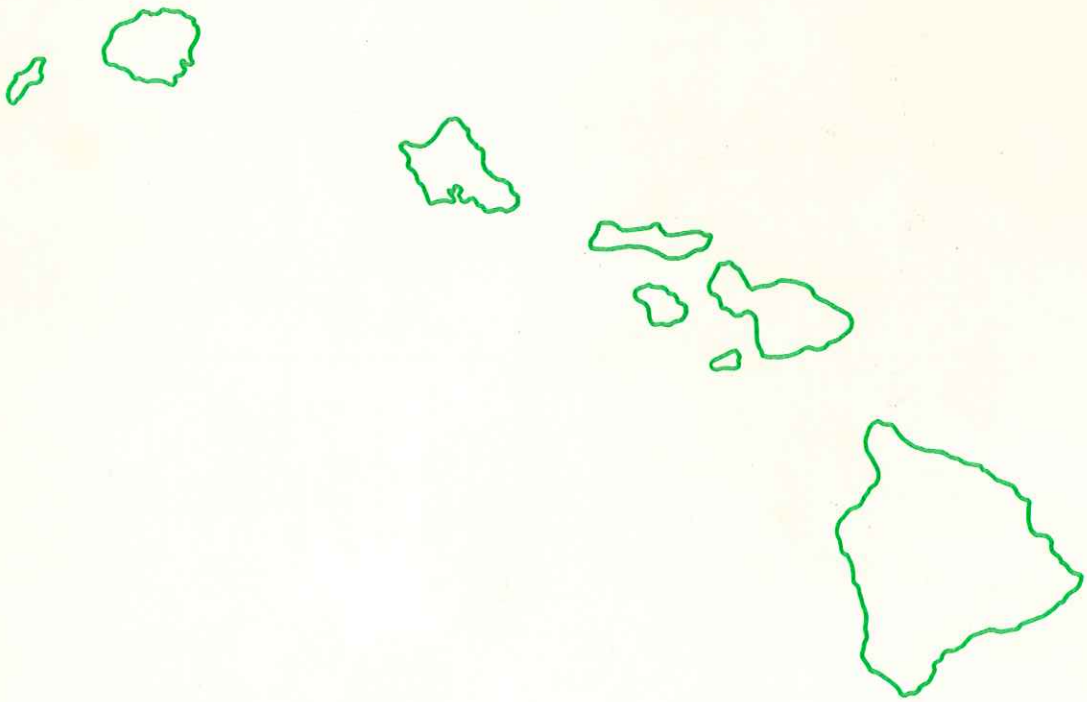
Correction Copy

Water Resources Data Hawaii and other Pacific Areas Water Year 1985

Volume 1. Hawaii



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-85-1
Prepared in cooperation with the State of Hawaii Department of Land and Natural Resources, Division of Water and Land Development and with other agencies

CALENDAR FOR WATER YEAR 1985

1984

OCTOBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

DECEMBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

1985

JANUARY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

FEBRUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

MARCH

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

APRIL

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

MAY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JUNE

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

JULY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

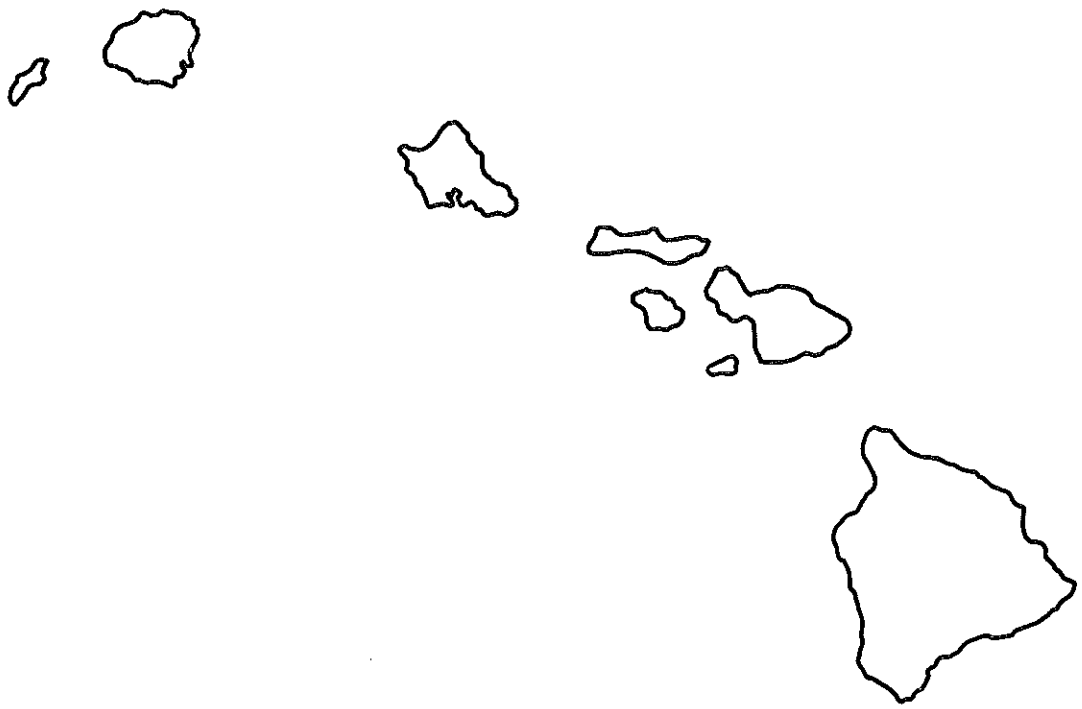
SEPTEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Water Resources Data Hawaii and other Pacific Areas Water Year 1985

Volume 1. Hawaii

by Salwyn S. Chinn, Grace A. Tateishi, and Johnson J.S. Yee



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-85-1
Prepared in cooperation with the State of Hawaii Department of Land and Natural Resources, Division of Water and Land Development and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Hawaii
and other Pacific Areas write to
District Chief, Water Resources Division
U.S. Geological Survey
300 Ala Moana Boulevard, Rm. 6110
P.O. Box 50166
Honolulu, Hawaii 96850

1986

PREFACE

This volume of the annual hydrologic data report of Hawaii and other Pacific Areas is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Hawaii and other Pacific Areas are contained in two volumes:

Volume 1. Hawaii
Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

Reuben Lee
George Gohara
Eugene S. Capellas
Rose M. Maruoka
Lodie T. Piniol
Richard H. Nakahara
Noriaki Kojiri
Roy I. Taogoshi
Isao Yamashiro
Leonora L. Fukuda

This report was prepared in cooperation with the State of Hawaii, the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and with other agencies under the general supervision of Stanley F. Kapustka, District Chief, Hawaii.

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. USGS/WRD/HD-86/262	2.	3. Recipient's Accession No.

4. Title and Subtitle
Water Resources Data for Hawaii and other Pacific Areas, Water Year 1985. Volume 1, Hawaii

5. Report Date
September 1986

6.

7. Author(s)
Salwyn S. Chinn, Grace A. Tateishi, and Johnson J. S. Yee

8. Performing Organization Rept. No.
USGS-WDR-HI-85-01

9. Performing Organization Name and Address
U.S. Geological Survey, Water Resources Division
300 Ala Moana Blvd, Room 6110
Honolulu, Hawaii 96850

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
U.S. Geological Survey, Water Resources Divison
300 Ala Moana Blvd, Room 6110
Honolulu, Hawaii 96850

13. Type of Report & Period Covered
Annual - Oct. 1, 1984 to Sept. 30, 1985

14.

15. Supplementary Notes
Prepared in cooperation with the State of Hawaii and with other agencies.

16. Abstract (Limit: 200 words)

Water resources data for the 1985 water year for Hawaii and other Pacific Areas consist of records of stage, discharge, and water quality of streams and springs; and water levels and water quality in wells. This report, volume 1, contains discharge records for 98 gaging stations; water quality for 13 gaging stations, 100 partial-record flow stations, and 154 wells; and water levels for 39 observation wells. Also included are 108 crest-stage partial-record stations and 20 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Federal, and other agencies in Hawaii.

17. Document Analysis a. Descriptors
*Hawaii, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement: No restriction on distribution. This report may be purchased from:
National Technical Information Service
Springfield, VA 22161

19. Security Class (This Report)	21. No. of Pages
UNCLASSIFIED	302
20. Security Class (This Page)	**22. Price**
UNCLASSIFIED	

(See ANSI-Z39.18) *See Instructions on Reverse*

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

CONTENTS

	Page
Preface	III
List of surface-water and water-quality stations, in downstream order, for which records are published	VI
List of ground-water stations for which water-level and water-quality records are published	VIII
Introduction	1
Cooperation	1
Summary of hydrologic conditions	2
Definition of terms	4
Downstream order and station number	8
Numbering system for wells and miscellaneous sites	9
Special networks and programs	22
Explanation of stage and water-discharge records	22
Collection and computation of data	22
Accuracy of field data and computed results	24
Records of discharge collected by agencies other than the Geological Survey	24
Other data available	24
Publications	24
Explanation of water-quality records	25
Collection and examination of data	25
Water analysis	25
Water temperature	25
Sediment	25
Publications	26
Explanation of ground-water level recorda	26
Collection of the data	26
Publications	26
Access to WATSTORE data	27
Publications on techniques of water-resources investigations	28
Hydrologic-data station records	30
Discharge at partial-record stations and miscellaneous sites	169
Low-flow partial-record stations	169
Crest-stage partial-record stations	172
Measurements at miscellaneous sites	180
Analyses of samples collected at water-quality partial-record stations	183
Observations of physical parameters	203
Ground-water records	217
Index	299

ILLUSTRATIONS

Figure	1.	Graphs showing discharge during 1985 water year compared with median discharge for period 1951-80 for four representative gaging stations	3
	2.	Map of Kauai showing locations of gaging, water-quality, and partial-record stations	10
	3.	Map of Kauai showing locations of observation wells and ground-water quality sampling sites	11
	4.	Map of Oahu showing locations of gaging, water-quality, and partial-record stations	12
	5.	Map of Oahu showing locations of observation wells and ground-water quality sampling sites	13
	6.	Map of Molokai showing locations of gaging, water-quality, and partial-record stations	14
	7.	Map of Molokai showing locations of observation wells and ground-water quality sampling sites	15
	8.	Map of Maui showing locations of gaging, water-quality, and partial-record stations	16
	9.	Map of Maui showing locations of observation wells and ground-water quality sampling sites	17
	10.	Map of Hawaii showing locations of gaging, water-quality, and partial-record stations	18
	11.	Map of Hawaii showing locations of observation wells and ground-water quality sampling sites	19
	12.	Sketch showing system for numbering wells and miscellaneous sites	20
	13.	Sketch showing local well numbering system	20
	14.	Map of Hawaii showing system for numbering local well numbers	21
	15.	Schematic diagram showing water-quality stations in Kamooalii Stream basin, Kaneohe, Oahu	184

SURFACE-WATER AND WATER-QUALITY STATIONS,
IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

Letters after station name designate type of data:
(d) discharge, (c) chemical, (m) microbiological,
(t) water temperature, (s) sediment

Page

HAWAII
ISLAND OF KAUAI
Kawaikoi Stream (head of Waimea River) near Waimea (dct)..... 30
Waimea River:
Waialae Stream at altitude 3,820 ft, near Waimea (dct)..... 31
Waimea River near Waimea (dcmts)..... 33
Makaweli River near Waimea (dct)..... 36
Hanapepe River below Manuahi Stream, near Eleele (dct)..... 37
Wailua River:
South Fork Wailua River near Lihue (dct)..... 38
North Fork Wailua River:
North Wailua ditch near Lihue (dct)..... 39
North Wailua ditch below Waikoko Stream, near Lihue (dct)..... 40
Stable storm ditch near Lihue (dct)..... 41
North Fork Wailua River at altitude 650 ft, near Lihue (dct)..... 42
East Branch of North Fork Wailua River near Lihue (dct)..... 43
Wailua ditch near Kapaa (dct)..... 44
North Fork Wailua River near Kapaa (dct)..... 45
Opaekaa Stream:
Left Branch Opaekaa Stream near Kapaa (dct)..... 46
Kapaa Stream:
Makaleha Stream:
Makaleha ditch near Kealia (dct)..... 47
Kapahi ditch near Kealia (dct)..... 48
Kapaa Stream at Kapahi ditch intake, near Kapaa (dct)..... 49
Anahola Stream:
Anahola ditch:
Anahola ditch wasteway near Kealia (dct)..... 50
Anahola ditch above Kaneha Reservoir, near Kealia (dct)..... 51
Anahola Stream near Kealia (dct)..... 52
Lower Anahola ditch near Kealia (dct)..... 53
Kilauea Stream:
Halaulani Stream at altitude 400 ft, near Kilauea (dct)..... 54
Hanalei River:
Hanalei tunnel outlet near Lihue (dct)..... 55
Hanalei River near Hanalei (dct)..... 56
Wainiha River near Hanalei (dct)..... 57
ISLAND OF OAHU
Kaukonahua Stream (head of Kiikii Stream):
North Fork Kaukonahua Stream above Right Branch, near Wahiawa (dct)..... 58
South Fork Kaukonahua Stream at East Pump Reservoir, near Wahiawa (dct)..... 59
Makaha Stream near Makaha (dct)..... 60
Waikele Stream:
Kipapa Stream near Wahiawa (dct)..... 61
Waikele Stream at Waipahu (dcmts)..... 62
Waiawa Stream near Pearl City (dct)..... 67
Halawa Stream:
North Halawa Stream near Aiea (dct)..... 68
North Halawa Stream near Honolulu (dct)..... 69
Kalihi Stream near Honolulu (dct)..... 70
Kalihi Stream at Kalihi (dcmts)..... 72
Nuuanu Stream below reservoir 2 wasteway, near Honolulu (dct)..... 75
Waiakeakua Stream (head of Manoa Stream) at Honolulu (dct)..... 76
Maunawili Stream:
Makawao Stream near Kailua (dct)..... 77
Kaneohe Stream:
Kamooalii Stream:
Right Branch Kamooalii Stream near Kaneohe (dcmts)..... 78
Luluku Stream at altitude 220 ft, near Kaneohe (dcmts)..... 84
Kamooalii Stream below Luluku Stream, near Kaneohe (dcmts)..... 92
Haiku Stream near Heeia (dct)..... 100
Kahaluu Stream near Ahuimanu (dct)..... 102
Waihee Stream:
South Fork Waihee Stream near Heeia (dct)..... 103
North Fork Waihee Stream near Heeia (dct)..... 104
Waihee Stream near Kahaluu (dct)..... 105

Page

HAWAII--Continued
ISLAND OF OAHU--Continued
Waikane Stream at altitude 75 ft, at Waikane (dct)..... 106
Kahana Stream at altitude 30 ft, near Kahana (dct)..... 107
Punaluu Stream:
Punaluu ditch near Punaluu (d)..... 108
Punaluu Stream near Punaluu (dct)..... 109
Kaluanui Stream near Punaluu (dct)..... 110
Waimea River:
Kamananui Stream at Pupukea Military Road, near Maunawai (dct)..... 111
Kamananui Stream at Maunawai (dct)..... 112
Paukauila Stream:
Opaeula Stream near Wahiawa (dct)..... 113
ISLAND OF MOLOKAI
Halawa Stream near Halawa (dcmts)..... 114
Pelekunu Stream:
Pilipililau Stream near Pelekunu (dct)..... 117
Waikolu Stream:
Molokai tunnel at east portal (dt)..... 118
Molokai tunnel at west portal (dct)..... 119
Waikolu Stream at altitude 900 ft, near Kalaupapa (dct)..... 120
Waikolu Stream below pipeline crossing, near Kalaupapa (dct)..... 121
Kaunakakai Gulch at Kaunakakai (d)..... 122
Papio Gulch at Halawa (dct)..... 123
ISLAND OF MAUI
Hanawi Stream near Nahiku (dct)..... 124
Koolau ditch at Nahiku weir, near Nahiku (dct)..... 125
West Wailuaiki Stream near Keanae (dct)..... 126
Koolau ditch near Keanae (dct)..... 127
Haipuaena Stream:
Kula diversion from Haipuaena Stream near Olinda (dct)..... 128
Spreckels ditch at Haipuaena weir, near Huelo (dct)..... 129
Koolau ditch at Haipuaena, near Huelo (dct)..... 130
Manuel Luis ditch at Puohokamoa Gulch, near Huelo (dct)..... 131
Honopou Stream near Huelo (dct)..... 132
Wailoa ditch at Honopou, near Huelo (dct)..... 133
New Hamakua ditch at Honopou, near Huelo (dct)..... 134
Lowrie ditch at Honopou Gulch, near Huelo (dct)..... 135
Haiku ditch at Honopou Gulch, near Kailua (dct)..... 136
Kakipi Gulch:
Opana Gulch:
Opana tunnel at Kaililili (dct)..... 137
Iao Stream at Kepaniwai Park, near Wailuku (dct)..... 138
Waihee River at dam, near Waihee (dct)..... 139
Kahakuloa Stream near Honokohau (dcmts)..... 140
Honokohau Strsam near Honokohau (dct)..... 143
Kahoma Stream at Lahaina (dct)..... 144
ISLAND OF HAWAII
Waiakea Stream (head of Wailoa River) near Mountain View (dct)..... 145
Olaa flume Spring near Kaumana (dct)..... 146
Lyman Springs No. 2 near Piihonua (dct)..... 147
Wailuku River at Piihonua (dct)..... 148
Wailuku River at Hilo (dcmts)..... 149
Honolii Stream near Papaikou (dcmts)..... 155
Kawainui Stream (head of Wailoa Stream) neer Kamuela (dct)..... 158
Kawaiki Stream near Kamuela (dct)..... 159
Upper Hamakua ditch below Kawaiki Stream, near Kamuela (dct)..... 160
Upper Hamakua ditch above Alekahi Stream, near Kamuela (dct)..... 161
Waipio Stream (continuation of Kawainui Stream):
Alakahi Streem near Kamuela (dct)..... 162
Upper Hamakua ditch above Waimea Reservoir diversion, near Kamuela (dct)..... 163
Upper Hamakua ditch above Puukapu Reservoir, near Kamuela (dct)..... 164
Kohakohau Stream near Kamuela (dct)..... 165
Waikoloa Stream at Marine Dam, near Kamuela (dct)..... 166
Hauani Gulch (head of Lanimaumau Stream) near Kamuela (dct)..... 167
Hilea Gulch tributary near Honuapo (dct)..... 168

Letters after well number designate type of data:
(c) chemical, (t) water temperature, (w) water level

			Page
HAWAII			
ISLAND OF KAUAI			
(2-0044-10)	220018159444701	(ct)	249
(2-0044-13)	220018159444702	(ct)	249
(2-0044-14)	220019159444801	(ctw)	217
(2-0044-15)	220016159442701	(ct)	249
(2-0120-01)	220136159205501	(ct)	249
(2-0120-02)	220134159205401	(ct)	249
(2-0145-10)	220148159453501	(ct)	249
(2-0320-01)	220354159205601	(ctw)	218
(2-0345-04)	220341159453901	(ct)	249
(2-0545-01)	220530159450401	(ct)	249
(2-0818-01)	220827159185401	(ct)	250
(2-1125-01)	221141159252501	(ct)	250
(2-1125-02)	221141159252502	(ct)	250
(2-1126-01)	221150159264501	(ct)	250
(2-1126-02)	221151159265001	(ct)	250
(2-1229-03)	221201159293401	(ct)	250
(2-1232-01)	221247159324801	(ct)	250
(2-1333-01)	221318159335901	(ct)	250
(2-5427-01)	215454159274201	(ct)	263
(2-5526-01)	215536159263501	(ct)	250
(2-5530-02)	215528159303001	(ct)	250
(2-5530-03)	215525159302601	(ct)	264
(2-5534-03)	215522159342601	(ct)	250
(2-5631-02)	215630159314001	(c)	265
(2-5635-01)	215635159355001	(ct)	250
(2-5635-02)	215635159355002	(ct)	251
(2-5840-01)	215803159401201	(ct)	251
(2-5842-02)	215854159424601	(ct)	251
(2-5842-03)	215843159422901	(ct)	251
(2-5923-01)	215901159235301	(ct)	251
(2-5923-02)	215901159235302	(ct)	251
(2-5923-07)	215901159235201	(ct)	251
(2-5939-01)	215906159395601	(ct)	251
(2-5942-01)	215911159424701	(ct)	266
(2-5943-01)	215937159434201	(ct)	251
ISLAND OF OAHU			
(3-1646-01)	211646157465201	(ct)	252
(3-1748-09)	211727157485807	(ct)	268
(3-1849-16)	211813157494706	(ct)	269
(3-1851-19A)	211832157515501	(ct)	252
(3-1851-19B)	211832157515502	(ct)	252
(3-1851-34)	211831157512008	(ct)	271
(3-1959-05)	211907157594701	(w)	220
(3-2042-13)	212038157422501	(ct)	252
(3-2052-08)	212052157523601	(ct)	272
(3-2101-03)	212154158015201	(w)	220
(3-2103-03)	212133158035501	(ct)	252
(3-2153-02)	212106157533701	(ct)	252
(3-2153-05)	212123157535501	(cw)	221
(3-2202-21)	212252158025001	(ct	273
(3-2255-35)	212259157554201	(ct)	252
(3-2256-10)	212238157561101	(w)	222
(3-2256-12)	212238157561102	(ct)	252
(3-2300-06)	212300158004801	(ct)	253
(3-2300-11)	212343158001001	(ct)	253
(3-2300-18)	212340158001901	(cw)	223
(3-2300-20)	212341158001101	(ct)	274
(3-2300-21)	212325158003801	(ct)	276
(3-2301-09,10)	212358158010901	(ct)	253
(3-2354-01)	212305157542601	(ct)	277
(3-2355-09)	212338157555601	(ct)	279
(3-2358-02)	212332157582201	(ct)	253
(3-2358-22)	212342157584301	(ct)	253

			Page
HAWAII--Continued			
ISLAND OF OAHU--Continued			
(3-2358-29)	212343157584701	(ct)	253
(3-2359-05)	212338157591801	(ct)	253
(3-2448-01)	212422157485601	(ct)	253
(3-2457-09)	212446157573204	(ct)	280
(3-2500-01)	212522158003001	(ct)	281
(3-2550-01)	212556157500301	(ct)	253
(3-2558-10)	212506157582301	(ct)	254
(3-2600-04)	212659158004102	(w)	224
(3-2603-01)	212617158033801	(ct)	254
(3-2607-01)	212656158071801	(ct)	254
(3-2800-01)	212803158000701	(ct)	254
(3-2808-01)	212813158080201	(ct)	254
(3-2809-06)	212828158092001	(ct)	254
(3-2812-01)	212859158124301	(ct)	254
(3-2858-02)	212857157580401	(c)	283
(3-2858-03)	212851157580401	(c)	283
(3-2901-07)	212927158014801	(ctw)	225
(3-2901-09)	212945158014301	(ct)	254
(3-2911-02)	212939158112301	(ct)	254
(3-3213-06)	213224158135901	(ct)	255
(3-3251-01)	213243157510001	(ct)	255
(3-3307-10)	213311158071601	(ct)	283
(3-3352-01)	213327157524401	(ctw)	226
(3-3405-01	213429158055501	(ct)	255
(3-3405-02)	213427158055501	(ct)	255
(3-3407-25)	213411158074501	(ct)	255
(3-3407-30)	213444158075501	(ct)	255
(3-3410-08)	213446158104901	(ctw)	227
(3-3506-03,04)	213512158061601	(ct)	255
(3-3605-03)	213636158053701	(ct)	255
(3-3605-21)	213636158053702	(ct)	256
(3-3655-01)	213656157550401	(ct)	256
(3-3956-04)	213902157561601	(ct)	256
(3-4100-01)	214157158000101	(ct)	256
(3-4101-03)	214125158013401	(w)	228
(3-4101-08)	214131158011601	(ct)	256
(3-4258-04)	214233157583501	(ct)	256
ISLAND OF MOLOKAI			
(4-0448-02)	210425156483001	(w)	228
(4-0449-01)	210402156495801	(ctw)	229
(4-0457-01)	210419156570501	(ctw)	230
(4-0601-01)	210605157012001	(ctw)	231
(4-0700-01)	210711157000501	(w)	232
(4-0801-01)	210856157011201	(c)	257
(4-0801-02)	210857156010701	(c)	257
(4-0901-01)	210903157013001	(ct)	257
ISLAND OF MAUI			
(6-3806-01)	203835156065001	(ct)	257
(6-3904-01)	203908156041201	(w)	232
(6-3925-01)	203912156255901	(w)	233
(6-3926-03)	203947156261201	(ct)	257
(6-4600-01)	204601156001501	(ct)	257
(6-4600-03)	204633156003201	(ct)	257
(6-4627-14)	204635156270101	(ct)	258
(6-4824-01)	204827156242201	(w)	233
(6-4825-01)	204845156255001	(ct)	258
(6-4831-01)	204818156310301	(w)	234
(6-4928-02)	204909156281401	(w)	234
(6-4937-01)	204931156371201	(ct)	258
(6-5021-01)	205014156212701	(ct)	258
(6-5128-02)	205102156282501	(ct)	258
(6-5130-01)	205140156304501	(w)	235
(6-5130-02)	205154156303801	(w)	235
(8-5224-02)	205243156243201	(ct)	258
(6-5227-04)	205211156271901	(ct)	284
(6-5321-01)	205327156213201	(ct)	285
(6-5330-09)	205328156305502	(ct)	258
(6-5330-11)	205330156305401	(ct)	258

			Page
HAWAII--Continued			
ISLAND OF MAUI--Continued			
(6-5339-01)	205322156394501	(ct)	286
(6-5339-02)	205320156394501	(ct)	258
(8-5340-02)	205343156401101	(ct)	259
(8-5341-01)	205324156405701	(ct)	288
(6-5420-01)	205458156205401	(ct)	289
(6-5423-02)	205449156231001	(ct)	290
(6-5424-01)	205416156244301	(ct)	259
(6-5430-03)	205419156304401	(w)	236
(6-5430-05)	205405156305401	(ow)	237
(6-5431-01	205437156310501	(w)	238
(6-5519-01)	205552156193101	(w)	238
(6-5522-01)	205511156222101	(ct)	259
(6-5631-01)	205617156311101	(w)	239
(6-5640-01)	205651156401001	(ct)	259
(6-5838-01)	205837156384601	(ct)	259
(6-5838-02)	205838156383101	(ct)	259
(6-5838-04)	205848156383601	(ct)	259
(6-5840-01)	205856156400101	(w)	239
ISLAND OF HAWAII			
(8-0632-01)	190602155325901	(w)	240
(8-0831-02)	190832155310901	(ct)	260
(8-1128-02)	191108155281701	(ct)	260
(8-1129-01)	191114155294801	(ct)	260
(8-1229-01)	191219155291601	(ct)	292
(8-2102-01)	192108155021201	(ct)	260
(8-2653-01)	192646155532001	(ct)	260
(8-2753-01)	192738155534201	(ct)	260
(8-2753-02)	192731155534101	(ct)	260
(8-2783-01)	192728154530101	(ctw)	241
(8-2883-08)	192849154533601	(ct)	293
(8-2986-01)	192924154564701	(ct)	294
(8-2986-02)	192923154564701	(ct)	260
(8-3080-02)	193017154502101	(ctw)	242
(8-3185-01)	193113154555801	(ct)	260
(8-3389-01)	193339154594801	(w)	243
(8-3557-01)	193510155570801	(ct)	260
(8-3557-04)	193505155570701	(ct)	281
(8-3557-05)	193502155572301	(ct)	261
(8-3802-01)	193803155020201	(ct)	294
(8-3802-03)	193805155020201	(ct)	261
(8-4003-01)	194037155035301	(ct)	281
(8-4003-02)	194040155035201	(ct)	261
(8-4003-03)	194039155035801	(ct)	261
(8-4100-01)	194134155005601	(ctw)	244
(8-4203-04)	194222155035101	(w)	245
(8-4203-05)	194222155035001	(ct)	261
(8-4203-06)	194222155034801	(ct)	261
(8-4304-01)	194337155041801	(ct)	261
(8-4706-01)	194715155061301	(ct)	295
(8-4858-02)	194818155582301	(ct)	261
(8-4858-03)	194820155582401	(ct)	262
(8-5005-01)	195035155054501	(ct)	296
(8-5005-02)	195043155053801	(ct)	262
(8-5005-05)	195051155051501	(ct)	262
(8-5239-01)	195225155394401	(ct)	262
(8-5548-01)	195546155480301	(ct)	262
(8-5745-02)	195722155455201	(ct)	262
(8-5814-01)	195857155142301	(ct)	262
(8-5946-01)	195929155462501	(ct)	262
(8-5946-02)	195912155464201	(ct)	262
(8-5948-01)	195947155485801	(ctw)	246
(8-8147-01)	200132155471001	(w)	247
(8-6223-01)	200229155231101	(ct)	298
(8-6528-01)	200518155281601	(ct)	262
(8-7449-02)	201428155494201	(ct)	262
(8-7652-01)	201603155521801	(ctw)	248

WATER RESOURCES DATA FOR HAWAII AND OTHER PACIFIC AREAS, 1985

Volume 1

INTRODUCTION

Water resources data for the 1985 water year for Hawaii and other Pacific areas consist of records of stage, discharge, and water quality of streams, ditches, and springs; and water-levels and water quality of wells. This report, Volume 1, contains discharge records for 98 gaging stations; water quality for 13 gaging stations, 100 partial-record flow stations, and 154 wells; and water levels for 39 observation wells. Also included are 108 crest-stage partial-record stations and 20 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Federal, and other agencies in Hawaii.

Through September 30, 1960 (June 30, 1960, for Hawaii and other Pacific areas), the records of discharge (or stage) of streams, and contents (or stage) of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." The records in Hawaii were contained in the series as "Surface Water Supply of Hawaii." Records for other Pacific areas were contained in one volume entitled, "Surface Water Supply of Meriana, Caroline, and Samoa Islands." Through water year 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended aediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled, "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.

Beginning with the 1961 water year (fiscal year for Hawaii) and continuing through water year 1974, streamflow data have been released by the Geological Survey in annual reports on a state-boundary bases. Water-quality records beginning with the 1964 water year, and ground-water data since the 1971 water year have been similarly releaaed either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a state-boundary basis. These official Survey reports carry an identification number consisting of the two-letter state abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report HI-85-1." For archiving and general distribution, the reports for water years 1971-74 are also indentified as water-data reports. These water-data reports are for aale, in paper copy or in microfiche by ths National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information (including current prices) for ordering specific reports may be obtained from the district chief at the addresa given on the back of the title page or by telephone (808) 546-8331.

COOPERATION

The U.S. Geological Survey and organizations of the State of Hawaii have had cooperative agreements for the systematic collection of streamflow and ground water-level records since 1909, and for water-quality records since 1967. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Hawaii Department of Land and Natural Resources, Division of Water and Land Development, Manabu Tagomori, Manager-Chief Engineer.
Hawaii Department of Health, Leslie S. Matsubara, Director.
City and County of Honolulu, Board of Water Supply, Kazu Hayashida, Manager and Chief Engineer.
City and County of Honolulu, Department of Public Works, Russell L. Smith, Jr., Director and Chief Engineer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army and the Public Works, U.S. Navy.

The following organizations aided in collecting records:

Maui County Board of Water Supply; East Kauai Water Co., Ltd.; McBryde Sugar Co., Ltd.; East Maui Irrigation Co., Ltd.; and B. P. Bishop Estate.

SUMMARY OF HYDROLOGIC CONDITIONS

Runoff during the 1985 year was normal at all index stations except Kalihi Stream on the island of Oahu where the annual mean discharge was 53 percent of the 1951-80 annual median.

Streamflow at Kalihi Stream near Honolulu, Oahu, was deficient (lower 25 percent of record) for October, November, and January. Ground-water levels at two index well sites on Oahu showed that the water level was slightly below the normal range and it continued to drop steadily during the year. As a result, on June 13, the Honolulu Board of Water Supply chief engineer-manager renewed a plea to the Oahu consumers to conserve water.

Monthly and yearly mean discharges of the four index stations are compared with their medians in figure 1.

The chemical quality of surface waters statewide showed little change from previous years. Median specific conductance values increased slightly from the 1984 water year. Average values for individual sites determined at 100 gaging stations ranged from 18 to 739 US/CM (microsiemens per centimeter). The range of average values for streams by island are:

Island	Number of Streams	Average Specific Conductance (US/CM)		
		Minimum	Maximum	Median
Kauai	25	33	121	90
Oahu	31	50	739	147
Molokai	6	50	107	122
Maui	19	18	91	52
Hawaii	17	23	65	27

Dissolved-solids concentrations at the six NASQAN (National Stream Quality Accounting Network) stations also showed little change during the 1985 year from the previous year. Samples collected every other month showed dissolved-solids concentrations ranged from 14 to 429 mg/L (milligrams per liter) during 1985. Waikele Stream at Waipahu, Oahu, had the highest concentration values.

Average dissolved-oxygen concentrations ranged from 70 to 99 percent saturation. Waikele and Kalihi streams were the lowest at 70 and 81 percent, respectively.

Concentrations of trace metals were less than the minimum contaminant levels established by EPA (Environmental Protection Agency). Fecal coliform densities increased on Oahu streams. The densities were high compared to other NASQAN and Benchmark stations in Hawaii. Waikele Stream at Waipahu, Oahu had the highest fecal coliform density. The geometric-values were:

	Fecal Coliform (colonies per 100 milliliters)	
NASQAN Station	1984	1985
Waimea River at Waimea, Kauai	450	280
Waikele Stream at Waipahu, Oahu	5500	7900
Kalihi Stream at Kalihi, Oahu	5700	6600
Halawa Stream near Halawa, Molokai	130	120
Kahakuloa Stream at Kahakuloa, Maui	37	21
Wailuku River at Hilo, Hawaii	77	46
Benchmark Station		
Honolii Stream near Papaikou, Hawaii	100	14

Analyses of water samples taken at more than 150 basal water-table wells generally did not show significant changes in chloride concentration.

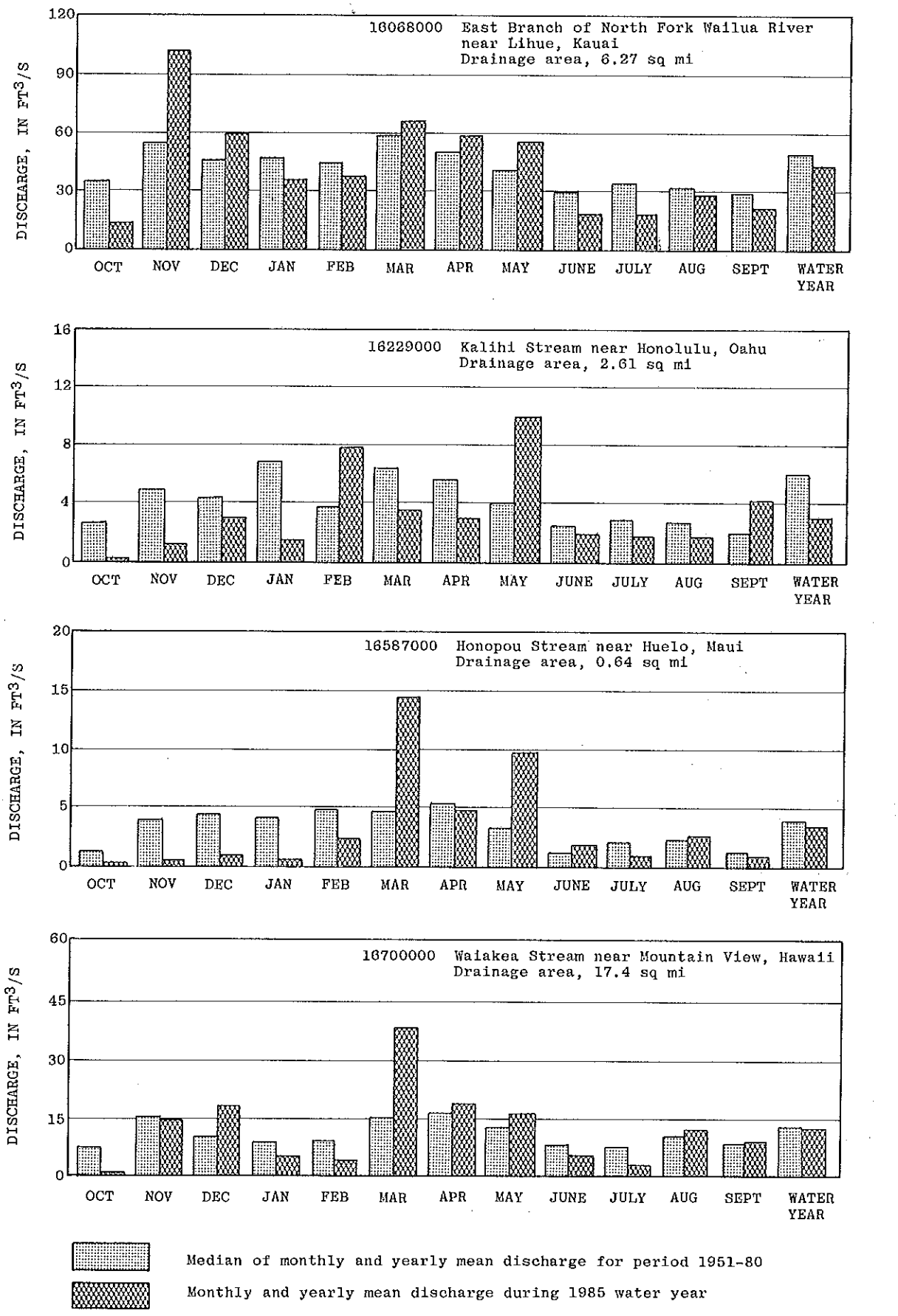


FIGURE 1. DISCHARGE DURING 1985 WATER YEAR COMPARED WITH MEDIAN DISCHARGE FOR PERIOD 1951-80 FOR FOUR REPRESENTATIVE GAGING STATIONS.

DEFINITION OF TERMS

Definition of terms related to streamflow, water-quality, and other hydrologic data are defined as follows:

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,851 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies within 24 hours when incubated at 35°C ± 0.5°C on M-Endoagar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliter of of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacterial which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 0.5°C on KF Streptococcus agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of orgsnic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any time, expressed as the weight per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in g/m^3 (grams per cubic meter), and periphyton and benthic organisms in g/m^2 (grams per square meter).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash, and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substancea. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyaes because different digeation procedures are likely to produce different analytical results.

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the conatituent in the asmple, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters of liters (L).

CFS-day is the volume of water represented by a flow of 1 cubic foot per aecond for 24 hours. It ia equivalent to 86,400 oubic feet, 1.9835 acre-fest, or 646,317 gallons or 2,447 cubic meters.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate or delayed incubation membrane filter method.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volums is computed on the basis of a level pool and does not include bank storage.

Continuing record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.

2. When water temperature records include observations taken one or more times daily.

3. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic average of individual daily mean discharges during a specified period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the table is "DISCHARGE (CFS)."

Dissolved is that material in a representative water sample which passes through a 0.45 micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing psrt or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Microgram per gram ($\mu g/g$) is a unit expressing the concentration of a chemical element ae the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Microgram per liter ($\mu G/L$, $\mu g/L$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligram per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

Partisl-record station is a particular site where limited streamflow and/or water-quality data sre collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clsy.....	0.00024 - 0.004	Sedimentation.
Silt.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Pesticides are chemical compounds used to control the growth of undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (Pc,pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radio-active disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Sediment is solid material that originates moatly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical preoipitates and decomposed organic material, such as humus. The quantity, characteristics, snd cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension ss a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times milligrams per liter times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total-sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean ooncentration is the time-weight concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetstion, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and ooncentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stresm, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Suspsnded recoverable is the amount of a given constituent that is insolution after the part of a respresentative water-suspended sedimsnt sample that is retained on a 0.45 micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in diesolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To aohieve comparibility of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different snalytical resulte.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 micrometer membrane filter. This term is used only when the analytioal procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituents.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily aoluble substances. Complete dissolution of all particulate matter ia not achieved by the digestion treatment, and thus the dstermination represents something less than the "total" smount (that is, less than 95 percent) of ths constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedurea would be required of all laboratories performing such analyses because diggerent digestion procedures are likely to produce different snalytical results.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only whsn the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrationa of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Turbidity of a sample is the reduction of transparency dur to the presence of particulate matter. in this report it is expressed Nephelometric turbidity units (NTU).

WDR is used as an abbreviation for "Water-Data Reports" in the summary REVISIONS paragraph to refer to previously published Stat annual basic-data reports.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of discharges. A diacharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all main-stream stations are listed before the first main-stream station. Stations on tributaries to tributaries are listed in a similar manner. In the lists of gaging stations and water-quality stations in the front of this report the rank of tributariea ia indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station, partial-record station, and water-quality station has been aasigned a station number. These are in the same downstream order used in this report. In assigning sstation numbers, no distinction is made between partial-record stations and continuous-record gaging stations; therefore, the station number for a partial-record station inidcated downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each sstation, such as 16200000 which appears just

to the left of the station name includes the 2-digit number "16" plus the 6-digit downstream order number "200000." In this report, the records are listed in downstream order by islands. Locations of the stations are shown in figures 2, 4, 6, 8, and 10.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

Miscellaneous downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits is a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and a miscellaneous site are the same, assign sequential numbers "01," "02," etc. as one would for wells. See figure 12.

Beginning in 1971, the local well-numbering system for Hawaii was restructured to contain seven digits based on a non-arbitrary, unique one-minute grid system. One-minute parallel lines for both latitude and longitude are drawn on the map resulting in one-minute grids. Each grid is designated by a four-digit number. The first two digits represent minutes of latitude for the grid and the second two digits represent minutes of longitude for that grid. This establishes unique minute-grid numbers within each of the islands in the state except for the island of Hawaii where it encompasses an area more than one degree (60 minutes) of latitude and longitude. To establish unique minute-grid numbers for this island, 30 was added to the minutes of latitude in areas less than 19°00" of latitude, and 60 was added to the minutes of latitude in areas more than 20°00" of latitude. For the same reason, 30 was added to the minutes of longitude in areas less than 155°00" of longitude, and 60 was added to the minutes of longitudes more than 156°00" longitude. See figures 13 and 14.

To distinguish wells within a minute grid, two grids are added following the 4-digit minute-grid numbers with a dash separator. These two-digit numbers are assigned with the oldest well dug within the grid as 01 and increase chronologically, with few exceptions, to ths latest dug.

Since it is possible to have a same 6-digit number for wells on different islands, another digit distinguishing each of the islands, is added in front of the 6-digit number with a dash separator.

Well locations on the islands of Kauai, Oahu, Molokai, Maui, and Hawaii are shown in figures 3, 5, 7, 9, and 11,

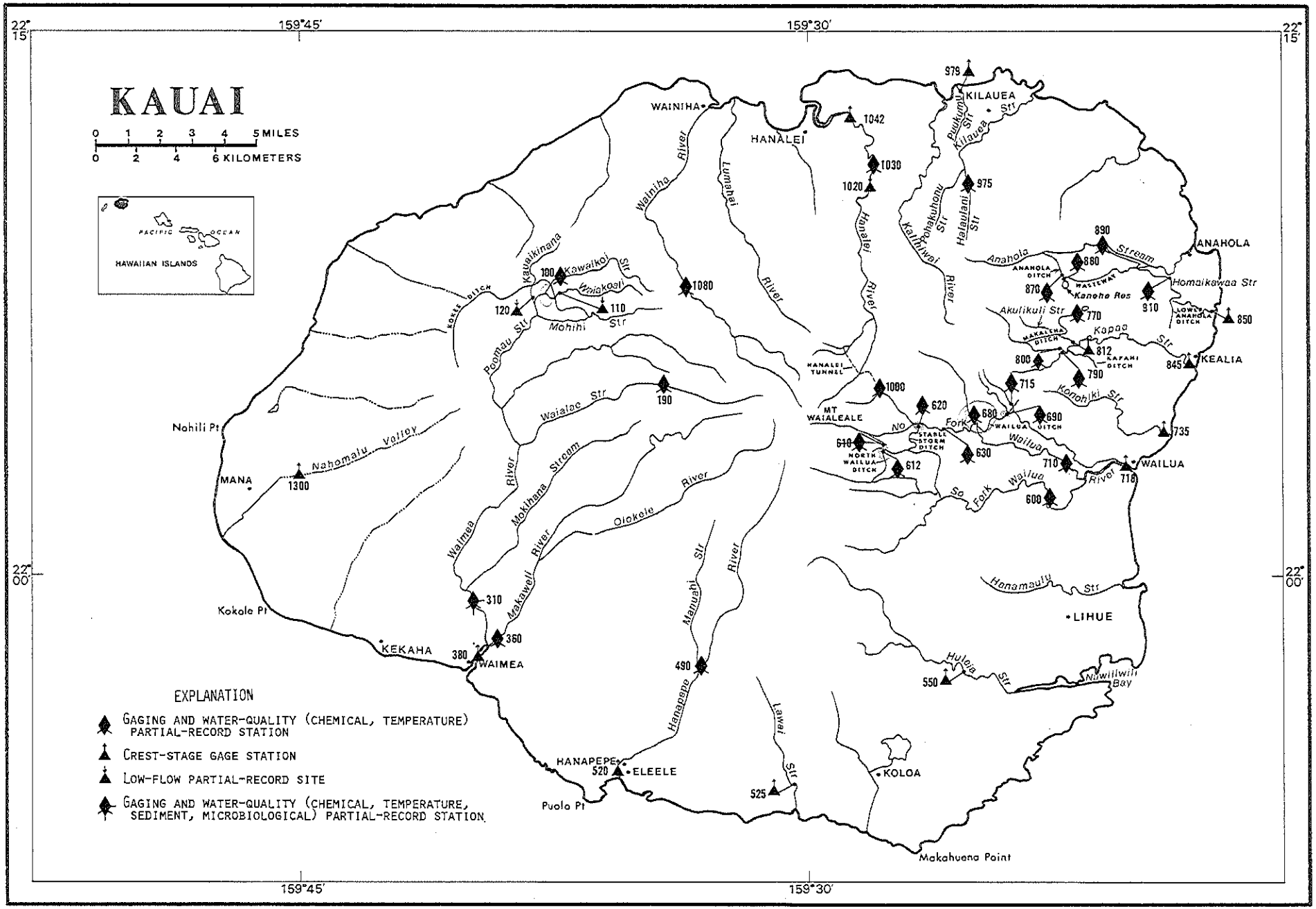


FIGURE 2.--LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS ON KAUAI.

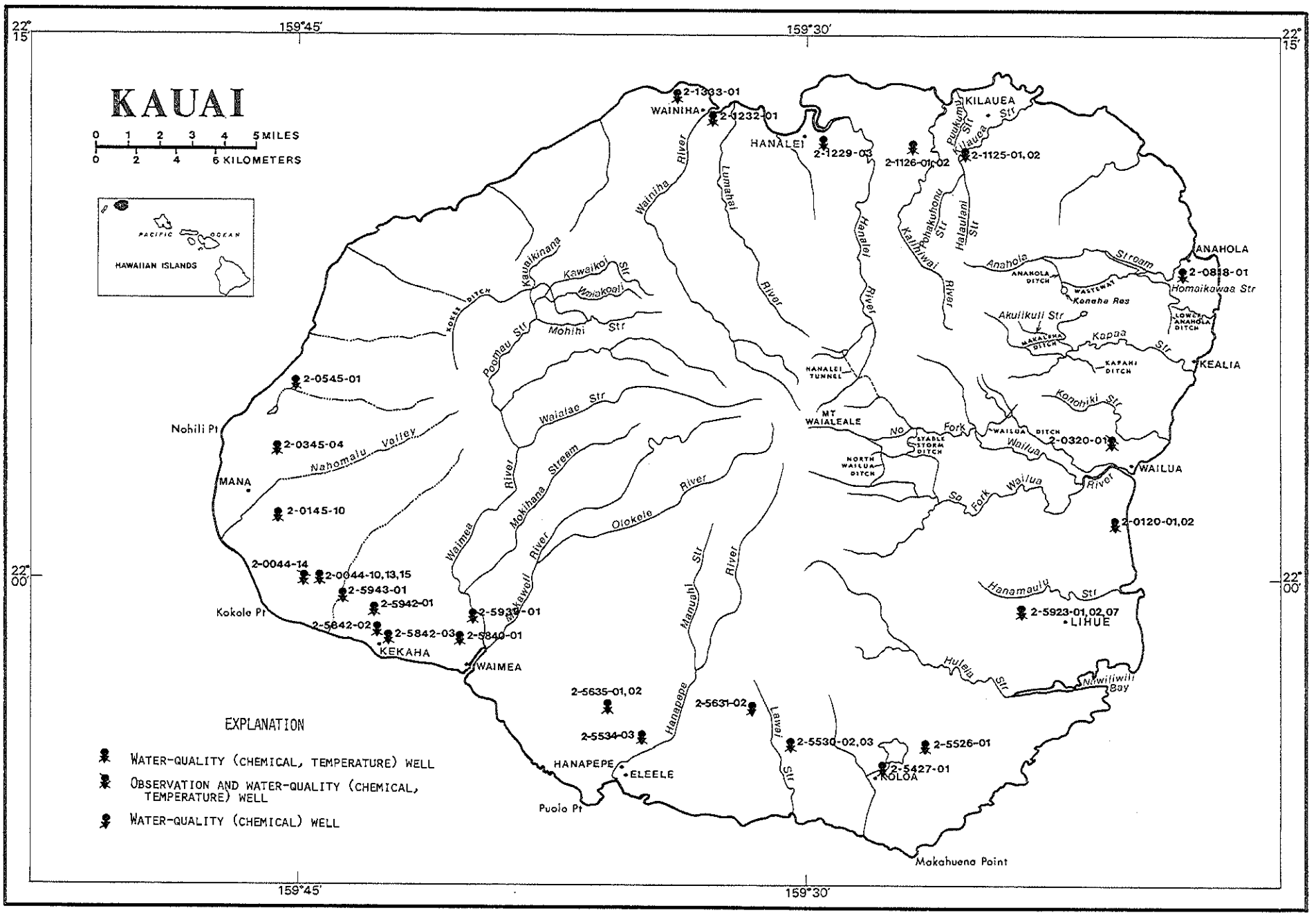


FIGURE 3.--LOCATIONS OF OBSERVATION WELLS AND GROUND-WATER QUALITY SAMPLING SITES ON KAUAI.

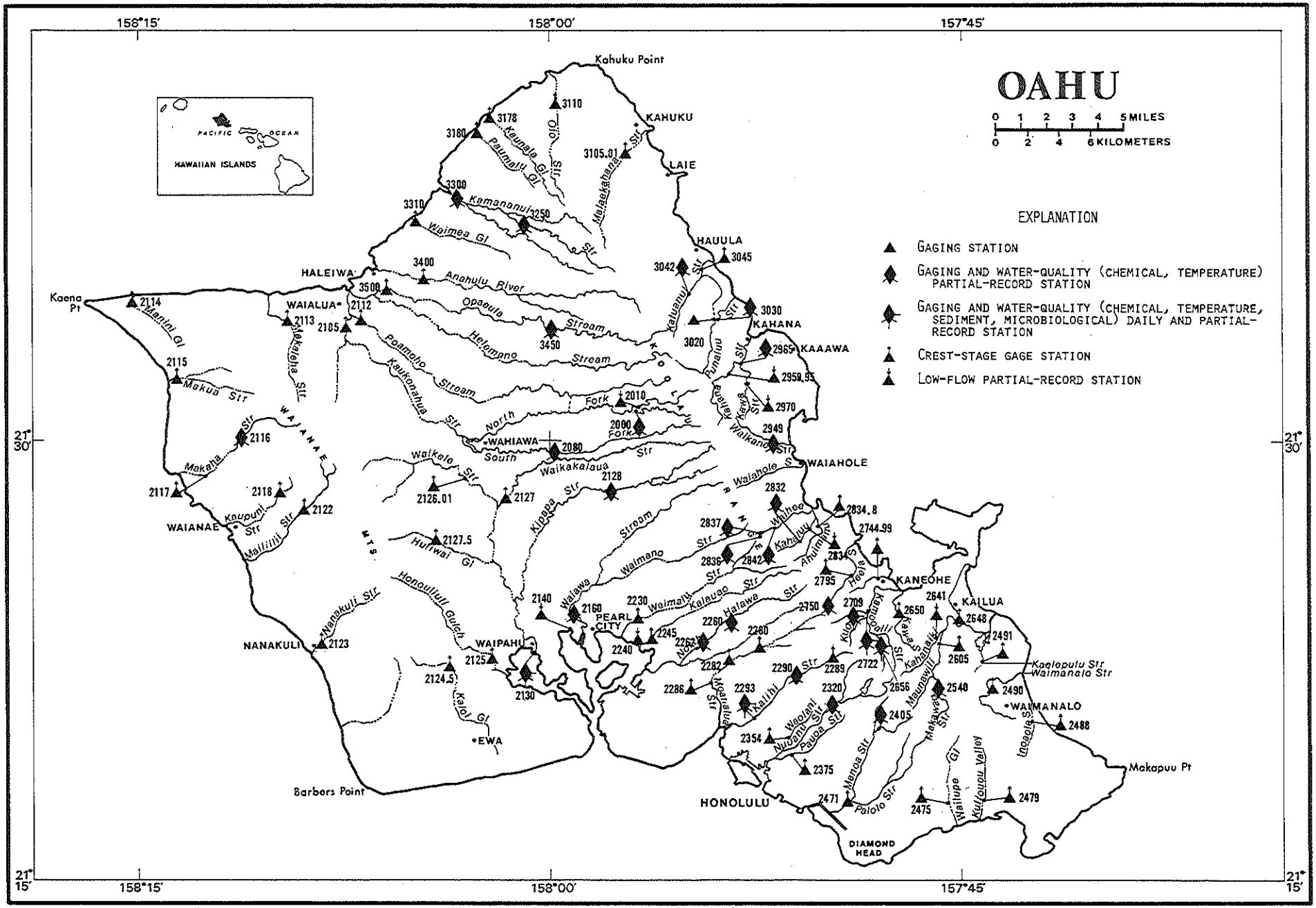


FIGURE 4.--LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS ON OAHU.

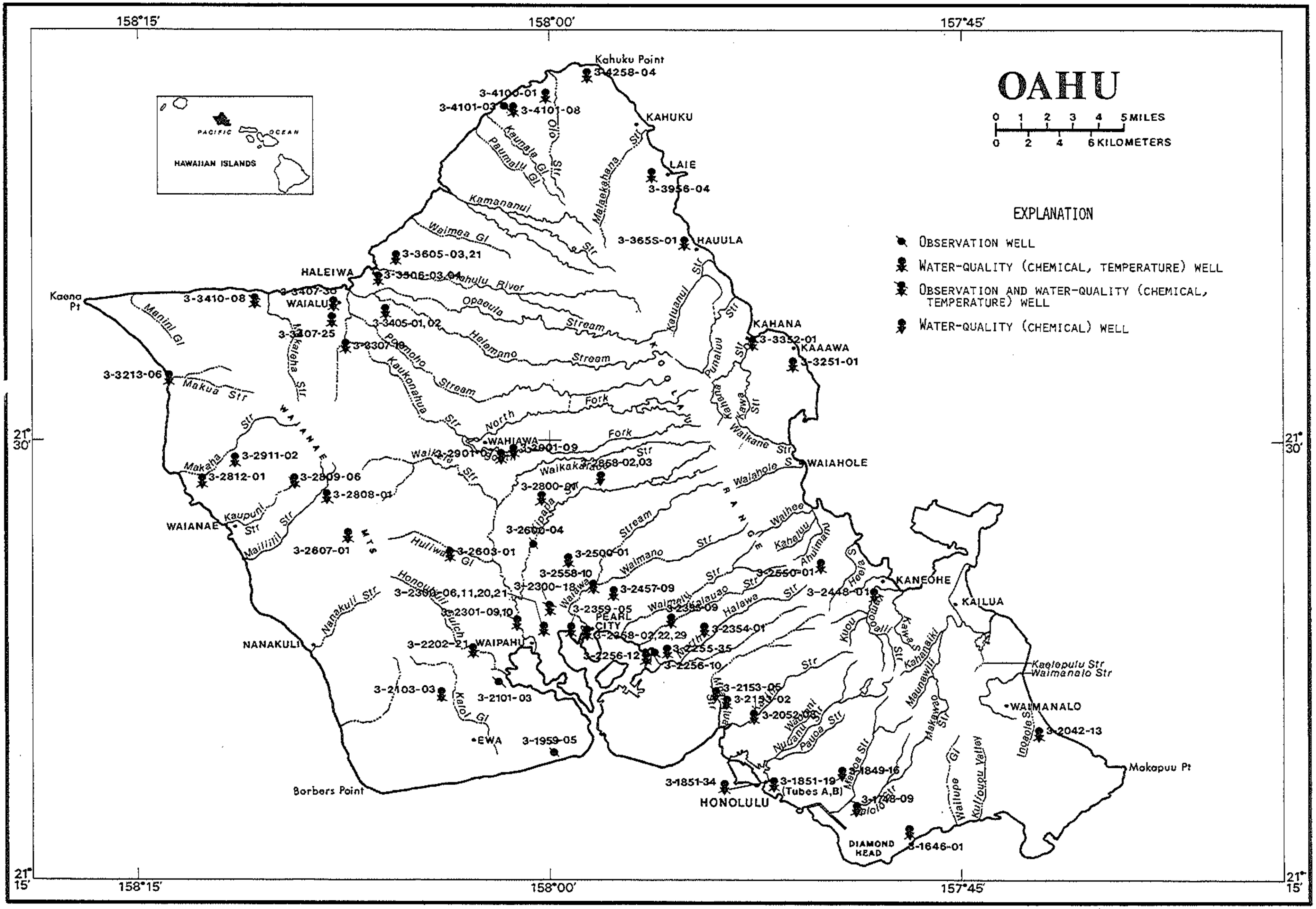


FIGURE 5.--LOCATIONS OF OBSERVATION WELLS AND GROUND-WATER QUALITY SAMPLING SITES ON OAHU.

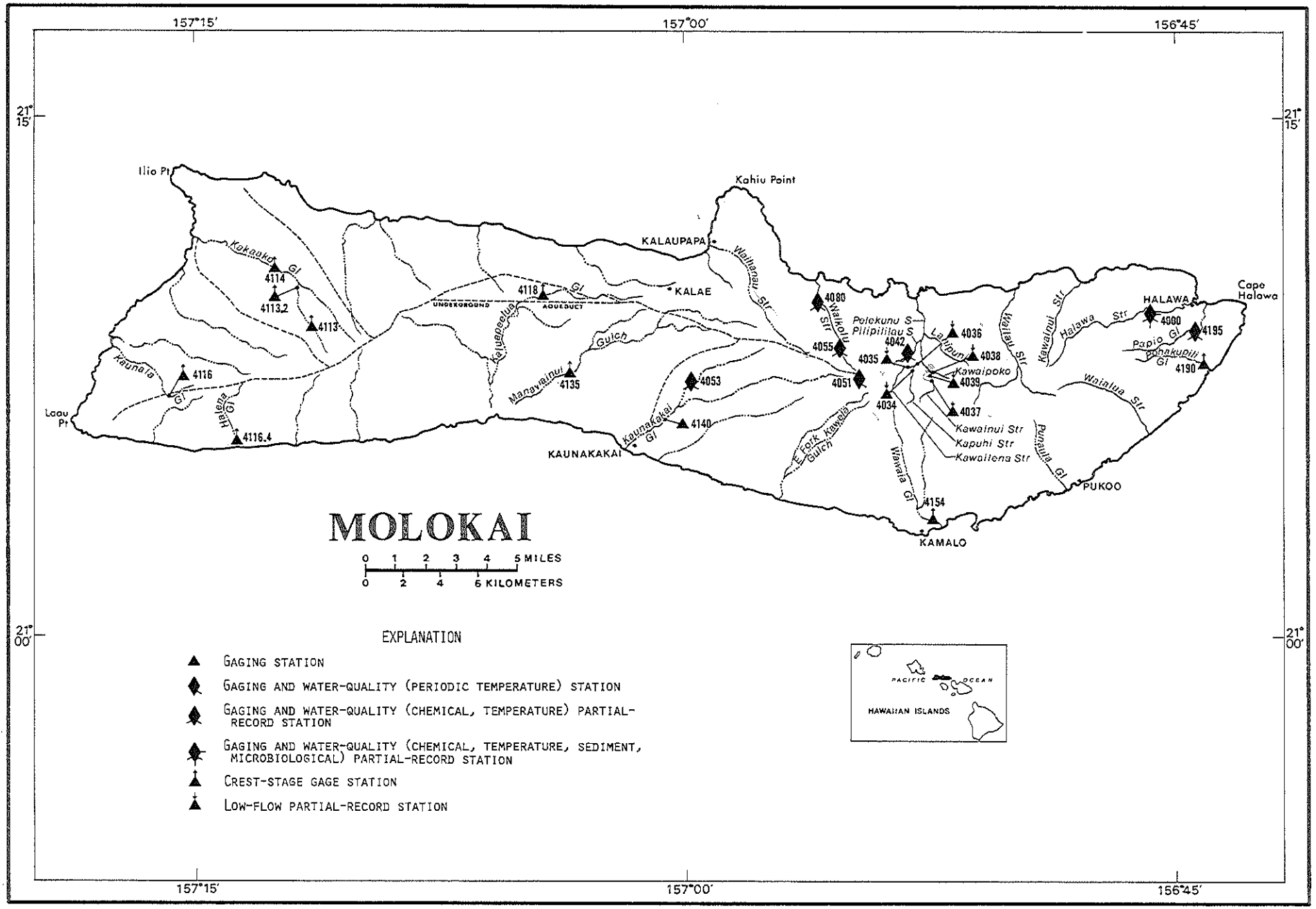


FIGURE 6.--LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS ON MOLOKAI.

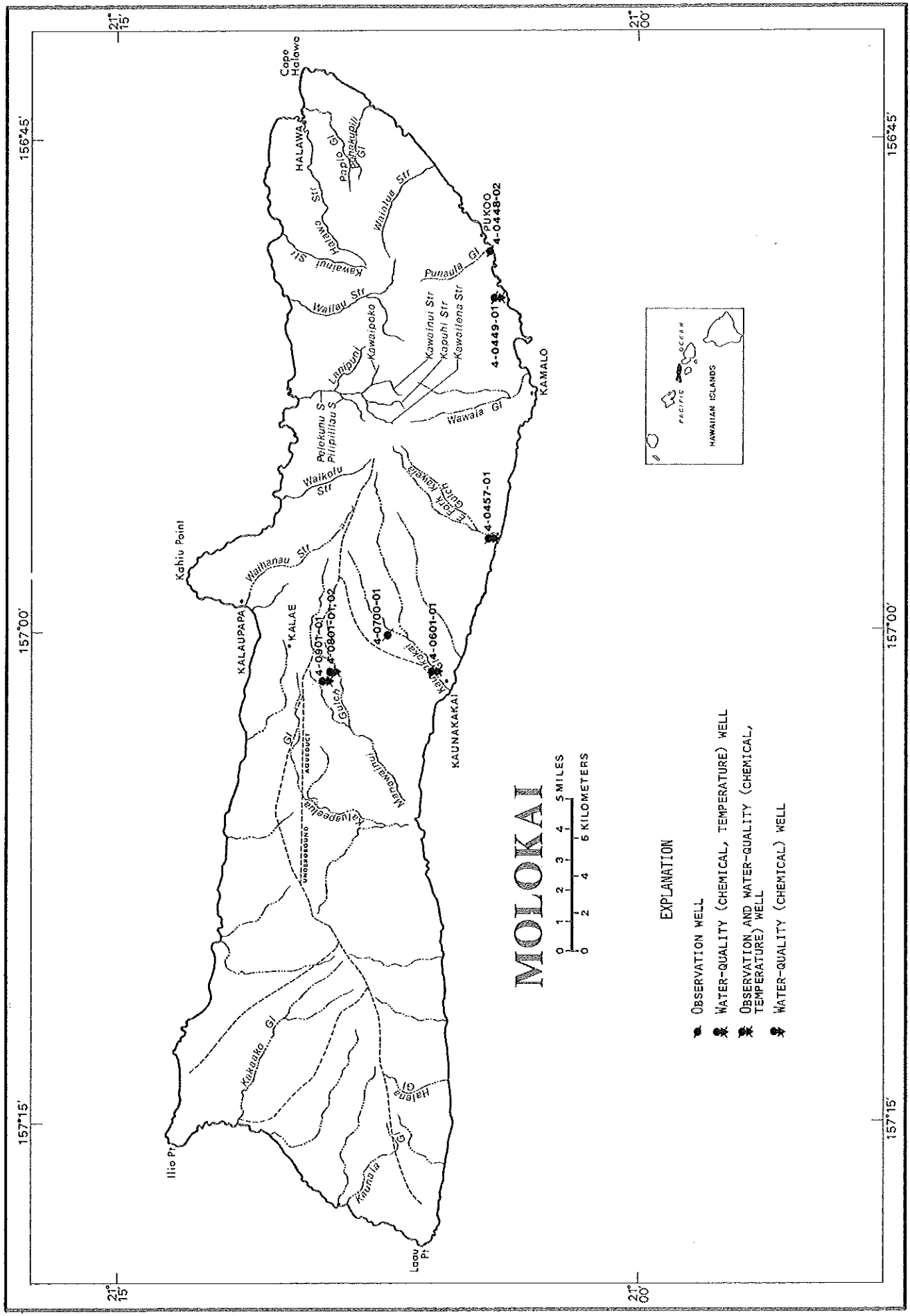


FIGURE 7.--LOCATIONS OF OBSERVATION WELLS AND GROUND-WATER QUALITY SAMPLING SITES ON MOLOKAI.

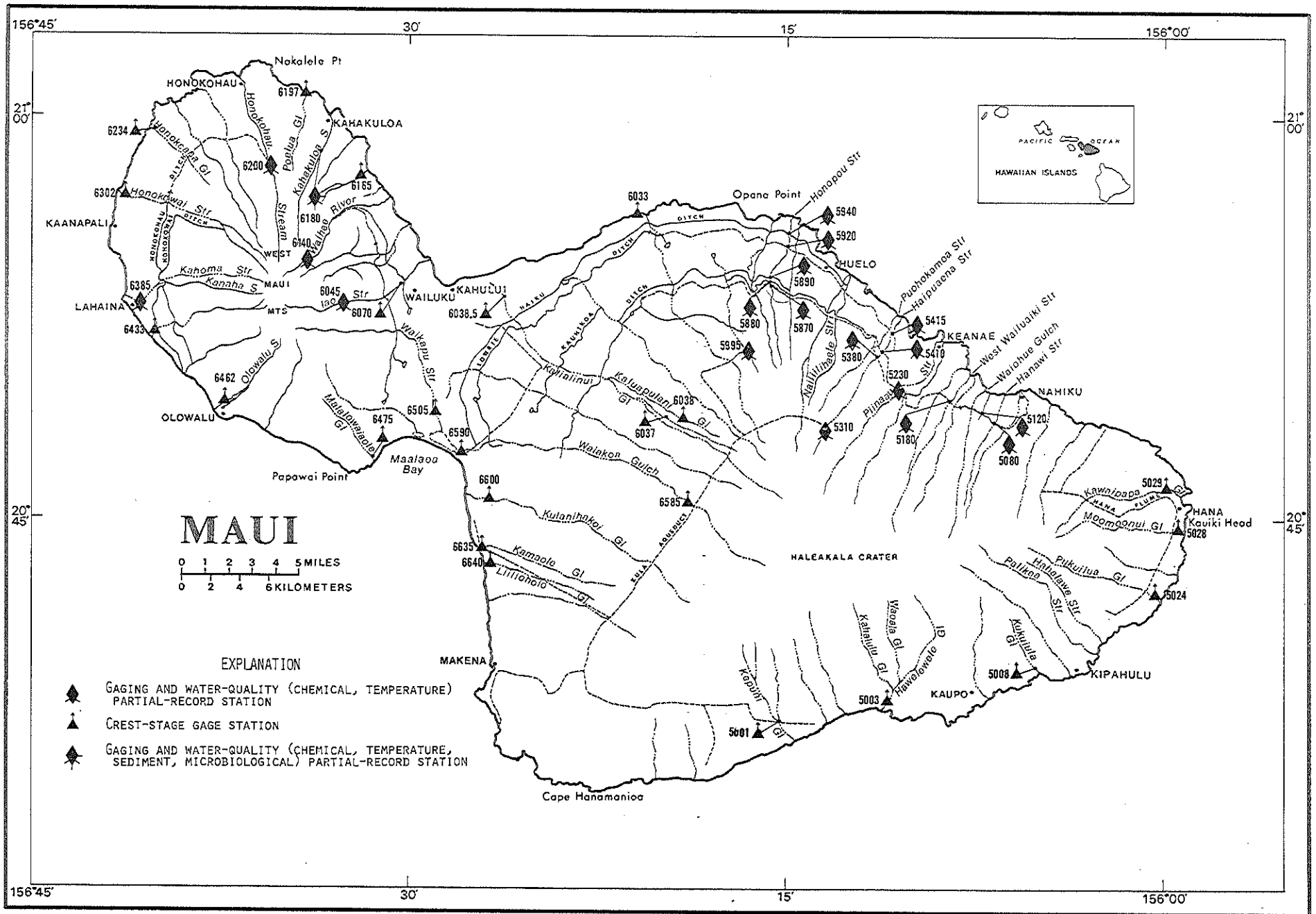


FIGURE 8.--LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS ON MAUI.

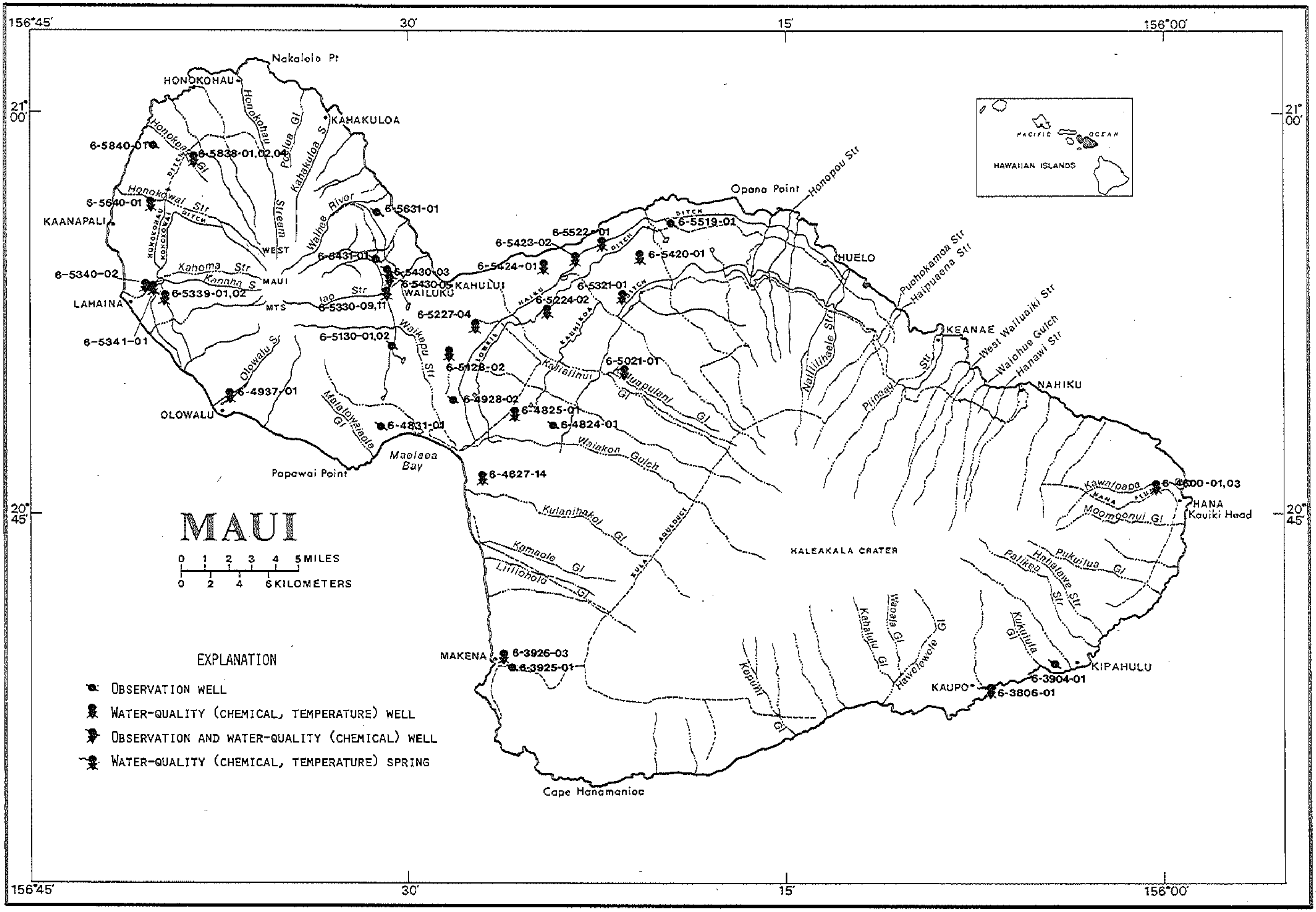


Figure 9.--Locations of observation wells and ground-water quality sampling sites on Maui.

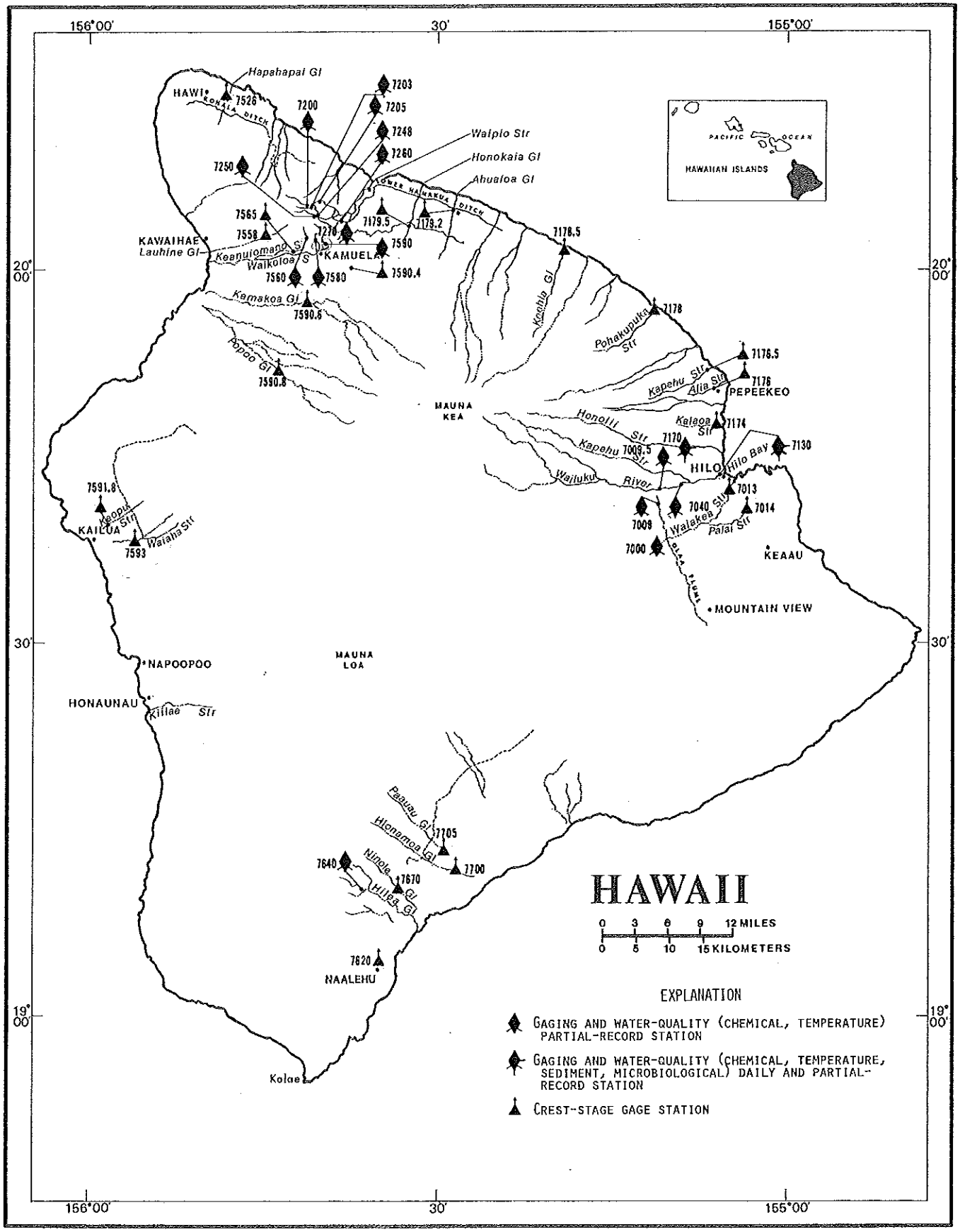


FIGURE 10.--LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS ON HAWAII.

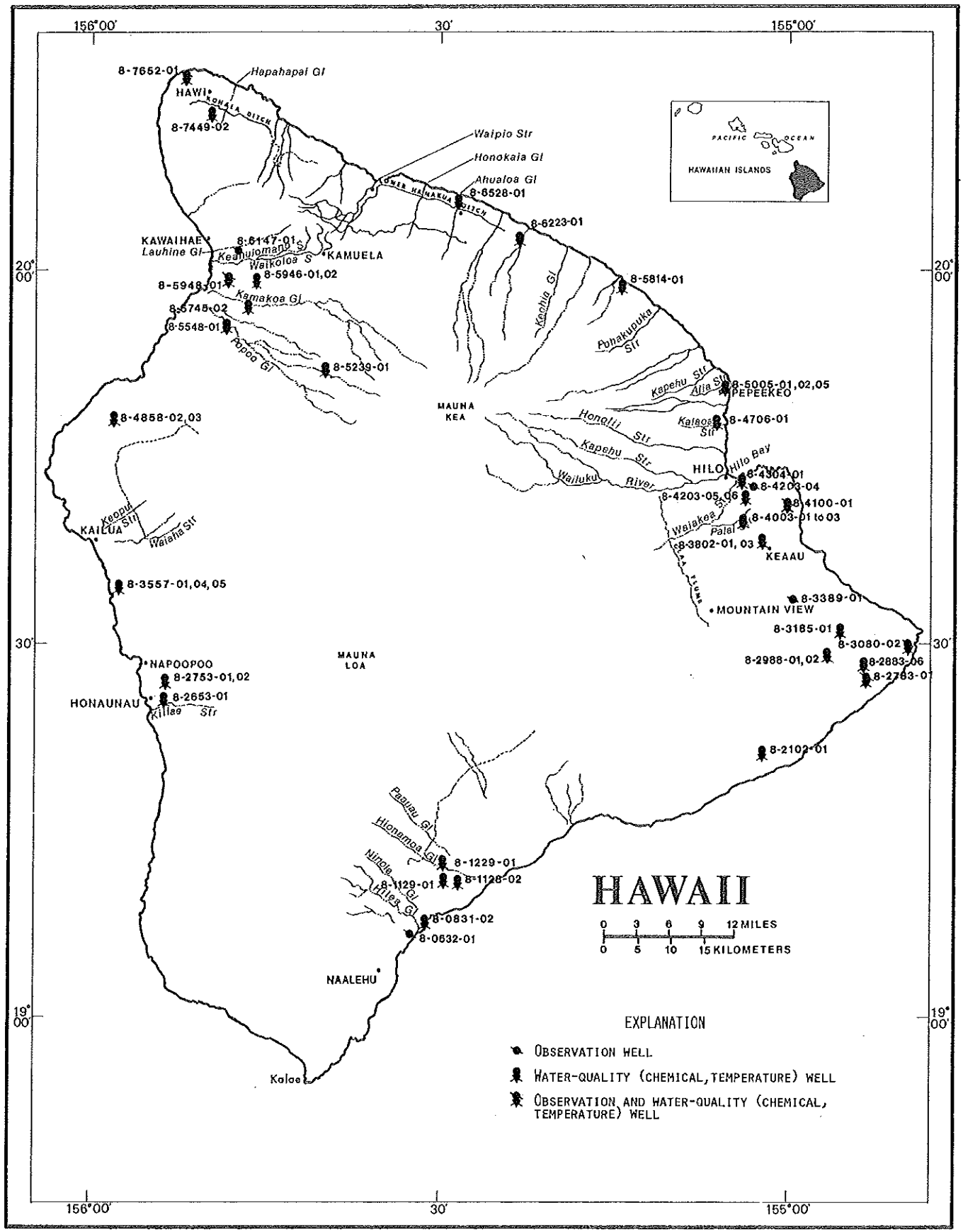


FIGURE 11.--LOCATIONS OF OBSERVATION WELLS AND GROUND-WATER QUALITY SAMPLING SITES ON HAWAII.

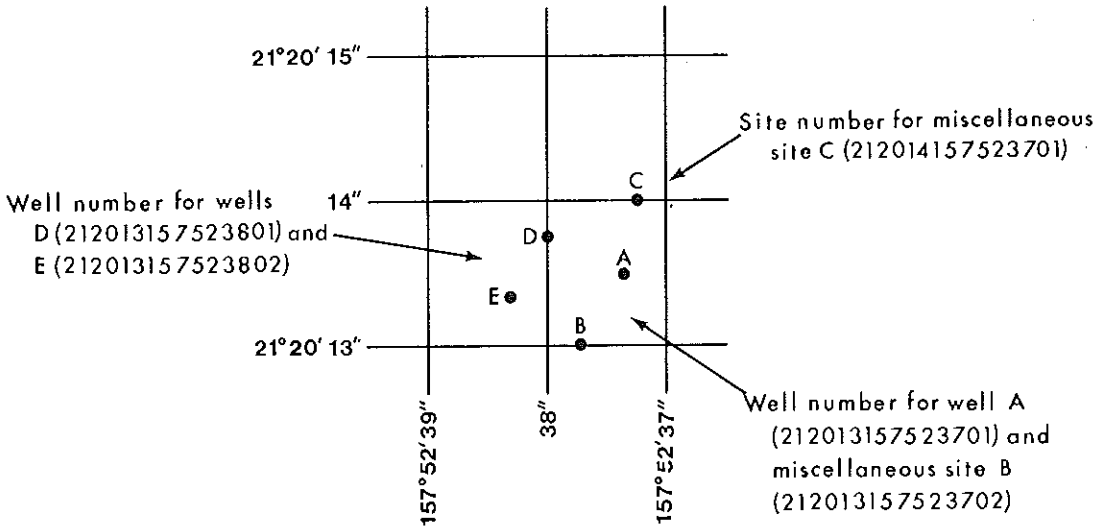


Figure 12. Sketch showing system for numbering wells and miscellaneous sites

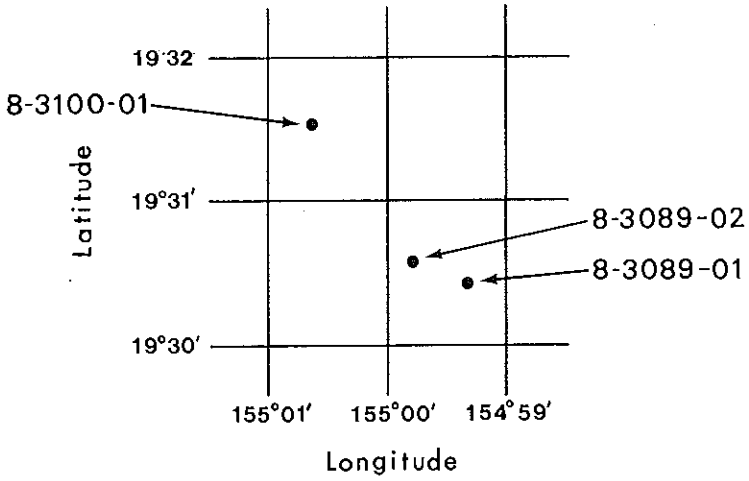


Figure 13. Sketch showing local well numbering system

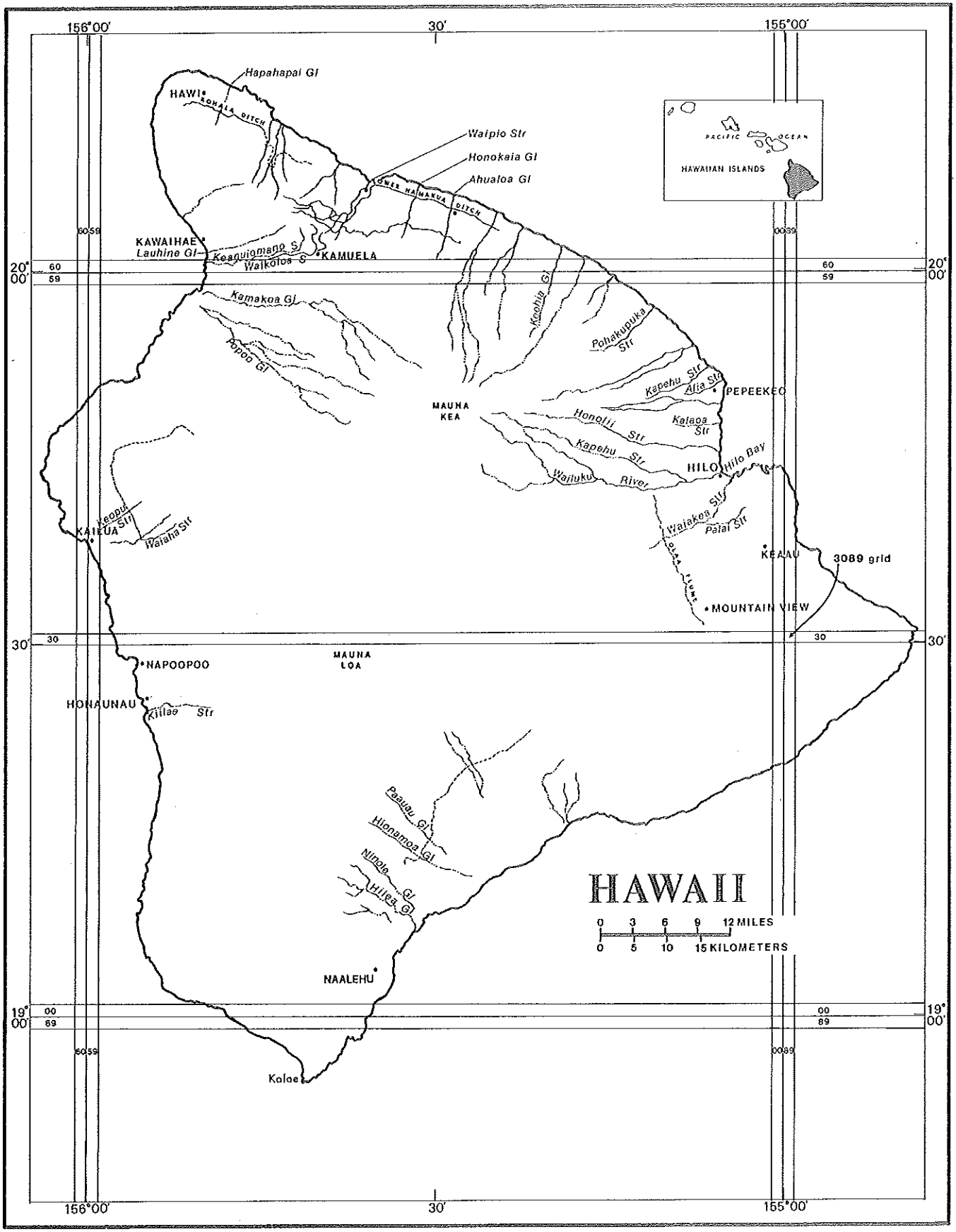


FIGURE 14.--MAP OF HAWAII SHOWING SYSTEM FOR NUMBERING LOCAL WELL NUMBERS.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely to be governed solely by natual conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the phyaiography, climate, end geology are similar to those in the undeveloped bench-mark basin.

National atream-quality accounting network is an accounting network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectivea have been incorporated in the network design. Areal configuration of the network is based on the river-basin accounting units designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term chenges in stream quality.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observationa of factors affecting the stage-discharge relation or the stage-capacity relation, weather records and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-arsa or contracted-opening measursments, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent of continual change in the physical features that form the control, the daily mean discharge is computed by the ahifting-control method, in which correction factors based on individual diacharge measurementa and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

For some gaging stations there are periods when no gage-height record is obtained or the rscorded gage height is so faulty that it cannot be used to computed daily discharge or contents. This happens when the recorder stop or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimatsd on the basia of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations, in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging station on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir ststions. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharge were revised. If the drainage area has been revised, the report in which the revised figures was first published is given.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE", it is not given for stations having fewer than 5 complete years of record or for station where changes to water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest atage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day snd is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discherge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and wster yeare.

Footnotes to the table of daily discharge are introducsd by the word "NOTE." Footnotes ars used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of bsckwater from an unusual source, of indefinite stage relation, or of any other unusual condition at the gage site sre indicated only if they are a month or more in length and the accuracy of the records is affected.

For most gaging atation on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the sespage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-rscord stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unatable, the frequency of discharge measurements and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff dus to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic fest per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changea in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations whsre adjustments are made, large errora in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22092, maintains an index of water-data sites not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperature, discharge measurements, gage-height records, and rating tablea ia on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the diatrict office.

Publications

In each water-supply paper entitled, "Surface Water Supply of the United States" there is a list of numbers of preceding water-supply papers containing streamflow information for the area covered by that report. In addition, there is a list of numbera of water-supply papers containing detailed information on major floods in the area. Records for stations in Hawaii and other Pacific areas for the period October 1959 to September 1965, are in Water-Supply Paper 1937.

Two series of summary reports entitled, "Compilation of Records of Surface Waters of the Unitsd Statea" have been publiahed; the first series covers the entire period of record through September 1950 (June 1950, for Hawaii), and the second series covera the period October 1950 to September 1960 (July 1950 to June 1960, for Hawaii and other Pacific areas). These reports contain summaries of monthly and annual discharge and monthend storage for all previously publiehed records, as well as some record not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimatea of diacharge were made to fill ahort gapa whenever practical. The yearly summary table for each gaging station lista the numbers of the water-supply papera in which daily records were published for that station. Records for atations in Hawaii and other Pacific areas are compiled in Water-Supply Paper 1319 through June 1950, in 1739 and 1751 for July 1950 to June 1960, in 1937 for October 1959 to September 1965, and 2137 for October 1966 to September 1970.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The water-quality records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives periods of record for the various types of water-quality data (chemical, specific conductance, biological determination, water temperatures, sediment discharge), period of record, and extremes of pertinent data, and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniquea of Water-Resourcea Investigations listed on a following page.

One sample can define adequately the water-quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are baeed upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. Large streams have a small diel temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Ssmples usually are obtained several verticals in the cross section, or a single or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration time 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations obaerved immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically msy represent conditions only at the time of observations, such dats are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Publications

The annual series of water-supply papers that contain information on quality of surface waters in Hawaii and other Pacific areas are listed below.

Water year	WSP No.	Water year	WSP No.	Water year	WSP No.
1964	1966	1967	2016	1970	2160
1965	1986	1968	2016		
1966	1996	1969	2150		

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitiude and (2) a local number that is provided for local needs. See figure 13.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques uaed are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well deecription. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom). To show the intraday variation in the ground-water levels caused by local pumping and tidal fluctuations, instantaneous maximum and minimum water levels are given with the mean water levels for the day.

Water levels are reportd to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Publications

Publication of ground-water level data for the United States in Water-Supply Papers was begun by the Geological Survey in 1935. From 1935 through 1939, a single Water-Supply Paper for each year covering the entire nation was issued (Water-Supply Papers 777, 817, 840, 845, and 886). From 1940 through 1974, separate Water-Supply Papers were issued for 6 sections of the United States. Water-level data for Hawaii are in the Water-Supply Papers listed below each report containing one or more calendar years (January-December) of data. Data in this report are for the 12-month water year ending September 30.

Calendar year	WSP No.	Calendar year	WSP No.	Calendar year	WSP No.	Calendar year	WSP No.
1935	777	1942	949	1949	1161	1956-60	1770
1936	817	1943	991	1950	1170	1961-65	1855
1937	840	1944	1021	1951	1196	1966-70	2010
1938	845	1945	1028	1952	1228	1971-74	2162
1939	886	1946	1076	1953	1270		
1940	911	1947	1101	1954	1326		
1941	941	1948	1131	1955	1409		

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's district offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

1-D1. *Water temperature--influential factors, field measurement, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents,* by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations,* by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-E1. *Application of borehole geophysics to water-resources investigations,* by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

3-A1. *General field and office procedures for indirect discharge measurements,* by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 Pages.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel and dispersion in streams by dye tracing,* by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.

3-A10. *Discharge ratings at gaging stations,* by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-A13. *Computation of continuous records of streamflow,* by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. *Use of flumes in measuring discharge,* by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. *Computation of water-surface profiles in open channels,* by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction,* by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers,* by J. E. Reed: USGS-TWRI Book 3, Chapter B3. 1980. 106 pages.

3-C1. *Fluvial sediment concepts* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment.* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells.* by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments.* by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy.* by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for analysis of organic substances in water,* by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples.* edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sedments,* by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. *A model for simulation of flow in singular and interconnected channels* by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

8-A1. *Methods of measuring water levels in deep wells.* by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages

8-A2. *Installation and service manual for U.S. Geological Survey manometers* by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters.* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

HAWAII, ISLAND OF KAUAI

16010000 KAWAIKOI STREAM NEAR WAIMEA

LOCATION.--Lat 22°08'09", long 159°37'22", Hydrologic Unit 20070000, on left bank 0.2 mi upstream from Kokee-Mohihi Road crossing, 2.5 mi east of Kokee Lodge, and 12.5 mi north of Waimea.

DRAINAGE AREA.--3.95 mi^2.

PERIOD OF RECORD.--April 1909 to October 1912, December 1912 to March 1913, May 1913 to June 1915, August 1915 to May 1916, July to December 1916, July 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 555: 1920-21 WSP 1185: 1914-17(M), 1920-38(M), 1940-43(M), 1947(M). WSP 1719: 1912, 1921-25, 1927-32, 1936. WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,420 ft, by barometer. Prior to May 26, 1910, nonrecording gage at site 300 ft downstream at different datum.

REMARKS.--Records good. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--68 yesrs (watsr years 1912, 1914, 1920-85), 34.4 ft^3/s (24,920 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft^3/s Jan. 13, 1967, gage height, 15.33 ft, from rating curve extended above 470 ft^3/s on basis of slope-area measurements at gage heights 12.12 ft and 13.43 ft; minimum, 1.14 ft^3/s Sept. 21, 22, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,920 ft^3/s Nov. 26, gage height, 7.82 ft, no peak greater than base discharge of 2,100 ft^3/s; minimum, 1.5 ft^3/s Oct. 21-23, 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.8	11	8.0	52	234	166	9.5	9.9	7.9	41	4.9
2	2.3	2.8	13	151	29	91	72	15	9.8	11	29	4.1
3	2.1	2.9	63	19	22	37	129	12	9.5	20	31	3.9
4	1.9	96	46	11	239	288	30	9.5	8.3	10	143	3.8
5	1.9	79	14	9.3	53	278	46	9.0	7.6	6.6	67	3.6
6	1.8	170	21	8.2	28	444	39	9.3	7.1	5.6	22	3.5
7	1.7	138	52	7.5	21	179	99	41	6.9	5.8	32	4.3
8	1.7	13	175	7.0	18	114	37	22	6.6	5.6	24	5.0
9	2.1	7.0	120	6.6	18	88	21	18	6.5	4.9	16	4.3
10	9.7	5.6	40	10	20	120	17	16	6.4	4.8	10	3.8
11	6.5	5.3	21	29	15	97	15	32	6.3	4.6	8.5	3.6
12	5.4	6.5	15	10	25	119	14	108	5.9	4.3	7.5	3.7
13	3.5	82	12	31	35	269	12	216	6.0	4.2	6.8	5.9
14	2.7	126	24	376	16	144	11	179	6.0	4.0	6.4	4.5
15	2.2	25	45	59	12	64	11	93	5.8	3.9	8.5	4.0
16	1.9	13	26	21	11	74	11	243	5.6	4.6	95	3.6
17	1.8	6.9	16	15	9.8	41	19	122	5.5	44	24	3.4
18	1.7	6.0	11	48	9.0	37	54	47	5.5	20	11	3.1
19	1.6	9.3	22	18	8.7	29	76	29	5.5	7.7	7.9	3.1
20	1.6	6.4	16	12	8.2	30	43	34	5.5	5.5	6.6	3.0
21	1.6	11	10	10	7.7	26	19	25	7.7	4.5	5.8	3.0
22	1.5	6.8	9.5	26	8.8	29	15	23	6.0	4.5	5.4	3.0
23	1.7	11	32	20	21	32	32	21	4.9	4.8	5.2	4.5
24	2.3	9.0	115	14	20	20	35	19	19	24	4.9	4.8
25	1.9	12	50	11	98	42	16	15	36	13	4.9	8.9
26	1.6	570	21	10	108	25	15	13	20	6.3	4.7	9.9
27	1.6	230	13	8.7	216	18	12	11	43	5.0	4.6	4.9
28	1.6	40	11	8.0	173	18	14	10	15	26	4.8	3.7
29	16	27	16	206	---	18	11	10	7.0	62	7.2	3.4
30	11	14	13	366	---	15	11	9.9	5.8	64	7.4	21
31	4.1	---	9.3	201	---	20	---	10	---	196	7.0	---
TOTAL	103.5	1734.3	1062.8	1737.3	1302.2	3040	1102	1431.2	300.6	595.1	659.1	146.2
MEAN	3.34	57.8	34.3	56.0	46.5	98.1	36.7	46.2	10.0	19.2	21.3	4.87
MAX	18	570	175	376	239	444	166	243	43	196	143	21
MIN	1.5	2.8	9.3	6.6	7.7	15	11	9.0	4.9	3.9	4.6	3.0
AC-FT	205	3440	2110	3450	2580	6030	2190	2840	596	1180	1310	290

CAL YR 1984	TOTAL	6759.6	MEAN	18.5	MAX	570	MIN	1.5	AC-FT	13410
WTR YR 1985	TOTAL	13214.3	MEAN	36.2	MAX	570	MIN	1.5	AC-FT	26210

16019000 WAIALAE STREAM AT ALTITUDE 3,820 FT, NEAR WAIMEA

LOCATION.--Lat 22°05'20", long 159°34'18", Hydrologic Unit 20070000, on left bank 5.0 mi northeast of mouth, 6.4 mi southeast of Kokee Lodge, and 11 mi northeast of Waimea.

DRAINAGE AREA.--1.79 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1920 to July 1932, June 1952 to current yeer. Prior to July 1954, published as Waialae River at altitude 3,700 ft near Waimea.

REVISED RECORDS.--WSP 1937: 1921, 1922-32(M), 1953(M), 1954. WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,820 ft, from topographic map.

REMARKS.--Records good. No diversion upstream.

AVERAGE DISCHARGE.--44 years (water years 1921-31, 1953-85), 22.2 ft^3/s (16,080 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,530 ft^3/s Jan. 16, 1921, gage height, 8.44 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement at gage height 4.60 ft; minimum, 0.99 ft^3/s May 17, 18, May 30 to June 2, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,720 ft^3/s Jan. 14, gage height, 5.16 ft, no other peak greater than base discharge of 1,300 ft^3/s; minimum, 1.2 ft^3/s Oct. 19-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.0	8.0	5.8	15	648	31	5.2	6.8	3.2	14	2.6
2	1.7	4.7	11	11	9.2	188	26	5.0	5.2	3.0	9.2	2.0
3	1.6	8.0	15	9.2	7.2	34	47	12	4.0	2.9	6.4	1.9
4	1.5	28	14	6.4	349	166	15	12	3.5	3.0	67	1.8
5	1.4	27	8.4	5.2	34	111	14	9.2	3.4	2.8	39	1.7
6	1.3	98	17	4.5	14	162	12	26	3.0	2.4	13	1.7
7	1.5	85	19	4.0	10	84	16	67	2.9	2.8	28	1.7
8	1.2	8.8	121	3.8	8.0	60	14	13	2.8	4.0	44	1.7
9	1.3	5.5	122	3.5	6.8	41	9.6	15	2.8	3.0	11	1.7
10	1.6	4.5	38	31	6.4	77	8.0	15	2.6	2.6	5.5	1.6
11	1.8	5.5	30	19	5.5	31	7.2	18	2.6	2.2	4.0	1.9
12	4.0	6.8	18	7.2	31	31	6.4	13	2.4	1.9	3.5	2.4
13	2.6	82	12	80	15	104	5.8	18	2.6	1.8	3.4	2.0
14	1.9	96	8.8	240	8.8	58	5.0	29	2.6	1.8	3.0	1.7
15	1.6	62	7.6	28	7.2	22	4.8	38	2.4	1.8	2.8	1.6
16	1.5	13	7.2	11	6.0	18	4.8	86	2.4	2.8	2.8	1.6
17	1.3	6.0	8.8	8.4	5.2	15	9.3	39	2.4	27	2.4	1.5
18	1.3	11	12	9.6	4.5	15	30	17	2.4	53	2.3	1.5
19	1.2	10	87	8.8	4.2	12	39	12	2.4	6.8	2.0	1.5
20	1.2	26	29	6.0	4.5	15	74	10	2.9	3.5	2.0	1.5
21	1.2	79	28	5.2	7.2	15	23	9.2	4.8	2.8	2.0	1.6
22	1.2	10	19	5.5	6.8	30	64	7.2	3.8	2.4	1.9	1.7
23	19	43	87	8.0	51	24	21	6.4	2.9	3.2	1.9	3.4
24	12	11	118	8.8	16	30	27	6.4	2.6	4.2	1.9	16
25	4.0	20	76	5.8	25	50	17	6.0	2.4	3.8	1.9	7.2
26	2.2	141	25	4.8	34	19	11	5.8	2.9	3.0	1.8	4.0
27	2.0	187	15	4.2	242	13	8.4	5.2	3.2	2.4	1.8	2.8
28	2.6	29	12	4.0	413	33	8.0	4.8	3.5	4.3	2.9	7.7
29	4.0	18	10	56	---	14	6.8	7.2	4.8	29	4.2	4.5
30	6.0	9.6	8.8	51	---	12	6.0	8.0	4.0	14	5.9	4.1
31	3.0	---	7.2	73	---	14	---	8.0	---	30	4.0	---
TOTAL	90.7	1137.4	999.8	728.7	1346.5	2146	571.1	533.6	97.0	231.4	295.5	88.6
MEAN	2.93	37.9	32.3	23.5	48.1	69.2	19.0	17.2	3.23	7.46	9.53	2.95
MAX	19	187	122	240	413	648	74	86	6.8	53	67	16
MIN	1.2	2.0	7.2	3.5	4.2	12	4.8	4.8	2.4	1.8	1.8	1.5
AC-FT	180	2260	1980	1450	2670	4260	1130	1060	192	459	586	176

CAL YR 1984	TOTAL	4767.7	MEAN	13.0	MAX	187	MIN	1.2	AC-FT	9460
WTR YR 1985	TOTAL	8266.3	MEAN	22.6	MAX	648	MIN	1.2	AC-FT	16400

16019000 WAIALAE STREAM AT ALTITUDE 3,820 FT, NEAR WAIMEA--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
OCT												
17...	1015	1.3	40	7.0	16.5	10	4	1.5	1.5	3.9	45	.5
JAN												
07...	1040	3.9	33	6.9	12.0	14	12	4.3	.90	3.9	36	.5
APR												
04...	1015	14	--	6.9	12.0	7	6	1.3	.90	4.2	54	.7
JUN												
07...	1020	2.9	32	6.8	17.0	7	4	1.0	1.0	4.1	50	.7
AUG												
14...	1035	2.9	28	6.5	18.0	6	4	.92	.94	4.3	58	.8

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT											
17...	.40	6.0	8.8	6.3	<.10	5.3	32	.04	<.10	340	<1
JAN											
07...	.40	2.0	7.7	7.4	<.10	6.1	32	.04	<.10	250	7
APR											
04...	.70	1.0	7.1	8.4	<.10	2.9	26	.04	<.10	260	16
JUN											
07...	1.9	3.0	9.1	7.5	<.10	5.3	32	.04	<.10	420	4
AUG											
14...	.50	2.0	8.6	6.7	.30	4.5	28	.04	<.10	370	5

< Actual value is known to be less than value shown.

16031000 WAIMEA RIVER NEAR WAIMEA
(National stream-quality accounting network station)

LOCATION.--Lat 21°59'02", long 159°39'47", Hydrologic Unit 20070000, on right bank 1.3 mi upstream from Makaweli River and 1.9 mi north of Waimea Post Office.

DRAINAGE AREA.--57.8 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1910 to June 1918, July to October 1919, November 1943 to September 1968, October 1969 to September 1972 (discontinued as a continuous-record station, converted to a crest-stage partial-record station October 1972 to April 1975), May 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 20.0 ft above mean sea level (Department of Water, County of Kauai bench mark). Prior to Oct. 5, 1911, nonrecording gage at site 1.0 mi downstream at different datum. Oct. 5, 1911, to Oct. 31, 1919, nonrecording gage at present site at different datum.

REMARKS.--Records good. Several upstream diversions for power and irrigation.

AVERAGE DISCHARGE.--44 years (water years 1911-17, 1945-68, 1970-72, 1976-85), 127 ft^3/s (92,010 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,100 ft^3/s Feb. 7, 1949, gage height, 19.3 ft, from rating curve extended above 5,200 ft^3/s on basis of slope-area measurements at gage heights 10.28 ft and 18.7 ft; practically no flow occasionally owing to upstream diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 19, 1974, which destroyed the station reached a stage of 19.05 ft, from floodmarks, discharge, 29,100 ft^3/s, from rating curve extended above 2,200 ft^3/s on basis of slope-area measurement at gage height 19.05 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,220 ft^3/s Jan. 14, gage height, 11.91 ft, no other peak greater than base discharge of 8,700 ft^3/s; minimum, 3.0 ft^3/s Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	8.3	22	21	291	2060	106	8.5	7.9	4.9	144	7.5
2	6.2	5.7	19	115	160	1080	186	8.2	7.6	4.7	12	7.0
3	6.4	5.4	41	64	123	239	256	8.5	6.9	4.8	12	5.6
4	6.4	88	50	23	2000	828	77	18	6.4	5.2	197	5.2
5	6.2	68	26	13	692	1240	48	14	6.4	5.2	165	6.0
6	6.0	490	11	11	254	1440	49	11	6.0	5.0	32	6.2
7	6.0	392	42	9.9	176	784	76	156	6.0	5.0	50	5.1
8	6.2	45	195	9.3	133	450	82	30	6.2	5.2	62	5.1
9	6.4	9.9	540	8.5	101	284	24	14	6.0	6.1	42	5.1
10	5.5	6.7	124	60	93	392	15	18	5.8	5.7	11	5.3
11	5.1	6.8	77	105	101	263	13	14	5.5	5.9	7.0	5.3
12	4.9	6.6	37	34	154	243	13	34	6.4	6.0	6.1	12
13	6.4	193	23	16	215	645	11	152	4.6	6.0	5.9	5.9
14	6.4	417	13	2200	120	583	11	207	4.8	6.1	5.5	4.9
15	5.8	159	18	413	99	206	11	217	4.6	6.1	6.5	5.0
16	5.5	67	16	120	53	188	10	432	4.4	5.6	11	4.7
17	5.1	13	14	70	45	120	9.6	226	4.6	6.8	49	5.2
18	4.9	7.7	13	55	40	93	61	99	4.7	116	6.2	5.2
19	4.7	14	121	53	26	64	69	36	4.6	19	5.0	5.0
20	4.7	9.7	118	31	21	51	188	14	4.7	6.4	4.5	5.2
21	4.7	162	39	21	21	58	71	12	4.7	5.4	4.5	5.2
22	4.5	37	61	16	22	61	107	9.6	5.9	4.9	4.8	5.7
23	8.2	41	134	18	65	109	61	9.3	5.5	5.0	4.9	15
24	31	45	1160	28	77	62	37	9.0	5.8	6.0	5.1	11
25	10	14	569	18	47	108	47	8.2	6.2	7.1	5.9	34
26	6.2	1000	247	13	176	90	35	7.3	6.9	6.8	5.5	10
27	5.4	1040	122	13	649	38	12	7.1	67	6.4	5.1	7.2
28	7.1	200	87	12	1550	59	9.6	6.9	24	5.7	5.4	6.5
29	43	112	58	377	---	49	9.0	6.2	6.8	23	5.7	7.6
30	68	42	41	1020	---	24	8.8	7.6	5.5	58	7.4	7.9
31	36	---	31	1050	---	28	---	8.8	---	127	9.2	---
TOTAL	339.5	4703.8	4069	6017.7	7504	11939	1713.0	1809.2	252.4	491.0	897.2	226.6
MEAN	11.0	157	131	194	268	385	57.1	58.4	8.41	15.8	28.9	7.55
MAX	68	1040	1160	2200	2000	2060	256	432	67	127	197	34
MIN	4.5	5.4	11	8.5	21	24	8.8	6.2	4.4	4.7	4.5	4.7
AC-FT	673	9330	8070	11940	14880	23680	3400	3590	501	974	1780	449

CAL YR 1984	TOTAL	15166.7	MEAN	41.4	MAX	1160	MIN	4.5	AC-FT	30080
WTR YR 1985	TOTAL	39962.4	MEAN	109	MAX	2200	MIN	4.4	AC-FT	79270

16031000 WAIMEA RIVER NEAR WAIMEA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971-74, November 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 22...	1100	764	4.8	220	7.8	24.0	4.8	7.7	91	120	230
DEC 10...	1100	769	97	67	7.2	18.5	4.6	8.4	89	230	2200
FEB 11...	1045	763	103	100	7.6	19.0	50	8.6	93	860	1900
APR 08...	1100	767	83	69	7.4	17.5	1.7	8.9	92	140	840
JUN 10...	1145	765	6.0	--	7.8	25.0	1.7	8.7	105	560	350
AUG 12...	1130	763	6.7	--	7.8	26.0	15	8.2	101	250	310

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 22...	92	0	12	15	11	20	.5	1.0	91	3.2	15
DEC 10...	23	5	3.6	3.4	5.1	32	.5	.50	18	6.1	9.2
FEB 11...	36	3	5.0	5.8	6.5	28	.5	.50	33	2.8	10
APR 08...	23	3	3.2	3.7	5.4	32	.5	1.1	20	4.6	9.6
JUN 10...	74	6	10	12	11	24	.6	.90	68	3.1	23
AUG 12...	60	6	7.7	10	8.7	23	.5	1.0	55	4.1	11

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT 22...	<.10	32	136	140	.19	<.10	<.010	<.20	.010	<.010	<.010
DEC 10...	<.10	11	44	50	.06	.18	<.010	.50	.010	.010	<.010
FEB 11...	<.10	21	79	72	.11	.34	<.010	.80	.050	.010	<.010
APR 08...	<.10	13	47	53	.06	<.10	.020	.50	.010	<.010	<.010
JUN 10...	<.10	26	109	130	.15	<.10	.020	.30	.010	.010	.010
AUG 12...	.10	23	92	99	.13	<.10	.020	.30	.030	<.010	.010

< Actual value is known to be less than the value shown.

16031000 WAIMEA RIVER NEAR WAIMEA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
OCT										
22...	<10	<1	13	2.0	<1	<1	<3	<1	79	2
FEB										
11...	30	<1	12	<.5	<1	<1	<3	1	31	<1
APR										
08...	50	<1	10	<.5	<1	<1	<3	1	78	5
AUG										
12...	60	<1	12	<.5	<1	<1	<3	4	200	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT										
22...	<4	34	<.1	<10	2	<1	<1	70	<6	8
FEB										
11...	<4	68	<.1	<10	4	<1	<1	32	<6	<3
APR										
08...	<4	10	.8	<10	<1	<1	<1	18	<6	12
AUG										
12...	<4	21	<.1	<10	3	<1	<1	47	<6	10

DATE	TIME	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	DATE	TIME	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					APR				
22...	1100	10	.13	100	08...	1100	3	.87	100
DEC					JUN				
10...	1100	9	2.4	100	10...	1145	7	.11	100
FEB					AUG				
11...	1045	63	18	100	12...	1130	10	.18	100

< Actual value is known to be less than the value shown.

16036000 MAKAWELI RIVER NEAR WAIMEA

LOCATION.--Lat 21°58'31", long 159°38'55", Hydrologic Unit 20070000, on left bank 0.7 mi upstream from mouth and 1.9 mi northeast of Waimea.

DRAINAGE AREA.--26.0 mi^2.

PERIOD OF RECORD.--July 1943 to current year. Records for October 1911 to June 1917 at site 0.2 mi downstream not equivalent owing to intervening diversion.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 18.2 ft above mean sea level (by stadia survey). Prior to June 16, 1959, at datum 1.00 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Olokele ditch diverts all low flow from the headwaters of the Olokele River 9 mi upstream for irrigation in vicinity of Makaweli. A 5 ft^3/s capacity ditch diverts water from upstream of the station for irrigation of taro in the vicinity of the station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--42 years, 87.5 ft^3/s (63,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft^3/s Jan. 31, 1975, gage height, 15.51 ft, from rating curve extended above 3,200 ft^3/s on basis of slope-area measurement at gage height 10.65 ft; minimum, 3.15 ft^3/s July 19, 1951.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 14	0300	*5550	*8.10	Mar. 1	0530	5440	8.02

Minimum discharge, 9.0 ft^3/s Sept. 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e11	15	67	49	e23	3160	45	18	20	14	23	10
2	e10	15	46	40	e20	1220	41	16	18	13	93	9.3
3	e10	18	68	38	e19	e281	46	102	17	13	17	9.3
4	e9.7	38	64	48	1250	e408	29	42	16	13	99	9.2
5	9.7	42	32	27	e277	e338	26	18	15	12	63	9.0
6	9.6	150	74	20	52	e419	24	33	11	12	32	9.0
7	9.6	250	51	18	33	e250	23	251	13	17	74	9.4
8	9.6	33	325	18	27	140	22	52	13	15	165	9.3
9	9.5	29	416	18	22	112	19	64	13	13	30	9.3
10	9.6	19	170	110	20	196	17	52	13	12	27	9.3
11	22	16	90	78	19	104	16	70	13	12	15	13
12	16	16	60	36	82	76	17	40	13	12	13	19
13	12	116	45	171	47	168	16	55	13	12	12	12
14	11	353	35	830	30	142	16	42	13	12	12	11
15	11	217	30	100	25	72	15	32	12	11	15	11
16	10	57	29	32	e22	54	15	125	11	11	16	9.8
17	9.7	31	65	27	e20	49	78	85	12	106	13	9.7
18	9.6	70	50	36	e19	45	80	34	12	219	12	9.5
19	9.4	37	140	e22	e19	36	92	27	11	20	10	12
20	9.4	105	100	e19	e21	35	307	24	12	13	9.8	11
21	9.8	249	110	e19	e23	32	61	22	24	11	9.8	11
22	9.5	59	80	e22	e21	73	253	22	12	11	9.6	12
23	67	180	250	e19	60	92	100	22	11	27	9.6	15
24	53	98	605	e21	56	68	70	21	11	14	9.6	50
25	20	51	630	e19	36	120	48	28	12	15	9.7	31
26	15	249	240	e20	74	51	34	20	13	12	9.8	18
27	20	587	170	e20	e273	33	25	19	62	11	14	16
28	18	117	120	e19	1430	211	22	18	35	23	28	22
29	28	108	85	e193	---	54	20	29	20	50	18	18
30	41	48	72	e70	---	44	18	24	15	24	52	15
31	24	---	58	30	---	38	---	21	---	29	14	---
TOTAL	521.7	3353	4377	2189	4020	8121	1595	1428	486	789	934.9	419.1
MEAN	16.8	112	141	70.6	144	262	53.2	46.1	16.2	25.5	30.2	14.0
MAX	67	587	630	830	1430	3160	307	251	62	219	165	50
MIN	9.4	15	29	18	19	32	15	16	11	11	9.6	9.0
AC-FT	1030	6650	8660	4340	7970	16110	3160	2830	964	1560	1850	831

CAL YR 1984	TOTAL	16201.6	MEAN	44.3	MAX	630	MIN	8.1	AC-FT	32140
WTR YR 1985	TOTAL	26233.7	MEAN	77.4	MAX	3160	MIN	9.0	AC-FT	56000

e Estimated

16049000 HANAPEPE RIVER BELOW MANUAHI STREAM, NEAR ELEELE

LOCATION.--Lat 21°57'29", long 159°33'13", Hydrologic Unit 20070000, on left bank 200 ft downstream from Manuahi Stream and 4.0 mi northeast of Eleele.

DRAINAGE AREA.--18.5 mi^2.

PERIOD OF RECORD.--July 1917 to January 1921, December 1926 to current year. Prior to July 1952, published as "at Koula, near Eleele." Records for August 1910 to December 1916 at site 0.5 mi upstream not equivalent owing to intervening inflow.

REVISED RECORDS.--WSP 740: 1931. WSP 1719: 1929-31(M). WSP 1937: 1918, 1919(M), 1920, 1921(M), 1927-28(M), 1930, 1936-37(M), 1941(P), 1943-46(P), 1947(M), 1948-52(P), 1955(M), 1956-57(P), 1958(M), 1960(M). WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 222 ft above mean sea level (by stadia survey). July 1, 1917, to Jan. 22, 1921, nonrecording gage and Dec. 16, 1926, to June 30, 1951, water-stage recorder, at same site at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Koula ditch diverts 3.0 mi upstream for irrigation in vicinity of Makaweli. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--61 years (water years 1918-20, 1928-85), 85.7 ft^3/s (62,090 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft^3/s Apr. 15, 1963, gage height, 14.87 ft, from rating curve extended above 7,600 ft^3/s on basis of slope-area measurement of peak flow; minimum, 5.1 ft^3/s May 21, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0800	*4110	*6.34	Mar. 1	0530	3800	6.13

Minimum discharge, 11 ft^3/s Oct. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e14	12	138	44	17	1330	49	17	17	15	19	13
2	e13	14	83	39	16	446	35	19	16	15	156	13
3	e12	13	81	36	15	145	28	172	15	15	25	13
4	e12	23	97	48	638	178	22	62	15	14	79	13
5	e12	32	46	26	153	226	21	38	15	13	73	13
6	e12	170	96	24	56	231	20	261	15	13	41	13
7	e12	281	51	22	35	156	20	386	15	15	72	13
8	e12	30	245	21	26	124	18	82	14	14	221	13
9	e12	46	332	21	21	103	16	75	14	13	46	13
10	e12	e15	135	85	19	182	15	58	14	13	30	13
11	e12	e14	91	40	18	91	15	62	14	13	18	14
12	12	e14	55	25	129	55	15	40	14	13	16	16
13	12	e93	42	56	50	111	14	56	14	13	16	13
14	12	465	32	399	27	97	14	46	14	13	15	12
15	12	263	27	60	23	46	14	32	14	13	14	12
16	12	68	25	34	19	36	14	88	14	14	14	13
17	12	32	58	21	17	35	63	51	14	43	15	13
18	12	66	41	29	16	31	63	28	14	165	13	13
19	12	36	125	18	16	29	134	24	13	20	13	14
20	12	91	86	16	17	38	380	21	15	15	13	13
21	12	161	96	16	18	33	105	19	19	14	13	15
22	12	53	69	18	16	77	317	18	14	14	12	14
23	94	158	301	15	76	66	117	18	13	21	12	39
24	43	102	405	16	71	47	88	18	13	22	12	111
25	14	163	725	14	38	86	58	20	14	16	13	32
26	13	205	214	15	61	47	39	17	31	15	12	15
27	12	572	205	17	184	58	26	17	107	15	18	14
28	12	249	124	16	689	378	22	16	39	35	30	56
29	12	127	77	144	---	89	20	20	21	82	17	18
30	13	63	65	50	---	109	18	18	16	28	93	15
31	12	---	54	29	---	105	---	20	---	32	17	---
TOTAL	492	3631	4221	1414	2481	4785	1780	1819	577	756	1158	592
MEAN	15.9	121	136	45.6	88.6	154	59.3	58.7	19.2	24.4	37.4	19.7
MAX	94	572	725	399	689	1330	380	386	107	165	221	111
MIN	12	12	25	14	15	29	14	16	13	13	12	12
AC-FT	976	7200	8370	2800	4920	9490	3530	3610	1140	1500	2300	1170

CAL YR 1984	TOTAL	16526	MEAN	45.2	MAX	725	MIN	12	AC-FT	32780
WTR YR 1985	TOTAL	23706	MEAN	64.9	MAX	1330	MIN	12	AC-FT	47020

e Estimated

16060000 SOUTH FORK WAILUA RIVER NEAR LIHUE

LOCATION.--Lat 22°02'24", long 159°22'58", Hydrologic Unit 20070000, on right bank 0.2 mi upstream from Wailua Falls and 4.3 mi north of Lihue.

DRAINAGE AREA.--22.4 mi^2.

PERIOD OF RECORD.--December 1911 to April 1919, June 1919 to March 1921, May 1921 to June 1957, August, September 1957, November 1957 to February 1958, June 1958 to current year. Monthly discharge only for some periods, published in WSP 1319. Published as "above Waiehu Falls, near Lihue" 1912-13.

REVISED RECORDS.--WSP 1249: 1941-47(M), 1948-51(P). WSP 1719: 1943-49. WSP 1937: 1958-60.

GAGE.--Water-stage recorder. Elevation of gage is 240 ft, from topographic map. Prior to Nov. 18, 1918, at site 0.3 mi upstream at different datum. Nov. 18, 1918, to June 30, 1957, at site 10 ft downstream from present site at datum 2.50 ft higher and July 1, 1957, to June 23, 1958, at present datum.

REMARKS.--Records good. Lihue and Hanamaulu ditches divert upstream for irrigation of sugarcane in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--68 years (water years 1913-18, 1920, 1922-24, 1926-56, 1959-85), 115 ft^3/s (83,320 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,300 ft^3/s Apr. 15, 1963, gage height, 22.90 ft, from rating curve extended above 13,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 1.5 ft^3/s Aug. 21, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,400 ft^3/s Nov. 27, gage height, 14.75 ft, no other peak greater than base discharge of 5,800 ft^3/s; minimum, 2.3 ft^3/s Oct. 22, 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	3.1	194	45	20	396	64	10	18	5.0	11	6.9
2	4.3	4.0	80	50	16	177	43	9.5	16	5.0	142	6.5
3	4.0	6.4	71	51	15	98	25	185	9.6	6.3	17	6.5
4	11	5.6	173	105	550	120	17	66	8.8	5.2	34	6.3
5	14	38	88	38	278	211	29	48	6.9	4.4	40	7.5
6	4.7	236	103	20	59	182	25	468	5.9	4.1	7.5	6.5
7	3.6	367	126	15	16	120	26	533	5.2	3.9	21	6.3
8	3.5	55	129	12	13	81	20	198	5.0	7.4	172	5.2
9	3.3	60	291	11	13	38	13	106	5.0	4.4	42	4.5
10	3.3	28	122	14	14	101	7.5	53	5.0	4.1	27	5.5
11	3.5	11	93	30	15	61	8.5	52	5.9	4.2	11	5.2
12	5.1	9.4	62	10	176	50	8.7	40	5.0	3.8	6.1	4.7
13	4.9	83	67	8.8	129	49	8.0	46	5.0	3.5	16	5.5
14	4.9	409	18	584	152	191	7.3	37	4.7	3.4	15	5.5
15	4.3	235	14	55	242	60	6.5	29	4.4	3.4	9.8	46
16	3.5	84	14	18	117	41	6.9	175	8.2	3.5	7.8	34
17	3.3	22	74	11	90	37	16	185	4.4	6.7	4.9	9.5
18	2.7	44	43	20	74	22	113	78	4.2	107	3.9	6.1
19	2.6	89	54	22	69	17	114	46	4.4	15	3.6	5.2
20	2.4	83	88	9.8	49	18	279	31	5.0	4.9	4.5	9.2
21	2.4	142	68	8.5	19	19	146	14	14	3.8	4.9	6.9
22	2.4	98	103	8.2	18	28	312	14	6.3	3.6	4.5	8.2
23	30	141	76	7.8	45	68	165	17	4.4	23	4.2	197
24	37	224	401	7.8	77	20	114	17	4.2	27	3.9	102
25	5.8	162	656	7.1	47	21	454	37	5.0	14	3.9	112
26	3.8	683	318	6.7	70	23	261	16	8.0	11	4.2	28
27	3.8	1600	268	6.7	152	14	73	11	13	6.1	8.8	14
28	8.6	633	215	6.3	256	286	45	8.8	5.7	29	14	43
29	5.3	368	115	32	---	94	26	7.8	5.9	80	25	22
30	4.9	175	84	15	---	103	12	22	5.5	32	68	11
31	3.8	---	61	30	---	222	---	20	---	12	12	---
TOTAL	201.6	6098.5	4267	1265.7	2791	2968	2445.4	2580.1	208.6	446.7	749.5	736.7
MEAN	6.50	203	138	40.8	99.7	95.7	81.5	83.2	6.95	14.4	24.2	24.6
MAX	37	1600	656	584	550	396	454	533	18	107	172	197
MIN	2.4	3.1	14	6.3	13	14	6.5	7.8	4.2	3.4	3.6	4.5
AC-FT	400	12100	8460	2510	5540	5890	4850	5120	414	886	1490	1460

CAL YR 1984	TOTAL	14490.9	MEAN	39.6	MAX	1600	MIN	1.8	AC-FT	28740
WTR YR 1985	TOTAL	24758.8	MEAN	67.8	MAX	1600	MIN	2.4	AC-FT	49110

16061000 NORTH WAILUA DITCH NEAR LIHUE

LOCATION.--Lat 22°03'56", long 159°28'14", Hydrologic Unit 20070000, on left bank 300 ft downstream from intake, 7.9 mi west of Wailua House Lots, and 8.8 mi northwest of Lihue.

PERIOD OF RECORD.--July 1932 to September 1985 (discontinued).

REVISED RECORDS.--WSP 770: 1933.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,105.45 ft above mean sea level (levels by Lihue Plantation Co.).

REMARKS.--Records good. Ditch diverts from North Fork Wailua River for power and irrigation in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--53 years, 18.8 ft^3/s (13,620 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 59 ft^3/s Dec. 21, 1933, Apr. 24, 1934; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 39 ft^3/s Nov. 27; minimum daily, 6.6 ft^3/s July 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	16	30	18	20	28	25	20	20	17	23	19
2	16	20	26	22	19	24	24	22	19	6.6	28	18
3	16	17	26	22	18	22	25	27	19	10	24	18
4	16	22	29	23	31	25	22	25	18	15	26	19
5	15	26	24	20	24	25	22	24	18	15	25	18
6	15	30	27	19	22	25	22	27	18	15	24	20
7	15	30	25	18	22	22	22	25	18	20	25	19
8	14	24	30	18	20	23	21	24	18	16	30	18
9	15	26	28	17	20	22	20	24	18	15	23	18
10	15	20	25	22	20	24	20	23	17	16	25	17
11	23	20	25	20	18	23	20	23	17	16	21	17
12	22	16	24	17	23	23	20	22	17	15	21	18
13	20	27	12	22	22	25	19	22	17	15	22	17
14	19	33	14	28	24	25	18	23	17	15	20	17
15	16	30	20	22	24	22	18	22	17	15	20	21
16	15	25	20	21	22	22	20	29	17	17	20	23
17	15	23	24	20	21	22	24	25	17	26	19	20
18	15	27	22	23	20	21	24	22	17	27	19	19
19	14	24	25	20	20	21	26	22	16	19	18	23
20	14	27	25	20	22	22	27	21	20	17	19	20
21	14	28	25	18	22	22	25	21	20	16	17	22
22	14	24	22	20	20	23	27	23	17	18	18	19
23	21	28	25	20	24	23	25	21	16	22	17	26
24	21	31	25	18	22	22	23	20	16	22	17	25
25	16	29	28	18	21	23	28	22	17	22	17	25
26	16	33	23	18	22	22	23	20	17	20	16	22
27	18	39	23	17	24	22	22	22	17	20	23	21
28	16	30	21	17	27	29	21	20	18	22	23	22
29	18	26	20	22	---	24	21	22	17	26	22	20
30	16	26	20	22	---	25	20	21	16	22	25	20
31	16	---	20	23	---	23	---	20	---	25	20	---
TOTAL	513	779	733	625	614	724	674	704	524	562.6	667	601
MEAN	16.5	26.0	23.6	20.2	21.9	23.4	22.5	22.7	17.5	18.1	21.5	20.0
MAX	23	39	30	28	31	29	28	29	20	27	30	26
MIN	14	16	12	17	18	21	18	20	16	6.6	16	17
AC-FT	1020	1550	1450	1240	1220	1440	1340	1400	1040	1120	1320	1190

CAL YR 1984	TOTAL	7288.4	MEAN	19.9	MAX	39	MIN	8.5	AC-FT	14460
WTR YR 1985	TOTAL	7720.6	MEAN	21.2	MAX	39	MIN	6.6	AC-FT	15310

16061200 NORTH WAILUA DITCH BELOW WAIKOKO STREAM, NEAR LIHUE

LOCATION.--Lat 22°03'34", long 159°28'00", Hydrologic Unit 20070000, on left bank 380 ft downstream from Waikoko Stream, 8.1 mi wast of Wailua, and 8.4 mi northwest of Lihue.

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,070 ft, from topographic map.

REMARKS.--Records good. Ditch diverts from North Fork Wailua River and Waikoko Stream for power and irrigation in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the yeer are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 23.1 ft^3/s (16,740 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 58 ft^3/s Oct. 11, 1966; no flow Jan. 1-18, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 29 ft^3/s Nov. 27, Aug. 8, Sept. 23-25; minimum daily, 16 ft^3/s Oct. 18-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	17	26	23	23	26	24	23	22	19	26	23
2	19	22	25	24	22	25	24	23	22	9.0	28	22
3	18	20	24	24	21	24	24	25	21	14	27	22
4	18	22	26	24	27	25	23	24	20	18	27	24
5	18	24	24	24	24	25	23	25	20	17	27	22
6	17	26	25	23	24	25	23	26	20	17	27	22
7	17	27	24	22	23	24	23	25	19	22	27	22
8	17	24	26	22	23	24	23	24	19	18	29	21
9	17	25	26	21	23	24	23	24	19	18	27	22
10	17	24	25	23	22	25	23	24	19	18	27	21
11	21	23	24	23	21	24	22	24	19	18	25	21
12	23	22	24	21	24	24	22	24	19	17	24	21
13	21	24	18	23	24	25	21	24	18	17	24	20
14	22	27	18	27	25	25	20	24	18	17	23	20
15	19	26	23	24	24	24	21	24	18	17	23	24
16	18	24	23	24	24	24	22	27	18	19	22	28
17	17	23	24	24	23	24	23	25	18	25	22	25
18	16	25	24	24	23	23	24	24	18	28	22	23
19	16	24	24	24	23	23	25	24	19	24	21	26
20	16	24	25	23	23	24	26	24	21	20	22	25
21	16	25	25	22	24	24	24	24	19	19	20	26
22	16	24	24	23	23	24	26	24	18	21	20	24
23	19	25	25	23	24	24	24	23	18	26	20	29
24	24	26	26	22	24	24	24	24	18	26	19	29
25	20	26	27	22	24	24	26	23	18	24	20	29
26	18	27	25	21	24	24	24	24	19	24	19	28
27	20	29	25	20	24	24	24	23	19	23	25	26
28	20	26	24	20	25	26	24	24	18	25	25	27
29	20	25	24	23	---	24	23	23	20	27	26	25
30	19	25	24	23	---	24	23	23	18	26	27	24
31	17	---	23	24	---	24	---	23	---	27	25	---
TOTAL	576	731	750	710	658	753	701	745	572	640.0	746	721
MEAN	18.6	24.4	24.2	22.9	23.5	24.3	23.4	24.0	19.1	20.6	24.1	24.0
MAX	24	29	27	27	27	26	26	27	22	28	29	29
MIN	16	17	18	20	21	23	20	23	18	9.0	19	20
AC-FT	1140	1450	1490	1410	1310	1490	1390	1480	1130	1270	1480	1430

CAL YR 1984	TOTAL	8020.4	MEAN	21.9	MAX	34	MIN	8.4	AC-FT	15910
WTR YR 1985	TOTAL	8303.0	MEAN	22.7	MAX	29	MIN	9.0	AC-FT	16470

16062000 STABLE STORM DITCH NEAR LIHUE

LOCATION.--Lat 22°04'09", long 159°26'46", Hydrologic Unit 20070000, on left bank 100 ft downstream from intake, 7.8 mi northwest of Lihue, and 7.9 mi wast of Kapaa.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 710 ft, by barometer.

REMARKS.--Records good. Ditch diverts from North Fork Wailua River for irrigation of sugarcane in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsawhere in this report.

AVERAGE DISCHARGE.--48 years (water years 1938-85), 10.9 ft^3/s (7,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 71 ft^3/s Apr. 3, 1948; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maxiumum daily discharge, 58 ft^3/s Apr. 25; no flow Nov. 28 to Dec. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	21	.00	.02	34	.64	.20	.92	32	34	46	1.8
2	26	34	.00	.02	32	.12	.20	.92	19	36	55	1.8
3	24	27	.00	.02	32	.12	.20	.78	19	36	48	17
4	23	34	.00	.05	15	.12	.20	.64	36	30	51	36
5	23	40	.00	.05	.38	.12	.28	.64	36	29	26	34
6	23	17	.00	.12	.38	.12	.28	.64	34	29	1.8	35
7	23	.28	.00	.12	e.38	.12	.20	.50	34	40	1.8	34
8	22	24	.00	.12	e1.2	.12	.20	.50	34	32	2.0	32
9	23	38	.00	.12	e.01	.12	.20	.50	34	29	1.6	33
10	23	34	.00	.12	e.01	.12	20	.50	33	30	1.6	31
11	34	34	.00	.12	.12	.12	36	.50	33	28	1.6	32
12	32	32	.00	.12	.38	.20	34	.50	32	28	30	34
13	28	22	.00	.20	.38	.20	32	.50	32	27	44	32
14	26	.38	.00	.44	.50	.20	32	.50	32	26	40	34
15	23	.38	.02	.12	.38	.20	28	.50	32	26	38	40
16	22	.28	.02	.12	.20	.20	28	.64	32	29	11	44
17	21	.20	.02	.12	.20	.20	39	.64	31	43	.92	38
18	21	.38	.02	.12	.20	.20	42	.50	30	50	.92	35
19	21	.28	.02	.12	.20	.20	49	.50	30	34	e29	41
20	21	.28	.02	.05	.20	.20	52	.50	35	30	e33	38
21	21	.28	.02	.02	.28	.20	46	.50	38	29	e32	39
22	20	.28	.02	.02	.38	.20	52	.50	e32	32	32	38
23	29	.28	.05	.02	.50	.20	47	.50	e30	44	32	48
24	28	.28	.05	e.01	.50	.20	45	.50	e30	44	32	48
25	21	.28	.12	e.01	.64	.20	56	.50	33	40	32	38
26	21	.38	.05	e.01	.78	.20	16	.50	34	38	32	32
27	25	.64	.05	e.01	.78	.20	.92	.50	34	36	42	31
28	22	.00	.02	e.01	.78	.28	.92	.50	32	42	42	32
29	12	.00	.02	e.01	---	.20	.92	23	36	48	42	31
30	16	.00	.02	e27	---	.20	.92	35	32	42	25	30
31	21	---	.02	38	---	.20	---	33	---	48	1.8	---
TOTAL	721	361.88	.56	67.41	122.76	5.92	659.64	106.82	961	1089	808.04	990.6
MEAN	23.3	12.1	.018	2.17	4.38	.19	22.0	3.45	32.0	35.1	26.1	33.0
MAX	34	40	.12	38	34	.64	56	35	38	50	55	48
MIN	12	.00	.00	.01	.01	.12	.20	.50	19	26	.92	1.8
AC-FT	1430	718	1.1	134	243	12	1310	212	1910	2160	1600	1960

CAL YR 1984	TOTAL	7899.44	MEAN	21.6	MAX	49	MIN	.00	AC-FT	15670
WTR YR 1985	TOTAL	5894.63	MEAN	16.1	MAX	56	MIN	.00	AC-FT	11690

e Estimated

16063000 NORTH FORK WAILUA RIVER AT ALTITUDE 650 FT, NEAR LIHUE

LOCATION.--Lat 22°04'02", long 159°26'21", Hydrologic Unit 20070000, on right bank 0.5 mi downstream from intake of Stable storm ditch and 7.6 mi northwest of Lihue.

DRAINAGE AREA.--5.29 mi^2.

PERIOD OF RECORD.--September 1914 to March 1915, May 1915 to October 1918, December 1918, March 1919, June 1919 to September 30, 1985 (discontinued). Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 555: 1921. WSP 1569: 1915-27(M), 1943-47(M), 1948-56(P). WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 650 ft, from topographic map. Prior to Sept. 9, 1944, at datum 2.0 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Since 1925, Hanalei tunnel (station 16100000) has diverted from Hanalei River basin into North Fork Wailua River upstream; North Wailua and Stable storm ditches (station 16061000 and 160620000) divert water upstream for power development and irrigation in vicinity of Lihue. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--69 years (water years 1916-18, 1920-85), 73.0 ft^3/s (52,890 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,200 ft^3/s Nov. 12, 1955, gage height, 13.53 ft, from rating curve extended above 2,300 ft^3/s on basis of slope-area measurement at gage height 10.65 ft; minimum, 0.23 ft^3/s June 5, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	1500	*3820	*8.34	Apr. 25	About 1700	3280	7.86

Minimum discharge, 0.84 ft^3/s Oct. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.97	220	35	e14	e120	149	42	10	e1.8	7.5	32
2	.97	4.3	81	86	8.8	e60	104	54	18	e2.2	112	30
3	.97	1.4	89	59	7.0	e47	140	194	24	e3.1	9.2	18
4	.97	11	162	88	421	e130	60	93	e2.0	e1.9	26	2.2
5	.91	31	59	37	91	144	60	70	e1.9	e1.8	32	2.0
6	.91	112	103	33	51	123	70	216	e1.9	e1.8	62	2.8
7	.91	256	56	32	42	73	66	182	e1.9	e3.5	76	2.2
8	.91	33	193	29	37	75	47	93	e1.9	e1.9	170	1.9
9	.97	27	156	29	38	59	40	132	e1.8	e1.9	60	2.0
10	.87	4.8	60	38	34	110	21	83	e1.8	e1.8	72	1.9
11	16	6.6	55	32	32	93	2.4	84	e1.8	e1.8	42	1.9
12	2.5	3.0	50	27	85	94	2.0	66	e1.8	e1.7	e18	2.2
13	1.7	132	50	225	40	223	1.9	60	e1.7	e1.7	e2.7	2.0
14	1.3	358	45	423	141	166	1.8	86	e1.7	e1.7	e1.9	2.6
15	.97	237	42	73	83	93	3.0	71	e1.7	e1.7	e1.8	40
16	.97	83	38	e35	43	87	6.2	384	e1.7	e1.8	e23	14
17	.97	56	86	e33	e37	67	e23	207	e1.7	11	35	2.7
18	.91	104	52	e82	e34	56	27	95	e1.7	81	34	2.0
19	.91	53	106	e35	e35	51	68	73	e1.8	1.9	e18	14
20	.91	91	106	e33	e33	62	135	63	e3.0	1.7	e1.9	2.4
21	.91	128	110	e31	e43	56	79	56	e6.6	1.7	e1.8	6.3
22	.91	57	59	e31	e45	93	243	90	e1.8	1.8	1.8	3.3
23	33	129	134	e31	e72	87	41	60	e1.7	11	1.7	108
24	2.0	260	142	e40	e66	61	29	50	e1.7	4.7	1.7	94
25	.91	202	359	e31	e50	81	e420	79	e2.2	5.1	1.8	55
26	.91	540	105	e27	e60	49	103	47	e2.1	2.1	1.8	25
27	2.3	979	121	e24	e100	90	77	51	e2.0	1.9	12	15
28	1.0	260	62	e22	e120	376	59	44	e2.0	8.1	23	25
29	13	131	49	e24	---	100	52	45	e2.1	21	5.7	13
30	9.2	118	43	e82	---	116	46	12	e1.9	3.7	49	13
31	.97	---	38	e90	---	98	---	11	---	13	35	---
TOTAL	101.74	4409.07	3051	1897	1862.8	3150	2176.3	2893	107.9	201.8	940.3	536.4
MEAN	3.28	147	98.4	61.2	66.5	102	72.5	93.3	3.60	6.51	30.3	17.9
MAX	33	979	359	423	421	376	420	384	24	81	170	108
MIN	.91	.97	38	22	7.0	47	1.8	11	1.7	1.7	1.7	1.9
AC-FT	202	8750	6050	3760	3690	6250	4320	5740	214	400	1870	1060

CAL YR 1984	TOTAL	11248.17	MEAN	30.7	MAX	979	MIN	.78	AC-FT 22310
WTR YR 1985	TOTAL	21327.31	MEAN	58.4	MAX	979	MIN	.91	AC-FT 42300

e Estimated

16068000 EAST BRANCH OF NORTH FORK WAILUA RIVER NEAR LIHUE

LOCATION.--Lat 22°04'19", long 159°25'05", Hydrologic Unit 20070000, on right bank 1,200 ft upstream from mouth and 7.2 mi northwest of Lihue.

DRAINAGE AREA.--6.27 mi^2.

PERIOD OF RECORD.--July 1912 to September 1914, December 1914 to March 1915, May 1915 to March 1919, June 1919 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 770: 1932-33. WSP 1719: 1916. WSP 1937: 1916. WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 500 ft, from topographic map. Prior to Dec. 31, 1914, nonrecording gage at site 725 ft downstream at different datum. Dec. 31, 1914 to May 10, 1934, water-stage recorder at site 75 ft upstream at present datum.

REMARKS.--Records good. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year ere published elsewhere in this report.

AVERAGE DISCHARGE.--70 years (water years 1913-14, 1916-17, 1920-85), 48.1 ft^3/s (34,650 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft^3/s Nov. 12, 1955, gage height, 14.7 ft, from floodmarks, from rating curve extended above 2,700 ft^3/s; minimum, 6.8 ft^3/s July 3, 13, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,950 ft^3/s Nov. 26, gage height, 5.93 ft, no other peak greater than base discharge of 1,900 ft^3/s; minimum, 10.0 ft^3/s Oct. 20-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	11	93	35	33	78	65	36	25	19	25	16
2	15	21	64	58	27	42	53	37	23	15	66	15
3	14	15	82	41	24	36	65	66	22	15	27	16
4	13	25	91	57	103	80	42	44	21	14	56	15
5	13	58	52	34	51	93	40	38	20	14	39	14
6	12	105	66	30	37	75	42	184	20	15	33	14
7	12	122	50	28	33	48	43	90	19	17	38	14
8	11	42	74	26	30	48	34	55	18	14	76	14
9	11	44	72	25	28	50	30	48	18	14	35	20
10	11	29	52	25	26	72	29	48	18	14	31	15
11	15	31	44	24	25	65	28	44	17	14	23	13
12	17	28	40	22	30	73	28	45	17	13	20	14
13	13	82	37	38	26	150	24	41	17	12	27	13
14	14	110	36	120	55	113	23	50	16	12	21	12
15	13	83	40	37	44	75	23	45	16	12	20	57
16	12	49	34	30	28	68	24	177	18	12	18	23
17	11	38	49	28	26	53	45	127	16	22	19	16
18	11	42	37	48	24	47	49	68	15	22	21	14
19	10	35	57	30	25	42	59	52	15	14	19	15
20	10	36	57	26	23	48	80	44	17	13	23	15
21	10	38	50	25	29	40	45	40	18	12	16	16
22	10	29	43	25	30	45	95	49	15	13	16	15
23	21	44	44	25	43	53	62	40	14	23	15	79
24	16	56	62	27	42	40	50	33	14	23	15	38
25	11	114	179	25	33	44	337	37	22	16	15	33
26	10	580	82	22	40	36	99	30	32	15	14	28
27	12	759	78	20	66	36	60	29	21	18	17	22
28	12	211	58	20	68	206	48	27	16	25	26	26
29	19	123	48	20	---	55	44	30	17	30	20	22
30	18	86	44	67	---	51	39	27	16	23	44	19
31	12	---	39	73	---	57	---	26	---	33	18	---
TOTAL	407	3042	1834	1111	1047	2019	1703	1707	551	528	853	643
MEAN	13.1	101	59.2	35.8	37.4	65.1	56.8	55.1	18.4	17.0	27.5	21.4
MAX	21	759	179	120	103	206	337	184	32	33	76	79
MIN	10	11	34	20	23	36	23	28	14	12	14	12
AC-FT	807	6030	3640	2200	2080	4000	3380	3390	1090	1050	1690	1280

CAL YR 1984	TOTAL	10523.8	MEAN	28.8	MAX	759	MIN	9.1	AC-FT	20870
WTR YR 1985	TOTAL	15445	MEAN	42.3	MAX	759	MIN	10	AC-FT	30640

16069000 WAILUA DITCH NEAR KAPAA

LOCATION.--Lat 22°04'34", long 159°24'04", Hydrologic Unit 20070000, on right bank 2,000 ft downstream from Wailua Reservoir, 5.2 mi west of Kapaa, and 7.0 mi north of Lihue.

PERIOD OF RECORD.--November 1936 to current year.

GAGE.--Water-stage recorder. Sharp-crested weir since Feb. 4, 1965. Datum of gage is 462.3 ft above mean sea level (by stadia survey).

REMARKS.--Records good. Ditch diverts water from North Fork Wailua River to reservoir, 2,000 ft upstream and thence to fields for irrigation of sugarcane in vicinity of Kapaa. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--48 years (water years 1938-85), 15.6 ft^3/s (11,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 63 ft^3/s June 4, 1937; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 33 ft^3/s Jan. 31; minimum daily, 1.8 ft^3/s Oct. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	5.0	12	2.2	29	23	15	18	17	19	16	24
2	24	14	14	2.3	26	23	16	18	17	19	22	24
3	23	20	14	11	26	23	16	18	17	19	22	24
4	21	20	15	13	15	23	16	15	25	16	22	23
5	17	23	16	16	5.6	23	16	18	29	20	22	20
6	13	28	15	17	11	23	16	19	21	20	22	23
7	12	27	16	18	18	23	15	19	25	19	22	22
8	12	20	16	19	18	23	22	19	22	19	14	22
9	13	17	16	19	18	20	19	19	24	19	22	22
10	13	16	15	20	18	23	19	19	24	19	22	22
11	18	16	15	20	18	23	19	18	24	19	22	21
12	21	16	15	20	18	23	19	18	23	18	22	21
13	20	16	19	20	17	23	18	18	21	18	11	20
14	18	16	26	20	17	23	18	18	23	18	12	20
15	14	16	26	20	18	23	18	18	23	18	24	20
16	14	16	26	30	18	23	18	16	22	18	24	21
17	12	16	22	31	19	23	18	18	22	18	24	22
18	11	15	20	30	18	18	18	18	22	18	24	22
19	9.6	15	21	30	23	16	18	18	20	19	24	22
20	9.4	14	20	30	24	16	17	18	19	18	25	22
21	9.2	14	19	31	24	16	25	15	19	18	24	22
22	9.0	15	18	31	23	16	20	19	19	18	24	22
23	12	15	17	32	23	16	18	19	18	18	23	20
24	21	16	16	32	23	16	18	18	18	15	23	20
25	20	16	16	32	23	16	19	18	18	18	22	20
26	14	17	15	32	23	16	17	18	18	18	22	21
27	11	16	14	32	23	16	19	18	14	18	22	21
28	14	11	13	32	23	16	19	18	19	18	22	22
29	5.1	5.5	7.2	32	---	16	18	15	19	18	22	18
30	2.9	8.1	4.1	32	---	16	18	18	19	19	23	22
31	1.8	---	2.9	33	---	16	---	18	---	19	24	---
TOTAL	440.0	479.6	501.2	739.5	559.6	614	542	554	621	568	669	645
MEAN	14.2	16.0	16.2	23.9	20.0	19.8	18.1	17.9	20.7	18.3	21.6	21.5
MAX	25	28	26	33	29	23	25	19	29	20	25	24
MIN	1.8	5.0	2.9	2.2	5.6	16	15	15	14	15	11	18
AC-FT	873	951	994	1470	1110	1220	1080	1100	1230	1130	1330	1280

CAL YR 1984	TOTAL	6685.9	MEAN	18.3	MAX	42	MIN	1.8	AC-FT	13260
WTR YR 1985	TOTAL	6932.9	MEAN	19.0	MAX	33	MIN	1.8	AC-FT	13750

16071000 NORTH FORK WAILUA RIVER NEAR KAPAA

LOCATION.--Lat 22°03'08", long 159°22'22", Hydrologic Unit 20070000, on right bank 1.1 mi upstream from confluence with South Fork, 3.7 mi southwest of Kapaa, and 5.0 mi north of Lihue.

DRAINAGE AREA.--17.9 mi^2.

PERIOD OF RECORD.--July 1952 to current year.

REVISED RECORDS.--WSP 2137: Drainage area. WDR HI-75-1: 1974.

GAGE.--Water-stage recorder. Elevation of gage is 18 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Wailua ditch (station 16069000) diverts upstream for irrigation of sugarcane in vicinities of Kapaa and Wailua. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--33 years, 124 ft^3/s (89,840 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,200 ft^3/s Nov. 12, 1955, gage height, 19.88 ft in gage well, 20.8 ft, from floodmarks, from rating curve extended above 3,700 ft^3/s on basis of slope-area measurement of peak flow; minimum, 2.1 ft^3/s Oct. 28, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,460 ft^3/s Nov. 27, gage height, 7.28 ft, no other peak greater than base discharge of 4,100 ft^3/s; minimum, 2.3 ft^3/s Oct. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.0	4.7	250	82	34	318	146	78	30	7.5	18	23
2	e2.7	3.4	118	134	21	128	136	79	29	7.4	95	22
3	e2.8	3.4	116	83	17	83	165	195	46	7.3	17	28
4	e2.7	5.0	185	113	357	155	91	116	19	7.2	46	25
5	e2.6	30	97	50	167	223	85	92	13	7.1	45	13
6	e2.6	115	140	43	99	170	83	317	11	7.0	70	6.1
7	e2.6	216	112	39	73	114	94	281	10	6.7	98	5.5
8	e2.6	54	185	37	64	103	71	137	9.6	7.0	170	5.3
9	e2.7	60	205	35	60	92	58	125	9.2	6.5	84	5.5
10	e2.8	32	138	38	60	130	50	122	8.3	6.6	81	7.1
11	e20	30	110	41	53	143	25	123	8.0	6.6	56	5.4
12	e8.0	23	93	36	98	128	23	110	7.6	6.3	42	5.4
13	3.1	120	80	117	77	220	21	97	7.5	6.0	21	5.3
14	2.8	343	76	475	124	295	19	111	7.2	6.0	9.3	4.9
15	2.8	259	72	122	185	143	17	107	7.2	6.0	8.8	59
16	2.6	124	66	87	84	123	17	399	7.2	6.0	9.6	30
17	2.6	91	102	73	64	102	50	284	7.0	6.5	28	11
18	2.6	124	84	106	55	86	84	150	6.7	60	29	7.6
19	3.4	93	143	52	59	77	94	112	7.0	8.9	33	6.9
20	3.4	103	160	41	54	89	160	96	7.2	5.5	15	11
21	4.0	111	140	40	66	81	72	85	9.9	5.3	9.3	6.8
22	3.7	63	122	44	60	97	218	112	6.8	5.6	7.6	8.9
23	14	114	144	44	115	133	94	91	6.5	11	6.8	115
24	17	202	200	39	95	86	72	74	6.6	16	6.0	89
25	4.0	253	436	37	79	97	521	96	11	8.0	6.1	53
26	3.4	1020	221	33	88	75	211	68	14	7.5	5.7	38
27	3.4	2220	186	31	144	73	138	68	18	6.4	9.1	23
28	3.7	678	145	29	200	457	110	61	8.0	11	15	28
29	21	346	116	46	---	147	96	67	7.6	27	19	22
30	46	172	100	69	---	122	85	35	7.4	15	44	19
31	18	---	90	119	---	143	---	32	---	11	31	---
TOTAL	216.6	7012.5	4432	2335	2652	4433	3106	3920	353.5	311.9	1135.3	689.7
MEAN	6.99	234	143	75.3	94.7	143	104	126	11.8	10.1	36.6	23.0
MAX	46	2220	436	475	357	457	521	399	46	60	170	115
MIN	2.6	3.4	66	29	17	73	17	32	6.5	5.3	5.7	4.9
AC-FT	430	13910	8790	4630	5260	8790	6160	7780	701	619	2250	1370

CAL YR 1984	TOTAL	16623.9	MEAN	45.4	MAX	2220	MIN	2.6	AC-FT	32970
WTR YR 1985	TOTAL	30597.5	MEAN	83.8	MAX	2220	MIN	2.6	AC-FT	60690

e Estimated

16071500 LEFT BRANCH OPAEKAA STREAM NEAR KAPAA

LOCATION.--Lat 22°04'43", long 159°23'55", Hydrologic Unit 20070000, on left bank 0.4 mi upstream from mouth, 0.6 mi northeast of Wailua Reservoir, and 4.9 mi west of Kapaa.

DRAINAGE AREA.--0.65 mi^2.

PERIOD OF RECORD.--May 1960 to current year. Prior to July 1960, published as Left Branch Opaikaa Stream near Kapaa.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 458.4 ft above mean sea level (by stadia survey).

REMARKS.--Records good except for estimated daily discharges, which are fair. No diversion upstream. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--25 years, 2.62 ft^3/s (1,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 724 ft^3/s Jan. 31, 1975, gage height, 5.58 ft, from rating curve extended above 415 ft^3/s on basis of slope-area measurement at gage height 5.01 ft; minimum, 0.09 ft^3/s Sept. 27-30, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 78 ft^3/s Nov. 27, gage height, 2.38 ft, no other peak greater than base discharge of 70 ft^3/s; minimum discharge, 0.30 ft^3/s Oct. 17-23, 26-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	.48	5.5	e2.3	2.2	2.4	2.8	2.0	1.7	1.2	.79	.58
2	.40	.58	4.4	e2.7	2.0	2.2	2.8	2.0	1.7	1.2	1.0	.58
3	.40	.52	4.1	e2.4	2.0	2.2	3.2	2.2	1.7	1.2	.86	.58
4	.40	.52	4.4	e2.9	3.9	2.5	2.8	2.0	1.6	1.2	.93	.65
5	.40	.93	3.8	e2.4	3.1	3.1	2.7	2.0	1.6	1.1	.93	.65
6	.40	1.7	e3.9	e2.3	2.6	2.7	2.7	2.0	1.6	1.0	.86	.58
7	.40	2.7	e3.3	e2.3	2.4	2.5	2.6	2.4	1.6	1.0	1.2	.52
8	.40	1.5	e4.1	e2.3	2.2	2.4	2.5	2.0	1.6	1.0	1.4	.52
9	.40	1.2	e3.9	e2.2	2.2	2.4	2.4	1.8	1.6	.86	1.0	.52
10	.40	.93	e3.2	e2.2	2.2	2.4	2.4	1.8	1.6	.86	.86	.52
11	.46	.93	e2.8	e2.2	2.2	2.4	2.4	1.8	1.6	.86	.79	.46
12	.48	.86	e2.6	e2.2	2.2	2.4	2.2	2.0	1.6	.86	.79	.46
13	.40	1.0	e2.4	e2.2	2.0	3.0	2.2	1.8	1.5	.79	.79	.46
14	.40	1.6	e2.4	e4.0	4.2	4.1	2.0	1.8	1.4	.72	.72	.40
15	.40	1.6	e2.5	e2.6	3.9	2.9	2.0	1.8	1.4	.72	.72	1.5
16	.35	1.2	e2.3	2.3	2.5	2.7	2.0	2.2	1.4	.72	.72	1.0
17	.35	1.1	e2.7	2.4	2.4	2.7	2.0	2.8	1.4	.86	.79	.65
18	.30	1.1	e2.4	2.7	2.2	2.6	2.2	2.4	1.3	.86	.72	.58
19	.30	1.1	e2.8	2.4	2.2	2.6	2.5	2.2	1.3	.79	.79	.58
20	.30	1.0	e2.8	2.2	2.2	2.6	2.6	2.0	1.3	.79	.86	.52
21	.30	.93	e2.6	2.2	2.2	2.4	2.2	2.0	1.2	.72	.72	.52
22	.30	.93	e2.5	2.2	2.2	2.4	2.9	2.0	1.1	.72	.72	.58
23	.52	1.0	e2.6	2.2	2.4	2.6	2.4	2.0	1.0	.86	.65	1.1
24	.40	.93	e3.2	2.0	2.4	2.4	2.2	1.8	1.0	.88	.65	.93
25	.35	3.4	e5.0	2.0	2.5	2.4	3.0	2.0	1.2	.79	.65	.72
26	.35	21	e3.3	2.0	2.4	2.2	2.6	1.8	1.2	.79	.65	.79
27	.35	37	e3.2	2.0	2.6	2.2	2.4	1.8	1.2	.72	.65	.79
28	.40	14	e2.9	2.0	2.5	6.2	2.2	1.8	1.1	.79	.65	.72
29	.83	8.3	e2.7	2.0	---	2.9	2.2	1.8	1.1	.93	.65	.65
30	.86	6.1	e2.5	2.2	---	2.7	2.2	1.8	1.1	.86	.79	.58
31	.52	---	e2.4	2.6	---	2.9	---	1.8	---	.93	.65	---
TOTAL	12.96	118.12	99.2	72.6	70.0	84.1	73.3	61.6	41.7	27.56	24.95	19.69
MEAN	.42	3.87	3.20	2.34	2.50	2.71	2.44	1.99	1.39	.89	.80	.66
MAX	.86	37	5.5	4.0	4.2	6.2	3.2	2.8	1.7	1.2	1.4	1.5
MIN	.30	.46	2.3	2.0	2.0	2.2	2.0	1.8	1.0	.72	.65	.40
AC-FT	26	230	197	144	139	167	145	122	83	55	49	39

CAL YR 1984	TOTAL	432.25	MEAN	1.18	MAX	37	MIN	.30	AC-FT	857
WTR YR 1985	TOTAL	703.78	MEAN	1.93	MAX	37	MIN	.30	AC-FT	1400

e Estimated

18077000 MAKALEHA DITCH NEAR KEALIA

LOCATION.--Lat 22°07'06", long 159°22'04", Hydrologic Unit 20070000, on left bank at end of last tunnel from which flow enters Mimino Reservoir, 3.9 mi northwest of Kealia, and 4.0 mi northwest of Kapaa.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 518 ft above mean sea level (by stadia survey).

REMARKS.--Records good except for estimated daily discharges, which are fair. Ditch diverts from Makaleha Stream for irrigation of sugarcane in vicinity of Kealia. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--48 years (water years 1938-85), 6.81 ft^3/s (4,930 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 31 ft^3/s Aug. 1, 1961, June 30, 1982; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 19 ft^3/s Nov. 26; minimum daily, 0.50 ft^3/s Jan. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	4.3	1.3	.50	7.7	1.9	e11	5.7	7.3	7.8	12	5.7
2	5.1	9.1	.98	.50	6.7	1.7	e7.0	6.7	7.0	5.7	14	5.4
3	3.5	5.3	.80	2.8	8.1	1.5	e10	9.6	6.7	6.7	10	5.8
4	3.4	8.3	.98	7.1	4.5	1.3	e8.4	8.0	5.9	5.6	13	5.2
5	3.2	12	1.1	5.2	1.7	1.2	e8.4	7.1	5.3	5.9	11	5.1
6	3.1	14	.92	4.4	3.9	1.2	9.3	8.8	5.1	8.4	12	5.2
7	3.4	14	.92	4.1	4.9	1.2	9.7	9.6	5.1	8.7	11	5.4
8	3.4	9.4	.80	3.8	4.9	1.2	4.9	8.4	5.2	6.4	14	5.1
9	3.8	10	.75	3.7	4.3	1.0	1.5	7.8	4.9	5.8	9.8	6.4
10	4.4	8.7	.65	3.7	3.9	.98	1.4	7.9	4.9	5.8	8.5	8.3
11	9.2	7.3	.85	4.5	3.6	.98	1.2	8.9	4.9	5.7	7.1	5.1
12	7.2	8.0	.60	3.7	2.0	.98	1.1	8.0	4.8	5.2	6.5	5.0
13	4.9	11	.65	5.3	2.1	2.8	3.0	8.2	5.0	4.8	9.3	5.1
14	4.8	14	5.1	10	9.2	5.4	5.4	12	5.1	4.6	8.9	4.6
15	4.7	13	13	6.3	9.4	5.2	5.3	10	4.9	4.6	7.7	6.5
16	4.5	8.0	10	5.1	7.3	5.0	6.4	14	4.9	6.4	6.5	5.8
17	3.7	6.0	13	4.8	5.6	4.8	9.4	8.3	4.8	11	8.0	6.0
18	3.5	9.7	12	7.1	4.5	4.6	11	4.1	4.5	11	7.8	5.7
19	3.4	7.4	6.1	6.3	5.3	4.6	11	3.9	4.6	7.1	6.4	6.4
20	3.5	9.0	.75	5.4	6.1	4.6	11	3.8	6.9	6.5	8.6	6.3
21	3.4	8.6	.75	5.1	7.5	4.8	9.3	4.3	7.6	5.6	6.1	7.3
22	3.4	5.8	.75	6.3	9.3	4.6	12	5.1	5.2	6.5	6.3	7.0
23	7.1	9.2	.70	6.4	10	4.6	10	5.2	4.8	10	5.3	10
24	6.1	12	.80	6.0	9.7	4.6	9.3	7.8	4.6	11	4.9	8.0
25	5.6	10	1.5	6.3	4.9	4.6	12	9.8	7.2	9.7	4.9	8.6
26	4.3	19	1.9	5.7	2.2	4.5	9.0	7.7	11	8.6	5.2	4.4
27	6.6	18	1.3	5.2	2.0	e4.5	7.4	8.6	7.3	9.6	6.6	4.6
28	5.8	7.4	1.0	5.2	2.0	e12	6.7	7.4	7.3	12	8.6	7.3
29	7.8	3.4	.86	6.3	---	e7.0	6.6	7.7	8.3	13	7.5	5.4
30	8.2	2.0	.70	9.7	---	e6.0	5.9	9.0	6.9	11	9.7	4.5
31	5.1	---	.60	10	---	e7.0	---	8.4	---	14	6.6	---
TOTAL	153.3	279.9	81.91	166.50	151.3	116.34	224.6	239.8	178.0	244.7	263.8	179.2
MEAN	4.95	9.33	2.64	5.37	5.40	3.75	7.49	7.74	5.93	7.89	8.51	5.97
MAX	9.2	19	13	10	10	12	12	14	11	14	14	10
MIN	3.1	2.0	.60	.50	1.7	.98	1.1	3.8	4.5	4.6	4.9	4.4
AC-FT	304	555	162	330	300	231	445	476	353	485	523	355

CAL YR 1984	TOTAL	2705.11	MEAN	7.39	MAX	20	MIN	.60	AC-FT	5370
WTR YR 1985	TOTAL	2279.35	MEAN	6.24	MAX	19	MIN	.50	AC-FT	4520

e Estimated

16079000 KAPAHI DITCH NEAR KEALIA

LOCATION.--Lat 22°06'09", long 159°22'28", Hydrologic Unit 20070000, on right bank 500 ft downstream from intake and 4.0 mi west of Kealia.

PERIOD OF RECORD.--April 1909 to February 1911, May 1911, July 1911 to May 1914, July 1915 to April 1917, June 1917 to current year. Published as "at Kapehi, near Kapaa" prior to January 1914 and as "at Kapahi, near Kealia" January to December 1913.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 377.1 ft above mean sea level (by stadia survey). Prior to Nov. 26, 1936, at site 61 ft upstream at datum 2.52 ft higher.

REMARKS.--Records good. Ditch diverts from Kapaa Stream for irrigation of sugarcane in vicinity of Kapaa. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--67 years (water years 1918-20, 1922-85), 6.20 ft^3/s (4,490 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 138 ft^3/s Feb. 6, 1913; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 24 ft^3/s Nov. 5-6; minimum daily, 0.06 ft^3/s Jan. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	3.6	.25	.25	.19	.25	4.0	5.6	4.1	4.7	7.8	3.9
2	3.2	8.3	.25	12	.19	.31	.19	7.6	4.1	3.6	17	3.6
3	3.4	4.4	.38	21	.19	.25	.25	15	3.8	3.6	7.9	3.9
4	2.8	6.4	.70	17	.58	5.5	.19	10	3.6	3.5	21	3.3
5	2.9	24	.31	9.0	.25	8.2	.14	8.4	3.9	3.2	4.8	3.2
6	3.0	24	.38	7.6	.25	8.0	.14	14	3.8	3.2	1.1	3.2
7	2.8	.59	.31	6.8	5.1	2.5	.10	15	3.8	3.5	1.1	3.6
8	2.5	.31	.38	6.6	6.6	.25	7.5	10	3.6	2.8	.45	3.5
9	2.6	.31	.25	6.1	5.9	.25	11	8.4	3.6	2.5	.25	5.8
10	2.8	.25	.25	6.2	6.1	.25	11	8.8	3.5	3.2	.80	4.8
11	6.6	.25	.25	6.4	6.8	.25	12	6.8	2.7	3.2	.31	3.2
12	4.6	.25	8.5	5.7	2.3	.25	10	9.7	.45	3.0	.25	3.0
13	3.2	.56	14	3.1	4.2	.85	7.9	9.6	.38	2.9	.25	2.9
14	3.0	.44	11	.51	7.8	.31	4.9	14	.31	2.9	.19	2.9
15	3.2	.38	20	.38	10	.79	4.7	5.4	.97	2.8	3.4	5.8
16	3.0	.38	12	.38	11	.58	5.7	1.2	.38	3.3	3.6	6.8
17	2.6	.87	4.3	.38	11	.51	10	.72	.53	12	5.3	5.4
18	2.5	.51	.31	.45	8.6	.51	7.2	.31	.51	6.3	4.6	3.9
19	2.5	.51	.25	.98	8.6	.45	.38	.25	.51	3.5	3.9	4.2
20	2.5	.51	.25	.31	7.4	.38	.38	.25	.38	3.2	6.5	4.4
21	2.5	.51	.25	.25	9.0	.38	.31	7.1	.31	3.2	3.5	6.3
22	2.5	.51	.25	.25	3.5	.38	.31	17	.25	3.0	3.3	2.1
23	13	.45	.25	7.1	.51	.38	.31	14	.19	4.8	3.0	.91
24	5.9	.45	.25	7.3	.38	.38	.31	7.2	2.4	6.1	2.9	.82
25	4.2	.99	.82	2.2	.38	10	.56	6.1	4.5	4.6	3.2	.95
26	3.0	2.7	.19	2.0	.31	9.4	.19	5.0	7.3	4.1	3.5	.87
27	5.2	3.0	.90	.25	.31	10	.19	4.9	5.6	4.9	4.5	7.0
28	4.1	.83	.51	.38	.25	16	.25	4.6	4.2	9.6	8.9	9.0
29	17	.25	.38	.06	---	13	4.6	4.6	4.7	12	7.3	7.4
30	10	.25	.38	.14	---	12	5.6	4.4	4.1	12	11	6.2
31	4.7	---	.25	.38	---	14	---	4.4	---	13	5.6	---
TOTAL	135.9	86.76	78.75	131.45	117.69	116.56	110.30	230.33	78.47	154.2	147.20	122.85
MEAN	4.38	2.89	2.54	4.24	4.20	3.76	3.68	7.43	2.62	4.97	4.75	4.09
MAX	17	24	20	21	11	16	12	17	7.3	13	21	9.0
MIN	2.5	.25	.19	.06	.19	.25	.10	.25	.19	2.5	.19	.82
AC-FT	270	172	156	261	233	231	219	457	156	306	292	244

CAL YR 1984	TOTAL	1562.01	MEAN	4.27	MAX	26	MIN	.19	AC-FT	3100
WTR YR 1985	TOTAL	1510.46	MEAN	4.14	MAX	24	MIN	.06	AC-FT	3000

16080000 KAPAA STREAM AT KAPAHI DITCH INTAKE, NEAR KAPAA

LOCATION.--Lat 22°06'15", long 159°22'28", Hydrologic Unit 20070000, on right bank at Kapahi ditch intake, 3.8 mi northwest of Kapaa, and 4.3 mi northwest of Wailua.

DRAINAGE AREA.--3.86 mi^2.

PERIOD OF RECORD.--July 1938 to September 1985 (discontinued). Prior to July 1959, published as Kapaa River at Kapahi ditch intake, near Kapaa.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete-masonry control. Datum of gage is 381.8 ft above mean sea level (by stadia survey). Prior to July 1, 1962, at datum 0.07 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Entire low flow is diverted upstream at times for irrigation of sugarcane. Records do not include flow of Kapahi ditch (sta. 16079000).

AVERAGE DISCHARGE.--49 years, 20.1 ft^3/s (14,560 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,670 ft^3/s Jan. 25, 1956, gage height, 5.41 ft, present datum, from rating curve extended above 2,800 ft^3/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,170 ft^3/s Nov. 27, gage height, 3.13 ft, no other peak greater than base discharge of 1,900 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	43	12	15	22	21	.00	.00	.00	.00	.00
2	.00	.00	22	37	10	15	16	.00	.00	.00	16	.00
3	.00	.00	47	5.3	7.7	13	33	2.7	.00	.00	.00	.00
4	.00	.00	78	3.6	62	37	12	.00	.00	.00	9.9	.00
5	.00	2.7	24	.00	24	34	12	.00	.00	.00	8.5	.00
6	.00	32	39	.00	14	22	14	21	.00	.00	10	.00
7	.00	65	24	.00	3.4	15	18	10	.00	.00	9.8	.00
8	.00	13	35	.00	.00	17	4.9	.00	.00	.00	32	.00
9	.00	15	29	.00	.00	18	.00	.00	.00	.00	8.5	1.3
10	.00	7.0	24	.00	.00	33	.00	.00	.00	.00	4.8	.00
11	.00	7.0	17	.00	.00	26	.00	.00	.70	.00	4.0	.00
12	.00	5.4	4.8	.00	8.8	35	.00	.00	3.2	.00	3.2	.00
13	.00	37	.00	8.7	8.9	79	.00	.00	3.2	.00	8.4	.00
14	.00	33	5.1	33	89	48	.00	11	2.8	.00	5.4	.00
15	.00	21	4.1	7.7	22	21	.00	13	2.2	.00	1.3	26
16	.00	9.3	.00	5.8	.00	19	.00	114	2.8	.00	.00	e.90
17	.00	5.4	12	5.4	.00	15	6.9	75	2.5	1.9	.00	e.00
18	.00	12	10	36	.00	14	12	28	2.5	.00	.00	e.00
19	.00	7.0	26	8.4	.00	12	20	18	2.8	.00	.00	e.00
20	.00	9.3	24	6.5	.00	17	24	14	3.6	.00	.27	e.00
21	.00	8.4	28	5.8	.38	14	15	3.5	4.8	.00	.00	e.50
22	.00	4.8	19	14	7.7	19	32	16	3.2	.00	.00	e4.0
23	1.2	10	25	2.6	20	26	23	1.4	3.2	.00	.00	e20
24	.00	16	28	.00	19	14	16	.00	1.1	.00	.00	e12
25	.00	61	100	14	14	4.0	59	.00	.01	.00	.00	e10
26	.00	462	32	6.4	20	.00	17	.00	2.1	.00	.00	e8.0
27	.00	518	21	6.5	37	.00	10	.00	.00	.00	.00	e4.0
28	.00	95	17	5.2	33	82	7.7	.00	.00	.42	5.2	e3.0
29	1.9	42	17	5.4	---	2.0	2.1	.00	.00	1.2	.00	e3.0
30	.00	30	14	51	---	.48	.00	.00	.00	.00	14	e2.0
31	.00	---	12	57	---	2.0	---	.00	---	1.4	.00	---
TOTAL	3.10	1528.30	780.80	337.30	415.88	675.48	373.60	327.60	40.71	4.92	141.27	94.70
MEAN	.10	50.9	25.2	10.9	14.9	21.8	12.5	10.6	1.36	.16	4.56	3.16
MAX	1.9	518	100	57	89	82	59	114	4.8	1.9	32	26
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	6.1	3030	1550	669	825	1340	741	650	81	9.8	280	188

CAL YR 1984	TOTAL	2682.78	MEAN	7.33	MAX	518	MIN	.00	AC-FT	5320
WTR YR 1985	TOTAL	4723.66	MEAN	12.9	MAX	518	MIN	.00	AC-FT	9370

e Estimated

16087000 ANAHOLA DITCH WASTEWAY NEAR KEALIA

LOCATION.--Lat 22°08'16", long 159°22'28", Hydrologic Unit 20070000, on right bank 300 ft downstream from wasteway gates on Anahola ditch, 500 ft north of Kaneha Reservoir, 3.8 mi west of Anahola, and 4.9 mi northwest of Kealia.

PERIOD OF RECORD.--July 1936 to September 1985 (discontinued).

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 825 ft above mean sea level (by stadia survey).

REMARKS.--Records good except for estimated daily dischargee, which are fair. Water that passes station flows into Kaupaku Stream and thence into Anahola Stream 2 mi downstream of gaging station 16089000 on Anahola Stream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--49 years, 4.17 ft^3/s (3,020 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 84 ft^3/s Nov. 12, 1955; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 0.22 ft^3/s Nov. 22; minimum daily, 0.01 ft^3/s Sept. 16-21, 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.04	.24	1.2	2.7	.24	3.4	.06	.13	.50	.24	.13	.13
2	e.04	.26	.92	2.9	.24	5.4	.06	.24	.50	.24	.13	.13
3	e.04	.24	4.8	2.7	.24	4.3	.13	.24	.50	.24	.06	.50
4	e.04	.36	7.4	1.6	10	9.6	.06	.13	.24	.13	.24	.50
5	e.04	.50	5.4	.92	9.3	11	.06	.13	.24	.13	.13	.13
6	e.04	.50	5.7	.92	6.6	8.9	.06	.13	.24	.24	.13	.24
7	e.04	e.30	5.1	.92	5.4	6.0	.21	.06	.24	.24	.13	.36
8	e.04	e.20	5.4	.92	3.5	3.9	.24	.13	.36	.13	.24	.24
9	e.04	e.20	4.8	.92	1.2	.64	.24	.06	.36	.13	.02	.36
10	.06	e.20	3.7	.92	1.1	.50	.36	.06	.24	.24	.02	.06
11	.36	e.15	3.3	.78	.92	.24	.36	.02	.24	.24	.02	.02
12	.13	e.15	3.3	.64	.92	.24	.24	.13	.36	.13	.06	.06
13	.06	e5.9	3.3	.78	.92	.36	.24	.24	.36	.13	.24	.06
14	.06	12	1.8	.64	8.2	.13	.24	.36	.36	.24	.24	.06
15	.06	10	2.8	.50	9.2	.13	.24	.13	.36	.24	.24	.13
16	.06	4.2	3.3	.50	6.0	.24	.24	.36	.36	.24	.06	.01
17	.13	1.1	3.5	.50	6.3	.13	.24	5.5	.24	.24	.06	.01
18	.24	.92	3.7	.84	2.2	.24	.36	8.9	.36	.06	.13	.01
19	.24	.50	2.3	.36	1.1	.13	.24	6.0	.50	.02	.13	.01
20	.24	.78	.92	.36	.92	.24	.24	2.9	.50	.02	.13	.01
21	.24	.78	.92	.36	.92	.24	.06	.78	.64	.02	.13	.01
22	.24	.50	.92	.64	.78	.13	.13	.78	.50	.06	.24	.02
23	.36	.50	.92	.36	.78	.06	.24	.50	.50	.24	.24	.02
24	.36	.50	2.5	.36	.64	.06	.13	.36	.50	.24	.36	.01
25	.13	.64	4.3	.36	.64	.06	.24	.50	.50	.06	.64	.01
26	.13	18	3.7	e.25	.64	.06	.13	.36	.64	.06	.36	.01
27	.36	22	3.5	e.10	.64	.06	.13	.50	.24	.13	.50	.02
28	.24	8.9	3.5	e.20	.50	.06	.13	.50	.24	.24	.50	.02
29	.36	6.6	3.1	.06	---	.02	.13	.50	.24	.24	.36	.02
30	.24	3.0	2.7	.24	---	.06	.13	.50	.24	.13	.50	.02
31	.24	---	2.7	.24	---	.06	---	.50	---	.24	.13	---
TOTAL	4.90	100.12	101.40	24.29	80.04	56.59	5.57	31.63	11.30	5.18	6.50	3.19
MEAN	.16	3.34	3.27	.78	2.86	1.83	.19	1.02	.38	.17	.21	.11
MAX	.36	22	7.4	2.9	10	11	.36	8.9	.64	.24	.64	.50
MIN	.04	.15	.92	.06	.24	.02	.06	.02	.24	.02	.02	.01
AC-FT	9.7	199	201	48	159	112	11	63	22	10	13	6.3

CAL YR 1964	TOTAL	245.23	MEAN	.67	MAX	22	MIN	.00	AC-FT	486
WTR YR 1985	TOTAL	430.71	MEAN	1.18	MAX	22	MIN	.01	AC-FT	854

e Estimated

16088000 ANAHOLA DITCH ABOVE KANEHA RESERVOIR, NEAR KEALIA

LOCATION.--Lat 22°08'10", long 159°22'28", Hydrologic Unit 20070000, on left bank at point of discharge into Kaneha Reservoir, 500 ft below wasteway gates, and 4.8 mi northwest of Kealia.

PERIOD OF RECORD.--December 1921 to current year. Records for May 1915 to December 1921 at site 520 ft upstream not equivalent owing to intervening diversion.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 821.8 ft above mean sea level (Lihue Plantation bench mark). Dec. 9, 1921, to June 2, 1934, at site 480 ft upstream at different datum.

REMARKS.--Records good. Ditch diverts water from Anahola Stream to Kaneha Reservoir, where it is stored for irrigation. Flood sometimes diverted upstream by Anshola ditch wasteway (see sta. 16087000). Observations of specific conduotance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--61 years (water years, 1923-25, 1928-85), 4.21 ft^3/s (3,050 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily diechsrge, 62 ft^3/s Nov. 12, 1947; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 28 ft^3/s Nov. 26; minimum daily, 0.15 ft^3/s Feb. 5-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	1.4	6.6	.30	9.9	6.5	9.5	4.6	4.9	2.2	7.4	2.1
2	2.8	6.4	6.1	.35	7.0	.83	8.2	7.8	4.5	1.8	13	2.1
3	2.5	2.8	3.1	.30	6.1	.61	13	11	4.3	3.1	7.8	3.4
4	2.1	7.7	1.4	1.5	6.4	2.9	6.1	8.2	3.3	1.8	17	2.0
5	2.0	11	.75	2.1	.15	3.6	7.2	5.3	3.0	1.5	11	1.7
6	1.4	22	.75	2.2	.15	2.1	7.2	13	2.8	2.9	8.7	1.8
7	2.0	23	.61	3.0	.15	.99	11	11	2.6	2.4	9.9	2.1
8	1.5	8.1	.54	3.0	1.4	3.9	6.1	11	2.6	1.6	18	1.7
9	1.7	8.1	.54	3.0	3.8	7.6	4.6	7.0	2.5	1.4	7.8	4.3
10	2.2	4.5	.35	3.0	4.0	12	4.5	6.1	2.4	1.7	5.7	3.4
11	7.4	4.8	.25	6.8	3.4	12	4.5	5.2	2.4	2.5	4.5	1.8
12	4.0	3.8	.25	3.6	3.4	10	3.8	7.7	2.4	1.3	3.8	1.7
13	2.1	6.5	.20	3.4	7.0	13	3.4	9.2	2.4	1.1	6.1	1.6
14	1.7	6.2	2.3	7.6	9.6	12	3.4	13	2.1	.99	3.4	1.5
15	1.4	5.5	2.9	4.3	2.4	7.9	3.3	7.9	2.0	.99	3.0	8.3
16	1.3	4.1	.91	3.1	.99	7.0	4.9	26	2.0	.99	2.8	5.6
17	1.2	5.2	.54	3.0	.99	6.2	7.3	14	2.0	13	2.5	2.8
18	1.1	8.2	.35	12	2.8	6.2	14	3.4	1.8	7.2	2.4	2.4
19	1.1	5.8	1.4	5.0	4.6	5.3	13	3.6	1.8	2.5	2.1	2.1
20	.99	9.5	2.8	3.6	4.1	6.2	11	5.1	2.0	1.7	2.2	2.1
21	.91	9.6	3.0	3.3	4.3	5.6	6.6	6.1	2.4	1.5	2.0	2.1
22	.91	4.5	3.0	8.6	5.8	9.4	16	16	1.7	1.5	1.8	5.9
23	3.4	7.6	3.1	5.3	12	12	16	9.0	1.6	3.1	1.7	18
24	2.6	9.9	1.5	4.8	11	7.2	13	6.2	1.5	9.5	1.5	5.5
25	1.4	14	.54	13	12	7.0	19	7.7	1.5	4.8	2.5	4.3
26	.99	28	.47	5.9	13	5.2	9.9	5.3	4.7	3.1	2.1	4.1
27	2.9	3.4	.40	4.5	14	4.8	6.8	5.2	2.7	3.5	3.7	3.6
28	2.0	2.0	.40	3.8	12	12	5.7	4.6	4.0	6.6	6.3	5.9
29	5.8	1.5	.40	5.2	---	5.7	5.0	5.0	3.1	12	5.5	4.0
30	4.7	4.4	.35	18	---	7.7	4.6	4.5	3.3	9.8	8.8	4.6
31	1.8	---	.30	20	---	10	---	3.8	---	12	2.8	---
TOTAL	71.90	239.5	46.10	163.55	162.43	213.43	246.6	251.5	80.3	122.07	177.6	113.5
MEAN	2.32	7.98	1.49	5.28	5.80	6.88	8.22	8.11	2.68	3.94	5.73	3.78
MAX	7.4	28	6.6	20	14	13	19	26	4.9	13	18	18
MIN	.91	1.4	.20	.30	.15	.61	3.3	3.4	1.5	.99	1.5	1.5
AC-FT	143	475	91	324	322	423	489	499	159	242	352	225

CAL YR 1984 TOTAL 1410.99 MEAN 3.86 MAX 28 MIN .20 AC-FT 2800
WTR YR 1985 TOTAL 1888.48 MEAN 5.17 MAX 28 MIN .15 AC-FT 3750

16089000 ANAHOLA STREAM NEAR KEALIA

LOCATION.--Lat 22°09'05", long 159°21'17", Hydrologic Unit 20070000, on right bank at intake of Lower Anahola ditch end 4.7 mi northwest of Kealia.

DRAINAGE AREA.--4.27 mi^2.

PERIOD OF RECORD.--August to December 1910, January 1913 to November 1918, January 1919, March 1919 to September 1985 (discontinued). Monthly discharge only for some periods, published in WSP 1319. Published as Anahola River above dam at Kiokala, near Kealia prior to July 1913 and as Anahola River near Kealia July 1913 to June 1958.

REVISED RECORDS.--WSP 1719: 1915, 1916-18(M). WSP 2137: 1965(P), drainage area.

GAGE.--Water-stage recorder and combination concrete dam and orifice control. Datum of gage is 295.11 ft above mean sea level (Highway Department bench mark). Prior to May 4, 1934, at site 0.1 mi upstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Records include flow in Lower Anahola ditch (see sta. 16091000). Anahols ditch (see 16088000) diverts 3 mi upstream for irrigation in vicinity of Kealia. Observations of specific conductance, pH, and water tempsrature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--70 years (water years 1914-17, 1920-85), 22.5 ft^3/s (16,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft^3/s Jan. 25, 1956, gage height, 14.6 ft from floodmarks, from rating curve extended above 590 ft^3/s; minimum, 1.5 ft^3/s Sept. 6, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,520 ft^3/s Nov. 26, gage height, 7.09 ft, from rating curve extended above 410 ft^3/s on basis of slope-area measurement at gage height 10.6 ft, no other peak greater than base discharge of 2,200 ft^3/s; minimum, 1.9 ft^3/s Oct. 19-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	3.9	e45	e18	24	17	13	8.2	7.7	4.8	11	4.4
2	3.2	9.4	e30	e30	18	12	10	8.6	7.7	4.6	24	4.1
3	2.8	5.6	e40	e20	17	12	21	12	7.2	4.6	7.5	4.9
4	2.5	7.8	e100	18	58	23	10	8.2	6.3	4.8	28	4.5
5	2.3	12	e34	15	26	39	10	8.2	6.0	4.5	14	3.9
6	2.2	51	e37	13	18	24	11	27	6.0	5.1	7.6	4.0
7	2.2	91	e30	13	15	14	16	13	5.7	5.1	12	4.0
8	2.2	16	e40	13	15	14	11	13	5.7	4.9	31	4.0
9	2.3	12	e35	12	13	13	9.6	8.2	5.7	4.9	11	5.5
10	3.0	9.2	e27	12	13	28	9.1	7.7	5.4	4.9	7.1	6.5
11	5.0	8.4	e22	17	12	29	11	7.7	e5.4	5.9	5.6	4.0
12	5.7	7.1	e19	12	12	18	9.1	8.2	e5.4	4.9	4.9	5.7
13	3.0	24	e17	12	14	33	8.6	8.6	e5.4	4.4	6.4	4.4
14	2.5	79	e54	17	133	26	8.2	12	e5.1	4.5	5.6	4.0
15	2.2	37	e96	12	53	14	8.2	8.6	e5.1	4.2	4.4	30
16	2.3	16	e20	11	27	13	8.2	60	e5.1	4.2	4.5	7.9
17	2.2	12	e23	11	23	13	11	38	e4.8	12	4.2	4.6
18	2.1	16	e17	26	19	12	20	16	e4.4	8.2	4.2	4.1
19	2.0	13	e26	14	18	11	18	9.6	4.6	4.9	3.9	4.0
20	1.9	15	e26	12	16	11	13	8.8	4.6	4.8	4.0	4.0
21	1.9	14	e23	11	15	11	9.6	8.2	4.9	4.5	3.7	3.9
22	1.9	9.9	e22	17	16	17	25	21	4.5	4.8	3.6	4.8
23	3.7	12	e21	13	23	29	23	11	4.6	4.8	3.6	29
24	8.7	14	e30	13	21	11	17	8.8	4.8	7.6	3.8	6.3
25	6.6	64	e71	45	19	11	34	8.6	4.6	7.1	10	6.8
26	3.2	898	e40	13	22	10	11	8.2	8.4	5.9	7.9	8.2
27	3.3	721	e35	11	28	10	9.1	8.2	4.9	5.1	5.6	6.4
28	4.7	95	e29	11	21	24	9.1	7.7	4.5	10	7.5	6.8
29	30	e60	e21	14	---	10	8.6	7.7	4.6	17	7.6	5.6
30	15	e40	e19	60	---	10	8.2	7.2	4.8	14	9.0	5.1
31	5.6	---	e17	71	---	17	---	7.2	---	12	5.6	---
TOTAL	140.2	2373.3	1066	587	707	536	390.6	395.0	161.9	199.0	268.6	201.4
MEAN	4.52	79.1	34.4	18.9	25.3	17.3	13.0	12.7	5.40	6.42	8.66	6.71
MAX	30	898	100	71	133	39	34	60	7.7	17	31	30
MIN	1.9	3.9	17	11	12	10	8.2	7.2	4.4	4.2	3.6	3.9
AC-FT	278	4710	2110	1160	1400	1060	775	783	321	395	533	399

CAL YR 1984	TOTAL	5802.5	MEAN	15.9	MAX	898	MIN	1.8	AC-FT	11510
WTR YR 1985	TOTAL	7026.0	MEAN	19.2	MAX	898	MIN	1.9	AC-FT	13940

e Estimated

16091000 LOWER ANAHOLA DITCH NEAR KEALIA

LOCATION.--Lat 22°08'14", long 159°19'31", Hydrologic Unit 20070000, on left bank 100 ft downstream from last wasteway, 1.5 mi southwest of mouth of Anahola Stream, and 2.8 mi northwest of Kealia.

PERIOD OF RECORD.--December 1936 to September 1983, October 1984 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 276.11 ft above mean sea level (Highway Department bench mark).

REMARKS.--Records good. Ditch diverts from Anahola Stream for irrigation of sugarcane in vicinity of Anahola. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--47 years (water years 1938-83, 1985), 2.83 ft^3/s (2,050 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 18.6 ft^3/s June 1, 1938; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 8.3 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.43	1.1	1.9	.00	1.8	.00	.29	.00	2.8	1.1	1.4	1.4
2	.40	1.6	1.7	.14	.47	.00	.05	.00	2.9	1.6	1.9	1.3
3	.40	1.5	.62	.23	.43	.00	.05	1.1	2.8	1.6	1.5	1.3
4	.40	1.4	.00	.00	.58	.03	.05	3.0	2.7	1.6	1.6	1.3
5	.40	2.2	2.7	.00	.33	.01	.03	3.0	2.6	1.5	1.9	1.3
6	.37	3.6	3.3	.00	.26	.00	.03	3.2	2.5	1.5	1.6	1.2
7	.37	1.9	.95	2.7	3.5	.00	.05	3.1	2.4	1.5	1.9	1.2
8	.33	2.1	.85	2.7	4.4	.00	.08	3.1	2.4	1.5	2.3	1.2
9	.40	3.6	1.4	.63	1.3	.00	.11	3.1	2.4	1.5	2.4	1.2
10	.33	3.1	1.1	.50	1.1	.00	.11	3.1	2.3	1.6	1.7	1.3
11	.43	2.7	2.8	.37	1.0	.00	.11	3.1	2.3	1.5	1.4	1.2
12	.72	2.6	6.7	.26	1.0	.00	.11	3.2	2.3	1.4	1.4	1.1
13	.47	4.4	3.1	.26	.95	.00	.11	3.2	2.2	1.4	1.6	1.3
14	.40	2.5	2.2	.16	.73	.00	.11	3.2	2.1	1.3	1.9	1.1
15	.37	.00	.49	.12	.23	.00	.11	1.7	2.0	1.3	1.9	1.2
16	.37	.00	.23	.12	.20	.00	.11	.17	2.0	1.3	1.5	2.0
17	.37	.00	.03	.12	.20	.00	.02	.17	1.9	1.7	1.3	1.5
18	.30	.00	.01	.12	.20	.00	.00	.17	1.9	1.7	1.4	1.3
19	.26	.00	.00	.12	.17	.00	.00	.14	1.9	1.3	1.2	1.2
20	.26	.00	.00	.12	.14	.00	.00	2.8	1.9	1.2	1.2	1.1
21	.30	.71	.00	2.3	.05	.00	.00	3.7	1.8	1.0	1.2	1.0
22	.33	2.1	.00	1.2	.05	.00	.00	3.7	1.7	1.0	1.2	1.0
23	.58	2.2	.00	.37	.05	.00	.00	1.1	1.7	1.0	1.2	1.3
24	1.7	2.2	.00	1.9	.01	.00	.00	1.6	1.7	1.2	1.1	1.4
25	.86	4.3	.17	5.1	.00	.00	.00	3.1	1.7	1.3	2.5	1.2
26	.74	8.3	.18	4.5	.00	.02	.00	3.1	2.2	1.2	3.1	1.6
27	.67	2.2	.02	4.2	.00	.92	.00	3.0	.72	1.0	2.1	1.0
28	1.5	.03	2.7	4.1	.00	2.2	.00	3.0	.00	1.0	1.8	.80
29	4.1	2.1	6.5	3.1	---	.39	.00	2.9	.00	1.3	2.0	.65
30	4.7	2.4	1.7	3.0	---	.39	.00	2.8	.00	1.5	1.9	.55
31	2.1	---	.03	3.4	---	.39	---	2.8	---	1.3	1.9	---
TOTAL	25.36	60.84	41.38	41.84	19.15	4.35	1.53	71.35	57.82	41.9	53.0	36.20
MEAN	.82	2.03	1.33	1.35	.68	.14	.051	2.30	1.93	1.35	1.71	1.21
MAX	4.7	8.3	6.7	5.1	4.4	2.2	.29	3.7	2.9	1.7	3.1	2.0
MIN	.26	.00	.00	.00	.00	.00	.00	.00	.00	1.0	1.1	.55
AC-FT	50	121	82	83	38	8.6	3.0	142	115	83	105	72

WTR YR 1985 TOTAL 454.72 MEAN 1.25 MAX 8.3 MIN .00 AC-FT 902

16097500 HALAULANI STREAM AT ALTITUDE 400 FT, NEAR KILAUEA

LOCATION.--Lat 22°10'54", long 159°25'17", Hydrologic Unit 20070000, on left bank 0.5 mi upstream from confluence with Pohakuhonu Stream and 2.3 mi south of Kilauea.

DRAINAGE AREA.--1.9 mi^2.

PERIOD OF RECORD.--November 1957 to current year.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 391.8 ft above mean sea level (by stadia survey).

REMARKS.--Records good. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--27 years (water years 1959-85), 11.5 ft^3/s (8,330 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,070 ft^3/s Aug. 6, 1959, gage height, 8.30 ft, from rating curve extended above 190 ft^3/s on basis of slope-area measurement of peak flow; minimum, 1.8 ft^3/s Sept. 6-8, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,380 ft^3/s Nov. 26, gage height, 6.84 ft, no other peak greater than base discharge of 580 ft^3/s; minimum, 3.7 ft^3/s Oct. 21-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	4.0	14	6.3	11	13	10	6.9	6.7	4.8	8.6	5.1
2	4.2	4.8	11	10	8.5	8.5	8.5	8.2	6.2	4.7	16	5.0
3	4.1	4.6	34	8.4	7.5	7.6	10	18	5.9	4.9	8.2	5.1
4	4.0	7.9	43	7.0	23	12	7.9	8.3	5.7	4.7	15	5.0
5	4.0	7.2	14	6.2	11	16	7.7	7.2	5.6	4.6	11	4.8
6	4.0	35	15	6.0	8.1	15	7.4	19	5.5	4.7	9.0	4.6
7	4.3	39	10	5.8	7.3	8.8	9.4	18	5.4	5.0	9.4	4.6
8	4.0	9.4	14	5.7	6.8	8.5	7.4	14	5.4	4.7	22	4.7
9	4.8	7.4	11	5.5	6.5	9.3	6.9	9.2	5.3	4.7	9.6	4.8
10	4.5	6.0	9.0	5.7	6.2	11	6.7	8.6	5.3	5.0	7.8	4.8
11	5.1	6.9	7.9	8.4	6.0	11	7.1	8.4	5.4	5.2	7.0	4.5
12	4.6	5.9	7.5	5.7	6.4	9.5	6.4	8.3	5.3	4.7	6.6	4.5
13	4.3	11	7.0	5.5	7.2	14	6.1	11	5.2	4.6	7.0	4.5
14	4.1	49	36	6.3	29	11	6.1	12	5.1	4.5	6.2	4.4
15	4.0	21	45	5.6	12	8.4	6.1	8.3	5.1	4.5	5.9	9.0
16	3.9	9.6	20	5.3	7.6	8.1	6.0	30	5.1	4.7	5.7	5.3
17	3.9	7.4	15	5.3	7.1	7.9	13	19	5.0	10	5.7	4.6
18	3.8	8.9	11	14	6.5	7.5	18	12	5.0	7.7	5.7	4.5
19	3.8	6.9	11	6.6	6.7	7.0	16	9.6	5.0	5.2	5.5	4.9
20	3.8	11	11	5.8	6.3	7.7	16	8.6	5.3	4.9	5.3	4.5
21	3.8	8.0	15	5.5	6.4	7.7	11	7.9	5.3	4.7	5.3	4.6
22	3.7	6.3	11	7.4	6.9	11	20	13	4.9	5.0	5.2	4.8
23	4.0	8.2	9.0	5.8	15	14	24	8.9	4.9	5.0	5.1	22
24	3.8	8.3	9.3	9.3	15	11	15	7.5	4.9	5.7	5.1	6.3
25	3.9	24	27	27	12	9.4	20	7.3	4.9	5.9	5.2	5.4
26	3.7	270	11	8.2	9.3	7.9	11	6.7	5.5	5.4	5.1	5.1
27	3.8	190	8.8	6.8	13	7.5	8.9	6.5	5.0	5.7	5.4	4.6
28	3.8	51	7.9	6.3	13	16	8.1	6.4	4.9	8.2	6.0	5.1
29	12	22	7.6	12	---	8.2	7.6	6.6	5.0	15	6.2	4.8
30	5.9	14	6.9	24	---	15	7.1	6.4	5.0	10	8.8	4.7
31	4.2	---	6.6	30	---	12	---	6.5	---	10	5.5	---
TOTAL	136.4	864.7	466.5	277.4	281.3	321.5	315.4	328.5	158.8	184.4	240.1	166.8
MEAN	4.40	28.8	15.0	8.95	10.0	10.4	10.5	10.8	5.29	5.95	7.75	5.56
MAX	12	270	45	30	29	16	24	30	6.7	15	22	22
MIN	3.7	4.0	6.6	5.3	6.0	7.0	6.0	6.4	4.9	4.5	5.1	4.4
AC-FT	271	1720	925	550	558	638	626	652	315	366	476	331

CAL YR 1984	TOTAL	3279.0	MEAN	8.96	MAX	270	MIN	3.7	AC-FT	6500
WTR YR 1985	TOTAL	3741.8	MEAN	10.3	MAX	270	MIN	3.7	AC-FT	7420

16100000 HANALEI TUNNEL OUTLET NEAR LIHUE

LOCATION.--Lat 22°05'03", long 159°27'51", Hydrologic Unit 20070000, on left bank at outlet of Hanalei tunnel, 2.2 mi downstream from intake on Kaapoko Stream, and 9.4 mi northwest of Lihue.

PERIOD OF RECORD.--July 1932 to September 1985 (discontinued).

GAGE.--Water-stage recordar and concrete control. Elevation of gage is 1,210 ft, from tunnel-profile.

REMARKS.--Records good except for the estimated daily discharges, which are fair. Tunnel diverts water from Kaapoko Stream and Hanalei River into North Branch of North Fork Wailua River, from which it is later diverted for irrigation in vicinity of Lihue and Kapaa. Prior to Feb. 24, 1976, records do not include water by-passing at times upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--53 years, 27.0 ft^3/s (19,560 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 99 ft^3/s Apr. 11, 25, 26, 1942; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 54 ft^3/s Nov. 27; minimum daily, 16 ft^3/s for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e22	e20	38	16	24	52	35	28	28	27	35	26
2	e22	32	29	29	21	38	31	32	27	25	44	25
3	e20	24	33	25	21	26	35	42	26	26	39	25
4	e19	31	38	24	52	40	25	40	26	25	42	25
5	e19	40	28	19	29	36	27	35	26	24	39	25
6	e19	46	31	18	24	39	29	44	25	25	38	26
7	e19	45	28	18	22	29	29	38	25	35	38	25
8	e18	34	40	16	20	28	24	37	25	26	46	24
9	e20	35	38	16	21	28	22	36	25	25	37	25
10	e20	26	31	19	20	33	21	35	25	25	36	24
11	e30	30	26	18	19	31	21	36	25	24	31	25
12	e28	25	28	16	24	33	20	33	25	24	33	27
13	e22	39	24	26	21	44	20	33	25	24	32	25
14	e19	48	23	35	31	37	19	36	25	24	e28	28
15	e18	45	28	23	24	28	19	35	25	24	e26	29
16	e17	34	25	18	20	28	21	48	25	26	e26	32
17	e17	29	34	18	19	25	32	42	25	36	e25	26
18	e17	35	29	25	19	23	29	35	25	39	e25	25
19	e17	29	38	18	20	23	36	32	25	28	e28	32
20	e17	39	35	17	20	25	43	31	25	25	e25	26
21	e16	40	35	16	22	24	32	29	32	24	25	29
22	e18	30	28	21	20	32	40	38	26	26	25	29
23	e36	40	33	18	29	28	34	31	25	35	25	41
24	e32	44	34	16	26	25	36	29	25	34	24	40
25	e20	39	39	18	25	29	43	33	25	32	24	38
26	e18	50	25	18	30	24	35	29	26	29	24	31
27	e22	54	23	16	38	33	33	31	28	29	31	28
28	e20	41	20	16	45	46	31	28	26	35	34	33
29	e24	31	19	20	---	29	30	34	29	39	29	28
30	e24	31	18	33	---	33	29	30	26	34	35	29
31	e19	---	17	36	---	28	---	28	---	38	28	---
TOTAL	649	1086	909	640	706	975	881	1068	776	892	977	851
MEAN	20.9	36.2	29.3	20.6	25.2	31.5	29.4	34.5	25.9	28.8	31.5	28.4
MAX	36	54	40	36	52	52	43	48	32	39	46	41
MIN	16	20	17	16	19	23	19	28	25	24	24	24
AC-FT	1290	2150	1800	1270	1400	1930	1750	2120	1540	1770	1940	1690

CAL YR 1984	TOTAL	9136.4	MEAN	25.0	MAX	54	MIN	8.4	AC-FT	18120
WTR YR 1985	TOTAL	10410	MEAN	28.5	MAX	54	MIN	16	AC-FT	20650

e Estimated

16103000 HANALEI RIVER NEAR HANALEI

LOCATION.--Lat 22°11'31", long 159°27'57", Hydrologic Unit 20070000, on right bank 2.6 mi southeast of Hanalei School and 4.9 mi upstream from mouth.

DRAINAGE AREA.--19.1 mi^2.

PERIOD OF RECORD.--January 1912 to November 1919, annual maximum, water years 1962-63, December 1962 to current year.

REVISED RECORDS.--WSP 1937: Drainage area. WSP 2137: 1962(M), 1963-65(P). WDR HI-77-1: 1970-76(M), 1975-76.

GAGE.--Water-stage recorder and crest-atage gage. Datum of gage is 35.8 ft above mean sea level (by stadia survey). Jan. 1, 1912, to Nov. 20, 1919, nonrecording gege at site 0.2 mi upstream at different datum. Jan. 26 to Dec. 26, 1962, orest-stage gage at present site and datum.

REMARKS.--Records fair except for estimated daily dischsrges, whioh are poor. Since 1925, Hanalei tunnel (sta. 16100000) has diverted from Hanalei River and its tributary Kaapoko Stream upstream to North Branch of North Fork Wailua River for irrigation. China ditch upstream diverts for irrigation of taro in vicinity of Hanalei. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE (since diversion to Hanalei tunnel).--22 years (water years 1964-85), 215 ft^3/s (155,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft^3/s Apr. 19, 1974, gsge height, 14.28 ft, from rating curve extended above 9,600 ft^3/s; minimum, 31 ft^3/s Sept. 30, Oct. 1, 2, 5, 12, 13, Nov. 3, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,140 ft^3/s Nov. 26, gage height, 11.48 ft, no other peak greater than bsse discharge of 9,200 ft^3/s; minimum, 36 ft^3/s for several days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	37	e180	e70	177	1430	426	98	e84	64	165	57
2	46	40	e100	e250	129	463	240	125	e80	60	294	54
3	43	57	e130	e150	110	222	297	269	e74	61	128	54
4	42	168	e180	e100	983	427	164	171	73	59	298	53
5	42	185	e100	e72	255	478	166	114	70	57	186	52
8	40	521	e160	e67	159	426	171	522	68	59	146	50
7	43	691	e140	e65	128	250	251	512	67	79	152	50
8	40	130	e600	e83	112	220	158	223	65	67	323	50
9	40	112	e350	e62	118	216	130	210	65	58	148	62
10	40	75	e250	e150	110	348	119	190	64	57	120	58
11	52	83	e170	e90	91	334	112	182	63	58	96	50
12	53	68	e140	e88	98	345	104	202	62	55	90	53
13	42	e566	e100	e250	112	610	99	258	62	54	95	52
14	40	e800	e85	e750	210	420	96	313	60	54	82	54
15	38	e500	e110	e100	158	228	94	241	59	53	74	128
16	37	e150	e120	e86	95	208	102	e813	59	58	73	74
17	36	e100	e220	e80	85	176	192	e400	58	148	73	55
18	37	e220	e170	e200	78	152	282	e250	58	195	75	50
19	37	e100	e450	e100	79	137	321	e180	58	77	70	57
20	37	e260	e210	e78	79	150	482	e170	66	66	67	57
21	36	e290	e330	e70	106	138	220	e110	80	82	61	58
22	36	e140	e160	e100	105	238	463	e110	58	65	58	72
23	50	e380	e230	e100	254	246	361	e100	56	113	57	273
24	50	e170	e300	84	221	174	236	e90	55	132	56	198
25	38	e120	e450	446	300	176	422	e130	58	101	59	102
26	36	e1000	e160	128	315	140	182	e90	162	82	57	72
27	e45	e1100	e110	98	472	180	143	e100	97	82	72	62
28	e46	e300	e92	85	707	734	125	e95	72	140	86	96
29	94	e140	e92	111	---	206	112	e130	73	175	78	68
30	57	e95	e80	643	---	247	103	e100	66	150	137	73
31	39	---	e72	476	---	230	---	e94	---	247	68	---
TOTAL	1364	8598	6041	5190	5846	9950	6373	6593	2094	2788	3545	2244
MEAN	44.0	287	195	167	209	321	212	213	69.8	89.9	114	74.8
MAX	94	1100	600	750	983	1430	482	813	162	247	323	273
MIN	36	37	72	62	78	137	94	90	55	53	56	50
AC-FT	2710	17050	11980	10290	11600	19740	12640	13080	4150	5530	7030	4450

CAL YR 1984 TOTAL 39488 MEAN 108 MAX 1100 MIN 38 AC-FT 78320
WTR YR 1985 TOTAL 60626 MEAN 166 MAX 1430 MIN 36 AC-FT 120300

e Estimated

16108000 WAINIHA RIVER NEAR HANALEI

LOCATION.--Lat 22°08'20", long 159°33'38", Hydrologic Unit 20070000, on left bank at Puwainui Falls, 1.5 mi upstream from Wainiha powerplant intake, and 6.0 mi southwest of Henalei.

DRAINAGE AREA.--10.2 mi^2.

PERIOD OF RECORD.--August 1952 to February 1958, October 1957 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 960 ft, from topographic map.

REMARKS.--Records good except for the estimated daily discharges, which are fair. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--30 years (water years 1953-55, 1958-85), 139 ft^3/s (100,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,100 ft^3/s Apr. 19, 1974, gage height, 9.47 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement at gage height 7.72 ft; minimum, 32 ft^3/s Oct. 21-23, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 17, 1958, which destroyed the station, reached a stage of 14.1 ft, from floodmarks, discharge, about 40,000 ft^3/s, from unit-discharge study.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	1500	3850	5.25	Mar. 1	0830	*4020	*5.39

Minimum discharge, 32 ft^3/s Oct. 21-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	34	162	47	104	2340	266	56	66	64	134	55
2	e41	103	73	148	70	716	203	80	56	54	254	49
3	e38	58	124	93	59	163	238	220	54	72	126	49
4	e36	134	167	78	720	513	106	150	51	54	307	53
5	e35	199	74	54	143	429	121	75	49	50	193	52
6	e35	431	135	49	80	628	122	235	49	53	169	55
7	e40	369	115	46	62	293	149	224	48	109	146	59
8	e36	82	398	45	54	216	96	143	48	61	309	52
9	e35	112	344	43	54	195	74	153	48	50	101	46
10	49	55	180	83	57	285	65	127	47	52	96	47
11	104	78	113	65	48	219	60	132	47	48	65	48
12	63	56	98	46	103	268	56	121	47	47	68	64
13	53	487	71	184	71	635	54	149	49	45	82	60
14	e43	626	61	572	78	322	53	227	48	45	60	64
15	e38	324	81	135	65	145	53	209	47	45	62	54
16	e35	100	85	72	54	147	71	650	46	71	60	56
17	e33	67	130	59	49	118	231	288	46	212	62	51
18	e33	140	99	127	46	97	200	130	46	218	57	50
19	e33	78	293	64	55	91	257	95	46	68	51	103
20	33	196	192	54	64	121	371	89	75	54	51	57
21	33	275	206	51	94	107	186	72	91	50	49	78
22	32	88	103	66	69	227	307	73	50	66	51	83
23	77	242	167	65	212	170	152	64	47	117	49	107
24	56	170	211	57	118	142	161	59	52	106	47	141
25	38	140	281	53	146	197	125	97	49	117	47	64
26	34	1090	96	48	203	106	81	58	59	74	47	53
27	37	1110	77	45	574	159	78	74	85	71	83	49
28	40	211	87	45	1370	263	67	63	90	138	113	68
29	41	116	66	104	---	108	63	119	84	191	78	59
30	45	80	57	322	---	135	58	80	61	121	140	86
31	35	---	51	572	---	121	---	71	---	226	57	---
TOTAL	1326	7251	4377	3492	4822	9676	4126	4393	1681	2749	3214	1934
MEAN	42.8	242	141	113	172	312	138	142	56.0	88.7	104	64.5
MAX	104	1110	398	572	1370	2340	371	650	91	226	309	141
MIN	32	34	51	43	46	91	53	56	46	45	47	47
AC-FT	2630	14380	8680	6930	9560	19190	8180	8710	3330	5450	6370	3840

CAL YR 1984	TOTAL	35038	MEAN	95.7	MAX	1110	MIN	32	AC-FT	69500
WTR YR 1985	TOTAL	49043	MEAN	134	MAX	2340	MIN	32	AC-FT	97280

e Estimated

16200000 NORTH FORK KAUKONAHUA STREAM ABOVE RIGHT BRANCH, NEAR WAHIAWA

LOCATION.--Lat 21°31'09", long 157°58'53", Hydrologic Unit 20060000, on left bank 140 ft upstream from Mauks ditch intake and Right Branch, and 4.5 mi northeast of Wahiawa.

DRAINAGE AREA.--1.38 mi^2.

PERIOD OF RECORD.--May 1913 to July 1953, April 1980 to current year. Monthly discharge only for some periods, published in WSP 1319. Prior to August 1953, published as Left Branch of North Fork Kaukonahua Stream near Wahiswa.

REVISED RECORDS.--WSP 1219: 1931-33(M), 1935(M), 1937-38(M). WSP 1319: 1914, 1917-18(M), 1920-23(M), 1925(M), 1927-30(M). WSP 1719: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,150 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No diversion upstream.. Observations of specific conductance, pH, and water temparature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--62 years (water years 1914-24, 1927-52, 1981-85), 16.4 ft^3/s (11,880 acre-ft/yr).

EXTREMES FOR PERIOD OP RECORD.--Maximum discharge, 5,640 ft^3/s Oct. 28, 1981, gage height, 13.2 ft, from rating curve extended above 68 ft^3/s on basis of slope-area measurement at gage height, 12.46 ft; minimum, 0.12 ft^3/s Mar. 2, 13, 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s end maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Tims	Discharge (ft^3/s)	Gage height (ft)
Nov. 13	1430	1680	6.97	Apr. 24	0800	1540	6.72
Nov. 26	2300	*2140	*7.73				

Minimum discharge, 0.37 ft^3/s a few days in Octobsr.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	e1.2	17	2.5	.82	28	22	28	3.9	3.1	13	7.4
2	1.7	2.3	5.7	2.5	.72	11	9.7	17	8.6	2.6	37	9.5
3	1.5	12	8.4	4.1	.68	6.5	5.7	27	3.8	2.2	6.1	5.3
4	1.3	23	5.3	8.4	32	6.3	4.7	15	3.2	1.9	31	4.7
5	e1.2	3.6	4.4	2.7	4.2	17	6.0	6.5	3.0	8.0	6.5	4.1
6	e1.1	9.0	7.2	2.2	1.4	9.0	4.4	167	2.7	2.7	29	3.6
7	e1.0	3.1	34	2.1	1.1	5.3	3.8	92	2.5	3.3	10	3.3
8	e.90	22	21	1.9	5.0	4.2	4.4	17	2.5	4.2	55	3.2
9	e.82	8.4	26	1.8	1.4	4.4	3.2	17	2.4	2.2	43	3.0
10	e.76	2.2	7.9	1.8	1.8	11	3.0	10	2.3	1.9	11	2.7
11	e.70	2.2	5.7	3.3	1.2	23	2.8	8.2	2.2	1.6	7.2	2.7
12	e.60	1.7	5.3	1.9	3.4	8.7	2.6	7.2	2.1	1.4	5.9	2.6
13	e.54	161	4.4	1.7	6.7	5.3	2.5	28	2.2	1.3	7.8	3.2
14	e.50	23	4.1	29	109	5.7	2.5	9.0	1.9	1.2	13	3.1
15	e.47	33	3.6	2.8	6.5	7.4	3.0	35	1.8	1.1	40	2.2
16	e.43	5.7	6.5	1.8	3.0	4.6	16	25	1.7	2.3	34	3.2
17	e.40	3.8	11	1.6	2.3	3.5	80	63	1.6	41	6.7	12
18	e.38	3.9	4.4	1.4	2.4	3.2	15	13	1.6	19	5.1	17
19	e.38	8.5	4.1	1.4	4.1	3.0	12	9.3	1.7	3.2	4.9	150
20	e.37	20	3.0	1.3	11	3.9	26	9.0	9.2	2.2	6.1	8.4
21	e.37	17	8.2	1.2	2.5	3.1	23	7.4	3.7	1.9	3.9	17
22	e10	5.5	3.9	2.3	10	70	43	7.0	1.7	9.3	3.6	7.2
23	e6.0	9.5	3.0	2.1	16	12	29	7.0	1.4	17	3.3	49
24	e2.0	13	14	1.1	6.1	4.7	103	9.8	1.4	26	3.2	59
25	e1.0	4.3	27	2.0	4.1	5.1	19	8.9	46	68	5.3	20
26	e.60	153	8.2	1.9	32	3.8	9.6	5.3	4.8	6.1	9.6	13
27	e.80	116	4.4	1.0	36	13	7.2	6.1	24	4.1	15	7.0
28	e1.8	9.0	3.5	.82	36	39	5.9	4.9	25	3.9	24	28
29	e5.0	6.3	3.2	2.0	---	5.7	5.1	4.9	13	3.8	9.2	6.5
30	e8.0	21	3.0	4.2	---	41	4.4	5.9	5.3	3.9	26	6.3
31	e15	---	2.7	1.2	---	9.0	---	4.6	---	39	39	---
TOTAL	68.42	704.2	270.1	96.02	341.42	377.2	478.5	675.0	187.2	289.4	514.4	464.2
MEAN	2.21	23.5	8.71	3.10	12.2	12.2	15.9	21.8	6.24	9.34	16.6	15.5
MAX	15	161	34	29	109	70	103	167	46	68	55	150
MIN	.37	1.2	2.7	.82	.68	3.0	2.5	4.6	1.4	1.1	3.2	2.2
AC-FT	136	1400	536	190	677	748	949	1340	371	574	1020	921

CAL YR 1984	TOTAL	3255.24	MEAN	8.89	MAX	161	MIN	.37	AC-FT	6460
WTR YR 1985	TOTAL	4466.06	MEAN	12.2	MAX	167	MIN	.37	AC-FT	8860

e Estimated

16208000 SOUTH FORK KAUKONAHUA STREAM AT EAST PUMP RESERVOIR, NEAR WAHIAWA

LOCATION.--Lat 21°29'32", long 157°59'54", Hydrologic Unit 20060000, on right bank on upstream side of dam at East Pump Reservoir, 2.3 mi east of Wahiawa Post Office, and 7.1 mi north of Waipahu.

DRAINAGE AREA.--4.04 mi^2.

PERIOD OF RECORD.--July 1957 to June 1963, water years 1963-64 (annual maximum), July 1964 to current year.

GAGE.--Water-stage recorder and Ogee-type dam control. Datum of gage is 860.35 ft above mean sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Prior to 1960, diversions from reservoirs upstream for use at Schofield Barracks. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--23 years (water years, 1961-62, 1965-85), 21.3 ft^3/s (15,430 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,460 ft^3/s Apr. 15, 1963, gage height, 11.33 ft, from rating curve extended above 1,100 ft^3/s on basis of computation of peak flow over dam; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,560 ft^3/s Nov. 26, gage height, 5.88 ft, no other peak greater than base discharge of 1,100 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	3.0	e30	3.0	1.3	37	21	31	6.1	4.5	15	6.7
2	1.6	1.2	e9.0	2.4	.83	25	26	19	8.1	3.3	28	7.4
3	.83	6.3	e12	2.1	.64	15	7.7	12	6.4	2.7	8.0	8.9
4	.58	33	e8.0	6.2	39	16	6.0	8.2	5.1	2.0	63	4.2
5	.48	9.9	e6.0	4.5	17	74	5.5	6.9	4.7	6.3	17	3.5
6	.34	7.0	e20	2.5	3.6	40	7.2	144	4.3	7.3	18	3.1
7	.19	9.2	64	2.0	2.0	27	5.0	149	4.0	2.7	20	2.8
8	.07	2.1	46	1.8	1.9	17	5.2	33	3.9	2.4	18	2.8
9	.00	18	50	1.8	3.0	15	4.5	20	3.8	3.5	50	2.5
10	.00	2.6	16	1.6	1.5	30	4.0	15	3.6	2.0	14	2.4
11	.00	1.5	8.7	4.0	2.1	50	3.7	12	3.3	1.6	9.1	2.8
12	.00	1.7	9.1	3.5	2.2	20	4.2	13	3.0	1.3	6.9	2.8
13	.00	143	6.4	2.1	14	14	3.8	41	3.3	1.2	7.5	2.8
14	.00	32	4.9	27	56	15	3.1	24	3.1	.86	6.2	2.7
15	e.00	41	4.3	5.7	17	15	3.8	44	2.9	.73	35	2.1
16	e.00	8.2	3.8	2.5	4.6	15	23	45	2.9	.80	29	1.8
17	e.00	4.1	9.9	1.7	2.9	10	81	85	2.6	23	11	1.8
18	e.00	2.9	10	1.4	2.2	8.0	32	26	2.5	21	6.2	9.7
19	e.00	38	5.0	1.2	3.2	7.0	12	17	2.4	5.0	5.2	80
20	e.00	e70	3.4	1.1	5.1	8.2	23	14	2.4	2.4	8.1	11
21	e.00	e50	3.1	.91	5.3	7.3	10	13	4.3	1.7	4.8	10
22	e.00	e9.0	3.3	.87	2.2	38	27	11	2.9	7.2	4.7	13
23	e.00	e14	3.0	.84	19	23	55	11	2.1	19	4.0	25
24	e.00	e20	7.5	1.4	9.4	8.8	122	9.4	1.9	30	3.6	91
25	e.00	e7.0	59	1.3	12	7.2	23	11	3.6	74	6.4	12
26	e.00	e130	14	3.3	63	6.4	16	7.9	9.5	8.9	5.7	15
27	e.00	e100	8.1	2.0	100	5.7	12	8.6	9.8	4.8	6.2	9.3
28	e.00	e16	5.1	1.3	58	21	9.9	7.6	51	6.8	11	29
29	e.00	e10	4.1	1.2	---	7.8	8.3	7.5	5.7	7.9	19	7.9
30	e.04	e40	3.6	5.2	---	13	7.3	7.3	10	8.6	16	7.7
31	3.6	---	3.2	2.8	---	11	---	8.1	---	78	20	---
TOTAL	9.91	830.7	440.5	99.02	448.97	607.2	572.2	861.5	179.2	341.49	476.6	381.7
MEAN	.32	27.7	14.2	3.19	16.0	19.6	19.1	27.8	5.97	11.0	15.4	12.7
MAX	3.8	143	64	27	100	74	122	149	51	78	63	91
MIN	.00	1.2	3.0	.84	.84	5.7	3.1	6.9	1.9	.73	3.6	1.8
AC-FT	20	1650	874	196	891	1200	1130	1710	355	677	945	757

CAL YR 1984	TOTAL	3807.00	MEAN	10.4	MAX	170	MIN	.00	AC-FT	7550
WTR YR 1985	TOTAL	5248.99	MEAN	14.4	MAX	149	MIN	.00	AC-FT	10410

e Estimated

16211600 MAKAHA STREAM NEAR MAKAHA

LOCATION.--Lat 21°30'16", long 158°10'59", Hydrologic Unit 20060000, on right bank 1.5 mi northeast of Kaneaki Heiau and 3.4 mi northeast of Makaha.

DRAINAGE AREA.--2.31 mi^2.

PERIOD OF RECORD.--July 1959 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete-masonry control. Datum of gage is 938.84 ft above mean sea level (Waianae Plantation bench mark).

REMARKS.--Records good. Wells and water-development tunnels in the vicinity and upstream may affect low-flow records. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--28 years, 1.89 ft^3/s (1,370 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,450 ft^3/s Jan. 6, 1982, gage height, 7.40 ft, from floodmarks, from rating curve extended above 51 ft^3/s on basis of slope-area measurements at gage heights 6.50 ft and 7.40 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1953, about 7.8 ft Nov. 24, 1954, from information by local resident. Discharge, about 1,700 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 66 ft^3/s Sept. 13, gage height, 2.57 ft, no peak above base of 200 ft^3/s; minimum, 0.02 ft^3/s Nov. 5, 7, 9, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.04	.69	.92	8.3	1.8	1.7	.36	.46	.51	.91	2.0
2	.04	.04	.58	.82	4.7	1.5	2.0	.38	.45	.44	.73	1.9
3	.03	.04	.86	.72	3.1	1.3	1.1	.49	.44	.37	.63	.72
4	.03	.03	.93	.65	9.4	1.2	.89	.44	.44	.33	.59	.10
5	.03	.03	.76	.57	8.0	1.3	1.0	.66	.41	.31	.57	.09
6	.03	.03	.67	.53	5.1	2.2	1.0	.49	.42	.29	.51	.82
7	.03	.03	.80	.48	3.7	1.9	.92	.44	.42	.26	.45	2.1
8	.03	.03	.94	.45	2.8	1.3	1.1	.44	.41	.24	.39	1.9
9	.03	.03	2.3	.41	2.3	1.1	.89	.44	.41	.24	.33	1.9
10	.03	.03	1.1	1.9	2.2	.97	.76	.42	.40	.22	.29	1.9
11	.05	.03	.84	6.7	1.8	.93	.67	.37	.38	.21	.26	1.7
12	.05	.03	.70	2.7	3.2	.87	.61	.33	.36	.20	.23	1.6
13	.05	.04	.58	2.1	3.7	.80	.56	.34	.35	.20	.21	6.3
14	.05	.04	.51	7.9	2.9	.75	.51	.31	.34	.19	.19	2.3
15	.06	.04	.42	3.4	2.8	1.0	.48	.98	.33	.18	.20	1.9
16	.07	.05	.37	2.4	2.4	1.4	.46	2.4	.31	.17	1.1	1.9
17	.06	.08	.30	1.8	2.0	1.1	.44	6.9	.29	.26	2.6	1.8
18	.06	.12	.26	1.4	1.8	.86	.44	3.4	.28	.19	2.6	1.8
19	.06	.13	.23	1.1	1.5	.72	.43	3.0	.26	.21	2.6	1.8
20	.05	.14	.18	.97	1.4	.66	.41	2.4	.25	.20	2.1	1.7
21	.06	.13	.15	.88	1.2	.60	.39	1.9	.23	.17	1.9	1.7
22	.06	.11	.14	.81	1.1	.60	.40	1.4	.22	.16	1.5	1.7
23	.07	.10	1.1	.85	.97	.59	.39	1.1	.20	.15	1.8	1.8
24	.06	.08	12	.81	.89	.56	.37	1.0	1.6	.15	2.1	5.2
25	.04	.12	18	1.2	.82	.54	.35	.92	2.7	.14	2.1	3.8
26	.04	2.0	7.1	1.1	1.0	.54	.35	.82	4.4	.12	.81	2.7
27	.04	3.8	3.7	.91	2.1	.54	.36	.70	1.6	.12	.16	2.8
28	.05	3.0	2.2	.82	3.1	.54	.34	.62	1.1	.13	.14	2.0
29	.04	1.8	1.8	4.1	---	.51	.34	.57	.73	.12	.90	1.3
30	.04	.89	1.5	5.6	---	.50	.31	.51	.61	.12	2.1	.94
31	.03	---	1.1	12	---	.54	---	.47	---	2.4	2.0	---
TOTAL	1.40	13.06	62.82	67.00	84.28	29.72	19.97	34.98	20.80	9.00	33.00	60.17
MEAN	.045	.44	2.03	2.16	3.01	.96	.67	1.13	.69	.29	1.06	2.01
MAX	.07	3.8	18	12	9.4	2.2	2.0	6.9	4.4	2.4	2.6	6.3
MIN	.03	.03	.14	.41	.82	.50	.31	.31	.20	.12	.14	.09
AC-FT	2.8	26	125	133	167	59	40	69	41	18	65	119

CAL YR 1984	TOTAL	428.50	MEAN	1.17	MAX	18	MIN	.03	AC-FT	850
WTR YR 1985	TOTAL	436.20	MEAN	1.20	MAX	18	MIN	.03	AC-FT	865

16212800 KIPAPA STREAM NEAR WAHIAWA

LOCATION.--Lat 21°28'13", long 157°57'40", Hydrologic Unit 20060000, on left bank 1,700 ft downstream from forest-reserve boundary, 4.9 mi southeast of Wahiawa Post Office, and 6.3 mi northeast of Waipahu.

DRAINAGE AREA.--4.29 mi^2.

PERIOD OF RECORD.--January 1957 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 690 ft, from topographic map.

REMARKS.--Records good. At times, a small amount of water is diverted from the gage pool for domestic use. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--28 years, 10.7 ft^3/s (7,750 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,680 ft^3/s May 14, 1963, gage height, 12.29 ft, from rating curve extended above 300 ft^3/s on basis of slope-area measurements at gage heights 7.96 ft and 12.29 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,140 ft^3/s Nov. 27, gage height, 7.38 ft, no other peak greater than base discharge of 930 ft^3/s; no flow for many days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.1	16	1.1	.88	23	30	39	1.9	2.2	6.1	1.0
2	.00	1.4	3.2	.88	.48	11	19	11	2.1	1.4	16	.63
3	.00	1.2	3.5	.95	.35	5.6	5.9	4.7	1.9	1.0	3.7	.53
4	.00	17	4.1	8.7	21	5.8	4.3	3.5	1.5	.75	18	.69
5	.00	5.7	1.8	2.4	11	35	7.4	3.3	1.4	.53	4.9	1.3
6	.00	5.3	1.8	1.1	2.8	18	6.1	140	1.4	1.5	4.0	.48
7	.00	3.9	36	.89	1.6	9.1	3.0	46	1.2	.95	8.0	.26
8	.00	1.5	13	.48	1.3	5.8	2.4	12	1.1	2.1	8.5	.19
9	.00	4.3	12	.39	1.5	4.5	2.0	7.0	1.1	2.0	6.1	.13
10	.00	1.4	5.8	.48	1.1	6.1	1.8	5.1	.95	.81	3.2	.11
11	.00	1.5	3.7	5.6	1.8	14	1.5	4.7	.88	.48	2.2	.32
12	.00	2.1	3.3	2.0	2.0	5.6	1.6	4.1	.75	.32	1.6	1.0
13	.00	19	2.7	1.0	9.4	4.5	1.6	14	.75	.32	1.4	2.0
14	.00	3.9	2.0	12	70	5.1	1.4	9.8	.75	.35	1.9	2.1
15	.00	8.7	1.6	3.2	12	4.2	1.4	42	.63	.48	9.8	.88
16	.00	3.0	1.4	1.4	4.3	4.9	1.4	36	.58	.48	2.5	.39
17	.00	1.4	1.8	.95	2.8	2.8	30	129	.53	9.6	1.8	.21
18	.00	.88	2.4	.69	2.0	2.2	18	18	.53	8.2	1.2	1.2
19	.00	.88	1.6	.48	2.1	1.9	15	9.5	.63	2.0	.81	28
20	.00	1.6	1.1	.39	4.7	1.8	23	7.0	1.0	.95	2.4	4.6
21	.00	3.0	1.0	.35	3.2	1.5	9.1	5.6	2.8	.58	1.4	1.9
22	11	1.8	.95	.35	1.5	29	26	4.7	1.1	.43	.81	3.2
23	8.7	1.3	.81	.35	17	7.5	10	5.9	.53	3.0	.58	27
24	.81	1.0	2.7	.53	6.5	3.2	55	4.1	.39	7.2	.39	44
25	.26	1.0	41	1.2	4.1	3.3	11	5.2	.75	34	2.2	11
26	.09	75	11	4.6	21	3.0	6.1	3.3	.88	4.1	1.5	9.1
27	.13	120	5.6	1.9	27	2.2	4.7	2.8	20	2.0	1.4	7.3
28	3.6	9.1	3.2	.69	39	18	3.5	2.5	43	1.4	1.4	4.9
29	4.1	4.5	2.4	.83	---	4.9	3.2	2.5	3.2	1.4	3.4	2.7
30	4.6	6.0	1.8	3.6	---	15	2.7	2.5	2.5	1.0	3.2	2.1
31	13	---	1.4	1.6	---	5.7	---	2.2	---	22	2.0	---
TOTAL	44.29	309.46	190.26	58.68	272.41	261.8	306.1	587.0	96.73	113.53	122.39	159.22
MEAN	1.43	10.3	6.14	1.89	9.73	8.45	10.2	18.9	3.22	3.68	3.95	5.31
MAX	13	120	41	12	70	35	55	140	43	34	18	44
MIN	.00	.88	.81	.35	.35	1.5	1.4	2.2	.39	.32	.39	.11
AC-FT	88	814	377	116	540	519	607	1160	192	225	243	316

CAL YR 1984	TOTAL	1615.79	MEAN	4.41	MAX	142	MIN	.00	AC-FT	3200
WTR YR 1985	TOTAL	2521.87	MEAN	6.91	MAX	140	MIN	.00	AC-FT	5000

16213000 WAIKELE STREAM AT WAIPAHU
(National stream-quality accounting network station)

LOCATION.--Lat 21°23'11", long 158°00'49", Hydrologic Unit 20060000, on left bank 300 ft upstream from bridge on Highway 90 and 0.3 mi southwest of sugar refinery at Waipahu.

DRAINAGE AREA.--45.7 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to October 1951, December 1951 to October 1959, July 1960 to current year.

REVISED RECORDS.--WSP 1639: 1955(M). WSP 1937: Drainage area. WSP 2137: 1965.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.37 ft above mean sea level. Prior to July 1, 1960, at site 300 ft downstream at datum 1.30 ft higher.

REMARKS.--Records good. Diversions upstream for irrigation of sugarcane in vicinity of Waipahu.

AVERAGE DISCHARGE.--32 years (water years 1953-59, 1961-85), 38.2 ft^3/s (27,680 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft^3/s Nov. 28, 1954, gage height, 14.82 ft, site and datum then in use, from rating curve extended above 730 ft^3/s on basis of slope-area measurement of peak flow; no flow for part of Feb. 25, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,670 ft^3/s Sept. 24, gage height, 5.16 ft, no other peak greater than base discharge of 1,300 ft^3/s; minimum, 0.54 ft^3/s Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	12	32	17	15	72	25	23	11	6.3	29	11
2	4.0	5.6	26	16	16	56	69	58	14	5.8	21	11
3	4.4	11	21	14	17	41	28	20	11	5.6	19	11
4	4.8	19	21	15	76	38	18	14	8.4	5.1	28	8.9
5	5.3	22	19	19	58	80	20	18	8.0	9.2	28	7.2
6	8.9	9.6	11	17	31	105	28	184	7.3	11	12	5.8
7	16	11	53	15	25	60	20	118	7.7	10	12	6.2
8	9.6	8.3	48	12	20	42	17	58	11	11	11	5.9
9	6.8	7.4	45	9.6	18	35	15	25	14	10	13	6.0
10	7.3	14	24	11	17	31	11	17	10	6.1	9.1	7.5
11	6.8	19	18	15	17	38	10	18	12	4.4	7.7	5.4
12	7.0	11	18	13	22	41	9.1	19	8.3	5.0	12	5.4
13	11	16	17	5.8	40	29	13	22	7.7	6.5	6.7	7.4
14	14	24	17	25	93	32	17	30	9.9	7.5	6.3	8.1
15	5.2	10	15	23	75	31	15	53	16	6.2	7.4	8.8
16	4.8	15	15	12	31	37	9.5	63	14	5.7	11	9.1
17	5.6	14	15	17	24	31	15	192	15	9.0	11	11
18	5.3	19	14	16	21	20	46	68	9.8	10	11	5.2
19	8.6	12	15	16	19	16	20	36	6.3	7.3	7.5	15
20	6.1	8.3	14	16	19	15	38	28	6.3	9.7	5.2	18
21	15	8.1	14	15	21	14	29	18	6.2	9.8	5.0	7.6
22	5.6	16	14	15	19	20	42	16	7.5	9.8	4.5	6.1
23	5.1	17	15	14	25	43	28	22	11	8.4	4.6	10
24	5.3	17	30	13	25	21	88	20	8.6	6.9	6.3	186
25	5.2	18	129	15	23	18	44	20	15	30	12	33
26	4.5	89	52	18	48	15	23	19	14	18	15	32
27	11	255	32	20	86	15	15	14	8.6	8.9	6.2	21
28	21	42	24	16	108	19	19	11	61	7.1	8.0	14
29	18	25	20	14	---	25	15	11	13	6.5	5.9	10
30	22	19	18	17	---	25	11	8.9	8.5	6.6	8.9	8.2
31	17	---	17	21	---	33	---	8.7	---	18	8.8	---
TOTAL	277.0	774.3	823	480.4	1009	1096	755.6	1230.6	361.1	281.4	351.1	501.8
MEAN	8.94	25.8	26.5	15.5	36.0	35.4	25.2	39.7	12.0	9.08	11.3	16.7
MAX	22	255	129	25	108	105	86	192	61	30	29	186
MIN	4.0	5.8	11	5.8	15	14	9.1	8.7	6.2	4.4	4.5	5.2
AC-FT	549	1540	1630	953	2000	2170	1500	2440	716	558	696	995

CAL YR 1984	TOTAL	7148.4	MEAN	19.5	MAX	255	MIN	3.4	AC-FT	14180
WTR YR 1985	TOTAL	7941.3	MEAN	21.8	MAX	255	MIN	4.0	AC-FT	15750

16213000 WAIKELE STREAM AT WAIPAHU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-72. April 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1973 to September 1981.
WATER TEMPERATURE: April 1973 to September 1981.
SUSPENDED SEDIMENT DISCHARGE: July 1972 to current year.

INSTRUMENTATION.--Water-quality monitor April 1973 to September 1981. Automatic pumping sediment sampler since July 1972.

REMARKS.--In addition to the sediment record, water-quality samples were collected bi-monthly.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 796 micromhos/cm Dec. 1, 1980; minimum, 30 micromhos/cm Apr. 19, 1974.
WATER TEMPERATURES: Maximum, 30.0°C May 6, 1973; minimum, 16.0°C Mar. 16, 1976.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 3,420 mg/L Feb. 7, 1976; minimum daily mean, 5 mg/L for many days in 1983.
SEDIMENT DISCHARGE: Maximum daily, 32,900 tons Apr. 19, 1974; minimum daily, 0.07 ton Sept. 4, Oct. 1, 1975.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 591 mg/L Sept. 24; minimum daily mean, 7 mg/L Oct. 8, 9.
SEDIMENT DISCHARGE: Maximum daily, 742 tons Sept. 24; minimum daily, 0.10 ton Oct. 4.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT											
23...	0945	762	5.2	519	6.9	23.0	2.5	2.5	29	>60000	19000
NOV											
11...	0750	--	22	750	--	25.5	--	--	--	--	--
DEC											
26...	0930	762	56	200	7.2	20.0	16	7.1	78	7000	12000
28...	0940	--	24	385	7.0	21.0	--	--	--	--	--
JAN											
10...	1410	--	15	500	7.0	22.0	--	--	--	--	--
FEB											
25...	0945	764	24	372	6.9	21.5	7.3	7.3	83	8300	9200
MAR											
11...	1345	--	30	345	7.1	23.0	--	--	--	--	--
APR											
30...	0915	760	13	440	7.1	22.0	3.9	6.3	73	12000	3000
JUN											
25...	0850	763	12	700	7.2	22.0	3.1	7.6	87	K300	K190
AUG											
05...	1130	--	30	235	--	24.0	--	--	--	--	--
27...	0915	765	5.7	480	6.9	22.0	4.5	6.4	73	20000	3800

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT											
23...	87	13	15	12	69	62	3	3.2	74	24	99
DEC											
26...	37	2	7.2	4.5	23	56	2	1.9	35	12	31
FEB											
25...	63	7	11	8.7	50	62	3	2.2	56	18	63
APR											
30...	71	7	12	10	58	63	3	2.5	64	19	78
JUN											
25...	120	61	19	18	83	59	3	3.5	61	27	170
AUG											
27...	69	2	11	10	65	68	3	2.5	67	22	86

> Actual value is known to be greater than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

16213000 WAIKELE STREAM AT WAIPAHU--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT											
23...	.20	62	338	330	.46	1.3	.030	.50	.180	.140	.140
DEC											
26...	.10	23	125	120	.17	.71	.050	.70	.160	.130	.110
FEB											
25...	.10	47	241	230	.33	1.4	.120	1.1	.180	.150	.170
APR											
30...	.20	55	270	270	.37	1.6	.080	.60	.200	.170	.160
JUN											
25...	.10	58	429	420	.58	1.6	.060	.20	.190	.170	.090
AUG											
27...	.20	64	303	300	.41	2.0	.080	.30	.240	.220	.180

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
OCT										
23...	<10	<1	13	2.0	2	2	<3	1	25	3
FEB										
25...	40	<1	11	2.3	2	<1	<3	4	84	<1
APR										
30...	<10	<1	11	<.5	<1	1	<3	1	32	<1
AUG										
27...	20	<1	12	<.5	<1	<1	<3	1	25	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT										
23...	7	110	<.1	<10	1	2	<1	100	35	5
FEB										
25...	<4	53	<.1	<10	<1	1	<1	69	26	37
APR										
30...	<4	72	<.1	<10	<1	2	<1	81	31	9
AUG										
27...	<4	44	<.1	<10	1	3	<1	78	37	42

DATE	TIME	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	DATE	TIME	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
OCT					APR				
23...	0945	100	4	.06	30...	0915	100	8	.28
DEC					JUN				
26...	0930	100	11	1.7	25...	0950	100	6	.19
FEB					AUG				
25...	0945	100	7	.45	27...	0915	100	8	.12

< Actual value is known to be less than the value shown.

16213000 WAIKELE STREAM AT WAIPAHU--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	5.8	11	.17	12	20	.65	32	22	2.0
2	4.0	10	.11	5.6	16	.24	26	14	.98
3	4.4	9	.11	11	14	.42	21	11	.62
4	4.8	8	.10	19	12	.62	21	11	.62
5	5.3	9	.13	22	18	1.1	19	12	.62
6	8.9	11	.26	9.6	16	.41	11	12	.36
7	16	10	.43	11	14	.42	53	32	5.8
8	9.6	7	.18	8.3	17	.38	48	18	2.3
9	6.8	7	.13	7.4	17	.34	45	15	1.8
10	7.3	10	.20	14	13	.49	24	13	.84
11	6.8	11	.20	19	13	.67	18	11	.53
12	7.0	11	.21	11	13	.39	18	11	.53
13	11	11	.33	18	26	1.7	17	11	.50
14	14	10	.38	24	36	2.6	17	10	.46
15	5.2	12	.17	10	24	.65	15	10	.41
16	4.8	13	.17	15	26	1.1	15	10	.41
17	5.6	11	.17	14	30	1.1	15	10	.41
18	5.3	10	.14	19	19	.97	14	10	.38
19	8.6	12	.28	12	17	.55	15	10	.41
20	6.1	11	.18	8.3	17	.38	14	10	.38
21	15	14	.57	8.1	17	.37	14	10	.38
22	5.6	10	.15	16	14	.60	14	10	.38
23	5.1	12	.17	17	14	.64	15	10	.41
24	5.3	12	.17	17	14	.64	30	24	3.1
25	5.2	11	.15	18	14	.68	129	84	32
26	4.5	10	.12	89	240	72	52	30	4.2
27	11	10	.30	255	448	572	32	25	2.2
28	21	20	1.1	42	30	3.4	24	15	.97
29	18	16	.78	25	20	1.4	20	10	.54
30	22	15	.89	19	15	.77	18	10	.49
31	17	15	.69	---	---	---	17	10	.46
TOTAL	277.0	---	9.14	774.3	---	667.68	823	---	65.49
		JANUARY			FEBRUARY			MARCH	
1	17	10	.46	15	16	.65	72	30	5.8
2	16	10	.43	16	14	.60	56	40	6.0
3	14	12	.45	17	12	.55	41	30	3.3
4	15	14	.57	76	113	37	38	15	1.5
5	19	12	.62	58	50	7.8	80	43	10
6	17	8	.37	31	22	1.8	105	55	17
7	15	9	.36	25	21	1.4	60	30	4.9
8	12	10	.32	20	20	1.1	42	28	3.2
9	9.6	12	.31	18	24	1.2	35	24	2.3
10	11	14	.42	17	20	.92	31	12	1.0
11	15	16	.65	17	18	.83	38	14	1.4
12	13	10	.35	22	35	2.6	41	20	2.2
13	5.8	10	.16	40	104	12	29	15	1.2
14	25	21	1.5	93	122	53	32	12	1.0
15	23	15	.93	75	102	23	31	12	1.0
16	12	12	.39	31	35	2.9	37	15	1.5
17	17	12	.55	24	30	1.9	31	15	1.3
18	16	12	.52	21	30	1.7	20	15	.81
19	16	12	.52	19	35	1.8	16	15	.65
20	16	12	.52	19	32	1.6	15	15	.61
21	15	13	.53	21	30	1.7	14	15	.57
22	15	15	.61	19	30	1.5	20	20	1.1
23	14	15	.57	25	26	1.8	43	50	5.8
24	13	12	.42	25	22	1.5	21	30	1.7
25	15	13	.53	23	15	.93	16	20	.86
26	16	14	.80	48	28	3.8	15	20	.81
27	20	20	1.1	86	30	7.0	15	20	.81
28	16	14	.60	108	30	8.7	19	25	1.3
29	14	14	.53	---	---	---	25	20	1.4
30	17	15	.69	---	---	---	25	20	1.4
31	21	20	1.1	---	---	---	33	25	2.2
TOTAL	480.4	---	17.68	1009	---	181.08	1096	---	84.62

16213000 WAIKELE STREAM AT WAIPAHU--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	25	20	1.4	23	30	1.9	11	12	.36
2	69	50	9.3	58	40	6.3	14	12	.45
3	28	30	2.3	20	23	1.2	11	12	.36
4	18	20	.97	14	23	.87	8.4	12	.27
5	20	15	.81	18	23	1.1	8.0	13	.28
6	28	20	1.5	184	443	413	7.3	13	.26
7	20	15	.81	118	100	33	7.7	13	.27
8	17	20	.92	58	42	8.6	11	13	.39
9	15	20	.81	25	25	1.7	14	14	.53
10	11	20	.59	17	23	1.1	10	14	.38
11	10	25	.68	18	22	1.1	12	16	.52
12	9.1	25	.81	19	20	1.0	8.3	14	.31
13	13	20	.70	22	26	1.5	7.7	14	.29
14	17	17	.78	30	38	3.1	9.9	14	.37
15	15	15	.61	53	40	5.7	18	13	.56
16	9.5	15	.38	83	35	6.0	14	13	.49
17	15	21	1.5	192	94	62	15	10	.41
18	48	31	4.2	68	50	9.2	9.8	10	.26
19	20	14	.76	36	35	3.4	6.3	14	.24
20	38	38	4.4	28	30	2.1	6.3	14	.24
21	29	20	1.6	18	28	1.4	6.2	12	.20
22	42	22	2.5	16	32	1.4	7.5	12	.24
23	28	22	1.7	22	34	2.0	11	14	.42
24	86	161	80	20	34	1.8	8.6	10	.23
25	44	50	5.9	20	34	1.8	15	10	.41
26	23	25	1.6	19	22	1.1	14	25	.95
27	15	18	.73	14	22	.83	8.6	25	.58
28	19	18	.92	11	18	.53	61	130	44
29	15	18	.73	11	16	.48	13	28	.98
30	11	15	.45	8.9	12	.29	8.5	18	.41
31	---	---	---	8.7	12	.28	---	---	---
TOTAL	755.6	---	130.16	1230.8	---	573.78	361.1	---	55.66
		JULY			AUGUST			SEPTEMBER	
1	6.3	15	.26	29	24	1.9	11	26	.77
2	5.8	15	.23	21	22	1.2	11	12	.36
3	5.6	15	.23	19	18	.92	11	16	.48
4	5.1	15	.21	28	20	1.5	8.9	22	.53
5	9.2	12	.30	28	18	1.4	7.2	25	.49
6	11	12	.36	12	17	.55	5.8	12	.19
7	10	25	.68	12	19	.62	6.2	11	.18
8	11	20	.59	11	15	.45	5.9	11	.18
9	10	20	.54	13	16	.56	6.0	14	.23
10	6.1	25	.41	9.1	18	.39	7.5	26	.53
11	4.4	25	.30	7.7	20	.42	5.4	20	.29
12	5.0	23	.31	12	25	.81	5.4	11	.16
13	6.5	22	.39	6.7	13	.24	7.4	16	.32
14	7.5	25	.51	6.3	20	.34	8.1	16	.35
15	6.2	28	.47	7.4	25	.50	8.8	12	.29
16	5.7	28	.43	11	14	.42	9.1	10	.25
17	9.0	53	1.9	11	14	.42	11	10	.30
18	10	60	1.8	11	14	.42	5.2	8	.11
19	7.3	30	.59	7.5	14	.28	15	20	.81
20	9.7	25	.65	5.2	11	.15	18	26	1.3
21	9.8	18	.48	5.0	18	.22	7.6	26	.53
22	9.8	16	.42	4.5	38	.46	6.1	11	.18
23	8.4	15	.34	4.6	32	.40	10	38	.97
24	6.9	15	.28	6.3	32	.54	186	591	742
25	30	45	3.6	12	26	.84	33	100	8.9
26	18	28	1.4	15	28	1.1	32	70	6.0
27	8.9	20	.48	6.2	30	.50	21	60	3.4
28	7.1	18	.35	6.0	20	.32	14	50	1.9
29	6.5	15	.26	5.9	28	.45	10	16	.43
30	6.6	15	.27	8.9	22	.53	8.2	16	.35
31	18	20	.97	8.8	26	.62	---	---	---
TOTAL	281.4	---	19.81	351.1	---	19.47	501.8	---	772.78
YEAR	7941.3		2597.35						

16216000 WAIAWA STREAM NEAR PEARL CITY

LOCATION.--Lat 21°23'57", long 157°58'51", 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^2.

PERIOD OF RECORD.--June 1952 to current year.

REVISED RECORDS.--WSP 1569: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.81 ft above mean sea level.

REMARKS.--Records good except those above 200 ft^3/s which are poor. Low flow affected by effluent from sewage treatment plant and occasionel small irrigation diversion and return flow upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--33 years, 32.8 ft^3/s (23,760 acra-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft^3/s Oct. 28, 1981, gage height, 26.46 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurements at gage heights 17.1 ft and 20.56 ft; minimum, 1.1 ft^3/s for several days in 1984 and 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base diacharge of 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	0100	*4130	*10.88	May 6	1830	2690	9.30

Minimum discharge, 1.1 ft^3/s for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.4	21	3.5	1.9	59	14	16	1.5	1.6	13	1.2
2	1.3	1.4	6.5	2.9	1.9	33	28	26	1.5	1.5	19	1.2
3	1.3	1.4	3.8	2.6	1.9	16	14	6.8	1.4	1.5	5.9	1.2
4	1.3	1.4	2.8	2.1	10	18	8.2	3.7	1.4	1.4	13	1.2
5	1.2	1.3	2.4	2.1	15	119	5.6	2.5	1.4	1.4	14	1.2
6	1.2	1.4	2.3	2.1	5.4	77	4.8	597	1.4	1.4	5.1	1.2
7	1.3	1.3	124	1.9	3.2	43	4.0	248	1.4	1.4	7.4	1.2
8	1.3	1.3	52	1.9	2.4	22	3.0	39	1.4	1.4	6.1	1.2
9	1.2	1.3	51	1.8	2.2	14	2.5	16	1.4	1.4	6.2	1.3
10	1.2	1.3	24	1.9	2.1	13	2.3	9.3	1.4	1.4	3.7	1.2
11	1.2	1.5	11	1.9	2.1	20	2.1	6.3	1.4	1.3	2.1	1.2
12	1.2	1.3	6.2	1.8	2.6	18	2.0	4.4	1.4	1.3	1.5	1.3
13	1.2	1.3	4.4	1.8	4.5	14	2.0	5.7	1.4	1.3	1.4	1.8
14	1.2	1.3	3.5	2.9	200	10	1.9	10	1.4	1.3	1.4	1.2
15	1.2	1.3	3.1	1.8	67	8.5	1.9	60	1.4	1.3	1.4	1.2
16	1.2	1.3	2.9	1.8	13	9.2	1.8	51	1.4	1.3	1.3	1.2
17	1.2	1.3	2.5	1.8	6.6	7.3	18	337	1.4	2.4	1.3	1.2
18	1.2	1.3	2.3	1.8	4.7	5.3	49	64	1.4	6.0	1.3	1.2
19	1.2	1.3	2.2	1.8	3.6	4.1	10	23	1.4	2.5	1.3	1.2
20	1.2	1.3	2.2	1.8	2.9	3.4	15	12	1.3	1.4	1.3	1.2
21	1.2	1.3	2.2	1.8	2.6	2.9	7.9	7.7	1.3	1.3	1.3	1.2
22	1.2	1.2	2.2	1.9	2.4	24	27	5.4	1.3	1.3	1.3	1.2
23	1.2	1.3	2.2	1.8	2.3	32	19	4.5	1.3	1.3	1.3	73
24	1.2	1.4	3.1	1.8	3.1	9.9	43	4.2	1.3	1.3	1.3	124
25	1.2	8.8	176	1.8	4.3	6.2	21	2.8	1.3	27	1.3	8.2
26	1.2	69	38	1.8	159	4.8	9.9	3.1	6.7	7.8	1.2	18
27	3.0	678	21	1.8	203	3.8	5.9	2.4	9.4	2.7	1.2	28
28	4.0	29	10	1.9	140	15	4.2	1.9	146	1.6	1.2	12
29	6.2	9.8	6.5	2.0	---	13	3.1	1.7	5.0	1.3	1.2	4.6
30	1.6	5.0	4.8	1.9	---	31	2.5	1.6	2.0	1.3	1.2	2.5
31	1.4	---	4.1	1.9	---	34	---	1.5	---	11	1.2	---
TOTAL	48.0	831.5	600.2	62.4	869.7	690.4	333.6	1574.5	203.7	92.4	121.4	297.5
MEAN	1.55	27.7	19.4	2.01	31.1	22.3	11.1	50.8	6.79	2.98	3.92	9.92
MAX	6.2	678	176	3.5	203	119	49	597	146	27	19	124
MIN	1.2	1.2	2.2	1.8	1.9	2.9	1.8	1.5	1.3	1.3	1.2	1.2
AC-FT	95	1650	1190	124	1730	1370	662	3120	404	183	241	590

CAL YR 1984	TOTAL	3442.9	MEAN	9.41	MAX	678	MIN	1.2	AC-FT	6830
WTR YR 1985	TOTAL	5725.3	MEAN	15.7	MAX	678	MIN	1.2	AC-FT	11360

16226000 NORTH HALAWA STREAM NEAR AIEA

LOCATION.--Lat 21°23'46", long 157°53'37", Hydrologic Unit 20060000, on left bank 2.7 mi upstream from confluence with South Halawa Stream and 2.7 mi northeast of Aiea Post Office.

DRAINAGE AREA.--3.45 mi^2.

PERIOD OF RECORD.--August 1929 to June 1933, July 1953 to current year. Monthly discharge only May, June 1931, published in WSP 1319.

REVISED RECORDS.--WSP 1319: Drainage area. WSP 1719: 1954-55(P), 1956, 1957(P), 1958-59.

GAGE.--Water-stage recorder. Elevation of gage is 320 ft, from topographic map.

REMARKS.--Records good. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--35 years (water years 1930-32, 1954-85), 4.85 ft^3/s (3,510 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,650 ft^3/s Feb. 28, 1932, gage height, 13.36 ft, from rating curve extended above 420 ft^3/s; maximum gage height, 13.46 ft May 14, 1963; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 528 ft^3/s Sept. 23, gage height, 8.67 ft, no peak greater than base discharge of 570 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.18	.13	.04	9.8	3.1	.58	.03	.18	2.2	.00
2	.00	.00	.09	.09	.03	5.6	3.8	1.4	.03	.06	3.4	.00
3	.00	.00	.07	.05	.02	2.8	2.4	.75	.01	.04	.88	.00
4	.00	.00	.05	.04	.10	2.4	1.4	.55	.01	.02	.70	.00
5	.00	.00	.04	.03	1.4	5.5	1.0	.36	.01	.02	.85	.00
6	.00	.00	.03	.02	.95	7.0	.76	71	.01	.01	.58	.00
7	.00	.00	13	.01	.55	6.4	.48	34	.01	.01	.37	.00
8	.00	.00	6.0	.01	.34	3.2	.30	10	.01	.01	.22	.00
9	.00	.00	3.1	.01	.18	1.8	.20	4.1	.01	.01	.13	.00
10	.00	.00	1.3	.01	.12	1.2	.14	2.4	.01	.01	.08	.00
11	.00	.00	.76	.01	.07	1.8	.10	1.6	.01	.01	.05	.00
12	.00	.00	.41	.01	6.1	2.0	.07	1.1	.01	.01	.03	.00
13	.00	.00	.22	.01	14	1.2	.05	1.2	.01	.00	.03	.00
14	.00	.00	.11	.01	83	.95	.04	1.1	.00	.00	.02	.00
15	.00	.00	.07	.01	25	.76	.02	5.3	.00	.00	.02	.00
16	.00	.00	.05	.01	6.2	.55	.02	11	.00	.00	.02	.00
17	.00	.00	.04	.01	2.6	.41	7.4	27	.00	.00	.09	.00
18	.00	.00	.04	.01	1.5	.32	8.0	10	.00	.00	.26	.00
19	.00	.00	.03	.01	.88	.24	2.5	4.2	.00	.00	.12	.00
20	.00	.00	.03	.01	.64	.16	2.8	2.4	.00	.00	.06	.00
21	.00	.00	.03	.01	.41	.12	2.2	1.5	.00	.00	.03	.00
22	.00	.00	.02	.01	.26	7.3	5.8	1.1	.00	.00	.02	.00
23	.00	.00	.02	.01	1.9	6.0	7.2	.88	.00	.00	.01	23
24	.00	.00	4.3	.00	1.4	2.4	12	.70	.00	.00	.01	6.6
25	.00	.01	65	5.1	.88	1.2	5.8	1.4	.00	8.8	.01	1.2
26	.00	3.9	8.4	.64	30	.88	2.7	.70	.00	1.2	.01	8.7
27	.00	36	3.2	.32	29	.70	1.6	.41	3.3	.44	.01	4.3
28	.00	3.7	1.3	.14	15	.60	1.0	.24	7.1	.26	.01	1.0
29	.00	.75	.82	.12	---	1.3	.82	.17	.39	.12	.01	.37
30	.00	.34	.44	.09	---	6.4	.58	.10	.26	.07	.00	.22
31	.00	---	.24	.05	---	6.4	---	.05	---	5.8	.00	---
TOTAL	.00	44.70	109.39	6.99	222.57	87.39	74.28	197.29	11.22	17.08	10.33	45.39
MEAN	.00	1.49	3.53	.23	7.95	2.82	2.48	6.36	.37	.55	.33	1.51
MAX	.00	36	65	5.1	83	9.8	12	71	7.1	8.8	3.4	23
MIN	.00	.00	.02	.00	.02	.12	.02	.05	.00	.00	.00	.00
AC-FT	.00	89	217	14	441	173	147	391	22	34	20	90

CAL YR 1984	TOTAL	424.96	MEAN	1.16	MAX	65	MIN	.00	AC-FT	843
WTR YR 1985	TOTAL	826.63	MEAN	2.26	MAX	83	MIN	.00	AC-FT	1640

16226200 NORTH HALAWA STREAM NEAR HONOLULU

LOCATION.--Lat 21°22'34", long 157°54'22", Hydrologic Unit 20060000, on right bank 0.5 mi north of Halawa quarry, 1.7 mi east of Aiea High School, and 1.9 mi east of Aiea.

DRAINAGE AREA.--4.01 mi^2.

PERIOD OF RECORD.--February 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 160 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 710 ft^3/s Feb. 14, 1985, gage height, 10.20 ft; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 710 ft^3/s Feb. 14, gage height, 10.20 ft, no peak greater than base discharge of 750 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.13	.30	.08	12	3.8	.57	.12	.08	3.2	.00
2	.00	.00	.05	.23	.07	6.8	4.4	1.5	.10	.04	3.6	.00
3	.00	.00	.04	.15	.06	4.0	3.1	.88	.07	.03	1.3	.00
4	.00	.00	.03	.12	.19	3.7	2.0	.64	.06	.03	.96	.00
5	.00	.00	.01	.07	.71	7.9	1.4	.44	.05	.02	1.1	.00
6	.00	.00	.01	.05	1.2	11	1.1	86	.03	.01	.92	.00
7	.00	.00	11	.03	.84	9.8	.84	35	.03	.01	.64	.00
8	.00	.00	6.0	.03	.54	5.6	.57	e14	.02	.01	.41	.00
9	.00	.00	4.0	.03	.32	3.6	.44	e5.0	.02	.01	.27	.00
10	.00	.00	1.8	.02	.25	2.4	.38	e2.8	.02	.01	.19	.00
11	.00	.00	1.0	.03	.19	2.2	.32	e2.0	.01	.01	.13	.00
12	.00	.00	.72	.02	2.9	2.6	.30	e1.4	.01	.01	.09	.00
13	.00	.00	.41	.02	18	1.6	.27	e1.4	.01	.00	.08	.00
14	.00	.00	.25	.02	102	1.2	.25	e1.4	.01	.00	.06	.00
15	.00	.00	.17	.02	34	1.0	.23	e6.0	.01	.00	.05	.00
16	.00	.00	.10	.01	8.2	.84	.23	e14	.01	.00	.04	.00
17	.00	.00	.08	.01	4.1	.61	5.1	e30	.01	.00	.03	.00
18	.00	.00	.06	.01	2.4	.44	8.6	e13	.00	.00	.03	.00
19	.00	.00	.06	.01	1.4	.35	3.1	e4.4	.00	.00	.02	.00
20	.00	.00	.03	.01	1.0	.27	3.0	e2.6	.00	.00	.02	.00
21	.00	.00	.03	.01	.68	.23	3.0	1.8	.00	.00	.02	.00
22	.00	.00	.02	.01	.41	6.4	5.7	1.3	.00	.00	.01	.00
23	.00	.00	.02	.01	1.4	6.7	7.2	1.1	.00	.00	.01	17
24	.00	.00	3.2	.00	1.7	3.2	13	.88	.00	.00	.01	7.8
25	.00	.00	85	3.3	1.0	1.7	6.0	1.4	.00	6.5	.02	1.4
26	.00	.00	11	.91	33	1.1	3.6	.88	.00	1.4	.02	10
27	.00	39	4.6	.23	35	.92	2.0	.61	.00	.47	.01	5.9
28	.00	4.2	2.5	.19	23	.76	1.3	.38	7.8	.25	.01	1.6
29	.00	.84	1.4	.21	---	1.3	1.0	.27	.30	.17	.00	.61
30	.00	.35	.96	.15	---	5.8	.84	.23	.09	.09	.00	.30
31	.00	---	.57	.09	---	6.8	---	.13	---	4.6	.00	---
TOTAL	.00	44.39	135.25	6.30	274.64	112.82	83.07	232.01	8.78	13.75	13.25	44.61
MEAN	.00	1.48	4.36	.20	9.81	3.64	2.77	7.48	.29	.44	.43	1.49
MAX	.00	39	85	3.3	102	12	13	86	7.8	6.5	3.6	17
MIN	.00	.00	.01	.00	.06	.23	.23	.13	.00	.00	.00	.00
AC-FT	.00	88	268	12	545	224	165	460	17	27	26	88

CAL YR 1984	TOTAL	454.15	MEAN	1.24	MAX	85	MIN	.00	AC-FT	901
WTR YR 1985	TOTAL	968.87	MEAN	2.65	MAX	102	MIN	.00	AC-FT	1920

e Estimated

16229000 KALIHI STREAM NEAR HONOLULU

LOCATION.--Lat 21°22'00", long 157°50'49", Hydrologic Unit 20060000, on right bank 1.9 mi upstream from Kamanaiki Stream and 4.1 mi north of Honolulu Post Office.

DRAINAGE AREA.--2.61 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1913 to April 1914, July 1914 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1569: Drainage area. WSP 1719: 1921-22(M), 1923-24, 1925-26(M), 1927-28, 1929-32(M), 1935, 1937, 1938-39(M), 1943(M), 1948-52(P), 1955-56, 1957-58(M), 1959.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 464.40 ft above mean sea level. Prior to Oct. 12, 1923, at datum 2.00 ft lower.

REMARKS.--Records good. No diversion upstream.

AVERAGE DISCHARGE.--71 years (water years 1915-85), 6.63 ft^3/s (4,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 12,400 ft^3/s Nov. 18, 1930, gage height, 13.81 ft, from rating curve extended above 280 ft^3/s on basis of indirect measurements at gage heights 8.9 ft, 10.96 ft, and 11.27 ft; minimum, 0.09 ft^3/a Oct. 22, 1933, July 29, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	0930	*1100	*8.25	Sept. 23	1730	1,040	8.12

Minimum discharge, 0.15 ft^3/s for several days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	.33	1.1	1.1	1.2	7.4	4.4	2.6	2.2	1.3	3.8	.82
2	.23	.33	.73	1.0	1.1	5.4	4.0	2.4	2.0	1.3	4.4	2.7
3	.28	.36	.65	1.1	1.0	4.6	3.2	2.2	2.1	1.2	2.8	1.6
4	.23	.41	.57	2.2	4.2	4.2	2.4	1.8	1.9	1.1	3.6	1.3
5	.28	.36	.50	1.2	3.2	4.2	2.3	1.6	1.8	1.1	2.6	1.1
6	.28	.50	.57	1.0	2.0	4.4	2.0	113	1.8	1.1	2.2	.91
7	.23	.46	5.5	.91	1.5	4.2	1.8	62	1.6	1.1	1.9	.91
8	.73	.65	4.4	.82	1.4	3.4	1.8	17	1.5	1.1	1.9	.82
9	.33	.65	3.6	.82	1.2	3.0	1.5	11	1.6	1.0	1.8	.82
10	.23	.41	2.0	1.1	1.6	3.8	1.5	7.7	1.6	.91	1.6	.91
11	.33	.46	1.4	2.4	1.3	4.2	1.5	6.8	1.4	.91	1.5	1.9
12	.20	.33	1.3	1.5	2.6	3.4	1.5	5.6	1.4	.91	1.4	1.2
13	.20	.36	1.2	1.2	4.5	2.8	1.4	5.6	1.3	.91	1.5	.91
14	.23	.46	1.0	1.6	72	2.4	1.3	4.9	1.3	.82	1.5	.73
15	.23	.82	.73	1.1	19	3.2	1.3	5.9	1.3	.73	1.8	.82
16	.20	.46	.82	.91	7.4	2.4	3.0	6.2	1.2	1.1	2.0	.73
17	.17	.36	1.0	.82	5.1	2.3	5.0	6.5	1.2	6.6	1.5	.65
18	.17	.28	.73	.82	4.2	2.0	4.2	5.9	1.2	2.4	1.3	.65
19	.17	.33	.57	.82	3.2	1.9	3.0	4.9	1.1	1.4	1.3	2.5
20	.17	.65	.50	.73	3.4	2.0	2.4	4.4	1.4	1.1	1.2	1.1
21	.15	.36	.50	.73	2.8	1.6	2.6	4.0	1.3	1.0	1.1	2.1
22	.17	.28	.50	1.2	2.8	4.2	4.0	3.2	1.1	1.0	1.1	1.6
23	.20	.41	.57	1.0	2.6	4.4	7.6	3.0	1.0	1.1	1.1	41
24	.20	.23	2.6	.91	3.0	3.0	5.8	2.8	1.0	1.9	1.0	30
25	.17	1.3	35	8.1	2.6	3.0	4.0	2.7	1.9	5.8	1.2	7.7
26	.15	6.2	6.3	3.6	42	2.3	3.0	2.6	1.5	2.2	1.3	4.4
27	.23	9.7	3.2	1.8	13	2.3	2.4	2.4	3.9	1.5	1.4	3.2
28	1.1	2.9	2.3	1.4	9.1	3.2	2.2	2.4	2.8	1.3	1.1	2.6
29	.65	1.3	1.6	2.1	---	2.3	1.9	2.6	1.6	1.1	1.0	2.4
30	.50	1.1	1.4	1.8	---	9.3	1.8	2.4	1.5	1.2	1.3	2.3
31	.36	---	1.2	1.3	---	5.6	---	2.3	---	6.2	1.0	---
TOTAL	9.00	32.75	84.04	47.09	219.0	112.4	84.8	308.4	48.5	52.39	54.2	120.38
MEAN	.29	1.09	2.71	1.52	7.82	3.63	2.83	9.95	1.62	1.69	1.75	4.01
MAX	1.1	9.7	35	8.1	72	9.3	7.6	113	3.9	6.6	4.4	41
MIN	.15	.23	.50	.73	1.0	1.6	1.3	1.6	1.0	.73	1.0	.65
AC-FT	18	65	167	93	434	223	168	612	96	104	108	239

CAL YR 1984	TOTAL	593.07	MEAN	1.62	MAX	35	MIN	.15	AC-FT 1180
WTR YR 1985	TOTAL	1172.95	MEAN	3.21	MAX	113	MIN	.15	AC-FT 2330

16229000 KALIHI STREAM NEAR HONOLULU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972, 1974 to current year.

REMARKS.--Miscellaneous chemical analyses published for this station for 1969, 1973 water years.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	TEMPERATURE (DEG C)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)
OCT					
29...	1015	21.5	.46	155	7.3
NOV					
28...	1115	21.5	3.1	180	7.0
28...	1130	21.5	3.1	180	7.0
JAN					
29...	1120	20.0	1.0	160	7.4
FEB					
26...	1115	19.5	46	130	7.1
APR					
26...	1030	20.0	2.9	160	7.3
MAY					
28...	0935	20.0	2.4	145	7.4
JUL					
23...	1140	23.0	1.1	150	7.3
AUG					
28...	0915	22.0	1.1	150	7.3
SEP					
26...	1035	22.0	4.2	150	7.0

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
NOV										
28...	1130	43	27	7.3	6.1	14	41	.9	1.0	16
FEB										
26...	1115	29	15	5.3	3.9	11	44	.9	1.0	14
MAY										
28...	0935	35	14	5.9	5.0	14	46	1	.60	21
AUG										
28...	0915	35	8	5.6	5.1	13	44	1	1.0	27

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
NOV									
28...	20	26	<.10	14	98	.13	.14	24	34
FEB									
26...	12	17	<.10	13	72	.10	.28	130	18
MAY									
28...	11	23	<.10	13	85	.12	.14	100	14
AUG									
28...	8.7	20	<.10	13	83	.11	.12	200	10

< Actual value is known to be less than the value shown.

16229300 KALIHI STREAM AT KALIHI
(National stream-quality acoounting network station)

LOCATION.--Lat 21°20'29", long 157°52'36", Hydrologic Unit 20060000, on right bank at Kalihi, 0.4 mi northwest of Bishop Museum, and 2.4 mi northwest of Honolulu Post Office.

DRAINAGE AREA.--5.18 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Water year 1962 (annual maximum), July 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 70 ft, from topographic map. Aug. 28, 1961, to June 30, 1962, crest-stage gage at site 600 ft downstream at different datum.

REMARKS.--Records fair. No diversion upstream. Recording rain gage located at station.

AVERAGE DISCHARGE.--23 years, 10.5 ft^3/s (7,610 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,110 ft^3/s Apr. 19, 1974, gage height, 9.98 ft from rating curve extended above 180 ft^3/s on basis of slope-area measurement at gage height 9.98 ft; minimum, 0.16 ft^3/s June 24, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 14, 1960, reached a stage of 8.0 ft from floodmarks, present site and datum, discharge, 6,350 ft^3/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,500 ft^3/s Feb. 26, gage height, 4.81 ft, no peak greater than base discharge of 1,600 ft^3/s; minimum, 0.22 ft^3/s Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.75	1.0	1.7	1.8	1.5	19	9.0	3.1	2.5	1.7	3.9	1.3
2	.66	2.2	1.4	1.5	1.4	11	6.4	3.3	2.5	1.7	4.7	5.1
3	.68	1.5	1.3	1.4	1.4	8.0	4.8	2.8	2.3	1.5	3.7	2.7
4	.58	1.3	1.1	2.4	11	13	3.8	2.5	2.3	1.4	5.9	2.1
5	.51	1.0	1.0	1.7	3.9	20	3.5	2.3	2.2	1.3	3.4	1.5
6	.42	1.3	1.2	1.4	2.6	25	3.1	140	2.1	1.3	2.8	1.3
7	.44	1.3	14	1.3	2.0	17	2.9	102	2.0	1.4	2.4	1.3
8	2.0	1.8	16	1.3	1.8	8.0	2.8	24	1.9	1.4	2.5	1.3
9	.83	2.0	10	1.4	1.7	7.0	2.6	13	1.8	1.4	2.4	1.3
10	.43	1.0	4.1	2.2	1.9	9.1	2.5	9.4	1.8	1.4	2.0	1.3
11	.46	2.2	2.6	6.1	1.5	9.1	2.4	8.6	1.8	1.3	1.8	2.5
12	.56	.94	2.1	2.1	6.7	8.5	2.2	6.5	1.5	1.3	1.8	2.6
13	.42	.84	1.7	1.8	6.4	5.8	2.2	8.9	1.4	1.3	1.9	1.3
14	.32	2.3	1.5	2.8	96	4.8	2.2	6.6	1.5	1.3	1.7	1.2
15	.43	2.9	1.3	1.6	28	8.0	2.3	9.1	1.5	1.2	2.0	1.1
16	.37	1.2	1.8	1.4	9.7	4.8	5.0	8.6	1.5	2.6	2.2	1.2
17	.32	.84	2.0	1.3	5.6	4.1	6.4	9.2	1.6	12	1.7	1.1
18	.37	.75	1.6	1.1	3.8	3.6	5.1	7.6	1.6	3.4	1.7	1.0
19	.32	.84	1.8	1.1	3.3	3.1	6.1	6.0	1.6	1.9	1.5	2.7
20	.37	2.5	1.2	1.1	3.8	3.3	3.6	4.9	1.9	1.5	1.5	1.8
21	.32	1.7	1.3	.98	2.7	2.9	3.5	4.3	1.8	1.5	1.4	2.8
22	.58	.94	1.2	1.2	2.6	7.5	9.8	4.2	1.6	1.6	1.4	2.6
23	.51	1.5	1.4	1.6	2.8	11	13	4.2	1.6	1.6	1.4	62
24	.44	.84	21	1.2	2.9	5.6	8.4	3.7	1.8	2.8	1.4	38
25	.44	20	134	7.3	3.1	6.0	5.4	3.6	2.3	5.7	3.3	9.2
26	.51	22	14	3.7	119	4.1	3.9	3.2	1.8	2.6	1.5	4.5
27	.58	15	5.5	2.1	42	5.6	3.3	3.0	3.3	1.9	1.9	3.3
28	7.7	5.2	3.3	1.6	23	6.5	2.9	3.2	4.2	1.9	1.4	3.0
29	4.0	2.4	2.6	4.1	---	4.1	2.7	2.9	1.9	1.5	1.4	3.0
30	2.2	1.7	2.1	2.5	---	16	2.4	2.9	1.9	2.0	1.8	3.5
31	.94	---	1.8	1.8	---	8.5	---	2.7	---	9.9	1.6	---
TOTAL	29.44	100.99	257.8	84.88	392.1	267.8	134.2	416.3	59.5	75.3	70.0	167.6
MEAN	.95	3.37	8.31	2.09	14.0	8.64	4.47	13.4	1.98	2.43	2.26	5.59
MAX	7.7	22	134	7.3	119	25	13	140	4.2	12	5.9	62
MIN	.32	.75	1.0	.98	1.4	2.9	2.2	2.3	1.4	1.2	1.4	1.0
AC-FT	58	200	511	128	778	531	266	826	118	149	139	332

CAL YR 1984	TOTAL	1132.14	MEAN	3.09	MAX	134	MIN	.32	AC-FT	2250
WTR YR 1985	TOTAL	2035.51	MEAN	5.58	MAX	140	MIN	.32	AC-FT	4040

HAWAII, ISLAND OF OAHU

16229300 KALIHI STREAM AT KALIHI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970-74, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT						
17...	1215	--	.37	380	7.3	25.0
23...	1230	760	.37	393	7.3	25.0
29...	1245	--	1.5	352	7.4	24.0
NOV						
15...	1005	--	2.9	285	7.5	22.5
JAN						
07...	1215	--	1.3	325	7.8	20.5
FEB						
25...	1310	760	2.5	253	7.8	23.0
MAR						
06...	1515	--	17	375	7.9	22.5
APR						
18...	1040	--	6.0	230	8.2	21.0
30...	1130	763	2.7	260	8.2	22.5
MAY						
29...	1015	--	3.1	250	7.9	21.5
JUL						
16...	1130	--	3.0	240	7.6	25.0
AUG						
27...	1130	764	2.3	270	7.6	25.0
SEP						
04...	1025	--	2.0	230	7.4	24.0

DATE	TIME	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT										
23...	1230	25	4.4	53	2800	2800	110	4	24	13
FEB										
25...	1310	2.4	8.2	96	10000	11000	73	16	15	8.7
APR										
30...	1130	1.4	6.9	80	6600	3600	71	14	13	9.4
AUG										
27...	1130	--	7.9	95	10000	5200	69	10	14	8.3

DATE	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT									
23...	36	40	2	1.5	110	9.4	49	.10	21
FEB									
25...	23	40	1	1.4	57	14	31	<.10	17
APR									
30...	25	43	1	.40	57	16	34	.10	9.6
AUG									
27...	26	44	1	1.5	59	10	36	<.10	17

< Actual value is known to be less than the value shown.

16228300 KALIHI STREAM AT KALIHI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT 23...	227	220	.31	<.10	.050	<.20	.070	.050	.040
FEB 25...	153	140	.21	.19	.070	.60	.060	.050	.050
APR 30...	143	140	.19	<.10	.060	.40	.070	.050	.030
AUG 27...	151	150	.21	.13	.050	.50	.100	.060	.030

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
OCT 23...	<10	<1	16	2.0	<1	<1	<3	<1	110	6
FEB 25...	20	<1	11	1.9	<1	<1	<3	4	120	5
APR 30...	10	<1	10	<.5	<1	<1	<3	1	130	<1
AUG 27...	50	1	12	<.5	<1	<1	<3	2	200	1

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 23...	8	32	<.1	<10	<1	<1	<1	210	<6	17
FEB 25...	<4	11	<.1	<10	4	<1	6	110	<6	15
APR 30...	<4	13	<.1	<10	<1	<1	<1	110	<6	4
AUG 27...	<4	15	<.1	<10	1	<1	<1	120	<6	11

DATE	TIME	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 23...	1230	3	.00	100
FEB 25...	1310	3	.02	100
APR 30...	1130	1	.00	100
AUG 27...	1130	5	.03	100

< Actual value is known to be less than the value shown.

16232000 NUUANU STREAM BELOW RESERVOIR 2 WASTEWAY, NEAR HONOLULU

LOCATION.--Lat 21°20'57", long 157°49'40", Hydrologic Unit 20060000, on right bank beside Old Pali Road in upper Nuuanu Valley, 0.2 mi downstream from reservoir 2 wasteway, and 3.5 mi northeast of Honolulu Post Office.

DRAINAGE AREA.--3.35 mi^2.

PERIOD OF RECORD.--October 1913 to January 1921. September 1921 to current year.

REVISED RECORDS.--WSP 985: 1921-35(M). WSP 1319: 1931. WSP 1569: Drainage area. WSP 1639: 1931, 1935.

GAGE.--Water-stage recorder and sharp-crested weirs. Datum of gage is 631.71 ft above mean sea level. Prior to Sept. 7, 1915, nonrecording gage at same site at datum 0.03 ft lower and Sept. 7, 1915, to Mar. 31, 1918, at same datum.

REMARKS.--Records good. Low-flow regulation by reservoirs 2, 3, and 4, capacities, 21 acre-ft, 34 acre-ft, and 1,630 acre-ft, respectively. Honolulu Board of Water Supply diverts ground water from tunnels in drainage area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--69 years (water years 1915-16, 1918-20, 1922-85), 6.96 ft^3/s (5,040 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft^3/s Jan. 16, 1921, gage height, 8.74 ft, from floodmarks, from rating curve extended above 420 ft^3/s by test of model of station site; minimum, 0.09 ft^3/s Sept. 10, 11, 1925.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 240 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	1030	246	3.47	Sept. 23	1730	*606	*4.71

Minimum discharge, 0.23 ft^3/s, Oct. 16-19, 26, Nov. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.31	.23	.67	1.5	1.1	4.5	3.5	3.0	3.0	2.0	2.0	1.2
2	.31	.43	.59	1.3	1.1	3.9	3.4	4.1	3.2	1.9	2.3	1.3
3	.31	.57	.68	1.5	1.1	4.0	3.2	2.5	2.9	2.0	1.7	1.2
4	.34	.38	.64	1.8	4.1	3.4	3.1	2.5	2.8	1.9	2.5	1.3
5	.34	.31	.60	1.4	2.1	4.4	3.1	2.5	2.8	1.9	1.9	1.1
6	.31	.34	.97	1.3	1.6	4.6	2.9	44	2.8	1.9	2.2	1.0
7	.31	.31	2.5	1.1	1.5	4.0	2.8	10	2.8	2.0	1.9	1.0
8	.47	.57	3.2	1.0	1.5	3.5	2.6	4.0	2.7	1.8	1.9	1.0
9	.26	.48	2.3	1.1	1.3	3.5	2.7	3.6	2.7	1.8	2.0	.97
10	.26	.43	1.4	1.5	1.5	3.5	2.6	3.6	2.6	1.7	1.7	1.2
11	.31	.67	1.0	2.3	1.3	3.8	2.5	4.0	2.6	1.7	1.6	2.7
12	.26	.57	1.0	1.4	2.0	3.4	2.5	4.0	2.6	1.6	1.6	1.5
13	.26	.52	.87	1.3	1.7	3.4	2.5	3.7	2.5	1.6	1.6	1.3
14	.26	.72	.94	1.4	48	3.3	2.6	3.6	2.4	1.6	1.5	1.3
15	.25	.68	.93	1.2	7.2	3.4	2.7	4.2	2.4	1.5	1.6	1.3
16	.25	.46	1.3	1.0	3.9	3.2	2.9	4.2	2.4	2.0	1.7	1.2
17	.23	.40	1.5	1.0	3.4	3.1	3.8	4.9	2.3	5.0	1.5	1.2
18	.23	.38	1.4	1.0	3.2	3.0	2.9	4.2	2.3	2.3	1.4	1.2
19	.23	.43	1.2	.96	3.1	2.7	3.0	3.8	2.4	1.7	1.4	2.5
20	.26	.51	.88	.93	3.1	2.7	3.0	3.7	2.5	1.7	1.3	1.5
21	.26	.43	.94	.93	3.0	2.7	3.1	3.6	2.1	1.6	1.4	2.0
22	.26	.38	.81	1.1	2.8	4.5	4.4	3.6	2.0	1.9	1.4	1.8
23	.26	.48	.91	1.1	2.8	4.0	4.9	3.6	2.1	1.6	1.3	39
24	.28	.38	5.4	1.1	2.7	3.2	3.5	3.4	2.2	1.7	1.3	36
25	.26	.92	27	3.8	2.7	2.9	3.1	3.2	2.6	2.3	1.7	7.1
26	.26	4.4	3.5	1.8	11	2.8	2.9	3.1	2.2	1.7	1.4	4.1
27	.43	2.6	2.3	1.5	8.1	3.6	2.8	3.4	4.1	1.7	1.4	3.4
28	2.1	1.6	1.9	1.1	4.2	4.1	2.7	3.3	2.9	1.7	1.4	3.2
29	.83	.93	1.7	1.4	---	3.3	2.7	3.1	2.1	1.7	1.3	3.0
30	.48	.79	1.6	1.4	---	6.1	2.6	3.4	2.2	1.9	1.3	2.9
31	.26	---	1.5	1.2	---	4.4	---	3.1	---	2.8	1.1	---
TOTAL	11.46	22.30	72.13	42.42	130.9	112.9	91.2	156.9	77.2	60.2	50.3	129.47
MEAN	.37	.74	2.33	1.37	4.67	3.64	3.04	5.06	2.57	1.94	1.62	4.32
MAX	2.1	4.4	27	3.8	48	6.1	4.9	44	4.1	5.0	2.5	39
MIN	.23	.23	.59	.93	1.1	2.7	2.5	2.5	2.0	1.5	1.1	.97
AC-FT	23	44	143	84	260	224	181	311	153	119	100	257

CAL YR 1984	TOTAL	514.16	MEAN	1.40	MAX	27	MIN	.23	AC-FT	1020
WTR YR 1985	TOTAL	957.38	MEAN	2.62	MAX	48	MIN	.23	AC-FT	1900

16240500 WAIAKEAKUA STREAM AT HONOLULU

LOCATION.--Lat 21°19'53", long 157°48'12", 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 mi^2.

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

REVISED RECORDS.--WSP 1319: 1919(M), 1930-33(M). WSP 1569: Drainage area. WSP 1937: 1949(M), 1960(M).

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 bench mark). Prior to May 20, 1914, nonrecording gage at site 200 ft upstream at different datum. May 20, 1914, to Jan. 16, 1921, water-stage recorder at site 30 ft upstream at different datum. Aug. 18, 1925, to Mar. 15, 1928, water-stage recorder at present site at datum 2.99 ft lower, and Mar. 16, 1928, to Oct. 18, 1933, at datum 0.41 ft higher than present datum.

REMARKS.--Records fair. Honolulu Board of Water Supply at times diverts a small amount of ground water from tunnel upstream. Occasional small diversions for irrigation upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--87 years (water years 1914-20, 1926-85), 5.03 ft^3/s (3,640 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft^3/s Jan. 16, 1921, gage height, 10.4 ft, from floodmarks, site and datum then in use, from rating curve extended above 58 ft^3/s. Current peak discharges are derived from rating curve extended above 1,760 ft^3/s on the basis of slope-area measurement at gege height 5.28 ft; minimum, 0.8 ft^3/s June 7, 8, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 446 ft^3/s Feb. 14, gage height, 3.64 ft, no other peak greater than base discharge of 310 ft^3/s; minimum, 0.85 ft^3/s for several days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.3	2.0	1.4	1.2	2.4	3.3	2.4	1.7	1.5	5.7	1.5
2	1.0	1.9	1.6	1.4	1.2	2.1	2.8	4.0	2.1	1.4	5.1	1.6
3	1.1	1.3	1.5	1.7	1.2	2.0	2.2	2.5	1.7	1.3	3.0	1.5
4	.99	1.9	1.4	3.4	5.7	2.4	2.0	2.2	1.7	1.3	4.5	1.6
5	.98	1.8	1.3	1.6	2.0	3.6	2.2	2.0	1.6	1.4	2.8	1.4
6	.92	2.6	1.9	1.4	1.7	3.9	1.9	6.1	1.6	1.3	3.1	1.4
7	1.0	1.9	16	1.3	1.6	3.0	1.8	5.0	1.5	1.3	3.3	1.4
8	3.4	5.0	8.2	1.2	1.4	2.4	1.8	2.8	1.5	1.3	2.7	1.4
9	1.2	2.6	4.1	1.2	1.2	2.2	1.7	2.4	1.5	1.2	2.6	1.3
10	1.1	1.6	2.7	1.6	2.2	2.9	1.6	1.9	1.5	1.3	2.1	2.0
11	1.1	2.4	2.0	6.8	1.5	3.5	1.6	1.8	1.4	1.2	1.9	4.8
12	1.0	2.0	1.8	2.2	3.5	2.3	1.6	1.8	1.4	1.2	1.9	1.9
13	.97	3.4	1.7	1.7	3.8	2.1	1.5	1.9	1.4	1.2	2.4	1.6
14	1.1	3.3	1.5	2.2	57	2.0	1.6	2.0	1.4	1.2	2.0	1.4
15	1.0	3.3	1.4	1.5	7.0	3.7	1.6	2.7	1.4	1.2	2.4	1.6
16	.98	1.8	2.2	1.3	3.4	2.7	2.7	6.7	1.4	1.6	2.9	1.5
17	.92	1.4	2.1	1.2	2.7	2.0	6.2	12	1.4	24	2.0	1.4
18	.89	1.3	1.7	1.2	2.3	1.8	3.7	3.7	1.4	4.1	1.8	1.6
19	.85	1.2	1.4	1.2	2.1	1.7	2.3	2.6	1.4	2.1	1.7	6.7
20	.85	1.2	1.3	1.2	2.0	1.9	2.0	2.2	1.7	1.8	1.6	2.3
21	.85	1.1	1.2	1.2	1.8	1.7	2.1	2.0	1.5	1.6	1.5	3.5
22	.85	1.1	1.2	2.2	1.7	8.9	4.1	2.1	1.4	2.0	1.7	3.0
23	.85	1.1	1.2	2.0	1.8	7.0	4.1	2.1	1.3	1.6	1.5	13
24	.85	1.1	8.8	1.8	1.9	2.6	3.2	2.3	1.4	2.1	1.5	12
25	.85	4.6	19	6.4	1.8	2.4	3.2	2.1	1.3	4.1	6.0	3.4
26	1.0	10	3.8	2.1	9.7	2.0	2.4	1.8	1.4	2.0	2.6	2.5
27	2.0	12	2.5	1.8	11	2.1	2.0	1.8	9.6	1.7	1.8	1.8
28	4.8	3.3	1.9	1.3	3.1	2.8	1.9	1.8	2.4	1.6	1.7	1.7
29	3.1	2.1	1.8	2.7	---	2.0	1.8	1.7	1.7	1.5	1.7	1.8
30	2.6	2.4	1.7	1.9	---	10	1.7	2.5	1.7	3.3	1.7	1.8
31	1.3	---	1.5	1.4	---	3.5	---	1.8	---	12	1.7	---
TOTAL	41.50	82.0	100.4	61.3	137.5	93.6	72.6	90.7	54.4	86.4	78.9	84.4
MEAN	1.34	2.73	3.24	1.98	4.91	3.02	2.42	2.93	1.81	2.79	2.55	2.81
MAX	4.8	12	19	6.8	57	10	6.2	12	9.6	24	6.0	13
MIN	.85	1.1	1.2	1.2	1.2	1.7	1.5	1.7	1.3	1.2	1.5	1.3
AC-FT	82	163	199	122	273	186	144	180	108	171	156	167

CAL YR 1984	TOTAL	945.80	MEAN	2.58	MAX	23	MIN	.85	AC-FT	1880
WTR YR 1985	TOTAL	983.70	MEAN	2.70	MAX	57	MIN	.85	AC-FT	1950

16254000 MAKAWAO STREAM NEAR KAILUA

LOCATION.--Lat 21°21'49", long 157°46'02", Hydrologic Unit 20060000, on left bank 650 ft upstream from mouth, 2.7 mi southwest of Kailua, and 4.3 mi southeast of Kaneohe Courthouse.

DRAINAGE AREA.--2.04 mi^2.

PERIOD OF RECORD.--November 1912 to June 1916, January 1958 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 80 ft, from topographic map. Prior to Jan. 1, 1958, nonrecording gage at sites about 200 ft upstream at different datums.

REMARKS.--Records good except for estimated daily discharges, which are poor. Maunawili ditch diverts 1.5 mi upstream for irrigation in vicinity of Waimanalo. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years (water years 1914-15, 1959-85), 4.99 ft^3/s (3,620 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum dischsrge, 8,000 ft^3/s Feb. 4, 1965, gage height, 12.41 ft, from rating curve extended above 470 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.43 ft^3/a Sept. 8-12, 14, 16-20, 22, 23, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,940 ft^3/s Feb. 14, gage height, 10.89 ft, no other peak greater than base discharge of 390 ft^3/s; minimum, 0.76 ft^3/s for several days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.1	1.9	3.0	3.5	5.2	3.0	2.4	2.2	e1.8	2.4	1.6
2	1.0	1.1	1.8	2.9	3.3	4.8	2.9	2.6	2.2	e1.8	2.4	1.6
3	1.0	1.1	1.7	3.0	3.3	4.7	2.9	2.4	2.2	e1.9	2.1	1.6
4	.97	1.2	1.7	3.7	9.5	5.8	2.9	2.3	2.2	e1.8	2.1	1.5
5	1.0	1.1	1.6	2.9	6.0	5.4	2.9	2.3	2.1	e1.8	2.1	1.5
6	1.0	1.3	1.7	2.7	4.9	4.8	2.8	2.7	2.1	e1.8	2.1	1.5
7	1.0	1.1	2.2	2.6	4.3	5.2	2.8	2.4	2.1	e1.9	2.0	1.5
8	1.4	1.3	2.2	2.5	4.2	4.5	2.8	2.3	2.1	e1.8	1.9	1.6
9	.94	1.1	1.9	2.5	4.0	4.0	2.8	2.3	2.0	e1.7	1.8	1.6
10	.88	1.1	1.8	3.0	4.0	3.9	2.8	2.3	2.0	1.7	1.7	2.2
11	.96	1.4	1.7	9.4	3.9	3.9	2.7	2.3	2.0	1.7	1.7	2.1
12	.99	1.3	1.6	5.5	8.1	3.7	2.7	2.3	2.0	1.7	1.7	1.6
13	.91	1.3	1.6	4.5	9.0	3.7	2.8	2.3	2.0	1.7	1.7	1.6
14	.96	1.3	1.6	6.7	208	3.8	2.8	2.3	2.0	1.8	1.7	1.5
15	.91	1.2	1.5	4.9	34	3.6	2.8	2.4	2.0	1.7	1.7	1.5
16	.90	1.2	1.6	3.2	20	3.5	2.9	2.8	2.0	1.9	1.7	1.4
17	.86	1.2	1.6	3.5	16	3.4	3.1	3.3	2.0	2.7	1.7	1.4
18	.82	1.2	1.5	3.5	14	3.3	2.9	2.8	2.0	1.9	1.6	1.4
19	.85	1.2	1.5	2.8	12	3.3	2.7	2.5	2.1	1.7	1.7	1.7
20	.88	1.3	1.4	2.8	10	3.3	2.8	2.4	2.1	1.7	1.6	1.6
21	.84	1.4	1.4	2.6	8.0	3.2	2.6	2.4	2.1	1.7	1.6	1.8
22	.92	1.5	1.5	3.1	7.1	3.5	2.6	2.8	2.1	1.8	1.6	1.5
23	.91	1.6	1.5	3.0	6.4	3.5	2.5	2.8	e2.0	1.8	1.6	2.3
24	.86	1.6	6.1	3.1	6.1	3.2	2.4	2.4	e1.9	1.9	1.6	5.5
25	.83	2.2	27	9.3	5.7	3.2	2.6	2.3	e1.9	2.0	2.1	4.8
26	.85	4.5	7.0	6.1	6.4	3.2	2.4	2.3	e1.9	1.8	1.8	3.2
27	.98	15	4.6	4.2	8.8	3.1	2.4	2.2	e2.0	1.8	1.6	1.8
28	2.8	4.6	3.9	3.7	6.2	3.1	2.3	2.2	e1.9	1.8	1.6	1.6
29	1.5	3.0	3.6	4.7	---	3.0	2.3	2.2	e1.8	1.7	1.6	1.6
30	2.0	2.2	3.4	4.7	---	3.1	2.3	2.3	e1.8	2.1	1.6	1.6
31	1.2	---	3.2	3.9	---	3.0	---	2.2	---	2.9	1.6	---
TOTAL	33.02	61.7	97.3	123.8	436.7	118.7	81.0	75.5	60.8	57.8	55.7	57.7
MEAN	1.07	2.06	3.14	3.99	15.6	3.83	2.70	2.44	2.03	1.86	1.80	1.92
MAX	2.8	15	27	9.4	208	5.8	3.1	3.3	2.2	2.9	2.4	5.5
MIN	.82	1.1	1.4	2.5	3.3	3.0	2.3	2.2	1.8	1.7	1.6	1.4
AC-FT	65	122	193	246	866	235	161	150	121	115	110	114

CAL YR 1984	TOTAL	778.55	MEAN	2.13	MAX	27	MIN	.82	AC-FT	1540
WTR YR 1985	TOTAL	1259.72	MEAN	3.45	MAX	208	MIN	.82	AC-FT	2500

e Estimated

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE

LOCATION.--Lat 21°23'22", long 157°47'44", Hydrologic Unit 20060000, on left bank 0.3 mi south of Hawaiian Memorial Park cemetary, 1.0 mi northwest of Pali Golf Course, and 1.3 mi south of Castle High School.

DRAINAGE AREA.--1.11 mi^2.

PERIOD OF RECORD.--February 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage ie 210 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 842 ft^3/s, Feb. 14, 1985, gage height, 10.40 ft from rating curve extended above 100 ft^3/s on basis of slope-conveyance computation; minimum, 0.03 ft^3/s for several days in November, December 1984 and January 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, that of Feb. 14, 1985, no other peak greater than base discharge of 600 ft^3/s; minimum, 0.03 ft^3/s for several days in November, December 1984 and January 1985.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.07	.05	.08	.07	.62	.37	.49	.55	.43	.35	.32
2	.07	.10	.05	.05	.06	.52	.37	.49	.55	.43	.32	.43
3	.10	.17	.05	.13	.07	.46	.43	.43	.55	.52	.32	.40
4	.07	.19	.05	.56	7.5	.46	.46	.43	.52	.49	.35	.40
5	.10	.17	.04	.06	.21	.52	.43	.49	.49	.46	.37	.43
6	.20	.29	.05	.05	.10	.46	.43	1.7	.49	.43	.37	.49
7	.44	.13	.33	.06	.08	.40	.37	1.8	.49	.43	.37	.46
8	.86	.08	.06	.05	.15	.43	.37	.55	.49	.43	.37	.49
9	.53	.08	.04	.05	.08	.46	.37	.55	.52	.43	.37	.43
10	.10	.08	.04	.33	.08	.43	.37	.53	.52	.43	.40	.91
11	.17	.10	.04	.49	.09	.46	.43	.53	.49	.43	.37	.69
12	.07	.07	.04	.06	1.7	.43	.43	.52	.52	.43	.40	.37
13	.08	.06	.04	.06	1.3	.43	.43	.53	.52	.43	.40	.45
14	.09	.05	.04	1.0	121	.43	.43	.56	.52	.40	.40	.35
15	.10	.04	.04	.06	1.6	.40	.43	.71	.52	.40	.35	.35
16	.09	.03	.05	.06	1.1	.40	.49	.56	.52	.40	.37	.33
17	.08	.04	.04	.05	1.1	.40	.49	.69	.52	.76	.30	.34
18	.09	.04	.05	.05	1.0	.40	.43	.50	.52	.41	.27	.44
19	.08	.04	.05	.07	.97	.37	.43	.49	.46	.37	.25	.45
20	.08	e.04	.05	.07	.85	.43	.43	.50	.49	.40	.25	.36
21	.08	e.04	.05	.07	.75	.43	.46	.51	.49	.40	.25	.53
22	.07	e.04	.05	.45	.70	.52	.46	.53	.52	.40	.25	.35
23	.07	e.04	.08	.07	.70	.43	.46	.53	.49	.43	.25	1.6
24	.07	e.04	1.9	.07	.70	.37	.43	.51	.52	.99	.25	.37
25	.07	e.22	6.9	.07	.70	.37	.46	.50	.49	.52	.25	.35
26	.14	e.60	.33	.09	8.8	.40	.49	.53	.49	.43	.25	.40
27	.11	e.56	.09	.09	.85	.37	.49	.52	2.6	.43	.25	.35
28	5.1	e.09	.07	.07	.70	.37	.49	.52	.44	.37	.25	.37
29	1.0	.06	.06	1.1	---	.37	.49	.55	.43	.37	.27	.37
30	.32	.06	.06	.10	---	.37	.46	.52	.45	.37	.27	.40
31	.08	---	.06	.07	---	.37	---	.55	---	.52	.32	---
TOTAL	10.61	3.62	10.85	5.62	153.01	13.28	13.08	18.82	17.17	14.14	9.81	13.98
MEAN	.34	.12	.35	.18	5.48	.43	.44	.61	.57	.46	.32	.47
MAX	5.1	.60	6.9	1.1	121	.62	.49	1.8	2.6	.99	.40	1.6
MIN	.07	.03	.04	.05	.06	.37	.37	.43	.43	.37	.25	.32
AC-FT	21	7.2	22	11	303	26	26	37	34	28	19	28

CAL YR 1984	TOTAL	110.53	MEAN	.30	MAX	6.9	MIN	.03	AC-FT	219
WTR YR 1985	TOTAL	283.99	MEAN	.78	MAX	121	MIN	.03	AC-FT	563

e Estimated

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1983 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: February 1983 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since February 1983.

REMARKS.--Water-quality samples were also collected at this site.

EXTREMES FOR PERIOD OF RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,230 mg/L Apr. 19, 1984; minimum daily mean, 3 mg/L for many days.
SEDIMENT DISCHARGE: Maximum daily, 452 tons Feb. 14, 1985; minimum daily, less than 0.01 ton for many days.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 458 mg/L Feb. 14; minimum daily mean, 3 mg/L Feb. 17-19.
SEDIMENT DISCHARGE: Maximum daily, 452 tons Feb. 14; minimum daily, less than 0.01 ton for many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	HARDNESS (MG/L AS CACO3)
NOV											
14...	1130	759	.07	239	6.9	24.0	1.2	5.9	70	--	--
27...	1130	--	.61	--	6.7	24.0	--	--	--	--	--
JAN											
11...	0920	--	1.2	145	--	21.0	--	--	--	--	--
FEB											
04...	1040	756	13	87	6.6	21.0	360	8.1	92	--	21
14...	1000	756	6.6	209	6.8	20.0	270	8.1	90	--	--
MAY											
06...	1010	758	9.4	144	6.4	21.5	95	8.2	94	3900	--
JUN											
04...	1045	762	.54	275	6.6	24.5	1.5	6.2	74	K430	87
JUL											
30...	1330	759	.39	230	6.6	25.0	1.9	6.3	77	660	--
AUG											
13...	1510	--	.42	240	6.6	26.5	--	--	--	--	--
SEP											
25...	1025	756	.35	236	8.4	24.0	5.0	4.0	48	2900	--

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB										
04...	4	4.9	2.2	5.3	32	.5	2.7	17	14	5.2
JUN										
04...	19	19	9.5	20	33	1	1.1	68	21	19

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
NOV										
14...	--	--	--	--	--	<1	--	--	--	--
FEB										
04...	<.10	3.0	53	48	.07	500	.30	1.7	2.0	.430
14...	--	--	--	--	--	310	--	--	--	--
MAY										
06...	--	--	--	--	--	290	.30	.60	.90	.580
JUN										
04...	<.10	24	156	150	.21	12	.60	.10	.70	.030
JUL										
30...	--	--	--	--	--	1	.50	.40	.90	.030
SEP										
25...	--	--	--	--	--	5	.50	.20	.70	.040

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)
FEB 04...	200	110	2	1	100	9	<10	<.5	<1	<1
JUN 04...	160	<10	<1	<1	<100	14	<10	<.5	<1	<1

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)
FEB 04...	80	10	10	<3	60	5	39000	80	31	<1
JUN 04...	10	<1	2	<3	2	2	420	170	2	1

DATE	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)
FEB 04...	<10	<4	540	23	<.1	<.1	<1	<10	120
JUN 04...	<10	<4	70	66	<.1	<.1	<1	<10	17

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
FEB 04...	<1	<1	<1	<1	<1	27	<6	160	7
JUN 04...	<1	<1	<1	<1	<1	96	<6	140	140

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVIMETRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)
FEB 04...	9.5	<1	<.1	<.010	<.1	<.010	<.010	<.010	.01	<.010
JUN 04...	1.4	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010

< Actual value is known to be less than the value shown.

16265600 RIGHT BRANCH OF KAMOOALII STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
FEB 04...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
JUN 04...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 04...	<.01	<.10	<.1	<.01	<1	<.01	.02	<.01	<.01	<.01
JUN 04...	<.01	<.10	<.1	<.01	<1	<.01	--	--	--	--

< Actual value is known to be less then the value shown.

16265600 RIGHT BRANCH OF KAMOOALII STREAM NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.10	5	.00	.07	10	.00	.05	9	.00
2	.07	7	.00	.10	51	.01	.05	10	.00
3	.10	46	.01	.17	12	.00	.05	9	.00
4	.07	11	.00	.19	19	.00	.05	19	.00
5	.10	11	.00	.17	62	.03	.04	8	.00
6	.20	5	.00	.29	11	.00	.05	32	.00
7	.44	5	.00	.13	51	.02	.33	52	.07
8	.86	60	.14	.08	10	.00	.06	26	.00
9	.53	12	.02	.08	11	.00	.04	10	.00
10	.10	7	.00	.08	7	.00	.04	10	.00
11	.17	7	.00	.10	6	.00	.04	8	.00
12	.07	7	.00	.07	28	.00	.04	8	.00
13	.08	7	.00	.06	6	.00	.04	8	.00
14	.09	7	.00	.05	6	.00	.04	8	.00
15	.10	7	.00	.04	10	.00	.04	8	.00
16	.09	7	.00	.03	6	.00	.05	8	.00
17	.08	7	.00	.04	8	.00	.04	8	.00
18	.09	7	.00	.04	5	.00	.05	8	.00
19	.08	7	.00	.04	5	.00	.05	8	.00
20	.08	7	.00	.04	6	.00	.05	7	.00
21	.08	7	.00	.04	6	.00	.05	6	.00
22	.07	7	.00	.04	6	.00	.05	4	.00
23	.07	7	.00	.04	6	.00	.08	10	.00
24	.07	7	.00	.04	6	.00	1.9	92	1.2
25	.07	7	.00	.22	15	.00	6.9	189	11
26	.14	7	.00	.60	75	.12	.33	28	.04
27	.11	7	.00	.56	70	.11	.09	10	.00
28	5.1	82	19	.09	24	.00	.07	10	.00
29	1.0	18	.23	.06	16	.00	.06	6	.00
30	.32	10	.00	.06	13	.00	.06	6	.00
31	.08	10	.00	---	---	---	.06	5	.00
TOTAL	10.61	---	19.40	3.62	---	0.29	10.85	---	12.31
		JANUARY			FEBRUARY			MARCH	
1	.08	4	.00	.07	5	.00	.62	11	.02
2	.05	4	.00	.06	8	.00	.52	10	.01
3	.13	20	.00	.07	7	.00	.46	8	.00
4	.56	20	.05	7.5	184	21	.46	10	.01
5	.06	8	.00	.21	18	.01	.52	12	.02
6	.05	4	.00	.10	8	.00	.46	7	.00
7	.06	8	.00	.08	9	.00	.40	8	.00
8	.05	6	.00	.15	12	.00	.43	10	.01
9	.05	4	.00	.08	8	.00	.46	7	.00
10	.33	17	.04	.08	8	.00	.43	14	.02
11	.49	28	.05	.09	5	.00	.46	28	.05
12	.06	10	.00	1.7	181	3.0	.43	4	.00
13	.06	8	.00	1.3	66	.26	.43	6	.00
14	1.0	68	.99	121	458	452	.43	6	.00
15	.06	10	.00	1.6	18	.08	.40	5	.00
16	.06	8	.00	1.1	4	.01	.40	4	.00
17	.05	6	.00	1.1	3	.00	.40	4	.00
18	.05	5	.00	1.0	3	.00	.40	5	.00
19	.07	8	.00	.97	3	.00	.37	5	.00
20	.07	6	.00	.85	10	.02	.43	10	.01
21	.07	5	.00	.75	20	.04	.43	5	.00
22	.45	43	.08	.70	15	.03	.52	62	.13
23	.07	7	.00	.70	15	.03	.43	6	.00
24	.07	13	.00	.70	12	.02	.37	6	.00
25	.07	6	.00	.70	11	.02	.37	6	.00
26	.09	5	.00	8.8	83	6.6	.40	6	.00
27	.09	5	.00	.85	17	.04	.37	6	.00
28	.07	5	.00	.70	10	.02	.37	6	.00
29	1.1	89	.95	---	---	---	.37	4	.00
30	.10	25	.00	---	---	---	.37	6	.00
31	.07	6	.00	---	---	---	.37	9	.00
TOTAL	5.62	---	2.16	153.01	---	483.18	13.28	---	0.28

16265800 RIGHT BRANCH OF KAMOOALII STREAM NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.37	10	.00	.49	16	.02	.55	5	.00
2	.37	8	.00	.49	16	.02	.55	6	.00
3	.43	8	.00	.43	8	.00	.55	7	.01
4	.46	11	.01	.43	14	.02	.52	8	.01
5	.43	6	.00	.49	14	.02	.49	14	.02
6	.43	5	.00	1.7	185	1.6	.49	7	.00
7	.37	6	.00	1.8	236	12	.49	9	.01
8	.37	4	.00	.55	35	.05	.49	9	.01
9	.37	6	.00	.55	35	.05	.52	14	.02
10	.37	4	.00	.53	30	.04	.52	8	.01
11	.43	12	.01	.53	24	.03	.49	9	.01
12	.43	6	.00	.52	15	.02	.52	15	.02
13	.43	8	.00	.53	17	.02	.52	14	.02
14	.43	6	.00	.56	25	.04	.52	18	.03
15	.43	11	.01	.71	70	.13	.52	9	.01
16	.49	30	.04	.56	9	.01	.52	17	.02
17	.49	74	.16	.69	35	.07	.52	13	.02
18	.43	15	.02	.50	18	.02	.52	12	.02
19	.43	10	.01	.49	13	.02	.46	9	.01
20	.43	11	.01	.50	10	.01	.49	8	.01
21	.46	10	.01	.51	11	.02	.49	9	.01
22	.46	6	.00	.53	8	.01	.52	32	.04
23	.46	15	.02	.53	7	.01	.49	10	.01
24	.43	10	.01	.51	11	.02	.52	10	.01
25	.46	10	.01	.50	8	.01	.49	10	.01
26	.49	10	.01	.53	7	.01	.49	10	.01
27	.49	6	.00	.52	11	.02	2.6	79	5.5
28	.49	6	.00	.52	7	.00	.44	10	.01
29	.49	6	.00	.55	7	.01	.43	10	.01
30	.46	8	.00	.52	6	.00	.45	10	.01
31	---	---	---	.55	6	.00	---	---	---
TOTAL	13.08	---	0.33	18.82	---	14.30	17.17	---	5.88
		JULY			AUGUST			SEPTEMBER	
1	.43	10	.01	.35	20	.02	.32	15	.01
2	.43	10	.01	.32	20	.02	.43	40	.05
3	.52	10	.01	.32	15	.01	.40	15	.02
4	.49	9	.01	.35	15	.01	.40	15	.02
5	.46	8	.00	.37	10	.00	.43	15	.02
6	.43	7	.00	.37	10	.00	.49	15	.02
7	.43	9	.01	.37	10	.00	.46	10	.01
8	.43	11	.01	.37	10	.00	.49	10	.01
9	.43	8	.00	.37	10	.00	.43	10	.01
10	.43	6	.00	.40	10	.01	.91	100	.25
11	.43	7	.00	.37	10	.00	.69	90	.17
12	.43	12	.01	.40	10	.01	.37	40	.04
13	.43	11	.01	.40	15	.02	.45	50	.06
14	.40	12	.01	.40	20	.02	.35	15	.01
15	.40	14	.02	.35	20	.02	.35	10	.00
16	.40	8	.00	.37	30	.03	.33	10	.00
17	.76	100	.21	.30	15	.01	.34	10	.00
18	.41	15	.02	.27	10	.00	.44	10	.01
19	.37	13	.01	.25	10	.00	.45	10	.01
20	.40	12	.01	.25	10	.00	.36	10	.00
21	.40	9	.00	.25	10	.00	.53	60	.09
22	.40	8	.00	.25	10	.00	.35	30	.03
23	.43	9	.01	.25	10	.00	1.6	58	1.1
24	.99	125	.33	.25	10	.00	.37	30	.03
25	.52	25	.04	.25	15	.01	.35	25	.02
26	.43	15	.02	.25	10	.00	.40	10	.01
27	.43	10	.01	.25	10	.00	.35	10	.00
28	.37	9	.00	.25	10	.00	.37	10	.00
29	.37	10	.00	.27	10	.00	.37	10	.00
30	.37	10	.00	.27	10	.00	.40	10	.01
31	.52	40	.06	.32	10	.00	---	---	---
TOTAL	14.14	---	0.63	9.81	---	0.19	13.98	---	2.01
YEAR	283.99		541.16						

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE

LOCATION.--Lat 21°23'42", long 157°48'44", Hydrologic Unit 20060000, on right bank 0.5 mi upstream from mouth, 1.4 mi southwest of Castle High School, and 1.8 mi south of Kaneohe Post Office.

DRAINAGE AREA.--0.44 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1960-63 (low-flow measurements), 1965-71, 1971-84 (annual maximum), April 1984 to current year. Prior to April 1984, the station was located 400 ft upstream.

GAGE.--Water-stage recorder and wooden control. Elevation of gage is 200 ft (from Corps of Engineers).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Honolulu Board of Water Supply diverts water from tunnel in drainage area.

AVERAGE DISCHARGE.--5 years (water years 1968-71, 1985), 1.59 ft^3/s (1,150 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 651 ft^3/s Nov. 26, 1970 (gage height, 6.18 ft for datum and site then in use), from rating curve extended above 10 ft^3/s on basis of slope-area measurement at gage height 6.09 ft; minimum, 0.03 ft^3/s for many days 1984-85.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 96 ft^3/s May 6, gage height, 2.28 ft, from rating curve extended above 30 ft^3/s, no peak greater than base discharge of 180 ft^3/s; minimum, 0.03 ft^3/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							e.27	.45	.44	.18	.11	.14
2							e.26	.38	.50	.18	.08	.14
3							e.24	.44	.34	.14	.14	.11
4							e.23	.40	.30	.14	.11	.14
5							e.22	.41	.30	.18	.14	.14
6							e.22	.73	.28	.18	.14	.11
7							e.22	.41	.30	e.26	.14	.14
8							e.22	.36	.30	e.26	.14	.11
9							e.22	.40	.30	e.30	.11	.11
10							e.27	.34	.30	e.26	.18	.17
11							e.26	.62	.26	e.18	.11	.18
12							e.24	.39	.26	.22	.11	.14
13							e.26	.39	.26	.18	.11	.14
14							e.25	.39	.14	.14	.08	.18
15							e.24	.34	.18	.14	.11	.18
16							e.24	.34	.18	.14	.11	.11
17							e.24	.39	.18	.14	.22	.11
18							e.24	.34	.18	.17	.50	.11
19							e2.3	.34	.18	.18	.56	.11
20							.65	.26	.18	.14	.44	.11
21							.71	.26	.18	.19	.56	.11
22							.44	.30	.22	.14	.39	.14
23							.35	.30	.18	.14	.18	.15
24							.34	.26	.14	.11	.14	.18
25							.44	.26	.20	.14	.14	.18
26							.49	.26	.18	.14	.14	.18
27							.44	.18	.18	.16	.14	.18
28							.40	.14	.14	.08	.14	.11
29							.42	.22	.14	.06	.18	.11
30							.44	.14	.11	.08	.18	.08
31							---	.14	---	.11	.14	---
TOTAL							11.76	10.58	7.03	5.06	5.97	4.10
MEAN							.39	.34	.23	.16	.19	.14
MAX							2.3	.73	.50	.30	.56	.18
MIN							.22	.14	.11	.06	.08	.08

e Estimated

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.08	.14	.30	.36	.90	.42	.34	.44	.22	.18	.14
2	.08	.08	.10	.29	.38	.81	.39	.44	.44	.22	.14	.14
3	.08	.11	.14	.28	.38	.76	.39	.34	.46	.21	.14	.11
4	.08	.08	.08	.36	.84	.76	.39	.22	.39	.22	.14	.11
5	.08	.08	.08	.26	.52	.78	.38	.22	.41	.20	.11	.09
6	.08	.08	.09	.25	.50	.80	.39	13	.30	.22	.14	.07
7	.08	.08	.30	.14	.38	.76	.37	2.9	.34	.20	.14	.08
8	.11	.11	.22	.11	.36	.67	.39	1.2	.30	.22	.14	.08
9	.11	.08	.22	.11	.34	.69	.33	.98	.30	.18	.11	.08
10	.06	.06	.18	.22	.34	.69	.34	.83	.30	.22	.11	.10
11	.06	.08	.33	.34	.34	.74	.32	.69	.26	.22	.14	.10
12	.06	.06	.39	.31	.87	.69	.30	.62	.26	.26	.14	.11
13	.08	.06	.69	.23	1.0	.76	.36	.56	.30	.25	.14	.11
14	.06	.08	1.4	.63	9.4	.62	.42	.56	.34	.30	.14	.12
15	.06	.08	1.3	e.22	2.2	.64	.44	.69	.34	.22	.11	.11
16	.08	.08	1.3	e.22	1.4	.59	.56	.69	.26	.30	.14	.08
17	.08	.08	1.5	e.22	1.1	.56	.73	.69	.26	.28	.11	.13
18	.08	.08	.81	e.22	.90	.62	.69	.62	.26	.30	.14	.12
19	.08	.08	.18	.22	.88	.53	.44	.69	.26	.28	.14	.12
20	.08	.06	.14	.24	.80	.48	.30	.56	.31	.31	.11	.11
21	.08	.06	.14	.26	.92	.50	.30	.56	.30	.22	.14	.12
22	.08	.06	.14	.30	.92	.61	.39	.50	.22	.26	.14	.09
23	.08	.06	.11	.26	.84	.59	.52	.55	.26	.22	.11	1.7
24	.08	.06	.34	.26	.83	.52	.42	.51	.28	.38	.08	.14
25	.06	.08	2.4	.44	.76	.56	.41	.50	.26	.48	.11	.13
26	.08	.39	.59	.31	1.7	.44	.39	.48	.22	.30	.11	.16
27	.11	.76	.47	.24	1.1	.48	.38	.53	.34	.18	.11	.16
28	.22	.26	.43	.22	.90	.56	.34	.44	.39	.18	.14	.14
29	.18	.14	.34	.44	---	.47	.30	.45	.22	.15	.18	.14
30	.11	.14	.31	.44	---	.44	.39	.54	.22	.18	.22	.09
31	.10	---	.28	.39	---	.44	---	.47	---	.22	.22	---
TOTAL	2.76	3.59	15.14	8.74	31.36	19.47	12.21	32.37	9.24	7.61	4.22	4.98
MEAN	.089	.12	.49	.28	1.12	.63	.41	1.04	.31	.25	.14	.17
MAX	.22	.76	2.4	.63	9.4	.90	.73	13	.46	.48	.22	1.7
MIN	.06	.06	.08	.11	.34	.44	.30	.22	.22	.15	.08	.07

WTR YR 1985 TOTAL 151.69 MEAN .42 MAX 13 MIN .06

e Estimated

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1984 to current yeer.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: April 1984 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since April 1984.

REMARKS.--Water-quality samples were also collected at this site.

EXTREMES FOR PERIOD APRIL 1984 TO SEPTEMBER 1985.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 206 mg/L Feb. 14, 1985; minimum daily mean, 2 mg/L Mar. 2-4, 1985.
SEDIMENT DISCHARGE: Maximum daily, 28 tons May 6, 1985; minimum daily, leae than 0.01 ton for many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)
OCT						
01...	1020	--	.08	160	7.0	22.5
NOV						
14...	1530	759	.07	160	7.2	22.0
DEC						
13...	0710	--	.16	162	7.2	20.0
13...	1450	--	1.5	195	7.7	20.5
14...	1205	--	1.5	190	7.6	20.5
15...	0910	--	1.5	185	7.4	19.5
16...	0930	--	1.6	190	7.7	19.5
17...	1145	--	1.6	180	7.7	20.0
18...	0750	--	1.6	190	7.6	19.5
18...	1305	--	.29	180	7.2	20.0
18...	1445	--	.22	180	7.3	20.5
19...	0600	--	.12	160	7.2	19.5
FEB						
04...	1030	756	.90	150	7.0	20.5
14...	1110	757	3.4	163	6.5	20.0
MAY						
06...	1200	758	21	126	6.6	20.0
JUN						
03...	0940	762	.34	177	7.2	22.0
JUL						
08...	1150	--	.13	180	7.3	22.0
AUG						
14...	0955	--	.11	170	6.8	22.5

DATE	TIME	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
NOV									
14...	1530	55	7.0	80	--	--	--	--	--
FEB									
04...	1030	34	7.6	85	--	46	5	9.0	5.7
14...	1110	12	8.5	94	--	--	--	--	--
MAY									
06...	1200	33	9.0	99	4900	--	--	--	--
JUN									
03...	0940	.80	7.6	87	680	53	9	10	6.9

DATE	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
FEB									
04...	11	33	.7	2.3	41	15	15	<.10	22
JUN									
03...	14	36	.9	1.1	44	5.9	17	<.10	27

< Actual value is known to be less than the value shown.

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
NOV 14...	--	--	--	<7	--	--	--	--
FEB 04...	105	100	.14	29	.20	.50	.70	.140
14...	--	--	--	13	--	--	--	--
MAY 06...	--	--	--	81	.90	1.0	1.9	.150
JUN 03...	107	110	.15	2	.30	<.10	--	.020

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)
FEB 04...	300	160	1	1	100	6	<10	<.5	<1	<1
JUN 03...	60	<10	<1	<1	<100	6	<10	<.5	<1	2

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)
FEB 04...	20	7	<1	<3	8	3	4400	95	10	<1
JUN 03...	<10	<1	<1	<3	4	3	90	25	<1	2

DATE	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)
FEB 04...	<10	<4	130	37	<.1	<.1	<1	<10	8
JUN 03...	<10	<4	20	12	<.1	<.1	<1	<10	8

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
FEB 04...	<1	<1	<1	<1	<1	56	<6	10	<3
JUN 03...	<1	<1	<1	<1	<1	57	<6	20	19

< Actual value is known to be less than the value shown.

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
FEB										
04...	5.4	<1	<.1	<.010	<.1	<.010	<.010	<.010	.01	<.010
JUN										
03...	.60	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
FEB										
04...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
JUN										
03...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB										
04...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01
JUN										
03...	<.01	<.10	<.1	<.01	<1	<.01	--	--	--	--

< Actual value is known to be less than the value shown.

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), APRIL TO SEPTEMBER 1984

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.27	5	.00	.45	11	.01	.44	5	.00
2	.26	5	.00	.38	5	.00	.50	5	.00
3	.24	5	.00	.44	5	.00	.34	5	.00
4	.23	5	.00	.40	5	.00	.30	5	.00
5	.22	5	.00	.41	5	.00	.30	5	.00
6	.22	5	.00	.73	20	.04	.28	5	.00
7	.22	5	.00	.41	5	.00	.30	5	.00
8	.22	5	.00	.36	5	.00	.30	5	.00
9	.22	5	.00	.40	5	.00	.30	5	.00
10	.27	5	.00	.34	5	.00	.30	5	.00
11	.26	5	.00	.62	20	.03	.26	5	.00
12	.24	5	.00	.39	5	.00	.26	5	.00
13	.26	5	.00	.38	5	.00	.26	5	.00
14	.25	5	.00	.39	5	.00	.14	5	.00
15	.24	5	.00	.34	5	.00	.18	5	.00
16	.24	5	.00	.34	5	.00	.18	5	.00
17	.24	5	.00	.39	5	.00	.18	5	.00
18	.24	5	.00	.34	5	.00	.18	5	.00
19	2.3	74	1.2	.34	5	.00	.18	15	.00
20	.65	14	.02	.26	5	.00	.18	5	.00
21	.71	24	.05	.26	5	.00	.18	5	.00
22	.44	20	.02	.30	5	.00	.22	5	.00
23	.35	5	.00	.30	5	.00	.18	5	.00
24	.34	5	.00	.26	5	.00	.14	5	.00
25	.44	5	.00	.26	5	.00	.20	5	.00
26	.49	5	.00	.26	5	.00	.18	5	.00
27	.44	5	.00	.18	5	.00	.18	4	.00
28	.40	5	.00	.14	5	.00	.14	4	.00
29	.42	5	.00	.22	5	.00	.14	4	.00
30	.44	5	.00	.14	5	.00	.11	4	.00
31	---	---	---	.14	5	.00	---	---	---
TOTAL	11.76	---	1.29	10.58	---	0.08	7.03	---	0.00
		JULY			AUGUST			SEPTEMBER	
1	.18	4	.00	.11	4	.00	.14	4	.00
2	.18	4	.00	.08	4	.00	.14	4	.00
3	.14	4	.00	.14	4	.00	.11	4	.00
4	.14	4	.00	.11	4	.00	.14	4	.00
5	.18	4	.00	.14	4	.00	.14	4	.00
6	.18	4	.00	.14	4	.00	.11	4	.00
7	.26	4	.00	.14	4	.00	.14	4	.00
8	.26	4	.00	.14	4	.00	.11	4	.00
9	.30	4	.00	.11	4	.00	.11	4	.00
10	.26	4	.00	.18	4	.00	.17	4	.00
11	.18	4	.00	.11	4	.00	.18	4	.00
12	.22	4	.00	.11	4	.00	.14	4	.00
13	.18	4	.00	.11	4	.00	.14	4	.00
14	.14	4	.00	.08	4	.00	.18	4	.00
15	.14	4	.00	.11	4	.00	.18	4	.00
16	.14	4	.00	.11	4	.00	.11	4	.00
17	.14	4	.00	.22	4	.00	.11	4	.00
18	.17	4	.00	.50	4	.00	.11	4	.00
19	.18	4	.00	.56	4	.00	.11	4	.00
20	.14	4	.00	.44	4	.00	.11	4	.00
21	.19	4	.00	.56	4	.00	.11	4	.00
22	.14	4	.00	.39	4	.00	.14	4	.00
23	.14	4	.00	.18	4	.00	.15	4	.00
24	.11	4	.00	.14	4	.00	.18	4	.00
25	.14	4	.00	.14	4	.00	.18	4	.00
26	.14	4	.00	.14	4	.00	.18	4	.00
27	.16	4	.00	.14	4	.00	.18	4	.00
28	.08	4	.00	.14	4	.00	.11	4	.00
29	.06	4	.00	.18	4	.00	.11	4	.00
30	.08	4	.00	.18	4	.00	.08	4	.00
31	.11	4	.00	.14	4	.00	---	---	---
TOTAL	5.06	---	0.00	5.97	---	0.00	4.10	---	0.00
YEAR	44.50		1.37						

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.08	4	.00	.08	4	.00	.14	4	.00
2	.08	4	.00	.08	4	.00	.10	4	.00
3	.08	4	.00	.11	4	.00	.14	4	.00
4	.08	4	.00	.08	4	.00	.08	4	.00
5	.08	4	.00	.08	4	.00	.08	4	.00
6	.08	4	.00	.08	4	.00	.09	4	.00
7	.08	4	.00	.08	4	.00	.30	15	.01
8	.11	4	.00	.11	4	.00	.22	10	.00
9	.11	4	.00	.08	4	.00	.22	10	.00
10	.06	4	.00	.06	4	.00	.18	6	.00
11	.06	4	.00	.08	4	.00	.33	15	.01
12	.06	4	.00	.06	4	.00	.39	15	.02
13	.08	4	.00	.06	4	.00	.69	15	.03
14	.06	4	.00	.08	4	.00	1.4	20	.08
15	.08	4	.00	.08	4	.00	1.3	6	.02
16	.08	4	.00	.08	4	.00	1.3	6	.02
17	.08	4	.00	.08	4	.00	1.5	6	.02
18	.08	4	.00	.08	4	.00	.81	5	.01
19	.08	4	.00	.08	4	.00	.18	4	.00
20	.08	4	.00	.06	4	.00	.14	4	.00
21	.08	4	.00	.06	4	.00	.14	4	.00
22	.08	4	.00	.06	4	.00	.14	4	.00
23	.08	4	.00	.06	4	.00	.11	4	.00
24	.08	4	.00	.06	4	.00	.34	29	.07
25	.06	4	.00	.08	4	.00	2.4	58	.66
26	.08	4	.00	.39	15	.02	.59	10	.02
27	.11	4	.00	.76	20	.04	.47	10	.01
28	.22	4	.00	.26	10	.00	.43	10	.01
29	.18	4	.00	.14	6	.00	.34	5	.00
30	.11	4	.00	.14	6	.00	.31	5	.00
31	.10	4	.00	---	---	---	.28	5	.00
TOTAL	2.76	---	0.00	3.59	---	0.06	15.14	---	0.99
		JANUARY			FEBRUARY			MARCH	
1	.30	4	.00	.36	5	.00	.90	3	.00
2	.29	4	.00	.38	5	.00	.81	2	.00
3	.29	4	.00	.38	5	.00	.76	2	.00
4	.36	4	.00	.84	20	.06	.76	2	.00
5	.26	4	.00	.52	6	.00	.78	4	.00
6	.25	4	.00	.50	6	.00	.80	4	.00
7	.14	4	.00	.38	5	.00	.78	4	.00
8	.11	4	.00	.36	5	.00	.67	4	.00
9	.11	4	.00	.34	5	.00	.69	4	.00
10	.22	15	.00	.34	5	.00	.69	4	.00
11	.34	15	.01	.34	5	.00	.74	4	.00
12	.31	8	.00	.87	85	1.3	.69	4	.00
13	.23	6	.00	1.0	36	.15	.76	4	.00
14	.63	19	.05	9.4	206	13	.62	4	.00
15	.22	6	.00	2.2	11	.07	.64	4	.00
16	.22	4	.00	1.4	7	.03	.59	4	.00
17	.22	4	.00	1.1	7	.02	.56	4	.00
18	.22	4	.00	.90	8	.02	.62	4	.00
19	.22	4	.00	.88	7	.02	.53	4	.00
20	.24	4	.00	.80	7	.02	.48	4	.00
21	.26	4	.00	.92	7	.02	.50	4	.00
22	.30	4	.00	.92	6	.01	.61	4	.00
23	.26	4	.00	.94	5	.01	.59	4	.00
24	.26	4	.00	.83	5	.01	.52	4	.00
25	.44	56	.19	.76	5	.01	.56	4	.00
26	.31	6	.00	1.7	40	.42	.44	4	.00
27	.24	5	.00	1.1	11	.03	.49	4	.00
28	.22	5	.00	.90	4	.00	.56	4	.00
29	.44	5	.00	---	---	---	.47	4	.00
30	.44	5	.00	---	---	---	.44	4	.00
31	.39	5	.00	---	---	---	.44	4	.00
TOTAL	8.74	---	0.25	31.36	---	15.20	19.47	---	0.00

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	.42	4	.00	.34	4	.00	.44	3	.00
2	.39	4	.00	.44	4	.00	.44	3	.00
3	.39	4	.00	.34	4	.00	.46	3	.00
4	.39	4	.00	.22	4	.00	.39	3	.00
5	.39	4	.00	.22	4	.00	.41	3	.00
6	.39	4	.00	13	185	28	.30	3	.00
7	.37	4	.00	2.9	22	.37	.34	3	.00
8	.39	4	.00	1.2	8	.03	.30	3	.00
9	.33	4	.00	.98	6	.02	.30	3	.00
10	.34	4	.00	.83	6	.01	.30	3	.00
11	.32	4	.00	.69	5	.00	.26	3	.00
12	.30	4	.00	.62	5	.00	.28	3	.00
13	.36	4	.00	.56	5	.00	.30	3	.00
14	.42	4	.00	.56	5	.00	.34	3	.00
15	.44	4	.00	.69	5	.00	.34	3	.00
16	.56	4	.00	.69	5	.00	.26	3	.00
17	.73	4	.00	.69	5	.00	.26	3	.00
18	.69	4	.00	.62	5	.00	.26	3	.00
19	.44	4	.00	.69	5	.00	.26	3	.00
20	.30	4	.00	.56	5	.00	.31	3	.00
21	.30	4	.00	.56	5	.00	.30	3	.00
22	.39	4	.00	.50	5	.00	.22	3	.00
23	.52	4	.00	.55	5	.00	.26	3	.00
24	.42	4	.00	.51	5	.00	.28	3	.00
25	.41	4	.00	.50	5	.00	.26	3	.00
26	.39	4	.00	.48	5	.00	.22	3	.00
27	.39	4	.00	.53	5	.00	.34	3	.00
28	.34	4	.00	.44	5	.00	.39	3	.00
29	.30	4	.00	.45	5	.00	.22	3	.00
30	.39	4	.00	.54	5	.00	.22	3	.00
31	---	---	---	.47	5	.00	---	---	---
TOTAL	12.21	---	0.00	32.37	---	26.43	9.24	---	0.00
		JULY			AUGUST			SEPTEMBER	
1	.22	3	.00	.18	3	.00	.14	3	.00
2	.22	3	.00	.14	3	.00	.14	3	.00
3	.21	3	.00	.14	3	.00	.11	3	.00
4	.22	3	.00	.14	3	.00	.11	3	.00
5	.20	3	.00	.11	3	.00	.09	3	.00
6	.22	3	.00	.14	3	.00	.07	3	.00
7	.20	3	.00	.14	3	.00	.08	3	.00
8	.22	3	.00	.14	3	.00	.08	3	.00
9	.18	3	.00	.11	3	.00	.08	3	.00
10	.22	3	.00	.11	3	.00	.10	3	.00
11	.22	3	.00	.14	3	.00	.10	3	.00
12	.26	3	.00	.14	3	.00	.11	3	.00
13	.25	3	.00	.14	3	.00	.11	3	.00
14	.30	3	.00	.14	3	.00	.12	3	.00
15	.22	3	.00	.11	3	.00	.11	3	.00
16	.30	3	.00	.14	3	.00	.08	3	.00
17	.28	3	.00	.11	3	.00	.13	3	.00
18	.30	3	.00	.14	3	.00	.12	3	.00
19	.28	3	.00	.14	3	.00	.12	3	.00
20	.31	3	.00	.11	3	.00	.11	3	.00
21	.22	3	.00	.14	3	.00	.12	3	.00
22	.26	3	.00	.14	3	.00	.09	3	.00
23	.22	3	.00	.11	3	.00	1.7	16	.07
24	.39	3	.00	.08	3	.00	.14	3	.00
25	.48	3	.00	.11	3	.00	.13	3	.00
26	.30	3	.00	.11	3	.00	.16	3	.00
27	.18	3	.00	.11	3	.00	.16	3	.00
28	.18	3	.00	.14	3	.00	.14	3	.00
29	.15	3	.00	.18	3	.00	.14	3	.00
30	.18	3	.00	.22	3	.00	.09	3	.00
31	.22	3	.00	.22	3	.00	---	---	---
TOTAL	7.81	---	0.00	4.22	---	0.00	4.96	---	0.07
YEAR	151.69		43.00						

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE

LOCATION.--Lat 21°23'47", long 157°48'23", Hydrologic Unit 20060000, on left bank 300 ft downstream from Luluku Stream, 1.0 mi southwest of Castle High School, and 1.9 mi northwest of the intersection of State Highways 61 and 83.

DRAINAGE AREA.--3.81 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1976 to current year.

GAGE.--Water-stage recorder and concrete control.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by a flood-control dam upstream.

AVERAGE DISCHARGE.--8 years, 10.8 ft^3/s (7,820 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,500 ft^3/s Mar. 18, 1980, gage height, 5.50 ft, from rating curve extended above 200 ft^3/s; minimum, 0.25 ft^3/s several days in October 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 645 ft^3/s Feb. 14, gage height, 4.09 ft; minimum, 0.25 ft^3/s for several days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.8	3.8	3.8	4.4	7.7	5.6	5.7	8.4	5.6	6.1	4.1
2	2.9	2.6	3.3	3.6	4.1	7.3	5.8	5.8	6.1	5.3	5.8	4.7
3	3.1	3.2	3.3	4.4	4.1	7.6	5.3	5.2	6.1	5.6	5.3	4.7
4	2.8	3.2	3.3	6.7	12	8.0	5.3	5.1	6.1	5.8	5.6	4.4
5	2.9	2.8	3.1	4.4	7.0	8.4	5.3	5.1	6.1	5.6	5.3	4.1
6	2.7	3.2	3.3	3.8	5.1	8.4	5.3	104	6.1	5.3	5.0	3.8
7	2.7	3.0	5.7	3.8	4.5	7.1	5.3	27	6.1	5.3	5.0	4.1
8	3.5	3.0	4.9	3.8	4.9	6.4	5.3	11	6.1	5.3	5.0	4.4
9	20	2.8	3.9	3.8	4.2	6.4	5.3	9.1	5.8	5.3	5.0	4.4
10	.29	2.6	3.4	4.7	5.0	7.0	5.3	7.8	5.8	5.3	5.0	6.1
11	.33	3.0	3.3	7.7	4.1	7.6	5.3	7.4	5.8	5.3	4.7	5.6
12	.29	2.8	3.4	5.0	8.1	6.8	e5.3	7.4	5.8	5.3	4.7	4.7
13	.29	2.8	3.7	5.0	15	6.6	e5.3	7.3	5.8	5.3	5.0	4.4
14	.29	2.6	4.4	7.7	163	6.8	e5.3	7.4	5.6	5.0	4.7	4.4
15	.29	2.8	4.5	5.0	30	6.7	e5.3	8.4	5.8	4.7	5.0	4.4
16	.29	2.6	4.6	4.4	13	6.4	e5.5	7.9	5.6	5.3	5.3	4.1
17	.52	2.6	4.6	4.1	9.8	6.2	e5.7	8.3	5.6	6.4	4.7	4.1
18	2.1	2.6	3.8	4.1	8.3	5.8	e5.4	8.2	5.6	5.6	4.4	4.1
19	2.4	2.6	2.9	4.1	7.7	5.8	e5.3	7.3	5.6	5.0	4.7	4.7
20	2.5	2.6	2.8	3.8	7.4	6.1	e5.3	7.4	5.8	4.7	4.4	4.1
21	2.5	2.8	2.8	3.8	7.0	5.8	e5.3	7.4	5.6	4.7	4.4	5.3
22	2.6	2.6	2.8	6.1	7.2	7.7	e5.3	7.6	5.3	5.0	4.4	4.7
23	2.6	2.8	3.1	5.0	7.2	7.0	e5.3	7.7	5.3	5.3	4.4	14
24	2.4	2.8	7.3	4.4	6.9	5.8	e5.8	7.5	5.3	7.3	4.4	9.9
25	2.4	4.1	33	8.8	6.5	5.8	5.6	7.3	5.6	7.8	4.4	6.7
26	2.6	12	9.2	6.7	28	5.8	5.2	7.0	5.6	5.6	4.4	6.2
27	2.7	19	6.1	5.0	12	5.6	5.1	7.0	13	5.3	4.4	5.8
28	7.5	6.4	5.3	4.4	8.6	5.8	4.9	6.7	8.3	5.3	4.4	5.0
29	5.0	4.3	4.7	7.0	---	5.6	4.9	6.7	6.1	4.7	4.4	5.0
30	3.8	4.1	4.1	6.4	---	5.8	5.0	6.7	5.8	5.0	4.4	5.0
31	3.2	---	3.8	5.0	---	5.6	---	6.4	---	7.4	4.1	---
TOTAL	90.29	117.1	158.0	156.1	405.1	205.2	159.7	340.8	183.6	170.2	148.8	157.0
MEAN	2.91	3.90	5.10	5.04	14.5	6.62	5.32	11.0	6.12	5.49	4.80	5.23
MAX	20	19	33	8.8	163	8.4	5.8	104	13	7.8	6.1	14
MIN	.29	2.6	2.8	3.6	4.1	5.6	4.9	5.1	5.3	4.7	4.1	3.8
AC-FT	179	232	313	310	804	407	317	676	364	338	295	311

CAL YR 1984	TOTAL	1532.99	MEAN	4.19	MAX	37	MIN	.29	AC-FT	3040
WTR YR 1985	TOTAL	2291.89	MEAN	6.28	MAX	163	MIN	.29	AC-FT	4550

e Estimated

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1976 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: November 1976 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since November 1976.

REMARKS.--In addition to the sediment sampler record, observations of specific conduotsnce, pH, and water temperature were collected during the year.

EXTREMES FOR PERIOD OF RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 879 mg/L Mar. 18, 1980; minimum daily mean, 2 mg/L several days in 1981, 1983, 1984.
SEDIMENT DISCHARGE: Maximum daily, 1,380 tons Mar. 18, 1980; minimum daily, 0 ton Oct. 9-11, 1981.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Msximum daily mean, 230 mg/L May 6; minimum daily mean, 4 mg/L for several days.
SEDIMENT DISCHARGE: Maximum daily, 128 tons May 6; minimum daily, less then 0.01 ton for many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)
OCT							
09...	1415	--	.33	200	6.7	31.0	--
10...	0715	--	.29	220	6.6	23.0	--
NOV							
15...	1315	784	3.0	192	8.0	26.0	5.6
JAN							
07...	1500	--	3.8	210	7.5	24.5	--
FEB							
04...	1320	756	22	212	7.5	21.0	2.6
14...	0545	--	162	--	--	--	100
14...	0800	--	266	--	--	--	100
14...	0615	--	358	--	--	--	180
14...	0630	--	450	--	--	--	220
14...	0645	--	555	--	--	--	170
14...	0700	--	815	--	--	--	240
14...	0715	--	610	--	--	--	75
14...	0730	--	585	--	--	--	85
14...	0745	--	534	--	--	--	85
14...	0800	--	486	--	--	--	85
14...	0815	--	434	--	--	--	85
14...	1005	761	180	134	6.8	21.0	85
APR							
24...	1215	--	5.8	190	8.0	25.0	--
MAY							
06...	0730	--	184	122	--	--	140
06...	0800	--	247	140	--	--	130
06...	0830	--	300	142	--	--	120
06...	0900	--	305	147	--	--	85
06...	1000	--	442	145	--	--	70
06...	1030	--	335	135	--	--	120
06...	1100	--	300	137	--	--	95
06...	1130	--	260	146	--	--	60
06...	1135	760	290	149	6.9	22.0	50
06...	1200	--	221	144	--	--	60
06...	1230	--	184	147	--	--	45
06...	1300	--	160	148	--	--	39
08...	1330	--	140	149	--	--	36
JUN							
04...	0915	764	5.8	202	7.7	25.5	1.6
JUL							
30...	0950	763	5.1	184	7.8	27.5	1.7
SEP							
25...	1250	756	5.8	186	8.0	29.0	2.0

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
NOV				
15...	1315	8.0	99	--
FEB				
04...	1320	8.4	95	510
14...	1005	8.6	97	--
MAY				
06...	1135	8.5	98	3100
JUN				
04...	0915	8.0	98	K20
JUL				
30...	0950	8.4	106	K30
SEP				
25...	1250	8.2	108	140

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
FEB									
04...	1320	67	23	11	9.6	15	32	.8	1.1
14...	0700	44	15	7.7	6.1	10	32	.7	1.6
JUN									
04...	0915	61	16	9.7	8.8	15	35	.9	1.0
SEP									
25...	1250	58	7	9.1	8.5	16	37	.9	.90

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)
FEB								
04...	44	25	18	<.10	21	134	130	.18
14...	29	17	12	<.10	13	84	85	.11
JUN								
04...	45	16	18	<.10	22	115	120	.16
SEP								
25...	51	8.6	19	<.10	22	122	110	.17

< Actual value is known to be less than the value shown.
K Resulta based on colony count outside the acceptable range (non-ideal colony count).

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
NOV						
15...	1315	9	--	--	--	--
FEB						
04...	1320	10	<.10	.70	--	.010
14...	0545	220	.50	1.8	2.3	.460
14...	0600	234	.50	1.8	2.3	.570
14...	0615	290	.30	1.2	1.5	.660
14...	0630	248	.30	3.4	3.7	.750
14...	0645	484	.30	3.3	3.6	.750
14...	0700	390	.20	4.6	4.8	.710
14...	0715	210	.20	1.3	1.5	.590
14...	0730	245	.20	1.5	1.7	.500
14...	0745	193	.20	1.0	1.2	.420
14...	0800	189	.20	1.4	1.6	.410
14...	0815	165	.20	.80	1.0	.360
14...	1005	164	--	--	--	--
MAY						
06...	0730	472	--	--	--	--
06...	0800	552	--	--	--	--
06...	0830	752	--	--	--	--
06...	0900	392	--	--	--	--
06...	1000	202	--	--	--	--
06...	1030	620	--	--	--	--
06...	1100	340	--	--	--	--
06...	1130	192	--	--	--	--
06...	1135	118	.70	1.0	1.7	.260
06...	1200	69	--	--	--	--
06...	1230	90	--	--	--	--
06...	1300	66	--	--	--	--
06...	1330	53	--	--	--	--
JUN						
04...	0915	2	.20	.20	.40	.020
JUL						
30...	0950	1	.10	.60	.70	.020
SEP						
25...	1250	3	.20	.30	.50	.020

DATE	TIME	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
FEB										
04...	1320	490	20	<1	<1	100	12	<10	<.5	<1
14...	0700	34000	120	7	<1	200	9	<10	<.5	1
14...	0800	14000	--	1	--	100	--	<10	--	<1
JUN										
04...	0915	260	10	<1	<1	<100	10	<10	<.5	<1
SEP										
25...	1250	170	30	<1	<1	<100	9	<10	<.5	<1

< Actual value is known to be less than the value shown.

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
FEB										
04...	<1	10	3	2	<3	5	1	710	20	7
14...	<1	80	<1	30	<3	70	6	43000	110	100
14...	--	60	--	10	--	34	--	20000	--	10
JUN										
04...	<1	<10	<1	3	<3	3	2	370	14	2
SEP										
25...	<1	<10	<1	1	<3	4	4	270	23	<1

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
FEB										
04...	<1	<10	<4	50	19	<.1	<.1	<1	<10	2
14...	<1	<10	<4	870	17	.1	<.1	<1	<10	150
14...	--	<10	--	360	--	.2	--	<1	--	39
JUN										
04...	<1	<10	<4	30	8	<.1	<.1	<1	<10	8
SEP										
25...	1	<10	<4	40	11	<.1	<.1	1	<10	3

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB									
04...	1	<1	<1	<1	<1	88	<6	<10	<3
14...	5	<1	<1	4	1	57	<6	100	10
14...	--	1	--	<1	--	--	--	50	--
JUN									
04...	<1	8	<1	<1	<1	79	<6	<10	6
SEP									
25...	2	<1	<1	<1	<1	77	<6	50	5

DATE	TIME	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB		
04...	1320	2.6
14...	0545	11
14...	0600	9.9
14...	0615	8.0
14...	0630	26
14...	0645	27
14...	0700	15
14...	0715	12
14...	0730	9.4
FEB		
14...	0745	7.5
14...	0800	7.4
14...	0815	6.4
JUN		
04...	0915	1.6
SEP		
25...	1250	1.7

< Actual value is known to be less than the value shown.

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
FEB										
04...	1320	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010
14...	0600	--	<.1	.010	<.1	<.010	<.010	<.010	.01	.010
14...	0700	--	<.1	.010	<.1	<.010	<.010	<.010	.01	<.010
14...	0800	--	<.1	<.010	<.1	<.010	<.010	<.010	.01	<.010
JUN										
04...	0915	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010
SEP										
25...	1250	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
FEB										
04...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
14...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
14...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
14...	<.010	<.010	<.01	<.010	<.010	.010	<.01	<.01	<.01	<.01
JUN										
04...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
SEP										
25...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL .TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB										
04...	<.01	<.10	<.1	<.01	<1	<.01	.04	<.01	<.01	<.01
14...	<.01	<.10	<.1	<.01	<1	<.01	.01	.03	<.01	<.01
14...	<.01	<.10	<.1	<.01	<1	<.01	.02	.04	<.01	<.01
14...	<.01	<.10	<.1	<.01	<1	<.01	.02	.04	<.01	<.01
JUN										
04...	<.01	<.10	<.1	<.01	<1	<.01	--	--	--	--
SEP										
25...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

16272200 KAMOOALII STREAM BELOW LULUKU STREAM, NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	2.8	6	.05	2.8	18	.14	3.6	15	.15
2	2.9	6	.05	2.6	18	.13	3.3	27	.24
3	3.1	6	.05	3.2	18	.16	3.3	35	.31
4	2.8	6	.05	3.2	18	.16	3.3	33	.29
5	2.9	6	.05	2.8	18	.14	3.1	15	.13
6	2.7	6	.04	3.2	18	.16	3.3	15	.13
7	2.7	6	.04	3.0	18	.15	5.7	19	.29
8	3.5	10	.09	3.0	18	.15	4.9	38	.50
9	20	28	8.8	2.8	18	.14	3.9	50	.53
10	.29	10	.00	2.6	18	.13	3.4	49	.45
11	.33	4	.00	3.0	18	.15	3.3	65	.58
12	.29	4	.00	2.8	22	.17	3.4	20	.18
13	.29	4	.00	2.8	22	.17	3.7	18	.18
14	.29	4	.00	2.6	22	.15	4.4	25	.30
15	.29	4	.00	2.8	22	.17	4.5	25	.30
16	.29	4	.00	2.6	26	.18	4.6	37	.46
17	.52	5	.00	2.6	20	.14	4.6	30	.37
18	2.1	7	.04	2.6	20	.14	3.8	19	.19
19	2.4	8	.05	2.6	20	.14	2.9	22	.17
20	2.5	8	.05	2.6	20	.14	2.8	23	.17
21	2.5	12	.08	2.8	20	.15	2.8	20	.15
22	2.6	13	.09	2.6	20	.14	2.8	23	.17
23	2.6	14	.10	2.8	22	.17	3.1	22	.18
24	2.4	14	.09	2.8	24	.18	7.3	23	.45
25	2.4	17	.11	4.1	21	.23	33	28	3.0
26	2.6	17	.12	12	22	.71	9.2	24	.60
27	2.7	17	.12	19	18	1.0	6.1	20	.33
28	7.5	24	.49	6.4	12	.21	5.3	18	.26
29	5.0	21	.28	4.3	13	.15	4.7	12	.15
30	3.8	22	.23	4.1	10	.11	4.1	10	.11
31	3.2	18	.16	---	---	---	3.8	10	.10
TOTAL	90.29	---	11.23	117.1	---	6.06	158.0	---	11.42
		JANUARY			FEBRUARY			MARCH	
1	3.8	10	.10	4.4	17	.20	7.7	7	.15
2	3.6	10	.10	4.1	13	.14	7.3	8	.16
3	4.4	12	.14	4.1	10	.11	7.6	8	.16
4	6.7	14	.25	12	36	1.4	8.0	7	.15
5	4.4	13	.15	7.0	11	.21	8.4	9	.20
6	3.8	13	.13	5.1	9	.12	8.4	9	.20
7	3.8	33	.34	4.5	10	.12	7.1	8	.15
8	3.8	14	.14	4.9	10	.13	6.4	8	.14
9	3.6	18	.17	4.2	10	.11	6.4	8	.14
10	4.7	27	.34	5.0	11	.15	7.0	8	.15
11	7.7	20	.42	4.1	9	.10	7.6	8	.16
12	5.0	17	.23	8.1	9	.20	6.8	8	.15
13	5.0	30	.41	15	13	.53	6.6	8	.14
14	7.7	40	.83	163	158	104	6.6	8	.14
15	5.0	25	.34	30	50	4.1	6.7	8	.14
16	4.4	20	.24	13	26	.91	6.4	8	.14
17	4.1	15	.17	9.8	17	.45	6.2	8	.13
18	4.1	15	.17	8.3	11	.25	5.8	8	.13
19	4.1	15	.17	7.7	8	.17	5.8	8	.13
20	3.8	15	.15	7.4	8	.16	6.1	8	.13
21	3.8	15	.15	7.0	8	.11	5.8	8	.13
22	6.1	17	.28	7.2	7	.14	7.7	10	.21
23	5.0	17	.23	7.2	13	.25	7.0	9	.17
24	4.4	17	.20	6.9	13	.24	5.8	9	.14
25	8.8	22	.52	6.5	7	.12	5.8	9	.14
26	6.7	20	.36	28	23	1.7	5.8	9	.14
27	5.0	18	.24	12	11	.36	5.6	9	.14
28	4.4	18	.21	8.8	7	.16	5.8	9	.14
29	7.0	23	.43	---	---	---	5.6	9	.14
30	6.4	19	.33	---	---	---	5.8	9	.14
31	5.0	18	.24	---	---	---	5.6	9	.14
TOTAL	158.1	---	8.18	405.1	---	116.64	205.2	---	4.62

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	5.6	110	1.7	5.7	20	.31	6.4	18	.31
2	5.6	50	.76	5.8	17	.27	6.1	20	.33
3	5.3	40	.57	5.2	16	.22	6.1	18	.30
4	5.3	25	.36	5.1	16	.22	6.1	20	.33
5	5.3	15	.21	5.1	18	.25	6.1	25	.41
6	5.3	13	.19	104	230	128	6.1	36	.59
7	5.3	13	.19	27	55	4.0	8.1	47	.77
8	5.3	13	.19	11	11	.33	6.1	23	.38
9	5.3	13	.19	9.1	10	.25	5.8	31	.49
10	5.3	13	.19	7.8	8	.17	5.8	35	.55
11	5.3	10	.14	7.4	8	.16	5.8	30	.47
12	5.3	10	.14	7.4	9	.18	5.8	33	.52
13	5.3	10	.14	7.3	7	.14	5.8	39	.61
14	5.3	10	.14	7.4	5	.10	5.6	18	.27
15	5.3	10	.14	8.4	7	.16	5.8	18	.28
16	5.5	10	.15	7.9	5	.11	5.6	14	.21
17	5.7	14	.22	8.3	6	.13	5.6	12	.18
18	5.4	11	.16	8.2	5	.11	5.6	9	.14
19	5.3	11	.16	7.3	4	.08	5.6	8	.12
20	5.3	11	.16	7.4	5	.10	5.8	14	.22
21	5.3	11	.16	7.4	5	.10	5.6	12	.18
22	5.3	11	.16	7.6	4	.08	5.3	10	.14
23	5.3	11	.16	7.7	4	.08	5.3	8	.11
24	5.8	30	.47	7.5	5	.10	5.3	5	.07
25	5.6	28	.42	7.3	5	.10	5.6	7	.11
26	5.2	22	.31	7.0	7	.13	5.6	6	.09
27	5.1	22	.30	7.0	9	.17	13	18	.63
28	4.9	22	.29	6.7	9	.16	8.3	9	.20
29	4.9	25	.33	6.7	11	.20	6.1	7	.12
30	5.0	24	.32	6.7	13	.24	5.8	9	.14
31	---	---	---	6.4	18	.31	---	---	---
TOTAL	159.7	---	9.02	340.8	---	136.96	183.6	---	9.27
		JULY			AUGUST			SEPTEMBER	
1	5.6	8	.12	6.1	11	.18	4.1	8	.09
2	5.3	7	.10	5.8	12	.19	4.7	8	.10
3	5.6	6	.09	5.3	12	.17	4.7	8	.10
4	5.6	5	.08	5.6	11	.17	4.4	8	.10
5	5.6	5	.08	5.3	11	.16	4.1	8	.09
6	5.3	6	.09	5.0	10	.14	3.8	6	.06
7	5.3	5	.07	5.0	9	.12	4.1	6	.07
8	5.3	8	.11	5.0	9	.12	4.4	6	.07
9	5.3	8	.11	5.0	9	.12	4.4	8	.10
10	5.3	8	.11	5.0	9	.12	6.1	18	.30
11	5.3	12	.17	4.7	9	.11	5.6	35	.53
12	5.3	8	.11	4.7	9	.11	4.7	26	.33
13	5.3	8	.11	5.0	10	.14	4.4	14	.17
14	5.0	8	.11	4.7	10	.13	4.4	15	.18
15	4.7	8	.10	5.0	12	.16	4.4	36	.43
16	5.3	10	.14	5.3	13	.19	4.1	35	.39
17	6.4	14	.24	4.7	10	.13	4.1	51	.56
18	5.6	12	.18	4.4	10	.12	4.1	24	.27
19	5.0	8	.11	4.7	10	.13	4.7	10	.13
20	4.7	6	.08	4.4	10	.12	4.1	16	.18
21	4.7	8	.08	4.4	10	.12	5.3	20	.29
22	5.0	4	.05	4.4	10	.12	4.7	12	.15
23	5.3	5	.07	4.4	9	.11	14	23	2.1
24	7.3	12	.24	4.4	9	.11	9.9	23	.61
25	7.8	15	.32	4.4	8	.10	6.7	11	.20
26	5.6	8	.12	4.4	8	.10	6.2	146	2.8
27	5.3	15	.21	4.4	8	.10	5.8	80	1.3
28	5.3	15	.21	4.4	8	.10	5.0	70	.95
29	4.7	15	.19	4.4	8	.10	5.0	50	.68
30	5.0	15	.20	4.4	8	.10	5.0	50	.68
31	7.4	17	.34	4.1	8	.09	---	---	---
TOTAL	170.2	---	4.34	148.8	---	3.98	157.0	---	14.01
YEAR	2291.89		335.73						

16275000 HAIKU STREAM NEAR HEEIA

LOCATION.--Lat 21°24'46", long 157°49'33", Hydrologic Unit 20060000, on left bank 1.7 mi west of Kaneohe Post Office and 1.8 mi southwest of Heeia.

DRAINAGE AREA.--0.97 mi^2.

PERIOD OF RECORD.--January 1914 to October 1919, July 1939 to September 1977, October 1982 to current year.

REVISED RECORDS (FISCAL YEARS).--WSP 935: 1940. WSP 1319: 1916-19(M). WSP 1569: Drainage area. WSP 1719: 1942-43, 1946(M), 1947, 1949, 1951, 1954(M), 1955, 1957-59. WSP 1937: 1940-45(M), 1947(M), 1948-50(P), 1951, 1952(P), 1953(M), 1955-57(P), 1958-59, 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 271.9 ft above mean sea level (levels by city and county of Honolulu). Prior to Apr. 28, 1914, nonrecording gege and Apr. 28, 1914, to Oct. 25, 1919, water-stage recorder, at same site at different datums.

REMARKS.--Records fair. Honolulu Board of Water Supply has diverted ground water from tunnel in drainage area since 1943.

AVERAGE DISCHARGE (since diversion from tunnel began).--37 years (water years 1944-77, 1984-85), 2.13 ft^3/s (1,540 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,740 ft^3/s May 2, 1965, gage height, 7.94 ft, from rating curve extended above 57 ft^3/s on basis of slope-area measurements at gage heights 3.87 ft, 3.88 ft, and 7.94 ft; minimum, 0.20 ft^3/s July 20, 1957, Sept. 17, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 419 ft^3/s May 6, gage height, 3.17 ft, no other peak greater than base discharge of 340 ft^3/s; minimum, 0.94 ft^3/s Nov. 11-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.0	1.2	1.2	1.3	2.1	1.4	1.4	1.3	1.4	1.2	1.1
2	1.1	1.0	1.1	1.2	1.3	2.0	1.3	1.4	1.3	1.5	1.2	1.1
3	1.1	1.1	1.1	1.3	1.3	1.9	1.3	1.3	1.3	1.4	1.2	1.1
4	1.1	1.1	1.1	1.3	1.7	1.8	1.3	1.3	1.3	1.3	1.2	1.1
5	1.1	1.0	1.1	1.1	1.7	1.8	1.3	1.3	1.3	1.3	1.2	1.1
6	1.1	1.1	1.1	1.1	1.5	1.7	1.3	40	1.3	1.3	1.2	1.1
7	1.1	1.0	1.4	1.1	1.4	1.7	1.3	7.4	1.3	1.3	1.1	1.1
8	1.1	1.0	1.7	1.1	1.4	1.6	1.3	3.2	1.4	1.3	1.1	1.1
9	1.1	1.0	1.4	1.1	1.3	1.7	1.3	2.3	1.4	1.3	1.1	1.2
10	1.1	1.0	1.3	1.1	1.3	1.9	1.3	1.9	1.4	1.2	1.1	1.3
11	1.1	.94	1.2	1.4	1.3	1.7	1.3	1.7	1.5	1.2	1.1	1.2
12	1.1	.94	1.1	1.2	2.3	1.6	1.3	1.6	1.4	1.2	1.1	1.2
13	1.1	.94	1.1	1.2	4.1	1.5	1.3	1.5	1.4	1.2	1.1	1.2
14	1.1	.94	1.1	1.5	29	1.5	1.3	1.4	1.4	1.2	1.1	1.2
15	1.1	1.0	1.1	1.4	11	1.5	1.3	1.4	1.4	1.2	1.1	1.2
16	1.1	1.0	1.1	1.4	3.8	1.5	1.3	1.7	1.3	1.2	1.1	1.2
17	1.1	1.0	1.1	1.3	3.0	1.5	1.4	2.0	1.3	1.2	1.1	1.2
18	1.1	1.0	1.1	1.3	2.3	1.4	1.4	2.2	1.4	1.2	1.1	1.2
19	1.1	1.0	1.1	1.3	2.3	1.4	1.4	1.7	1.4	1.2	1.1	1.2
20	1.1	1.0	1.1	1.1	2.2	1.4	1.4	1.4	1.4	1.2	1.1	1.2
21	1.1	1.0	1.1	1.1	2.1	1.4	1.3	1.4	1.4	1.2	1.1	1.2
22	1.1	1.0	1.1	1.2	2.1	1.8	1.4	1.4	1.3	1.3	1.1	1.4
23	1.1	1.0	1.1	1.2	2.0	1.4	1.4	1.5	1.3	1.3	1.1	2.5
24	1.1	1.0	1.9	1.3	2.0	1.4	1.5	1.5	1.3	1.6	1.1	2.2
25	1.1	1.2	10	2.4	1.9	1.4	1.6	1.4	1.3	2.1	1.1	1.6
26	1.1	2.7	2.9	2.1	2.5	1.4	1.5	1.3	1.5	1.5	1.1	3.8
27	1.2	8.7	1.9	1.5	2.6	1.4	1.4	1.3	2.1	1.3	1.1	2.8
28	1.4	2.1	1.7	1.3	2.4	1.4	1.4	1.3	2.4	1.2	1.1	1.6
29	1.1	1.4	1.4	1.5	---	1.4	1.4	1.3	1.6	1.2	1.1	1.4
30	1.1	1.3	1.4	1.5	---	1.4	1.4	1.3	1.5	1.2	1.1	1.3
31	1.1	---	1.3	1.4	---	1.5	---	1.3	---	1.4	1.1	---
TOTAL	34.5	41.46	49.4	41.2	93.1	48.9	40.8	93.1	42.9	40.6	34.7	43.1
MEAN	1.11	1.38	1.59	1.33	3.32	1.58	1.36	3.00	1.43	1.31	1.12	1.44
MAX	1.4	8.7	10	2.4	29	2.1	1.6	40	2.4	2.1	1.2	3.8
MIN	1.1	.94	1.1	1.1	1.3	1.4	1.3	1.3	1.3	1.2	1.1	1.1
AC-FT	68	82	98	82	185	97	81	185	85	81	69	85

CAL YR 1984	TOTAL	502.56	MEAN	1.37	MAX	10	MIN	.94	AC-FT	997
WTR YR 1985	TOTAL	603.76	MEAN	1.65	MAX	40	MIN	.94	AC-FT	1200

16275000 HAIKU STREAM NEAR HEEIA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)
NOV										
14...	1415	760	1.1	147	7.9	21.0	.20	8.0	90	<1
JAN										
21...	1530	--	1.2	145	7.1	20.5	--	--	--	--
MAR										
25...	1330	--	1.3	145	7.0	20.0	--	--	--	--
MAY										
07...	1415	--	5.5	150	7.3	21.0	--	--	--	--
08...	1025	--	3.0	155	7.4	20.5	--	--	--	--
JUN										
28...	1545	--	2.4	155	7.3	21.5	--	--	--	--
AUG										
13...	1045	--	1.2	148	7.3	21.5	--	--	--	--
SEP										
24...	1150	--	2.4	160	7.3	21.0	--	--	--	--

< Actual value is known to be less than the value shown.

16283200 KAHALUU STREAM NEAR AHUIMANU

LOCATION.--Lat 21°28'32", long 157°50'47", Hydrologic Unit 20080000, on left bank 1.1 mi west of Valley of the Temples Memorial Park, 1.3 mi south of Kahaluu School, and 2.7 mi northwest of Heeia Elementary School, and 2.7 mi northwest of Heeia Elementary School.

DRAINAGE AREA.--0.99 mi^2.

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder end concrete control. Elevation of gage is 150 ft, from topographic map. Honolulu Board of Water Supply).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Honolulu Board of Water Supply has diverted groundwater from tunnel in drainage area since 1947. Observatione of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 450 ft^3/s Sept. 23, 1985, gage height, 5.10 ft; minimum, 0.58 ft^3/s several days in September, October, November 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft^3/s and maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 14	about 1600	344	4.57	Sept. 23	1600	*450	*5.10
May 6	0900	268	4.19				

Minimum discharge, 0.58 ft^3/s several days in October and November.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	.62	.97	.91	.80	1.6	1.0	.91	.91	1.0	.85	.85
2	.70	.62	.91	.85	.75	1.3	1.0	.91	.91	.97	.85	.85
3	.66	.62	.85	.91	.75	1.3	1.0	.91	.91	.85	.85	.85
4	.66	.69	.85	e1.1	2.2	1.3	.97	.91	.91	.85	.85	.85
5	.66	.62	.85	e.97	1.6	1.3	.97	.91	.91	.85	.85	.80
6	.66	.62	.85	e.91	1.3	1.3	.97	55	.91	.85	.85	.80
7	.66	.56	.97	e.91	1.1	1.2	.97	5.4	.91	.85	.85	.85
8	.66	.58	.91	e.91	1.0	1.1	.97	2.3	.91	.91	.85	.85
9	.66	.58	.85	e.91	.91	1.1	.97	1.5	.91	.91	.85	.91
10	.66	.58	.85	e.91	1.0	1.1	.97	1.2	.91	.91	.85	.97
11	.66	.58	.85	e.97	.91	1.1	.97	1.1	.91	.85	.85	.91
12	.66	.62	.85	e.97	1.4	1.0	.97	1.0	.91	.85	.85	.91
13	.66	.62	.85	e.97	1.5	1.0	.91	.97	.91	.85	.85	.91
14	.66	.62	.80	e1.0	60	1.0	.91	.91	.91	.85	.85	.91
15	.62	.62	.80	.97	6.2	1.0	.91	.91	.85	.85	.85	.91
16	.62	.62	.80	.97	2.7	1.0	.91	.91	.85	.91	.85	.85
17	.62	.62	.80	.91	1.9	1.0	.91	3.1	.85	.97	.80	.91
18	.62	.58	.75	.80	1.6	.97	.91	1.1	.85	.91	.80	.85
19	.62	.58	.75	.80	1.4	.97	.91	.97	e.85	.85	.85	.85
20	.62	.58	.75	.75	1.4	.97	.91	.91	e.85	.85	.91	.85
21	.62	.58	.75	.75	1.3	.97	.85	.91	e.85	.85	.91	.91
22	.62	.58	.75	.80	1.3	1.3	.85	.91	e.85	.85	.91	.97
23	.66	.62	.75	.80	1.2	1.1	.85	1.1	e.85	.85	.85	18
24	.66	.62	1.4	.80	1.2	1.0	.85	1.0	e.85	.85	.91	2.0
25	.66	.83	7.7	3.5	1.2	.97	.85	.97	e.85	1.1	.91	4.8
26	.70	8.1	2.0	1.2	4.0	.97	.85	.91	e.85	.91	.91	3.5
27	.70	16	1.3	1.0	2.5	.97	.85	.91	e3.2	.91	.91	2.0
28	.80	1.8	1.2	.91	1.8	1.0	.85	.91	e1.4	.85	.91	1.3
29	.71	1.1	1.0	1.0	---	.97	.85	.91	1.3	.85	.91	1.1
30	.70	1.1	.97	.85	---	1.2	.85	.91	1.0	.85	.97	1.0
31	.66	---	.91	.85	---	1.1	---	.91	---	.91	.91	---
TOTAL	20.53	43.48	35.59	30.86	104.92	34.16	27.51	92.18	29.84	27.47	26.97	53.02
MEAN	.66	1.45	1.15	1.00	3.75	1.10	.92	2.97	.99	.89	.87	1.77
MAX	.80	16	7.7	3.5	60	1.6	1.0	55	3.2	1.1	.97	18
MIN	.62	.58	.75	.75	.75	.97	.85	.91	.85	.85	.80	.80
AC-FT	41	86	71	61	208	68	55	183	59	54	53	105

CAL YR 1984	TOTAL	368.61	MEAN	1.01	MAX	16	MIN	.58	AC-FT	731
WTR YR 1985	TOTAL	526.53	MEAN	1.44	MAX	60	MIN	.58	AC-FT	1040

e Estimated

16283600 SOUTH FORK WAIHEE STREAM NEAR HEEIA

LOCATION.--Lat 21°26'47", long 157°52'12", Hydrologic Unit 20060000, on left bank 0.2 mi upstream from confluence with North Fork, 3.0 mi southwest of Waiahole School, and 4.0 mi northwest of Heeia.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 615.74 ft above mean sea level (levels by Honolulu Board of Water Supply).

REMARKS.--Records good. Honolulu Board of Water Supply diverts water from wells in drainage area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--23 years, 1.51 ft^3/s (1,090 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 430 ft^3/s Oct. 28, 1981, gage height, 4.68 ft, from rating curve extended above 4.8 ft^3/s; no flow July 7, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 47 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 27	2100	61	2.34	Sept. 23	1600	*88	*2.65

Minimum discharge, 0.70 ft^3/s May 31, June 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.91	1.1	.80	.91	.85	.75	.98	.85	1.0	.98	1.0
2	1.0	.98	1.0	.80	.91	.85	.75	.91	.85	1.0	.98	1.0
3	1.0	1.0	1.0	.85	.91	.85	.80	.91	.80	1.0	.98	1.0
4	.98	1.0	.98	.85	1.2	.80	.80	.91	.85	1.0	.98	1.0
5	.98	1.0	.98	.80	1.0	.80	.80	.85	.70	.98	.98	1.0
6	.98	1.1	.98	.80	.98	.80	.80	5.9	.80	.98	.98	1.0
7	.98	1.0	1.2	.80	.91	.80	.80	1.6	.85	.98	.98	1.0
8	.98	1.0	1.1	.91	.91	.80	.80	1.1	.85	.98	1.0	1.0
9	.98	1.0	1.0	.98	.91	.80	.80	1.0	.91	.98	.98	1.0
10	.98	1.0	.98	1.0	.98	.80	.80	1.0	.91	.98	.98	1.0
11	.98	1.0	.98	1.1	.91	.80	.80	1.0	.85	.98	.98	1.0
12	.98	1.0	.91	1.0	.88	.85	.80	1.0	.80	.98	.98	1.0
13	.98	1.0	.91	1.0	.98	.85	.80	1.0	.85	.98	.98	1.0
14	.98	1.0	.85	1.2	4.2	.85	.80	1.0	.85	.98	.98	1.0
15	.98	1.0	.75	1.0	.98	.85	.80	1.2	.91	.98	.98	1.0
16	.98	1.0	.75	1.0	.80	.85	.80	1.5	.91	.98	.98	1.0
17	.98	1.0	.80	.98	.80	.85	.91	1.6	.85	1.1	.98	1.0
18	.98	1.0	.75	.98	.80	.80	.85	1.2	.91	1.0	.98	1.0
19	.98	.98	.75	.98	.80	.80	.85	1.0	.91	.98	1.0	1.0
20	.98	.98	.75	.98	.80	.75	.85	1.0	.98	.98	1.0	1.0
21	.98	.98	.75	.98	.80	.75	.85	1.0	.91	.98	1.0	1.0
22	.98	.98	.80	.98	.80	1.0	.85	1.0	.85	.98	1.0	1.1
23	.91	.98	.91	.98	.80	.80	.85	.98	.85	.98	1.0	3.4
24	.91	.98	.98	.98	.80	.80	.85	.98	.85	.98	1.0	1.3
25	.98	1.1	1.8	2.5	.80	.80	.85	.91	.98	1.3	1.0	1.1
26	.98	3.0	1.1	.98	1.7	.75	.85	.85	.98	.98	1.0	1.7
27	1.0	2.6	1.0	.91	1.1	.75	.85	.75	3.5	.98	1.0	1.1
28	.98	1.1	.98	.91	.85	.75	.85	.70	1.3	.98	1.0	1.1
29	1.0	1.0	.85	.98	---	.75	.85	.80	1.0	.98	1.0	1.1
30	1.0	1.3	.80	.98	---	.80	.85	.85	1.0	.98	1.0	1.1
31	.98	---	.85	.91	---	.75	---	.70	---	1.1	1.0	---
TOTAL	30.46	33.97	29.34	30.90	29.22	25.10	24.66	36.18	29.41	31.04	30.66	34.0
MEAN	.98	1.13	.95	1.00	1.04	.81	.82	1.17	.98	1.00	.99	1.13
MAX	1.1	3.0	1.8	2.5	4.2	1.0	.91	5.9	3.5	1.3	1.0	3.4
MIN	.91	.91	.75	.80	.80	.75	.75	.70	.70	.98	.98	1.0
AC-FT	60	67	58	61	58	50	49	72	58	62	61	67

CAL YR 1984	TOTAL	335.54	MEAN	.92	MAX	3.0	MIN	.56	AC-FT	666
WTR YR 1985	TOTAL	364.94	MEAN	1.00	MAX	5.9	MIN	.70	AC-FT	724

16283700 NORTH FORK WAIHEE STREAM NEAR HEEIA

LOCATION.--Lat 21°26'48", long 157°52'18", Hydrologic Unit 20060000, on left bank 0.3 mi upstream from confluence with South Fork, 2.8 mi southwest of Waiahole School, and 4.3 mi northwest of Heeia.

DRAINAGE AREA.--0.03 mi^2.

PERIOD OF RECORD.--September 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 639.00 ft above mean sea level (levels by Honolulu Board of Water Supply).

REMARKS.--Records good except for estimated daily discharges, which are poor. Honolulu Board of Water Supply diverts water from wells in South Fork Waihee which affects the low flow at this station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--23 years, 1.63 ft^3/s (1,180 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 376 ft^3/s Feb. 4, 1965, gage height, 3.38 ft, from rating curve extended above 19 ft^3/s; no flow July 7, 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 68 ft^3/s Sept. 23, gage height, 1.97 ft, no other peak greater than base discharge of 45 ft^3/s; minimum, 1.1 ft^3/s for several days in February and March.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.3	e1.4	e1.3	1.3	1.1	1.2	1.3	1.3	1.3	1.3	1.4
2	1.4	1.3	e1.3	e1.3	1.3	1.1	1.2	1.3	1.3	1.3	1.3	1.4
3	1.3	1.3	e1.3	e1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.4
4	1.3	1.3	e1.3	e1.3	1.5	1.1	1.2	1.2	1.3	1.3	1.3	1.4
5	1.3	1.3	e1.3	e1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.4
6	1.3	1.3	e1.3	e1.3	1.3	1.1	1.2	4.2	1.3	1.3	1.3	1.4
7	1.3	1.3	e1.5	e1.3	1.3	1.1	1.2	1.5	1.3	1.3	1.4	1.4
8	1.3	1.3	e1.3	e1.3	1.3	1.1	1.2	1.3	1.3	1.3	1.4	1.4
9	1.3	1.3	e1.3	1.3	1.3	1.1	1.2	1.3	1.3	1.3	1.4	1.4
10	1.3	1.3	e1.3	1.3	1.3	1.1	1.2	1.3	1.3	1.3	1.4	1.4
11	1.3	1.3	e1.3	1.4	1.3	1.1	1.2	1.3	1.3	1.3	1.4	1.4
12	1.3	1.3	e1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4
13	1.3	1.3	e1.3	1.3	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4
14	1.3	1.3	e1.4	1.4	3.3	1.2	1.2	1.3	1.3	1.3	1.4	1.4
15	1.3	1.3	e1.3	1.3	1.2	1.2	1.2	1.4	1.3	1.3	1.4	1.4
16	1.3	1.3	e1.3	1.3	1.1	1.2	1.2	1.5	1.3	1.3	1.4	1.4
17	1.3	1.3	e1.3	1.3	1.1	1.2	1.3	1.8	1.3	1.5	1.4	1.4
18	1.3	1.3	e1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4
19	1.3	1.3	e1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4
20	1.3	1.3	e1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4
21	1.3	1.3	e1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4
22	1.3	1.3	e1.3	1.3	1.1	1.4	1.2	1.3	1.3	1.3	1.4	1.4
23	1.3	1.3	e1.3	1.3	1.1	1.3	1.2	1.3	1.3	1.3	1.4	4.7
24	1.3	e1.3	e1.3	1.3	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.6
25	1.3	e1.4	e1.8	1.9	1.1	1.2	1.2	1.3	1.3	1.5	1.4	1.4
26	1.3	e2.6	e1.3	1.3	1.9	1.2	1.2	1.3	1.3	1.3	1.4	1.8
27	1.3	e2.4	e1.3	1.3	1.3	1.2	1.2	1.3	2.5	1.3	1.4	1.4
28	1.3	e1.4	e1.3	1.3	1.1	1.2	1.2	1.3	1.4	1.3	1.4	1.4
29	1.3	e1.3	e1.3	1.4	---	1.2	1.2	1.3	1.3	1.3	1.4	1.4
30	1.3	e1.6	e1.3	1.3	---	1.2	1.2	1.3	1.3	1.3	1.4	1.4
31	1.3	---	e1.3	1.3	---	1.2	---	1.3	---	1.3	1.4	---
TOTAL	40.5	41.9	41.2	41.2	36.7	36.4	36.1	43.9	40.3	40.8	42.8	45.9
MEAN	1.31	1.40	1.33	1.33	1.31	1.17	1.20	1.42	1.34	1.32	1.38	1.53
MAX	1.4	2.6	1.8	1.9	3.3	1.4	1.3	4.2	2.5	1.5	1.4	4.7
MIN	1.3	1.3	1.3	1.3	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4
AC-FT	80	83	82	82	73	72	72	87	80	81	85	91

CAL YR 1984	TOTAL	438.91	MEAN	1.20	MAX	2.6	MIN	.86	AC-FT	871
WTR YR 1985	TOTAL	487.7	MEAN	1.34	MAX	4.7	MIN	1.1	AC-FT	967

e Estimated

16284200 WAIHEE STREAM NEAR KAHALUU

LOCATION.--Lat 21°27'04", long 157°51'36", Hydrologic Unit 20060000, on right bank 0.2 mi downstream from forest-reserve boundary, 1.0 mi south of Kahaluu School, and 1.6 mi west of Ahuimanu sewage treatment plant.

DRAINAGE AREA.--0.97 mi^2.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 170 ft, from topographic map.

REMARKS.--Records good. Honolulu Board of Water Supply diverts water from tunnel and wells in drainage area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 5.69 ft^3/s (4,120 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft^3/s Mar. 14, 1982, gage height, 7.52 ft, from rating curve extended above 100 ft^3/s; minimum, 1.1 ft^3/s Apr. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	1200	247	4.86	Sept. 23	1630	*434	*5.60

Minimum discharge, 3.4 ft^3/s Apr. 7, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	4.2	5.1	4.6	4.5	5.3	4.7	4.9	5.0	5.0	5.0	4.7
2	4.4	4.2	4.7	4.6	4.5	5.1	4.7	4.8	4.9	4.9	5.0	4.8
3	4.4	4.3	4.6	4.7	4.5	5.0	4.6	4.6	4.9	4.9	4.9	4.7
4	4.4	4.4	4.6	4.8	5.5	4.9	4.6	4.6	4.7	4.9	4.9	4.7
5	4.4	4.3	4.5	4.6	5.0	5.0	4.6	4.6	4.7	4.7	4.7	4.7
6	4.4	4.6	4.6	4.5	4.7	4.9	4.5	54	4.7	4.7	4.9	4.7
7	4.4	4.4	5.1	4.5	4.6	4.7	3.6	12	4.7	4.7	4.9	4.7
8	4.4	4.4	5.0	4.5	4.6	4.7	4.1	6.4	4.7	4.7	4.9	4.7
9	4.4	4.4	4.7	4.5	4.5	4.7	4.5	5.8	4.7	4.7	4.9	4.7
10	4.4	4.4	4.6	4.6	4.7	4.8	4.6	5.2	4.7	4.7	4.9	4.8
11	4.4	4.4	4.6	4.8	4.5	4.9	4.6	5.0	4.7	4.7	4.9	4.7
12	4.4	4.4	4.5	4.5	4.7	4.9	4.6	4.9	4.7	4.7	4.9	4.7
13	4.4	4.4	4.5	4.5	4.9	4.9	4.6	4.7	4.7	4.7	4.9	4.7
14	4.4	4.4	4.5	5.1	34	4.9	4.6	4.7	4.7	4.7	4.9	4.7
15	4.3	4.4	4.5	4.6	11	4.9	4.6	5.4	4.6	4.7	4.9	4.8
16	4.3	4.4	4.5	4.5	6.5	4.9	4.6	6.6	4.6	4.9	4.9	4.7
17	4.2	4.4	4.5	4.5	5.7	4.8	4.7	9.0	4.6	5.3	4.9	4.7
18	4.2	4.4	4.5	4.5	5.2	4.7	4.6	7.0	4.6	4.9	4.8	4.7
19	4.2	4.4	4.5	4.5	5.0	4.7	4.6	6.1	4.6	4.7	4.9	4.8
20	4.2	4.3	4.5	4.5	4.9	4.7	4.6	5.4	4.6	4.6	4.8	4.7
21	4.2	4.2	4.5	4.5	4.7	4.7	4.6	5.2	4.6	4.6	4.7	4.7
22	4.3	4.2	4.5	4.5	4.8	5.4	4.7	5.3	4.6	4.7	4.7	4.9
23	4.2	4.2	4.5	4.5	4.9	4.9	4.6	5.4	4.6	4.7	4.7	14
24	4.2	4.2	4.7	4.5	4.7	4.8	4.6	5.2	4.6	5.0	4.7	6.6
25	4.2	4.5	8.2	11	4.6	4.7	4.6	5.2	4.6	5.4	4.8	5.6
26	4.2	13	5.4	5.2	8.6	4.7	4.6	5.2	4.6	4.9	4.7	8.0
27	4.3	22	5.0	4.7	6.2	4.7	4.6	5.0	13	4.7	4.7	6.0
28	4.4	6.4	4.7	4.6	5.5	4.7	4.6	5.0	6.7	4.7	4.8	5.5
29	4.3	5.3	4.7	4.8	---	4.7	4.6	5.0	5.3	4.7	4.7	5.2
30	4.3	5.3	4.6	4.7	---	4.8	4.6	5.0	5.2	4.7	4.8	5.2
31	4.3	---	4.6	4.6	---	4.7	---	5.0	---	4.9	4.7	---
TOTAL	133.9	160.8	148.0	149.5	177.5	150.2	136.7	222.2	151.9	148.8	149.8	160.1
MEAN	4.32	5.36	4.77	4.82	6.34	4.85	4.56	7.17	5.06	4.80	4.83	5.34
MAX	4.4	22	8.2	11	34	5.4	4.7	54	13	5.4	5.0	14
MIN	4.2	4.2	4.5	4.5	4.5	4.7	3.6	4.6	4.6	4.6	4.7	4.7
AC-FT	266	319	294	297	352	298	271	441	301	295	297	318

CAL YR 1984	TOTAL	1741.1	MEAN	4.76	MAX	22	MIN	3.7	AC-FT	3450
WTR YR 1985	TOTAL	1889.4	MEAN	5.18	MAX	54	MIN	3.6	AC-FT	3750

16294900 WAIKANE STREAM AT ALTITUDE 75 FT, AT WAIKANE

LOCATION.--Lat 21°30'00", long 157°51'54", Hydrologic Unit 20060000, on right bank 0.3 mi downstream from Waikaekee Stream, 0.7 mi west of Waikane, and 1.2 mi northwest of Waiahole School.

DRAINAGE AREA.--2.22 mi^2.

PERIOD OF RECORD.--December 1959 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 75 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Waiahole tunnel diverts from two tributaries upstream for irrigation in vicinity of Waipahu. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--25 years (water years 1961-85), 8.30 ft^3/s (6,010 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,800 ft^3/s Feb. 4, 1965, gage height, 10.76 ft, from rating curve extended above 120 ft^3/s on basis of slope-area measurements at gage heights 4.88 ft, 9.46 ft, and 10.76 ft; minimum, 0.76 ft^3/s Oct. 27, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	0030	2420	7.49	May 6	0700	2360	7.42
Feb. 14	1300	*2750	*7.84				

Minimum discharge, 0.96 ft^3/s Oct. 18, 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.6	11	3.3	4.2	5.2	3.3	17	4.2	2.5	e4.1	2.0
2	1.3	1.6	5.8	3.3	3.9	4.7	3.6	8.3	4.2	2.3	e4.7	2.0
3	1.4	1.3	6.5	3.6	3.8	4.7	2.9	5.1	e4.1	2.3	e2.4	2.2
4	1.4	7.5	5.3	5.0	17	5.0	2.7	4.5	e3.9	2.2	e3.0	2.0
5	1.4	2.5	4.5	3.7	10	4.7	3.3	4.3	e3.7	2.5	e2.2	2.0
6	1.4	1.8	4.7	3.4	6.6	4.4	3.1	266	e3.5	2.4	e2.8	2.0
7	1.4	1.5	7.2	3.2	5.5	4.2	3.0	37	e3.4	2.2	e2.3	2.0
8	1.5	1.4	5.7	3.1	5.3	3.8	2.9	15	e3.3	3.0	e2.2	2.0
9	1.3	1.4	5.5	3.1	4.9	3.9	2.7	11	e3.2	2.4	e2.6	2.2
10	1.3	1.5	5.1	3.2	5.2	4.2	2.6	8.5	e3.1	2.1	e2.3	2.2
11	1.4	1.5	5.1	4.0	4.7	4.2	2.5	7.4	e3.0	2.0	e2.1	2.2
12	1.3	1.5	5.6	3.3	5.6	3.5	2.5	6.5	e3.0	2.0	e2.0	2.7
13	1.3	13	4.9	3.1	7.0	3.6	2.5	7.0	e2.9	2.1	e2.4	4.2
14	1.2	2.2	4.7	19	234	3.5	2.4	6.1	e2.9	2.0	e2.0	3.1
15	1.3	2.2	4.6	5.5	33	3.9	2.4	12	e2.9	1.9	e4.2	2.2
16	1.3	1.6	4.5	4.2	20	3.8	2.5	15	e2.9	2.0	e3.9	2.2
17	1.2	1.5	4.6	3.7	14	3.4	3.3	78	e2.9	2.7	e2.7	2.0
18	1.2	1.5	4.3	3.3	12	3.2	3.5	26	e2.8	2.4	e2.3	2.0
19	1.3	1.4	4.0	3.3	10	3.1	2.6	14	2.7	2.0	e2.5	5.5
20	1.3	1.4	3.9	3.3	10	3.2	2.7	11	2.7	1.9	e2.7	2.5
21	1.9	1.5	3.9	3.1	7.5	3.1	2.6	9.6	2.6	1.9	e2.2	2.5
22	1.4	1.4	3.9	5.0	7.6	5.4	4.4	8.2	2.5	1.9	e2.0	2.2
23	1.5	1.4	3.9	3.9	7.1	3.9	3.2	7.5	2.4	2.3	e2.0	16
24	1.3	1.4	5.1	3.3	6.4	3.2	3.8	7.1	2.4	2.9	e2.0	44
25	1.2	1.6	12	16	6.8	3.0	3.3	6.4	2.4	e8.0	e2.7	17
26	1.2	165	7.5	7.7	8.2	3.0	2.7	5.5	3.3	3.1	e2.2	10
27	1.6	225	5.5	5.3	7.5	3.0	2.5	5.2	e5.3	2.5	e2.0	6.6
28	2.4	13	4.4	4.6	6.1	3.0	2.4	5.0	e5.0	2.2	e2.4	4.8
29	1.9	8.0	4.0	4.9	---	2.8	2.3	5.0	2.9	2.2	2.5	3.9
30	1.6	7.6	3.8	4.8	---	3.1	2.3	4.7	2.6	2.2	2.2	3.8
31	5.5	---	3.6	4.5	---	3.0	---	4.4	---	e5.0	2.0	---
TOTAL	48.1	475.8	165.1	150.7	474.1	116.6	86.5	628.3	96.7	79.1	79.6	160.0
MEAN	1.55	15.9	5.33	4.86	16.9	3.76	2.88	20.3	3.22	2.55	2.57	5.33
MAX	5.5	225	12	19	234	5.4	4.4	266	5.3	8.0	4.7	44
MIN	1.2	1.3	3.6	3.1	3.8	2.8	2.3	4.3	2.4	1.9	2.0	2.0
AC-FT	95	944	327	299	940	231	172	1250	192	157	158	317

CAL YR 1984	TOTAL	1506.9	MEAN	4.12	MAX	225	MIN	1.1	AC-FT	2990
WTR YR 1985	TOTAL	2580.6	MEAN	7.02	MAX	266	MIN	1.2	AC-FT	5080

e Estimated

16296500 KAHANA STREAM AT ALTITUDE 30 FT, NEAR KAHANA

LOCATION.--Lat 21°32'37", long 157°53'07", Hydrologic Unit 20060000, on right bank 600 ft upstream from Kawa Stream, 1.1 mi southwest of Kahana, and 2.2 mi southwest of Swanzy Beach Park in Kaaawa.

DRAINAGE AREA.--3.74 mi^2.

PERIOD OF RECORD.--December 1958 to current year.

REVISED RECORDS.--WSP 1937: 1959-60.

GAGE.--Water-stage recorder and concrete-masonry control. Elevation of gage is 30 ft, from topographic map.

REMARKS.--Records fair. Waiahole tunnel diverts water from tributaries end tunnels at 800-ft elevation upstream. Recording rain gage located at station. Observatione of specific conductance, pH and water temperature made during the year are publiehed elsewhere in this report.

AVERAGE DISCHARGE.--26 years (water years 1960-85), 35.6 ft^3/s (25,790 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft^3/s Apr. 15, 1963, gage height, 8.10 ft, from rating curve extended above 530 ft^3/s on basis of computation of peak flow over submerged weir; minimum, 10 ft^3/s Sept. 17, 18, 20, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discherges greater then base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	0030	*4310	*7.30	May 6	0630	4000	7.08
Feb. 14	1600	3670	6.82				

Minimum diacharge, 11 ft^3/s several days in October.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	49	15	15	22	22	54	19	16	20	16
2	14	14	25	15	14	20	21	28	20	15	37	16
3	13	14	26	16	14	19	20	32	19	15	19	15
4	13	30	22	19	71	19	20	26	19	15	23	15
5	13	17	20	15	24	20	23	52	18	24	19	15
6	12	17	20	15	19	19	20	704	18	13	23	15
7	12	15	25	15	18	18	20	126	16	15	20	14
8	12	15	22	14	20	18	19	43	16	15	20	14
9	12	16	22	14	18	18	19	34	16	15	22	14
10	12	14	20	14	19	19	19	29	16	14	19	14
11	12	14	19	15	16	23	19	26	16	14	18	14
12	12	13	19	14	20	19	19	25	15	14	16	14
13	12	176	18	14	20	17	18	35	15	14	18	15
14	12	28	18	57	604	16	18	25	15	13	16	15
15	12	32	17	18	67	18	18	38	15	13	28	14
16	12	21	18	15	34	16	18	37	15	14	28	14
17	12	16	19	15	28	15	35	110	15	23	20	14
18	11	18	16	15	25	15	26	35	15	19	18	16
19	11	17	16	14	24	15	20	29	15	14	19	45
20	11	17	15	14	25	15	22	28	16	14	20	20
21	11	17	15	14	22	15	25	25	15	14	16	20
22	11	15	15	15	20	42	43	25	15	15	16	17
23	13	15	15	15	22	23	29	25	14	16	16	46
24	11	19	22	14	20	20	63	25	14	16	16	131
25	11	16	37	40	19	19	145	23	16	65	20	70
26	11	336	23	19	28	19	35	22	15	20	16	40
27	14	565	20	15	29	20	28	20	63	18	17	34
28	16	40	18	15	25	28	26	20	44	16	18	30
29	14	29	17	15	---	20	23	20	19	15	20	26
30	14	44	16	16	---	29	23	20	16	15	20	25
31	22	---	15	16	---	22	---	20	---	26	18	---
TOTAL	392	1615	639	537	1280	618	856	1761	560	545	616	768
MEAN	12.6	53.8	20.6	17.3	45.7	19.9	28.5	56.8	18.7	17.6	19.9	25.6
MAX	22	565	49	57	604	42	145	704	63	65	37	131
MIN	11	13	15	14	14	15	16	20	14	13	16	14
AC-FT	778	3200	1270	1070	2540	1230	1700	3490	1110	1080	1220	1520

CAL YR 1984	TOTAL	7723	MEAN	21.1	MAX	565	MIN	11	AC-FT 15320
WTR YR 1985	TOTAL	10187	MEAN	27.9	MAX	704	MIN	11	AC-FT 20210

16302000 PUNALUU DITCH NEAR PUNALUU

LOCATION.--Lat 21°33'41", long 157°54'10", Hydrologic Unit 20060000, on right bank 800 ft downstream from intake, 1.5 mi west of Kahana, and 1.7 mi southwest of Punaluu.

PERIOD OF RECORD.--May 1953 to current year.

REVISED RECORDS.--WSP 1719: 1954-55.

GAGE.--Water-stage recorder. Elevation of gage is 200 ft, from topographic map.

REMARKS.--Records poor. Ditch diverts from Punaluu Stream for irrigation in Punaluu Valley.

AVERAGE DISCHARGE.--32 years, 7.18 ft^3/s (5,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 54 ft^3/s Oct. 31, 1964; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 8.8 ft^3/s Feb. 24; minimum daily, 0.10 ft^3/s Feb. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	2.1	.87	5.8	2.1	1.5	4.6	5.2	2.4	4.5	e6.5	4.0
2	3.3	3.8	.69	5.3	3.9	2.8	5.1	3.8	2.8	5.6	e6.2	3.9
3	2.7	4.7	.65	5.2	5.8	5.6	5.9	3.3	5.3	e4.5	e6.0	4.0
4	2.5	3.6	1.6	4.5	2.1	5.3	6.6	3.0	4.6	e5.8	e4.4	3.4
5	2.1	2.5	2.1	3.6	.10	4.0	5.9	2.7	3.7	e6.3	e5.1	3.0
6	3.6	2.2	2.3	4.0	3.9	2.8	5.5	1.1	4.7	e4.9	3.8	2.7
7	3.9	1.9	1.9	5.0	6.2	2.0	5.3	3.1	4.6	e5.1	3.3	2.5
8	3.6	4.3	2.4	4.0	5.6	4.3	4.1	8.0	4.0	e5.1	2.5	2.4
9	3.2	4.8	2.4	4.6	5.5	4.5	3.9	6.0	3.6	e5.0	2.1	2.2
10	3.5	4.4	1.9	4.1	5.3	4.5	3.9	5.3	4.2	e5.5	1.9	2.1
11	4.8	4.5	1.7	4.9	4.5	3.6	3.8	5.0	5.1	e6.0	1.7	2.1
12	3.8	4.2	1.8	5.3	3.4	4.2	3.6	5.3	4.0	e5.8	1.8	2.1
13	4.3	3.3	1.4	4.6	2.8	3.9	3.4	3.6	4.0	e6.5	1.7	2.1
14	5.3	1.1	1.2	1.0	1.8	2.9	4.3	2.9	4.4	e4.8	1.6	1.9
15	5.1	1.0	1.3	.26	.33	2.4	4.7	2.1	3.8	e4.6	1.6	1.6
16	4.4	3.1	2.7	.19	.17	3.2	4.6	1.9	4.9	e4.2	1.6	3.3
17	3.9	5.1	2.1	.15	6.7	4.1	5.3	.91	5.3	e3.4	1.5	5.5
18	3.3	4.8	1.7	3.8	7.8	3.2	4.1	2.7	5.1	e4.5	1.4	5.0
19	3.9	3.8	1.5	5.3	6.6	2.6	3.8	5.9	5.6	e5.7	4.0	2.4
20	4.2	4.5	1.3	5.1	6.0	2.3	3.6	5.5	5.0	e6.1	5.1	1.5
21	5.0	3.6	1.1	4.9	5.3	2.0	3.9	5.3	3.7	e5.1	4.2	1.4
22	4.8	2.9	2.3	3.9	5.1	3.4	.73	4.7	4.4	e5.8	5.0	1.2
23	3.7	3.1	2.6	3.3	7.2	3.8	4.4	3.8	5.3	e5.2	5.1	1.4
24	3.0	4.6	2.0	2.7	8.8	4.7	3.9	3.3	4.0	e6.1	5.1	2.1
25	2.9	3.8	1.4	2.2	4.8	3.7	1.8	4.0	4.6	e8.2	4.0	1.8
26	2.6	3.7	1.1	.69	2.4	3.2	1.6	4.6	4.5	e7.0	3.3	.57
27	3.4	2.4	1.1	.65	1.9	2.7	1.5	4.4	3.2	e6.8	3.1	4.4
28	4.6	1.6	1.0	3.5	1.7	2.4	4.8	3.9	3.4	e4.2	2.7	6.8
29	3.0	1.2	.97	4.1	---	2.1	6.0	3.0	5.8	e4.1	4.6	5.6
30	2.5	1.0	.97	3.1	---	1.8	5.5	2.5	5.1	e4.1	5.3	4.8
31	2.4	---	3.3	2.7	---	1.4	---	2.4	---	e4.1	4.7	---
TOTAL	112.9	97.6	51.15	108.44	117.80	100.9	125.93	117.21	130.9	164.4	110.9	87.77
MEAN	3.64	3.25	1.65	3.50	4.21	3.25	4.20	3.78	4.36	5.30	3.58	2.93
MAX	5.3	5.1	3.3	5.8	8.8	5.6	8.6	6.0	5.8	8.2	6.5	6.8
MIN	2.1	1.0	.85	.15	.10	1.4	.73	.91	2.4	3.4	1.4	.57
AC-FT	224	194	101	215	234	200	250	232	260	326	220	174

CAL YR 1984	TOTAL	1084.17	MEAN	2.91	MAX	6.0	MIN	.23	AC-FT	2110
WTR YR 1985	TOTAL	1325.90	MEAN	3.63	MAX	8.8	MIN	.10	AC-FT	2630

e Estimated

16303000 PUNALUU STREAM NEAR PUNALUU

LOCATION.--Lat 21°33'33", long 157°54'08", Hydrologic Unit 20060000, on left bank at Punaluu ditch diversion dam, 1.4 mi west of Kahana, and 1.8 mi southwest of Punaluu.

DRAINAGE AREA.--2.78 mi^2.

PERIOD OF RECORD.--May 1953 to current year.

REVISED RECORDS.--WSP 1569: Drainage area. WRD Hawaii 1974: 1971-72(P), 1973(M). WDR HI-78-1: 1954(M), 1955-70(P).

GAGE.--Water-stage recorder and masonry control. Elevation of gage is 212 ft, from topographic map.

REMARKS.--Records fair except for eatimated daily discharges, which are poor. Records do not include flow of Punaluu ditch (see sta. 16302000). Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--32 years, 17.6 ft^3/s (12,750 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,700 ft^3/s July 17, 1974, gage height, 7.60 ft, from rating curve extended above 170 ft^3/s on basis of slope-area measurements at gage heights 5.77 ft and 7.60 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 930 ft^3/s and maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	0030	2270	5.27	May 6	0630	*3010	*5.94
Feb. 14	1600	1320	4.05				

Minimum discharge, 3.4 ft^3/s May 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	PEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	7.7	18	7.2	12	13	12	13	12	9.1	10	7.2
2	6.8	6.0	15	7.2	9.6	10	9.6	9.6	11	8.2	9.6	7.2
3	6.8	6.0	17	8.2	7.2	8.2	8.2	12	8.6	7.2	6.8	7.2
4	7.2	13	13	9.1	46	8.6	7.2	10	9.1	7.7	7.7	7.7
5	7.7	9.1	12	9.1	22	8.6	10	11	9.6	7.2	7.7	8.2
6	5.7	9.6	11	8.6	13	12	8.2	e250	9.1	6.8	8.2	8.2
7	5.7	8.6	18	7.2	9.6	13	8.6	e60	8.6	8.2	9.1	8.2
8	5.7	6.0	13	7.2	12	9.6	8.6	e30	9.1	8.2	10	8.6
9	6.0	5.7	13	7.2	9.6	9.6	8.6	e20	9.6	8.8	10	8.6
10	6.0	5.0	12	8.2	9.6	10	8.6	e15	8.6	6.8	9.6	8.6
11	5.3	5.3	12	7.2	10	12	8.6	14	7.7	6.3	9.6	8.6
12	6.0	5.3	12	6.3	13	9.6	9.1	12	8.2	7.2	9.6	8.6
13	5.3	11	12	6.8	13	9.6	9.1	17	8.2	6.8	9.6	8.6
14	4.7	10	12	38	e240	10	8.2	14	8.2	6.8	10	9.6
15	5.0	13	10	15	44	10	8.2	23	8.2	7.7	10	9.1
16	5.3	6.8	10	13	27	10	7.7	30	7.2	8.2	10	7.2
17	5.7	5.0	12	12	17	9.1	12	87	6.8	10	10	5.3
18	6.0	5.0	11	9.1	13	10	10	27	7.2	10	10	6.0
19	5.7	5.7	11	7.2	12	10	9.1	18	6.8	8.2	7.7	27
20	5.3	5.3	11	7.2	13	10	10	15	7.7	6.3	6.3	11
21	5.0	6.0	11	7.2	12	11	21	15	7.7	7.2	7.2	11
22	5.0	6.3	9.6	10	12	17	19	15	7.2	7.2	6.3	10
23	6.0	6.3	9.6	9.6	12	10	7.7	15	6.3	7.2	6.3	23
24	6.3	5.7	20	9.8	e9.1	8.6	38	15	7.2	6.8	6.3	64
25	6.8	6.3	27	38	e9.1	9.6	26	13	7.7	19	7.7	56
26	6.8	185	19	18	e14	10	14	11	6.3	10	8.2	27
27	6.0	226	15	15	15	13	12	11	41	9.6	8.2	22
28	7.2	26	14	10	16	14	7.7	11	19	8.6	8.6	13
29	10	18	13	10	---	11	6.8	12	8.6	7.2	6.3	11
30	8.2	21	13	12	---	17	6.8	12	8.6	8.6	6.3	11
31	7.7	---	9.6	13	---	13	---	12	---	14	7.2	---
TOTAL	192.9	655.7	415.8	353.4	651.8	337.1	340.6	829.6	291.1	260.9	260.1	428.7
MEAN	6.22	21.9	13.4	11.4	23.3	10.9	11.4	26.8	9.70	8.42	8.39	14.3
MAX	10	226	27	38	240	17	38	250	41	19	10	64
MIN	4.7	5.0	9.6	6.3	7.2	8.2	6.8	9.6	6.3	6.3	6.3	5.3
AC-FT	383	1300	825	701	1290	669	876	1650	577	517	516	850

CAL YR 1984	TOTAL	4182.3	MEAN	11.4	MAX	226	MIN	4.7	AC-FT	8300
WTR YR 1985	TOTAL	5017.7	MEAN	13.7	MAX	250	MIN	4.7	AC-FT	9950

e Estimated

16304200 KALUANUI STREAM NEAR PUNALUU

LOCATION.--Lat 21°35'22", long 157°54'38", Hydrologic Unit 20060000, on right bank 0.8 mi downstream from Sacred Falls, 1.6 mi west of Punaluu Beach Park, and 1.7 mi south of cemetery in Hauula.

DRAINAGE AREA.--1.11 mi^2.

PERIOD OF RECORD.--May 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 110 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream. Observation of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--18 years, 4.09 ft^3/s (2,960 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,390 ft^3/s Jan. 6, 1982, gage height, 11.90 ft, from rating curve extended above 14 ft^3/s on basis of slope-area measurements at gage heights 8.85 ft and 10.0 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	0030	925	9.51	May 6	0645	511	8.47
Feb. 14	1600	*1090	*9.84	Sept. 24	0300	576	8.66

No flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.04	4.4	.41	3.5	e22	6.7	15	.69	.29	2.3	.54
2	.04	.82	1.7	.34	1.6	e8.0	1.7	2.0	1.7	.17	4.8	.37
3	.07	.31	8.4	.45	1.1	e5.0	.74	1.9	.67	.11	2.4	.31
4	.08	2.0	1.9	3.1	32	e2.7	.55	1.0	.44	.09	3.1	1.8
5	2.3	1.1	1.4	.84	4.8	e2.2	5.1	.79	.36	.07	1.3	.41
6	.13	5.4	1.4	.34	2.0	e7.0	1.6	96	.29	.17	5.3	.25
7	.06	1.3	7.4	.25	1.4	e4.0	1.6	17	.25	.38	2.0	.20
8	.38	.81	7.0	.22	e1.8	e2.6	1.4	3.0	.32	.29	3.4	.79
9	.76	1.2	3.8	.18	e3.0	e1.9	.58	1.9	.34	.24	2.0	.45
10	.23	.32	1.7	.16	e7.0	e6.0	.42	1.4	.19	.09	.99	1.3
11	.29	.61	1.3	1.9	e2.8	e7.0	.34	1.1	.16	.06	.82	.31
12	.30	.80	1.0	.54	e1.9	e1.5	.30	.90	.13	.03	.76	2.3
13	.09	2.4	.91	.28	e1.8	e.86	.25	5.6	.13	.01	.69	9.6
14	.04	3.8	.74	23	e80	.91	1.1	2.8	.15	.00	.79	1.2
15	.03	4.1	.64	1.6	e14	1.2	.97	10	.10	.00	4.8	2.2
16	.01	.69	.98	.91	e4.0	1.2	.69	16	.08	.02	3.4	.65
17	.00	.36	1.8	.64	e2.8	.69	11	42	.07	4.0	1.2	.44
18	.00	.45	.79	.54	e2.2	.49	2.9	3.9	.06	1.6	.91	1.3
19	.00	.38	.54	.45	e2.0	.41	.79	2.8	.06	.32	1.8	17
20	.00	.92	.41	.41	e2.3	.91	1.2	3.0	.20	.13	1.3	1.2
21	.00	1.7	.34	.37	e5.2	.54	5.0	1.9	.57	.09	.54	1.8
22	.00	.77	.31	10	e2.3	8.7	4.0	2.3	.14	1.7	.45	2.2
23	.15	1.1	.28	2.0	e2.0	1.5	2.0	1.9	.07	.60	.37	28
24	.12	.93	12	.85	e3.0	.58	9.2	1.3	.06	.55	.34	38
25	.02	.55	14	19	e5.0	.43	1.9	1.7	1.3	7.9	1.4	20
26	.00	100	5.2	2.2	e18	.41	1.0	.93	.34	.65	.49	4.1
27	1.2	82	1.4	1.0	e9.0	1.5	.79	.82	17	.31	1.0	2.4
28	.29	3.8	.98	.74	e7.0	6.2	.69	.99	5.5	.23	3.2	1.7
29	.69	2.2	.98	4.8	---	1.0	.54	.69	.97	.41	1.2	1.1
30	1.0	13	.91	6.2	---	3.1	.45	.67	.50	.37	2.7	.88
31	.13	---	.54	9.3	---	1.1	---	.59	---	13	1.3	---
TOTAL	8.43	233.66	85.15	92.62	223.3	101.63	65.50	241.68	32.84	33.86	57.05	140.80
MEAN	.27	7.79	2.75	2.99	7.97	3.28	2.18	7.80	1.09	1.09	1.84	4.69
MAX	2.3	100	14	23	80	22	11	96	17	13	5.3	36
MIN	.00	.04	.28	.16	1.1	.41	.25	.59	.06	.00	.34	.20
AC-FT	17	463	189	184	443	202	130	479	65	67	113	279

CAL YR 1984	TOTAL	830.87	MEAN	2.27	MAX	100	MIN	.00	AC-FT 1650
WTR YR 1985	TOTAL	1316.54	MEAN	3.61	MAX	100	MIN	.00	AC-FT 2610

e Estimated

16325000 KAMANANUI STREAM AT PUPUKEA MILITARY ROAD, NEAR MAUNAWAI

LOCATION.--Lat 21°37'25", long 158°01'04", Hydrologic Unit 20060000, on right bank 75 ft upstream from Pupukea Military Road and 3.5 mi southeaat of Maunawai.

DRAINAGE AREA.--3.13 mi^2.

PERIOD OF RECORD.--June 1963 to current year. Occaaional low-flow meaaurementa, water years 1961 end 1963.

GAGE.--Water-stage recorder and combination pipe culverts and paved road control. Elevation of gage is 590 ft, from topographic map.

REMARKS.--Recoords fair. No diversion upstream. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--22 years, 10.3 ft^3/s (7,460 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,390 ft^3/s Jan. 30, 1975, gage height, 10.06 ft, from rating curve extended above 42 ft^3/s on basis of slope-area measurement at gage height 10.06 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 950 ft^3/s end maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 26	2300	*1590	*8.29	Feb. 14	1900	1390	8.03

No flow for many days,.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	8.2	1.4	12	25	3.5	27	3.3	1.2	5.1	1.7
2	.00	.00	2.0	1.3	2.8	11	6.8	12	4.5	1.1	8.0	.78
3	.00	.00	5.7	1.1	1.8	6.9	2.8	6.5	3.6	.91	2.9	.59
4	.00	.00	6.7	1.2	14	6.9	2.1	3.7	2.8	.82	4.1	.37
5	.00	.00	1.8	1.1	12	20	2.0	2.6	2.6	.75	3.3	.26
6	.00	.00	1.3	1.1	2.9	4.7	2.5	168	2.4	.71	1.5	.20
7	.00	.00	3.2	.90	1.8	8.7	2.1	39	2.2	.90	4.4	.15
8	.00	.00	9.6	.78	1.6	5.6	2.8	17	2.2	.93	2.3	.13
9	.00	.00	8.2	.72	1.6	4.8	2.0	11	2.2	.98	9.4	.10
10	.00	.00	2.9	.72	1.5	6.3	1.7	8.0	2.0	.92	2.7	.10
11	.00	.00	1.8	1.2	1.6	21	1.5	6.4	1.9	.66	1.3	.09
12	.00	.00	1.3	1.8	11	7.6	1.5	5.4	1.8	.54	.92	.07
13	.00	.00	1.1	1.3	4.0	5.0	1.5	6.7	1.8	.47	.76	.08
14	.00	.00	.90	7.7	163	4.0	1.4	6.4	1.7	.43	.67	.87
15	.00	4.2	.78	2.9	30	3.7	1.7	32	1.6	.42	1.0	.93
18	.00	2.9	.67	1.4	11	3.6	1.9	23	1.6	.45	2.9	.41
17	.00	1.0	1.1	1.1	7.0	3.2	12	85	1.6	.83	3.1	.22
18	.00	.57	1.3	.84	5.5	2.6	7.3	21	1.5	4.0	1.1	.14
19	.00	.28	1.1	.67	4.4	2.4	2.7	13	1.5	1.6	1.0	11
20	.00	.13	.96	.57	4.4	2.8	2.7	9.9	1.7	.83	.70	4.0
21	.00	.07	.98	.47	4.1	2.7	3.0	8.3	1.7	.57	.47	1.2
22	.00	.02	.96	.52	3.2	7.8	13	7.2	1.6	.64	.38	1.2
23	.00	.16	.98	2.4	7.4	9.4	6.6	7.2	1.3	1.7	.32	6.0
24	.00	1.4	24	1.4	4.7	3.1	21	6.4	1.2	1.0	.28	34
25	.00	1.5	43	8.0	4.2	2.5	6.8	5.7	1.9	7.2	.28	4.0
26	.00	107	10	4.7	19	2.6	3.7	5.0	2.4	2.8	.28	7.2
27	.00	151	5.1	1.6	22	2.1	2.6	4.6	1.5	1.1	.30	2.1
28	.00	8.3	2.9	1.1	23	7.8	2.2	4.5	16	.73	.47	1.3
29	.00	3.0	2.1	.96	---	3.8	2.0	4.1	2.9	.56	1.4	1.5
30	.00	2.0	2.4	4.5	---	4.3	1.8	4.0	1.9	.52	.93	.86
31	.00	---	1.8	16	---	4.8	---	3.6	---	10	1.2	---
TOTAL	.00	283.53	152.79	71.45	381.5	206.5	125.0	564.2	76.9	46.27	63.46	81.55
MEAN	.00	9.45	4.93	2.30	13.6	6.68	4.17	18.2	2.56	1.49	2.05	2.72
MAX	.00	151	43	16	163	25	21	168	16	10	9.4	34
MIN	.00	.00	.67	.47	1.5	2.1	1.4	2.6	1.2	.42	.28	.07
AC-FT	.00	562	303	142	757	410	248	1120	153	92	126	162

CAL YR 1984	TOTAL	1369.02	MEAN	3.74	MAX	151	MIN	.00	AC-FT 2720
WTR YR 1985	TOTAL	2053.15	MEAN	5.63	MAX	168	MIN	.00	AC-FT 4070

16330000 KAMANANUI STREAM AT MAUNAWAI

LOCATION.--Lat 21°38'20", long 158°03'27", Hydrologic Unit 20060000, on right bank 0.5 mi upstream from Kamehameha Highway, 4.9 mi northeast of Waialua School, and 7.3 mi southwest of Kahuku School.

DRAINAGE AREA.--12.36 mi^2, revised, including that of Elehaha Stream which is mostly diverted into Kamananui Stream since June 14, 1975.

PERIOD OF RECORD.--February 1958 to current year.

REVISED RECORDS.--WSP 1937: 1958-60. WRD Hawaii 1974: 1971(P), 1972-73(M). WDR HI-81-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft, from topographic map. Prior to May 13, 1965, at datum 2.00 ft higher and May 13, 1965, to May 17, 1966, at datum 1.00 ft higher.

REMARKS.--Records good. Small diversion upstream. Obsarvations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--27 years, 17.1 ft^3/s (12,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,540 ft^3/s Mar. 18, 1980, gage height, 11.46 ft, from rating curve extended above 150 ft^3/s on basis of slope-area measurements at gage heights 5.68 ft and 11.46 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 26	2330	2500	6.92	May 6	0900	1700	5.99
Feb. 14	1930	*2800	*7.26				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	6.0	1.6	20	50	4.9	33	4.2	1.7	9.5	.70
2	.01	.01	4.2	1.0	5.2	24	7.4	25	4.8	1.1	7.5	.84
3	.01	.01	2.4	.78	2.6	14	4.5	8.6	4.9	1.2	5.0	.41
4	.01	.01	12	.62	10	12	2.7	5.5	3.9	1.0	3.0	.22
5	.01	.01	3.5	.60	25	26	2.2	3.4	3.4	.87	5.1	.15
6	.01	.01	1.8	.50	6.2	30	2.2	563	3.1	.54	2.3	.05
7	.01	.01	1.6	.44	3.2	19	2.6	154	2.8	.56	2.8	.03
8	.01	.01	8.3	.32	2.2	12	2.3	31	2.7	.72	2.8	.02
9	.01	.00	13	.22	1.9	9.1	2.4	18	2.6	.63	8.0	.02
10	.00	.01	4.9	.18	2.1	8.8	1.5	13	2.4	.59	4.3	.02
11	.00	.01	2.5	.49	1.6	28	1.2	10	2.2	.57	2.0	.01
12	.00	.01	1.5	.88	16	16	1.1	8.1	2.0	.35	1.1	.01
13	.01	.00	.92	1.2	7.3	9.7	.95	9.6	2.0	.21	.75	.01
14	.00	.00	.57	4.4	547	7.0	.86	9.2	1.9	.11	.49	.01
15	.01	.00	.35	6.3	136	5.1	.86	47	1.6	.06	.30	.01
16	.01	.00	.23	2.1	25	4.7	1.5	35	1.3	.03	.96	.01
17	.01	.01	.15	.95	15	4.3	6.5	271	1.3	.04	3.0	.02
18	.01	.01	.26	.51	9.7	3.5	13	51	1.3	1.6	1.6	.01
19	.01	.02	.56	.31	7.0	3.0	4.4	23	1.3	2.3	.76	4.0
20	.01	.02	.31	.16	5.8	2.8	2.7	17	1.3	.99	.61	6.6
21	.00	.02	.16	.10	5.7	2.9	3.4	14	1.3	.50	.44	1.7
22	.01	.02	.08	.06	4.6	3.1	11	11	1.2	.30	.20	.89
23	.01	.03	.16	.04	7.2	14	9.0	11	.98	.35	.09	1.7
24	.01	.03	32	1.0	8.1	4.8	31	9.5	.74	1.1	.05	55
25	.01	.05	141	3.5	5.6	3.1	15	8.2	.95	3.7	.05	7.6
26	.00	115	23	9.2	23	2.9	6.0	7.0	2.1	4.5	.05	7.5
27	.00	475	11	2.5	41	2.5	3.6	6.1	2.3	1.6	.04	3.4
28	.00	15	5.0	1.1	52	5.9	2.8	5.5	19	.91	.05	1.7
29	.00	5.6	3.1	.68	---	5.2	2.2	5.2	5.1	.56	.05	1.1
30	.00	3.1	2.5	3.4	---	3.3	1.9	5.1	2.9	.38	.05	1.0
31	.00	---	2.4	22	---	8.6	---	4.7	---	5.6	.37	---
TOTAL	.20	614.02	285.45	67.16	996.0	345.3	151.67	1422.7	87.57	34.67	63.31	94.74
MEAN	.006	20.5	9.21	2.17	35.6	11.1	5.06	45.9	2.92	1.12	2.04	3.16
MAX	.01	475	141	22	547	50	31	563	19	5.6	9.5	55
MIN	.00	.00	.08	.04	1.6	2.5	.86	3.4	.74	.03	.04	.01
AC-FT	.4	1220	566	133	1980	685	301	2820	174	69	126	188

CAL YR 1984	TOTAL	2028.59	MEAN	5.54	MAX	475	MIN	.00	AC-FT	4020
WTR YR 1985	TOTAL	4162.79	MEAN	11.4	MAX	563	MIN	.00	AC-FT	8260

16345000 OPAEULA STREAM NEAR WAHIAWA

LOCATION.--Lat 21°33'55", long 158°00'10", Hydrologic Unit 200600000, on left bank 4.3 mi northeast of Leilehua High School in Wahiawa and 8.1 mi east of Waialua School.

DRAINAGE AREA.--2.98 mi^2.

PERIOD OF RECORD.--August 1959 to current year.

REVISED RECORDS.--WSP 1937: 1960.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,120 ft, from topographic map.

REMARKS.--Records good. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--26 years, 13.5 ft^3/s (9,780 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,540 ft^3/s July 17, 1974, gage height, 11.94 ft from rating curve extended above 110 ft^3/s on basis of slope-area measurements at gage heights 6.74 ft and 10.12 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 26	2400	*2280	*8.05	May 6	0800	1420	6.76
Feb. 14	1730	1650	7.14				

No flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	24	1.4	6.7	57	29	22	2.5	2.6	8.5	2.1
2	.00	.00	4.6	1.1	3.0	18	22	17	2.6	1.8	13	1.6
3	.14	.00	3.4	.94	1.6	8.1	5.8	7.2	4.9	1.2	5.4	.92
4	.16	.57	9.7	2.4	70	7.6	4.0	5.1	2.6	.87	13	.69
5	.13	9.8	3.1	4.8	21	13	4.3	3.3	2.0	.67	9.1	1.1
6	.10	8.3	2.1	2.0	4.5	28	11	292	1.7	.56	3.7	1.4
7	.08	11	24	1.1	2.5	12	4.2	53	1.5	.53	12	.80
8	.07	3.2	22	.81	2.6	5.9	7.5	14	1.5	1.3	6.3	.59
9	.05	2.0	20	.64	4.5	4.8	3.9	6.9	1.4	1.4	9.2	.48
10	.03	2.9	6.9	.56	9.0	17	2.6	5.5	1.6	1.2	4.8	.45
11	.02	1.6	4.5	.82	5.5	33	2.2	4.5	1.3	.82	2.8	.68
12	.01	.88	3.3	2.7	5.3	10	2.1	4.3	1.1	.54	2.0	.54
13	.09	.64	2.7	1.9	4.6	5.3	1.9	16	1.1	.42	1.8	4.1
14	.18	15	2.1	48	237	4.4	1.7	6.6	1.2	.32	1.6	13
15	.12	12	1.8	6.3	27	4.5	1.8	31	1.1	.26	4.3	3.3
16	.16	5.4	1.5	2.5	6.5	6.1	3.1	39	.93	.23	4.0	1.4
17	.15	2.0	1.4	1.5	4.5	4.1	25	140	.82	.22	4.8	1.5
18	.10	1.1	2.9	1.0	3.7	3.1	17	22	.81	12	2.4	1.5
19	.07	.70	2.3	.74	2.8	2.6	5.7	9.0	.79	3.8	1.5	59
20	.05	.60	1.6	.59	2.9	2.5	3.5	7.0	.83	1.7	1.2	9.8
21	.03	1.6	1.3	.53	6.2	3.4	7.2	8.6	.91	.94	2.0	3.4
22	.02	3.1	1.1	.50	2.8	37	57	5.3	2.1	.69	1.3	5.2
23	.02	2.3	1.1	4.1	2.7	18	9.0	6.3	1.2	2.4	.95	22
24	.00	3.3	21	2.4	4.8	5.0	72	5.0	.82	2.3	.79	73
25	.00	4.7	64	1.7	6.6	3.4	12	4.6	.82	21	.77	35
26	.00	120	13	8.8	44	3.0	5.7	4.3	2.8	6.3	.71	28
27	.00	285	7.1	2.8	36	2.5	4.2	3.3	2.2	2.3	1.5	5.6
28	.00	10	3.5	1.4	24	27	3.6	3.1	56	1.4	2.3	5.8
29	.00	4.9	2.3	1.0	---	9.8	3.0	3.1	4.7	1.1	4.5	4.1
30	.00	4.3	1.9	11	---	5.5	2.7	3.1	4.3	1.3	3.1	2.9
31	.00	---	1.9	6.5	---	9.0	---	2.9	---	34	4.2	---
TOTAL	1.78	516.89	262.1	120.53	552.3	370.6	334.7	755.0	108.13	106.17	133.52	289.95
MEAN	.057	17.2	8.45	3.89	19.7	12.0	11.2	24.4	3.60	3.42	4.31	9.66
MAX	.18	285	64	46	237	57	72	292	56	34	13	73
MIN	.00	.00	1.1	.50	1.6	2.5	1.7	2.9	.79	.22	.71	.45
AC-FT	3.5	1030	520	239	1100	735	664	1500	214	211	265	575

CAL YR 1984	TOTAL	2481.10	MEAN	6.78	MAX	285	MIN	.00	AC-FT	4920
WTR YR 1985	TOTAL	3551.67	MEAN	9.73	MAX	292	MIN	.00	AC-FT	7040

16400000 HALAWA STREAM NEAR HALAWA
(National stream-quality accounting network station)

LOCATION.--Lat 21°09'31", long 156°45'53", Hydrologic Unit 20050000, on right bank 600 ft downstream from Hipuapua Stream and 1.5 mi west of Halawa.

DRAINAGE AREA.--4.62 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1917 to July 1932, November 1937 to current year.

REVISED RECORDS.--WSP 1319: 1928, 1929(M), 1930-31, 1938-50(M), drainage area. WSP 1719: 1954.

GAGE.--Water-stage recorder. Elevation of gage is 210 ft, from topographic map. Prior to June 25, 1923, at site 350 ft upstream at different datum. June 25, 1923, to July 18, 1932, and Nov. 17, 1937, to Feb. 3, 1965, at present site at datum 2.00 ft higher.

REMARKS.--Records fair. No diversion upstream.

AVERAGE DISCHARGE.--61 years (water years 1918-31, 1939-85), 29.0 ft^3/s (21,010 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,900 ft^3/s Feb. 4, 1965, gage height, 19.91 ft, from floodmarks, from rating curve extended above 163 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.76 ft^3/s about Nov. 23, 1962.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 27	0330	2410	9.01	July 17	0600	2270	8.81
Feb. 14	0330	*2830	*9.54				

Minimum discharge, 1.0 ft^3/s Oct. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.4	19	3.9	12	19	77	41	7.2	7.4	28	7.4
2	1.5	20	9.8	3.5	6.7	11	26	29	12	4.7	24	6.9
3	1.5	47	7.4	45	5.8	13	8.4	25	6.3	3.0	15	5.6
4	1.5	39	6.9	78	5.0	19	6.9	35	6.1	22	45	5.6
5	1.7	14	6.1	7.8	5.5	27	16	10	5.5	64	18	4.3
6	1.3	3.9	8.5	5.3	4.6	86	12	43	4.9	8.2	66	3.9
7	1.1	2.7	71	4.4	5.5	22	13	223	4.4	5.3	22	3.6
8	12	82	115	4.2	5.0	13	20	30	4.2	6.3	51	3.2
9	7.4	8.0	38	3.9	4.2	20	11	28	3.9	6.9	45	3.0
10	2.4	4.7	13	3.6	19	68	7.9	12	3.8	4.3	14	2.8
11	1.6	20	8.7	20	5.3	74	38	12	3.6	3.4	12	6.1
12	2.9	5.5	12	8.0	7.4	92	7.0	14	3.4	2.8	10	4.9
13	3.4	6.5	8.9	4.4	302	44	6.1	27	3.2	2.6	7.4	3.2
14	9.3	12	5.9	139	311	26	6.5	17	3.2	2.2	28	2.8
15	2.8	48	5.3	24	25	20	6.1	18	3.2	2.1	17	7.4
16	1.7	6.0	5.9	6.9	15	19	88	24	3.0	12	35	3.9
17	1.4	3.7	6.5	5.3	11	11	144	110	2.8	170	19	2.8
18	1.2	8.8	6.3	4.4	13	11	33	32	3.5	13	11	2.6
19	1.1	4.9	5.9	4.2	8.7	8.4	14	29	3.8	6.9	22	62
20	1.1	5.8	4.2	3.8	7.5	7.6	11	14	7.0	5.3	15	25
21	1.6	4.3	8.2	3.4	7.0	8.0	11	11	5.6	5.2	6.9	32
22	1.6	3.3	8.5	14	15	74	16	46	3.2	16	17	13
23	84	4.1	9.6	11	11	13	25	20	2.6	15	6.9	84
24	34	3.7	6.3	8.7	37	9.4	58	11	2.6	41	5.6	78
25	3.5	65	82	53	40	19	12	11	2.6	28	18	13
26	2.1	148	66	11	158	8.4	8.3	8.2	9.6	11	18	36
27	11	241	12	5.3	94	7.3	7.4	34	17	8.2	20	15
28	2.8	85	6.5	4.3	28	8.9	6.7	8.2	6.5	7.4	13	17
29	1.8	28	5.5	9.8	---	6.7	6.0	14	3.9	8.2	13	11
30	1.5	59	6.7	105	---	46	5.6	24	4.3	8.2	8.2	8.7
31	1.4	---	4.4	26	---	16	---	14	---	71	17	---
TOTAL	183.8	965.4	581.0	631.1	1169.2	807.7	707.9	974.4	153.1	571.6	648.0	474.7
MEAN	5.93	32.8	18.7	20.4	41.8	26.1	23.6	31.4	5.10	18.4	20.9	15.8
MAX	84	241	115	139	311	92	144	223	17	170	66	84
MIN	1.1	1.4	4.2	3.4	4.2	6.7	5.6	8.2	2.6	2.1	5.6	2.6
AC-FT	365	1950	1150	1250	2320	1600	1400	1930	304	1130	1290	942

CAL YR 1984	TOTAL	5769.2	MEAN	15.8	MAX	241	MIN	1.1	AC-FT	11440
WTR YR 1985	TOTAL	7887.9	MEAN	21.6	MAX	311	MIN	1.1	AC-FT	15650

16400000 HALAWA STREAM NEAR HALAWA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-74, 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 22...	1315	755	1.5	75	7.3	23.0	3.2	8.6	101	39	870
DEC 03...	1440	754	7.7	53	6.6	21.0	4.2	8.0	91	54	440
FEB 25...	0930	756	188	45	6.5	19.0	16	8.9	97	940	800
APR 15...	1200	757	5.9	62	7.8	19.5	2.1	8.7	95	21	370
JUN 03...	1100	759	6.4	57	6.7	21.5	2.5	7.5	85	62	270
AUG 26...	0930	759	8.7	46	7.0	22.0	13	8.1	93	1100	2200

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 22...	15	0	2.7	2.0	8.4	53	1	.80	15	4.4	10
DEC 03...	7	2	1.1	1.1	6.6	63	1	.80	5	5.9	11
FEB 25...	6	0	.90	.90	5.9	66	1	.50	5	8.6	9.9
APR 15...	10	3	1.6	1.4	8.1	62	1	1.0	7	4.6	12
JUN 03...	8	5	1.1	1.2	7.4	65	1	.80	3	4.4	12
AUG 26...	7	5	1.1	1.0	6.3	63	1	.80	5	8.3	9.6

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT 22...	<.10	9.4	56	47	.08	<.10	<.010	.50	.030	.010	<.010
DEC 03...	<.10	6.8	36	36	.05	<.10	.020	.40	.010	.010	<.010
FEB 25...	<.10	6.2	49	37	.07	<.10	.010	.60	.130	.010	<.010
APR 15...	<.10	7.8	40	41	.05	<.10	.040	1.4	<.010	.010	<.010
JUN 03...	<.10	7.3	28	36	.04	<.10	.040	.40	.010	<.010	<.010
AUG 26...	<.10	6.3	34	35	.05	<.10	.030	.50	.040	.020	<.010

< Actual value is known to be less than the value shown.

16400000 HALAWA STREAM NEAR HALAWA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
OCT										
22...	30	<1	5	2.0	1	<1	<3	6	120	<1
FEB										
25...	170	<1	4	1.9	<1	<1	<3	2	270	1
APR										
15...	50	<1	7	--	<1	<1	<3	1	65	<1
AUG										
26...	220	<1	5	<.5	<1	<1	<3	<1	310	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT										
22...	5	8	<.1	<10	<1	<1	<1	30	<6	11
FEB										
25...	<4	4	<.1	<10	<1	<1	<1	16	<6	6
APR										
15...	<4	11	<.1	<10	2	<1	<1	19	<6	3
AUG										
26...	<4	4	.1	<10	<1	<1	<1	14	<6	8

DATE	TIME	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	DATE	TIME	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					APR				
22...	1315	5	.02	100	15...	1200	3	.05	100
DEC					JUN				
03...	1440	2	.04	100	03...	1100	2	.03	100
FEB					AUG				
25...	0930	31	14	100	26...	0930	7	.16	100

< Actual value is known to be less than the value shown.

16404200 PILIPILILAU STREAM NEAR PELEKUNU

LOCATION.--Lat 21°08'08", long 156°53'09", Hydrologic Unit 20050000, on right bank 500 ft downstream from left-bank tributary, 1.9 mi south of former village of Pelekunu, and 5.8 mi north of Kamalo.

DRAINAGE AREA.--0.49 mi^2.

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,000 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--17 years, 1.47 ft^3/s (1,070 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 835 ft^3/s Jan. 25, 1982, gage height, 4.25 ft, from rating curve extended above 6.2 ft^3/s on basis of slope-area measurement at gage height, 4.25 ft; minimum, 0.50 ft^3/s Sept. 2-8, 21-29, 1975, Nov. 26 to Dec. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29 ft^3/s Jan. 4, gage height, 2.40 ft, no peak greater than base discharge of 100 ft^3/s; minimum, 0.55 ft^3/s, Oct. 30, 31, Nov. 7, 9, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61	.61	.61	.64	1.2	1.6	2.8	1.9	1.1	.99	.80	.72
2	.81	.61	.61	.61	.99	1.2	2.3	1.2	1.1	.94	.76	.72
3	.61	.73	.58	.72	.94	1.1	1.4	1.0	1.1	.94	.84	.72
4	.61	.64	.58	.72	.94	1.2	1.2	1.0	1.1	.94	.84	.72
5	.61	.61	.58	.64	e.82	1.6	1.3	.94	1.1	.99	.76	.72
6	.58	.58	.61	.61	e.76	5.8	1.2	.99	1.1	.89	.84	.72
7	.61	.58	.76	.61	e.73	4.3	1.5	3.5	1.0	.89	.89	.72
8	.68	.64	2.4	.61	e.72	2.6	1.3	1.6	1.0	.89	1.0	.72
9	.61	.58	2.6	.64	e.72	2.1	1.2	1.4	1.0	.89	.89	.68
10	.58	.61	.84	.61	e.72	2.4	1.1	1.2	.99	.89	.76	.68
11	.58	.68	.72	2.7	e.72	3.2	1.1	1.3	.99	.84	.76	.76
12	.58	.58	.68	.99	e.72	3.7	1.1	1.4	.99	.89	.76	.68
13	.58	.58	.64	.80	e.80	4.1	1.0	2.0	.99	.84	.76	.68
14	.58	.64	.64	4.5	e1.2	3.2	1.0	1.5	.99	.84	.80	.68
15	.58	.64	.64	1.3	e1.7	2.6	1.2	1.4	.99	.89	.76	.68
16	.58	.61	.61	.94	e.96	2.2	1.4	1.7	.99	.94	.72	.68
17	.58	.58	.61	.80	e.82	1.9	1.6	2.6	.99	1.1	.72	.68
18	.58	.61	.64	.76	e.77	1.7	1.3	1.9	.94	.84	.72	.64
19	.61	.64	.64	.72	e.75	1.5	1.2	1.9	.99	.80	.72	.72
20	.61	.72	.61	.72	e.74	1.4	1.1	1.6	.94	.80	.72	.68
21	.61	.64	.61	.72	e.73	1.3	1.2	1.5	.94	.80	.72	.72
22	.61	.58	.61	.72	e.72	1.6	1.1	1.5	.94	.84	.72	.72
23	.61	.61	.58	.72	e.72	1.3	1.0	1.5	.94	.84	.72	2.1
24	.61	.58	.72	.76	e.72	1.3	1.2	1.4	.94	.80	.72	.80
25	.61	.61	1.3	.76	e.72	1.3	1.1	1.3	.94	.80	.72	.72
26	.58	2.0	1.2	.72	e1.2	1.2	.99	1.2	.94	.80	.80	.76
27	.58	1.6	.80	.68	e3.2	1.2	.99	1.2	.94	.80	.76	.68
28	.58	.72	.72	.68	2.3	1.2	.99	1.2	.89	.80	.76	.68
29	.61	.64	.72	2.0	---	1.1	.91	1.2	.94	.80	.72	.68
30	.58	.64	.64	2.7	---	1.2	.94	1.2	.94	1.1	.72	.68
31	.58	---	.64	1.6	---	1.1	---	1.2	---	1.2	.72	---
TOTAL	18.53	21.09	25.14	32.70	28.03	63.2	37.72	46.43	29.74	27.61	23.90	22.54
MEAN	.60	.70	.81	1.05	1.00	2.04	1.26	1.50	.99	.89	.77	.75
MAX	.68	2.0	2.6	4.5	3.2	5.8	2.8	3.5	1.1	1.2	1.0	2.1
MIN	.58	.58	.58	.81	.72	1.1	.91	.94	.89	.80	.72	.64
AC-FT	37	42	50	65	56	125	75	92	59	55	47	45

CAL YR 1984	TOTAL	347.90	MEAN	.95	MAX	6.2	MIN	.58	AC-FT	690
WTR YR 1985	TOTAL	378.63	MEAN	1.03	MAX	5.8	MIN	.58	AC-FT	747

e Estimated

18405100 MOLOKAI TUNNEL AT EAST PORTAL

LOCATION.--Lat 21°08'38", long 156°55'16", Hydrologic Unit 20050000, on left bank 100 ft downstream from the east portal, 5.3 mi southeast of Kalaupapa, and 7.5 mi northeast of Kaunakakai.

PERIOD OF RECORD.--July 1988 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 989 ft, from tunnel plans.

REMARKS.--Records good. Tunnel diverts from Waikolu Stream and two tributaries; diversion is augmented by water pumped from two wells and from the stream at elevation 728 ft in Waikolu Valley near the east portal. Water is used for irrigation in west-central Molokai. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 3.53 ft^3/s (2,560 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 35 ft^3/s Oct. 19, 1983; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 34 ft^3/s Dec. 8, Mar. 6; minimum daily, 1.4 ft^3/s June 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	5.4	5.8	3.3	5.1	7.9	12	14	2.0	4.5	7.1	5.6
2	5.6	5.3	5.3	4.7	3.8	4.1	15	5.7	1.4	4.7	7.2	5.3
3	5.5	5.6	5.3	5.4	3.5	2.4	4.1	2.1	1.5	4.7	7.4	5.1
4	5.6	6.0	5.3	9.6	4.1	6.8	2.8	1.7	2.4	6.0	16	5.1
5	5.5	7.4	5.4	5.9	3.9	10	6.2	1.5	2.4	6.0	7.4	5.1
6	5.5	5.2	5.3	5.4	3.7	34	4.5	2.8	2.3	6.1	7.0	5.1
7	5.5	5.3	12	5.3	3.6	27	5.6	16	2.2	5.8	8.9	5.1
8	5.5	7.5	34	5.3	3.6	12	8.1	6.5	1.6	5.8	19	5.0
9	5.8	6.2	27	5.2	4.0	5.9	3.4	5.1	1.6	5.2	14	5.1
10	5.5	5.4	7.8	5.2	3.3	14	2.7	2.6	1.7	5.7	6.9	4.0
11	5.5	8.6	8.0	29	3.3	18	2.3	4.2	2.3	5.7	5.9	2.3
12	5.5	5.8	5.4	8.9	3.5	24	2.1	4.8	2.6	5.7	5.7	3.1
13	5.4	5.3	5.4	6.0	13	25	2.0	17	2.5	5.7	5.6	3.1
14	5.5	5.4	4.1	20	9.8	17	2.1	7.8	3.0	5.6	5.8	3.1
15	5.4	9.9	3.2	9.7	11	10	2.3	6.5	3.0	5.6	6.4	3.1
16	5.5	5.9	3.2	6.4	4.3	6.6	13	13	3.0	4.5	5.7	3.1
17	5.4	5.4	3.2	4.3	3.8	3.6	18	22	3.0	8.2	5.6	3.9
18	5.4	5.4	2.6	3.5	3.6	2.6	9.1	9.1	2.7	8.0	5.5	5.0
19	5.4	6.1	1.9	3.3	3.3	2.2	6.1	7.5	4.3	3.2	5.5	5.1
20	5.4	10	4.0	3.3	3.2	2.0	6.7	8.9	5.1	1.5	5.4	6.0
21	5.5	6.8	5.4	3.2	3.6	1.9	5.9	8.3	5.0	1.5	5.4	5.4
22	5.4	6.2	5.3	3.5	3.3	8.0	7.3	3.9	3.4	4.5	5.4	5.6
23	5.4	7.5	5.3	3.5	3.3	4.4	5.5	3.8	1.5	5.9	5.5	14
24	5.5	6.0	5.5	3.3	3.3	2.3	6.5	4.5	4.8	5.2	5.4	9.1
25	5.4	5.8	17	3.3	3.6	3.7	4.9	3.3	5.2	1.9	5.3	5.8
26	5.2	23	18	3.4	15	2.5	4.0	2.4	4.1	3.6	5.2	5.7
27	5.4	16	6.5	3.2	28	2.4	3.8	3.3	5.9	6.1	6.2	5.5
28	5.1	4.3	3.7	3.2	24	4.9	3.7	2.3	3.8	6.2	7.2	5.2
29	5.6	4.5	3.4	11	---	2.4	2.2	2.3	3.3	6.1	8.5	5.1
30	5.1	5.6	4.3	22	---	4.1	1.5	1.7	3.2	12	5.7	5.2
31	5.4	---	3.4	9.3	---	2.2	---	2.9	---	24	6.1	---
TOTAL	169.0	212.8	230.0	218.6	181.3	273.9	173.4	197.5	90.6	185.2	223.9	154.9
MEAN	5.45	7.09	7.42	7.05	6.47	8.84	5.78	6.37	3.02	5.97	7.22	5.16
MAX	5.8	23	34	29	28	34	18	22	5.9	24	19	14
MIN	5.1	4.3	1.9	3.2	3.2	1.9	1.5	1.5	1.4	1.5	5.2	2.3
AC-FT	335	422	456	434	360	543	344	392	180	367	444	307

CAL YR 1984	TOTAL	2052.1	MEAN	5.61	MAX	34	MIN	1.1	AC-FT	4070
WTR YR 1985	TOTAL	2311.1	MEAN	6.33	MAX	34	MIN	1.4	AC-FT	4580

16405300 MOLOKAI TUNNEL AT WEST PORTAL

LOCATION.--Lat 21°07'27", long 156°59'50", Hydrologic Unit 20050000, on left bank 50 ft upstream from the west portal, 2.5 mi northeast of Kaunakakai, and 4.7 mi south of Kalaupapa.

PERIOD OF RECORD.--July 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 970 ft, from tunnel plans.

REMARKS.--Records good. Tunnel diverts from Waikolu Stream and two tributaries; diversion is augmented by water pumped from two wells and from the stream at elevation 728 ft in Waikolu Valley near east portal and one well in the tunnel near east portal. Water is used for irrigation in west-central Molokai. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 5.90 ft^3/s (4,270 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily diacharge, 36 ft^3/s Oct. 19, 1983; minimum daily, 1.8 ft^3/s Oct. 15, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 34 ft^3/s Mar. 6; minimum daily, 2.8 ft^3/s Dec. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	8.5	6.8	5.0	7.9	11	11	14	4.1	6.1	11	7.4
2	8.5	8.5	6.4	6.1	6.1	6.6	20	8.9	3.5	6.6	11	7.1
3	8.5	8.8	6.1	7.1	5.9	4.7	7.1	4.5	3.5	6.8	10	7.1
4	8.5	9.1	6.1	11	6.4	8.5	5.3	3.9	4.5	8.2	20	7.1
5	8.5	9.7	6.1	7.7	6.4	11	7.6	3.9	4.5	8.2	11	6.9
6	8.5	8.5	5.9	7.1	5.9	34	7.1	4.8	4.5	8.5	10	6.9
7	8.5	8.2	12	7.1	5.9	30	6.9	17	4.5	8.2	12	6.9
8	8.5	10	31	7.1	5.7	15	11	8.9	3.7	7.9	22	6.9
9	8.8	9.4	29	7.1	5.7	9.1	5.8	7.7	3.7	7.4	18	6.9
10	8.5	8.5	9.1	7.1	5.7	16	4.8	4.7	3.7	7.7	11	6.3
11	8.5	11	6.9	28	5.4	20	4.4	5.8	4.4	7.4	9.1	3.9
12	8.5	8.8	6.4	11	5.4	25	4.2	6.9	4.8	7.4	8.8	5.0
13	8.5	8.5	8.1	8.2	14	28	4.2	18	4.4	7.4	8.5	4.7
14	8.5	8.5	5.2	20	9.7	20	4.2	10	5.3	7.4	8.5	4.7
15	8.5	12	4.3	12	15	12	4.2	8.5	5.2	7.4	9.7	4.7
16	8.5	9.1	4.1	8.5	6.4	9.7	14	15	5.2	7.0	8.8	4.7
17	8.5	8.5	4.1	8.6	5.9	6.4	19	23	5.2	9.5	8.5	5.4
18	8.5	8.5	4.0	5.4	5.7	5.0	12	12	5.3	11	8.5	6.9
19	8.5	9.1	2.8	5.4	5.7	4.5	8.5	9.8	6.1	7.3	8.5	6.9
20	8.5	13	4.6	5.4	5.7	4.1	8.7	11	7.2	4.3	8.2	7.9
21	8.5	8.4	6.6	5.4	5.7	4.1	8.2	11	7.2	4.3	8.2	7.1
22	8.5	6.9	6.6	5.7	5.7	9.4	9.5	6.6	5.8	7.2	8.2	7.4
23	8.2	9.5	6.6	5.4	5.7	7.1	7.7	6.0	3.5	9.4	8.5	14
24	8.2	8.8	7.9	5.2	5.7	4.5	8.2	6.9	6.0	9.1	8.2	12
25	8.2	8.5	17	5.4	5.4	5.8	7.1	5.5	6.8	5.2	8.2	7.9
26	8.2	22	20	5.4	14	4.7	6.1	4.5	5.8	6.3	8.2	7.7
27	8.2	17	8.6	5.2	30	4.1	5.9	5.2	7.4	9.7	8.7	7.4
28	8.2	5.0	5.4	5.2	28	7.6	5.9	4.6	6.1	9.7	8.8	7.1
29	8.5	5.4	5.0	9.0	---	4.5	4.6	4.1	5.0	9.7	11	7.1
30	8.5	6.4	5.7	25	---	6.4	3.7	3.7	5.2	14	7.9	7.1
31	8.5	---	5.2	13	---	4.7	---	4.7	---	28	7.7	---
TOTAL	262.0	284.1	261.4	272.8	240.7	343.3	236.9	261.1	151.9	264.3	316.7	209.1
MEAN	8.45	9.47	8.43	8.80	8.60	11.1	7.90	8.42	5.06	8.53	10.2	6.97
MAX	8.8	22	31	28	30	34	20	23	7.4	28	22	14
MIN	8.2	5.0	2.8	5.0	5.4	4.1	3.7	3.7	3.5	4.3	7.7	3.9
AC-FT	520	564	518	541	477	681	470	518	301	524	628	415

CAL YR 1984	TOTAL	2918.8	MEAN	7.97	MAX	31	MIN	2.8	AC-FT	5790
WTR YR 1985	TOTAL	3104.3	MEAN	8.50	MAX	34	MIN	2.8	AC-FT	6160

16405500 WAIKOLU STREAM AT ALTITUDE 900 FT, NEAR KALAUPAPA

LOCATION.--Lat 21°08'43", long 156°55'18", Hydrologic Unit 20050000, on right bank 1.8 mi southwest of Haupu Bay, 2.3 mi upstream from mouth, and 5.2 mi southeast of Kalaupapa.

DRAINAGE AREA.--1.99 mi^2.

PERIOD OF RECORD.--May 1956 to October 1961, July 1962 to current year.

REVISED RECORDS.--WSP 1719: 1959. WSP 2137: 1965(P).

GAGE.--Water-stage recorder. Elevation of gage is 900 ft, from topographic map. Prior to July 1, 1962, at site 200 ft upstream at datum 6.14 ft higher.

REMARKS.--Records good. Since Nov. 16, 1980, water diverted upstream at times, either into or from Molokai tunnel. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE (since Molokai tunnel diversion began).--24 yesrs (water years 1961, 1963-85), 6.83 ft^3/s (4,950 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,570 ft^3/s Jan. 25, 1962, gage height, 6.64 ft, from rating curve extended above 43 ft^3/s on basis of slope-area measurement at gage height 5.24 ft; no flow at times since 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 31, 1961, reached a stage of 13.62 ft, from floodmarks, former site and datum, discharge, 6,220 ft^3/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 386 ft^3/s Jan. 14, gage height, 3.24 ft, no peak greater than base discharge of 590 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	1.0	32	11	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.01	7.5	.54	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.29	.00
5	.00	.00	.00	.00	.00	1.8	.88	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	54	.20	.00	.00	.00	.00	.00
7	.00	.00	.45	.00	.00	16	3.2	18	.00	.00	.00	.00
8	.00	.00	23	.00	.00	2.8	2.0	.04	.00	.00	1.0	.00
9	.00	.00	18	.00	.00	.50	.03	.00	.00	.00	.25	.00
10	.00	.00	.00	.00	.00	3.6	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	24	.00	13	.00	.01	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	19	.00	.03	.00	.00	.00	.00
13	.00	.00	.00	.00	.87	14	.00	3.9	.00	.00	.00	.00
14	.00	.00	.00	32	5.0	4.8	.00	.17	.00	.00	.00	.00
15	.00	.00	.00	.30	3.1	2.4	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	1.3	2.3	2.2	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.10	4.6	14	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.52	1.1	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.34	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00	13
24	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.03
25	.00	.00	2.6	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	12	3.6	.00	8.6	.00	.00	.00	.00	.00	.00	.00
27	.00	11	.00	.00	17	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	6.8	.69	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	14	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	10	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.12	---	.00	---	.00	---	11	.00	---
TOTAL	.00	23.00	47.85	80.42	41.37	137.05	53.29	51.67	.00	11.00	1.54	13.03
MEAN	.00	.77	1.54	2.59	1.48	4.42	1.78	1.67	.00	.35	.050	.43
MAX	.00	12	23	32	17	54	32	18	.00	11	1.0	13
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	46	95	160	82	272	106	102	.00	22	3.1	26

CAL YR 1984	TOTAL	474.24	MEAN	1.30	MAX	64	MIN	.00	AC-FT	941
WTR YR 1985	TOTAL	460.22	MEAN	1.26	MAX	54	MIN	.00	AC-FT	913

16408000 WAIKOLU STREAM BELOW PIPELINE CROSSING, NEAR KALAUPAPA

LOCATION.--Lat 21°09'45", long 156°55'54", Hydrologic Unit 20050000, on left bank 0.7 mi upstream from mouth and 4.4 mi southeast of Molokai Lighthouse near Kalaupapa.

DRAINAGE AREA.--3.68 mi^2.

PERIOD OF RECORD.--July 1919 to November 1930, August 1931 to July 1932, September 1937 to January 1948, July 1948 to current year. Prior to August 1931, published as "at pipeline crossing, near Kalaupapa."

REVISED RECORDS.--WSP 1155: 1932(M), 1938-44(M), 1946-48(M). WSP 1319: 1923(M), 1930(M), 1932, 1938-40, 1945(M), 1974-81(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 252 ft above maan sea level (hand levels by Bureau of Reclamation). Prior to Nov. 19, 1930, at site 500 ft upatream at different datums. Aug. 14, 1931, to July 20, 1932, and Sept. 20, 1937, to Jan. 26, 1948, at present site at datum 1.49 ft higher, and July 30, 1948, to June 30, 1962, at present site at datum 1.00 ft higher.

REMARKS.--Records fair. Diversion upstream for domestic use in Kalaupapa, and since Nov. 16, 1960, water has been diverted upstream both to and from Molokai tunnel. Observations of specific conductance, pH, and water tempsrature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE (since Molokai tunnel diversion began).--25 years (water years 1961-85), 14.8 ft^3/s (10,720 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,740 ft^3/s Mar. 31, 1982, gage height, 7.63 ft, from rating curve extendad above 59 ft^3/s on basis of slope-area measurement at gage height 6.68 ft; minimum, 2.0 ft^3/s Nov. 1, 2, 1925, June 5, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Dischsrge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 14	0830	*1170	*4.61	Sept. 23	1700	1080	4.52

Minimum discharge, 2.2 ft^3/s for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.6	2.8	2.1	3.3	4.1	90	25	3.5	2.8	3.9	2.3
2	3.0	3.4	2.7	2.1	2.9	3.4	21	4.8	3.3	2.6	3.1	2.5
3	3.1	3.8	2.6	2.8	2.8	3.4	3.7	3.7	3.1	2.5	2.8	2.5
4	3.2	3.7	2.5	2.6	2.7	3.6	3.7	3.5	2.8	2.5	3.9	2.5
5	3.4	3.4	2.4	2.5	2.6	3.6	4.4	3.3	2.8	2.5	2.8	2.6
6	3.2	3.3	2.4	2.5	2.6	128	3.9	3.3	2.6	2.5	2.8	2.8
7	3.4	3.3	2.8	2.3	2.5	36	9.2	50	2.6	2.5	2.9	2.8
8	3.5	3.3	51	2.3	2.5	5.1	9.6	5.4	2.6	2.5	3.7	2.8
9	3.3	3.3	56	2.5	2.4	4.7	4.6	4.1	2.6	2.3	5.6	2.8
10	3.3	3.3	3.3	2.3	2.6	7.9	4.4	3.9	2.5	2.3	4.1	2.8
11	3.4	3.4	2.8	89	2.4	34	4.1	3.9	2.5	2.3	3.3	3.3
12	3.4	3.3	2.7	3.1	2.4	49	3.9	3.9	2.5	2.3	3.1	2.5
13	3.3	3.3	2.6	2.9	6.5	37	3.9	8.0	2.5	2.3	2.8	2.5
14	3.3	3.5	2.4	84	10	11	3.9	4.6	2.5	2.3	2.9	2.8
15	3.2	3.4	2.4	3.5	12	6.1	4.4	4.1	2.5	2.5	2.8	2.9
16	3.2	3.3	2.4	3.1	3.5	5.3	10	4.6	2.5	2.5	2.6	2.9
17	3.2	3.2	2.4	2.9	3.1	4.7	11	39	2.6	2.6	2.6	3.1
18	3.3	3.3	2.4	2.8	2.9	4.4	5.4	12	2.5	2.3	2.5	3.1
19	3.2	3.3	2.3	2.6	2.8	4.1	4.4	6.2	2.6	2.3	2.5	3.5
20	2.9	3.2	2.3	2.6	2.7	4.0	4.1	5.9	2.5	2.3	2.5	3.3
21	2.9	3.3	2.3	2.6	2.7	3.9	3.9	5.4	2.5	2.3	2.5	3.3
22	2.9	3.2	2.3	2.9	2.7	4.4	3.7	4.8	2.5	2.3	2.5	3.3
23	3.0	3.2	2.3	2.5	2.7	4.0	3.5	4.6	2.5	2.5	2.5	54
24	3.0	3.1	2.4	2.4	2.6	3.8	3.7	4.4	2.5	2.5	2.5	2.8
25	3.0	3.2	4.2	3.1	2.7	3.9	3.3	4.1	2.8	2.5	2.5	2.3
26	3.1	28	6.0	2.6	14	3.6	3.1	3.9	2.5	2.5	2.5	2.8
27	3.2	62	2.4	2.4	40	3.7	3.1	3.9	16	2.5	2.5	2.3
28	3.3	3.9	2.3	2.4	14	3.6	3.1	3.9	3.9	2.5	2.6	2.2
29	3.3	3.1	2.3	38	---	3.5	3.1	3.9	2.9	2.5	2.3	2.3
30	3.3	2.8	2.2	31	---	3.6	2.9	3.7	2.8	3.1	2.3	2.5
31	3.4	---	2.1	4.3	---	3.5	---	3.7	---	33	2.3	---
TOTAL	99.2	183.4	184.0	294.7	156.6	400.9	243.0	245.5	94.5	106.9	90.2	133.9
MEAN	3.20	6.11	5.94	9.51	5.59	12.9	8.10	7.92	3.15	3.45	2.91	4.46
MAX	3.5	62	56	84	40	128	90	50	16	33	5.6	54
MIN	2.9	2.8	2.1	2.1	2.4	3.4	2.9	3.3	2.5	2.3	2.3	2.2
AC-FT	197	364	365	585	311	795	482	487	187	212	179	266

CAL YR 1984	TOTAL	2750.9	MEAN	7.52	MAX	267	MIN	2.1	AC-FT	5460
WTR YR 1985	TOTAL	2232.8	MEAN	6.12	MAX	128	MIN	2.1	AC-FT	4430

16414000 KAUNAKAKAI GULCH AT KAUNAKAKAI

LOCATION.--Lat 21°06'21", long 157°00'34", Hydrologic Unit 20050000, on left bank 0.6 mi upstream from Molokai Ranch pipeline crossing, 1.3 mi northeast of Kaunakakai Post Office, and 1.7 mi upstream from mouth.

DRAINAGE AREA.--8.57 mi^2.

PERIOD OF RECORD.--December 1949 to current year. Prior to July 1956, published as Kaunakakai Stream at Kaunakakai.

REVISED RECORDS.--WSP 1269: 1950-51. WSP 1569: Drainage area.

GAGE.--Watar-stage recorder. Elevation of gage is 240 ft, from topographic map.

REMARKS.--Records good. Flow has been augmented by occasional spillage from Molokai tunnel since May 1965.

AVERAGE DISCHARGE.--35 years (water years 1951-85), 1.56 ft^3/s (1,130 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,060 ft^3/s Oct. 31, 1961, gage height, 9.30 ft, from rating curve extended above 620 ft^3/s on basis of slope-area measurements at gage heights 7.22 ft and 9.30 ft; no flow most of the time esch year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 136 ft^3/s Jan. 11, gage height, 4.08 ft, no peak greater than base discharge of 280 ft^3/s; no flow for many daya.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	5.4	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	37	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	34	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	3.8	.00	.00	.00	.00	.00	.00
9	.00	.00	4.1	.00	.00	.62	.00	.00	.00	.00	.00	.00
10	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	17	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	2.6	.00	.68	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	8.7	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	5.5	.00	5.0	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.31	.00	.56	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	2.9	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	5.2	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	4.11	30.61	2.90	90.77	5.40	.00	.00	.00	.00	.00
MEAN	.00	.00	.13	.99	.10	2.93	.18	.00	.00	.00	.00	.00
MAX	.00	.00	4.1	17	2.9	37	5.4	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	8.2	61	5.8	180	11	.00	.00	.00	.00	.00

CAL YR 1984	TOTAL	48.99	MEAN	.13	MAX	30	MIN	.00	AC-FT	97
WTR YR 1985	TOTAL	133.79	MEAN	.37	MAX	37	MIN	.00	AC-FT	265

16419500 PAPIO GULCH AT HALAWA

LOCATION.--Lat 21°08'55", long 156°44'16", Hydrologic Unit 20050000, on left bank 200 ft downstream from wooden bridge on Highway 45 and 0.8 mi south of Halawa.

DRAINAGE AREA.--0.94 mi^2.

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 640 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diversion upstream for domestic use at Puu O Hoku Ranch. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--22 years, 0.764 ft^3/s (554 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,720 ft^3/s Apr. 13, 1965, gage height, 11.25 ft, from rating curve extended above 37 ft^3/s on basis of slope-area measurements at gage heights 4.60 ft, 7.15 ft, and 11.25 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 644 ft^3/s Feb. 14, gage height, 5.88 ft, no other peak greater than base discharge of 210 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.02	.36	e.26	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.27	e.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.21	e.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.21	e.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	e.26	e.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	e.48	e.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	e.12	e.00	1.6	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	e.00	e.00	.08	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	e.47	e.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	e1.6	e.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	e3.0	e.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	10	e.70	e.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.72	27	e.34	e.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.24	e.16	e.01	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.02	e.08	e.00	.01	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	e.06	e.00	.27	.00	.00	1.9	.00	.00
18	.00	.00	.00	.00	e.04	e.00	.24	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	e.02	e.00	.03	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	e.00	e.00	.02	.03	.00	.00	.00	.00
21	.00	.00	.00	.00	e.00	e.00	.01	.01	.00	.00	.00	.00
22	.00	.00	.00	.00	e.02	e.25	.01	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	e.01	e.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.02	e.00	.00	.00	.00	.00	.00	.00
26	.00	1.4	.00	.00	4.6	e.00	.00	.00	.00	.00	.00	.00
27	.00	14	.00	.00	4.8	e.00	.00	.00	.00	.00	.00	.00
28	.00	.46	.00	.00	.73	e.00	.00	.00	.00	.00	.00	.00
29	.00	.02	.00	.00	---	e.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.05	---	e.23	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.16	---	e.00	---	.00	---	.00	.00	---
TOTAL	.00	15.88	.00	1.19	47.36	8.51	.85	1.72	.00	1.90	.00	.00
MEAN	.00	.53	.00	.038	1.69	.27	.028	.055	.00	.061	.00	.00
MAX	.00	14	.00	.72	27	3.0	.27	1.6	.00	1.9	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	31	.00	2.4	94	17	1.7	3.4	.00	3.8	.00	.00

CAL YR 1984	TOTAL	70.58	MEAN	.19	MAX	18	MIN	.00	AC-FT	140
WTR YR 1985	TOTAL	77.41	MEAN	.21	MAX	27	MIN	.00	AC-FT	154

e Estimated

16508000 HANAWI STREAM NEAR NAHIKU

LOCATION.--Lat 20°48'37", long 156°07'00", Hydrologic Unit 20020000, on left bank 200 ft upstream from Koolau ditch intake and trail, 1.9 mi southwest of Nahiku, and 4.5 mi southeast of Keanae.

DRAINAGE AREA.--3.49 mi^2.

PERIOD OF RECORD.--January 1914 to January 1918, November 1921 to current year. Monthly discharge only April to June 1915, published in WSP 1319.

REVISED RECORDS.--WSP 1045: 1922-43(M). WSP 1569: Drainage area. WSP 1719: 1915(M), 1922, 1924-25, 1927, 1930-35, 1937, 1939-40, 1942-43.

GAGE.--Water-stage recorder. Datum of gage is 1,318 ft above mean sea level (by vertical angles). Prior to Nov. 1, 1921, at site 50 ft downstream at datum 0.12 ft lower.

REMARKS.--Records good. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the yaar are published elsewhere in this report.

AVERAGE DISCHARGE.--63 years (water years 1923-85), 23.0 ft^3/s (16,660 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 5,570 ft^3/s Jan. 18, 1916, gage height, 11.6 ft, present site and datum, from rating curve extended above 814 ft^3/s by physical model of station site; minimum, 0.90 ft^3/s Oct. 28 to Nov. 1, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 6	1900	1860	6.73	May 7	0930	2240	7.48
Mar. 11	0630	*2900	*8.56	July 26	0900	2130	7.26

Minimum discharge, 0.90 ft^3/s, Oct. 28 to Nov. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.0	2.3	2.1	1.9	227	99	105	11	4.6	8.1	5.5
2	1.4	1.1	2.2	2.0	1.8	34	144	155	9.8	3.5	6.2	5.2
3	1.4	1.3	2.0	2.9	1.8	35	24	21	8.2	10	20	4.8
4	1.3	2.7	2.0	8.0	1.9	74	11	15	8.0	8.4	38	4.5
5	1.3	1.6	1.9	4.0	1.9	114	11	28	6.9	14	9.1	4.2
6	1.3	1.0	1.9	2.6	1.7	548	10	58	6.3	5.3	8.3	4.1
7	1.3	.95	3.3	2.4	1.7	252	8.9	375	5.9	6.1	24	3.9
8	1.3	1.3	142	2.4	1.7	167	18	179	5.5	5.0	159	3.9
9	1.3	1.1	322	2.2	1.8	73	13	82	5.2	3.9	55	3.7
10	1.3	1.1	30	2.2	1.6	135	9.4	34	4.9	3.9	11	3.6
11	1.3	3.4	17	2.2	1.6	489	8.3	103	4.6	3.4	7.4	3.5
12	1.2	2.8	6.5	2.2	1.6	285	8.3	61	4.4	3.1	6.4	3.4
13	1.2	1.7	3.5	2.2	1.8	147	6.9	93	4.3	3.0	5.8	3.3
14	1.1	1.7	2.7	2.1	3.4	112	6.7	29	4.1	2.9	6.9	3.3
15	1.1	2.9	2.4	2.1	2.1	66	25	18	3.9	18	7.0	3.5
16	1.1	1.9	2.3	2.0	2.0	44	106	11	3.8	38	5.7	3.0
17	1.1	1.8	2.3	2.0	1.8	20	89	38	3.7	12	54	2.9
18	1.1	1.5	29	2.0	1.8	18	27	18	3.7	7.0	9.3	3.0
19	1.1	61	100	2.0	1.7	29	37	13	3.6	4.1	7.0	21
20	1.1	55	5.0	2.0	6.1	37	38	12	3.6	3.9	6.1	7.6
21	1.1	9.6	3.0	2.0	2.7	28	12	18	3.4	3.8	5.8	8.9
22	1.1	6.6	2.6	2.4	2.3	103	11	17	3.3	21	5.7	8.9
23	1.1	15	2.4	2.4	4.7	64	20	14	3.2	10	5.3	6.6
24	1.1	4.8	2.2	2.0	9.4	37	28	15	3.1	8.1	5.0	6.3
25	.98	3.0	2.2	1.9	83	62	9.8	11	3.0	5.2	4.8	4.1
26	.98	4.2	7.3	1.9	185	19	8.1	10	2.9	219	4.8	3.8
27	.98	7.3	4.9	1.9	258	23	7.5	21	2.9	26	5.5	3.7
28	.94	3.6	18	1.9	315	18	6.9	24	2.8	40	8.4	6.0
29	.93	2.8	4.4	1.9	---	13	6.4	21	2.8	15	10	6.7
30	.99	2.5	2.5	2.0	---	13	6.0	13	3.2	94	8.7	9.7
31	.90	---	2.3	1.9	---	11	---	14	---	64	7.3	---
TOTAL	35.80	206.05	732.1	73.8	901.6	3298	816.2	1822	142.0	866.2	523.6	160.6
MEAN	1.15	6.87	23.8	2.38	32.2	108	27.2	52.3	4.73	21.5	16.9	5.35
MAX	1.4	61	322	8.0	315	549	144	375	11	219	159	21
MIN	.90	.95	1.9	1.9	1.8	11	6.0	10	2.8	2.9	4.8	2.9
AC-FT	71	409	1450	146	1790	6540	1620	3220	282	1320	1040	319

CAL YR 1984	TOTAL	4118.45	MEAN	11.2	MAX	322	MIN	.90	AC-FT 8160
WTR YR 1985	TOTAL	9177.95	MEAN	25.1	MAX	549	MIN	.90	AC-FT 18200

16512000 KOOLAU DITCH AT NAHIKU WEIR, NEAR NAHIKU

LOCATION.--Lat 20°48'56", Long 156°07'15", Hydrologic Unit 20020000, on right bank between Kapaula and Waiohue Gulches, 1.8 mi southwest of Nahiku, and 3.8 mi southeast of Keanae.

PERIOD OF RECORD.--February 1919 to September 1985 (discontinued).

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,289.14 ft above mean sea level. Prior to Apr. 28, 1922, nonrecording gage at same site and datum.

REMARKS.--Records good. Ditch diverts water from nearly all streams from the Makapipi west to the Alo for power, domestic use, and irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--66 years, 34.1 ft^3/s (24,710 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 104 ft^3/s Mar. 17, 1980; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 93 ft^3/s Mar. 22; minimum daily, 4.4 ft^3/s Oct. 20, 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	4.6	16	14	7.7	91	55	64	48	16	39	25
2	6.6	5.0	15	13	7.5	89	88	89	46	14	34	24
3	6.3	6.5	14	17	7.4	66	71	72	42	34	46	22
4	6.0	12	13	30	7.7	80	53	58	40	35	68	21
5	6.2	8.2	12	21	7.5	85	52	54	36	49	42	20
6	5.9	5.6	11	15	7.2	91	48	76	33	27	39	19
7	5.7	5.1	18	14	7.1	90	42	69	30	31	47	18
8	6.1	6.3	61	13	7.0	89	62	72	29	26	87	18
9	5.9	5.5	82	13	6.7	86	53	77	27	21	79	17
10	5.7	5.2	63	12	6.6	87	44	74	26	21	49	16
11	5.8	14	49	12	6.5	91	41	86	24	18	38	16
12	5.7	14	32	12	6.3	89	43	83	24	17	35	15
13	5.5	9.4	24	11	7.3	87	36	85	24	15	33	15
14	5.0	9.1	21	10	16	85	34	70	23	15	36	15
15	5.1	14	19	10	9.8	80	47	55	22	28	34	15
16	4.9	9.5	17	9.9	9.1	75	90	51	21	71	30	14
17	4.7	8.1	17	9.8	8.1	53	89	61	20	43	76	13
18	4.5	7.5	36	9.6	7.9	49	80	68	20	33	46	13
19	4.6	47	64	9.4	7.4	59	80	53	20	23	36	51
20	4.4	72	28	9.1	16	67	82	51	19	21	31	32
21	4.7	41	21	8.9	11	67	57	64	18	20	28	28
22	5.2	30	19	10	10	93	53	66	17	45	27	31
23	5.3	50	17	11	17	90	65	57	16	39	25	31
24	5.5	28	15	9.2	22	84	75	64	16	35	23	29
25	5.1	21	15	8.7	62	83	50	50	15	26	22	21
26	4.8	27	33	8.5	83	65	43	46	15	69	22	19
27	4.5	36	25	8.3	86	69	39	60	15	65	24	18
28	4.4	24	31	8.1	90	69	35	63	15	73	31	24
29	4.4	20	23	7.9	---	58	32	68	14	51	36	24
30	4.6	18	16	8.5	---	60	29	56	15	82	29	32
31	4.5	---	15	8.0	---	51	---	55	---	69	29	---
TOTAL	164.6	563.6	842	361.9	547.6	2358	1668	2017	730	1132	1221	658
MEAN	5.31	18.8	27.2	11.7	19.6	76.1	55.6	65.1	24.3	36.5	39.4	21.9
MAX	7.0	72	82	30	90	93	90	69	48	82	87	51
MIN	4.4	4.6	11	7.9	6.3	49	29	46	14	14	22	13
AC-FT	326	1120	1670	718	1090	4680	3310	4000	1450	2250	2420	1300

CAL YR 1984	TOTAL	8948.6	MEAN	24.4	MAX	92	MIN	4.4	AC-FT	17750
WTR YR 1985	TOTAL	12261.7	MEAN	33.6	MAX	93	MIN	4.4	AC-FT	24320

16518000 WEST WAILUAIKI STREAM NEAR KEANAE

LOCATION.--Lat 20°49'16", long 156°08'37", Hydrologic Unit 20020000, on left bank 500 ft upstream from Koolau ditch crossing and trail bridge and 2.8 mi south of Keanae Post Office.

DRAINAGE AREA.--3.66 mi^2.

PERIOD OF RECORD.--January 1914 to December 1915, May 1916 to October 1917, November 1921 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1589. Drainage area. WSP 2137: 1915-16(M), 1923-25(M), 1929-31(M), 1934-35(M), 1937-39(M), 1941-43(M), 1946-47(M), 1948(P), 1949(M), 1952-53(M), 1955-56(M), 1959-60(M), 1960(P), 1961(M), 1963(M).

GAGE.--Water-stage recorder. Datum of gage is 1,343.1 ft above mean sea level (by vertical angles). Prior to Oct. 3, 1974, at present site at datum 0.50 ft higher.

REMARKS.--Records good. No diversion upstream. Water is diverted by Koolau ditch, 500 ft downstream, for domestic supply and irrigation of sugarcane in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--65 years (water years 1915, 1917, 1923-85), 35.0 ft^3/s (25,360 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft^3/s Jan. 14, 1923, gage height, 13.5 ft, from floodmarks, from rating curve extended above 650 ft^3/s by logarithmic plotting; minimum, 0.5 ft^3/s July 26, 1922.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 6	1900	3390	9.44	May 7	0830	3490	9.54
Mar. 11	0700	*3720	*9.76	July 26	0930	2840	8.86

Minimum discharge, 0.61 ft^3/s Oct. 27-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.79	3.2	5.1	2.4	129	135	168	14	12	20	5.9
2	1.1	1.3	2.9	4.5	2.1	38	166	178	13	5.9	14	5.0
3	1.0	1.3	2.6	8.6	2.0	61	35	31	10	15	35	4.4
4	1.0	9.3	2.6	15	1.9	83	18	20	10	11	56	3.7
5	.98	5.4	2.4	8.4	1.9	168	19	29	8.9	23	21	3.4
6	.96	1.7	2.3	5.5	1.7	1020	18	61	7.9	8.6	17	3.2
7	.94	1.2	9.0	4.7	1.7	491	15	514	7.2	8.3	36	3.2
8	1.3	1.4	190	4.1	1.6	256	31	203	6.7	6.1	185	3.5
9	1.3	1.1	380	3.7	1.6	93	23	82	6.4	4.9	69	2.9
10	.99	1.0	42	3.4	1.5	157	17	36	5.9	4.7	23	2.7
11	.95	8.6	25	3.4	1.5	662	14	85	5.7	3.9	16	2.6
12	.92	3.7	14	3.7	1.5	458	12	70	5.3	3.7	13	2.5
13	.90	1.9	9.4	3.6	2.3	177	9.7	110	5.4	3.5	11	2.6
14	.86	2.0	7.4	3.1	4.6	134	9.3	40	4.9	3.2	13	3.1
15	.84	7.0	6.2	3.0	2.7	85	28	25	4.6	39	11	3.3
16	.83	2.6	5.3	2.8	2.6	58	124	18	4.3	57	9.3	2.4
17	.82	2.0	5.2	2.7	1.9	32	96	46	4.1	21	70	2.2
18	.81	1.7	29	2.8	1.9	25	34	25	3.9	12	17	2.4
19	.79	68	93	2.5	1.7	30	33	19	4.5	7.5	11	29
20	.78	48	14	2.4	9.1	31	31	20	4.1	6.5	9.3	10
21	.78	15	9.5	2.3	3.3	28	18	42	3.7	6.2	8.4	9.6
22	.79	8.8	7.4	4.2	2.2	87	16	33	3.4	32	8.1	11
23	.77	14	6.1	4.3	4.5	47	23	24	3.3	17	6.8	23
24	.87	6.2	5.3	2.6	12	28	27	20	3.2	13	6.2	12
25	.78	4.2	5.6	2.6	133	46	14	14	3.1	8.8	5.6	7.1
26	.74	6.2	32	2.4	263	23	12	13	4.0	305	5.6	5.1
27	.71	26	17	2.2	234	20	11	20	4.3	35	6.6	4.4
28	.68	8.0	22	2.1	261	16	9.7	27	4.7	48	10	9.7
29	.87	5.0	11	2.1	---	13	8.7	24	3.7	26	12	13
30	.68	3.8	7.2	2.4	---	13	8.1	17	8.4	109	7.7	21
31	.88	---	6.0	2.3	---	12	---	17	---	105	8.0	---
TOTAL	27.42	267.19	974.6	122.3	961.2	4521	1015.5	2031	178.6	961.8	741.6	213.9
MEAN	.88	8.91	31.4	3.95	34.3	146	33.9	65.5	5.95	31.0	23.9	7.13
MAX	1.3	68	380	15	263	1020	166	514	14	305	185	29
MIN	.87	.79	2.3	2.1	1.5	12	8.1	13	3.1	3.2	5.6	2.2
AC-FT	54	530	1930	243	1910	8970	2010	4030	354	1910	1470	424

CAL YR 1984	TOTAL	5652.11	MEAN	15.4	MAX	380	MIN	.67	AC-FT 11210
WTR YR 1985	TOTAL	12016.11	MEAN	32.9	MAX	1020	MIN	.67	AC-FT 23830

16523000 KOOLAU DITCH NEAR KEANAE

LOCATION.--Lat 20°49'53", long 158°10'30", Hydrologic Unit 20020000, on right bank on west side of Keanae Valley, 2.7 mi southwest of Keanae School, and 5.1 mi southeast of Kailua.

PERIOD OF RECORD.--January 1910 to December 1912, November 1917 to February 1918, April 1918 to September 1985 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,237.7 ft above mean sea level (by plane-table traverse). Jan. 1, 1910, to Dec. 31, 1912, nonrecording gage at same site and datum.

REMARKS.--Records good. Ditch diverts at elevation 1,260 ft from nearly all streams from the Makapipi west to the Alo for power, domestic use, and irrigation in central Maui. Ditch is regulated for short periods on several days. Observations of specific conductance, pH, and water temparature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--69 years (water years 1911-12, 1918-85), 101 ft^3/s (73,170 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 266 ft^3/s Apr. 19, 1935; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 212 ft^3/s Apr. 16, May 2, 11, 13; minimum daily, 12 ft^3/s Oct. 21, 26-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	13	42	47	28	211	142	173	133	70	148	66
2	17	15	38	44	23	194	208	212	124	48	112	63
3	18	18	35	70	23	195	191	192	105	114	147	61
4	16	66	35	116	23	204	151	171	101	111	202	55
5	18	38	32	69	22	208	146	147	87	159	153	52
6	16	17	30	52	21	210	138	197	79	73	132	50
7	15	15	72	47	21	189	114	204	73	90	144	49
8	18	19	193	44	20	187	182	209	70	68	211	50
9	17	15	208	42	20	181	170	205	67	55	209	46
10	15	15	191	39	19	184	127	198	63	56	174	44
11	15	72	162	39	19	189	111	212	61	48	127	43
12	15	46	101	39	19	156	102	210	58	45	111	42
13	14	28	72	37	20	178	86	212	58	43	96	41
14	14	27	61	34	60	186	83	200	54	40	115	44
15	14	58	55	33	34	183	115	183	52	88	100	47
16	13	29	50	32	32	181	212	156	50	202	85	39
17	13	23	49	31	24	172	210	168	48	135	197	37
18	13	22	128	30	24	160	196	182	47	110	143	38
19	13	146	189	29	21	169	195	158	48	66	102	149
20	13	192	93	28	60	170	193	152	47	61	86	102
21	12	120	69	28	32	180	161	196	44	62	78	88
22	13	80	59	40	26	209	155	190	42	175	75	103
23	13	137	53	40	54	207	175	177	40	134	68	117
24	14	70	49	29	86	191	184	174	39	113	63	97
25	13	53	49	28	188	199	136	134	38	77	60	62
26	12	75	165	26	208	179	112	121	41	175	60	55
27	12	144	101	25	211	170	102	165	39	191	69	52
28	12	65	98	24	211	163	90	164	38	201	102	77
29	12	53	79	24	---	136	81	186	37	178	111	94
30	12	47	57	27	---	142	76	165	61	208	78	132
31	12	---	51	27	---	116	---	160	---	205	81	---
TOTAL	438	1718	2666	1220	1547	5597	4344	5573	1844	3401	3639	1995
MEAN	14.1	57.3	86.0	39.4	55.3	181	145	180	61.5	110	117	66.5
MAX	18	192	208	116	211	211	212	212	133	208	211	149
MIN	12	13	30	24	19	116	76	121	37	40	60	37
AC-FT	869	3410	5290	2420	3070	11100	8620	11050	3660	6750	7220	3960

CAL YR 1984	TOTAL	26234	MEAN	71.7	MAX	210	MIN	12	AC-FT	52040
WTR YR 1985	TOTAL	33982	MEAN	93.1	MAX	212	MIN	12	AC-FT	67400

16531000 KULA DIVERSION FROM HAIPUAENA STREAM NEAR OLINDA

LOCATION.--Lat 20°48'24", long 156°13'27", Hydrologic Unit 20020000, on left bank of Haipuaena Stream, 3.4 mi east of Olinda, and 6.2 mi south of Kailua.

PERIOD OF RECORD.--July 1945 to September 1985 (discontinued).

GAGE.--Water-stage recorder and V-notch sharp-crested weir since Apr. 2, 1975. Elevation of gage is 4,320 ft, from topographic map.

REMARKS.--Records good except those above 6.6 ft^3/s, which are poor. Water is diverted from Haipuaena Stream at station for domestic use and irrigation of truck crops in the Olinda and Kula areas. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--40 years, 0.765 ft^3/s (554 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 10 ft^3/s Nov. 8, 1976, July 2, 1982; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 9.4 ft^3/s Aug. 8; minimum daily, 0.01 ft^3/s on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	.36	.14	.36	1.1	3.6	5.8	.32	1.6	.97	.44
2	.01	.01	.16	.12	.19	1.1	6.5	8.3	.25	.48	.66	.25
3	.01	.01	.10	.38	.14	1.2	2.7	1.8	.28	.72	2.5	.22
4	.01	1.8	.08	1.2	.14	5.0	.84	.91	.25	.97	3.9	.28
5	.01	1.1	.04	.40	.10	8.0	.72	.94	.22	2.1	1.2	.19
6	.01	.18	.03	.19	.09	1.7	.78	7.3	.16	.72	.78	.14
7	.01	.08	.91	.12	.08	.26	.48	5.2	.14	.48	4.7	.12
8	.02	.05	6.3	.10	.10	3.1	1.5	3.9	.10	.54	9.4	.10
9	.09	.03	.91	.07	.10	4.4	1.1	3.2	.07	.28	4.4	.08
10	.04	.03	.72	.05	.08	3.7	.72	1.3	.06	.19	1.1	.05
11	.02	.28	1.1	.05	.07	1.2	.40	3.1	.04	.14	.60	.04
12	.01	1.0	.78	.04	.04	.32	.28	3.3	.03	.12	.40	.03
13	.01	.78	.44	.03	.04	.09	.19	3.8	.03	.10	.32	.03
14	.01	.25	.28	1.4	.03	.08	.19	1.8	.03	.07	.40	.02
15	.01	1.8	.19	.97	.05	.07	.34	.91	.03	3.5	.60	.02
16	.01	.40	.14	.40	.10	.07	6.3	.60	.02	5.7	.32	.02
17	.01	.18	.14	.19	.08	.37	6.2	.54	.02	3.1	5.7	.02
18	.01	.12	1.8	.14	.07	.78	2.7	.60	.02	1.6	1.2	.02
19	.01	3.3	3.3	.10	.07	.72	2.5	.44	.01	.66	.54	1.4
20	.01	4.1	.72	.08	1.0	1.5	1.9	.66	.01	.36	.36	.91
21	.01	1.1	.40	.06	.40	1.4	1.0	1.8	.01	.25	.22	1.0
22	.01	.48	.25	.05	.16	1.7	.78	2.0	.01	2.0	.19	.78
23	.01	.66	.16	.07	.25	2.7	.84	1.2	.01	1.8	.16	2.4
24	.01	.40	.14	.06	.70	1.0	1.4	.54	.12	1.0	.14	.97
25	.01	.22	.21	.04	3.4	1.7	1.2	.36	1.6	.91	.12	.48
26	.01	.14	4.2	.03	1.8	.84	.72	.25	.66	3.8	.27	.22
27	.01	1.6	2.2	.02	1.2	.44	.40	.66	3.1	2.4	.72	.19
28	.01	.60	.66	.02	1.1	.36	.28	.44	.83	2.8	.48	.91
29	.01	.28	.44	.01	---	.28	.22	.60	.28	1.9	.60	1.9
30	.01	.19	.28	2.9	---	.28	.16	.32	.75	4.9	.48	2.1
31	.01	---	.19	.98	---	.48	---	.36	---	3.6	.78	---
TOTAL	.44	20.94	27.63	10.41	11.94	45.94	46.94	62.93	9.46	48.79	44.21	15.33
MEAN	.014	.70	.89	.34	.43	1.48	1.56	2.03	.32	1.57	1.43	.51
MAX	.09	4.1	6.3	2.9	3.4	8.0	6.5	8.3	3.1	5.7	9.4	2.4
MIN	.01	.01	.03	.01	.03	.07	.16	.25	.01	.07	.12	.02
AC-FT	.9	42	55	21	24	91	93	125	19	97	88	30

CAL YR 1984	TOTAL	251.88	MEAN	.69	MAX	8.5	MIN	.01	AC-FT	500
WTR YR 1985	TOTAL	344.96	MEAN	.95	MAX	9.4	MIN	.01	AC-FT	684

16538000 SPRECKELS DITCH AT HAIPUAENA WEIR, NEAR HUELO

LOCATION.--Lat 20°51'15", long 156°11'25", Hydrologic Unit 20020000, on right bank near Spreckels ditch trail between Haipuaena and Puohokamoa Streams, 2.7 mi west of Keanae, and 4.5 mi southeast of Huelo.

PERIOD OF RECORD.--April 1922 to September 1985 (discontinued). Published as "at Haipuaena, near Huelo" 1930-35.

REVISED RECORDS.--WSP 770: 1932-33.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 1,470.96 ft above mean sea level (East Maui Irrigation Co. bench mark). Apr. 29, 1922, to Feb. 19, 1930, at same site at different datum. Feb. 20, 1930, to Oct. 25, 1935, at site 100 ft upstream at different datum.

REMARKS.--Records good. Spreckels ditch diverts 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 8 ft^3/s was diverted upstream to East Maui Irrigation Co. powerplant at Kolea Gulch prior to June 30, 1961, when the plant was abandoned. Water used for domestic supply and irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhers in this report.

AVERAGE DISCHARGE (since termination of powerplant diversion).--24 years (water years 1962-85), 29.2 ft^3/s (21,160 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 150 ft^3/s Feb. 10, 1955, Feb. 18, 1956; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 117 ft^3/s Dec. 9; minimum daily, 1.4 ft^3/s Oct. 27-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	1.5	7.7	8.0	9.8	95	45	83	31	29	37	14
2	2.3	2.4	6.8	7.4	8.5	68	93	111	34	12	29	13
3	2.2	2.5	6.1	22	5.8	69	58	89	24	46	48	12
4	2.2	31	6.1	44	5.4	92	28	44	24	42	71	11
5	2.2	16	5.4	15	5.0	94	34	41	19	65	36	9.7
6	2.0	3.4	5.0	10	4.7	91	27	97	15	21	32	9.2
7	2.0	2.4	23	8.8	4.4	71	23	101	14	35	46	8.7
8	3.5	3.0	102	8.0	4.2	69	74	96	13	21	76	12
9	3.7	2.4	117	7.4	4.0	66	43	93	12	15	71	8.3
10	2.4	2.1	50	6.9	3.9	68	27	65	11	14	45	7.6
11	2.1	27	31	8.8	3.7	64	20	96	10	11	31	7.2
12	2.0	9.6	21	6.8	3.6	58	17	93	9.5	9.9	25	6.8
13	1.9	5.2	15	6.2	4.5	56	15	98	9.5	9.3	21	6.5
14	1.9	7.9	12	15	30	56	15	66	8.8	8.5	31	8.9
15	1.8	21	10	9.1	20	55	37	42	8.4	43	24	11
16	1.8	6.8	9.3	6.4	13	54	104	34	7.8	103	19	7.0
17	1.8	4.5	10	5.5	6.8	49	100	53	7.5	51	98	6.3
18	1.8	4.1	54	5.1	6.1	39	66	43	7.2	47	39	7.5
19	1.7	82	79	4.7	5.3	44	64	28	7.8	20	24	67
20	1.6	75	19	4.4	30	44	58	28	7.5	16	20	33
21	1.8	28	14	4.3	9.4	45	32	71	6.9	21	16	29
22	1.6	19	12	11	6.8	57	35	72	6.0	73	16	37
23	1.6	32	11	12	15	56	53	48	5.8	38	13	59
24	1.5	15	9.5	5.9	38	51	55	51	17	30	12	40
25	1.5	11	10	5.0	88	53	28	28	31	20	11	19
26	1.5	11	58	4.5	101	39	24	26	12	58	11	13
27	1.4	40	19	4.2	97	29	20	50	24	51	18	14
28	1.4	13	20	4.0	99	23	18	57	11	60	30	28
29	1.4	9.7	15	3.9	---	19	15	66	7.7	46	34	29
30	1.4	8.5	10	46	---	21	14	43	32	80	21	49
31	1.4	---	8.9	21	---	18	---	41	---	70	23	---
TOTAL	59.7	497.0	776.8	329.3	628.7	1711	1242	1930	434.4	1165.7	1028	583.7
MEAN	1.93	16.6	25.1	10.6	22.5	55.2	41.4	62.3	14.5	37.6	33.2	19.5
MAX	3.7	82	117	46	101	95	104	111	34	103	98	67
MIN	1.4	1.5	5.0	3.9	3.6	18	14	28	5.8	8.5	11	6.3
AC-FT	118	986	1540	653	1250	3390	2460	3830	862	2310	2040	1160

CAL YR 1984	TOTAL	7428.7	MEAN	20.3	MAX	125	MIN	1.4	AC-FT	14730
WTR YR 1985	TOTAL	10386.3	MEAN	28.5	MAX	117	MIN	1.4	AC-FT	20600

16541000 KOOLAU DITCH AT HAIPUAENA, NEAR HUELO

LOCATION.--Lat 20°51'17", long 156°11'18", Hydrologic Unit 20020000, on right bank at Haipuaena Stream, 1,000 ft upstream from intake at Puohokamoa Stream, 3.3 mi southeast of Kailua, and 4.5 mi southeast of Huelo.

PERIOD OF RECORD.--April 1932 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 1,240 ft, from topographic map. Prior to Mar. 21, 1933, at datum 1.94 ft lower, and Mar. 21, 1933, to Mar. 20, 1935, at datum 0.25 ft lower than present datum.

REMARKS.--Records good. Ditch is extension of Wailoa ditch east of Alo Stream; it receives water from Makapipi ditch at Hanawi Stream and diverts from nearly all streams from there west to the Alo. Water is used for power, domestic supply, and irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--53 years, 115 ft^3/s (83,320 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 300 ft^3/s July 1, 17, 1963; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 267 ft^3/s Feb. 28, Mar. 6; minimum daily, 11 ft^3/s Oct. 26-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	12	42	48	26	263	154	200	139	75	157	70
2	16	15	38	44	23	209	241	257	131	49	120	67
3	16	17	35	70	22	212	207	202	113	121	161	64
4	15	68	34	123	22	242	159	178	109	118	230	57
5	15	41	32	73	22	241	153	157	94	170	159	54
6	15	17	30	53	21	267	148	228	86	79	138	51
7	14	14	71	47	20	240	121	249	79	95	161	49
8	18	18	221	44	19	240	192	259	74	73	262	51
9	17	15	256	41	19	215	175	248	71	57	243	46
10	15	13	202	39	18	229	135	211	66	58	182	43
11	14	73	171	38	17	254	118	250	64	49	135	42
12	14	47	109	38	17	221	109	239	60	44	119	41
13	14	28	77	37	18	231	93	247	60	41	104	40
14	13	26	65	34	66	230	90	213	56	40	121	44
15	13	60	57	32	34	214	130	191	53	97	108	48
16	13	28	51	31	32	198	283	162	51	241	93	38
17	13	23	50	30	24	179	252	183	49	150	234	37
18	12	21	130	29	23	167	206	191	47	119	152	37
19	12	177	218	28	21	176	203	163	48	71	111	162
20	12	211	102	27	64	179	201	157	46	65	94	104
21	11	127	73	27	33	187	164	214	44	64	85	90
22	12	87	62	40	25	259	159	207	41	183	81	104
23	12	140	55	41	57	235	184	187	40	140	72	120
24	13	75	50	28	87	201	189	182	39	118	67	110
25	12	54	49	27	216	215	141	142	42	83	63	67
26	11	74	170	26	249	185	118	128	42	200	62	57
27	11	150	106	25	263	174	108	171	43	200	73	54
28	11	69	99	24	267	167	96	175	40	218	103	80
29	11	54	85	23	---	142	87	196	37	185	118	94
30	11	47	59	30	---	147	80	170	63	243	84	182
31	11	---	52	27	---	123	---	164	---	233	88	---
TOTAL	415	1801	2849	1224	1725	6442	4674	6121	1927	3679	3980	2103
MEAN	13.4	60.0	91.9	39.5	61.6	208	156	197	64.2	119	128	70.1
MAX	18	211	256	123	267	267	263	259	139	243	262	182
MIN	11	12	30	23	17	123	80	128	37	40	62	37
AC-FT	823	3570	5650	2430	3420	12780	9270	12140	3820	7300	7890	4170

CAL YR 1984	TOTAL	27421	MEAN	74.9	MAX	256	MIN	11	AC-FT	54390
WTR YR 1985	TOTAL	36940	MEAN	101	MAX	267	MIN	11	AC-FT	73270

16541500 MANUEL LUIS DITCH AT PUOHOKAMOA GULCH, NEAR HUELO

LOCATION.--Lat 20°51'48", long 156°10'49", Hydrologic Unit 20020000, on right bank at lower portal of tunnel between Haipuaena and Puohokamoa Streams, 2.2 mi west of Keanae, and 4.4 mi southeast of Huelo.

PERIOD OF RECORD.--December 1917 to November 1924, January 1925 to September 1985 (discontinued).

REVISED RECORDS.--WSP 1719: 1918-30.

GAGE.--Water-stage recorder and sharp-created weir. Elevation of gage is 920 ft, from topographic map.

REMARKS.--Records good. Ditch is extension of Center ditch and picks up water from streams between the Kolea and the Waikamoi for irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--86 years (water years, 1919-24, 1926-85), 8.22 ft^3/s (5,960 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 142 ft^3/s Jan. 3, 1927; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 130 ft^3/s Mar. 6; minimum daily, 0.03 ft^3/s Oct. 19 to Nov. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.03	.17	.18	.23	62	20	62	1.5	.21	1.9	.60
2	.06	.03	.13	.18	.15	10	42	82	1.4	.16	1.5	.53
3	.06	.05	.12	.42	.13	8.0	6.5	3.6	1.2	1.4	12	.47
4	.06	.34	.11	1.5	.13	29	2.2	2.5	1.3	.73	32	.43
5	.06	.25	.10	.56	.13	37	2.0	7.9	1.0	1.6	1.8	.37
6	.06	.08	.09	.33	.09	130	1.6	41	.91	.49	1.7	.36
7	.08	.06	.26	.26	.09	112	1.4	79	.80	.71	19	.36
8	.12	.08	42	.24	.09	104	2.7	86	.72	.67	102	.39
9	.14	.09	77	.21	.07	48	1.4	40	.67	.34	46	.30
10	.12	.07	1.1	.18	.06	76	1.2	4.5	.62	.32	3.9	.26
11	.09	.44	.49	.18	.06	117	1.1	38	.57	.28	2.6	.24
12	.11	.42	.37	.18	.06	116	.96	25	.53	.22	2.1	.23
13	.09	.23	.30	.14	.08	99	.85	35	.45	.18	1.7	.18
14	.07	.14	.25	.17	4.0	79	.87	5.4	.45	.16	2.2	.19
15	.06	.25	.21	.18	.22	57	11	3.1	.38	12	1.6	.30
16	.06	.13	.18	.14	.16	40	80	2.4	.37	17	1.3	.22
17	.05	.09	.18	.13	.11	5.3	55	34	.33	3.4	47	.18
18	.04	.09	.32	.10	.11	2.5	7.0	16	.30	1.1	5.8	.21
19	.03	33	23	.09	.09	12	4.5	5.9	.30	.43	3.2	15
20	.03	12	.38	.09	.11	15	4.1	3.9	.30	.41	2.3	.94
21	.03	.91	.24	.09	.14	4.4	2.9	16	.27	.32	1.8	.64
22	.03	.36	.20	.22	.10	109	4.2	8.8	.24	2.0	1.6	.66
23	.03	.51	.16	.31	.26	55	4.7	5.0	.24	.83	1.3	5.4
24	.03	.29	.13	.14	.27	10	6.0	6.1	.18	.61	1.1	2.2
25	.03	.19	.18	.10	35	28	3.1	3.2	.18	.42	.95	.79
26	.03	.25	1.5	.09	83	3.2	2.5	2.7	.24	47	.92	.62
27	.03	1.4	.57	.09	89	2.5	2.2	2.8	.23	8.7	.95	.67
28	.03	.37	.32	.09	106	2.0	1.9	4.3	.16	25	1.0	1.3
29	.03	.24	.28	.08	---	1.7	1.6	3.4	.15	2.9	.98	.98
30	.03	.23	.24	1.7	---	2.1	1.4	2.0	.19	39	.77	1.1
31	.03	---	.21	.51	---	1.4	---	1.6	---	45	.76	---
TOTAL	1.76	52.62	150.79	8.88	299.94	1378.1	276.88	633.1	16.18	213.59	303.73	36.12
MEAN	.057	1.75	4.88	.29	10.7	44.5	9.23	20.4	.54	6.89	9.80	1.20
MAX	.14	33	77	1.7	106	130	80	86	1.5	47	102	15
MIN	.03	.03	.09	.08	.06	1.4	.85	1.6	.15	.16	.76	.18
AC-FT	3.5	104	299	18	595	2730	549	1260	32	424	602	72

CAL YR 1984	TOTAL	1098.77	MEAN	3.00	MAX	81	MIN	.03	AC-FT	2180
WTR YR 1985	TOTAL	3371.69	MEAN	9.24	MAX	130	MIN	.03	AC-FT	6690

16587000 HONOPOU STREAM NEAR HUELO

LOCATION.--Lat 20°53'20", long 156°15'20", Hydrologic Unit 20020000, on left bank 75 ft upstream from Wailoa ditch intake, 2.2 mi southwest of Huelo, and 2.5 mi wast of Kailua.

DRAINAGE AREA.--0.64 mi^2.

PERIOD OF RECORD.--December 1910 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1219: 1914(M), 1916-50(M). WSP 1249: 1948-50(P). WSP 1569: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,208 ft above mean sea level (by vertical angles). Prior to June 19, 1914, nonrecording gage at same site and datum.

REMARKS.--Records good. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--74 years (water years 1912-85), 4.65 ft^3/s (3,370 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,710 ft^3/s Nov. 18, 1930, gage height, 7.28 ft from rating curve extended above 110 ft^3/s by test of model of station site; minimum, 0.02 ft^3/s several days in 1933, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 191 ft^3/s May 7, gage height, 2.86 ft, no peak greater than base discharge of 270 ft^3/s; minimum, 0.11 ft^3/s for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.13	.24	.60	.85	17	5.7	4.4	4.0	.89	2.0	1.4
2	.15	.16	.20	.60	.88	11	7.7	11	3.7	.76	1.8	1.3
3	.15	.15	.20	.72	.60	7.9	4.8	5.0	3.4	1.1	1.9	1.2
4	.15	.33	.20	1.0	.80	7.6	4.1	4.4	3.3	.88	4.3	1.1
5	.15	.21	.17	.73	.58	6.8	4.2	4.8	3.1	.91	2.0	1.1
6	.15	.12	.15	.60	.51	27	3.7	12	2.8	.71	2.0	1.0
7	.15	.11	.43	.59	.51	16	3.9	43	2.6	1.0	3.0	1.0
8	.21	.16	3.2	.51	.51	16	4.2	22	2.5	.78	11	1.1
9	.22	.12	7.7	.51	.50	13	3.4	13	2.3	.66	5.5	.96
10	.15	.11	1.8	.51	.44	14	3.1	10	2.1	.72	3.9	.98
11	.15	.23	1.3	.51	.42	68	2.9	14	2.0	.62	3.4	.90
12	.15	.24	1.0	.54	.42	35	2.7	12	1.9	.60	3.2	.88
13	.15	.18	.87	.51	.47	24	2.6	14	1.8	.56	2.9	.79
14	.15	.14	.79	.82	2.0	18	2.5	9.9	1.7	.51	3.0	.84
15	.15	.19	.69	.64	.64	14	2.9	8.5	1.6	.65	2.6	.90
16	.15	.15	.69	.51	.57	11	.12	7.3	1.5	1.8	2.4	.79
17	.15	.11	.71	.49	.51	9.0	15	22	1.4	1.1	5.2	.79
18	.15	.11	1.1	.42	.49	7.8	7.2	10	1.4	1.2	2.7	.80
19	.15	1.5	2.0	.42	.42	7.8	6.2	8.1	1.4	.74	2.3	2.5
20	.15	1.8	.86	.42	.63	6.6	5.7	6.9	1.3	.68	2.1	1.2
21	.15	.74	.75	.42	.49	6.4	4.9	6.7	1.2	.62	2.0	.98
22	.15	.42	.69	.92	.44	32	5.2	6.6	1.1	1.1	2.0	1.2
23	.15	.66	.67	.70	.75	17	4.6	5.7	1.0	.77	1.8	1.9
24	.15	.38	.60	.50	.63	12	4.2	8.2	1.0	.72	1.7	1.5
25	.14	.25	.74	.42	1.6	11	3.7	5.2	.94	.67	1.6	.94
26	.12	.36	1.6	.42	9.8	8.7	3.4	4.8	.90	2.9	1.6	.79
27	.11	1.0	.93	.40	16	7.7	3.2	5.0	.85	1.3	2.0	.78
28	.11	.44	.79	.35	24	6.5	2.9	4.8	.80	1.8	1.8	.86
29	.11	.30	.70	.35	---	5.7	2.7	6.2	.82	1.3	1.8	.80
30	.11	.28	.68	3.2	---	5.3	2.6	4.7	.92	2.8	1.6	.98
31	.11	---	.60	1.1	---	4.5	---	4.3	---	5.7	1.5	---
TOTAL	4.54	11.06	33.05	20.43	68.04	454.3	141.9	304.5	55.33	36.55	86.6	32.26
MEAN	.15	.37	1.07	.66	2.36	14.7	4.73	9.82	1.84	1.18	2.79	1.08
MAX	.22	1.8	7.7	3.2	24	68	15	43	4.0	5.7	11	2.5
MIN	.11	.11	.15	.35	.42	4.5	2.5	4.3	.80	.51	1.5	.78
AC-FT	9.0	22	68	41	131	901	281	604	110	72	172	64

CAL YR 1984	TOTAL	672.98	MEAN	1.84	MAX	27	MIN	.11	AC-FT	1330
WTR YR 1985	TOTAL	1246.56	MEAN	3.42	MAX	68	MIN	.11	AC-FT	2470

16588000 WAILOA DITCH AT HONOPOU, NEAR HUELO

LOCATION.--Lat 20°53'20", long 156°15'19", Hydrologic Unit 20020000, on right bank 100 ft downstream from intake at Honopou Stream, 0.5 mi west of Lupi, and 2.2 mi southwest of Huelo.

PERIOD OF RECORD.--November 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208 ft above mean sea level (by vertical angles).

REMARKS.--Records good. Wailoa ditch receives water from Koolau ditch at Alo Stream and from all streams from there west to Halehaku Gulch at elevation of about 1,200 ft. Water is used for domestic supply, power, and irrigation in central Maui. Obaervations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--82 years (water years 1924-85), 170 ft^3/s (123,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 328 ft^3/s Nov. 24, 1981; no flow Jan. 24-27, 1923.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 311 ft^3/s Apr. 17; minimum daily, 17 ft^3/s Oct. 28-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	18	70	82	81	301	247	259	274	158	232	129
2	26	24	63	76	81	306	302	302	263	88	216	118
3	25	24	58	116	57	303	299	302	238	159	225	113
4	25	98	57	217	54	303	272	295	223	177	298	102
5	25	85	52	142	51	303	270	272	189	233	274	95
6	24	28	49	99	47	279	262	302	168	148	263	90
7	23	22	125	86	45	287	229	289	152	179	264	87
8	30	29	265	79	43	302	293	296	140	149	299	96
9	30	24	301	74	41	301	283	304	133	106	304	82
10	24	22	257	69	40	301	250	303	122	105	294	77
11	23	111	214	68	39	303	216	304	116	89	269	74
12	23	78	195	68	38	303	195	303	108	80	244	71
13	22	46	140	65	38	302	170	303	107	76	209	69
14	22	42	113	88	125	301	162	302	101	70	236	74
15	21	106	100	76	73	301	187	298	95	118	217	91
16	20	49	91	64	80	300	305	281	90	283	181	88
17	20	37	91	57	51	297	311	280	86	246	281	63
18	20	33	193	53	49	297	303	299	82	217	272	65
19	19	189	277	51	44	303	301	297	86	145	222	246
20	19	250	184	49	115	300	300	285	82	125	185	190
21	18	210	135	47	70	301	283	300	78	123	162	171
22	19	149	111	83	51	292	287	300	71	235	156	179
23	18	196	98	90	111	300	290	297	68	228	136	232
24	19	129	90	55	148	301	292	299	76	208	124	227
25	18	93	90	50	268	301	267	276	103	162	114	145
26	18	104	243	47	298	298	238	254	80	249	111	112
27	18	209	187	45	299	294	214	291	88	270	153	102
28	17	116	146	43	283	282	190	283	75	271	171	173
29	17	90	149	43	---	257	168	300	65	232	205	158
30	17	79	103	189	---	262	156	298	124	277	164	214
31	17	---	91	123	---	226	---	296	---	297	175	---
TOTAL	666	2690	4338	2494	2700	9107	7542	9068	3683	5503	6656	3713
MEAN	21.5	89.7	140	80.5	96.4	294	251	293	123	178	215	124
MAX	30	250	301	217	299	306	311	304	274	297	304	246
MIN	17	18	49	43	38	226	156	254	65	70	111	63
AC-FT	1320	5340	8600	4950	5360	18060	14960	17990	7310	10920	13200	7360

CAL YR 1984	TOTAL	44427	MEAN	121	MAX	307	MIN	17	AC-FT	88120
WTR YR 1985	TOTAL	58160	MEAN	159	MAX	311	MIN	17	AC-FT	115400

16589000 NEW HAMAKUA DITCH AT HONOPOU, NEAR HUELO

LOCATION.--Lat 20°53'28", long 156°15'22", Hydrologic Unit 20020000, on right bank 15 ft upstream from tunnel portal, 600 ft downstream from Honopou Stream crossing, and 2.1 mi southwest of Huelo.

PERIOD OF RECORD.--January 1918 to September 1985 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,170 ft above mean sea level (by vertical angles). Prior to May 14, 1921, at site 300 ft upstream at different datum. May 14, 1921, to Mar. 18, 1962, at present site at datum 1.00 ft higher.

REMARKS.--Records good. Ditch diverts from streams between Waikamoi Stream and Halehaku Gulch above Center and Lowrie ditches for irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--67 years, 36.0 ft^3/s (26,080 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 182 ft^3/s Nov. 2, 1967; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 165 ft^3/e Feb. 27; minimum daily, 0.02 ft^3/s Nov. 1, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.02	.26	.37	.73	145	22	83	20	2.0	110	1.1
2	.05	.04	.17	.33	.43	144	143	153	13	.32	44	1.1
3	.05	.04	.12	4.4	.35	143	129	156	6.9	56	58	.98
4	.05	19	.11	64	.31	144	40	109	3.1	58	154	.89
5	.04	2.8	.09	.99	.30	144	24	36	2.7	92	62	.83
6	.03	.04	.09	.57	.26	145	34	157	2.4	3.0	12	.73
7	.03	.02	2.6	.44	.23	147	4.0	156	2.1	34	35	.66
8	.04	.05	136	.38	.20	146	102	156	1.9	1.6	161	.66
9	.04	.04	162	.34	.17	144	68	155	1.8	.43	159	.57
10	.04	.04	144	.31	.16	145	16	144	1.6	.35	119	.49
11	.04	19	97	.30	.16	144	3.2	156	1.5	.30	24	.48
12	.04	.49	3.3	.30	.16	144	2.9	156	1.4	.25	3.7	.43
13	.04	.26	.73	.28	.15	144	2.7	154	1.4	.20	2.8	.41
14	.04	.05	.51	.31	34	144	2.5	152	1.2	.16	7.7	.40
15	.04	.10	.41	.41	6.9	143	17	126	1.1	28	2.9	.57
16	.04	.09	.36	.31	1.1	143	153	58	1.1	153	2.0	.46
17	.04	.03	.33	.26	.32	127	158	68	.96	79	120	.41
18	.04	.03	62	.19	.30	84	156	137	.89	61	65	.48
19	.05	88	140	.16	.24	101	155	58	.83	.77	3.6	95
20	.04	149	10	.16	22	77	150	36	.78	.44	2.8	35
21	.04	58	.62	.12	.67	111	60	116	.66	.32	2.4	9.4
22	.04	.77	.45	.43	.30	145	61	141	.57	116	2.2	40
23	.04	56	.38	1.0	.69	144	92	114	.52	66	1.9	75
24	.03	.72	.33	.28	18	143	107	117	.47	16	1.7	61
25	.03	.32	.35	.20	128	141	20	23	.48	.69	1.6	1.6
26	.03	2.1	99	.19	160	115	4.6	7.5	.47	101	1.5	1.1
27	.03	68	16	.14	165	63	4.2	95	.42	134	1.6	.94
28	.03	.69	14	.12	153	37	3.6	61	.35	147	23	15
29	.03	.33	8.9	.09	---	6.0	3.2	151	.33	141	52	16
30	.03	.32	.54	74	---	12	2.9	86	.39	147	1.5	47
31	.03	---	.43	19	---	4.4	---	68	---	156	1.4	---
TOTAL	1.19	466.39	901.08	170.38	694.13	3619.4	1741.0	3385.5	71.32	1596.83	1239.5	408.69
MEAN	.038	15.5	29.1	5.50	24.8	117	58.0	109	2.38	51.5	40.0	13.6
MAX	.05	149	162	74	165	147	158	157	20	156	161	95
MIN	.03	.02	.09	.09	.15	4.4	2.5	7.5	.33	.16	1.4	.40
AC-FT	2.4	925	1790	338	1380	7180	3450	6720	141	3170	2460	811

CAL YR 1984	TOTAL	7199.80	MEAN	19.7	MAX	167	MIN	.02	AC-FT	14280
WTR YR 1985	TOTAL	14295.41	MEAN	39.2	MAX	165	MIN	.02	AC-FT	28350

16592000 LOWRIE DITCH AT HONOPOU GULCH, NEAR HUELO

LOCATION.--Lat 20°54'57", long 156°15'08", Hydrologic Unit 20020000, on left bank 0.2 mi downstream from siphon across Honopou Stream, 1.6 mi west of Huelo, and 2.7 mi northwest of Kailua.

PERIOD OF RECORD.--January 1910 to March 1927, February 1930 to September 1985 (discontinued). Published as "at Opana weir, near Huelo" 1910-27.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 598.0 ft above mean sea level. Jan. 1, 1910, to Mar. 31, 1927, at site 1.5 mi downstream at different datum.

REMARKS.--Records good. Lowrie ditch receives water from Center ditch at Nailiilihaele Stream and diverts from additional stream westward to Maliko Gulch for irrigation in central Maui. Ditch flow regulated at times. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--71 years (water years 1911-26, 1931-85), 36.3 ft^3/s (26,300 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 116 ft^3/s Oct. 31, 1921; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 101 ft^3/s May 2; minimum daily, 0.82 ft^3/s Oct. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	.87	4.2	4.0	6.2	76	27	57	42	8.3	22	12
2	1.7	1.5	3.4	4.1	4.7	73	87	101	32	11	16	12
3	1.6	1.6	3.0	13	4.1	53	57	75	20	14	18	13
4	1.6	5.6	2.8	11	4.3	73	23	34	20	8.9	76	8.7
5	1.5	4.2	2.7	6.3	12	74	24	26	17	11	24	7.9
6	1.4	1.9	2.5	4.9	9.1	49	21	81	16	13	18	7.6
7	1.4	1.6	3.8	4.8	4.1	9.1	19	80	15	17	22	7.2
8	1.8	2.2	30	16	4.5	5.8	50	76	14	14	94	7.6
9	2.0	1.9	91	14	3.7	4.1	29	75	13	6.0	83	6.8
10	1.6	1.7	41	11	2.9	4.1	20	74	12	7.6	53	6.5
11	1.4	2.7	26	4.5	2.8	40	18	75	14	6.1	29	6.3
12	1.4	3.3	23	4.1	2.7	29	17	75	15	4.7	24	5.9
13	1.3	3.0	18	3.2	3.5	20	15	75	14	4.5	21	5.6
14	1.3	2.1	14	4.9	21	7.2	15	73	12	4.3	23	5.5
15	1.2	3.0	7.6	4.4	4.6	15	17	47	9.7	6.2	20	6.6
16	1.2	2.2	3.8	3.6	3.8	3.3	98	40	9.2	75	24	5.6
17	1.2	1.8	7.3	3.3	3.2	3.4	93	51	9.6	53	67	5.2
18	1.1	2.1	10	3.1	3.2	12	72	94	13	32	52	5.9
19	1.1	29	50	3.0	3.3	41	62	75	13	23	29	40
20	1.1	53	21	2.8	7.9	41	65	61	13	25	33	19
21	1.0	29	19	2.7	3.7	48	37	63	11	22	37	24
22	.99	20	15	4.0	3.5	77	40	70	7.9	31	38	25
23	.99	35	14	6.5	6.0	75	48	65	11	32	26	39
24	1.1	26	14	3.8	5.4	72	57	65	11	16	17	33
25	1.0	12	9.2	3.1	27	66	34	46	11	15	15	18
26	1.1	4.5	23	2.6	83	51	30	40	12	48	14	16
27	1.0	11	16	2.4	99	36	28	51	11	40	19	15
28	.88	9.3	14	3.1	89	32	25	46	5.5	49	18	14
29	.82	6.0	11	3.3	---	27	28	83	5.4	27	17	9.2
30	.86	5.0	8.3	30	---	31	34	40	5.5	59	13	17
31	.86	---	4.4	9.0	---	25	---	39	---	80	13	---
TOTAL	39.20	283.07	513.0	196.5	428.2	1173.0	1190	1953	414.8	763.6	975	405.1
MEAN	1.26	9.44	16.5	6.34	15.3	37.8	39.7	63.0	13.8	24.6	31.5	13.5
MAX	2.0	53	91	30	99	77	98	101	42	80	94	40
MIN	.82	.87	2.5	2.4	2.7	3.3	15	26	5.4	4.3	13	5.2
AC-FT	78	561	1020	390	849	2330	2360	3870	823	1510	1930	804

CAL YR 1984	TOTAL	6124.93	MEAN	16.7	MAX	91	MIN	.36	AC-FT	12150
WTR YR 1985	TOTAL	8334.47	MEAN	22.8	MAX	101	MIN	.82	AC-FT	16530

16594000 HAIKU DITCH AT HONOPOU GULCH, NEAR KAILUA

LOCATION.--Lat 20°55'07", long 156°14'58", Hydrologic Unit 20020000, on right bank on west side of Honopou Gulch, 160 ft below new Government Road, 2.5 mi northwest of Kailua, and 5.0 mi east of Haiku.

PERIOD OF RECORD.--January 1910 to December 1928, February 1930 to September 1985 (discontinuad). Published as "at Peahi weir, near Huelo" prior to July 1919, as "at Manawai Gulch, near Peahi" July 1919 to December 1928, and as "at Kapalalaea Gulch, near Huelo" February 1930 to January 1940. Monthly discharge only for some periods, published in WSP 1319.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 421.54 ft above mean sea level. Prior to Oct. 7, 1914, at site at Peahi weir on old Haiku ditch at different datum. Oct. 7, 1914, to Dec. 31, 1928, at site 2.9 mi downstream at different datum. Feb. 19, 1930, to Feb. 20, 1940, at site 0.9 mi downstream at different datum.

REMARKS.--Records good. Ditch diverts from all streams between Naililihaele Stream and Maliko Gulch for irrigation in central Maui. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--70 years (water years 1911, 1914, 1916-28, 1931-85), 24.0 ft^3/s (17,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 209 ft^3/s Nov. 13, 1934, Jan. 8, 9, Feb. 25-27, 1935, Jan. 27, 1938; no flow at times.

EXTREMES FOR CURRENT YEAR.--Msximum daily discharge, 103 ft^3/s Aug. 8; minimum daily, 0.21 ft^3/s Dec. 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.31	.28	.30	.91	65	7.2	42	3.9	1.4	2.4	1.5
2	.35	.37	.22	.27	.78	60	87	99	3.7	1.3	1.7	1.5
3	.35	.44	.21	.51	.73	27	48	59	3.4	1.5	5.5	1.5
4	.39	.57	.21	.84	.71	70	5.1	4.0	3.4	1.4	80	1.4
5	.38	.39	.22	.49	.71	71	5.2	3.2	3.0	1.5	2.5	1.3
6	.37	.33	.24	.35	.71	73	4.5	84	2.8	1.1	1.9	1.2
7	.35	.34	.36	.31	.60	74	4.1	76	2.7	1.1	8.7	1.2
8	.46	.50	26	.28	.59	74	24	60	2.5	1.2	103	1.3
9	.43	.40	100	.31	.59	72	4.6	61	2.5	1.2	101	1.1
10	.41	.46	17	.32	.56	73	2.9	54	2.4	1.1	13	1.1
11	.39	.57	.69	.33	.51	71	2.6	78	2.3	1.1	3.2	1.1
12	.40	.27	.53	.33	.53	68	2.5	82	2.2	1.1	2.8	1.1
13	.38	.22	.40	.29	1.1	69	2.4	72	2.1	1.1	2.6	1.1
14	.38	.24	.29	.61	2.0	69	2.3	55	2.0	1.0	2.5	1.1
15	.38	.25	.28	.62	.91	69	3.1	13	1.9	1.0	2.2	1.1
16	.36	.24	.29	.48	.71	69	96	6.2	1.9	75	2.0	1.1
17	.36	.27	.28	.46	.86	67	89	25	1.8	33	72	1.1
18	.35	.25	.37	.43	.64	47	53	76	1.8	1.5	18	1.2
19	.33	37	43	.40	.58	25	24	23	1.8	1.2	2.6	24
20	.31	41	.58	.40	.83	5.7	34	11	2.0	1.4	2.4	1.4
21	.32	9.5	.35	.41	.67	5.3	7.1	31	1.8	1.1	2.2	1.4
22	.32	.42	.27	.58	.67	64	7.0	50	1.7	1.9	2.2	1.6
23	.33	.40	.26	.68	1.0	56	18	40	1.5	1.4	2.0	2.1
24	.29	.33	.22	.51	.80	46	20	43	1.5	1.9	1.8	15
25	.26	.28	.40	.48	21	44	6.0	8.1	1.5	1.3	1.7	1.4
26	.26	.57	.65	.47	96	16	4.5	7.4	1.5	49	1.7	1.3
27	.27	.85	.45	.42	99	4.8	3.7	7.1	1.5	5.2	1.8	1.2
28	.28	.41	.44	.41	82	4.1	3.4	23	1.4	37	1.7	1.2
29	.28	.29	.45	.47	---	3.6	3.3	38	1.4	2.4	1.6	1.1
30	.28	.39	.34	7.1	---	4.0	3.2	6.4	1.4	67	1.5	1.3
31	.29	---	.30	1.3	---	3.5	---	4.4	---	76	1.5	---
TOTAL	10.84	97.86	195.58	21.16	316.50	1469.8	577.7	1241.8	65.3	374.4	449.7	75.0
MEAN	.34	3.26	6.31	.68	11.3	47.4	19.3	40.1	2.18	12.1	14.5	2.50
MAX	.46	41	100	7.1	99	74	96	99	3.9	76	103	24
MIN	.26	.22	.21	.27	.51	3.5	2.3	3.2	1.4	1.0	1.5	1.1
AC-FT	21	194	388	42	628	2920	1150	2460	130	743	892	149

CAL YR 1984	TOTAL	2671.71	MEAN	7.30	MAX	100	MIN	.21	AC-FT	5300
WTR YR 1985	TOTAL	4895.44	MEAN	13.4	MAX	103	MIN	.21	AC-FT	9710

16599500 OPANA TUNNEL AT KAILIILI

LOCATION.--Lat 20°51'04", long 156°18'17", Hydrologic Unit 20020000, on left bank at tunnel outlet, 0.3 mi north of Kailiili, and 2.7 mi east of Makawao.

PERIOD OF RECORD.--May 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,340 ft, from topographic map.

REMARKS.--Records good. Tunnel diverts from Opana Gulch for domestic use in the Kokomo, Makawao, and Pukalani areas. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 3.02 ft^3/s (2,190 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 18 ft^3/s Mar. 31, 1982; minimum daily, 0.11 ft^3/s Nov. 5-10, 1973, Oct. 5, 6, 25, 26, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 13 ft^3/s Mar. 6, minimum daily, 0.12 ft^3/s on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.12	.17	.63	3.2	9.3	5.3	6.7	3.3	1.1	4.9	1.0
2	.14	.12	.15	.50	1.7	7.7	11	9.8	3.3	.93	3.1	.98
3	.14	.12	.14	.54	1.2	8.2	6.6	7.6	3.1	1.0	3.8	.94
4	.14	.12	.12	.88	.85	9.6	6.8	5.7	3.0	.91	9.0	.86
5	.14	.12	.12	.75	.63	10	5.7	4.9	2.7	.82	4.9	.82
6	.14	.12	.12	.52	.47	13	5.4	7.7	2.5	.75	3.2	.77
7	.14	.12	.14	.41	.39	9.3	4.7	11	2.4	.74	3.7	.74
8	.14	.12	5.4	.35	.33	8.4	5.8	10	2.3	.67	11	.74
9	.14	.12	12	.31	.29	7.0	5.3	9.2	2.2	.62	8.7	.68
10	.14	.12	7.3	.27	.27	7.3	4.4	8.1	2.0	.58	5.7	.64
11	.14	.12	3.8	.27	.23	4.8	4.0	8.8	1.9	.56	3.9	.64
12	.14	.12	2.2	.29	.23	2.5	3.7	9.4	1.8	.52	3.3	.62
13	.14	.12	1.5	.24	.20	2.1	3.4	10	1.7	.52	3.0	.57
14	.14	.12	1.1	1.5	.24	2.0	3.2	8.7	1.6	.48	2.7	.53
15	.14	.12	.76	1.8	.27	1.8	3.4	7.9	1.5	1.5	2.5	.57
16	.14	.12	.57	.86	.37	1.8	5.8	7.1	1.5	7.7	2.3	.51
17	.14	.12	.46	.52	.27	1.8	8.8	6.5	1.5	4.1	3.5	.47
18	.14	.12	.84	.39	.23	1.7	7.5	6.3	1.4	2.4	3.1	.46
19	.14	.44	7.7	.33	.20	1.7	5.9	6.0	1.4	1.5	2.3	.95
20	.14	.78	2.9	.27	.50	1.7	5.5	5.8	1.3	1.1	2.0	.78
21	.14	.78	1.6	.24	.54	1.8	4.4	5.6	1.2	.99	1.8	.65
22	.14	.73	1.1	.29	.33	1.6	4.0	5.6	1.1	1.7	1.7	.76
23	.14	.71	.85	.31	.30	1.6	3.9	5.8	1.1	2.3	1.6	1.3
24	.14	.71	.65	.24	.38	1.6	3.7	5.1	1.0	1.4	1.5	1.1
25	.14	.71	.76	.22	2.4	1.5	3.4	4.5	1.0	1.0	1.4	.76
26	.14	.39	5.2	.20	11	1.5	3.2	4.2	.96	5.8	1.4	.62
27	.14	.96	3.9	.20	11	1.5	3.0	4.1	.93	4.8	1.3	.51
28	.13	.81	1.7	.17	12	2.9	2.8	4.3	.92	3.6	1.4	.58
29	.12	.38	1.5	.17	---	4.7	2.8	4.2	.86	3.4	1.4	.61
30	.12	.23	1.1	7.2	---	4.5	2.7	3.7	1.0	8.6	1.3	1.2
31	.12	---	.82	8.3	---	4.1	---	3.7	---	9.7	1.2	---
TOTAL	4.27	9.79	66.67	27.17	50.02	138.6	148.1	208.0	52.47	71.79	102.6	22.36
MEAN	.14	.33	2.15	.88	1.79	4.47	4.94	6.71	1.75	2.32	3.31	.75
MAX	.14	.96	12	7.2	12	13	11	11	3.3	9.7	11	1.3
MIN	.12	.12	.12	.17	.20	1.5	2.7	3.7	.86	.48	1.2	.46
AC-FT	8.5	19	132	54	99	275	294	413	104	142	204	44

CAL YR 1984	TOTAL	680.10	MEAN	1.86	MAX	12	MIN	.12	AC-FT	1350
WTR YR 1985	TOTAL	901.84	MEAN	2.47	MAX	13	MIN	.12	AC-FT	1790

16604500 IAO STREAM AT KEPANIWAI PARK, NEAR WAILUKU

LOCATION.--Lat 20°53'08", long 156°32'32", Hydrologic Unit 20020000, on left bank of Maniania and Waikapu ditch intake, 0.3 mi upstream from Kepaniwai Park, 0.5 mi downstraam from Iao Valley State Park, and 2.3 mi west of Wailuku Post Office.

DRAINAGE AREA.--5.98 mi^2.

PERIOD OF RECORD.--May 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 780 ft, from topographic map.

REMARKS.--Records fair. No appreciable diversion upstream. Observation of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,180 ft^3/s Dec. 25, 1983, gage height, 6.48 ft, from rating curve extended above 153 ft^3/s on basis of slope-area measurement at peak flow; minimum, 11 ft^3/s for several days in October and November 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Msximum discharge known, 7,540 ft^3/s Dec. 3, 1950, from rating curve based on model study of site 2.3 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 705 ft^3/s Feb. 26, gage height, 3.15 ft, no psak greater than base discharge of 1,000 ft^3/s; minimum, 11 ft^3/s for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	11	17	13	19	42	126	93	41	44	69	26
2	13	11	14	12	17	34	142	132	40	22	51	24
3	13	13	14	18	16	35	70	84	32	22	73	23
4	12	42	14	35	17	102	52	59	33	60	93	22
5	12	23	14	15	16	62	57	61	30	71	51	21
6	12	13	13	14	16	228	46	52	29	32	56	19
7	11	12	33	13	15	130	42	165	26	55	66	19
8	20	23	54	13	14	131	46	175	25	38	172	19
9	14	15	58	12	14	79	46	104	25	30	131	18
10	13	15	24	12	14	88	41	65	24	28	67	17
11	12	26	18	94	14	252	36	78	23	25	49	24
12	12	43	17	31	14	269	33	65	22	23	43	20
13	12	22	16	22	16	301	32	58	22	22	37	19
14	12	22	15	99	54	178	32	45	22	21	55	18
15	12	17	15	36	31	119	82	46	22	47	48	17
16	11	14	14	25	22	85	222	43	21	76	38	17
17	11	14	17	20	17	64	186	64	20	89	40	19
18	11	13	16	18	17	56	98	49	20	54	32	19
19	11	37	17	17	15	60	64	41	20	33	29	137
20	11	19	15	17	22	45	51	37	19	32	26	70
21	11	16	14	16	16	42	48	36	18	29	24	47
22	11	15	14	18	15	205	49	60	17	48	32	49
23	11	16	13	17	17	156	60	73	17	33	24	82
24	11	15	13	16	21	77	52	71	17	33	23	71
25	11	14	13	15	64	56	42	49	19	29	22	41
26	11	55	17	14	160	45	38	45	20	42	35	32
27	11	30	15	14	174	45	34	56	22	35	44	28
28	11	18	14	14	67	40	33	53	19	51	43	26
29	11	16	13	33	---	36	31	43	20	47	45	30
30	11	16	13	69	---	52	30	38	47	79	37	39
31	11	---	13	26	---	40	---	36	---	142	30	---
TOTAL	369	616	567	788	916	3154	1921	2074	732	1392	1585	1013
MEAN	11.9	20.5	18.3	25.4	32.7	102	64.0	66.9	24.4	44.9	51.1	33.8
MAX	20	55	58	99	174	301	222	175	47	142	172	137
MIN	11	11	13	12	14	34	30	36	17	21	22	17
AC-FT	732	1220	1120	1560	1820	6260	3810	4110	1450	2760	3140	2010

CAL YR 1984	TOTAL	11794	MEAN	32.2	MAX	290	MIN	11	AC-FT	23390
WTR YR 1985	TOTAL	15127	MEAN	41.4	MAX	301	MIN	11	AC-FT	30000

16614000 WAIHEE RIVER AT DAM NEAR WAIHEE

LOCATION.--LAT 20°56'21", long 156°32'59", Hydrologic Unit 20020000, on right bank at dam 8 ft upstream from the abandonad Waihee canal intake, 2.6 mi southwest from Waihee Point, and 4.4 mi northwest from Wailuku Post Office.

DRAINAGE AREA.--4.20 mi^2.

PERIOD OF RECORD.--November 1910 to December 1913, November 1983 to current year. Low-flow records not equivalent prior to Dec. 31, 1913, due to Waihee canal diverted water upstream.

GAGE.--Water-stage recorder. Elevation of gage is 605 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream. Observations of spscific conductance, pH, and water temperature made during the year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,650 ft^3/s Feb. 26, 1985, gage height, 4.84 ft, from rating curve extended above 280 ft^3/s on basis of slops-area measurement at gage height 3.99 ft; minimum, 22 ft^3/s Jan. 18-22, 24, 25, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than bsse discherge of 2,000 ft^3/s and maximum (*), from rating curve extended above 280 ft^3/s on basis as explained above:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 26	1900	*3650	*4.84	Sept. 23	2000	2000	4.07

Minimum discharge, 22 ft^3/s, Jan. 18-22, 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	27	33	24	27	36	157	149	59	59	83	42
2	28	28	27	24	27	32	93	240	52	40	49	39
3	27	48	26	64	26	31	46	81	47	51	77	40
4	27	74	28	60	24	e93	43	49	50	111	107	39
5	27	36	26	28	24	e70	65	124	47	107	44	37
6	27	28	27	28	24	e280	44	73	46	47	69	37
7	27	27	50	24	24	e170	43	252	44	92	96	37
8	40	41	81	24	24	e180	57	153	44	49	159	39
9	30	28	69	24	24	e100	59	70	46	43	128	37
10	27	30	31	24	24	e76	47	50	44	49	50	39
11	27	44	29	31	24	e305	42	66	43	40	47	44
12	28	94	30	26	24	e400	40	59	43	39	49	39
13	28	34	28	24	97	e280	39	65	43	37	43	39
14	28	31	27	85	130	e105	42	50	43	36	78	37
15	27	31	27	28	43	e91	115	52	42	98	68	37
16	27	28	27	24	31	e73	323	55	40	109	49	36
17	27	27	29	24	28	e70	247	154	40	144	72	46
18	27	30	29	22	30	e52	62	66	39	54	46	42
19	27	60	29	22	27	e60	47	57	39	40	43	273
20	27	31	26	22	48	e47	43	52	39	44	42	86
21	27	30	26	22	28	e54	74	74	37	40	42	187
22	27	28	26	26	53	e500	54	193	37	67	47	91
23	26	29	24	24	32	e113	64	91	37	50	42	229
24	26	29	24	22	40	e75	54	107	37	59	40	62
25	26	27	27	22	105	46	44	55	43	46	39	43
26	26	58	39	24	289	40	40	54	55	60	49	42
27	28	34	28	24	130	50	40	62	45	52	52	40
28	26	29	26	24	46	42	39	63	39	54	53	39
29	26	27	24	31	---	42	39	55	40	52	46	42
30	26	37	24	35	---	84	40	49	62	82	48	51
31	26	---	24	28	---	50	---	49	---	184	44	---
TOTAL	849	1105	971	912	1453	3627	2142	2769	1322	2035	1901	1891
MEAN	27.4	36.8	31.3	29.4	51.9	117	71.4	89.3	44.1	65.6	61.3	63.0
MAX	40	94	81	85	289	500	323	252	62	184	159	273
MIN	28	27	24	22	24	31	39	49	37	36	39	36
AC-FT	1680	2190	1930	1810	2880	7190	4250	5490	2620	4040	3770	3750

CAL YR 1984	TOTAL	18206	MEAN	49.7	MAX	471	MIN	24	AC-FT	36110
WTR YR 1985	TOTAL	20977	MEAN	57.5	MAX	500	MIN	22	AC-FT	41610

e Estimated

16618000 KAHAKULOA STREAM NEAR HONOKOHAU
(National stream-quality accounting network station)

LOCATION.--Lat 20°58'54", long 156°33'26", Hydrologic Unit 20020000, on right benk 0.5 mi downstream from Kapuna Stream, 1.3 mi south of Kahakuloa, 2.0 mi west of Puu Makawana, and 4.3 mi southeast of Honokohau.

DRAINAGE AREA.--3.47 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1939 to August 1943, September 1947 to November 1970, December 1974 to current year. Records for January 1913 to December 1914 (fragmentary) at site 1.0 mi upstream not equivalent owing to difference in drainage areas.

REVISED RECORDS.--WSP 1319: 1948, 1949(M). WSP 1569: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 330 ft, from topographic map.

REMARKS.--Records good. No diversion upstraam.

AVERAGE DISCHARGE.--36 years (1940-42, 1948-70, 1976-85), 16.9 ft^3/s (12,240 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,800 ft^3/s Nov. 25, 1970, gage height, 10.57 ft from flood-marks, from rating curve extended above 510 ft^3/s, on basis of slope-area meesurements at gage heights 6.70 ft, 8.48 ft, and 10.57 ft; minimum, 2.7 ft^3/s Jan. 22, 28, 29, Feb. 10, 12, 13, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 505 ft^3/s Feb. 28, gage height, 5.20 ft, no other peak greater than bsse discharge of 500 ft^3/s; minimum, 2.7 ft^3/s Jan. 22, 28, 29, Feb. 10, 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	2.8	6.8	2.9	4.8	7.7	25	20	6.8	9.7	12	4.6
2	3.2	2.9	3.7	2.9	3.4	5.8	34	57	7.6	5.3	12	4.9
3	3.2	6.9	3.3	8.7	3.2	5.0	8.2	11	6.0	12	13	4.7
4	3.3	12	3.4	27	3.0	20	6.0	6.9	6.4	34	40	4.6
5	3.2	9.6	3.8	4.7	2.9	18	18	26	5.6	36	8.6	4.3
6	3.2	3.8	3.2	3.6	2.9	54	12	23	5.2	8.1	16	4.2
7	3.2	3.2	5.7	3.3	2.8	21	6.3	61	4.9	12	32	4.2
8	5.1	3.2	21	3.2	2.8	27	18	39	4.8	8.1	38	4.4
9	4.1	3.5	16	3.0	2.8	12	15	14	5.0	6.7	31	4.1
10	3.4	3.2	5.0	3.0	2.7	11	9.6	7.6	4.7	5.7	10	4.9
11	3.2	8.7	3.9	3.0	2.8	98	6.4	12	4.5	6.0	8.2	5.2
12	3.2	16	3.7	3.1	2.7	114	5.5	12	4.3	4.6	7.8	5.7
13	3.2	6.7	4.9	3.2	28	45	5.1	10	4.3	4.6	6.4	4.1
14	3.9	4.0	3.4	18	60	30	5.7	7.2	4.3	4.2	15	4.2
15	3.3	4.0	3.3	5.3	6.6	14	17	7.0	4.2	14	13	4.8
16	3.2	3.6	3.2	3.5	5.0	14	90	8.3	4.2	19	11	4.1
17	3.0	3.3	3.0	3.2	4.2	8.8	78	105	4.0	24	21	3.9
18	3.1	3.5	3.0	3.0	4.5	7.8	12	27	4.0	7.4	8.8	5.0
19	3.0	9.8	3.1	2.9	3.8	9.8	7.7	13	4.0	5.4	6.6	94
20	3.0	5.6	3.1	2.8	14	6.9	6.5	9.5	4.2	5.4	5.9	20
21	3.0	3.9	2.9	2.8	5.5	7.6	9.8	23	4.1	5.0	5.4	11
22	2.9	3.5	2.9	3.2	4.0	159	11	66	3.9	16	6.4	25
23	2.9	3.4	2.9	5.5	4.6	25	11	27	3.9	6.9	5.4	86
24	3.0	3.4	2.8	3.4	7.9	9.9	8.8	22	3.9	13	5.1	18
25	2.9	3.4	3.3	3.4	26	8.1	6.2	9.5	3.8	10	4.8	7.7
26	2.9	11	12	3.1	99	6.9	5.4	7.9	7.6	9.8	4.8	6.2
27	2.9	9.5	5.0	2.8	50	6.1	5.1	11	9.8	8.2	5.6	5.4
28	2.9	8.9	3.6	2.7	14	5.7	4.8	8.5	5.0	7.4	5.6	5.0
29	2.9	4.2	3.2	2.7	---	5.3	4.7	8.2	4.1	6.5	5.8	5.0
30	2.9	5.1	3.1	11	---	6.4	4.5	6.7	5.0	19	5.0	7.9
31	2.9	---	3.0	7.3	---	7.7	---	6.3	---	64	4.9	---
TOTAL	99.3	172.6	151.2	158.2	373.9	777.5	457.3	672.6	150.1	398.0	375.1	373.1
MEAN	3.20	5.75	4.88	5.10	13.4	25.1	15.2	21.7	5.00	12.8	12.1	12.4
MAX	5.1	16	21	27	99	159	90	105	9.8	64	40	94
MIN	2.9	2.8	2.8	2.7	2.7	5.0	4.5	6.3	3.8	4.2	4.8	3.9
AC-FT	197	342	300	314	742	1540	907	1330	298	789	744	740

CAL YR 1984	TOTAL	3231.6	MEAN	8.83	MAX	185	MIN	2.8	AC-FT	6410
WTR YR 1985	TOTAL	4158.9	MEAN	11.4	MAX	159	MIN	2.7	AC-FT	8250

16618000 KAHAKULOA STREAM NEAR HONOKOHAU--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 15...	1330	752	3.3	97	7.8	20.5	1.0	8.5	96	9	1500
DEC 10...	1245	756	4.8	86	7.5	20.5	1.4	8.7	97	13	2200
FEB 04...	1215	750	3.0	96	8.0	19.5	.30	8.8	97	15	300
APR 01...	1210	756	13	67	7.4	19.5	.70	8.4	92	40	460
JUN 10...	1110	755	4.7	81	7.7	22.0	.80	7.9	91	21	420
AUG 12...	1100	758	7.3	69	7.7	21.0	1.3	8.2	93	56	550

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 15...	27	0	5.4	3.2	8.5	40	.7	.90	29	2.5	10
DEC 10...	21	0	4.2	2.5	7.5	43	.7	.90	21	3.5	10
FEB 04...	28	0	5.9	3.2	8.6	39	.7	.90	29	2.6	11
APR 01...	18	0	2.9	2.0	6.8	47	.8	.90	19	2.2	10
JUN 10...	20	0	3.9	2.5	8.0	44	.8	1.9	23	2.4	10
AUG 12...	17	0	3.4	2.1	6.9	45	.7	1.0	23	3.2	10

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT 15...	<.10	24	78	72	.11	.13	.020	<.20	.030	.030	.030
DEC 10...	<.10	17	58	58	.08	.14	<.010	.50	.020	.020	<.010
FEB 04...	<.10	23	--	73	.10	<.10	<.010	.30	.020	.030	.020
APR 01...	<.10	16	53	52	.07	<.10	.020	1.6	.010	.010	.010
JUN 10...	<.10	20	--	63	.09	<.10	.030	<.20	.020	.020	<.010
AUG 12...	<.10	17	45	58	.06	.13	.030	--	--	--	.020

< Actual value is known to be less than the value shown.

16616000 KAHAKULOA STREAM NEAR HONOKOHAU--Continued

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
OCT 15...	20	<1	3	<.0	<1	<1	<3	<1	5	2
FEB 04...	20	<1	4	<.5	<1	7	<3	<1	10	4
APR 01...	30	<1	4	<.5	<1	<1	<3	2	17	4
AUG 12...	40	<1	3	<.5	<1	<1	<3	3	21	15

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 15...	<4	<1	<.1	<10	<1	<1	<1	34	<6	<3
FEB 04...	<4	7	<.1	<10	<1	<1	<1	32	<6	12
APR 01...	4	<1	<.1	<10	4	<1	<1	21	<6	<3
AUG 12...	<4	3	<.1	<10	<1	<1	<1	22	<6	3

DATE	TIME	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 15...	1330	1	.00	100
DEC 10...	1245	1	.01	100
FEB 04...	1215	0	.00	100
APR 01...	1210	1	.04	100
JUN 10...	1110	1	.01	100
AUG 12...	1100	0	.00	100

< Actual value is known to be less than the value shown.

16620000 HONOKOHAU STREAM NEAR HONOKOHAU

LOCATION.--Lat 20°57'48", long 156°35'22", Hydrologic Unit 20020000, on right bank 1,000 ft upstream from intake of Honokohau ditch and 4.1 mi southeast of Honokohau.

DRAINAGE AREA.--4.11 mi^2.

PERIOD OF RECORD.--September, November, and December 1911 (combined flow of stream and ditch below point of diversion), March 1913 to September 1920, May 1922 to current year. Monthly discharge only for some periods, published in WSP 1319.

REVISED RECORDS.--WSP 1937: Drainage area. WDR HI-79-1: 1927-48(M), 1949-78(P).

GAGE.--Water-stage recorder and masonry control. Elevation of gage is 870 ft, from topographic map. Prior to Mar. 7, 1913, nonrecording gage at site juat below Honokohau ditch intake at different datum.

REMARKS.--Records good. No diversion upstream. All medium and low flow, together with the inflow from two development tunnels downstream of station, ia diverted into Honokohau ditch. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--69 years (water years 1914-19, 1923-85) 39.2 ft^3/s (28,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,120 ft^3/s revised, Dec. 14, 1942, gage height, 8.40 ft, from rating curve extended above 547 ft^3/s, on basis of slope-area measurement at gage height 8.76 ft; minimum, 8.4 ft^3/s May 1, 1945, Jan. 5, 1946.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Peb. 26	1900	*1800	*5.83	May 7	0500	1230	5.28

Minimum discharge, 8.5 ft^3/s Jan. 29, Feb. 5-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.9	16	9.0	9.7	18	66	64	27	29	37	15
2	11	10	10	9.0	9.0	13	55	105	23	15	24	15
3	11	15	9.9	25	8.7	13	16	62	17	18	48	14
4	11	40	9.9	42	8.7	81	13	21	17	29	64	14
5	11	20	9.7	11	8.7	34	22	43	15	35	18	13
8	10	11	9.7	9.5	8.5	153	16	37	15	17	38	13
7	10	10	41	9.3	8.5	54	13	166	15	46	54	13
8	23	29	86	9.0	8.5	61	17	122	15	20	126	13
9	15	12	81	9.0	8.5	24	17	42	14	15	70	13
10	11	11	13	9.0	8.5	48	14	19	14	15	19	13
11	11	27	11	18	8.5	199	12	45	14	15	17	15
12	10	32	11	11	8.5	155	12	36	14	13	17	14
13	10	14	10	9.3	14	86	12	33	14	13	15	13
14	10	15	9.8	50	28	58	13	19	14	13	35	13
15	10	15	9.7	11	22	28	51	21	14	50	30	13
16	10	11	9.8	9.6	13	25	174	20	14	69	19	13
17	10	10	14	9.1	9.8	16	172	51	14	92	26	15
18	10	11	16	9.0	11	16	37	25	14	32	16	18
19	10	70	17	9.0	9.2	27	20	21	14	15	15	137
20	10	16	10	8.7	27	15	16	17	14	16	14	48
21	10	13	9.7	8.7	10	15	19	18	14	15	14	31
22	10	12	9.4	9.3	48	330	26	43	14	44	22	45
23	10	14	9.3	9.7	17	60	37	36	13	22	15	78
24	10	12	9.3	9.0	23	17	32	40	13	28	14	34
25	10	10	9.8	8.7	97	22	15	18	14	20	14	17
26	10	34	15	8.7	215	15	14	17	15	30	24	15
27	10	15	11	8.7	121	23	13	31	15	20	34	14
28	10	11	9.6	8.7	34	16	13	28	14	30	28	14
29	9.8	10	9.3	9.3	---	14	13	23	14	19	26	16
30	9.7	12	9.2	30	---	26	13	16	32	42	25	25
31	9.7	---	9.0	11	---	18	---	17	---	98	17	---
TOTAL	334.2	531.9	515.1	406.3	803.3	1658	963	1256	470	935	935	724
MEAN	10.8	17.7	16.6	13.1	28.7	53.5	32.1	40.5	15.7	30.2	30.2	24.1
MAX	23	70	86	50	215	330	174	166	32	98	126	137
MIN	9.7	9.9	9.0	8.7	8.5	13	12	16	13	13	14	13
AC-FT	663	1060	1020	806	1590	3290	1910	2490	932	1850	1850	1440

CAL YR 1984	TOTAL	8477.2	MEAN	23.2	MAX	219	MIN	9.0	AC-FT	16810
WTR YR 1985	TOTAL	9531.8	MEAN	26.1	MAX	330	MIN	8.5	AC-FT	18910

16638500 KAHOMA STREAM AT LAHAINA

LOCATION.--Lat 20°53'10", long 156°40'36", Hydrologic Unit 20020000, on right bank 0.2 mi west of Kelawea, 0.6 mi northeast of Lahaina, 0.6 mi downstream from Kanaha Stream, and 0.9 mi upstream from mouth.

DRAINAGE AREA.--5.22 mi^2.

PERIOD OF RECORD.--October 1962 to current yaar.

REVISED RECORDS.--WSP 2137: 1963-65(P).

GAGE.--Water-stage recorder. Elevation of gage is 90 ft, from topographic map.

REMARKS.--Records fair. Diversions upstream by Pioneer Mill Co. for irrigation of sugarcane and from Kanaha Stream by Maui County Board of Water Supply for domestic use. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year is published elsewhere in this report.

AVERAGE DISCHARGE.--22 yeara (water years 1964-85), 3.32 ft^3/s (2,410 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,490 ft^3/s July 11, 1965, gage height, 11.03 ft, from rating curve extended above 332 ft^3/s on basis of slope-area measurements at gage heights 7.39 ft, 7.58 ft, 8.07 ft, 9.12 ft, and 11.03 ft; no flow many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 13, 1960, reached a discharge of 7,750 ft3/s, by slope-area measurement, 0.6 mi upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 634 ft^3/s Feb. 26, gage height, 7.27 ft, no other peak greater than base discharge of 590 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.65	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10	.00
4	.00	.00	.00	.00	.00	11	.00	.00	.00	.00	.30	.00
5	.00	.00	.00	.00	.00	6.2	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	165	.00	.00	.00	.00	.00	.00
7	.00	.00	.14	.00	.00	39	.00	.03	.00	.00	.00	.00
8	.00	.00	9.8	.00	.00	24	.00	9.3	.00	.00	9.0	.00
9	.00	.00	66	.00	.00	1.4	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	20	.00	1.6	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	66	.00	11	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	5.4	.00	5.9	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	28	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	4.2	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	65	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	70	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	34	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.44	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	3.1	.00	---
TOTAL	.00	.00	75.94	5.84	173.20	393.67	2.30	22.13	.00	3.10	19.30	.00
MEAN	.00	.00	2.45	.19	6.19	12.7	.077	.71	.00	.10	.62	.00
MAX	.00	.00	66	5.4	70	165	2.3	11	.00	3.1	10	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	151	12	344	781	4.6	44	.00	6.1	38	.00

CAL YR 1984	TOTAL	164.55	MEAN	.45	MAX	66	MIN	.00	AC-FT	326
WTR YR 1985	TOTAL	695.48	MEAN	1.91	MAX	165	MIN	.00	AC-FT	1380

16700000 WAIAKEA STREAM NEAR MOUNTAIN VIEW

LOCATION.--Lat 19°38'30", long 155°10'28", Hydrologic Unit 20010000, on left bank 200 ft upstream from Olaa Flume Road, 7.3 mi northwest of Mountain View, and 8.0 mi southwest of Hilo Post Office.

DRAINAGE AREA.--17.4 mi^2.

PERIOD OF RECORD.--September 1930 to current year. Prior to July 1960, published as "at middle flume house, near Mountain View."

REVISED RECORDS.--WSP 2137: 1939(M), 1942(M), 1944-45(M), 1947(M), 1949(P), 1950-51(M), 1952-53(P), 1955(P), 1956(M), 1957-58(P), 1960(M).

GAGE.--Water-stage recorder and combined Parshall flume and concrete-weir control. Datum of gage is 1,934 ft above mean sea level (by stadia survey). Prior to Jan. 21, 1938, at datum 0.23 ft lower.

REMARKS.--Records good. No diversion upstream. Large part of flow comes from 3 tunnels. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--55 years, 11.7 ft^3/s (8,480 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 565 ft^3/s Mar. 14, 1942, Aug. 26, 1970, from rating curve extended above 160 ft^3/s; maximum gage height, 4.45 ft Aug. 26, 1970; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 84 ft^3/s Mar. 1, gage height, 3.34 ft, no peak greater than base diacharge of 100 ft^3/s; no flow Nov. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	.00	18	12	1.0	60	27	13	11	1.7	3.7	8.2
2	.40	.00	17	11	.95	56	24	16	11	1.4	3.4	7.9
3	.32	.32	16	9.8	.80	44	20	14	11	1.2	3.2	8.1
4	.28	.44	15	9.3	2.0	37	18	14	9.9	3.1	3.0	7.3
5	.20	.32	13	8.9	.70	29	17	14	9.3	3.0	3.4	6.7
6	.20	.12	12	8.1	.75	51	16	15	8.8	2.3	3.2	6.3
7	.12	.08	11	7.3	.65	50	14	17	8.1	2.4	5.1	6.2
8	.12	.20	14	6.7	.52	50	13	21	7.6	2.3	31	5.7
9	.12	.28	26	6.3	.48	41	13	20	7.1	2.7	22	5.4
10	.08	.32	24	6.0	.40	39	12	22	6.7	2.1	25	5.1
11	.08	3.3	26	5.6	.32	36	14	28	6.3	1.7	25	4.8
12	.08	9.8	26	5.1	.28	32	13	30	5.8	1.6	23	4.6
13	.08	8.3	24	4.9	.24	41	13	28	5.6	1.4	21	4.2
14	.08	4.7	23	4.7	.24	38	12	26	5.2	1.1	19	4.2
15	.08	3.8	21	4.5	.20	32	11	24	4.8	1.0	17	4.6
16	.08	3.8	19	4.1	.16	28	16	22	4.6	1.0	16	3.9
17	.08	3.3	17	3.9	.12	28	20	19	4.3	1.2	15	4.0
18	.08	3.5	20	3.6	.12	27	30	18	4.1	2.4	14	4.3
19	.05	28	24	3.4	.31	24	27	17	3.8	1.5	13	17
20	.05	30	23	3.1	1.1	21	31	15	3.6	1.3	12	13
21	.05	34	22	3.0	.70	20	29	14	3.3	1.4	11	12
22	.12	42	22	2.7	.56	31	26	13	3.0	2.0	10	11
23	.12	44	21	2.5	1.4	42	23	12	3.0	2.2	9.6	12
24	.08	38	21	2.3	5.2	54	24	12	2.7	2.5	8.8	12
25	.05	33	19	2.0	10	52	19	11	2.4	3.7	8.2	15
26	.05	28	20	1.8	15	48	18	9.9	2.2	5.2	8.1	14
27	.03	28	18	1.6	14	40	17	12	2.0	5.2	9.0	14
28	.03	26	17	1.4	41	39	16	12	1.7	4.8	7.9	16
29	.01	23	16	1.4	---	37	14	12	1.8	4.4	8.7	18
30	.01	20	14	1.7	---	34	13	12	1.8	4.5	8.8	16
31	.01	---	13	1.3	---	33	---	12	---	4.0	8.7	---
TOTAL	3.62	416.58	593	150.0	99.20	1194	560	524.9	162.5	76.3	376.8	271.5
MEAN	.12	13.9	19.1	4.84	3.54	38.5	18.7	16.9	5.42	2.46	12.2	9.05
MAX	.48	44	28	12	41	60	31	30	11	5.2	31	18
MIN	.01	.00	11	1.3	.12	20	11	9.9	1.7	1.0	3.0	3.9
AC-FT	7.2	826	1180	298	197	2370	1110	1040	322	151	747	539

CAL YR 1984	TOTAL	2463.86	MEAN	6.73	MAX	44	MIN	.00	AC-FT	4890
WTR YR 1985	TOTAL	4428.40	MEAN	12.1	MAX	60	MIN	.00	AC-FT	8780

16700900 OLAA FLUME SPRING NEAR KAUMANA

LOCATION.--Lat 19°41'58", long 155°11'13", Hydrologic Unit 20010000, on left bank 58 ft downstream from tunnel entrance, 3.3 mi northwest of Kaumana School, and 6.5 mi southwest of Hilo Post Office.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,970 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. County of Hawaii, Department of Water Supply, diverts by 16-inch pipeline 50 ft upstream for domestic use in the Kaumana and Piihonua areas since Oct. 2, 1978. Observations of specific conductance, pH, and water temperature made during the yesr are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 7.65 ft^3/s (5,540 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 43 ft^3/s Jan. 8, 1975; minimum daily, 0.02 ft^3/s Mer. 24, 26-30, Apr. 1, 1983, Sept. 19, 1984, and for many days in 1985.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 22 ft^3/s Mar. 7; minimum daily, 0.02 ft^3/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.07	9.5	5.4	.03	15	7.3	6.6	4.2	.03	1.2	4.1
2	.09	.05	8.6	4.8	.03	13	7.5	6.2	3.8	.04	.50	3.3
3	.09	.03	7.3	4.1	.04	12	7.1	8.4	1.7	.03	.26	3.2
4	.09	.04	6.2	3.7	.04	13	5.6	8.1	.32	.03	.09	2.2
5	.09	.04	4.8	3.4	.03	16	6.2	7.9	.11	.03	.09	1.9
6	.07	.04	3.7	3.3	.03	18	7.1	8.1	.02	.04	.22	2.0
7	.05	.03	3.3	2.9	.03	22	6.6	8.6	.03	.04	.18	1.7
8	.05	.03	3.3	2.6	.02	16	6.2	9.5	.02	.05	3.3	1.6
9	.05	.03	9.2	2.5	.02	15	6.0	12	.02	.05	8.8	1.5
10	.04	.04	13	2.5	.02	14	5.8	12	.02	.05	9.5	1.4
11	.04	.04	12	2.3	.02	9.2	6.2	12	.02	.04	8.4	.26
12	.04	e.50	12	2.3	.02	6.6	9.5	12	.02	.04	7.3	.03
13	.04	e4.0	11	2.2	.02	5.3	11	12	.02	.04	6.0	.03
14	.04	e3.0	11	2.1	.02	4.4	8.6	11	.03	.04	4.6	.03
15	.05	e5.0	10	2.1	.03	8.2	7.3	9.9	.03	.04	3.3	.03
16	.05	e6.5	9.9	2.2	.03	10	6.4	8.4	.04	.03	2.9	.02
17	.07	4.6	9.2	2.2	.04	9.5	9.0	7.1	.03	.03	3.2	.02
18	.09	3.8	8.6	2.2	.04	9.2	12	6.4	.03	.03	4.8	.02
19	.07	7.7	10	2.2	.04	8.6	13	5.8	.02	.11	7.3	2.1
20	.09	13	11	2.1	.04	9.2	13	5.3	.02	.11	7.1	7.7
21	.07	16	10	2.1	.04	9.5	13	5.1	.02	.04	5.4	8.8
22	.07	15	9.5	2.0	.05	9.5	12	4.9	.02	.09	4.4	7.1
23	.07	13	9.0	2.0	.05	12	11	4.6	.02	.15	3.3	5.3
24	.09	13	7.1	2.0	.05	11	11	5.3	.02	.13	2.8	5.4
25	.09	12	6.6	2.0	2.3	7.3	11	4.9	.02	.07	2.3	4.4
26	.07	11	6.9	2.0	8.1	6.0	9.5	3.4	.02	.09	2.0	3.7
27	.09	9.7	8.2	1.9	9.7	5.3	8.4	3.3	.02	.50	2.0	4.1
28	.07	11	7.9	1.9	12	6.4	8.4	3.8	.02	.40	2.7	3.9
29	.09	11	7.9	.29	---	7.7	8.8	3.7	.02	.43	3.2	5.6
30	.07	9.5	7.5	.03	---	7.7	8.1	3.8	.02	1.2	3.1	7.5
31	.11	---	6.6	.03	---	7.3	---	4.2	---	1.4	3.9	---
TOTAL	2.18	169.74	260.8	73.35	32.88	321.9	262.6	224.3	10.70	5.40	114.14	88.94
MEAN	.070	5.66	8.41	2.37	1.17	10.4	8.75	7.24	.36	.17	3.68	2.96
MAX	.11	16	13	5.4	12	22	13	12	4.2	1.4	9.5	8.8
MIN	.04	.03	3.3	.03	.02	4.4	5.8	3.3	.02	.03	.09	.02
AC-FT	4.3	337	517	145	65	638	521	445	21	11	226	176

CAL YR 1984	TOTAL	1365.71	MEAN	3.73	MAX	16	MIN	.02	AC-FT	2710
WTR YR 1985	TOTAL	1566.93	MEAN	4.29	MAX	22	MIN	.02	AC-FT	3110

e Estimated

16700950 LYMAN SPRINGS NO. 2 NEAR PIIHONUA

LOCATION.--Lat 19°42'02", long 155°10'36", Hydrologic Unit 20010000, on right bank 3 ft downstream from tunnel entrance, 2.7 mi southwest of Piihonua, and 5.8 mi southwest of Hilo Post Office.

PERIOD OF RECORD.--Fsbrusry 1981 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,700 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No diversion upstream. Observations of specific conductance, pH, and wster temperature made during the year ara published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 21 ft^3/s Mar. 1, 1985; minimum daily, 0.03 ft^3/s Mar. 23, 24, 31, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 21 ft^3/s Mar. 1; minimum daily, 0.16 ft^3/s Oct. 17, 18, Nov. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.75	.20	6.0	5.3	1.8	21	6.8	6.5	5.9	1.4	4.4	5.2
2	.71	.16	5.8	5.3	2.0	16	e8.0	7.7	5.6	1.4	4.3	5.1
3	.69	.28	5.4	5.2	2.0	13	e7.5	6.1	5.1	1.6	4.1	5.3
4	.66	1.2	5.2	5.2	2.0	8.6	e7.5	6.3	4.5	2.8	4.2	4.9
5	.62	1.2	5.1	5.2	1.4	8.7	e7.0	6.1	4.5	2.9	4.8	4.6
6	.80	1.1	5.0	5.0	1.4	19	e6.5	6.6	4.4	3.1	4.5	4.6
7	.55	1.1	5.1	4.9	1.6	16	e6.5	7.3	4.3	3.9	5.0	4.5
8	.50	1.2	6.1	4.9	1.5	15	e6.0	9.5	4.2	4.2	11	4.4
9	.44	1.2	12	4.7	1.4	11	6.1	8.1	4.1	4.3	7.0	4.4
10	.41	1.2	7.5	4.6	1.4	11	6.1	8.2	3.9	3.9	6.5	4.3
11	.38	4.2	7.1	4.5	1.3	13	7.7	8.7	3.8	3.7	5.9	4.3
12	.31	7.1	6.7	4.5	1.2	9.3	6.5	8.0	3.6	3.5	5.6	4.1
13	.25	6.4	6.4	4.4	1.1	8.3	6.1	7.1	3.6	3.4	5.5	4.1
14	.24	5.2	6.3	4.4	1.1	8.5	5.9	6.7	3.5	3.2	5.2	4.3
15	.20	5.4	6.1	4.0	.99	7.3	5.8	6.3	3.5	3.1	5.0	5.2
16	.20	5.1	5.9	4.1	.96	6.9	8.3	6.1	3.4	2.9	5.4	4.0
17	.16	4.9	5.9	4.1	.92	6.8	8.6	5.9	3.1	2.8	5.1	4.2
18	.16	4.9	8.5	4.0	.82	6.6	9.5	5.8	2.9	4.1	5.2	4.8
19	.18	9.4	8.5	3.9	.82	7.5	7.5	5.7	2.8	3.7	5.2	e10
20	.21	9.2	7.1	3.8	1.7	6.8	8.3	5.6	2.5	3.9	5.1	e8.0
21	.39	7.6	6.8	3.6	1.6	7.3	7.0	5.5	2.4	4.0	5.0	e6.0
22	.43	7.5	6.4	3.5	3.5	11	6.6	5.5	2.1	4.5	4.9	e5.0
23	.47	8.6	6.2	3.4	5.0	12	6.5	6.1	2.0	4.3	4.9	e6.0
24	.45	7.4	6.5	3.2	6.0	9.4	6.9	6.0	1.7	4.3	4.8	e5.5
25	.43	6.8	6.0	3.1	7.0	8.1	6.2	5.5	1.6	5.3	4.7	e7.0
26	.39	6.4	6.7	2.9	7.4	7.4	6.3	5.3	1.5	5.4	5.0	e5.0
27	.36	7.1	8.1	2.8	7.5	7.3	6.0	7.4	1.3	5.1	5.8	e5.0
28	.33	6.1	6.0	2.6	17	7.6	6.4	5.9	1.2	4.8	4.9	e6.0
29	.28	5.9	5.8	2.4	---	7.8	5.8	6.0	1.2	4.5	5.8	e6.5
30	.24	6.4	5.6	2.4	---	7.8	5.8	5.9	1.6	5.2	5.4	e6.0
31	.21	---	5.5	1.7	---	7.2	---	6.3	---	4.7	5.5	---
TOTAL	12.20	140.44	199.1	123.6	82.41	313.2	205.7	203.7	95.8	115.9	165.7	158.3
MEAN	.39	4.68	6.42	3.99	2.94	10.1	6.86	6.57	3.19	3.74	5.35	5.28
MAX	.75	9.4	12	5.3	17	21	9.5	9.5	5.9	5.4	11	10
MIN	.16	.16	5.0	1.7	.82	6.6	5.8	5.3	1.2	1.4	4.1	4.0
AC-FT	24	279	395	245	163	621	408	404	190	230	329	314

CAL YR 1964	TOTAL	1378.50	MEAN	3.77	MAX	12	MIN	.16	AC-FT	2730
WTR YR 1985	TOTAL	1816.05	MEAN	4.98	MAX	21	MIN	.16	AC-FT	3600

e Estimated

16704000 WAILUKU RIVER AT PIIHONUA

LOCATION.--Lat 19°42'56", long 155°09'12", Hydrologic Unit 20010000, on right bank 0.2 mi downstream from Hookelekele Stream, 0.9 mi west of Piihonua, and 4.1 mi west of Hilo Post Office. Prior to Nov. 16, 1977, at opposite site on left bank.

DRAINAGE AREA.--230 mi^2, of which 81 mi^2 probebly is noncontributing.

PERIOD OF RECORD.--July 1928 to July 1940, October 1940 to December 1947, April 1948 to current year. Monthly discharge only July 1928, published in WSP 1319. Prior to July 1960, published as "above Hilo Boarding School ditch intake, near Hilo."

REVISED RECORDS.--WSP 865: 1929-36(M). WSP 965: 1941. WDR HI-80-1: 1929-79(P). WDR HI-81-1: 1940(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,090 ft, from topographic map. Prior to Nov. 16, 1977, at opposite site on left bank at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Hawaii County Board of Water Supply diverts about 6 ft^3/s upstream for domestic supply. Kapehu ditch diverted from Kapehu Stream into Wailuku River upstream 1938-63. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--54 years (water years 1929-39, 1942-47, 1949-85), 281 ft^3/s (203,600 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,200 ft^3/s, revised, Aug. 11, 1940, gage height, 28.6 ft, from floodmarks, from rating curve extended above 13,000 ft^3/s; minimum, 0.15 ft^3/s Jan. 20, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,700 ft^3/s and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 1	0330	*15400	*17.25	Mar. 6	2100	8850	15.04

Minimum discharge, 0.82 ft^3/s Feb. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	.86	200	119	6.0	e12500	332	135	188	18	64	122
2	1.7	1.0	143	100	3.9	e2200	300	381	148	13	54	110
3	1.7	2.1	114	84	3.1	1150	229	285	125	13	45	115
4	6.0	39	92	80	11	694	191	229	101	36	50	93
5	33	17	78	97	11	778	161	237	85	66	72	72
6	7.2	5.2	62	67	4.0	e6500	148	307	75	29	80	62
7	3.2	2.1	66	56	2.9	e2500	132	470	65	39	169	53
8	2.2	1.8	237	48	2.2	e1900	111	829	58	43	1830	47
9	2.0	2.4	e3500	42	2.3	1340	116	962	52	42	1080	41
10	1.5	7.4	1200	38	1.7	1410	110	1110	47	30	538	36
11	1.2	173	659	34	1.6	1850	272	910	42	21	296	33
12	1.2	545	404	30	1.4	1090	600	865	40	17	207	29
13	1.1	685	297	28	1.4	795	256	525	36	14	159	26
14	.97	164	252	30	1.4	721	180	370	34	13	123	32
15	.95	151	232	26	1.2	538	145	263	31	11	103	64
16	.97	115	182	20	1.1	402	476	205	29	18	118	43
17	.93	88	172	19	1.1	319	798	167	28	31	454	33
18	.94	89	624	17	.97	257	1260	142	25	123	417	83
19	1.0	2010	1480	16	.97	433	780	126	24	54	241	1240
20	1.2	2560	989	16	19	291	610	116	23	33	156	525
21	1.4	984	519	14	27	517	518	106	21	27	119	453
22	1.3	700	347	13	41	e1800	387	95	20	51	98	422
23	4.1	946	270	10	134	e2500	275	128	20	40	86	408
24	4.4	630	340	9.5	184	1040	344	195	18	39	71	383
25	3.2	416	324	6.8	525	687	237	123	17	100	63	375
26	1.6	343	379	6.1	1070	484	210	102	18	208	68	347
27	1.2	624	418	5.4	914	383	171	242	16	166	191	326
28	1.0	298	375	4.2	e6000	529	204	180	16	114	109	425
29	.99	211	287	3.5	---	811	147	187	19	93	134	435
30	.93	190	188	16	---	700	124	188	13	118	106	384
31	.90	---	148	16	---	472	---	245	---	87	174	---
TOTAL	91.68	12000.86	14574	1071.5	8973.24	47591	9824	10425	1434	1707	7475	6817
MEAN	2.96	400	470	34.6	320	1535	327	336	47.8	55.1	241	227
MAX	33	2560	3500	119	6000	12500	1260	1110	188	208	1830	1240
MIN	.90	.86	62	3.5	.97	257	110	95	13	11	45	26
AC-FT	182	23800	28910	2130	17800	94400	19490	20680	2840	3390	14830	13520

CAL YR 1984 TOTAL 53332.14 MEAN 146 MAX 3500 MIN .85 AC-FT 105800
WTR YR 1985 TOTAL 121984.26 MEAN 334 MAX 12500 MIN .86 AC-FT 242000

e Estimated

16713000 WAILUKU RIVER AT HILO
(National stream-quality accounting network station)

LOCATION.--Lat 19°43'43", long 155°05'40", Hydrologic Unit 20010000, on right bank 500 ft upstream from Wailuku bridge and 0.2 mi west of Hilo Post Office.

DRAINAGE AREA.--256 mi^2, of which 81 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1977 to September 1979, June 1980 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 80 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Hilo Electric Light Co. diverts upstream for Hydro-plant use.

AVERAGE DISCHARGE.--7 years (water years 1978, 1979, 1981-85), 377 ft^3/s (273,100 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,500 ft^3/s Nov. 17, 1979, gage height, 34.57 ft, from floodmarks and from rating curve extended above 6,840 ft^3/s on basis of slope-area measurements at gage heights 23.30 ft and 34.57 ft; minimum, 4.6 ft^3/s July 17, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,500 ft^3/s and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Dischage (ft^3/s)	Gage height (ft)
Dec. 9	0530	11900	13.70	Mar. 22	2030	9500	12.54
Mar. 1	0400	*30000	*21.56	Aug. 9	1000	11000	13.28
Mar. 6	2100	23200	18.70				

Minimum discharge, 8.1 ft^3/s, Feb. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	15	385	186	17	18600	580	235	340	28	143	e180
2	28	17	245	144	15	3920	564	687	238	22	123	e195
3	26	23	186	110	12	1680	418	620	202	17	103	e190
4	26	246	136	95	22	1080	346	452	157	45	116	151
5	85	82	98	143	23	1240	280	498	126	162	167	114
6	43	35	71	71	16	9950	255	523	99	64	192	85
7	30	24	70	45	14	4800	220	825	91	61	274	55
8	26	23	262	34	11	e3200	175	1670	61	76	5320	49
9	25	26	6220	30	12	e2500	184	1650	51	82	1700	34
10	24	37	1770	25	14	e2700	175	1880	44	61	950	30
11	23	322	1020	24	10	e3500	441	1560	33	40	572	26
12	22	1020	640	29	9.5	e2200	1030	1520	28	28	435	28
13	23	1470	526	24	10	e1800	435	990	33	25	340	32
14	23	268	452	22	12	e1500	325	710	32	19	222	30
15	20	250	418	24	11	e1100	230	526	27	20	180	128
16	18	175	301	30	10	e900	855	414	24	25	198	69
17	20	112	280	38	9.6	e700	1320	331	21	34	775	34
18	21	73	951	31	8.8	e500	2080	e310	e22	227	919	136
19	22	3710	2170	30	8.6	800	1320	e290	e20	112	505	2070
20	21	4240	1460	30	54	530	1280	e280	e21	66	295	700
21	24	1540	800	26	71	900	935	e270	35	48	200	400
22	24	1130	552	22	46	2520	640	e250	31	89	175	310
23	31	1560	463	23	309	3770	508	e280	29	76	136	405
24	31	1090	549	21	418	1600	632	e350	26	66	104	612
25	26	750	560	19	938	1090	438	e270	25	194	91	560
26	22	546	680	16	1880	800	400	e250	26	480	105	385
27	19	1100	716	17	1460	660	310	e450	23	379	379	275
28	17	560	630	16	9820	910	385	e330	20	248	196	853
29	17	400	498	14	---	1280	268	304	20	210	280	790
30	16	346	328	24	---	1110	214	310	34	260	e185	522
31	16	---	242	39	---	780	---	435	---	194	e200	---
TOTAL	797	21190	23679	1402	15241.5	76620	17243	19470	1939	3458	15580	9448
MEAN	25.7	706	764	45.2	544	2472	575	628	64.6	112	503	315
MAX	85	4240	6220	186	9820	16600	2080	1880	340	480	5320	2070
MIN	16	15	70	14	8.6	500	175	235	20	17	91	26
AC-FT	1580	42030	46970	2780	30230	152000	34200	38620	3850	6860	30900	18740

CAL YR 1984 TOTAL 95721 MEAN 262 MAX 6220 MIN 12 AC-FT 189900
WTR YR 1985 TOTAL 206067.5 MEAN 565 MAX 16600 MIN 8.6 AC-FT 408700

e Estimated

16713000 WAILUKU RIVER AT HILO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1977 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1982 to April 1984, June 1984 to April 1985, June 1985 to September 1985 (discontinued).
WATER TEMPERATURE: October 1982 to April 1984, June 1984 to September 1985 (discontinued).
SUSPENDED SEDIMENT DISCHARGE: March 1977 to September 1979. June 1980 to December 1983.

INSTRUMENTATION.--Automatic pumping sediment sampler March 1977 to December 1983.

REMARKS.--Water-quality samples were collected at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 166 microsiemens/cm at 25°C Nov. 15, 1983; minimum, 6 microsiemens/cm at 25°C Mar. 8, 1985.
WATER TEMPERATURES: Maximum, 25.5°C July 18, 19, Oct. 7, 8, 1984, July 14, 15, 1985; minimum, 16.5°C Feb. 27, 28, Mar. 1, 6, 7, 1985.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 292 mg/L Sept. 21, 1980; minimum daily mean, 0 mg/L on several days in 1981, 1982, and 1983.
SEDIMENT DISCHARGE: Maximum daily, 14,100 tons Feb. 20, 1979; minimum daily, 0 ton on several days in 1981, 1982, and 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 29...	0930	755	16	86	8.2	22.5	1.2	8.1	94	28	1500
DEC 12...	0800	755	676	38	7.8	--	1.7	8.7	--	26	450
FEB 13...	0930	755	9.5	84	7.6	21.0	.30	8.9	100	22	380
APR 10...	0815	755	162	55	7.6	19.5	1.0	9.0	99	81	K79
JUN 18...	0815	760	23	75	7.7	23.0	.70	8.6	101	43	630
SEP 03...	1015	755	190	50	6.6	21.5	.80	8.7	100	170	970

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 29...	37	0	7.7	4.2	4.5	21	.3	.20	37	2.9	5.6
DEC 12...	12	1	2.5	1.4	2.7	32	.3	.40	11	2.9	3.8
FEB 13...	36	5	7.3	4.2	5.2	24	.4	.70	31	3.3	6.1
APR 10...	22	2	4.6	2.5	3.5	25	.3	.40	20	2.8	4.3
JUN 18...	30	0	6.1	3.5	4.5	24	.4	.60	29	2.4	5.6
SEP 03...	18	2	3.7	2.2	3.0	26	.3	.60	16	4.7	4.1

K Results based on colony count outside the acceptable rsnge (non-ideal colony count).

16713000 WAILUKU RIVER AT HILO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT											
29...	<.10	17	72	64	.10	.19	.040	.30	.020	.010	<.010
DEC											
12...	<.10	9.5	22	30	.03	.18	.060	.20	<.010	.020	<.010
FEB											
13...	<.10	20	59	66	.08	.23	.050	<.20	<.010	.010	.010
APR											
10...	<.10	14	47	44	.06	.20	.060	.30	<.010	<.010	<.010
JUN											
18...	<.10	19	53	59	.07	.25	.120	.20	<.010	.030	.030
SEP											
03...	<.10	12	41	40	.06	.11	.060	<.20	<.010	<.010	<.010

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)
DEC										
12...	40	<1	5	<.5	2	<1	<3	6	42	3
FEB										
13...	20	<1	5	1.4	<1	<1	<3	4	28	7
JUN										
18...	10	<1	6	<.5	<1	<1	<3	2	26	2
SEP										
03...	40	<1	6	<.5	<1	<1	<3	<1	92	<1

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
DEC											
12...	<4	4	--	<.1	<10	3	<1	<1	15	<6	3
FEB											
13...	<4	<1	--	<.1	<10	4	1	<1	42	<6	12
APR											
10...	--	--	.2	--	--	--	--	--	--	--	--
JUN											
18...	<4	2	--	.2	<10	<1	<1	<1	36	<6	4
SEP											
03...	<4	6	--	<.1	<10	<1	<1	<1	24	<6	11

DATE	TIME	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	DATE	TIME	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
OCT					APR				
29...	0930	100	2	.09	10...	0815	100	0	.00
DEC					JUN				
12...	0800	100	1	1.8	18...	0815	100	1	.06
FEB					SEP				
13...	0930	100	1	.03	03...	1015	100	0	.00

< Actual value ia known to be less than the value shown.

16713000 WAILUKU RIVER AT HILO--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	84	82	84	90	87	88	46	45	46	55	51	53
2	85	83	84	89	87	88	48	45	47	58	55	57
3	86	83	85	90	86	88	55	49	51	61	58	60
4	86	84	85	83	74	76	58	52	54	64	62	63
5	87	85	86	73	58	64	60	56	58	64	60	62
6	86	85	86	58	55	56	63	60	61	66	62	64
7	85	83	84	57	55	56	66	63	64	71	66	68
8	84	82	83	58	56	57	65	46	61	75	71	73
9	84	81	83	59	58	58	31	9	15	77	74	76
10	83	81	82	59	57	58	22	17	19	79	77	78
11	83	80	82	60	41	56	26	22	24	81	79	80
12	83	81	82	34	17	27	30	25	28	83	81	82
13	84	82	82	23	14	18	33	29	31	84	82	83
14	84	82	83	33	24	28	35	33	34	84	81	82
15	84	83	84	38	33	36	34	32	33	84	82	83
16	86	83	85	40	38	39	36	33	34	85	82	84
17	86	84	85	43	40	41	38	35	36	84	78	81
18	88	85	86	48	43	46	38	19	31	79	77	78
19	88	86	87	47	14	21	20	15	18	80	78	79
20	88	85	87	23	15	16	23	19	21	81	79	80
21	88	86	87	29	18	25	27	22	25	82	80	81
22	88	85	87	31	29	29	31	27	29	84	81	82
23	88	85	87	33	24	28	32	30	31	83	76	80
24	86	84	85	33	25	30	46	32	40	79	77	78
25	86	85	86	38	33	36	41	35	37	80	77	78
26	87	85	86	42	38	40	42	36	39	81	77	79
27	88	86	87	41	28	32	39	30	36	80	77	79
28	89	86	87	37	28	33	36	28	31	81	77	79
29	89	86	88	43	37	40	40	35	37	83	79	81
30	88	86	87	47	43	45	46	41	43	82	76	80
31	89	86	88	---	---	---	51	46	48	81	78	79
MONTH	89	80	85	90	14	45	66	9	37	85	51	76
		FEBRUARY			MARCH			APRIL			MAY	
1	78	75	77	14	8	10	22	19	20	---	---	---
2	79	76	78	21	14	18	23	21	22	---	---	---
3	81	76	78	25	21	23	24	22	23	---	---	---
4	80	69	78	27	24	26	25	23	24	---	---	---
5	82	79	80	29	11	24	27	25	26	---	---	---
8	82	79	81	11	6	8	27	26	27	---	---	---
7	82	79	81	12	10	11	28	27	28	---	---	---
8	82	77	80	14	12	13	29	28	28	---	---	---
9	82	79	80	16	13	14	29	28	29	---	---	---
10	82	79	80	15	12	13	32	28	30	---	---	---
11	83	79	81	15	11	12	64	26	47	---	---	---
12	84	80	82	18	15	17	55	43	46	---	---	---
13	85	82	84	18	17	18	53	48	50	---	---	---
14	84	81	82	18	17	18	56	53	55	---	---	---
15	83	80	82	21	19	20	60	56	58	---	---	---
16	86	82	83	22	20	21	60	46	55	---	---	---
17	86	83	85	23	22	23	82	43	51	---	---	---
18	86	83	85	24	23	23	88	43	49	---	---	---
19	86	81	85	23	18	21	50	44	47	---	---	---
20	86	82	84	21	18	20	50	48	49	---	---	---
21	83	80	81	21	17	19	52	48	50	---	---	---
22	80	78	79	19	7	16	59	50	54	---	---	---
23	77	49	59	13	7	10	---	---	---	---	---	---
24	55	38	46	16	14	15	---	---	---	---	---	---
25	38	19	31	19	16	17	---	---	---	---	---	---
26	19	13	16	21	18	19	---	---	---	---	---	---
27	20	16	19	22	20	21	---	---	---	---	---	---
28	20	10	13	22	18	19	---	---	---	---	---	---
29	---	---	---	19	14	16	---	---	---	---	---	---
30	---	---	---	16	15	15	---	---	---	---	---	---
31	---	---	---	20	16	18	---	---	---	---	---	---
MONTH	86	10	70	29	6	17	88	19	39			

16713000 WAILUKU RIVER AT HILO--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	74	71	74	50	48	49	49	47	48
2	---	---	---	75	73	74	53	50	51	51	48	49
3	---	---	---	75	74	74	55	53	54	52	50	51
4	---	---	---	75	72	74	57	55	56	54	51	53
5	---	---	---	73	67	69	57	56	57	56	54	55
6	62	41	53	68	66	67	56	53	54	60	56	58
7	76	54	65	66	64	66	54	48	52	62	59	61
8	70	59	62	64	61	62	43	19	23	65	62	63
9	65	57	61	61	59	60	33	25	29	67	64	66
10	69	56	63	61	59	60	38	33	35	69	67	68
11	66	60	64	63	60	62	43	38	41	73	70	71
12	73	62	67	69	62	64	46	43	45	74	72	73
13	94	63	68	70	64	66	49	46	48	75	73	74
14	70	68	69	67	65	66	53	49	51	75	73	74
15	70	69	69	69	67	68	55	52	53	75	65	69
16	72	69	70	71	68	70	59	54	56	66	64	66
17	73	70	72	71	68	69	54	25	47	69	66	67
18	74	72	73	68	60	64	34	24	28	74	61	66
19	76	74	74	60	56	58	37	32	34	61	23	32
20	76	74	75	56	55	55	44	37	41	37	27	33
21	76	74	75	57	55	55	48	44	46	42	37	40
22	74	70	72	57	54	55	51	48	50	46	42	44
23	71	70	71	56	54	55	55	51	53	48	43	47
24	71	70	71	58	56	57	57	54	56	42	36	37
25	71	70	70	57	54	55	59	57	58	43	38	40
26	71	70	70	53	39	46	60	59	60	47	42	44
27	71	70	71	40	38	39	60	48	53	50	46	48
28	74	70	73	44	40	42	48	47	48	52	34	40
29	74	71	73	47	43	45	50	47	48	39	36	38
30	75	71	73	48	47	48	52	50	51	43	37	40
31	---	---	---	49	48	48	52	48	49	---	---	---
MONTH	94	41	69	75	38	60	60	19	48	75	23	54
YEAR	94	6	55									

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.0	22.5	23.0	24.5	22.5	23.5	20.5	20.5	20.5	18.5	18.0	18.5
2	24.0	22.5	23.5	23.5	22.5	23.0	20.5	20.0	20.0	19.0	18.5	19.0
3	25.0	23.0	23.5	24.0	22.5	23.0	20.0	19.5	20.0	19.0	18.5	18.5
4	25.0	23.0	24.0	23.0	22.0	22.5	20.0	19.5	19.5	19.0	18.5	19.0
5	24.5	23.5	24.0	22.0	21.5	22.0	20.0	19.5	19.5	19.5	19.0	19.0
6	25.0	24.0	24.5	22.0	21.0	21.5	20.0	19.5	20.0	19.0	18.5	18.5
7	25.5	23.5	24.5	22.0	21.0	21.5	20.5	20.0	20.0	19.5	18.5	19.0
8	25.5	23.5	24.5	21.5	21.0	21.0	20.0	20.0	20.0	20.0	19.0	19.5
9	25.0	23.5	24.0	21.5	21.0	21.5	19.5	17.5	18.0	20.5	19.0	19.5
10	25.0	23.0	23.5	22.0	21.0	21.5	18.5	17.5	18.0	20.5	19.5	20.0
11	24.0	23.0	23.5	22.0	21.0	21.5	18.5	17.5	18.0	21.0	19.0	20.0
12	23.5	23.0	23.0	21.0	19.5	20.0	19.0	18.0	18.5	20.5	19.5	20.0
13	24.5	22.5	23.5	20.0	19.0	19.5	19.0	18.5	19.0	21.0	20.0	20.5
14	24.0	22.5	23.0	20.0	19.5	20.0	19.5	19.0	19.0	21.0	20.0	20.5
15	24.5	22.5	23.0	20.5	20.0	20.0	19.5	19.0	19.5	21.0	20.0	20.5
16	24.5	22.5	23.0	20.5	20.0	20.5	19.5	19.0	19.5	20.5	19.5	20.0
17	24.0	22.5	23.0	20.5	20.0	20.5	19.5	19.0	19.0	20.0	19.5	19.5
18	23.0	22.5	23.0	20.5	20.0	20.0	19.5	18.0	19.0	20.0	19.0	19.5
19	24.5	22.5	23.5	20.5	18.5	19.0	18.0	17.5	17.5	20.0	19.0	19.5
20	24.5	23.0	23.5	19.0	18.5	18.5	18.0	17.5	18.0	20.5	19.5	20.0
21	25.0	23.0	24.0	19.5	18.5	19.0	18.0	17.5	17.5	20.5	19.5	19.5
22	24.5	23.5	23.5	20.0	19.0	19.5	18.5	18.0	18.0	20.5	19.0	20.0
23	24.5	23.0	23.5	20.0	19.0	19.5	19.0	18.5	18.5	20.5	19.5	20.0
24	24.5	23.5	24.0	19.5	19.0	19.0	19.5	19.0	19.0	21.5	20.0	20.5
25	24.5	23.0	23.5	20.5	19.5	20.0	19.5	19.0	19.0	21.5	20.0	20.5
26	24.5	23.0	23.5	20.5	20.0	20.5	19.5	19.0	19.5	21.5	20.0	20.5
27	24.5	22.5	23.0	20.5	20.0	20.5	19.0	18.5	19.0	21.5	20.0	20.5
28	24.0	22.0	23.0	20.5	20.0	20.0	19.0	18.5	19.0	21.5	20.0	20.5
29	24.0	22.0	23.0	20.5	20.5	20.5	19.0	18.0	18.5	21.0	20.0	20.5
30	24.0	22.5	23.0	20.5	20.5	20.5	19.0	18.5	18.5	20.5	20.0	20.0
31	24.5	22.5	23.5	---	---	---	18.5	18.0	18.5	20.5	19.5	20.0
MONTH	25.5	22.0	23.5	24.5	18.5	20.5	20.5	17.5	19.0	21.5	18.0	20.0

16713000 WAILUKU RIVER AT HILO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	20.5	19.0	19.5	17.0	16.5	17.0	19.5	18.5	19.0	21.0	20.0	20.5
2	20.0	19.5	19.5	18.0	17.0	17.5	19.5	19.0	19.0	20.5	20.0	20.0
3	21.0	19.5	20.0	18.5	17.5	18.0	19.0	18.0	18.5	20.5	20.0	20.0
4	21.0	20.0	20.5	19.0	17.5	18.5	18.5	18.0	18.5	21.0	20.5	20.5
5	22.0	20.5	21.0	19.0	17.0	18.0	18.5	18.5	18.5	21.0	20.5	20.5
6	21.5	20.5	21.0	17.0	16.5	18.5	19.0	18.5	18.5	20.5	20.0	20.0
7	22.0	20.5	21.0	17.5	16.5	17.0	19.5	18.5	19.0	20.0	19.5	19.5
8	22.5	20.5	21.5	17.5	17.0	17.5	19.5	19.0	19.0	19.5	19.0	19.0
9	22.0	21.0	21.0	18.5	17.0	17.5	19.5	19.0	19.5	19.5	18.5	19.0
10	22.0	20.5	21.5	18.0	17.0	17.5	19.5	19.0	19.5	19.0	18.0	18.5
11	22.0	20.5	21.0	18.0	17.5	17.5	20.5	19.5	20.0	19.0	18.5	19.0
12	22.0	20.5	21.5	19.0	17.5	18.5	20.0	19.0	19.5	19.5	18.5	19.0
13	22.5	20.5	21.5	19.0	18.5	18.5	20.5	19.5	20.0	20.0	19.0	19.5
14	22.5	20.5	21.5	18.5	17.5	18.0	21.0	20.5	20.5	20.5	19.5	20.0
15	21.5	20.5	21.0	18.5	17.5	18.0	21.0	20.5	21.0	21.0	20.0	20.5
16	23.0	20.5	21.5	18.5	18.0	18.5	21.0	19.0	20.0	21.0	20.0	20.5
17	23.5	21.0	22.0	19.0	18.0	18.5	19.0	18.5	19.0	21.0	20.0	20.5
18	23.0	21.0	21.5	19.0	18.5	18.5	19.0	18.0	18.5	---	---	---
19	22.5	20.5	21.5	19.0	18.5	19.0	19.0	18.0	18.5	---	---	---
20	21.5	21.0	21.0	19.0	18.5	18.5	19.0	18.5	19.0	---	---	---
21	21.5	20.5	21.0	19.0	18.5	18.5	19.0	18.5	18.5	---	---	---
22	21.0	20.5	20.5	19.0	17.5	18.5	20.0	18.5	19.5	---	---	---
23	20.5	20.0	20.0	18.0	17.0	17.5	20.0	19.5	20.0	---	---	---
24	20.0	19.0	19.5	18.5	17.5	18.0	20.0	19.5	20.0	---	---	---
25	18.5	18.0	18.5	18.5	17.5	18.0	20.0	19.5	20.0	---	---	---
26	17.5	17.0	17.0	18.5	17.5	18.0	20.5	20.0	20.0	---	---	---
27	18.0	16.5	17.5	19.0	18.5	18.5	20.5	20.0	20.0	---	---	---
28	17.5	16.5	17.0	19.0	18.5	19.0	20.5	19.5	20.0	---	---	---
29	---	---	---	19.0	18.5	18.5	21.0	20.0	20.5	---	---	---
30	---	---	---	19.0	18.0	18.5	21.0	20.0	20.5	20.0	19.5	19.5
31	---	---	---	19.0	18.5	18.5	---	---	---	20.5	19.5	20.0
MONTH	23.5	16.5	20.5	19.0	16.5	18.0	21.0	18.0	19.5	21.0	18.0	20.0
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.5	20.0	20.5	23.5	22.5	23.0	23.5	22.0	23.0	22.0	21.5	22.0
2	21.5	20.0	21.0	24.0	22.5	23.0	23.5	23.0	23.0	22.0	21.5	22.0
3	21.5	20.5	21.0	23.5	22.5	23.0	23.0	22.5	23.0	22.0	21.5	22.0
4	22.5	20.5	21.5	23.5	22.5	23.0	23.0	22.5	23.0	22.5	21.5	22.0
5	22.0	21.5	22.0	23.5	22.5	23.0	23.0	22.5	23.0	23.0	22.0	22.5
6	22.5	21.5	22.0	24.0	22.5	23.0	22.5	22.0	22.5	23.5	22.5	23.0
7	22.5	21.5	22.0	23.5	23.0	23.0	22.5	22.0	22.5	23.5	22.5	23.0
8	23.0	22.0	22.5	24.0	23.0	23.5	21.5	20.0	20.5	24.0	22.5	23.5
9	24.0	22.0	23.0	24.0	23.0	23.5	21.0	20.0	20.5	24.5	23.0	23.5
10	24.0	22.5	23.0	23.5	23.0	23.5	22.0	20.5	21.0	24.5	23.0	23.5
11	23.5	22.5	23.0	24.5	21.5	23.5	21.5	21.0	21.5	24.0	23.0	23.0
12	23.5	22.0	22.5	24.0	23.0	23.5	22.5	21.5	22.0	24.5	22.5	23.0
13	23.5	22.0	22.5	24.5	22.5	23.5	23.0	21.5	22.5	24.5	22.5	23.0
14	23.5	22.5	23.0	25.5	23.0	24.0	23.0	22.0	22.5	24.5	22.5	23.5
15	23.5	22.5	23.0	25.5	23.0	24.0	23.5	22.0	23.0	24.0	23.5	23.5
16	24.0	22.5	23.0	25.0	23.5	24.0	23.0	22.5	23.0	24.0	23.0	23.5
17	25.0	22.5	23.5	24.5	24.0	24.0	22.5	21.5	22.5	24.0	23.0	23.5
18	24.0	22.5	23.5	24.0	23.5	24.0	22.0	21.0	21.5	23.5	23.0	23.5
19	24.5	23.0	24.0	24.0	23.0	23.5	22.5	21.5	22.0	23.5	21.0	22.0
20	24.5	23.0	23.5	24.0	23.0	23.5	22.5	22.0	22.0	21.5	21.0	21.0
21	24.5	23.0	23.5	24.5	23.0	23.5	23.0	22.0	22.5	21.0	21.0	21.0
22	25.0	20.0	23.0	24.0	23.0	23.5	22.5	22.0	22.5	21.0	21.0	21.0
23	24.5	22.0	23.0	24.0	23.0	23.5	22.5	22.0	22.0	21.5	20.5	21.0
24	24.0	22.5	23.0	24.0	23.5	23.5	22.5	21.5	22.5	21.5	20.5	21.0
25	23.5	22.5	22.5	23.5	23.0	23.5	23.0	22.0	22.5	21.5	21.0	21.5
26	23.5	22.5	23.0	23.0	21.5	22.5	23.0	22.5	22.5	21.5	21.0	21.5
27	24.0	22.5	23.0	22.5	21.5	22.0	23.0	22.5	22.5	22.0	21.0	21.5
28	25.0	22.5	23.5	22.5	22.0	22.0	23.5	22.5	23.0	21.5	21.0	21.5
29	23.5	22.5	23.0	22.5	22.0	22.0	23.5	22.5	23.0	21.0	21.0	21.0
30	23.5	22.0	23.0	22.5	22.0	22.0	23.5	22.5	23.0	21.0	20.5	21.0
31	---	---	---	23.0	22.0	22.5	22.5	21.5	22.0	---	---	---
MONTH	25.0	20.0	22.5	25.5	21.5	23.0	23.5	20.0	22.5	24.5	20.5	22.5
YEAR	25.5	16.5	21.0									

16717000 HONOLII STREAM NEAR PAPAIKOU
(Hydrologic bench-mark station)

LOCATION.--Lat 19°46'00", long 155°09'16", Hydrologic Unit 20010000, on left bank 0.7 mi downstream from Pohakupaa Stream, 4.1 mi west of Papaikou, and 4.8 mi northwest of Hilo Post Office.

DRAINAGE AREA.--11.6 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1911 to March 1913 (published as "at Kaiwiki, near Hilo"), February 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,540 ft, from topographic map. Prior to Aug. 27, 1911, nonrecording gage and Aug. 27, 1911 to Mar. 24, 1913, water-stage recorder, at site 0.5 mi upstream at different datum.

REMARKS.--Records good. No diversion upstream. During period 1911-13, Honolii ditch diverted an average of about 3.2 ft^3/s upstream for fluming cane and domestic use.

AVERAGE DISCHARGE.--19 years, 125 ft^3/s (90,560 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,600 ft^3/s May 23, 1978, gage height, 20.00 ft, from floodmarks and from rating curve extended above 4,810 ft^3/s on basis of slope-area measurement at gage height 20.00 ft; minimum, 0.8 ft^3/s Jan. 31, 1912.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base discharge of 4,400 ft^3/s and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 19	1800	5240	12.71	Mar. 6	2000	4930	12.37
Mar. 1	0230	*7350	*14.85				

Minimum discharge, 5.2 ft^3/s, Oct. 17, 18, Nov. 1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	5.5	64	32	8.6	4360	72	83	83	14	35	73
2	7.3	5.4	42	28	7.7	674	117	284	55	14	30	64
3	7.0	26	33	25	7.3	144	60	113	48	13	26	64
4	18	95	28	36	11	77	49	116	37	43	38	45
5	42	34	23	52	9.8	490	43	152	32	64	91	36
6	14	15	21	26	8.8	3270	46	141	28	27	64	29
7	9.4	9.5	29	21	8.6	1370	39	179	25	43	323	25
8	8.8	12	219	18	7.7	797	32	624	22	35	1900	22
9	7.3	20	2530	17	8.4	483	42	419	21	34	306	22
10	6.6	19	410	16	7.2	687	46	534	19	25	121	20
11	6.1	327	150	15	6.7	1040	213	477	17	19	86	19
12	5.9	631	80	14	8.5	216	294	346	17	16	50	17
13	6.0	352	63	13	6.9	202	69	132	16	15	43	16
14	5.7	53	84	13	6.6	263	47	92	15	14	35	20
15	5.8	81	62	11	6.4	127	42	65	15	15	33	37
16	5.8	59	43	11	6.2	90	345	52	15	17	47	26
17	5.5	42	52	10	6.2	76	477	44	14	18	227	21
18	5.4	104	290	9.7	6.0	59	539	40	13	88	234	74
19	5.8	3050	732	8.4	6.0	168	229	36	13	40	94	840
20	6.2	1710	366	10	41	88	263	37	13	24	50	132
21	10	259	115	9.2	33	226	129	40	12	21	37	77
22	16	212	75	8.8	46	1030	74	38	11	48	32	66
23	24	490	66	9.1	109	1170	69	65	11	31	36	128
24	16	170	96	8.7	192	336	120	121	11	39	28	159
25	11	100	93	8.1	670	146	66	48	18	112	25	99
26	7.7	81	141	7.9	619	96	65	35	13	212	43	59
27	6.7	228	165	7.7	391	80	59	118	11	116	122	48
28	6.0	85	91	7.4	3700	172	86	91	11	73	59	271
29	5.7	54	71	7.2	---	314	49	93	12	61	81	211
30	5.9	52	48	13	---	219	38	85	18	82	62	99
31	6.1	---	38	11	---	109	---	122	---	52	100	---
TOTAL	300.7	8381.4	6320	485.2	5943.6	18580	3819	4822	646	1425	4438	2819
MEAN	9.70	279	204	15.7	212	599	127	156	21.5	46.0	143	94.0
MAX	42	3050	2530	52	3700	4360	539	624	83	212	1900	840
MIN	5.4	5.4	21	7.2	8.0	59	32	35	11	13	25	16
AC-FT	596	16620	12540	962	11790	36850	7570	9560	1280	2830	8800	5590

CAL YR 1984	TOTAL	31365.4	MEAN	85.7	MAX	3050	MIN	5.4	AC-FT	62210
WTR YR 1985	TOTAL	57979.9	MEAN	159	MAX	4360	MIN	5.4	AC-FT	115000

16720000 KAWAINUI STREAM NEAR KAMUELA

LOCATION.--Lat 20°05'18", long 155°40'58", Hydrologic Unit 20010000, on left bank 250 ft upstream from Upper Hamakua ditch intake and 4.5 mi north of Kamuela.

DRAINAGE AREA.--1.58 mi^2.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,060 ft, from topographic map.

REMARKS.--Records good. No diversion upstream. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--21 years, 14.5 ft^3/s (10,510 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,160 ft^3/s Nov. 18, 1979, gage height, 10.03 ft, from rating curve extended above 53 ft^3/s on basis of computations of peak flow over dam and slope-area measurement at gage height 10.03 ft; minimum, 0.01 ft^3/s Jan. 20, 21, 24-28, Feb. 20-22, 1977, Dec. 16-20, 1977, Feb. 23, 24, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 490 ft^3/s Mar. 6, gage height, 5.20 ft, no other peak greater than base discharge of 440 ft^3/s; minimum, 0.12 ft^3/s Oct. 29 to Nov. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.13	12	1.2	2.3	70	18	14	7.0	15	18	6.5
2	.22	.12	3.2	.97	1.5	19	63	54	3.8	16	18	5.3
3	.28	.14	2.0	.85	1.1	9.1	8.5	11	3.6	14	24	18
4	.25	.22	2.5	9.0	.80	18	3.5	4.0	2.5	36	22	5.6
5	.23	1.1	2.3	26	.57	58	2.5	4.9	2.5	26	15	3.0
6	.22	.68	1.7	4.6	.42	243	2.4	3.5	4.6	6.3	32	3.2
7	.20	.41	29	2.4	.35	149	1.9	7.9	2.5	8.6	80	2.6
8	.20	1.9	32	1.6	.30	111	2.4	62	1.8	6.2	97	2.6
9	.18	13	164	1.2	.26	24	7.5	20	4.6	2.9	36	1.8
10	.18	9.4	25	.96	.23	62	6.1	30	3.4	2.2	12	1.4
11	.17	33	5.7	.70	.21	65	4.1	50	2.4	1.9	4.4	1.2
12	.18	25	3.1	.56	.19	32	2.5	35	1.9	1.4	14	1.1
13	.23	14	2.1	.46	.18	46	1.9	25	2.0	1.2	19	.87
14	.19	3.9	1.5	23	.18	82	3.6	6.8	1.9	1.1	22	.74
15	.18	3.0	1.2	19	.16	30	5.1	4.8	1.5	5.8	20	.73
16	.17	3.7	1.1	4.2	.17	21	54	2.8	1.2	16	22	.73
17	.16	2.1	.93	2.2	.20	19	37	2.1	1.1	16	45	5.0
18	.15	1.6	1.2	1.5	.17	17	28	1.7	.86	53	5.1	15
19	.14	5.5	17	1.2	.16	28	12	1.4	.74	8.9	2.9	93
20	.15	2.3	21	.87	.18	20	11	1.2	2.2	3.6	2.1	20
21	.14	2.2	5.5	.86	.16	42	6.5	1.1	11	9.9	1.9	12
22	.14	12	2.6	.54	12	49	3.9	1.1	2.7	17	4.8	7.5
23	.14	2.3	1.8	.62	8.8	25	10	25	1.8	8.4	5.3	3.9
24	.14	5.2	1.4	.49	13	6.5	12	24	1.3	25	2.7	3.0
25	.14	2.6	59	.41	42	3.5	3.7	11	1.1	31	2.0	1.9
26	.14	1.8	78	.36	85	2.8	2.4	6.4	1.2	12	7.2	1.4
27	.13	1.6	20	.31	28	2.1	2.8	36	3.6	18	43	1.8
28	.13	1.5	5.2	.28	76	1.9	7.1	40	2.7	13	20	7.8
29	.13	1.2	2.8	.26	---	6.0	8.1	28	2.0	19	41	15
30	.12	6.7	2.0	25	---	6.8	3.0	12	16	43	16	20
31	.12	---	1.5	6.7	---	4.6	---	16	---	23	12	---
TOTAL	5.37	158.30	508.33	138.10	254.55	1273.3	332.5	542.7	95.50	481.4	666.4	262.67
MEAN	.17	5.28	16.4	4.45	9.09	41.1	11.1	17.5	3.18	14.9	21.5	8.76
MAX	.28	33	164	26	76	243	63	62	16	53	97	93
MIN	.12	.12	.93	.26	.16	1.9	1.9	1.1	.74	1.1	1.9	.73
AC-FT	11	314	1010	274	505	2530	660	1080	189	915	1320	521

CAL YR 1984	TOTAL	3628.38	MEAN	9.91	MAX	164	MIN	.12	AC-FT	7200
WTR YR 1985	TOTAL	4699.12	MEAN	12.9	MAX	243	MIN	.12	AC-FT	9320

16720300 KAWAIKI STREAM NEAR KAMUELA

LOCATION.--Lat 20°05'13", long 155°40'59", Hydrologic Unit 20010000, on right bank 0.2 mi upstream from Upper Hamakua ditch intake and 4.4 mi north of Kamuela.

DRAINAGE AREA.--0.45 mi^2.

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WDR HI-80-1: 1969-79(P).

GAGE.--Water-stage recorder. Elevation of gage is 4,090 ft, from topographic map.

REMARKS.--Recorda good. No diversion upstream. Observations of specific conductence, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--17 years, 4.23 ft^3/s (3,060 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discherge, 1,470 ft^3/s Nov. 18, 1979, gage height, 8.32 ft, from rating curve extended ebove 33 ft^3/s on basis of slope-area measurement at gage height 8.32 ft; minimum, 0.01 ft^3/s Mar. 10-15, 1983.

EXTREMES FOR CURRENT YEAR.--Peak dischergea greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 9	0730	112	2.80	Mar. 6	1730	*152	*3.22

Minimum discharge, 0.02 ft^3/s for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.02	4.6	.37	.82	15	7.7	6.1	3.0	5.6	6.4	3.0
2	.08	.02	1.6	.35	.51	6.4	18	15	1.6	5.8	5.4	3.2
3	.07	.03	.75	.37	.39	4.2	3.2	3.7	1.6	5.8	7.5	7.5
4	.04	.03	1.2	5.2	.32	6.5	1.7	1.6	1.0	12	6.3	2.5
5	.04	.36	1.0	8.3	.26	14	1.3	3.0	2.0	8.7	5.7	1.4
6	.04	.13	.65	1.9	.23	65	1.2	1.9	3.4	2.8	9.8	2.0
7	.04	.07	7.3	.80	.21	36	.90	3.5	1.2	4.6	21	1.5
8	.03	1.4	7.8	.56	.19	28	1.7	18	.72	3.0	23	1.4
9	.03	5.0	48	.42	.17	5.6	5.0	5.6	3.1	1.2	10	.76
10	.03	3.1	5.2	.30	.16	14	4.5	8.9	1.9	.75	4.3	.58
11	.03	11	2.0	.22	.15	14	3.0	12	1.1	.62	1.8	.47
12	.04	7.2	.90	.22	.14	6.5	1.7	9.1	.72	.44	6.5	.44
13	.03	3.9	.55	.22	.13	11	1.3	7.1	1.3	.36	6.9	.40
14	.03	1.2	.35	7.2	.12	21	3.7	2.4	.76	.35	9.6	.40
15	.03	1.2	.24	5.6	.11	7.9	3.8	2.0	.52	2.5	6.6	.40
16	.02	2.2	.20	1.4	.12	6.6	17	1.1	.40	6.1	7.6	.36
17	.02	1.8	.18	.56	.15	6.6	9.8	.74	.34	6.5	13	4.5
18	.02	8.6	.26	.36	.13	6.0	7.6	.58	.30	14	1.9	8.3
19	.02	40	3.5	.29	.12	7.0	4.2	.47	.26	3.1	1.1	25
20	.02	11	5.2	.25	.11	7.4	3.7	.47	1.8	1.3	.73	8.0
21	.03	4.2	1.4	.25	.11	11	2.4	.47	5.4	4.4	.77	5.7
22	.02	2.0	.59	.24	5.8	14	2.2	.51	1.2	6.0	3.0	4.1
23	.02	4.4	.38	.32	5.3	6.2	4.8	11	.57	4.3	2.3	2.2
24	.02	2.2	.42	.25	6.2	2.5	4.3	7.3	.39	9.4	1.1	1.9
25	.02	1.2	14	.22	14	1.7	1.5	4.9	.34	10	.70	1.1
26	.02	.90	16	.22	19	1.3	.86	3.3	.35	3.9	4.6	1.4
27	.02	.65	6.0	.22	8.8	1.1	1.3	11	1.1	5.8	12	1.8
28	.02	.47	1.8	.22	16	.94	3.5	10	1.0	5.3	9.0	6.4
29	.02	.40	.81	.21	---	3.2	3.4	7.0	.81	6.6	12	8.1
30	.02	3.9	.51	5.2	---	3.1	1.3	3.5	6.5	12	7.2	9.2
31	.02	---	.40	2.0	---	2.3	---	4.3	---	6.6	4.4	---
TOTAL	.96	118.58	133.79	44.34	79.75	336.04	126.56	166.54	44.68	159.82	212.20	114.01
MEAN	.031	3.95	4.32	1.43	2.85	10.8	4.22	5.37	1.49	5.16	6.85	3.80
MAX	.08	40	48	8.3	19	65	18	18	6.5	14	23	25
MIN	.02	.02	.18	.21	.11	.94	.86	.47	.26	.35	.70	.36
AC-FT	1.9	235	265	88	158	667	251	330	89	317	421	226

CAL YR 1984	TOTAL	1034.47	MEAN	2.83	MAX	48	MIN	.02	AC-FT	2050
WTR YR 1985	TOTAL	1537.27	MEAN	4.21	MAX	65	MIN	.02	AC-FT	3050

16720500 UPPER HAMAKUA DITCH BELOW KAWAIKI STREAM, NEAR KAMUELA

LOCATION.--Lat 20°05'15", long 155°40'42", Hydrologic Unit 20010000, on right bank 800 ft downstream from Kawaiki Stream intake and 4.4 mi north of Kamuela.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,020 ft, from topographic map.

REMARKS.--Records good. Ditch diverts from Kawainui and Kawaiki Streams for irrigation in vicinity of Kamuela. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--21 years, 7.05 ft^3/s (5,110 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 49 ft^3/s Nov. 2, 1967; no flow Nov. 18, 1979 to Oct. 23, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 19 ft^3/s Mar. 6; minimum daily, 0.08 ft^3/s Oct. 24 to Nov. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	.08	14	1.2	2.7	17	14	11	9.7	15	14	9.3
2	.24	.08	4.3	.89	1.4	15	17	17	5.6	15	14	6.7
3	.28	.10	2.4	.84	.94	13	11	12	5.0	14	15	16
4	.24	.24	3.6	6.7	.78	16	5.0	5.6	3.4	17	16	7.8
5	.20	1.4	3.0	16	.62	16	3.6	8.0	4.6	15	15	3.9
6	.20	.87	1.9	6.6	.45	19	3.2	5.0	8.2	8.6	15	4.7
7	.20	.42	13	2.9	.38	18	2.4	11	3.5	13	17	3.5
8	.17	3.8	16	1.7	.34	17	4.0	17	2.3	8.3	17	3.5
9	.17	12	18	1.3	.31	16	13	15	7.4	3.4	16	1.9
10	.14	11	16	.89	.28	17	11	17	4.8	2.3	13	1.4
11	.14	15	8.6	.72	.24	17	6.4	17	3.1	1.7	5.8	1.0
12	.14	17	3.8	.62	.24	17	3.5	16	2.3	1.3	13	.89
13	.24	14	2.5	.56	.20	17	2.7	16	3.2	.94	15	.84
14	.17	4.8	1.6	7.4	.20	17	7.4	8.8	2.5	.89	15	.72
15	.14	3.4	1.2	16	.20	17	6.5	6.6	1.7	3.7	16	.78
16	.14	6.6	.94	6.6	.20	16	17	3.6	1.4	15	14	.72
17	.10	6.4	.84	2.7	.20	17	17	2.7	1.1	15	16	5.2
18	.10	8.4	1.2	1.6	.20	18	16	1.9	.94	17	6.4	15
19	.10	18	11	1.1	.17	16	14	1.5	.89	11	3.5	17
20	.10	17	16	.84	.17	14	14	1.4	3.1	4.1	2.4	15
21	.10	14	8.8	.67	.20	17	8.6	1.3	12	8.0	2.1	14
22	.09	7.2	3.4	.62	5.6	17	6.6	1.4	3.5	15	8.6	12
23	.09	13	1.9	.67	12	16	12	11	1.9	12	7.1	6.2
24	.08	8.2	1.4	.56	11	10	13	16	1.4	16	3.0	5.0
25	.08	4.1	8.3	.45	17	5.6	4.8	14	1.1	16	1.9	2.9
26	.08	2.3	18	.38	17	3.8	3.0	8.2	1.3	13	6.8	2.7
27	.08	1.9	16	.34	17	2.7	3.8	16	4.7	14	16	3.4
28	.08	1.6	8.4	.31	17	2.4	11	17	3.1	15	15	12
29	.08	1.2	3.6	.24	---	8.0	11	16	2.3	15	16	15
30	.08	7.4	2.3	13	---	9.2	4.1	13	15	17	14	15
31	.08	---	1.6	8.9	---	7.4	---	14	---	15	13	---
TOTAL	4.37	201.49	213.38	103.30	107.02	427.1	266.6	323.1	121.03	338.23	360.4	204.05
MEAN	.14	6.72	6.88	3.33	3.82	13.8	8.89	10.4	4.03	10.9	11.6	6.80
MAX	.28	18	18	16	17	19	17	17	15	17	17	17
MIN	.08	.08	.84	.24	.17	2.4	2.4	1.3	.89	.89	1.9	.72
AC-FT	8.7	400	423	205	212	847	529	641	240	671	715	405

CAL YR 1984	TOTAL	1340.66	MEAN	3.66	MAX	18	MIN	.08	AC-FT	2660
WTR YR 1985	TOTAL	2670.07	MEAN	7.32	MAX	19	MIN	.08	AC-FT	5300

16724800 UPPER HAMAKUA DITCH ABOVE ALAKAHI STREAM, NEAR KAMUELA

LOCATION.--Lat 20°04'31", long 155°40'26", Hydrologic Unit 20010000, on right bank 0.1 mi upstream from Alakahi Stream and 3.6 mi north of Kamuela.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,890 ft, from topographic map.

REMARKS.--Records good. Ditch diverts from Kawainui and Kawaiki Streams for irrigation in vicinity of Kamuela. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--17 years, 5.02 ft^3/s (3,640 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 41 ft^3/s Aug. 18, 1972; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 16 ft^3/s Mar. 6; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	4.5	.02	.18	5.9	6.5	5.1	5.2	5.9	7.1	5.1
2	.00	.00	1.5	.00	.00	5.3	12	10	2.8	6.6	7.8	3.7
3	.00	.00	.40	.00	.00	3.7	6.4	6.8	2.7	6.3	8.0	8.5
4	.00	.01	.71	1.1	.00	5.2	2.8	3.0	1.4	8.9	8.6	4.5
5	.00	.01	.71	4.9	.00	6.3	1.7	4.0	1.7	6.3	8.2	2.1
6	.00	.00	.14	2.2	.00	16	1.5	2.7	3.8	4.0	8.7	2.5
7	.00	.00	3.1	.69	.00	13	.87	4.5	1.4	5.9	11	1.7
8	.00	.01	4.7	.19	.00	13	1.4	11	.64	4.2	13	1.6
9	.00	.72	10	.01	.00	8.5	5.9	8.3	2.8	1.4	11	.67
10	.00	2.0	6.3	.00	.00	10	5.1	8.9	2.2	.76	8.1	.28
11	.00	3.7	3.4	.00	.00	11	3.3	10	1.1	.46	3.6	.15
12	.00	5.1	1.4	.00	.00	9.0	1.5	9.7	.60	.19	7.7	.02
13	.00	4.3	.62	.00	.00	9.9	.83	9.3	.85	.04	9.1	.00
14	.00	1.4	.27	1.1	.00	12	3.1	5.2	.61	.00	9.8	.00
15	.00	.72	.12	4.7	.00	9.5	2.6	3.8	.23	.93	9.7	.00
16	.00	1.7	.00	2.0	.00	9.1	10	1.9	.05	6.6	8.8	.00
17	.00	1.8	.00	.53	.00	8.6	8.8	1.1	.00	6.5	11	1.3
18	.00	2.3	.00	.10	.00	8.1	8.7	.62	.00	8.8	4.1	5.4
19	.00	9.4	2.3	.00	.00	8.6	7.3	.30	.00	5.5	2.0	9.8
20	.00	7.2	4.9	.00	.00	7.2	6.7	.18	.43	2.1	1.1	7.8
21	.00	5.8	2.9	.00	.00	10	4.9	.11	4.7	3.5	.91	6.7
22	.00	3.1	.96	.00	.58	11	3.1	.08	1.1	6.9	4.0	5.8
23	.00	4.8	.27	.00	1.7	9.0	6.0	4.6	.27	5.5	3.8	3.3
24	.00	3.5	.03	.00	1.3	5.3	6.8	7.5	.03	8.5	1.5	2.6
25	.00	1.2	3.5	.00	3.9	3.0	2.8	6.7	.01	8.8	.76	1.0
26	.00	.39	7.8	.00	5.8	2.1	1.4	4.3	.01	6.9	2.8	.63
27	.00	.19	6.3	.00	5.2	1.3	1.5	8.6	.91	7.2	8.4	1.2
28	.00	.08	3.3	.00	5.8	.97	4.6	9.2	.70	7.5	8.0	4.2
29	.00	.00	1.4	.00	---	2.9	5.2	8.8	.26	7.6	10	6.5
30	.00	1.6	.60	2.0	---	4.6	2.0	6.8	5.0	9.2	8.0	7.0
31	.00	---	.22	1.9	---	3.0	---	7.7	---	8.4	7.3	---
TOTAL	.00	61.03	72.35	21.44	24.46	233.07	135.30	170.79	41.50	163.38	213.87	94.05
MEAN	.00	2.03	2.33	.69	.87	7.52	4.51	5.51	1.38	5.27	6.90	3.13
MAX	.00	9.4	10	4.9	5.8	16	12	11	5.2	9.2	13	9.8
MIN	.00	.00	.00	.00	.00	.97	.83	.08	.00	.00	.76	.00
AC-FT	.00	121	144	43	49	462	268	339	82	324	424	187

CAL YR 1984	TOTAL	541.62	MEAN	1.48	MAX	10	MIN	.00	AC-FT	1070
WTR YR 1985	TOTAL	1231.24	MEAN	3.37	MAX	16	MIN	.00	AC-FT	2440

16725000 ALAKAHI STREAM NEAR KAMUELA

LOCATION.--Lat 20°04'27", long 155°40'25", Hydrologic Unit 20010000, on right bank 25 ft upstream from upper Hamakua ditch intake and 3.5 mi north of Kamuela.

DRAINAGE AREA.--0.87 mi^2.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,900 ft, from topographic map.

REMARKS.--Records fair. Parker Ranch pipeline diverts from tributary 0.4 mi upstream for ranch use in Kamuela area. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--21 years, 6.76 ft^3/s (4,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft^3/s Nov. 18, 1979, gage height, 9.90 ft, from rating curve extended above 28 ft^3/s on basis of computations of peak flow over dam and slope-area measurement at gage height 9.90 ft; minimum, 0.03 ft^3/s on several days in 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 324 ft^3/s Mar. 6, gage height, 5.77 ft, no other peak discharge greater than base discharge of 120 ft^3/s; minimum, 0.22 ft^3/s Jan. 14, 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	.23	8.7	.70	1.4	13	8.6	6.5	3.3	7.0	8.0	3.6
2	.36	.22	2.7	.54	.72	5.9	32	25	2.6	7.0	7.9	3.9
3	.40	.55	1.5	.44	.55	3.4	4.4	5.5	2.6	7.2	8.8	9.2
4	.36	.98	1.6	3.7	.35	5.3	2.8	3.0	1.9	21	7.6	3.7
5	.35	1.1	1.8	11	.27	19	2.3	3.5	2.0	15	6.4	2.6
6	.36	.55	1.1	2.8	.25	107	2.0	3.2	3.8	3.9	13	2.8
7	.35	.33	7.8	1.7	.25	63	1.6	4.1	2.1	4.9	33	2.5
8	.35	1.0	7.7	.98	.25	56	2.0	28	1.4	4.3	35	2.4
9	.35	5.6	60	.68	.24	13	4.8	8.6	3.0	2.5	15	1.7
10	.35	4.4	8.1	.50	.22	27	4.9	9.2	2.6	1.9	6.0	1.3
11	.35	14	3.1	.35	.22	30	3.8	14	1.8	1.5	3.2	1.1
12	.37	8.9	2.2	.27	.22	11	2.5	11	1.3	1.1	7.8	.93
13	.36	5.7	1.4	.24	.22	20	1.9	8.9	1.6	.88	9.3	.83
14	.34	2.9	.94	8.7	.22	36	3.5	3.7	1.4	.78	15	.76
15	.31	2.1	.72	8.7	.23	12	3.4	2.8	.94	2.6	8.8	.76
16	.31	2.1	.57	2.9	.23	8.5	26	1.9	.76	9.3	9.4	.74
17	.28	2.0	.52	1.7	.25	7.0	11	1.4	.65	8.8	20	4.1
18	.28	5.1	.41	.97	.22	6.7	8.2	1.0	.57	21	3.3	7.8
19	.28	51	1.3	.66	.22	7.6	4.8	.82	.54	4.4	2.5	36
20	.29	14	4.0	.51	.22	7.3	4.0	.73	1.4	2.7	2.0	10
21	.28	5.1	2.3	.33	.23	16	3.6	.66	7.2	4.9	1.8	5.7
22	.28	2.9	1.3	.29	4.5	20	2.9	.64	2.4	8.3	2.4	4.3
23	.26	3.4	.77	.40	4.4	8.0	4.6	12	1.3	7.0	3.2	3.1
24	.25	2.6	.60	.29	4.4	3.5	5.2	9.8	.85	15	2.1	2.5
25	.25	1.8	16	.24	13	2.7	2.8	5.3	.81	15	1.6	2.0
26	.25	1.1	25	.22	26	2.2	2.1	3.5	.84	5.1	3.6	1.6
27	.25	.92	8.2	.22	8.3	1.9	1.8	12	1.7	6.2	16	2.5
28	.24	.75	3.3	.21	15	1.6	3.5	13	1.7	5.9	9.5	5.8
29	.22	.60	2.2	.19	---	2.1	4.2	8.2	1.4	7.8	22	9.9
30	.22	3.7	1.4	2.8	---	3.0	2.5	4.6	7.0	15	8.8	10
31	.22	---	.96	2.8	---	2.4	---	4.2	---	9.6	6.8	---
TOTAL	9.47	145.63	176.19	56.01	82.58	522.1	167.7	216.75	61.26	227.56	299.8	144.12
MEAN	.31	4.85	5.68	1.81	2.95	16.8	5.59	6.99	2.04	7.34	9.67	4.80
MAX	.40	51	60	11	26	107	32	28	7.2	21	35	36
MIN	.22	.22	.41	.19	.22	1.6	1.6	.64	.54	.78	1.8	.74
AC-FT	19	289	349	111	164	1040	333	430	122	451	595	286

CAL YR 1984	TOTAL	1599.49	MEAN	4.37	MAX	60	MIN	.22	AC-FT	3170
WTR YR 1985	TOTAL	2109.17	MEAN	5.78	MAX	107	MIN	.19	AC-FT	4180

16726000 UPPER HAMAKUA DITCH ABOVE WAIMEA RESERVOIR DIVERSION, NEAR KAMUELA

LOCATION.--Lat 20°03'31", long 155°37'40", Hydrologic Unit 20010000, on left bank 120 ft upstream from diversion intake leading to Waimea Reservoir and 3.7 mi northeast of Kamuela Post Office.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,020 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Ditch diverts from Kawainui, Kawaiki, and Alakahi Streams for use in vicinity of Kamuela. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 10.2 ft^3/s (7,390 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 57 ft^3/s Mar. 6, 1985; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 57 ft^3/s Mar. 6; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	20	e1.0	1.8	45	e20	34	30	29	.21	e10
2	.00	.00	5.2	e.85	.76	36	e40	47	25	36	.14	e15
3	.00	.01	2.3	e.75	.50	27	e15	37	28	36	.13	e25
4	.00	.17	2.2	e8.5	.33	35	e12	28	12	47	.13	e10
5	.00	.07	3.1	e15	.21	41	e10	29	12	31	13	e8.0
6	.00	.01	1.5	e5.0	.14	57	e8.0	27	30	13	27	e8.5
7	.03	.00	14	e3.0	.10	55	e7.5	27	12	18	43	e8.0
8	.05	.28	15	e2.0	.05	54	e12	43	3.3	15	48	e7.5
9	.01	9.9	52	e1.0	.00	44	e15	38	19	5.9	e40	e7.0
10	.00	9.1	40	e.85	.00	47	e10	35	24	3.5	e30	e6.5
11	.00	22	23	.71	.00	52	e7.0	38	7.6	2.6	e15	e6.0
12	.00	25	5.3	.55	.00	45	e5.0	38	3.0	1.7	e20	e5.5
13	.00	16	3.2	.47	.00	46	3.7	37	4.0	1.3	e25	e5.0
14	.00	5.0	2.1	13	.00	51	27	30	3.0	1.1	e30	e4.5
15	.00	2.9	1.4	28	.00	54	24	27	1.8	7.4	e20	e4.5
16	.00	3.4	1.1	8.5	.00	e45	49	16	1.3	35	e20	e4.0
17	.00	3.8	.90	2.7	.07	e40	41	4.0	.98	36	e40	e10
18	.00	7.3	.88	1.5	.01	e40	38	2.5	.79	43	e10	e15
19	.00	42	.87	.94	.00	e35	34	1.8	.69	31	e7.5	e45
20	.00	32	.85	.68	.00	e35	31	1.5	9.2	21	e7.0	e25
21	.00	17	.81	.53	.00	e45	30	1.4	28	24	e5.0	e15
22	.00	7.3	.81	.47	4.4	e40	24	1.5	5.6	37	e6.0	e10
23	.00	7.0	.81	1.3	14	e40	32	21	2.5	38	e10	e8.0
24	.00	5.4	.81	.71	5.1	32	34	37	.82	44	e8.0	e7.0
25	.00	2.6	e20	.46	19	22	24	40	.10	45	e7.0	e6.5
26	.00	1.4	e30	.32	40	8.1	7.0	32	.09	35	e15	e6.0
27	.00	1.4	e15	.24	30	4.3	4.0	42	.08	35	e30	e7.5
28	.00	1.2	e8.0	.19	40	3.5	29	41	.87	36	e20	e10
29	.00	.73	e5.0	.12	---	9.3	32	37	1.8	13	e40	e20
30	.00	8.4	e3.0	11	---	25	21	34	19	.16	e25	e25
31	.00	---	e2.0	10	---	13	---	33	---	.14	e20	---
TOTAL	.09	231.37	281.14	120.34	156.47	1126.2	646.2	860.7	284.52	719.80	582.11	345.0
MEAN	.003	7.71	9.07	3.88	5.59	36.3	21.5	27.8	9.48	23.2	18.8	11.5
MAX	.05	42	52	28	40	57	49	47	30	47	48	45
MIN	.00	.00	.81	.12	.00	3.5	3.7	1.4	.08	.14	.13	4.0
AC-FT	.2	459	558	239	310	2230	1280	1710	564	1430	1150	684

CAL YR 1984	TOTAL	2642.11	MEAN	7.22	MAX	52	MIN	.00	AC-FT	5240
WTR YR 1985	TOTAL	5353.94	MEAN	14.7	MAX	57	MIN	.00	AC-FT	10620

e Estimated

16727000 UPPER HAMAKUA DITCH ABOVE PUUKAPU RESERVOIR, NEAR KAMUELA

LOCATION.--Lat 20°02'53", long 155°37'17", Hydrologic Unit 20010000, on right bank 25 ft downstream from pipe railed bridge and 4.0 mi northeast of Kamuela Post Office.

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,890 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Ditch diverts into Waimea Reservoir for use in vicinity of Kamuela. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 1.88 ft^3/s (1,360 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 42 ft^3/s Apr. 16, 1985; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 42 ft^3/s Apr. 16; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	6.6	.00	.00	17	16	18	4.8	.00	.00	6.0
2	.00	.00	4.0	.00	.00	13	32	40	3.0	.00	.00	4.4
3	.00	.00	.54	.00	.00	4.8	15	18	1.6	.00	.00	19
4	.00	.00	.00	2.2	.00	11	5.2	2.8	.00	.00	.00	5.0
5	.00	.00	.00	13	.00	12	3.5	5.7	.00	.00	.49	.50
6	.00	.00	.00	.80	.00	21	3.6	3.4	2.3	.00	5.3	.53
7	.00	.00	1.1	.01	.00	26	1.5	.65	.85	.00	23	.90
8	.00	.00	7.3	.00	.00	29	7.3	.55	.05	.00	38	1.9
9	.00	.20	23	.00	.00	24	26	.45	3.2	.00	31	.06
10	.00	.01	18	.00	.00	22	19	4.3	2.6	.02	16	.00
11	.00	2.9	4.4	e.00	.00	22	5.8	14	.72	.00	4.8	.00
12	.00	3.5	1.2	e.00	.00	22	.24	15	.00	.00	19	.00
13	.00	.50	.56	e.00	.00	24	.06	12	.00	.00	24	.00
14	.00	.00	.00	e5.0	.00	24	5.8	5.0	.00	.00	24	.00
15	.00	.00	.00	e2.0	.00	22	3.0	2.6	.00	1.5	19	.00
16	.00	.00	.00	e.01	.00	20	42	.41	.00	13	17	.00
17	.00	.00	.00	.00	.00	18	22	.00	.00	16	20	.30
18	.00	.10	.00	.00	.00	16	16	.00	.00	29	7.1	3.2
19	.00	17	.00	.00	.00	18	9.2	.00	.00	8.6	2.0	19
20	.00	7.1	.00	.00	.00	12	7.7	.00	.00	1.3	.47	19
21	.00	11	.00	.00	.00	27	7.3	.00	.00	6.7	.00	9.8
22	.00	3.5	.00	.00	.97	28	2.6	.00	.00	14	1.4	7.3
23	.00	2.6	.00	.00	2.5	19	11	8.5	.00	14	4.1	2.4
24	.00	1.8	.00	.00	.00	6.6	10	11	.00	29	.00	.34
25	.00	.24	6.3	.00	4.2	1.2	2.6	17	.00	32	.00	.00
26	.00	.00	22	.00	17	.24	.32	7.5	.00	11	1.4	.03
27	.00	.00	16	.00	7.2	.03	.00	22	.00	12	17	.00
28	.00	.00	5.6	.00	9.2	.01	4.4	19	.00	13	10	6.4
29	.00	.00	2.4	.00	---	.18	7.7	14	.00	5.3	22	15
30	.00	.34	.24	.19	---	6.4	.96	8.6	.00	.00	15	12
31	.00	---	.01	.03	---	4.6	---	7.3	---	.00	14	---
TOTAL	.00	50.79	119.25	23.24	41.07	471.06	287.78	257.76	19.12	206.42	336.06	133.06
MEAN	.00	1.69	3.85	.75	1.47	15.2	9.59	8.31	.64	6.66	10.8	4.44
MAX	.00	17	23	13	17	29	42	40	4.8	32	38	19
MIN	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
AC-FT	.00	101	237	46	81	934	571	511	38	409	667	264

CAL YR 1984	TOTAL	175.38	MEAN	.48	MAX	23	MIN	.00	AC-FT	348
WTR YR 1985	TOTAL	1945.61	MEAN	5.33	MAX	42	MIN	.00	AC-FT	3860

e Estimated

16756000 KOHAKOHAU STREAM NEAR KAMUELA

LOCATION.--Lat 20°02'38", long 155°41'10", Hydrologic Unit 20010000, on left bank 0.6 mi upstream from Oolamakapehu Gulch and 1.7 mi northwest of Kamuela.

DRAINAGE AREA.--2.51 mi^2.

PERIOD OF RECORD.--March 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,273 ft above mean sea level (by stadia survey by State Department of Land and Natural Resources). Prior to Jan. 11, 1967, at site 0.5 mi upstream at different datum.

REMARKS.--Records good. Parker Ranch pipeline diverts upstream at elevation 4,250 ft. Hawaii Division of Water and Land Development diverts by pipeline 0.3 mi upstream at elevation 3,400 ft for domestic use in the Kamuela and Kawaihae areas since Aug. 20, 1973. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years, 8.48 ft^3/s (6,140 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,880 ft^3/s Aug. 7, 1958, gage height, 10.76 ft, site and datum then in use, from rating curve extended above 70 ft^3/s by test of model of station site; no flow at times in 1968, 1971-85.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 425 ft^3/s Mar. 6, gage height, 4.63 ft, from rating curve extended above 46 ft^3/s on basis of computation of flow over dam at gage height 6.20 ft, no other peak greater than base discharge of 310 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.40	.00	29	1.6	.42	.00	.20	2.3	.00
2	.00	.00	.00	.23	.00	8.5	32	21	.00	.70	4.7	.00
3	.00	.00	.00	.12	.00	2.1	.25	.71	.00	.06	.44	1.2
4	.00	.00	.00	.44	.00	3.7	.01	.00	.00	13	1.7	.01
5	.00	.00	.00	8.0	.00	19	.00	.00	.00	9.0	.00	.00
6	.00	.00	.00	1.7	.00	152	.00	.00	.00	.01	2.8	.00
7	.00	.00	.00	.77	.00	103	.00	.00	.00	.00	34	.00
8	.00	.00	.00	.45	.00	85	.00	18	.00	.00	55	.00
9	.00	.00	95	.24	.00	27	.00	6.5	.00	.00	17	.00
10	.00	.00	15	.17	.00	30	.00	.01	.00	.00	1.9	.00
11	.00	.38	.04	.06	.00	44	.00	10	.00	.00	.00	.00
12	.00	.62	.00	.00	.00	18	.00	8.5	.00	.00	1.4	.00
13	.00	.00	.00	.00	.00	33	.00	1.5	.45	.00	3.9	.00
14	.00	.00	.00	11	.00	49	.00	.01	.73	.00	7.4	.00
15	.00	.00	.00	18	.00	17	.00	.00	.55	.00	3.7	.00
16	.00	.00	.00	2.8	.00	14	17	.00	.46	.00	1.9	.00
17	.00	.00	.00	1.3	.00	7.3	8.0	.00	.41	1.8	23	.00
18	.00	.00	.00	.63	.00	5.1	5.2	.00	.03	16	.01	.00
19	.00	58	.00	.47	.00	5.1	.14	.00	.00	.16	.00	44
20	.00	16	.00	.35	.00	.48	.00	.00	.00	.00	.00	3.7
21	.00	.65	.00	.23	.00	16	.00	.00	2.0	.00	.00	.00
22	.00	.00	.00	.21	.00	21	.00	.00	1.3	.54	.00	.00
23	.00	.00	.00	.40	.00	9.4	.00	1.0	.71	1.0	.00	.00
24	.00	.00	.00	.21	.00	.03	.00	3.4	.28	3.9	.00	.00
25	.00	.00	3.3	.00	.00	.01	.00	.01	.00	6.0	.00	.00
26	.00	.00	36	.00	19	.00	.00	.01	.00	.57	.00	.00
27	.00	.00	14	.00	8.3	.00	.00	8.3	.01	.78	11	.00
28	.00	.00	3.1	.00	27	.00	.00	7.7	.00	.01	.90	.00
29	.00	.00	1.4	.00	---	.00	.00	3.5	.00	.52	27	.10
30	.00	.00	.79	3.6	---	.00	.00	1.6	.00	7.6	2.7	2.4
31	.00	---	.53	.36	---	.00	---	.00	---	6.4	2.6	---
TOTAL	.00	75.65	169.16	52.14	54.30	698.72	64.20	92.17	6.93	68.25	205.35	51.41
MEAN	.00	2.52	5.46	1.68	1.94	22.5	2.14	2.97	.23	2.20	6.62	1.71
MAX	.00	58	95	18	27	152	32	21	2.0	16	55	44
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	150	336	103	108	1390	127	183	14	135	407	102

CAL YR 1984	TOTAL	1218.77	MEAN	3.33	MAX	95	MIN	.00	AC-FT	2420
WTR YR 1985	TOTAL	1538.28	MEAN	4.21	MAX	152	MIN	.00	AC-FT	3050

16758000 WAIKOLOA STREAM AT MARINE DAM, NEAR KAMUELA

LOCATION.--Lat 20°02'48", long 155°39'58", Hydrologic Unit 20010000, on right bank 160 ft upstream from Marine Dam, 0.4 mi east of Puu Ohu, and 1.6 mi north of Kamuela.

DRAINAGE AREA.--1.18 mi^2.

PERIOD OF RECORD.--May 1947 to current year.

REVISED RECORDS.--WSP 1569: Drainage area. WSP 1937: 1948(M), 1949-51(P), 1952(M), 1954(M), 1955, 1956-57(P), 1958-60.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,460 ft, from topographic map.

REMARKS.--Records good. Diversion upstream for livestock and domestic use. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--38 years, 8.81 ft^3/s (6,380 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,410 ft^3/s Nov. 18, 1979, gage height, 6.84 ft, from rating curve extended above 120 ft^3/s on basis of computations of flow over dam at gage heights 5.46 ft and 5.96 ft; minimum, 0.59 ft^3/s Oct. 3-6, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 428 ft^3/s Mar. 6, gage height, 4.07 ft, no other peak greater than base discharge of 180 ft^3/s; minimum, 0.81 ft^3/s Nov. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.89	5.7	2.2	2.4	14	12	11	4.4	8.3	10	6.8
2	1.5	.89	3.0	1.9	1.9	7.1	46	26	3.9	8.9	12	7.2
3	1.5	.99	2.2	1.8	1.7	4.0	8.0	7.6	4.0	8.1	8.4	13
4	1.2	1.2	2.4	3.3	1.5	7.1	5.0	4.4	3.5	31	8.4	7.0
5	1.2	1.3	2.4	11	1.4	18	4.2	4.8	3.7	21	6.9	5.3
6	1.2	1.1	1.9	3.9	1.4	121	3.9	4.5	5.5	6.7	11	4.8
7	1.2	.93	3.8	2.7	1.4	69	3.6	4.2	3.7	6.7	35	4.6
8	1.2	1.4	4.3	2.2	1.4	61	5.2	21	3.1	7.3	43	4.6
9	1.1	4.7	59	2.0	1.4	19	12	10	4.7	4.3	19	3.6
10	1.1	4.0	9.0	1.8	1.3	27	8.8	6.1	4.6	3.7	12	3.4
11	1.1	7.6	3.8	1.7	1.3	34	5.8	9.7	3.5	3.5	7.2	3.2
12	1.2	7.8	2.8	1.6	1.2	17	4.0	10	3.0	3.3	13	3.2
13	1.1	5.4	2.3	1.6	1.2	21	3.3	8.5	3.3	3.1	15	3.0
14	1.1	3.0	2.2	7.0	1.2	36	5.7	5.0	3.0	3.0	23	3.1
15	1.0	2.4	2.3	12	1.2	15	4.4	4.0	2.8	4.9	16	3.1
16	1.1	2.3	1.9	3.6	1.2	11	27	3.4	2.6	13	18	3.1
17	1.0	2.1	1.8	2.4	1.3	8.4	14	3.0	2.5	13	31	5.2
18	.98	3.0	1.7	2.2	1.2	7.9	9.0	3.0	2.3	19	8.0	8.1
19	.99	33	1.8	2.1	1.2	8.1	5.4	2.8	2.3	6.9	5.9	44
20	1.0	12	1.9	1.7	1.2	7.4	4.4	2.7	5.1	4.3	4.8	14
21	.99	5.3	1.8	1.6	1.2	16	4.1	2.7	13	6.6	4.1	8.1
22	.96	3.2	1.7	1.6	3.5	19	3.5	2.8	4.1	9.0	4.6	6.8
23	.92	3.4	1.6	2.3	3.9	11	4.8	13	3.0	9.2	5.3	5.4
24	.93	2.9	1.6	1.9	3.0	5.9	5.9	13	2.7	16	4.1	4.5
25	.96	2.4	16	1.7	6.1	4.6	3.6	11	3.5	19	3.7	4.1
26	.94	2.1	33	1.5	24	4.0	2.9	6.8	3.3	8.6	5.3	3.7
27	.94	2.0	13	1.4	10	3.6	2.9	16	3.7	8.1	15	3.6
28	.93	1.9	5.1	1.3	14	3.4	4.4	14	3.4	8.5	9.5	6.0
29	.87	1.8	3.5	1.3	---	3.6	5.7	9.4	3.1	8.1	31	8.6
30	.87	2.6	2.8	6.0	---	4.0	3.4	6.8	8.2	12	15	11
31	.89	---	2.4	4.1	---	3.8	---	5.0	---	12	12	---
TOTAL	33.47	123.60	198.7	93.4	93.7	591.9	232.9	252.2	119.5	297.1	417.2	212.1
MEAN	1.08	4.12	6.41	3.01	3.35	19.1	7.76	8.14	3.98	9.58	13.5	7.07
MAX	1.5	33	59	12	24	121	46	26	13	31	43	44
MIN	.87	.89	1.6	1.3	1.2	3.4	2.9	2.7	2.3	3.0	3.7	3.0
AC-FT	66	245	394	185	186	1170	462	500	237	589	828	421

CAL YR 1984	TOTAL	1895.87	MEAN	5.18	MAX	59	MIN	.87	AC-FT	3760
WTR YR 1985	TOTAL	2665.77	MEAN	7.30	MAX	121	MIN	.87	AC-FT	5290

16759000 HAUANI GULCH NEAR KAMUELA

LOCATION.--Lat 20°02'28", long 155°39'05", Hydrologic Unit 20010000, on left bank 800 ft downstream from small tributary and 1.8 mi northeast of Kamuela.

DRAINAGE AREA.--0.47 mi^2.

PERIOD OF RECORD.--March 1956 to current year. Prior to July 1960, published as Hauani Stream near Kamuela.

GAGE.--Water-stage recorder. Concrete control since Feb. 27, 1963. Datum of gage is 3,117.42 ft above mean sea level (Hawaii County Board of Water Supply bench mark).

REMARKS.--Records good. Diversion upstream for livestock and domestic use. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years, 1.54 ft^3/s (1,120 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 822 ft^3/s Nov. 18, 1979, gage height, 4.56 ft, from rating curve extended above 11 ft^3/s on basis of slope-conveyance study; maximum gage height, 4.65 ft Oct. 23, 1957; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 150 ft^3/s Mar. 6, gage height, 3.00 ft, no other peak greater than base discharge of 78 ft^3/s; no flow for meny days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.00	.27	.11	.13	1.6	.74	.93	.47	.91	1.6	.76
2	.04	.00	.12	.10	.09	.81	8.2	3.7	.41	.90	2.1	.60
3	.04	.00	.07	.11	.07	.35	1.0	1.3	.44	.68	.91	1.1
4	.02	.00	.07	1.1	.06	.43	.59	.61	.36	4.8	.99	.71
5	.01	.02	.08	.95	.06	2.7	.44	.44	.48	3.3	.68	.44
6	.01	.02	.06	.29	.05	36	.39	.36	.80	.97	.81	.39
7	.02	.00	.52	.18	.05	18	.33	.32	.36	.76	6.6	.35
8	.02	.00	.37	.15	.04	13	.57	1.9	.29	.87	7.7	.36
9	.02	.11	11	.12	.03	3.4	1.3	1.3	.55	.46	2.9	.29
10	.00	.27	1.2	.09	.03	4.9	.84	.74	.44	.33	1.6	.26
11	.00	.20	.37	.08	.03	8.1	.53	.93	.31	.29	.84	.24
12	.00	.62	.20	.08	.03	2.7	.38	1.1	.25	.24	1.6	.22
13	.01	.26	.14	.07	.02	3.3	.35	1.0	.26	.22	2.2	.21
14	.02	.10	.10	.46	.03	8.5	.54	.60	.22	.22	2.4	.20
15	.00	.06	.08	.81	.04	2.5	.44	.45	.21	.33	2.3	.20
16	.00	.04	.07	.22	.05	1.5	4.8	.35	.19	1.4	2.8	.19
17	.00	.04	.07	.13	.06	1.1	1.7	.30	.18	1.9	6.4	.35
18	.00	.04	.06	.09	.02	1.1	1.1	.27	.16	2.1	1.3	.60
19	.00	2.9	.07	.09	.02	1.0	.67	.24	.16	.99	.74	7.1
20	.00	1.3	.07	.06	.00	1.2	.55	.22	1.2	.45	.53	1.8
21	.00	.42	.06	.07	.01	2.7	.48	.22	1.7	.53	.41	.82
22	.00	.18	.05	.08	.56	4.1	.42	.22	.38	.96	.38	.56
23	.00	.14	.04	.11	.39	1.7	.53	.98	.23	.96	.46	.39
24	.00	.12	.05	.08	.19	.87	.64	1.4	.19	1.6	.35	.34
25	.00	.08	4.8	.08	.39	.65	.39	1.0	.73	2.8	.29	.29
26	.00	.08	6.6	.07	3.7	.48	.33	.75	.65	1.4	.37	.28
27	.00	.05	1.9	.06	1.2	.40	.32	2.8	.64	.92	1.5	.28
28	.00	.04	.51	.05	1.4	.36	.63	1.8	.56	.91	1.0	.41
29	.00	.03	.27	.05	---	.36	.74	1.2	.32	1.1	4.9	.73
30	.00	.07	.19	.76	---	.34	.38	.84	.73	1.5	2.0	.76
31	.00	---	.14	.31	---	.31	---	.60	---	1.9	2.1	---
TOTAL	.25	7.17	29.60	7.03	8.75	122.46	30.30	28.87	13.87	36.70	60.76	21.23
MEAN	.008	.24	.95	.23	.31	3.95	1.01	.93	.46	1.18	1.96	.71
MAX	.04	2.9	11	1.1	3.7	38	8.2	3.7	1.7	4.8	7.7	7.1
MIN	.00	.00	.04	.05	.00	.31	.32	.22	.16	.22	.29	.19
AC-FT	.5	14	59	14	17	243	60	57	28	73	121	42

CAL YR 1984	TOTAL	219.57	MEAN	.60	MAX	14	MIN	.00	AC-FT	436
WTR YR 1985	TOTAL	366.99	MEAN	1.01	MAX	36	MIN	.00	AC-FT	728

16764000 HILEA GULCH TRIBUTARY NEAR HONUAPO

LOCATION.--Lat 19°10'27", long 155°35'58", Hydrologic Unit 20010000, on right bank 0.5 mi upstream from mouth, 6.6 mi northwest of Honuapo, and 6.7 mi west of Punaluu.

DRAINAGE AREA.--9.17 mi^2.

PERIOD OF RECORD.--February 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage ia 2,940 ft, from topographic map.

REMARKS.--Records fair. No diversion upstream. Recording rain gage located at station. Observations of specific conductance, pH, and water temperature made during the year are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 7.92 ft^3/s (5,740 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,400 ft^3/s Mar. 18, 1980, gage height, 8.00 ft, from rating curve extended above 75 ft^3/s; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Dste	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 24	1530	642	5.08	Mar. 1	0830	*970	*5.86

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	.13	3.5	.14	.00	320	.47	26	.36	.29	.01	3.4
2	4.8	.03	.39	.12	.00	17	.21	14	4.6	.01	.00	.99
3	1.3	.04	.27	.43	.11	1.4	.05	11	1.2	.00	.07	1.1
4	26	23	.20	1.4	2.9	37	.00	2.6	.46	16	.68	.52
5	3.6	1.2	.16	.72	.10	2.9	.00	1.4	.37	3.6	.54	.24
6	11	.19	.14	.17	.10	.90	.00	.95	.29	1.9	.08	.08
7	1.7	.14	.12	.13	.09	.76	.00	17	.15	.85	.00	.00
8	.56	.44	.08	.00	.00	.72	.00	54	.01	.19	27	.00
9	.43	.40	1.3	.00	.00	.68	.00	15	.08	.06	15	.00
10	.37	.36	.19	.00	.00	18	.06	16	.17	.00	1.3	.00
11	.34	.20	.14	.00	.00	1.3	1.2	23	.24	.00	.30	.00
12	.44	10	.12	.00	.00	.50	4.1	4.2	.01	.00	.15	.00
13	.33	12	.07	.00	.84	.41	.31	.79	.00	.00	.00	.00
14	.30	.60	.08	.00	6.2	.38	.02	.60	.00	.00	.08	.00
15	.33	.29	.25	.00	.71	.35	.00	.88	.00	.00	.10	.90
16	.24	1.1	2.9	.00	.25	.33	13	23	.00	.00	.00	.36
17	.21	.38	.48	.00	.09	.32	19	2.6	.04	20	.00	3.2
18	.25	.17	.22	.00	.09	.40	35	.72	.00	2.6	9.9	2.8
19	.25	38	.16	.00	.24	.11	2.3	.57	.00	.28	.39	8.0
20	.21	5.7	.11	.00	5.1	.06	.53	.45	.00	.02	.03	.71
21	.20	.73	.07	.00	1.5	.11	.40	.38	.00	9.5	.00	31
22	2.2	.41	.07	.00	30	23	3.3	.32	.00	22	2.1	35
23	.81	.37	.06	.00	55	21	3.9	.28	.00	2.1	.77	45
24	.40	.37	54	.00	42	1.1	1.1	.22	.00	.28	.53	9.6
25	.19	.31	2.8	.00	2.4	.30	.35	.18	.00	.08	.40	1.4
26	4.0	1.0	14	.00	.45	.19	.53	.15	.00	.00	1.8	.65
27	.85	17	3.4	.00	1.1	.05	12	.15	.08	.00	2.9	.43
28	.39	.62	.81	.00	210	.18	1.8	.10	.92	.88	.33	4.5
29	.20	.35	.37	.00	---	.30	1.2	.02	4.2	.28	.14	2.0
30	.22	7.8	.23	.00	---	.30	22	.02	1.5	.06	.38	.58
31	.20	---	.17	.00	---	.53	---	.08	---	.02	.86	---
TOTAL	64.52	123.33	86.86	3.11	359.07	450.58	122.83	216.66	14.68	81.20	65.84	152.46
MEAN	2.08	4.11	2.80	.10	12.8	14.5	4.09	6.99	.49	2.62	2.12	5.08
MAX	26	38	54	1.4	210	320	35	54	4.6	22	27	45
MIN	.19	.03	.06	.00	.00	.05	.00	.02	.00	.00	.00	.00
AC-FT	128	245	172	6.2	712	894	244	430	29	161	131	302

CAL YR 1984	TOTAL	730.24	MEAN	2.00	MAX	54	MIN	.00	AC-FT	1450
WTR YR 1985	TOTAL	1741.14	MEAN	4.77	MAX	320	MIN	.00	AC-FT	3450

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of base flow or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1985

Station No.	Station name	Location	Drainage area mi^2	Period of record	Measurements: Date	Measurements: Discharge (ft^3/s)
		Hawaii, Island of Kauai				
16011000	Waiakoali Stream near Waimea	Lat 22°07'42", long 159°37'27", 0.3 mi upstream from mouth and 12 mi northeast of Waimea.	1.58	1909-13≠, 1914-17, 1919-25≠, 1961-62, 1964, 1966-70, 1972-85	1-23-85 4-23-85 7-23-85	2.79 2.56 1.49
16012000	Kauaikinana Stream near Waimea	Lat 22°08'12", long 159°37'58", 0.6 mi upstream from mouth, and 12 mi northeast of Waimea.	.84	1911-13, 1915-17, 1919-25≠, 1961-62, 1964, 1966-85	1-23-85 4-23-85 7-23-85	2.11 1.63 .76
16102000	China ditch near Hanalei	Lat 22°11'10", long 159°28'00", on left bank just below intake and 3.0 mi southeast of Hanalei.	-	1913-19≠, 1977-85	6- 3-85	6.57
		Hawaii, Island of Oahu				
		Discharge measurements made at low-flow partial-record stations during water year 1985				
16201000	Right Branch of North Fork Kaukonahua Stream	Lat 21°31'11", long 157°56'53", 200 ft above confluence with Left Branch and 4.5 mi east of Leilehua High School in Wahiawa.	1.17	1913-53≠, 1960-62, 1966, 1968-85	8- 7-85 9-17-85	2.97 2.54
16214000	Pearl Harbor Springs at Waiawa, near Pearl City	Lat 21°23'36", long 157°59'11", 0.7 mi west of Pearl City and 1.5 mi east of Waipahu Post Office.	-	1931-34≠, 1937-64≠, 1967-68, 1970-85	11- 7-84 4- 8-85 7-18-85	12.1 13.5 11.4
16224000	Pearl Harbor Springs at Kalauao, near Aiea	Lat 21°23'05", long 157°56'46", 300 ft downstream from Highway 90 and 0.8 mi west of Aiea Post Office.	-	1931-62≠, 1964-65≠, 1966-68, 1970-85	11- 7-84 4- 9-85 7-17-85	12.6 13.9 10.3

≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1985--Continued

Station No.	Station name	Location	Drainage area mi^2	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		Hawaii, Island of Oahu--Continued				
16264100	Kahanaiki Stream at Highway 61, near Kailua	Lat 21°22'49", long 157°46'06", at bridge on Highway 61 and 1.9 mi southwest of Kailua Post Office.	1.45	1960-63, 1965-66, 1971-81, 1983-85	11-15-84 7- 3-85	.38 .66
*16265700	Kamooalii Stream at altitude 200 ft near Kaneohe	Lat 21°23'12", long 157°47'56", 0.5 mi southwest of Hawaiian Memorial cemetery, 0.9 mi northwest of Pali Golf Course, and 1.5 mi south of Castle High School.	.46	1983-85	2-14-85 5- 6-85 6- 5-85	2.99 1.95 .70
16266500	Hooleinaiwa Stream at altitude 220 ft, near Kaneohe	Lat 21°23'06", long 157°48'16", 0.7 mi aouthwest of Hawaiian Memorial Park cemetery, 1.2 mi northwest of Pali Golf Course, and 1.7 mi southwest of Castle High School.	.42	1983-85	6- 5-85	e<.20
*16267500	Hooleinaiwa Stream above confluence with Kamooalii Stream, near Kaneohe	Lat 21°23'15", long 157°48'19", 0.7 mi west of Hawaiian Memorial Park cemetery, 1.3 mi northwest of Pali Golf Course, and 1.5 mi southwest of Castle High School.	.58	1983-85	10-10-84 6- 3-85	.28 .81
*16269500	Kuou Stream at altitude 220 ft, near Kaneohe	Lat 21°23'30", long 157°48'44", 1.0 mi west of Hawaiian Memorial Park cemetery, 1.6 mi southwest of Castle High School, and 1.9 mi northwest of Pali Golf Course.	.34	1983-85	5- 6-85 6- 5-85	5.97 e.10
16283400	Kahaluu Stream near Kahaluu	Lat 21°27'14", long 157°50'17", 600 ft above Ahuimanu Stream and 0.6 mi aouth of Kahaluu.	1.29	1962-63, 1966, 1972-81, 1983-85	11-15-84	.73
16295995	Kahana Stream at Mauka trail crossing, near Kehana	Lat 21°32'17", long 157°53'29", 1.8 mi upstream from main bridge on Kamehameha Highway and 2.8 mi southwest of Kaaawa School.	3.18	1960-62, 1966, 1971-72, 1974-81, 1983-85	11- 6-84 6-27-85	17.9 12.6
16297000	Kawa Stream near Kahana	Lat 21°32'33", long 157°53'00", 0.1 mi above confluence with Kahana Stream and 1.0 mi south of Kahana.	2.09	1914-17≠, 1958b, 1961-62, 1966, 1971-72, 1974-81, 1983-85	11-16-84 6-27-85	1.52 e.30

* Also a water-quality partial-record station.
< Actual value is known to less than the value shown.
≠ Operated as a continuous-record gaging station.
b Gage height only.
e Estimated.

Discharge measurements made at low-flow partial-record stations during water year 1985--Continued

Station No.	Station name	Location	Drainage area mi^2	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		Hawaii, Island of Molokai				
16403400	Kapuhi Stream at altitude 1,000 ft, near Pelekunu	Lat 21°07'50", long 156°53'02", 500 ft upstream from Kawailena Stream, 2.2 mi south of former village of Pelekunu, and 5.4 mi north of Kamalo.	.51	1968-85	10-30-84	.46
					12- 6-84	.76
					1-23-85	1.42
					4-29-85	1.32
					6- 5-85	1.30
					8-28-85	1.30
16403500	Kawailena Stream near Pelekunu	Lat 20°07'52", long 156°53'05", 800 ft upstream from mouth, 2.2 mi south of former village of Pelekunu, and 5.5 mi north of Kamalo.	.65	1968-85	10-30-84	1.11
					12- 6-84	1.06
					1-23-85	1.59
					4-29-85	1.90
					6- 5-85	1.81
					8-28-85	1.70
16403600	Kapuhi Stream near Pelekunu	Lat 21°07'57", long 156°52'56", on left bank 400 ft downstream from Kawailena Stream, 2.1 mi south of former village of Pelekunu, and 5.6 mi north of Kamalo.	1.20	1968-70≠, 1974-85	10-30-84	1.46
					12- 6-84	1.74
					1-23-85	2.92
					4-29-85	3.28
					6- 5-85	2.81
					8-28-85	2.96
16403700	Kawainui Stream at altitude 1,000 ft, near Pelekunu	Lat 20°07'46", long 156°52'31", 400 ft upstream from Kawaipoko Stream, 2.4 mi south of former village of Pelekunu, and 5.4 mi north of Kamalo.	.79	1968-85	10-31-84	.71
					12- 6-84	1.71
					1-23-85	2.89
					4-30-85	2.97
					6- 5-85	2.34
					8-28-85	5.26
16403800	Kawaipoko Stream near Pelekunu	Lat 21°07'48", long 156°52'30", 300 ft upstream from mouth, 2.4 mi south of former village of Pelekunu, and 5.4 mi north of Kamalo.	.26	1968-85	10-31-84	.07
					12- 6-84	.58
					1-23-85	.72
					4-30-85	.86
					6- 5-85	.70
					8-28-85	.85
16403900	Kawainui Stream near Pelekunu	Lat 21°07'59", long 156°52'38", on right bank 900 ft upstream from confluence with Kapuhi Stream, 2.1 mi south of former village of Pelekunu, and 5.7 mi north of Kamalo.	1.17	1968-79≠, 1980-85	10-31-84	.94
					12- 6-84	2.29
					1-23-85	4.14
					4-30-85	4.21
					6- 5-85	3.30
					8-28-85	7.87

≠ Operated as a continuous-record gaging station.

Crest-stage partial-record stations

Prior to 1973, crest-stage partial-record station records for the State of Hawaii were published in an annual progress report entitled "An Investigation of Floods in Hawaii." The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements or peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1985

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		Hawaii, Island of Kauai					
16038000	Waimea River at Waimea	Lat 21°57'23", long 159°39'59", 150 ft upstream from highway bridge at Waimea and 0.2 mi upstream from mouth.	86.5	1944-85b	1-14-85	7.39	-
16052000	Hanapepe River at Hanapepe	Lat 21°54'47", long 159°35'33", 400 ft upstream from bridge on Highway 50 and 0.5 mi upstream from mouth.	26.6	1950-85b	3- 1-85	4.67	-
16052500	Lawai Stream near Koloa	Lat 21°54'11", long 159°30'21", on right bank at private road bridge, 0.9 mi upstream from mouth, and 2.4 mi southwest of Koloa.	6.62	1962-63, 1964-72≠, 1973-85	10-23-84	.75	50
16055000	Huleia Stream near Lihue	Lat 21°57'20", long 159°25'23", at highway bridge, 3.7 mi southwest of Lihue, snd 4.5 mi upstream from mouth.	17.6	1912-15≠, 1962-67, 1968-70≠, 1971-85	2- 4-85	5.60	530
16071800	Wailua River near Kapaa	Lat 22°03'00", long 159°20'26", at State Park 600 ft upstreamr from highway bridge, 850 ft upstream from mouth, and 2.5 mi southwest of Kapaa.	52.6	1962-85b	-	<4.62	-
16073500	Konohiki Stream near Kapaa	Lat 22°04'01", long 159°20'21", at culvert on private road, 1.8 mi upstream from mouth, and 2.4 mi southwest of Kapaa High School.	3.38	1964-67, 1970-85	11-27-84	7.50	700
16081200	Akulikuli Stream near Kapaa	Lat 22°06'25", long 159°22'07", at Kahuna road crossing, 800 ft upstream from mouth, and 3.5 mi northwest of Kapaa armory.	.40	1964-85	11-27-84	5.25	235
16084500	Kapaa Stream at old highway crossing, near Kealia	Lat 22°06'28", long 159°19'52", at abutment of old highway bridge, 100 ft upstream from road crossing, 1.4 mi northwest of Kealia, and 2.1 mi upstream from mouth.	14.0	1962-85	11-27-84	12.33	7,110
16085000	Homaikawaa Stream near Kealia	Lat 22°07'23", long 159°18'12", at culvert on Highway 56, 1.6 mi southeest of Anahola School, and 1.6 mi north of Kealia.	.85	1964-85	11-26-84	4.47	350
16097900	Puukumu Stream near Kilauea	Lat 22°13'01", long 159°25'18", at culvert on Highway 56, 0.6 mi northwest of Kilauea School, and 0.9 mi upstream from mouth.	.91	1964-68, 1971-85	1-25-85	6.50	285
16104200	Henalei River at Highway 56 bridge near Hanalei	Lat 22°12'50", long 159°28'43", at highway bridge, 1.6 mi northeast of Hanalei, and 2.4 mi upstream from mouth.	21.0	1963-85b	11-26-84	11.29	-
16130000	Nahomalu Valley near Mana	Lat 22°02'41", long 159°45'17", on left bank 1.1 mi northeast of Mana, and 5.3 mi northwest of Kekeha School.	3.81	1962-63, 1964-71≠, 1972-85	2- 4-85	4.10	250

≠ Operated as a continuous-record gaging station.
< Actual value is known to be less than the value shown.
b Gage height only.

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum Date	Gage height (ft)	Discharge (ft^3/s)
		Hawaii, Island of Oahu					
16210500	Kaukonahua Stream at Waialua	Lat 21°33'56", long 158°07'26", 0.2 mi upstream from Highway 99, 0.4 mi southeast of Waialua High School, and 1.3 mi southwest of Weed Circle.	38.7	1963, 1968-85	5- 6-85	16.22	766
16211200	Poamoho Stream at Waialua	Lat 21°34'00", long 158°06'40", at culvert crossing of Kaheaka Road, 0.2 mi upstream from Highway 83, and 1.1 mi east of Waialua High School.	10.9	1967-85	2-14-85	-	e150
16211300	Makaleha Stream near Waialua	Lat 21°33'49", long 158°09'21", 1.0 mi southwest of Dillingham Ranch and 1.9 mi southwest of sugar mill at Waialua.	4.15	1958-63, 1964-65≠, 1966-85	2-14-85	5.28	372
16211400	Manini Gulch at Kaena	Lat 21°34'50", long 158°15'12", 180 ft upstream from Highway 99, 1.7 mi west of Camp Erdman, and 2.0 mi east of Kaena Point.	1.08	1974-85	1-14-85	13.69	e360
16211500	Makua Stream at Makua	Lat 21°31'59", long 158°13'49", on left bank 20 ft upstream from old concrete highway ford, 140 ft downstream from Farrington Highway box culvert, 0.1 mi north of Makua cemetery, and 4.5 mi southeast of Kaena Point lighthouse.	4.28	1958-85	11-27-84	-	e80
16211700	Makaha Stream at Makaha	Lat 21°28'47", long 158°12'31", 0.9 mi upstream from Farrington Highway and 1.1 mi north of junction of Farrington Highway and Makaha Valley Road.	5.25	1966-85	1-14-85	-	e80
16211800	Kaupuni Stream at altitude 372 ft, near Waianae	Lat 21°28'20", long 158°09'26", at abandoned diversion dam, 2.6 mi northeast of Waianae cemetery, and 2.8 mi northeast of junction of Waianae Valley Road and Farrington Highway.	3.58	1961-72≠, 1973-85	11-27-84	4.67	e70
16212200	Maiiiilii Stream near Waianae	Lat 21°27'34", long 158°08'05", at bridge at Lualualei Naval Reservation and 3.4 mi east of cemetery near Waianae.	1.51	1958-85	1-14-85	1.59	e70
16212300	Nanakuli Stream at Nanakuli	Lat 21°23'08", long 158°08'11", 0.7 mi upstream from Highway 90 and 0.8 mi northeast of Nanakuli Post Office.	3.98	1968-85	1-14-85	-	e300
16212450	Kaloi Gulch tributary near Honouliuli	Lat 21°22'41", long 158°03'45", at culvert on private road, 1.8 mi west of Honouliuli, and 2.8 mi northwest of Ewa Post Office.	1.70	1968-85	9-24-85	3.36	133
16212500	Honouliuli Stream near Waipahu	Lat 21°22'40", long 158°02'10", at bridge on Farrington Highway and 1.8 mi west of Waipahu Post Office.	11.0	1956-85	6-28-85	1.77	175
16212601	Waikele Stream at Wheeler Field	Lat 21°28'44", long 158°03'07", at culvert 0.3 mi west of east-west runway at Wheeler Field and 1.9 mi southwest of Wahiawa Post Office.	6.35	1958, 1960-85	2-14-85	3.28	e120
16212700	Waikakalaua Stream near Wahiawa	Lat 21°27'50", long 158°01'38", 0.2 mi downstream from Kamehameha Highway and 2.4 mi south of Wahiawa Post Office.	7.49	1958-85	9-24-85	6.36	772
16212750	Huliwai Gulch near Kunia Camp	Lat 21°26'43", long 158°03'47", 200 ft upstream from Highway 75 and 1.2 mi south of Kunia Camp.	.84	1974-85	9-24-85	8.10	e30

≠ Operated as a continuous-record gaging station.
e Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum Date	Gage height (ft)	Discharge (ft^3/s)
		Hawaii, Island of Oahu--Continued					
16223000	Waimalu Stream near Aiea	Lat 21°23'48", long 157°56'56", 1,300 ft upstream from bridge on Moanalua Road and 1.2 mi northwast of Aiea High School.	5.97	1952-70≠, 1973-85	6-27-85	2.71	1,070
16224500	Kalauao Stream at Moanalua Road, at Aiea	Lat 21°23'07", long 157°56'22", on left bank at downstream eide of Moanalua Road bridge, 0.4 mi northwast of Aiea Post Office, and 2.3 mi southeaat of Pearl City Post Office.	2.59	1957-82≠, 1984-85	2-14-85	5.62	e600
16228000	Moanalua Stream near Honolulu	Lat 21°22'53", long 157°52'22", on left bank 1.8 mi northeast of Tripler Hospital and 5.0 mi north of Honolulu Post Office.	2.73	1927-78≠, 1979-85	5- 6-85	5.32	604
16228200	Moanalua Stream near Aiea	Lat 21°22'37", long 157°53'03", on right bank 1.1 mi northeast of Tripler Hospital and 2.9 mi east of Aiea sugar refinery.	3.34	1969-85	5- 6-85	4.38	836
16228600	Moanalua Stream at Tripler Hospital	Lat 21°21'52", long 157°54'05", on right bank 0.5 mi west of Tripler Hospital and 1.6 mi northeast of Aliamanu School.	4.44	1971-85	5- 6-85	-	e1,000
16228900	Kalihi Stream near Kaneohe	Lat 21°22'35", long 157°49'32", on right bank 800 ft downstream from Likelike Highway and 2.8 mi southwest of Castle High School in Kaneohe.	.60	1967-71≠, 1972-65	9-23-65	3.03	309
16235400	Waolani Stream at Honolulu	Lat 21°20'00", long 157°51'04", at Wyllie Street bridge and 1.8 mi northeast of Honolulu Post Office.	1.28	1958-85	12-25-84	1.16	165
16237500	Pauoa Stream at Honolulu	Lat 21°19'18", long 157°51'03", at Lusitana Street bridge and 1.1 mi northeast of Honolulu Post Office.	1.43	1958-85	12-25-84	.67	350
16247100	Manoa-Palolo Drainage Canal at Moiliili	Lat 21°17'24", long 157°49'17", on left bank at Kaimuki High School, 0.3 mi downstream from confluence of Manoa and Palolo Streams, and 0.6 mi upstream from point of discharge into Ala Wai Canal.	9.35	1968-85	12-25-84	5.11	1,110
16247500	Wailupe Gulch at Aina Haina	Lat 21°17'46", long 157°45'29", at Ani Street bridge and 1.0 mi upetream from Kalanianaole Highway in Aina Haina.	2.35	1958-85	12-25-84	.18	e60
16247900	Kuliouou Valley at Kuliouou	Lat 21°17'50", long 157°43'35", at Kuliouou, 300 ft downstream of single-lane wooden bridge, and 0.6 mi upstream from Highway 72.	1.18	1958-59, 1970-85	2-14-85	29.98	242
16248800	Inoaole Stream at Waimanalo	Lat 21°29'31", long 157°42'40", 30 ft upstream from culvart on Hihimanu Street and 0.8 mi northwest of Waimanalo Post Office.	1.21	1958-85	2-14-85	6.23	e380
16249000	Waimanalo Stream at Waimanalo	Lat 21°21'12", long 157°43'52", on right bank 40 ft upstream from Highway 72 snd 2.3 mi northwest of Waimanalo Post Office.	2.16	1967-70≠, 1971-85	2-14-85	10.82	e2,000
16249100	Kaelepulu Stream tributary at Kailua	Lat 21°21'44", long 157°44'22", 30 ft upstream from Kalanianaole Highway, 1.6 mi northwest of Waimanalo School, and 2.4 mi south of Kailua Post Office.	.16	1963-85	2-14-85	6.98	417

≠ Operated as a continuous-record gaging station.
e Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum Date	Gage height (ft)	Discharge (ft^3/s)
		Hawaii, Island of Oahu--Continued					
16260500	Maunawili Stream at Highway 61, near Kailua	Lat 21°22'51", long 157°45'48", on right bank at downstream side of bridge on Highway 61, 0.6 mi west of Maunawili School, and 1.6 mi southwest of Kailua Post Office.	5.34	1958-67, 1968-71≠, 1972-85	2-14-85	13.04	4,850
16264800	Kawainui Canal at Kailua	Lat 21°24'15", long 157°45'28", at head of canal and 1.2 mi northwest of Kailua Post Office.	11.0	1957-60, 1963-64, 1967-85b	2-14-85	2.63	-
16265000	Kawa Stream at Kaneohe	Lat 21°24'32", long 157°47'36", 50 ft upstream from bridge on Kaneohe Bay Drive at Kaneohe, 0.2 mi northeast of Castle High School, and 0.6 mi upstream from mouth.	1.19	1965, 1968-74, 1977-85	2-14-85	6.58	644
16274499	Keaahala Stream at Kamehameha Highway, at Kaneohe	Lat 21°25'12", long 157°48'15", 35 ft upstream from bridge on Kamehameha Highway in Kaneohe.	.62	1959-85	5- 6-85	3.14	e500
16279500	Heeia Stream at Kaneohe	Lat 21°25'17", long 157°49'01", 60 ft downstream from culvert on Kahekili Highway, 0.7 mi west of Kaneohe Post Office, and 0.8 mi southwest of Heeia.	1.80	1965-66, 1968-85	5- 6-85	4.11	204
16283480	Ahuimanu Stream near Kahaluu	Lat 21°27'04", long 157°50'13", at bridge on Ahuimanu Road and 0.8 mi south of Kahaluu.	2.31	1963-85	9-23-85	-	e800
16304500	Kaluanui Stream at Hauula	Lat 21°35'57", long 157°54'24", on left downstream wingwall of concrete bridge, 1.2 mi southeast of cemetery in Hauula, and 1.4 mi northeast of Sacred Falls.	2.12	1958-85	11-27-84	5.06	e1,200
16310501	Malaekahana Stream at altitude 30 ft, near Kahuku	Lat 21°39'47", long 157°57'11", at abandoned plantation railroad bridge, 1.1 mi southwest of junction of plantation road and Highway 83, and 1.2 mi south of Kahuku Hospital.	4.05	1958-85	11-27-84	5.46	155
16311000	Oio Stream near Kahuku	Lat 21°41'32", long 157°59'48", 0.6 mi southwest of junction of plantation road and Highway 83 and 2.7 mi west of Kahuku Hospital.	2.13	1958-85	11-27-84	-	e80
16317800	Kaunala Gulch near Sunset Beach	Lat 21°40'59", long 158°02'12", on downstream left bank wingwall of road bridge on Highway 83 near Sunset Beach and 2.9 mi northeast of Waimea.	1.98	1973-85	11-27-84	5.99	e80
16318000	Paumalu Gulch at Sunset Beach	Lat 21°40'19", long 158°02'28", 0.4 mi upstream from Highway 83 at Sunset Beach and 2.2 mi northeast of Waimea.	2.59	1968-85	11-27-84	3.19	193
16331000	Waimea Gulch near Kawailoa Camp	Lat 21°37'29", long 158°04'58", at culvert on Ashley Road, 0.1 mi upstream from Highway 83, and 1.1 mi north of Kawailoa Camp.	2.23	1968-85	2-14-85	2.18	63
16340000	Anahulu River near Haleiwa	Lat 21°35'28", long 158°04'45", 1.7 mi southeast of junction of Emerson Road and Kamehameha Highway and 2.5 mi east of Waialua School at Haleiwa.	13.5	1958-85	2-14-85	6.34	2,100
16350000	Opaeula Stream near Haleiwa	Lat 21°35'09", long 158°06'01", 0.6 mi upstream from Kamehameha Highway and 2.1 mi northeast of Waialua.	5.96	1956-85	11-27-84	13.14	1,480

≠ Operated as a continuous-record gaging station.
e Estimated.
b Gage height only.

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum Date	Gage height (ft)	Discharge (ft^3/s)
		Hawaii, Island of Molokai					
16411300	Kakaako Gulch at Highway 46, near Mauna Loa	Lat 21°08'49", long 157°11'36", at Highway 46, 1.6 mi northeast of Mauna Loa, and 1.8 mi upstream from Kamakahi Gulch.	0.55	1964-85	-	-	No flow
16411320	Kakaako Gulch above Kamakahi Gulch, near Mauna Loa	Lat 21°10'11", long 157°11'56", 0.1 mi upstream from Kamakahi Gulch, 1.7 mi downstream from Highway 46, and 2.5 mi northeast of Mauna Loa.	1.40	1964-85	2-13-85	-	e1
16411400	Kakaako Gulch near Mauna Loa	Lat 21°10'39", long 157°12'31", on left bank 1.0 mi downstream from Kamakahi Gulch, and 3.0 mi north of Mauna Loa School.	5.34	1963-72≠, 1973-85	2-13-85	1.95	31
16411600	Kaunala Gulch near Mauna Loa	Lat 21°07'01", long 157°15'43", at Sand Haul Road, 3.2 mi east of Laau Point lighthouse, and 3.3 mi southwest of Mauna Loa.	.28	1964-85	12-25-84	3.87	151
16411640	Halena Gulch near Mauna Loa	Lat 21°05'53", long 157°13'47", 2.7 mi southwest of Mauna Loa and 5.5 mi east of Laau Point.	2.07	1965-85	12-25-84	2.75	358
16411800	Kaluapeelua Gulch at Hoolehua	Lat 21°09'55", long 157°04'22", 0.4 mi south of Hoolehua and 2.1 mi west of Kualapuu.	1.46	1964-85	-	-	No flow
16413500	Manawainui Gulch near Kualapuu	Lat 21°07'42", long 157°03'25", at bridge on Highway 46, 0.5 mi south of Holomua School, and 2.3 mi southwest of Kualapuu.	10.4	1965-85	1-30-85	5.14	109
16415400	Waweia Gulch at Kamalo	Lat 21°03'25", long 156°52'20", at Highway 45, 0.3 mi upstream from mouth, and 0.5 mi northeast of Kamalo.	2.12	1964-85	1-14-85	.98	193
16419000	Pohakupili Gulch near Halawa	Lat 21°07'59", long 156°44'15", at Highway 45, 0.5 mi upstream from mouth, and 1.9 mi south of Halawa.	.48	1964-85	2-14-85	7.90	535
		Hawaii, Island of Maui					
16500100	Kepuni Gulch near Kahikinui House	Lat 20°37'21", long 156°15'16", on right bank 120 ft upstream from bridge on Highway 31, 400 ftr upstream from Kamole Gulch, 1.1 mi east of Kahikinui House, and 8.5 mi west of Kaupo.	1.91	1963-72≠, 1973-85	1-14-85	5.70	381
16500300	Hawelewele Gulch near Kaupo	Lat 20°38'01", long 156°11'08", 700 ft upstream from Piilani Highway 31 and 3.9 mi west of Kaupo.	11.3	1967-85	9-23-85	10.41	4,550
16500800	Kukuiula Gulch near Kipahulu	Lat 20°39'18", long 156°04'44", at Highway 31, 1.3 mi west of Kipahulu, and 3.2 mi east of Kaupo.	.76	1963-68≠, 1969-85	9-23-85	4.80	302
16502400	Pukuilua Gulch near Hana	Lat 20°42'00", long 156°00'14", at Highway 31, 0.4 mi southwest of Puuiki, and 4.0 mi south of Hana.	.48	1963-85	5- 7-85	-	e2
16502800	Moomoonui Gulch at Hana	Lat 20°44'37", long 155°59'18", at Highway 31 just downstream from Moomooiki Gulch and 1.0 mi south of Hana.	.90	1963-85	5- 7-85	9.02	458

≠ Operated as a continuous-record gaging station.
e Estimated.

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		Hawaii, Island of Maui--Continued					
16502900	Kawaipapa Gulch at Hana	Lat 20°46'08", long 156°00'04", 1,000 ft upstream from Highway 36 and 0.3 mi northwest of Hana Hospital.	5.83	1965-85	5- 7-85	7.33	3,870
16603300	Unnamed gulch at Maliko Bay	Lat 20°56'26", long 156°21'04", at Hana Highway, 0.5 mi west of Maliko Bay, and 1.3 mi north of Hamakuapoko.	.43	1963-85	-	-	No flow
16603700	Kalialinui Gulch tributary near Pukalani	Lat 20°49'02", long 156°19'44", at Lower Kula Road and 1.4 mi south of Pukalani.	1.17	1967-85	-	-	No flow
16603800	Kaluapulani Gulch tributary near Pukalani	Lat 20°48'52", long 156°18'32", at Haleakala Highway, 1.5 mi west of Olinda Prison Camp, and 2.3 mi southeast of Pukalani.	.45	1963-85	1-14-85	1.55	27
16603850	Kalialinui Gulch near Kahului	Lat 20°52'47", long 156°26'06", 600 ft upstream from Hansen Road, 0.5 mi northeast of Puunene Hospital, and 2.5 mi southeast of Kahului Post Office.	17.9	1967-85	-	-	No flow
16607000	Iao Stream at Wailuku	Lat 20°53'38", long 156°30'27", 560 ft upstream from Market Street bridge at Wailuku and 1.9 mi upstream from mouth.	8.24	1951≠, 1952-85	2-26-85	3.12	928
16616500	Unnamed gulch at Maluhia Camp	Lat 20°57'26", long 156°31'41", at Kahekili Highway, 0.6 mi east of Maluhia Camp, and 1.8 mi northwest of Waihee.	.12	1964-85	2-26-85	4.58	53
16619700	Poelua Gulch near Kahakuloa	Lat 21°00'58", long 156°34'58", at Highway 30 (bypass), 1.3 mi southeast of Nakalele Point lighthouse, and 2.2 mi northwest of Kahakuloa.	1.18	1965-85	5-22-85	4.25	52
16623400	Honokeana Gulch near Honokahua	Lat 20°59'39", long 156°40'13", at Honoapiilani Highway, 1.1 mi southwest of Honokahua, and 1.1 mi south of Hawea Point.	.59	1964-85	-	-	No flow
16630200	Honokowai Stream at Honokowai	Lat 20°56'58", long 156°41'07", 0.5 mi southeast of Honokowai, and 1.1 mi northwest of Puukolii.	5.59	1962-63, 1965-85	2-26-85	3.39	242
16643300	Kauaula Stream near mouth, near Lahaina	Lat 20°52'09", long 156°39'43", 0.7 mi upstream from Honoapiilani Highway (bypass) and 1.3 mi southeast of Lahaina Lighthouse.	4.12	1960, 1962, 1964-85	3- 6-85	3.23	197
16646200	Olowalu Stream at Olowalu	Lat 20°49'23", long 156°37'15", on downstream side of center pier of plantation road bridge, 0.6 mi northeast of Olowalu, and 5.5 mi southeast of Lahaina.	4.08	1962-72≠, 1973-85	3- 6-85	3.09	198

≠ Operated as a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum Date	Gage height (ft)	Discharge (ft^3/s)
		Hawaii, Island of Maui--Continued					
16647500	Malalowaiaole Gulch near Maalaea	Lat 20°46'56", long 156°31'32", at Honoapiilani Highway, 200 ft upstream from mouth, 0.2 mi north of McGregor Point, and 1.2 mi southwest of Mealaea.	.64	1964-85	2-26-85	3.21	4
16650500	Waikapu Stream near Kihei	Lat 20°49'02", long 156°29'00", at railroad bridge beside Lower Maalaea Road, 2.5 mi northeast of Maalaea, and 2.5 mi northwest of Kihei.	6.97	1963-85	3-13-85	2.94	309
16658500	Waiakoa Gulch tributary near Waiakoa	Lat 20°44'56", long 156°19'22", at Upper Kula Road, 1.0 mi southeast of Waiakoa, and 1.0 mi northeast of junction of Lower and Upper Kula Roads.	.98	1984-85	-	-	No flow
16659000	Waiakoa Gulch at Kihei	Lat 20°47'14", long 158°27'41", 0.3 mi northeast of Kihei and 0.4 mi upstream from mouth.	10.1	1963-85	-	-	No flow
16660000	Kulanihakoi Gulch near Kihei	Lat 20°46'06", long 156°27'03", on right bank 0.5 mi northeast of Lihue Cemetery, 0.8 mi upstraam from mouth, and 1.3 mi southeast of Kihei.	14.4	1963-70≠, 1971-85	-	-	No flow
16663500	Kamaole Gulch at Kamaole	Lat 20°43'36", long 156°27'02", at Kihei Road, 350 ft upstream from mouth, and 0.2 mi south of Kamaole.	4.28	1972-85	-	-	No flow
16664000	Liilioholo Gulch at Kamaole	Lat 20°43'04", long 156°26'55", on upstream side of Kihei Road, 300 ft upstream from mouth, and 0.8 mi south of Kamaole.	4.12	1972-85	-	-	No flow
		Hawaii, Island of Hawaii					
16701300	Waiakea Stream at Hilo	Lat 19°42'38", long 155°05'02", 0.3 mi upstream from Kinoole Street bridge and 1.3 mi southeast of Hilo Post Office.	35.8	1968-85	3- 1-85	3.90	290
16701400	Palai Stream at Hilo	Lat 19°40'56", long 155°04'04", at Highway 11, 300 ft south of Palai Street intersection, and 3.5 mi southeast of Hilo Post Office.	5.08	1965-85	3- 6-85	3.50	209
16717400	Kalaoa Mauka Stream near Hilo	Lat 19°48'07", long 155°06'03", at culvert on Highway 19, 1.0 mi north of Papaikou, and 5.1 mi north of Hilo Post Office.	.24	1963-85	11-18-84	4.75	80
16717600	Alia Stream near Hilo	Lat 19°50'38", long 155°06'21", on left bank 10 ft downstream from culvert on Highway 19 at Pepeekeo, 2.0 mi south of Honomu, and 8.0 mi north of Hilo.	.58	1962-72≠, 1973-85	11-18-84	4.57	585
16717650	Kapehu Stream near Pepeekeo	Lat 19°51'52", long 155°06'11", at culvert on Highway 19, 1.0 mi southeast of Honomu, 2.2 mi north of Pepeekeo, and 9.4 mi north of Hilo.	1.09	1963-85	3- 6-85	6.20	460
16717800	Pohakupuka Stream near Papaaloa	Lat 19°57'20", long 155°11'20", on right bank 200 ft downstream from Highway 19, 2.8 mi northweat of Honohina, and 3.0 mi southwest of Papaaloa.	2.76	1963-80≠, 1983-85	3- 6-85	5.87	681
16717850	Keehia Gulch near Ookala	Lat 20°01'08", long 155°18'45", at culvert on Highway 19, 1.7 mi west of Ookala, and 4.1 mi southeaat of Paauilo.	.62	1963-85	3- 6-85	3.43	96
16717920	Ahusloa Gulch at Honokaa	Lat 20°05'12", long 155°29'17", at Highway 24, 1.1 mi northwest of Honokaa Hospital, and 1.5 mi upstream from mouth.	2.27	1963-85	-	-	No flow

≠ Operated aa a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations during water year 1985--Continued

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum: Date	Annual maximum: Gage height (ft)	Annual maximum: Discharge (ft^3/s)
		Hawaii, Island of Hawaii--Continued					
16717950	Honokaia Guloh tributary near Honokaa	Lat 20°02'58", long 155°32'19", at culvert 4.8 mi southwest of Honokaa Hospital, and 5.5 mi southeast of Kukuihaele.	2.42	1963-85	-	-	No flow
16752600	Hapahapai Gulch at Kapaau	Lat 20°14'00", long 155°48'00", at Highway 27, 300 ft east of Kapaau Post Office.	1.52	1963-85	-	-	No flow
16755800	Luahine Gulch near Waimea	Lat 20°03'11", long 155°44'35", at culvert 5.1 mi northwest of Waimea and 5.7 mi east of Kawaihae.	.32	1963-85	3- 6-85	2.26	51
16756500	Keanuiomano Stream near Kamuela	Lat 20°01'48", long 155°42'05", on left bank 150 ft upstream from Highway 25 at Waiaka and 2.0 mi west of Kamuela.	4.3	1964-72≠, 1973-85	3- 6-85	6.48	1,280
16759040	Paiakuli Reservoir tributary near Waimea	Lat 20°02'16", long 155°38'08", at Highway 19, 2.1 mi west of Puukapu Reservoir, and 2.6 mi northeast of Waimea.	.27	1963-85	12- 9-84	2.75	97
16759060	Kamakoa Gulch near Waimea	Lat 19°57'32", long 155°41'02", at bridge, 1.4 mi north of Saddle Road Junction, and 4.5 mi south of Waimea.	50.6	1963-85	-	-	No flow
16759080	Popoo Gulch near Waikii	Lat 19°52'11", long 155°43'51", at bridge on Highway 19, 2.0 mi north of Keamuku, and 5.2 mi west of Waikii.	33.1	1963-85	-	-	No flow
16759180	Keopu Stream near Kailua	Lat 19°38'54", long 155°58'15", at county road bridge, 1.9 mi east of Kailua, and 2.3 mi northwest of Holualoa Post Office.	2.61	1962, 1965-85	-	-	No flow
16759300	Waiaha Stream at Luawai, near Holualoa	Lat 19°38'12", long 155°55'45", on right bank at Luawai, 1.8 mi northeast of Holualoa School, and 4.2 mi southeast of Honokohau School.	8.74	1961-~~85~~ 71≠ 1972-85	6-26-85	2.45	32
16762000	Alapai Gulch at Naalehu	Lat 19°04'00", long 155°35'19", at debris catchment outlet of Naalehu Watershed Protection Project and 0.2 mi upstream from Highway 11 at Naalehu.	2.87	1963-85	9-23-85	7.25	1,200
16767000	Ninole Gulch near Punaluu	Lat 19°10'44", long 155°33'46", on right bank 300 ft downstream from forest-reserve boundary, 4.6 mi northwest of Punaluu, and 6.0 mi north of Honuapo.	15.5	1966-82≠, 1983-85	3- 1-85	4.93	528
16770000	Honamoa Gulch at Pahala	Lat 19°11'45", long 155°29'11", at bridge, 0.6 mi southwest of Pahala, and 4.1 mi north of Punaluu.	9.41	1963-85	3- 1-85	12.1	3,580
16770500	Paauau Gulch at Pahala	Lat 19°12'39", long 155°28'48", on right bank 100 ft downstream from bridge on Wood Valley Road and 0.7 mi north of Pahala.	1.74	1962-79≠, 1980-85	3- 1-85	4.08	245

≠ Operated as a continuous-record gaging station.

Discharge measurements made at miscellaneous sites during water year 1985

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Hawaii, Island of Oahu				
Kumaipo Stream	Kaupuni Stream	Lat 21°29'42", long 158°09'43", 1.6 mi upstream from confluence of Kumaipo and Honua Streams, 3.7 mi northeast of Waianae High School, and 3.9 mi northeast of Waianae Post Office.			7-11-85 7-24-85	<0.01 <.01
Kumaipo Stream	Kaupuni Stream	Lat 21°29'37", long 158°09'42", 1.5 mi upstream from confluence of Kumaipo and Honua Streams, 3.6 mi northeast of Waianae High School, and 3.8 mi northeast of Waianae Post Office.			7-11-85 7-24-85	.01 <.01
Kumaipo Stream	Kaupuni Stream	Lat 21°29'34", long 158°09'41", 1.5 mi upstream from confluence of Kumaipo and Honua Streams, 3.6 mi northeast of Waianae High School, and 3.8 mi northeast of Waianae Post Office.			7-11-85 7-24-85	<.01 No flow
Kumaipo Stream	Kaupuni Stream	Lat 21°29'18", long 158°09'36", 1.1 mi upstream from confluence of Kumaipo and Honua Streams, 3.5 mi northeast of Waianae High School, and 3.6 mi northeast of Waianae Post Office.			7-24-85	.02
Waianae tunnel		Lat 21°29'16", long 158°09'34", 1.1 mi upstream from confluence of Kumaipo and Honua Streams, 3.5 mi northeast of Waianae High School, and 3.6 mi northeast of Waianae Post Office.			7-24-85	.02
Kumaipo Stream	Kaupuni Stream	Lat 21°29'07", long 158°09'36", 0.9 mi upstream from confluence of Kumaipo and Honua Streams, 3.3 mi northeast of Waianae High School, and 3.4 mi northeast of Waianae Post Office.			7-22-85 7-24-85	.04 .03
Takeda Ranch intake		Lat 21°29'15", long 158°09'45", 3.3 mi northeast of Waianae High School, 3.5 northeast of Waianae Post Office, and 3.9 mi northeast of Lahilahi Point.			7-24-85	.02
Manoa Stream	Pacific Ocean	Lat 21°19'40", long 157°48'16", 0.2 mi downstream from confluence of Waihi and Waiakeakua Streams, 0.7 mi north of Manoa School, and 4.0 mi northeast of Honolulu Post Office.			7-12-85	1.44
Manoa Stream	Pacific Ocean	Lat 21°19'04", long 157°48'31", 0.2 mi east of Manoa School, 1.1 mi downstream from confluence of Waihi and Waiakeakua Streams, and 3.6 mi east of Honolulu Post Office.			7-12-85	1.60
Manoa Stream	Pacific Ocean	Lat 21°19'01", long 157°48'33", 0.3 mi southeast of Manoa School, 1.1 mi downstream from confluence of Waihi and Waiakeakua Streams, and 3.5 mi northeast of Honolulu Post Office.			7-12-85	1.55
Manoa Stream	Pacific Ocean	Lat 21°18'47", long 157°48'44", 0.5 mi south of Manoa School, 1.5 mi downstream from confluence of Waihi and Waiakeakua Streams, and 3.4 mi east of Honolulu Post Office.			7-12-85	1.64

< Actual value is known to be less than the value shown.

Discharge measurements made at miscellaneous aitea during water year 1985--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Hawaii, Island of Oahu--Continued				
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'40", long 157°49'17", 1.6 mi east of Hawaiian Memorial Park cemetery, 1.9 mi southeast of Castle High School, and 2.5 mi northeast of Pali Golf Course.		1984	10- 1-84	.13
					12-11-84	.12
					12-13-84	.11
					12-13-84	.13
					12-14-84	.12
					12-15-84	.12
					12-16-84	.12
					12-17-84	.12
					12-18-84	.12
					12-19-84	.11
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'42", long 157°49'13", 1.5 mi east of Hawaiian Memorial Park cemetery, 1.8 mi southeast of Castle High School, and 2.4 mi northeast of Pali Golf Course.		1984	12-11-64	.26
					12-13-84	.25
					12-13-84	.25
					12-14-84	.26
					12-15-84	.23
					12-16-84	.26
					12-17-84	.26
					12-18-84	.24
					12-19-84	.24
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'42", long 157°49'10", 1.5 mi east of Hawaiian Memorial Park cenetery, 1.8 mi aouthaast of Castle High School, and 2.4 mi northeast of Pali Golf Course.		1984	10- 1-84	.25
					12-11-84	.26
					12-13-84	.23
					12-13-84	.24
					12-14-84	.25
					12-14-84	.26
					12-15-84	.22
					12-16-84	.25
					12-17-84	.26
					12-17-84	.23
					12-18-84	.23
					12-18-84	.22
					12-19-84	.22
Right Branch of Luluku Stream	Luluku Stream	Lat 21°23'41", long 157°49'05", 1.4 mi east of Hawaiian Memorial Park cemetery, 1.7 mi southeast of Castle High School, and 2.3 mi northeast of Pali Golf Course.		1984	10- 1-84	.29
					12-13-84	.23
					12-13-84	1.58
					12-13-84	1.69
					12-13-84	1.80
					12-14-84	1.82
					12-14-84	1.87
					12-15-84	1.69
					12-16-84	1.75
					12-17-64	1.81
					12-17-84	1.93
					12-18-84	1.79
					12-18-84	.24
					12-18-84	.23
					12-19-84	.22
		Hawaii, Island of Maui				
Hanawi Stream	Pacific Ocean	Lat 20°49'15", long 156°06'25", 0.7 mi downstream from Hanawi bridge and Maui Pine pump, 0.95 mi southwest of Nahiku, and 4.3 mi southeast of Keanae Point.		1927-32ƒ, 1932-47≠, 1974, 1975	11- 2-84	15
Hanawi Stream	Pacific Ocean	Lat 20°49'21", long 156°06'23", 0.8 mi downstream from Hanawi bridge and Maui Pine pump and 0.9 mi southwest of Nahiku.		1974, 1975	11- 2-84	18
Hahalawe Gulch	Pacific Ocean	Lat 20°40'38", long 156°02'36", at bridge on Highway 31 and 1.6 northeast of Kipahulu.		1969	10- 4-84	1.1

ƒ Operated as a contiuous-record gaging station by E. M. I. Co.
≠ Operated as a continous-record gaging station.

Discharge measurements made at miscellaneous sites during water year 1985--Continued

Stream	Tributary to	Location	Drainage area mi^2	Measured previously (wster years)	Measurements	
					Date	Discharge (ft^3/s)
		Hawaii, Island of Hawaii				
Kawainui	Pacific Ocean	Lat 19°49'19", long 155°06'27", 0.8 mi south of Pepeekeo and 2.4 mi north of Papaikou.		1984	10-26-84	3.87
Kawaiki Stream	Kawainui Stream	Lat 20°05'18", long 155°40'49", 75 ft above Kawaiki intake and 4.4 mi north of Kamuela.			8-21-85	2.40
Upper Hamakua ditch		Lat 20°05'03", long 155°40'30", at altitude 4,010 ft and 4.2 mi north of Kamuela.			8-21-85	1.09
Upper Hamakua ditch		Lat 20°04'49", long 155°40'23", at altitude 3,960 ft and 4.0 mi north of Kamuela.			8-21-85	1.02
Upper Hamakua ditch		Lat 20°04'26", long 155°40'24", at altitude 3,890 ft and 3.6 mi north of Kamuela.			8-21-85	1.82
Upper Hamakua ditch		Lat 20°04'03", long 155°40'12", at altitude 3,800 ft and 3.2 mi north of Kamuela.			8-21-85 8-22-85 9-18-85	2.61 2.98 17.9
Upper Hamakua ditch		Lat 20°03'52", long 155°40'02", at altitude 3,760 ft and 3.0 mi north of Kamuela.			8-22-85 9-18-85	4.23 16.6
Koiawe Stream	Waipio Stream	Lat 20°03'39", long 155°39'37", at altitude 3,550 ft and 2.7 mi northeast of Kamuela.			8-22-85	4.49
Koiawe Stream	Waipio Stream	Lat 20°03'27", long 155°39'12", at altitude 3,470 ft and 2.6 mi northeast of Kamuela.			8-22-85	5.24
Koiawe Stream	Waipio Stream	Lat 20°03'38", long 155°38'57", 300 ft above Koiawe intake at altitude 3,380 ft and 3.1 mi northeast of Kamuela.			8-22-85	5.45
Upper Hamakua ditch		Lat 20°03'18", long 155°38'38", at altitude 3,080 ft and 3.0 mi northeast of Kamuela.			8-22-85	3.62
Upper Hamakua ditch		Lat 20°03'27", long 155°38'22", at altitude 3,060 ft and 3.2 mi northeast of Kamuela.			8-21-85	3.02
Upper Hamakua ditch		Lat 20°02'30", long 155°38'15", at Waima tunnel portal and 3.4 mi northeast of Kamuela.			8-21-85	3.11
Upper Hamakua ditch		Lat 20°02'23", long 155°37'57", 5 ft above Waima intake and 3.7 mi northeast of Kamuela.			8-21-85 9-18-85	3.33 14.9
Upper Hamakua ditch		Lat 20°03'03", long 155°37'30", 200 ft balow Waimea Reservoir and 3.6 northeast of Kamuela.			8-23-85 9-24-85	8.31 1.06
Upper Hamakua ditch		Lat 20°02'30", long 155°36'28", 30 ft above by-pass to Puukapu Reservoir and 4.8 mi east of Kamuela.			8-23-85 9-24-85	9.11 .19
Upper Hamakua ditch		Lat 20°02'23", long 155°38'12", 200 ft above Puukapu Reservoir and 5.1 mi east of Kamuela.			8-23-85 9-24-85	7.35 .26

Water-quality partial-record stations are particular sites where chemical-quality, biological and or sediment data are collected systematically over a pariod of years for use in hydrologic analyses. A schematic diagram showing water-quality stations in Kamooalii Stream basin, Kaneohe, Oahu is shown in figure 15 and the data are listed in downstream order.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU

16265600 RIGHT BRANCH KAMOOALII STREAM NEAR KANEOHE (LAT 21°23'22" LONG 157°47'44")

Streamflow and water-quality data for this station are published in pages 78-83.

16265700 KAMOOALII STREAM AT ALTITUDE 200 FT NEAR KANEOHE (LAT 21°23'12" LONG 157°47'56")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)
FEB								
14...	1215	756	3.1	207	7.0	20.0	5.2	7.3
MAY								
06...	1450	757	2.0	159	6.4	20.5	9.0	8.3
JUN								
05...	1010	761	.70	195	6.8	22.5	1.1	7.6

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
FEB							
14...	81	--	7	--	--	--	--
MAY							
06...	93	K1300	18	.20	.50	.70	.070
JUN							
05...	88	120	1	.20	.40	.60	.020

16267500 HOOLEINAIWA STREAM ABOVE CONFLUENCE WITH KAMOOALII STREAM NEAR KANEOHE (LAT 21°23'15" LONG 157°48'19")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
JUN										
03...	1230	764	.81	188	6.9	26.0	2.2	6.2	76	K110

DATE	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
JUN										
03...	59	13	10	8.3	14	34	.8	.80	46	13

K Results based on colony count outside the acceptable range (non-ideal colony count).

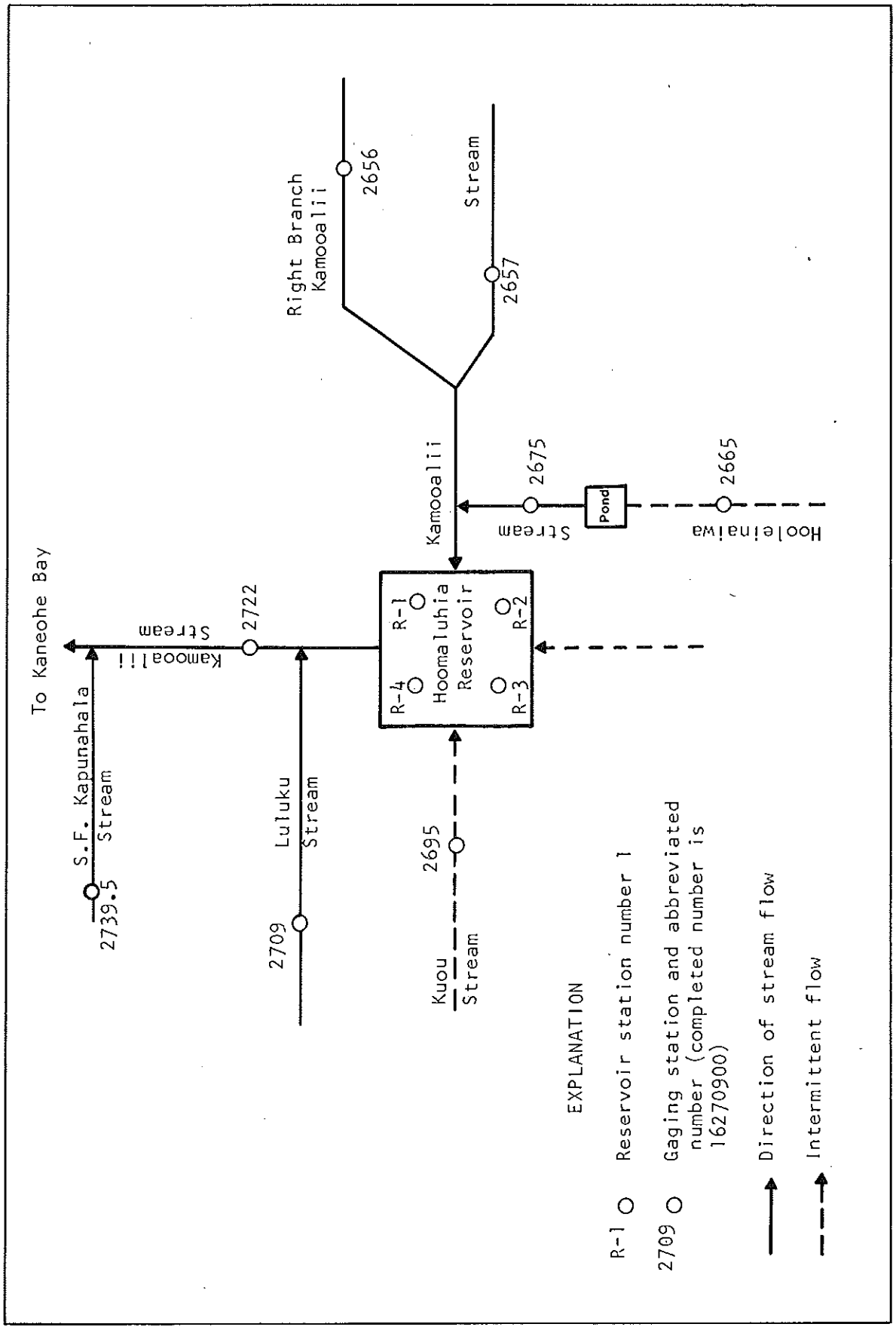


Figure 15.--Schematic diagram showing water-quality stations in Kamooalii Stream basin, Kaneohe, Oahu.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

16267500 HOOLEINAIWA STREAM ABOVE CONFLUENCE WITH KAMOOALII STREAM NEAR KANEOHE--Continued

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
JUN 03...	15	<.10	26	110	120	.15	1	<.10	<.10	.030

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)
JUN 03...	30	<10	<1	<1	<100	7	<10	<.5	1	<1

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)
JUN 03...	<10	<1	<1	<3	4	5	750	160	3	<1

DATE	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)
JUN 03...	<10	<4	130	100	<.1	<.1	<1	<10	2

DATE	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
JUN 03...	<1	<1	<1	<1	<1	62	<6	<10	6

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

16267500 HOOLEINAIWA STREAM ABOVE CONFLUENCE WITH KAMOOALII STREAM NEAR KANEOHE--Continued

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)
JUN									
03...	1.9	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01

DATE	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)
JUN									
03...	<.010	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)
JUN								
03...	<.01	<.01	<.01	<.10	<.1	<.01	<1	<.01

16269500 KUOU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE (LAT 21°23'30" LONG 157°48'44")

DATE	TIME	BARO-METRIC PRES-SURE (MM OF HG)	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)
MAY								
06...	1330	757	6.0	293	6.0	21.0	6.7	9.1

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)
MAY							
06...	103	350	13	4.1	.60	4.7	.040

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212329157483101 HOOMALUHIA RESERVOIR SEC 3-1 NEAR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
OCT							
05...	1144	759	1.00	190	7.9	27.8	8.0
05...	1145	759	3.00	190	7.9	27.7	8.0
05...	1146	759	5.00	191	7.9	27.6	7.6
05...	1147	759	7.00	191	7.7	27.2	7.4
05...	1149	759	9.00	192	7.4	26.9	4.5
FEB							
07...	1007	760	1.00	209	7.8	22.3	9.6
07...	1009	760	3.00	210	7.8	21.8	9.5
07...	1011	760	5.00	210	7.7	21.5	9.2
07...	1013	760	7.00	208	7.4	21.3	7.9
07...	1015	760	9.00	208	7.1	21.2	6.4
JUN							
03...	1125	762	1.00	187	7.6	25.9	8.7
03...	1127	762	3.00	187	7.8	25.8	8.6
03...	1128	762	5.00	187	7.8	25.8	8.6
03...	1129	762	7.00	187	7.9	25.7	8.6
03...	1130	762	9.00	185	7.8	25.4	8.0
			9.8 (bottom)				

212329157483102 HOOMALUHIA RESERVOIR SEC 3-2 NEAR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT										
05...	1155	759	1.00	191	7.9	27.5	1.7	8.0	102	--
05...	1156	759	3.00	191	7.9	27.7	--	8.0	102	--
05...	1158	759	5.00	191	7.9	27.6	--	7.9	101	--
05...	1200	759	6.00	191	7.7	27.5	1.4	7.7	98	--
05...	1201	759	7.00	191	7.7	27.2	--	7.5	95	--
05...	1202	759	9.00	191	7.6	27.0	--	6.7	85	--
05...	1205	759	10.0	192	7.4	27.0	2.5	4.7	59	--
05...	1206	759	11.0	195	7.1	26.6	--	1.2	15	--
FEB										
07...	1020	760	1.00	209	7.8	22.0	.80	9.6	111	59
07...	1022	760	3.00	209	7.8	21.7	--	9.4	107	--
07...	1024	760	5.00	209	7.8	21.5	--	9.2	105	--
07...	1025	760	6.00	209	7.7	21.5	.50	9.1	103	56
07...	1028	760	7.00	209	7.4	21.3	--	8.0	91	--
07...	1029	760	9.00	208	7.2	21.2	--	7.0	79	--
07...	1030	760	10.0	208	7.1	21.0	1.7	6.6	74	66
07...	1040	760	--	209	7.5	21.5	--	8.4	96	--
JUN										
03...	1134	762	3.00	187	8.0	25.7	--	8.8	106	--
03...	1135	762	5.00	187	8.0	25.7	--	8.6	106	--
03...	1137	762	7.00	187	8.0	25.6	--	8.5	104	--
03...	1138	762	9.00	186	7.8	25.3	--	8.0	97	--
03...	1140	762	1.00	187	8.0	26.0	1.3	8.6	106	2
03...	1145	762	6.00	187	8.0	25.5	1.0	8.6	106	6
03...	1150	762	10.0	188	7.5	25.0	2.5	7.3	88	2
			11.5 (bottom)							

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212329157483102 HOOMALUHIA RESERVOIR SEC 3-2 NEAR KANEOHE--Continued

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
FEB									
07...	1040	68	24	11	9.7	15	32	.8	1.0

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)
FEB								
07...	44	27	19	<.10	21	123	130	.17

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT						
05...	1155	<1	--	--	--	--
05...	1200	<1	--	--	--	--
05...	1205	4	--	--	--	--
FEB						
07...	1020	3	<.10	.60	--	.010
07...	1025	5	<.10	.40	--	.010
07...	1030	4	<.10	1.0	--	.030
JUN						
03...	1140	<1	.20	.30	.50	.030
03...	1145	<1	.20	.30	.50	.030
03...	1150	<1	.20	.40	.60	.050

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
FEB										
07...	1040	160	20	<1	<1	<100	11	<10	<.5	<1

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212329157483102 HOOMALUHIA RESERVOIR SEC 3-2 NEAR KANEOHE--Continued

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
FEB 07...	<1	<10	<1	5	<3	1	1	220	19	17

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
FEB 07...	2	<10	<4	30	12	<.1	<1	<10	11

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB 07...	1	<1	<1	<1	<1	89	<6	20	<3

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
FEB 07...	3.1	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
FEB 07...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 07...	<.01	<.10	<.1	<.01	<1	<.01	.04	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212329157463103 HOOMALUHIA RESERVOIR SEC 3-3 NEAR KANEOHE (LAT 21°23'29" LONG 157°48'31")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
OCT							
05...	1206	759	1.00	191	7.9	27.7	7.9
05...	1207	759	3.00	191	7.9	27.6	7.9
05...	1208	759	5.00	191	7.9	27.5	7.8
05...	1209	759	7.00	191	7.8	27.3	7.8
05...	1210	759	9.00	191	7.8	27.1	7.5
05...	1211	759	10.0	193	7.2	26.8	3.2
05...	1212	759	11.0	194	7.1	26.6	1.9
05...	1213	759	12.0	195	7.0	26.4	1.2
FEB							
07...	1048	760	1.00	209	7.9	22.1	9.7
07...	1050	760	3.00	208	7.9	21.9	9.6
07...	1051	760	5.00	208	7.9	21.5	9.5
07...	1053	760	7.00	208	7.5	21.3	8.2
07...	1055	760	9.00	208	7.3	21.2	7.7
07...	1057	760	11.0	208	7.2	21.1	6.7
07...	1058	760	12.0	208	7.1	21.1	6.3
JUN							
03...	1155	762	1.00	187	8.0	25.7	8.7
03...	1156	762	3.00	187	7.9	25.7	8.6
03...	1157	782	5.00	187	7.9	25.6	8.6
03...	1158	762	7.00	187	7.9	25.6	8.5
03...	1159	762	9.00	187	7.9	25.3	8.5
03...	1200	762	11.0	190	7.4	24.8	5.7
03...	1201	782	12.0	190	7.2	24.2	5.1
			12.8 (bottom)				

212331157482501 HOOMALUHIA RESERVOIR SEC 2-1 NEAR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
OCT							
03...	1155	760	1.00	192	7.7	27.6	8.1
03...	1157	760	3.00	192	7.7	27.6	7.8
03...	1159	760	5.00	192	7.7	27.5	7.7
03...	1201	760	7.00	192	7.6	27.2	7.1
03...	1203	760	9.00	191	7.4	27.0	6.1
05...	1114	760	1.00	191	8.0	27.6	8.0
05...	1115	760	3.00	191	7.9	27.4	7.8
05...	1116	760	5.00	191	7.7	27.2	7.4
05...	1117	760	7.00	191	7.7	27.2	7.4
05...	1119	760	9.00	191	7.4	26.9	5.0
FEB							
07...	1139	759	1.00	207	7.8	22.4	9.3
07...	1141	759	3.00	204	7.8	22.1	9.2
07...	1143	759	5.00	207	7.8	21.6	9.3
07...	1146	759	7.00	207	7.4	21.4	7.6
07...	1148	759	9.00	206	7.2	21.3	6.3
			9.8 (bottom)				

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212331157482502 HOOMALUHIA RESERVOIR SEC 2-2 NEAR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT									
03...	1208	760	3.00	191	7.8	27.6	--	7.8	99
03...	1209	760	5.00	190	7.8	27.4	--	7.8	99
03...	1213	760	7.00	190	7.8	27.2	--	7.6	96
03...	1214	760	9.00	190	7.4	26.6	--	4.7	59
05...	1100	760	1.00	192	7.9	27.5	2.0	7.8	99
05...	1102	760	3.00	192	7.8	27.3	--	7.5	95
05...	1104	760	5.00	192	7.7	27.1	--	7.2	91
05...	1105	760	6.00	192	7.7	27.0	2.0	7.1	89
05...	1107	760	7.00	192	7.6	27.0	--	6.9	87
05...	1108	760	9.00	192	7.5	26.9	--	5.8	73
05...	1110	760	11.0	194	7.1	26.5	2.0	2.5	31
FEB									
07...	1150	759	1.00	208	7.9	22.5	.60	9.4	109
07...	1153	759	3.00	208	7.9	22.2	--	9.4	108
07...	1154	759	5.00	208	7.9	21.6	--	9.3	106
07...	1155	759	6.00	209	7.7	21.5	1.2	8.5	97
07...	1156	759	7.00	209	7.5	21.4	--	7.6	86
07...	1158	759	9.00	206	7.2	21.2	--	6.8	77
07...	1200	759	11.0 12.4 (bottom)	204	7.1	21.0	3.4	5.5	62

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT							
05...	1100	--	<1	--	--	--	--
05...	1105	--	<1	--	--	--	--
05...	1110	--	<1	--	--	--	--
FEB							
07...	1150	85	4	<.10	.60	--	.010
07...	1155	K28	1	<.10	.60	--	.010
07...	1200	150	5	.10	.70	.80	.020

< Actual value is known to be less than the value shown.
K Result based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212331157482503 HOOMALUHIA RESERVOIR SEC 2-3 NEAR KANEOHE (LAT 21°23'31" LONG 157°48'25")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
OCT							
05...	1045	760	1.00	192	7.8	27.5	7.7
05...	1046	760	3.00	192	7.8	27.4	7.7
05...	1047	760	5.00	192	7.7	27.2	7.2
05...	1048	760	7.00	192	7.6	27.1	7.0
05...	1050	760	9.00	193	7.5	27.0	6.0
FEB							
07...	1206	759	1.00	209	7.8	22.6	9.4
07...	1208	759	3.00	208	7.9	22.3	9.4
07...	1210	759	5.00	208	7.9	21.6	9.3
07...	1212	759	7.00	207	7.5	21.3	8.1
07...	1215	759	9.00	206	7.2	21.2	6.3
			10.2 (bottom)				

212335157482601 HOOMALUHIA RESERVOIR SEC 1-1 NEAR KANEOHE (LAT 21°23'35" LONG 157°48'26")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT										
03...	1030	759	1.00	192	7.6	27.5	1.4	7.4	94	--
03...	1032	759	3.00	192	7.6	27.0	--	7.4	93	--
03...	1035	759	5.00	193	7.5	27.0	2.0	7.1	89	--
03...	1038	759	7.00	193	7.5	26.8	--	6.9	87	--
03...	1040	759	9.00	193	7.3	27.0	35	6.0	75	--
FEB										
08...	1325	758	1.00	210	7.8	22.0	1.1	9.6	111	110
06...	1328	758	3.00	210	7.8	22.1	--	9.5	110	--
06...	1330	758	5.00	208	7.8	21.5	1.3	8.9	101	K130
06...	1332	758	7.00	207	7.5	21.1	--	8.4	95	--
06...	1335	758	9.00	206	7.4	21.0	1.8	7.3	82	K200
06...	1340	758	--	208	7.7	21.5	--	8.7	99	--
07...	0805	760	1.00	202	7.5	21.3	--	8.9	101	--
07...	0806	760	3.00	207	7.5	21.3	--	8.9	101	--
07...	0807	760	5.00	207	7.5	21.4	--	8.9	101	--
07...	0809	760	7.00	206	7.4	21.3	--	8.3	94	--
07...	0811	760	8.00	205	7.3	21.2	--	7.6	86	--
07...	0812	760	9.00	204	7.2	21.1	--	7.1	80	--
JUN										
04...	1041	783	3.00	188	7.8	25.7	--	8.5	104	--
04...	1043	763	7.00	189	7.8	25.2	--	8.0	97	--
04...	1050	763	1.00	187	7.8	26.0	1.6	8.6	106	14
04...	1055	763	5.00	188	7.8	25.5	1.3	8.4	102	42
04...	1100	763	9.00	191	7.6	25.0	3.7	7.3	88	6
04...	1105	763	--	189	7.7	25.5	--	8.1	99	--
SEP										
24...	1115	757	1.00	186	7.8	26.5	1.7	8.0	100	K74
24...	1119	757	3.00	185	7.9	26.2	--	7.8	97	--
24...	1120	757	5.00	185	7.8	26.0	1.7	7.6	95	80
24...	1123	757	7.00	186	7.6	26.0	--	6.9	86	--
24...	1125	757	9.00	183	7.3	26.0	7.2	5.3	66	280
			10.0 (bottom)							

K Result based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157482601 HOOMALUHIA RESERVOIR SEC 1-1 NEAR KANEOHE--Continued

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
FEB									
06...	1340	67	23	11	9.6	16	34	.9	1.1
JUN									
04...	1105	60	16	9.4	8.9	15	35	.9	1.1

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)
FEB								
06...	44	18	19	<.10	21	121	120	.16
JUN								
04...	44	14	17	<.10	22	115	110	.16

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT						
03...	1030	<1	--	--	--	--
03...	1035	<1	--	--	--	--
03...	1040	110	--	--	--	--
FEB						
06...	1325	4	<.10	.60	--	.010
06...	1330	2	<.10	.50	--	.010
06...	1335	1	<.10	.50	--	.010
JUN						
04...	1050	<1	.20	.20	.40	.030
04...	1055	<1	.20	.20	.40	.030
04...	1100	9	.20	.20	.40	.030
SEP						
24...	1115	2	.20	.40	.60	.020
24...	1120	2	.20	.50	.70	.020
24...	1125	10	.20	.50	.70	.020

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
FEB										
06...	1340	160	10	<1	<1	<100	11	<10	1.1	<1
JUN										
04...	1105	10	<10	<1	<1	<100	10	<10	<.5	1

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157482601 HOOMALUHIA RESERVOIR SEC 1-1 NEAR KANEOHE--Continued

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)
FEB										
06...	<1	10	<1	2	<3	6	6	240	23	<1
JUN										
04...	<1	<10	<1	<1	<3	23	3	30	11	<1

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
FEB										
06...	1	<10	<4	30	19	--	<.1	<1	<10	10
JUN										
04...	2	<10	<4	<10	2	<.1	<.1	2	<10	<1

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L23 AS ZN)
FEB									
06...	4	<1	<1	<1	<1	87	<6	20	<3
JUN									
04...	2	<1	<1	2	<1	82	<6	<10	12

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
FEB										
06...	2.3	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010
JUN										
04...	2.3	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
FEB										
06...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01
JUN										
04...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157482601 HOOMALUHIA RESERVOIR SEC 1-1 NEAR KANEOHE--Continued

DATE	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB										
06...	<.01	<.10	<.1	<.01	<1	<.01	.05	<.01	<.01	<.01
JUN										
04...	<.01	<.10	<.1	<.01	<1	<.01	--	--	--	--

212335157482602 HOOMALUHIA RESERVOIR SEC 1-2 NEAR KANEOHE (LAT 21°23'35" LONG 157°48'26")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
OCT							
03...	1048	759	1.00	192	7.7	27.5	7.9
03...	1050	759	3.00	192	7.6	27.1	7.4
03...	1051	759	5.00	192	7.5	26.9	7.2
03...	1052	759	7.00	192	7.5	26.9	7.1
03...	1053	759	9.00	192	7.4	26.8	6.4
03...	1055	759	9.50	192	7.4	26.8	5.8
FEB							
06...	1350	758	1.00	210	7.7	22.2	9.6
06...	1351	758	3.00	210	7.7	22.0	9.4
06...	1353	758	5.00	209	7.9	21.4	9.5
06...	1355	758	7.00	208	7.7	21.1	8.6
06...	1356	758	9.00	208	7.5	21.0	7.5
07...	0754	760	1.00	208	7.4	21.4	9.0
07...	0756	760	3.00	209	7.5	21.4	8.9
07...	0757	760	5.00	209	7.5	21.4	8.9
07...	0758	760	7.00	208	7.4	21.3	8.9
07...	0800	760	9.00	205	7.3	21.1	7.3
JUN							
04...	1117	763	1.00	188	7.9	25.8	8.5
04...	1118	763	3.00	188	7.9	25.7	8.5
04...	1119	763	5.00	188	7.9	25.4	8.5
04...	1120	763	7.00	189	7.9	25.3	8.4
04...	1121	763	9.00	191	7.5	25.1	7.1
SEP							
24...	1105	757	1.00	185	7.9	26.3	7.9
24...	1107	757	3.00	185	7.8	26.3	7.7
24...	1109	757	5.00	185	7.7	26.1	7.3
24...	1110	757	7.00	186	7.6	26.0	6.9
24...	1111	757	9.00	184	7.3	25.7	5.5
			10.3 (bottom)				

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157482603 HOOMALUHIA RESERVOIR SEC 1-3 NEAR KANEOHE (LAT 21°23'35" LONG 157°48'26")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT										
03...	1100	759	1.00	193	7.7	27.5	1.8	7.8	99	--
03...	1102	759	3.00	192	7.6	27.0	--	7.3	92	--
03...	1104	759	5.00	192	7.6	26.9	--	7.2	91	--
03...	1105	759	7.00	191	7.6	27.0	1.5	7.2	91	--
03...	1108	759	9.00	193	7.4	26.8	--	6.0	75	--
03...	1110	759	12.0	194	7.0	26.0	2.3	4.1	51	--
03...	1111	759	11.0	194	7.0	28.3	--	4.2	52	--
FEB										
06...	1400	758	1.00	206	7.6	22.0	1.7	9.3	107	K190
06...	1403	758	3.00	210	7.7	21.9	--	9.5	109	--
06...	1404	758	5.00	209	8.0	21.5	--	9.6	109	--
06...	1405	758	7.00	208	7.6	21.0	1.2	8.4	95	K160
06...	1406	758	9.00	208	7.4	21.0	--	7.3	82	--
06...	1408	758	11.0	206	7.2	20.9	--	6.8	77	--
06...	1410	758	12.0	204	7.1	21.0	4.5	6.0	68	K240
07...	0740	760	1.00	208	7.5	21.4	--	8.9	101	--
07...	0742	760	3.00	208	7.5	21.4	--	8.9	101	--
07...	0744	760	5.00	208	7.5	21.3	--	8.8	100	--
07...	0745	760	7.00	207	7.4	21.3	--	8.3	94	--
07...	0747	760	9.00	206	7.3	21.1	--	7.6	86	--
07...	0749	760	11.0	204	7.2	21.1	--	6.6	74	--
07...	0750	760	12.0	203	7.1	20.9	--	6.0	67	--
JUN										
04...	1126	763	3.00	188	7.9	25.8	--	8.5	104	--
04...	1127	763	5.00	189	7.9	25.6	--	8.5	104	--
04...	1129	763	9.00	191	7.4	25.0	--	6.8	82	--
04...	1130	763	1.00	189	7.8	26.0	.90	8.6	106	9
04...	1131	763	11.0	193	7.1	24.7	--	5.6	67	--
04...	1135	763	7.00	190	7.6	25.0	1.4	7.6	92	8
04...	1140	763	12.0	197	7.1	24.0	2.0	5.5	66	14
SEP										
24...	1030	757	1.00	185	7.8	26.5	1.7	7.6	95	110
24...	1033	757	3.00	185	7.8	26.2	--	7.5	94	--
24...	1034	757	5.00	185	7.8	28.1	--	7.3	91	--
24...	1035	757	7.00	185	7.6	26.0	2.1	7.0	87	120
24...	1037	757	9.00	183	7.2	25.6	--	5.1	63	--
24...	1039	757	11.0	168	7.2	24.7	--	5.6	68	--
24...	1040	757	12.0	147	7.1	24.5	7.9	4.9	59	220
24...	1045	757	--	185	7.6	26.0	--	7.0	87	--
			13.1 (bottom)							

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
SEP									
24...	1045	56	6	8.3	8.5	15	38	.9	1.0

K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157482603 HOOMALUHIA RESERVOIR SEC 1-3 NEAR KANEOHE--Continued

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)
SEP								
24...	50	8.4	17	<.10	21	108	110	.15

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT						
03...	1100	2	--	--	--	--
03...	1105	<1	--	--	--	--
03...	1110	6	--	--	--	--
FEB						
06...	1400	<1	.10	.70	.80	.020
06...	1405	5	<.10	.60	--	.010
06...	1410	8	<.10	1.0	--	.020
JUN						
04...	1130	<1	.20	.30	.50	.030
04...	1135	1	.20	.30	.50	.030
04...	1140	<1	.20	.30	.50	.030
SEP						
24...	1030	1	.20	.30	.50	.020
24...	1035	2	.20	.40	.60	.020
24...	1040	8	.20	.40	.60	.020

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DIS-SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BERYLLIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)
SEP										
24...	1045	270	40	1	<1	<100	10	<10	<.5	<1

DATE	CADMIUM DIS-SOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)
SEP										
24...	<1	<10	<1	<1	<3	2	1	390	25	<1

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157482803 HOOMALUHIA RESERVOIR SEC 1-3 NEAR KANEOHE--Continued

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
SEP 24...	1	<10	<4	50	7	.1	<.1	<1	<10	15

DATE	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
SEP 24...	1	<1	<1	<1	<1	78	<6	30	5

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
SEP 24...	4.7	<1	<.1	<.010	<.1	<.010	<.010	<.010	<.01	<.010

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
SEP 24...	<.010	<.010	<.01	<.010	<.010	<.010	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
SEP 24...	<.01	<.10	<.1	<.01	<1	<.01	<.01	<.01	<.01	<.01

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157483001 HOOMALUHIA RESERVOIR SEC 4-1 NEAR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT									
05...	1400	757	7.00	191	7.9	27.5	1.6	8.0	102
05...	1403	759	3.00	191	7.9	27.5	--	8.0	101
05...	1405	757	5.00	192	7.9	27.0	1.2	8.0	102
05...	1407	759	7.00	192	7.8	27.0	--	7.6	96
05...	1410	757	8.00	192	7.7	27.0	2.0	7.0	89
05...	1411	759	9.00	193	7.4	27.0	--	5.4	68
FEB									
06...	1105	760	1.00	209	7.8	21.5	.90	9.2	105
06...	1108	760	3.00	210	7.8	21.5	--	9.3	106
06...	1110	760	5.00	210	7.8	21.5	1.1	9.2	104
06...	1112	760	7.00	210	7.6	21.0	--	8.3	94
06...	1115	760	8.00 9.5 (bottom)	209	7.5	21.0	1.6	7.6	86

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT						
05...	1400	--	1	--	--	--
05...	1405	--	<1	--	--	--
05...	1410	--	<1	--	--	--
FEB						
06...	1105	100	3	<.10	.50	.010
06...	1110	80	2	<.10	.50	.010
06...	1115	K150	2	<.10	.60	.010

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157483002 HOOMALUHIA RESERVOIR SEC 4-2 NEAR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
OCT							
05...	1351	757	1.00	192	7.9	27.5	8.1
05...	1352	757	3.00	192	7.9	27.5	8.1
05...	1353	757	5.00	192	7.9	27.0	7.9
05...	1354	757	7.00	192	7.9	27.0	7.9
05...	1355	757	8.00	192	7.7	27.0	7.5
05...	1357	757	9.00	193	7.4	27.0	5.1
05...	1358	757	10.0	193	7.2	27.0	4.5
FEB							
06...	1123	760	1.00	208	7.7	21.5	9.5
06...	1124	760	3.00	209	7.8	21.5	9.4
06...	1126	760	5.00	209	7.7	21.5	9.2
06...	1128	760	7.00	209	7.6	21.0	8.4
06...	1129	760	9.00	209	7.5	21.0	7.7
06...	1130	760	10.0	210	7.3	21.0	6.9
06...	1133	760	11.0	210	7.2	21.0	6.5
			11.5 (bottom)				

212335157483003 HOOMALUHIA RESERVOIR SEC 4-3 NEAR KANEOHE (LAT 21°23'35" LONG 157°48'30")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT									
05...	1335	758	1.00	191	7.9	27.5	1.5	8.1	103
05...	1336	758	3.00	191	7.9	27.5	--	8.1	103
05...	1338	758	5.00	191	7.9	27.5	--	8.0	102
05...	1340	758	6.00	192	7.8	27.0	1.9	7.8	99
05...	1341	758	7.00	192	7.8	27.0	--	7.6	96
05...	1342	758	9.00	192	7.8	27.0	--	6.7	85
05...	1343	758	11.0	193	7.2	27.0	--	3.7	47
05...	1345	758	12.0	195	7.0	26.5	23	1.9	24
FEB									
06...	1135	760	1.00	208	7.8	21.5	.80	9.5	108
06...	1137	760	3.00	210	7.8	21.5	--	9.4	107
06...	1139	760	5.00	210	7.8	21.5	--	9.3	105
06...	1140	760	6.00	209	7.7	21.5	1.3	9.2	104
06...	1141	760	7.00	209	7.6	21.0	--	8.5	96
06...	1142	760	9.00	210	7.5	21.0	--	8.1	91
06...	1144	760	11.0	210	7.3	21.0	--	7.4	83
06...	1145	760	12.0	210	7.2	21.0	2.2	6.8	76
			13.2 (bottom)						

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212335157483003 HOOMALUHIA RESERVOIR SEC 4-3 NEAR KANEOHE--Continued

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT						
05...	1335	--	<1	--	--	--
05...	1340	--	<1	--	--	--
05...	1345	--	47	--	--	--
FEB						
06...	1135	K140	4	<.10	.30	.010
06...	1140	120	1	<.10	.60	.010
06...	1145	K160	9	<.10	.90	.020

212336157482601 HOOMALUHIA RESERVOIR AT OUTLET, NEAR KANEOHE (LAT 21°23'36" LONG 157°48'26")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
SEP									
24...	1006	757	1.00	185	7.8	26.5	--	7.7	96
24...	1008	757	3.00	185	7.8	26.5	--	7.7	96
24...	1010	757	5.00	185	7.7	26.0	--	7.4	92
24...	1012	757	7.00	184	7.5	26.0	--	6.2	77
24...	1014	757	9.00	181	7.3	25.5	--	5.1	63
24...	1016	757	11.0	175	7.2	25.5	--	4.5	55
24...	1017	757	13.0	162	7.1	25.0	--	4.8	58
24...	1019	757	15.0	146	7.0	24.5	--	4.3	52
24...	1020	757	17.0	142	7.0	24.5	--	4.3	52
24...	1300	757	1.00	185	7.6	27.5	1.9	8.3	106
24...	1301	757	3.00	185	7.9	27.0	--	8.3	105
24...	1302	757	5.00	185	7.7	26.5	--	7.6	95
24...	1303	757	7.00	185	7.8	26.5	--	6.8	85
24...	1305	757	9.00	178	7.2	26.0	13	5.2	64
24...	1308	757	11.0	174	7.2	25.5	--	4.7	58
24...	1308	757	13.0	163	7.1	25.0	--	4.8	59
24...	1310	757	15.0	147	7.0	24.5	28	4.3	52
24...	1312	757	17.0	142	6.8	24.5	--	4.0	48
			18.0 (bottom)						

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
SEP							
24...	1300	83	2	.20	.30	.50	.020
24...	1305	220	13	.20	.50	.70	.020
24...	1310	K1100	23	.20	.60	.80	.040

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

16270900 LULUKU STREAM AT ALTITUDE 220 FT, NEAR KANEOHE (LAT 21°23'42" LONG 157°48'46")

Streamflow and water-quality data for this station are published in pages 84-91.

16272200 KAMOOALII STREAM BELOW LULUKU STREAM NEAR KANEOHE (LAT 21°23'47" LONG 157°48'23")

Streamflow and water-quality data for this station are published in pages 92-99.

16273950 SOUTH FORK KAPUNAHALA STREAM AT KANEOHE (LAT 21°24'21" LONG 157°48'31")

DATE	TIME	BAROMETRIC PRESSURE (MM OF HG)	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
NOV								
15...	1215	763	1.9	147	7.4	23.0	6.3	13

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16010000 - KAWAIKOI STREAM NR WAIMEA, KAUAI, HI (LAT 22 08 09 LONG 159 37 22)					
OCT , 1984					
15...	1125	2.2	34	7.0	19.0
DEC					
07...	1010	65	25	6.8	15.5
JAN , 1985					
23...	1300	20	68	6.9	16.0
MAR					
11...	1215	125	56	7.4	15.0
APR , 1985					
23...	1210	16	56	5.9	17.0
JUN					
13...	1130	6.1	32	6.2	18.0
JUL					
23...	1000	4.5	32	6.9	18.0
SEP					
10...	1015	3.8	29	6.8	17.5
16036000 - MAKAWELI RIVER NR WAIMEA, KAUAI, HI (LAT 21 58 31 LONG 159 38 55)					
OCT , 1984					
04...	1100	9.9	160	7.6	23.0
NOV					
26...	1135	128	72	7.6	20.5
JAN , 1985					
09...	1030	18	132	7.6	18.5
FEB					
28...	1030	1750	89	7.4	19.0
MAR					
06...	1115	230	62	7.0	17.0
APR , 1985					
24...	1020	43	120	7.4	18.5
JUN					
06...	1340	14	125	7.8	25.5
JUL					
18...	1335	93	65	6.7	24.0
SEP					
11...	1405	9.3	145	7.1	26.0
16049000 - HANAPEPE RIVER BL MANUAHI STR NR ELEELE, KAUAI, HI (LAT 21 57 29 LONG 159 33 13)					
OCT , 1984					
11...	1115	11	135	7.7	23.0
NOV					
28...	1000	141	85	7.5	20.5
JAN , 1985					
08...	1155	21	117	7.7	18.5
FEB					
27...	1050	149	91	7.2	19.0
MAR					
12...	1305	53	108	7.5	19.0
APR , 1985					
11...	1100	15	89	7.2	19.0
MAY					
03...	0950	362	60	6.8	19.0
JUN					
06...	1020	14	125	7.3	21.0
JUL					
18...	1020	119	56	6.9	22.0
SEP					
11...	1005	13	120	6.7	21.0
16060000 - SF WAILUA RIVER NR LIHUE, KAUAI, HI (LAT 22 02 24 LONG 159 22 58)					
OCT , 1984					
03...	1250	4.0	112	7.3	27.0
NOV					
02...	1300	3.9	110	7.3	21.5
DEC					
05...	1425	80	85	7.3	21.5
JAN , 1985					
03...	1305	46	85	7.2	19.5
31...	1420	34	116	6.7	20.0
MAR					
04...	1320	107	95	7.1	18.5
APR , 1985					
03...	1505	36	110	7.4	18.0
MAY					
14...	1400	38	97	7.1	22.0
JUN					
27...	1425	11	125	7.0	23.0
AUG					
20...	1405	4.3	110	6.7	27.0
16061000 - NORTH WAILUA DITCH NR LIHUE, KAUAI, HI (LAT 22 03 56 LONG 159 28 14)					
OCT , 1984					
01...	1305	16	74	7.9	20.5
NOV					
01...	1405	16	72	7.9	21.0
DEC					
03...	1215	27	70	7.4	19.5
JAN , 1985					
02...	1320	28	69	7.3	17.5
FEB					
01...	1230	20	80	7.1	16.5
MAR , 1985					
01...	1335	30	65	7.2	18.0
APR					
03...	1320	25	78	7.3	17.5
MAY					
08...	1440	27	55	7.0	19.0
JUN					
26...	1135	16	79	7.2	21.0
AUG					
19...	0940	18	68	7.3	19.0
16061200 - N WAILUA DITCH BL WAIKOKO STR NR LIHUE, KAUAI, HI (LAT 22 03 34 LONG 159 28 00)					
OCT , 1984					
23...	1205	16	95	7.8	22.0
NOV					
20...	1135	25	65	7.5	20.0
DEC					
20...	1105	25	73	7.2	19.5
JAN , 1985					
21...	1125	22	70	7.0	18.5
FEB					
19...	1115	24	78	7.3	18.5
APR , 1985					
01...	1105	24	73	7.3	18.0
MAY					
13...	1225	25	72	7.5	20.0
JUN					
26...	1000	18	78	7.2	20.0
AUG					
19...	1130	20	65	7.3	19.0

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16062000 - STABLE STORM DITCH NR LIHUE, KAUAI, HI (LAT 22 04 09 LONG 159 28 46)					
OCT , 1984					
23...	1010	20	102	7.5	23.0
NOV					
20...	1000	.41	95	7.5	20.0
DEC					
20...	0915	.02	90	7.2	21.0
JAN , 1985					
21...	0920	.02	89	7.3	18.5
FEB					
19...	0930	.21	90	7.2	19.0
APR , 1985					
01...	0915	.19	85	7.0	18.5
MAY					
08...	1320	.49	58	7.0	21.0
JUN					
28...	1130	31	78	7.2	21.0
AUG					
21...	1150	32	85	7.0	21.5
16063000 - NF WAILUA RIVER AT ALT 650 FT NR LIHUE, KAUAI, HI (LAT 22 04 02 LONG 159 26 21)					
OCT , 1984					
03...	1015	.94	102	7.3	22.0
NOV					
02...	1030	2.0	100	7.3	21.5
DEC					
05...	1050	60	75	7.1	20.5
JAN , 1985					
03...	0850	39	72	7.0	19.0
FEB					
01...	1005	14	85	7.2	15.0
MAR , 1985					
04...	0925	96	71	7.0	18.0
APR					
03...	1020	146	68	7.4	18.0
MAY					
13...	1020	57	78	7.2	19.5
JUN					
28...	1030	2.1	80	7.0	24.0
AUG					
21...	1010	1.8	98	6.8	23.0
16068000 - EB OF NF WAILUA RIVER NR LIHUE, KAUAI, HI (LAT 22 04 19 LONG 159 25 05)					
OCT , 1984					
26...	0935	10	105	7.4	22.0
NOV					
27...	0940	618	58	8.9	21.0
DEC					
27...	1010	60	69	7.0	19.5
JAN , 1985					
28...	1015	20	97	7.1	19.5
FEB					
25...	1000	33	88	7.3	20.0
MAR					
27...	1425	35	90	7.3	19.0
APR , 1985					
25...	1350	772	59	6.9	20.5
MAY					
28...	1015	28	94	6.9	20.5
JUN					
25...	1030	15	105	7.0	21.5
JUL					
26...	0945	16	96	6.8	22.0
AUG					
27...	1000	19	110	7.1	23.0
SEP					
24...	0940	27	83	6.7	21.0
16069000 - WAILUA DITCH NR KAPAA, KAUAI, HI (LAT 22 04 34 LONG 159 24 04)					
OCT , 1984					
23...	1440	10	130	7.8	23.0
NOV					
20...	1410	14	120	7.3	22.0
DEC					
20...	1410	20	110	7.0	21.0
JAN , 1985					
21...	1410	30	102	7.4	19.5
FEB					
19...	1410	24	105	7.3	20.0
APR , 1985					
01...	1415	18	110	7.4	19.0
MAY					
14...	1520	18	93	7.1	24.5
JUN					
26...	1440	18	125	7.1	22.0
AUG					
19...	1435	25	95	7.4	23.0
16071000 - NF WAILUA RIVER NR KAPAA, KAUAI, HI (LAT 22 03 08 LONG 159 22 22)					
OCT , 1984					
12...	1020	7.9	135	7.7	24.5
DEC					
11...	1050	120	90	7.2	21.0
JAN , 1985					
16...	1030	87	85	7.2	18.5
MAR					
08...	1040	115	95	7.3	18.5
APR , 1985					
25...	0900	279	90	7.2	21.0
JUN					
14...	1005	7.8	148	7.2	24.0
JUL					
19...	1040	8.2	120	7.4	24.0
SEP					
19...	1035	7.0	125	6.9	24.0
16071500 - LEFT BRANCH OPAEKAA STREAM NR KAPAA, KAUAI, HI (LAT 22 04 44 LONG 159 23 55)					
OCT , 1984					
05...	1125	.39	110	7.2	22.5
NOV					
30...	1315	5.9	80	7.0	21.5
JAN , 1985					
16...	1410	2.3	79	7.3	19.0
MAR					
08...	1140	2.3	90	7.1	19.5
APR , 1985					
23...	1155	2.3	87	6.9	21.0
JUN					
05...	1430	1.6	93	6.9	23.0
JUL					
18...	1100	.84	100	6.8	24.0
SEP					
05...	1350	.67	110	6.6	24.0

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16077000 - MAKALEHA DITCH NR KEALIA, KAUAI, HI (LAT 22 07 06 LONG 159 22 04)											
OCT , 1984						APR , 1985					
23...	1125	3.5	108	7.5	20.5	05...	0910	8.1	85	7.0	18.0
NOV						MAY					
20...	1020	14	70	7.4	20.5	10...	0920	7.8	70	6.9	19.0
DEC						JUN					
20...	1050	.82	85	7.4	20.0	26...	1150	7.7	85	7.0	20.0
JAN , 1985						AUG					
21...	1055	5.3	105	7.6	19.0	19...	1140	6.4	92	7.0	21.0
FEB											
19...	1055	4.3	110	7.5	19.5						
16079000 - KAPAHI DITCH NR KEALIA, KAUAI, HI (LAT 22 06 09 LONG 159 22 28)											
OCT , 1984						APR , 1985					
23...	1000	2.6	130	7.6	23.0	02...	1450	.20	120	7.4	19.0
NOV						MAY					
20...	0905	.51	130	7.3	22.0	10...	1440	9.2	97	7.3	21.0
DEC						JUN					
20...	0925	.20	105	7.0	20.5	26...	0945	6.1	105	6.9	20.5
JAN , 1985						AUG					
21...	0905	.31	120	7.5	18.5	19...	0945	4.1	113	6.9	22.0
FEB											
19...	0920	9.2	125	7.5	20.5						
16080000 - KAPAA STR AT KAPAHI DITCH INTK NR KAPAA, KAUAI, HI (LAT 22 06 15 LONG 159 22 29)											
DEC , 1984						MAR , 1985					
04...	1515	51	63	7.1	22.0	04...	1000	15	95	7.3	18.5
FEB , 1985						APR					
05...	1015	26	102	6.8	20.0	02...	1355	14	110	7.5	18.5
16087000 - ANAHOLA DITCH WASTEWAY NR KEALIA, KAUAI, HI (LAT 22 08 16 LONG 159 22 28)											
OCT , 1984						APR , 1985					
02...	0945	.04	70	6.5	23.0	05...	1020	.07	82	6.9	18.5
NOV						MAY					
02...	1005	.47	77	6.9	22.0	07...	1445	.05	72	6.8	22.0
DEC						JUN					
04...	1005	8.7	45	7.1	20.5	28...	0925	.19	70	6.9	21.0
JAN , 1985						AUG					
03...	1030	2.5	65	7.0	19.0	21...	0925	.09	85	6.8	23.0
30...	1100	.65	65	7.1	16.0						
MAR											
04...	1115	9.2	78	7.3	18.0						
16088000 - ANAHOLA DITCH AB KANEHA RES NR KEALIA, KAUAI, HI (LAT 22 08 10 LONG 159 22 28)											
OCT , 1984						APR , 1985					
23...	1325	.98	90	7.6	22.0	02...	0930	6.3	80	7.3	18.0
NOV						MAY					
20...	1220	12	60	7.1	20.5	07...	1350	10	59	7.1	21.0
DEC						JUN					
20...	1300	2.8	66	6.9	19.5	26...	1450	1.7	93	6.8	21.5
JAN , 1985						AUG					
21...	1320	3.1	80	7.3	18.0	19...	1500	2.2	85	6.8	21.5
FEB											
19...	1330	6.6	78	7.3	20.0						
16089000 - ANAHOLA STREAM NR KEALIA, KAUAI, HI (LAT 22 09 05 LONG 159 21 17)											
OCT , 1984						APR , 1985					
02...	1120	2.9	130	7.8	24.0	05...	1145	19	102	7.4	20.5
NOV						MAY					
02...	1140	25	120	7.5	23.5	10...	1145	7.4	100	7.3	21.0
DEC						JUN					
04...	1300	152	57	7.1	21.5	28...	1115	4.7	110	6.9	22.5
JAN , 1985						AUG					
03...	1235	18	89	7.4	19.5	21...	1105	3.8	120	6.8	23.0
29...	1045	11	102	7.5	19.5						
MAR											
04...	1315	16	103	7.5	20.0						

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16091000 - LOWER ANAHOLA DITCH NR KEALIA, KAUAI, HI (LAT 22 08 14 LONG 159 19 31)											
JAN , 1985						MAY , 1985					
21...	1225	3.4	130	7.2	20.5	07...	0930	3.4	140	6.8	22.0
FEB						JUN					
19...	1215	.17	120	7.3	22.5	26...	1325	2.4	130	6.7	24.0
APR						AUG					
02...	1135	.06	125	7.3	18.0	19...	1320	1.2	140	6.6	26.5
16097500 - HALAULANI STR AT ALT 400 FT NR KILAUEA, KAUAI, HI (LAT 22 10 54 LONG 159 25 17)											
OCT , 1984						APR , 1985					
10...	1030	4.7	102	7.5	22.5	22...	1405	14	77	7.1	22.0
NOV						JUN					
30...	0955	14	82	7.2	20.5	05...	1000	5.7	102	6.9	20.0
JAN , 1985						JUL					
22...	0935	10	96	7.3	19.5	17...	1400	12	82	7.0	24.0
MAR						SEP					
07...	1345	8.7	89	7.3	19.5	05...	1015	4.7	112	6.9	22.0
16100000 - HANALEI TUNNEL OUTLET NR LIHUE, KAUAI, HI (LAT 22 05 02 LONG 159 27 50)											
OCT , 1984						APR , 1985					
01...	1035	22	78	7.6	19.0	05...	0955	29	56	7.3	18.0
NOV						MAY					
01...	1110	19	83	7.5	19.0	14...	1030	34	74	7.3	18.0
DEC						JUN					
03...	1025	33	73	7.2	19.0	27...	1055	24	75	6.8	18.5
JAN , 1985						AUG					
02...	1020	50	65	7.2	18.0	20...	1035	28	56	6.6	20.0
31...	1030	47	57	6.6	14.5						
MAR											
01...	1100	54	54	7.3	17.5						
18103000 - HANALEI RIVER NR HANALEI, KAUAI, HI (LAT 22 11 31 LONG 159 27 57)											
OCT , 1984						APR , 1985					
09...	1110	39	100	8.0	23.5	22...	1115	687	66	7.2	20.5
NOV						JUN					
29...	1200	290	83	7.2	21.0	03...	0945	76	97	7.6	22.0
JAN , 1985						JUL					
17...	0930	80	85	7.3	18.5	17...	1040	199	76	6.9	22.0
MAR						SEP					
07...	1050	260	88	7.5	19.0	04...	1035	53	95	6.9	22.5
16108000 - WAINIHA RIVER NEAR HANALEI, KAUAI, HI (LAT 22 08 20 LONG 159 33 38)											
OCT , 1984						JUN , 1985					
19...	1050	34	71	7.9	20.0	04...	1020	54	62	6.8	19.0
DEC						JUL					
14...	1100	55	65	7.4	17.5	22...	1100	72	60	6.9	19.0
FEB , 1985						SEP					
07...	1130	60	86	8.8	17.5	25...	1115	63	54	7.5	19.5
APR											
09...	1100	73	58	7.5	16.5						

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16200000 - NF KAUKONAHUA STR AB RB NR WAHIAWA, OAHU, HI (LAT 21 31 09 LONG 157 56 53)					
NOV , 1984					
01...	1230	1.1	48	8.7	23.0
DEC					
12...	1445	5.9	41	6.7	19.5
JAN , 1985					
22...	1045	1.2	60	6.5	19.5
MAR					
19...	1330	3.0	58	6.5	18.5
MAY , 1985					
08...	1315	32	43	6.9	18.5
JUN					
18...	1250	1.6	60	6.7	22.5
AUG					
07...	1400	6.8	40	6.9	23.5
SEP					
17...	1335	3.8	48	7.0	22.0
16208000 - S F KAUKONAHUA STR AT E PUMP RE WAHIAWA, OAHU, HI (LAT 21 29 32 LONG 157 59 54)					
DEC , 1984					
11...	1340	8.6	78	6.6	20.0
FEB , 1985					
01...	1630	1.2	65	6.5	18.0
MAR					
15...	1705	13	67	6.6	19.0
MAY					
08...	1420	26	43	7.0	20.0
MAY , 1985					
10...	1745	13	55	6.9	22.0
JUN					
21...	1720	4.9	72	6.8	24.5
AUG					
01...	1110	12	41	6.5	23.0
15...	1510	29	49	6.9	24.0
16211600 - MAKAHA STREAM NR MAKAHA, OAHU, HI (LAT 21 30 16 LONG 158 10 59)					
NOV , 1984					
05...	1410	.02	260	6.9	21.5
DEC					
07...	1530	1.3	160	7.0	21.0
JAN , 1985					
29...	1230	.72	110	7.0	20.5
MAR					
22...	1140	.50	105	8.8	18.5
MAY , 1985					
10...	1540	.41	120	7.2	21.0
JUN					
27...	1250	.79	112	7.1	20.0
AUG					
06...	1540	.51	110	7.1	22.0
SEP					
23...	1350	1.7	195	7.7	20.5
16212800 - KIPAPA STREAM NR WAHIAWA, OAHU, HI (LAT 21 28 13 LONG 157 57 40)					
NOV , 1984					
02...	1315	1.1	43	6.6	24.5
DEC					
10...	1400	5.7	80	6.6	20.0
JAN , 1985					
25...	1255	.37	75	8.9	21.0
MAR					
15...	1230	3.5	82	6.7	20.0
MAY , 1985					
13...	1315	13	65	7.0	21.0
JUN					
24...	1420	.41	80	7.2	30.0
JUL					
31...	1445	82	54	6.7	24.0
SEP					
18...	1105	.23	69	6.9	25.0
16216000 - WAIAWA STREAM NR PEARL CITY, OAHU, HI (LAT 21 23 57 LONG 157 58 51)					
OCT , 1984					
12...	1240	1.3	900	7.1	23.5
JAN , 1985					
08...	1200	2.0	900	7.2	22.0
MAR					
01...	1420	55	180	7.3	21.5
APR					
16...	1410	1.8	900	7.6	23.0
MAY , 1985					
31...	1210	1.6	820	7.6	24.5
JUL					
19...	1230	2.9	570	7.6	25.0
SEP					
05...	1315	1.2	900	7.3	25.0
16226000 - NORTH HALAWA STREAM NR AIEA, OAHU, HI (LAT 21 23 46 LONG 157 53 37)					
JAN , 1985					
09...	1130	.01	200	6.8	18.5
MAR					
06...	1220	6.8	160	7.1	20.0
APR , 1985					
18...	1515	6.2	125	7.2	21.0
MAY					
30...	1140	.07	165	6.9	21.0
16226200 - NORTH HALAWA STREAM NR HONOLULU, OAHU, HI (LAT 21 22 34 LONG 157 54 22)					
JAN , 1985					
09...	1415	.03	140	6.9	20.5
APR					
19...	1500	2.5	150	7.5	22.0
MAY , 1985					
31...	1550	.13	180	6.9	21.5

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16232000 - NUUANU STR BL RES 2 WASTEWAY NR HONOLULU, OAHU, HI (LAT 21 20 57 LONG 157 49 40)					
OCT , 1984					
16...	1600	.28	150	7.3	23.0
JAN , 1985					
07...	1525	.83	155	7.3	19.5
MAR					
04...	1450	2.6	150	7.4	20.0
APR					
17...	1510	4.5	125	7.1	21.0
MAY , 1985					
29...	1240	3.2	140	7.5	20.5
JUL					
16...	1520	1.8	125	7.5	24.5
SEP					
04...	1415	1.2	135	7.3	24.0
16240500 - WAIAKEAKUA STREAM AT HONOLULU, OAHU, HI (LAT 21 19 53 LONG 157 48 08)					
OCT , 1984					
12...	1000	1.0	140	7.5	22.0
JAN , 1985					
07...	1030	1.4	130	7.3	19.5
MAR					
04...	1040	2.7	135	7.3	19.5
APR					
17...	1105	7.6	103	7.4	19.5
MAY , 1985					
29...	1515	1.8	140	7.3	20.5
JUL					
16...	1250	1.7	135	7.5	22.0
SEP					
04...	1120	1.6	135	7.5	22.5
16254000 - MAKAWAO STREAM NEAR KAILUA, OAHU, HI (LAT 21 21 49 LONG 157 46 02)					
OCT , 1984					
10...	1220	.88	180	7.5	23.0
NOV					
27...	1455	11	220	6.9	23.0
JAN , 1985					
23...	1455	2.8	210	7.1	21.0
JUN , 1985					
20...	1045	2.0	190	7.3	23.0
AUG					
08...	1105	1.8	190	7.3	23.0
16283200 - KAHALUU STREAM NEAR AHUIMANU, OAHU, HI (LAT 21 26 32 LONG 157 50 47)					
NOV , 1984					
09...	1440	.57	180	7.5	22.0
JAN , 1985					
14...	1600	.99	200	7.3	21.0
MAR					
12...	1235	1.1	200	7.3	22.0
APR , 1985					
26...	1100	.82	180	6.9	21.5
JUN					
28...	1450	1.3	180	7.5	25.0
AUG					
02...	1235	.90	175	7.2	23.0
16283600 - SF WAIHEE STR NR HEEIA, OAHU, HI (LAT 21 26 47 LONG 157 52 12)					
OCT , 1984					
02...	1035	1.1	110	6.7	20.0
NOV					
20...	1050	.99	110	8.8	19.5
JAN , 1985					
08...	1125	1.0	110	7.8	18.5
MAR , 1985					
05...	0945	.77	105	6.6	19.0
APR					
30...	0950	.90	110	7.6	19.0
JUN					
25...	0935	1.0	100	6.9	20.0
16283700 - NF WAIHEE STREAM NR HEEIA, OAHU, HI (LAT 21 26 48 LONG 157 52 18)					
NOV , 1984					
20...	0945	1.3	110	7.0	19.5
JAN , 1985					
08...	1320	1.3	105	7.7	19.5
MAR					
05...	1030	1.2	105	6.6	19.0
APR , 1985					
30...	1115	1.2	110	7.7	19.0
JUN					
25...	1040	1.4	115	6.8	19.5
16284200 - WAIHEE STREAM NR KAHALUU, OAHU, HI (LAT 21 27 04 LONG 157 51 36)					
OCT , 1984					
02...	1510	4.3	145	7.3	22.0
NOV					
20...	1330	4.4	150	6.9	20.5
JAN , 1985					
08...	1600	4.7	135	7.6	20.0
MAR , 1985					
05...	1345	4.9	140	7.4	21.0
APR					
30...	1430	4.8	135	7.5	20.5
JUN					
25...	1345	4.6	120	7.0	21.5

OBSERVATIONS OF PHYSICAL PARAMETERS

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16294900 - WAIKANE STREAM AT ALT 75 FT AT WAIKANE, OAHU, HI (LAT 21 30 00 LONG 157 51 54)					
NOV , 1984					
21...	1100	1.3	180	6.9	23.0
JAN , 1985					
23...	1055	3.8	160	7.5	20.5
MAR					
12...	1600	3.5	175	7.0	21.0
APR , 1985					
26...	0915	2.5	170	7.3	21.5
JUN					
18...	1440	2.8	175	7.5	23.0
AUG					
02...	1000	4.9	130	7.3	22.5
16296500 - KAHANA STR AT ALT 30 FT NR KAHANA, OAHU, HI (LAT 21 32 37 LONG 157 53 07)					
OCT , 1984					
04...	1310	13	130	7.0	22.0
NOV					
16...	1440	21	120	6.6	21.5
JAN , 1985					
22...	1430	17	125	7.1	20.5
APR , 1985					
23...	1415	29	93	6.8	21.0
JUN					
27...	1505	15	125	7.1	22.0
AUG					
13...	1030	19	130	6.6	22.5
16303000 - PUNALUU STREAM NR PUNALUU, OAHU, HI (LAT 21 33 33 LONG 157 54 06)					
JAN , 1985					
21...	1250	7.7	120	7.7	22.0
MAR					
06...	1310	13	115	7.7	20.0
APR					
29...	1315	7.0	115	8.2	22.5
JUN , 1985					
21...	1000	8.0	120	7.9	21.0
AUG					
05...	1410	7.7	110	7.6	23.0
16304200 - KALUANUI STREAM NR PUNALUU, OAHU, HI (LAT 21 35 22 LONG 157 54 38)					
NOV , 1984					
28...	1510	3.5	70	7.6	22.5
JAN , 1985					
22...	1115	40	59	7.0	19.5
APR					
23...	1030	2.0	75	6.6	20.5
JUN , 1985					
18...	1020	.05	75	6.8	24.5
AUG					
14...	1150	.54	65	7.4	24.0
16325000 - KAMANANUI STR AT PUPUKEA MIL RD NR MAUNAWAI, OAHU, HI (LAT 21 37 25 LONG 158 01 04)					
DEC , 1984					
05...	1425	1.8	62	6.6	23.0
JAN , 1985					
23...	1345	2.8	72	6.5	20.0
MAR					
20...	1200	2.6	80	6.7	22.5
MAY					
02...	1550	7.5	85	6.9	22.5
JUN , 1985					
20...	1310	1.7	87	7.0	25.5
AUG					
05...	1525	2.6	68	7.1	26.5
SEP					
19...	1200	.20	85	6.7	26.0
16330000 - KAMANANUI STREAM AT MAUNAWAI, OAHU, HI (LAT 21 38 20 LONG 158 03 27)					
DEC , 1984					
14...	1505	.50	120	7.2	22.0
JAN , 1985					
23...	1540	.05	210	6.6	22.0
MAR					
20...	1535	2.8	105	6.8	23.0
27...	1550	2.3	110	6.9	23.0
MAY					
03...	1640	6.9	86	--	24.0
MAY , 1985					
20...	1430	17	90	7.1	21.5
JUN					
21...	1200	1.3	117	7.2	25.0
AUG					
02...	1450	14	88	7.1	26.0
SEP					
19...	1430	.01	340	6.7	28.0
16345000 - OPAEULA STREAM NR WAHIAWA, OAHU, HI (LAT 21 33 55 LONG 158 00 10)					
OCT , 1984					
09...	1540	.05	54	6.7	25.0
DEC					
14...	1200	2.0	50	6.2	20.0
JAN , 1985					
28...	1145	1.4	56	6.5	20.0
MAR					
18...	1345	3.1	83	6.6	22.5
MAY , 1985					
03...	1120	5.4	50	6.4	22.0
JUN					
19...	1115	.79	59	7.0	25.0
AUG					
01...	1600	6.2	50	6.8	25.5
SEP					
18...	1610	1.3	43	6.9	27.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MOLOKAI

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16404200 - PILIPILILAU STREAM NR PELEKUNU, MOLOKAI, HI (LAT 21 08 08 LONG 156 53 09)											
OCT , 1984						APR , 1985					
31...	1020	.60	155	7.5	21.0	29...	1300	.89	150	7.9	22.0
DEC						JUN					
06...	0850	.60	158	7.9	20.0	05...	0755	1.1	160	7.4	19.5
JAN , 1985						JUL					
23...	1100	.72	154	7.8	18.5	17...	0700	3.0	132	7.7	22.0
FEB						AUG					
27...	1045	2.2	140	7.7	18.5	28...	0805	.78	150	7.8	21.0
16405100 - MOLOKAI TUNNEL AT EAST PORTAL, MOLOKAI, HI (LAT 21 08 38 LONG 156 55 16)											
OCT , 1984						APR , 1985					
23...	0925	5.2	--	--	19.0	16...	1030	9.8	--	--	17.0
DEC						JUN					
04...	0935	5.2	--	--	19.0	04...	1000	1.7	--	--	19.0
JAN , 1985						JUL					
22...	1030	3.1	--	--	19.0	16...	0920	5.4	--	--	19.0
FEB						AUG					
26...	1105	9.8	--	--	18.0	27...	0940	7.2	--	--	19.5
16405300 - MOLOKAI TUNNEL AT WEST PORTAL, MOLOKAI, HI (LAT 21 07 27 LONG 156 59 50)											
OCT , 1984						APR , 1985					
23...	1530	5.5	110	8.1	19.5	16...	1645	18	61	7.6	18.0
DEC						JUN					
04...	1515	6.1	116	7.7	19.0	04...	1525	3.8	100	7.9	19.0
JAN , 1985						JUL					
22...	1605	5.7	116	7.5	19.0	16...	1440	7.9	112	7.8	19.0
FEB						AUG					
26...	1745	19	49	7.5	18.0	27...	1525	9.4	99	7.7	19.5
16405500 - WAIKOLU STR AT ALT 900 FT NR KALAUPAPA, MOLOKAI, HI (LAT 21 08 43 LONG 156 55 18)											
FEB , 1985						APR , 1985					
26...	1435	2.3	47	7.4	19.0	16...	1325	4.7	52	7.8	18.0
16408000 - WAIKOLU STR BL PIPE CROSS NR KALAUPAPA, MOLOKAI, HI (LAT 21 09 45 LONG 156 55 54)											
OCT , 1984						APR , 1985					
23...	1150	2.9	116	8.1	22.5	16...	1205	9.7	114	8.0	20.0
DEC						JUN					
04...	1220	2.6	120	7.6	21.5	04...	1105	2.9	122	7.9	21.0
JAN , 1985						JUL					
22...	1200	2.9	124	7.3	19.5	16...	1115	2.6	120	7.9	22.0
FEB						AUG					
26...	1145	3.3	116	7.7	20.0	27...	1105	2.5	120	7.7	21.0
16419500 - PAPIO GULCH AT HALAWA, MOLOKAI, HI (LAT 21 08 55 LONG 156 44 16)											
FEB , 1985											
25...	1515	.02	190	6.0	21.0						

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIPIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16508000 - HANAWI STREAM NEAR NAHIKU, MAUI, HI (LAT 20 48 37 LONG 156 07 00)											
OCT , 1984						APR , 1985					
03...	1410	1.4	48	7.5	21.0	02...	1405	52	23	7.7	17.5
NOV						MAY					
09...	1130	1.1	47	6.7	20.5	14...	1405	23	29	7.5	19.0
JAN , 1985						JUL					
08...	1410	2.4	43	6.9	18.0	02...	1430	3.5	46	7.8	20.0
FEB						AUG					
06...	1230	1.8	48	7.9	21.0	20...	1150	3.5	37	7.8	22.0
16512000 - KOOLAU DITCH AT NAHIKU WEIR NR NAHIKU, MAUI, HI (LAT 20 48 56 LONG 156 07 15)											
OCT , 1984						APR , 1985					
03...	1430	6.6	53	8.6	21.5	03...	1415	64	39	7.3	18.0
NOV						MAY					
14...	1430	11	47	7.8	20.0	14...	1300	67	35	7.3	18.0
JAN , 1985						JUL					
08...	1435	13	50	7.6	18.0	02...	1340	15	49	7.8	21.0
FEB						AUG					
21...	1400	10	48	8.3	20.0	20...	0935	32	43	7.7	20.0
16518000 - WEST WAILUAIKI STREAM NEAR KEANAE, MAUI, HI (LAT 20 49 16 LONG 156 08 37)											
OCT , 1984						APR , 1985					
03...	1000	1.1	56	7.3	22.0	02...	1130	85	25	7.9	14.5
NOV						MAY					
09...	1335	1.2	51	7.1	21.5	14...	1200	37	27	7.2	17.5
JAN , 1985						JUL					
08...	1050	4.6	41	7.2	16.0	02...	0850	6.6	44	7.7	19.5
FEB						AUG					
07...	0905	1.7	51	7.9	21.0	20...	1020	9.8	33	7.9	22.5
16523000 - KOOLAU DITCH NR KEANAE, MAUI, HI (LAT 20 49 53 LONG 156 10 30)											
OCT , 1984						APR , 1985					
03...	1025	17	56	7.9	20.0	03...	1135	197	35	7.3	17.0
NOV						MAY					
14...	1030	22	49	7.3	19.0	14...	1110	209	31	7.6	19.0
JAN , 1985						JUL					
08...	1045	46	47	7.1	17.5	02...	1100	50	49	7.5	19.0
FEB						AUG					
21...	1050	32	50	7.6	18.0	20...	0730	90	42	7.6	20.0
16531000 - KULA DIV FROM HAIPUAENA STR NR OLINDA, MAUI, HI (LAT 20 48 24 LONG 156 13 27)											
OCT , 1984						APR , 1985					
02...	1035	.01	17	6.2	18.0	04...	1115	.74	15	5.8	11.0
NOV						MAY					
26...	1245	.12	18	7.3	15.0	13...	1335	3.9	24	4.9	13.5
JAN , 1985						JUL					
10...	1045	.05	17	6.3	10.0	01...	1305	1.1	17	6.3	15.0
MAR						AUG					
08...	1145	5.4	22	4.7	10.5	16...	1145	.32	15	6.8	15.0
16538000 - SPRECKELS DITCH AT HAIPUAENA WEIR NR HUELO, MAUI, HI (LAT 20 51 15 LONG 156 11 25)											
OCT , 1984						MAY , 1985					
01...	1120	2.6	48	7.4	21.5	07...	1210	103	13	6.7	16.5
NOV						JUN					
16...	1340	6.0	38	7.6	21.0	27...	1030	8.1	37	7.5	20.0
JAN , 1985						AUG					
09...	1340	7.2	39	6.8	18.5	14...	0715	22	34	7.2	21.0
MAR											
05...	1520	101	25	6.8	16.5						
27...	1115	27	34	7.6	18.0						

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16541000 - KOOLAU DITCH AT HAIPUAENA NR HUELO, MAUI, HI (LAT 20 51 17 LONG 156 11 19)											
OCT , 1984						MAY , 1985					
01...	1320	18	55	7.2	20.0	08...	1300	253	20	7.3	17.0
NOV						JUN					
16...	1140	28	47	7.5	19.5	27...	1200	39	53	7.4	20.0
JAN , 1985						AUG					
09...	1105	43	48	6.7	18.5	14...	1020	125	44	7.5	20.0
MAR											
05...	1215	220	28	7.4	16.0						
27...	1410	171	42	7.5	18.0						
16541500 - MANUEL LUIS DITCH AT PUOHOKAMOA GL NR HUELO, MAUI, HI (LAT 20 51 48 LONG 156 10 59)											
OCT , 1984						MAR , 1985					
01...	1110	.06	74	6.4	22.5	27...	1200	2.2	56	7.5	19.0
NOV						MAY					
19...	1055	9.2	50	7.3	20.5	07...	1445	97	24	6.6	19.0
JAN , 1985						JUN					
10...	1205	.14	61	6.1	20.0	27...	1400	.24	62	7.2	23.0
FEB						AUG					
08...	1100	.09	64	7.8	20.0	14...	1250	3.0	49	7.3	22.0
16587000 - HONOPOU STREAM NR HUELO, MAUI, HI (LAT 20 53 20 LONG 156 15 20)											
OCT , 1984						MAY , 1985					
05...	1245	.19	59	6.4	24.0	10...	1510	9.8	50	7.1	21.0
NOV						JUN					
27...	1245	1.1	55	6.7	21.0	26...	1220	.90	56	7.6	23.0
JAN , 1985						AUG					
15...	1400	.70	55	6.5	20.0	15...	1025	2.4	52	7.5	22.0
MAR											
06...	1140	86	46	6.8	18.0						
26...	1225	8.8	52	7.3	19.0						
16588000 - WAILOA DITCH AT HONOPOU NR HUELO, MAUI, HI (LAT 20 53 20 LONG 156 15 19)											
OCT , 1984						MAY , 1985					
05...	1135	26	60	6.8	21.0	10...	1500	304	35	7.0	18.5
NOV						JUN					
27...	1145	207	41	6.7	20.0	26...	1110	71	50	7.5	19.5
JAN , 1985						AUG					
15...	1500	70	49	6.5	19.0	15...	1045	219	42	7.3	20.0
MAR											
06...	1515	274	29	6.8	18.0						
26...	1020	298	37	7.4	16.5						
16589000 - NEW HAMAKUA DITCH AT HONOPOU NR HUELO, MAUI, HI (LAT 20 53 28 LONG 156 15 22)											
OCT , 1984						MAY , 1985					
05...	1345	.04	72	6.1	26.0	10...	1430	155	40	6.8	19.0
NOV						JUN					
27...	0930	133	40	6.5	20.0	26...	1410	.50	64	7.9	23.0
JAN , 1985						AUG					
15...	1215	.38	68	6.6	19.0	15...	1230	2.4	55	7.2	23.0
MAR											
06...	1030	147	39	7.3	17.0						
26...	1600	106	38	7.1	18.0						
16592000 - LOWRIE DITCH AT HONOPOU GULCH NR HUELO, MAUI, HI (LAT 20 54 57 LONG 156 15 08)											
OCT , 1984						MAY , 1985					
02...	1255	1.6	85	7.3	27.0	08...	1240	75	36	7.3	20.0
NOV						JUN					
19...	1530	63	63	7.3	22.0	28...	1255	5.4	77	7.3	26.5
JAN , 1985						AUG					
10...	1520	11	60	6.2	21.0	14...	1500	26	51	7.4	24.5
MAR											
04...	1440	74	47	7.2	18.5						
26...	1240	50	54	7.9	19.0						

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16594000 - HAIKU DITCH AT HONOPOU GULCH NR KAILUA, MAUI, HI (LAT 20 55 07 LONG 156 14 58)											
OCT , 1984						MAY , 1985					
02...	1045	.35	118	7.0	23.5	08...	1010	61	31	7.5	20.0
NOV						JUN					
19...	1300	.16	112	7.8	22.0	28...	1015	1.4	106	6.8	23.0
JAN , 1985						AUG					
10...	1035	.31	106	6.2	21.0	15...	1200	2.3	95	6.9	23.5
MAR											
04...	1145	69	45	7.3	18.0						
26...	1020	10	69	7.7	19.0						
16599500 - OPANA TUNNEL NR KAILIILI, MAUI, HI (LAT 20 51 04 LONG 156 18 17)											
OCT , 1984						APR , 1985					
02...	1425	.13	102	5.4	19.0	04...	1435	6.5	35	6.5	17.0
NOV						MAY					
26...	0900	.17	80	7.0	19.0	13...	1100	11	15	7.0	16.0
JAN , 1985						JUL					
10...	1335	.27	60	6.9	16.0	01...	0930	1.0	58	6.9	19.5
MAR						AUG					
13...	1150	1.8	40	6.7	15.5	16...	1335	2.2	41	6.7	21.0
16604500 - IAO STREAM AT KEPANIWAI PARK NR WAILUKU, MAUI, HI (LAT 20 53 08 LONG 156 32 32)											
OCT , 1984						MAR , 1985					
16...	1250	11	104	7.7	22.0	25...	1445	56	63	7.9	18.0
NOV						MAY					
07...	1230	11	108	7.6	21.5	06...	1440	43	93	7.8	21.0
26...	1300	160	90	7.3	20.0	JUN					
JAN , 1985						24...	1245	17	102	7.9	23.5
04...	1030	26	82	7.8	18.5	AUG					
MAR						13...	1045	36	87	7.8	22.0
05...	0930	52	92	7.9	18.0						
16614000 - WAIHEE RIVER AT DAM NR WAIHEE, MAUI, HI (LAT 20 56 20 LONG 156 32 58)											
OCT , 1984						MAR , 1985					
17...	1205	28	68	7.8	21.0	25...	1055	50	91	7.9	18.0
NOV						MAY					
06...	1210	29	68	7.4	20.5	06...	1105	50	59	7.9	19.0
JAN , 1985						JUN					
03...	1135	26	70	7.9	19.0	24...	0900	36	68	7.7	19.5
FEB						AUG					
11...	1130	24	72	7.9	20.0	13...	0730	43	64	7.8	20.5
16620000 - HONOKOHAU STREAM NR HONOKOHAU, MAUI, HI (LAT 20 57 48 LONG 156 35 22)											
OCT , 1984						APR , 1985					
12...	1225	10	70	7.9	21.5	09...	1020	15	64	7.9	19.0
NOV						MAY					
09...	0950	12	62	7.5	20.0	17...	1115	31	43	7.6	19.0
JAN , 1985						JUL					
07...	1250	9.3	70	7.7	19.0	08...	1255	18	55	7.7	20.5
MAR						AUG					
12...	1200	182	29	7.9	16.0	22...	1025	31	52	7.5	20.5
16638500 - KAHOMA STREAM AT LAHAINA, MAUI, HI (LAT 20 53 10 LONG 156 40 36)											
MAR , 1985						MAR , 1985					
01...	1100	.74	76	7.9	22.0	11...	1035	107	33	7.9	16.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16700000 - WAIAKEA STREAM NR MOUNTAIN VIEW, HAWAII, HI (LAT 19 38 30 LONG 155 10 28)					
OCT , 1984					
26...	0940	.05	44	6.7	16.0
DEC					
27...	0910	18	34	7.0	16.0
JAN , 1985					
28...	1120	1.4	45	6.8	17.0
FEB					
25...	0955	6.5	44	6.9	17.0
APR					
24...	0910	23	39	7.0	16.0
MAY , 1985					
28...	0950	11	40	7.1	17.0
JUN					
24...	1000	2.9	38	6.9	17.0
JUL					
29...	0925	4.4	42	6.9	17.0
AUG					
27...	1115	8.9	38	7.1	17.0
SEP					
25...	1320	13	38	7.0	17.0
16700900 - OLAA FLUME SPRING NR KAUMANA, HAWAII, HI (LAT 19 41 59 LONG 155 11 13)					
NOV , 1984					
02...	0915	.04	40	6.7	20.0
23...	1500	13	30	6.7	17.0
DEC					
05...	1400	5.1	32	6.6	17.0
JAN , 1985					
04...	1040	3.7	34	6.6	17.0
APR , 1985					
05...	1030	9.2	34	6.5	16.0
JUL					
29...	1240	1.5	38	6.9	17.0
AUG					
15...	1500	2.8	36	6.8	16.0
16700950 - LYMAN SPRINGS NO. 2 NEAR PIIHONUA, HAWAII, HI (LAT 19 42 02 LONG 155 10 36)					
OCT , 1984					
12...	1035	.29	43	7.3	17.5
NOV					
09...	1330	1.2	38	7.1	17.0
DEC					
31...	1020	5.4	35	6.8	17.0
JAN , 1985					
25...	1040	3.0	35	7.1	17.0
APR , 1985					
08...	1110	5.7	38	7.1	17.0
JUN					
03...	1030	4.9	37	7.3	16.5
JUL					
02...	1025	1.6	35	7.1	17.0
AUG					
01...	1215	4.4	34	6.9	17.0
16704000 - WAILUKU RIVER AT PIIHONUA, HAWAII, HI (LAT 19 42 56 LONG 155 09 12)					
OCT , 1984					
05...	1615	20	40	6.9	19.0
DEC					
05...	1130	77	34	7.0	19.0
JAN , 1985					
23...	1415	9.0	48	7.1	19.0
FEB					
08...	1130	2.4	50	7.1	19.0
JUN , 1985					
10...	1015	48	35	6.9	18.0
JUL					
03...	1040	11	38	7.2	18.0
SEP					
12...	1005	29	40	7.0	19.0
16720000 - KAWAINUI STREAM NR KAMUELA, HAWAII, HI (LAT 20 05 18 LONG 155 40 58)					
OCT , 1984					
03...	1135	.29	18	6.6	15.0
NOV					
16...	1155	6.6	24	6.4	15.0
DEC					
14...	1320	1.5	24	6.6	15.0
JAN , 1985					
10...	1205	.93	22	6.3	15.0
APR , 1985					
19...	1135	13	25	6.5	15.0
JUN					
25...	1130	1.1	23	6.1	15.0
AUG					
21...	1035	1.9	26	6.3	14.0
16720300 - KAWAIKI STREAM NEAR KAMUELA, HAWAII, HI (LAT 20 05 13 LONG 155 40 59)					
OCT , 1984					
03...	1130	.03	28	6.4	15.0
NOV					
16...	1045	3.2	25	6.4	15.0
DEC					
14...	1230	.35	25	6.4	16.0
JAN , 1985					
10...	1105	.25	29	6.3	15.0
APR , 1985					
19...	1045	3.9	26	6.2	15.0
MAY					
30...	1030	3.2	26	6.3	15.0
JUL					
31...	1130	5.2	23	6.3	16.0
AUG					
21...	1145	.55	28	6.3	15.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
16720500 - UPPER HAMAKUA DITCH BL KAWAIKI STR NR KAMUELA, HAWAII, HI (LAT 20 05 15 LONG 155 40 42)					
OCT , 1984					
03...	1035	.28	28	6.3	15.0
NOV					
16...	0955	8.2	28	6.6	15.0
DEC					
14...	1110	1.5	25	6.5	13.0
JAN , 1985					
10...	0930	.84	24	6.2	12.0
APR , 1985					
19...	1015	15	28	6.6	15.0
JUN					
25...	0925	1.0	26	6.4	15.0
AUG					
21...	1220	2.1	28	6.5	15.0
16724800 - UP HAMAKUA DITCH AB ALAKAHI STR NR KAMUELA, HAWAII, HI (LAT 20 04 31 LONG 155 40 26)					
NOV , 1984					
16...	1255	2.7	23	6.3	16.0
DEC					
07...	1015	4.4	25	6.4	15.0
MAR , 1985					
13...	1025	10	22	6.2	14.0
APR					
12...	0950	1.6	24	6.4	15.0
JUL , 1985					
31...	1240	8.8	24	6.6	15.0
AUG					
08...	1035	11	20	6.3	15.0
21...	1425	.70	28	6.5	15.0
16725000 - ALAKAHI STREAM NEAR KAMUELA, HAWAII, HI (LAT 20 04 27 LONG 155 40 25)					
OCT , 1984					
03...	0900	.43	30	6.3	14.0
NOV					
07...	0955	.32	28	6.4	14.0
JAN , 1985					
02...	0900	.60	28	6.1	14.0
FEB					
08...	1025	.29	30	6.3	14.0
APR , 1985					
12...	1055	2.6	24	6.3	15.0
JUN					
25...	0915	.85	24	5.9	14.0
AUG					
21...	1505	1.5	23	6.0	13.0
16726000 - UP HAMAKUA DITCH AB WAIMEA RES DIV NR KAMUELA, HAWAII, HI (LAT 20 03 31 LONG 155 37 40)					
DEC , 1984					
03...	1145	2.3	25	6.4	16.0
JAN , 1985					
10...	0945	.96	28	6.5	10.0
FEB					
08...	1345	.03	32	6.2	17.0
APR , 1985					
12...	1405	6.8	25	6.3	16.0
MAY					
30...	1015	35	22	6.4	16.0
JUN					
26...	1310	.07	32	6.4	16.0
16727000 - UPPER HAMAKUA D AB PUUKAPU RES NR KAMUELA, HAWAII, HI (LAT 20 02 53 LONG 155 37 17)					
DEC , 1984					
03...	1230	.05	28	6.5	17.0
APR , 1985					
19...	1405	8.0	26	6.3	16.0
MAY , 1985					
30...	1050	9.2	24	6.4	16.0
AUG					
07...	1200	4.2	28	6.5	16.0
16756000 - KOHAKOHAU STREAM NEAR KAMUELA, HAWAII, HI (LAT 20 02 38 LONG 155 41 10)					
JAN , 1985					
02...	1035	.28	28	6.4	14.0
MAR					
22...	0935	9.8	24	6.4	15.0
JUL , 1985					
24...	1230	4.6	24	6.3	16.0
16758000 - WAIKOLOA STR AT MARINE DAM NR KAMUELA, HAWAII, HI (LAT 20 02 48 LONG 155 39 58)					
OCT , 1984					
03...	1500	1.4	26	6.4	16.0
NOV					
07...	1250	.87	22	6.5	17.0
DEC					
07...	1220	5.3	30	6.4	15.0
JAN , 1985					
02...	1145	1.8	25	6.4	15.0
FEB					
08...	1320	1.4	25	6.3	15.0
MAR , 1985					
22...	1035	12	23	6.2	16.0
APR					
12...	1300	4.1	26	6.3	15.0
JUN					
25...	1130	2.6	25	6.4	15.0
AUG					
07...	0920	14	22	6.2	16.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)
18759000 - HAUANI GULCH NEAR KAMUELA, HAWAII, HI (LAT 20 02 28 LONG 155 39 05)					
OCT , 1984					
04...	0830	.02	32	6.4	15.0
DEC					
03...	0900	.07	28	6.8	15.0
JAN , 1985					
10...	1405	.08	28	6.6	14.0
16...	1030	.22	25	6.5	14.0
MAR					
22...	0835	1.8	30	6.3	15.0
APR , 1985					
24...	1155	.62	28	6.6	14.0
JUN					
27...	0825	.34	28	6.4	15.0
JUL					
24...	1040	1.2	26	6.3	16.0
18764000 - HILEA GULCH TRIBUTARY NEAR HONUAPO, HAWAII, HI (LAT 19 10 27 LONG 155 35 58)					
OCT , 1984					
01...	1030	1.1	45	8.8	17.0
DEC					
28...	1305	.58	44	6.9	17.0
MAR , 1985					
20...	1300	.12	55	6.5	17.0
APR , 1985					
26...	1200	.20	50	6.9	16.5
JUN					
06...	1150	.28	45	6.7	16.0
JUL					
05...	1330	.92	43	6.3	19.0

HAWAII, ISLAND OF KAUAI

220019159444801. Local number 2-0044-14.

LOCATION.--Lat 22°00'19", long 159°44'48", Hydrologic Unit 20070000, 1.8 mi northeast of Kokole Point, and 2.8 mi northwest of Kekaha School. Owner: Kekaha Sugar Co.

AQUIFER.--Waimea Canyon Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 245 ft, casing diameter 12 in., cased to 164 ft.

DATUM.--Elevation of land-surface datum is 8 ft. Measuring point: Top of standpipe, 11.49 ft above mean sea level. Prior to June 1979 nonrecording gage at datum 0.25 ft lower.

PERIOD OF RECORD.--Occasional measurements, 1937 to 1962 (measured by Kekaha Sugar Co.).
Water-level recorder, June 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.07 ft above mean sea level, Dec. 20, 1937; lowest measured, 7.52 ft above mean sea level, Aug. 15, 1947.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	e9.0	8.85	9.59	9.84	9.94	9.70	9.57	9.00	8.85	8.90	9.38	8.74
10	e9.0	8.85	9.84	9.92	9.98	9.84	9.32	9.28	8.88	8.95	9.47	8.74
15	e9.0	8.80	9.70	9.91	9.93	9.75	9.53	8.98	8.94	8.89	9.02	9.06
20	e9.0	9.02	9.25	9.92	9.95	9.38	9.40	8.92	8.85	9.23	8.98	9.22
25	8.92	9.11	9.75	9.91	9.97	9.55	9.55	9.29	8.80	9.05	8.83	9.20
EOM	8.88	9.48	9.80	9.85	9.60	9.80	9.48	8.91	9.13	9.00	8.76	9.38

WTR YEAR 1985 MAX 10.15 JAN 14 MIN 8.55 SEP 13

e Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT				
24...	1030	540	24.5	100
29...	0910	500	24.0	86
30...	0835	810	21.0	100
31...	0855	650	21.0	100
DEC				
12...	1140	560	24.5	95
JAN				
22...	1130	540	24.0	90
FEB				
12...	1215	510	24.0	88
MAR				
14...	1200	520	24.0	82
APR				
29...	1045	560	23.0	82
JUN				
18...	1030	570	24.0	92
JUL				
24...	1055	520	24.0	94
SEP				
26...	1030	510	24.0	97

HAWAII, ISLAND OF KAUAI--Continued

220354159205601. Local number, 2-0320-01.

LOCATION.--Lat 22°03'54", long 159°20'56", Hydrologic Unit 20070000, 0.6 mi east of Sleeping Giant Mountain, and 1.3 mi northwest of Wailua River bridge. Owner: Kauai County, Department of Water.

AQUIFER.--Koloa Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 240 ft, casing diameter 8 in., cased to 193 ft.

DATUM.--Elevation of land-surface datum is 155 ft. Measuring point: Top edge of steel pump-base at breather hole, 155.98 ft above mean sea level.

REMARKS.-- Water from this well is used for public supply. Water level affected by pumping of nearby well.

PERIOD OF RECORD.--
WATER LEVEL: Occesional measurements, February 1960, June 1973 to current year.
WATER QUALITY: 1960, 1966, 1972-80, 1985.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.04 ft above mean sea level, Feb. 17, 1960; lowest measured, 3.31 ft below mean sea level, May 27, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 11	6.90	JAN 23	5.62	MAR 11	5.73	APR 24	4.38	JUN 12	3.85	SEP 20	6.11

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)
JUL 18...	1415	410	--	24.0	46	--	--	--	--	--	--	--
AUG 13...	0840	401	7.0	24.0	--	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0

DATE	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)
AUG 13...	<10.0	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3

DATE	CHRY-SENE TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)
AUG 13...	<10.0	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

HAWAII, ISLAND OF KAUAI--Continued

220354159205601. Local number, 2-0320-01--Continued.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985--Continued

DATE	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0

DATE	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0

DATE	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)
AUG 13...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

HAWAII, ISLAND OF OAHU

211907157594701. Local number, 3-1959-05.

LOCATION.--Lat 21°19'06", long 157°59'46", Hydrologic Unit 20060000, 800 ft northwest of Ewa Beach Park, and 1.2 mi southeast of Campbell High School. Owner: Hawaii Institute of Geophysics.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1110 ft, 5-inch PVC casing, bottom 12 ft perforated.

DATUM.--Elevation of land surface datum is 6 ft. Measuring point: Top of 5-inch PVC casing, 6.40 ft above mean sea level.

REMARKS.--Geophysical log and water-quality records are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, December 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.38 ft above mean sea level, Jan. 17, 1969; lowest, 2.81 ft below mean sea level, Aug. 25, 1977.

WATER LEVEL IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	-.14	-1.57	-.80	-.21	-.09	.16	-.51	-1.04	-1.29	-1.55	-1.60	-1.70
10	-.09	-1.65	-1.01	-.34	.04	.10	-.53	-1.11	-1.33	-1.48	-1.73	-1.81
15	-.10	-1.64	-.85	-.13	.13	-.07	-.64	-1.07	-1.25	-1.89	-1.77	-1.79
20	-.18	-1.59	-.87	-.29	.18	-.20	-.82	-1.02	-1.47	-1.61	-1.70	-1.79
25	-.11	-1.27	-.47	-.33	.14	-.30	-.91	-1.03	-1.42	-1.70	-1.79	-1.41
EOM	e.30	-.94	-.29	-.23	.19	-.43	-.80	-1.18	-1.39	-1.74	-1.74	-1.15

WTR YEAR 1985 MAX 0.41 MAR 4 MIN -2.03 SEP 12, 13

e Estimated.

212154158015201. Local number, 3-2101-03.

LOCATION.--Lat 21°21'54", long 158°01'52", Hydrologic Unit 20060000, 0.4 mi southeast of Honouliuli, and 0.5 mi north of Ewa Hospital. Owner: State of Hawaii.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 355 ft, 8 inch-PVC casing, cased to 165 ft. Well was modified in January 1958 and May 1982.

DATUM.--Elevation of land-surface datum is 15 ft. Measuring point: Top of horizontal flange below petcock, 13.31 ft above mean sea level.

REMARKS.--Water-quality records for 1910-16, 1920-21, 1923-75, 1978-81, are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, April 1910 to June 1921, September 1923 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.16 ft above mean sea level, April 1918; lowest observed, less than 11.2 ft, revised, above mean sea level (below petcock then in use), Sept. 2, and Oct. 19, 1977, revised.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	12.80	MAR 12	16.36	APR 23	14.76	JUN 13	13.81	JUL 25	13.07	SEP 10	12.89
JAN 14	16.75										

HAWAII, ISLAND OF OAHU--Continued

212123157535501. Local number, 3-2153-05.

LOCATION.--Lat 21°21'23", long 157°53'55", Hydrologic Unit 20060000, 0.4 mi northwest of Moanalua Elementary School, and 0.5 mi southwest of Tripler Hospital, in Moanalua. Owner: Honolulu Board of Water Supply.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1246 ft, 8-inch PVC casing, cased to 24 ft, perforated from 24 to 1248 ft. Well was modified and deepened August 1980.

DATUM.--Elevation of land-surface datum is 35 ft. Measuring point: Top of 6-inch PVC casing, 37.90 ft, revised, above mean sea level.

REMARKS.--Geophysical logs are available in files of district office.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, March 1981 to current year.
WATER QUALITY: 1985.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.53 ft above mean sea level Jan. 9, 1983; lowest 16.69 ft above mean sea level, Sept. 4-6, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	17.35	17.48	17.85	18.53	18.49	18.93	18.45	17.82	17.62	17.36	17.21	16.77
10	e17.4	17.57	17.94	18.66	18.73	18.84	18.41	17.88	17.56	17.20	16.98	16.76
15	17.39	17.50	18.05	18.48	18.82	18.80	18.34	17.84	17.48	17.15	16.95	16.87
20	17.41	17.54	18.22	18.42	18.89	18.87	18.18	17.86	17.32	17.21	16.88	16.78
25	17.32	17.65	18.37	18.39	18.85	18.88	18.08	17.95	17.30	17.00	16.91	e17.0
EOM	17.42	17.75	18.51	18.41	18.87	18.54	17.95	17.71	17.43	17.10	16.81	17.10

WTR YEAR 1985 MAX 19.05 MAR 5, 7 MIN 16.69 SEP 4-6

e Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB				
05...	j0915	300	713	170
05...	j1000	500	1370	380
05...	j1035	650	4920	1600
05...	j1115	750	13600	4800
05...	j1155	800	25600	9500
05...	j1245	900	37400	14000
05...	j1335	1050	44900	17000
05...	j1420	1200	45400	17000
JUN				
19...	j0915	300	642	150
19...	j0945	500	1280	340
19...	j1015	650	4950	1600
19...	j1130	700	8880	2900
19...	j1205	750	13700	4600
19...	j1240	800	25900	9500
19...	j1315	850	31700	12000
JUN				
19...	j1350	950	40500	15000
19...	j1425	1050	44900	17000
19...	j1500	1200	45400	17000
SEP				
27...	j0925	300	570	130
27...	j0945	500	1310	360
27...	j1010	650	5000	1600
27...	j1035	700	9020	3000
27...	j1105	750	13700	4900
27...	j1130	800	25600	9500
27...	j1155	850	31200	12000
27...	j1230	900	37000	14000
27...	j1300	950	39800	15000
27...	j1330	1050	44500	17000
27...	j1400	1200	44900	17000

j Collected by non-USGS agency.

HAWAII, ISLAND OF OAHU--Continued

212238157561101. Local number, 3-2256-10.

LOCATION.--Lat 21°22'38", long 157°56'11", Hydrologic Unit 20060000, 0.4 mi southwest of Aiea School, and 0.5 mi east of McGrew Point. Owner: U.S. Navy.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 173 ft, casing diameter 12 in., cased to 143 ft.

DATUM.--Elevation of land-surface datum is 10 ft. Measuring point: Top of 10-inch stilling pipe for water-level recorder, 26.15 ft above mean sea level.

REMARKS.--Water-quality records for 1923, 1928-30, 1934-68, 1972, 1974-75 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, January 1928 to February 1931, September 1934 to August 1966. Water-level recorder, September 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.90 ft above mean sea level, Jan. 16, 1928; lowest, 12.97 ft above mean sea level, Oct. 5, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	14.06	14.37	14.89	15.64	15.61	15.92	15.43	14.77	14.41	14.18	14.01	13.72
10	14.09	14.34	14.85	15.53	15.77	15.98	15.30	14.66	14.33	14.09	13.90	13.65
15	14.13	14.32	14.99	15.59	15.87	15.78	15.02	14.72	14.26	13.98	13.73	13.71
20	14.08	14.35	15.05	15.58	15.88	15.71	14.97	14.69	14.13	14.00	13.70	13.66
25	14.07	14.50	15.34	15.54	15.88	15.67	14.88	14.65	14.11	13.92	13.69	13.86
EOM	14.28	14.67	15.55	15.44	15.90	15.57	14.85	14.56	14.27	13.87	13.66	14.15

WTR YEAR 1985 MAX 16.02 MAR 4 MIN 13.59 AUG 23

HAWAII, ISLAND OF OAHU--Continued

212340158001901. Local number, 3-2300-18.

LOCATION.--Lat 21°23'40", long 158°00'19", Hydrologic Unit 20060000, 700 ft south of August Ahrens School, and 1400 ft northeast of L'Orange Park, Waipahu. Owner: Honolulu Board of Water Supply.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal-water table well, depth 1090 ft, casing diameter 12 in., cased to 38 ft. Well was deepened May 1980 and modified Feb. 1984. Prior to May 1980, well depth 205 ft.

DATUM.--Elevation of land-aurface datum is 26 ft. Measuring point: Top of ceaing, 27.73 ft above mean sea level.

REMARKS.--Geophysical logs are available in files of district office.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, November 1982 to July 1983, March 1984 to current year.
WATER QUALITY: 1930, 1942-45, 1947-49, 1951-54, 1968, 1983, 1985.

EXTREMES FOR PERIOD OF RECORD.--Highest water level 22.40 ft above mean sea level, Jan. 4, 1983; lowest 14.01 ft above mean sea level, Sept. 14, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	14.49	15.03	16.25	17.10	17.30	17.62	16.22	15.51	15.03	14.63	14.37	14.30
10	14.50	14.89	15.73	16.86	17.48	17.54	16.21	15.35	14.98	14.76	14.20	14.18
15	14.49	14.89	16.15	17.29	17.61	17.22	16.16	15.36	15.22	14.38	14.19	14.10
20	14.39	14.88	16.05	17.07	17.67	17.00	15.81	15.47	14.84	14.56	14.35	14.13
25	14.49	15.53	16.66	16.90	17.59	16.88	15.68	15.48	15.00	14.33	14.17	e14.5
EOM	15.40	16.20	16.97	17.11	17.65	16.45	15.71	15.17	14.88	14.24	14.25	15.13

WTR YEAR 1985 MAX 17.74 MAR 7 MIN 14.01 SEP 14

e Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB				
06...	j --	990	31400	16000
JUN				
12...	j --	990	44300	16000
SEP				
26...	j0930	400	685	160
26...	j1010	500	1810	510
26...	j1040	600	10600	3500
26...	j1115	650	17000	5800
SEP				
26...	j1150	700	23400	8000
26...	j1225	750	27700	9800
26...	j1300	800	31200	11000
26...	j1340	850	35500	13000
26...	j1415	900	39900	14000
28...	j1445	950	42900	16000
26...	j1510	990	44400	17000

j Collected by non-USGS agency.

HAWAII, ISLAND OF OAHU--Continued

212659158004102. Local number, 3-2600-04.

LOCATION.--Lat 21°26'59", long 158°00'41", Hydrologic Unit 20060000, 30 ft south of Waiahole ditch, and 1.1 mi east southeast of Kipapa School in Mililani. Owner: Honolulu Board of Water Supply.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 815 ft, casing diameter 16 in., cased to 705 ft.

DATUM.--Elevation of land-surface datum is 665 ft. Measuring point: Top of 16-inch casing, 666.62 ft, revised, above mean sea level.

PERIOD OF RECORD.--Water-level recorder, October 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Higheat water level 20.94 ft above mean sea level, Oct. 1, 1983; lowest 16.74 ft above mean sea level, Sept. 14, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	17.50	17.77	18.39	19.13	19.66	20.31	19.46	e18.6	e18.1	17.54	e17.2	16.95
10	17.47	17.79	18.44	19.28	19.83	20.32	19.38	18.50	e18.0	17.50	e17.1	16.86
15	17.41	17.84	18.46	19.33	19.94	20.19	19.28	18.41	e17.9	17.35	e17.1	16.79
20	17.32	17.78	18.48	19.47	20.08	20.04	19.08	e18.3	e17.7	17.27	e17.1	16.82
25	17.37	17.83	18.60	19.48	20.15	19.88	18.94	e18.3	17.61	e17.2	e17.0	16.86
EOM	17.55	18.09	18.95	19.52	20.22	19.65	16.76	e18.2	17.67	e17.2	e17.0	17.25

WTR YEAR 1985 MAX 20.39 MAR 10 MIN 16.74 SEP 14

e Estimated.

HAWAII, ISLAND OF OAHU-Continued

212927158014801. Local number, 3-2901-07.

LOCATION.--Lat 21°29'27", long 158°01'48", Hydrologic Unit 20060000, across the main gage of Wheeler AFB, and 1200 ft south of Wahiawa bridge on Kaukonohua Stream. Owner: U.S. Army.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Dug high-level water-table well, size 8 x 8 ft, length of 30-degree inclined shaft 1,148 ft.

DATUM.--Elevation of land-surface datum is 850 ft. Measuring point: Top of pump chamber floor at recorder, 287.00 ft above mean sea level.

REMARKS.--Water-level recorder is located on the pump chamber floor at the bottom of shaft. Water from this well is used for public supply.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, November 1938 to current year.
WATER QUALITY: 1966-72, 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 284.40 ft above mean sea level, May 12, 1969; lowest, 269.52 ft above mean sea level, Dec. 5, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	272.04	271.75	271.45	271.23	271.03	270.85	270.89	270.42	270.81	270.94	271.06	271.09
10	271.97	271.71	271.40	271.28	271.06	270.87	270.79	270.53	270.85	270.95	271.06	271.13
15	272.12	271.63	271.41	271.14	271.01	270.89	270.78	270.88	270.90	271.09	271.06	271.29
20	271.95	271.61	271.31	271.13	270.99	270.84	270.88	270.89	270.88	271.06	271.04	271.17
25	271.80	271.65	271.35	271.10	271.00	270.88	270.89	270.76	270.41	270.95	271.13	271.34
EOM	271.82	271.51	271.37	271.01	271.00	270.87	270.42	270.81	270.96	271.04	271.11	e271.4

e Estimated.
Note: Well being pumped throughout the year.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
NONPUMPING VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 1	271.68	DEC 1	271.68	FEB 1	271.20	APR 1	271.03	JUN 19	271.04	AUG 1	271.19
NOV 1	271.96	JAN 1	271.40	MAR 1	271.00	MAY 1	270.82	JUL 2	271.08	SEP 1	271.36

Note: Water levels are measured after all pumps being shut off for 2 hours.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
NOV					MAY				
14...	0930	170	22.0	17	17...	1500	165	22.5	18
DEC					JUL				
11...	1000	170	21.5	18	02...	0840	165	22.0	18
JAN					31...	1000	165	22.0	18
30...	1425	170	21.5	18	SEP				
MAR					26...	0920	170	22.5	18
28...	0900	165	22.5	16					

HAWAII, ISLAND OF OAHU--Continued

213327157524401. Local number, 3-3352-01.

LOCATION.--Lat 21°33'27", long 157°52'44", Hydrologic Unit 20060000, at mouth of Kahana Valley, and 700 ft southwest of Kamehameha Highway, Kahana. Owner: Mary E. Foster Estate.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICES.--Drilled artesian well, depth 441 ft, casing diameter 10 in., cased to 177 ft.

DATUM.--Elevation of land-surface datum is 6 ft. Measuring point: Top of "T", 7.31 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, April 1935 to current year.
WATER QUALITY: 1935 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.3 ft above mean sea level, Mar. 29, 1966; lowest measured, 12.61 ft above mean sea level, July 5, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	12.17	NOV 29	12.62	JAN 22	12.73	MAR 15	13.73	APR 29	12.69	AUG 9	12.65

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT					MAR				
04...	1300	265	23.0	34	15...	1330	250	22.5	32
NOV					APR				
29...	1400	260	23.0	34	29...	1515	250	22.5	35
JAN					AUG				
22...	1500	250	22.5	34	09...	1330	250	22.5	36

HAWAII, ISLAND OF OAHU--Continued

213446158104901. Local number, 3-3410-08.

LOCATION.--Lat 21°34'46", long 158°10'49", Hydrologic Unit 20060000, 0.5 mi east of Dillingham Airfield, and 1.1 mi southeast of Mokuleia Beach Park. Owner: Waialua Sugar Co., Inc.

AQUIFER.--Basalt of Waianae Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 447 ft, casing diameter 1-inch, cased to 410 ft, perforated from 410 to 447 ft.

DATUM.--Elevation of land-surface datum is 12 ft. Measuring point: Top 12-inch stilling well, 20.53 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, January 1963 to February 1972.
Occasional measurements, January 1929 to December 1962, March 1972 to current year.
WATER QUALITY: 1929 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.98 ft above mean aea level, Jan. 5, 1989; lowest measured, 16.08 ft above mean sea level, Aug. 6, 1929.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 13	18.97	FEB 1	18.93	MAR 29	18.61	MAY 20	18.23	JUL 2	18.38	AUG 16	18.36
DEC 17	19.16										

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
NOV					MAY				
13...	1500	800	21.5	190	20...	1050	780	22.0	--
DEC					JUL				
17...	1400	830	22.0	190	02...	1335	810	22.0	--
FEB					AUG				
01...	1515	820	21.5	--	16...	1200	800	22.5	--
MAR									
29...	1115	810	21.5	--					

HAWAII, ISLAND OF OAHU--Continued

214125158013401. Local number, 3-4101-03.

LOCATION.--Lat 21°41'25", long 158°01'34", Hydrologic Unit 20060000, 1500 ft northeast of UH agriculture experiment Station in Waialee and 1.9 mi northeast of Sunset Beach. Owner: State of Hawaii.

AQUIFER.--Basalt of Koolau Volcanic Series, Tertiary age.

WELL CHARACTERISTICS.--Drilled artesian well, depth 61 ft, casing diamter 8 in., cased to 36 ft.

DATUM.--Elevation of land-surface datum is 22 ft. Measuring point: Top of 4-inch pipe, 21.89 ft above mean sea level.

REMARKS.--Water-quality records for 1929-74 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, February 1929 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.60 ft above mean sea level, Nov. 14, 1932; lowest measured, 10.97 ft above mean sea level, July 1, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	13.31	JAN 15	13.41	MAY 2	12.54	JUN 19	12.49	AUG 9	12.48	SEP 30	12.68
NOV 29	13.34	MAR 15	12.89								

HAWAII, ISLAND OF MOLOKAI

210425156483001. LOCAL NUMBER, 4-0448-02.

LOCATION.--Lat 21°04'25", long 156°48'30", Hydrologic Unit 20050000, 100 ft north of Highway 45, and 0.8 mi west of Pukoo. Owner: P. Friel.

AQUIFER.--East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, size 4 x 6 ft, depth 22 ft.

DATUM.--Elevation of land-surface datum is 19 ft. Measuring point: Top of 2 x 2 in. steel plate bolted to top of concrete wall of well, 21.23 ft sbove mean sea level.

REMARKS.-- Water-quality records for 1970-1973 are available in files of district office.

PERIOD OF RECORD.-- Water-level recorder, August 1970 to January 1973.
Occasional measurements, February 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.11 ft above mean sea level, Nov. 26, 1970; lowest measured, 3.67 ft above mean sea level, Feb. 8, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	4.32	JAN 21	4.33	APR 14	4.09	JUN 3	3.94	JUl 15	3.99	AUG 26	4.02
DEC 5	4.29	FEB 28	4.38								

HAWAII, ISLAND OF MOLOKAI--Continued

210402156495801. Local number, 4-0449-01.

LOCATION.--Lat 21°04'02", long 156°49'58", Hydrologic Unit 20050000, 1,800 ft north of Ualapue Fishpond, and 0.5 mi northeast of Kilohana School. Owner: County of Maui.

AQUIFER.--East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, size 4 x 8 ft, depth 42 ft, lined with concrete to 42 ft; two infiltration tunnels, total length 214 ft.

DATUM.--Elevation of land-surface datum is 42 ft. Measuring point: Top of steel plate, 42.42 ft above mean sea level.

REMARKS.--Water from this well is used for public supply.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, 1938-39, 1941-63, November 1972 to current year.
WATER QUALITY: 1948, 1952-56, 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.05 ft above mean sea level, Jan. 19, 1950; lowest measured, 2.09 ft above mean sea level, Sept. 16, 1975.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	3.45	JAN 21	3.47	APR 14	3.20	JUN 5	3.12	JUL 15	2.98	AUG 26	3.15
DEC 5	a3.13	FEB 28	3.37								

a Well being pumped.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT					APR				
24...	1125	330	20.5	61	14...	1555	340	20.5	--
DEC					JUN				
05...	1235	340	20.5	64	05...	1640	320	20.5	60
JAN					JUL				
21...	1245	310	21.0	--	15...	1605	330	20.5	66
FEB					AUG				
26...	1120	340	20.5	--	26...	1400	310	21.5	62

HAWAII, ISLAND OF MOLOKAI--Continued

210419156570501. Local number, 4-0457-01.

LOCATION.--Lat 21°04'19", long 156°57'05", Hydrologic Unit 20050000, 0.5 mi northwest of Kakahaia Fishpond, and 0.5 mi northeast of Moku. Owner: County of Maui.

AQUIFER.--Basalt of East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, size 4 x 4 ft, depth 38 ft, lined with concrete to 38 ft; two infiltration tunnels, total length 229 ft.

DATUM.--Elevation of land-surface datum is 38 ft. Measuring point: Top of steel plate, 37.37 ft, revised, above mean sea level.

REMARKS.--Water from this well is used for public supply.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, June 1947 to November 1960, January 1962 to February 1963, November 1972 to current year.
WATER QUALITY: 1948, 1954-56, 1960, 1962, 1971, 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.66 ft above mean sea level, Dec. 5, 1950; lowest measured, 1.47 ft above mean sea level, June 24, 1955.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	a1.95	JAN 21	2.20	APR 17	1.86	JUN 5	1.91	JUL 18	1.81	AUG 26	1.97
DEC 5	a1.89	FEB 28	a1.95								

a Well being pumped.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 24...	1210	480	23.0	110	APR 17...	1020	360	23.0	--
DEC 05...	1355	540	23.0	130	JUN 05...	1705	340	23.5	76
JAN 21...	1345	480	23.5	--	JUL 18...	1510	380	23.5	86
FEB 28...	1215	430	23.0	--	AUG 26...	1500	360	23.0	86

HAWAII, ISLAND OF MOLOKAI--Continued

210605157012001. Local number, 4-0601-01.

LOCATION.--Lat 21°06'05", long 157°01'20", Hydrologic Unit 20050000, 0.6 mi north of Kaunakakai School, and 0.9 mi east of Kalanianaole Colony. Owner: Molokai Ranch.

AQUIFER.--Basalt of East Molokai Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 59 ft, casing diameter 12 in., cased to 20 ft.

DATUM.--Elevation of land-surface datum is 51 ft. Measuring point: Top of 15-inch surface casing, 51.95 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, May 1954 to current year.
WATER QUALITY: 1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.30 ft above mean sea level, Jan. 20, 1969; lowest measured, 1.60 ft above mean sea level, Dec. 5, 1964.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 19854

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	3.01	JAN 24	2.92	APR 18	2.60	JUN 4	2.62	JUL 18	2.66	AUG 25	2.69
DEC 5	2.92	FEB 28	2.87								

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT					APR				
24...	1430	370	24.5	43	18...	0750	250	23.5	18
DEC					JUN				
05...	1435	360	24.5	45	04...	1800	260	24.0	23
JAN					JUL				
24...	1230	320	24.5	32	18...	1605	310	24.5	32
FEB					AUG				
28...	1300	330	24.5	32	25...	1630	320	24.5	38

HAWAII, ISLAND OF MOLOKAI--Continued

210711157000501. Local number, 4-0700-01.

LOCATION.--Lat 21°07'11", long 157°00'05", Hydrologic Unit 20050000, 2.3 mi northeast of Kaunakakai, and 2.4 mi north of Kamiloloa. Owner: Kaluakoi Corporation.

AQUIFER.--East Molokai Volcanic Series.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1,080 ft, casing diameter 20 in., cased to 956 ft, perforated from 956 to 1056 ft.

DATUM.--Measuring point: Top of casing, 979.00 ft, land-surface datum.

REMARKS.--Water-quality records for 1973-75 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, July 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 975.40 ft below land-surface datum, Jan. 25, 1983; lowest measured, 976.10 ft below land-surface datum, July 13, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	975.69	JAN 22	975.74	APR 16	975.92	JUL 16	975.97	AUG 29	976.00

HAWAII, ISLAND OF MAUI

203908156041201. Local number, 6-3904-01.

LOCATION.--Lat 20°39'08", long 156°04'12", Hydrologic Unit 20020000, 1300 ft northwest of Kakanoni Point, and 0.7 mi west of Kipahulu School. Owner: Cordelia May.

AQUIFER.--Hana Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 150 ft, casing diameter 4 in.

DATUM.--Elevation of land-surface datum is 133 ft. Measuring point: Top of 1-inch pipe nipple, 133.61 ft above mean sea level.

REMARKS.--Water-quality records for 1978 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, July 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.73 ft above mean sea level, Jan. 9, 1985; lowest measured, 0.99 ft above mean sea level, June 13 and Aug. 8, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 4	1.79	JAN 9	2.73	APR 3	1.51	MAY 15	1.16	JUL 3	1.46	AUG 21	1.92
NOV 15	2.30	FEB 22	2.20								

HAWAII, ISLAND OF MAUI--Continued

203912156255901. Local number, 6-3925-01.

LOCATION.--Lat 20°39'12", long 156°25'59", Hydrologic Unit 20020000, 0.8 mi east of Keawalai Church, and 0.9 mi southeast of intersection of Kihei and Makena roads. Owner: State of Hawaii.

AQUIFER.--Hana Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 382 ft, casing diameter 8 in., cased to 343 ft. perforated from 343 to 363 ft.

DATUM.--Elevation of land-surface datum is 352 ft. Measuring point: Top of 2-inch pipe attached to the casing cover, 352.29 ft above mean sea level.

REMARKS.--Water-quality records for 1964 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, August 1964, June 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.47 ft above mean sea level, Aug. 24, 1964; lowest measured, 0.41 ft below mean sea level, May 4, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	0.35	JAN 15	0.45	APR 4	-0.18	MAY 16	-0.33	JUL 5	-0.08	AUG 26	0.04
NOV 20	.40	MAR 5	.05								

204827156242201. Local number, 6-4824-01.

LOCATION.--Lat 20°48'27", long 156°24'22", Hydrologic Unit 20020000, on Waiakoa Road 1,000 ft south of intersection with Kalaloa Gulch, and 4 mi east of Kihei. Owner: State of Hawaii.

AQUIFER.--Kula Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 647 ft, casing diameter 12 in., cased to 598 ft, screened from 598 to 638 ft.

DATUM.--Elevation of land-surface datum is 593 ft. Measuring point: Top of 3-inch pipe attached to the steel casing cover, 594.75 ft above mean sea level.

REMARKS.--Water-quality records for 1971, 1973 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, March 1971 and May 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.20 ft above mean sea level, Jan. 17, 1974; lowest measured, 3.65 ft above mean sea level, Jan. 27, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	3.85	JAN 16	4.25	APR 8	4.15	MAY 20	4.08	JUL 9	3.81	AUG 30	3.93
NOV 23	3.98	FEB 20	4.07								

HAWAII, ISLAND OF MAUI--Continued

204818156310301. Local number, 6-4831-01.

LOCATION.--Lat 20°48'18", long 156°31'03", Hydrologic Unit 20020000, on sugar plantation road 0.7 mi north of Maalaea, and 0.9 mi southwest of intersection of Honoapoolani Highway and Kihei Road. Owner: State of Hawaii.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 219 ft, casing diameter 8 in., cased to 187 ft.

DATUM.--Elevation of land-surface datum is 166 ft. Measuring point: Top of 8-inch casing, 166.60 ft above mean sea level.

REMARKS.--Water-quality records for 1965-67 are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, January to July 1974.
Occasional measurements, September 1972 to December 1973, August 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.76 ft above mean sea level, Nov. 30, 1983; lowest measured, 4.74 ft above mean aea level, Mar. 16, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	5.52	JAN 4	5.46	APR 4	5.26	MAY 13	5.21	JUL 3	5.23	AUG 26	5.24
NOV 13	5.42	FEB 12	5.40								

204909156281401. Local number, 6-4928-02.

LOCATION.--Lat 20°48'27", long 156°28'14", Hydrologic Unit 20020000, at Puunene Airport on Mokulele Highway 2.3 mi north of intersection with Kihei Road, Kihei. Owner: Hawaiian Commercial and Sugar Co.

AQUIFER.--Honomanu Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, 6 x 9 ft vertical shaft, depth 53 ft.

DATUM.--Elevation of land-surface datum is 50 ft. Measuring point: Top of angle iron at well, 50.08 ft above mean sea level.

REMARKS.--Water-quality records for 1973 are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, March 1972 to September 1984.
Occasional measurements, October 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.09 ft above mean sea level, Jan. 12, 1980; lowest, 3.05 ft above mean sea level, Mar. 5-6, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	3.85	JAN 15	3.98	APR 4	3.79	MAY 18	3.73	JUL 5	3.56	AUG 27	3.60
NOV 20	3.71	MAR 8	3.82								

HAWAII, ISLAND OF MAUI--Continued

205140156304501. Local number, 6-5130-01.

LOCATION.--Lat 20°51'40", long 156°30'45", Hydrologic Unit 20020000, 0.5 mi northwest of Waikapu, and 1.0 mi southeast of Wailuku Heights. Owner: State of Hawaii.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 757 ft, casing diameter 8 in., cased to 569 ft, perforated from 569 to 609 ft.

DATUM.--Elevation of land-surface datum is 551 ft. Measuring point: Top of 6-inch pipe coupling, 551.33 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, June 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 30.90 ft above mean sea level, Oct. 13, 1982; lowest measured, 11.36 ft above mean sea level, Jan. 27, 1976.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	16.67	JAN 16	15.01	APR 8	15.80	JUL 9	16.77	AUG 30	15.92	SEP 18	15.19
NOV 23	15.83	FEB 20	15.55	MAY 20	17.88						

205154156303801. Local number, 6-5130-02.

LOCATION.--Lat 20°51'54", long 156°30'38", Hydrologic Unit 20020000, 0.6 mi northwest of Waikapu, and 1.0 mi southeast of Wailuku Heights. Owner: State of Hawaii.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1020 ft, casing diameter 20 in., cased to 520 ft, perforated from 520 to 570 ft.

DATUM.--Elevation of land-surface datum is 518 ft. Measuring point: Top of casing, 519.33 ft above mean sea level.

REMARKS.--Water-quality records for 1974 are available in files of district office.

PERIOD OF RECORD.--Water-level recorder, August 1983 to September 1984.
Occasional measurements, October 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 14.42 ft above mean sea level, Aug. 8, 1983; lowest, 13.48 ft above mean sea level, April 6, 1965.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	13.80	JAN 16	13.53	APR 8	13.48	JUL 9	13.59	AUG 30	13.58	SEP 18	13.56
NOV 23	13.63	FEB 20	13.55	MAY 20	13.51						

HAWAII, ISLAND OF MAUI--Continued

205419156304401. Local number, 6-5430-03.

LOCATION.--Lat 20°54'19", long 156°30'44", Hydrologic Unit 20020000, 2,000 ft north of Puuohala Village, and 0.5 mi northwest of Wailuku Sugar Mill reservoir. Owner: Wailuku Sugar Co.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 580 ft, 1.5-inch PVC casing, cased to 400 ft, perforatad from 400 to 580 ft.

DATUM.--Elevation of land-surface datum is 415 ft. Meaauring point: Top of 1-inch galvanized pipe, 416.75 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, August 1982 to February 1984.
Occasional measurements, March 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.09 ft above mean sea level, Dec. 31, 1982; lowest measured, 14.86 ft above mean sea level, Aug. 28, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	15.77	JAN 3	16.08	MAR 29	18.07	JUL 5	15.09	AUG 28	14.86	SEP 16	14.88
NOV 1	15.65	FEB 12	16.21	MAY 15	15.54						

HAWAII, ISLAND OF MAUI--Continued

205405156305401. Local number, 8-5430-05.

LOCATION.--Lat 20°54'59", long 156°30'56", Hydrologic Unit 20020000, 1.0 mi southwest of interseotion of Malaihi Road and Highway 33, and 1.2 mi south of Waihee. Owner: State of Hawaii.

AQUIFER.--Wailuku Voloanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled baeal water-table well, depth 1400 ft, casing diameter 10 in., cased to 400 ft.

DATUM.--Elevation of land-surface datum is 380 ft. Measuring point: Top of 10-inch casing, 380.84 ft, revised, above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, August 1983 to current year.
WATER QUALITY: 1982, 1985.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.68 ft above mean sea level, Aug. 5, 1983; lowest measured, 13.16 ft above mean sea level, Sept.16, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	14.12	JAN 3	14.25	FEB 11	14.29	MAR 28	14.12	MAY 15	13.63	SEP 16	13.16
NOV 1	13.99										

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG				
22...	j --	400	585	140
22...	j1500	200	225	14
22...	j1810	500	589	140
22...	j1700	600	660	180
22...	j1730	875	1150	300
22...	j1820	750	--	760
AUG				
22...	j1900	800	12100	4100
22...	j1930	825	39000	14000
22...	j2010	850	45700	17000
23...	j --	1000	49800	19000
23...	j1300	900	48700	18000

j Collected by non-USGS agency.

HAWAII, ISLAND OF MAUI--Continued

205437156310501. Local number, 6-5431-01.

LOCATION.--Lat 20°54'37", long 156°31'05", Hydrologic Unit 20020000, 0.5 mi southwest of Waiehu Village, and 1.4 mi southwest of intersection of Malaihi Road and Kahekili Highway. Owner: Wailuku Sugar Co.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 555 ft, 1.5-inch PVC casing, cased to 515 ft, perforated from 515 to 555 ft.

DATUM.--Elevation of land-surface datum is 493 ft. Measuring point: Top of 1.5-inch PVC casing, 492.51 ft above mean sea level.

PERIOD OF RECORD.--Water-level rscorder, August 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 19.52 ft above mean sea level, Jan. 2, 1983; lowest 12.66 ft above mean sea level, Sept. 25, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.82	13.94	14.02	14.05	14.24	14.13	13.91	13.57	13.43	13.46	13.32	12.80
10	13.78	13.89	14.06	14.05	14.14	14.14	13.86	13.52	13.42	13.38	13.14	12.77
15	13.82	13.88	14.05	14.20	14.18	14.14	13.79	13.47	13.46	13.38	12.94	12.89
20	13.77	13.85	13.99	14.17	14.15	14.08	13.69	13.56	13.61	13.35	12.88	12.73
25	13.72	13.86	14.02	14.14	14.12	14.03	13.63	13.57	13.52	13.34	12.90	12.75
EOM	13.70	14.09	14.06	14.15	14.23	13.98	13.57	13.45	13.48	13.29	12.84	12.82

WTR YEAR 1985 MAX 14.32 JAN 14 MIN 12.66 SEP 25

205552156193101. Local number, 6-5519-01.

LOCATION.--Lat 20°55'52", long 156°19'31", Hydrologic Unit 20020000, at Haiku School 1.0 mi north of Haiku, and 2.7 mi northeast of Paia. Owner: State of Hawaii.

AQUIFER.--Kula Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled baaal water-table well, depth 400 ft, casing diameter 8 in., cased to 363 ft, perforated from 363 to 383 ft.

DATUM.--Elevation of land-surface datum is 365 ft. Measuring point: Top of 2.5-inch pipe coupling attached to the casing cover, 368.26 ft above mean sea level.

REMARKS.--Water-quality records for 1967, 1980 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, May 1967, December 1970, May 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.08 ft above mean sea level, Nov. 23, 1982; lowest measured, 4.75 ft above mean sea level, Mar. 7, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	5.71	JAN 16	5.75	APR 8	5.30	MAY 20	5.29	JUL 9	5.27	AUG 30	5.23
NOV 23	5.69	FEB 20	5.56								

HAWAII, ISLAND OF MAUI--Continued

205617156311101. Local number, 6-5631-01.

LOCATION.--Lat 20°56'17", long 156°31'11", Hydrologic Unit 20020000, 2,000 ft southwest of Waihee Farm, and 1.3 mi northwest of Waiehu Golf Course. Owner: Wailuku Sugar Co.

AQUIFER.--Wailuku Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 300 ft, 1.5-inch PVC casing, cased to 260 ft, perforated from 260 to 300 ft.

DATUM.--Elevation of land-surface datum is 248 ft. Measuring point: Top of 1.5-inch PVC pipe, 248.05 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, August 1982 to September 1984.
Occasional measurements, October 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 18.83 ft above mean sea level, Dec. 6, 1982; lowest 14.61 ft above mean sea level, Sept. 16, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	15.43	JAN 3	15.32	MAR 29	15.07	JUL 5	14.79	AUG 28	14.68	SEP 16	14.61
NOV 21	15.27	FEB 11	15.27	MAY 15	14.80						

205856156400101. Local number, 6-5840-01.

LOCATION.--Lat 20°58'58", long 158°40'01", Hydrologic Unit 20020000, on sugar plantation road 0.9 mi east of Kahana, and 1.5 mi southwest of Honokahua. Owner: State of Hawaii.

AQUIFER.--Honolua Volcanic Series, Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 274 ft, casing diameter 8 in., cased to 264 ft, perforated from 264 to 274 ft. Hole was drilled to depth of 284 ft but plugged back 10 ft with cement.

DATUM.--Elevation of land-surface datum is 257 ft. Measuring point: Top of 9-inch casing, 257.34 ft above mean sea level.

REMARKS.--Water-quality records for 1964, 1980 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, March 1972 to July 1975.
Water-level recorder, August 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.68 ft above mean sea level, Sept. 20, 1981; lowest, 2.40 ft above mean sea level May 4-5, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	3.27	3.25	3.19	3.25	3.13	3.12	2.74	2.57	2.79	2.96	3.08	2.98
10	3.32	3.26	3.16	3.28	3.10	3.07	2.69	2.74	2.88	2.98	3.04	3.05
15	3.39	3.25	3.21	3.39	3.15	2.99	2.57	2.60	2.95	2.98	3.03	3.07
20	3.30	3.30	3.24	3.17	3.11	2.90	2.64	2.69	2.88	2.95	3.00	3.06
25	3.30	3.31	3.31	3.11	3.13	2.88	2.61	2.86	2.89	3.02	2.99	3.06
EOM	3.24	3.19	3.27	3.15	3.18	2.76	2.60	2.74	2.92	3.04	2.98	3.07

WTR YEAR 1985 MAX 3.52 JAN. 14, 15 MIN 2.40 MAY 4, 5

HAWAII, ISLAND OF HAWAII

190602155325901. Local number, 8-0632-01.

LOCATION.--Lat 19°06'02", long 155°32'59", Hydrologic Unit 20010000, 0.9 mi north of Whittington Park, and 3.3 mi northeast of Naalehu. Owner: Kau Agribusiness (formerly Kau Sugar Company).

AQUIFER.--Ninole Volcanic Series, Pleistocsne age.

WELL CHARACTERISTICS.--Drilled basal water-table, depth 140 ft, casing diameter 14 in., cased to 105 ft, perforated from 105 to 125 ft.

DATUM.--Elevation of land-surface datum is 102 ft. Measuring point: 1-inch hole in pump base, 103.26 ft above mean sea level.

REMARKS.--Water-quality records for 1972 and 1973 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, April 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.39 ft above mean sea level, October 19, 1978; lowest measured, 0.54 ft below mean sea level, June 5, 1985.

0.58 Jr. 9/29/1981

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	2.12	DEC 27	1.88	MAR 11	1.24	MAY 1	0.70	JUN 5	0.54	JUL 23	1.34

HAWAII, ISLAND OF HAWAII--Continued

192728154530101. Local number, 8-2783-01.

LOCATION.--Lat 19°27'28", long 154°53'01", Hydrologic Unit 20010000, 0.8 mi southeast of Pawai crater in Keahialaka, and 1.9 mi north of Opihikao road junction, south Pahoa. Owner: State of Hawaii.

AQUIFER.--Hilina Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 319 ft, casing diameter 8 in., cased to 279 ft, perforated from 279 to 319 ft.

DATUM.--Elevation of land-surface datum is 273 ft. Measuring point: Top of casing, 273.00 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, March 1972 to current year.
WATER QUALITY: 1962, 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level msasured; 2.87 ft above mean sea level, Sept. 17, 1985; lowest measured, 0.97 ft above mean sea level, July 26, 1976.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 11	2.72	APR 18	1.85	JUN 3	1.57	JUL 16	1.50	AUG 27	2.34	SEP 17	2.87
FEB 20	2.43										

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC 11...	0955	9500	54.0	2800	JUN 03...	0945	12500	54.0	4200
FEB 20...	1015	15000	55.0	5100	JUL 16...	1030	13000	54.0	4500
APR 18...	0925	7000	53.0	2400	SEP 17...	0900	13500	54.0	4800

HAWAII, ISLAND OF HAWAII--Continued

193017154502101. Local number, 8-3080-02.

LOCATION.--Lat 19°30'17", long 154°50'21", Hydrologic Unit 20010000, 0.5 mi south of intersection of Highway 132, and Highway 137 near Pahoa. Owner: County of Hawaii.

AQUIFER.--Puna Volcanic Series, Holocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, depth 46 ft, casing diameter 66 in., with two horizontal infiltration tunnels 2 x 50 ft extending in opposite directions from 3 ft above bottom of well.

DATUM.--Elevation of land-surface datum is 39 ft. Measuring point: Top of steel manhole cover at 1-inch hole, 39.50 ft above mean sea level.

REMARKS.--Water from this well is used for public supply and at times, water level affected by pumping.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, March 1972 to current year.
WATER QUALITY: 1972-81, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.16 ft above mean sea level, Dec. 6, 1982; lowest measured, 1.18 ft above mean sea level, June 3, 1985.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 11	4.00	FEB 20	2.56	APR 18	3.83	JUN 3	1.18	JUL 16	2.39	SEP 6	2.92

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB 20...	0855	1300	25.5	240	JUL 16...	0905	1700	25.5	380
JUN 03...	1245	1500	25.5	290	SEP 06...	1240	1400	25.5	290

HAWAII, ISLAND OF HAWAII--Continued

193339154594801. Local number, 8-3389-01.

LOCATION.--Lat 19°33'39", long 154°59'48", Hydrologic Unit 20010000, 3.5 mi northwest of Pahoa airstrip, and 5.5 mi southeast of Keaau. Owner: County of Hawaii.

AQUIFER.--Puna Volcanic Series, Holocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 475 ft, casing diameter 8 in., cased to 403 ft, perforated from 403 to 475 ft.

DATUM.--Elevation of lsnd-surface datum is 427 ft. Measuring point: Top of casing, 428.14 ft above mean sea level.

REMARKS.--Water-quality records for 1961 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, September 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.37 ft above mean sea level, Mar. 26, 1979; lowest measured, 15.99 ft above mean sea level, Apr. 25, 1978, Mar 10, 1986

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	16.71	FEB 22	17.43	APR 18	19.64	JUN 3	19.90	JUL 16	18.32	SEP 6	17.21
DEC 13	17.53										

HAWAII, ISLAND OF HAWAII--Continued

194134155005601. Local number, 8-4100-01.

LOCATION.--Lat 19°41'34", long 155°00'56", Hydrologic Unit 20010000, 5.5 mi southeast of Hilo Post Office, and 5.0 mi northeast of Keaau. Owner: Hawaiian Paradise Park Corporation.

AQUIFER.--Kau Volcanic Series, Holocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 55 ft, casing diameter 10 in., cased to 39 ft, perforated from 39 to 55 ft.

DATUM.--Elevation of land-surface datum is 45 ft. Measuring point: Top of casing, 46.84 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, November 1971 to current year.
WATER QUALITY: 1971, 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.73 ft above mean sea level, Apr. 9, 1980; lowest measured, 2.24 ft above mean sea level, Mar. 9, 1972.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	4.84	JAN 7	4.76	MAR 19	4.89	MAY 13	4.98	JUL 9	4.83	SEP 26	4.23

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT					MAY				
25...	1425	1600	19.0	420	13...	0945	1200	19.5	--
JAN					JUL				
07...	1105	1400	19.0	--	09...	0945	1280	19.5	--
MAR					SEP				
19...	0935	1400	19.0	--	26...	0855	1160	19.0	--

HAWAII, ISLAND OF HAWAII--Continued

194222155035101. Local number, 8-4203-04.

LOCATION.--Lat 19°42'22", long 155°03'51", Hydrologic Unit 20010000, 0.5 mi east of Hawaii Technical School, and 1.0 mi south of Hilo airport terminal. Owner: Hawaii Electric Light Company.

AQUIFER.--Kahuku Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 201 ft, casing diameter 16 in., cased to 63 ft.

DATUM.--Elevation of land-surface datum is 47 ft. Measuring point: Top of 3-inch nipple above casing; 46.54 ft above mean sea level.

REMARKS.--Water-quality records for 1961 are available in files of district office. Water level affected by pumping of nearby industrial wells.

PERIOD OF RECORD.--Occasional measurements, July 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.67 ft above mean sea level, Mar. 11, 1979; lowest measured, 5.87 ft above mean sea level, May 17, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	6.44	FEB 22	8.41	APR 22	7.92	JUN 4	7.44	JUL 17	6.56	SEP 23	6.37
DEC 13	6.78										

HAWAII, ISLAND OF HAWAII--Continued

195947155485801. Local number, 8-5948-01.

LOCATION.--Lat 19°59'47", long 155°48'58", Hydrologic Unit 20010000, 0.7 mi east of Hapuna Beach Park, and 3.1 mi southeast of Kawaihae. Owner: State of Hawaii.

AQUIFER.--Hamakua Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 268 ft, casing diameter 10 in., cased to 246 ft, screened from 246 to 266 ft.

DATUM.--Elevation of land-surface datum is 244 ft. Measuring point: Hole in pumpbase, 246.47 ft above mean sea level.

REMARKS.--Water from this well is used for irrigation.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, April 1970, March 1973 to current year.
WATER QUALITY: 1970, 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measurad, 4.50 ft above mean sea level, Sept. 26, 1984; lowest measured, 1.40 ft, above mean aea level, June 22, 1973, June 3, 1974.

7-89

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 14	4.11	JAN 18	3.97	MAR 13	4.00	MAY 3	3.45	JUN 17	a1.40	JUL 26	3.80

a Well being pumpsd.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
NOV 14...	1015	1650	26.0	460	MAY 03...	0845	1650	25.5	460
JAN 18...	1020	1650	26.0	450	JUN 17...	1020	1650	25.5	460
MAR 13...	1010	1600	25.5	450	JUL 26...	0900	1600	26.0	450

HAWAII, ISLAND OF HAWAII--Continued

200132155471001. Local number, 8-6147-01.

LOCATION.--Lat 20°01'32", long 155°47'10", Hydrologic Unit 20010000, on Highway 26, 3.1 mi east of Kawaihae, and 2.8 mi northeast of Hapuna Beach Park. Owner: State of Hawaii.

AQUIFER.--Pololu Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 1,008 ft, casing diameter 8 in., cased to 997 ft, perforated from 997 to 1,008 ft. Hole was drilled to 1,040 ft but was finally plugged back to 1,008 ft.

DATUM.--Elevation of land-surface datum is 982 ft. Measuring point: Top of pips coupling on casing cover 982.8 ft, revised, above mean sea level.

REMARKS.--Water-quality records for 1963-64 are available in files of district office.

PERIOD OF RECORD.--Occasional measurements, June to July 1963, June 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.15 ft above mean sea level, Sept. 22, 1983, lowest measured, 4.82 ft above mean sea level Sept. 20, 1976.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 14	6.09	JAN 18	5.87	MAR 13	5.80	MAY 3	5.48	JUN 17	5.83	JUL 26	5.80

HAWAII, ISLAND OF HAWAII--Continued

201603155521801. Local number, 8-7652-01.

LOCATION.--Lat 20°16'03", long 155°52'18", Hydrologic Unit 20010000, 0.3 mi west of Upolu Point Airfield, 3.1 mi northwest of Hawi, and 1.9 mi west of Hoea Camp. Owner: Kohala Corporation.

AQUIFER.--Pololu Volcanic Series, Pleistocene age.

WELL CHARACTERISTICS.--Dug basal water-table well, with horizontal infiltration tunnels from pump sump.

DATUM.--Elevation of land-surface datum is 33 ft. Measuring point: Top of 4-inch steel I-beam placed across sump, 7.75 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, March 1973 to current year.
WATER QUALITY: 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.09 ft sbove mean sea level, Aug. 22, 1974; loweet measured, 1.45 ft above mean sea level, July 9, 1975, Jan. 16, 1980.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 7	2.54	JAN 25	2.34	APR 1	2.28	MAY 22	1.78	JUL 11	2.67

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
NOV					MAY				
07...	1015	2100	22.0	610	22...	1300	2200	22.5	590
JAN					JUL				
25...	1400	2070	22.0	590	11...	1245	2200	22.5	600
APR									
01...	1130	2300	22.5	590					

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
			HAWAII, ISLAND OF KAUAI					
220018159444701	2-0044-10	22 00 18	159 44 47	10-24-84	1040	540	24.5	82
				10-29-84	0915	580	23.0	84
				10-30-84	0850	610	21.0	100
				10-31-84	0900	610	21.0	100
				12-12-84	1150	570	24.0	86
				01-22-85	1130	570	24.0	84
				02-12-85	1215	550	23.5	84
				03-14-85	1145	560	24.0	73
				04-29-85	1040	510	23.0	88
				06-18-85	1015	520	24.0	80
				07-24-85	1110	530	24.0	82
				09-26-85	1010	460	24.0	79
220018159444702	2-0044-13	22 00 18	159 44 47	10-24-84	1035	520	24.5	86
				10-29-84	0915	430	24.0	82
				10-30-84	0845	570	21.0	89
				10-31-84	0900	570	21.0	90
				12-12-84	1145	505	24.0	88
				01-22-85	1130	500	24.0	87
				02-12-85	1215	490	23.5	88
				03-14-85	1150	500	24.0	77
				04-29-85	1045	460	23.0	76
				06-18-85	1020	470	24.0	78
				07-24-85	1105	450	24.0	82
				09-26-85	1020	420	24.0	80
220016159442701	2-0044-15	22 00 16	159 44 27	10-24-84	0930	5200	24.0	1600
				10-31-84	0835	5200	23.0	1600
				12-12-84	1110	1080	24.5	250
				01-22-85	1050	700	24.5	130
				04-29-85	1030	1050	24.5	240
				06-18-85	1000	4040	24.5	1200
				07-24-85	1140	3210	23.0	900
				09-26-85	1000	1560	24.0	400
220136159205501	2-0120-01	22 01 36	159 20 55	06-12-85	0930	830	25.0	150
220134159205401	2-0120-02	22 01 34	159 20 54	12-11-84	1330	850	25.0	120
				01-23-85	1430	780	25.0	130
				03-11-85	0905	780	24.5	120
				04-24-85	1430	725	25.0	110
				07-18-85	1445	750	29.5	130
				09-20-85	0815	750	25.0	110
220148159453501	2-0145-10	22 01 48	159 45 35	10-24-84	1115	790	24.0	170
				04-29-85	1130	1090	21.0	230
				07-24-85	1030	1000	23.0	240
220341159453901	2-0345-04	22 03 41	159 45 39	10-31-84	1000	1900	23.0	520
				12-12-84	1410	1100	22.5	240
				01-22-85	1400	1300	23.0	280
				03-14-85	1400	1520	23.5	290
				04-29-85	1245	1800	22.5	400
				06-18-85	1130	1610	23.5	500
				07-24-85	0925	1150	22.0	260
				09-28-85	1145	1550	24.5	400
220530159450401	2-0545-01	22 05 30	159 45 04	10-24-84	1315	750	24.5	150
				12-12-84	1350	800	23.0	140
				03-14-85	1345	780	23.0	130
				04-29-85	1210	810	23.0	150
				06-18-85	1200	790	23.5	140
				07-24-85	0855	750	24.0	140
				09-26-85	1210	670	24.0	140

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF KAUAI--Continued								
220827159185401	2-0818-01	22 08 27	159 18 54	03-11-85	0955	230	24.0	18
				04-24-85	1230	235	24.0	18
				08-11-85	1350	225	24.0	20
				07-18-85	0845	220	24.0	20
				09-18-85	1430	225	24.0	20
221141159252501	2-1125-01	22 11 41	159 25 25	06-11-85	1325	167	24.0	14
221141159252502	2-1125-02	22 11 41	159 25 25	07-18-85	0930	150	24.5	14
				09-20-85	0945	150	24.5	14
221150159264501	2-1126-01	22 11 50	159 26 45	01-23-85	1130	170	22.5	15
				03-11-85	1200	165	23.5	13
				04-24-85	0950	170	22.0	14
				07-18-85	1045	190	23.0	15
				09-18-85	1245	170	23.5	15
221151159265001	2-1126-02	22 11 51	159 26 50	06-11-85	1255	192	24.5	16
221201159293401	2-1228-03	22 12 01	159 29 34	12-11-84	1130	220	23.0	24
				03-11-85	1245	225	23.5	23
				06-11-85	1030	225	23.5	24
				07-19-85	1130	225	23.5	24
221247159324801	2-1232-01	22 12 47	159 32 48	12-11-84	1245	135	22.5	18
				01-17-85	1345	140	22.5	18
				07-18-85	1230	140	23.0	19
				09-20-85	1145	135	23.0	19
221318159335901	2-1333-01	22 13 18	159 33 59	12-11-84	1215	200	21.5	20
				01-17-85	1415	210	22.0	19
				04-24-85	1130	210	22.5	18
				06-11-85	1130	210	23.5	20
				07-18-85	1215	210	23.5	20
				09-20-85	1100	210	22.5	20
215536159263501	2-5526-01	21 55 36	159 26 35	06-17-85	1345	260	24.0	20
				07-26-85	1040	230	23.0	22
215528159303001	2-5530-02	21 55 28	159 30 30	10-25-84	1330	240	24.5	26
				01-25-85	1030	255	24.0	26
				04-30-85	1030	260	22.5	28
				07-28-85	0940	250	23.0	27
215522159342601	2-5534-03	21 55 22	159 34 28	10-25-84	1245	570	24.0	71
				12-13-84	1030	580	24.0	92
				03-26-85	1010	600	24.0	44
				09-27-85	0920	480	24.0	44
215635159355001	2-5635-01	21 56 35	159 35 50	10-25-84	1155	750	24.0	150
				12-13-84	0930	760	24.0	150
				01-24-85	1500	770	24.0	150
				03-25-85	1415	750	24.0	140
				04-30-85	0925	720	23.0	140
				06-17-85	1010	850	24.0	140
				07-26-85	0825	720	23.0	140

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
HAWAII, ISLAND OF KAUAI--Continued								
215635159355002	2-5635-02	21 56 35	159 35 50	08-17-85	1020	920	24.0	190
				07-26-85	0830	1030	23.0	220
215803159401201	2-5840-01	21 58 03	159 40 12	10-25-84	0915	700	24.5	130
				12-12-84	1440	650	25.0	110
				01-24-85	1330	610	24.5	--
				04-29-85	1430	640	25.0	--
				08-17-85	0940	610	24.5	--
				07-24-85	1405	725	24.0	--
				09-26-85	1400	800	24.0	--
215854159424601	2-5842-02	21 58 54	159 42 46	10-16-84	0945	690	24.5	110
				12-12-84	1040	670	24.0	100
				01-22-85	0930	700	23.5	98
				03-25-85	1050	720	24.0	95
				04-29-85	0930	675	24.0	100
				06-20-85	1345	670	25.0	110
				07-24-85	1305	700	24.0	110
				09-26-85	0930	670	24.0	140
215843159422901	2-5842-03	21 58 43	159 42 29	10-31-84	1050	1000	23.5	200
				12-12-84	1020	700	24.0	120
				01-22-85	0900	620	23.0	110
				03-25-85	1110	740	24.0	160
				04-29-85	0905	1050	24.0	220
				08-18-85	0910	1000	24.0	280
				07-24-85	1340	1100	25.0	250
				09-26-85	0850	830	24.5	200
215901159235301	2-5923-01	21 59 01	159 23 50	10-29-84	1130	280	25.5	16
215901159235302	2-5923-02	21 59 01	159 23 53	07-26-85	1150	198	24.0	21
				09-30-85	0915	210	24.0	22
215901159235201	2-5923-07	21 59 01	159 23 52	07-26-85	1155	180	24.0	18
215906159395601	2-5939-01	21 59 06	159 39 56	10-31-84	1125	330	22.0	21
				12-12-84	0945	365	23.5	41
				01-24-85	1410	320	23.5	56
				03-25-85	1315	370	24.0	60
				04-29-85	1505	540	23.5	87
				08-17-85	0925	530	24.5	95
				07-24-85	1455	680	24.0	140
				09-26-85	1430	362	24.0	42
215937159434201	2-5943-01	21 59 37	159 43 42	10-24-84	0910	1200	24.0	260
				12-12-84	1055	1100	24.0	230
				01-22-85	1030	1200	23.5	190
				03-25-85	1030	1300	24.0	170
				04-29-85	0950	1030	24.0	200
				06-18-85	0950	1010	24.0	220
				07-24-85	1230	1150	24.0	240
				09-26-85	0950	970	24.5	230

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
			HAWAII, ISLAND OF OAHU					
211648157465201	3-1646-01	21 16 46	157 46 52	10-17-84	1000	800	22.5	180
				03-11-85	0930	620	23.0	--
				06-12-85	1145	800	22.5	--
				07-18-85	1005	720	23.5	--
				09-09-85	0950	890	22.0	--
211832157515501	3-1851-19A	21 18 32	157 51 55	10-18-84	1305	24000	23.5	8900
				01-15-85	0830	25000	23.0	9200
				03-12-85	1600	24000	23.5	9200
				04-17-85	1555	24000	23.5	9200
				06-13-85	1340	26000	23.5	9600
				07-23-85	1535	26000	24.0	9600
				09-09-85	1545	26000	23.5	9500
211832157515502	3-1851-19B	21 18 32	157 51 55	10-18-84	1310	3800	23.5	1200
				01-15-85	0835	4000	23.0	--
				03-12-85	1610	4000	23.5	--
				04-17-85	1350	4100	23.5	--
				06-13-85	1350	4200	23.5	--
				07-23-85	1530	4400	23.5	--
				09-09-85	1550	4600	23.5	--
212038157422501	3-2042-13	21 20 02	157 42 06	08-08-85	1345	10000	25.5	3600
212133158035501	3-2103-03	21 21 33	158 03 55	01-14-85	0930	1100	23.0	240
				03-12-85	0900	1100	23.0	230
				04-23-85	0900	1100	23.0	240
				06-13-85	0900	1100	23.0	240
				07-25-85	0850	1100	23.0	240
				09-10-85	0910	1120	23.0	240
212106157533701	3-2153-02	21 21 06	157 53 37	10-11-84	1535	395	21.5	72
				03-12-85	1355	380	21.5	66
				04-15-85	1520	380	22.0	69
				06-13-85	1305	380	21.5	69
				07-18-85	1540	395	21.5	70
				09-09-85	1510	400	21.5	72
212259157554201	3-2255-35	21 22 59	157 55 42	01-11-85	1100	1070	21.5	280
				04-23-85	1310	1100	21.5	--
				07-25-85	1305	1080	21.5	--
212238157561102	3-2256-12	21 22 39	157 56 09	01-11-85	1510	740	23.5	180
				03-05-85	1530	670	23.0	130
				04-19-85	1555	700	24.0	180
				06-11-85	1000	740	24.5	190
				07-18-85	1440	750	25.5	190
				09-06-85	0920	750	24.5	190

WATER QUALITY DATA, WATER YEAR OCTOBER 1943 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
HAWAII, ISLAND OF OAHU--Continued								
212300158004801	3-2300-06	21 23 00	158 00 48	03-12-85	1145	640	21.5	--
212343158001001	3-2300-11	21 23 43	158 00 10	10-16-84	1020	890	22.0	200
				01-14-85	1010	850	22.0	--
				03-11-85	1505	850	22.0	--
				04-16-85	1125	830	22.5	--
				06-13-85	1050	850	22.0	--
				07-18-85	1240	875	22.0	--
				09-09-85	1220	900	22.0	--
212358158010901	3-2301-09 TO 10	21 23 58	158 01 09	10-11-84	1235	440	22.0	75
				01-14-85	1025	480	22.0	--
				03-12-85	1120	595	22.0	--
				04-16-85	1115	550	22.0	--
				06-13-85	1000	460	22.0	--
				07-18-85	1205	460	22.0	--
				09-09-85	1200	450	21.5	--
212332157582201	3-2358-02	21 23 32	157 58 22	10-12-84	1410	1200	20.0	330
				01-11-85	1220	2600	20.0	750
				04-23-85	1125	1900	20.0	--
				09-09-85	1420	1200	20.0	--
212342157584301	3-2358-22	21 23 42	157 58 43	10-17-84	1430	900	20.5	240
				01-11-85	1145	1100	20.5	300
				03-11-85	1520	1250	20.5	--
				04-22-85	1350	1100	20.5	--
				06-12-85	1355	1100	20.0	--
				07-18-85	1250	960	20.5	--
				09-09-85	1400	910	20.0	--
212343157584701	3-2358-29	21 23 43	157 58 47	10-17-84	1435	1020	20.5	280
				01-11-85	1135	1600	20.5	450
				03-11-85	1515	2500	20.5	--
				04-22-85	1345	1700	20.5	--
				06-12-85	1350	1300	20.0	--
212336157591801	3-2359-05	21 23 36	157 59 18	10-17-84	1440	2000	22.0	--
				01-11-85	1150	2400	22.0	680
				03-11-85	1530	2600	22.0	--
				04-22-85	1400	2400	22.0	--
				06-12-85	1405	2200	22.0	--
				07-18-85	1310	2100	22.0	--
				09-09-85	1350	2200	21.5	--
212422157485601	3-2448-01	21 24 22	157 48 56	10-04-84	1430	180	21.0	18
212556157500301	3-2550-01	21 25 56	157 50 03	03-14-85	0900	120	23.0	14
				06-20-85	1345	125	23.0	18
				08-13-85	1420	130	23.0	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
			HAWAII, ISLAND OF OAHU--Continued					
212506157582301	3-2558-10	21 25 06	157 58 23	10-17-84	1415	520	21.5	110
				01-11-85	1240	500	21.0	100
				03-12-85	1210	480	21.0	--
				04-22-85	1415	450	21.5	--
				06-13-85	1105	440	21.0	--
				07-25-85	1045	430	21.5	--
				09-09-85	1120	420	21.0	--
212617158033801	3-2603-01	21 26 17	158 03 38	01-14-85	1110	355	22.0	52
				04-23-85	1100	355	22.0	48
				07-25-85	1000	350	22.0	50
212656158071801	3-2607-01	21 26 56	158 07 18	05-17-85	1130	350	24.5	--
				07-01-85	1220	345	24.5	--
				08-14-85	1115	340	25.0	--
				09-30-85	1220	345	24.0	--
212803158000701	3-2800-01	21 28 03	158 00 06	09-24-85	1645	160	24.0	16
212813158080201	3-2808-01	21 28 13	158 08 04	11-14-84	1230	1250	26.0	180
				12-18-84	1245	1200	26.5	160
				01-30-85	1120	1200	26.0	150
				03-28-85	1450	1250	26.5	180
				05-17-85	1200	1350	26.5	180
				07-01-85	1305	1300	26.5	180
				08-14-85	1205	1350	27.0	180
				09-30-85	1310	1250	26.5	170
212828158092001	3-2809-06	21 28 27	158 09 20	11-05-84	0945	380	23.0	34
				12-07-84	1000	380	23.0	34
				03-22-85	1415	370	22.5	--
				06-25-85	1030	370	22.5	--
				09-23-85	0945	375	22.5	--
212859158124301	3-2812-01	21 28 59	158 12 43	11-05-84	1145	620	26.0	120
				12-07-84	1225	610	25.5	120
				01-29-85	1525	650	25.0	--
				02-28-85	1215	655	25.0	--
				05-15-85	1320	650	25.0	--
				06-25-85	1200	650	25.0	--
				08-06-85	1100	660	25.0	--
				09-23-85	1200	675	25.0	--
212945158014301	3-2901-09	21 29 45	158 01 43	11-05-84	1700	190	22.0	20
				12-17-84	1640	186	21.5	20
				05-15-85	0930	188	22.0	20
				08-20-85	1700	195	21.5	20
212939158112301	3-2911-02	21 29 39	158 11 23	11-05-84	1300	260	21.5	24
				12-07-84	1300	260	21.0	25
				03-22-85	1300	250	21.0	25
				06-22-85	1350	250	21.0	--
				09-23-85	1600	255	21.0	26

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF OAHU--Continued								
213224158135901	3-3213-06	21 32 24	158 13 59	11-05-84	1110	850	24.0	210
				12-07-84	1105	850	24.0	200
				01-29-85	1500	880	24.0	210
				03-28-85	1130	860	24.5	200
				05-15-85	1440	850	25.0	200
				06-27-85	1525	850	25.0	200
				08-06-85	1000	850	25.5	210
				09-23-85	1100	890	25.5	200
213243157510001	3-3251-01	21 32 43	157 51 00	10-30-84	1330	950	26.5	220
				01-22-85	1530	900	22.5	240
				06-19-85	1530	900	22.5	220
				08-09-85	1400	900	25.0	220
213429158055501	3-3405-01	21 34 29	158 05 55	06-21-85	1300	470	22.0	--
				08-14-85	1850	450	22.5	--
				09-26-85	1450	430	22.0	--
213427158055501	3-3405-02	21 34 27	158 05 55	10-30-84	1430	500	23.0	96
				12-17-84	0930	480	22.5	91
				02-12-85	1330	550	22.5	--
				03-26-85	1715	540	22.0	--
				05-21-85	1430	550	22.0	--
				07-02-85	1630	540	22.5	--
213411158074501	3-3407-25	21 34 11	158 07 45	11-16-84	1430	2350	22.5	630
				12-18-84	0830	2200	23.0	630
				02-12-85	1015	2100	23.0	--
				05-21-85	0945	2350	23.0	--
				07-02-85	1500	2350	22.5	--
213444158075501	3-3407-30	21 34 44	158 07 55	03-29-85	1520	3020	24.5	750
				05-20-85	1010	5800	24.5	1700
				07-02-85	1125	6600	24.5	2000
				08-16-85	1100	6700	25.0	2000
213512158061601	3-3506-03 TO 04	21 35 12	158 08 16	01-28-85	1325	560	22.0	--
				03-18-85	1535	550	22.0	--
				05-02-85	1300	580	22.0	--
				07-02-85	1800	580	22.0	--
				08-14-85	1510	595	22.0	--
				09-18-85	1330	590	22.0	--
213636158053701	3-3605-03	21 36 36	158 05 37	11-13-84	1130	2400	21.0	630
				12-17-84	1115	1550	21.5	450
				01-28-85	1455	1900	21.0	--
				03-27-85	1635	2280	21.0	--
				05-21-85	1145	2150	21.0	--
				08-21-85	0750	2720	21.0	--
				08-16-85	0845	2850	22.0	--
				09-26-85	1245	3150	21.5	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
HAWAII, ISLAND OF OAHU--Continued								
213636158053702	3-3605-21	21 36 35	158 05 40	11-13-84	1200	1600	21.5	380
				12-17-84	1145	1380	22.0	370
				02-12-85	1300	1450	21.5	--
				03-27-85	1700	1430	21.5	--
				05-21-85	1200	1500	21.5	--
				06-21-85	0815	1580	21.5	--
				08-16-85	0915	1550	22.0	--
				09-26-85	1305	1870	21.5	--
213656157550401	3-3655-01	21 38 56	157 55 04	10-03-84	0930	240	22.0	32
				01-15-85	1305	240	22.0	32
				03-15-85	1230	240	22.0	32
				05-02-85	1500	240	21.0	34
				08-19-85	1300	240	21.0	34
				08-09-85	1300	230	21.5	34
				09-30-85	1325	235	22.0	34
213902157561601	3-3956-04	21 39 02	157 56 16	10-03-84	1000	630	22.0	170
				01-15-85	1245	630	22.5	--
				05-02-85	1445	650	21.5	170
				06-19-85	1200	670	21.5	--
				08-09-85	1240	660	21.5	--
				09-30-85	1315	660	21.5	--
214157158000101	3-4100-01	21 41 57	158 00 01	06-19-85	1000	325	21.5	61
				08-09-85	1010	330	21.0	62
214131158011601	3-4101-08	21 41 31	158 01 16	10-03-84	1115	240	22.0	32
				03-15-85	1200	220	21.0	31
				05-02-85	1415	220	20.5	34
				06-19-85	1115	220	21.0	34
				08-09-85	1050	215	21.0	34
214233157583501	3-4258-04	21 42 33	157 58 35	10-03-84	1030	1800	25.5	520
				11-29-84	0945	1750	24.0	530
				01-15-85	0900	1650	20.0	530
				03-15-85	0930	1400	23.0	520
				05-02-85	1130	1790	22.5	520
				06-19-85	0845	1600	23.0	520
				08-09-85	0930	1750	25.0	520
				09-30-85	0950	1700	25.5	530

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF MOLOKAI								
210856157011201	4-0801-01	21 08 56	157 01 12	06-04-85	0830	346	--	72
210857156010701	4-0801-02	21 08 57	157 01 07	10-26-84	j0800	344	--	70
				12-05-84	j1500	340	--	69
				02-27-85	j1300	344	--	50
				04-16-85	j0915	344	--	69
				07-15-85	j0837	334	--	68
				08-28-85	j0837	342	--	70
210903157013001	4-0901-01	21 09 03	157 01 30	10-24-84	1450	270	20.5	50
				12-05-84	0905	270	21.0	50
				02-28-85	j0830	278	--	66
				04-17-85	1530	270	20.0	52
				06-05-85	j1620	273	--	49
				07-17-85	j0800	264	--	50
				08-28-85	0800	263	--	48
HAWAII, ISLAND OF MAUI								
203835156065001	6-3806-01	20 38 35	156 06 50	10-04-84	0940	780	21.5	200
				11-15-84	0900	680	21.5	180
				01-09-85	0930	740	21.5	190
				02-22-85	0940	670	21.5	170
				07-03-85	0815	580	21.5	140
203947156261201	6-3926-03	20 39 47	156 26 13	10-09-84	1010	2800	19.0	750
				11-20-84	0930	2600	18.5	700
				01-15-85	1100	2300	18.5	590
				03-05-85	1355	2800	20.0	720
				05-16-85	1040	2700	18.5	720
				08-28-85	1350	2900	18.5	780
204601156001501	6-4600-01	20 46 01	156 00 15	10-03-84	1600	600	21.0	120
				11-14-84	1630	610	20.5	120
				01-08-85	1550	650	20.5	130
				02-21-85	1600	640	21.0	120
				04-02-85	1550	650	20.5	130
				05-14-85	1525	620	20.5	110
				07-02-85	1625	620	21.0	120
				08-20-85	1255	600	22.0	120
204633156003201	6-4600-03	20 46 36	156 00 30	10-03-84	1540	1080	19.0	290
				11-14-84	1615	1180	19.0	320
				01-08-85	1700	1180	19.0	320
				02-21-85	1630	1240	18.5	340
				04-02-85	1700	790	19.0	190
				05-14-85	1510	480	18.5	110
				07-02-85	1700	520	20.0	130
				08-20-85	1450	760	19.5	210

j Collected by non-USGS agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
			HAWAII, ISLAND OF MAUI--Continued					
204835156270101	6-4627-14	20 46 35	156 27 01	10-09-84	1410	1750	23.0	340
				11-20-84	1200	1700	23.5	340
				03-08-85	1115	1650	23.0	340
				05-16-85	1315	1550	23.0	340
				07-05-85	1230	1650	23.5	350
204845156255001	6-4825-01	20 48 45	156 25 50	10-18-84	1450	1650	24.0	320
				11-21-84	0855	1650	23.5	340
				02-20-85	1055	1300	23.0	--
				06-17-85	1245	1500	23.5	--
				08-30-85	0950	1550	24.0	--
204931156371201	8-4937-01	20 49 31	156 37 12	10-17-84	1320	2900	24.5	850
				11-08-84	1555	3000	24.5	850
				04-11-85	1300	1100	24.0	240
				06-17-85	1030	2600	25.0	720
				08-26-85	1035	2400	25.0	710
205014156212701	6-5021-01	20 50 14	156 21 27	10-30-84	0835	2000	21.0	540
				04-16-85	1500	1950	21.0	540
				07-30-85	0630	1850	21.5	540
205102156282501	6-5128-02	20 51 02	156 28 25	10-18-84	1515	2000	24.0	400
				11-21-84	0830	2000	23.5	420
				06-17-85	1220	1750	25.0	--
				08-30-85	0930	1850	24.0	--
205243156243201	6-5224-02	20 52 43	156 24 32	10-18-84	1235	1550	24.0	340
				11-21-84	0925	1600	23.0	350
				06-17-85	1325	1500	23.5	340
				08-30-85	1110	1500	24.0	340
205329156305502	6-5330-09	20 53 29	156 30 55	10-18-84	1200	770	22.5	180
				11-13-84	1250	780	22.5	170
				01-03-85	1435	740	22.5	--
				02-12-85	1320	690	22.0	--
				03-29-85	0855	760	22.0	--
				05-15-85	1300	750	22.0	--
				07-03-85	1215	820	22.5	180
				08-28-85	0915	790	22.0	--
205330156305401	6-5330-11	20 53 30	156 30 54	10-18-84	1210	500	22.5	95
				03-29-85	0900	420	22.5	--
				05-15-85	1305	430	22.0	--
				07-03-85	1220	520	22.5	97
	6-5339-01			08-28-85	0905	610	22.5	--
205320156394501	6-5339-02	20 53 20	156 39 45	10-17-84	1525	1080	21.5	240
				11-08-84	1055	1130	21.0	240
				01-07-85	1435	950	21.0	--
				03-01-85	1515	940	21.0	--
				08-19-85	0945	1100	21.5	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF MAUI--Continued								
205343156401101	6-5340-02	20 53 43	156 40 11	10-17-84	1215	2800	23.5	800
				11-08-84	1030	3000	21.5	820
				03-28-85	1205	1600	23.5	--
				04-19-85	1115	1700	24.0	--
				06-17-85	1000	2450	24.5	--
				08-19-85	1050	2050	23.5	--
205416156244301	6-5424-01	20 54 16	156 24 43	10-18-84	1300	2450	24.0	600
				11-21-84	0940	2550	23.0	650
				02-20-85	1350	2100	23.0	--
				06-17-85	1350	2400	24.5	--
				08-30-85	1130	2450	24.0	--
205511156222101	6-5522-01	20 55 11	156 22 21	10-18-84	1325	1450	22.0	340
				07-03-85	1410	1380	22.5	320
				08-30-85	1140	1360	22.5	320
205651158401001	6-5640-01	20 56 51	158 40 10	10-17-84	1135	1140	20.5	300
				11-08-84	1000	1280	20.5	310
				01-07-85	1220	530	20.5	--
				03-28-85	1040	680	20.5	--
				06-17-85	0940	1080	22.0	--
				08-19-85	1020	1160	21.0	--
205837156384601	8-5838-01	20 58 37	156 38 48	10-09-84	1055	700	20.5	170
				11-08-84	1430	720	20.5	170
				01-07-85	1340	730	21.0	180
				03-01-85	1350	700	21.0	160
				03-28-85	1320	750	20.5	180
				05-09-85	1255	720	20.5	170
				08-19-85	1245	750	21.0	180
205838156383101	6-5838-02	20 58 38	158 38 31	10-09-84	1120	380	20.0	85
				11-08-84	1445	370	20.5	77
				03-28-85	1350	250	20.0	44
				05-09-85	1310	350	20.0	75
				07-01-85	1400	280	20.0	50
				08-19-85	1305	420	20.0	98
205848158383801	6-5838-04	20 58 48	156 38 36	03-28-85	1435	790	20.0	200
				05-09-85	1325	760	20.0	190
				07-01-85	1415	750	20.5	180

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DATE OF SAMPLE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
			HAWAII, ISLAND OF HAWAII					
190832155310901	8-0831-02	19 08 32	155 31 09	10-31-84	0920	650	18.5	160
				03-11-85	1030	620	18.5	150
				05-01-85	0955	700	18.5	170
				07-23-85	1235	700	18.0	170
191108155281701	8-1128-02	19 11 08	155 28 17	10-31-84	0845	118	19.5	10
				01-16-85	1035	115	19.0	9.5
				03-11-85	0940	110	19.0	10
				05-01-85	0850	118	19.0	12
				06-05-85	0900	118	19.0	12
				07-23-85	1120	118	19.0	12
191114155294801	8-1129-01	19 11 14	155 29 48	01-16-85	1100	90	18.5	3.0
				03-11-85	1010	88	18.5	2.5
				05-01-85	0930	88	18.5	3.5
				07-23-85	1150	90	18.0	3.5
192108155021201	8-2102-01	19 21 08	155 02 12	10-25-84	0935	1150	26.0	300
				12-11-84	1120	660	25.0	150
				02-20-85	1130	1000	25.5	260
				04-18-85	1050	870	25.5	200
				08-03-85	1105	1170	25.0	--
				07-16-85	1210	1150	28.0	--
				09-17-85	1020	1200	26.0	--
192846155532001	8-2653-01	19 26 48	155 53 20	01-16-85	1345	220	19.5	34
				03-11-85	1325	210	19.5	29
				06-05-85	1300	250	19.5	39
				07-23-85	1500	270	19.5	46
192738155534201	8-2753-01	19 27 31	155 53 42	03-11-85	1405	540	19.5	120
192731155534101	8-2753-02	19 27 22	155 53 38	11-05-84	1255	660	19.0	170
				01-16-85	1415	700	19.0	180
				07-23-85	1535	670	19.0	170
192923154564701	8-2988-02	19 29 23	154 56 47	09-06-85	1020	115	23.0	6.0
193113154555801	8-3165-01	19 31 13	154 55 58	10-25-84	1035	130	21.5	15
				04-18-85	1145	125	21.0	15
				06-03-85	1335	125	21.0	16
				07-16-85	1310	145	21.0	17
				09-06-85	1350	130	21.0	16
193510155570801	8-3557-01	19 35 10	155 57 08	05-01-85	1410	130	20.0	10
				06-06-85	1055	130	20.0	9.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF HAWAII--Continued								
193505155570701	8-3557-04	19 35 05	155 57 07	11-06-84	1105	260	20.5	39
				03-12-85	0930	270	20.0	44
				05-01-85	1400	270	20.5	41
				06-06-85	1045	270	20.0	44
				07-24-85	1555	280	20.0	46
193502155572301	8-3557-05	19 35 02	155 57 23	01-17-85	1255	530	20.0	120
				03-12-85	1005	530	20.0	120
				05-01-85	1445	630	20.0	150
				06-06-85	1240	560	20.0	130
				07-24-85	1625	580	20.0	140
193805155020201	8-3802-03	19 38 05	155 02 02	10-24-84	1400	78	19.0	4.0
				01-11-85	0810	77	19.5	3.0
				04-22-85	0800	80	19.0	4.5
				06-03-85	1445	83	19.0	4.5
				07-17-85	1420	82	19.0	5.0
				09-17-85	1140	83	18.0	3.5
194037155035301	8-4003-01	19 40 37	155 03 53	10-24-84	1315	75	20.0	4.0
				01-11-85	1005	73	20.0	3.0
				02-22-85	1050	73	20.0	3.0
				07-17-85	1250	87	20.0	4.5
				09-17-85	1435	85	20.0	5.0
194040155035201	8-4003-02	19 40 40	155 03 52	10-24-84	1310	75	20.0	4.0
				02-22-85	1045	73	20.0	2.5
				04-22-85	0920	80	20.0	4.0
				06-04-85	0935	82	20.0	5.0
194039155035801	8-4003-03	19 40 32	155 03 54	04-22-85	0930	80	19.5	4.0
				07-17-85	1255	87	20.0	5.0
194222155035001	8-4203-05	19 42 22	155 03 50	10-24-84	1050	310	22.0	66
194222155034801	8-4203-06	19 42 22	155 03 48	12-13-84	1005	225	25.5	42
				02-22-85	1115	195	26.0	40
				04-22-85	0955	122	23.5	16
				07-17-85	1510	130	25.0	20
				09-23-85	0845	135	24.5	22
194337155041801	8-4304-01	19 43 37	155 04 18	10-26-84	1230	45000	22.0	16000
				12-13-84	0930	13500	23.0	4400
				03-19-85	1115	7000	21.0	2300
				05-21-85	1055	16500	21.0	6100
				07-10-85	0930	12000	22.5	3800
				09-23-85	0910	13800	22.5	4900
194818155582301	8-4858-02	19 48 18	155 58 23	11-05-84	1040	2200	22.0	450
				03-12-85	1320	2150	20.5	430
				05-02-85	1115	2100	20.5	430
				06-06-85	1335	1950	20.5	--
				07-24-85	1415	1950	20.5	430

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
HAWAII, ISLAND OF HAWAII--Continued								
194820155582401	8-4858-03	19 48 20	155 58 24	01-18-85	0855	3500	21.0	--
				03-12-85	1310	4300	21.0	--
				05-02-85	1110	4000	21.0	--
				07-24-85	1410	4200	21.0	--
195043155053801	8-5005-02	19 50 43	155 05 38	12-13-84	0810	270	21.0	28
				05-21-85	0915	210	22.5	15
				07-10-85	0815	240	22.0	22
				09-23-85	0955	270	21.0	28
195051155051501	8-5005-05	19 50 51	155 05 15	12-13-84	0850	14000	18.5	4900
				05-21-85	1005	11000	18.0	3500
				07-10-85	0840	12500	18.0	4400
				09-23-85	1030	13000	18.5	4800
195225155394401	8-5239-01	19 52 25	155 39 44	05-03-85	1110	460	29.0	23
				06-17-85	1300	460	29.5	20
				09-26-85	1250	450	30.0	22
195546155480301	8-5548-01	19 55 46	155 48 03	04-11-85	1040	2100	28.5	590
				05-22-85	0930	2100	28.5	580
195722155455201	8-5745-02	19 57 22	155 45 52	11-16-84	1040	290	27.0	26
				01-25-85	1045	300	27.0	26
				04-11-85	0945	290	26.5	27
				05-22-85	1030	280	26.5	27
				07-11-85	1035	290	26.5	26
195857155142301	8-5814-01	19 58 57	155 14 23	10-26-84	0845	510	19.5	120
195929155462501	8-5948-01	19 59 30	155 46 30	11-14-84	1140	470	26.5	82
				07-26-85	0955	460	26.0	83
195912155464201	8-5946-02	19 59 12	155 46 43	11-14-84	1200	370	26.5	52
				04-01-85	1310	360	28.0	52
				07-26-85	0945	370	26.0	54
200518155281601	8-6528-01	20 05 18	155 28 16	10-26-84	0940	480	21.0	89
201428155494201	8-7449-02	20 14 28	155 49 42	01-25-85	1425	180	22.5	21

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI

215454159274201 - 2-5427-01 W16A CNTY, KOLOA KAUAI

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)
DEC 13...	1230	260	--	24.0	24	--	--	--	--	--	--	--
AUG 13...	0950	230	7.0	23.0	--	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0

DATE	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)
AUG 13...	<10.0	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3

DATE	CHRY-SENE TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)
AUG 13...	<10.0	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0

DATE	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0

DATE	NITRO-BENZENE TOTAL (UG/L)	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0

DATE	TOLUENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 13...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI--Continued

215454159274201 - 2-5427-01 W18A CNTY, KOLOA KAUAI--Continued

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

215535159302601 - 2-5530-03 W22 LAWAI KAUAI

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)
AUG 13...	1315	220	7.1	23.0	--	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0
SEP 27...	1025	270	--	24.0	24	--	--	--	--	--	--	--

DATE	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGH I PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)
AUG 13...	<10.0	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3

DATE	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)
AUG 13...	<10.0	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0

DATE	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI--Continued

215535159302601 - 2-5530-03 W22 LAWAI KAUAI--Continued

DATE	NITRO-BENZENE TOTAL (UG/L)	N-NITRO-SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0

DATE	TOLUENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 13...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI--Continued

215630159314001 - 2-5631-02 STATE, KALAHEO 2 KAUAI

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
FEB 22...	0730	70	6	10	11	16	33	.8	1.1	64

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
FEB 22...	4.0	21	<.10	44	150	.20	.30	7	2	j

< Actual value is known to be less than the value shown.
j Collected by non-USGS agency.

215911159424701 - 2-5942-01 W1 CNTY, KEKAHA KAUAI

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 13...	1110	470	7.2	24.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 13...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
AUG 13...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF KAUAI--Continued

215911159424701 - 2-5942-01 W1 CNTY, KEKAHA KAUAI--Continued

DATE	N-NITRO-SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 13...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 13...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 13...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU

211727157485807 - 3-1748-09 W7E CNTY, KAIMUKI OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 19...	0850	445	7.7	21.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 19...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)
AUG 19...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 19...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)
AUG 19...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

211727157485807 - 3-1748-09 W7E CNTY, KAIMUKI OAHU--Continued

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

211813157494706 - 3-1849-16 W36F CNTY, WILDER OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)
AUG 19...	0920	280	8.0	22.0	<5.0	<5.0	<.001	<.10	<5.0	<.10	<3.0	<5.0

DATE	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
AUG 19...	<10.0	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<.1	<3.0	<3.0

DATE	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)
AUG 19...	<3	<10.0	<.10	<.001	<.001	<.001	<.01	<5.0	<10.0	<10.0	<3.0	<.001

DATE	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<30.0	<.001	<.001	<.01	<3.0	<5.0	<5.0	<.001	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

211813157494706 - 3-1849-16 W36F CNTY, WILDER OAHU--Continued

DATE	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<10.0	<5.0	<.001	<.001	<.01	<.01	<.01	<.01	<3.0	<3.0

DATE	MIREX, TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO-SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO-SODI-METHY-LAMINE TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)
AUG 19...	<.01	<5.0	<5.0	<5.0	<.10	<5.0	<5.0	<.01	<.1	<30.0	<.1	<5.0

DATE	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)
AUG 19...	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0	<1	<3.0	<3.0

DATE	TOTAL TRI-THION (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)
AUG 19...	<.01	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0	<5.0	<5.0

DATE	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)
AUG 19...	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0	<5.0	<5.0	<5.0

DATE	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 19...	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

211831157512008 - 3-1851-34 W88-F CNTY, BERETANIA OAHU

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 19...	0850	385	7.8	21.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B PLUOR-AN-THENE TOTAL (UG/L)	I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
AUG 19...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)
AUG 19...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 19...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 19...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

211831157512008 - 3-1851-34 W88-F CNTY, BERETANIA OAHU--Continued

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<20.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

212052157523601 - 3-2052-08 S6 CNTY, KALIHI OAHU

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 19...	1045	450	7.8	22.5	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
AUG 19...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)
AUG 19...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 19...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 19...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

212052157523601 - 3-2052-08 S6 CNTY, KALIHI OAHU--Continued

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

212252158025001 - 3-2202-21 S3 OSCO EP 15 TO 16 EWA OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 27...	1040	780	6.9	23.0	<5.0	<5.0	<.10	<5.0	.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 27...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
AUG 27...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
AUG 27...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 27...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212252158025001 - 3-2202-21 S3 OSCO EP 15 TO 16 EWA OAHU--Continued

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 27...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 27...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 27...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

212341158001101 - 3-2300-20 W236-1 OSCO, WAIPAHU OAHU

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 20...	1025	600	6.8	22.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
AUG 20...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)
AUG 20...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212341158001101 - 3-2300-20 W238-1 OSCO, WAIPAHU OAHU--Continued

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 20...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 20...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<20.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212325158003801 - 3-2300-21 W246-I OSCO, WAIPAHU OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 27...	0945	520	7.3	21.5	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 27...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
AUG 27...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
AUG 27...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 27...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)
AUG 27...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

212325158003801 - 3-2300-21 W246-I OSCO, WAIPAHU OAHU--Continued

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 27...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 27...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

212305157542601 - 3-2354-01 S12 CNTY, HALAWA OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 19...	1130	320	7.6	21.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 19...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)
AUG 19...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212305157542601 - 3-2354-01 S12 CNTY, HALAWA OAHU--Continued

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 19...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 19...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 19...	<5.0	<5.0	<5.0	<20.0	<5.0	<5.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212338157555601 - 3-2355-09 W191-1A CNTY, KALAUAO OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 20...	0930	315	7.2	20.5	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	I PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	PARACHLORO-META CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 20...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)
AUG 20...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 20...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)
AUG 20...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212338157555601 - 3-2355-09 W191-1A CNTY, KALAUAO OAHU--Continued

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

212446157573204 - 3-2457-09 W196-2B CNTY, PUNANANI OAHU

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 20...	1100	450	7.6	20.5	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 20...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)
AUG 20...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO(1,2,3-CD)PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITRO-SODI-PHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITRO-SODI-METHYLAMINE TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<3.0	<5.0	<5.0

DATE	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 20...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii ragulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212446157573204 - 3-2457-09 W196-2B CNTY, PUNANANI OAHU--Continued

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
AUG 20...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 20...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

212522158003001 - 3-2500-01 GENTRY, WAIPIO #1 OAHU

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 21...	0930	260	7.0	21.5	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
AUG 21...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF OAHU--Continued

212522158003001 - 3-2500-01 GENTRY, WAIPIO #1 OAHU--Continued

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHO-CRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)
AUG 21...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO(1,2,3-CD)PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
AUG 21...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)
AUG 21...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS(2-CHLOROETHOXY)METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS(2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
AUG 21...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

212857157580401 - 3-2858-02 STATE, MILILANI B OAHU

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
FEB 15...	1000	57	2	10	7.7	15	36	.9	.90	55

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
FEB 15...	3.6	16	<.10	44	130	.18	.50	<3	1	j

212851157580401 - 3-2858-03 STATE, MILILANI MAUKA C OAHU

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
MAY 10...	1100	56	4	9.8	7.6	14	35	.8	.90	52

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
MAY 10...	3.7	18	.50	45	130	.18	.45	<3	<1	j

213311158071601 - 3-3307-19 STATE DOWALD, WAIALUA MAUKA,OAHU

DATE	TIME	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
NOV 17...	1030	22.5	130	0	19	19	36	38	1	2.2

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
NOV 17...	125	13	38	.10	63	270	.36	2.4	8	<1	j

< Actual value is known to be less than the value shown.
j Collected by non-USGS agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI

205211156271901 - 6-5227-04 S17 HC&S, PUUNENE MAUI

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
JUL 29...	1400	2700	7.1	25.5	<5.0	<5.0	<.10	<5.0	1.0	<3.0	<5.0	<10.0

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
JUL 29...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)
JUL 29...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 29...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
JUL 29...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not repreaent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

205211156271901 - 6-5227-04 S17 HC&S, PUUNENE MAUI--Continued

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<5.0	<20.0	<5.0	<30.0	<5.0	<5.0	<5.0	<30.0

205327156213201 - 6-5321-01 S27 HC&S, PAIA MAUI

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
JUL 30...	0915	950	7.7	21.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
JUL 30...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)
JUL 30...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

205327156213201 - 6-5321-01 S27 HC&S, PAIA MAUI--Continued

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 30...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
JUL 30...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<5.0	<20.0	<5.0	<30.0	<5.0	<5.0	<5.0	<30.0

205322156394501 - 6-5339-01 W291 CNTY, LAHAINA MAUI

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 17...	1530	1020	21.5	220
NOV 08...	1100	1100	21.0	230
MAR 28...	1225	1000	21.5	--
MAY 09...	1455	1020	21.5	--
JUL 01...	1510	990	21.5	200
29...	0725	810	22.0	--

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

205322156394501 - 6-5339-01 W291 CNTY, LAHAINA MAUI--Continued

DATE	TIME	PH (STAND-ARD UNITS)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)
JUL 29...	0725	7.7	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)
JUL 29...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)
JUL 29...	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 29...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
JUL 29...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

205322156394501 - 6-5339-01 W291 CNTY, LAHAINA MAUI--Continued

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<5.0	<20.0	<5.0	<30.0	<5.0	<5.0	<5.0	<30.0

205324156405701 - 6-5341-01 S6 PNR MILL, WAHIKULI MAUI

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
JUL 29...	0920	2850	7.1	24.0	<5.0	<5.0	<.10	<5.0	.40	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
JUL 29...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)	HEXACHLOROBENZENE TOTAL (UG/L)
JUL 29...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)	N-NITROSODIMETHYLAMINE TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 29...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

205324156405701 - 6-5341-01 S6 PNR MILL, WAHIKULI MAUI--Continued

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
JUL 29...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
JUL 29...	<5.0	<5.0	<5.0	<20.0	<5.0	<30.0	<5.0	<5.0	<5.0	<30.0

205458156205401 - 6-5420-01 W35 MAUI HI SCH, HAMAKUAPOKO MAUI

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
JUL 30...	1320	590	7.8	22.0	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
JUL 30...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)
JUL 30...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

205458156205401 - 6-5420-01 W35 MAUI HI SCH, HAMAKUAPOKO MAUI--Continued

DATE	N-NITRO-SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 30...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
JUL 30...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<5.0	<20.0	<5.0	<30.0	<5.0	<5.0	<5.0	<30.0

205449156231001 - 6-5423-02 S30 HC&S, PAIA MAUI

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
JUL 30...	0845	2000	6.8	24.0	<5.0	<5.0	<.10	<5.0	.60	<3.0	<5.0	<10.0

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
JUL 30...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)
JUL 30...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF MAUI--Continued

205449156231001 - 6-5423-02 S30 HC&S, PAIA MAUI--Continued

DATE	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO-SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITRO-SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 30...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
JUL 30...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

DATE	1,2,4-TRI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
JUL 30...	<5.0	<5.0	<5.0	<20.0	<5.0	<30.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be leee than the detection limit shown, and is a preliminary determination which doee not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII

191219155291601 - 8-1229-01 CNTY, PAHALA HAWAII

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	ACENAPHTHENE TOTAL (UG/L)	ACENAPHTHYLENE TOTAL (UG/L)	AMETRYNE TOTAL	ANTHRACENE TOTAL (UG/L)	ATRAZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRACENE1,2-BENZANTHRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
AUG 26...	1015	88	6.6	18.0	<5.0	<5.0	<.10	<5.0	.20	<3.0	<5.0	<10.0

DATE	BENZO B FLUORANTHENE TOTAL (UG/L)	BENZOGHI PERYLENE1,12-BENZOPERYLENE TOTAL (UG/L)	BENZO K FLUORANTHENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHALATE TOTAL (UG/L)	CARBONTETRACHLORIDE TOTAL (UG/L)	PARACHLOROMETA CRESOL TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CHRYSENE TOTAL (UG/L)
AUG 26...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYANAZINE TOTAL (UG/L)	DI-N-BUTYL PHTHALATE TOTAL (UG/L)	DI-N-OCTYL PHTHALATE TOTAL (UG/L)	1,2,5,6-DIBENZ-ANTHRACENE TOTAL (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)	DICHLOROFLUOROMETHANE TOTAL (UG/L)	DIETHYL PHTHALATE TOTAL (UG/L)	DIMETHYL PHTHALATE TOTAL (UG/L)	4,6-DINITRO-ORTHOCRESOL TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	FLUORANTHENE TOTAL (UG/L)	FLUORENE TOTAL (UG/L)
AUG 26...	<.10	<5.0	<10.0	<10.0	<3.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0

DATE	HEXACHLOROBENZENE TOTAL (UG/L)	HEXACHLOROBUTADIENE TOTAL (UG/L)	HEXACHLOROCYCLOPENTADIENE TOTAL (UG/L)	HEXACHLOROETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISOPHORONE TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	N-NITROSODI-N-PROPYLAMINE TOTAL (UG/L)	N-NITROSODIPHENYLAMINE TOTAL (UG/L)	NAPHTHALENE TOTAL (UG/L)	NITROBENZENE TOTAL (UG/L)
AUG 26...	<5.0	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITROSODIMETHYLAMINE TOTAL (UG/L)	PENTACHLOROPHENOL TOTAL (UG/L)	PHENANTHRENE TOTAL (UG/L)	PHENOL (C6H5OH) TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)
AUG 26...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0r

DATE	TOLUENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	TRICHLOROFLOUROMETHANE TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	1,1,2,2 TETRACHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROBENZENE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)
AUG 26...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

191219155281601 - 8-1229-01 CNTY, PAHALA HAWAII--Continued

DATE	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
AUG 26...	<3.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
AUG 26...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

192849154533601 - 8-2883-06 THERMAL POWER CO, KAPOHO HAWAII

DATE	TIME	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CACO3)
JUL 20...	1000	43.5	130	55	39	7.0	860	91	35	42	71

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
JUL 20...	.40	9.5	.45	990	4	300	<10	<1	10	1	4	140

DATE	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LITHIUM TOTAL RECOV-ERABLE (UG/L AS LI)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	AGENCY COL-LECTING SAMPLE (CODE NUMBER)
JUL 20...	120	20	3	90	10	<10	13	1	2	<1	30	j

< Actual value is known to be less than the value shown.
j Collected by non-USGS agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

192924154564701 - 8-2986-01 W9-5A CNTY, PAHOA HAWAII

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)
OCT							
25...	0840	118	--	23.0	5.5	--	--
AUG							
13...	0855	120	7.1	23.0	--	<.10	.20

DATE	CYANAZINE TOTAL (UG/L)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
OCT							
25...	--	--	--	--	--	--	
AUG							
13...	<.10	<.1	<.1	<.10	<.10	<.1	j

193803155020201 - 8-3802-01 W9-B CNTY, OLAA HAWAII

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)
AUG							
13...	0815	82	6.9	19.0	<.10	.10	<.10

DATE	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
AUG						
13...	<.1	<.1	<.10	<.10	<.1	j

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.
j Collected by non-USGS agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

194715155061301 - 8-4706-01 CNTY, PAPAIKOU HAWAII

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE (DEG C)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)
JUL 22...	1000	125	7.4	18.5	<5.0	<5.0	<.10	<5.0	<.10	<3.0	<5.0	<10.0

DATE	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)
JUL 22...	<10.0	<10.0	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0

DATE	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)
JUL 22...	<.10	<5.0	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0

DATE	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)
JUL 22...	<5.0	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)
JUL 22...	<5.0	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0

DATE	TOLUENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)
JUL 22...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0

< Actual value is known to be less than the detection limit shown, and ia a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

194715155061301 - 8-4706-01 CNTY, PAPAIKOU HAWAII--Continued

DATE	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-BENZENE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	1,4-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHYL-ENE TOTAL (UG/L)	BIS (2-CHLORO-ETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLORO-ETHYL ETHER TOTAL (UG/L)	BIS (2-CHLORO-ISO-PROPYL) ETHER TOTAL (UG/L)	2-CHLORO-NAPH-THALENE TOTAL (UG/L)	2-CHLORO-PHENOL TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)
JUL 22...	<3.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-CHLORO-PHENOL TOTAL (UG/L)	2,4-DI-METHYL-PHENOL TOTAL (UG/L)	2,4,-DI-NITRO-PHENOL TOTAL (UG/L)	2,4-DI-NITRO-TOLUENE TOTAL (UG/L)	2,4,6-TRI-CHLORO-PHENOL TOTAL (UG/L)	2,6-DI-NITRO-TOLUENE TOTAL (UG/L)	4-BROMO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLORO-PHENYL PHENYL ETHER TOTAL (UG/L)	4-NITRO-PHENOL TOTAL (UG/L)
JUL 22...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

195035155054501 - 8-5005-01 W7-1 HILO CST PROC, PEPEEKEO HAWAII

DATE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
DEC 13...	0830	165	20.0	12
APR 01...	0820	175	22.0	14
MAY 21...	0935	180	22.0	14
JUL 22...	0915	195	21.0	--
SEP 23...	1010	200	20.5	12

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

195035155054501 - 8-5005-01 W7-1 HILO CST PROC, PEPEEKEO HAWAII--Continued

DATE	TIME	PH (STAND-ARD UNITS)	ACE-NAPHTH-ENE TOTAL (UG/L)	ACE-NAPHTH-YLENE TOTAL (UG/L)	AME-TRYNE TOTAL	ANTHRA-CENE TOTAL (UG/L)	ATRA-ZINE, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BENZO A ANTHRAC ENE1,2-BENZANT HRACENE TOTAL (UG/L)	BENZO-A-PYRENE TOTAL (UG/L)	BENZO B FLUOR-AN-THENE TOTAL (UG/L)	BENZOGH I PERYL ENE1,12 -BENZOP ERYLENE TOTAL (UG/L)
JUL 22...	0915	6.4	<5.0	<5.0	<.10	<5.0	.60	<3.0	<5.0	<10.0	<10.0	<10.0

DATE	BENZO K FLUOR-AN-THENE TOTAL (UG/L)	BROM-OFORM TOTAL (UG/L)	N-BUTYL BENZYL PHTHAL-ATE TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	PARA-CHLORO-META CRESOL TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CHRY-SENE TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	DI-N-BUTYL PHTHAL-ATE TOTAL (UG/L)
JUL 22...	<10.0	<3.0	<5.0	<3.0	<30.0	<3.0	<3.0	<3.0	<3	<10.0	<.10	<5.0

DATE	DI-N-OCTYL PHTHAL-ATE TOTAL (UG/L)	1,2,5,6 -DIBENZ -ANTHRA -CENE TOTAL (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DIETHYL PHTHAL-ATE TOTAL (UG/L)	DI-METHYL PHTHAL-ATE TOTAL (UG/L)	4,6-DINITRO -ORTHO-CRESOL TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	FLUOR-ANTHENE TOTAL (UG/L)	FLUOR-ENE TOTAL (UG/L)	HEXA-CHLORO-BENZENE TOTAL (UG/L)	HEXA-CHLORO-BUT-ADIENE TOTAL (UG/L)
JUL 22...	<10.0	<10.0	<3.0	<5.0	<5.0	<30.0	<3.0	<5.0	<5.0	<5.0	<5.0

DATE	HEXA-CHLORO-CYCLO-PENT-ADIENE TOTAL (UG/L)	HEXA-CHLORO-ETHANE TOTAL (UG/L)	INDENO (1,2,3-CD) PYRENE TOTAL (UG/L)	ISO-PHORONE TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	N-NITRO-SODI-N-PROPYL-AMINE TOTAL (UG/L)	N-NITRO -SODI-PHENY-LAMINE TOTAL (UG/L)	NAPHTH-ALENE TOTAL (UG/L)	NITRO-BENZENE TOTAL (UG/L)	N-NITRO -SODI-METHY-LAMINE TOTAL (UG/L)
JUL 22...	<5.0	<5.0	<10.0	<5.0	<3.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0

DATE	PENTA-CHLORO-PHENOL TOTAL (UG/L)	PHENAN-THRENE TOTAL (UG/L)	PHENOL (C6H-5OH) TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PYRENE TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 22...	<30.0	<5.0	<5.0	<.1	<.1	<.10	<5.0	<.10	<.1	<3.0	<3.0

DATE	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	TRI-CHLORO-FLOURO-METHANE TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2,2 TETRA-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-BENZENE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)
JUL 22...	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<5.0	<3.0	<3.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

WATER QUALITY DATA, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985

HAWAII, ISLAND OF HAWAII--Continued

185035155054501 - 8-5005-01 W7-1 HILO CST PROC, PEPEEKEO HAWAII--Continued

DATE	1,2,4-TRICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROBENZENE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	1,4-DICHLOROBENZENE TOTAL (UG/L)	1,2-TRANSDICHLOROETHYLENE TOTAL (UG/L)	BIS (2-CHLOROETHOXY) METHANE TOTAL (UG/L)	BIS 2-CHLOROETHYL ETHER TOTAL (UG/L)	BIS (2-CHLOROISOPROPYL) ETHER TOTAL (UG/L)	2-CHLORONAPHTHALENE TOTAL (UG/L)	2-CHLOROPHENOL TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
JUL 22...	<5.0	<5.0	<3.0	<5.0	<3.0	<5.0	<5.0	<5.0	<5.0	<5.0	<3.0

DATE	2-NITROPHENOL TOTAL (UG/L)	2,4-DICHLOROPHENOL TOTAL (UG/L)	2,4-DIMETHYLPHENOL TOTAL (UG/L)	2,4,-DINITROPHENOL TOTAL (UG/L)	2,4-DINITROTOLUENE TOTAL (UG/L)	2,4,6-TRICHLOROPHENOL TOTAL (UG/L)	2,6-DINITROTOLUENE TOTAL (UG/L)	4-BROMOPHENYL PHENYL ETHER TOTAL (UG/L)	4-CHLOROPHENYL PHENYL ETHER TOTAL (UG/L)	4-NITROPHENOL TOTAL (UG/L)
JUL 22...	<5.0	<5.0	<5.0	<20.0	<5.0	<20.0	<5.0	<5.0	<5.0	<30.0

< Actual value is known to be less than the detection limit shown, and is a preliminary determination which does not represent conclusive findings of contamination for State of Hawaii regulatory purposes.

200228155231101 - 8-6223-01 STATE, PAAUILO EXP WELL, HAWAII

DATE	TIME	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
MAY 31...	0945	19.5	43	2	9.0	5.0	9.0	30	.6

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)
MAY 31...	2.3	41	3.8	8.0	<.10	36	98	.13	.96	140

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
MAY 31...	<1	<100	<10	1	<10	<1	3	190	190	5

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LITHIUM TOTAL RECOVERABLE (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	AGENCY COLLECTING SAMPLE (CODE NUMBER)
MAY 31...	4	<10	30	<1	<1	<1	<1	<1	20	j

< Actual value is known to be less than the value shown.
j Collected by non-USGS agency.

INDEX

	Page
Access to WATSTORE data	27
Accuracy of field data and computed results	24
Acre-foot, definition of	4
Ahualoa Gulch at Honokaa, Hawaii	178
Ahuimanu Stream near Kahaluu, Oahu	175
Akulikuli Stream near Kapaa, Kauai	172
Alakahi Stream near Kamuela, Hawaii	162,215
Alapai Gulch at Naalehu, Hawaii	179
Algae, definition of	4
Alia Stream near Hilo, Hawaii	178
Anahola ditch above Kaneha Reservoir, near Kealia, Kauai	51,205
Anahola ditch wasteway near Kealia, Kauai	50,205
Anahola Stream near Kealia, Kauai	52,205
Anahulu River near Haleiwa, Oahu	175
Aquifer, definition of	4
Artesian, definition of	4
Ash mass, definition of	4
Bacteria, definition of	4
Biochemical oxygen demand, definition of	4
Biomass, definition of	4
Bottom material, definition of	5
Cells/volume, definition of	5
Cfs-day, definition of	5
China ditch near Hanalei, Kauai	169
Chlorophyll, definition of	5
Coliform organisms, definition of	5
Collection and computation of data	22
Collection and examination of data	25
Collection of the data	26
Color unit, definition of	5
Contents, definition of	5
Continuing record station, definition of	5
Control, definition of	5
Control structure, definition of	5
Cooperation	1
Cubic foot per second, definition of	5
Definition of terms	4
Discharge, definition of	5
Dissolved, definition of	5
Downstream order and station number	8
Drainage area, definition of	6
Drainage basin, definition of	6
Dry mass, definition of	4
Explanation of ground-water level records	26
Explanation of stage and water-discharge records	22
Explanation of water-quality records	25
Fecal coliform bacteria, definition of	4
Fecal streptococcal bacteria, definition of	4
Gage height, definition of	6
Gaging station, definition of	6
Ground-water records	217-298
Hahalawe Gulch near Kipahulu, Maui	181
Haiku ditch at Honopou Gulch, near Kailua, Maui	136,213
Haiku Stream near Haeia, Oahu	100-101
Halaulani Stream at altitude 400 ft, near Kilauea, Kauai	54,206
Halawa Stream, near Halawa, Molokai	114-116
North, near Aiea, Oahu	68,207
North, near Honolulu, Oahu	69,207
Halena Gulch near Mauna Loa, Molokai	176
Hanalei River, at Highway 56 bridge near Hanalei, Kauai	172
near Hanalei, Kauai	56,206
Hanalei tunnel outlet near Lihue, Kauai	55,206
Hanapepe River, at Hanapepe, Kauai	172
below Manuahi Stream, near Eleele, Kauai	37,203
Hanawi Stream near Nahiku, Maui	124,181,211
Hapahapai Gulch at Kapaau, Hawaii	179
Hardness, definition of	6
Hauani Gulch near Kamuela, Hawaii	167,216
Hawaii, island of, crest-stage partial-record stations in	178-179
discharge measurements at miscellaneous sites in	182
gaging-station records in	145-168
ground-water records in	240-248
map of	18-19,21
water-quality records, at ground-water sites in	260-262,292-298
observations of physical parameters	214-216
Hawelewele Gulch near Kaupo, Maui	176
Heeia Stream at Kaneohe, Oahu	175
Hilea Gulch tributary near Honuapo, Hawaii	168,216
Hionamoa Gulch at Pahala, Hawaii	179
Homaikawaa Stream near Kealia, Kauai	172
Honokaia Gulch tributary near Honokaa, Hawaii	179
Honokeana Gulch near Honokahua, Maui	177
Honokohau Stream near Honokohau, Maui	143,213
Honokowai Stream at Honokowai, Maui	177
Honolii Stream near Papaikou, Hawaii	155-157
Honopou Stream near Huelo, Maui	132,212
Honouliuli Stream near Waipahu, Oahu	173
Hooleinaiwa Stream, above confluence with Kamooalii Stream near Kaneohe, Oahu	170,183,185-186
at altitude 220 ft near Kaneohe, Oahu	170
Hoomaluhia Reservoir, at outlet, near Kaneohe.	201
sec 1-1 near Kaneohe, Oahu	192-195
sec 1-2 near Kaneohe, Oahu	194
sec 1-3 near Kaneohe, Oahu	196-198
sec 2-1 near Kaneohe, Oahu	190
sec 2-2 near Kaneohe, Oahu	191
sec 2-3 near Kaneohe, Oahu	192
sec 3-1 near Kaneohe, Oahu	187
sec 3-2 near Kaneohe, Oahu	187-189
sec 3-3 near Kaneohe, Oahu	190
sec 4-1 near Kaneohe, Oahu	199
sec 4-2 near Kaneohe, Oahu	200
sec 4-3 near Kaneohe, Oahu	200-201
Huleia Stream near Lihue, Kauai	172
Huliwai Gulch near Kunia Camp, Oahu	173
Hydrologic bench-mark station, definition of	22
Hydrologic unit, definition of	6
Iao Stream at Kepaniwai Park, near Wailuku, Maui	138,213
at Wailuku, Maui	177
Illustrations	3,10-21,184
Inoaole Stream at Waimanlo, Oahu	174
Instantaneous discharge, definition of	5
Introduciton	1

Page

Kaelepulu Stream tributary at Kailua, Oahu.... 174
Kahakuloa Stream near Honokohau, Maui..... 140-142
Kahaluu Stream, near Ahuimanu, Oahu..... 102,208
near Kahaluu, Oahu..... 170
Kahana Stream, at altitude 30 ft, near Kahana, Oahu..... 107,209
at Mauka trail croasing, near Kahana, Oahu. 170
Kahanaiki Stream at Highway 61, near Kailua, Oahu..... 170
Kahoma Stream at Lahaina, Maui..... 144,213
Kakaako Gulch, above Kamakahi Guloh, near Mauna Loa, Molokai..... 176
at Highway 46, near Mauna Loa, Molokai..... 176
near Mauna Loa, Molokai..... 176
Kalaoa Mauka Stream near Hilo, Hawaii..... 178
Kalauao Stream at Moanalua Road, at Aiea, Oahu..... 174
Kalialinui Gulch, near Kahului, Maui..... 177
tributary near Pukalani, Maui..... 177
Kalihi Stream, at Kalihi, Oahu..... 72-74
near Honolulu, Oahu..... 70-71
near Kanaohe, Oahu..... 174
Kaloi Gulch tributary near Hoonuliuli, Oahu... 173
Kaluanui Stream, at Hauula, Oahu..... 175
near Punaluu, Oahu..... 110,209
Kaluapaelua Gulch at Hoolehua, Molokai..... 176
Kaluapulani Gulch tributary near Pukalani, Maui..... 177
Kamakoa Gulch near Waimea, Hawaii..... 179
Kamanenui Stream, at Maunawai, Oahu..... 112,209
at Pupukea Military Road, near Maunawai, Oahu..... 111,209
Kamaole Gulch at Kamaole, Maui..... 178
Kamooalii Stream, at altitude 200 ft near Kaneohe, Oahu..... 170,183
below Luluku Stream, near Kaneohe, Oahu.... 92-99
right branch, near Kaneohe, Oahu..... 78-83
Kapaa Stream, at Kapahi ditch intake, near Kapaa, Kauai..... 49,205
at old highway crossing, near Kealia, Kauai..... 172
Kapahi ditch near Kealia, Kauai..... 48,205
Kapehu Stream near Pepeekeo, Hawaii..... 178
Kapuhi Stream, at altitude 1,000 ft, near Pelekunu, Molokai..... 171
near Pelekunu, Molokai..... 171
Kauai, island of, crest-stage partial-record statione in..... 172
gaging-station records in..... 30-57
ground-water records in..... 217-219
low-flow partial-racord stations in..... 169
map of..... 10-11
water-quality records, at ground-water sites in.....249-251,263-267
obaervations of physical parameters..... 203-206
Kauaikinana Stream near Waimea, Kauai..... 189
Kauaula Stream near mouth, near Lahaina, Maui..... 177
Kaukonahua Stream, at Waialua, Oahu..... 173
North Fork, above Right Branch, near Wahiawa, Oahu..... 58,207
Right Branch of North Fork, near Wahiawa, Oahu..... 169
South Fork, at East Pump Reservoir, near Wahiawa, Oahu..... 59,207
Kaunakakai Gulch at Kaunakakai, Molokai..... 122
Kaunala Gulch, near Mauna Loa, Molokai..... 176
near Sunsat Beach, Oahu..... 175
Kaupuni Stream at altitude 372 ft, near Waianae, Oahu..... 173
Kawa Stream, at Kaneohe, Oahu 175
near Kahana, Oahu..... 170
Kawaiki Stream near Kamuela, Hawaii.....159,182,214
Kawaikoi Stream near Waimea, Kauai..... 30,203

Page

Kawailena Stream near Pelekunu, Molokai..... 171
Kawainui Canal at Kailua, Oahu..... 175
Kawainui Stream, at altitude 1,000 ft, near Pelekunu, Molokai..... 171
near Kamuela, Hawaii..... 158,214
near Pelekunu, Molokai..... 171
near Pepeekeo, Hawaii..... 182
Kawaipapa Gulch at Hana, Maui..... 177
Kawaipoko Stream near Pelekunu, Molokai..... 171
Keaahala Stream at Kamehameha Highway, at Kaneohe, Oahu..... 175
Keanuiomano Stream near Kamuela, Hawaii..... 179
Keehia Gulch near Ookala, Hawaii..... 178
Keopu Stream near Kailua, Hawaii..... 179
Kepuni Gulch near Kahikinui House, Maui..... 176
Kipapa Stream near Wahiawa, Oahu..... 61,207
Kohakohau Stream near Kamuela, Hawaii..... 165,215
Koiawe Stream near Kamuela, Hawaii..... 182
Konohiki Stream near Kapaa, Kauai..... 172
Koolau ditch, at Haipuaena, near Huelo, Maui..... 130,212
at Nahiku weir, near Nahiku, Maui..... 125,211
near Keanae, Maui..... 127,211
Kukuiula Gulch near Kipahulu, Maui..... 176
Kula diversion from Haipuaena Stream near Olinda, Maui..... 128,211
Kulanihakoi Gulch near Kihei, Maui..... 178
Kuliouou Valley at Kuliouou, Oahu..... 174
Kumaipo Stream near Waianae, Oahu..... 180
Kuou Stream at altituda 220 ft near Kaneoha, Oahu..... 170,185

Lawai Stream near Koloa, Kauai..... 172
Liilioholo Gulch at Kamaole, Maui..... 178
Lower Anahola ditch near Kealia, Kauai..... 53,206
Lowrie ditch at Honopou Gulch, near Huelo, Maui..... 135,212
Luahine Gulch near Waimea, Hawaii..... 179
Luluku Stream at altitude 220 ft, near Kaneohe, Oahu..... 84-91
near Kaneohe, Oahu..... 181
Lyman Springs No. 2 near Piihonua, Hawaii..... 147,214

Maiiiiii Stream naar Waianae, Oahu..... 173
Makaha Stream, at Makaha, Oahu..... 173
near Makaha, Oahu..... 60,207
Makaleha ditch near Kealia, Kauai..... 47,205
Makaleha Stream near Waialua, Oahu..... 173
Makawao Straam near Kailua, Oahu..... 77,208
Makawali River near Waimea, Kauai..... 36,203
Makua Stream at Makua, Oahu..... 173
Malaekahana Stream at altitude 30 ft, near Kahuku, Oahu..... 175
Malalowaiaole Gulch near Maalaaa, Maui..... 178
Manawainui Gulch near Kualapuu, Molokai..... 176
Manini Gulch at Kaena, Oahu..... 173
Manoa Stream at Honolulu, Oahu..... 180
Manoa-Palolo Drainage Canal at Moiliili, Oahu..... 174
Manuel Luis ditch at Puohokamoa Gulch, near Huelo, Maui..... 131,212
Maui, island of, crest-stege partial-record atations in..... 176-178
discharge measurements at miscellaneous sitea in..... 181
gaging-station records in..... 124-144
ground-water recorda in..... 233-239
map of..... 16-17
water-quality records at ground-water sitea in.....257-259,264-291
observations of physical parameters..... 211-213
Maunawili Stream at Highway 61, near Kailua, Oahu..... 175

	Page
Mean concentration, definition of	7
Mean discharge, definition of	5
Microgram per gram, definition of	6
Microgram per liter, definition of	6
Milligram per liter, definition of	6
Moanalua Stream, at Tripler Hospital, Oahu	174
near Aiea, Oahu	174
near Honolulu, Oahu	174
Molokai, island of, crest-stage partial-record stations in	176
gaging-station records in	114-123
ground-water records in	228-232
low-flow partial-record atations in	171
map of	14-15
water-quality records, at ground-water sites in	257
observatione of physical parameters	210
Molokai tunnel, at east portal, Molokai	118,210
at west portal, Molokai	119,210
Moomoonui Gulch at Hana, Maui	176
Nahomalu Valley near Mana, Kauai	172
Nanakuli Stream at Nanakuli, Oahu	173
National stream-quality-accounting network, definition of	22
New Hamakua ditch at Honopou, near Huelo, Maui	134,212
Ninole Gulch near Punaluu, Hawaii	179
North Wailua ditch, below Waikoko Stream, near Lihue, Kauai	40,203
near Lihue, Kauai	39,203
Numbering system for wells and miscellaneous sites	9
sketch of	20
Nuuanu Stream below reservoir 2 wasteway, near Honolulu, Oahu	75,208
Oahu, island of, crest-stage partial-record stations in	173-175
discharge measurements at miscellaneous sites in	180-181
gaging-station recorda in	58-113
ground-water records in	220-228
low-flow psrtial-record stations in	169-170
map of	12-13
water-quality records, at ground-water sites in	252-256,268-283
at partial-record stations in	183-202
observations of physical parameters	207-209
Observations of physical parameters	203-216
Oio Stream near Kahuku, Oahu	175
Olsa flume Spring near Kaumana, Hawaii	146,214
Olowalu Stream at Olowalu, Maui	177
Opaekaa Stream, Left Branch, near Kapaa, Kauai	46,204
Opaeula Stream, near Haleiwa, Oahu	175
near Wahiawa, Oahu	113,209
Opana tunnel at Kailiili, Maui	137,213
Organic mass, definition of	4
Other data available	24
Paauau Gulch at Pahala, Hawaii	179
Paiakuli Reservoir tributary near Waimea, Hawaii	179
Palai Stream at Hilo, Hawaii	178
Papio Gulch at Halawa, Molokai	123,210
Partial-record station, definition of	6
Particle size, definition of	6
Particle-size classification, definition of	6
Paumalu Gulch at Sunset Beach, Oahu	175
Pauoa Stream at Honolulu, Oahu	174
Pearl Harbor Springs, at Kalauao, near Aiea, Oahu	169
at Waiawa, near Peerl City, Oahu	169
Percent composition, definition of	6
Pesticides, definition of	6
Picocurie, definition of	6
Pilipililau Stream near Pelekunu, Molokai	117,210
Poamoho Stream at Waialua, Oahu	173
Poelua Gulch near Kehakuloa, Maui	177
Pohakupili Gulch near Halawa, Molokai	176
Pohakupuka Stream near Papaaloa, Hawaii	178
Polychlorinated biphenyls, definition of	6
Popoo Gulch near Waikii, Hawaii	179
Publications	24,26
Publications on techniques of water-resources investigations	28-29
Pukuilua Gulch near Hana, Maui	176
Punaluu ditch near Punaluu, Oahu	108
Punaluu Stream near Punaluu, Oahu	109,209
Puukumu Stream near Kilauea, Kauai	172
Records of discharge collected by agencies other than the Gsological Survey	24
Recoverable from bottom material, definition of	5
Sediment	25
Sediment, definition of	7
Solute, definition of	7
South Fork Kapunahala Stream at Kaneohe, Oahu	202
Special networks and programs	22
Specific conductance, definition of	7
Spreckels ditch at Haipuaena weir, near Huelo, Maui	129,211
Stable storm ditch near Lihue, Kauai	41,204
Stage-discharge relation, definition of	7
Streamflow, definition of	7
Summary of hydrologic conditions	2
Suspended, definition of	7
Suspended recoverable, definition of	7
Suspsnded-sediment concentration, definition of	7
Suspanded sediment, definition of	7
Suspendad-sediment discharge, definition of	7
Suspended-sediment load, definition of	7
Suspended, total, definition of	7
Time-weighted aversge, definition of	8
Tons per acre-foot, definition of	8
Tons per day, definition of	8
Total, definition of	8
Total coliform bacteris, definition of	4
Total in bottom material, definition of	5
Total load, definition of	8
Total, recoverable, definition of	8
Total-sedimsnt discharge, definition of	7
Turbidity, definition of	8
Unnamed gulch, at Maliko Bay, Maui	177
at Maluhia Camp, Maui	177
Upper Hamakua ditch, above Alakahi Stream, near Kamuela, Hawaii	161,215
above Puukapu Reservoir, near Kamuela, Hawaii	164,215
above Waimea Reservoir diversion, near Kamuela, Hawaii	163,215
below Kawaiki Stream, near Kamuela, Hawaii	160,215
near Kamuela, Hawaii	182
Waiaha Stream at Luawai, near Holualoa, Hawaii	179
Waiakea Stream, at Hilo, Hawaii	178
near Mountain View, Hawaii	145,214
Waiakeakua Stream at Honolulu, Oahu	76,208
Waiakoa Guloh, at Kihei, Maui	178
tributary near Waiakoa, Maui	178

	Page
Waiakoali Stream near Waimea, Kauai	169
Waialae Stream at altitude 3,820 ft, near Waimea, Kauai	31-32
Waiawa Stream near Pearl City, Oahu	67,207
Waihee River at dam, near Waihee, Maui	139,213
Waihee Stream, near Kahaluu, Oahu	105,208
North Fork, near Heeia, Oahu	104,208
South Fork, near Heeia, Oahu	103,208
Waikakalaua Stream near Wahiawa, Oahu	173
Waikene Stream at altitude 75 ft, at Waikane, Oahu	106,209
Waikapu Stream near Kihei, Maui	178
Waikele Stream, at Waipahu, Oahu	62,66
at Wheeler Field, Oahu	173
Waikoloa Stream at Marine Dam, near Kamuela, Hawaii	166,215
Waikolu Stream, at altitude 900 ft, near Kalaupapa, Molokai	120,210
below pipeline crossing, near Kalaupapa, Molokai	121,210
Wailoa ditch at Honopou, near Huelo, Maui	133,212
Wailua ditch near Kapaa, Kauai	44,204
Wailua River, East Branch of North Fork, near Lihue, Kauai	43,204
near Kapaa, Kauai	172
Wailua River (Continued):	
North Fork, at altitude 650 ft, near Lihue, Kauai	42,204
North Fork, near Kapaa, Kauai	45,204
South Fork, near Lihue, Kauai	38,203
Wailupe Gulch at Aina Heina, Oahu	174
Wailuku River, at Hilo, Hawaii	149-154
at Piihonua, Hawaii	148,214
Waimalu Stream near Aiea, Oahu	174
Waimanalo Stream at Waimanalo, Oahu	174
Waimea Gulch near Kawailoa, Camp, Oahu	175
Waimea River, at Waimea, Kauai	172
near Waimea, Kauai	33-35
Wainiha River near Hanalei, Kauai	57,206
Waolani Stream at Honolulu, Oahu	174
Water analysis	25
Water temperature	25
Wawaia Gulch at Kamalo, Molokai	176
WDR, definition of	8
Weighted average, definition of	8
West Wailuaiki Stream near Keanae, Maui	126,211
Wet mass, definition of	4
WRD, definition of	8
WSP, definition of	8