

**State of Hawaii  
COMMISSION ON WATER RESOURCE MANAGEMENT  
Department of Land and Natural Resources**

01 JUN 22 P3:43

01 JUN 24 P3:10

**PETITION TO AMEND INTERIM INSTREAM FLOW STANDARDS**

PUOHOKAMOA STREAM (West, Middle, East Branches) EAST MAUI

**Instructions:** Please print in ink or type and send completed petition with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. Petition must be accompanied by a non-refundable filing fee of \$25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 587-0225.

**1. PETITIONER**

Firm/Name Na Moku 'Aupuni o Ko'olau Hui c/o Native Hawaiian Legal Corporation  
 Contact Person Alan Murakami, Attorney Ph: 521-2302  
 Address 1164 Bishop Street, Honolulu, Hawai'i 96813

**2. STREAMFLOW DATA**

16544000 (W), 16545000, 16539000, 16541500,  
16547000, 16546000, 16541000, 16543000 (M), Data to follow.  
 USGS stream gaging station 16542000 (E) Period of Record Gages Inactive  
 Location/Reach SEE ATTACHED SEE ATTACHED  
 (Attach a USGS map, scale 1"=2000', and a property tax map showing diversion location referenced to established property boundaries.)

**TABLE 1. PERIOD OF RECORD AVERAGE MONTHLY STREAMFLOW WITHIN THE AFFECTED STREAM REACH, IN CFS**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
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SEE ATTACHED STREAMFLOW DATA TABLES TO FOLLOW.

Annual Median flow in cfs =

**TABLE 2. PROPOSED AVERAGE MONTHLY STREAMFLOW DIVERSION FROM AFFECTED STREAM REACH, IN CFS**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
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NONE. UNDETERMINED; SUFFICIENT FOR TARO FARMING AND/OR GATHERING.

Annual Median flow in cfs =

RESTORATION

**TABLE 3. AVERAGE MONTHLY STREAMFLOW IN AFFECTED STREAM REACH AFTER RESTORATION (min release flow), IN CFS**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
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NATURAL STREAMFLOW EXCEPT FOR EXERCISE OF APPURTENANT WATER RIGHTS.

Annual Median flow in cfs =

**3. EXISTING INSTREAM AND OFFSTREAM WATER USES FOR ENTIRE STREAM REACH**

TMK	OWNER	USE
		<u>RESEARCH IN PROGRESS.</u>

(If more space is necessary, attach an extended list following above format)

**4. ANTICIPATED IMPACTS ON STREAM AND BASIS FOR SUCH IMPACTS:**

RESTORATION OF INSTREAM NATURAL HABITAT AND BIOTA, AND BENEFICIAL APPURTENANT AND GATHERING USES.

(Attach supporting documentation, plans, letters, etc.)

NATIVE HAWAIIAN LEGAL CORPORATION

May 24, 2001

Signature

Alan Murakami Petitioner  
 Attorney for Na Moku 'Aupuni o Ko'olau Hui

For Official Use

Date Received

## Puohokamoa Stream

Puohokamoa Stream splits into three main branches at 2,100 ft altitude; the longest is the middle branch that is headed at 4,400 ft altitude 6.4 mi inland (plate 1). The stream rises steeply from sea level to 600 ft altitude 0.6 mi from the coast (a gradient of 930 ft/mi) and at this altitude the stream valley is incised 200 ft below the upland surface. With the exception of 3,000 ft of Honomanu Basalt at the coast, this stream lies on lava flows of the Kula Volcanics along most of its length (Stearns and Macdonald, 1942). Streamflow is captured by five of the surface-water diversion systems (table 4).

Puohokamoa Stream was never dry during 1913–71 at gaging station 5450 at 1,322 ft altitude (table 2, plate 1). At the gaging stations at about 2,800 ft altitude on the three stream branches, streamflow was perennial in the west (station 5440) and middle (station 5430) branches but went dry in the shorter east (station 5420) branch during 1919–27 when the gaging stations were operated concurrently. Base-flow estimates from long-term streamflow records indicate that the average annual gains from ground water are about 5.46 Mgal/d upstream of 1,322 ft altitude, 2.8 Mgal/d of this flow is gained downstream of 2,800 ft altitude (table 2, fig. 15I).

Several sets of streamflow measurements in sections of the stream branches also show continuous streamflow gains upstream of 1,300 ft altitude (table 12). Measurements were made some time in the 1920's between 2,050 and 1,300 ft altitude that show a gain of about 0.6 Mgal/d (written commun. from J.H. Hofmann to J.H. Foss, November 17, 1932 in USGS Hawaii District files). Streamflow data from February 3, 1920 confirm this pattern (table 12). Measurements were also made on October 29–30, 1932 and June 12, 1933 between 2,900 ft and 2,400 ft altitude during base-flow conditions that show gains of about 0.1 Mgal/d in the east and west branches and a slight loss of about 0.05 Mgal/d in the middle branch (Hofmann, 1934). The latter measurement represents only a 15 percent difference between the upstream and downstream measurements; therefore, this value is probably about the same magnitude as the measurement error inherent in the method used in that particular study. Four measurements were made on April 10, 1962, three on the middle branch

between 3,200 ft and 2,900 ft altitude and one on the west branch at 2,850 ft altitude (U.S. Geological Survey, undated [a]). These measurements show a gain of about 0.2 Mgal/d in the middle branch. A measurement made in March 1928 by EMI shows a gain of about 0.1 Mgal/d between 900 ft and 500 ft altitude (table 10). No measurements were made where the stream flows over the Honomanu Basalt. No water budget was calculated for the Puohokamoa Stream subbasin.

## Streamflow

Estimates of streamflow and base flow are based on streamflow records of varying length and from different times. The error associated with comparing these records is not considered significant because the average annual values used in the comparisons are expected to be within about 10 percent of the true value in most cases. A statistical analysis of five streamflow records, each with more than 60 years of record, shows that the average annual discharge for any 10-year period within that record has a standard error of 12 percent when compared with the whole record (Fontaine, 1996). When the length of the subset is increased to a 50-year period, the standard error only improves to 5 percent. Thirty nine of the streamflow records for the study area are equal to or greater than 10 years long.

For this study, the length of the period of record at each gaging station was determined to be unimportant by comparing each record to three reference records from the study area. The three longest streamflow records, 5080 (73 years), 5180 (76 years), and 5870 (85 years) were chosen as reference records. For each other individual record, a time period equal to the length of that record was chosen. A subset of a reference record was then selected from this same time period and the average flow during that time period was compared with the total reference record to estimate the ratio of flow during the subset period to the reference period. This analysis was made for all three reference records and the result was averaged to obtain a period-of-record scale factor for each of the other records. The scale factor ranged from 0.88 to 1.13 (table 2). This variability is consistent with the statistical analysis reported by Fontaine (1996). This range of accuracy is considered sufficient for the type of comparisons made in this study, and therefore, no corrections were made to any of the records to account for differences in length or period of record.

**Table 12. Streamflow in Puohokamoa Stream, northeast Maui, Hawaii**

[ft, feet; Mgal/d, million gallons per day; all altitudes estimated from U.S. Geological Survey topographic maps, Haiku, Keanae, Kilohana, and Nahiku quadrangles; 1920 flow data from Hofmann; written commun. to Foss, 11/17/32, in U.S. Geological Survey Hawaii District files and daily-discharge data from Grover and Stewart (1924); 1932 and 1933 flow data from Hofmann (1934) and daily-discharge data from Grover and Carson (1935); all 1962 data from U.S. Geological Survey (undated[a]); 1963 daily-discharge data from U.S. Geological Survey (undated[b]); gaging-station number is preceded by 16 and ends in 00]

Station number	Stream name	Altitude (ft)	Date	Streamflow (Mgal/d)	Comments
5450	Puohokamoa	1,322	1920	1.60	Daily mean at gaging station; upstream of Spreckels Ditch diversion
			2/3/20	1.60	
			10/29/32	1.20	
			10/30/32	1.70	
			6/12/33	2.60	
			4/10/62	3.62	
	4/11/63	2.59			
Puohokamoa 11	Puohokamoa	1,500	1920	1.53	
Puohokamoa 12	Puohokamoa	1,650	1920	1.49	
Puohokamoa 13	Puohokamoa	1,900	1920	1.20	
Puohokamoa 14	Puohokamoa	2,050	1920	0.96	
Puohokamoa 19	West Branch Puohokamoa	2,440	10/30/32	0.40	
5440	West Branch Puohokamoa	2,800	2/3/20	0.40	Daily mean at gaging station
			10/30/32	0.36	
			4/11/63	0.21	
Puohokamoa 21	West Branch Puohokamoa	2,850	4/10/62	0.28	
Puohokamoa 29	Middle Branch Puohokamoa	2,400	6/12/33	0.26	
5430	Middle Branch Puohokamoa	2,900	2/3/20	0.20	Daily mean at gaging station
			6/12/33	0.31	
			4/10/62	0.32	
			4/11/63	0.15	
Puohokamoa 31	Middle Branch Puohokamoa	3,080	4/10/62	0.28	
Puohokamoa 32	Middle Branch Puohokamoa	3,200	4/10/62	0.14	
Puohokamoa 39	East Branch Puohokamoa	2,460	10/29/32	0.25	
5420	East Branch Puohokamoa	2,800	2/3/20	0.05	Daily mean at gaging station
			10/29/32	0.14	
			4/11/63	0.13	

***PUOHOKAMO***



DURATION CURVE STATISTICAL CHARACTERISTICS FOR ...  
 STATION ID: 1542000 E B PUOHOKAMOJA STR AT HAIKU-UKA BDY NR KAILIILLI  
 PARAMETER CODE = 00060  
 STATISTIC CODE - 00003 MEAN

DURATION DATA VALUES ARE INTERPOLATED FROM DURATION TABLE:  
 DATA ARE NOT ANALYTICALLY FITTED TO A PARTICULAR STATISTICAL DISTRIBUTION,  
 AND THE USER IS RESPONSIBLE FOR ASSESSMENT AND INTERPRETATION.

ADDITIONAL CONDITIONS FOR THIS RUN ARE:  
 STATISTICS ARE BASED ON LOGARITHMS (BASE 10).  
 NUMBER OF VALUES IS REDUCED FOR EACH NEAR-ZERO OR ZERO VALUE.

NUMBER OF VALUES = 19 (NUMBER OF NEAR-ZERO VALUES = 0)  
 LISTING OF DATA FOLLOWS:

PERCENT OF TIME VALUE EQUALED OR EXCEEDED	DATA VALUE	(LOG = ...)
95.0	0.28	(LOG = -0.55110)
90.0	0.32	(LOG = -0.49683)
85.0	0.43	(LOG = -0.36272)
80.0	0.47	(LOG = -0.33151)
75.0	0.50	(LOG = -0.30239)
70.0	0.64	(LOG = -0.19233)
65.0	0.69	(LOG = -0.15968)
60.0	0.74	(LOG = -0.12932)
55.0	0.82	(LOG = -0.08474)
50.0	0.91	(LOG = -0.04176)
45.0	1.04	(LOG = 0.01800)
40.0	1.16	(LOG = 0.06324)
35.0	1.26	(LOG = 0.09894)
30.0	1.41	(LOG = 0.14928)
25.0	1.63	(LOG = 0.21124)
20.0	2.17	(LOG = 0.33574)
15.0	2.82	(LOG = 0.44968)
10.0	4.08	(LOG = 0.61053)
5.0	7.73	(LOG = 0.88821)

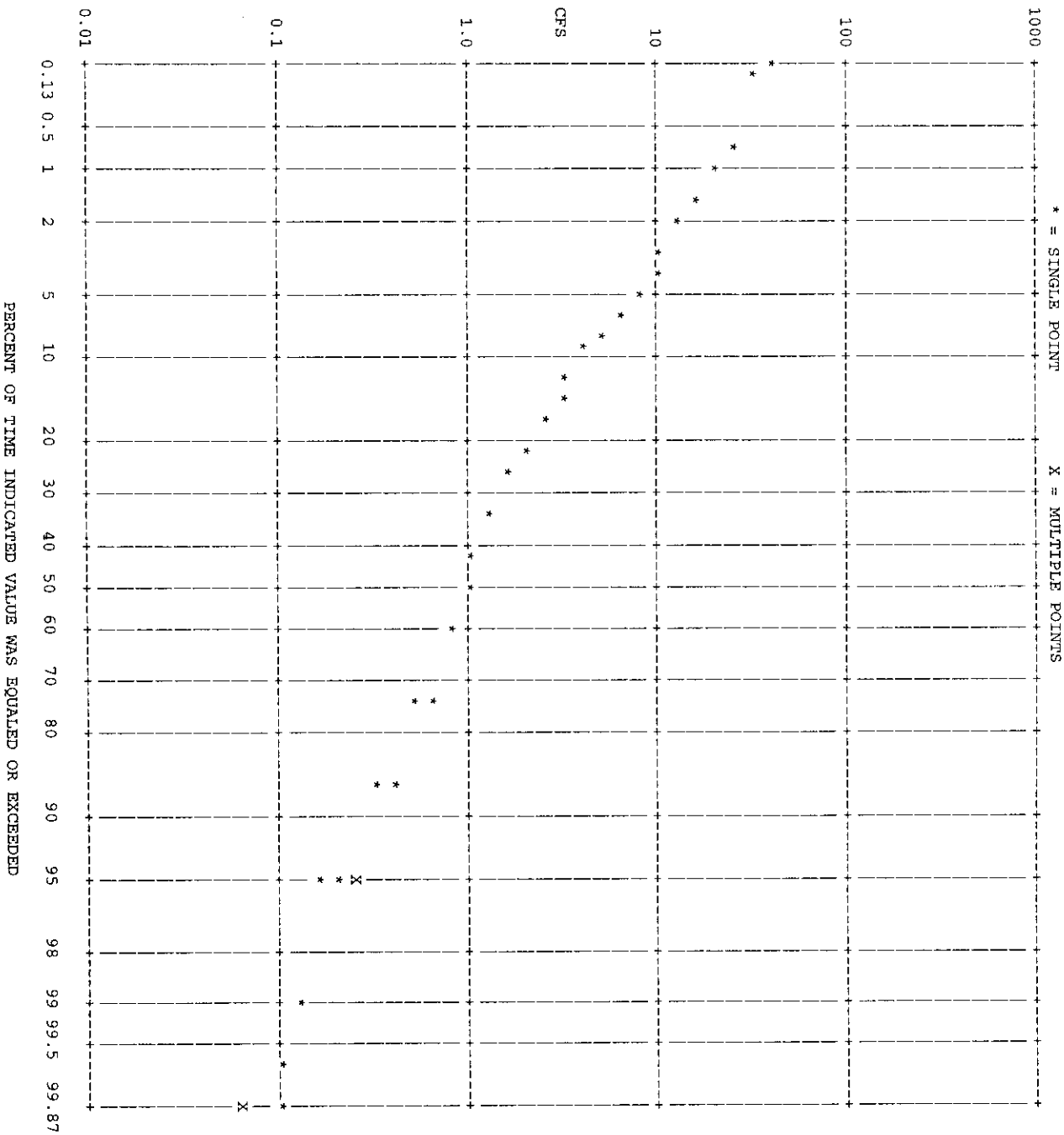
MEAN OF LOGS = 0.00908

STANDARD DEVIATION OF LOGS = 0.37473 (VARIABILITY INDEX - SEE USGS WSP 1542-A)

COEFFICIENT OF VARIATION = 41.28006

COEFFICIENT OF SKEW = 0.69188

LOG-NORMAL DURATION PLOT FOR PERIOD OCT TO SEP  
 STATION ID: 16542000 E B PUOHOKAMOA STR AT HAIKU-UKA BDRY NR KAILIILI (YEARS 1920 - 1933)  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN





DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16542000  
 E B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KAILIILI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

LOWEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	3	7	14	30	60	90	120	183
1921 1921	.080 3	.087 1	.096 1	.11 1	.12 1	.25 1	.46 2	.80 4	1.08 3
1922 1922	.15 4	.15 2	.15 2	.15 2	.19 2	.28 2	.42 1	.52 1	.84 2
1923 1923	.15 5	.26 5	.29 5	.30 4	.31 3	.97 6	1.06 5	1.11 5	1.24 5
1924 1924	.0000 1	.15 3	.15 3	.16 3	.33 4	.52 3	.89 4	.80 3	1.09 4
1925 1925	.0000 2	.20 4	.26 4	.32 5	.61 6	.89 5	1.10 6	1.49 6	2.11 6
1926 1926	.31 7	.31 6	.33 6	.36 6	.46 5	.57 4	.70 3	.71 2	.75 1
1932 1932	.15 6	.46 7	.46 7	.53 7	.83 7	1.10 7	1.77 7	1.73 7	2.31 7

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16542000  
 E B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KALLILLI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

HIGHEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	3	7	15	30	60	90	120	183
1921 1921	25.0 5	15.9 5	9.69 5	8.11 4	5.28 4	3.78 4	3.18 5	2.69 5	2.33 4
1922 1922	34.0 3	25.7 1	18.6 2	11.2 2	9.25 1	6.42 1	6.45 1	6.29 1	4.63 1
1923 1923	31.0 4	21.7 3	19.6 1	11.3 1	6.26 3	3.92 3	3.23 4	2.75 4	2.28 5
1924 1924	36.0 2	22.8 2	10.9 4	6.09 6	3.89 6	3.09 6	2.64 6	2.56 6	2.11 6
1925 1925	40.0 1	18.8 4	11.6 3	8.50 3	7.16 2	4.67 2	3.95 2	3.47 2	3.07 2
1926 1926	13.0 7	6.90 7	3.91 7	2.83 7	2.44 7	1.60 7	1.41 7	1.24 7	1.10 7
1932 1932	23.0 6	12.7 6	8.50 6	7.03 5	4.98 5	3.61 5	3.63 3	3.45 3	3.02 3

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16542000  
 E B PUOHOKAMO STR AT HAIKU-LKA BDRY NR KALLILLI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN LOW-VALUE ANALYSIS (OCT-SEP)		MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN HIGH-VALUE ANALYSIS (OCT-SEP)	
WATER YEAR RANGE		WATER YEAR RANGE	
1921 1921	1.59 2	1921 1921	1.59 6
1922 1922	2.72 7	1922 1922	2.72 1
1923 1923	1.76 4	1923 1923	1.76 4
1924 1924	1.66 3	1924 1924	1.66 5
1925 1925	2.31 5	1925 1925	2.31 3
1926 1926	1.02 1	1926 1926	1.02 7
1932 1932	2.35 6	1932 1932	2.35 2



DURATION CURVE STATISTICAL CHARACTERISTICS FOR ...  
 STATION ID: 16543000 M B PUOHOKAMOJA STR AT HAIKU-UKA BDRY NR KAILIILLI  
 PARAMETER CODE = 00060  
 STATISTIC CODE - 00003 MEAN

DURATION DATA VALUES ARE INTERPOLATED FROM DURATION TABLE:  
 DATA ARE NOT ANALYTICALLY FITTED TO A PARTICULAR STATISTICAL DISTRIBUTION,  
 AND THE USER IS RESPONSIBLE FOR ASSESSMENT AND INTERPRETATION.

ADDITIONAL CONDITIONS FOR THIS RUN ARE:  
 STATISTICS ARE BASED ON LOGARITHMS (BASE 10).  
 NUMBER OF VALUES IS REDUCED FOR EACH NEAR-ZERO OR ZERO VALUE.

NUMBER OF VALUES = 19 (NUMBER OF NEAR-ZERO VALUES = 0)  
 LISTING OF DATA FOLLOWS:

PERCENT OF TIME VALUE EQUALED OR EXCEEDED	DATA VALUE	(LOG =
95.0	0.19	-0.71923)
90.0	0.31	(LOG = -0.50225)
85.0	0.46	(LOG = -0.33632)
80.0	0.54	(LOG = -0.26622)
75.0	0.64	(LOG = -0.19427)
70.0	0.76	(LOG = -0.12039)
65.0	0.90	(LOG = -0.04578)
60.0	1.05	(LOG = 0.02265)
55.0	1.21	(LOG = 0.08291)
50.0	1.37	(LOG = 0.13599)
45.0	1.54	(LOG = 0.18703)
40.0	1.78	(LOG = 0.25011)
35.0	2.11	(LOG = 0.32428)
30.0	2.51	(LOG = 0.39926)
25.0	3.06	(LOG = 0.48559)
20.0	4.09	(LOG = 0.61153)
15.0	5.56	(LOG = 0.74520)
10.0	8.84	(LOG = 0.94667)
5.0	17.3	(LOG = 1.23707)

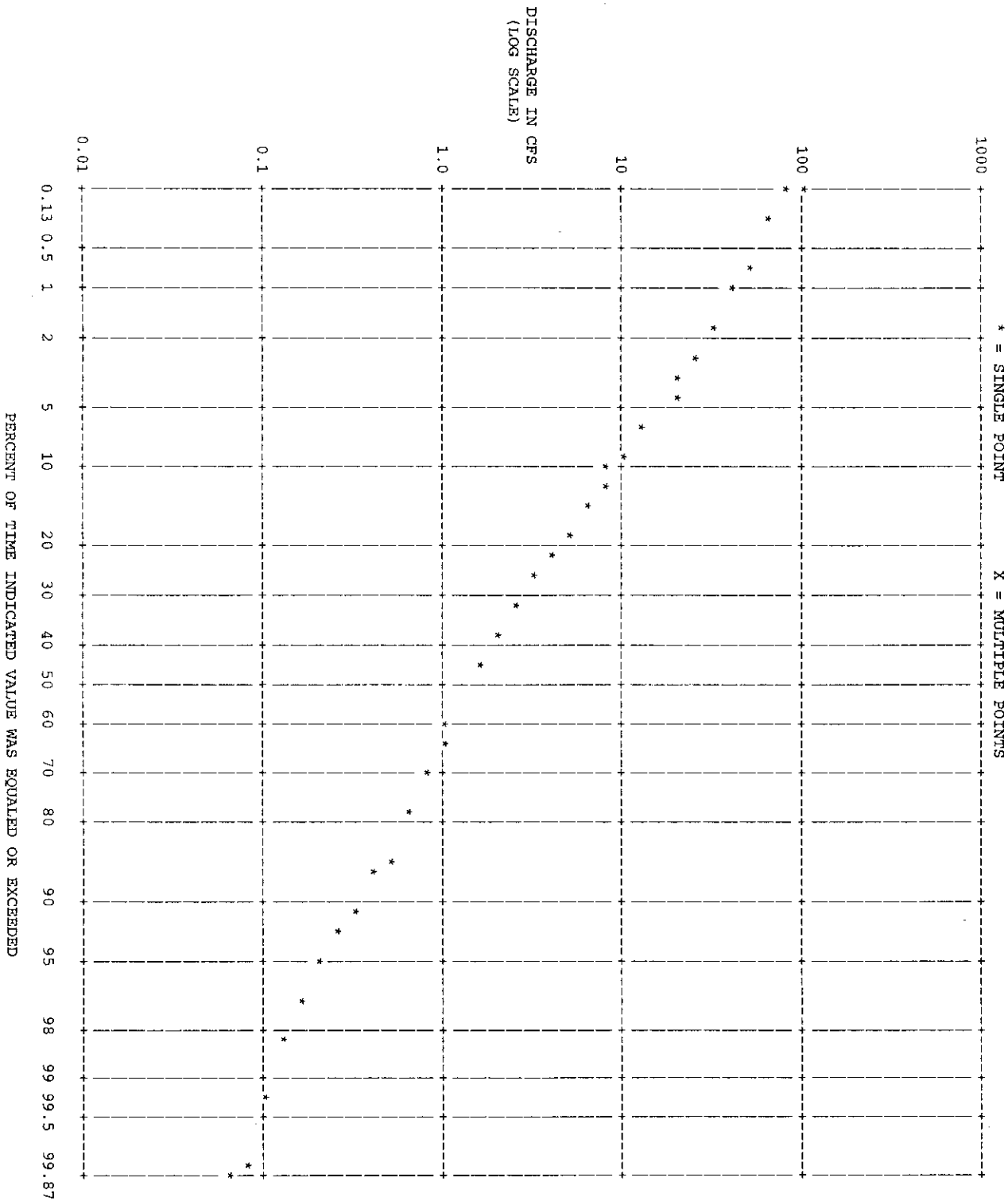
MEAN OF LOGS = 0.17073

STANDARD DEVIATION OF LOGS = 0.49630 (VARIABILITY INDEX - SEE USGS WSP 1542-A)

COEFFICIENT OF VARIATION = 2.90697

COEFFICIENT OF SKEW = 0.35116

LOG-NORMAL DURATION PLOT FOR PERIOD OCT TO SEP  
 STATION ID: 16543000 M B PUOHOKAMO A STR AT HAIKU-UKA BDRY NR KAILILILI (YEARS 1919 - 1969)  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN



DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16543000  
 M B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KAILILILI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

LOWEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	3	7	14	30	60	90	120	183
1920 1920	.080 3	.080 3	.090 2	.11 2	.15 2	.40 1	.77 2	1.12 2	1.78 5
1921 1921	.31 9	.31 9	.42 11	.46 11	.49 9	.83 7	1.08 5	1.73 9	2.50 8
1922 1922	.31 10	.31 10	.31 9	.34 9	.49 8	.72 3	1.12 6	1.39 6	2.37 6
1923 1923	.46 12	.46 12	.53 13	.55 12	.86 13	2.02 14	2.31 13	2.63 13	2.96 10
1924 1924	.46 13	.51 14	.60 14	.61 14	.89 14	1.43 13	2.90 14	2.58 12	3.21 13
1925 1925	.46 14	.46 13	.46 12	.57 13	.82 12	1.41 12	2.27 12	3.24 14	5.14 14
1926 1926	.15 6	.15 6	.20 8	.25 8	.37 7	.75 4	.86 3	1.09 1	1.15 1
1933 1933	.31 11	.31 11	.35 10	.43 10	.57 11	.77 6	1.13 7	1.36 5	1.50 4
1963 1963	.060 1	.060 1	.066 1	.071 1	.090 1	.46 2	.75 1	1.12 3	1.17 2
1964 1964	.15 7	.16 8	.19 7	.21 7	.54 10	1.07 10	1.32 8	1.64 8	2.77 9
1965 1965	.12 5	.12 5	.14 5	.17 5	.34 6	1.07 11	2.08 11	2.40 11	3.06 11
1966 1966	.090 4	.090 4	.11 4	.18 6	.23 4	.77 5	.92 4	1.13 4	1.43 3
1967 1967	.16 8	.16 7	.16 6	.17 4	.22 3	.83 8	1.68 10	2.15 10	2.38 7
1968 1968	.070 2	.073 2	.099 3	.15 3	.29 5	1.06 9	1.44 9	1.56 7	3.14 12

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16543000  
 M B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KAILILILI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

HIGHEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	30	60	90	120	183
1920 1920	71.0	6	40.7	8	39.0	3	21.1	6	12.1	7	6.74	10	4.72	12	4.24	13	3.39	13		
1921 1921	74.0	5	46.3	5	26.2	7	24.6	4	15.4	4	11.8	3	10.2	2	8.52	2	7.00	2		
1922 1922	85.0	4	66.0	1	57.0	1	34.3	1	26.9	1	18.0	1	17.7	1	17.6	1	12.8	1		
1923 1923	93.0	3	65.3	2	53.4	2	31.2	2	16.7	3	11.0	4	8.98	4	7.49	4	6.56	4		
1924 1924	94.0	2	63.3	3	29.7	6	17.4	8	10.5	10	9.08	5	7.10	6	7.15	5	5.88	6		
1925 1925	104	1	56.7	4	37.0	5	25.7	3	21.0	2	12.3	2	9.43	3	7.93	3	6.94	3		
1926 1926	43.0	12	21.3	14	11.5	14	6.73	14	6.26	14	3.91	14	3.46	14	2.88	14	2.29	14		
1933 1933	68.0	7	42.0	7	25.1	8	12.7	12	9.09	12	6.18	12	5.51	11	5.02	11	4.00	12		
1963 1963	50.0	10	27.7	13	20.6	9	17.9	7	13.6	6	8.74	8	7.42	5	6.61	6	5.00	8		
1964 1964	40.0	14	28.0	12	18.1	13	12.9	10	10.3	11	6.73	11	5.90	10	5.81	8	4.46	10		
1965 1965	62.0	8	44.3	6	38.3	4	23.7	5	15.4	5	8.86	7	6.46	8	5.52	10	5.47	7		
1966 1966	43.0	13	29.0	11	19.9	10	12.8	11	12.0	8	7.72	9	6.36	9	5.89	7	4.47	9		
1967 1967	52.0	9	34.3	9	19.1	11	10.5	13	7.46	13	5.29	13	4.36	13	4.83	12	4.10	11		
1968 1968	44.0	11	31.0	10	18.3	12	13.6	9	11.1	9	9.08	6	6.83	7	5.70	9	6.08	5		



DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16543000  
 M B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KAILIITI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN LOW-VALUE ANALYSIS (OCT-SEP)		MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN HIGH-VALUE ANALYSIS (OCT-SEP)	
WATER YEAR RANGE		WATER YEAR RANGE	
1920 1920	2.28 2	1920 1920	2.28 13
1921 1921	4.37 10	1921 1921	4.37 5
1922 1922	7.40 14	1922 1922	7.40 1
1923 1923	4.77 12	1923 1923	4.77 3
1924 1924	4.71 11	1924 1924	4.71 4
1925 1925	5.35 13	1925 1925	5.35 2
1926 1926	2.03 1	1926 1926	2.03 14
1933 1933	2.56 3	1933 1933	2.56 12
1963 1963	3.01 6	1963 1963	3.01 9
1964 1964	3.48 7	1964 1964	3.48 8
1965 1965	4.03 9	1965 1965	4.03 6
1966 1966	2.87 4	1966 1966	2.87 11
1967 1967	2.99 5	1967 1967	2.99 10
1968 1968	3.88 8	1968 1968	3.88 7

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16543000  
M B PUOHOKAMO A STR AT HAIKU-UKA BDRY NR KAILIILI  
PARAMETER CODE - 00060 DISCHARGE  
STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR  
PERIOD INCLUDED IN LOW-VALUE ANALYSIS  
(OCT-SEP)  
WATER YEAR  
RANGE

MEAN VALUE AND RANKING FOR  
PERIOD INCLUDED IN HIGH-VALUE ANALYSIS  
(OCT-SEP)  
WATER YEAR  
RANGE





DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16545000  
 PUHOHOKAMOA STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

CLASS	VALUE	TOTAL	ACCUM	PERCT	CLASS	VALUE	TOTAL	ACCUM	PERCT	CLASS	VALUE	TOTAL	ACCUM	PERCT
1	0.00	0	21184	100.00	13	7.10	1716	15299	72.22	25	101.00	400	1566	7.39
2	0.62	5	21184	100.00	14	8.80	1393	13583	64.12	26	126.00	324	1166	5.50
3	0.77	21	21179	99.98	15	11.00	1888	12190	57.54	27	157.00	253	842	3.97
4	0.97	49	21158	99.88	16	14.00	1393	10302	48.63	28	196.00	204	589	2.78
5	1.20	70	21109	99.65	17	17.00	1437	8909	42.06	29	245.00	146	385	1.82
6	1.50	185	21039	99.32	18	21.00	1494	7472	35.27	30	305.00	109	239	1.13
7	1.90	297	20854	98.44	19	27.00	1037	5978	28.22	31	381.00	76	130	0.61
8	2.30	796	20557	97.04	20	33.00	889	4941	23.32	32	475.00	30	54	0.25
9	2.90	1215	19231	90.78	21	42.00	719	4052	19.13	33	593.00	15	24	0.11
10	3.60	1201	18016	85.05	22	52.00	679	3333	15.73	34	740.00	7	9	0.04
11	4.60	1516	16815	79.38	23	65.00	619	2654	12.53	35	923.00	2	2	0.01
12	5.70				24	81.00	469	2035	9.61					

DURATION CURVE STATISTICAL CHARACTERISTICS FOR ...  
 STATION ID: 16545000 PUHOKAMO A STR AB SPECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE = 00060  
 STATISTIC CODE - 00003 MEAN

DURATION DATA VALUES ARE INTERPOLATED FROM DURATION TABLE:  
 DATA ARE NOT ANALYTICALLY FITTED TO A PARTICULAR STATISTICAL DISTRIBUTION,  
 AND THE USER IS RESPONSIBLE FOR ASSESSMENT AND INTERPRETATION.

ADDITIONAL CONDITIONS FOR THIS RUN ARE:  
 STATISTICS ARE BASED ON LOGARITHMS (BASE 10).  
 NUMBER OF VALUES IS REDUCED FOR EACH NEAR-ZERO OR ZERO VALUE.

NUMBER OF VALUES = 19 (NUMBER OF NEAR-ZERO VALUES = 0)  
 LISTING OF DATA FOLLOWS:

PERCENT OF TIME VALUE EQUALED OR EXCEEDED	DATA VALUE	(LOG =
95.0	2.79	0.44549)
90.0	3.74	(LOG = 0.57242)
85.0	4.61	(LOG = 0.66359)
80.0	5.58	(LOG = 0.74655)
75.0	6.56	(LOG = 0.81664)
70.0	7.57	(LOG = 0.87886)
65.0	8.62	(LOG = 0.93526)
60.0	10.2	(LOG = 1.00767)
55.0	11.9	(LOG = 1.07394)
50.0	13.5	(LOG = 1.13159)
45.0	15.7	(LOG = 1.19470)
40.0	18.2	(LOG = 1.26036)
35.0	21.2	(LOG = 1.32698)
30.0	25.5	(LOG = 1.40629)
25.0	30.9	(LOG = 1.49060)
20.0	40.1	(LOG = 1.60346)
15.0	55.0	(LOG = 1.74017)
10.0	78.8	(LOG = 1.89677)
5.0	136.2	(LOG = 2.13424)

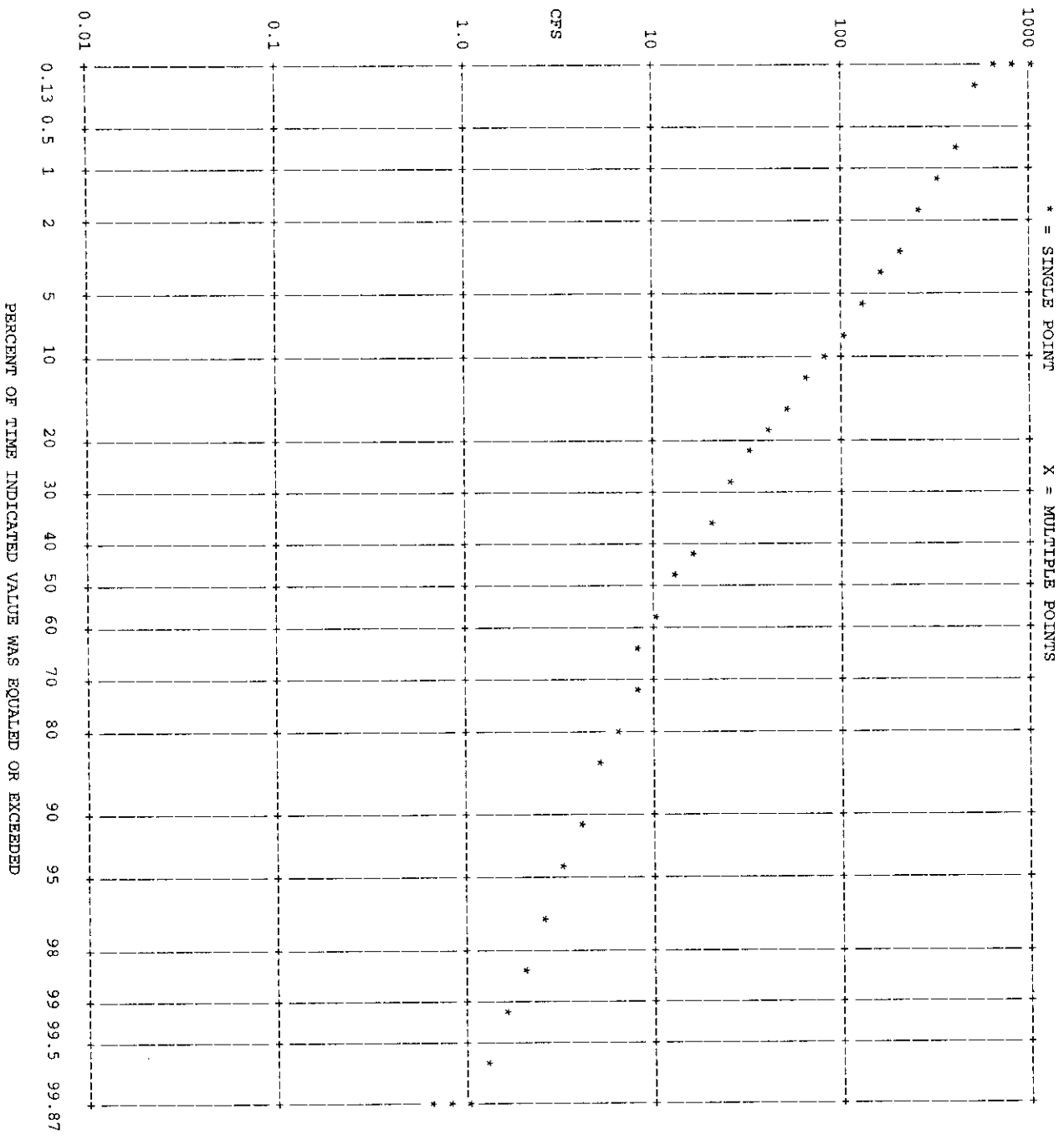
MEAN OF LOGS = 1.17503

STANDARD DEVIATION OF LOGS = 0.45838 (VARIABILITY INDEX - SEE USGS MSP 1542-A)

COEFFICIENT OF VARIATION = 0.39010

COEFFICIENT OF SKEW = 0.42190

LOG-NORMAL DURATION PLOT FOR PERIOD OCT TO SEP (YEARS 1913 - 1972)  
 STATION ID: 16545000 PUHOAKAMOA STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN



DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16545000  
 PUOHOKOMA STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

LOWEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR	1	3	7	14	30	60	90	120	183
1914 1914	5.70 56	5.90 56	5.99 55	6.33 54	7.44 47	11.5 38	19.5 45	25.1 50	36.8 53
1915 1915	5.60 55	5.67 55	5.93 54	6.61 55	8.01 49	12.3 43	19.2 43	20.7 38	24.6 34
1916 1916	7.10 58	7.27 58	8.06 58	8.36 56	11.5 55	18.2 54	20.8 48	35.1 57	44.3 55
1917 1917	1.10 8	1.10 8	1.10 5	1.50 7	1.91 5	3.97 4	4.93 2	7.49 3	10.8 3
1918 1918	.62 1	.67 1	.73 1	1.17 2	1.56 2	7.66 17	10.8 21	11.5 14	31.2 48
1919 1919	1.90 24	1.93 24	2.33 27	3.31 35	4.14 27	9.28 26	12.1 25	14.1 25	18.8 21
1920 1920	.93 6	.93 3	1.04 4	1.33 4	1.75 4	3.31 2	4.57 1	7.07 2	11.0 6
1921 1921	.93 7	1.09 7	1.32 9	1.76 10	2.66 14	5.79 10	8.07 7	13.0 20	18.2 19
1922 1922	2.20 31	2.30 33	2.30 25	2.30 21	2.30 7	3.30 1	6.21 4	8.04 4	15.1 12
1923 1923	3.20 48	3.20 46	3.46 47	3.58 40	5.33 36	15.5 49	19.0 41	22.0 42	24.2 31
1924 1924	2.90 44	3.03 44	3.36 45	4.02 47	5.76 40	9.94 31	17.7 37	15.7 28	23.1 28
1925 1925	1.70 18	1.87 21	2.49 29	3.91 46	6.03 43	10.5 33	14.8 30	22.3 44	35.6 51
1926 1926	2.20 32	2.27 32	2.51 30	2.99 28	4.15 28	7.79 18	8.66 14	10.5 11	10.6 2
1927 1927	2.50 39	2.50 36	3.27 43	3.90 45	5.29 35	12.5 44	13.3 29	24.0 49	22.2 25
1928 1928	1.50 15	1.50 15	1.50 11	2.45 23	4.76 31	15.2 47	25.2 54	30.0 54	30.8 46
1929 1929	1.90 25	1.97 25	2.04 22	2.41 22	4.29 29	9.34 29	13.2 27	13.0 21	18.4 20
1930 1930	1.50 16	1.63 16	1.91 19	2.26 19	3.04 17	22.4 56	33.6 57	34.3 56	46.4 57
1931 1931	2.60 41	2.70 41	3.24 42	3.35 36	5.66 39	10.7 36	11.9 24	13.8 23	21.8 24
1932 1932	3.70 51	4.27 52	4.69 52	5.25 51	10.4 54	14.3 46	25.9 55	23.9 48	35.3 50
1933 1933	1.70 19	1.77 18	1.94 20	2.26 20	2.41 10	5.96 11	8.11 9	9.01 6	10.9 4
1934 1934	1.70 20	1.80 20	1.87 16	2.05 13	2.30 8	8.36 23	11.7 23	11.3 13	13.2 9
1935 1935	3.70 52	4.00 51	4.54 51	6.23 53	9.42 51	16.5 50	18.5 40	19.8 36	27.7 41
1936 1936	2.90 45	3.47 48	3.60 48	3.88 44	5.55 38	8.10 20	8.62 13	11.5 15	17.9 18
1937 1937	5.70 57	6.23 57	7.07 57	8.54 57	21.5 58	24.5 58	44.3 58	43.5 58	47.0 58
1938 1938	4.60 54	4.70 53	4.81 53	5.83 52	9.45 52	18.0 53	21.4 50	26.1 52	39.0 54
1939 1939	4.30 53	4.90 54	5.99 56	9.01 58	15.4 57	19.7 55	24.0 52	31.1 55	34.8 49
1940 1940	2.80 43	2.83 43	3.03 38	3.17 31	4.11 26	8.44 25	10.3 18	11.5 16	16.8 15
1941 1941	3.10 47	3.20 47	3.30 44	3.63 42	6.43 45	8.42 24	17.4 36	17.8 32	26.0 38
1942 1942	2.30 35	2.47 34	2.79 35	3.04 29	4.03 25	8.23 22	19.1 42	21.8 41	30.1 45
1943 1943	2.60 42	2.73 43	3.07 40	3.61 41	5.84 41	11.1 37	19.4 44	18.5 35	22.4 26
1944 1944	1.40 13	1.40 13	1.56 13	1.78 11	2.34 9	5.76 9	8.37 10	12.8 19	12.1 7
1945 1945	1.20 9	1.20 9	1.24 8	1.43 5	2.41 11	4.77 7	8.52 12	10.3 10	17.0 16
1946 1946	1.70 21	1.90 23	1.90 17	2.11 14	3.46 20	5.98 13	16.7 34	18.3 34	24.9 35
1947 1947	1.70 22	1.77 19	1.84 15	2.16 17	3.27 19	13.6 45	19.9 47	22.7 45	27.2 39
1948 1948	3.20 49	3.50 49	3.94 50	5.17 50	8.22 50	17.7 51	24.8 53	22.8 46	36.0 52
1949 1949	2.20 33	2.20 29	2.34 28	2.89 27	4.74 30	8.20 21	11.1 22	14.1 26	16.2 14
1950 1950	2.10 29	2.13 28	2.56 31	3.48 39	5.13 34	11.8 41	18.0 39	20.2 37	27.8 42



DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16545000  
 PUOHOKAMO STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

LOWEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	3	7	14	30	60	90	120	183
1951 1951	2.40 38	2.53 39	2.69 32	3.13 30	5.01 33	5.96 12	8.00 6	9.47 7	13.9 11
1952 1952	1.90 26	2.10 27	2.81 36	3.63 43	9.65 53	15.4 48	21.3 49	23.3 47	24.5 32
1953 1953	.90 3	.96 5	.98 3	1.17 3	1.64 3	3.84 3	9.53 16	8.38 5	12.7 8
1954 1954	.90 4	1.00 6	1.15 6	1.72 9	2.93 16	7.86 19	10.5 19	12.1 18	15.5 13
1955 1955	1.70 23	1.87 22	1.90 18	2.19 18	5.91 42	7.34 16	23.6 51	21.5 40	27.9 43
1956 1956	2.00 27	2.03 26	2.27 24	2.71 25	3.98 24	6.91 15	8.40 11	11.7 17	30.8 47
1957 1957	2.10 30	2.23 31	2.31 26	2.66 24	3.48 21	6.15 14	9.39 15	15.7 29	17.6 17
1958 1958	2.30 36	2.47 35	2.76 34	3.19 32	11.8 56	17.8 52	17.8 38	21.4 39	24.5 33
1959 1959	3.50 50	3.50 50	3.73 49	4.46 49	7.44 48	11.7 39	16.4 32	17.6 31	25.6 36
1960 1960	2.30 37	2.50 37	2.87 37	3.39 37	3.84 22	11.7 40	17.0 35	18.1 33	30.0 44
1961 1961	2.50 40	2.50 38	2.73 33	3.43 38	4.84 32	10.5 34	10.6 20	13.9 24	18.9 22
1962 1962	1.30 12	1.30 11	1.39 10	1.56 8	2.14 6	4.67 5	7.96 5	9.56 8	10.4 1
1963 1963	.90 5	.90 2	.97 2	1.04 1	1.41 1	4.76 6	8.07 8	9.69 9	10.9 5
1964 1964	2.90 46	3.03 45	3.40 46	4.06 48	6.92 46	11.8 42	12.9 26	15.2 27	23.4 29
1965 1965	1.60 17	1.67 17	2.01 21	2.11 15	3.06 18	9.67 30	16.4 33	16.9 30	22.8 27
1966 1966	1.40 14	1.40 14	1.51 12	2.12 16	2.85 15	9.33 28	9.56 17	11.2 12	13.6 10
1967 1967	2.00 28	2.20 30	3.03 39	3.29 34	5.42 37	10.5 35	15.2 31	22.2 43	25.9 37
1968 1968	1.20 10	1.33 12	2.17 23	2.76 26	3.89 23	10.1 32	13.2 28	13.3 22	23.8 30
1969 1969	1.20 11	1.27 10	1.63 14	1.89 12	2.45 12	22.7 57	29.4 56	27.0 53	45.7 56
1970 1970	2.20 34	2.60 40	3.09 41	3.23 33	6.19 44	9.32 27	19.8 46	25.8 51	27.4 40
1971 1971	.86 2	.94 4	1.15 7	1.49 6	2.56 13	5.37 8	5.16 3	5.83 1	19.7 23

DVSTAN - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16545000  
 PUOHOKAMOA STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

HIGHEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR	RANGE	1	3	7	15	30	60	90	120	183
1914 1914	511 24	416 14	303 12	208 7	164 3	135 2	110 3	103 3	95.8 1	
1915 1915	458 37	266 41	165 40	107 45	73.5 43	62.5 36	52.3 36	43.0 43	37.2 41	
1916 1916	724 9	494 7	389 4	241 2	145 8	106 7	85.6 8	76.5 9	61.4 9	
1917 1917	509 25	380 18	232 22	162 19	109 22	80.4 15	63.1 20	50.5 29	36.2 44	
1918 1918	674 12	425 13	278 15	230 3	142 9	110 6	91.8 6	77.6 7	69.6 5	
1919 1919	473 34	256 42	211 28	128 33	79.7 37	58.1 43	43.9 45	40.6 48	35.4 46	
1920 1920	586 18	392 17	342 6	179 15	99.7 26	54.5 46	39.2 52	34.2 54	24.9 56	
1921 1921	433 41	267 40	139 46	131 32	83.2 35	63.5 34	54.8 33	46.2 35	40.3 36	
1922 1922	622 16	483 8	338 8	208 8	158 4	120 4	112 2	113 2	82.5 3	
1923 1923	531 22	354 24	330 9	192 12	108 23	70.5 24	58.4 24	50.3 30	42.8 31	
1924 1924	693 11	449 10	218 26	144 25	91.4 31	76.4 20	61.2 22	59.1 16	48.0 22	
1925 1925	735 7	373 19	208 29	151 22	124 12	75.5 21	61.5 21	53.0 22	49.9 19	
1926 1926	283 54	141 57	81.7 58	61.9 57	46.8 57	28.3 58	25.0 58	21.3 58	17.5 58	
1927 1927	735 8	323 28	172 36	107 44	79.7 38	52.5 48	43.7 46	41.7 46	37.1 42	
1928 1928	486 30	276 36	139 47	89.0 50	62.2 53	56.0 45	49.5 41	42.5 44	41.9 33	
1929 1929	435 40	311 31	227 24	149 23	117 16	78.1 18	68.0 15	60.7 15	52.3 16	
1930 1930	565 21	434 11	339 7	191 13	118 15	103 8	80.8 10	78.1 6	66.3 7	
1931 1931	455 38	322 29	191 32	110 41	67.3 49	59.4 40	54.0 34	44.4 40	42.5 32	
1932 1932	476 33	274 37	204 31	171 17	115 17	75.5 22	71.5 14	65.4 13	55.2 13	
1933 1933	433 42	433 12	229 23	117 38	77.3 42	47.1 51	41.0 49	36.6 51	29.5 52	
1934 1934	774 6	292 34	165 38	127 34	91.7 29	64.6 32	59.1 23	53.7 21	43.6 28	
1935 1935	413 43	358 22	245 19	135 29	86.0 33	69.7 26	57.7 26	52.0 26	47.5 23	
1936 1936	238 58	114 58	101 55	86.8 51	71.3 46	57.0 44	52.5 35	46.6 34	44.1 27	
1937 1937	582 19	459 9	286 14	227 4	158 5	114 5	104 4	91.5 4	79.1 4	
1938 1938	882 2	547 4	413 3	222 5	153 6	101 9	91.0 7	76.6 8	65.4 8	
1939 1939	501 27	231 46	158 45	110 40	78.1 41	62.3 37	55.7 29	54.4 20	48.6 21	
1940 1940	483 31	347 25	221 25	141 26	101 25	63.3 35	49.7 39	40.9 47	36.1 45	
1941 1941	640 15	295 33	189 33	120 37	72.8 44	59.8 39	51.3 38	51.8 27	47.5 24	
1942 1942	665 13	516 6	447 1	286 1	194 1	131 3	102 5	79.4 5	66.4 6	
1943 1943	251 57	158 55	101 56	82.0 55	59.0 56	47.1 52	40.0 51	38.4 49	34.3 47	
1944 1944	291 53	149 56	82.8 57	49.6 58	39.0 58	33.4 57	28.3 57	27.0 57	23.0 57	
1945 1945	272 55	196 50	131 48	108 43	70.5 47	42.9 54	30.5 55	28.4 55	28.5 53	
1946 1946	464 36	202 48	125 49	94.0 48	78.6 39	66.6 29	55.2 32	52.8 24	40.9 34	
1947 1947	808 4	518 5	379 5	207 9	137 10	86.0 12	65.9 17	55.6 17	49.8 20	
1948 1948	806 5	551 3	294 13	188 14	147 7	97.0 10	85.5 9	72.5 10	61.1 10	
1949 1949	388 46	256 43	162 42	121 36	94.4 28	64.2 33	55.5 30	45.0 37	38.0 39	
1950 1950	469 35	304 32	253 18	174 16	121 13	96.0 11	75.3 12	64.8 14	52.5 15	

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16545000  
 PUOHOKAMOA STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

HIGHEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR	1	3	7	15	30	60	90	120	183
1951 1951	364 47	254 44	122 50	96.5 47	67.1 50	59.1 41	51.7 37	44.8 39	33.8 49
1952 1952	252 56	169 53	118 51	83.3 54	61.1 54	40.8 55	38.6 54	36.9 50	33.8 50
1953 1953	323 50	168 54	106 54	80.1 56	71.7 45	58.8 42	44.8 44	34.3 53	26.8 55
1954 1954	309 52	186 51	114 53	83.5 53	63.5 51	49.7 49	45.2 43	44.9 38	39.7 38
1955 1955	503 26	361 21	321 11	201 11	129 11	80.1 16	79.4 11	70.9 11	60.3 11
1956 1956	838 3	617 2	329 10	221 6	121 14	85.2 13	72.2 13	67.0 12	57.1 12
1957 1957	478 32	271 38	164 41	110 42	81.4 36	54.3 47	41.6 48	35.2 52	34.1 48
1958 1958	446 39	269 39	165 39	144 24	113 18	78.7 17	63.2 19	52.9 23	42.9 30
1959 1959	498 28	371 20	236 20	134 30	87.3 32	72.9 23	58.2 25	49.5 32	47.2 25
1960 1960	572 20	411 15	272 16	139 27	85.7 34	64.7 31	65.3 18	54.6 19	50.5 18
1961 1961	600 17	337 26	182 34	139 28	78.6 40	61.2 38	42.6 47	44.0 41	37.9 40
1962 1962	336 49	182 52	114 52	101 46	59.6 55	38.9 56	30.2 56	27.2 56	27.4 54
1963 1963	396 45	211 47	179 35	155 20	109 21	69.9 25	56.7 28	51.1 28	39.8 37
1964 1964	316 51	202 49	162 43	85.1 52	69.3 48	44.9 53	40.7 50	43.2 42	33.6 51
1965 1965	521 23	329 27	256 17	166 18	111 19	66.7 28	49.6 40	45.1 36	46.1 26
1966 1966	354 48	250 45	169 37	115 39	104 24	67.9 27	55.5 31	52.1 25	40.4 35
1967 1967	410 44	281 35	160 44	93.7 49	63.5 52	48.4 50	39.2 53	41.8 45	36.7 43
1968 1968	646 14	402 16	215 27	124 35	91.5 30	77.7 19	57.1 27	46.7 33	50.7 17
1969 1969	984 1	679 1	420 2	203 10	185 2	165 1	142 1	117 1	93.2 2
1970 1970	700 10	358 23	235 21	154 21	99.3 27	65.1 30	49.0 42	49.9 31	43.4 29
1971 1971	495 29	317 30	207 30	131 31	110 20	83.2 14	66.1 16	55.2 18	52.8 14

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16545000  
 PUOHOKAMOA STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN LOW-VALUE ANALYSIS (OCT-SEP)			MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN HIGH-VALUE ANALYSIS (OCT-SEP)		
WATER YEAR RANGE			WATER YEAR RANGE		
1914 1914	66.4	58	1914 1914	66.4	1
1915 1915	32.8	31	1915 1915	32.8	28
1916 1916	53.5	55	1916 1916	53.5	4
1917 1917	23.5	8	1917 1917	23.5	51
1918 1918	43.7	50	1918 1918	43.7	9
1919 1919	26.4	15	1919 1919	26.4	44
1920 1920	17.4	3	1920 1920	17.4	56
1921 1921	26.8	19	1921 1921	26.8	40
1922 1922	47.8	52	1922 1922	47.8	7
1923 1923	33.7	36	1923 1923	33.7	23
1924 1924	36.5	43	1924 1924	36.5	16
1925 1925	38.5	46	1925 1925	38.5	13
1926 1926	16.7	1	1926 1926	16.7	58
1927 1927	30.0	25	1927 1927	30.0	34
1928 1928	34.8	39	1928 1928	34.8	20
1929 1929	32.7	30	1929 1929	32.7	29
1930 1930	47.8	53	1930 1930	47.8	6
1931 1931	33.0	34	1931 1931	33.0	25
1932 1932	40.9	48	1932 1932	40.9	11
1933 1933	18.3	4	1933 1933	18.3	55
1934 1934	28.0	22	1934 1934	28.0	37
1935 1935	33.9	38	1935 1935	33.9	21
1936 1936	30.6	26	1936 1936	30.6	33
1937 1937	57.7	56	1937 1937	57.7	3
1938 1938	44.4	51	1938 1938	44.4	8
1939 1939	37.0	44	1939 1939	37.0	15
1940 1940	27.7	21	1940 1940	27.7	38
1941 1941	33.9	37	1941 1941	33.9	22
1942 1942	48.3	54	1942 1942	48.3	5
1943 1943	26.0	13	1943 1943	26.0	46
1944 1944	17.1	2	1944 1944	17.1	57
1945 1945	22.1	7	1945 1945	22.1	52
1946 1946	28.3	23	1946 1946	28.3	36
1947 1947	36.0	42	1947 1947	36.0	17
1948 1948	43.2	49	1948 1948	43.2	10
1949 1949	26.2	14	1949 1949	26.2	45
1950 1950	35.0	41	1950 1950	35.0	18
1951 1951	23.6	9	1951 1951	23.6	50
1952 1952	26.6	17	1952 1952	26.6	42
1953 1953	19.9	6	1953 1953	19.9	53
1954 1954	26.4	16	1954 1954	26.4	43

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16545000  
 PUOHOKAMO STR AB SPRECKELS DITCH NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN LOW-VALUE ANALYSIS (OCT-SEP)		MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN HIGH-VALUE ANALYSIS (OCT-SEP)	
WATER YEAR RANGE		WATER YEAR RANGE	
1955 1955	38.5 45	1955 1955	38.5 14
1956 1956	35.0 40	1956 1956	35.0 19
1957 1957	26.7 18	1957 1957	26.7 41
1958 1958	38.6 47	1958 1958	38.6 12
1959 1959	32.8 32	1959 1959	32.8 27
1960 1960	33.1 35	1960 1960	33.1 24
1961 1961	25.5 11	1961 1961	25.5 48
1962 1962	18.8 5	1962 1962	18.8 54
1963 1963	24.4 10	1963 1963	24.4 49
1964 1964	27.5 20	1964 1964	27.5 39
1965 1965	32.4 29	1965 1965	32.4 30
1966 1966	25.8 12	1966 1966	25.8 47
1967 1967	29.3 24	1967 1967	29.3 35
1968 1968	32.1 28	1968 1968	32.1 31
1969 1969	59.0 57	1969 1969	59.0 2
1970 1970	33.0 33	1970 1970	33.0 26
1971 1971	32.0 27	1971 1971	32.0 32





DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16541500  
 MANUEL LUIS DITCH AT PUOHOKAMO A CL NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

CLASS	VALUE	TOTAL	ACCU	PERCT	CLASS	VALUE	TOTAL	ACCU	PERCT	CLASS	VALUE	TOTAL	ACCU	PERCT
1	0.00	2	24107	100.00	13	0.43	1406	21488	89.14	25	14.00	665	3870	16.05
2	0.01	20	24105	99.99	14	0.57	1576	20082	83.30	26	18.00	740	3205	13.29
3	0.02	2	24085	99.91	15	0.76	2062	18506	76.77	27	25.00	681	2465	10.23
4	0.03	17	24093	99.90	16	1.00	2388	16444	68.21	28	33.00	618	1784	7.40
5	0.04	13	24066	99.83	17	1.40	1668	14056	58.31	29	44.00	488	1166	4.84
6	0.06	119	24053	99.78	18	1.80	1891	12388	51.39	30	58.00	340	678	2.81
7	0.08	131	23934	99.28	19	2.40	1616	10497	43.54	31	78.00	241	338	1.40
8	0.10	130	23803	98.74	20	3.20	1365	8881	36.84	32	104.00	96	97	0.40
9	0.13	321	23673	98.20	21	4.30	1174	7516	31.18	33	139.00	1	1	0.00
10	0.18	400	23352	96.87	22	5.80	939	6342	26.31	34	0.00	0	0	0.00
11	0.24	816	22952	95.21	23	7.70	750	5403	22.41	35	0.00	0	0	0.00
12	0.32	648	22136	91.82	24	10.00	783	4653	19.30					



DURATION CURVE STATISTICAL CHARACTERISTICS FOR ...  
 STATION ID: 15541500 MANUEL LOUIS DITCH AT PUOHOKANOA GL NR HUELO, MAUI  
 PARAMETER CODE = 00060  
 STATISTIC CODE = 00003 MEAN

DURATION DATA VALUES ARE INTERPOLATED FROM DURATION TABLE:  
 DATA ARE NOT ANALYTICALLY FITTED TO A PARTICULAR STATISTICAL DISTRIBUTION,  
 AND THE USER IS RESPONSIBLE FOR ASSESSMENT AND INTERPRETATION.

ADDITIONAL CONDITIONS FOR THIS RUN ARE:  
 STATISTICS ARE BASED ON LOGARITHMS (BASE 10).  
 NUMBER OF VALUES IS REDUCED FOR EACH NEAR-ZERO OR ZERO VALUE.

NUMBER OF VALUES = 19 (NUMBER OF NEAR-ZERO VALUES = 0)  
 LISTING OF DATA FOLLOWS:

PERCENT OF TIME VALUE EQUALED OR EXCEEDED	DATA VALUE	(LOG = ...)
95.0	0.24	(LOG = -0.61095)
90.0	0.39	(LOG = -0.40380)
85.0	0.53	(LOG = -0.27631)
80.0	0.67	(LOG = -0.17652)
75.0	0.81	(LOG = -0.09175)
70.0	0.95	(LOG = -0.02235)
65.0	1.13	(LOG = 0.05297)
60.0	1.33	(LOG = 0.12438)
55.0	1.59	(LOG = 0.20171)
50.0	1.91	(LOG = 0.28015)
45.0	2.29	(LOG = 0.35957)
40.0	2.82	(LOG = 0.45069)
35.0	3.56	(LOG = 0.55114)
30.0	4.66	(LOG = 0.66864)
25.0	6.44	(LOG = 0.80874)
20.0	9.48	(LOG = 0.97697)
15.0	15.5	(LOG = 1.19110)
10.0	25.6	(LOG = 1.40888)
5.0	43.3	(LOG = 1.63648)

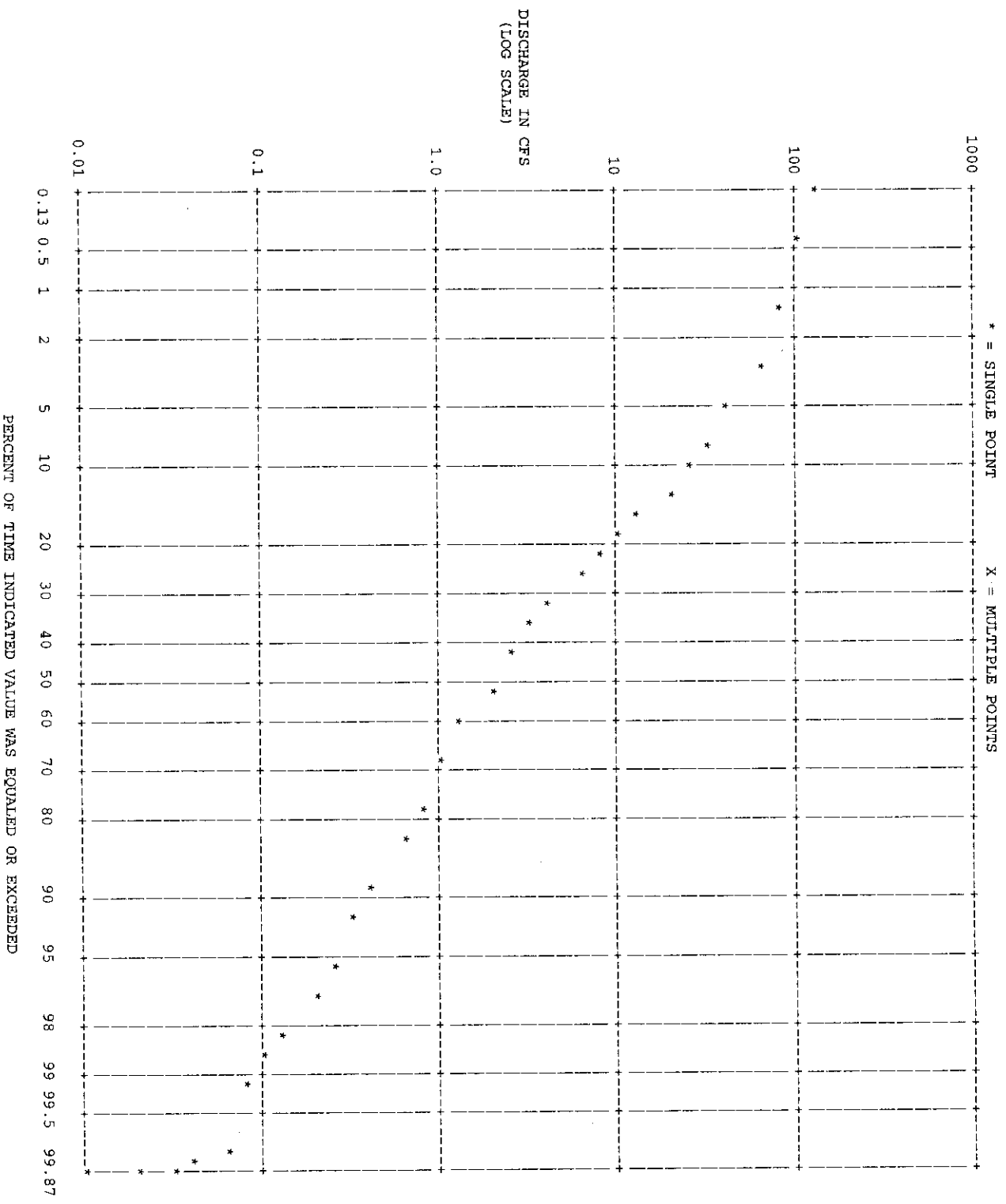
MEAN OF LOGS = 0.37525

STANDARD DEVIATION OF LOGS = 0.61861 (VARIABILITY INDEX - SEE USGS WSP 1542-A)

COEFFICIENT OF VARIATION = 1.64853

COEFFICIENT OF SKEW = 0.49505

LOG-NORMAL DURATION PLOT FOR PERIOD OCT TO SEP (YEARS 1918 - 1986)  
 STATION ID: 16541500 MANUEL IUIS DITCH AT PUHOKAMOA GL NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN



DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16541500  
 MANUEL LUTS DITCH AT PUOHOKAMOA GL NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

LOWEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	3	7	14	30	60	90	120	183
1919 1919	.31 38	.41 55	.44 52	.51 46	.61 35	1.51 34	2.74 37	2.97 30	3.88 25
1920 1920	.15 21	.15 20	.15 18	.17 15	.27 14	.37 9	.47 5	.82 5	2.20 8
1921 1921	.31 39	.31 37	.40 44	.45 40	.61 34	1.50 32	2.92 40	5.16 53	6.18 45
1922 1922	.15 22	.15 21	.24 24	.31 24	.32 20	.69 14	2.10 29	3.13 32	5.74 40
1923 1923	.46 60	.57 61	.64 61	.66 55	1.11 54	7.06 65	9.60 65	9.71 63	12.9 62
1924 1924	.31 40	.31 38	.35 37	.41 35	.76 41	3.28 54	8.82 62	7.50 58	11.4 59
1926 1926	.15 23	.26 31	.33 34	.47 43	.74 39	1.49 31	1.96 26	2.62 27	2.64 11
1927 1927	.46 61	.51 58	.62 58	.74 56	1.15 55	2.69 52	4.24 50	7.88 60	8.83 55
1928 1928	.46 62	.46 57	.46 54	.54 50	.95 47	6.41 64	9.13 63	10.5 65	13.8 65
1929 1929	.31 41	.31 39	.33 35	.35 29	.56 29	2.09 44	3.68 44	3.93 39	5.90 43
1930 1930	.62 63	.67 64	.84 63	.98 61	1.07 52	7.32 66	11.6 66	11.0 66	12.9 63
1931 1931	.31 42	.31 40	.37 40	.46 41	.66 36	1.72 41	2.35 34	3.13 33	4.44 30
1932 1932	.62 64	.62 63	.75 62	1.12 62	1.67 57	2.67 51	4.33 52	4.16 41	7.87 51
1933 1933	.31 43	.31 41	.31 31	.32 26	.40 24	.64 13	.80 10	.99 10	1.20 2
1934 1934	.31 44	.31 42	.31 32	.31 25	.31 18	1.55 36	1.98 27	1.92 18	2.74 12
1935 1935	.15 24	.15 22	.37 41	.60 54	.94 46	2.22 47	2.46 35	3.17 34	3.85 24
1936 1936	.31 45	.31 43	.35 38	.44 38	.86 44	1.35 28	1.31 16	1.82 16	2.74 13
1937 1937	.080 12	.53 60	.63 60	1.22 64	3.60 66	4.92 62	9.27 64	8.55 61	9.65 57
1938 1938	.87 66	.87 66	.91 64	1.39 65	1.96 62	2.69 53	4.01 46	4.96 51	9.94 58
1939 1939	.45 59	.59 62	1.19 66	1.87 66	3.32 65	4.86 61	5.64 57	7.06 57	8.60 54
1940 1940	.0000 1	.017 3	.40 45	.44 39	.69 37	1.97 43	2.83 38	3.40 37	4.48 31
1941 1941	.26 34	.29 34	.30 30	.34 27	.86 45	1.31 27	4.32 51	4.60 46	6.72 48
1942 1942	.39 55	.39 52	.43 48	.53 48	.77 42	1.52 35	4.01 47	4.85 49	7.69 50
1943 1943	.34 46	.34 44	.39 43	.43 37	.74 40	2.48 49	4.15 49	3.95 40	5.79 41
1944 1944	.17 28	.17 25	.20 21	.25 21	.29 16	.99 23	1.85 21	3.20 35	3.10 17
1945 1945	.17 29	.20 28	.21 23	.23 20	.31 19	.70 15	1.25 15	2.16 23	4.06 27
1946 1946	.26 35	.26 32	.29 29	.34 28	.48 26	1.06 25	4.03 48	4.65 47	5.91 44
1947 1947	.34 47	.34 45	.34 36	.49 44	.74 38	4.42 57	5.91 58	6.95 56	9.34 56
1948 1948	.70 65	.79 65	.92 65	1.21 63	1.77 58	4.18 56	7.56 60	7.50 59	12.2 61
1949 1949	.34 48	.37 49	.50 57	.75 57	1.07 53	2.19 46	2.84 39	3.67 38	4.68 32
1950 1950	.39 56	.39 53	.44 53	.77 59	1.79 59	4.53 59	5.52 56	5.33 54	8.08 52
1951 1951	.34 49	.39 51	.43 49	.56 52	.77 43	1.04 24	1.82 19	2.39 26	4.13 28
1952 1952	.34 50	.36 46	.49 56	.94 60	2.83 63	3.57 55	5.01 55	5.49 55	5.49 35
1953 1953	.22 31	.23 29	.27 25	.30 23	.38 22	.81 19	2.10 30	1.74 14	2.59 10
1954 1954	.22 32	.23 30	.27 26	.36 30	.57 30	1.61 38	2.03 28	2.08 20	2.89 15
1955 1955	.26 36	.30 35	.32 33	.40 33	1.04 50	1.39 29	3.74 45	4.86 50	5.49 36

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16541500  
 MAUNEL LUIS DITCH AT PUOHOKAMO A GL NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

LOWEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR	1	3	7	14	30	60	90	120	183
1956 1956	.34 51	.36 47	.41 47	.53 49	.98 49	1.58 37	1.90 23	2.75 29	7.61 49
1957 1957	.34 52	.37 50	.38 42	.41 36	.50 27	.93 21	2.34 33	4.20 43	5.41 34
1958 1958	.43 57	.43 56	.48 55	.56 53	3.16 64	4.49 58	4.39 53	5.02 52	6.22 46
1959 1959	.43 58	.52 59	.62 59	.76 58	1.85 60	2.46 48	3.21 41	4.49 44	6.25 47
1960 1960	.36 53	.36 48	.43 51	.49 45	.54 28	1.65 39	1.83 20	2.09 22	5.85 42
1961 1961	.28 37	.31 36	.36 39	.39 32	.58 32	1.08 26	1.12 13	1.63 13	3.04 16
1962 1962	.050 6	.060 6	.071 7	.084 7	.19 10	.71 16	1.10 12	1.45 11	1.60 3
1963 1963	.080 13	.080 11	.086 10	.16 14	.21 12	.26 6	1.92 24	2.02 19	3.30 19
1964 1964	.36 54	.41 54	.43 50	.54 51	.96 48	1.84 42	2.11 31	2.70 28	5.68 38
1965 1965	.080 14	.080 12	.099 11	.13 12	.29 15	1.66 40	3.40 42	3.10 31	5.08 33
1966 1966	.050 7	.060 7	.071 8	.18 16	.31 17	.97 22	1.06 11	1.88 17	2.77 14
1967 1967	.13 19	.15 19	.28 27	.38 31	.58 31	1.48 30	2.60 36	4.55 45	5.62 37
1968 1968	.13 20	.13 17	.13 16	.19 18	.46 25	.91 20	1.40 17	1.55 12	4.19 29
1969 1969	.090 16	.090 14	.10 12	.12 11	.16 7	2.62 50	4.88 54	4.80 48	11.6 60
1970 1970	.24 33	.26 33	.29 28	.41 34	1.17 56	1.50 33	3.44 43	4.17 42	5.71 39
1971 1971	.080 15	.097 15	.10 14	.11 9	.17 9	.61 12	.59 8	.64 2	3.96 26
1972 1972	.16 25	.17 26	.20 20	.26 22	.38 23	.80 18	1.60 18	2.17 24	3.66 22
1973 1973	.070 11	.070 10	.080 9	.084 8	.10 6	.22 5	.48 7	.67 3	1.91 6
1974 1974	.010 2	.010 1	.010 1	.029 2	.087 4	.19 3	.48 6	.53 1	3.15 18
1975 1975	.010 3	.010 2	.013 2	.025 1	.19 11	.34 8	.43 3	.75 4	1.19 1
1976 1976	.12 18	.14 18	.15 17	.18 17	.36 21	.51 10	.69 9	.82 6	2.13 7
1977 1977	.040 5	.047 5	.060 4	.071 6	.078 3	.15 2	.47 4	2.08 21	3.80 23
1978 1978	.11 17	.11 16	.11 15	.14 13	.26 13	.53 11	2.33 32	2.32 25	3.39 20
1979 1979	.16 26	.16 23	.18 19	.21 19	.60 33	2.10 45	1.94 25	3.39 36	3.57 21
1980 1980	.16 27	.16 24	.21 22	.46 42	1.06 51	5.89 63	7.93 61	9.08 62	16.5 66
1981 1981	.060 9	.060 8	.060 5	.061 4	.072 2	.12 1	.35 2	.88 7	1.79 5
1982 1982	.18 30	.19 27	.40 46	.51 47	1.89 61	4.72 60	7.16 59	10.1 64	12.9 64
1983 1983	.060 10	.060 9	.060 6	.069 5	.094 5	.21 4	.24 1	.88 8	1.75 4
1984 1984	.050 8	.080 13	.10 13	.12 10	.16 8	.79 17	1.16 14	.99 9	2.35 9
1985 1985	.030 4	.030 4	.030 3	.030 3	.054 1	.29 7	1.88 22	1.76 15	8.09 53

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16541500  
 MANUEL LUTS DITCH AT PUHOKAMOA GL NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

HIGHEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	3	7	15	30	60	90	120	183
1919 1919	48.0 62	35.7 62	30.3 57	19.4 57	12.6 57	9.62 56	6.86 61	6.92 58	6.31 53
1920 1920	121 12	103 7	91.4 6	51.3 14	28.4 26	14.7 42	10.2 50	8.79 50	6.25 54
1921 1921	118 15	101 9	60.6 21	46.9 17	31.2 21	23.9 19	19.7 19	16.2 21	13.7 21
1922 1922	132 5	107 6	99.0 3	72.3 4	51.0 4	41.6 3	37.5 3	38.6 1	29.1 2
1923 1923	130 6	108 5	98.7 4	64.3 8	34.2 16	24.8 16	23.3 11	22.5 7	18.8 8
1924 1924	128 8	93.7 12	80.0 11	64.6 7	40.2 9	34.1 5	26.5 7	22.5 8	20.0 7
1926 1926	80.0 52	57.3 43	38.4 46	35.9 29	21.1 38	12.4 49	8.91 53	8.00 51	5.96 58
1927 1927	142 1	78.0 31	63.3 19	54.9 11	38.3 11	24.9 15	22.8 13	18.9 15	18.4 9
1928 1928	105 19	77.0 34	48.4 36	37.8 27	31.6 20	26.7 12	23.7 10	19.6 12	17.8 11
1929 1929	87.0 48	71.0 39	61.9 20	54.0 12	47.3 7	30.2 9	23.9 9	22.9 6	20.2 6
1930 1930	53.0 59	53.0 46	53.0 27	41.3 25	36.1 13	29.4 10	28.1 6	23.4 5	22.2 5
1931 1931	43.0 63	42.0 58	32.6 51	23.7 52	19.2 44	16.1 38	13.8 33	11.2 41	9.89 40
1932 1932	40.0 64	40.0 60	34.9 48	28.7 40	20.6 41	17.7 31	15.0 28	14.5 27	13.1 24
1933 1933	34.0 66	34.0 63	25.7 61	13.8 65	11.7 60	9.26 58	8.53 54	7.79 53	5.92 59
1934 1934	37.0 65	31.0 64	29.6 58	21.8 54	17.7 50	14.1 44	13.0 37	12.0 36	9.23 44
1935 1935	52.0 60	46.0 55	39.6 45	25.0 48	18.1 47	12.4 50	10.5 48	9.55 48	8.88 46
1936 1936	71.0 56	37.2 61	18.7 65	14.3 63	10.9 62	9.37 57	8.34 55	7.17 57	7.50 50
1937 1937	99.0 31	89.3 15	57.3 25	46.9 18	34.7 15	25.3 13	22.4 16	19.4 14	16.9 14
1938 1938	105 20	95.0 11	72.6 14	41.6 24	30.5 23	22.2 21	21.1 17	17.8 17	15.4 16
1939 1939	88.0 47	52.3 48	41.7 43	27.2 44	19.0 45	16.0 39	13.1 36	13.6 29	11.9 28
1940 1940	105 21	90.7 13	63.9 18	42.5 23	27.9 27	16.6 35	12.5 41	10.1 46	9.12 45
1941 1941	105 22	88.7 16	48.8 35	28.8 39	19.8 42	13.9 46	12.9 38	12.5 34	12.1 26
1942 1942	105 23	90.0 14	86.6 8	57.2 10	44.8 8	33.0 6	26.0 8	20.2 10	17.4 12
1943 1943	77.0 54	48.3 52	31.9 54	24.7 50	17.3 52	14.0 45	11.8 44	10.4 45	9.59 42
1944 1944	99.0 32	47.3 53	26.2 60	15.0 62	9.98 63	8.33 62	6.54 63	6.31 62	5.31 63
1945 1945	76.0 55	50.7 51	34.4 49	26.5 46	18.0 49	11.6 52	8.98 52	7.43 54	8.31 47
1946 1946	99.0 33	55.3 44	32.3 53	28.0 43	21.6 37	17.1 32	14.1 32	13.1 31	10.7 35
1947 1947	105 24	96.3 10	88.1 7	57.7 9	38.7 10	24.0 18	18.8 21	17.4 18	15.8 15
1948 1948	105 25	83.7 21	68.4 15	45.8 20	37.5 12	27.6 11	23.2 12	20.1 11	17.9 10
1949 1949	99.0 34	69.0 41	47.1 40	34.5 33	26.2 32	18.3 29	15.5 26	12.6 33	11.5 32
1950 1950	105 26	70.7 40	49.9 32	44.4 21	29.9 24	25.0 14	20.4 18	17.3 19	14.2 18
1951 1951	99.0 35	79.3 29	65.4 16	50.6 15	35.6 14	24.1 17	19.0 20	16.9 20	12.1 27
1952 1952	82.0 51	53.7 45	43.9 41	28.6 42	18.2 46	12.4 51	11.6 45	11.9 37	9.69 41
1953 1953	79.0 53	46.0 56	33.4 50	24.8 49	20.7 40	16.8 34	12.4 42	9.48 49	7.18 52
1954 1954	60.0 58	52.0 49	30.8 56	18.9 59	15.7 55	10.4 55	9.66 51	9.57 47	8.18 49
1955 1955	99.0 36	85.7 18	82.7 10	52.7 13	32.2 18	21.1 23	22.7 14	19.5 13	15.1 17

DVSTART - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16541500  
 MANUEL LOUIS DITCH AT PUOHOKAMOA GL NR HUELLO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

HIGHEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR	1	3	7	15	30	60	90	120	183
1956 1956	105.27	102.8	78.4 12	50.7 16	28.6 25	21.3 22	18.1 23	16.0 22	13.2 23
1957 1957	93.0 43	82.3 24	58.0 23	33.3 34	19.3 43	12.7 48	12.6 40	10.6 44	8.19 48
1958 1958	99.0 37	72.7 37	50.3 31	38.2 26	33.9 17	23.2 20	17.8 24	14.7 25	11.7 30
1959 1959	90.0 45	71.7 38	47.9 38	26.5 47	17.4 51	15.7 40	12.9 39	11.1 42	11.6 31
1960 1960	99.0 38	84.7 19	57.7 24	36.1 28	30.8 22	19.6 26	18.3 22	15.7 23	13.5 22
1961 1961	127.9	86.7 17	52.1 29	46.7 19	25.4 33	17.8 30	12.3 43	12.1 35	10.2 37
1962 1962	99.0 39	52.7 47	32.5 52	22.9 53	14.3 56	9.12 59	6.74 62	5.73 63	6.08 57
1963 1963	93.0 44	80.3 27	73.1 13	66.9 5	49.5 5	30.7 8	22.5 15	18.6 16	14.1 19
1964 1964	106.18	82.0 25	58.9 22	35.2 32	26.9 31	16.2 37	13.4 34	13.8 28	10.9 34
1965 1965	107.17	77.0 35	64.1 17	43.6 22	31.9 19	20.1 25	14.7 29	13.2 30	12.2 25
1966 1966	119.14	78.0 32	49.2 34	31.5 36	27.8 28	19.1 28	15.5 27	15.1 24	11.3 33
1967 1967	104.28	79.7 28	49.3 33	35.7 30	21.9 36	14.7 43	11.2 47	10.9 43	9.95 39
1968 1968	96.0 41	76.3 36	47.9 39	29.6 38	22.3 35	19.2 27	13.3 35	11.3 40	11.9 29
1969 1969	134.3	127.1	92.7 5	73.7 3	61.8 2	50.3 2	40.9 2	34.0 3	25.3 3
1970 1970	122.11	77.7 33	52.7 28	35.4 31	27.6 29	16.6 36	11.6 46	11.8 39	10.0 38
1971 1971	103.29	63.3 42	50.9 30	33.1 35	27.3 30	21.1 24	17.0 25	14.6 26	13.9 20
1972 1972	124.10	83.3 22	38.3 47	19.7 56	12.4 58	6.92 65	7.98 56	6.43 61	5.62 60
1973 1973	95.0 42	51.3 50	30.9 55	28.7 41	24.0 34	17.0 33	14.4 31	11.9 38	9.42 43
1974 1974	97.0 40	78.7 30	57.0 26	30.7 37	18.1 48	10.7 53	7.87 57	6.52 60	5.60 61
1975 1975	66.0 57	30.7 65	22.8 63	14.0 64	9.30 65	8.98 60	7.82 58	6.57 59	4.89 64
1976 1976	51.0 61	25.7 66	16.6 66	10.7 66	8.21 66	7.19 64	5.48 66	4.43 66	3.27 66
1977 1977	100.30	81.0 26	48.1 37	24.5 51	17.1 53	12.9 47	10.3 49	7.82 52	7.30 51
1978 1978	83.0 50	47.0 54	21.4 64	15.2 61	11.7 61	8.77 61	7.66 59	7.23 55	6.12 56
1979 1979	115.16	83.3 23	43.6 42	26.8 45	20.8 39	15.2 41	14.5 30	13.0 32	10.3 36
1980 1980	135.2	125.2	114.1	102.1	85.8 1	62.4 1	47.2 1	38.4 2	29.9 1
1981 1981	121.13	84.7 20	40.4 44	19.4 58	9.92 64	5.76 66	5.79 65	4.45 65	4.11 65
1982 1982	134.4	123.3	83.4 9	64.7 6	49.1 6	38.2 4	31.9 4	26.6 4	22.6 4
1983 1983	89.0 46	43.9 57	24.3 62	21.0 55	12.0 59	7.98 63	5.85 64	5.24 64	5.50 62
1984 1984	87.0 49	41.3 59	29.6 59	18.7 60	15.8 54	10.7 54	7.42 60	7.21 56	6.18 55
1985 1985	130.7	115.4	100.2	76.2 2	55.4 3	32.3 7	28.5 5	21.7 9	17.0 13

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16541500  
 MANUEL LUIS DITCH AT PUOHOKAMOA GL NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN LOW-VALUE ANALYSIS (OCT-SEP)		MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN HIGH-VALUE ANALYSIS (OCT-SEP)	
WATER YEAR RANGE		WATER YEAR RANGE	
1919 1919	5.03 15	1919 1919	5.03 52
1920 1920	4.11 10	1920 1920	4.11 57
1921 1921	9.33 48	1921 1921	9.33 19
1922 1922	17.3 65	1922 1922	17.3 2
1923 1923	15.3 59	1923 1923	15.3 8
1924 1924	15.5 61	1924 1924	15.5 6
1926 1926	5.91 22	1926 1926	5.91 45
1927 1927	13.8 58	1927 1927	13.8 9
1928 1928	15.3 60	1928 1928	15.3 7
1929 1929	12.2 55	1929 1929	12.2 12
1930 1930	16.2 64	1930 1930	16.2 3
1931 1931	7.62 35	1931 1931	7.62 32
1932 1932	8.99 46	1932 1932	8.99 21
1933 1933	3.38 5	1933 1933	3.38 62
1934 1934	5.70 19	1934 1934	5.70 48
1935 1935	5.96 23	1935 1935	5.96 44
1936 1936	5.16 16	1936 1936	5.16 51
1937 1937	12.0 54	1937 1937	12.0 13
1938 1938	10.3 51	1938 1938	10.3 16
1939 1939	8.84 45	1939 1939	8.84 22
1940 1940	7.08 29	1940 1940	7.08 38
1941 1941	8.66 44	1941 1941	8.66 23
1942 1942	12.6 56	1942 1942	12.6 11
1943 1943	6.79 25	1943 1943	6.79 42
1944 1944	4.03 9	1944 1944	4.03 58
1945 1945	5.90 21	1945 1945	5.90 46
1946 1946	7.19 31	1946 1946	7.19 36
1947 1947	11.2 53	1947 1947	11.2 14
1948 1948	13.3 57	1948 1948	13.3 10
1949 1949	7.51 34	1949 1949	7.51 33
1950 1950	9.55 50	1950 1950	9.55 17
1951 1951	8.12 40	1951 1951	8.12 27
1952 1952	7.20 32	1952 1952	7.20 35
1953 1953	4.95 14	1953 1953	4.95 53
1954 1954	5.28 17	1954 1954	5.28 50
1955 1955	9.38 49	1955 1955	9.38 18
1956 1956	8.13 41	1956 1956	8.13 26
1957 1957	7.12 30	1957 1957	7.12 37
1958 1958	10.4 52	1958 1958	10.4 15
1959 1959	8.05 39	1959 1959	8.05 28
1960 1960	7.87 37	1960 1960	7.87 30

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16541500  
 MANUEL LUIS DITCH AT PPOHOKAMOA GL NR HUELO, MAUI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN LOW-VALUE ANALYSIS (OCT-SEP)		MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN HIGH-VALUE ANALYSIS (OCT-SEP)	
WATER YEAR RANGE		WATER YEAR RANGE	
1961 1961	5.89 20	1961 1961	5.89 47
1962 1962	3.81 7	1962 1962	3.81 60
1963 1963	8.23 42	1963 1963	8.23 25
1964 1964	8.01 38	1964 1964	8.01 29
1965 1965	8.28 43	1965 1965	8.28 24
1966 1966	6.78 24	1966 1966	6.78 43
1967 1967	7.25 33	1967 1967	7.25 34
1968 1968	6.80 26	1968 1968	6.80 41
1969 1969	15.8 62	1969 1969	15.8 5
1970 1970	7.02 28	1970 1970	7.02 39
1971 1971	7.72 36	1971 1971	7.72 31
1972 1972	3.79 6	1972 1972	3.79 61
1973 1973	5.65 18	1973 1973	5.65 49
1974 1974	3.26 4	1974 1974	3.26 63
1975 1975	2.89 2	1975 1975	2.89 65
1976 1976	2.14 1	1976 1976	2.14 66
1977 1977	4.63 12	1977 1977	4.63 55
1978 1978	4.76 13	1978 1978	4.76 54
1979 1979	6.96 27	1979 1979	6.96 40
1980 1980	18.4 66	1980 1980	18.4 1
1981 1981	3.16 3	1981 1981	3.16 64
1982 1982	15.9 63	1982 1982	15.9 4
1983 1983	3.97 8	1983 1983	3.97 59
1984 1984	4.27 11	1984 1984	4.27 56
1985 1985	9.24 47	1985 1985	9.24 20





DURATION CURVE STATISTICAL CHARACTERISTICS FOR ...  
 STATION ID: 16544000 W B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KAILIILI  
 PARAMETER CODE = 00060  
 STATISTIC CODE = 00003 MEAN

DURATION DATA VALUES ARE INTERPOLATED FROM DURATION TABLE:  
 DATA ARE NOT ANALYTICALLY FITTED TO A PARTICULAR STATISTICAL DISTRIBUTION,  
 AND THE USER IS RESPONSIBLE FOR ASSESSMENT AND INTERPRETATION.

ADDITIONAL CONDITIONS FOR THIS RUN ARE:  
 STATISTICS ARE BASED ON LOGARITHMS (BASE 10).  
 NUMBER OF VALUES IS REDUCED FOR EACH NEAR-ZERO OR ZERO VALUE.

NUMBER OF VALUES = 19 (NUMBER OF NEAR-ZERO VALUES = 0)  
 LISTING OF DATA FOLLOWS:

PERCENT OF TIME VALUE EQUALED OR EXCEEDED	DATA VALUE	(LOG =
95.0	0.42	-0.37287)
90.0	0.63	(LOG = -0.20196)
85.0	0.70	(LOG = -0.15612)
80.0	0.77	(LOG = -0.11467)
75.0	0.87	(LOG = -0.05826)
70.0	1.00	(LOG = 0.00134)
65.0	1.21	(LOG = 0.08143)
60.0	1.35	(LOG = 0.12875)
55.0	1.48	(LOG = 0.17142)
50.0	1.65	(LOG = 0.21754)
45.0	1.96	(LOG = 0.29133)
40.0	2.34	(LOG = 0.36832)
35.0	2.82	(LOG = 0.45009)
30.0	3.45	(LOG = 0.53746)
25.0	4.23	(LOG = 0.62600)
20.0	5.23	(LOG = 0.71890)
15.0	7.01	(LOG = 0.84591)
10.0	11.8	(LOG = 1.07151)
5.0	25.1	(LOG = 1.39893)

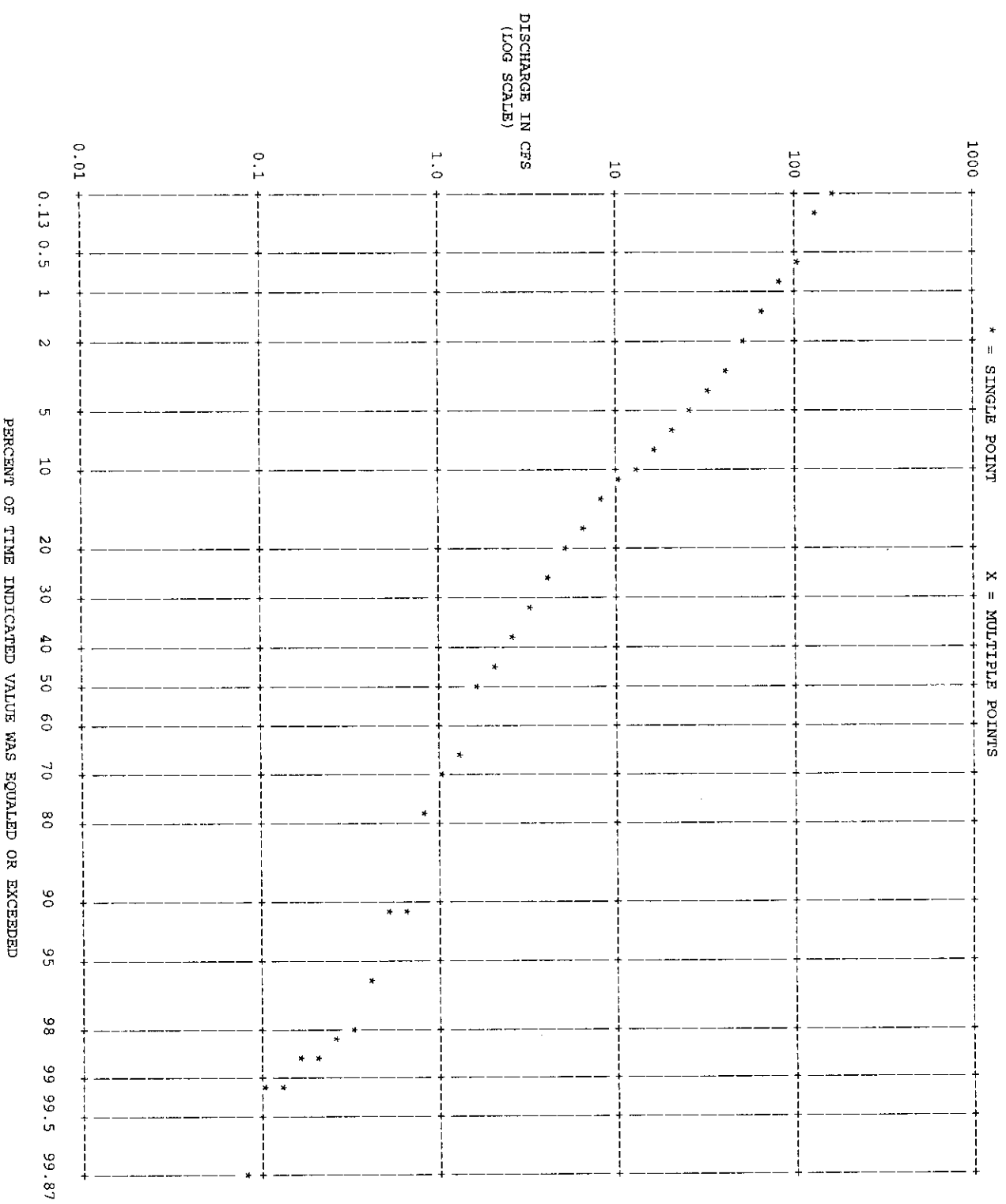
MEAN OF LOGS = 0.31606

STANDARD DEVIATION OF LOGS = 0.46333 (VARIABILITY INDEX - SEE USGS WSP 1542-A)

COEFFICIENT OF VARIATION = 1.46597

COEFFICIENT OF SKEW = 0.74911

LOG-NORMAL DURATION PLOT FOR PERIOD OCT TO SEP  
 STATION ID: 1654000 W B PUOHOKAMO A STR AT HAIKU-UKA BDRY NR KAILITILI (YEARS 1919 - 1935)  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN



DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16544000  
 W B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KAILILLI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

LOWEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR RANGE	1	2	3	7	14	30	60	90	120	183
1920 1920	.15	.15	.15	.15	.16	.32	.63	.98	1.45	2.24
1921 1921	.080	.080	.080	.083	.086	.087	.76	1.20	2.32	3.54
1922 1922	.46	.46	.46	.48	.54	.61	.82	1.24	1.59	3.10
1923 1923	.62	.62	.62	.66	.69	.87	2.93	3.28	3.53	3.91
1924 1924	.46	.46	.46	.51	.59	.86	1.36	2.98	2.72	3.60
1925 1925	.62	.62	.62	.62	.80	1.20	1.97	3.18	4.31	6.52
1926 1926	.31	.36	.36	.42	.46	.69	1.27	1.31	1.58	1.64
1927 1927	.15	.20	.20	.29	.35	.48	1.78	2.07	3.24	3.32
1933 1933	.25	.25	.25	.31	.39	.42	.84	1.19	1.44	1.82
1934 1934	.23	.23	.23	.23	.28	.35	1.05	2.82	2.78	3.39

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16544000  
 W B PUHOKAMOA STR AT HAIKU-UKA BDRY NR KAILIILLI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

HIGHEST MEAN VALUE AND RANKING FOR THE FOLLOWING NUMBER OF CONSECUTIVE DAYS  
 FOR PERIOD OCT TO SEP

WATER YEAR	1	3	7	15	30	60	90	120	183
1920 1920	94.0	50.0	48.0	26.1	15.2	8.47	5.99	5.41	4.25
1921 1921	111	66.3	33.8	28.9	18.4	13.9	11.8	10.0	8.69
1922 1922	128	96.7	80.1	46.9	37.2	26.2	24.8	25.2	18.5
1923 1923	121	82.7	69.3	41.1	21.9	14.3	11.5	9.90	8.57
1924 1924	141	96.3	44.4	25.6	15.2	10.4	9.32	8.91	7.42
1925 1925	150	70.3	45.3	31.9	25.7	15.3	11.9	10.0	8.73
1926 1926	50.0	24.7	13.8	7.84	7.66	4.76	4.13	3.47	2.85
1927 1927	108	46.5	24.4	14.1	8.57	7.05	6.55	5.59	5.37
1933 1933	124	95.0	51.2	25.0	17.1	11.5	9.71	8.40	6.27
1934 1934	155	62.4	45.6	33.5	21.9	14.9	13.9	12.0	9.23

DVSTAT - DAILY VALUES STATISTICAL PROGRAM

STATION ID - 16544000  
 W B PUOHOKAMO STR AT HAIKU-UKA BDRY NR KALLILLI  
 PARAMETER CODE - 00060 DISCHARGE  
 STATISTIC CODE - 00003 MEAN

ANNUAL AND/OR SEMI-ANNUAL VALUES

MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN LOW-VALUE ANALYSIS (OCT-SEP)			MEAN VALUE AND RANKING FOR PERIOD INCLUDED IN HIGH-VALUE ANALYSIS (OCT-SEP)		
WATER YEAR RANGE			WATER YEAR RANGE		
1920 1920	2.93	2	1920 1920	2.93	9
1921 1921	5.54	5	1921 1921	5.54	6
1922 1922	10.5	10	1922 1922	10.5	1
1923 1923	6.21	8	1923 1923	6.21	3
1924 1924	5.67	6	1924 1924	5.67	5
1925 1925	6.95	9	1925 1925	6.95	2
1926 1926	2.64	1	1926 1926	2.64	10
1927 1927	4.40	4	1927 1927	4.40	7
1933 1933	3.70	3	1933 1933	3.70	8
1934 1934	6.19	7	1934 1934	6.19	4