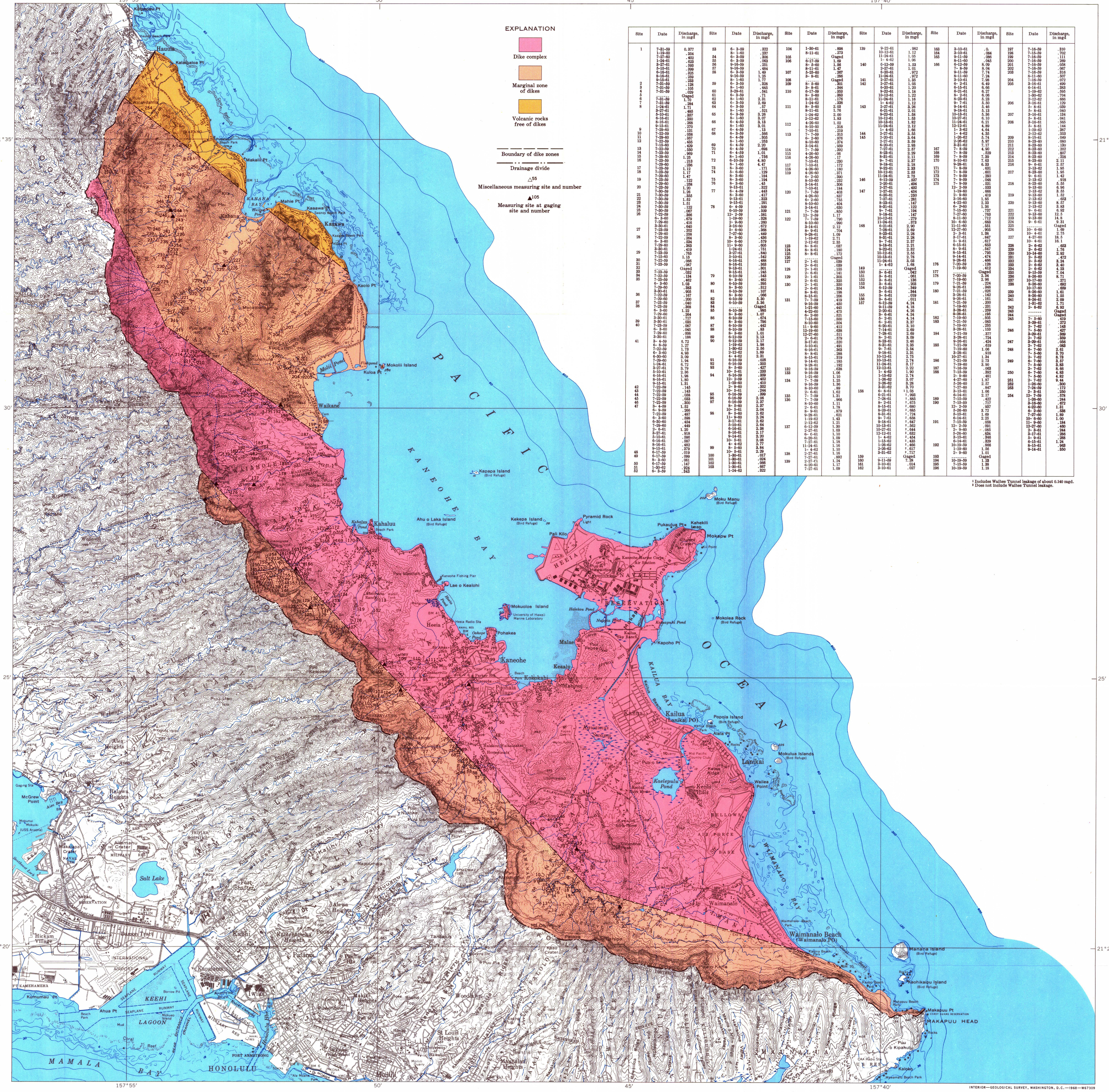
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

WATER-SUPPLY PAPER 1894
PLATE 3



Site	Date	Discharge, in mgd
1	7-31-59	0.377
	1-19-60	.354
	7-27-60	.402
	1-24-61	.623
	3-27-61	.593
	5-10-61	.399
	6-16-61	.325
	8-16-61	.259
	9-15-61	.233
2	7-31-59	.128
3	7-31-59	.105
4	7-31-59	.029
5	-------	Gaged
6	7-31-59	1.70
7	7-31-59	.284
8	1-24-61	1.71
	3-27-61	.485
	5-10-61	.357
	6-16-61	.350
	8-16-61	.268
	9-15-61	.270
9	7-29-60	.131
10	7-22-59	.058
11	7-29-60	.357
12	7-22-59	.435
	7-15-60	.429
13	7-22-59	.550
14	7-23-59	.969
15	7-29-60	1.25
16	7-23-59	.213
	7-29-60	.236
17	7-23-59	1.12
18	7-23-59	1.17
	7-29-60	1.47
19	7-23-59	.122
	7-29-60	.258
20	7-23-59	1.20
	7-30-59	1.26
21	7-30-59	.355
22	7-30-59	1.52
23	7-30-59	1.51
24	7-30-59	.122
25	7-30-59	.067
26	7-22-59	.366
	6-3-60	.679
	7-29-60	.416
	3-30-61	.640
27	7-23-59	.202
	7-29-60	.258
28	7-22-59	.264
	6-3-60	.534
	7-29-60	.363
	3-30-61	.419
29	7-23-59	.765
	7-15-60	1.15
30	7-22-59	.066
31	7-23-59	.087
32	-------	Gaged
33	7-23-59	.032
34	7-22-59	.134
35	7-23-59	.462
	6-3-60	1.03
	7-29-60	.383
	3-30-61	.905
36	7-22-59	.167
	7-29-60	.200
37	7-23-59	.040
38	7-23-59	.368
	6-3-60	1.22
	7-29-60	.264
	3-30-61	.717
39	3-30-61	.035
40	7-23-59	.087
	6-3-60	.045
	7-29-60	.006
	3-30-61	.188
41	3-4-59	6.72
	6-8-59	1.27
	7-22-59	1.73
	6-3-60	4.93
	6-30-60	3.09
	7-29-60	1.94
	1-24-61	6.72
	3-27-61	3.79
	5-10-61	2.36
	6-16-61	1.98
	8-16-61	1.80
	9-15-61	1.31
42	7-22-59	.145
43	7-22-59	.143
44	7-22-59	.058
45	7-22-59	.033
46	7-22-59	.300
47	3-4-59	1.52
	6-9-59	.266
	7-22-59	.487
	6-3-60	.598
	6-30-60	.454
	7-29-60	.449
	2-6-61	1.20
	3-27-61	.918
	5-10-61	.586
	6-16-61	.587
	8-16-61	.482
	9-15-61	.379
48	6-17-59	.019
49	6-17-59	.099
	8-3-60	.061
50	6-17-59	.147
51	1-30-62	.924
52	6-3-59	.343

Site	Date	Discharge, in mgd
53	6-3-59	.322
	8-1-60	.237
54	6-3-59	.306
55	6-3-59	.063
56	9-16-59	.251
57	9-16-59	.484
58	6-3-59	1.49
	9-16-59	1.25
	8-1-60	1.77
59	6-3-59	.328
	8-1-60	.445
60	3-29-61	.541
61	6-3-59	.71
62	8-1-60	2.31
63	6-3-59	2.69
64	6-3-59	.57
	8-1-60	.521
65	6-3-59	3.26
	8-1-60	3.07
66	6-4-59	3.13
	8-1-60	3.01
67	6-4-59	.13
68	6-3-59	.566
	6-4-59	.305
	8-1-60	.253
69	6-4-59	2.20
70	6-4-59	.698
71	6-4-59	1.01
	8-1-60	.756
72	6-10-59	4.80
	8-1-60	4.47
73	8-3-60	.171
74	5-6-60	.129
	8-3-60	.184
75	8-3-60	.194
76	8-3-60	.45
	9-13-61	.322
77	6-4-59	.443
	8-3-60	.417
	9-13-61	.323
	9-15-61	.291
78	6-4-59	.509
	6-10-59	.509
	12-2-59	.581
	1-19-60	.328
	2-9-60	.260
	3-16-60	.672
	5-6-60	.368
	7-27-60	.449
	8-3-60	.436
	10-6-60	.579
	11-9-60	.605
	1-24-61	.751
	3-27-61	.840
	5-10-61	.542
	6-16-61	.488
	8-16-61	.363
	9-13-61	.301
	9-15-61	.245
79	6-10-59	.543
	8-3-60	.482
80	6-10-59	.395
	8-3-60	.312
81	6-10-59	.107
	8-3-60	.066
82	6-10-59	5.30
83	6-10-59	5.36
84	-------	Gaged
85	6-10-59	.995
	8-3-60	1.07
86	6-10-59	.674
	8-3-60	.796
87	6-10-59	.442
88	6-10-59	.83
	8-3-60	1.01
89	6-12-59	2.13
90	6-12-59	2.17
	1-19-62	1.98
	1-30-62	2.56
	2-12-62	1.89
	4-4-62	2.31
91	6-16-59	.028
92	6-16-59	.355
93	8-5-60	.427
	10-5-61	.233
94	6-16-59	.359
	12-2-59	.452
	1-19-60	.410
	2-9-60	.352
	10-5-61	.244
95	6-16-59	.399
96	6-16-59	2.06
97	6-16-59	2.37
	8-5-60	2.37
	10-5-61	2.04
98	8-5-60	2.62
	11-9-60	2.24
	3-17-61	2.62
	5-10-61	2.64
	6-16-61	2.38
	8-16-61	2.17
	9-14-61	2.20
	10-5-61	2.08
	4-4-62	2.77
99	8-5-60	3.84
	10-5-61	2.29
100	1-30-61	.017
101	1-30-61	.024
102	1-30-61	.066
103	1-30-61	.667
	1-24-62	.322

Site	Date	Discharge, in mgd
104	1-30-61	.898
	8-11-61	.273
105	-------	Gaged
106	6-17-59	1.69
	8-5-60	1.56
	8-11-61	1.47
107	5-25-60	.267
	3-8-61	.286
108	-------	Gaged
109	8-5-60	.301
	3-8-61	.344
110	6-17-59	.353
	8-5-60	.383
	8-11-61	.176
	1-24-62	.338
111	8-5-60	2.03
	8-11-61	1.76
	1-24-62	2.00
	2-12-62	1.83
112	4-26-60	1.02
	8-10-60	.318
	7-10-61	.219
113	7-7-59	.315
	6-2-60	.976
	8-10-60	.374
	3-14-61	.959
114	7-7-59	.392
115	4-26-60	.06
116	4-26-60	.17
	7-10-61	.230
117	7-10-61	.172
118	4-26-60	.180
119	4-26-60	.371
	6-2-60	.390
	8-10-60	.232
	3-14-61	.306
	7-10-61	.184
120	7-7-59	.403
	4-26-60	.837
	6-2-60	.755
	8-10-60	.404
	3-14-61	.630
121	7-7-59	.850
	12-2-59	1.17
122	7-7-59	.790
	8-10-60	.990
	3-14-61	2.12
	8-9-61	.704
	9-28-61	1.09
	1-19-62	2.71
	2-12-62	2.35
123	8-8-61	.037
124	8-8-61	.180
125	8-8-61	.172
126	-------	Gaged
127	2-1-61	.039
	2-6-61	.039
128	2-1-61	.155
	2-6-61	.141
129	2-1-61	.305
	2-6-61	.325
130	2-1-61	.350
	2-6-61	.354
	8-8-61	.198
	8-15-61	.206
131	7-7-59	.419
	9-16-59	.450
	1-21-60	.445
	4-22-60	.475
	6-2-60	.521
	7-15-60	.500
	8-10-60	.504
	11-9-60	.412
	12-19-60	.638
	12-27-60	.511
	2-6-61	.579
	3-17-61	.520
	5-10-61	.491
	6-16-61	.363
	8-8-61	.288
	8-15-61	.319
	9-14-61	.185
	9-28-61	.192
132	9-16-59	.638
133	9-16-59	1.06
	1-21-60	1.10
134	7-7-59	1.25
	9-16-59	1.36
	8-10-60	.89
	2-6-61	1.62
135	7-7-59	1.31
136	7-7-59	.966
	8-10-60	1.11
	2-6-61	1.78
	8-9-61	.879
	9-28-61	.621
	1-19-62	1.43
	2-12-62	1.21
137	6-12-59	1.30
	2-27-61	1.03
	6-6-61	1.10
	6-20-61	1.09
	7-27-61	1.18
	11-24-61	1.16
	1-4-62	1.10
138	2-27-61	1.16
	7-27-61	.892
139	2-27-61	1.24
	6-20-61	1.17
	7-27-61	1.09

Site	Date	Discharge, in mgd
139	9-22-61	.982
	10-12-61	1.12
	11-24-61	1.05
	1-4-62	1.06
140	6-12-59	1.53
	2-27-61	1.01
	6-20-61	.972
	11-24-61	.972
141	2-27-61	1.35
142	2-27-61	1.05
	6-20-61	1.20
	9-22-61	1.18
	10-12-61	1.22
	11-24-61	1.16
	1-4-62	1.12
143	2-27-61	3.26
	6-21-61	2.01
	9-22-61	1.58
	10-12-61	1.53
	10-13-61	1.82
	11-24-61	2.12
	1-4-62	1.66
144	2-27-61	3.55
145	2-20-61	3.64
	2-27-61	3.59
	6-20-61	2.93
	7-27-61	2.57
	8-23-61	2.29
	8-31-61	2.11
	9-7-61	2.37
	9-18-61	2.18
	9-22-61	2.33
	10-12-61	2.53
	11-24-61	2.75
146	6-12-59	.537
	2-20-61	.494
	2-27-61	.492
147	2-27-61	.454
	6-20-61	.250
	7-27-61	.281
	8-23-61	.147
	8-31-61	.122
	9-7-61	.194
	9-18-61	.147
	10-12-61	.279
	11-24-61	.373
148	6-21-61	2.90
	7-28-61	2.69
	8-23-61	2.28
	8-31-61	2.28
	9-7-61	2.37
	9-18-61	2.21
	9-22-61	2.32
	10-12-61	2.55
	10-13-61	2.78
	11-24-61	3.03
	1-4-62	1.68
149	-------	Gaged
150	3-6-61	.042
151	3-6-61	.061
152	3-6-61	.136
153	3-6-61	.203
154	6-12-59	.349
	3-6-61	.344
155	3-6-61	.019
156	3-6-61	.011
157	6-12-59	4.24
	9-11-59	4.18
	2-20-61	4.26
	3-6-61	4.24
	5-2-61	4.14
	6-2-61	3.37
	6-20-61	3.10
	7-14-61	2.69
	7-28-61	2.69
	8-2-61	3.09
	8-23-61	2.46
	8-31-61	2.35
	9-7-61	2.54
	9-18-61	2.31
	10-12-61	2.75
	10-13-61	2.74
	11-24-61	3.17
	12-12-61	2.22
	1-4-62	1.90
	1-15-62	2.74
	1-26-62	3.07
	2-26-62	3.28
	3-31-62	3.70
158	6-8-61	[1] 1.05
	6-21-61	[1] .993
	7-28-61	[1] .885
	8-2-61	[2] .675
	8-15-61	[2] .680
	8-23-61	[2] .685
	8-31-61	[2] .724
	9-7-61	[2] .658
	9-18-61	[2] .647
	10-13-61	[2] .562
	10-27-61	[2] .644
	12-12-61	[2] .632
	1-4-62	[2] .454
	1-15-62	[2] .435
	1-26-62	[2] .466
	2-26-62	[2] .617
	3-31-62	[2] .717
159	-------	Gaged
160	9-11-59	7.28
161	3-10-61	.014
162	3-10-61	.027

Site	Date	Discharge, in mgd
163	3-10-61	.0
164	3-10-61	.084
165	9-11-59	.086
	8-11-60	.045
166	6-12-59	8.09
	7-8-59	8.04
	9-11-59	7.74
	8-11-60	7.24
	3-10-61	7.98
	6-2-61	6.49
	6-15-61	6.66
	6-21-61	6.27
	8-2-61	6.06
	8-23-61	5.23
	9-7-61	5.50
	9-14-61	5.46
	9-18-61	5.13
	10-13-61	5.36
	10-27-61	6.10
	11-24-61	6.21
	12-12-61	4.89
	1-3-62	4.64
	1-4-62	4.35
	1-26-62	5.74
	2-26-62	5.97
	3-31-62	7.17
167	7-8-59	4.90
168	7-8-59	.529
169	7-8-59	7.39
170	8-10-60	7.63
	9-28-61	6.33
171	7-8-59	.631
172	7-8-59	.601
173	7-9-59	.290
174	7-9-59	.048
175	7-9-59	.531
	12-2-59	.533
	1-19-60	.666
	2-9-60	.419
	3-16-60	1.85
	4-22-60	2.33
	6-2-60	1.36
	7-15-60	.737
	7-27-60	.763
	8-11-60	.712
	10-6-60	.683
	11-11-60	.551
	12-27-60	.905
	2-3-61	1.38
	3-17-61	.847
	5-9-61	.617
	6-15-61	.653
	8-9-61	.547
	8-15-61	.795
	9-14-61	.474
	9-28-61	.466
176	7-20-59	.128
	7-19-60	.412
177	-------	Gaged
178	7-20-59	2.34
	7-19-60	2.96
179	7-21-59	.224
	9-26-61	.348
180	7-21-59	.026
	3-28-61	.142
	9-26-61	.161
181	7-21-59	.200
	7-19-60	.231
	3-28-61	.259
	9-26-61	.195
182	7-19-60	.505
183	7-21-59	.083
	7-19-60	.235
	3-28-61	.153
184	7-21-59	.377
	3-28-61	.724
	9-26-61	.424
185	7-21-59	.619
	7-19-60	1.06
	3-28-61	.918
	10-27-61	1.34
186	7-21-59	2.73
	7-19-60	3.90
187	7-16-59	.063
188	7-15-59	.392
	2-9-60	.481
	4-27-60	1.87
	5-26-60	2.57
	7-27-60	.847
	3-15-61	1.06
	6-14-61	2.17
189	7-15-59	.422
190	7-15-59	.717
	12-2-59	.937
	5-26-60	3.72
	5-15-61	1.69
	6-14-61	2.25
191	7-15-59	.058
	12-2-59	.091
	2-9-60	.085
	5-26-60	.834
	3-15-61	.346
	6-14-61	.329
192	10-19-59	.866
	1-19-60	1.56
	2-9-60	1.01
193	-------	Gaged
194	10-19-59	1.23
195	7-15-59	1.38
196	10-19-59	1.18

Site	Date	Discharge, in mgd
197	7-16-59	.310
198	7-15-59	.702
199	7-16-59	.111
200	7-16-59	.269
201	7-16-59	.058
202	7-16-59	.067
203	7-16-59	.316
	8-11-60	.507
204	7-16-59	.072
205	3-16-61	.499
	6-14-61	.383
	1-19-62	.595
	1-30-62	.704
	2-12-62	.666
206	3-16-61	.129
	5-8-61	.039
	5-8-61	.040
207	3-16-61	.134
	5-8-61	.041
208	3-16-61	.565
	5-8-61	.144
	1-19-62	.387
	2-12-62	.353
209	8-15-61	.049
210	8-23-60	.080
211	8-23-60	.130
212	8-23-60	.202
213	8-23-60	.807
214	8-23-60	.218
215	8-23-60	2.11
216	9-6-61	2.57
	2-13-62	1.95
217	8-23-60	1.95
	9-6-61	1.42
	2-13-62	.918
218	8-23-60	5.55
	9-13-60	6.96
	2-13-62	3.55
219	9-13-60	1.52
	2-13-62	.653
220	9-13-60	8.57
	2-13-62	3.83
221	9-6-61	6.92
222	9-13-60	12.5
223	9-13-60	14.8
224	9-6-61	9.31
225	-------	Gaged
226	10-6-60	1.69
	10-4-61	2.75
227	4-27-60	18.5
	10-4-61	16.1
228	2-6-62	.653
229	2-6-62	1.76
230	10-14-60	2.92
231	2-5-62	.472
232	2-5-62	3.24
233	2-6-62	3.40
234	2-6-62	4.23
235	9-15-59	7.04
236	8-26-60	8.71
237	10-17-60	.271
238	8-26-60	.692
	10-17-60	.659
239	8-26-60	1.61
240	8-26-60	1.55
241	8-24-61	2.09
	1-31-62	1.71
242	2-6-62	6.92
243	-------	Gaged
244	-------	Gaged
245	7-5-60	.419
	3-29-61	.272
	2-7-62	.143
246	7-5-60	.427
	3-29-61	.369
	2-7-62	.359
247	3-29-61	.056
	2-7-62	.083
248	6-7-60	2.61
	7-5-60	3.70
	2-7-62	8.73
249	6-7-60	3.57
	7-5-60	3.83
	2-7-62	8.66
250	6-7-60	4.83
	7-5-60	4.82
251	2-7-62	9.44
252	1-26-60	.300
253	7-24-59	.172
	2-3-61	.250
254	12-7-59	.578
	1-26-60	.244
	3-16-60	.672
	4-22-60	1.31
	6-2-60	.538
	7-27-60	1.89
	10-6-60	1.00
	11-9-60	.184
	12-27-60	.460
	2-3-61	.244
	3-17-61	.286
	5-9-61	.288
	6-15-61	1.24
	8-15-61	.963
	9-14-61	.350

[1] Includes Waihee Tunnel leakage of about 0.140 mgd.
[2] Does not include Waihee Tunnel leakage.

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1968—W67309

Base from U.S. Geological Survey, 1954

APPROXIMATE MEAN DECLINATION, 1968

MAP SHOWING GENERALIZED DIKE DENSITY, LOCATION OF STREAM-MEASURING SITES AND RECORDS OF MEASUREMENTS, WINDWARD OAHU, HAWAII

SCALE 1:62 500

1 ½ 0 1 2 3 4 MILES

1 .5 0 1 2 3 4 KILOMETERS

CONTOUR INTERVAL 80 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL
DEPTH CURVES IN FEET—DATUM IS MEAN LOWER LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 2 FEET

Data from geologic map of Oahu, Stearns (1939)
Distribution of sedimentary and volcanic rocks of the Honolulu Volcanic Series after Stearns (1939)