

State Water Survey Division

SURFACE WATER SECTION



SWS Contract Report 251

EVALUATION OF HYDRAULIC GEOMETRY PARAMETERS
FOR VARIOUS LOW-FLOW RELEASES DOWNSTREAM
OF DAMS ON ILLINOIS STREAMS

By

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Urbana, Illinois

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INTRODUCTION

Modification of river flow resulting from the construction and operation of a dam or impounding structure has been identified as a significant factor causing water quality and aquatic species problems. State, local, and corporate water use planning often presumes that all water in a stream is potentially available for off-stream uses. This assumption clearly contradicts legislative mandates regarding the public interest in preserving water in the stream for instream flow uses, e.g., for water quality and aquatic organisms, fish and wildlife. State certified and federally issued 404 permits and state construction permits must consider the impact of construction and operation of dams on the water quality and instream flow needs downstream of such structures. The regulatory and institutional solutions to this problem require the development of hydraulic geometry parameters (area of flow section, A; mean flow velocity, V; top width of flow section, W; and mean depth of flow section, D) for different flow releases from the reservoirs and the assessment of economic and instream-flow-need impacts for the various flow releases considered. These assessments can indicate guidelines for institutional and regulatory framework. Data needed for these assessments (which are being funded by the Illinois Environmental Protection Agency) include the evaluation of hydraulic geometry parameters for various flow releases. This evaluation is partially funded by the Division of Water Resources, Illinois Department of Transportation, and is the subject matter of this report.

Acknowledgements

The study was jointly supported by the Division of Water Resources of the Illinois Department of Transportation and the Illinois State Water Survey of the Illinois Institute of Natural Resources. Bruce Barker of the Division of Water Resources served in a liaison capacity during the course of this study. Ganapathi S. Ramamurthy, graduate research assistant at the University of Illinois, helped with computer programs and hydrologic analyses. George W. Curtis of the U.S. Geological Survey, Champaign, Illinois, provided the needed discharge measurements at various gaging stations.

LOW-FLOW RELEASE CRITERIA

The U.S. Geological Survey publishes observed daily flows at its various gaging stations on streams in Illinois every year. These daily flow data, updated to September 1976, are available on DISK at the State Water Survey for quick computer processing. The information on USGS gaging station number, years of daily flow record available, the name of the stream and gaging station, and the drainage area above the gaging station, is listed in Table 1 for 229 gaging stations in Illinois.

Low-Flow Release Criteria

The following eight low-flow release levels were considered in evaluation of economic and other impacts for mandating a particular low-flow release from an impounding reservoir.

1. Median 31-day low flow during the period May-October, Q(31)P
2. Half median 31-day low flow during the period May-October, 0.5Q(31)P
3. Median 61-day low flow during the period May-October, Q(61)P
4. Half median 61-day low flow during the period May-October, 0.5Q(61)P
5. Flow at 90 percent duration using daily flows May-October, Q(90)P
6. Flow at 85 percent duration using daily flows May-October, Q(85)P
7. Flow at 90 percent duration using daily flows for the record, Q(90)
8. Flow at 85 percent duration using daily flows for the record, Q(85)

The partial record, May through October, was used to determine whether Q(90) and Q(85) were higher or lower than Q(90)P and Q(85)P, respectively.

Computer programs were developed for calculating the 8 flow releases at each of the 229 gaging stations. The flow releases are listed in Table 2 for levels 1,3,5,6,7, and 8. Low-flow releases for levels 2 and 4 are 50 percent of those for levels 1 and 3.

Flow-Duration Curves

In developing the flow-duration information, two probability levels were determined for a flow Q: p_1 for flow $< Q$ and p_2 for flow $> Q$. Then, the flow-duration, p , in percent for flow Q is:

$$p = [p_2 + (100 - p_1)]/2$$

Let there be 21 daily flows equal to Q cfs in the daily flow record at a gaging station. Assuming the normal law of errors, the developed flow-duration applies to 11th Q value, and allows 10 values to be slightly lower (but not lower than the next lower observed value) and 10 values to be slightly higher (but not higher than the next higher observed value). A few examples are given below for the annual record.

USGS No. 03 345500

USGS No. 03 346000

<u>P₁</u>	<u>P₂</u>	<u>P</u>	<u>Q,cfs</u>	<u>P₁</u>	<u>P₂</u>	<u>P</u>	<u>Q,cfs</u>
0.10	99.94	99.92	3.00	1.13	100.00	99.43	0.00
0.30	99.89	99.80	4.00	2.33	98.36	98.02	0.20
0.50	99.54	99.52	9.00	3.16	97.26	97.05	0.40
1.12	99.05	98.96	13.00	5.14	95.21	95.03	1.00
2.10	98.23	98.07	17.00	10.14	90.15	90.01	2.40
3.05	97.33	97.14	20.00	15.23	85.09	84.93	4.40
5.20	95.13	94.97	26.00	20.17	80.01	79.92	6.60
10.36	90.04	89.84	40.00				
15.11	85.06	84.97	57.00				
20.15	80.14	79.99	82.00				

The flows at 85 and 90 percent duration were determined by straight-line interpolation.

The lowest average flows over 31-day and 61-day periods during May through October each year as well as the mid-date of the low-flow occurrence were calculated for each year of record at a gaging station. These flows were ranked from low to high and the flow at the 50 percent probability or a 2-yr recurrence interval was interpolated from the flows at the nearest lower and higher probability levels.

EVALUATION OF HYDRAULIC GEOMETRY PARAMETERS

The following criteria were used in selecting the stations for developing hydraulic geometry parameters for the 8 low-flow releases.

1. The daily flow record should be 16 years or more to provide satisfactory flow estimates for the 8 low-flow release criteria.
2. The flow corresponding to 90 percent duration should be greater than zero for both $Q(90)$ and $Q(90)P$.
3. The Wabash, Ohio, and Mississippi Rivers (i.e., the interstate rivers) are not to be included.

A total of 127 gaging stations met the above criteria. However, 4 stations were excluded (04091500--Little Calumet River at Harvey, 05538000--Des Plaines River at Joliet, 05560000--Illinois River at Peoria, and 05584000--Illinois River at Beardstown) because the daily flow data available are for the years prior to 1939 and because the flow in later years have significantly changed from the previous flow on account of change in regulation procedures. The final list of 123 selected gaging stations is given in Table 3.

Concept of Hydraulic Geometry

The concept of hydraulic geometry of a stream system was first stated by Leopold and Maddock (1953). It suggested relationships between width, W , flow depth, D , and flow velocity, V , at a particular cross section of the stream, with the discharge, Q .

$$W = a Q^b$$

$$D = c Q^f$$

$$V = k Q^m$$

Leopold and Maddock showed that the above relations are valid for different cross sections along the stream, even when the values of a, b, c, f, k , and m change. These relations were found to be greatly similar and consistent, even for stream systems in different physiographic settings.

Stall and Fok (1968) confirmed the general relationships for Illinois streams. They used the data from 166 gaging stations to develop parameters needed to define the hydraulic geometry of the streams and presented the results as separate sets of equations for 18 major river basins. The general

form of the relationship is:

$$\ln (\text{parameter}) = a - bF + c \ln A_d$$

in which parameter refers to Q , A (area of flow section), $V (=Q/A)$, W (width of the stream at the surface), and $D (=A/W)$: a , b , and c are coefficients; F and A_d denote flow duration and drainage area in square miles, respectively; and \ln represents the natural logarithm. The set of values of a , b , and c for a parameter were developed by considering values of the parameter at 9 values of F (0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, and 0.9) at each of the gaging stations in a major river basin.

Hydraulic Geometry Parameters

It was the intent to use the already developed hydraulic geometry equations for calculating hydraulic geometry parameters for $Q(90)$ and $Q(85)$ and for the other 6 flow releases from corresponding F values from flow-duration curves. A preliminary investigation for the gaging stations on the Sangamon River Basin revealed that the developed relationships yielded parameter values which were significantly different from those indicated by the actual data.

The hydraulic geometry relations were significantly improved by dividing the Sangamon basin into 3 sub-basins on the basis of flow duration (Singh, 1971) and by making a few changes in the structure of the equation. These improved relations indicated not only better fit over the range of F values, but also yielded considerably lower estimates of standard error.

It was decided to calculate the parameters A , V , W , and D at each gaging station for the discharges corresponding to the 3 low flow release criteria with the following procedure.

1. Plot A , V , W , and D versus Q on logarithmic paper for the range of Q encompassing all the low-flow release values being used as criteria.
2. Draw best-fit straight lines indicating the general relation
$$\log (\text{parameter}) = a + b (\log Q)$$
in which a is the intercept and b is a coefficient.
3. Check that V and A , and D and W relations are compatible in the sense that $V \times A = Q$ and $D \times W = A$.

4. Calculate a set of values of A, V, W, and D for each of the 8 low flow release criteria.

Relevant information was obtained from the U. S. Geological Survey office in Champaign, Illinois, to develop A, V, W, and D versus Q curves for 26 gaging stations to update the information available at other 97 gaging stations.

Values of the 5 parameters (Q, A, V, W, and D) for each flow release at the 123 gaging stations are given in Table 4. The information will be used in developing economic and instream-flow-need impacts (as related to fish) of mandating one of the 8 low-flow release criteria for various combinations of reservoir design frequency and the desired low flow release frequency. The units of the hydraulic geometry parameters are:

Q in cfs
A in sq ft
V in ft/sec
W in ft
D in ft

REFERENCES

- Leopold, Luna B., and Thomas Maddock, 1953. The hydraulic geometry of stream channels and some physiographic implications. U.S. Geological Survey Professional Paper 252.
- Singh, Krishan, P. 1971. Model flow duration and stream flow variability. Water Resources Research, Vol. 7, No. 4, p. 1031-1036.
- Stall, John B., and Yu-Si, Fok. 1968. Hydraulic geometry of Illinois streams. University of Illinois Water Resources Center, Research Report No. 15, . 47 p.

TABLE 1. STREAM GAGING STATIONS IN ILLINOIS

TABLE 1. STREAM GAGING STATIONS IN ILLINOIS

NO.	USGS NO.	RECORD YEARS	STREAM AND GAGING STATION	D.A. IN SQ MI
1	03336500	49-71	BLUEGRASS CREEK AT POTOMAC	35.00
2	03336900	58 - 76	SALT FORK NEAR ST. JOSEPH	134.00
3	03337000	48 - 76	BONEYARD CREEK AT URBANA	4.46
4	03337500	36 - 58	WEST BRANCH SALT FORK AT URBANA	68.00
5	03338000	44 - 58	SALT FORK VERMILION RIVER NEAR HOMER	340.00
6	03338500	39 - 58	VERMILION RIVER NEAR CATLIN	958.00
7	03339000	28 - 76	VERMILION RIVER NEAR DANVILLE	1290.00
8	03343400	60 - 76	EMBARRAS RIVER NEAR CAMARGO	186.00
9	03344000	70 - 76	EMBARRAS RIVER NEAR DIONA	919.00
10	03344500	50 - 76	RANGE CREEK NEAR CASEY	7.61
11	03345000	39 - 45	EMBARRAS RIVER AT NEWTON	1392.00
12	03345500	14-76	EMBARRAS RIVER AT STE. MARIE	1516.00
13	03346000	40 - 76	NORTH FORK EMBARRAS RIVER NEAR OBLONG	319.00
14	03377500	27 - 69	WABASH RIVER AT MT. CARMEL	28635.00
15	03378000	40 - 76	BONPAS CREEK AT BROWNS	228.00
16	03378635	66 - 76	LITTLE WABASH RIVER NEAR EFFINGHAM	240.00
17	03378900	65 - 76	LITTLE WABASH RIVER AT LOUISVILLE	745.00
18	03379500	14-76	LITTLE WABASH RIVER BELOW CLAY CITY	1131.00
19	03380350	65 - 76	SKILLET FORK NEAR IUKA	208.00
20	03380475	59 - 76	HORSE CREEK NEAR KEENES	97.20
21	03380500	28 - 76	SKILLET FORK AT WAYNE CITY	464.00
22	03381500	39 - 76	LITTLE WABASH RIVER AT CARMi	3102.00
23	03382100	65 - 76	S. F. SALINE RIVER NEAR CARRIER MILLS	147.00
24	03382170	68 - 76	BRUSHY CREEK NEAR HARCO	13.30
25	03382510	66 - 76	EAGLE CREEK NEAR EQUALITY	8.51
26	03384450	67 - 76	LUSK CREEK NEAR EDDYVILLE	42.90
27	03384500	40-71	OHIO RIVER AT GOLCONDA	143900.00
28	03385000	49 - 75	HAYES CREEK AT GLENDALE	19.10
29	03385500	54 - 63	L. GLENDALE INLET NEAR DIXON SPRINGS	1.05
30	03386000	54-63	L. GLENDALE OUTLET NEAR DIXON SPRINGS	1.98
31	03386500	50-71	SUGAR CREEK NEAR DIXON SPRINGS	9.93
32	03611500	28 - 76	OHIO RIVER AT METROPOLIS	203000.00
33	03612000	24 - 76	CACHE RIVER AT FORMAN	244.00
34	04091500	16-33	LITTLE CALUMET RIVER AT HARVEY	570.00
35	05414820	67-76	SINSINAWA RIVER NEAR MENOMINEE	39.60
36	05415500	39-68	E. F. GALENA RIVER AT COUNCIL HILL	17.60
37	05419000	34 - 76	APPLE RIVER NEAR HANOVER	247.00
38	05420000	40 - 76	PLUM RIVER BELOW CARROLL CK. NEAR SAVANNA	230.00
39	05435000	51 - 71	CEDAR CREEK NEAR WINSLOW	1.31
40	05435500	14-76	PECATONICA RIVER AT FREEPORT	1326.00

TABLE 1. CONTINUED

NO.	USGS NO.	RECORD YEARS	STREAM AND GAGING STATION	D.A. IN SQ MI
41	05437000	39 - 58	PECATONICA RIVER AT SHIRLAND	2550.00
42	05437500	39 - 76	ROCK RIVER AT ROCKTON	6363.00
43	05438250	61 - 76	COON CREEK AT RILEY	85.10
44	05438500	39 - 76	KISHWAUKEE RIVER AT BELVIDERE	538.00
45	05439000	25 - 33	S. B. KISHWAUKEE RIVER AT DEKALB	77.70
46	05439500	39-76	S. B. KISHWAUKEE RIVER NEAR FAIRDALE	387.00
47	05440000	39 - 76	KISHWAUKEE RIVER NEAR PERRYVILLE	1099.00
48	05440500	39-71	KILLBUCK CREEK NEAR MONROE CENTER	117.00
49	05441000	39 - 58	LEAF RIVER AT LEAF RIVER	103.00
50	05441500	39 - 49	ROCK RIVER AT OREGON	8205.00
51	05442000	39 - 51	KYTE RIVER NEAR FLAGG CENTER	116.00
52	05443500	34-71	ROCK RIVER AT COMO	8755.00
53	05444000	39 - 76	ELKHORN CREEK NEAR PENROSE	146.00
54	05445500	42 - 58	ROCK CREEK NEAR MORRISON	158.00
55	05446500	39 - 76	ROCK RIVER NEAR JOSLIN	9551.00
56	05447000	39 - 58	GREEN RIVER AT AMBOY	201.00
57	05447500	36 - 76	GREEN RIVER NEAR GENESEO	1003.00
58	05448000	41 - 76	MILL CREEK AT MILAN	62.40
59	05466000	40 - 76	EDWARDS RIVER NEAR ORION	155.00
60	05466500	34 - 76	EDWARDS RIVER NEAR NEW BOSTON	445.00
61	05467000	34 - 76	POPE CREEK NEAR KEITHSBURG	183.00
62	05467500	40 - 58	HENDERSON CREEK NEAR LITTLE YORK	151.00
63	05468000	40 - 51	NORTH HENDERSON CREEK NEAR SEATON	67.10
64	05468500	40 - 71	CEDAR CREEK AT LITTLE YORK	130.00
65	05469000	34 - 76	HENDERSON CREEK NEAR OQUAWKA	432.00
66	05469500	39-71	SOUTH HENDERSON CREEK AT BIGGSVILLE	82.90
67	05495500	44 - 76	BEAR CREEK NEAR MARCELLINE	349.00
68	05510000	55 - 66	HADLEY CREEK NEAR BARRY	40.90
69	05510500	39 - 73	HADLEY CREEK AT KINDERHOOK	72.70
70	05511000	41-47	HADLEY CREEK NEAR SHINN	73.60
71	05512500	39 - 76	BAY CREEK AT PITTSFIELD	39.40
72	05513000	39 - 76	BAY CREEK AT NEBO	161.00
73	05520000	44 - 76	SINGLETON DITCH AT ILLINOI	220.00
74	05520500	15-76	KANKAKEE RIVER AT MOMENCE	2294.00
75	05525000	44 - 76	IROQUOIS RIVER AT IROQUOIS	686.00
76	05525500	48 - 76	SUGAR CREEK AT MILFORD	446.00
77	05526000	23 - 76	IROQUOIS RIVER NEAR CHEBANSE	2091.00
78	05526500	49 - 75	TERRY CREEK NEAR CUSTER PARK	12.10
79	05527000	15-33	KANKAKEE RIVER AT CUSTER PARK	4810.00
80	05527500	33-76	KANKAKEE RIVER NEAR WILMINGTON	5150.00

TABLE 1. CONTINUED

NO.	USGS NO.	RECORD YEARS	STREAM AND GAGING STATION	D.A. IN SQ MI
81	05527800	67 - 76	DES PLAINES RIVER AT RUSSELL	123.00
82	05528000	45 - 76	DES PLAINES RIVER NEAR GURNEE	232.00
83	05528500	52 - 76	BUFFALO CREEK NEAR WHEELING	19.60
84	05529000	40 - 76	DES PLAINES RIVER NEAR DES PLAINES	360.00
85	05529500	52 - 76	MCDONALD CREEK NEAR MOUNT PROSPECT	7.93
86	05530000	50 - 76	WELLER CREEK AT DES PLAINES	13.20
87	05530500	50 - 58	WILLOW CREEK NEAR PARK RIDGE	19.70
88	05531000	50 - 73	SALT CREEK NEAR ARLINGTON HEIGHTS	32.10
89	05531500	45 - 76	SALT CREEK AT WESTERN SPRINGS	114.00
90	05532000	51 - 76	ADDISON CREEK AT BELLWOOD	17.90
91	05532500	43 - 76	DES PLAINES RIVER AT RIVERSIDE	630.00
92	05533000	51-76	FLAG CREEK NEAR WILLOW SPRINGS	16.50
93	05533500	15-44	DES PLAINES RIVER AT LEMONT	684.00
94	05534500	52 - 76	NORTH BRANCH CHICAGO RIVER AT DEERFIELD	19.70
95	05535000	51-76	SKOKIE RIVER AT LAKE FOREST	13.00
96	05535070	67 - 76	SKOKIE RIVER NEAR HIGHLAND PARK	21.10
97	05535500	52 - 76	W. F. OF N. B. CHICAGO RIVER AT NORTHBROOK	11.50
98	05536000	50 - 76	NORTH BRANCH CHICAGO RIVER AT NILES	100.00
99	05536210	64 - 76	THORN CREEK NEAR CHICAGO HEIGHTS	17.20
100	05536215	49 - 76	THORN CREEK AT GLENWOOD	24.70
101	05536235	48 - 76	DEER CREEK NEAR CHICAGO HEIGHTS	23.10
102	05536255	48 - 76	BUTTERFIELD CREEK AT FLOSSMOOR	23.50
103	05536265	48 - 76	LANSING DITCH NEAR LANSING	8.84
104	05536270	48 - 76	NORTH CREEK NEAR LANSING	16.80
105	05536275	48 - 76	THORN CREEK AT THORNTON	104.00
106	05536290	47 - 76	LITTLE CALUMET RIVER AT SOUTH HOLLAND	205.00
107	05536340	50 - 76	MIDLOTHIAN CREEK AT OAK FOREST	12.60
108	05536500	51 - 76	TINLEY CREEK NEAR PALOS PARK	11.20
109	05537000	38 - 70	CHICAGO SANITARY & SHIP CANAL AT LOCKPORT	740.00
110	05537500	51-76	LONG RUN NEAR LEMONT	20.90
111	05538000	15-31	DES PLAINES RIVER AT JOLIET	1503.00
112	05538500	25 - 33	SPRING CREEK AT JOLIET	19.60
113	05539000	44 - 76	HICKORY CREEK AT JOLIET	107.00
114	05539900	61-76	W. B. DU PAGE RIVER NEAR WEST CHICAGO	28.50
115	05540095	68-76	W. B. DU PAGE RIVER NEAR WARRENVILLE	90.40
116	05540500	40 - 76	DU PAGE RIVER AT SHOREWOOD	324.00
117	05542000	39 - 76	MAZON RIVER NEAR COAL CITY	455.00
118	05543500	39 - 76	ILLINOIS RIVER AT MARSEILLES	8259.00
119	05548280	66 - 76	NIPPERSINK CREEK NEAR SPRING GROVE	192.00
120	05549000	48 - 76	BOONE CREEK NEAR MCHENRY	15.50

TABLE 1. CONTINUED

NO.	USGS NO.	RECORD YEARS	STREAM AND GAGING STATION	D.A. IN SQ MI
121	05550000	15 - 76	FOX RIVER AT ALGONQUIN	1403.00
122	05550500	51 - 76	POPLAR CREEK AT ELGIN	35.20
123	05551200	60 - 76	FERSON CREEK NEAR ST. CHARLES	51.70
124	05551700	60 - 76	BLACKBERRY CREEK NEAR YORKVILLE	70.20
125	05552500	24 - 76	FOX RIVER AT DAYTON	2642.00
126	05554000	42 - 62	N. F. VERMILION RIVER NEAR CHARLOTTE	186.00
127	05554500	42 - 76	VERMILION RIVER AT PONTIAC	579.00
128	05555000	21 - 30	VERMILION RIVER AT STREATOR	1084.00
129	05555300	71 - 76	VERMILION RIVER NEAR LEONORE	1251.00
130	05555500	31 - 71	VERMILION RIVER AT LOWELL	1278.00
131	05556500	36 - 76	BUREAU CREEK AT PRINCETON	196.00
132	05557000	36 - 66	WEST BUREAU CREEK AT WYANET	86.70
133	05557500	36 - 66	EAST BUREAU CREEK NEAR BUREAU	99.00
134	05558000	40 - 51	BUREAU CREEK AT BUREAU	485.00
135	05558500	49 - 71	CROW CREEK (WEST) NEAR HENRY	56.20
136	05559000	49 - 71	GIMLET CREEK AT SPARLAND	5.66
137	05559500	44 - 71	CROW CREEK NEAR WASHBURN	115.00
138	05560000	10 - 38	ILLINOIS RIVER AT PEORIA	14165.00
139	05560500	48 - 76	FARM CREEK AT FARMDALE	27.40
140	05561000	54 - 76	ACKERMAN CREEK AT FARMDALE	11.20
141	05561500	48 - 76	FONDULAC CREEK NEAR EAST PEORIA	5.54
142	05562000	43 - 76	FARM CREEK AT EAST PEORIA	61.20
143	05563000	44 - 62	KICKAPOO CREEK NEAR KICKAPOO	119.00
144	05563500	42 - 71	KICKAPOO CREEK AT PEORIA	297.00
145	05564400	58 - 76	MONEY CREEK NEAR TOWANDA	49.00
146	05564500	33 - 58	MONEY CREEK ABOVE LAKE BLOOMINGTON	53.10
147	05565000	38 - 58	HICKORY CREEK ABOVE LAKE BLOOMINGTON	9.81
148	05566000	49 - 60	E. B. PANTHER CREEK NEAR GRIDLEY	6.30
149	05566500	49 - 76	E. B. PANTHER CREEK AT EL PASO	30.50
150	05567000	49 - 60	PANTHER CREEK NEAR EL PASO	93.90
151	05567500	44 - 76	MACKINAW RIVER NEAR CONGERVILLE	767.00
152	05568000	21 - 56	MACKINAW RIVER NEAR GREEN VALLEY	1089.00
153	05568500	39 - 76	ILLINOIS RIVER AT KINGSTON MINES	15819.00
154	05568660	72 - 75	DUCK CREEK NEAR LIVERPOOL	20.00
155	05568800	59 - 76	INDIAN CREEK NEAR WYOMING	62.70
156	05569500	42 - 76	SPOON RIVER AT LONDON MILLS	1062.00
157	05570000	14 - 76	SPOON RIVER AT SEVILLE	1636.00
158	05570350	71 - 76	BIG CREEK AT ST. DAVID	26.70
159	05570360	71 - 76	EVELYN BRANCH NEAR BRYANT	6.20
160	05570370	71 - 76	BIG CREEK NEAR BRYANT	40.30

TABLE 1. CONTINUED

NO.	USGS NO.	RECORD YEARS	STREAM AND GAGING STATION	D.A. IN SQ MI
161	05571000	48 - 76	SANGAMON RIVER AT MAHOMET	362.00
162	05571500	51 - 59	GOOSE CREEK NEAR DELAND	47.90
163	05572000	14 - 76	SANGAMON RIVER AT MONTICELLO	550.00
164	05572450	66 - 76	FRIENDS CREEK AT ARGENTA	111.00
165	05574000	51 - 75	SOUTH FORK SANGAMON RIVER NEAR NOKOMIS	11.00
166	05574500	49 - 76	FLAT BRANCH NEAR TAYLORVILLE	276.00
167	05575500	44 - 61	SOUTH FORK SANGAMON RIVER AT KINCAID	562.00
168	05575800	67 - 76	HORSE CREEK AT PAWNEE	52.20
169	05575830	73 - 76	BRUSH CREEK NEAR DIVERNON	32.40
170	05576000	49 - 76	SOUTH FORK SANGAMON RIVER NEAR ROCHESTER	867.00
171	05576500	14 - 56	SANGAMON RIVER AT RIVERTON	2618.00
172	05577500	49 - 76	SPRING CREEK AT SPRINGFIELD	107.00
173	05578500	42 - 76	SALT CREEK NEAR ROWELL	335.00
174	05579500	48 - 76	LAKE FORK NEAR CORNLAND	214.00
175	05580000	48 - 76	KICKAPOO CREEK AT WAYNESVILLE	227.00
176	05580500	44 - 71	KICKAPOO CREEK NEAR LINCOLN	306.00
177	05580950	74 - 77	SUGAR CREEK NEAR BLOOMINGTON	34.60
178	05581500	44 - 71	SUGAR CREEK NEAR HARTSBURG	333.00
179	05582000	41 - 76	SALT CREEK NEAR GREENVIEW	1804.00
180	05582500	49 - 74	CRANE CREEK NEAR EASTON	26.50
181	05583000	39 - 76	SANGAMON RIVER NEAR OAKFORD	5093.00
182	05584000	20 - 38	ILLINOIS RIVER AT BEARDSTOWN	24227.00
183	05584400	60 - 76	DROWNING FORK AT BUSHNELL	26.30
184	05584500	44 - 76	LA MOINE RIVER AT COLMAR	655.00
185	05585000	21 - 76	LA MOINE RIVER AT RIPLEY	1293.00
186	05585500	38 - 76	ILLINOIS RIVER AT MEREDOSIA	26028.00
187	05586000	50 - 75	N. F. MAUVAISE TERRE CR. NR. JACKSONVILLE	29.10
188	05586500	50 - 75	HURRICANE CREEK NEAR ROODHOUSE	2.30
189	05586800	59 - 76	OTTER CREEK NEAR PALMYRA	61.10
190	05587000	40 - 76	MACOUPIN CREEK NEAR KANE	868.00
191	05587500	39 - 69	MISSISSIPPI RIVER AT ALTON	171500.00
192	05587900	69 - 76	CAHOKIA CREEK AT EDWARDSVILLE	212.00
193	05588000	40 - 76	INDIAN CREEK AT WANDA	36.70
194	05589000	39 - 49	LONG LAKE AT STALLINGS	5.00
195	05589500	39 - 76	CANTEEN CREEK AT CASEYVILLE	22.60
196	05590000	49 - 76	KASKASKIA RIVER AT BONDVILLE	12.40
197	05590400	64 - 76	KASKASKIA RIVER NEAR PESOTUM	109.00
198	05590500	54 - 64	KASKASKIA RIVER AT FICKLIN	126.00
199	05590800	72 - 76	LAKE FORK AT ATWOOD	149.00
200	05591200	70 - 76	KASKASKIA RIVER AT COOKS MILLS	473.00

TABLE 1. CONCLUDED

NO.	USGS NO.	RECORD YEARS	STREAM AND GAGING STATION	D.A. IN SQ MI
201	05591500	50 - 76	ASA CREEK AT SULLIVAN	8.05
202	05592000	40 - 76	KASKASKIA RIVER AT SHELBYVILLE	1054.00
203	05592100	70 - 76	KASKASKIA RIVER NEAR COWDEN	1330.00
204	05592300	58 - 76	WOLF CREEK NEAR BEECHER CITY	47.90
205	05592500	14 - 76	KASKASKIA RIVER AT VANDALIA	1940.00
206	05592800	70 - 76	HURRICANE CREEK NEAR MULBERRY GROVE	152.00
207	05593000	38 - 76	KASKASKIA RIVER AT CARLYLE	2719.00
208	05593520	74 - 77	CROOKED CREEK NEAR HOFFMAN	254.00
209	05593575	67 - 76	LITTLE CROOKED CREEK NEAR NEW MINDEN	84.30
210	05593600	60 - 76	BLUE GRASS CREEK NEAR RAYMOND	17.30
211	05593900	63 - 76	EAST FORK SHOAL CREEK NEAR COFFEEN	55.50
212	05594000	45 - 76	SHOAL CREEK NEAR BREESE	735.00
213	05594090	72 - 76	SUGAR CREEK AT ALBERS	124.00
214	05594100	69 - 76	KASKASKIA RIVER NEAR VENEDY STATION	4393.00
215	05594330	70 - 76	MUD CREEK NEAR MARISSA	72.40
216	05594450	67 - 76	SILVER CREEK NEAR TROY	154.00
217	05594800	70 - 76	SILVER CREEK NEAR FREEBURG	464.00
218	05595000	34 - 71	KASKASKIA RIVER AT NEW ATHENS	5181.00
219	05595200	69 - 76	RICHLAND CREEK NEAR HECKER	129.00
220	05595500	49 - 71	MARYS RIVER NEAR SPARTA	17.80
221	05595800	60 - 76	SEVENMILE CREEK NEAR MOUNT VERNON	21.10
222	05596000	45 - 70	BIG MUDDY RIVER NEAR BENTON	502.00
223	05597000	14 - 76	BIG MUDDY RIVER AT PLUMFIELD	794.00
224	05597500	51 - 76	CRAB ORCHARD CREEK NEAR MARION	31.70
225	05599000	45 - 76	BEAUCOUP CREEK NEAR MATTHEWS	292.00
226	05599500	54 - 76	BIG MUDDY RIVER AT MURPHYSBORO	2162.00
227	05600000	40 - 71	BIG CREEK NEAR WETAUG	32.20
228	07020500	42 - 76	MISSISSIPPI RIVER AT CHESTER	712600.00
229	07022000	33 - 76	MISSISSIPPI RIVER AT THEBES	717200.00

TABLE 2. STREAMFLOWS AT SIX LEVELS FOR ILLINOIS STREAMS

TABLE 2. STREAMFLOWS AT SIX LEVELS FOR ILLINOIS STREAMS

NO.	D.A. IN SQ MI	FLOWS FOR CONDITIONS (IN CFS)					
		Q(.31)P	Q(.61)P	Q(.90)P	Q(.85)P	Q(.90)	Q(.85)
1	35.00	0.10	0.27	0.05	0.10	0.10	0.20
2	134.00	10.20	13.10	9.20	10.00	9.50	11.00
3	4.46	1.97	2.61	1.23	1.38	1.20	1.32
4	68.00	4.83	6.22	3.65	4.32	4.00	4.68
5	340.00	22.03	24.18	17.02	19.75	17.42	19.75
6	958.00	36.50	40.00	27.45	32.49	31.33	36.84
7	1290.00	61.50	74.80	42.36	54.22	50.48	65.52
8	186.00	2.08	6.45	0.69	1.75	1.38	3.25
9	919.00	72.71	96.79	46.90	69.77	56.93	85.46
10	7.61	0.00	0.06	0.00	0.00	0.00	0.00
11	1392.00	34.29	55.10	27.60	31.34	24.16	29.66
12	1516.00	54.30	83.80	38.00	49.42	39.57	56.90
13	319.00	4.01	9.47	1.70	3.12	2.40	4.37
14	28635.00	4087.00	5364.00	3463.00	3954.00	3763.00	4390.00
15	228.00	0.36	2.95	0.02	0.11	0.07	0.17
16	240.00	3.65	10.89	1.11	2.50	1.12	5.16
17	745.00	23.58	30.49	9.06	14.35	13.85	20.30
18	1131.00	15.50	38.50	6.66	10.00	9.20	14.90
19	208.00	0.77	3.31	0.22	0.42	0.50	0.96
20	97.20	0.04	0.96	0.01	0.04	0.05	0.10
21	464.00	1.84	7.78	0.74	1.21	1.27	2.17
22	3102.00	63.90	122.90	24.00	36.00	29.93	49.76
23	147.00	4.39	6.28	2.61	3.12	3.47	4.58
24	13.30	0.00	0.17	0.00	0.00	0.00	0.01
25	8.51	0.13	0.17	0.07	0.09	0.01	0.14
26	42.90	0.14	0.57	0.02	0.07	0.09	0.02
27	143900.00	24371.00	26721.00	1879.00	2781.00	1858.00	2650.00
28	19.10	0.00	0.13	0.00	0.00	0.00	0.01
29	1.05	0.00	0.00	0.00	0.00	0.00	0.00
30	1.98	0.00	0.00	0.00	0.00	0.00	0.00
31	9.93	0.00	0.02	0.00	0.00	0.00	0.00
32	203000.00	20408.00	23220.00	15603.00	18389.00	17310.00	21101.00
33	244.00	2.42	9.90	0.68	1.25	1.48	2.80
34	570.00	54.73	62.58	22.26	28.14	26.91	36.60
35	39.60	12.98	14.14	9.31	10.03	9.14	9.78
36	17.60	4.34	5.77	2.94	3.48	3.19	3.62
37	247.00	39.70	49.20	29.73	33.16	30.21	33.85
38	230.00	29.20	39.80	17.74	21.63	19.59	23.00
39	1.31	0.01	0.03	0.00	0.00	0.00	0.00
40	1326.00	390.00	437.00	292.00	326.00	300.00	332.00

TABLE 2. CONTINUED

NO.	D.A. IN SQ MI	FLOWS FOR CONDITIONS (IN CFS)					
		Q(.31)P	Q(.61)P	Q(.90)P	Q(.85)P	Q(.90)	Q(.85)
41	2550.00	705.00	787.00	594.00	625.00	576.00	617.00
42	6363.00	1454.00	1779.00	1103.00	1235.00	1164.00	1309.00
43	85.10	8.85	11.20	5.28	6.85	6.40	8.10
44	538.00	73.70	92.00	57.22	64.36	59.65	68.57
45	77.70	0.51	1.03	0.27	0.49	0.57	1.10
46	387.00	20.10	28.60	15.73	18.78	16.22	19.66
47	1099.00	138.00	156.00	107.00	121.00	111.00	128.00
48	117.00	7.65	9.21	5.77	6.86	5.80	6.96
49	103.00	18.40	43.40	14.05	15.51	14.53	16.09
50	8205.00	1861.00	2230.00	1575.00	1686.00	1530.00	1670.00
51	116.00	7.41	9.02	6.08	7.09	6.00	7.08
52	8755.00	1765.00	1923.00	1379.00	1557.00	1487.00	1670.00
53	146.00	32.60	35.60	22.12	24.89	22.75	25.82
54	158.00	22.90	28.20	19.42	20.84	19.91	21.87
55	9551.00	2137.00	2502.00	1725.00	1929.00	1813.00	2015.00
56	201.00	13.60	15.60	10.16	12.27	9.82	11.81
57	1003.00	106.00	128.00	86.00	100.00	87.11	101.00
58	62.40	2.98	4.99	1.28	2.02	1.37	2.11
59	155.00	8.85	13.80	4.76	6.97	5.21	7.38
60	445.00	28.00	43.20	18.22	24.29	18.69	24.50
61	183.00	8.77	15.60	5.49	7.51	5.90	7.80
62	151.00	3.43	8.77	1.42	2.52	2.10	3.35
63	67.10	1.66	4.06	0.91	1.29	1.21	2.00
64	130.00	12.60	17.60	9.16	10.92	9.09	10.82
65	432.00	19.60	35.50	13.94	18.54	16.00	20.84
66	82.90	2.15	5.71	0.15	0.88	0.25	0.98
67	349.00	2.65	9.11	0.72	1.37	0.88	1.63
68	40.90	0.15	0.93	0.04	0.09	0.15	0.30
69	72.70	1.52	4.50	0.19	0.53	0.58	1.16
70	73.60	3.63	9.32	1.05	1.85	2.29	3.09
71	39.40	0.53	1.91	0.15	0.23	0.20	0.30
72	161.00	3.62	10.50	0.69	1.50	1.13	2.38
73	220.00	30.60	36.40	24.27	28.68	27.08	32.40
74	2294.00	655.00	744.00	569.00	622.00	626.00	704.00
75	686.00	37.10	48.80	22.25	28.75	27.17	39.00
76	446.00	14.20	22.80	8.53	11.34	10.05	14.39
77	2091.00	79.40	110.00	51.36	65.37	69.44	96.78
78	12.10	0.78	1.40	0.49	0.77	0.73	1.07
79	4810.00	710.00	796.00	615.00	671.00	685.00	795.00
80	5150.00	824.00	949.00	704.00	797.00	796.00	926.00

TABLE 2. CONTINUED

NO.	D.A. IN SQ MI	FLOWS FOR CONDITIONS (IN CFS)					
		Q(.31)P	Q(.61)P	Q(.90)P	Q(.85)P	Q(.90)	Q(.85)
81	123.00	2.02	3.02	1.74	2.24	2.30	3.06
82	232.00	1.00	2.29	0.40	0.90	0.82	1.80
83	19.60	0.52	0.94	0.10	0.31	0.15	0.34
84	360.00	13.80	19.20	5.23	8.13	6.20	9.90
85	7.93	0.16	0.35	0.00	0.05	0.01	0.05
86	13.20	0.87	2.54	0.08	0.18	0.09	0.19
87	19.70	0.27	0.54	0.14	0.19	0.16	0.28
88	32.10	0.88	1.76	0.28	0.54	0.37	0.77
89	114.00	16.90	23.60	6.37	10.20	8.96	13.38
90	17.90	3.49	5.13	1.09	1.64	1.58	2.21
91	630.00	47.40	74.80	18.62	28.19	22.56	31.96
92	16.50	4.66	5.60	3.59	4.03	3.52	3.96
93	684.00	16.20	26.60	8.82	13.37	14.05	19.83
94	19.70	0.22	0.53	0.07	0.13	0.11	0.23
95	13.00	2.58	2.97	1.65	1.97	1.66	2.01
96	21.10	5.17	5.23	4.32	4.93	4.46	5.03
97	11.50	2.38	3.15	1.02	1.44	1.01	1.43
98	100.00	13.20	21.30	7.10	9.23	7.95	10.27
99	17.20	1.32	2.32	0.59	0.67	0.65	0.80
100	24.70	17.70	19.80	13.89	15.13	14.17	15.43
101	23.10	1.10	1.89	0.72	0.99	0.90	1.19
102	23.50	1.09	1.52	0.51	0.76	0.61	0.87
103	8.84	1.47	1.74	0.55	0.78	0.43	0.72
104	16.80	1.74	2.25	0.59	0.90	0.54	0.92
105	104.00	24.80	31.30	18.45	21.11	19.18	22.41
106	205.00	36.90	49.90	30.38	33.74	32.18	36.34
107	12.60	0.49	0.90	0.20	0.33	0.30	0.49
108	11.20	0.08	0.22	0.01	0.05	0.07	0.13
109	740.00	3001.00	3252.00	2769.00	2899.00	2457.00	2571.00
110	20.90	0.06	0.24	0.01	0.04	0.00	0.09
111	1503.00	7996.00	8305.00	7627.00	7859.00	7518.00	7733.00
112	19.60	3.77	4.24	2.82	3.30	3.18	3.61
113	107.00	7.19	9.40	5.83	6.81	6.52	7.87
114	28.50	7.09	9.48	2.50	3.80	3.00	4.68
115	90.40	22.19	30.25	17.32	20.67	19.32	23.08
116	324.00	49.40	61.40	40.10	44.70	39.40	44.89
117	455.00	2.14	4.90	0.74	1.59	1.00	1.88
118	8259.00	4643.00	4967.00	4445.00	4729.00	4342.00	4647.00
119	192.00	54.26	67.05	40.58	47.90	43.18	50.04
120	15.50	5.80	6.47	4.99	5.49	5.33	5.93

TABLE 2. CONTINUED

NO.	D.A. IN SQ MI	FLOWS FOR CONDITIONS (IN CFS)					
		Q(.31)P	Q(.61)P	Q(.90)P	Q(.85)P	Q(.90)	Q(.85)
121	1403.00	169.00	214.00	119.00	145.00	164.00	201.00
122	35.20	1.64	2.28	0.80	1.11	0.95	1.25
123	51.70	4.94	6.35	1.89	2.72	2.82	4.07
124	70.20	9.10	10.80	8.20	9.25	8.80	10.24
125	2642.00	350.00	415.00	269.00	314.00	327.00	389.00
126	186.00	1.09	2.16	0.49	0.83	0.73	1.31
127	579.00	6.26	9.97	4.31	6.70	5.77	8.22
128	1084.00	6.64	15.02	1.31	4.27	4.41	8.97
129	1251.00	38.91	89.87	35.66	50.55	34.37	61.14
130	1278.00	17.90	26.20	13.92	17.93	15.37	20.90
131	196.00	3.03	6.13	2.44	3.36	2.62	3.56
132	86.70	0.96	1.67	0.18	0.43	0.30	0.67
133	99.00	0.20	1.81	0.05	0.14	0.09	0.20
134	485.00	51.86	66.97	46.74	50.35	44.83	49.07
135	56.20	1.05	1.79	0.35	0.57	0.36	0.65
136	5.66	0.00	0.12	0.00	0.00	0.00	0.00
137	115.00	0.26	1.12	0.08	0.18	0.09	0.32
138	14165.00	9966.00	10286.00	9590.00	9845.00	9708.00	10051.00
139	27.40	1.01	1.50	0.39	0.61	0.51	0.77
140	11.20	0.00	0.05	0.00	0.00	0.00	0.00
141	5.54	0.00	0.08	0.00	0.00	0.00	0.00
142	61.20	2.60	3.92	1.79	2.10	1.55	2.05
143	119.00	3.76	7.65	2.46	3.09	2.94	3.93
144	297.00	9.69	21.20	5.87	7.83	7.53	9.76
145	49.00	0.33	0.79	0.08	0.18	0.18	0.39
146	53.10	0.04	0.23	0.00	0.01	0.03	0.07
147	9.81	0.00	0.01	0.00	0.00	0.00	0.00
148	6.30	0.00	0.01	0.00	0.00	0.00	0.00
149	30.50	0.19	0.32	0.10	0.16	0.10	0.18
150	93.90	0.88	1.31	0.29	0.49	0.69	1.05
151	767.00	13.00	21.60	9.43	12.89	11.12	15.56
152	1089.00	56.50	70.60	44.71	52.87	43.79	52.77
153	15819.00	5208.00	5951.00	4790.00	5222.00	4924.00	5472.00
154	20.00	2.96	3.58	2.04	2.64	1.89	3.00
155	62.70	4.99	6.98	2.14	3.10	2.29	3.42
156	1062.00	47.80	81.90	31.86	41.96	36.31	48.53
157	1636.00	85.40	155.00	50.15	68.33	57.54	78.00
158	26.70	9.74	10.81	7.51	8.43	7.08	8.71
159	6.20	2.04	2.53	1.61	1.72	1.53	1.69
160	40.30	16.25	17.93	11.86	13.01	12.12	14.01

TABLE 2. CONTINUED

NO.	D.A. IN SQ MI	FLOWS FOR CONDITIONS (IN CFS)					
		Q(.31)P	Q(.61)P	Q(.90)P	Q(.85)P	Q(.90)	Q(.85)
161	362.00	8.78	11.30	4.50	6.88	5.90	9.04
162	47.90	0.00	0.03	0.00	0.00	0.00	0.04
163	550.00	15.00	22.00	9.82	13.19	11.73	16.53
164	111.00	1.11	1.95	0.19	0.59	0.53	2.39
165	11.00	0.04	0.16	0.00	0.00	0.00	0.01
166	276.00	3.52	8.17	1.02	2.90	2.04	3.90
167	562.00	11.30	19.60	4.13	7.50	5.30	9.00
168	52.20	0.25	1.56	0.05	0.16	0.09	0.58
169	32.40	0.46	1.12	0.15	0.28	0.24	0.42
170	867.00	16.20	37.80	8.00	14.41	10.27	18.20
171	2618.00	66.90	111.00	48.64	62.61	47.56	65.30
172	107.00	0.74	2.00	0.04	0.15	0.09	0.20
173	335.00	14.00	19.40	8.34	11.56	11.00	15.11
174	214.00	9.82	10.80	6.92	8.57	6.63	8.51
175	227.00	7.37	12.40	3.04	5.26	3.94	6.40
176	306.00	10.20	18.00	7.19	9.80	7.37	9.96
177	34.60	19.57	24.29	14.68	15.43	14.99	15.78
178	333.00	17.70	27.20	13.55	16.32	14.67	18.65
179	1804.00	148.00	176.00	116.00	137.00	115.00	137.00
180	26.50	4.29	5.38	2.44	3.27	3.81	4.88
181	5093.00	389.00	570.00	305.00	376.00	291.00	351.00
182	24227.00	11071.00	11475.00	10797.00	11188.00	11098.00	11504.00
183	26.30	0.17	0.38	0.05	0.12	0.08	0.27
184	655.00	19.30	42.60	8.67	13.56	10.17	15.59
185	1293.00	52.20	104.00	25.95	36.60	28.10	38.52
186	26028.00	6367.00	7384.00	5980.00	6593.00	6176.00	6938.00
187	29.10	0.21	0.82	0.01	0.05	0.05	0.24
188	2.30	0.00	0.03	0.00	0.00	0.00	0.00
189	61.10	0.43	1.08	0.00	0.03	0.00	0.05
190	868.00	15.70	38.30	6.93	9.84	7.24	10.28
191	171500.00	35397.00	43297.00	32756.00	32462.00	32467.00	35852.00
192	212.00	4.22	9.71	2.29	3.23	3.09	5.05
193	36.70	0.83	3.48	0.01	0.06	0.06	0.14
194	5.00	0.00	0.00	0.00	0.00	0.00	0.00
195	22.60	0.87	1.67	0.35	0.49	0.50	0.69
196	12.40	0.32	0.48	0.19	0.28	0.24	0.37
197	109.00	21.97	24.75	18.02	19.72	19.06	20.76
198	126.00	1.42	2.91	0.32	0.79	0.59	1.13
199	149.00	7.70	12.46	6.86	10.02	9.92	18.51
200	473.00	45.58	64.92	35.40	41.64	39.98	48.78

TABLE 2. CONCLUDED

NO.	D.A. IN SQ MI	FLOWS FOR CONDITIONS (IN CFS)					
		Q(.31)P	Q(.61)P	Q(.90)P	Q(.85)P	Q(.90)	Q(.85)
201	8.05	0.01	0.03	0.00	0.01	0.00	0.02
202	1054.00	13.40	25.90	7.15	11.88	9.06	14.77
203	1330.00	256.00	342.00	110.00	137.00	36.09	83.20
204	47.90	0.13	0.33	0.00	0.03	0.03	0.09
205	1940.00	62.80	110.00	41.34	56.59	47.13	66.24
206	152.00	4.59	12.48	1.71	2.83	3.16	4.89
207	2719.00	82.30	189.00	56.74	76.72	58.90	79.88
208	254.00	6.02	9.18	3.80	4.37	4.26	5.28
209	84.30	0.50	2.63	0.17	0.33	0.33	0.58
210	17.30	0.16	0.56	0.00	0.03	0.01	0.03
211	55.50	0.42	2.15	0.05	0.10	0.09	0.28
212	735.00	16.80	38.90	9.36	13.38	11.78	16.17
213	124.00	2.02	7.87	1.18	1.41	1.32	1.86
214	4393.00	141.00	290.00	173.00	241.00	143.00	232.00
215	72.40	0.05	0.56	0.00	0.00	0.01	0.05
216	154.00	1.19	5.91	0.43	0.72	0.71	1.25
217	464.00	10.92	38.04	7.80	10.11	9.11	12.63
218	5181.00	180.00	339.00	140.00	188.00	149.00	202.00
219	129.00	10.26	16.59	7.06	7.99	7.97	9.15
220	17.80	0.00	0.07	0.00	0.00	0.00	0.00
221	21.10	0.00	0.15	0.00	0.00	0.00	0.00
222	502.00	4.62	16.30	1.75	2.71	2.68	4.22
223	794.00	6.68	21.23	2.88	4.29	4.61	7.09
224	31.70	0.03	0.23	0.00	0.00	0.00	0.03
225	292.00	4.10	9.28	0.92	1.87	1.59	3.18
226	2162.00	48.10	116.00	31.08	42.38	40.84	59.52
227	32.20	1.02	3.23	0.52	0.81	0.80	1.14
228	712600.00	94529.00	108326.00	86099.00	94414.00	70338.00	77978.00
229	717200.00	54106.00	60697.00	78320.00	88318.00	67300.00	74762.00

TABLE 3. GAGING STATIONS SELECTED FOR EVALUATING HYDRAULIC GEOMETRY PARAMETERS

TABLE 3. GAGING STATIONS SELECTED FOR EVALUATING
HYDRAULIC GEOMETRY PARAMETERS

NO.	USGS NO.	NO.	USGS NO.	NO.	USGS NO.	NO.	USGS NO.
1	03336900	36	05468500	71	05542000	106	05582500
2	03337000	37	05469000	72	05543500	107	05583000
3	03337500	38	05495500	73	05549000	108	05584500
4	03338500	39	05510500	74	05550000	109	05585000
5	03339000	40	05512500	75	05550500	110	05585500
6	03343400	41	05513000	76	05551200	111	05587000
7	03345500	42	05520000	77	05551700	112	05589500
8	03346000	43	05520500	78	05552500	113	05590000
9	03379500	44	05525000	79	05554000	114	05592000
10	03380500	45	05525500	80	05554500	115	05592500
11	03381500	46	05526000	81	05555500	116	05593000
12	03612000	47	05526500	82	05556500	117	05594000
13	05415500	48	05527000	83	05558500	118	05595000
14	05419000	49	05527500	84	05560500	119	05596000
15	05420000	50	05529000	85	05562000	120	05597000
16	05435500	51	05531000	86	05563000	121	05599000
17	05437000	52	05531500	87	05563500	122	05599500
18	05437500	53	05532000	88	05567500	123	05600000
19	05438250	54	05532500	89	05568000		
20	05438500	55	05533000	90	05568500		
21	05439500	56	05533500	91	05568800		
22	05440000	57	05535000	92	05569500		
23	05440500	58	05535500	93	05570000		
24	05441000	59	05536000	94	05571000		
25	05443500	60	05536215	95	05572000		
26	05444000	61	05536235	96	05574500		
27	05445500	62	05536255	97	05575500		
28	05446500	63	05536265	98	05576000		
29	05447000	64	05536270	99	05576500		
30	05447500	65	05536275	100	05578500		
31	05448000	66	05536290	101	05579500		
32	05466000	67	05536340	102	05580000		
33	05466500	68	05539000	103	05580500		
34	05467000	69	05539900	104	05581500		
35	05467500	70	05540500	105	05582000		

TABLE 4. HYDRAULIC GEOMETRY PARAMETERS FOR SELECTED GAGING STATIONS

TABLE. 4 HYDRAULIC GEOMETRY PARAMETERS FOR SELECTED GAGING STATIONS

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
1.	03336900	Salt Fork near St. Joseph						
Q	10.20	5.10	13.10	6.55	9.20	10.00	9.50	11.00
A	18.69	13.06	21.28	14.86	17.72	18.50	18.02	19.44
V	0.55	0.39	0.62	0.44	0.52	0.54	0.53	0.57
W	35.92	27.71	39.45	30.43	34.56	35.65	34.97	36.95
D	0.52	0.47	0.54	0.49	0.51	0.52	0.52	0.53
2.	03337000	Boneyard Creek at Urbana						
Q	1.97	0.99	2.61	1.31	1.23	1.38	1.20	1.32
A	4.85	3.95	5.28	4.30	4.21	4.36	4.18	4.30
V	0.41	0.25	0.50	0.30	0.29	0.32	0.29	0.31
W	10.07	8.99	10.55	9.41	9.32	9.49	9.28	9.42
D	0.48	0.44	0.50	0.46	0.45	0.46	0.45	0.46
3.	03337500	West Branch Salt Fork at Urbana						
Q	4.83	2.42	6.22	3.11	3.65	4.32	4.00	4.68
A	15.70	11.13	17.80	12.61	13.65	14.85	14.29	15.45
V	0.31	0.22	0.35	0.25	0.27	0.29	0.28	0.30
W	30.89	28.91	31.64	29.61	30.07	30.56	30.33	30.79
D	0.51	0.39	0.56	0.43	0.45	0.49	0.47	0.50
4.	03338500	Vermilion River near Catlin						
Q	36.50	18.30	40.00	20.00	27.45	32.49	31.33	36.84
A	85.24	56.12	90.10	59.22	71.73	79.44	77.71	85.72
V	0.43	0.33	0.45	0.34	0.38	0.41	0.40	0.43
W	81.70	60.63	85.00	63.00	72.24	77.70	76.48	82.03
D	1.04	0.93	1.06	0.94	0.99	1.02	1.02	1.05
5.	03339000	Vermilion River near Danville						
Q	61.50	30.80	74.80	37.40	42.36	54.22	50.48	65.52
A	219.00	190.00	228.00	198.00	203.00	213.00	210.00	222.00
V	0.28	0.16	0.33	0.19	0.21	0.26	0.24	0.30
W	132.00	131.00	132.00	131.00	131.00	131.00	131.00	132.00
D	1.66	1.45	1.73	1.51	1.55	1.62	1.60	1.68
6.	03343400	Embarras River near Camargo						
Q	2.08	1.04	6.45	3.23	0.69	1.75	1.38	3.25
A	4.34	2.28	12.45	6.54	1.55	3.70	2.96	6.58
V	0.48	0.46	0.52	0.50	0.45	0.48	0.47	0.50
W	13.69	10.72	20.40	15.99	9.28	12.88	11.84	16.02
D	0.32	0.21	0.61	0.41	0.17	0.29	0.25	0.41
7.	03345500	Embarras River at Ste. Marie						
Q	54.30	27.20	83.80	41.90	38.00	49.42	39.57	56.90
A	58.84	32.23	85.85	46.95	43.12	54.21	44.67	61.28
V	0.92	0.84	0.97	0.89	0.88	0.91	0.88	0.92
W	69.86	51.75	84.35	62.43	59.84	67.07	60.90	71.30
D	0.84	0.62	1.02	0.75	0.72	0.81	0.73	0.86

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
8.	03346000	North Fork Embarras River near Oblong						
Q	4.01	2.01	9.47	4.74	1.70	3.12	2.40	4.37
A	10.97	6.33	21.78	12.54	5.53	8.98	7.29	11.75
V	0.37	0.32	0.44	0.38	0.31	0.35	0.33	0.37
W	23.99	18.04	34.22	25.71	16.83	21.63	19.41	24.86
D	0.46	0.35	0.64	0.49	0.33	0.42	0.38	0.47
9.	03379500	Little Wabash River below Clay City						
Q	15.50	7.75	38.50	19.30	6.66	10.00	9.20	14.90
A	21.28	12.91	40.98	24.92	11.58	15.52	14.61	20.68
V	0.73	0.60	0.94	0.77	0.57	0.64	0.63	0.72
W	29.95	24.69	38.59	31.84	23.67	26.51	25.90	29.62
D	0.71	0.52	1.06	0.78	0.49	0.59	0.56	0.70
10.	03380500	Skillet Fork at Wayne City						
Q	1.84	0.92	7.78	3.89	0.74	1.21	1.27	2.17
A	4.99	3.40	11.15	7.58	3.01	3.95	4.06	5.48
V	0.37	0.27	0.70	0.51	0.25	0.31	0.31	0.40
W	14.96	12.42	22.03	18.29	11.71	13.37	13.54	15.64
D	0.33	0.27	0.51	0.41	0.26	0.30	0.30	0.35
11.	03381500	Little Wabash River at Carmi						
Q	63.90	32.00	123.00	61.50	24.00	36.00	29.93	49.76
A	73.71	49.92	107.00	72.14	42.45	53.35	48.08	64.02
V	0.87	0.64	1.15	0.85	0.56	0.67	0.62	0.78
W	71.67	59.06	86.06	70.91	54.49	61.04	57.96	66.82
D	1.03	0.85	1.24	1.02	0.78	0.87	0.83	0.96
12.	03612000	Cache River at Forman						
Q	2.42	1.21	9.90	4.95	0.68	1.25	1.48	2.80
A	5.92	3.87	14.05	9.18	2.72	3.95	4.38	6.48
V	0.41	0.31	0.71	0.54	0.25	0.32	0.34	0.43
W	12.87	10.75	18.55	15.50	9.26	10.84	11.33	13.37
D	0.46	0.36	0.76	0.59	0.29	0.36	0.39	0.48
13.	05415500	E. F. Galena River at Council Hill						
Q	4.34	2.17	5.77	2.89	2.94	3.48	3.19	3.62
A	7.18	4.59	8.62	5.52	5.58	6.22	5.88	6.38
V	0.61	0.47	0.67	0.52	0.53	0.56	0.54	0.57
W	11.94	7.88	14.16	9.35	9.45	10.46	9.93	10.71
D	0.60	0.58	0.61	0.59	0.59	0.60	0.59	0.60
14.	05419000	Apple River near Hanover						
Q	39.70	19.90	49.20	24.60	29.73	33.16	30.21	33.85
A	63.04	41.47	71.80	47.16	52.90	56.52	53.42	57.23
V	0.63	0.48	0.69	0.52	0.56	0.59	0.57	0.59
W	28.21	25.98	28.94	26.65	27.26	27.62	27.31	27.68
D	2.23	1.60	2.48	1.77	1.94	2.05	1.96	2.07

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
15.	05420000	Plum River below Carroll Ck. near Savanna						
Q	29.20	14.60	39.80	19.90	17.74	21.63	19.59	23.00
A	45.29	38.29	48.82	41.27	40.14	42.12	41.12	42.75
V	0.65	0.38	0.82	0.48	0.44	0.52	0.48	0.54
W	50.34	46.87	51.97	48.39	47.82	48.81	48.31	49.12
D	0.90	0.82	0.94	0.85	0.84	0.86	0.85	0.87
16.	05435500	Pecatonica River at Freeport						
Q	390.00	195.00	437.00	219.00	292.00	326.00	300.00	332.00
A	517.00	358.00	549.00	381.00	444.00	470.00	450.00	475.00
V	0.76	0.54	0.80	0.57	0.66	0.69	0.67	0.70
W	116.00	110.00	117.00	110.00	113.00	114.00	113.00	114.00
D	4.48	3.26	4.70	3.44	3.92	4.12	3.97	4.15
17.	05437000	Pecatonica River at Shirland						
Q	705.00	353.00	787.00	394.00	594.00	625.00	576.00	617.00
A	799.00	490.00	864.00	530.00	708.00	734.00	693.00	727.00
V	0.89	0.72	0.91	0.75	0.84	0.85	0.83	0.85
W	273.00	251.00	277.00	255.00	268.00	269.00	267.00	269.00
D	2.93	1.95	3.12	2.08	2.65	2.73	2.60	2.71
18.	05437500	Rock River at Rockton						
Q	1454.00	727.00	1779.00	890.00	1103.00	1235.00	1164.00	1309.00
A	854.00	586.00	954.00	654.00	735.00	782.00	757.00	807.00
V	1.71	1.24	1.87	1.36	1.50	1.58	1.54	1.63
W	474.00	454.00	480.00	460.00	466.00	469.00	467.00	471.00
D	1.80	1.29	1.99	1.42	1.58	1.67	1.62	1.71
19.	05438250	Coon Creek at Riley						
Q	8.85	4.43	11.20	5.60	5.28	6.85	6.40	8.10
A	11.78	9.52	12.67	10.23	10.05	10.89	10.66	11.47
V	0.76	0.47	0.89	0.55	0.53	0.63	0.61	0.71
W	19.72	18.85	20.02	19.14	19.07	19.39	19.31	19.61
D	0.60	0.51	0.63	0.54	0.53	0.56	0.55	0.59
20.	05438500	Kishwaukee River at Belvidere						
Q	73.70	36.90	92.00	46.00	57.22	64.36	59.65	68.57
A	74.69	46.10	87.18	53.76	62.60	67.95	64.44	71.02
V	0.99	0.80	1.06	0.86	0.92	0.95	0.93	0.97
W	82.98	72.62	86.60	75.77	79.03	80.84	79.66	81.83
D	0.90	0.64	1.01	0.71	0.79	0.84	0.81	0.87
21.	05439500	S. B. Kishwaukee River near Fairdale						
Q	20.10	10.10	28.60	14.30	15.73	18.78	16.22	19.66
A	24.59	14.61	32.12	19.01	20.43	23.36	20.91	24.19
V	0.82	0.69	0.90	0.76	0.77	0.81	0.78	0.82
W	38.34	29.12	44.15	33.46	34.76	37.31	35.19	38.00
D	0.64	0.50	0.73	0.57	0.59	0.63	0.59	0.64

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
22.	05440000	Kishwaukee River near Perryville						
Q	138.00	69.00	156.00	78.00	107.00	121.00	111.00	128.00
A	140.00	85.52	152.00	93.29	117.00	127.00	120.00	133.00
V	0.99	0.81	1.02	0.84	0.92	0.95	0.93	0.97
W	126.00	89.37	133.00	94.91	111.00	118.00	113.00	121.00
D	1.11	0.96	1.14	0.98	1.05	1.08	1.06	1.10
23.	05440500	Killbuck Creek Near Monroe Center						
Q	7.65	3.83	9.21	4.61	5.77	6.86	5.80	6.96
A	14.91	11.58	15.96	12.39	13.45	14.33	13.47	14.40
V	0.51	0.33	0.58	0.37	0.43	0.48	0.43	0.48
W	29.33	27.91	29.72	28.29	28.75	29.10	28.76	29.13
D	0.51	0.42	0.54	0.44	0.47	0.49	0.47	0.49
24.	05441000	Leaf River at Leaf River						
Q	18.40	9.20	43.40	21.70	14.05	15.51	14.53	16.09
A	11.69	6.17	25.80	13.61	9.11	9.99	9.40	10.33
V	1.57	1.49	1.68	1.59	1.54	1.55	1.54	1.56
W	22.22	18.04	28.75	23.35	20.49	21.11	20.70	21.34
D	0.53	0.34	0.90	0.58	0.45	0.47	0.45	0.48
25.	05443500	Rock River at Como						
Q	1765.00	883.00	1923.00	962.00	1379.00	1557.00	1487.00	1670.00
A	1075.00	794.00	1116.00	825.00	965.00	1018.00	997.00	1049.00
V	1.64	1.11	1.72	1.16	1.43	1.53	1.49	1.60
W	476.00	449.00	479.00	453.00	466.00	471.00	469.00	474.00
D	2.26	1.77	2.33	1.82	2.07	2.16	2.13	2.21
26.	05444000	Elkhorn Creek near Penrose						
Q	32.60	16.30	35.60	17.80	22.12	24.89	22.75	25.82
A	35.46	22.81	37.50	24.13	27.70	29.86	28.20	30.57
V	0.92	0.71	0.95	0.74	0.80	0.83	0.81	0.84
W	40.66	35.28	41.41	35.92	37.56	38.47	37.77	38.77
D	0.87	0.65	0.91	0.67	0.74	0.78	0.75	0.79
27.	05445500	Rock Creek near Morrison						
Q	22.90	11.50	28.20	14.10	19.42	20.84	19.91	21.87
A	56.94	48.78	59.66	51.6	54.87	55.74	55.18	56.35
V	0.40	0.24	0.47	0.28	0.36	0.38	0.36	0.39
W	55.54	53.86	56.05	54.35	55.13	55.30	55.19	55.42
D	1.03	0.91	1.06	0.94	1.00	1.01	1.00	1.02
28.	05446500	Rock River near Joslin						
Q	2137.00	1069.00	2502.00	1251.00	1725.00	1929.00	1813.00	2015.00
A	1495.00	912.00	1672.00	1020.00	1283.00	1389.00	1329.00	1433.00
V	1.43	1.17	1.50	1.23	1.35	1.39	1.37	1.41
W	616.00	601.00	619.00	605.00	611.00	614.00	612.00	614.00
D	2.43	1.52	2.70	1.69	2.10	2.26	2.17	2.33

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
29.	05447000	Green River at Amboy						
Q	13.60	6.80	15.60	7.80	10.16	12.27	9.82	11.81
A	14.79	10.28	15.90	11.05	12.69	14.01	12.47	13.74
V	0.92	0.67	0.99	0.71	0.81	0.88	0.79	0.87
W	21.99	18.37	22.78	19.03	20.38	21.41	20.20	21.20
D	0.67	0.56	0.70	0.58	0.62	0.70	0.62	0.65
30.	05447500	Green River near Geneseo						
Q	106.00	53.00	128.00	64.00	86.00	100.00	87.11	101.00
A	113.00	73.88	127.00	82.98	99.52	109.00	100.00	110.00
V	0.94	0.72	1.01	0.77	0.86	0.92	0.87	0.92
W	121.00	83.57	134.00	92.47	108.00	117.00	109.00	118.00
D	0.93	0.88	0.95	0.90	0.92	0.93	0.92	0.93
31.	05448000	Mill Creek at Milan						
Q	2.98	1.49	4.99	2.50	1.28	2.02	1.37	2.11
A	5.78	3.62	8.19	5.14	3.27	4.45	3.42	4.58
V	0.51	0.41	0.61	0.49	0.39	0.45	0.40	0.46
W	17.16	13.97	19.99	16.29	13.36	15.29	13.63	15.49
D	0.34	0.26	0.41	0.32	0.25	0.29	0.25	0.30
32.	05466000	Edwards River near Orion						
Q	8.85	4.43	13.80	6.90	4.76	6.97	5.21	7.38
A	14.65	9.02	20.00	12.31	9.49	12.39	10.11	12.90
V	0.61	0.50	0.69	0.56	0.51	0.57	0.52	0.58
W	27.81	20.87	33.44	25.08	21.50	25.18	22.32	25.79
D	0.53	0.43	0.60	0.49	0.44	0.49	0.45	0.50
33.	05466500	Edwards River near New Boston						
Q	28.00	14.00	43.20	21.60	18.22	24.29	18.69	24.50
A	29.28	17.24	40.78	24.01	21.08	26.26	24.50	26.44
V	0.96	0.81	1.06	0.90	0.86	0.93	0.87	0.93
W	51.41	45.44	55.54	49.09	47.62	50.12	47.84	50.20
D	0.57	0.38	0.73	0.49	0.44	0.52	0.45	0.53
34.	05467000	Pope Creek near Keithsburg						
Q	8.77	4.39	15.60	7.80	5.49	7.51	5.90	7.80
A	15.43	10.04	22.06	14.34	11.53	14.01	12.06	14.34
V	0.57	0.44	0.71	0.55	0.48	0.54	0.49	0.55
W	34.67	31.41	37.64	34.10	32.43	33.91	32.77	34.10
D	0.45	0.32	0.59	0.42	0.36	0.41	0.37	0.42
35.	05467500	Henderson Creek near Little York						
Q	3.43	1.72	8.77	4.39	1.42	2.52	2.10	3.35
A	3.80	2.13	8.34	4.67	1.81	2.93	2.52	3.72
V	0.90	0.81	1.05	0.94	0.78	0.86	0.83	0.90
W	9.79	6.49	17.13	11.34	5.79	8.15	7.31	9.66
D	0.39	0.33	0.49	0.41	0.31	0.36	0.34	0.39

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
36.	05468500	Cedar Creek at Little York						
Q	12.60	6.30	17.60	8.80	9.16	10.92	9.09	10.82
A	17.44	10.32	22.47	13.29	13.70	15.65	13.62	15.54
V	0.73	0.61	0.79	0.67	0.67	0.70	0.67	0.70
W	17.85	12.62	21.11	14.92	15.22	16.62	15.16	16.54
D	0.98	0.82	1.06	0.89	0.90	0.94	0.90	0.94
37.	05469000	Henderson Creek near Oquawka						
Q	19.60	9.80	35.50	17.80	13.94	18.54	16.00	20.84
A	45.75	33.29	60.07	43.77	39.13	44.60	41.68	47.05
V	0.43	0.30	0.59	0.41	0.36	0.42	0.39	0.44
W	36.53	29.82	43.46	35.51	33.06	35.94	34.42	37.19
D	1.25	1.12	1.38	1.23	1.18	1.24	1.21	1.27
38.	05495500	Bear Creek near Marcelline						
Q	2.65	1.33	9.11	4.56	0.72	1.37	0.88	1.63
A	5.30	3.17	13.25	7.93	2.01	3.24	2.34	3.69
V	0.50	0.42	0.69	0.58	0.36	0.43	0.38	0.45
W	19.18	16.34	25.57	21.77	14.17	16.45	14.84	17.13
D	0.28	0.19	0.52	0.36	0.14	0.20	0.16	0.22
39.	05510500	Hadley Creek at Kinderhook						
Q	1.52	0.76	4.50	2.25	0.19	0.53	0.58	1.16
A	2.38	1.39	5.53	3.23	0.48	1.05	1.13	1.93
V	0.64	0.55	0.82	0.70	0.40	0.50	0.51	0.60
W	9.60	7.40	14.42	11.12	4.40	6.46	6.68	8.67
D	0.25	0.19	0.38	0.29	0.11	0.16	0.17	0.22
40.	05512500	Bay Creek at Pittsfield						
Q	0.53	0.27	1.91	0.96	0.15	0.23	0.20	0.30
A	0.89	0.55	2.22	1.36	0.36	0.49	0.44	0.59
V	0.59	0.48	0.87	0.70	0.40	0.46	0.44	0.49
W	4.74	3.59	8.05	6.06	2.82	3.36	3.17	3.75
D	0.19	0.15	0.28	0.22	0.13	0.15	0.14	0.16
41.	05513000	Bay Creek at Nebo						
Q	3.62	1.81	10.50	5.25	0.69	1.50	1.13	2.38
A	3.93	2.27	9.14	5.27	1.06	1.95	1.56	2.82
V	0.92	0.80	1.15	1.00	0.66	0.77	0.73	0.85
W	9.96	6.95	17.33	12.09	4.21	6.30	5.44	8.01
D	0.39	0.33	0.53	0.44	0.25	0.31	0.29	0.35
42.	05520000	Singleton Ditch at Illinois						
Q	30.60	15.30	36.40	18.20	24.27	28.68	27.08	32.40
A	85.31	75.03	88.10	77.48	81.72	84.29	83.40	86.22
V	0.36	0.20	0.41	0.23	0.30	0.34	0.32	0.38
W	53.94	51.27	54.62	51.93	53.03	53.68	53.46	54.16
D	1.58	1.46	1.61	1.49	1.54	1.57	1.56	1.59

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
43.	05520500	Kankakee River at Momence						
	655.00	328.00	744.00	372.00	569.00	622.00	626.00	704.00
A	599.00	410.00	642.00	439.00	555.00	582.00	584.00	623.00
V	1.10	0.80	1.16	0.85	1.03	1.07	1.07	1.13
W	400.00	369.00	406.00	374.00	394.00	398.00	398.00	404.00
D	1.50	1.11	1.58	1.17	1.41	1.46	1.47	1.54
44.	05525000	Iroquois River at Iroquois						
Q	37.10	18.60	48.80	24.40	22.25	28.75	27.17	39.00
A	69.52	42.21	84.75	51.36	48.05	57.82	55.51	72.08
V	0.53	0.44	0.58	0.48	0.46	0.50	0.49	0.54
W	58.99	51.61	62.21	54.39	53.43	56.15	55.54	59.56
D	1.18	0.82	1.36	0.94	0.90	1.03	1.00	1.21
45.	05525500	Sugar Creek at Milford						
Q	14.20	7.10	22.80	11.40	8.53	11.34	10.05	14.39
A	15.00	9.38	20.68	12.93	10.62	12.88	11.87	15.14
V	0.94	0.75	1.10	0.88	0.80	0.88	0.84	0.95
W	25.63	20.30	30.05	23.80	21.59	23.76	22.81	25.74
D	0.59	0.46	0.69	0.54	0.49	0.54	0.52	0.59
46.	05526000	Iroquois River near Chebanse						
Q	79.40	39.70	110.00	55.00	51.36	65.37	69.44	96.78
A	162.00	135.00	176.00	147.00	145.00	154.00	156.00	170.00
V	0.49	0.29	0.63	0.37	0.36	0.43	0.44	0.57
W	270.00	256.00	277.00	262.00	261.00	266.00	267.00	274.00
D	0.60	0.53	0.64	0.56	0.55	0.58	0.59	0.62
47.	05526500	Terry Creek near Custer Park						
Q	0.78	0.39	1.40	0.70	0.49	0.77	0.73	1.07
A	1.48	0.56	3.35	1.27	0.77	1.45	1.35	2.30
V	0.53	0.70	0.42	0.55	0.64	0.53	0.54	0.47
W	5.14	2.84	8.48	4.68	3.45	5.08	4.86	6.74
D	0.29	0.20	0.40	0.27	0.22	0.29	0.28	0.34
48.	05527000	Kankakee River at Custer Park						
Q	710.00	355.00	796.00	398.00	615.00	671.00	685.00	795.00
A	1368.00	1180.00	1401.00	1209.00	1326.00	1351.00	1357.00	1401.00
V	0.52	0.30	0.57	0.33	0.46	0.50	0.50	0.57
W	456.00	437.00	460.00	440.00	452.00	455.00	455.00	460.00
D	3.00	2.70	3.05	2.75	2.93	2.97	2.98	3.05
49.	05527500	Kankakee River near Wilmington						
Q	824.00	412.00	949.00	475.00	704.00	797.00	796.00	926.00
A	775.00	526.00	839.00	570.00	710.00	761.00	760.00	827.00
V	1.06	0.78	1.13	0.83	0.99	1.05	1.05	1.12
W	668.00	550.00	695.00	572.00	639.00	661.00	661.00	690.00
D	1.16	0.96	1.21	1.00	1.11	1.15	1.15	1.20

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
50.	05529000	Des Plaines River near Des Plaines						
Q	13.80	6.90	19.20	9.60	5.23	8.13	6.20	9.90
A	15.19	6.65	22.53	9.86	4.78	8.09	5.85	10.23
V	0.91	1.03	0.86	0.97	1.09	1.00	1.05	0.97
W	31.48	17.59	41.55	23.21	13.93	20.19	16.08	23.82
D	0.48	0.38	0.54	0.43	0.34	0.40	0.36	0.43
51.	05531000	Salt Creek near Arlington Heights						
Q	0.88	0.44	1.76	0.88	0.28	0.54	0.37	0.77
A	1.46	0.81	2.62	1.46	0.55	0.96	0.70	1.30
V	0.60	0.54	0.67	0.60	0.51	0.56	0.53	0.59
W	5.38	3.89	7.44	5.38	3.15	4.28	3.59	5.05
D	0.27	0.21	0.35	0.27	0.18	0.23	0.20	0.26
52.	05531500	Salt Creek at Western Springs						
Q	16.90	8.45	23.60	11.80	6.37	10.20	8.96	13.38
A	23.00	13.01	30.16	17.18	10.41	15.26	13.74	19.02
V	0.74	0.65	0.78	0.69	0.62	0.67	0.66	0.71
W	30.84	19.50	38.50	24.29	16.13	22.05	20.23	26.41
D	0.75	0.67	0.78	0.71	0.65	0.69	0.70	0.72
53.	05532000	Addison Creek at Bellwood						
Q	3.49	1.75	5.13	2.57	1.09	1.64	1.58	2.21
A	7.63	5.62	9.05	6.66	4.56	5.46	5.37	6.23
V	0.46	0.31	0.57	0.39	0.24	0.30	0.30	0.36
W	14.87	14.21	15.24	14.57	13.78	14.15	14.12	14.43
D	0.51	0.40	0.59	0.46	0.33	0.39	0.38	0.43
54.	05532500	Des Plaines River at Riverside						
Q	47.40	23.70	74.80	37.40	18.62	28.19	22.56	31.96
A	61.35	43.16	77.32	54.40	38.19	47.13	42.10	50.23
V	0.77	0.55	0.97	0.69	0.49	0.60	0.54	0.64
W	74.40	67.57	79.26	71.99	65.35	69.22	67.11	70.44
D	0.83	0.64	0.98	0.76	0.58	0.68	0.63	0.71
55.	05533000	Flag Creek near Willow Springs						
Q	4.66	2.33	5.60	2.80	3.59	4.03	3.52	3.96
A	7.42	4.58	8.43	5.20	6.19	6.70	6.10	6.62
V	0.63	0.51	0.67	0.54	0.58	0.60	0.58	0.60
W	13.25	10.35	14.15	11.05	12.07	12.58	11.99	12.50
D	0.56	0.44	0.60	0.47	0.51	0.53	0.51	0.53
56.	05533500	Des Plaines River at Lemont						
Q	16.20	8.10	26.60	13.30	8.82	13.37	14.05	19.83
A	73.50	48.90	98.39	65.46	51.41	65.66	67.60	82.78
V	0.22	0.17	0.27	0.20	0.17	0.20	0.21	0.24
W	140.00	116.00	160.00	133.00	119.00	133.00	135.00	148.00
D	0.53	0.42	0.62	0.49	0.43	0.49	0.50	0.56

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
57.	05535000	Skokie River at Lake Forest						
Q	2.58	1.29	2.97	1.49	1.65	1.97	1.66	2.01
A	3.90	2.53	4.25	2.77	2.95	3.29	2.96	3.34
V	0.67	0.53	0.71	0.55	0.57	0.61	0.58	0.62
W	8.98	7.64	9.28	7.90	8.09	8.43	8.10	8.47
D	0.43	0.33	0.46	0.35	0.37	0.39	0.37	0.39
58.	05535500	W. F. of N. B. Chicago River at Northbrook						
Q	2.38	1.19	3.15	1.58	1.02	1.44	1.01	1.43
A	3.71	2.33	4.47	2.82	2.10	2.65	2.09	2.63
V	0.64	0.51	0.71	0.56	0.48	0.54	0.48	0.54
W	9.39	8.09	9.97	8.60	7.82	8.43	7.81	8.41
D	0.40	0.29	0.45	0.33	0.27	0.31	0.27	0.31
59.	05536000	North Branch Chicago River at Niles						
Q	13.20	6.60	21.30	10.70	7.10	9.23	7.95	10.27
A	22.65	14.14	31.36	19.64	14.86	17.76	16.05	19.10
V	0.58	0.46	0.68	0.54	0.47	0.52	0.49	0.54
W	31.94	28.47	34.57	30.84	28.82	30.10	29.36	30.64
D	0.71	0.50	0.91	0.64	0.52	0.59	0.55	0.62
60.	05536215	Thorn Creek at Glenwood						
Q	17.70	8.85	19.80	9.90	13.89	15.13	14.17	15.43
A	17.17	9.76	18.81	10.69	14.09	15.11	14.32	15.35
V	1.03	0.91	1.05	0.93	0.99	1.00	0.99	1.01
W	25.23	21.37	25.91	21.95	23.80	24.29	23.92	24.41
D	0.68	0.46	0.73	0.49	0.59	0.62	0.60	0.63
61.	05536235	Deer Creek near Chicago Heights						
Q	1.10	0.55	1.89	0.95	0.72	0.99	0.90	1.19
A	1.83	1.31	2.38	1.71	1.49	1.74	1.66	1.90
V	0.60	0.42	0.80	0.56	0.48	0.57	0.54	0.63
W	6.06	5.12	6.91	5.84	5.46	5.90	5.77	6.17
D	0.30	0.26	0.35	0.29	0.27	0.30	0.29	0.31
62.	05536255	Butterfield Creek at Flossmoor						
Q	1.09	0.55	1.52	0.76	0.51	0.76	0.61	0.87
A	1.33	0.79	1.72	1.01	0.75	1.01	0.86	1.12
V	0.82	0.69	0.89	0.75	0.67	0.75	0.70	0.77
W	5.95	3.74	7.47	4.66	3.55	4.66	4.01	5.10
D	0.22	0.21	0.23	0.22	0.21	0.22	0.21	0.22
63.	05536265	Lansing Ditch near Lansing						
Q	1.47	0.74	1.74	0.87	0.55	0.78	0.43	0.72
A	9.50	7.71	10.01	8.10	7.04	7.83	6.53	7.64
V	0.16	0.10	0.18	0.11	0.08	0.10	0.07	0.10
W	11.28	10.61	11.46	10.77	10.33	10.66	10.10	10.58
D	0.84	0.73	0.87	0.75	0.68	0.74	0.65	0.72

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
64.	05536270	North Creek near Lansing						
Q	1.74	0.87	2.25	1.13	0.59	0.90	0.54	0.92
A	6.47	3.87	7.83	4.70	2.90	3.97	2.72	4.03
V	0.27	0.23	0.29	0.24	0.21	0.23	0.20	0.23
W	17.72	16.21	18.31	16.76	15.42	16.28	15.25	16.32
D	0.37	0.24	0.43	0.28	0.19	0.24	0.18	0.25
65.	05536275	Thorn Creek at Thornton						
Q	24.80	12.40	31.30	15.70	18.45	21.11	19.18	22.41
A	29.49	21.04	33.04	23.60	25.54	27.27	26.02	28.07
V	0.84	0.59	0.95	0.67	0.72	0.78	0.74	0.80
W	30.39	25.82	32.10	27.29	28.35	29.26	28.61	29.67
D	0.97	0.82	1.03	0.87	0.90	0.93	0.91	0.95
66.	05536290	Little Calumet River at South Holland						
Q	36.90	18.50	49.90	25.00	30.38	33.74	32.18	36.34
A	65.85	39.46	82.38	49.37	57.01	61.62	59.50	65.11
V	0.56	0.47	0.61	0.51	0.53	0.55	0.54	0.56
W	45.25	36.06	49.97	39.82	42.45	43.94	43.26	45.02
D	1.46	1.09	1.65	1.24	1.34	1.40	1.38	1.45
67.	05536340	Midlothian Creek at Oak Forest						
Q	0.49	0.25	0.90	0.45	0.20	0.33	0.30	0.49
A	1.88	1.32	2.58	1.80	1.18	1.53	1.45	1.88
V	0.26	0.19	0.35	0.25	0.17	0.22	0.21	0.26
W	5.22	4.43	6.04	5.11	4.20	4.74	4.63	5.22
D	0.36	0.30	0.43	0.35	0.28	0.32	0.31	0.36
68.	05539000	Hickory Creek at Joliet						
Q	7.19	3.60	9.40	4.70	5.83	6.81	6.52	7.87
A	21.71	15.53	24.73	17.67	19.62	21.15	20.71	22.69
V	0.33	0.23	0.38	0.27	0.30	0.32	0.32	0.35
W	46.75	42.36	48.57	44.00	45.37	46.39	46.10	47.36
D	0.46	0.37	0.51	0.40	0.43	0.46	0.45	0.48
69.	05539900	W. B. Du Page River near West Chicago						
Q	7.09	3.55	9.48	4.74	2.50	3.80	3.00	4.68
A	10.10	6.00	12.58	7.46	4.60	6.31	5.28	7.39
V	0.71	0.59	0.76	0.64	0.55	0.61	0.57	0.64
W	12.25	10.07	13.30	10.93	9.12	10.27	9.60	10.89
D	0.83	0.60	0.95	0.68	0.51	0.62	0.55	0.68
70.	05540500	Du Page River at Shorewood						
Q	49.40	24.70	61.40	30.70	40.10	44.70	39.40	44.89
A	58.95	40.05	66.55	45.21	52.48	55.75	51.96	55.89
V	0.84	0.62	0.93	0.68	0.77	0.81	0.76	0.81
W	88.63	83.92	90.16	85.37	87.19	87.94	87.07	87.97
D	0.67	0.48	0.74	0.53	0.60	0.63	0.60	0.64

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
71.	05542000	Mazon River near Coal City						
Q	2.14	1.07	4.90	2.45	0.74	1.59	1.00	1.88
A	5.98	3.81	10.26	6.54	3.00	4.93	3.65	5.50
V	0.36	0.28	0.48	0.38	0.25	0.32	0.28	0.34
W	18.40	13.88	25.79	19.45	11.94	16.31	13.50	17.46
D	0.33	0.27	0.40	0.34	0.25	0.30	0.27	0.32
72.	05543500	Illinois River at Marseilles						
Q	4643.00	2322.00	4967.00	2484.00	4445.00	4729.00	4342.00	4647.00
A	1573.00	1118.00	1627.00	1156.00	1540.00	1588.00	1522.00	1574.00
V	2.99	2.10	3.09	2.17	2.92	3.01	2.89	2.99
W	681.00	691.00	680.00	690.00	682.00	681.00	682.00	681.00
D	2.31	1.62	2.39	1.67	2.26	2.33	2.23	2.31
73.	05549000	Boone Creek near McHenry						
Q	5.80	2.90	6.47	3.24	4.99	5.49	5.33	5.93
A	5.63	4.24	5.89	4.44	5.30	5.51	5.44	5.69
V	1.03	0.69	1.10	0.73	0.94	1.00	0.98	1.04
W	11.46	10.62	11.60	10.75	11.27	11.39	11.35	11.49
D	0.49	0.40	0.51	0.41	0.47	0.48	0.48	0.50
74.	05550000	Fox River at Algonquin						
Q	169.00	84.50	214.00	107.00	119.00	145.00	164.00	201.00
A	129.00	87.01	147.00	99.40	106.00	118.00	126.00	142.00
V	1.32	0.97	1.46	1.08	1.13	1.23	1.30	1.42
W	130.00	112.00	137.00	118.00	121.00	126.00	130.00	135.00
D	0.99	0.78	1.07	0.84	0.87	0.94	0.98	1.05
75.	05550500	Poplar Creek at Elgin						
Q	1.64	0.82	2.28	1.14	0.80	1.11	0.95	1.25
A	3.72	1.93	5.08	2.64	1.89	2.57	2.22	2.88
V	0.44	0.42	0.45	0.43	0.42	0.43	0.42	0.43
W	10.04	6.40	12.43	7.93	6.30	7.79	7.04	8.42
D	0.37	0.30	0.41	0.33	0.30	0.33	0.32	0.34
76.	05551200	Ferson Creek near St. Charles						
Q	4.94	2.47	6.35	3.18	1.89	2.72	2.82	4.07
A	6.96	4.16	8.40	5.02	3.41	4.47	4.59	6.03
V	0.71	0.60	0.75	0.64	0.56	0.61	0.62	0.68
W	14.93	10.64	16.88	12.04	9.34	11.16	11.35	13.58
D	0.47	0.39	0.50	0.42	0.37	0.40	0.40	0.44
77.	05551700	Blackberry Creek near Yorkville						
Q	9.10	4.55	10.80	5.40	8.20	9.25	8.80	10.24
A	11.24	7.94	12.24	8.65	10.66	11.33	11.05	11.92
V	0.81	0.57	0.88	0.62	0.77	0.82	0.80	0.86
W	16.64	14.14	17.33	14.72	16.24	16.71	16.51	17.11
D	0.68	0.56	0.71	0.59	0.66	0.68	0.67	0.70

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
78.	05552500	Fox River at Dayton						
Q	350.00	175.00	415.00	208.00	269.00	314.00	327.00	389.00
A	273.00	182.00	302.00	202.00	234.00	257.00	263.00	291.00
V	1.28	0.96	1.37	1.03	1.15	1.22	1.24	1.34
W	168.00	136.00	177.00	143.00	155.00	162.00	164.00	173.00
D	1.63	1.34	1.71	1.41	1.51	1.58	1.60	1.70
79.	05554000	N. F. Vermilion River near Charlotte						
Q	1.09	0.55	2.16	1.08	0.49	0.83	0.73	1.31
A	4.85	2.54	9.26	4.81	2.28	3.75	3.32	5.77
V	0.23	0.22	0.24	0.23	0.22	0.22	0.22	0.23
W	23.23	16.75	32.22	23.13	15.85	20.39	19.18	25.36
D	0.21	0.15	0.29	0.21	0.14	0.18	0.17	0.23
80.	05554500	Vermilion River at Pontiac						
Q	6.26	3.13	9.97	4.99	4.31	6.70	5.77	8.22
A	27.56	20.53	33.59	25.03	23.52	28.37	26.62	30.94
V	0.23	0.15	0.30	0.20	0.19	0.24	0.22	0.27
W	50.62	42.45	56.96	47.79	46.04	51.49	49.58	54.24
D	0.54	0.48	0.59	0.52	0.51	0.55	0.54	0.57
81.	05555500	Vermilion River at Lowell						
Q	17.90	8.95	26.20	13.10	13.92	17.93	15.37	20.90
A	43.47	27.71	55.68	35.49	36.92	43.52	39.37	48.07
V	0.41	0.32	0.47	0.37	0.38	0.41	0.39	0.44
W	62.46	48.00	72.19	55.48	56.77	62.50	58.95	66.25
D	0.70	0.58	0.77	0.64	0.65	0.70	0.67	0.73
82.	05556500	Bureau Creek at Princeton						
Q	3.03	1.52	6.13	3.07	2.44	3.36	2.62	3.56
A	6.68	4.69	9.60	6.73	5.98	7.05	6.20	7.26
V	0.45	0.32	0.64	0.46	0.41	0.48	0.42	0.49
W	16.22	13.01	20.32	16.29	15.13	16.76	15.48	17.08
D	0.41	0.36	0.47	0.41	0.40	0.42	0.40	0.43
83.	05558500	Crow Creek (West) near Henry						
Q	1.05	0.53	1.79	0.90	0.35	0.57	0.36	0.65
A	1.74	0.96	2.78	1.52	0.66	1.02	0.68	1.14
V	0.61	0.57	0.65	0.60	0.54	0.57	0.54	0.58
W	6.13	4.07	8.42	5.59	3.18	4.25	3.23	4.60
D	0.28	0.24	0.33	0.27	0.21	0.24	0.21	0.25
84.	05560500	Farm Creek at Farmdale						
Q	1.01	0.51	1.50	0.75	0.39	0.61	0.51	0.77
A	1.88	1.28	2.35	1.59	1.10	1.42	1.28	1.62
V	0.54	0.40	0.64	0.48	0.36	0.44	0.40	0.48
W	7.66	6.53	8.40	7.15	6.13	6.81	6.53	7.19
D	0.25	0.20	0.28	0.22	0.18	0.21	0.20	0.23

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
85.	05562000	Farm Creek at East Peoria						
Q	2.60	1.30	3.92	1.96	1.79	2.10	1.55	2.05
A	2.87	1.75	3.84	2.34	2.20	2.46	1.98	2.42
V	0.91	0.74	1.03	0.84	0.81	0.85	0.78	0.85
W	15.15	10.53	18.80	13.06	12.45	13.54	11.55	13.37
D	0.19	0.17	0.20	0.18	0.18	0.18	0.17	0.18
86.	05563000	Kickapoo Creek near Kickapoo						
Q	3.76	1.88	7.65	3.83	2.46	3.09	2.94	3.93
A	4.38	2.59	7.51	4.44	3.18	3.78	3.64	4.53
V	0.86	0.73	1.02	0.86	0.78	0.82	0.81	0.87
W	14.48	11.57	18.23	14.57	12.62	13.59	13.37	14.69
D	0.30	0.22	0.41	0.31	0.25	0.28	0.27	0.31
87.	05563500	Kickapoo Creek at Peoria						
Q	9.69	4.85	21.20	10.60	5.87	7.83	7.53	9.76
A	15.75	10.46	25.03	16.61	11.71	13.89	13.57	15.82
V	0.62	0.46	0.85	0.64	0.50	0.56	0.56	0.62
W	29.75	23.97	37.99	30.60	25.44	27.84	27.50	29.82
D	0.53	0.44	0.66	0.54	0.46	0.50	0.49	0.53
88.	05567500	Mackinaw River near Congerville						
Q	13.00	6.50	21.60	10.80	9.43	12.89	11.12	15.56
A	17.58	14.76	19.99	16.78	16.22	17.55	16.90	18.40
V	0.74	0.44	1.08	0.64	0.58	0.74	0.66	0.85
W	32.96	31.89	33.76	32.67	32.46	32.94	32.71	33.24
D	0.53	0.46	0.59	0.51	0.50	0.53	0.52	0.55
89.	05568000	Mackinaw River near Green Valley						
Q	56.50	28.30	70.60	35.30	44.71	52.87	43.79	52.77
A	37.66	13.75	52.10	18.97	26.77	34.18	25.97	34.09
V	1.49	2.06	1.35	1.86	1.66	1.54	1.68	1.54
W	54.23	35.19	62.33	40.41	46.84	52.02	46.24	51.96
D	0.69	0.39	0.84	0.47	0.57	0.66	0.56	0.66
90.	05568500	Illinois River at Kingston Mines						
Q	5208.00	2604.00	5951.00	2976.00	4790.00	5222.00	4924.00	5472.00
A	5525.00	3920.00	5902.00	4188.00	5301.00	5532.00	5374.00	5662.00
V	0.93	0.66	1.00	0.71	0.90	0.93	0.91	0.96
W	581.00	530.00	591.00	539.00	575.00	581.00	577.00	585.00
D	9.51	7.40	9.98	7.77	9.23	9.52	9.32	9.68
91.	05568800	Indian Creek near Wyoming						
Q	4.99	2.50	6.98	3.49	2.14	3.10	2.29	3.42
A	6.82	4.06	8.78	5.22	3.61	4.77	3.80	5.14
V	0.73	0.61	0.79	0.67	0.59	0.65	0.60	0.66
W	16.76	11.69	19.97	13.91	10.77	13.07	11.16	13.76
D	0.41	0.35	0.44	0.38	0.34	0.37	0.34	0.37

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
92.	05569500	Spoon River at London Mills						
Q	47.80	23.90	81.90	41.00	31.86	41.96	36.31	48.53
A	103.00	64.16	148.00	92.50	77.97	93.96	85.19	104.00
V	0.47	0.38	0.55	0.44	0.41	0.45	0.43	0.47
W	71.10	62.47	78.61	69.09	65.91	69.39	67.54	71.30
D	1.44	1.03	1.88	1.34	1.18	1.35	1.26	1.45
93.	05570000	Spoon River at Seville						
Q	85.40	42.70	155.00	77.50	50.15	68.33	57.54	78.00
A	86.03	36.37	180.00	76.26	44.42	65.22	52.68	76.87
V	0.99	1.17	0.86	1.02	1.13	1.05	1.09	1.01
W	66.94	44.67	94.80	63.26	49.07	58.77	53.17	63.49
D	1.29	0.81	1.90	1.21	0.91	1.11	0.99	1.21
94.	05571000	Sangamon River at Mahomet						
Q	8.78	4.39	11.30	5.65	4.50	6.88	5.90	9.04
A	11.68	7.90	13.47	9.11	8.01	10.18	9.33	11.88
V	0.75	0.56	0.83	0.62	0.56	0.67	0.63	0.76
W	29.47	21.47	33.06	24.09	21.72	26.36	24.58	29.86
D	0.40	0.37	0.41	0.38	0.37	0.39	0.38	0.40
95.	05572000	Sangamon River at Monticello						
Q	15.00	7.50	22.00	11.00	9.82	13.19	11.73	16.53
A	24.93	13.56	34.91	18.98	17.18	22.27	20.08	27.15
V	0.56	0.53	0.58	0.55	0.55	0.56	0.55	0.57
W	38.64	27.81	46.35	33.35	31.60	36.36	34.39	40.47
D	0.65	0.49	0.75	0.57	0.54	0.61	0.58	0.67
96.	05574500	Flat Branch near Taylorville						
Q	3.52	1.76	8.17	4.08	1.02	2.90	2.04	3.90
A	7.99	5.25	13.33	8.74	3.77	7.11	5.74	8.51
V	0.44	0.33	0.61	0.47	0.27	0.41	0.35	0.46
W	14.02	10.74	19.38	14.84	8.70	13.01	11.36	14.58
D	0.57	0.49	0.69	0.59	0.43	0.55	0.51	0.58
97.	05575500	South Fork Sangamon River at Kincaid						
Q	11.30	5.65	19.60	9.80	4.13	7.50	5.30	9.00
A	17.45	11.34	24.58	15.97	9.33	13.52	10.90	15.15
V	0.66	0.50	0.82	0.62	0.45	0.56	0.49	0.60
W	33.94	23.04	46.17	31.34	19.33	26.99	22.23	29.88
D	0.51	0.49	0.53	0.51	0.48	0.50	0.49	0.51
98.	05576000	South Fork Sangamon River near Rochester						
Q	16.20	8.10	37.80	18.90	8.00	14.41	10.27	18.20
A	27.35	16.79	49.69	30.49	16.64	25.19	19.84	29.69
V	0.65	0.50	0.88	0.68	0.50	0.62	0.54	0.67
W	34.89	26.10	49.74	37.21	25.96	33.22	28.83	36.63
D	0.78	0.64	1.00	0.82	0.64	0.76	0.69	0.81

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
99.	05576500	Sangamon River at Riverton						
Q	66.90	33.50	111.00	55.50	48.64	62.61	47.56	65.30
A	82.86	56.01	110.00	74.54	69.18	79.81	68.30	81.73
V	0.85	0.62	1.09	0.78	0.73	0.83	0.73	0.84
W	63.02	51.10	73.48	59.55	57.21	61.77	56.83	62.56
D	1.32	1.10	1.50	1.25	1.21	1.29	1.20	1.31
100.	05578500	Salt Creek near Rowell						
Q	14.00	7.00	19.40	9.70	8.34	11.56	11.00	15.11
A	15.83	10.00	19.65	12.41	11.23	13.94	13.49	16.65
V	0.75	0.67	0.79	0.70	0.69	0.72	0.72	0.76
W	30.55	22.97	34.95	26.27	24.69	28.24	27.67	31.53
D	0.52	0.44	0.56	0.47	0.46	0.49	0.49	0.53
101.	05579500	Lake Fork near Cornland						
Q	9.82	4.91	10.80	5.40	6.92	8.57	6.63	8.51
A	15.76	11.00	16.56	11.55	13.14	14.69	12.85	14.63
V	0.63	0.45	0.67	0.47	0.53	0.59	0.52	0.59
W	34.27	27.69	35.29	28.52	30.78	32.87	30.37	32.80
D	0.46	0.40	0.47	0.41	0.43	0.45	0.42	0.45
102.	05580000	Kickapoo Creek at Waynesville						
Q	7.37	3.69	12.40	6.20	3.04	5.26	3.94	6.40
A	9.69	5.71	14.42	8.49	4.92	7.49	6.00	8.70
V	0.74	0.63	0.82	0.71	0.61	0.68	0.64	0.71
W	16.43	11.98	20.82	15.18	10.97	14.08	12.35	15.40
D	0.59	0.48	0.69	0.56	0.45	0.53	0.49	0.57
103.	05580500	Kickapoo Creek near Lincoln						
Q	10.20	5.10	18.00	9.00	7.19	9.80	7.37	9.96
A	13.41	9.23	18.21	12.53	11.11	13.12	11.26	13.24
V	0.70	0.56	0.83	0.67	0.63	0.69	0.63	0.69
W	23.80	20.16	27.26	23.10	21.89	23.57	22.02	23.66
D	0.56	0.46	0.67	0.54	0.51	0.56	0.51	0.56
104.	05581500	Sugar Creek near Hartsburg						
Q	17.70	8.85	27.20	13.60	13.55	16.32	14.67	18.65
A	21.44	16.86	24.87	19.57	19.54	20.84	20.09	21.83
V	0.77	0.58	0.92	0.69	0.69	0.74	0.71	0.79
W	39.56	35.03	42.66	37.77	37.75	39.00	38.28	39.93
D	0.54	0.48	0.58	0.52	0.52	0.53	0.53	0.55
105.	05582000	Salt Creek near Greenview						
Q	148.00	74.00	176.00	88.00	116.00	137.00	115.00	137.00
A	96.89	74.87	103.00	79.86	88.50	94.15	88.21	94.15
V	1.38	1.01	1.50	1.09	1.24	1.33	1.23	1.33
W	92.39	88.50	93.39	89.46	91.00	91.95	90.96	91.95
D	1.05	0.85	1.11	0.89	0.97	1.02	0.97	1.02

TABLE 4. CONTINUED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
106.	05582500	Crane Creek near Easton						
Q	4.29	2.15	5.38	2.69	2.44	3.27	3.81	4.88
A	12.07	7.42	14.15	8.69	8.11	9.97	11.10	13.21
V	0.37	0.30	0.40	0.32	0.31	0.34	0.36	0.38
W	17.28	12.40	19.27	13.81	13.17	15.17	16.32	18.39
D	0.70	0.60	0.73	0.63	0.62	0.66	0.68	0.72
107.	05583000	Sangamon River near Oakford						
Q	389.00	195.00	570.00	285.00	305.00	376.00	291.00	351.00
A	282.00	182.00	360.00	231.00	242.00	276.00	235.00	264.00
V	1.32	1.09	1.47	1.21	1.23	1.31	1.22	1.28
W	241.00	207.00	263.00	225.00	229.00	240.00	226.00	236.00
D	1.17	0.88	1.37	1.03	1.06	1.15	1.04	1.12
108.	05584500	La Moine River at Colmar						
Q	19.30	9.65	42.60	21.30	8.67	13.56	10.17	15.59
A	23.71	13.69	44.39	25.63	12.58	17.92	14.27	20.02
V	0.81	0.71	0.96	0.83	0.69	0.76	0.71	0.78
W	29.47	21.65	41.91	30.79	20.65	25.19	22.17	26.80
D	0.80	0.63	1.06	0.83	0.61	0.71	0.64	0.75
109.	05585000	La Moine River at Ripley						
Q	52.20	26.10	104.00	52.00	25.95	36.30	28.10	38.52
A	37.33	18.46	75.19	37.18	18.35	25.81	19.90	27.41
V	1.40	1.42	1.38	1.40	1.42	1.41	1.42	1.41
W	29.14	19.48	43.48	29.07	19.42	23.60	20.34	24.42
D	1.28	0.95	1.73	1.28	0.95	1.09	0.98	1.12
110.	05585500	Illinois River at Meredosia						
Q	6367.00	3184.00	7384.00	3692.00	5980.00	6593.00	6176.00	6938.00
A	6110.00	4159.00	6634.00	4515.00	5901.00	6230.00	6008.00	6409.00
V	1.04	0.76	1.11	0.81	1.01	1.05	1.02	1.08
W	763.00	728.00	771.00	735.00	760.00	765.00	761.00	768.00
D	8.01	5.71	8.61	6.14	7.77	8.15	7.89	8.35
111.	05587000	Macoupin Creek near Kane						
Q	15.70	7.85	38.30	19.20	6.93	9.84	7.24	10.28
A	18.57	11.25	35.35	21.47	10.29	13.25	10.62	13.67
V	0.85	0.70	1.09	0.90	0.68	0.75	0.69	0.76
W	41.07	29.56	62.70	45.19	27.87	32.91	28.45	33.60
D	0.45	0.38	0.56	0.48	0.37	0.40	0.37	0.41
112.	05589500	Canteen Creek at Caseyville						
Q	0.87	0.44	1.67	0.84	0.35	0.49	0.50	0.69
A	1.36	0.73	2.46	1.31	0.59	0.80	0.82	1.10
V	0.65	0.61	0.69	0.65	0.60	0.62	0.62	0.64
W	6.12	4.54	8.13	6.02	4.11	4.46	4.80	5.53
D	0.22	0.16	0.30	0.22	0.14	0.17	0.17	0.20

TABLE 4. CONTINUED

ITEM	C1	VALUES FOR Q, A, V, W & D FOR CONDITIONS*						
		C2	C3	C4	C5	C6	C7	C8
113.	05590000	Kaskaskia River at Bondville						
Q	0.32	0.16	0.48	0.24	0.19	0.28	0.24	0.37
A	0.80	0.49	1.07	0.65	0.55	0.73	0.65	0.89
V	0.40	0.33	0.45	0.37	0.35	0.39	0.37	0.42
W	5.46	4.62	6.03	5.10	4.81	5.30	5.10	5.66
D	0.15	0.11	0.18	0.13	0.11	0.14	0.13	0.16
114.	05592000	Kaskaskia River at Shelbyville						
Q	13.40	6.70	25.90	13.00	7.15	11.88	9.06	14.77
A	15.77	9.24	26.23	15.41	9.71	14.37	11.66	17.00
V	0.86	0.73	1.00	0.85	0.74	0.84	0.79	0.88
W	35.55	30.00	41.78	35.28	30.48	34.51	32.30	36.41
D	0.44	0.31	0.63	0.44	0.32	0.42	0.36	0.47
115.	05592500	Kaskaskia River at Vandalia						
Q	62.80	31.40	110.00	55.00	41.34	56.59	47.13	66.24
A	105.00	65.56	154.00	95.92	79.02	97.79	86.37	109.00
V	0.60	0.48	0.72	0.58	0.53	0.58	0.55	0.61
W	62.60	55.10	69.40	61.09	57.96	61.41	59.38	63.22
D	1.68	1.19	2.21	1.57	1.36	1.59	1.46	1.72
116.	05593000	Kaskaskia River at Carlyle						
Q	82.30	41.20	189.00	94.50	56.74	76.72	58.90	79.88
A	113.00	67.24	211.40	126.00	85.53	107.00	87.97	111.00
V	0.73	0.62	0.90	0.76	0.67	0.72	0.68	0.73
W	105.00	96.77	117.00	107.00	101.00	104.00	101.00	105.00
D	1.07	0.70	1.81	1.17	0.85	1.03	0.87	1.05
117.	05594000	Shoal Creek near Breese						
Q	16.80	8.40	38.90	19.50	9.63	13.38	11.78	16.17
A	28.83	17.76	51.84	31.99	19.15	24.59	22.49	28.07
V	0.58	0.47	0.75	0.61	0.49	0.55	0.53	0.58
W	36.08	30.61	44.02	33.38	31.41	34.18	33.17	35.75
D	0.80	0.58	1.18	0.86	0.61	0.72	0.68	0.79
118.	05595000	Kaskaskia River at New Athens						
Q	180.00	90.00	339.00	170.00	140.00	188.00	149.00	202.00
A	430.00	290.00	616.00	416.00	373.00	441.00	386.00	459.00
V	0.42	0.31	0.56	0.41	0.38	0.43	0.39	0.45
W	138.00	125.00	151.00	137.00	134.00	139.00	135.00	141.00
D	3.11	2.31	4.08	3.03	2.79	3.17	2.86	3.26
119.	05596000	Big Muddy River near Benton						
Q	4.62	2.31	16.30	8.15	1.75	2.71	2.68	4.22
A	7.38	4.50	18.15	11.07	3.69	5.04	5.00	6.92
V	0.64	0.53	0.90	0.75	0.49	0.55	0.55	0.62
W	18.47	14.68	28.04	22.29	13.40	15.48	15.42	17.93
D	0.40	0.31	0.65	0.50	0.28	0.33	0.32	0.39

TABLE 4. CONCLUDED

ITEM	VALUES FOR Q, A, V, W & D FOR CONDITIONS*							
	C1	C2	C3	C4	C5	C6	C7	C8
120.	05597000	Big Muddy River at Plumfield						
Q	6.68	3.34	21.23	11.62	2.88	4.29	4.61	7.09
A	3.91	2.40	9.21	5.89	2.10	2.82	2.97	4.09
V	1.71	1.43	2.31	1.98	1.38	1.53	1.55	1.74
W	16.07	12.48	24.50	19.66	11.82	13.67	14.04	16.42
D	0.24	0.19	0.38	0.30	0.18	0.21	0.21	0.25
121.	05599000	Beaucoup Creek near Matthews						
Q	4.10	2.05	9.28	4.64	0.92	1.87	1.59	3.18
A	13.84	9.14	22.55	14.90	5.66	8.66	7.86	11.89
V	0.29	0.22	0.41	0.31	0.16	0.21	0.20	0.27
W	20.72	17.12	25.96	21.44	13.72	16.69	15.96	19.32
D	0.67	0.53	0.87	0.70	0.41	0.52	0.49	0.62
122.	05599500	Big Muddy River at Murphysboro						
Q	48.10	24.10	116.00	58.00	31.08	42.38	40.84	59.52
A	46.75	32.88	73.19	51.43	37.43	43.83	43.01	52.11
V	1.03	0.74	1.59	1.13	0.83	0.97	0.95	1.15
W	59.63	49.51	75.58	62.72	53.02	57.64	57.06	63.15
D	0.78	0.66	0.97	0.82	0.71	0.76	0.75	0.83
123.	05600000	Big Creek near Wetaug						
Q	1.02	0.51	3.23	1.62	0.52	0.81	0.80	1.14
A	4.65	3.19	8.70	5.98	3.22	4.10	4.07	4.94
V	0.22	0.16	0.37	0.27	0.16	0.20	0.20	0.23
W	9.23	8.25	11.13	9.95	8.27	8.89	8.87	9.40
D	0.50	0.39	0.78	0.60	0.39	0.46	0.46	0.53

*

- C1 = Median 31-day low flow during the period May-October.
- C2 = Half median 31-day low flow during the period May-October.
- C3 = Median 61-day low flow during the period May-October.
- C4 = Half median 61-day low flow during the period May-October.
- C5 = Flow at 90 percent duration using daily flows May-October.
- C6 = Flow at 85 percent duration using daily flows May-October.
- C7 = Flow at 90 percent duration using daily flows for the record.
- C8 = Flow at 85 percent duration using daily flows for the record.