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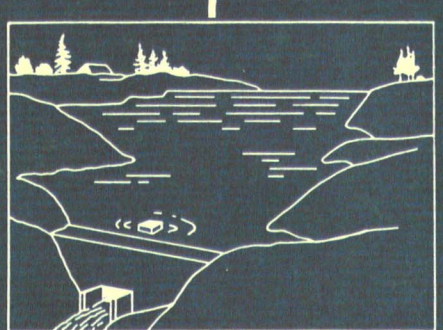
Hydrologic Design of Impounding Reservoirs in Illinois

by

MICHAEL L. TERSTRIEP, MISGANAW DEMISSIE,
DOUGLAS C. NOEL and H. VERNON KNAPP



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Title: Hydrologic Design of Impounding Reservoirs in Illinois.

Abstract: This report, an update of Illinois State Water Survey Bulletin 51 (1964), contains processed hydrologic data for use in the design of reservoirs in Illinois. Part 1 describes the data available and the analytical methods used, and provides a step-by-step example demonstrating application of the analytical methods. Part 2 presents the processed low flow data for 146 stream gaging stations in the state, in both graphical and tabular form, arranged according to 11 physiographic regions. Of the 146 stations presented, 23 had record lengths in excess of 40 years and were considered index stations. Curves of relation were developed between these stations and the 123 "short-record" or secondary stations. These curves were used to synthesize flows and extend the record of secondary stations to the same length as the index stations. For each flow record, a partial series of low flows for durations to 60 months were developed and extended to 50- or 100-year recurrence intervals depending on the length of original record. The low flow series were then subjected to a non-sequential mass analysis that provided a relationship between reservoir capacity, yield, duration, and recurrence interval. Net lake evaporation for durations to 60 months and recurrence intervals to 100 years are presented for 6 Illinois locations. A methodology is also provided to estimate loss of reservoir capacity due to sediment.

Reference: Terstriep, Michael L., Misganaw Demissie, Douglas C. Noel, and H. Vernon Knapp. Hydrologic Design of Impounding Reservoirs in Illinois. Illinois State Water Survey, Champaign, Bulletin 67, 1982.

Indexing Terms: Analytical techniques, draft-storage-recurrence curves, gaging stations, hydrologic data, Illinois, lake evaporation, low flow analysis, recurrence intervals, reservoirs, reservoir design, reservoir storage, reservoir yield, sedimentation, streamflow.

STATE OF ILLINOIS
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FOREWORD

by John B. Stall

Wise development of a water resource to meet probable future demands requires both basic data and methods of data analysis that give substantive information concerning the adequacy of the water source.

An impounding reservoir project that is successful in meeting a water demand reflects careful attention to the hydrologic design as well as to the various phases of physical design. The hydrologic phase is more elusive than the physical phases that include the dam, spillway, pumping and treatment facilities, and distribution system. Nonetheless, good engineering design in the hydrologic phase as well as in the other phases produces benefits of favorable construction, maintenance, and operation costs for the project. This study was undertaken to fulfill the need for improved methods of analysis and more exact hydrologic information on impounding reservoir yield to aid in design.

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Hydrologic Design of Impounding Reservoirs in Illinois

by Michael L. Terstriep, Misganaw Demiesie, Douglas C. Noel, and H. Vernon Knapp

INTRODUCTION

Background

This report is an update of State Water Survey Bulletin 51, 1964, by John B. Stall.[1] Since the primary reason for this update was to add 19 years of additional streamflow records (1960-1978), the format has been kept essentially the same. Although there have been some changes in generation of the low flow analyses presented here, users of Bulletin 51 will find application of the methodology nearly unchanged.

Scope of Report

The user of this report will be able to estimate the sustained net yield of an existing or proposed reservoir in Illinois with relative ease. The information required includes the location of the reservoir and its watershed area, pool area, and storage capacity. Methods of estimating sedimentation rate and evaporation loss are included. The report is organized into two major parts.

In Part 1, Analytical Methods, each of the major steps from analysis of flow records to calculation of yield is described. The steps include:

1) Selection of appropriate streamflow records
2) Extension of -short streamflow records
3) Regionalization of similar streamflow records
4) Development of low flow recurrence curves
5) Application of a nonsequential mass analysis
6) Application of the critical duration concept
7) Calculation of net evaporation
8) Estimation of the sedimentation rate

Users of this report should take the time to understand each of these steps before applying the results in Part 2 to their particular problems. A sample problem at the end of Part 1 illustrates the analysis of a reservoir using the methods and low flow analyses presented.

In Part 2, the draft-storage-duration-recurrence interval relations for each of 146 streamflow records are presented by region for 11 regions of the state.

Acknowledgments

This project was accomplished with funding from the Illinois Department of Transportation, Division of Water Resources. All staff on the project were members of the Surface Water Section of the State Water Survey, Stanley A. Changnon, Jr., Chief. This report is an update of Water Survey Bulletin 51, Low Flows of Illinois Streams for Impounding Reservoir Design, by John B. Stall, Engineer Emeritus. Much of the credit for this report should go to John Stall; many of the concepts and words herein are his. Robert A. Sinclair performed the initial translation of USGS stream gage records onto disks and managed the computer resources for the project. Linda Riggin and John Brother, Jr., prepared the illustrations, Gail Taylor edited the manuscript, and Kathleen Brown and Pamela Lovett typed the draft and final copies of the report. Streamflow data were obtained from the U.S. Geological Survey, and computing facilities of the University of Illinois were used throughout.

Part 1. Analytical Methods

STREAMFLOW DATA

Streamflow data from 160 USGS stream gaging stations in Illinois, exclusive of urban northeastern Illinois, with length of record ranging from 5 to 64 years, were initially analyzed for this study. The distribution of the streamflow record lengths through water year 1978 for the 160 stations is shown in figure 1. There were 23 station records ranging from 41 to 64 years and 104 station records ranging from 16 to 40 years. The rest of the stations have records for 15 years or less. Most of the stations with at least 9 years of record have been analyzed and are included in this report.

Extension of Short Streamflow Records

Since only 23 gaging stations out of the total of 160 have flow records in excess of 40 years, it is necessary to extend the flow records of the short-record stations by using the flow records at the long-record stations. Several techniques are available for extending monthly streamflow records, each of which defines a unique relationship between the monthly flows at the long-record (index) and short-record (secondary) stations for those years in which the two records are concurrent. After a review of the capabilities of many of these methods, the Maintenance of Variance Extension (MOVE) technique described by Hirsch[2] was chosen for use in this study because it best preserves the natural distribution of monthly flows of the secondary station in the extended record. A description of the MOVE technique follows.

The extension procedure is illustrated with an example based on the extension of the streamflow record for Salt Creek near Rowell using the longer streamflow record from the Sangamon River at Monticello. The periods of record at the Rowell and Monticello stations are 1942-1978 and 1914-1978, respectively. Thus there are 36 years in the concurrent period of record.

The MOVE technique initially involves fitting the populations of monthly flows from both the index and secondary stations for the concurrent period of record with an appropriate probability distribution function.

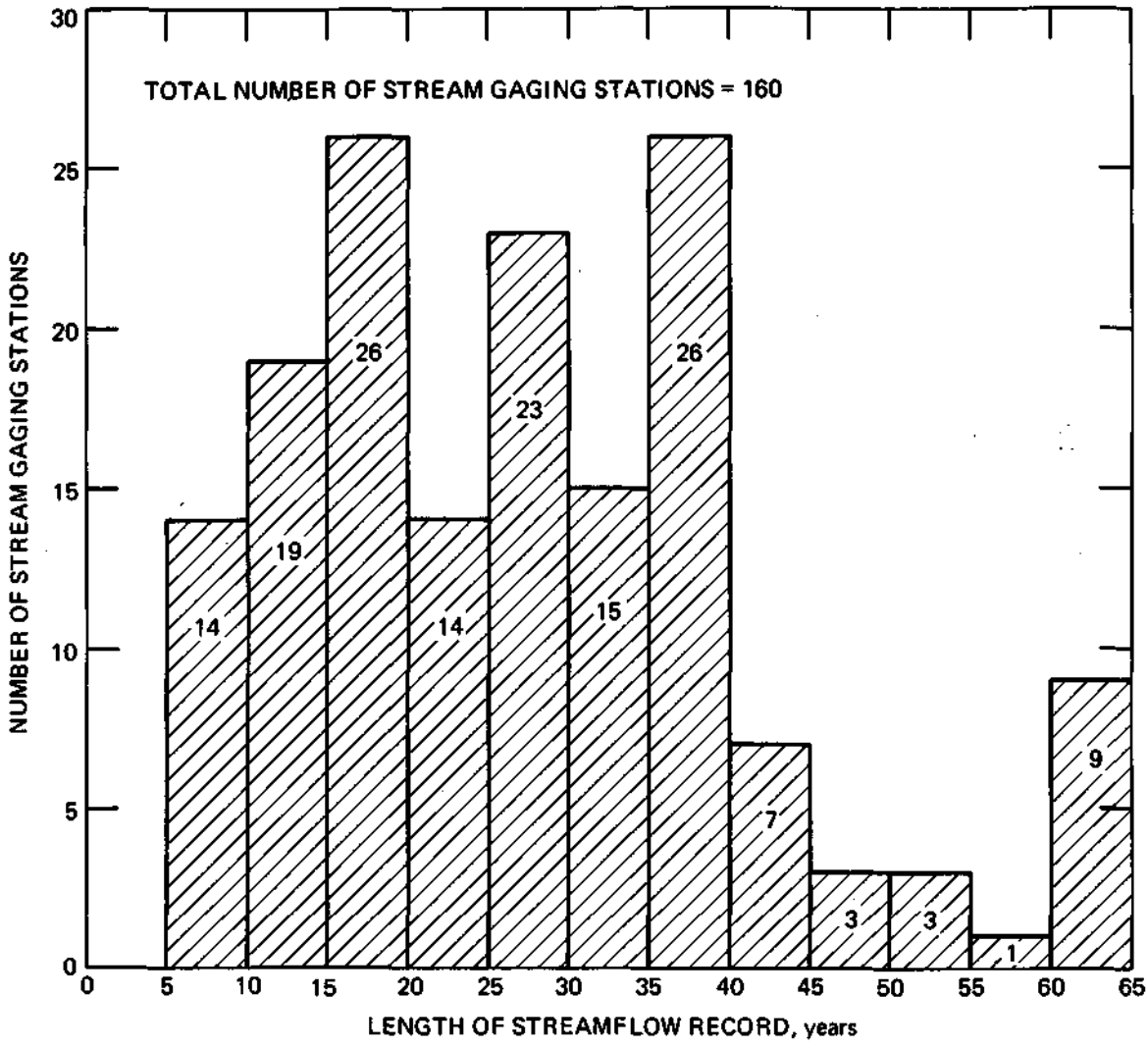


Figure 1. Distribution of streamgage records by length of record through water year 1978

For this study the Log-Pearson III distribution was employed. The cumulative distribution functions of these distributions are the flow duration curves of monthly streamflow for the period of record. Examples of the flow duration curves for the Sangamon River at Monticello and Salt Creek near Rowell are shown in figure 2.

In the MOVE procedure, each monthly flow that occurs at the index station for the period of extension is described by its probability of exceedance as computed with the index station's flow distribution function.

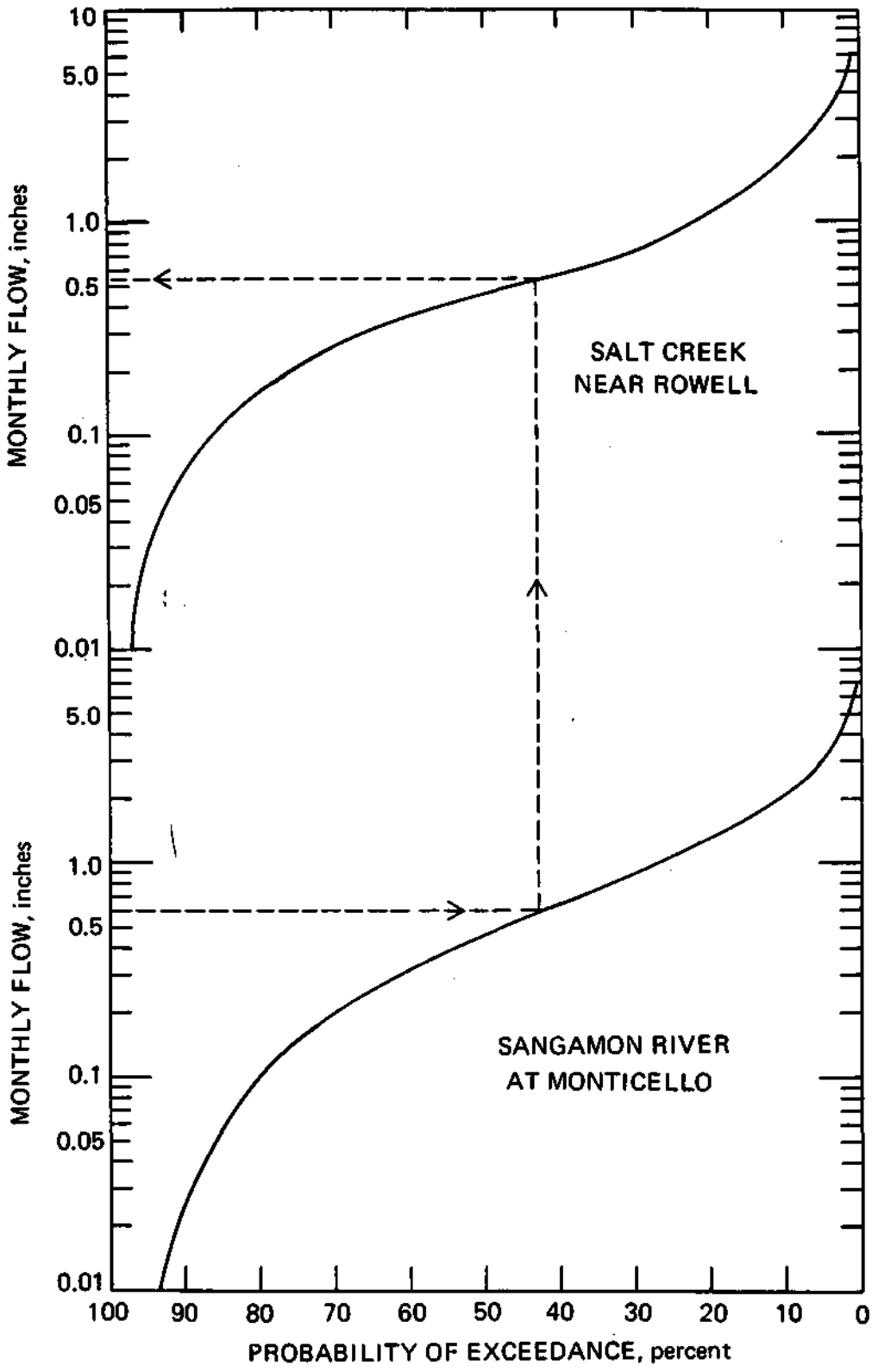


Figure 2. Examples of flow duration curves and their use in the Maintenance of Variance Extension (MOVE) technique

This probability of exceedance is subsequently transferred to the secondary station's flow distribution function,and the monthly flow associated with that probability becomes the extended monthly flow at the secondary station. This procedure is shown graphically in figure 2. In this example the January 1927 flow measured at the Sangamon River at Monticello (0.60 in) is used to compute an extended value for that month on the Salt Creek near Rowell (0.54 in). The probability of exceedance of these monthly flows at their respective locations is 41.7%. Following this procedure, the monthly flows at the Rowell gage may be extended for the years 1914-1942.

Because of the natural variation present in the flow records of both the index and secondary stations, no extension technique can explain an exact relationship between flows at the two stations. For example, when the 36 years of concurrent monthly flows at the Monticello and Rowell gages are plotted against one another, they show considerable scatter (see figure 3). Nevertheless, the relationship between the monthly flows at the index and secondary stations resulting from the MOVE technique, represented by the line of relation in figure 3, is able to explain 92.9% of the variance present in the secondary station's monthly flows.

For many short-record stations it is not always apparent which of a set of available long-record stations should be used for the extension process. For this reason a set of criteria was developed to judge the appropriateness of an extended record. The four criteria used were: 1) the percent of variance in the secondary station's monthly flows explained by the MOVE relationship; 2) the length of the effective period of record, described below; 3) the mean flow of the extended record; and 4) the magnitude of the lowest consecutive 12-month cumulative flows in the extended record. If either the mean flow or the 12-month low flows of the extended record suggested incongruity with the historical record, the extended record was not accepted as appropriate. Such a situation rarely occurred with extensions that showed a high percent of explained variance. The second criterion, the length of the effective period of record, describes the relative value of the extended record. The effective number

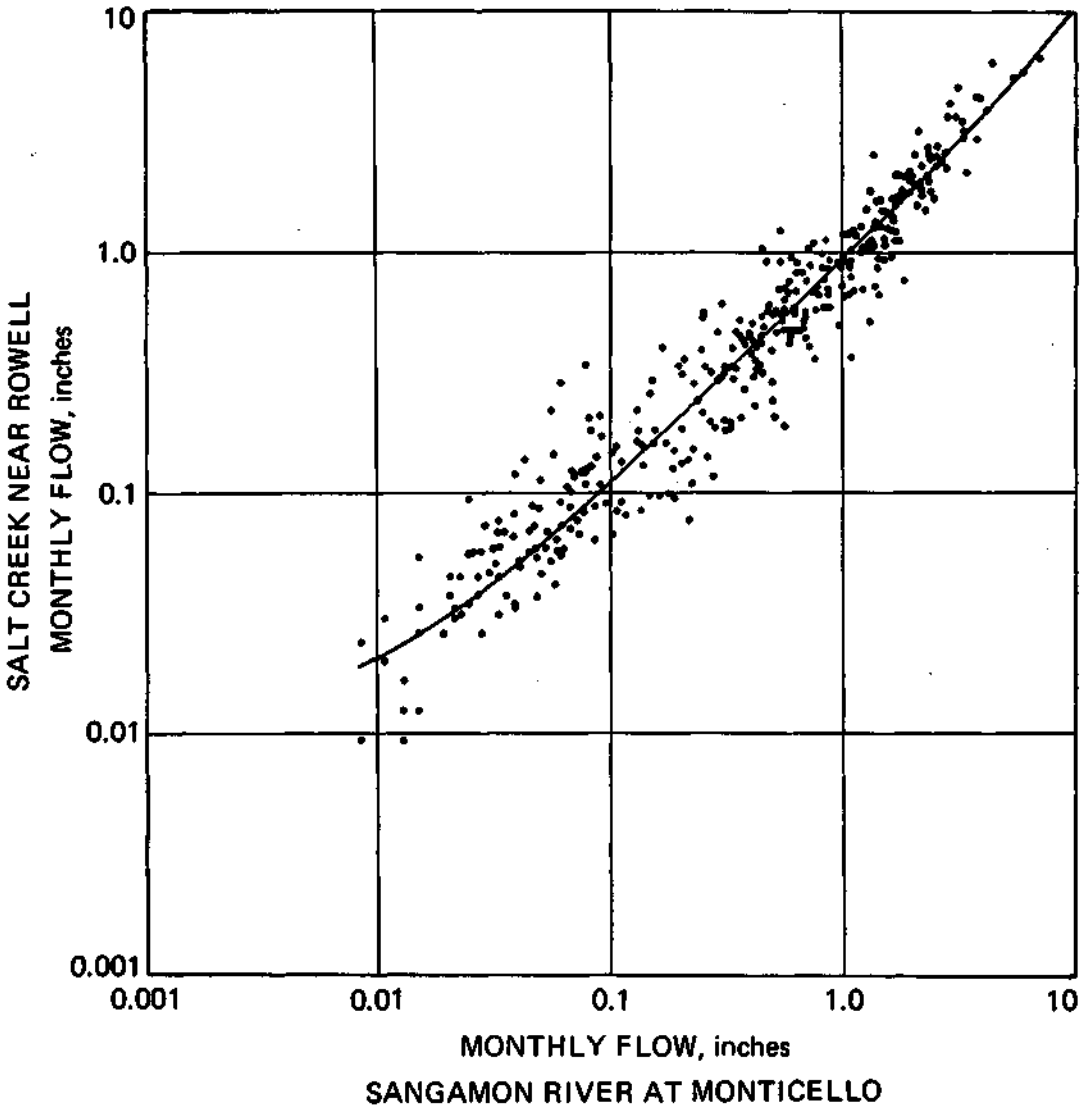


Figure 3. Concurrent monthly flows from 1942 to 1978 for the Salt Creek near Rowell and the Sangamon River at Monticello

of years, Ne, is determined using:

$$Ne = \frac{N_1 + N_2}{1 + \frac{N_2}{N_1 - 2}(1 - R^2)} \qquad (1)$$

where R^2 is the percent of variance explained by the extension technique, and N1 and N2 are the number of years of the concurrent and extended record, respectively (from Kite[3]). Using this criterion, one can evaluate the merits of extended records from differing index stations, and can determine if the extension adds valuable information to the historical record of a station. For example, in some cases a lower value of the percent of explained variance was accepted in order to have a longer effective period of record.

To illustrate the process by which an index station may be chosen, the selection procedure for Green River at Amboy is shown in table 1. The 19-year historical record at Amboy coincides with a period that included two severe drouths in Illinois. For this reason, the mean flows of all the extended records are noticeably greater than the mean flow of the historical record. In this instance, if Spoon River at Seville is used as the index gage, the length of the extended record is greater than if other index stations are used. However, the extension procedure using Green River near Geneseo is judged superior to the extension using the Seville station because 1) the amount of explained variance is much greater, and 2) the differential in the number of effective years of record between the two extended records is not great.

Regionalization of Streamgaging Stations

The amount of variance in the monthly flows explained by the extension process offers an excellent measure of the homogeneity between an index and secondary station. In the same manner, the percent of variance explained may be determined between different index stations for use in testing for regional homogeneity. For example, the monthly flows at the Skillet Fork at Wayne City, a long-record station, correlate well with respective monthly flows at the Big Muddy River near Plumfield and the Little Wabash River below Clay City. The latter station, in turn, correlates well with

Table 1. Evaluation of the Various Extended Records for Green River at Araboy Using Different Index Stations

Length of historical record = 19 years (1939-1958)
Historical monthly mean flow = .53"

Index station	Extended record monthly mean flow (inches)	Percent of variance explained	Number of years Extended	Effective
Fox River at Dayton	.64	79.7	54	38.1
Bureau Creek at Princeton	.57	88.6	42	36.4
Spoon River at Seville	.57	75.6	64	38.9
Green River near Geneseo*	.63	89.6	42	36.8

*Selected as the appropriate index station

the Embarras River at Ste. Marie. For this reason these four index stations were grouped into the same region. Through this process, 11 regions were defined throughout the state. These regions are shown in figure 4 with the 146 stations included in the final analysis of the report. Fourteen of the 160 stations initially analyzed were eliminated from consideration either because their flows were subject to regulation or modification, or because their historical records were too short to allow a successful extension of the monthly flows.

The regions resulting from the above analysis are dependent upon the correlation between the monthly flow distributions of the index and secondary stations. For this reason these regions are dependent not only upon the homogeneity of low flow characteristics which define reservoir storage requirements, but also upon transitory qualities such as the location and period of record of the index stations. In addition, almost all of the regional boundaries presented are boundaries of gradual transition, so that that in selected cases it would be feasible for a discriminating engineer to choose to ignore the regional demarcations in the selection of appropriate low flow data.

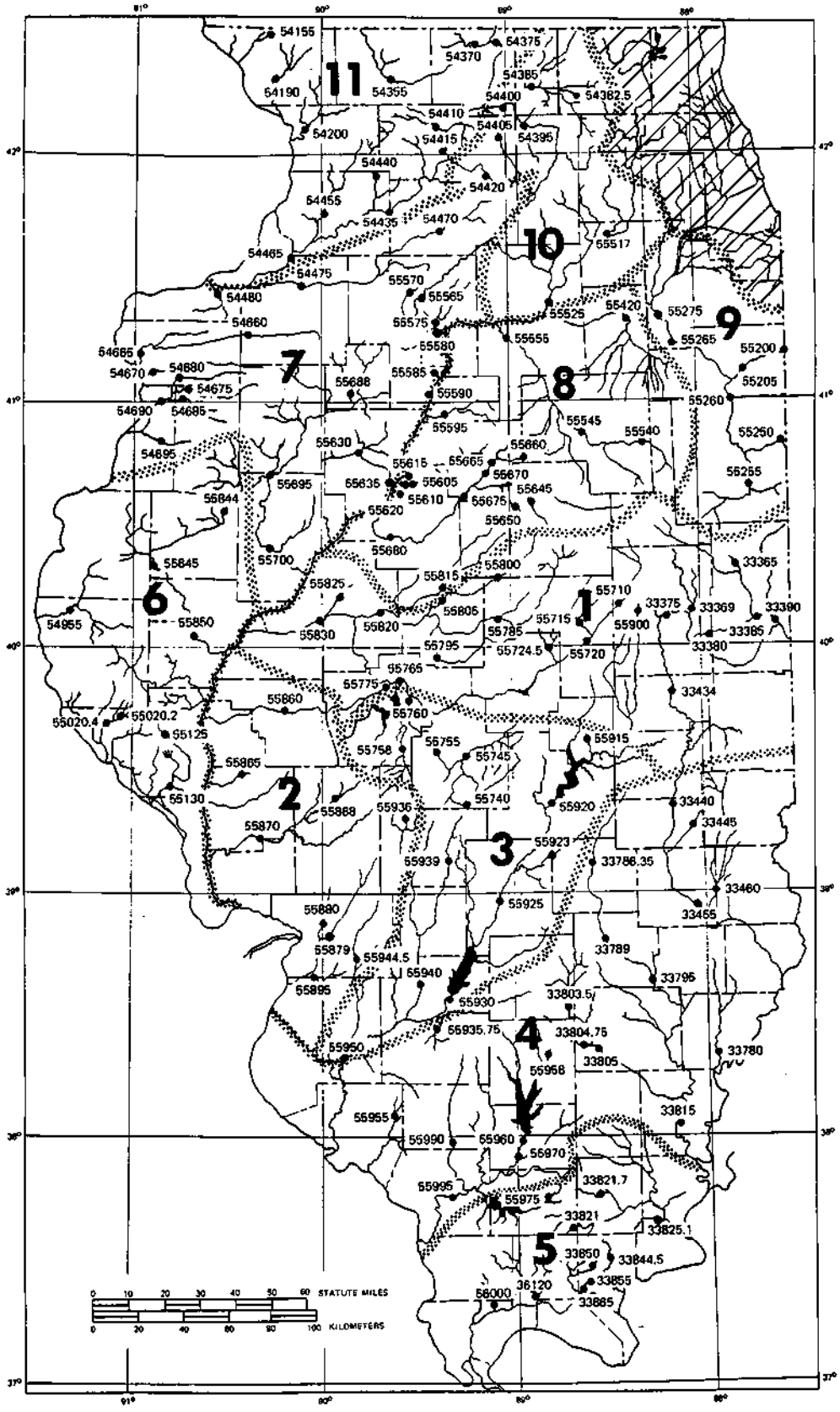


Figure 4. Regions of hydrologic homogeneity for low flow analyses

Low Flow Series

Past experience in analyzing the 1952-1955 drouth in Illinois[4] revealed that impounding reservoirs in Illinois are frequently under draft and drawdown for periods in excess of one year and may possibly be subject to drawdowns for as long as five years. For this reason it was necessary that the series of low flow events be selected in a manner not restricted to the annual fluctuations of runoff. A partial duration series of low flow events was selected as being most flexible and meaningful in this type of analysis. However, the partial series was selected only after intensive study, comparison, and evaluation of both the partial series and the more common annual series. The development of the partial series, and its theoretical support, are described below.

Development

The initial step in the development of the partial low flow series was the selection of a duration with which to work. Eventually, separate series were developed for various durations, but for illustration, the development of a series of low flow events each having a length of 30 months will be described using Salt Creek near Rowell. These 30-month low flow periods were selected without regard to the calendar year and in such a manner as to ensure their chronological independence.

The monthly flow data were converted to running totals for 30-month durations, for the period of record 1915-1978. These running totals were then inspected, and the lowest 30-month period on record was noted. For Salt Creek near Rowell the lowest 30-month flow on record occurred between August 1953 and January 1956. For this lowest 30-month period on record, the runoff amounted to 5.51 inches.

After the lowest-ranking flow value for a 30-month period was selected, all of the remaining running totals which overlapped to include any of the 30 months within this lowest period were excluded from further consideration. The second lowest 30-month period was then identified and those 30 months were eliminated from the remaining record.

In this example the process was repeated until the 13 lowest independent low flow periods were selected. The 14th lowest flow had an

Table 2. 30-Month Low Flow Series for Salt Creek near Rowell

(Runoff in inches for the 15 driest 30-month periods on record, based on partially synthetic 64-year flow record for water years 1915-77)

Mean flow = 0.79 inches per month or 23.70 inches in 30 months

Rank of event	Recurrence interval (years)	30-month flow (inches)	Dates of low flow period	
			Beginning	Ending
1	65.0	5.51	Aug 1953	Jan 1956
2	32.5	6.63	June 1930	Nov 1932
3	21.7	11.08	Aug 1952	Jan 1956
4	16.3	11.34	Apr 1939	Sept 1941
5	13.0	13.46	July 1933	Dec 1935
6	10.8	14.02	June 1916	Nov 1918
7	9.3	14.56	Apr 1976	Sept 1978
8	8.1	14.93	June 1965	Nov 1967
9	7.2	16.49	May 1919	Oct 1921
10	6.5	16.71	Sept 1958	Feb 1961
11	5.9	17.40	July 1943	Dec 1945
12	5.4	18.83	June 1970	Nov 1972
13	5.0	20.02	June 1947	Nov 1949

average annual flow value higher than the mean average flow for the period of record. These are shown in table 2. The recurrence intervals of these low flow periods range from 5 to 65 years.

Theoretical Support

The basic series utilized in this study is illustrated by the 13 low flow events listed in table 2. This series is partial in nature in that it contains only a portion of the original data. Since the present study is concerned only with low flows, the mean flow at the station was selected as the base or upper limit, and the resulting partial series retains only events below this particular base.

The use of a partial duration series in the analysis of hydrologic events is not a new idea. Hudson and Roberts[4] used it; the development and interpretation of this series have been described elsewhere in published form (Stall and Neill[5]); and other authors have used this

series for flood data. Chow[6] used it for precipitation data and discussed it in comparison with the more familiar annual series.

As described by Chow, a series of annual extreme events is usually obtained by selecting the single most extreme event that occurred during each year of record; the number of extreme events is equal to the number of years of record. Another series, partial in nature, can be devised in which all of the events that occurred during the entire period of record are ranked without regard to the year. The top-ranking values are selected, the number included is made equal to the number of years of record, and these events are labeled annual exceedances. The extreme events that make up this partial series of exceedances are selected in such a manner that more than one may occur in one year and some years may not be represented at all. Two extreme events occurring during the same year are included in the exceedance series, but the lesser one is excluded from the annual series because the two events may not be independent. In interpreting these two events it can be said that the combination of the many causative climatic and physical factors of the event of primary severity may have influenced the event of secondary severity in the same year.

The combination of causative factors which produces an extreme event is governed very strongly by the 12-month solar cycle. It is the established strength of this cycle that justifies the difference in interpretation between a series of annual extremes and a partial series of exceedances. This cycle justifies the exclusion of secondary events from the annual series and is the underlying factor in the conception that these events are not independent.

Knowledge of these important differences between a series of annual maximum events and a partial series of exceedances helps in the proper interpretation of the events included in the series presented in this study. For example, the selection procedure for the thirteen 30-month low flow events shown in table 2 ensures that the events are independent chronologically. If two of these events were to be considered dependent in any sense, it would be necessary to show that two 30-month events were the result of at least a portion of the same combination of causative climatic

factors. In an exceedance series, the dependence of a secondary 30-month low flow event on a more extreme 30-month low flow event could be caused by the presence of a multi-year cycle in the causative climatic factors. Although multi-year cycles have been shown by various authors to exist to some degree, the magnitude of these cycles is not so pronounced as that of the 12-month solar cycle. Consequently, current evidence of multi-year cycles is hardly justification for assuming that any particular 30-month low flow event could be associated with the same causative factors that produced another 30-month low flow event.

Thus, the theoretical support for the use of the partial series is based on two main principles:

1) The events in this series are considered to be independent to the extent that each is the result of a separate combination of the complex causative climatic and physical factors which affect streamflow.
2) The events in this series are considered to be the result of so many causative factors that their occurrence is distributed in accord with the laws of chance, and consequently the events are randomly distributed.

Recurrence Interval

The mean recurrence interval for the partial series of low flow events was computed as follows:

$$MRI = \frac{N+1}{m} \qquad (2)$$

where

MRI = mean recurrence interval in years

N = number of years of data available

m = rank when the low flow events are arrayed in order of magnitude, number 1 being the lowest

For a 64-year record, the most extreme event had a recurrence interval of 65 years, the second event had a recurrence interval of 32.5 years, and so forth.

Table 2 shows the recurrence interval for each of the events in the 30-raonth low flow series. These thirteen 30-month flows and their assigned

recurrence intervals furnish an estimate of the average length of time in years which can be expected to elapse between the beginnings of the various 30-month events. For example, the third-ranking event in this series has a recurrence interval of 21.7 years. Thus, it can be said that in any year the probability is 1 in 21.7 for the start of a 30-month period during which the total flow will be as low as 11.08 inches.

Low Flow Recurrence Curves

Separate series of low flow events were determined by the above procedure for 36 different durations ranging from 1 to 60 months, with a 1-month increment through the first 12 months, and a 2-month increment thereafter. After the low flow series were generated for the 36 different durations, the following procedure was followed to develop the low flow frequency curves shown in figure 5.

The curves were generated starting with the 60-month duration and working back to 1 month. For each curve the coefficients for a second-order polynomial were first determined. These coefficients were then used to generate a low flow ordinate for each desired recurrence interval. These generated points were next inspected to assure that the slope was always non-positive. If an incremental positive slope was found, the low fLow ordinates were regenerated by fitting a third-order polynomial to the observed data. The instance of positive slope was generally related to the occurrence of zero flows at the extreme points. Once the third-order polynomial was required for a particular duration, all ensuing curves were generated using the third-order fitting also.

The last step of generating a curve before moving to the next lower duration was to check the curve for the current duration against the curve for the previous duration. At any recurrence interval where the current low flow ordinate was higher than that for the previous duration, the current value was set equal to the previous value.

Table 3 contains the complete results of the low flow analysis for Salt Creek near Rowell, giving the low flow values for all the durations. The results of the curve fitting for the durations of 1, 6, 12, 18, 24, 36, 48, and 60 months are plotted in figure 5 along with the actual ranked

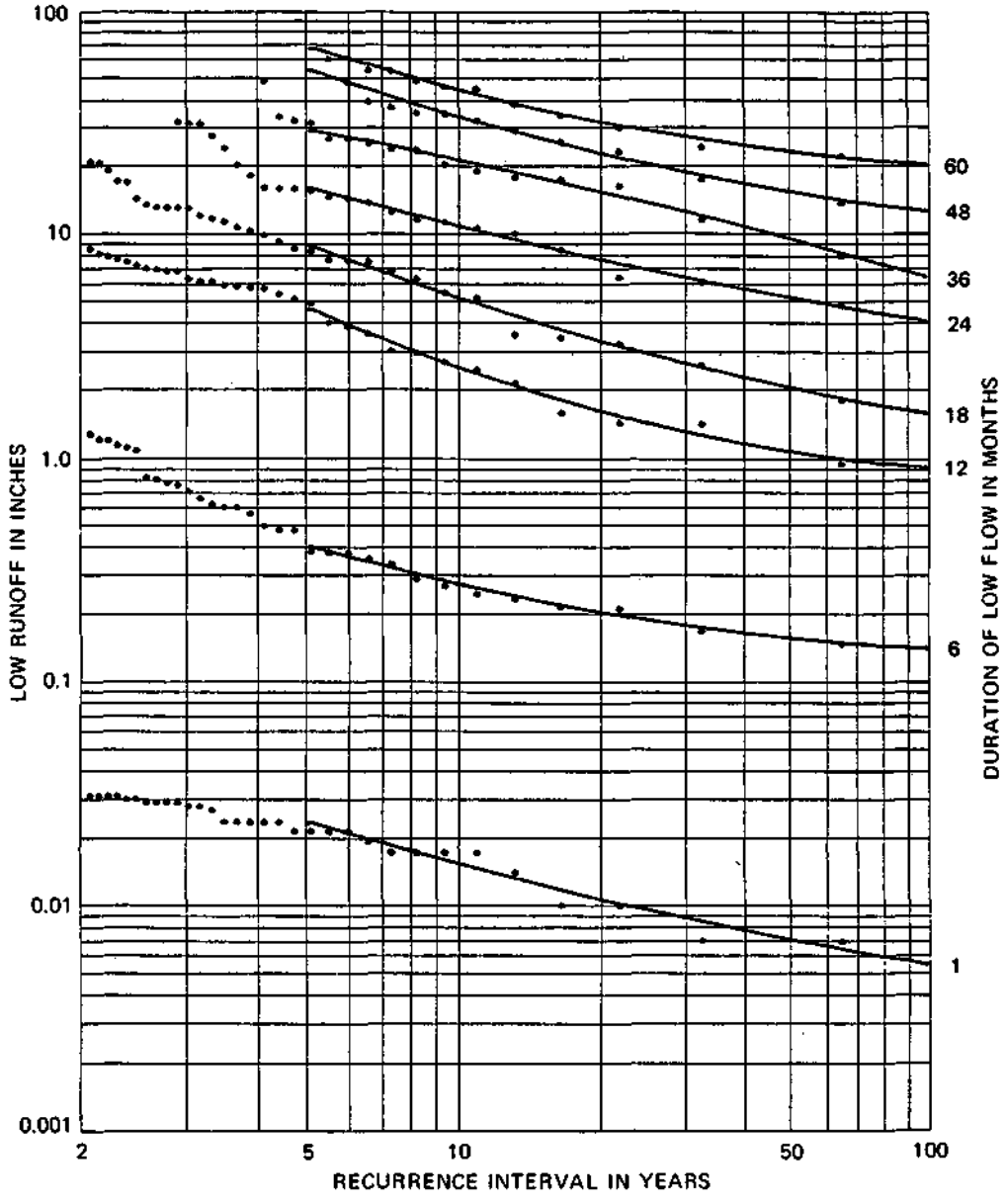


Figure 5. Low flow curves for 1- to 60-month durations for Salt Creek near Rowell

Table 3. Lowest Average Flows (in Inches) for a Given Duration at Salt Creek near Rowell

DURATION IN MONTHS	RECURRENCE INTERVAL IN YEARS														
	5	6	8	10	15	20	25	30	40	50	60	70	80	90	100
1	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
2	.06	.05	.05	.04	.04	.03	.03	.03	.02	.02	.02	.02	.02	.02	.01
3	.10	.10	.09	.08	.07	.06	.06	.06	.05	.05	.04	.04	.04	.04	.04
4	.15	.14	.13	.12	.11	.10	.09	.09	.08	.07	.06	.06	.06	.05	.05
5	.25	.23	.21	.19	.17	.15	.14	.13	.12	.11	.10	.10	.09	.09	.08
6	.39	.35	.30	.27	.22	.20	.19	.18	.17	.16	.15	.15	.15	.14	.14
7	.61	.53	.43	.38	.31	.27	.25	.23	.22	.21	.20	.20	.20	.20	.20
8	1.02	.88	.71	.61	.48	.41	.37	.34	.30	.28	.26	.25	.24	.23	.23
9	1.40	1.25	1.06	.93	.74	.63	.56	.50	.43	.38	.35	.32	.30	.28	.27
10	1.97	1.82	1.60	1.44	1.17	1.00	.87	.78	.65	.56	.49	.44	.40	.37	.34
11	3.19	2.83	2.34	2.03	1.57	1.31	1.14	1.01	.85	.74	.66	.60	.55	.51	.48
12	4.56	3.83	2.98	2.50	1.90	1.60	1.43	1.31	1.17	1.08	1.03	.99	.96	.94	.93
14	5.71	4.96	4.04	3.49	2.72	2.32	2.07	1.89	1.66	1.51	1.41	1.33	1.27	1.22	1.18
16	6.94	6.03	4.90	4.21	3.26	2.75	2.43	2.21	1.91	1.72	1.58	1.48	1.40	1.34	1.28
18	8.78	7.54	6.03	5.14	3.93	3.31	2.93	2.66	2.32	2.10	1.95	1.84	1.75	1.68	1.62
20	10.83	9.18	7.27	6.20	4.84	4.19	3.82	3.57	3.28	3.12	3.03	2.98	2.95	2.93	2.93
22	13.00	11.30	9.26	8.06	6.49	5.71	5.24	4.92	4.53	4.31	4.16	4.07	4.01	3.96	3.94
24	15.80	14.17	12.05	10.71	8.77	7.68	6.97	6.46	5.76	5.29	4.95	4.70	4.49	4.32	4.18
26	16.85	15.46	13.48	12.12	9.97	8.66	7.76	7.08	6.11	5.45	4.95	4.70	4.49	4.32	4.18
28	17.59	16.21	14.23	12.85	10.61	9.23	8.27	7.54	6.50	5.78	5.24	4.81	4.49	4.32	4.18
30	19.24	17.85	15.78	14.28	11.79	10.21	9.09	8.24	7.02	6.17	5.53	5.03	4.63	4.32	4.18
32	22.22	20.73	18.45	16.75	13.86	11.98	10.63	9.60	8.12	7.08	6.30	5.69	5.20	4.80	4.45
34	24.85	23.33	20.94	19.13	15.97	13.88	12.36	11.20	9.49	8.29	7.39	6.68	6.11	5.63	5.23
36	28.60	26.50	23.44	21.27	17.71	15.48	13.89	12.70	10.97	9.76	8.85	8.14	7.56	7.07	6.66
38	29.60	27.33	24.18	22.03	18.69	16.67	15.27	14.22	12.72	11.68	10.89	10.28	9.77	9.35	8.99
40	31.07	28.75	25.48	23.22	19.63	17.42	15.88	14.71	13.04	11.87	10.99	10.29	9.77	9.35	8.99
42	40.17	35.36	29.35	25.69	20.61	17.91	16.20	15.01	13.42	12.41	11.69	11.16	10.75	10.41	10.14
44	47.20	41.46	34.21	29.74	23.47	20.09	17.93	16.40	14.36	13.03	12.08	11.36	10.79	10.41	10.14
46	52.51	45.45	36.84	31.72	24.81	21.24	19.02	17.49	15.50	14.24	13.37	12.73	12.24	11.85	11.53
48	53.21	46.47	38.17	33.18	26.37	22.81	20.58	19.04	17.02	15.74	14.85	14.20	13.69	13.29	12.97
50	53.21	46.58	38.56	33.72	27.08	23.60	21.41	19.89	17.90	16.64	15.77	15.13	14.63	14.24	13.93
52	54.55	48.42	40.57	35.68	28.73	24.93	22.47	20.72	18.36	16.81	15.77	15.13	14.63	14.24	13.93
54	54.55	48.42	41.53	37.22	30.59	26.66	23.98	21.99	19.20	17.28	15.86	15.13	14.63	14.24	13.93
56	55.69	50.82	44.09	39.55	32.50	28.28	25.39	23.25	20.23	18.15	16.60	15.39	14.63	14.24	13.93
58	61.00	55.01	47.13	42.05	34.57	30.32	27.50	25.45	22.63	20.73	19.34	18.27	17.41	16.70	16.10
60	67.06	59.20	49.50	43.67	35.73	31.61	29.05	27.29	25.03	23.65	22.72	22.06	21.57	21.20	20.92

flows, denoted by dots, for purposes of comparison. Observing the actual flows in figure 5, one can see that the more frequent events seem to be of a different population than the extreme events. This same difference in distribution at about the 4- to 5-year recurrence interval has been observed in other analyses. Since values for recurrence intervals of less than 5 years are of little significance to users of this publication, only those actual low flows whose recurrence interval exceeded five years were used in determining the low flow curves.

GROSS YIELD OF A RESERVOIR

Nonsequential Mass Analysis

The most common method for determining the yield of an impounding reservoir is the Rippl mass diagram method'. E ssentially the method determines the necessary reservoir capacity to meet a particular draft rate as the difference between accumulative draft and accumulative inflow for a critical period of time. For a particular mass curve of flow at a particular gaging station, the necessary reservoir capacity is determined by locating the critical period which gives the largest reservoir capacity for a particular draft rate. The length or duration of the critical period is also determined.

Use of the partial series of low flow events previously described allows the mass-curve type of analysis to be carried out on a recurrence interval basis, as depicted in figure 6. The lowermost irregular curve in figure 6 shows the 100-year low flow for Salt Creek near Rowell for a particular duration in months. To illustrate, the series developed earlier for table 3 showed that the 100-year 30-month low flow was 4.18 inches; in figure 6 the lowermost curve shows that for a duration of 30 months the inflow was 4.18 inches. Similarly, the lowermost curve shows that the 18-month flow was 1.62 inches and the 12-month low flow was .93 inches.

All the low flows (which occurred at nonrelated times) connected by the lowermost line in figure 6 have a recurrence interval of 100 years. This curve represents a nonsequential series.

In a similar manner, the second lowest curve in figure 6 connects the points showing the runoff in inches to be expected for a particular duration in months, this series being the 50-year low flow. The points along this curve can be expected to have a recurrence interval of 50 years. Continuing in this manner, the third, fourth, fifth, and sixth curves represent low flows having recurrence intervals of 25, 20, 15, 10, and 5 years, respectively.

In figure 6 the mean flow at this gaging station is represented by a straight line having a slope of approximately 35 degrees. This represents the maximum gross draft that could be developed on this watershed. Also

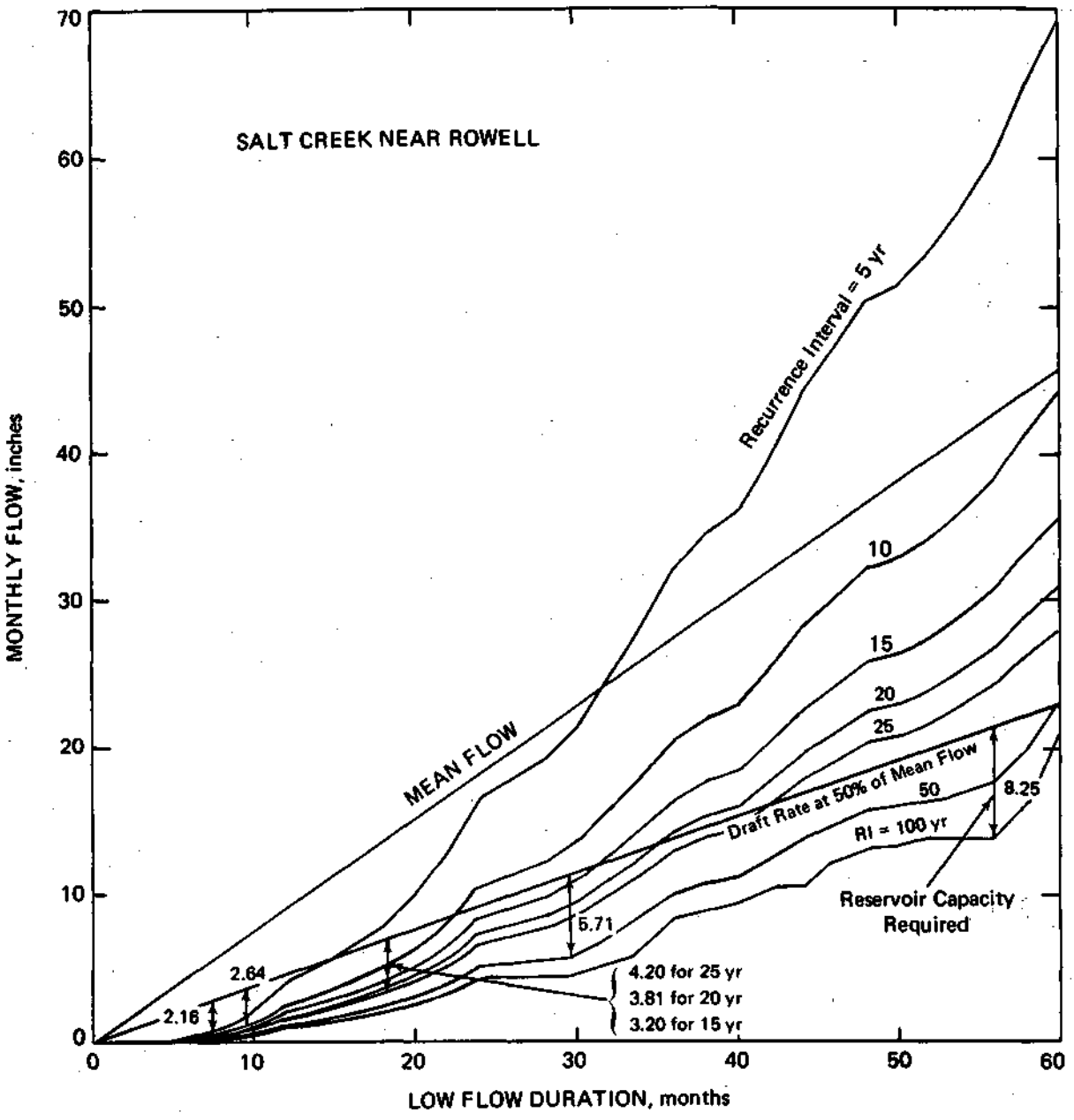


Figure 6. Determination of required reservoir capacity by mass-type analysis for Salt Creek near Rowell

shown is a straight sloping line representing a draft rate of 50% of the mean flow, which is used in the example of mass analysis below.

Since the following analysis concerns gross reservoir yield, no refined consideration is given to evaporation or other losses from the reservoir. These losses are detailed in later sections of this report but at this point can be considered a part of the draft rate.

To determine the reservoir capacity to meet a draft rate equal to 50% of the mean, it was necessary to find the duration of low flow in months for which the maximum ordinate exists between the accumulative draft rate curve and accumulative inflow curve. Figure 6 shows that this occurs at a duration of 56 months, and that a reservoir capacity of 8.25 inches is necessary to meet this draft rate during a 100-year drouth of 56-month duration.

Figure 6 also indicates that to meet the draft rate of 50% of the mean during the 50-year low flow would require a reservoir capacity of 5.71 inches and that the critical duration would be 30 months. Reservoir capacities to meet the 25-, 20-, 15-, 10-, and 5-year drouths likewise are shown. These data and the associated recurrence intervals are itemized in table 4. In addition, results for the 6-, 8-, 30-, 40-, 60-, 70-, 80-, and 90-year drouths are presented.

Table 4. Results of Mass Curve Analysis for a Draft Rate of 50 Percent of Mean Flow for Salt Creek near Rowell

Mean flow = .792 inches per month
Draft rate = .396 inches per month

Recurrence interval of low flow (years)	Duration of critical period (months)	Total draft for critical period (inches)	Total inflow during critical period (inches)	Reservoir capacity required (inches)
100	56	22.18	13.93	8.25
90	56	22.18	14.25	7.93
80	56	22.18	14.64	7.54
70	32	12.67	5.69	6.98
60	32	12.67	6.30	6.37
50	30	11.88	6.17	5.71
40	30	11.88	7.02	4.86
30	18	7.13	2.67	4.46
25	18	7.13	2.93	4.20
20	18	7.13	3.32	3.81
15	18	7.13	3.93	3.20
10	9	3.56	0.92	2.64
8	9	3.56	1.05	2.51
6	9	3.56	1.25	2.31
5	7	2.77	0.61	2.16

Draft-Storage-Recurrence Data

By means of the mass curve analysis it was possible to determine the reservoir capacity necessary for a particular gross draft rate or yield based upon various low flows having recurrence intervals ranging from 5 to either 50 or 100 years, depending on the available record. With the aid of a computer, it was possible to produce a complete array of results for a particular stream gaging record for a number of different draft rates.

As an example, a complete series of draft rates was developed on the basis of the flow records for Salt Creek near Rowe11. An analysis was made for 16 different draft rates, expressed as various percentages of the mean flow ranging from 2 to 100%, as shown in figure 7. The mass-type analysis shows the reservoir capacity necessary to meet each of these draft rates for various recurrence intervals. For every reservoir capacity, this analytical method also produces the duration of the critical period, which is the period of time during which the reservoir will be under draft.

The complete mass analysis results for this station are given in table 5. For recurrence intervals ranging from 5 to 100 years, and to meet gross draft rates from 2 to 100% of the mean flow at this station, this table presents the reservoir capacity in inches and the duration of the critical period in months. The draft-storage-recurrence curves of figure 7 are graphical representations of the data in table 5 except that the duration of the critical period is shown only in the table.

For each of the 146 stream gaging records selected for analysis, Part 2 of this report provides a table similar to table 5 and a graph of draft-storage-recurrence curves similar to figure 7. The array of results furnished in the table and graph provides the user with the essential information for an adequate hydrologic design under particular circumstances based upon the actual draft rate necessary, the reservoir sites available, and the finances available for a reservoir.

Duration of the Critical Period

The nonsequential mass analysis furnishes the duration of the critical drawdown period, which represents the governing time period during which the draft from the reservoir would exceed the inflow by the greatest

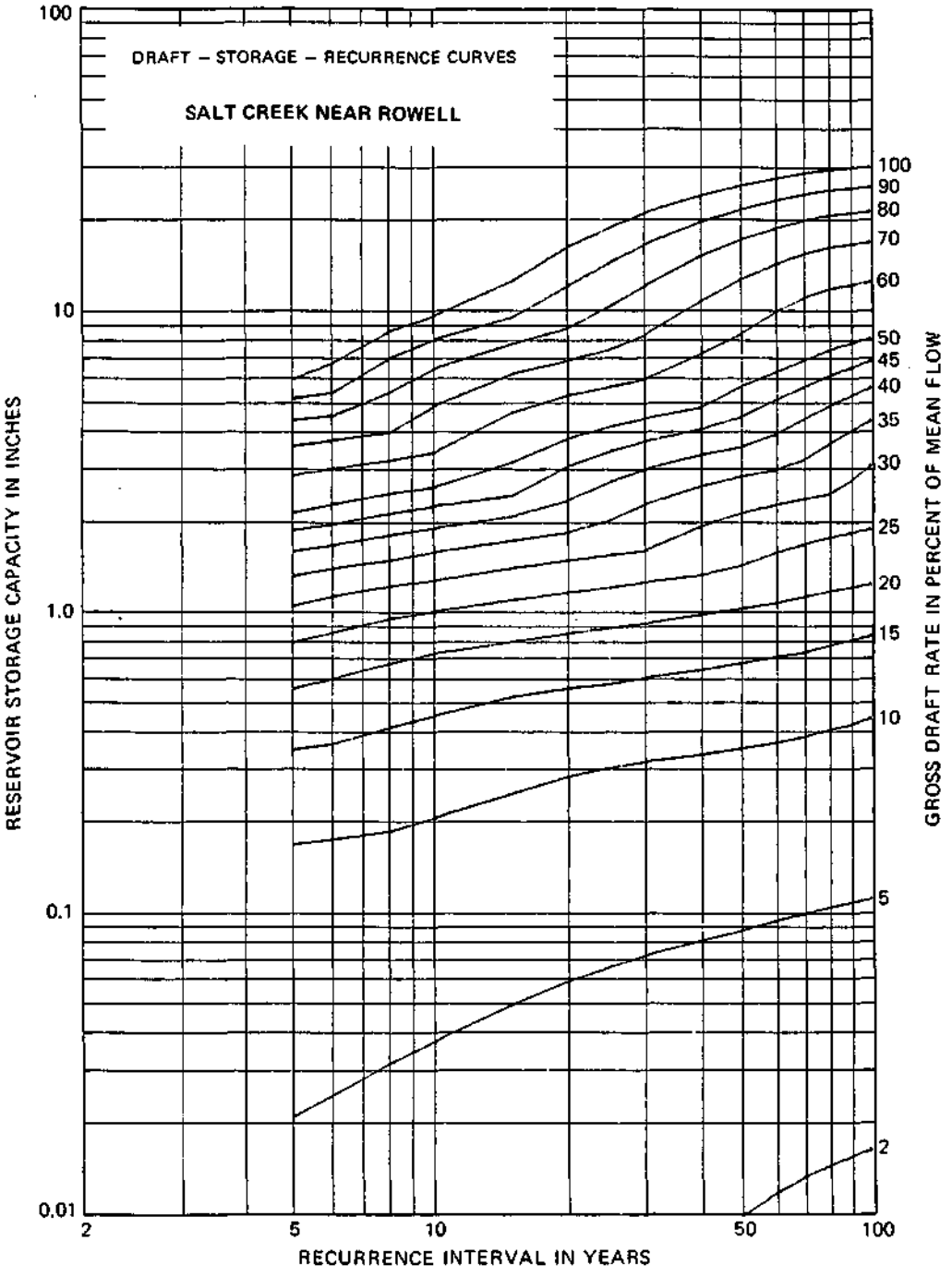


Figure 7. Draft-storage-recurrence curves for Salt Creek near Rowell

Table 5. Reservoir Capacity (in Inches) and Critical Drawdown Period Duration (in Months) at Various Draft Rates and Recurrence Intervals, Salt Creek near Rowell

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.17	.35	.56	.79	1.05	1.33	1.61	1.88	2.16	2.87	3.58	4.37	5.16	5.95
	3	2	4	5	6	6	7	7	7	7	7	9	9	10	10	10
6	.00	.02	.18	.36	.60	.86	1.13	1.41	1.69	1.97	2.31	3.02	3.73	4.51	5.38	6.71
	3	2	4	5	6	7	7	7	7	8	9	9	9	10	16	18
8	.00	.03	.19	.41	.67	.95	1.23	1.51	1.82	2.15	2.51	3.22	3.97	5.40	6.99	8.57
	4	3	5	6	7	7	7	7	8	9	9	9	16	20	20	20
10	.00	.04	.21	.45	.73	1.01	1.29	1.60	1.92	2.28	2.64	3.42	4.89	6.48	8.06	9.64
	5	3	6	7	7	7	8	8	9	9	9	18	20	20	20	20
15	.00	.05	.25	.53	.80	1.10	1.42	1.76	2.11	2.48	3.20	4.66	6.25	7.83	9.59	12.65
	1	4	6	7	7	8	8	9	9	18	18	20	20	20	30	42
20	.01	.06	.28	.56	.86	1.17	1.51	1.87	2.39	3.10	3.81	5.31	6.90	8.80	12.14	16.26
	1	4	7	7	8	8	9	9	18	18	18	20	20	30	52	52
25	.01	.07	.31	.58	.90	1.23	1.58	2.06	2.77	3.49	4.20	5.69	7.54	10.48	14.60	18.96
	1	4	7	7	8	9	9	18	18	18	18	20	30	52	52	56
30	.01	.07	.32	.61	.93	1.28	1.63	2.33	3.04	3.75	4.46	6.01	8.39	12.23	16.67	21.10
	1	4	7	8	8	9	9	18	18	18	18	30	30	56	56	56
40	.01	.08	.34	.65	.99	1.35	1.96	2.67	3.38	4.10	4.86	7.24	10.82	15.26	19.69	24.13
	1	4	7	8	9	9	18	18	18	18	30	30	56	56	56	56
50	.01	.09	.36	.68	1.04	1.46	2.18	2.89	3.60	4.52	5.71	8.47	12.90	17.34	21.77	26.21
	2	5	8	9	9	18	18	18	18	30	30	56	56	56	56	56
60	.01	.10	.37	.72	1.09	1.62	2.33	3.04	3.97	5.16	6.37	10.01	14.45	18.88	23.32	27.75
	2	5	8	9	10	18	18	18	30	30	32	56	56	56	56	56
70	.01	.10	.39	.75	1.15	1.73	2.44	3.28	4.47	5.71	6.98	11.22	15.65	20.09	24.52	28.96
	2	5	9	9	11	18	18	30	30	32	32	56	56	56	56	56
80	.01	.11	.41	.79	1.19	1.82	2.53	3.69	4.94	6.20	7.54	11.98	16.41	20.85	25.29	29.72
	2	5	9	10	11	18	18	30	32	32	56	56	56	56	56	56
90	.02	.11	.43	.82	1.23	1.89	2.81	4.08	5.34	6.61	7.93	12.37	16.80	21.24	25.68	30.11
	2	5	9	10	11	18	32	32	32	32	56	56	56	56	56	56
100	.02	.11	.45	.85	1.27	1.94	3.15	4.42	5.69	6.95	8.25	12.69	17.12	21.56	25.99	30.43
	2	5	10	10	11	18	32	32	32	32	56	56	56	56	56	56

Note: The critical drawdown period durations are shown below each capacity value

amount. At the beginning of the critical period the reservoir would be full, and at the end of the critical period it would be empty. Immediately after the end of the critical period, the reservoir would begin to refill. With the reservoir in actual operation, under a specified draft and during a specified recurrence-interval drouth, many other periods would occur, both shorter and longer than the critical period, during which draft might exceed inflow. The mass analysis shows, however, that none of these periods would be more severe than the critical duration.

The change in the duration of the critical period is not continuous and may vary widely within selected ranges of drafts, inflows, and recurrence intervals. Because the critical period results from a great

number of combinations of these three parameters, this variation can be expected. This lack of continuity is present in the traditional mass analysis and in the nonsequential mass analysis described above; it is due essentially to the 12-month cycle present in the flows of most streams of the world.

Table 5 reveals this discontinuity. As an example, inspection of the values of critical periods for a recurrence interval of 10 years shows that, for draft rates from 5 to 50% of the mean, the critical period increases from 3 to 9 months; for a draft rate of 60%, the critical period jumps to 18 months. Similarly, the critical period can jump with an increase in recurrence interval, as occurs for a draft rate of 50% between the recurrence intervals of 30 and 40 years.

These "jumps" or discontinuous tendencies of the duration of the critical period are a legitimate result of the methodology. They are accounted for by the "steep" portion of the mass inflow curve; a slight increase in the draft rate may make it miss the "steep" portion so that it must continue past the next "flat" portion of the curve to intersect the next "steep" portion, at a point representing a time many months later. As will be shown later, however, the net yields available from a particular reservoir are relatively continuous, and are not seriously interrupted by the discontinuity of the duration of the critical period involved.

Analysis at a Selected Recurrence Interval

Data in figure 7 and table 5 can be utilized to show the gross draft rate obtainable from reservoirs of various capacities during a drouth of a selected recurrence interval. Table 6 shows the results of such an analysis, for Salt Creek near Rowell where the drainage area is 335 square miles. These results were obtained by taking a vertical section through figure 7 at the selected recurrence interval of 40 years. Table 6 gives the gross draft rate both in percent of mean flow and in million gallons per day. The reservoir capacities required during a 40-year-recurrence drouth to meet the various draft rates are given in equivalent inches on the drainage area, as read from figure 7, and are also expressed as million gallons and acre-feet.

Table 6. Reservoir Capacity Required to Furnish Various Draft Rates during a 40-Year-Recurrence Drouth, Salt Creek near Rowell

Drainage area = 335 square miles

Gross draft rate		Reservoir capacity required		
Percent of mean flow	Mgd	Equivalent inches on drainage area (from table 5)	Million gallons	Acre-feet
2	3.0	0.01	58	178
5	7.6	0.08	465	1,429
10	15.2	0.34	1,979	6,075
15	23.0	0.65	3,783	11,610
20	30.0	0.99	5,762	17,690
25	38.0	1.35	8,040	24,120
30	45.0	1.96	11,410	35,020
35	53.0	2.67	15,540	47,700
40	61.0	3.38	19,670	60,390
45	68.0	4.10	23,860	73,250
50	76.0	4.86	28,280	86,830
60	91.0	7.24	42,130	129,400
70	106.0	10.82	63,000	193,300
80	122.0	15.26	88,800	272,600
90	137.0	19.69	106,200	326,100
100	152.0	24.13	140,400	431,100

The results shown in table 6 have been plotted in figure 8. Consideration of the shape of this curve allows the reservoir designer to choose an optimum design. For example, the slope of the curve is quite steep up to 40 billion gallons of reservoir capacity. Decrease of the curve slope above this value indicates that further increments of reservoir capacity provide lesser increments of available draft rate. As an added benefit to the designer, the reservoir capacity scale could easily be converted to dollar cost by applying appropriate construction cost data.

Analysis of a Particular Reservoir Site

The analytical results shown in figure 7 and table 5 can also be used effectively in the evaluation of a particular reservoir site. A theoretical reservoir on Salt Creek near Rowell that would have a storage

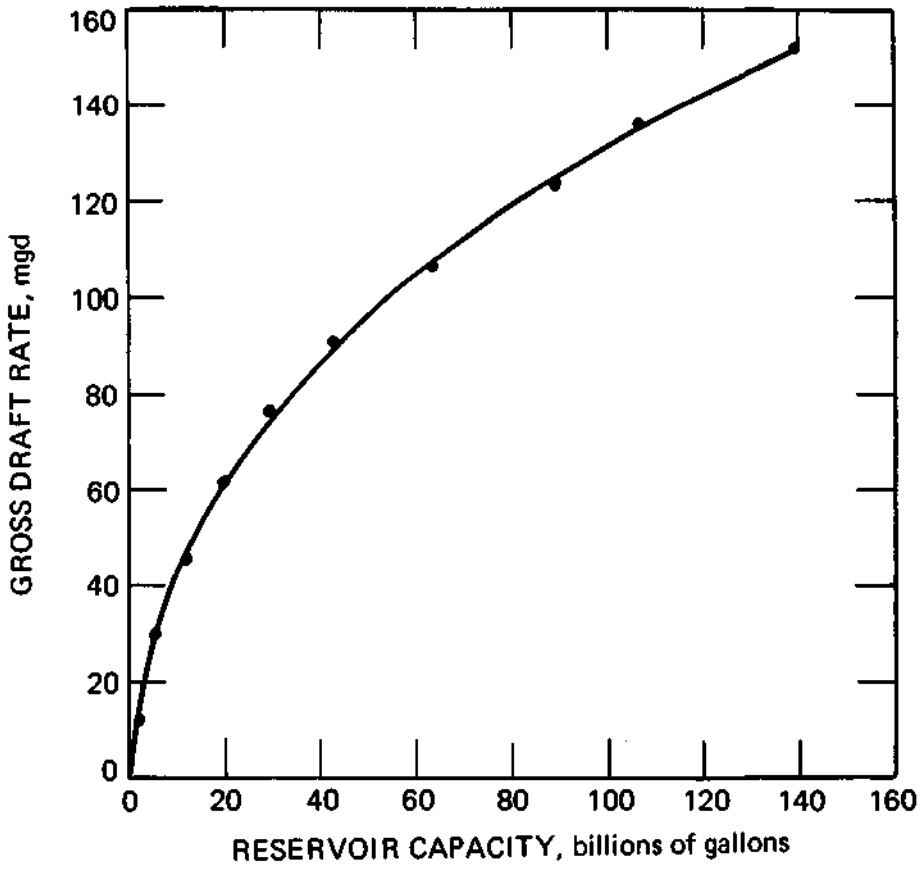


Figure 8. Reservoir capacity required to provide various draft rates during a 40-year-recurrence interval drouth based on data for Salt Creek near Rowel1

capacity of 3 equivalent inches on the drainage area, or 53,600 acre-feet, was used as an example. A comparison with two existing lakes in central Illinois showed that this size would be within reasonable limits.

To analyze the theoretical reservoir, a horizontal section was taken through figure 7 at a value of 3 inches of storage capacity, as shown in figure 9. The heavy horizontal line at 3 inches represents the theoretical reservoir site. The durations of the critical drawdown periods in months, also shown, were taken from table 5. The durations of these critical periods vary, but the duration which would govern the proposed reservoir can be selected from figure 9.

The performance of the theoretical reservoir under various draft rates and various recurrence intervals also can be determined by using figure 9.

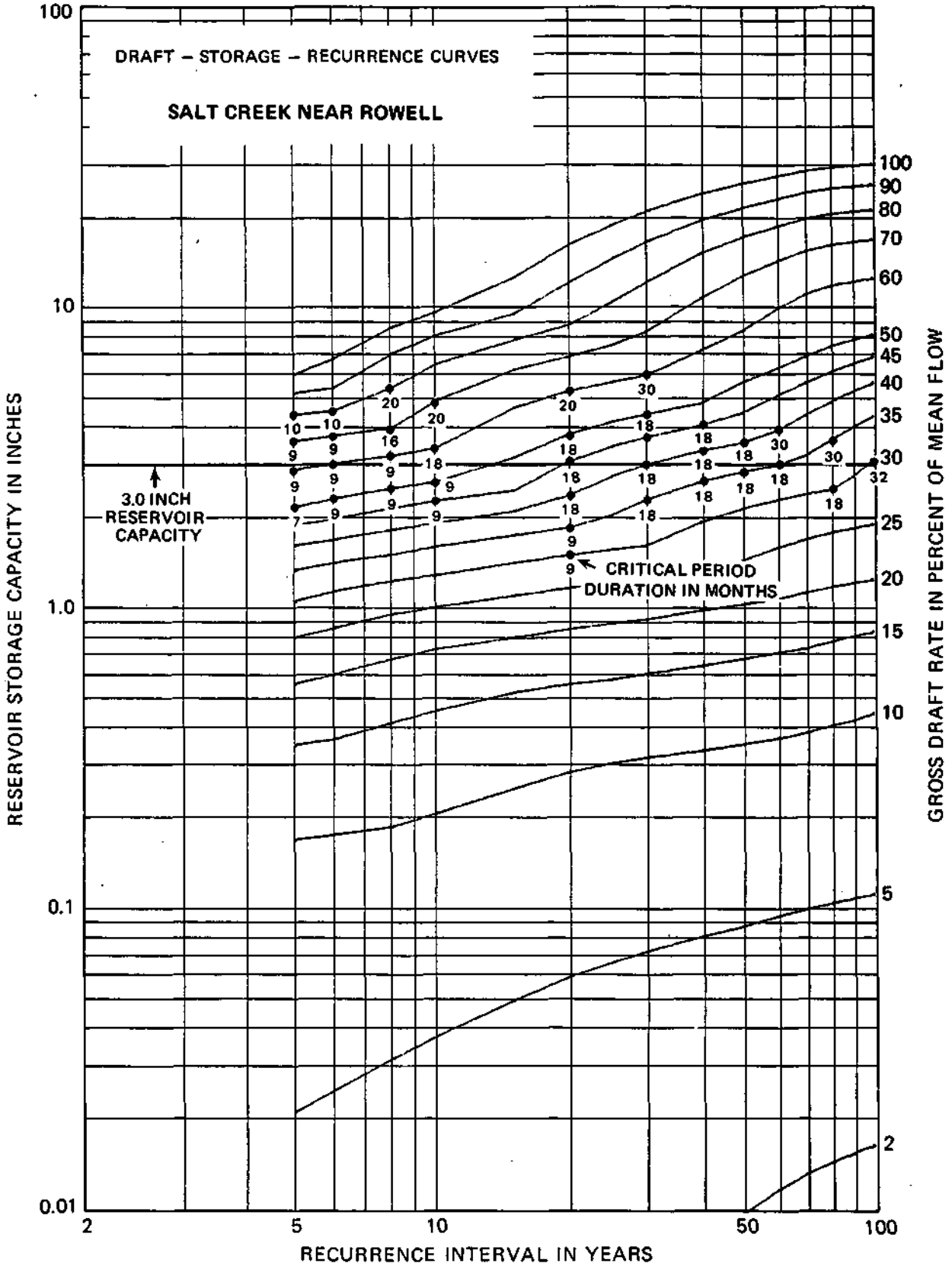


Figure 9. Analysis of a 3-inch capacity reservoir using draft-storage-recurrence curves for Salt Creek near Rowell

Table 7. Gross Draft Rates during Selected Drouths for Theoretical Reservoir on Salt Creek near Rowell

Drainage area = 335 square miles

Reservoir capacity = 53,600 acre-feet, or 3 equivalent inches on drainage area

Reservoir surface area = 5344 acres

Mean runoff = 0.79 inches per month, or 151 mgd

Drouth recurrence interval (years)	Gross draft rate (from figure 9)		Duration of critical period (from figure 9) (months)
	Percent of mean flow	Mgd	
5	61	92	9
10	55	83	18
20	44	66	18
50	36	54	18
100	30	45	32

Table 7 shows the results of such an analysis for five drouth recurrence intervals. It shows, for example, that during a 50-year-recurrence drouth the theoretical reservoir could serve a proposed draft rate of 54 million gallons per day (mgd) and would be subject to drawdown for an 18-raonth period.

The performance results in table 7 are also presented graphically in figure 10. The line in figure 10 can be useful to the designer in the further evaluation of the proposed lake site. For example, the lower right end of this line shows again that during a 100-year-recurrence drouth the proposed reservoir could furnish a gross draft rate of 45 mgd. If the reservoir were constructed to meet such a draft rate, its performance under an increased draft rate also could be evaluated; that is, if the draft rate were to increase from 45 to 80 mgd, the line shows that a water shortage could then be expected during a drouth having a recurrence interval of less than 10 years. This example deals only with gross yield; evaporation losses could change the shape of the curve considerably.

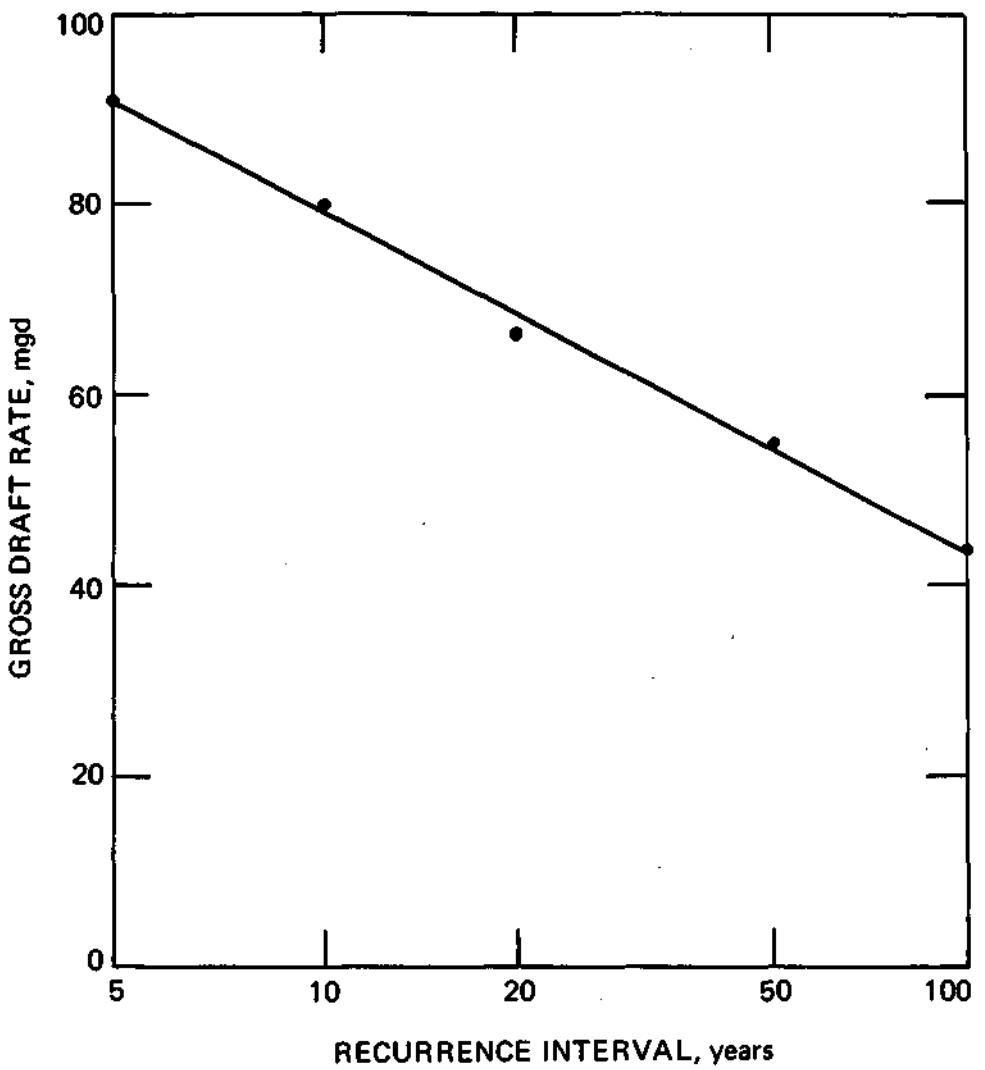


Figure 10. Performance of a theoretical 3-inch-capacity reservoir located on Salt Creek near Rowell

RESERVOIR LOSSES

Evaporation Loss

Evaporation loss is a primary consumptive loss of surface water impounding reservoirs. Depending on the design criteria related to critical duration and design frequency, the net yield of a reservoir may be either higher or lower than the gross yield upon application of the appropriate net evaporation data. In this analysis, net evaporation is defined

as the gross lake evaporation less the observed concurrent precipitation. Therefore, positive values for net lake evaluation indicate that evaporation exceeded precipitation for the given duration and frequency, while negative values indicate that precipitation exceeded evaporation. Lake evaporation is not measured directly and is not, therefore, available as "data." It must be calculated from other observed meteorological data.

The principal sources of information used in this study were Illinois State Water Survey Report of Investigation 57 (RI57) by Roberts and Stall[8], and records of the National Weather Service. RI57 reports calculated gross lake evaporation for the 52-year period from January 1911 through December 1962. Meteorologic data available allowed the calculation of evaporation to be extended 16 years from January 1963 through December 1978. Of the ten stations reported in RI57, nine have records back to 1911, and one has records back to 1930. The nine stations with 68-year records are: Carbondale; Chicago; Moline; Peoria; Rockford; Springfield; St. Louis, MO; Evansville, IN; and Indianapolis, IN. Urbana has the 49-year record.

Computation of Evaporation

As defined previously, net lake evaporation as defined in this study is equivalent to the total gross lake evaporation over a specified duration, less the total concurrent precipitation for that duration.

In order to compute net lake evaporation, two data sets are required: total monthly precipitation and gross monthly lake evaporation. The former is readily available from the National Weather Service at numerous locations in and around Illinois. Data for gross lake evaporation are not directly available. Evaporation pan data are available at several locations, but only for about seven months of each year. It was therefore necessary to compute lake evaporation from other existing meteorologic data which are available throughout the year. The computation procedure of Lamoreux[9] which was used in RI57 was used to generate lake evaporation time series from time series of mean daily air temperatures, mean daily dewpoint temperatures, mean daily wind movement, and mean daily solar radiation.

The mean daily wind movement is generally measured at a height of about 20 feet in order to eliminate ground structure effects on the measurements. In applying wind speeds to the computation of lake surface evaporation, a value for wind speed near the ground surface was needed. It was decided in this study to use the wind speed at an elevation 2 feet above the surface. The conversion from anemometer height to 2 feet followed methods developed by Nordenson[10].

Solar radiation data are collected at very few locations in the United States, although daily variability is very significant over a distance as short as 100 miles. Hamon[11] proposed a method of approximating daily solar radiation as a function of percent of possible sunshine and latitude, and this method was used to generate the solar radiation time series for each location. Sensitivity tests over the range of latitudes found in the state of Illinois showed no significant differences if the median latitude of 40 degrees north was used for all stations.

As in RI57, reduction factors were applied to all stations except Chicago, Moline, and Rockford, to account for the over-estimation of the computed gross lake evaporation with respect to the available observed pan data. The reduction factors for these locations are tabulated below:

Location	Gross lake evaporation reduction factor (%)
Peoria	5
Evansville	6
Springfield	8
Urbana	10
Carbondale	11
St. Louis	15

Maximum Net Evaporation Series

After the gross lake evaporation is calculated, the monthly values are reduced by the amount of the concurrent precipitation. This results in a chronological record of net lake evaporation values as previously defined. The partial duration series of maximum net lake evaporation values was developed in a manner exactly parallel to the partial duration series of

low flows described in an earlier section. Independent series for durations of 1 to 60 months were developed by selecting and ranking cumulative net evaporation values for mutually exclusive periods of time.

Based on the assigned rank, beginning with the highest accumulative net evaporation for each duration, recurrence intervals were calculated using equation 2. The results of these analyses are presented in tables 8 through 13 for Carbondale, Moline, Peoria, Rockford, Springfield, and St. Louis. Figure 11 shows the distribution of these locations around the state along with the average annual rainfall. When applying these data to a reservoir analysis, the nearest stations should be used with some consideration of the rainfall patterns. Where no clear choice exists, results can be calculated using first one table and then another. The resulting yields will indicate the significance of the evaporation station selection. Weighting of station records to obtain an "average" value is not recommended.

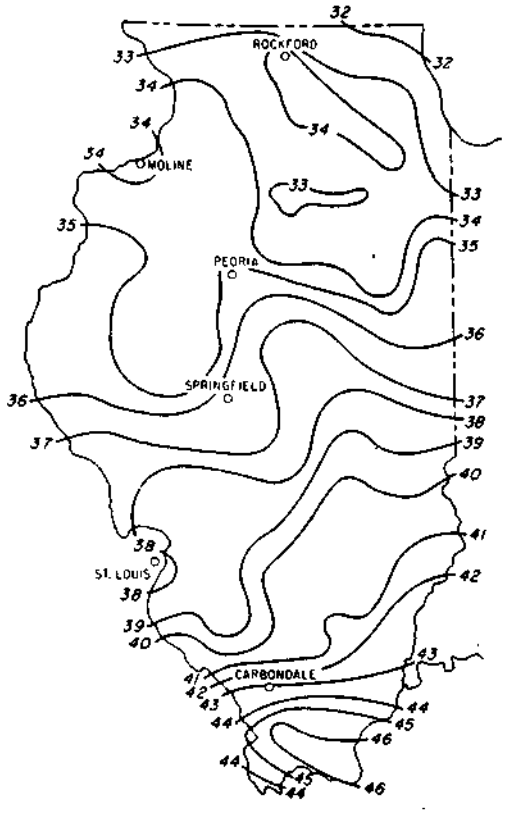


Figure 11. Locations of evaporation stations in Illinois, and mean annual rainfall

Table 8. Maximum Net Lake Evaporation in Inches, Carbondale

DURATION IN MONTHS	RECURRENCE INTERVAL IN YEARS														
	5	6	8	10	15	20	25	30	40	50	60	70	80	90	100
1	4.77	4.94	5.18	5.35	5.60	5.74	5.83	5.90	5.97	6.01	6.05	6.08	6.11	6.13	6.15
2	8.33	8.61	8.98	9.23	9.58	9.77	9.88	9.94	10.01	10.07	10.13	10.18	10.23	10.27	10.30
3	9.75	10.47	11.45	12.10	13.05	13.55	13.85	14.03	14.21	14.37	14.48	14.57	14.65	14.73	14.80
4	11.05	11.99	13.31	14.22	15.64	16.48	17.03	17.42	17.93	18.24	18.43	18.56	18.63	18.68	18.70
5	12.63	13.43	14.59	15.41	16.71	17.50	18.04	18.45	19.00	19.36	19.62	19.80	19.94	20.05	20.13
6	13.01	14.01	15.38	16.31	17.68	18.43	18.88	19.18	19.50	19.68	19.83	19.96	20.07	20.16	20.25
7	11.57	12.68	14.25	15.31	16.93	17.85	18.44	18.85	19.33	19.59	19.73	19.84	19.93	20.00	20.05
8	10.45	11.56	13.24	14.46	16.39	17.47	18.10	18.46	18.70	18.99	19.26	19.46	19.61	19.75	19.85
9	8.08	9.47	11.52	12.98	15.23	16.47	17.19	17.61	17.90	18.15	18.36	18.54	18.70	18.83	18.90
10	5.98	7.45	9.51	10.91	13.05	14.26	15.03	15.56	16.19	16.53	16.80	16.99	17.15	17.28	17.38
11	5.21	6.76	8.92	10.37	12.54	13.73	14.46	14.94	15.55	15.78	15.95	16.09	16.17	16.28	16.36
12	2.91	5.36	8.53	10.48	13.07	14.26	14.87	15.19	15.50	15.72	15.90	16.05	16.14	16.21	16.25
14	4.34	6.52	9.63	11.78	15.16	17.18	18.53	19.49	20.77	21.56	22.07	22.41	22.64	22.78	22.87
16	6.25	8.14	10.90	12.89	16.19	18.30	19.82	20.98	22.68	23.88	24.78	25.50	26.08	26.56	26.97
18	4.13	6.28	9.42	11.67	15.36	17.70	19.36	20.62	22.43	23.69	24.63	25.36	25.94	26.41	26.80
20	2.86	4.64	7.33	9.32	12.77	15.10	16.85	18.23	20.36	21.95	23.21	24.26	25.14	25.91	26.59
22	-.68	.78	3.13	4.99	8.47	11.05	13.10	14.82	17.61	19.50	20.80	21.86	22.60	23.30	23.80
24	-6.65	-3.58	.89	4.06	9.24	12.47	14.74	16.44	18.85	20.48	21.67	22.56	23.26	23.82	24.27
26	-5.26	-2.88	.82	3.68	8.87	12.56	15.45	17.82	21.59	24.54	26.97	29.04	30.84	32.44	33.87
28	-5.66	-2.94	1.29	4.52	10.36	14.48	17.68	20.29	24.43	27.65	30.29	32.53	34.48	36.20	37.74
30	-8.79	-5.43	-.39	3.33	9.74	14.04	17.24	19.77	23.60	26.45	28.70	30.55	32.10	33.44	34.61
32	-12.65	-8.76	-3.05	1.06	7.86	12.21	15.31	17.68	21.10	23.50	25.29	26.68	27.80	28.72	29.49
34	-16.72	-12.71	-6.86	-2.69	4.13	8.42	11.42	13.69	16.89	19.08	20.66	21.87	22.81	23.56	24.17
36	-18.27	-14.24	-8.36	-4.17	2.69	7.00	10.04	12.32	15.56	17.77	19.38	20.60	21.56	22.32	22.94
38	-19.75	-15.56	-9.37	-4.89	2.60	7.45	10.94	13.63	17.57	20.37	22.49	24.17	25.54	26.68	27.65
40			-11.84	-5.67	4.02	9.74	13.52	16.69	20.45	22.74	23.85	24.76	25.85	26.81	27.70
42			-16.03	-8.63	2.88	9.55	13.88	16.87	20.30	22.59	23.68	24.60	25.40	26.15	26.70
44				-12.42	-.41	6.53	11.00	14.06	17.80	19.78	20.81	21.26	21.60	21.84	22.00
46				-17.42	-4.92	2.38	7.15	10.47	14.62	16.93	18.23	18.90	19.18	19.38	19.50
48				-18.56	-3.91	4.02	8.75	11.67	14.05	15.30	15.55	15.70	15.82	15.92	16.00
50				-18.39	-2.50	6.01	11.01	14.04	16.89	17.48	17.99	18.45	18.80	19.05	19.27
52				-13.92	2.40	5.57	7.55	9.33	13.01	16.29	19.15	21.57	23.60	25.05	26.11
54				-19.79	-3.05	6.11	11.64	15.13	17.00	18.80	19.80	20.70	21.15	21.50	21.85
56					-7.22	4.82	9.15	12.08	15.10	17.50	18.70	19.55	20.25	20.55	20.80
58					-11.65	-1.62	3.46	9.30	10.55	13.00	14.45	15.15	15.70	16.10	16.45
60					-12.04	-4.13	-.50	3.75	7.50	10.50	12.50	13.50	14.40	14.85	15.00

Table 9. Maximum Net Lake Evaporation in Inches, Moline

DURATION IN MONTHS	RECURRENCE INTERVAL IN YEARS														
	5	6	8	10	15	20	25	30	40	50	60	70	80	90	100
1	5.15	5.41	5.82	6.12	6.66	7.03	7.31	7.53	7.88	8.14	8.36	8.54	8.69	8.82	8.94
2	8.65	8.97	9.46	9.82	10.47	10.91	11.25	11.53	11.95	12.28	12.54	12.76	12.95	13.11	13.26
3	10.86	11.13	11.62	12.03	12.86	13.51	14.05	14.52	15.31	15.96	16.52	17.01	17.44	17.84	18.20
4	11.94	12.23	12.77	13.25	14.26	15.09	15.79	16.41	17.45	18.33	19.09	19.75	20.35	20.90	21.40
5	13.79	13.93	14.27	14.62	15.47	16.23	16.90	17.51	18.58	19.49	20.30	21.02	21.68	22.28	22.83
6	14.10	14.23	14.56	14.93	15.84	16.67	17.41	18.09	19.27	20.30	21.20	22.01	22.75	23.43	24.06
7	13.43	13.80	14.42	14.94	15.97	16.77	17.43	18.00	18.94	19.71	20.36	20.94	21.45	21.91	22.33
8	12.02	12.81	13.97	14.82	16.22	17.13	17.78	18.29	18.90	19.48	19.98	20.30	20.57	20.79	20.98
9	11.66	12.45	13.60	14.42	15.78	16.64	17.25	17.71	18.39	18.86	19.21	19.49	19.71	19.89	20.04
10	11.71	12.27	13.13	13.79	14.96	15.78	16.42	16.93	17.74	18.37	18.88	19.29	19.62	19.80	20.01
11	10.37	11.40	12.87	13.90	15.54	16.55	17.24	17.75	18.46	18.99	19.48	19.93	20.30	20.53	20.69
12	9.02	10.44	12.52	14.02	16.51	18.10	19.25	20.12	21.40	22.31	23.00	23.54	23.98	24.35	24.66
14	10.85	13.22	16.53	18.76	22.15	24.04	25.22	26.01	26.93	27.37	27.77	28.12	28.40	28.60	28.75
16	13.31	15.17	17.84	19.72	22.73	24.58	25.85	26.78	28.07	28.92	29.51	29.95	30.27	30.52	30.71
18	13.29	15.22	18.04	20.07	23.41	25.54	27.06	28.21	29.89	31.06	31.94	32.63	33.18	33.64	34.02
20	12.43	14.44	17.37	19.46	22.90	25.07	26.62	27.79	29.47	30.64	31.51	32.18	32.72	33.16	33.52
22	10.40	12.62	15.82	18.07	21.67	23.87	25.38	26.50	28.03	29.04	29.74	30.25	30.62	30.91	31.13
24	9.14	11.70	15.33	17.83	21.70	23.97	25.45	26.49	27.82	28.59	29.06	29.35	29.50	29.60	29.67
26	10.66	13.37	17.18	19.75	23.66	25.85	27.23	28.15	29.24	29.77	30.20	30.56	30.84	31.07	31.22
28	9.67	14.36	20.16	23.53	27.70	29.50	30.44	31.00	31.78	32.23	32.67	33.05	33.39	33.64	33.82
30	11.40	14.85	19.61	22.77	27.41	29.87	31.31	32.20	33.05	33.80	34.40	34.85	35.15	35.38	35.51
32	9.54	13.02	17.86	21.11	25.95	28.58	30.18	31.20	32.30	32.72	33.07	33.35	33.55	33.68	33.75
34	6.95	10.56	15.57	18.91	23.88	26.57	28.18	29.20	30.27	30.64	30.95	31.19	31.37	31.48	31.55
36	2.34	6.91	13.25	17.48	23.75	27.11	29.11	30.36	31.62	32.91	33.50	33.99	34.35	34.60	34.74
38	-3.59	5.27	15.62	21.12	26.92	28.79	31.29	32.79	34.09	35.14	36.01	36.68	37.15	37.48	37.61
40	.24	5.61	13.11	18.17	25.75	29.91	32.45	34.09	35.86	36.57	37.15	37.62	37.97	38.15	38.20
42	-6.98	-.01	9.68	16.16	25.71	30.77	33.73	35.53	37.22	38.72	39.92	40.85	41.61	42.15	42.52
44	-2.85	2.63	10.36	15.64	23.75	28.36	31.30	33.29	35.69	36.91	37.99	38.88	39.59	40.21	40.67
46	-8.78	-2.28	6.87	13.08	22.48	27.72	30.97	33.09	35.49	36.54	37.55	38.41	39.10	39.58	39.96
48		-19.67	5.23	17.54	23.00	27.00	29.00	30.00	31.49	32.80	33.81	34.61	35.17	35.59	35.82
50		-12.56	4.85	14.63	25.85	30.12	32.11	33.26	34.90	36.29	37.34	37.91	38.25	38.34	38.39
52			.14	13.32	28.64	34.32	36.69	37.77	38.71	39.50	40.15	40.60	40.91	41.12	41.23
54			-.65	12.68	28.51	34.63	37.34	38.66	39.90	40.79	41.51	42.06	42.46	42.71	42.88
56			-3.14	9.55	25.25	31.88	35.70	38.08	40.79	42.03	42.71	43.30	43.74	44.05	44.28
58			-7.46	6.85	24.67	31.70	34.56	36.86	39.48	40.05	41.32	42.02	42.55	42.83	42.99
60			-9.78	5.65	24.18	31.43	36.15	38.08	39.42	40.29	40.87	41.17	41.33	41.42	41.48

Table 10. Maximum Net Lake Evaporation in Inches, Peoria

DURATION IN MONTHS	RECURRENCE INTERVAL IN YEARS														
	5	6	8	10	15	20	25	30	40	50	60	70	80	90	100
1	5.70	5.86	6.09	6.25	6.50	6.66	6.77	6.85	6.97	7.04	7.10	7.14	7.17	7.19	7.21
2	8.95	9.18	9.56	9.88	10.49	10.95	11.33	11.65	12.18	12.61	12.97	13.29	13.57	13.82	14.05
3	11.87	12.05	12.39	12.71	13.40	13.97	14.46	14.89	15.64	16.26	16.80	17.28	17.71	18.11	18.47
4	13.43	13.80	14.22	14.48	15.00	15.55	16.15	16.78	18.12	19.51	20.89	22.26	23.61	24.94	26.24
5	14.94	15.13	15.56	16.00	17.06	17.99	18.81	19.56	20.86	21.97	22.95	23.83	24.62	25.35	26.03
6	15.31	15.74	16.46	17.07	18.27	19.21	19.99	20.65	21.76	22.66	23.44	24.12	24.72	25.27	25.76
7	13.81	14.85	16.35	17.39	19.07	20.09	20.79	21.31	22.02	22.48	22.80	23.04	23.22	23.35	23.45
8	12.30	13.99	16.26	17.72	19.76	20.75	21.27	21.54	21.70	21.84	21.96	22.06	22.14	22.22	22.29
9	11.07	13.39	16.17	17.71	19.46	19.87	20.07	20.19	20.30	20.39	20.48	20.56	20.64	20.73	20.82
10	10.94	13.25	15.93	17.35	18.86	19.35	19.53	19.61	19.72	19.90	20.06	20.19	20.30	20.38	20.44
11	12.50	13.49	14.91	15.90	17.45	18.39	19.01	19.47	20.08	20.46	20.72	20.89	21.02	21.10	21.16
12	12.19	13.31	14.93	16.07	17.90	19.03	19.81	20.39	21.21	21.75	22.13	22.42	22.64	22.81	22.95
14	15.64	16.90	18.74	20.04	22.18	23.53	24.48	25.20	26.23	26.94	27.46	27.87	28.19	28.46	28.67
16	17.18	18.12	19.60	20.77	22.94	24.51	25.77	26.81	28.48	29.82	30.93	31.88	32.71	33.46	34.13
18	16.38	17.54	19.42	20.93	23.80	25.94	27.66	29.11	31.48	33.39	34.99	36.38	37.61	38.71	39.71
20	14.89	16.27	18.50	20.28	23.65	26.15	28.16	29.84	32.59	34.80	36.65	38.25	39.66	40.93	42.08
22	12.09	13.62	16.06	17.99	21.57	24.19	26.27	28.01	30.82	33.05	34.92	36.52	37.93	39.19	40.33
24	12.42	13.57	15.50	17.11	20.29	22.74	24.76	26.49	29.36	31.71	33.72	35.47	37.03	38.45	39.74
26	12.72	15.00	18.33	20.73	24.71	27.26	29.08	30.48	32.51	33.94	35.02	35.87	36.56	37.13	37.61
28	14.32	16.36	19.45	21.77	25.82	28.59	30.69	32.37	34.97	36.93	38.51	39.83	40.95	41.93	42.80
30	13.99	15.65	18.38	20.60	24.87	28.10	30.72	32.94	36.09	38.95	41.36	43.44	45.27	46.91	48.40
32	10.62	12.56	15.71	18.25	23.08	26.70	29.62	31.59	35.43	38.45	41.01	42.90	44.65	46.25	47.62
34	8.44	10.77	14.40	17.17	22.17	25.70	28.44	30.68	33.81	36.18	37.99	39.02	39.70	40.13	40.41
36	8.73	10.65	15.38	19.42	24.04	26.92	30.01	32.21	35.32	37.51	39.15	40.78	41.72	42.24	42.50
38	6.42	9.54	14.24	17.72	23.71	27.74	30.74	33.51	38.48	41.57	43.63	45.11	46.13	46.61	46.92
40	5.67	9.04	14.09	17.82	24.21	28.48	31.65	33.91	38.84	42.69	45.88	47.67	48.26	48.66	49.01
42	2.95	6.03	10.93	14.79	21.98	27.25	31.43	34.01	39.18	43.12	46.21	47.98	48.50	48.88	49.10
44	2.87	5.72	10.34	14.04	21.06	26.31	30.53	33.09	37.41	40.18	42.21	43.79	44.84	45.57	46.00
46	-.98	2.28	7.48	11.56	19.16	24.70	29.10	36.91	39.80	41.70	42.91	44.18	45.31	46.19	46.84
48		-14.65	-2.15	6.56	20.22	28.25	33.53	36.10	38.70	40.61	42.40	43.82	45.11	46.01	46.78
50		-16.82	-2.70	7.11	22.49	31.47	37.33	39.40	42.71	45.01	46.69	47.43	47.91	48.32	48.47
52		-17.69	-2.46	8.16	24.80	34.52	40.86	42.97	45.81	47.38	48.11	48.45	48.73	48.80	48.86
54		-17.37	-2.69	7.63	24.08	33.94	40.54	44.04	47.00	48.60	49.35	49.68	49.81	49.90	49.98
56			-5.42	5.21	22.13	32.25	39.01	41.14	44.81	47.08	48.20	48.70	48.97	49.10	49.18
58			-4.03	4.40	18.47	27.50	33.96	36.25	40.70	43.59	45.90	47.38	48.02	48.25	48.37
60			-7.38	1.91	17.21	26.86	33.64	35.75	40.09	42.90	45.12	46.71	47.30	47.82	47.95

Table 11. Maximum Net Lake Evaporation in Inches, Rockford

DURATION IN MONTHS	RECURRENCE INTERVAL IN YEARS														
	5	6	8	10	15	20	25	30	40	50	60	70	80	90	100
1	4.05	4.26	4.58	4.83	5.25	5.53	5.75	5.92	6.18	6.38	6.54	6.67	6.79	6.88	6.97
2	6.13	6.42	6.86	7.18	7.72	8.07	8.34	8.54	8.86	9.09	9.27	9.41	9.54	9.64	9.73
3	7.42	7.77	8.32	8.73	9.49	10.02	10.43	10.77	11.31	11.73	12.07	12.36	12.62	12.84	13.04
4	7.73	8.40	9.36	10.05	11.16	11.85	12.33	12.70	13.21	13.56	13.82	14.01	14.16	14.28	14.38
5	8.23	9.18	10.52	11.43	12.85	13.67	14.20	14.58	15.05	15.32	15.48	15.57	15.65	15.72	15.74
6	9.04	9.76	10.81	11.56	12.77	13.53	14.07	14.47	15.05	15.44	15.73	15.95	16.13	16.27	16.39
7	9.51	10.11	11.00	11.65	12.76	13.48	14.01	14.43	15.05	15.50	15.86	16.15	16.39	16.59	16.77
8	8.45	9.22	10.33	11.12	12.42	13.23	13.80	14.23	14.84	15.26	15.57	15.81	16.00	16.15	16.28
9	7.38	8.21	9.41	10.28	11.71	12.63	13.29	13.79	14.52	15.04	15.38	15.60	15.74	15.83	15.88
10	6.39	7.31	8.68	9.67	11.34	12.42	13.21	13.83	14.52	15.40	15.90	16.31	16.65	16.94	17.18
11	6.30	6.96	8.01	8.85	10.42	11.58	12.50	13.28	14.53	15.54	16.38	17.10	17.74	18.31	18.83
12	6.46	6.80	7.49	8.17	9.69	11.00	12.15	13.17	14.94	16.44	17.76	18.93	19.99	20.97	21.86
14	5.21	6.22	7.84	9.13	11.55	13.34	14.77	15.96	17.90	19.45	20.74	21.86	22.85	23.73	24.53
16	5.63	6.87	8.78	10.20	12.72	14.45	15.77	16.83	18.48	19.90	21.21	22.35	23.32	24.08	24.67
18	5.54	6.90	8.83	10.18	12.31	13.58	14.45	15.07	15.90	16.43	16.78	17.02	17.19	17.30	17.38
20	5.26	6.40	8.06	9.24	11.15	12.35	13.19	13.83	14.73	15.34	15.79	16.14	16.41	16.63	16.80
22	2.92	4.03	5.71	6.96	9.11	10.55	11.63	12.49	13.80	14.65	15.32	15.87	16.27	16.56	16.71
24	-.05	1.45	3.65	5.25	7.92	9.64	10.90	11.87	13.29	14.26	15.01	15.56	15.95	16.24	16.41
26	-4.73	-1.76	2.41	5.24	9.58	12.04	13.62	14.68	15.97	16.64	16.98	17.19	17.31	17.40	17.44
28	-5.84	-2.49	2.24	5.48	10.48	13.35	15.21	16.49	18.08	18.95	19.47	19.82	20.11	20.22	20.27
30	-8.69	-4.47	1.42	5.38	11.27	14.49	16.44	17.69	19.02	19.53	19.91	20.25	20.51	20.69	20.79
32	-10.54	-6.13	.01	4.12	10.24	13.55	15.54	16.80	18.12	18.58	18.96	19.26	19.49	19.63	19.71
34	-14.15	-9.06	-2.01	2.68	9.58	13.23	15.37	16.67	17.90	18.34	18.71	18.99	19.22	19.35	19.42
36		-12.56	-2.97	2.28	8.06	9.46	10.45	11.10	11.66	12.20	12.71	13.14	13.46	13.69	13.88
38		-16.48	-4.81	1.70	9.05	11.67	12.72	13.16	13.54	13.87	14.14	14.36	14.53	14.64	14.72
40			-8.66	-.02	9.41	12.51	13.61	14.00	14.34	14.63	14.85	15.02	15.14	15.25	15.33
42			-10.37	-1.39	9.16	13.13	14.76	15.44	15.79	16.08	16.30	16.47	16.59	16.69	16.77
44			-12.36	-1.67	9.69	13.13	14.13	14.88	15.48	15.95	16.27	16.40	16.53	16.61	16.66
46			-14.63	-3.27	8.47	11.79	12.62	13.33	13.93	14.41	14.82	15.13	15.32	15.44	15.51
48			-18.60	-6.94	5.85	10.08	11.61	12.21	12.87	13.46	13.95	14.43	14.76	14.96	15.09
50				-8.01	6.80	10.70	11.59	12.24	12.70	13.20	13.59	13.87	14.04	14.17	14.23
52				-9.44	5.76	9.70	10.65	11.35	12.05	12.64	13.12	13.48	13.72	13.99	14.07
54				-11.80	3.40	7.74	9.14	10.16	11.21	12.09	12.88	13.44	13.70	13.95	14.01
56				-13.95	1.55	6.00	7.49	8.31	9.41	10.33	11.01	11.56	11.97	12.21	12.31
58				-16.66	-1.05	3.46	4.99	5.83	7.98	9.58	10.65	11.42	11.88	12.15	12.28
60					-7.37	2.38	8.00	11.74	17.01	18.30	19.02	19.49	19.71	19.88	19.97

Table 12. Maximum Net Lake Evaporation in Inches, Springfield

DURATION IN MONTHS	RECURRENCE INTERVAL IN YEARS														
	5	6	8	10	15	20	25	30	40	50	60	70	80	90	100
1	5.79	6.00	6.15	6.38	6.51	6.61	6.67	6.76	6.82	6.85	6.88	6.90	6.91	6.92	6.93
2	9.13	9.51	9.79	10.27	10.59	10.84	11.03	11.33	11.55	11.72	11.87	11.99	12.10	12.19	12.26
3	12.10	12.61	12.96	13.52	13.85	14.08	14.25	14.48	14.62	14.72	14.79	14.84	14.88	14.90	14.91
4	13.61	14.59	15.23	16.18	16.67	16.96	17.14	17.31	17.58	17.79	17.93	18.04	18.12	18.16	18.18
5	14.89	16.32	17.13	18.12	18.55	18.77	18.91	19.08	19.22	19.35	19.48	19.58	19.65	19.69	19.71
6	15.65	16.77	17.54	18.75	19.47	19.95	20.29	20.75	21.03	21.21	21.33	21.41	21.47	21.50	21.52
7	14.99	16.49	17.39	18.52	19.52	20.31	20.72	20.93	21.41	21.72	21.91	22.07	22.18	22.24	22.27
8	14.34	15.87	16.89	18.36	19.14	19.59	19.87	20.15	20.31	20.44	20.53	20.60	20.64	20.67	20.69
9	13.94	15.33	16.27	17.67	18.45	18.94	19.26	19.63	19.90	20.21	20.41	20.53	20.59	20.64	20.66
10	13.10	14.43	15.33	16.71	17.49	17.99	18.34	18.75	19.16	19.57	19.90	20.17	20.39	20.58	20.64
11	12.81	13.88	14.66	15.96	16.80	17.42	17.89	18.60	19.10	19.50	19.81	20.07	20.29	20.47	20.59
12	12.27	13.71	14.73	16.41	17.46	18.21	18.78	19.59	20.15	20.57	20.89	21.14	21.35	21.52	21.63
14	15.07	16.78	17.98	19.89	21.06	21.87	22.46	23.27	23.81	24.18	24.46	24.66	24.82	24.93	24.97
16	16.29	19.65	21.41	23.21	24.41	25.11	26.02	26.71	27.80	28.68	29.37	29.88	30.19	30.38	30.47
18	15.90	18.73	20.65	23.57	25.23	26.28	26.99	27.84	28.79	29.51	30.08	30.41	60.62	30.78	30.85
20	14.63	17.97	20.19	23.43	25.10	26.52	27.71	28.50	29.41	30.13	30.62	30.99	31.24	31.39	31.44
22	12.09	15.37	17.56	20.84	22.63	24.12	25.39	26.08	26.96	27.65	28.14	28.45	28.63	28.74	28.79
24	12.79	15.70	17.70	20.79	22.58	23.75	24.57	25.61	26.20	26.55	26.75	26.86	26.93	26.97	26.99
26	15.70	17.76	19.28	21.88	23.60	24.88	25.89	27.41	28.54	29.43	30.15	30.76	31.28	31.74	32.02
28	14.93	17.77	19.88	23.53	25.99	27.84	29.30	31.55	33.23	34.57	35.67	36.61	37.42	38.14	38.62
30	12.91	17.14	20.07	24.68	27.42	29.25	30.55	32.27	33.76	34.97	35.98	36.88	37.48	38.15	38.63
32	11.21	15.05	17.79	22.26	25.07	27.05	28.54	30.69	32.06	33.05	33.80	34.38	34.83	35.20	35.32
34	8.45	12.67	15.63	20.34	23.20	25.15	26.57	28.50	29.73	30.57	31.16	31.58	31.89	32.11	32.24
36	8.38	12.83	15.88	20.58	23.30	25.05	26.27	27.78	28.62	29.09	29.35	29.54	29.67	29.75	29.80
38	8.96	14.75	18.65	24.51	27.75	29.75	31.05	32.50	33.12	33.57	33.86	34.01	34.17	34.26	34.29
40	9.46	15.51	19.59	25.72	29.11	31.20	32.56	34.07	34.67	35.18	35.61	35.89	36.08	36.21	36.28
42	1.81	12.57	18.47	25.05	27.45	29.23	30.81	32.17	33.63	34.59	35.23	35.61	35.82	35.94	35.98
44	-6.55	10.04	18.05	24.70	27.51	28.64	29.48	30.99	32.11	33.01	33.79	34.39	34.77	35.06	35.14
46	-10.39	3.94	12.09	21.68	25.44	27.20	28.47	29.66	30.97	32.12	32.97	33.81	34.48	34.82	35.10
48	-17.37	2.52	12.88	23.02	25.21	27.08	28.74	29.68	30.81	31.84	32.60	33.02	33.27	33.44	33.51
50		-.45	12.70	26.64	30.83	32.80	33.99	35.15	36.57	37.31	37.88	38.18	38.27	38.31	38.33
52		-1.00	12.90	27.94	32.74	34.39	35.26	36.02	37.29	38.07	38.64	39.04	39.26	39.38	39.44
54		-1.86	11.75	27.97	34.26	37.04	38.37	38.72	39.62	40.43	40.99	41.44	41.76	42.02	42.09
56		-4.68	9.99	27.08	33.41	36.01	37.16	37.25	37.76	38.14	38.35	38.54	38.67	38.75	38.79
58		-7.68	7.89	25.11	30.80	32.77	34.18	35.01	36.22	37.12	37.92	38.48	38.62	38.69	38.74
60		-9.33	6.82	24.61	30.41	32.35	33.40	34.20	35.31	36.27	37.05	37.63	38.02	38.28	38.37

Table 13. Maximum Net Lake Evaporation in Inches, St. Louis

DURATION IN MONTHS	RECURRENCE INTERVAL IN YEARS														
	5	6	8	10	15	20	25	30	40	50	60	70	80	90	100
1	5.43	5.60	5.74	5.99	6.18	6.32	6.44	6.64	6.79	6.92	7.03	7.13	7.21	7.29	7.34
2	8.88	9.31	9.63	10.18	10.54	10.81	11.02	11.34	11.57	11.75	11.91	12.03	12.14	12.24	12.31
3	11.26	12.07	12.66	13.63	14.26	14.71	15.06	15.57	15.93	16.21	16.43	16.61	16.76	16.89	16.97
4	13.61	14.19	14.68	15.64	16.39	17.00	17.52	18.39	19.10	19.70	20.23	20.70	21.13	21.51	21.72
5	14.03	14.93	15.61	16.84	17.70	18.37	18.91	19.78	20.44	20.99	21.45	21.85	22.21	22.53	22.72
6	13.86	15.29	16.32	17.99	19.05	19.80	20.36	21.17	21.73	22.15	22.47	22.72	22.93	23.10	23.22
7	13.42	14.69	15.61	17.16	18.18	18.92	19.50	20.66	21.44	22.04	22.39	22.66	22.89	23.08	23.20
8	12.76	13.98	14.89	16.48	17.56	18.39	19.05	20.07	20.85	21.47	21.99	22.43	22.81	23.03	23.16
9	11.65	13.07	14.11	15.89	17.07	17.94	18.63	19.68	20.45	21.06	21.55	21.97	22.33	22.64	22.88
10	11.27	12.39	13.26	14.85	15.98	16.87	17.60	18.77	19.68	20.44	21.08	21.64	22.14	22.58	22.86
11	9.98	11.42	12.50	14.40	15.71	16.71	17.51	18.76	19.71	20.48	21.13	21.68	22.16	22.59	22.86
12	10.82	12.04	12.96	14.62	15.79	16.69	17.42	18.57	19.47	20.20	20.81	21.35	21.82	22.24	22.53
14	13.17	15.27	16.72	19.00	20.35	21.26	21.91	22.77	23.30	23.65	23.88	24.03	24.13	24.19	24.22
16	14.75	16.96	18.47	20.80	22.14	23.01	23.61	24.36	24.78	25.02	25.21	25.35	25.44	25.49	25.52
18	16.38	17.65	18.63	20.42	21.71	22.71	23.54	24.87	25.90	26.76	27.49	28.13	28.70	29.21	29.56
20	13.09	15.55	17.23	19.84	21.36	22.35	23.04	23.91	24.42	24.71	24.88	24.99	25.07	25.10	25.12
22	11.15	13.73	15.43	17.91	19.22	19.97	20.43	20.86	21.23	21.51	21.72	21.89	22.01	22.08	22.11
24	11.73	13.35	14.55	16.63	18.03	19.08	19.92	21.20	22.16	22.93	23.56	24.10	24.56	24.98	25.27
26	10.94	13.67	15.55	18.47	20.17	21.30	22.09	23.10	24.01	24.76	25.35	25.81	26.09	26.26	26.35
28	10.43	14.22	16.78	20.66	22.83	24.19	25.09	26.15	26.66	27.09	27.44	27.72	27.93	28.06	28.13
30	7.07	12.73	16.12	20.50	22.52	23.61	24.27	25.00	25.42	25.73	26.00	26.25	26.40	26.49	26.56
32	5.78	10.32	13.40	18.08	20.71	22.37	23.49	24.80	25.38	25.67	25.91	26.14	26.27	26.34	26.38
34	3.70	7.83	10.68	15.10	17.67	19.36	20.55	22.06	22.93	23.45	23.76	23.99	24.16	24.25	24.28
36	2.07	7.00	10.33	15.36	18.16	19.91	21.07	22.39	23.00	23.51	23.91	24.19	24.38	24.49	24.56
38	-6.57	6.31	13.14	20.25	22.46	23.27	23.69	24.53	25.33	25.94	26.38	26.66	26.84	26.94	26.99
40	-13.90	4.76	13.83	21.43	22.81	23.99	25.01	25.79	26.35	26.78	27.05	27.24	27.37	27.45	27.49
42	-10.47	3.82	11.31	18.98	21.33	22.26	22.84	24.17	25.25	26.01	26.57	26.89	27.10	27.23	27.29
44	-12.58	1.82	9.05	15.83	17.57	18.81	19.83	20.65	21.91	22.83	23.62	24.33	24.91	25.28	25.45
46		-2.96	6.77	15.44	17.80	19.10	20.10	20.91	21.69	22.27	22.72	23.05	23.22	23.31	23.35
48		-5.45	1.13	11.11	16.68	20.14	22.41	24.98	26.37	27.31	28.02	28.59	28.97	29.18	29.33
50		-7.86	.55	13.11	19.92	24.00	26.54	29.12	30.75	32.10	33.14	33.87	34.41	34.76	34.97
52		-7.09	1.61	14.70	21.87	26.21	28.96	31.85	32.86	33.71	34.42	34.91	35.29	35.50	35.62
54		-8.45	.25	13.53	21.00	25.68	28.76	32.29	33.89	34.78	35.51	36.06	36.39	36.58	36.67
56		-10.28	-1.28	12.41	20.05	24.78	27.88	31.33	32.80	33.99	34.88	35.54	36.02	36.31	36.52
58		-14.97	-5.66	8.59	16.63	21.68	25.02	28.86	30.62	32.03	33.09	34.01	34.76	35.27	35.51
60		-19.65	-9.39	6.18	14.82	20.13	23.55	27.26	29.49	30.98	31.98	32.53	32.95	33.16	33.29

Calculation of Net Yield

Use of the evaporation tables just presented can be illustrated with a sample calculation. The theoretical reservoir on Salt Creek near Rowell presented in table 7 will be used. Since the Salt Creek site is just 40 miles northeast of Springfield, it is appropriate to use the Springfield evaporation data in table 12. Table 7 shows that for a 5-year recurrence interval, the reservoir could sustain a gross draft rate of 61% of the mean flow, or 92 mgd. The period of time during which the reservoir would go from full to empty (duration of the critical period) would be 9 months. Since the gross draft rate includes evaporation and all other losses, the evaporation rate must be calculated.

When a recurrence interval of 5 years and critical duration of 9 months are entered in table 12, a total net evaporation of 13.94 inches is determined. In the following steps, that value will be converted to acre-feet, million gallons, and finally million gallons per day. As the reservoir is being drawn down, the surface area goes from 5344 acres (table 7) to zero. Hudson and Roberts[4] recommended that 65% of the total area be used as the effective area for calculation of evaporation. Thus, the volume of evaporation is:

$$13.94 \text{ inches} \times \frac{1 \text{ foot}}{12 \text{ inches}} \times .65 \times 5344 \text{ acres} = 4035 \text{ acre-feet}$$

or 4035 acre-feet x .326 = 1315 million gallons. For the critical duration of 9 months, this volume would become

$$\frac{1315 \text{ million gallons}}{9 \text{ months} \times 30 \text{ days/month}} = 4.87 \text{ mgd}$$

Thus the gross draft rate of 92 mgd includes 4.87 mgd for evaporation. A similar calculation could be made for any recurrence interval and critical duration.

The negative values in tables 8 through 13 indicate that rainfall has exceeded evaporation and is available to increase the calculated gross draft rate. It is unlikely that these negative values would be encountered in a real solution. In the event that they are, the user has the options of using them to increase the calculated gross draft rate or being more conservative and treating them as zeros.

Reservoir Sedimentation

Any reservoir constructed to impound the waters of a flowing stream is subject to sediment deposition. In Illinois most of the drainage area land is cultivated and subject to soil erosion; consequently, the stream carries a variable but considerable load of soil or sediment particles. The flow velocities of the water in the stream are invariably greater than those prevailing within the reservoir, and the reduction of velocity that occurs when the water enters the reservoir accounts for the deposition of the sediment. In the evaluation of the yield of a reservoir it is necessary to consider the rate of sediment deposition in the reservoir and to determine the effect of this loss of storage space on the yield of the reservoir.

Sedimentation Rates

Several methods for estimating sedimentation rates on a statewide basis without detailed land use data were evaluated. The Upper Mississippi River Basin Commission (UMRBC) approach presented in the 1970 Comprehensive Basin Study[12] appeared to be the most promising. The method described and recommended here is a modification of that procedure.

The UMRBC method described the sediment yield of a stream as:

$$Y_s = k \quad A^{-.12} \qquad (3)$$

where

Y_s = sediment yield in tons per year per square mile of basin area

k = a regional factor

A = watershed area in square miles

A more useful form gives the annual volume of sediment retained in a reservoir as:

$$Y = k\ A^{.88}\ TE/2178\ T \qquad (4)$$

where

Y_r = total volume of sediment in acre-feet per year

TE = trap efficiency described below

T = specific weight of sediment in pounds per cubic foot

2178 = a conversion constant

The trap efficiency (TE) of the reservoir, given as a percentage of the stream sediment deposited in the reservoir, can be estimated from the Brune[13] relationship provided in figure 12. A specific weight of sediment (T) of 60 lbs/ft^3 is suggested unless the user has better information.

Modifications to the UMRBC method included: 1) extension of the method into the portion of Illinois within the Ohio River Basin, and 2) adjustment of the regional constant k to reflect the results of extensive reservoir sediment surveys in Illinois. Figure 13 shows the land resource areas (LRAs) as they were modified for this study. They were originally presented in Soil Conservation Handbook 296[14] and later employed in the UMRBC method. Figure 13 also shows the regional factors (k) associated with each LRA.

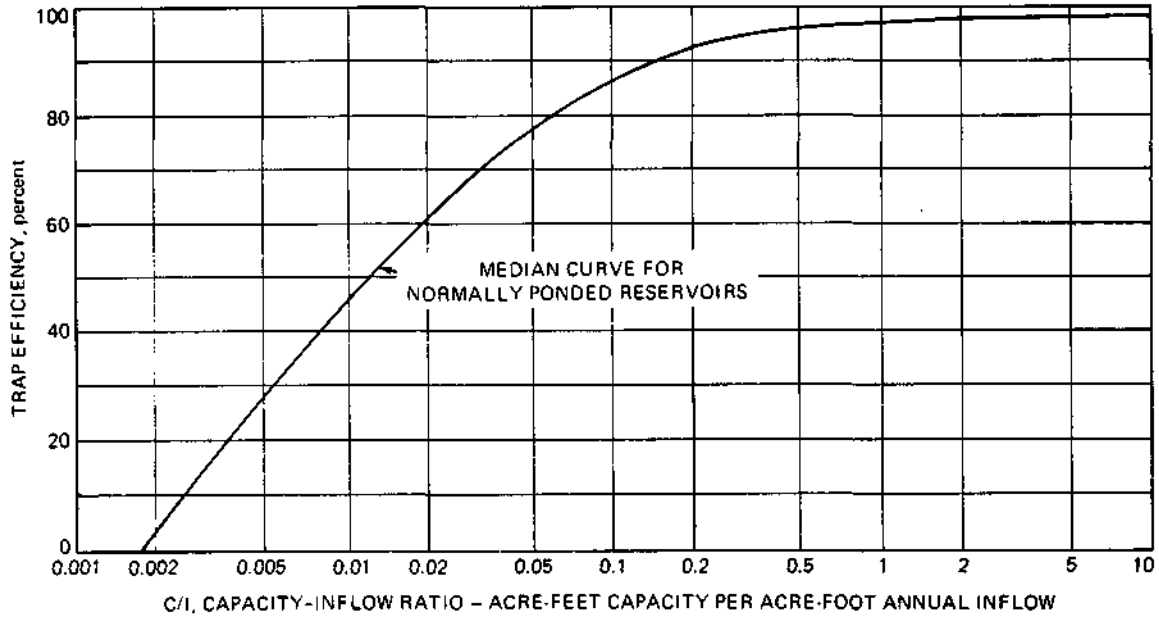
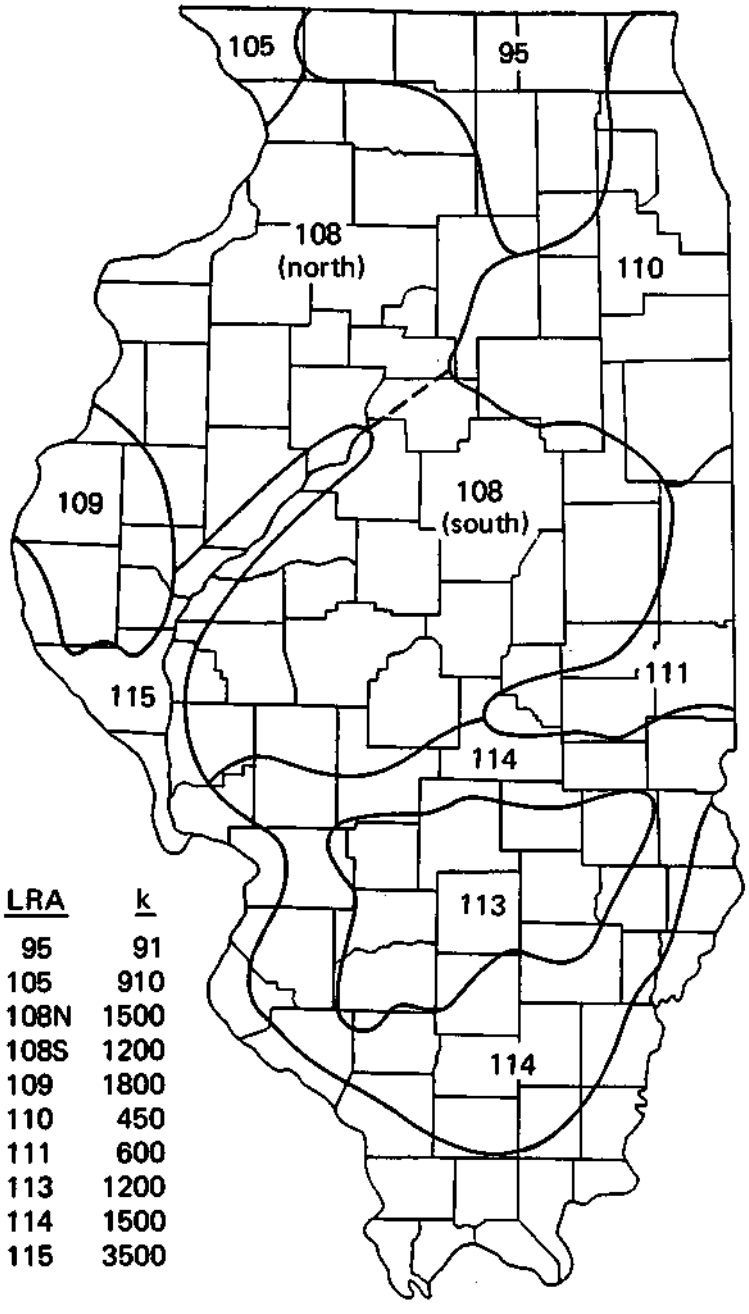


Figure 12. Median curve of trap efficiency for normally ponded reservoirs



LRA	k
95	91
105	910
108N	1500
108S	1200
109	1800
110	450
111	600
113	1200
114	1500
115	3500

Figure 13. Land resource areas in Illinois, and regional factors (k)

Calculation of Sediment Rate

Again the theoretical reservoir on the Salt Creek near Rowell (table 7) is used as an example. The watershed for this reservoir appears to lie primarily within land resource area 108-S (figure 13), giving a k factor of 1200. The watershed area of 335 square miles is known and a specific weight of the sediment of 60 lbs/ft^3 will be assumed. Before equation 4 can be solved, the trap efficiency, TE, must be determined. Figure 12 requires the capacity-annual inflow ratio of the reservoir to be known. This can be calculated in acre-feet, million gallons, or inches, whichever is more convenient. Using the values from table 7, capacity in acre-feet can be converted to million gallons by:

53,600 acre-feet x .326 = 17,470 million gallons

Inflow is equivalent to the mean runoff of:

151 million gallons/day x 365 days = 55,115 million gallons

The capacity-inflow ratio is then:

17,470/55,115 = 0.317

Finally, when this value is entered in figure 12, TE is found to be about 95.

Now equation 4 can be solved for Y_r, the volume of sediment retained in the reservoir, as:

$$\frac{1200 \times 335^{0.88} \times 95}{2178 \times 60} = 145 \text{ acre-feet per year}$$

In percent capacity lost per year this is:

$$\frac{145}{53,600} \times 100\% = .27\%$$

The sediment loss rate is not directly incorporated in the reservoir draft rate calculation. Draft rates or yields should first be calculated under as-built or current conditions, say 1980, for whatever recurrence intervals are of interest. The capacity should then be reduced by the sedimentation rate for 10-year periods and the yield recalculated for future conditions, i.e., 1990, 2000, etc., for the same recurrence intervals. This approach will give the clearest picture of the effect of sedimentation on reservoir yield.

Other Losses

The gross draft rate a given reservoir can sustain includes all consumptive uses and losses. Seepage and leakage losses are not treated in this publication but must be considered in overall design. For the purposes of the calculations shown here it is assumed that seepage and leakage losses have been minimized by blanketing or grouting problem areas. Net reservoir yield, therefore, refers to gross yield reduced by evaporation losses. In specific cases where seepage or leakage is known to be significant, net yield should be further reduced to reflect these losses.

APPLICATION OF THE ANALYTICAL METHODS

Conversion of Units

Most of the terminology used in this report for volumes of water and rates of flow consists of units having a common meaning. To aid the user in applying the processed data to a selected drainage area, the results are presented in inches.

A volume of water expressed as inches or "equivalent inches on the drainage area" is that quantity which would have this depth in inches if allowed to cover the entire drainage area at a uniform depth. The mean flow at each gaging station is given as a mean rate of runoff, expressed as inches per month.

The following list provides several equalities which may be useful in converting areas and volumes:

1 square mile = 640 acres
1 acre = 43,560 square feet
1 acre-foot = 43,560 cubic feet
1 acre-foot = 325,830 gallons or .326 million gallons
1 cubic foot = 7.48 gallons

Considerable conversion of units is often required in the manipulation of the various rates and volumes involved in flow rates, draft rates, and

reservoir storage capacities. Furnished below are several useful conversion equations.

$$C = 0.01875(A/B) \quad (5)$$
$$E = 0.8845D \quad (6)$$
$$F = 0.002228K \quad (7)$$
$$G = 0.646F \quad (8)$$
$$G = 0.011H \quad (9)$$
$$G = 0.5755DB \quad (10)$$
$$H = 92.3G \quad (11)$$
$$J = 17.3775CB \quad (12)$$
$$K = 4489.8F \quad (13)$$
$$L = 1440K \quad (14)$$

where

A = volume in acre-feet
B = drainage area in square miles (sq mi)
C = volume in equivalent inches on drainage area
D = flow rate in inches per month
E = flow in cubic feet per second per square mile (cfs/sq mi)
F = flow rate in cfs
G = flow rate in million gallons per day (mgd), assuming 30.4 days per month
H = flow rate in acre-feet per month
J = volume in million gallons (mil gal)
K = flow rate in gallons per minute (gpm)
L = flow rate in gallons per day (gpd)

The graphs for all stations in Part 2 of this publication use an abscissa scale that is laid out according to the theory of extreme values. In the use of the data, it may be desirable to replot portions of the draft-storage-recurrence curves for analysis of a particular reservoir. Table 14 is presented as a practical aid to this plotting. Given are corresponding values of the mean recurrence interval, MRI, in years, and the extreme-value reduced variate, Z. The Z values can be plotted on an arithmetic scale to produce the desired recurrence interval scale. The values in table 14 represent solutions of the equation:

$$Z = -\log_e [-\log_e(1 - 1/MRI)] \quad (15)$$

This equation can be used to furnish additional values for table 14 if desired.

Table 14. Values of Mean Recurrence Interval and Extreme-Value Reduced Variate

MRI (years)	Variate, Z	MRI (years)	Variate, Z
2.0	.367	25.0	2.199
3.0	.904	30.0	3.395
4.0	1.246	35.0	3.526
5.0	1.500	40.0	3.676
6.0	1.700	45 0	3.806
7.0	1.869	50.0	3.902
8.0	2.013	60.0	4.066
9.0	2.140	70.0	4.262
10.0	2.250	80.0	4.366
15.0	2.669	90.0	4.495
20.0	2.970	100.0	4.600

Sample Problem

Given: Reservoir site on Long Point Creek - N.W. DeWitt County
Pool area = 646 acres, Storage capacity = 9,000 acre feet,
Watershed area = 42.5 sq miles.

Find: 1) Net yield for a 50-year recurrence interval
2) Annual sedimentation rate

Solution for Gross Yield

1) Capacity in inches =

$$\frac{9000 \text{ acre feet}}{42.5 \text{ sq miles}} \times \frac{1 \text{ sq mile}}{640 \text{ acres}} \times \frac{12 \text{ inches}}{1 \text{ foot}} = 3.97 \text{ inches}$$

2) Region = 1 (figure 4)

3) Stream gage data = 55715 - Goose Creek near DeLand - from map and table in Part 2 at beginning of Region 1. This is the best choice because of its proximity and watershed size. Since only 8 years of actual record were available, however, Friends Creek at Argenta or Bluegrass Creek at Potomac could be used.

4) Gross draft rate = 36% of mean flow - from draft-storage-recurrence curves for Goose Creek near DeLand using 50 years and 3.97 inches.

5) Duration of critical drawdown = 18 months - from table with Goose Creek data. Notice that the duration was not interpolated between 35 and 40% of mean. The duration for the nearest draft rate, i.e., 35%, was selected.

6) Mean flow = 0.86 inches/month from Goose Creek station description.

0.86 inches/month x .8845 = 0.76 cfs/sq mi
0.76 x 42.5 sq mi = 32.3 cfs
32.3 x .646 = 20.87 mgd

7) Gross yield = mean flow (item 6) x draft rate (item 4)

20.87 x 0.36 = 7.51 mgd

Solution for Evaporation Loss

8) Net evaporation = 29.51 inches - from table 12 for Springfield

9) Effective evaporative lake surface is 65% of the full pool area.

.65 x 646 acres = 419.9 acres

10) Volume of evaporation

$$\frac{419.9 \text{ acres} \times 29.51 \text{ inches}}{12 \text{ inches/foot}} = 1033 \text{ acre-feet}$$

11) Rate of evaporation for duration of drawdown

$$\frac{1033 \text{ acre-feet}}{18 \text{ months} \times 30.4 \text{ days/month}} = 1.89 \text{ acre-feet/day}$$

$$1.89 \times .326 = 0.62 \text{ mgd}$$

Solution for Net Yield

12) Net yield = gross yield (item 7) - evaporation (item 11)

7.51 - 0.62 = 6.89 mgd

Solution for Sedimentation Bate

13) Land resource area = 108-S and

Regional factor k = 1200 (figure 13)

14) Capacity-annual inflow ratio

$$\frac{9000 \text{ acre-ft} \times .326}{20.87 \text{ mgd} \times 365} = \frac{2934 \text{ million gallons}}{7617 \text{ million gallons}} = 0.39$$

15) Trap efficiency = 95 (figure 12)

16) Solve equation (4) for the volume of sediment retained per year assuming the specific weight of the sediment is 60 lbs/ft^3

$$\frac{1200 \times 42.5^{.88} \times 95}{2178 \times 60} = 23.64 \text{ acre-feet/year}$$

17) Sediment loss per year in percent of original capacity =

$$\frac{23.64 \text{ acre-feet/year}}{9000 \text{ acre feet}} \times 100 = 0.26\% \text{ per year}$$

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Part 2. Low Flow Analyses by Regions

Processed low flow data for each of 146 stream gaging stations in Illinois are presented in this section. The stations have been grouped according to regions, as shown in figure 14 and as previously discussed in the section on "Regionalization of Streamgaging Stations."

An enlarged map at the beginning of each set of regional analyses provides locations of all gaging stations therein; stations are identified by their USGS gage numbers. On the page facing each regional map is a table that provides the name, drainage area, index station, historical and extended record length, and mean flow for each station in the region. The processed data for the stations are then presented in the numerical order of the gage numbers.

Four items of data, arranged on facing pages, are given for each of the 146 stations: the station description, the low flow recurrence curves, the draft-storage-recurrence table, and the draft-storage-recurrence curves.

Station descriptions include the surveyor's location and the size of the drainage area upstream from the gage, as well as pertinent facts about the gaging record. Periods of actual flow data are given up to and including water year 1978. Where synthetic flow data have been used, the name of the index station is given; the method of synthesis was described previously in the section on the extension of short streamflow records. The total data analyzed include both actual and synthetic data. The mean discharge, given in inches per month, represents the mean rate of runoff for the station for the entire period, and is equivalent to the total runoff rate available for development at that location.

The small graph for each station provides a family of up to eight selected low flow recurrence curves. Low flow values for drouth durations from 1 to 60 months are given, and recurrence intervals for these low flow events are indicated. Derivation of the low flow recurrence curves was described in Part 1.

The table of data for each station, obtained by the mass analysis, is similar to table 5 in Part 1. In most cases these tabular data provide the

required reservoir capacity, in inches, and the duration of the critical period, in months, for recurrence intervals of from 5 to 100 years, and to meet gross draft rates from 2 to 100% of the mean flow at the stations. For some stations the recurrence intervals go up only to 50 years, as discussed in Part 1. The draft-storage-recurrence curves in the large graphs, which are similar to figure 7, represent the same data as in the tables, except for the duration of the critical period. The table of complete data allows users to replot, for their own use, any desired portion of the family of curves in the graph.

The enlarged maps and station information given for each region will provide the best guide to selection of the appropriate gaging station record for use with a particular reservoir site.

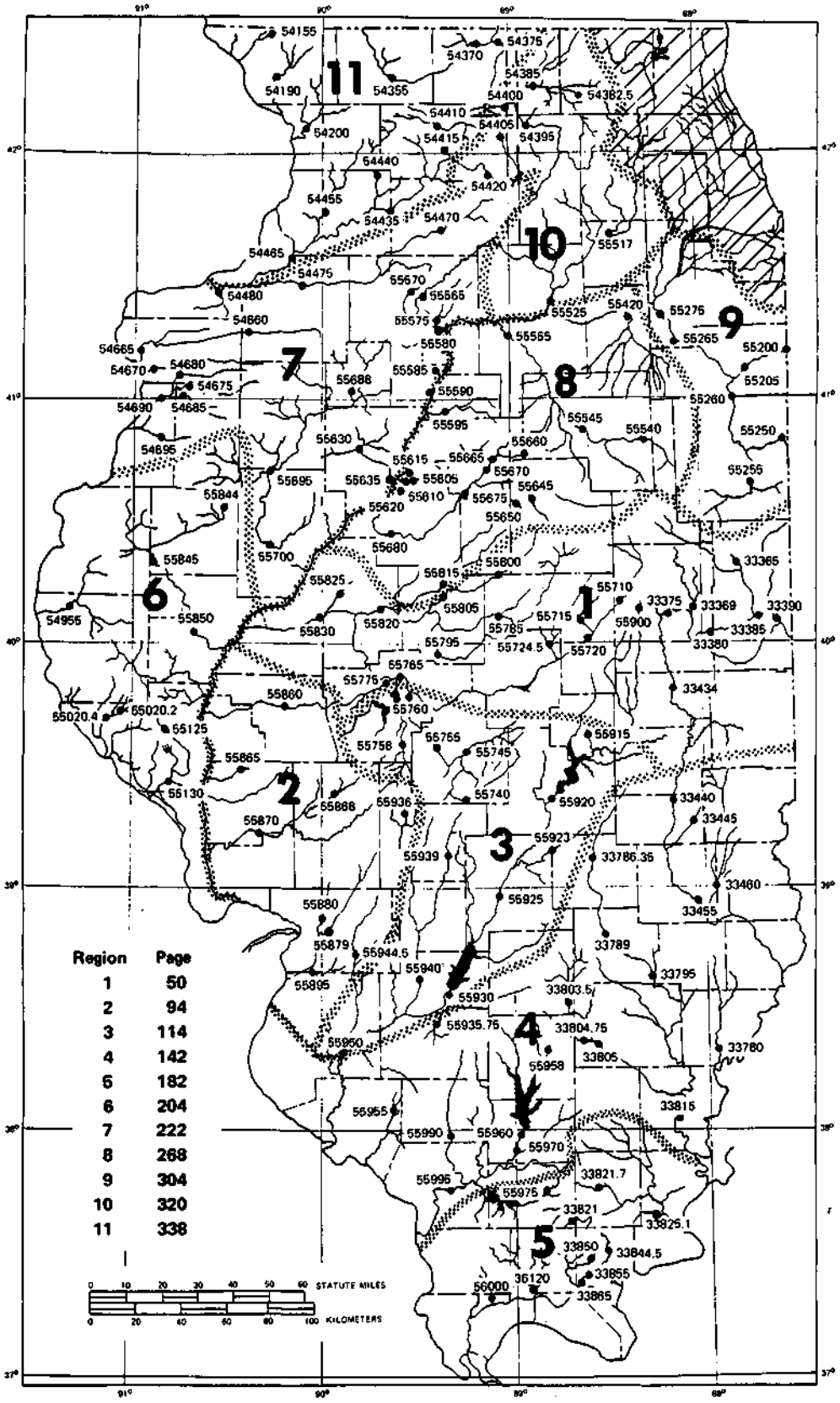
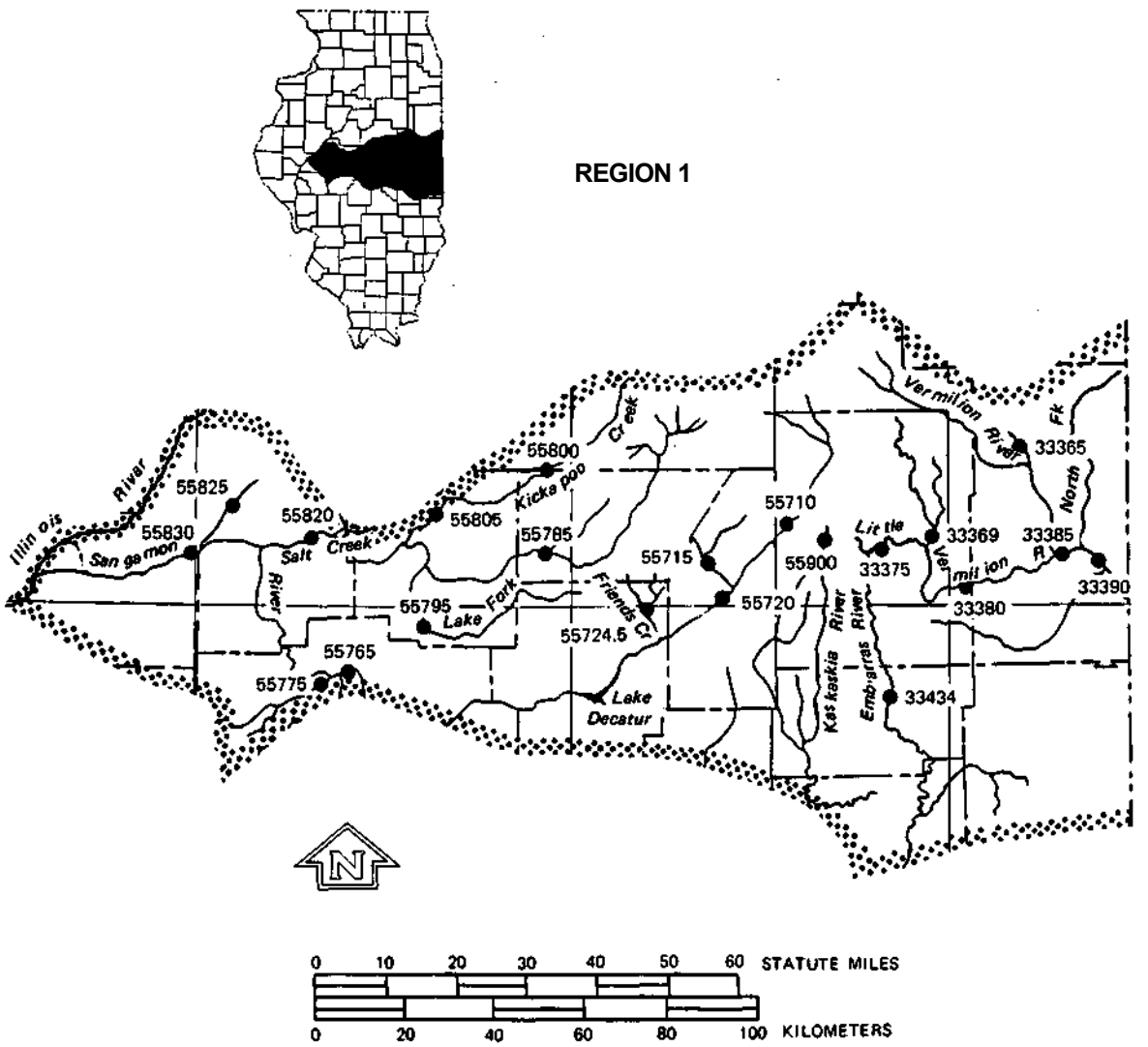


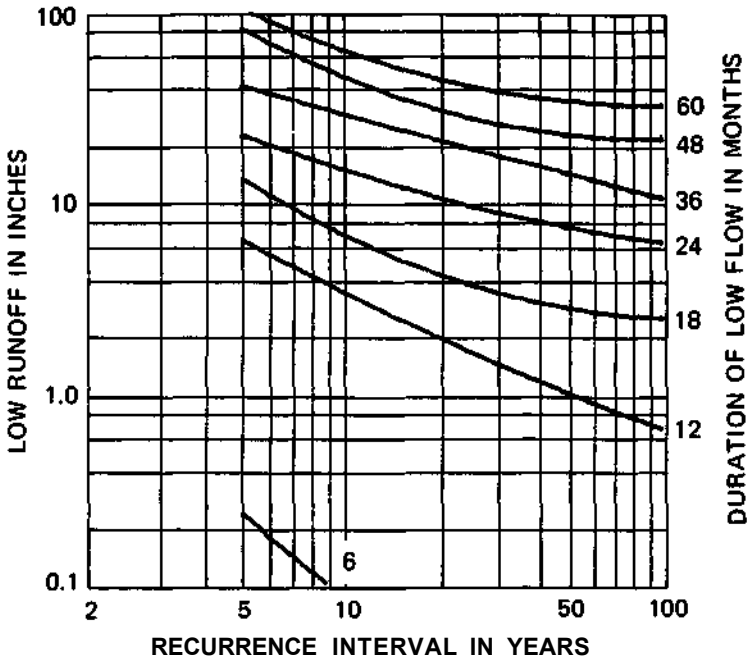
Figure 14. Regions of hydrologic homogeneity for low flow analyses


REGION 1
Illinois River
San gamon
Salt Creek
River
Lake Fork
Kicka poo Creek
Friends Cr
Lake Decatur
Kaskaskia River
Embarras River
Vermilion River
Fk
North
Little Vermilion R
55825
55830
55820
55806
55800
55785
55715
55710
55900
55720
55795
55724.5
55765
55775
33375
33365
33369
33385
33390
33380
33434
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

USGS Gage No.	Name of Station	Drainage Area (sq mi)
33365	Bluegrass Creek at Potomac	35
33369	Salt Fork Vermilion River near St. Joseph	134
33375	West Branch Salt Fork at Urbana	71.4
33380	Salt Fork Vermilion River near Homer	340
33385	Vermilion River near Catlin	959
33390	Vermilion River near Danville	1290
33434	Embarras River at Camargo	186
55710	Sangamon River at Mahomet	362
55715	Goose Creek near DeLand	47.3
55720	Sangamon River at Monticello	550
55724.5	Friends Creek at Argenta	111
55765	Sangamon River at Riverton	2618
55775	Spring Creek near Springfield	107
55785	Salt Creek near Rowell	335
55795	Lake Fork near Cornland	214
55800	Kickapoo Creek at Waynesville	227
55805	Kickapoo Creek near Lincoln	306
55820	Salt Creek near Greenview	1804
55825	Crane Creek near Easton	26.5
55830	Sangamon River near Oakford	5093
55900	Kaskaskia Ditch at Bondville	12.4

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
33365	55720	1949-1971	22	1914-1978	64	1.06
33369	55720	1958-1978	20	1914-1978	64	.88
33375	55720	1936-1958	22	1914-1978	64	.83
33380	55720	1944-1958	14	1914-1978	64	.90
33385	55720	1939-1958	19	1914-1978	64	.89
33390	55720	1928-1978	50	1914-1978	64	.88
33434	55720	1960-1978	18	1914-1978	64	.89
55710	55720	1948-1978	30	1914-1978	64	.83
55715	55720	1951-1959	8	1914-1978	64	.86
55720	-	1914-1978	64	-	-	.82
55724.5	55720	1966-1978	12	1914-1978	64	.86
55765	55720	1914-1956	42	1914-1978	64	.73
55775	55765	1949-1978	29	1914-1978	64	.71
55785	55720	1942-1978	36	1914-1978	64	.79
55795	55765	1948-1978	30	1914-1978	64	.74
55800	55720	1948-1978	30	1914-1978	64	.75
55805	55720	1944-1971	27	1914-1978	64	.77
55820	55765	1941-1978	37	1914-1978	64	.74
55825	-	1949-1974	25	-	-	.64
55830	55765	1939-1978	39	1914-1978	64	.70
55900	55720	1949-1978	29	1914-1978	64	.92

33365 - BLUEGRASS CREEK AT POTOMAC



LOCATION: In SE¼ NE¼ Sec 34, T22N, R13N, Vermilion County, at highway bridge 1 mile north of Potomac

DRAINAGE AREA: 35 square miles

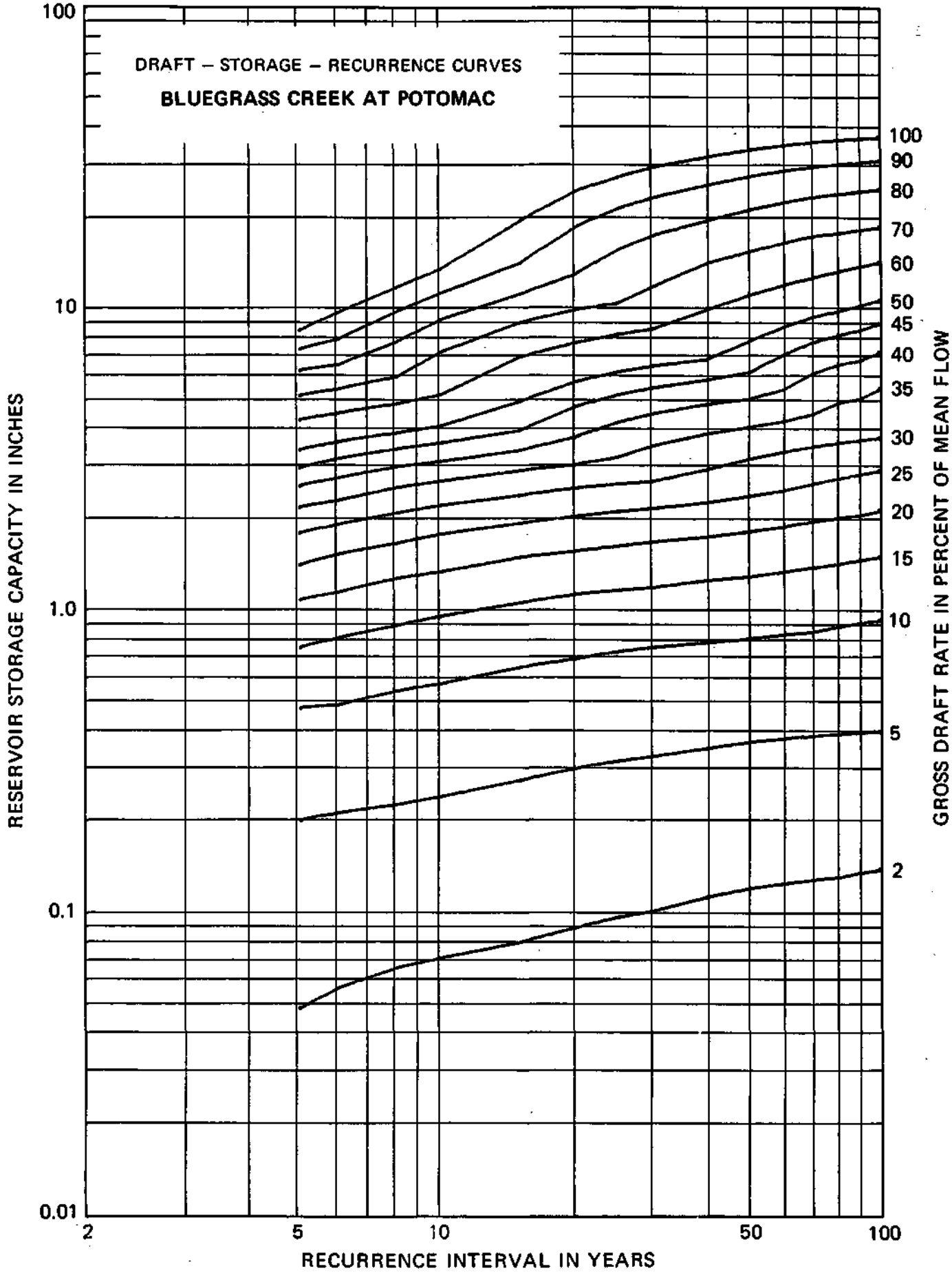
ACTUAL FLOW DATA: Oct 1949 to Oct 1978

INDEX STATION: Sangamon River at Monticello

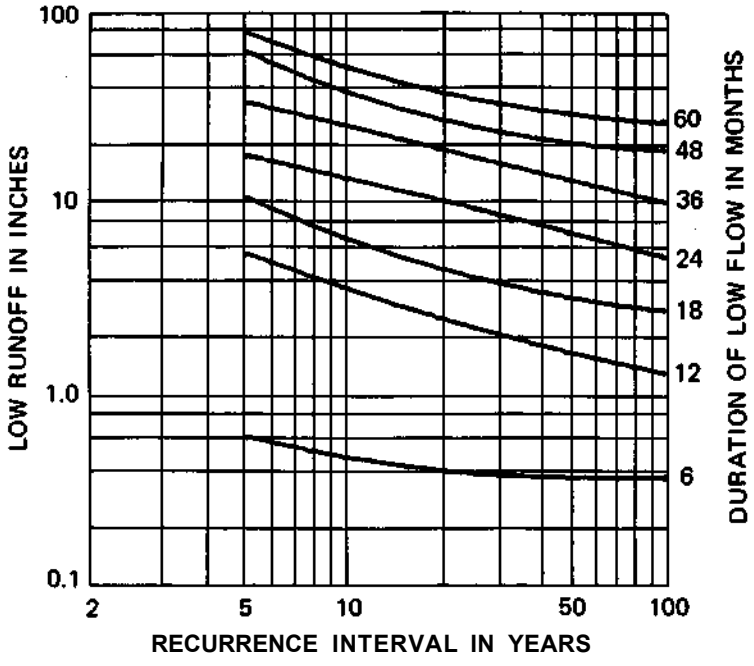
MEAN DISCHARGE: 1.06 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.19	.46	.73	1.05	1.37	1.74	2.11	2.48	2.85	3.27	4.12	4.97	6.03	7.09	8.15
	4	5	5	6	6	6	7	7	7	7	8	8	8	10	10	10
6	.05	.21	.47	.79	1.11	1.48	1.85	2.23	2.64	3.06	3.49	4.34	5.22	6.28	7.62	9.32
	4	5	5	6	7	7	7	7	8	8	8	8	10	10	16	16
8	.06	.22	.52	.86	1.23	1.61	2.02	2.45	2.87	3.30	3.72	4.66	5.73	7.48	9.39	11.30
	4	5	6	7	7	7	8	8	8	8	8	9	16	18	18	18
10	.07	.23	.56	.93	1.30	1.73	2.15	2.58	3.00	3.46	3.94	5.01	6.93	8.84	10.84	12.97
	4	6	7	7	8	8	8	8	8	9	9	18	18	18	20	20
15	.08	.27	.63	1.03	1.45	1.88	2.32	2.80	3.28	3.81	4.77	6.68	8.64	10.77	13.58	18.74
	5	6	7	8	8	8	9	9	9	18	18	18	20	20	42	52
20	.09	.29	.67	1.10	1.52	1.98	2.46	2.94	3.64	4.59	5.55	7.46	9.57	12.52	17.90	23.43
	6	7	8	8	8	9	9	9	18	18	18	18	20	42	52	52
25	.09	.31	.71	1.14	1.59	2.07	2.55	3.13	4.08	5.04	5.99	7.97	10.10	15.11	20.63	26.24
	6	7	8	8	9	9	9	18	18	18	18	20	42	52	52	58
30	.10	.32	.74	1.16	1.64	2.12	2.60	3.41	4.37	5.33	6.28	8.30	11.46	16.88	22.40	28.32
	6	7	8	9	9	9	9	18	18	18	18	20	46	52	52	58
40	.11	.34	.77	1.23	1.71	2.22	2.86	3.76	4.72	5.67	6.63	9.63	13.69	18.97	24.78	30.74
	7	8	8	9	9	10	16	18	18	18	18	30	46	52	56	58
50	.12	.36	.79	1.27	1.79	2.34	3.11	3.96	4.91	6.01	7.60	10.79	14.98	20.58	26.51	32.46
	7	8	9	9	10	11	16	16	18	30	30	30	46	54	56	56
60	.12	.37	.82	1.32	1.86	2.44	3.29	4.14	5.29	6.88	8.47	11.66	16.04	21.77	27.70	33.65
	7	8	9	10	11	11	16	16	30	30	30	30	54	54	56	56
70	.13	.38	.84	1.37	1.93	2.57	3.42	4.38	5.97	7.56	9.16	12.35	16.91	22.65	28.56	34.51
	7	8	9	10	11	16	16	30	30	30	30	30	54	54	56	56
80	.13	.38	.87	1.40	1.99	2.67	3.52	4.79	6.38	7.98	9.57	12.91	17.31	23.26	29.20	35.15
	8	8	10	11	11	14	16	30	30	30	30	32	56	56	56	56
90	.13	.39	.90	1.45	2.03	2.77	3.61	4.95	6.61	8.31	10.01	13.41	17.81	23.76	29.71	35.66
	8	8	10	11	11	14	16	30	32	32	32	32	56	56	56	56
100	.14	.39	.92	1.48	2.11	2.85	3.68	5.34	7.04	8.74	10.44	13.88	18.20	24.15	30.10	36.05
	8	8	10	11	14	14	16	32	32	32	32	34	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
BLUEGRASS CREEK AT POTOMAC
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33369 - SALT FORK, VERMILION RIVER NEAR ST. JOSEPH



LOCATION: In NW¼ SE¼ Sec 35 T20N, R10E, Champaign County, at township highway 2.5 miles north of St. Joseph

DRAINAGE AREA: 134 square miles

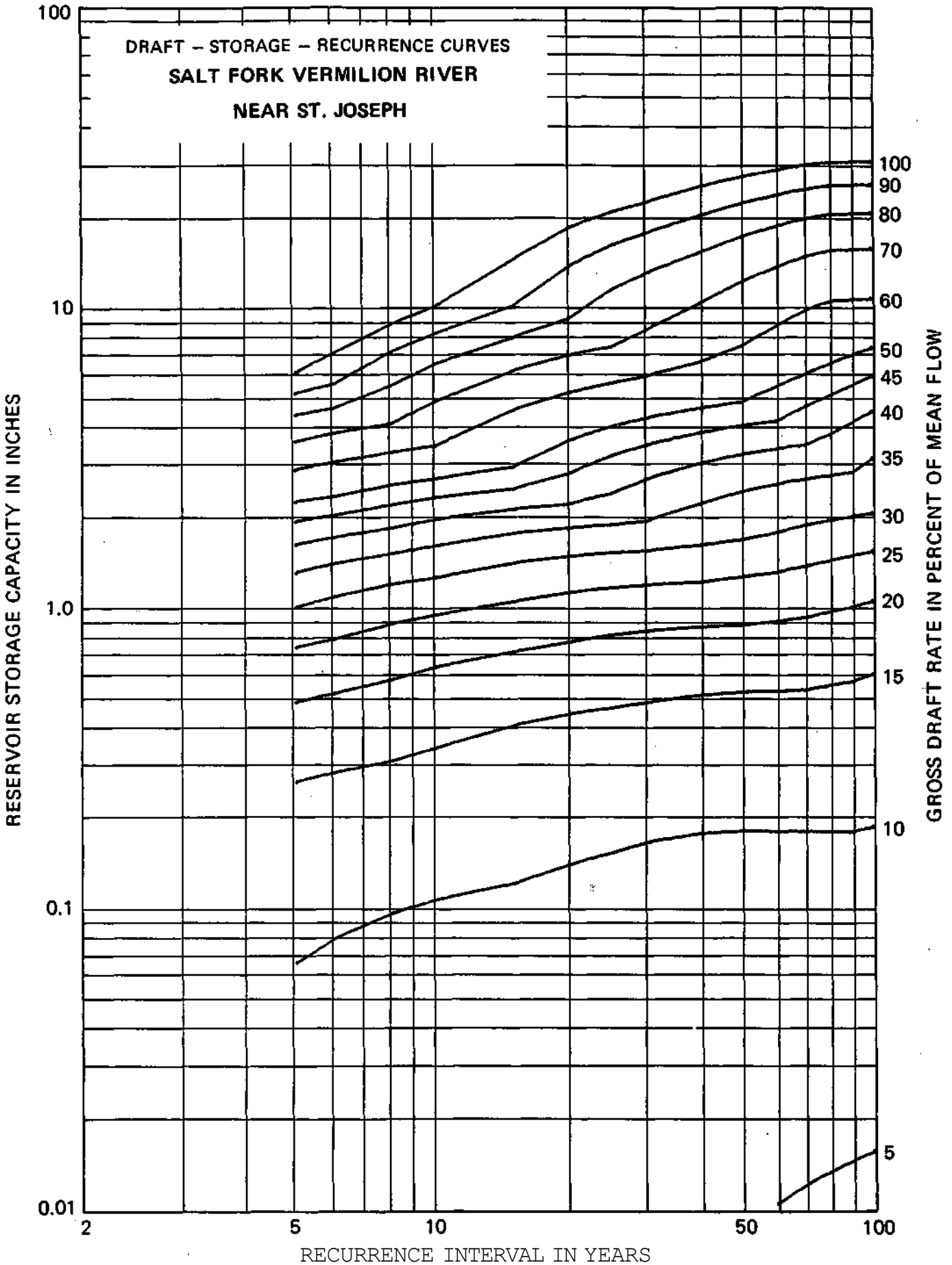
ACTUAL FLOW DATA: Oct 1958 to Oct 1978

INDEX STATION: Sangamon River at Monticello

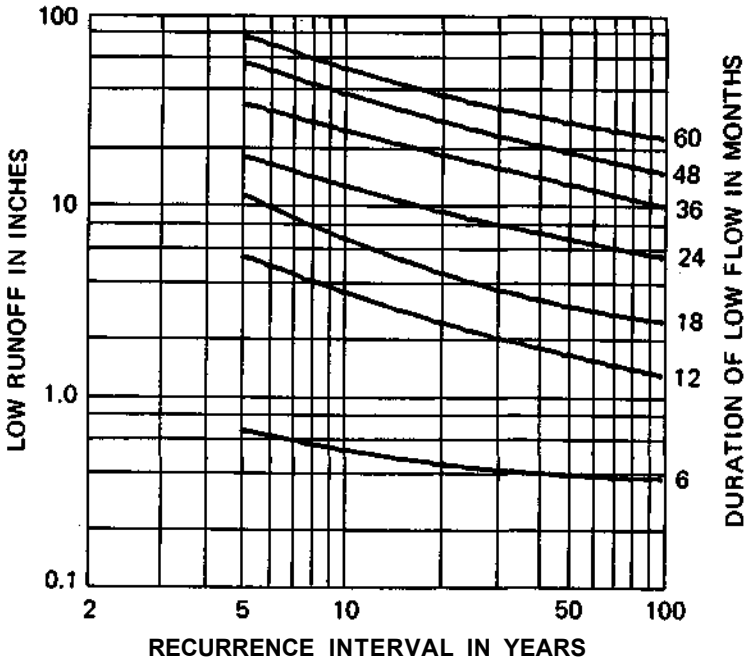
MEAN DISCHARGE: 0.88 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.07	.26	.48	.73	.99	1.29	1.60	1.91	2.21	2.83	3.51	4.30	5.09	5.96
	4	5	4	5	5	6	6	7	7	7	7	7	9	9	9	10
6	.00	.00	.08	.28	.51	.77	1.07	1.38	1.69	1.99	2.30	2.99	3.73	4.52	5.45	6.92
	4	5	4	5	6	6	7	7	7	7	7	8	9	9	16	18
8	.00	.00	.09	.30	.57	.87	1.18	1.49	1.81	2.16	2.51	3.22	4.01	5.39	6.97	8.65
	4	5	4	6	6	7	7	7	8	8	8	9	9	18	18	20
10	.00	.00	.11	.34	.63	.93	1.24	1.58	1.93	2.28	2.64	3.39	4.77	6.35	8.04	9.94
	4	6	4	6	7	7	7	8	8	8	8	9	18	18	20	30
15	.00	.00	.12	.40	.71	1.04	1.39	1.74	2.09	2.44	2.89	4.47	6.05	7.81	10.00	14.26
	5	6	4	7	7	8	8	8	8	9	18	18	20	20	42	52
20	.00	.00	.14	.44	.76	1.11	1.46	1.82	2.18	2.76	3.55	5.13	6.82	9.07	13.55	18.11
	6	7	6	7	8	8	8	8	9	18	18	18	20	42	52	52
25	.00	.00	.15	.46	.80	1.16	1.51	1.87	2.37	3.16	3.95	5.53	7.29	11.32	15.88	20.45
	6	1	7	7	8	8	8	9	18	18	18	20	20	52	52	52
30	.00	.00	.16	.48	.83	1.18	1.53	1.92	2.64	3.43	4.22	5.84	8.32	12.89	17.45	22.05
	6	1	7	8	8	8	8	9	18	18	18	20	52	52	52	56
40	.00	.01	.18	.51	.86	1.21	1.61	2.20	2.99	3.78	4.57	6.51	10.28	15.11	20.03	24.95
	7	1	7	8	8	9	9	18	18	18	18	30	52	56	56	56
50	.00	.01	.18	.52	.87	1.26	1.68	2.42	3.21	4.00	4.79	7.39	12.14	17.06	21.98	26.89
	7	1	7	8	8	9	10	18	18	18	18	30	56	56	56	56
60	.00	.01	.18	.53	.90	1.31	1.77	2.56	3.35	4.14	5.43	8.64	13.56	18.48	23.40	28.32
	7	1	7	8	9	10	11	18	18	18	30	56	56	56	56	56
70	.00	.01	.18	.53	.93	1.37	1.88	2.67	3.46	4.64	5.96	9.74	14.66	19.58	24.50	29.41
	7	1	7	9	9	11	18	18	18	30	30	56	56	56	56	56
80	.00	.01	.18	.55	.97	1.44	1.95	2.74	3.76	5.08	6.46	10.47	15.38	20.30	25.22	30.14
	8	1	7	9	10	11	18	18	30	30	32	56	56	56	56	56
90	.00	.01	.18	.57	1.01	1.49	2.01	2.81	4.13	5.50	6.91	10.60	15.52	20.44	25.35	30.27
	8	1	7	10	10	11	18	30	30	32	32	56	56	56	56	56
100	.00	.02	.19	.60	1.06	1.54	2.05	3.13	4.48	5.89	7.29	10.67	15.59	20.50	25.42	30.34
	8	1	9	10	11	11	18	30	32	32	32	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SALT FORK VERMILION RIVER
NEAR ST. JOSEPH
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

33375 - WEST BRANCH, SALT FORK AT URBANA



LOCATION: In NE¼, SW¼, Sec 9, T19N, R9E, Champaign County, at Champaign-Urbana Sewage Plant 10 miles east of Urbana

DRAINAGE AREA: 71.4 square miles

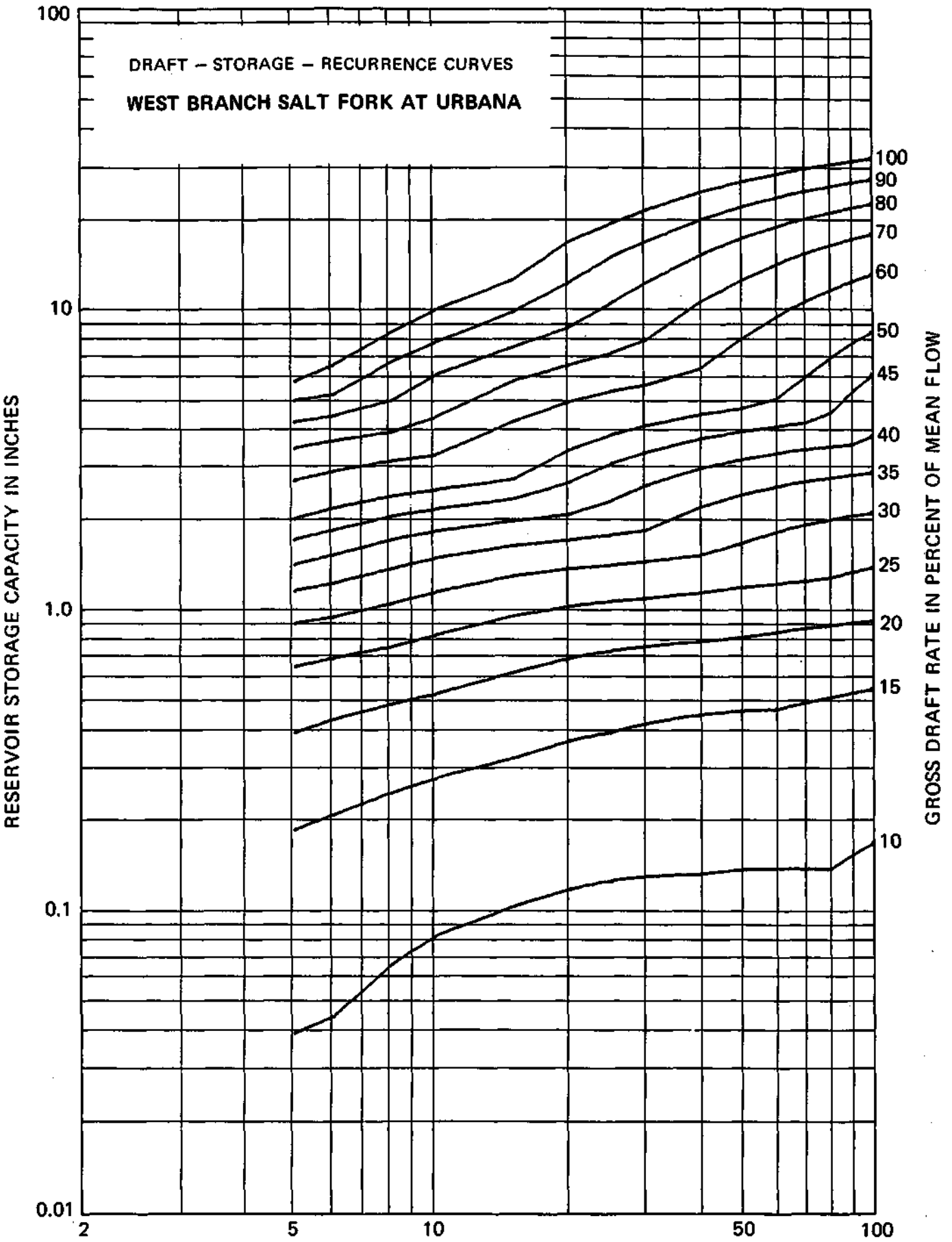
ACTUAL FLOW DATA: July 1936 thru Sep 1958; gaging discontinued Oct 1, 1958

INDEX STATION: Sangamon River at Monticello

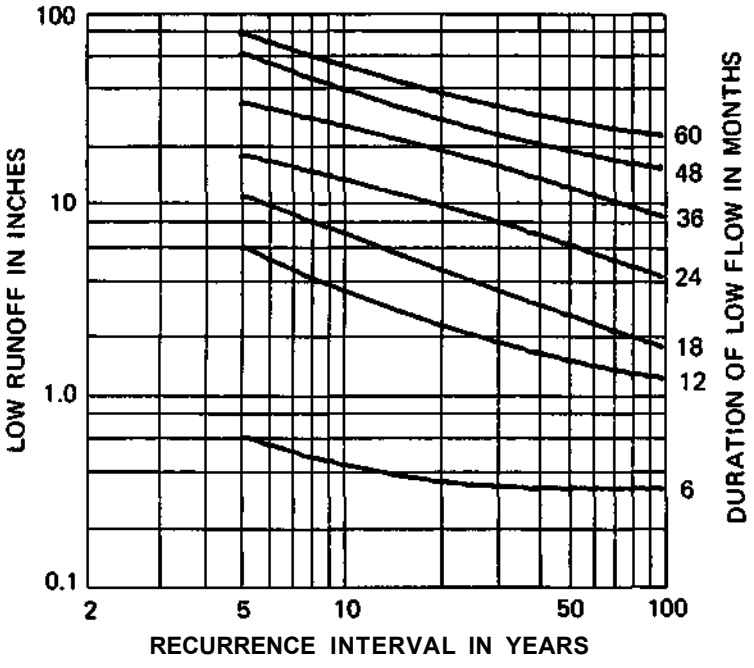
MEAN DISCHARGE: 0.83 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.04	.18	.38	.63	.88	1.13	1.38	1.67	1.96	2.63	3.38	4.12	4.87	5.66
	4	5	2	4	6	6	6	6	6	7	7	9	9	9	9	10
6	.00	.00	.04	.20	.42	.67	.92	1.19	1.48	1.79	2.12	2.81	3.56	4.31	5.08	6.35
	4	5	2	4	6	6	6	7	7	8	8	9	9	9	10	20
8	.00	.00	.07	.24	.48	.73	1.02	1.33	1.67	2.00	2.33	3.05	3.80	4.85	6.51	8.17
	4	5	4	5	6	7	7	8	8	8	8	9	9	20	20	20
10	.00	.00	.08	.27	.52	.81	1.12	1.45	1.78	2.12	2.46	3.20	4.28	5.92	7.59	9.70
	4	6	4	5	7	7	8	8	8	8	9	9	18	20	20	30
15	.00	.00	.10	.32	.61	.94	1.27	1.60	1.94	2.30	2.67	4.16	5.69	7.35	9.62	12.35
	5	6	4	7	7	8	8	8	8	9	9	18	20	20	30	52
20	.00	.00	.12	.36	.68	1.01	1.34	1.68	2.04	2.60	3.35	4.85	6.41	8.55	12.05	16.37
	6	7	5	7	8	8	8	8	9	18	18	18	20	30	52	52
25	.00	.00	.12	.39	.72	1.05	1.39	1.75	2.28	3.02	3.77	5.27	7.03	10.30	14.62	18.94
	6	1	5	7	8	8	8	9	18	18	18	18	30	52	52	52
30	.00	.00	.13	.42	.75	1.08	1.43	1.81	2.56	3.31	4.06	5.55	7.79	12.11	16.50	21.07
	6	1	5	8	8	8	9	18	18	18	18	18	52	52	54	56
40	.00	.00	.13	.45	.78	1.13	1.50	2.18	2.93	3.67	4.42	6.28	10.42	14.91	19.53	24.19
	7	1	5	8	8	9	9	18	18	18	18	30	54	54	56	56
50	.00	.00	.14	.46	.80	1.18	1.65	2.40	3.15	3.90	4.64	7.90	12.38	17.01	21.66	26.31
	7	1	7	8	9	9	18	18	18	18	18	54	54	56	56	56
60	.00	.00	.14	.47	.84	1.21	1.80	2.55	3.30	4.05	5.01	9.34	13.92	18.58	23.23	27.88
	7	1	7	8	9	9	18	18	18	18	30	54	56	56	56	56
70	.00	.00	.14	.49	.86	1.24	1.91	2.66	3.40	4.17	5.93	10.49	15.15	19.80	24.45	29.11
	7	1	7	9	9	9	18	18	18	30	54	56	56	56	56	56
80	.00	.00	.14	.51	.89	1.27	1.99	2.74	3.48	4.51	6.83	11.48	16.13	20.79	25.44	30.09
	8	1	7	9	9	10	18	18	18	30	56	56	56	56	56	56
90	.00	.00	.15	.53	.90	1.33	2.05	2.80	3.55	5.32	7.65	12.30	16.95	21.61	26.26	30.92
	8	1	9	9	9	16	18	18	18	56	56	56	56	56	56	56
100	.00	.00	.17	.54	.92	1.38	2.10	2.85	3.78	6.02	8.34	13.00	17.65	22.30	26.96	31.61
	8	1	9	9	10	16	18	18	30	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
WEST BRANCH SALT FORK AT URBANA
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10

33380 - SALT FORK, VERMILION RIVER NEAR HOMER



LOCATION: In SW¼ SW¼, Sec 33, T19N, R14W, Champaign County, at Illinois 49 bridge 1.1 miles north of Homer

DRAINAGE AREA: 340 square miles

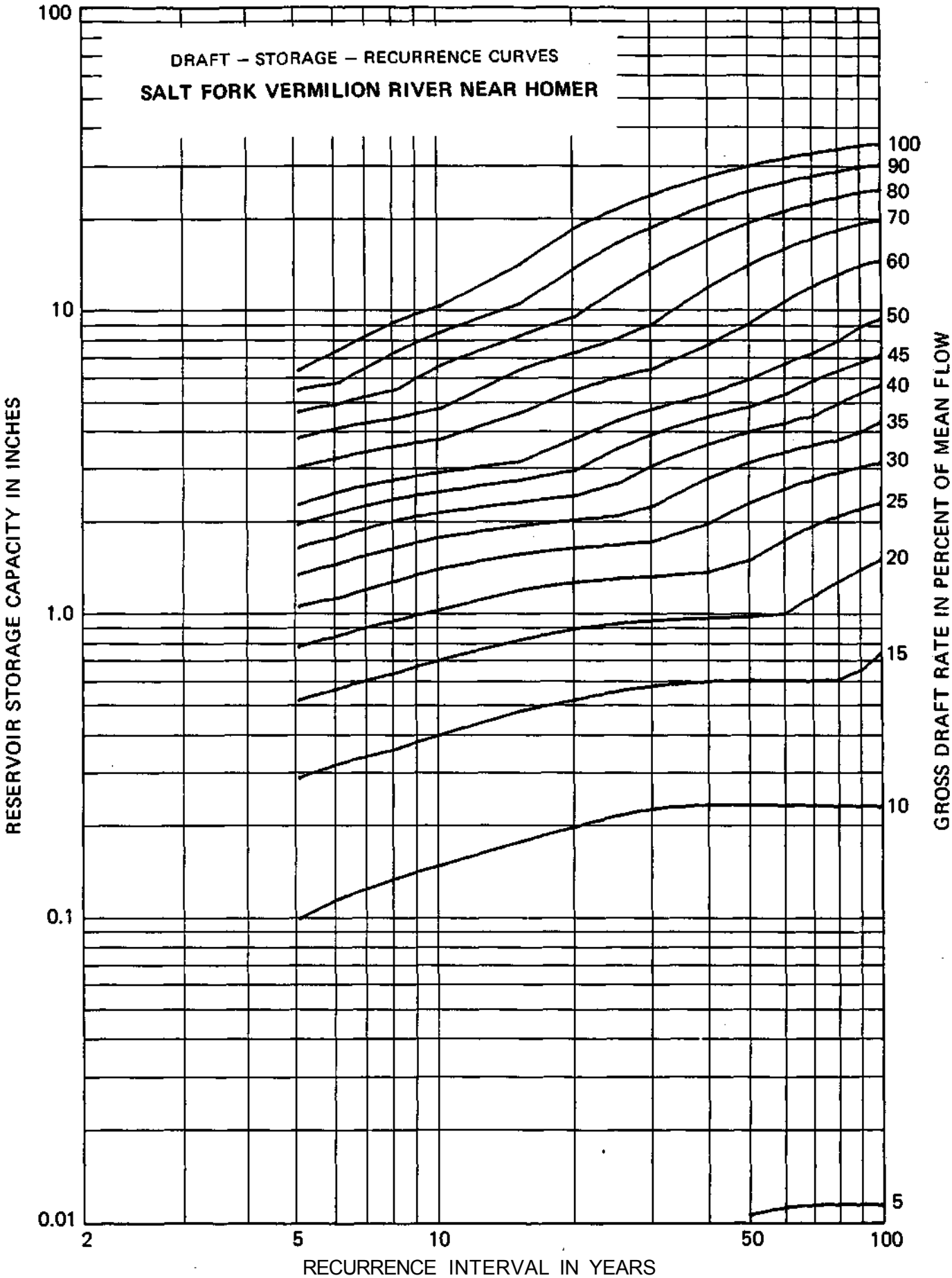
ACTUAL FLOW DATA: Oct 1945 to Oct 1978

INDEX STATION: Sangamon River at Monticello

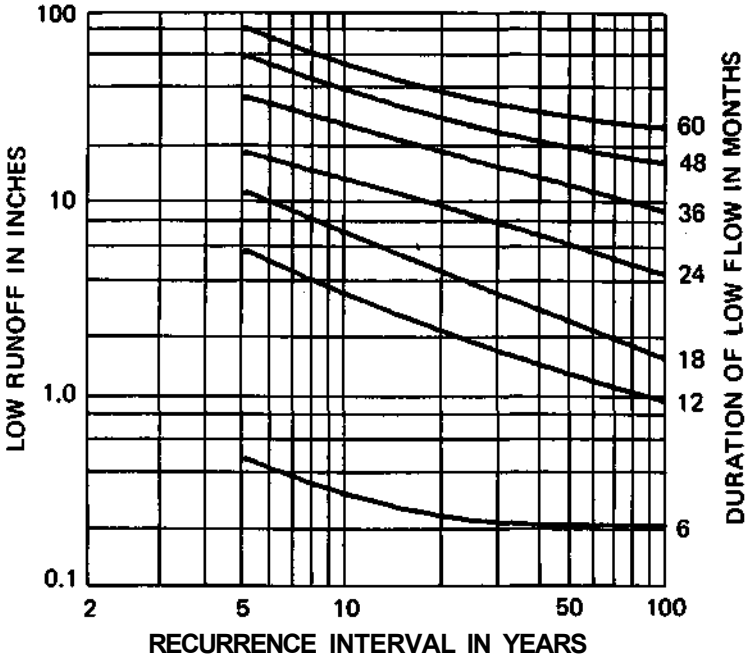
MEAN DISCHARGE: 0.90 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.10	.28	.51	.76	1.03	1.30	1.60	1.92	2.23	2.96	3.70	4.52	5.33	6.18
	4	5	4	5	5	6	6	6	7	7	8	8	9	9	9	10
6	.00	.00	.11	.31	.55	.82	1.09	1.41	1.73	2.08	2.44	3.17	3.96	4.78	5.59	7.17
	4	5	4	5	6	6	7	7	7	8	8	8	9	9	9	20
8	.00	.00	.13	.35	.62	.92	1.24	1.59	1.96	2.32	2.68	3.46	4.28	5.32	7.13	8.94
	4	1	4	5	6	7	7	8	8	8	8	9	9	20	20	20
10	.00	.00	.14	.39	.69	1.00	1.36	1.72	2.09	2.45	2.83	3.64	4.62	6.43	8.24	10.04
	4	1	5	6	7	7	8	8	8	8	9	9	20	20	20	20
15	.00	.00	.17	.47	.80	1.16	1.52	1.88	2.26	2.66	3.07	4.47	6.21	8.02	10.20	13.74
	5	1	5	7	8	8	8	8	9	9	9	18	20	20	30	52
20	.00	.00	.19	.51	.87	1.23	1.59	1.97	2.38	2.88	3.69	5.32	7.09	9.31	13.44	18.15
	6	2	6	7	8	8	8	9	9	18	18	18	20	30	52	52
25	.00	.01	.21	.54	.90	1.27	1.63	2.04	2.62	3.44	4.25	5.88	7.88	11.55	16.26	20.96
	6	2	7	8	8	8	9	9	18	18	18	18	30	52	52	52
30	.00	.01	.22	.57	.93	1.29	1.68	2.21	3.02	3.83	4.65	6.28	8.86	13.54	18.31	23.35
	6	2	7	8	8	8	9	18	18	18	18	18	30	52	54	56
40	.00	.01	.23	.59	.95	1.33	1.93	2.75	3.56	4.37	5.19	7.56	11.70	16.62	21.69	26.75
	7	2	7	8	8	9	18	18	18	18	18	30	54	56	56	56
50	.00	.01	.23	.59	.96	1.47	2.29	3.10	3.91	4.73	5.83	8.95	13.87	18.94	24.00	29.07
	7	2	7	8	9	18	18	18	18	18	30	54	56	56	56	56
60	.00	.01	.23	.59	.98	1.73	2.54	3.35	4.17	5.21	6.57	10.52	15.59	20.65	25.72	30.78
	7	2	7	8	9	18	18	18	18	30	30	56	56	56	56	56
70	.00	.01	.23	.59	1.13	1.92	2.73	3.55	4.44	5.79	7.15	11.86	16.92	21.99	27.05	32.12
	7	2	7	8	16	18	18	18	30	30	30	56	56	56	56	56
80	.00	.01	.23	.60	1.26	2.07	2.89	3.70	4.91	6.27	7.87	12.93	18.00	23.06	28.13	33.19
	8	2	7	9	16	18	18	18	30	30	56	56	56	56	56	56
90	.00	.01	.23	.65	1.39	2.20	3.01	3.95	5.30	6.66	8.76	13.83	18.89	23.96	29.02	34.09
	8	2	7	16	18	18	18	30	30	30	56	56	56	56	56	56
100	.00	.01	.23	.74	1.49	2.31	3.12	4.28	5.64	7.03	9.29	14.35	19.42	24.48	29.55	34.61
	8	2	7	16	18	18	18	30	30	32	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SALT FORK VERMILION RIVER NEAR HOMER
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

33385 - VERMILION RIVER NEAR CATLIN



LOCATION: In SE¼ SE¼ Sec 16, T19N, R12W, Vermilion County, 12.5 miles northwest of Catlin and 14.5 miles southwest of Danville

DRAINAGE AREA: 959 square miles

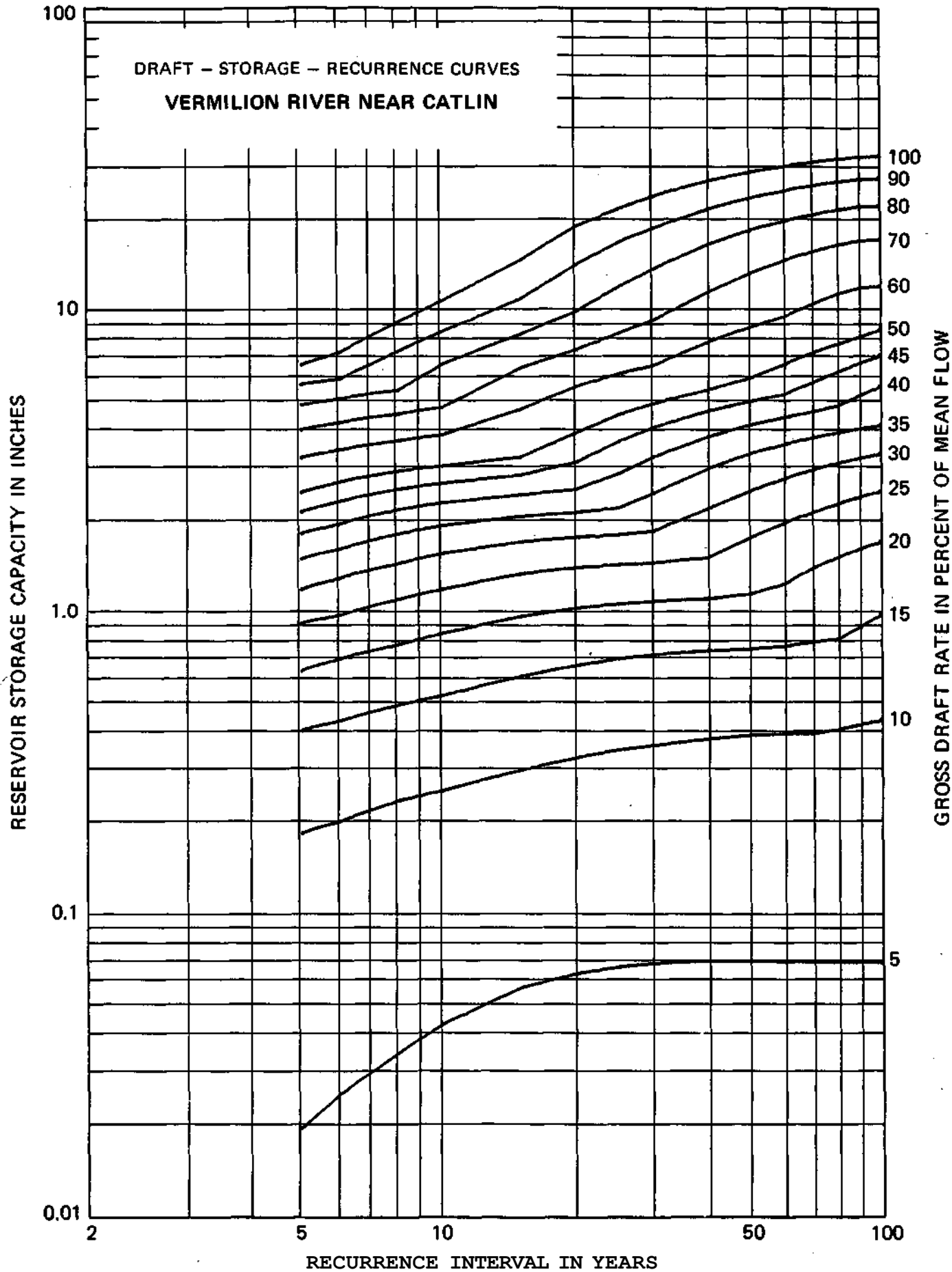
ACTUAL FLOW DATA: May 1940 thru Sep 1958 gaging discontinued Oct 1, 1958

INDEX STATION: Sangamon River at Monticello

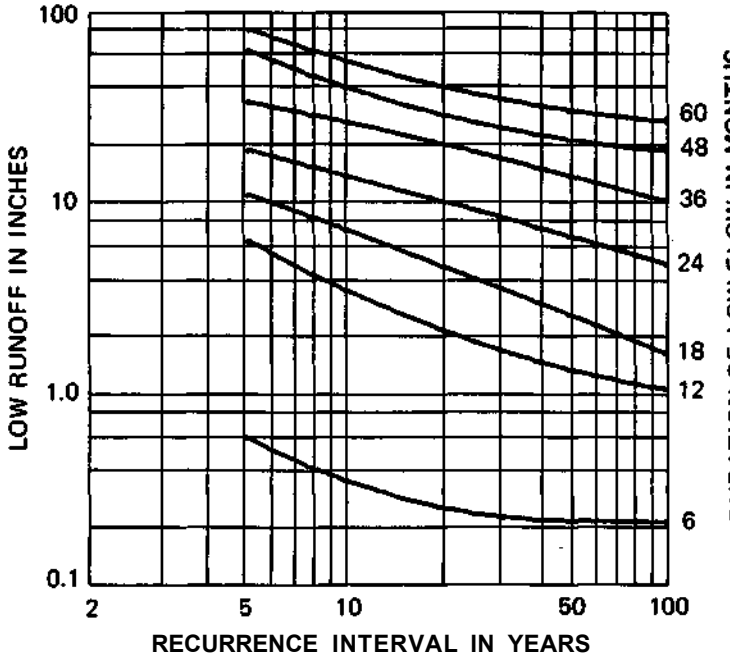
MEAN DISCHARGE: 0.89 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.18	.39	.61	.88	1.15	1.44	1.75	2.06	2.40	3.11	3.84	4.64	5.44	6.31
	4	2	4	5	6	6	6	7	7	7	8	8	9	9	9	10
6	.00	.02	.19	.42	.67	.94	1.24	1.55	1.88	2.23	2.59	3.30	4.06	4.86	5.66	6.92
	4	2	5	5	6	6	7	7	8	8	8	8	9	9	9	20
8	.00	.03	.23	.47	.74	1.06	1.38	1.74	2.09	2.45	2.80	3.53	4.33	5.20	6.97	8.75
	4	3	5	6	7	7	8	8	8	8	8	9	9	20	20	20
10	.00	.04	.24	.51	.81	1.14	1.50	1.85	2.21	2.56	2.92	3.70	4.57	6.34	8.12	10.30
	4	4	5	6	7	8	8	8	8	8	8	9	20	20	20	30
15	.00	.06	.29	.59	.93	1.29	1.64	2.00	2.35	2.73	3.13	4.51	6.21	7.98	10.48	14.11
	5	4	6	7	8	8	8	8	8	9	9	18	20	20	30	52
20	.00	.06	.32	.64	.99	1.35	1.71	2.06	2.46	3.02	3.78	5.38	7.11	9.55	13.64	18.25
	6	4	7	8	8	8	8	8	9	16	18	18	20	30	52	52
25	.00	.06	.34	.68	1.03	1.39	1.74	2.14	2.77	3.55	4.35	5.95	8.08	11.56	16.17	20.92
	6	4	7	8	8	8	8	9	16	18	18	18	30	52	52	56
30	.00	.07	.35	.70	1.05	1.41	1.79	2.40	3.15	3.95	4.75	6.35	8.97	13.28	18.07	23.04
	6	4	7	8	8	8	9	16	18	18	18	18	30	52	56	56
40	.00	.07	.37	.72	1.08	1.47	2.13	2.89	3.69	4.49	5.29	7.58	11.11	15.96	20.93	25.90
	7	4	8	8	8	9	16	18	18	18	18	30	54	56	56	56
50	.00	.07	.38	.73	1.12	1.71	2.44	3.24	4.04	4.84	5.79	8.52	12.87	17.84	22.81	27.78
	1	4	8	8	9	16	18	18	18	18	30	32	56	56	56	56
60	.00	.07	.38	.75	1.21	1.92	2.69	3.49	4.29	5.12	6.45	9.29	14.21	19.18	24.15	29.12
	1	4	8	9	16	16	18	18	18	30	30	32	56	56	56	56
70	.00	.07	.38	.78	1.37	2.08	2.88	3.68	4.48	5.63	7.05	10.26	15.23	20.20	25.17	30.14
	1	4	8	9	16	18	18	18	18	30	32	56	56	56	56	56
80	.00	.07	.40	.80	1.49	2.23	3.03	3.83	4.71	6.12	7.54	11.06	16.04	21.01	25.98	30.95
	1	4	9	9	16	18	18	18	30	32	32	56	56	56	56	56
90	.00	.07	.41	.88	1.59	2.36	3.16	3.95	5.11	6.53	7.95	11.58	16.55	21.52	26.50	31.47
	1	4	9	16	16	18	18	18	32	32	32	56	56	56	56	56
100	.00	.07	.43	.96	1.67	2.46	3.26	4.06	5.45	6.89	8.40	11.73	16.70	21.67	26.65	31.79
	1	4	9	16	16	18	18	18	32	34	34	56	56	56	58	58


DRAFT – STORAGE – RECURRENCE CURVES
VERMILION RIVER NEAR CATLIN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

33390 - VERMILION RIVER NEAR DANVILLE



LOCATION: In SE¼ NW¼, Sec 22, T19N, R11W, Vermilion County, 0.25 miles downstream of sewage treatment plant, 2.5 miles southeast of Danville

DRAINAGE AREA: 1290 square miles

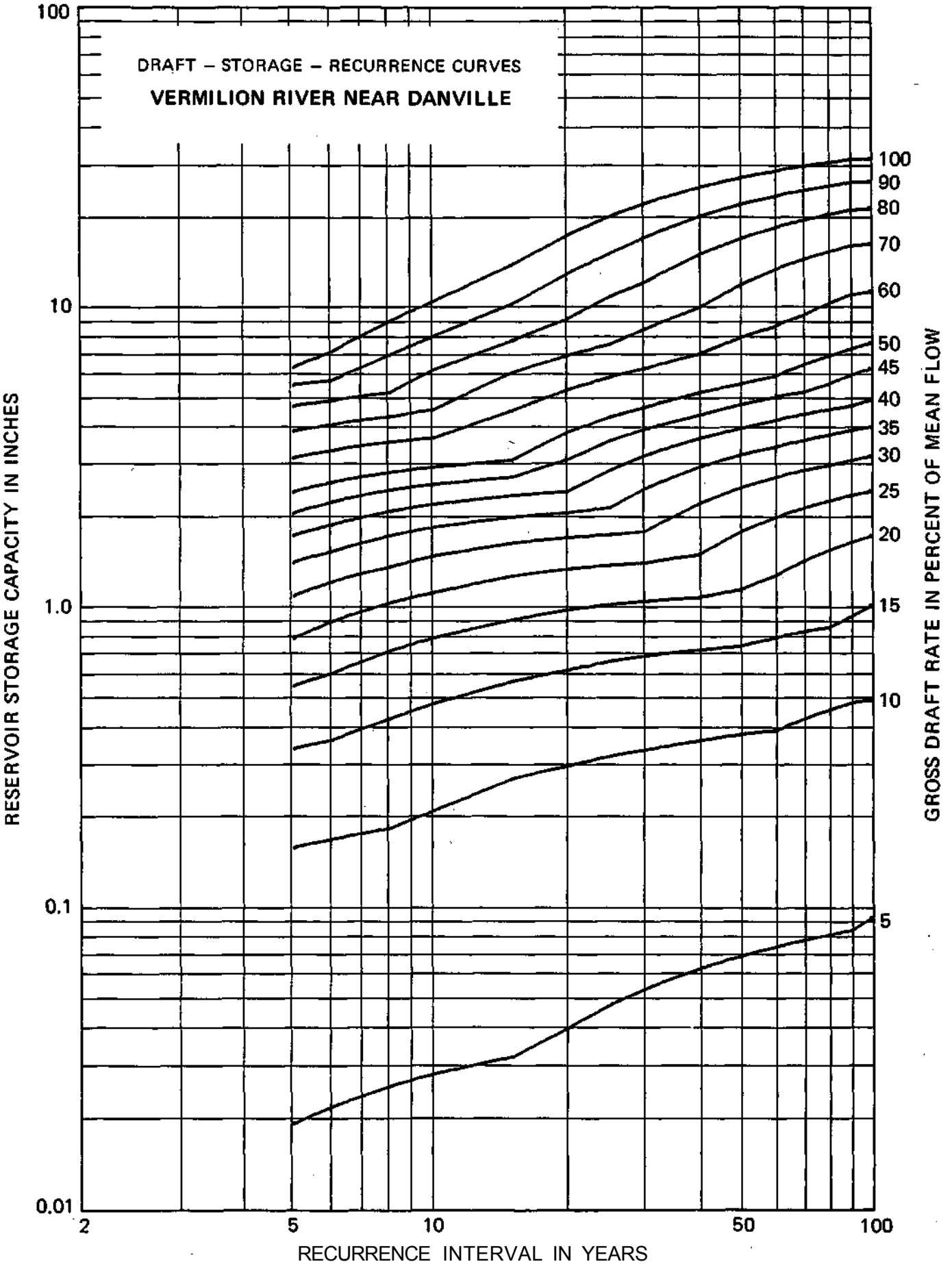
ACTUAL FLOW DATA: Oct 1914 to Sep 1921, June 1928 to Oct 1978

INDEX STATION: Sangamon River at Monticello

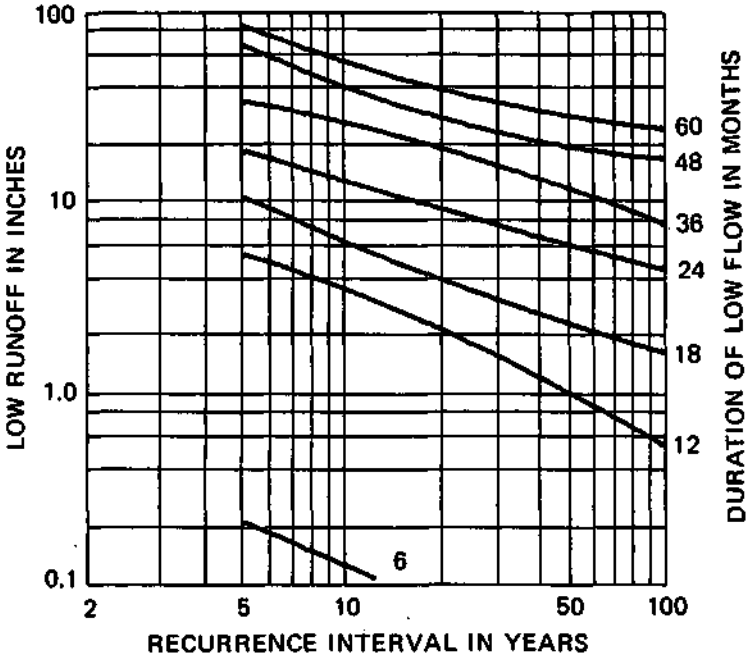
MEAN DISCHARGE: 0.88 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.15	.33	.53	.76	1.06	1.37	1.67	1.99	2.34	3.04	3.74	4.53	5.32	6.11
	4	2	4	4	5	6	7	7	7	8	8	8	8	9	9	9
6	.00	.02	.16	.35	.58	.87	1.17	1.48	1.81	2.17	2.52	3.22	3.92	4.71	5.50	6.88
	4	2	4	5	6	7	7	7	8	8	8	8	9	9	9	20
8	.00	.02	.18	.41	.69	1.00	1.32	1.67	2.02	2.37	2.72	3.42	4.17	5.01	6.71	8.64
	4	2	5	6	7	7	8	8	8	8	8	8	9	18	20	30
10	.00	.03	.20	.46	.77	1.08	1.43	1.79	2.14	2.49	2.84	3.54	4.42	5.99	7.74	10.09
	4	2	5	6	7	8	8	8	8	8	8	9	16	18	20	30
15	.00	.03	.26	.55	.88	1.23	1.58	1.93	2.29	2.64	3.01	4.39	5.88	7.51	9.90	13.37
	5	2	6	7	8	8	8	8	8	8	9	16	18	20	30	42
20	.00	.04	.29	.60	.95	1.30	1.65	2.01	2.36	3.02	3.72	5.14	6.72	8.83	12.50	16.77
	6	4	6	8	8	8	8	8	9	16	16	18	18	30	42	52
25	.00	.05	.31	.64	.99	1.35	1.70	2.09	2.79	3.50	4.20	5.70	7.33	10.53	14.64	19.40
	6	4	7	8	8	8	8	16	16	16	16	18	30	42	52	56
30	.00	.05	.33	.67	1.02	1.37	1.74	2.42	3.13	3.83	4.53	6.10	8.20	11.77	16.58	21.49
	6	4	7	8	8	8	9	16	16	16	16	18	30	52	56	56
40	.00	.06	.35	.70	1.05	1.46	2.17	2.87	3.57	4.28	5.07	6.83	9.70	14.55	19.47	24.38
	7	4	8	8	8	16	16	16	16	18	18	30	54	56	56	56
50	.00	.07	.37	.73	1.12	1.75	2.45	3.16	3.86	4.65	5.44	7.74	11.59	16.50	21.42	26.33
	1	4	8	9	9	16	16	16	16	18	18	30	56	56	56	56
60	.00	.07	.38	.78	1.25	1.95	2.66	3.36	4.12	4.91	5.79	8.42	13.01	17.93	22.85	27.76
	1	4	8	9	16	16	16	16	18	18	30	30	56	56	56	56
70	.00	.08	.42	.81	1.40	2.11	2.81	3.53	4.32	5.11	6.33	9.20	14.12	19.04	23.95	28.87
	1	4	9	9	16	16	16	18	18	18	30	56	56	56	56	56
80	.00	.08	.45	.84	1.52	2.23	2.93	3.69	4.48	5.47	6.78	10.09	15.01	19.92	24.84	29.75
	1	4	9	9	16	16	16	18	18	30	30	56	56	56	56	56
90	.00	.08	.47	.92	1.62	2.32	3.03	3.82	4.61	5.84	7.16	10.80	15.71	20.63	25.54	30.46
	1	4	9	16	16	16	18	18	18	30	30	56	56	56	56	56
100	.00	.09	.49	1.00	1.70	2.40	3.14	3.93	4.85	6.16	7.48	11.04	15.95	20.87	25.78	30.70
	1	9	9	16	16	16	18	18	30	30	30	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
VERMILION RIVER NEAR DANVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

33434 - EMBARRAS RIVER AT CAMARGO



LOCATION: In NE¼ NW¼ Sec 3, T15N, R9E, Douglas County, at bridge on U'S' Highway 36, 2 miles southwest of Camargo

DRAINAGE AREA: 186 square miles

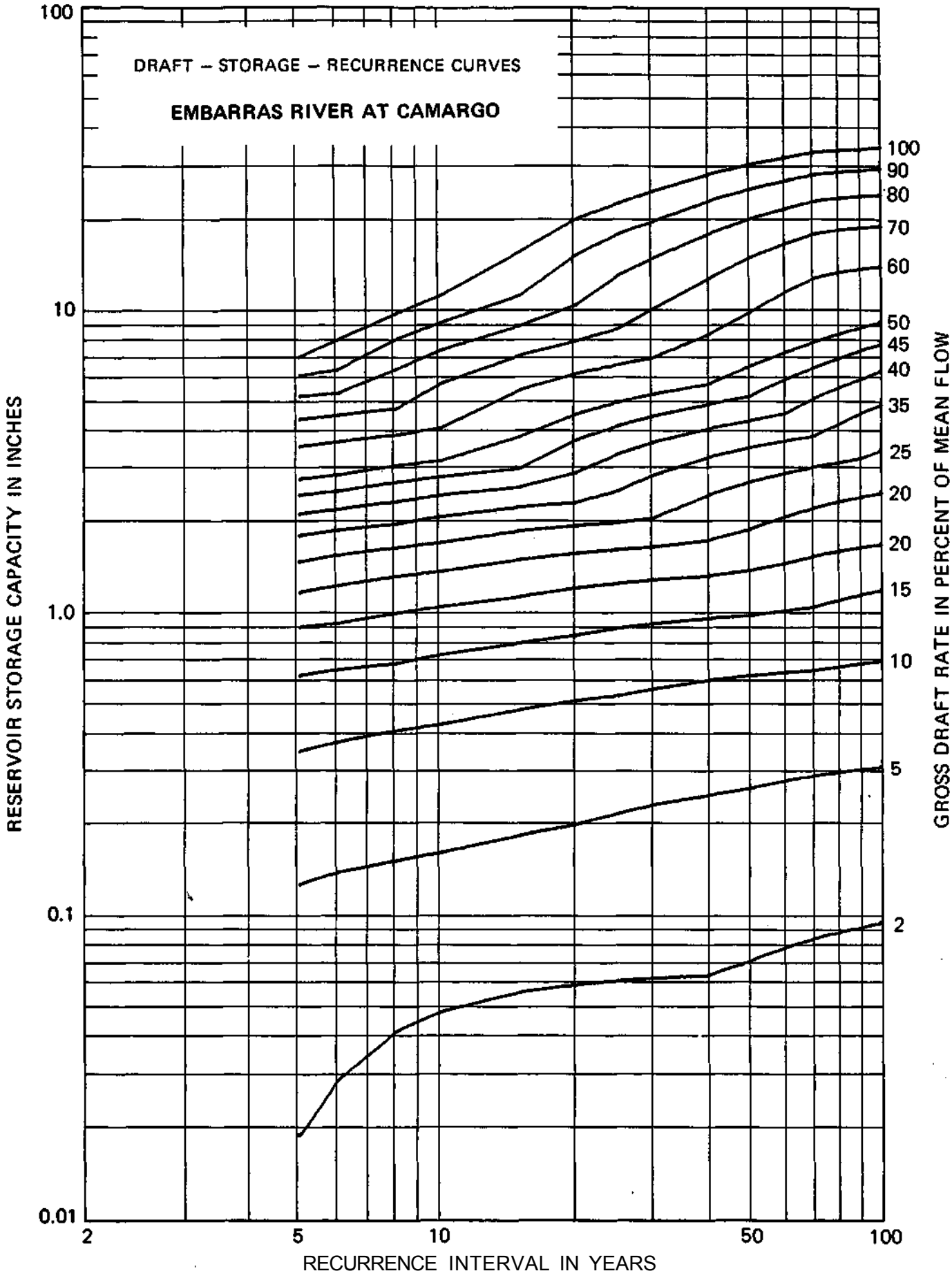
ACTUAL FLOW DATA: Oct 1960 to Oct 1978

INDEX STATION: Sangamon River at Monticello

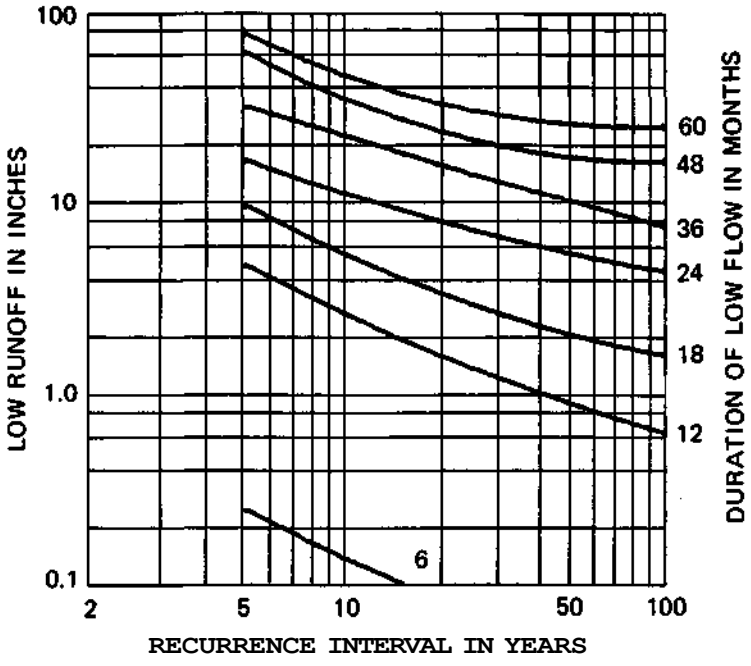
MEAN DISCHARGE: 0.89 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.12	.34	.60	.87	1.14	1.43	1.74	2.05	2.36	2.67	3.43	4.23	5.03	5.89	6.78
	3	4	5	6	6	6	7	7	7	7	7	9	9	9	10	10
6	.03	.13	.36	.63	.90	1.19	1.50	1.81	2.12	2.43	2.75	3.55	4.35	5.15	6.15	7.75
	3	4	6	6	6	7	7	7	7	7	9	9	9	9	18	18
8	.04	.15	.40	.66	.97	1.28	1.59	1.90	2.25	2.60	2.96	3.74	4.58	6.18	7.77	9.46
	4	4	6	6	7	7	7	7	8	8	8	9	18	18	18	20
10	.05	.16	.42	.71	1.02	1.33	1.66	2.01	2.37	2.72	3.08	3.96	5.56	7.16	8.84	10.89
	4	5	6	7	7	7	8	8	8	8	9	18	18	18	20	30
15	.05	.18	.47	.78	1.10	1.46	1.81	2.17	2.52	2.91	3.71	5.31	6.90	8.66	10.92	15.16
	4	6	7	7	8	8	8	8	8	18	18	18	18	20	30	52
20	.06	.19	.50	.83	1.18	1.54	1.89	2.25	2.82	3.62	4.42	6.02	7.72	10.17	14.78	19.40
	4	6	7	8	8	8	8	8	18	18	18	18	20	42	52	52
25	.06	.21	.52	.87	1.23	1.58	1.94	2.47	3.27	4.07	4.87	6.47	8.55	12.78	17.39	22.00
	4	7	7	8	8	8	9	18	18	18	18	20	30	52	52	52
30	.06	.23	.55	.91	1.26	1.62	2.01	2.78	3.58	4.38	5.18	6.83	9.95	14.56	19.19	24.16
	4	7	8	8	8	8	9	18	18	18	18	20	52	52	56	56
40	.06	.25	.59	.95	1.30	1.70	2.39	3.19	3.99	4.79	5.59	8.17	12.50	17.47	22.44	27.41
	4	7	8	8	9	9	18	18	18	18	18	30	56	56	56	56
50	.07	.26	.61	.97	1.36	1.86	2.66	3.46	4.25	5.12	6.45	9.73	14.70	19.67	24.64	29.61
	7	8	8	8	9	18	18	18	18	30	30	56	56	56	56	56
60	.08	.28	.63	1.01	1.44	2.05	2.84	3.64	4.49	5.82	7.15	11.35	16.32	21.28	26.25	31.22
	7	8	8	9	11	18	18	18	30	30	30	56	56	56	56	56
70	.08	.29	.64	1.04	1.52	2.19	2.98	3.78	5.04	6.38	7.75	12.60	17.57	22.54	27.51	32.47
	7	8	8	9	11	18	18	18	30	30	32	56	56	56	56	56
80	.09	.30	.66	1.09	1.58	2.30	3.09	4.16	5.49	6.86	8.28	13.20	18.17	23.14	28.11	33.08
	7	8	9	11	11	18	18	30	30	32	32	56	56	56	56	56
90	.09	.30	.68	1.14	1.63	2.38	3.20	4.53	5.87	7.29	8.71	13.53	18.50	23.47	28.44	33.41
	7	8	9	11	11	18	30	30	32	32	32	56	56	56	56	56
100	.09	.31	.69	1.18	1.67	2.46	3.41	4.82	6.24	7.66	9.08	13.79	18.76	23.75	28.89	34.04
	8	8	11	11	11	18	30	32	32	32	32	56	56	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
EMBARRAS RIVER AT CAMARGO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
25
20
20
15
10
5
2

55710 - SANGAMON RIVER AT MAHOMET



LOCATION: In NE¼ SW¼ Sec 15, T20N, R7E, Champaign County, at bridge on U. S. 150 in Mahomet

DRAINAGE AREA: 362 square miles

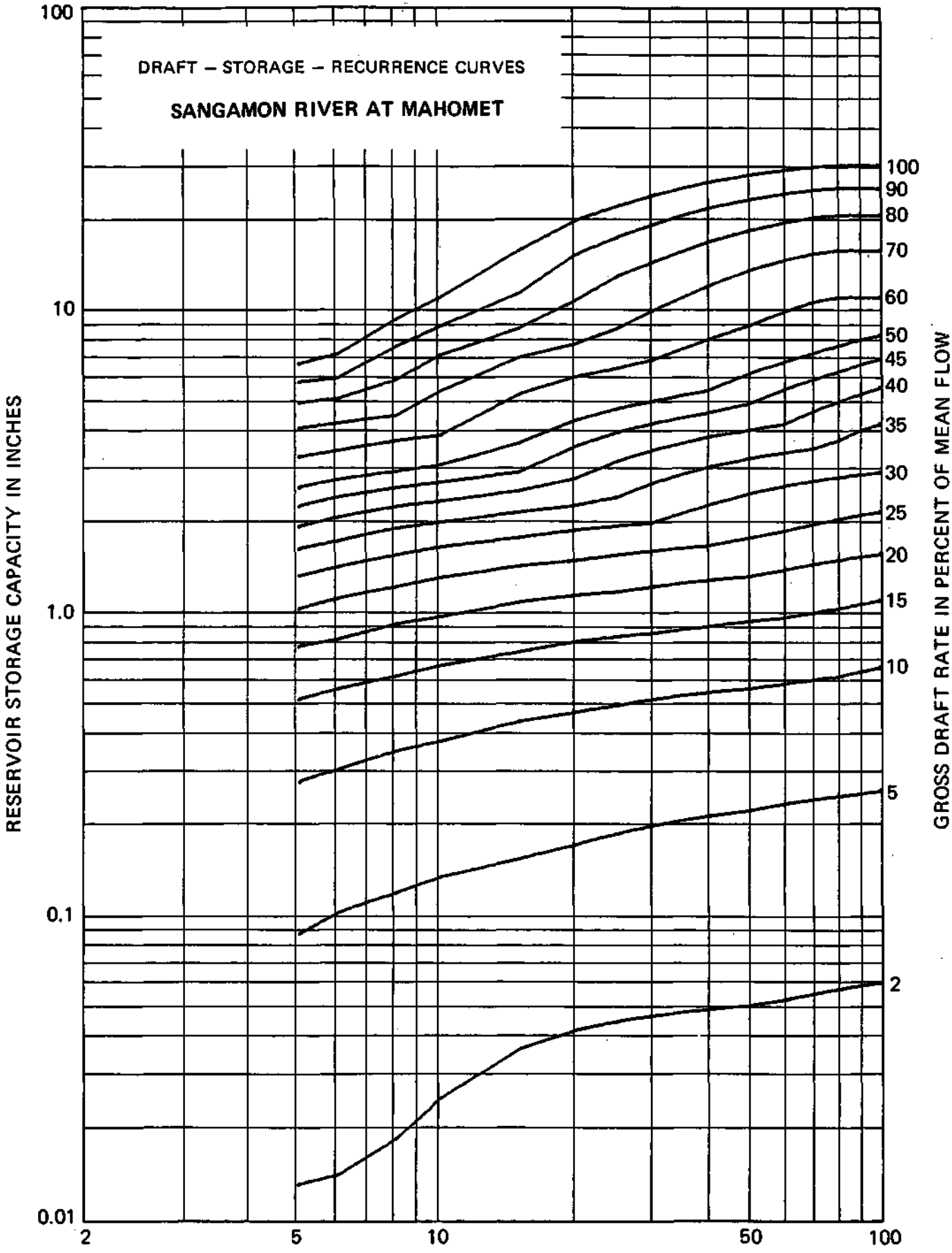
ACTUAL FLOW DATA: Mar 1948 to Sep 1978 (discontinued)

INDEX STATION: Sangamon River at Monticello

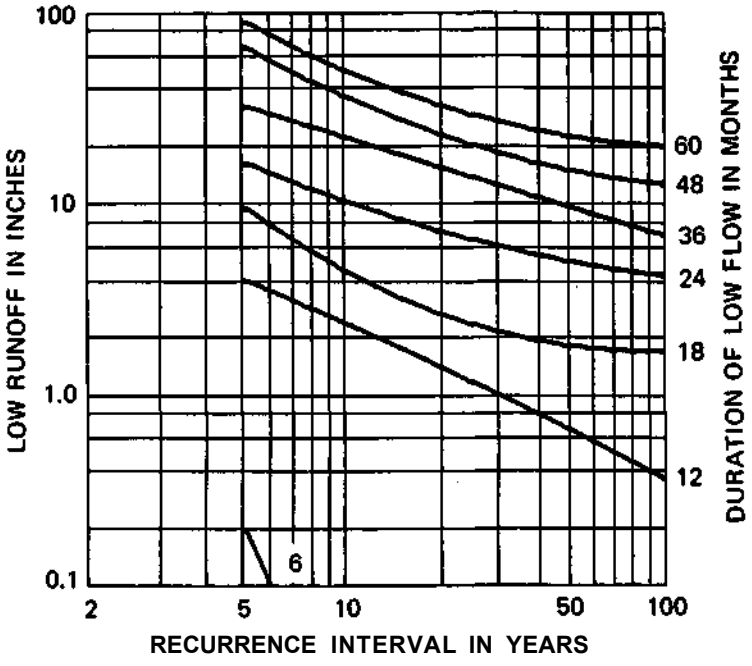
MEAN DISCHARGE: 0.83 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.08	.27	.50	.75	.99	1.28	1.57	1.86	2.17	2.50	3.16	3.90	4.73	5.56	6.38
	2	4	5	6	6	6	7	7	7	8	8	8	10	10	10	10
6	.01	.10	.29	.54	.79	1.08	1.36	1.66	1.99	2.32	2.65	3.31	4.06	4.89	5.71	6.87
	2	4	5	6	7	7	7	8	8	8	8	8	10	10	10	18
8	.02	.11	.34	.59	.88	1.17	1.50	1.83	2.16	2.49	2.82	3.56	4.31	5.65	7.28	8.94
	3	4	6	7	7	7	8	8	8	8	8	9	10	18	20	30
10	.02	.13	.36	.65	.94	1.26	1.59	1.92	2.25	2.60	2.97	3.72	5.21	6.86	8.51	10.62
	4	5	6	7	7	8	8	8	8	9	9	16	20	20	20	30
15	.04	.15	.42	.72	1.05	1.38	1.71	2.07	2.45	2.82	3.52	5.09	6.74	8.39	10.95	15.21
	4	5	7	8	8	8	8	9	9	9	18	20	20	20	42	52
20	.04	.17	.45	.78	1.11	1.44	1.81	2.19	2.68	3.43	4.17	5.81	7.46	10.36	14.66	18.95
	4	6	7	8	8	9	9	9	18	18	18	20	20	52	52	52
25	.04	.18	.48	.81	1.14	1.51	1.88	2.34	3.08	3.82	4.58	6.23	8.41	12.53	16.83	21.25
	4	7	8	8	8	9	9	18	18	18	20	20	42	52	52	56
30	.05	.19	.50	.83	1.19	1.56	1.93	2.60	3.35	4.09	4.85	6.65	9.64	13.95	18.47	23.10
	4	7	8	8	9	9	9	18	18	18	20	30	52	54	56	56
40	.05	.21	.53	.88	1.25	1.62	2.20	2.95	3.69	4.43	5.26	7.74	11.63	16.26	20.89	25.51
	4	7	8	9	9	9	18	18	18	18	30	30	56	56	56	56
50	.05	.22	.55	.91	1.29	1.72	2.42	3.16	3.90	4.77	6.01	8.63	13.16	17.78	22.41	27.04
	5	8	8	9	10	11	18	18	18	30	30	46	56	56	56	56
60	.05	.23	.57	.94	1.35	1.82	2.56	3.30	4.08	5.32	6.56	9.59	14.21	18.84	23.47	28.09
	6	8	9	9	11	16	18	18	30	30	30	56	56	56	56	56
70	.05	.24	.59	.98	1.42	1.92	2.67	3.41	4.52	5.76	7.03	10.36	14.99	19.62	24.24	28.87
	6	8	9	10	11	18	18	18	30	30	32	56	56	56	56	56
80	.06	.24	.60	1.01	1.46	2.00	2.75	3.63	4.86	6.13	7.45	10.77	15.40	20.03	24.65	29.28
	6	8	9	10	11	18	18	30	30	32	32	56	56	56	56	56
90	.06	.25	.63	1.05	1.50	2.06	2.81	3.91	5.15	6.47	7.79	10.78	15.41	20.04	24.67	29.29
	6	8	10	11	11	18	18	30	30	32	32	56	56	56	56	56
100	.06	.25	.65	1.08	1.53	2.12	2.86	4.12	5.44	6.76	8.08	10.78	15.41	20.04	24.67	29.29
	6	9	10	11	11	18	18	32	32	32	32	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SANGAMON RIVER AT MAHOMET
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55715 - GOOSE CREEK NEAR DELAND



LOCATION: In NW¼ Sec 22, T19N, R5E, Piatt County at bridge 2 miles southwest of DeLand

DRAINAGE AREA: 47.3 square miles

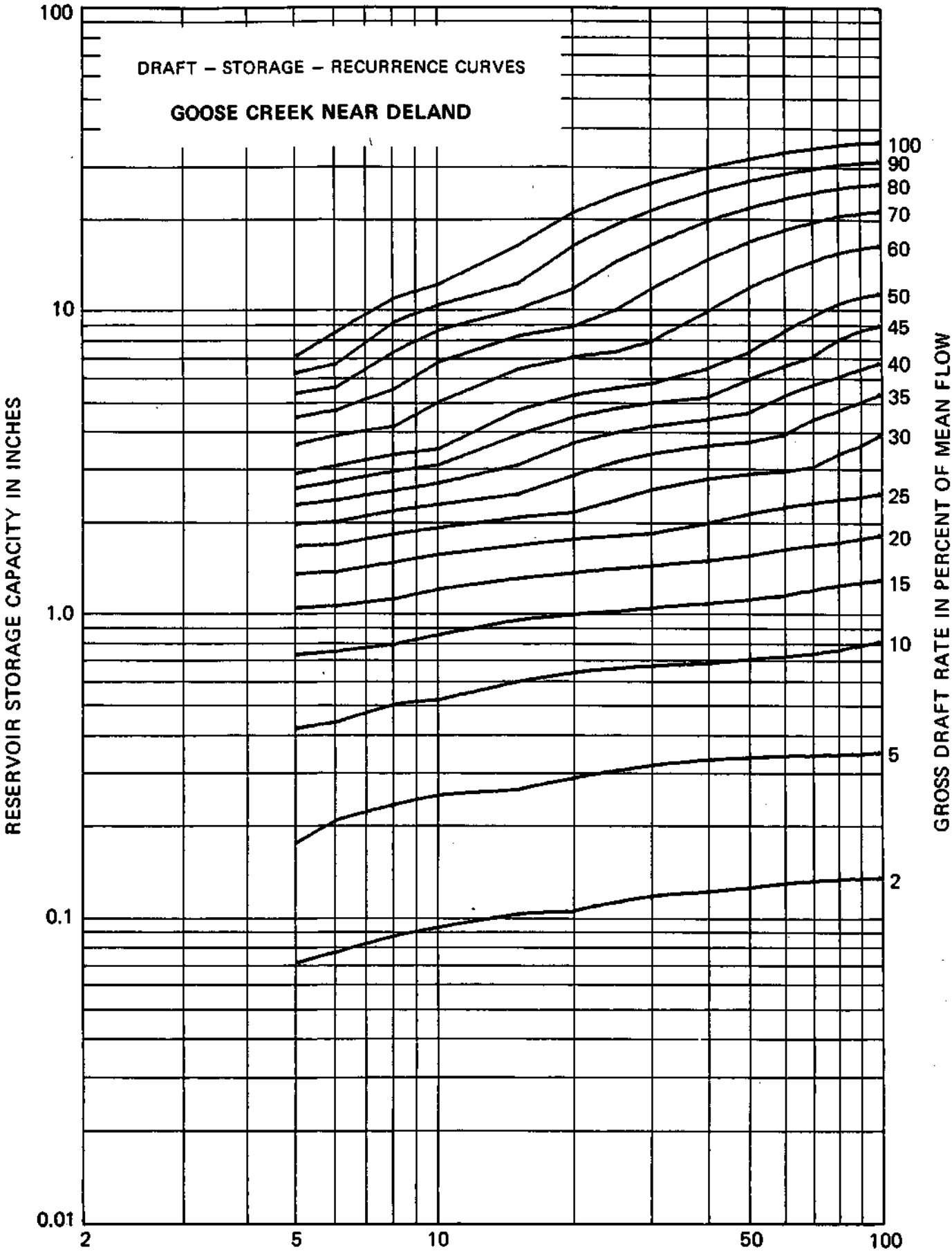
ACTUAL FLOW DATA: Oct 1951 to Oct 1959

INDEX STATION: Sangamon River at Monticello

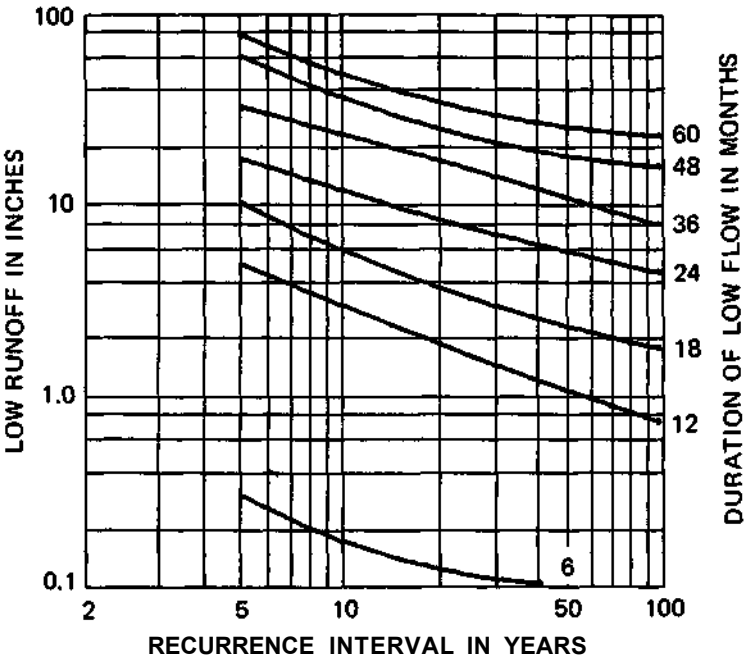
MEAN DISCHARGE: 0.86 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.07	.17	.41	.71	1.01	1.31	1.61	1.91	2.21	2.51	2.81	3.49	4.29	5.15	6.01	6.86
	4	4	7	7	7	7	7	7	7	7	7	8	10	10	10	10
6	.07	.20	.42	.72	1.02	1.32	1.62	1.93	2.27	2.62	2.96	3.72	4.51	5.37	6.41	8.09
	5	5	6	7	7	7	7	8	8	8	8	9	10	10	16	20
8	.08	.23	.48	.76	1.07	1.42	1.76	2.10	2.45	2.83	3.22	3.99	5.30	7.01	8.73	10.45
	5	6	6	7	8	8	8	8	8	9	9	9	20	20	20	20
10	.09	.24	.50	.82	1.16	1.51	1.85	2.21	2.60	2.98	3.37	4.81	6.51	8.22	9.94	11.66
	6	6	6	8	8	8	8	9	9	9	9	18	20	20	20	20
15	.10	.25	.58	.92	1.26	1.62	2.01	2.39	2.98	3.76	4.53	6.18	7.90	9.61	11.73	15.68
	6	6	8	8	8	9	9	9	18	18	18	20	20	20	42	52
20	.10	.28	.62	.96	1.32	1.71	2.09	2.77	3.54	4.31	5.08	6.77	8.49	11.28	15.67	20.13
	6	7	8	8	9	9	9	18	18	18	18	20	20	42	52	52
25	.11	.30	.64	.98	1.37	1.75	2.30	3.07	3.85	4.62	5.39	7.08	9.66	13.94	18.40	23.12
	7	8	8	8	9	9	18	18	18	18	18	20	42	52	52	60
30	.11	.31	.65	1.01	1.40	1.79	2.49	3.26	4.04	4.81	5.58	7.63	11.34	15.82	20.53	25.34
	7	8	8	9	9	10	18	18	18	18	18	30	52	54	56	56
40	.12	.32	.66	1.05	1.45	1.94	2.71	3.48	4.25	5.02	6.25	9.50	14.13	18.88	23.68	28.49
	7	8	9	9	10	18	18	18	18	18	30	54	54	56	56	56
50	.12	.33	.69	1.08	1.52	2.09	2.82	3.59	4.49	5.77	7.06	11.44	16.16	20.97	25.77	30.58
	8	8	9	10	11	16	18	18	30	30	30	54	56	56	56	56
60	.13	.33	.70	1.12	1.59	2.19	2.88	3.80	5.09	6.37	8.20	12.87	17.67	22.48	27.28	32.09
	8	8	9	10	11	16	16	30	30	30	54	56	56	56	56	56
70	.13	.33	.72	1.17	1.64	2.27	2.98	4.26	5.55	6.84	9.22	14.02	18.83	23.63	28.44	33.24
	8	8	10	11	11	16	30	30	30	30	56	56	56	56	56	56
80	.13	.34	.74	1.21	1.68	2.33	3.28	4.57	5.89	7.74	10.14	14.94	19.75	24.55	29.36	34.16
	8	8	10	11	11	16	30	30	32	56	56	56	56	56	56	56
90	.13	.34	.77	1.24	1.73	2.38	3.51	4.88	6.25	8.30	10.70	15.51	20.31	25.12	29.92	34.73
	8	9	11	11	14	16	32	32	32	56	56	56	56	56	56	56
100	.13	.34	.79	1.27	1.78	2.44	3.81	5.19	6.56	8.64	11.04	15.84	20.65	25.45	30.26	35.06
	8	9	11	11	14	32	32	32	32	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
GOOSE CREEK NEAR DELAND
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55720 - SANGAMON RIVER AT MONTICELLO



LOCATION: In SW¼ Sec 12, T18N, R5E, Piatt County, near downstream side of highway bridge, 0.5 miles west of Monticello

DRAINAGE AREA: 550 square miles

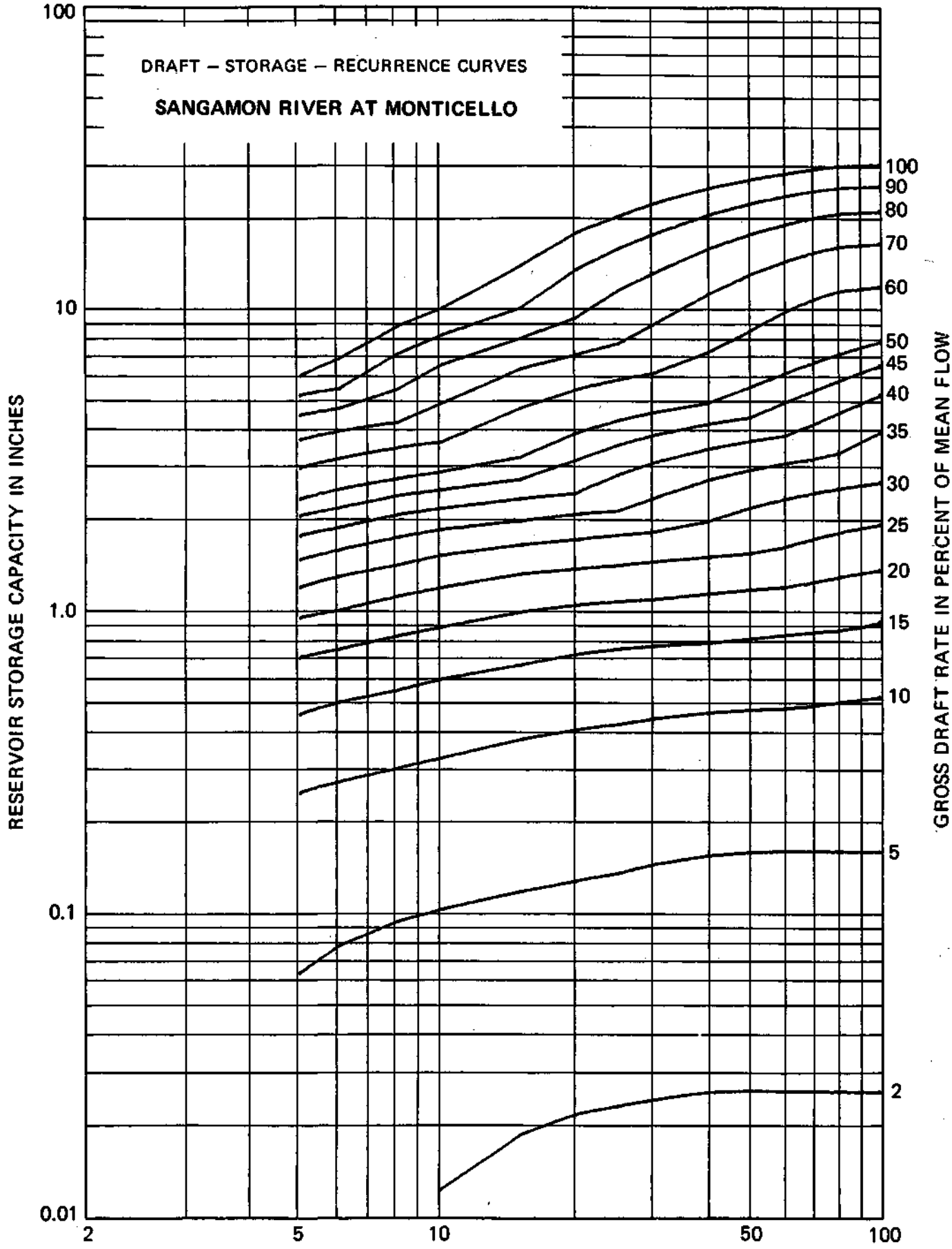
ACTUAL FLOW DATA: Feb 1908 to Dec 1912, June 1914 to Oct 1978

INDEX STATION: None

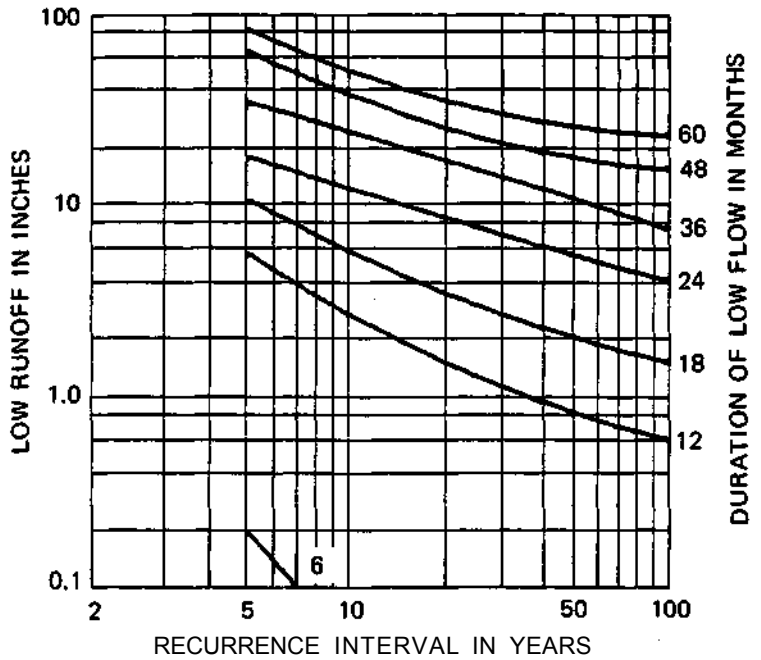
MEAN DISCHARGE: 0.82 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.06	.25	.45	.70	.95	1.19	1.47	1.76	2.05	2.33	2.95	3.67	4.41	5.15	5.98
	1	4	5	6	6	6	6	7	7	7	7	8	9	9	10	10
6	.01	.08	.27	.50	.74	1.00	1.29	1.58	1.86	2.17	2.50	3.17	3.91	4.65	5.42	6.77
	1	4	5	6	6	7	7	7	7	8	8	9	9	9	10	20
8	.01	.09	.30	.55	.83	1.11	1.41	1.74	2.07	2.39	2.72	3.45	4.19	5.40	7.05	8.69
	2	4	6	6	7	7	8	8	8	8	8	9	9	20	20	20
10	.01	.10	.33	.60	.88	1.19	1.52	1.85	2.18	2.51	2.88	3.62	4.88	6.52	8.17	10.01
	2	4	6	7	7	8	8	8	8	8	9	9	20	20	20	30
15	.02	.12	.38	.67	1.00	1.32	1.65	1.99	2.36	2.73	3.24	4.72	6.35	7.99	10.06	13.89
	3	5	7	8	8	8	8	9	9	9	18	18	20	20	42	52
20	.02	.13	.41	.72	1.05	1.38	1.72	2.09	2.46	3.17	3.91	5.44	7.09	9.36	13.52	17.80
	3	6	7	8	8	8	9	9	9	18	18	20	20	42	52	52
25	.02	.14	.43	.76	1.08	1.42	1.79	2.16	2.84	3.58	4.32	5.89	7.75	11.63	15.90	20.26
	3	7	8	8	8	9	9	9	18	18	18	20	30	52	52	56
30	.02	.15	.45	.78	1.10	1.47	1.84	2.38	3.12	3.86	4.60	6.20	8.96	13.24	17.72	22.32
	4	7	8	8	8	9	9	18	18	18	18	20	52	52	56	56
40	.03	.16	.47	.80	1.16	1.53	2.00	2.74	3.48	4.22	4.96	7.27	11.31	15.92	20.52	25.13
	4	7	8	8	9	9	18	18	18	18	18	30	54	56	56	56
50	.03	.16	.48	.82	1.19	1.57	2.23	2.97	3.71	4.45	5.61	8.57	13.17	17.78	22.38	26.99
	4	7	8	9	9	10	18	18	18	18	30	56	56	56	56	56
60	.03	.16	.49	.85	1.22	1.65	2.39	3.13	3.87	4.99	6.22	9.91	14.52	19.12	23.73	28.33
	4	7	8	9	9	11	18	18	18	30	30	56	56	56	56	56
70	.03	.16	.50	.87	1.26	1.76	2.50	3.24	4.24	5.47	6.75	10.94	15.55	20.15	24.76	29.36
	4	7	9	9	11	18	18	18	30	30	32	56	56	56	56	56
80	.03	.16	.51	.88	1.32	1.85	2.59	3.39	4.63	5.91	7.22	11.66	16.27	20.87	25.48	30.08
	4	7	9	9	11	18	18	30	30	32	32	56	56	56	56	56
90	.03	.16	.52	.91	1.36	1.92	2.66	3.72	4.98	6.30	7.61	11.92	16.52	21.13	25.73	30.34
	4	8	9	10	11	18	18	30	32	32	32	56	56	56	56	56
100	.03	.16	.53	.94	1.39	1.98	2.72	4.00	5.32	6.63	7.95	12.11	16.71	21.32	25.92	30.53
	4	8	9	11	11	18	18	32	32	32	32	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SANGAMON RIVER AT MONTICELLO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55724.5 - FRIENDS CREEK AT ARGENTA



LOCATION: In SE¼ NE¼ Sec 25, T18N, R3E, Macon County, upstream side of bridge on Illinois 47 and 48, 1 mile northeast of Argenta

DRAINAGE AREA: 111 square miles

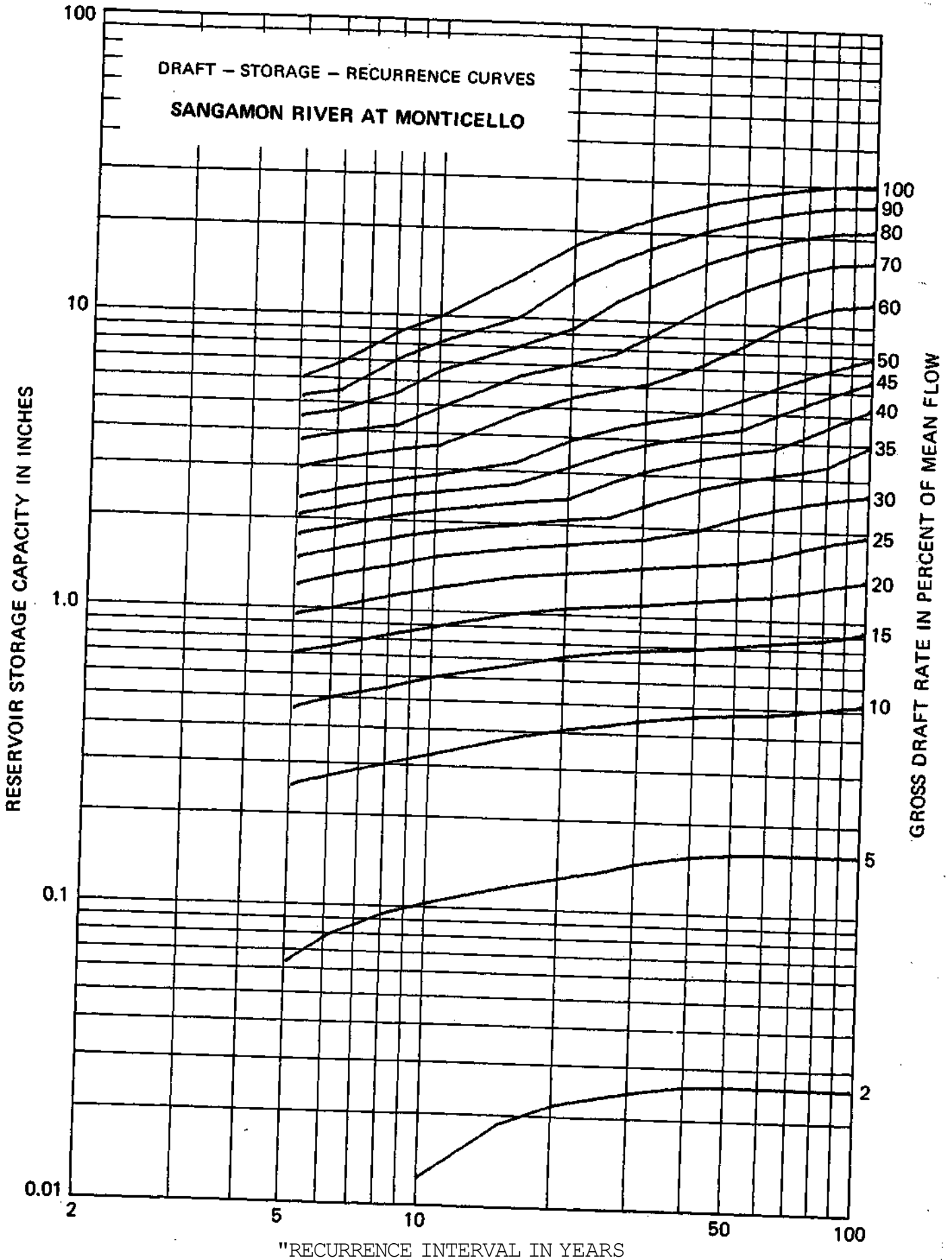
ACTUAL FLOW DATA: Oct 1966 to Oct 1978

INDEX STATION: Sangamon River at Monticello

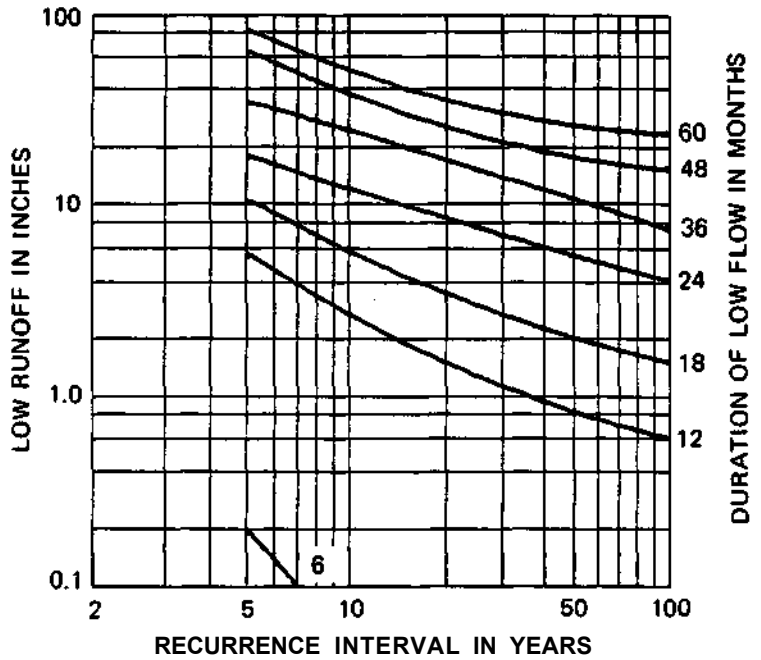
MEAN DISCHARGE: 0.86 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.16	.38	.59	.85	1.15	1.45	1.75	2.05	2.35	2.66	3.32	4.01	4.78	5.56	6.42
	3	5	5	5	6	7	7	7	7	7	7	8	9	9	10	10
6	.06	.17	.39	.65	.92	1.22	1.52	1.82	2.14	2.49	2.83	3.52	4.29	5.06	5.86	7.06
	4	5	6	6	7	7	7	7	8	8	8	8	9	9	10	18
8	.07	.19	.44	.71	1.01	1.32	1.67	2.01	2.36	2.70	3.06	3.83	4.60	5.85	7.51	9.23
	4	5	6	7	7	8	8	8	8	8	9	9	9	18	20	20
10	.07	.21	.47	.76	1.09	1.43	1.77	2.12	2.46	2.85	3.23	4.01	5.39	7.09	8.81	10.67
	4	6	6	7	8	8	8	8	8	9	9	9	18	20	20	30
15	.08	.23	.53	.86	1.21	1.55	1.91	2.29	2.68	3.07	3.72	5.30	7.02	8.74	10.85	15.16
	6	6	7	8	8	8	9	9	9	9	18	20	20	20	30	52
20	.09	.25	.57	.91	1.26	1.62	2.01	2.40	2.88	3.65	4.43	6.10	7.82	10.38	14.86	19.33
	6	7	8	8	8	9	9	9	18	18	18	20	20	52	52	52
25	.09	.27	.60	.94	1.30	1.68	2.07	2.54	3.31	4.09	4.86	6.57	8.55	12.90	17.37	21.85
	6	7	8	8	9	9	9	18	18	18	18	20	30	52	52	52
30	.10	.28	.62	.96	1.34	1.73	2.11	2.83	3.60	4.38	5.16	6.88	10.11	14.59	19.16	23.98
	7	7	8	8	9	9	9	18	18	18	20	20	52	52	56	56
40	.11	.29	.64	1.00	1.39	1.79	2.43	3.21	3.98	4.75	5.54	8.08	12.49	17.31	22.13	26.94
	7	8	8	9	9	11	18	18	18	18	20	30	56	56	56	56
50	.11	.30	.65	1.03	1.43	1.90	2.66	3.44	4.21	5.06	6.35	9.62	14.44	19.26	24.08	28.90
	7	8	8	9	10	11	18	18	18	30	30	56	56	56	56	56
60	.11	.31	.66	1.05	1.50	2.05	2.83	3.60	4.41	5.70	6.99	11.03	15.85	20.67	25.49	30.31
	7	8	9	9	11	18	18	18	30	30	30	56	56	56	56	56
70	.12	.32	.68	1.08	1.56	2.17	2.94	3.72	4.90	6.21	7.58	12.10	16.92	21.74	26.56	31.38
	7	8	9	11	11	18	18	18	30	32	32	56	56	56	56	56
80	.12	.32	.69	1.12	1.60	2.26	3.03	4.01	5.32	6.69	8.07	12.78	17.60	22.42	27.24	32.06
	7	8	9	11	11	18	18	30	32	32	32	56	56	56	56	56
90	.12	.32	.70	1.16	1.63	2.33	3.11	4.34	5.72	7.10	8.47	13.03	17.85	22.67	27.49	32.31
	7	8	10	11	11	18	18	30	32	32	32	56	56	56	56	56
100	.12	.32	.71	1.18	1.66	2.39	3.32	4.68	6.06	7.44	8.81	13.21	18.03	22.85	27.67	32.49
	7	8	10	11	11	18	30	32	32	32	32	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SANGAMON RIVER AT MONTICELLO
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
"RECURRENCE INTERVAL IN YEARS

55724.5 - FRIENDS CREEK AT ARGENTA



LOCATION: In SE¼ NE¼¼ Sec 25, T18N, R3E, Macon County, upstream side of bridge on Illinois 47 and 48, 1 mile northeast of Argenta

DRAINAGE AREA: 111 square miles

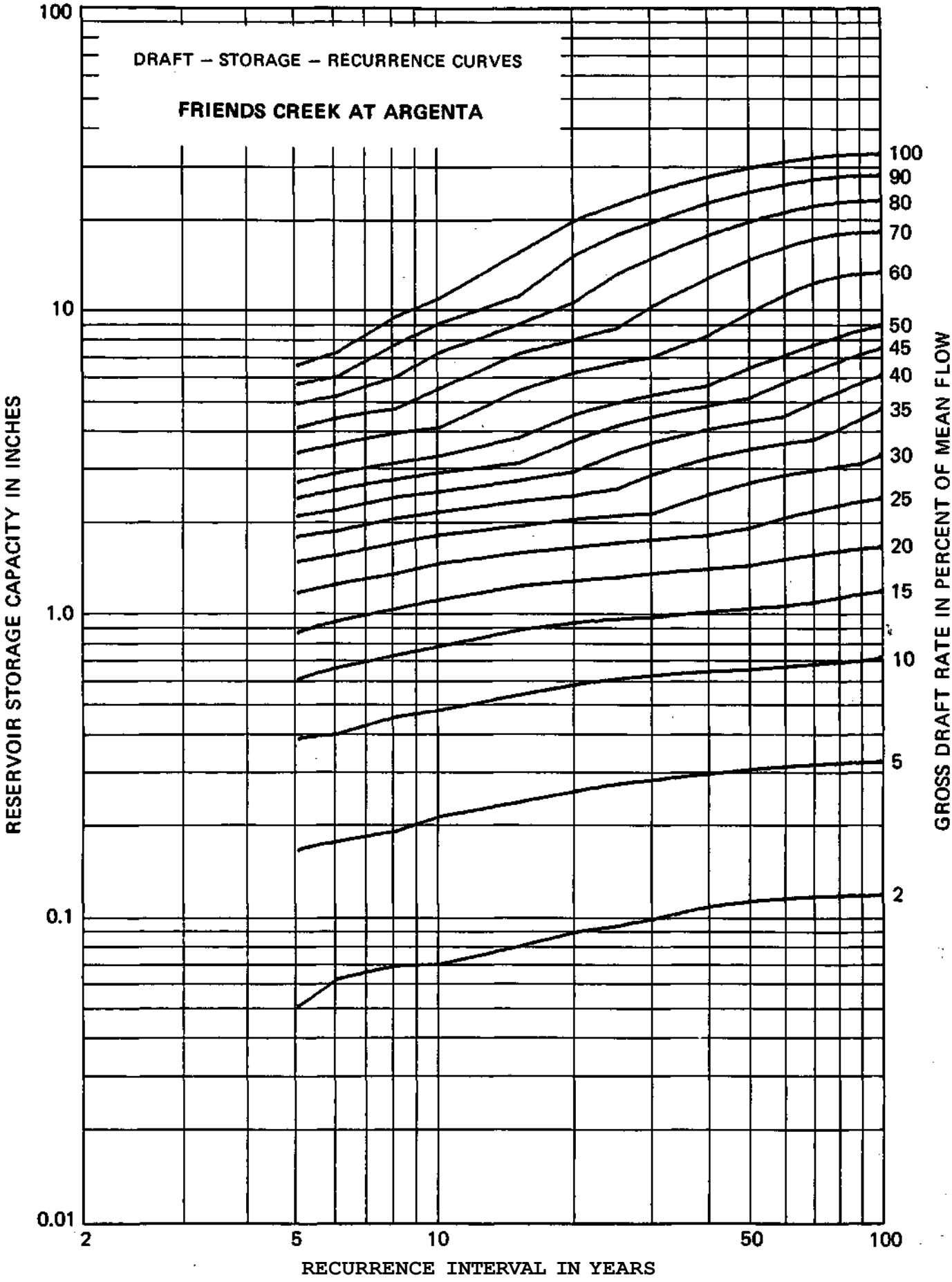
ACTUAL FLOW DATA: Oct 1966 to Oct 1978

INDEX STATION: Sangamon River at Monticello

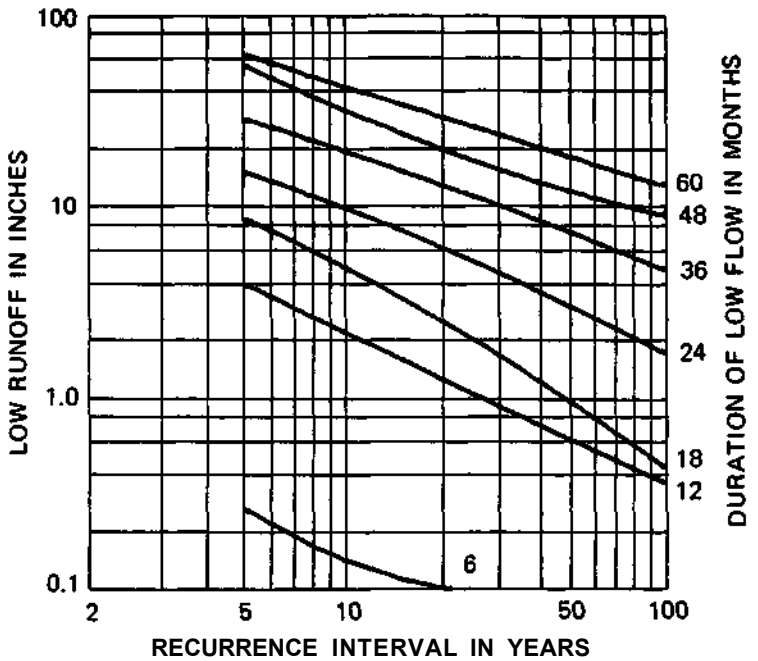
MEAN DISCHARGE: 0.86 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.16	.38	.59	.85	1.15	1.45	1.75	2.05	2.35	2.66	3.32	4.01	4.78	5.56	6.42
	3	5	5	5	6	7	7	7	7	7	7	8	9	9	10	10
6	.06	.17	.39	.65	.92	1.22	1.52	1.82	2.14	2.49	2.83	3.52	4.29	5.06	5.86	7.06
	4	5	6	6	7	7	7	7	8	8	8	8	9	9	10	18
8	.07	.19	.44	.71	1.01	1.32	1.67	2.01	2.36	2.70	3.06	3.83	4.60	5.85	7.51	9.23
	4	5	6	7	7	8	8	8	8	8	9	9	9	18	20	20
10	.07	.21	.47	.76	1.09	1.43	1.77	2.12	2.46	2.85	3.23	4.01	5.39	7.09	8.81	10.67
	4	6	6	7	8	8	8	8	8	9	9	9	18	20	20	30
15	.08	.23	.53	.86	1.21	1.55	1.91	2.29	2.68	3.07	3.72	5.30	7.02	8.74	10.85	15.16
	6	6	7	8	8	8	9	9	9	9	18	20	20	20	30	52
20	.09	.25	.57	.91	1.26	1.62	2.01	2.40	2.88	3.65	4.43	6.10	7.82	10.38	14.86	19.33
	6	7	8	8	8	9	9	9	18	18	18	20	20	52	52	52
25	.09	.27	.60	.94	1.30	1.68	2.07	2.54	3.31	4.09	4.86	6.57	8.55	12.90	17.37	21.85
	6	7	8	8	9	9	9	18	18	18	18	20	30	52	52	52
30	.10	.28	.62	.96	1.34	1.73	2.11	2.83	3.60	4.38	5.16	6.88	10.11	14.59	19.16	23.98
	7	7	8	8	9	9	9	18	18	18	20	20	52	52	56	56
40	.11	.29	.64	1.00	1.39	1.79	2.43	3.21	3.98	4.75	5.54	8.08	12.49	17.31	22.13	26.94
	7	8	8	9	9	11	18	18	18	18	20	30	56	56	56	56
50	.11	.30	.65	1.03	1.43	1.90	2.66	3.44	4.21	5.06	6.35	9.62	14.44	19.26	24.08	28.90
	7	8	8	9	10	11	18	18	18	30	30	56	56	56	56	56
60	.11	.31	.66	1.05	1.50	2.05	2.83	3.60	4.41	5.70	6.99	11.03	15.85	20.67	25.49	30.31
	7	8	9	9	11	18	18	18	30	30	30	56	56	56	56	56
70	.12	.32	.68	1.08	1.56	2.17	2.94	3.72	4.90	6.21	7.58	12.10	16.92	21.74	26.56	31.38
	7	8	9	11	11	18	18	18	30	32	32	56	56	56	56	56
80	.12	.32	.69	1.12	1.60	2.26	3.03	4.01	5.32	6.69	8.07	12.78	17.60	22.42	27.24	32.06
	7	8	9	11	11	18	18	30	32	32	32	56	56	56	56	56
90	.12	.32	.70	1.16	1.63	2.33	3.11	4.34	5.72	7.10	8.47	13.03	17.85	22.67	27.49	32.31
	7	8	10	11	11	18	18	30	32	32	32	56	56	56	56	56
100	.12	.32	.71	1.18	1.66	2.39	3.32	4.68	6.06	7.44	8.81	13.21	18.03	22.85	27.67	32.49
	7	8	10	11	11	18	30	32	32	32	32	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
FRIENDS CREEK AT ARGENTA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55765 - SANGAMON RIVER AT RIVERTON



LOCATION: In NE¼ Sec 16, T16N, R3W, Sangamon County, at bridge on U.S. 36 at Riverton

DRAINAGE AREA: 2560 square miles

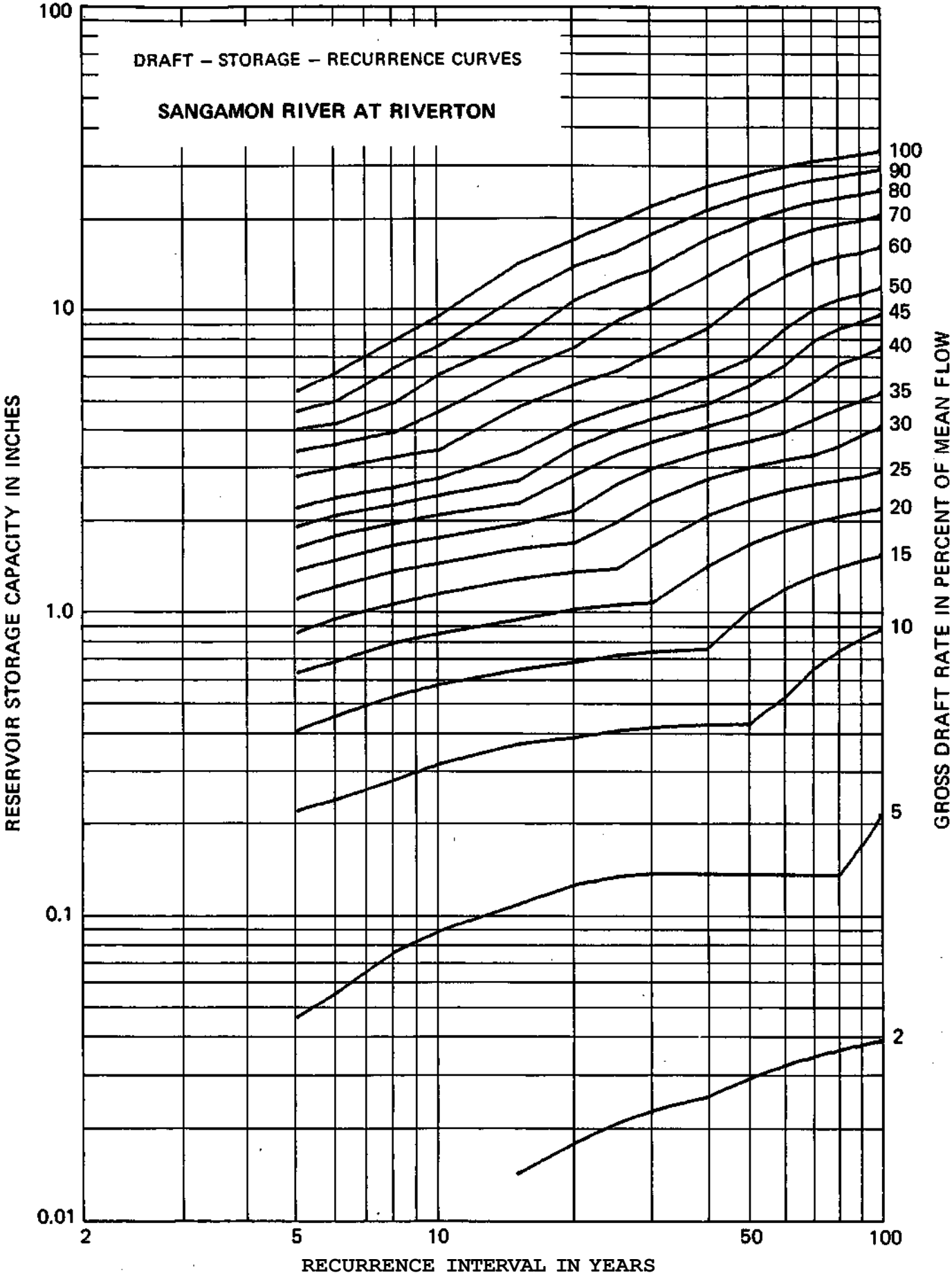
ACTUAL FLOW DATA: Mar 1908 to Dec 1913, Sep 1914 to Sep 1956

INDEX STATION: Sangamon River at Monticello

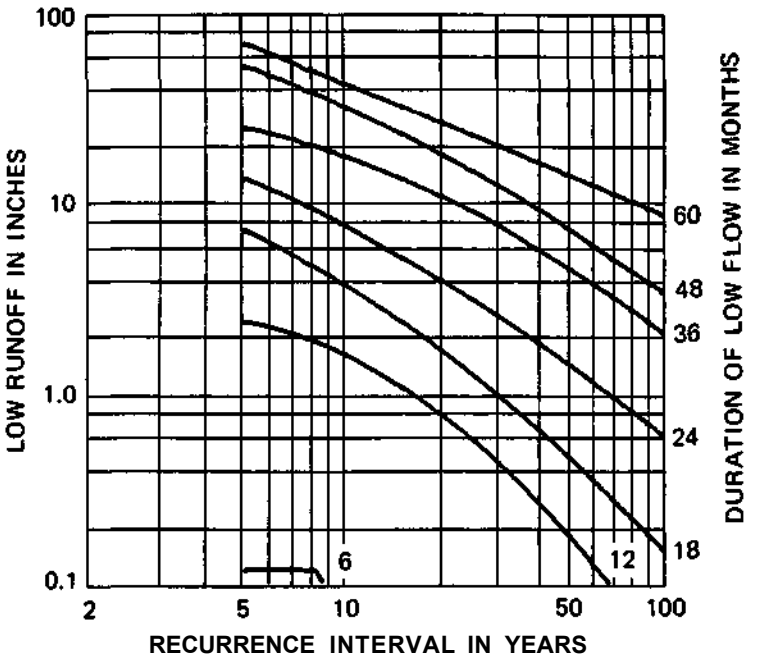
MEAN DISCHARGE: 0.73 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.05	.22	.40	.61	.83	1.07	1.33	1.58	1.86	2.15	2.73	3.31	3.89	4.47	5.24
	1	4	5	5	6	6	7	7	7	8	8	8	8	8	8	14
6	.01	.05	.23	.44	.67	.92	1.18	1.44	1.73	2.02	2.31	2.90	3.48	4.06	4.83	6.00
	1	4	5	6	7	7	7	8	8	8	8	8	8	9	16	16
8	.01	.07	.27	.51	.77	1.03	1.32	1.61	1.90	2.20	2.50	3.16	3.81	4.78	6.23	7.68
	1	5	6	7	7	8	8	8	8	8	9	9	9	16	20	20
10	.01	.09	.31	.56	.83	1.12	1.41	1.71	2.04	2.36	2.69	3.35	4.48	5.92	7.38	9.23
	2	5	7	7	8	8	8	9	9	9	9	9	18	20	20	28
15	.01	.11	.36	.63	.92	1.25	1.58	1.90	2.23	2.65	3.30	4.64	6.10	7.71	10.65	13.70
	2	6	7	8	9	9	9	9	9	18	18	20	20	28	42	42
20	.02	.12	.38	.67	1.00	1.32	1.65	2.11	2.76	3.42	4.07	5.51	7.28	10.34	13.39	16.44
	3	7	7	9	9	9	9	18	18	18	18	20	42	42	42	42
25	.02	.13	.40	.71	1.03	1.36	1.94	2.59	3.25	3.90	4.60	6.13	8.94	11.99	15.04	18.88
	3	7	8	9	9	9	18	18	18	18	20	30	42	42	42	56
30	.02	.13	.41	.73	1.05	1.62	2.27	2.93	3.58	4.26	4.99	6.99	10.05	13.15	17.22	21.29
	3	7	8	9	9	18	18	18	18	20	20	42	42	56	56	56
40	.03	.13	.42	.74	1.39	2.04	2.70	3.35	4.03	4.78	5.87	8.46	12.50	16.57	20.64	24.72
	3	7	8	9	18	18	18	18	20	30	30	54	56	56	56	56
50	.03	.13	.42	1.00	1.65	2.30	2.96	3.61	4.42	5.51	6.74	10.78	14.85	18.92	22.99	27.06
	4	7	8	18	18	18	18	20	30	30	54	56	56	56	56	56
60	.03	.13	.52	1.17	1.82	2.48	3.13	3.86	4.95	6.39	8.42	12.50	16.57	20.64	24.71	28.78
	4	7	18	18	18	18	18	30	30	54	56	56	56	56	56	56
70	.03	.13	.64	1.30	1.95	2.60	3.26	4.26	5.68	7.71	9.75	13.82	17.89	21.96	26.03	30.10
	4	7	18	18	18	18	20	30	56	56	56	56	56	56	56	56
80	.04	.13	.74	1.39	2.04	2.70	3.49	4.64	6.47	8.50	10.54	14.61	18.68	22.75	26.82	30.99
	4	7	18	18	18	18	30	32	56	56	56	56	56	56	56	58
90	.04	.17	.81	1.46	2.12	2.77	3.79	4.95	6.89	8.92	10.96	15.03	19.24	23.45	27.67	31.89
	4	16	18	18	18	18	32	32	56	56	56	56	58	58	58	58
100	.04	.21	.87	1.52	2.17	2.89	4.05	5.23	7.34	9.45	11.56	15.77	19.99	24.21	28.42	32.64
	4	16	18	18	18	32	32	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
SANGAMON RIVER AT RIVERTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55775 - SPRING CREEK NEAR SPRINGFIELD



LOCATION: In NW¼ NE¼ Sec 30, T16N, R5W, Sangamon County, at bridge on Illinois 125 about 1.9 miles west of intersection Jackson Street and Mac Arthur Blvd. in Springfield

DRAINAGE AREA: 107 square miles

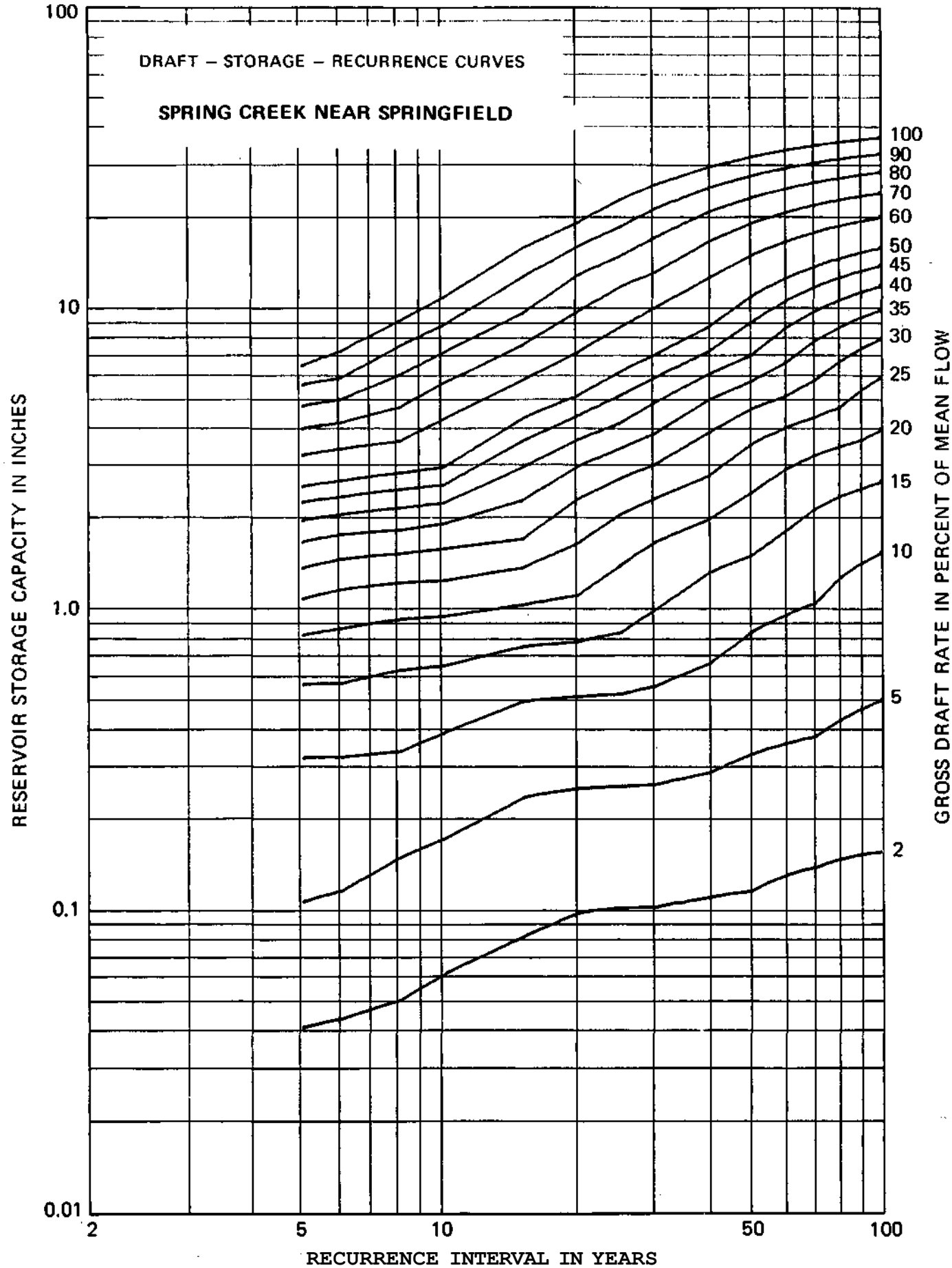
ACTUAL FLOW DATA: Jan to Sep 1948, Dec 1948 to Oct 1978

INDEX STATION: Sangamon River at Riverton

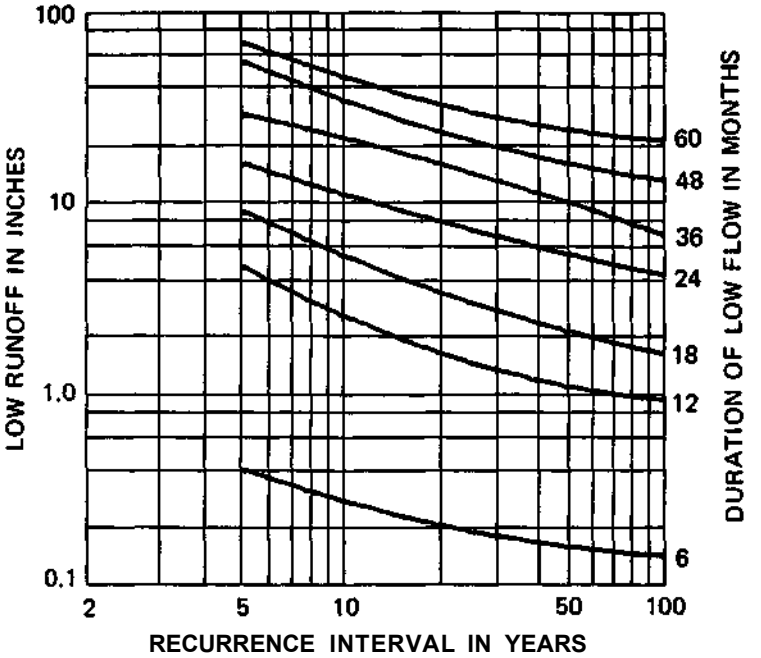
MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.10	.31	.54	.79	1.04	1.31	1.60	1.88	2.17	2.45	3.12	3.83	4.56	5.38	6.23
	3	3	6	7	7	7	8	8	8	8	8	10	10	11	12	12
6	.04	.11	.31	.55	.83	1.12	1.40	1.69	1.97	2.25	2.56	3.27	4.00	4.78	5.65	6.92
	3	4	6	8	8	8	8	8	8	8	10	10	11	11	16	18
8	.05	.14	.32	.60	.89	1.17	1.46	1.75	2.07	2.39	2.71	3.46	4.48	5.76	7.16	8.68
	4	5	5	8	8	8	8	9	9	9	10	11	18	18	20	28
10	.06	.17	.37	.62	.91	1.19	1.51	1.83	2.15	2.47	2.84	4.11	5.43	6.85	8.43	10.42
	5	5	7	8	8	9	9	9	9	9	11	18	20	20	28	28
15	.08	.23	.48	.73	1.00	1.32	1.64	2.20	2.84	3.48	4.14	5.56	7.24	9.23	12.16	15.14
	7	7	7	7	9	9	9	18	18	18	20	20	28	28	42	42
20	.10	.24	.49	.75	1.07	1.59	2.23	2.87	3.53	4.24	4.95	6.89	9.36	12.35	15.34	18.33
	7	7	7	9	9	18	18	18	20	20	20	28	42	42	42	42
25	.10	.25	.50	.81	1.35	1.99	2.63	3.31	4.02	4.96	5.96	8.34	11.32	14.31	17.79	21.91
	7	7	8	9	18	18	18	20	20	28	28	42	42	42	58	58
30	.10	.25	.54	.97	1.61	2.25	2.92	3.72	4.71	5.71	6.77	9.67	12.66	16.44	20.46	24.58
	7	8	8	18	18	18	20	28	28	28	30	42	42	56	58	58
40	.11	.28	.64	1.28	1.92	2.69	3.76	4.82	5.89	6.97	8.41	12.18	16.03	20.01	24.05	28.18
	8	8	18	18	18	30	30	30	30	32	42	54	56	56	58	58
50	.11	.32	.82	1.46	2.36	3.43	4.49	5.56	6.76	8.68	10.60	14.44	18.33	22.31	26.38	30.50
	8	10	18	18	30	30	30	30	54	54	54	54	56	56	58	58
60	.13	.35	.93	1.77	2.83	3.90	4.97	6.40	8.32	10.24	12.17	16.01	19.94	23.92	28.01	32.13
	10	11	18	30	30	30	30	54	54	54	54	54	56	56	58	58
70	.14	.37	1.02	2.09	3.15	4.22	5.62	7.54	9.46	11.38	13.30	17.14	21.12	25.11	29.22	33.34
	10	11	30	30	30	30	54	54	54	54	54	54	56	56	58	58
80	.14	.42	1.24	2.31	3.38	4.56	6.48	8.40	10.32	12.24	14.16	18.05	22.03	26.03	30.15	34.28
	11	18	30	30	30	54	54	54	54	54	54	56	56	58	58	58
90	.15	.46	1.39	2.45	3.57	5.23	7.15	9.07	10.99	12.91	14.84	18.76	22.74	26.77	30.90	35.03
	11	18	30	30	32	54	54	54	54	54	54	56	56	58	58	58
100	.15	.49	1.50	2.59	3.85	5.77	7.69	9.61	11.53	13.45	15.37	19.34	23.32	27.38	31.51	35.63
	11	18	30	32	54	54	54	54	54	54	54	56	56	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
SPRING CREEK NEAR SPRINGFIELD
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55785-SALT CREEK NEAR ROWELL



LOCATION: In NE¼ SE¼ Sec 11, T19N, R1E, De Witt County, at highway bridge 0.5 miles upstream from U. S. 54, 3.2 miles northwest of Rowell and 70 miles southwest of Clinton

DRAINAGE AREA: 335 square miles

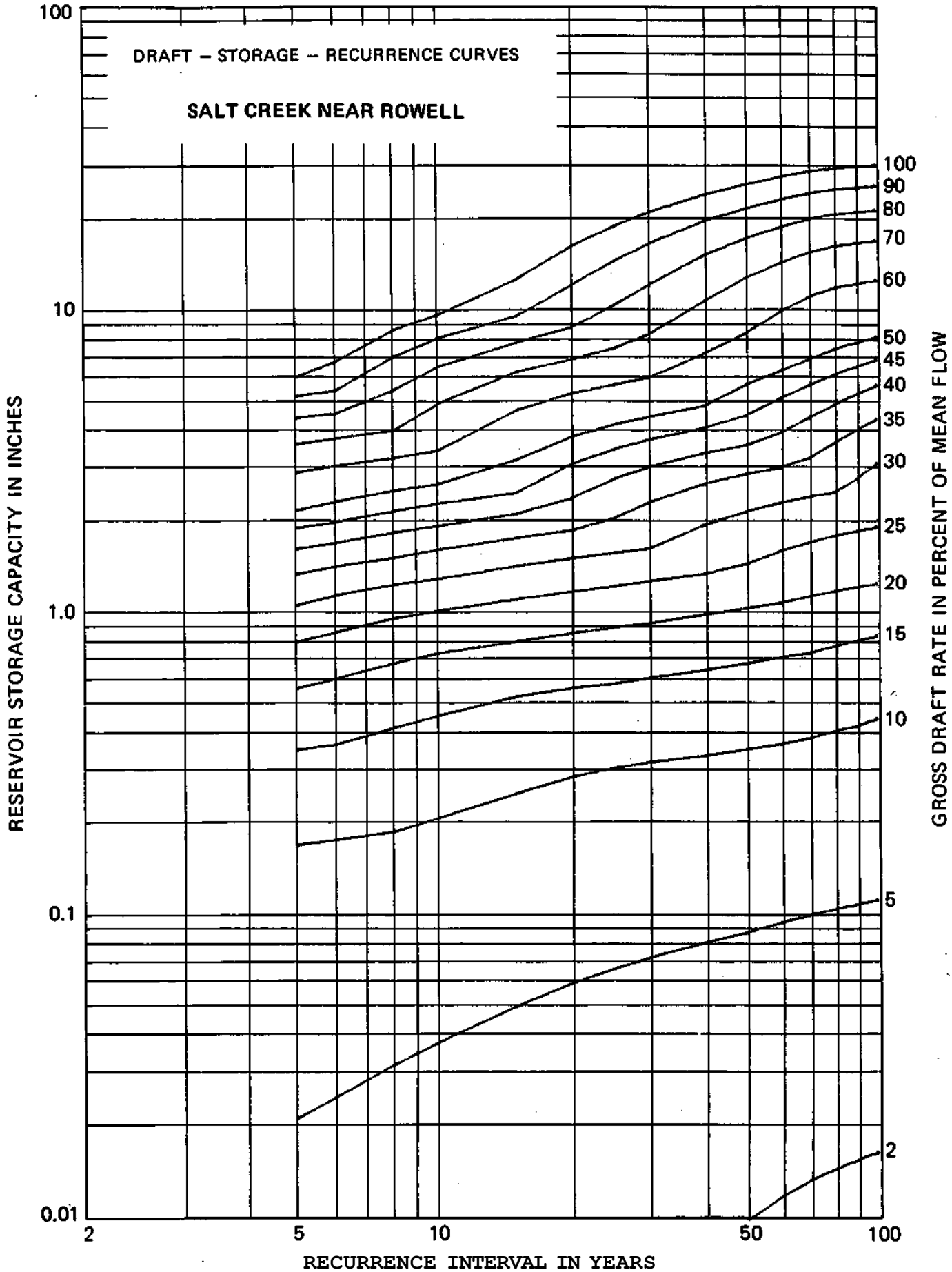
ACTUAL FLOW DATA: Oct 1942 to Oct 1978

INDEX STATION: Sangamon River at Monticello

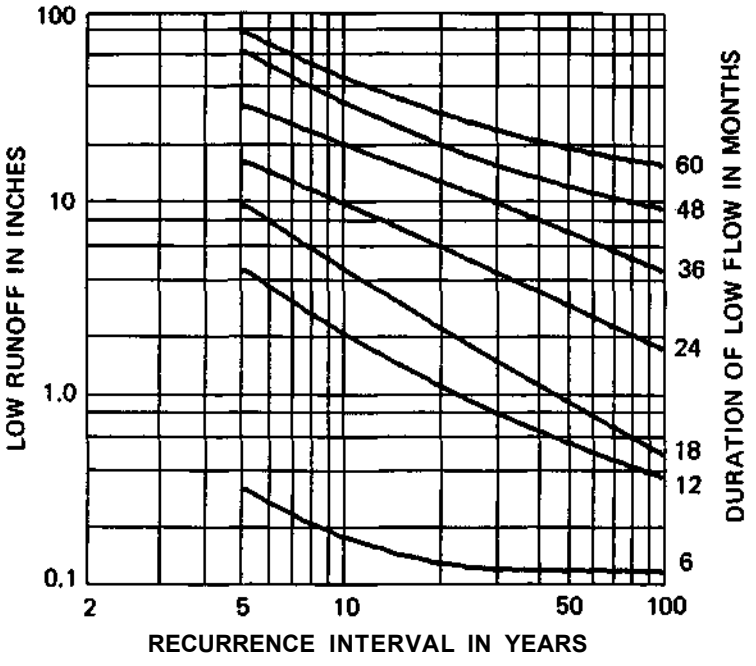
MEAN DISCHARGE: 0.79 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.17	.35	.56	.79	1.05	1.33	1.61	1.88	2.16	2.87	3.58	4.37	5.16	5.95
	3	2	4	5	6	6	7	7	7	7	7	9	9	10	10	10
6	.00	.02	.18	.36	.60	.86	1.13	1.41	1.69	1.97	2.31	3.02	3.73	4.51	5.38	6.71
	3	2	4	5	6	7	7	7	7	8	9	9	9	10	16	18
8	.00	.03	.19	.41	.67	.95	1.23	1.51	1.82	2.15	2.51	3.22	3.97	5.40	6.99	8.57
	4	3	5	6	7	7	7	7	8	9	9	9	16	20	20	20
10	.00	.04	.21	.45	.73	1.01	1.29	1.60	1.92	2.28	2.64	3.42	4.89	6.48	8.06	9.64
	5	3	6	7	7	7	8	8	9	9	9	18	20	20	20	20
15	.00	.05	.25	.53	.80	1.10	1.42	1.76	2.11	2.48	3.20	4.66	6.25	7.83	9.59	12.65
	1	4	6	7	7	8	8	9	9	18	18	20	20	20	30	42
20	.01	.06	.28	.56	.86	1.17	1.51	1.87	2.39	3.10	3.81	5.31	6.90	8.80	12.14	16.26
	1	4	7	7	8	8	9	9	18	18	18	20	20	30	52	52
25	.01	.07	.31	.58	.90	1.23	1.58	2.06	2.77	3.49	4.20	5.69	7.54	10.48	14.60	18.96
	1	4	7	7	8	9	9	18	18	18	18	20	30	52	52	56
30	.01	.07	.32	.61	.93	1.28	1.63	2.33	3.04	3.75	4.46	6.01	8.39	12.23	16.67	21.10
	1	4	7	8	8	9	9	18	18	18	18	30	30	56	56	56
40	.01	.08	.34	.65	.99	1.35	1.96	2.67	3.38	4.10	4.86	7.24	10.82	15.26	19.69	24.13
	1	4	7	8	9	9	18	18	18	18	30	30	56	56	56	56
50	.01	.09	.36	.68	1.04	1.46	2.18	2.89	3.60	4.52	5.71	8.47	12.90	17.34	21.77	26.21
	2	5	8	9	9	18	18	18	18	30	30	56	56	56	56	56
60	.01	.10	.37	.72	1.09	1.62	2.33	3.04	3.97	5.16	6.37	10.01	14.45	18.88	23.32	27.75
	2	5	8	9	10	18	18	18	30	30	32	56	56	56	56	56
70	.01	.10	.39	.75	1.15	1.73	2.44	3.28	4.47	5.71	6.98	11.22	15.65	20.09	24.52	28.96
	2	5	9	9	11	18	18	30	30	32	32	56	56	56	56	56
80	.01	.11	.41	.79	1.19	1.82	2.53	3.69	4.94	6.20	7.54	11.98	16.41	20.85	25.29	29.72
	2	5	9	10	11	18	18	30	32	32	56	56	56	56	56	56
90	.02	.11	.43	.82	1.23	1.89	2.81	4.08	5.34	6.61	7.93	12.37	16.80	21.24	25.68	30.11
	2	5	9	10	11	18	32	32	32	32	56	56	56	56	56	56
100	.02	.11	.45	.85	1.27	1.94	3.15	4.42	5.69	6.95	8.25	12.69	17.12	21.56	25.99	30.43
	2	5	10	10	11	18	32	32	32	32	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SALT CREEK NEAR ROWELL
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55795- LAKE FORK *NEAR* CORNLAISID



LOCATION: In SW¼ Sec 1, T17N, R3W, Logan County, at bridge on U. S. 54, 2.0 miles northeast of Cornland

DRAINAGE AREA: 214 square miles

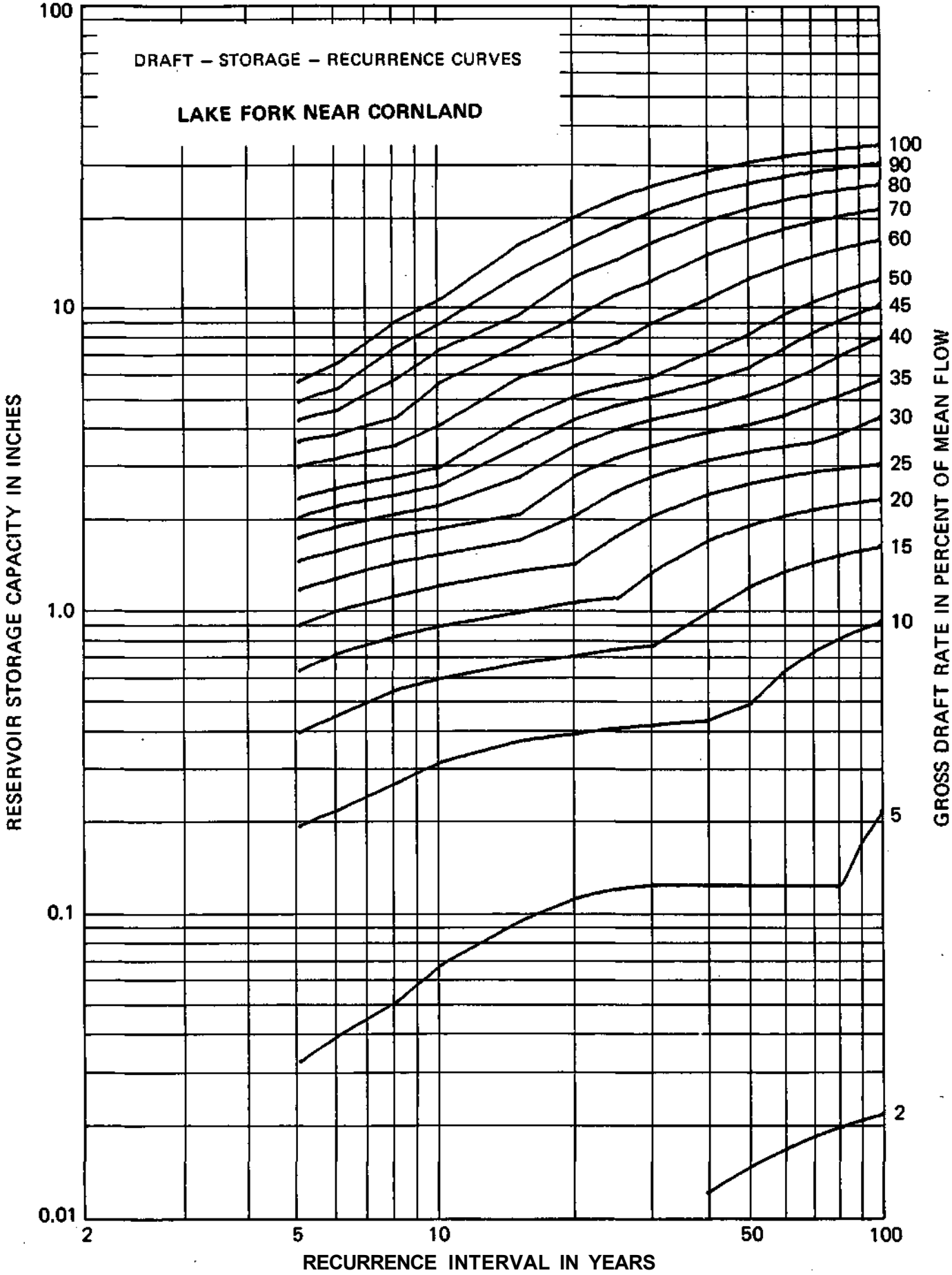
ACTUAL FLOW DATA: Jan 1948 to Oct 1978

INDEX STATION: Sangamon River at Riverton

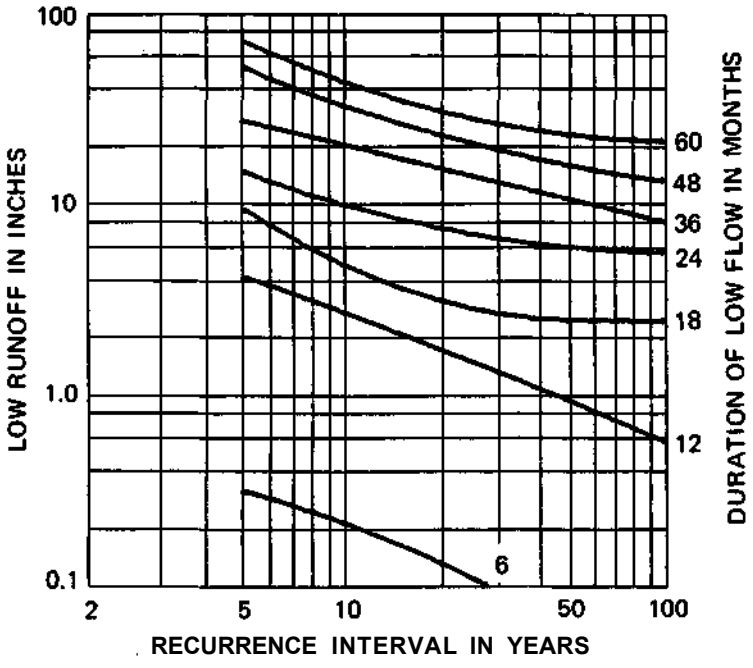
MEAN DISCHARGE: 0.74 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.03	.19	.39	.62	.88	1.15	1.43	1.70	1.98	2.29	2.92	3.54	4.17	4.79	5.56
	3	3	5	6	6	7	7	7	7	8	8	8	8	8	8	10
6	.00	.04	.22	.44	.71	.98	1.25	1.54	1.85	2.16	2.47	3.10	3.72	4.47	5.25	6.36
	3	3	5	6	7	7	7	8	8	8	8	8	8	10	10	18
8	.00	.05	.26	.53	.81	1.09	1.41	1.72	2.03	2.34	2.69	3.41	4.22	5.62	7.18	8.74
	1	5	6	7	7	8	8	8	8	8	9	10	18	18	20	20
10	.00	.07	.31	.58	.87	1.18	1.50	1.82	2.17	2.52	2.89	3.99	5.49	7.05	8.61	10.33
	1	5	7	7	8	8	8	9	9	9	10	18	20	20	20	30
15	.00	.09	.36	.66	.97	1.32	1.67	2.03	2.69	3.39	4.14	5.70	7.26	9.18	12.45	15.73
	1	6	7	8	8	9	9	10	18	18	20	20	20	42	42	42
20	.01	.11	.38	.70	1.05	1.40	2.01	2.72	3.42	4.19	4.97	6.52	8.98	12.25	15.52	19.34
	2	7	7	9	9	9	18	18	18	20	20	20	42	42	42	54
25	.01	.12	.40	.74	1.09	1.74	2.44	3.14	3.89	4.67	5.45	7.51	10.79	14.06	18.16	22.45
	2	7	8	9	9	18	18	18	20	20	20	42	42	42	54	56
30	.01	.12	.41	.76	1.32	2.03	2.73	3.43	4.21	4.99	5.77	8.71	11.98	16.06	20.32	24.68
	2	7	8	9	18	18	18	18	20	20	20	42	42	54	56	56
40	.01	.12	.43	.98	1.68	2.38	3.08	3.82	4.60	5.57	6.93	10.44	14.65	18.93	23.30	27.66
	3	7	9	18	18	18	18	20	20	30	42	54	54	56	56	56
50	.01	.12	.49	1.19	1.89	2.59	3.29	4.06	5.05	6.23	8.02	12.23	16.50	20.87	25.23	29.60
	3	7	18	18	18	18	18	20	30	32	54	54	56	56	56	56
60	.02	.12	.63	1.33	2.03	2.73	3.44	4.34	5.54	7.19	9.29	13.52	17.88	22.25	26.61	30.97
	3	7	18	18	18	18	20	30	32	54	54	56	56	56	56	56
70	.02	.12	.73	1.43	2.13	2.83	3.55	4.71	6.12	8.14	10.24	14.56	18.92	23.29	27.65	32.02
	3	7	18	18	18	18	20	32	44	54	54	56	56	56	56	56
80	.02	.12	.81	1.51	2.21	2.91	3.78	5.03	6.78	8.88	11.02	15.38	19.74	24.11	28.47	32.84
	3	7	18	18	18	18	32	32	54	54	56	56	56	56	56	56
90	.02	.17	.87	1.57	2.27	2.97	4.05	5.36	7.36	9.50	11.68	16.05	20.41	24.77	29.14	33.50
	3	16	18	18	18	18	32	34	54	56	56	56	56	56	56	56
100	.02	.21	.91	1.62	2.32	3.02	4.32	5.69	7.87	10.06	12.24	16.60	20.97	25.33	29.69	34.06
	3	16	18	18	18	32	34	56	56	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
LAKE FORK NEAR CORNLAND
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55800 - KICKAPOO CREEK AT WAYNESVILLE



LOCATION: On line between Sec 19 and 20, T21N, R1E, Dewitt County, at bridge 0.7 miles north of Waynesville and 5.5 miles east of Atlanta

DRAINAGE AREA: 227 square miles

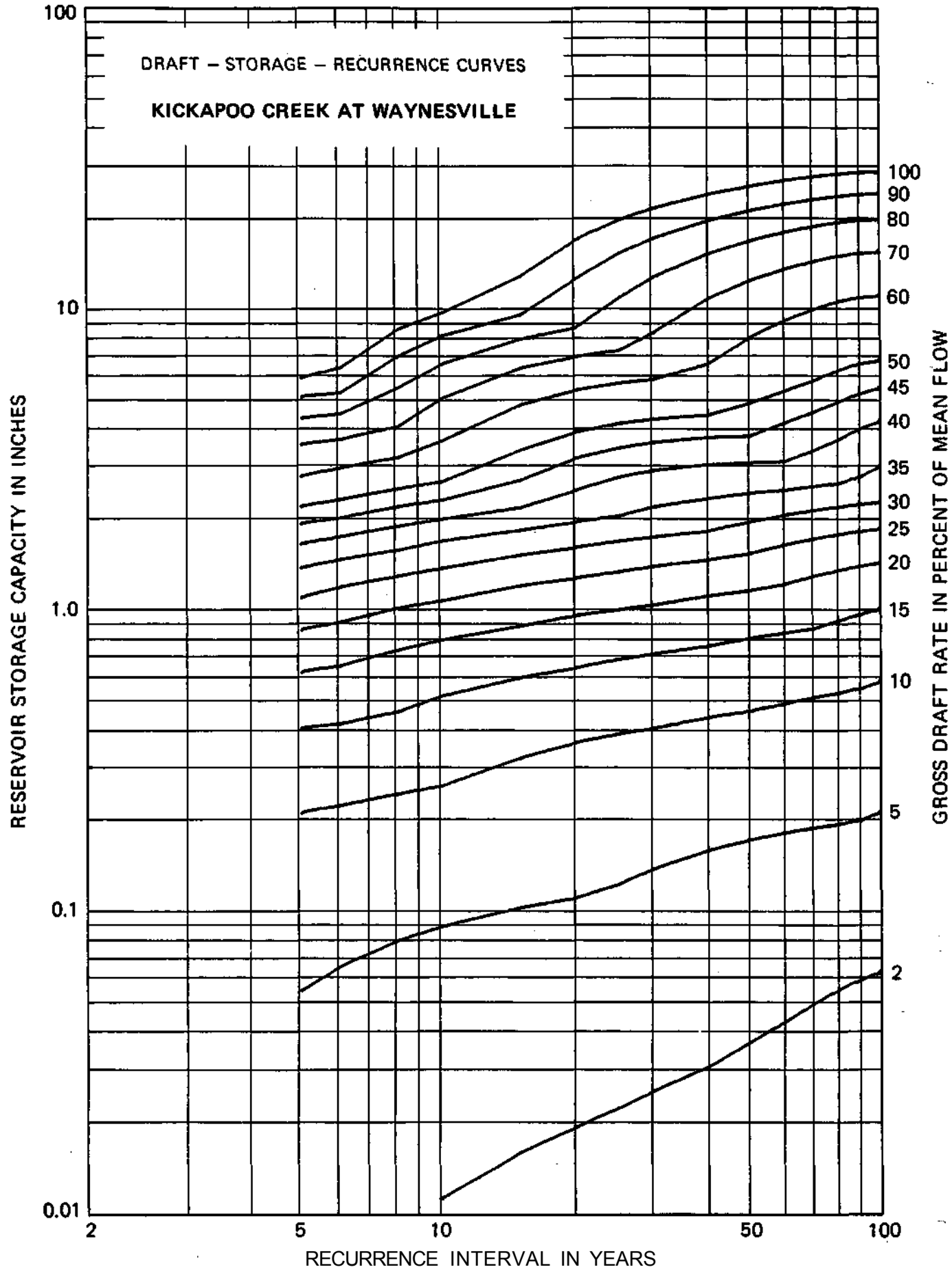
ACTUAL FLOW DATA: Jan 1948 to Oct 1978

INDEX STATION: Sangamon River at Monticello

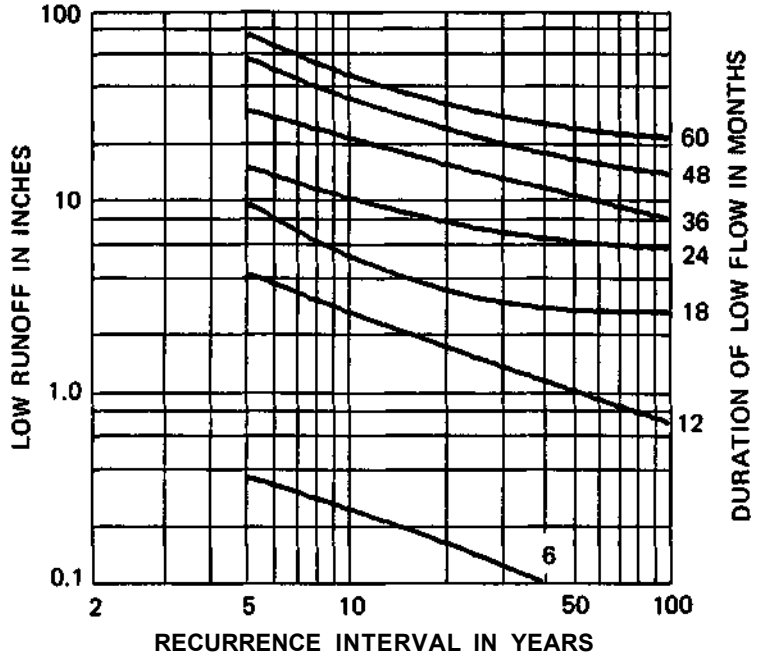
MEAN DISCHARGE: 0.75 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.05	.20	.39	.60	.82	1.05	1.31	1.57	1.84	2.10	2.65	3.39	4.14	4.89	5.64
	1	4	4	5	6	6	7	7	7	7	7	8	10	10	10	10
6	.01	.06	.21	.40	.62	.87	1.13	1.39	1.66	1.92	2.21	2.82	3.51	4.26	5.01	6.07
	1	4	4	5	6	7	7	7	7	7	8	9	10	10	10	18
8	.01	.08	.23	.44	.70	.97	1.23	1.50	1.80	2.10	2.40	3.06	3.87	5.22	6.65	8.16
	1	4	5	7	7	7	7	8	8	8	8	9	18	18	20	20
10	.01	.09	.25	.50	.76	1.02	1.31	1.61	1.91	2.21	2.54	3.49	4.84	6.29	7.79	9.29
	2	4	5	7	7	7	8	8	8	8	9	18	18	20	20	20
15	.02	.10	.31	.57	.85	1.15	1.45	1.75	2.09	2.58	3.26	4.61	6.10	7.61	9.18	12.35
	2	4	7	7	8	8	8	9	9	18	18	18	20	20	30	52
20	.02	.11	.35	.62	.92	1.22	1.54	1.88	2.39	3.07	3.74	5.16	6.67	8.31	12.09	16.24
	3	4	7	8	8	8	9	9	18	18	18	20	20	30	52	56
25	.02	.12	.37	.66	.96	1.28	1.62	1.97	2.65	3.32	4.00	5.46	6.98	10.42	14.63	18.84
	3	5	7	8	8	9	9	18	18	18	18	20	30	56	56	56
30	.02	.13	.39	.69	1.00	1.34	1.67	2.12	2.79	3.47	4.15	5.63	8.03	12.24	16.45	20.66
	4	6	7	8	9	9	9	18	18	18	18	20	56	56	56	56
40	.03	.15	.43	.73	1.07	1.41	1.76	2.26	2.94	3.62	4.29	6.34	10.43	14.64	18.85	23.06
	4	6	8	9	9	9	10	18	18	18	18	30	56	56	56	56
50	.04	.17	.45	.78	1.12	1.48	1.90	2.36	2.99	3.66	4.72	7.76	11.97	16.18	20.40	24.61
	5	6	8	9	9	11	11	16	18	18	30	56	56	56	56	56
60	.04	.18	.48	.81	1.17	1.59	2.00	2.42	3.02	4.05	5.18	8.85	13.06	17.27	21.48	25.69
	5	6	9	9	11	11	11	16	16	30	30	56	56	56	56	56
70	.05	.18	.50	.84	1.25	1.67	2.08	2.49	3.29	4.41	5.61	9.66	13.87	18.08	22.29	26.50
	6	6	9	10	11	11	11	11	30	30	32	56	56	56	56	56
80	.05	.19	.52	.90	1.31	1.72	2.14	2.55	3.58	4.78	6.08	10.29	14.50	18.71	22.93	27.14
	6	6	9	11	11	11	11	11	32	32	56	56	56	56	56	56
90	.06	.20	.54	.94	1.36	1.77	2.18	2.70	3.90	5.10	6.40	10.61	14.82	19.03	23.25	27.46
	6	9	10	11	11	11	11	32	32	32	56	56	56	56	56	56
100	.06	.21	.57	.98	1.39	1.81	2.22	2.92	4.13	5.33	6.56	10.78	14.99	19.20	23.41	27.62
	6	9	11	11	11	11	11	32	32	32	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
KICKAPOO CREEK AT WAYNESVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55805 - KICKAPOO CREEK NEAR LINCOLN



LOCATION: In NE¼ NW¼ Sec 18, T20N, R2W, Logan County, at highway bridge 3.0 miles north of Lincoln

DRAINAGE AREA: 306 square miles

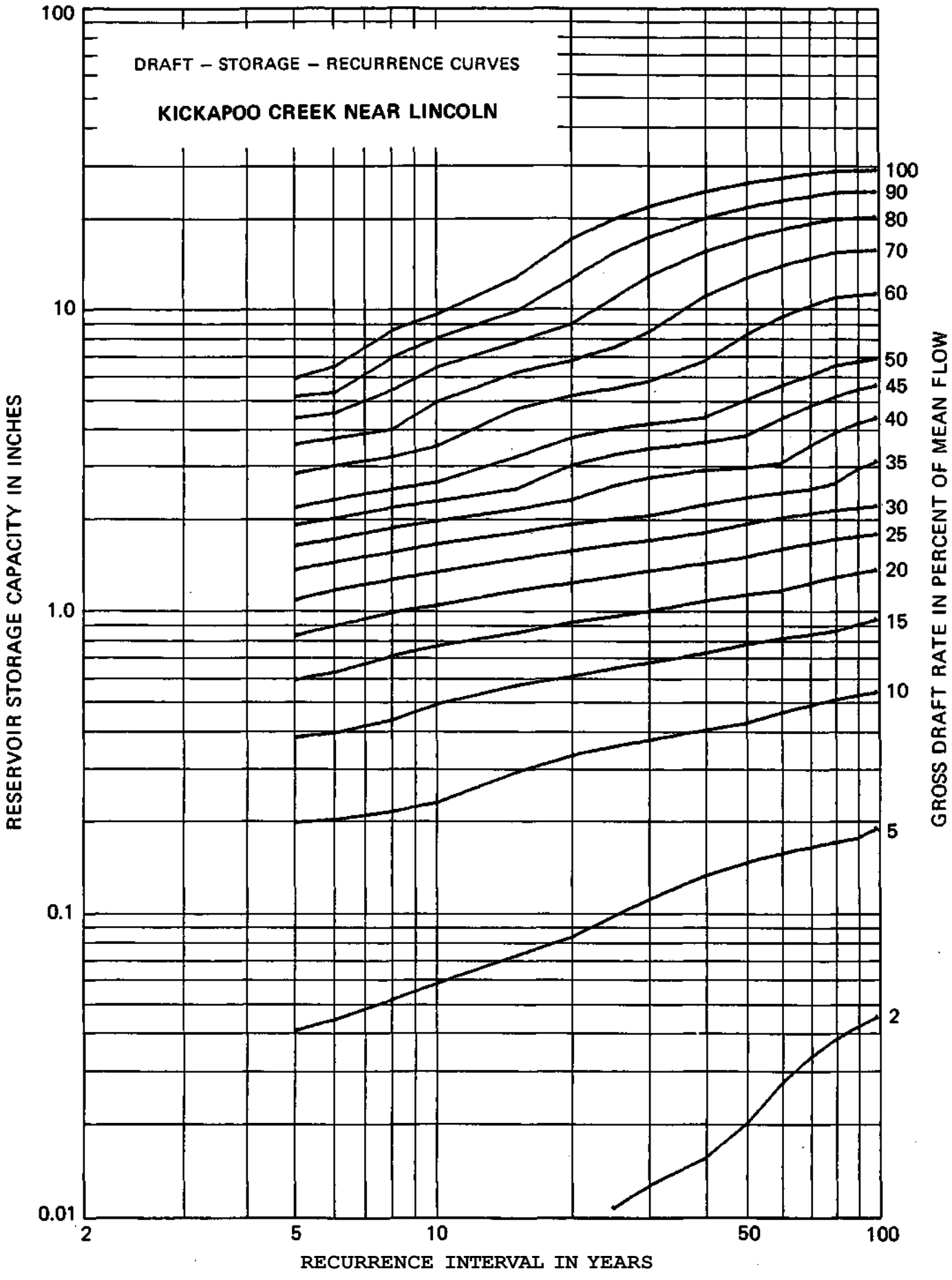
ACTUAL FLOW DATA: Oct 1944 to Oct 1978

INDEX STATION: Sangamon River at Monticello

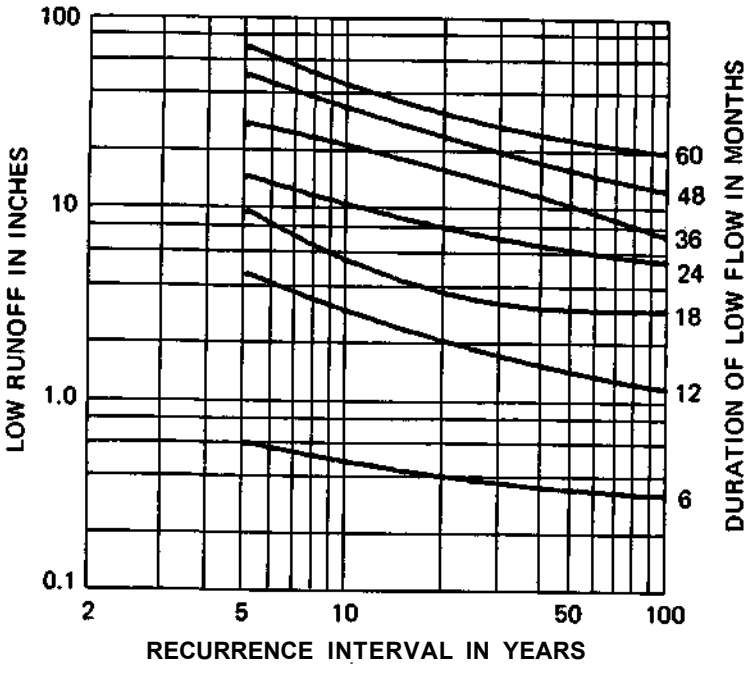
MEAN DISCHARGE: 0.77 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.04	.19	.37	.58	.81	1.06	1.33	1.60	1.87	2.13	2.77	3.46	4.22	4.98	5.75
	1	4	4	5	6	6	7	7	7	7	7	9	9	10	10	10
6	.00	.04	.20	.38	.61	.87	1.14	1.40	1.67	1.95	2.26	2.92	3.61	4.38	5.14	6.28
	1	4	4	5	6	7	7	7	7	8	8	9	9	10	10	16
8	.00	.05	.21	.42	.69	.96	1.23	1.51	1.82	2.13	2.44	3.13	3.86	5.25	6.73	8.26
	1	4	5	6	7	7	7	8	8	8	9	9	18	18	20	20
10	.00	.06	.23	.48	.75	1.02	1.31	1.61	1.92	2.24	2.58	3.42	4.80	6.26	7.80	9.33
	1	4	5	7	7	7	8	8	8	9	9	18	18	20	20	20
15	.01	.07	.29	.55	.83	1.14	1.44	1.76	2.10	2.46	3.15	4.54	6.01	7.54	9.55	12.33
	1	4	7	7	8	8	8	9	9	18	18	18	20	20	30	52
20	.01	.08	.32	.59	.90	1.21	1.53	1.88	2.27	2.96	3.65	5.04	6.58	8.66	12.17	16.47
	2	5	7	7	8	8	9	9	18	18	18	20	20	30	52	56
25	.01	.10	.35	.63	.94	1.27	1.61	1.96	2.54	3.23	3.92	5.34	7.29	10.60	14.90	19.21
	2	5	7	8	8	9	9	9	18	18	18	20	30	56	56	56
30	.01	.11	.37	.66	.98	1.33	1.67	2.02	2.70	3.39	4.08	5.66	8.21	12.51	16.81	21.12
	2	6	7	8	9	9	9	10	18	18	18	30	56	56	56	56
40	.02	.13	.39	.71	1.06	1.40	1.77	2.20	2.86	3.55	4.28	6.59	10.73	15.03	19.34	23.64
	2	6	8	9	9	9	11	11	18	18	30	32	56	56	56	56
50	.02	.14	.42	.76	1.11	1.48	1.90	2.32	2.93	3.74	4.91	8.04	12.35	16.65	20.95	25.25
	4	6	8	9	9	11	11	11	18	30	32	56	56	56	56	56
60	.03	.16	.45	.80	1.15	1.57	1.99	2.42	3.04	4.25	5.48	9.18	13.48	17.79	22.09	26.39
	5	6	9	9	11	11	11	11	30	32	32	56	56	56	56	56
70	.03	.16	.48	.83	1.22	1.64	2.06	2.49	3.47	4.70	5.93	10.03	14.33	18.64	22.94	27.24
	5	6	9	9	11	11	11	11	32	32	32	56	56	56	56	56
80	.04	.17	.50	.85	1.27	1.69	2.12	2.60	3.83	5.06	6.39	10.69	15.00	19.30	23.60	27.90
	5	6	9	9	11	11	11	32	32	32	56	56	56	56	56	56
90	.04	.17	.52	.89	1.32	1.74	2.16	2.90	4.13	5.36	6.61	10.92	15.22	19.52	23.83	28.13
	5	9	9	11	11	11	11	32	32	32	56	56	56	56	56	56
100	.05	.19	.53	.93	1.35	1.77	2.20	3.10	4.32	5.55	6.78	11.06	15.36	19.67	23.97	28.27
	5	9	9	11	11	11	11	32	32	32	32	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
KICKAPOO CREEK NEAR LINCOLN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55820 - SALT CREEK NEAR GREENVIEW



LOCATION: In NE¼ NE¼ Sec 2, T19N, R6W, Mason County, at bridge on Illinois 29, about 3.5 miles north of Greenview

DRAINAGE AREA: 1804 square miles

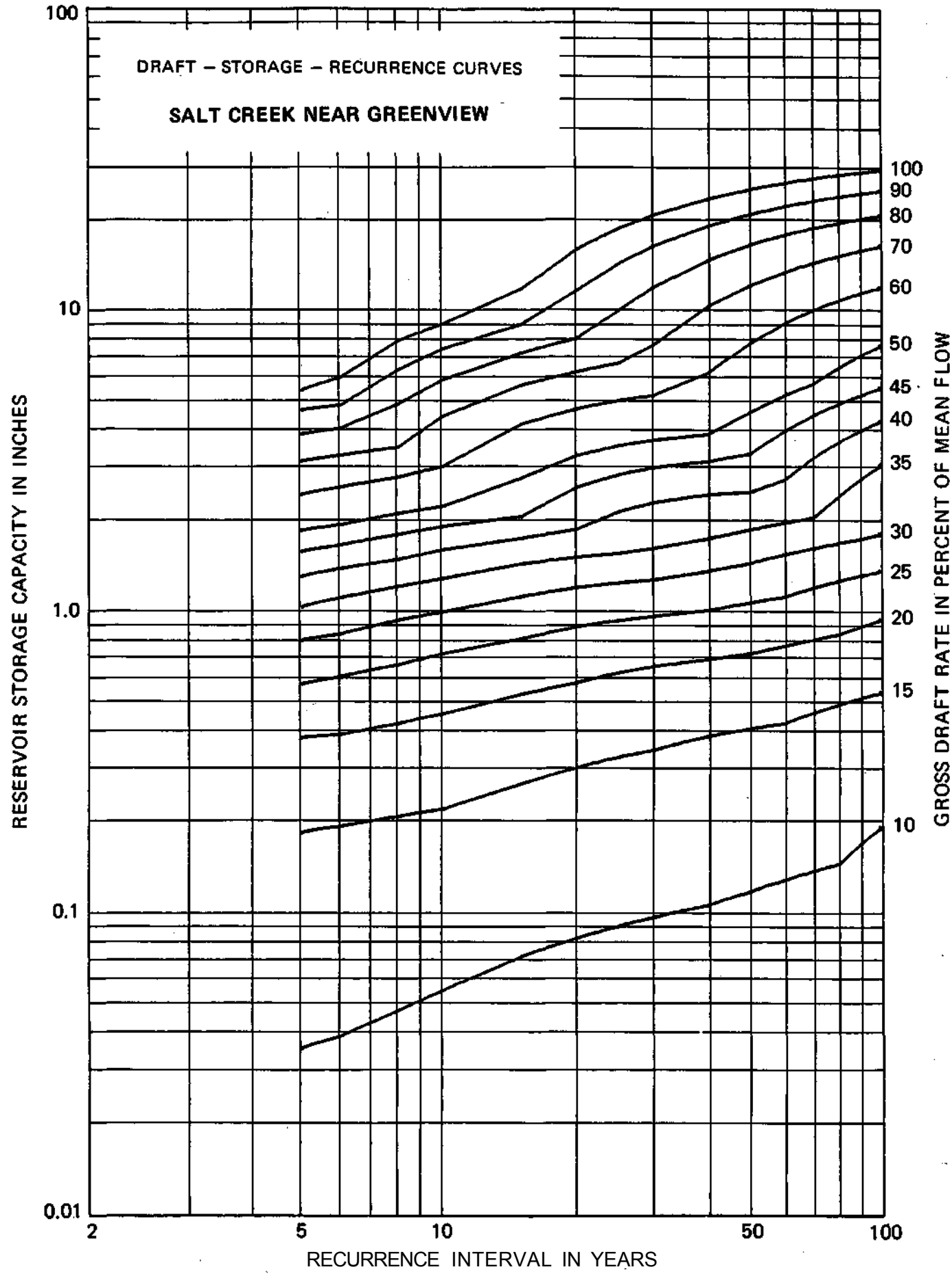
ACTUAL FLOW DATA: Oct 1941 to Oct 1978

INDEX STATION: Sangamon River at Riverton

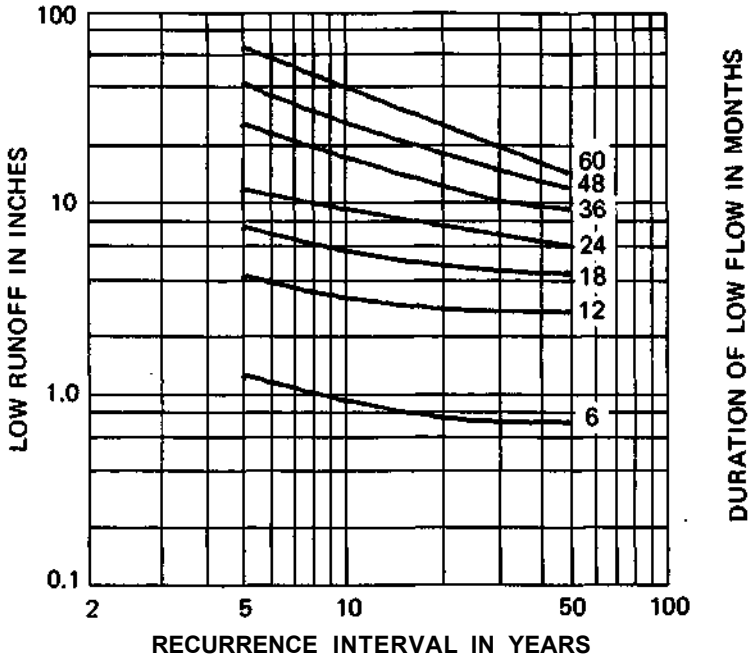
MEAN DISCHARGE: 0.74 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.03	.18	.36	.55	.77	1.00	1.26	1.52	1.78	2.34	3.01	3.70	4.45	5.20
	1	4	2	5	5	5	6	6	7	7	7	9	9	10	10	10
6	.00	.00	.04	.19	.37	.58	.81	1.07	1.33	1.59	1.86	2.48	3.15	3.86	4.61	5.73
	1	4	3	5	5	6	6	7	7	7	7	9	9	10	10	28
8	.00	.00	.05	.20	.41	.64	.90	1.16	1.42	1.72	2.02	2.66	3.35	4.66	6.07	7.57
	1	4	3	5	6	7	7	7	7	8	8	9	10	18	20	20
10	.00	.00	.05	.21	.44	.69	.96	1.23	1.53	1.83	2.13	2.89	4.24	5.62	7.12	8.62
	1	4	4	6	6	7	7	8	8	8	8	18	18	20	20	20
15	.00	.00	.07	.26	.51	.78	1.08	1.38	1.68	1.99	2.66	4.01	5.41	6.91	8.62	11.33
	1	4	4	6	7	8	8	8	8	18	18	18	20	20	30	52
20	.00	.00	.08	.29	.56	.86	1.16	1.46	1.80	2.48	3.15	4.51	6.01	7.74	11.19	15.27
	2	5	4	7	8	8	8	8	18	18	18	18	20	30	52	56
25	.00	.00	.09	.32	.60	.90	1.20	1.51	2.07	2.74	3.42	4.83	6.44	9.65	13.80	18.00
	2	5	4	7	8	8	8	9	18	18	18	20	30	52	56	56
30	.00	.00	.09	.33	.63	.93	1.24	1.57	2.22	2.90	3.57	5.03	7.41	11.55	15.75	19.95
	2	6	4	8	8	8	8	9	18	18	18	20	54	56	56	56
40	.00	.00	.10	.37	.67	.98	1.32	1.69	2.37	3.05	3.74	5.99	9.98	14.18	18.39	22.59
	2	6	4	8	8	9	9	18	18	18	20	32	56	56	56	56
50	.00	.00	.11	.39	.71	1.04	1.41	1.82	2.41	3.24	4.43	7.52	11.72	15.92	20.12	24.33
	4	6	5	8	9	9	11	11	18	30	32	56	56	56	56	56
60	.00	.00	.13	.41	.75	1.09	1.51	1.92	2.66	3.86	5.06	8.77	12.97	17.17	21.37	25.58
	5	6	5	9	9	11	11	11	32	32	32	56	56	56	56	56
70	.00	.00	.13	.45	.79	1.17	1.58	2.00	3.15	4.35	5.55	9.72	13.92	18.13	22.33	26.53
	5	6	5	9	9	11	11	11	32	32	32	56	56	56	56	56
80	.00	.00	.14	.48	.82	1.23	1.65	2.35	3.55	4.75	6.27	10.48	14.68	18.88	23.09	27.29
	5	6	5	9	11	11	11	32	32	32	56	56	56	56	56	56
90	.00	.00	.17	.50	.87	1.29	1.70	2.68	3.88	5.08	6.89	11.10	15.30	19.50	23.70	27.91
	5	9	9	9	11	11	11	32	32	32	56	56	56	56	56	56
100	.00	.00	.19	.53	.92	1.33	1.77	2.97	4.17	5.37	7.41	11.61	15.82	20.02	24.22	28.43
	5	9	9	9	11	11	32	32	32	32	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SALT CREEK NEAR GREENVIEW
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10

55825 - CRANE CREEK NEAR EASTON



LOCATION: In NE¼ NW¼ Sec 26, T21N, R7W, Mason County, at highway bridge 1.2 miles northwest of Easton

DRAINAGE AREA: 26.5 square miles

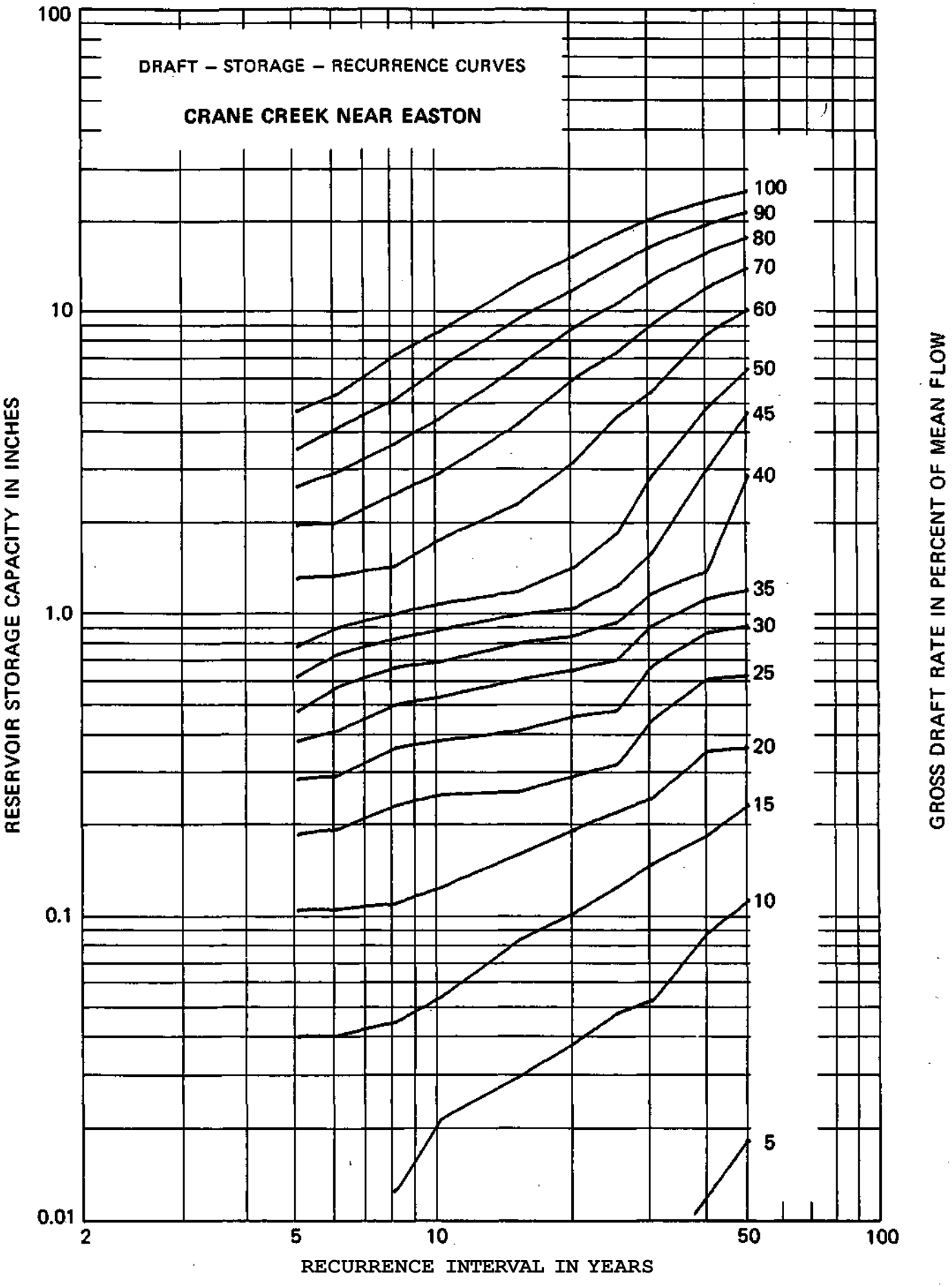
ACTUAL FLOW DATA: Oct 1949 to Oct 1978

INDEX STATION: None

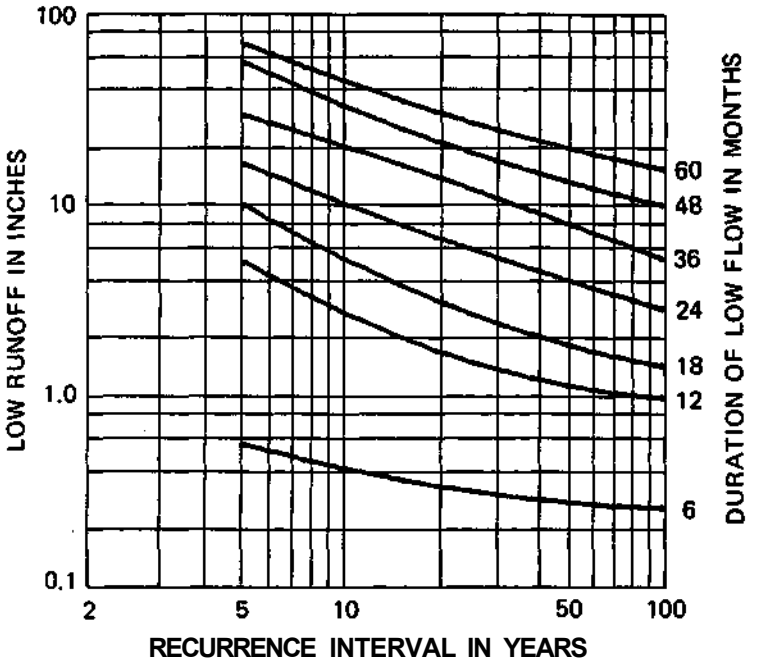
MEAN DISCHARGE: 0.64 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.04	.10	.19	.28	.38	.48	.62	.78	1.31	1.95	2.62	3.49	4.65
	1	4	5	2	2	3	3	3	3	5	5	10	10	11	18	18
6	.00	.00	.00	.04	.10	.19	.29	.41	.57	.73	.89	1.32	1.98	2.92	4.07	5.27
	1	4	5	2	2	3	3	5	5	5	5	8	11	18	18	22
8	.00	.00	.01	.04	.11	.23	.36	.50	.66	.82	.99	1.42	2.48	3.63	5.08	7.14
	2	4	1	1	3	4	4	5	5	5	6	12	18	18	30	32
10	.00	.00	.02	.05	.12	.25	.38	.53	.69	.88	1.07	1.74	2.90	4.42	6.47	8.53
	2	4	1	1	3	4	4	5	5	6	6	18	18	32	32	32
15	.00	.00	.03	.08	.16	.26	.41	.60	.79	.99	1.18	2.31	4.26	6.59	9.43	12.31
	3	5	1	2	3	3	6	6	6	6	6	18	32	44	44	46
20	.00	.00	.04	.10	.19	.29	.46	.65	.84	1.04	1.42	3.20	6.01	8.84	11.79	15.16
	3	6	2	2	3	3	6	6	6	10	18	32	44	44	46	56
25	.00	.00	.05	.13	.22	.32	.48	.70	.94	1.24	1.85	4.51	7.33	10.62	14.22	18.07
	3	7	2	3	3	3	6	7	8	10	30	42	44	56	56	60
30	.00	.00	.05	.15	.25	.45	.68	.91	1.17	1.59	2.88	5.47	9.07	12.67	16.41	20.27
	4	7	2	3	3	7	7	8	8	40	40	56	56	56	60	60
40	.00	.00	.09	.19	.36	.61	.87	1.13	1.39	3.03	4.83	8.43	12.03	15.64	19.38	23.25
	4	7	3	3	8	8	8	8	8	56	56	56	56	56	60	60
50	.00	.02	.12	.24	.36	.63	.92	1.21	2.91	4.71	6.54	10.27	14.00	17.73	21.46	25.20
	4	3	3	4	4	9	9	9	56	56	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
CRANE CREEK NEAR EASTON
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

55830 - SANGAMON RIVER NEAR OAKFORD



LOCATION: In NW¼ SE¼ Sec 3, T19N, R8W, Mason County, on right bank at downstream of bridge on Illinois 97, about 2 miles northwest of Petersburg and 1.8 miles northwest of Oakford

DRAINAGE AREA: 5093 square miles

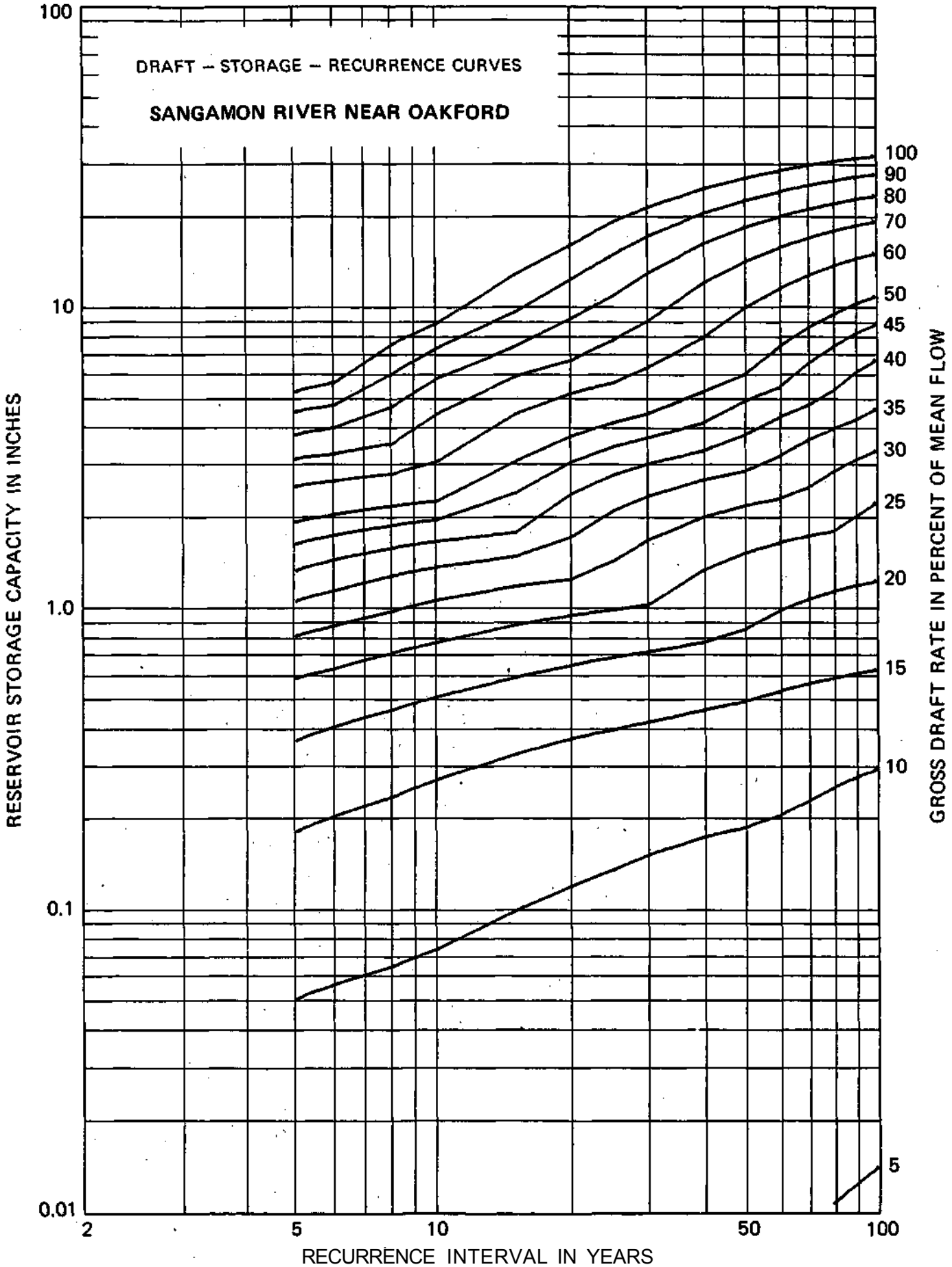
ACTUAL FLOW DATA: 1910-11; 1915-18; 1922; 1929-33; Oct 1939 to Oct 1978

INDEX STATION: Sangamon River at Riverton

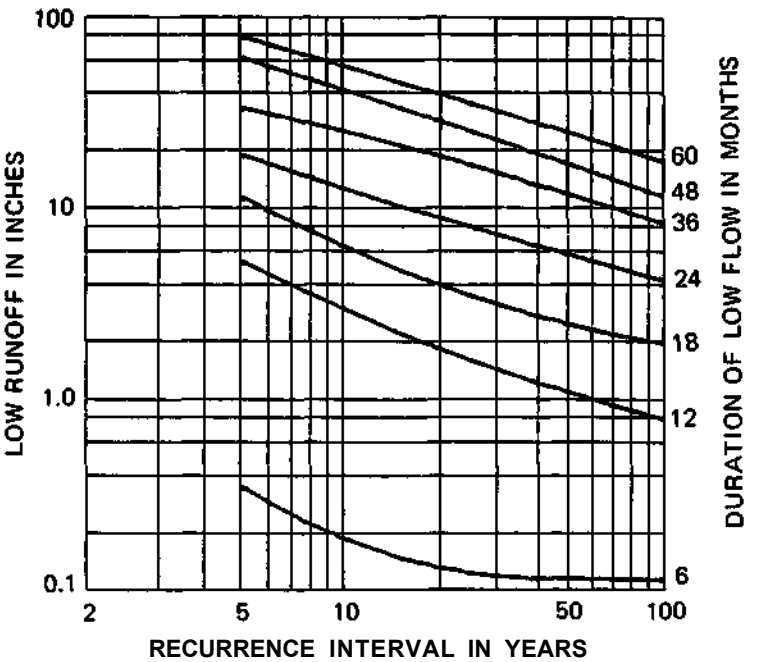
MEAN DISCHARGE: 0.70 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.05	.18	.36	.58	.80	1.04	1.31	1.60	1.90	2.49	3.08	3.70	4.42	5.16
	1	4	3	4	5	6	6	7	8	8	8	8	8	9	10	10
6	.00	.00	.06	.20	.40	.62	.86	1.12	1.41	1.71	2.00	2.59	3.19	3.91	4.64	5.51
	1	4	3	5	6	6	7	8	8	8	8	8	9	10	10	16
8	.00	.00	.06	.23	.45	.70	.96	1.25	1.55	1.84	2.14	2.74	3.46	4.60	5.92	7.39
	1	4	3	5	6	7	8	8	8	8	8	9	10	18	18	20
10	.00	.00	.07	.27	.50	.76	1.04	1.34	1.63	1.93	2.22	3.02	4.34	5.70	7.17	8.64
	1	4	4	6	7	7	8	8	8	8	8	18	18	20	20	20
15	.00	.00	.10	.32	.58	.87	1.16	1.46	1.75	2.37	3.04	4.36	5.81	7.29	9.47	12.57
	1	4	5	7	7	8	8	8	9	18	18	18	20	20	42	42
20	.00	.00	.12	.37	.64	.93	1.23	1.69	2.36	3.02	3.68	5.11	6.58	9.01	12.11	15.67
	2	5	6	7	8	8	8	18	18	18	18	20	20	42	42	56
25	.00	.00	.13	.39	.68	.97	1.41	2.07	2.74	3.40	4.09	5.56	7.66	10.74	14.62	18.74
	2	5	6	7	8	8	18	18	18	18	20	20	30	42	56	56
30	.00	.00	.15	.42	.71	1.01	1.67	2.33	2.99	3.66	4.39	6.27	8.89	12.76	16.88	21.00
	2	1	7	8	8	9	18	18	18	20	20	30	42	56	56	56
40	.00	.00	.17	.46	.76	1.32	1.98	2.64	3.31	4.09	5.20	7.79	11.79	15.91	20.03	24.16
	2	1	7	8	9	18	18	18	18	30	30	54	56	56	56	56
50	.00	.01	.19	.49	.85	1.51	2.17	2.83	3.74	4.85	5.96	9.82	13.92	18.04	22.17	26.29
	4	1	8	9	18	18	18	18	30	30	32	54	56	56	56	56
60	.00	.01	.20	.53	.97	1.64	2.30	3.19	4.29	5.41	7.33	11.36	15.48	19.61	23.73	27.85
	5	2	8	9	18	18	18	30	30	32	54	56	56	56	56	56
70	.00	.01	.23	.56	1.06	1.73	2.50	3.61	4.71	6.49	8.48	12.56	16.69	20.81	24.94	29.06
	5	2	9	9	18	18	30	30	30	54	54	56	56	56	56	56
80	.00	.01	.25	.59	1.13	1.79	2.84	3.94	5.28	7.34	9.40	13.53	17.65	21.78	25.90	30.02
	5	2	9	9	18	18	30	30	56	56	56	56	56	56	56	56
90	.00	.01	.28	.61	1.18	2.01	3.11	4.23	6.07	8.13	10.20	14.32	18.44	22.57	26.69	30.82
	5	2	9	9	18	30	30	32	56	56	56	56	56	56	56	56
100	.00	.01	.29	.62	1.22	2.23	3.33	4.58	6.64	8.70	10.77	14.89	19.01	23.14	27.26	31.39
	5	2	9	9	18	30	30	56	56	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SANGAMON RIVER NEAR OAKFORD
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

55900 - KASKASKIA DITCH AT BONDVILLE



LOCATION: In NW¼ NW¼ Sec 18, T19N, R8E, Champaign County, at bridge on Illinois 10, 1.0 miles east of Bondville and 3.8 miles west of Champaign

DRAINAGE AREA: 12.4 square miles

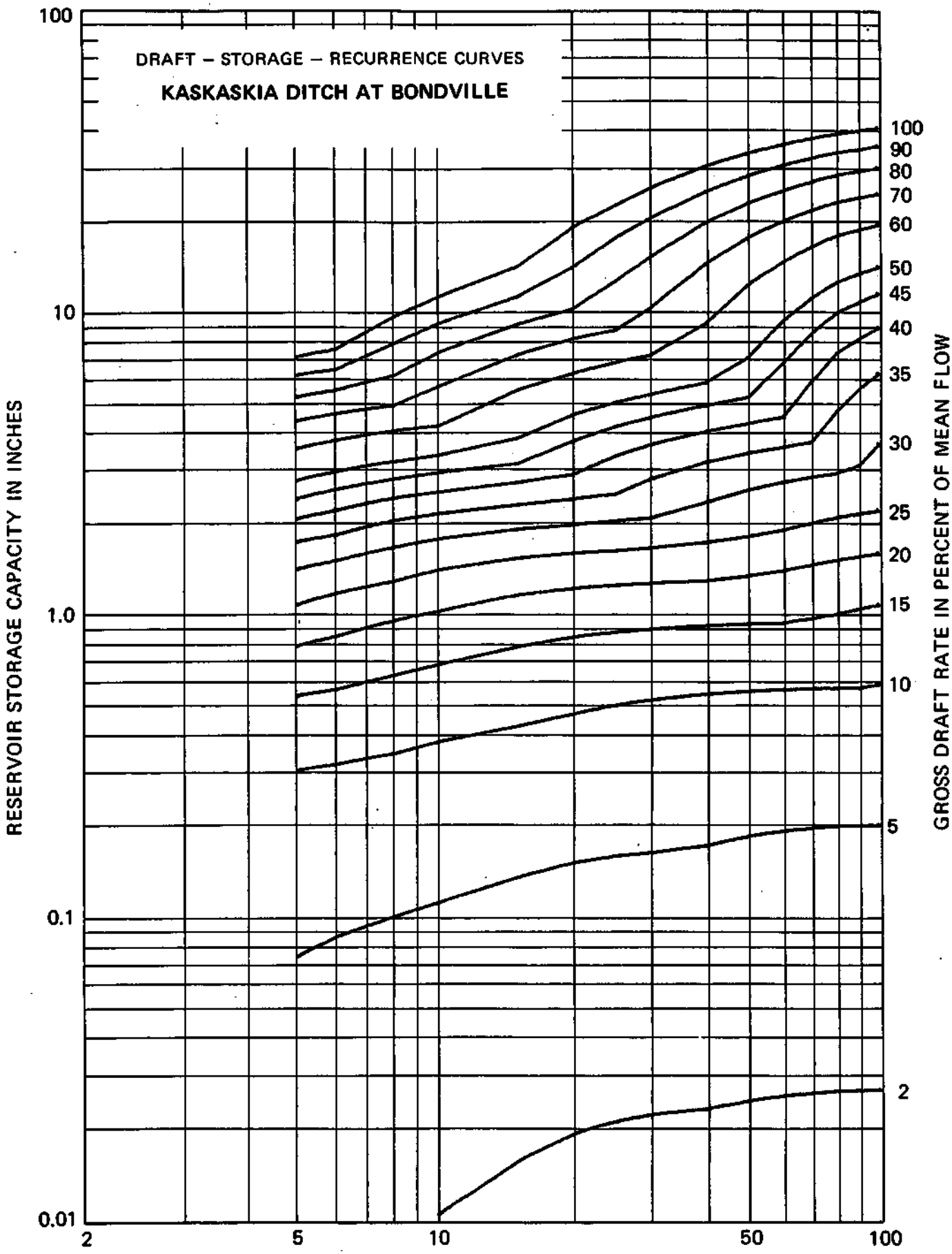
ACTUAL FLOW DATA: Dec 1948 to Oct 1978

INDEX STATION: Sangamon River at Monticello

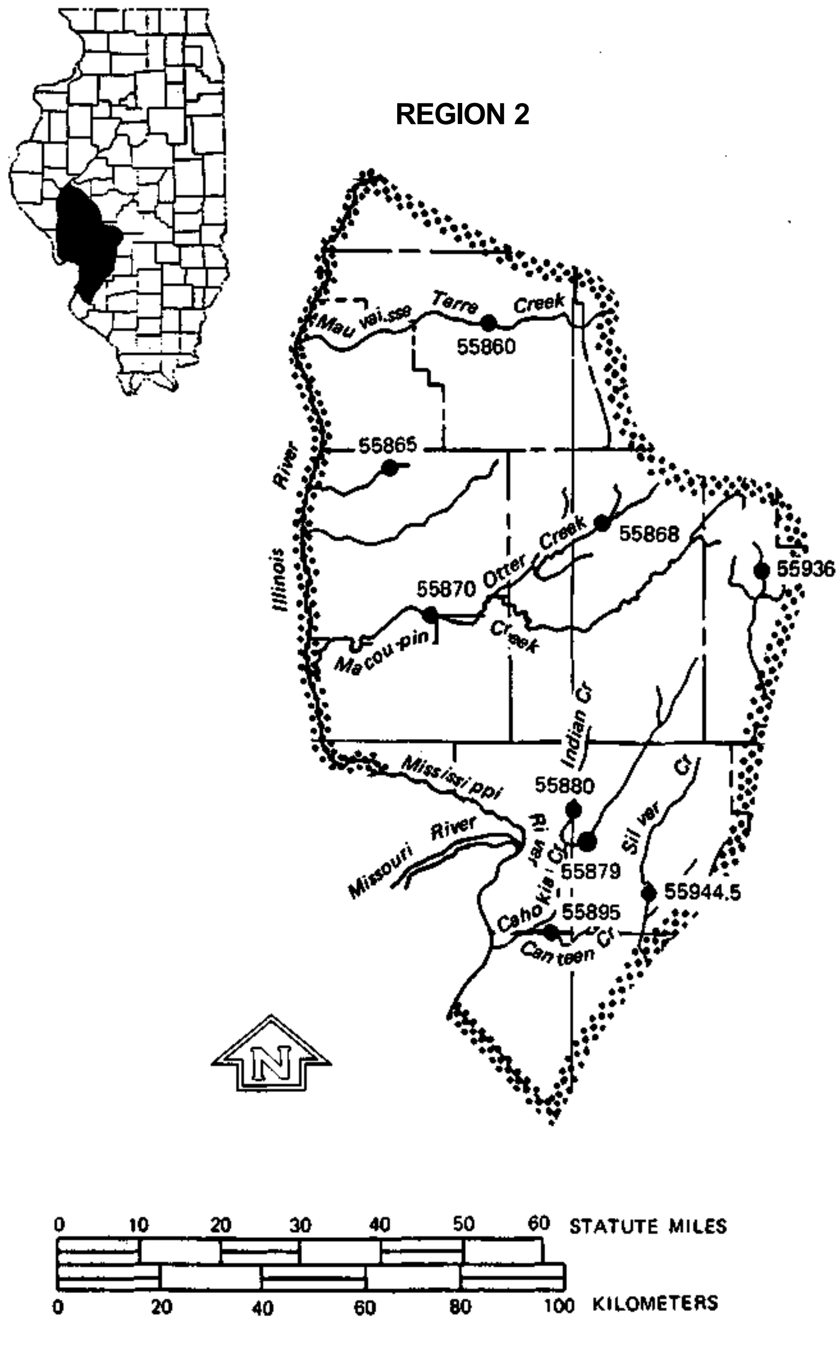
MEAN DISCHARGE: 0.92 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.07	.30	.53	.77	1.05	1.37	1.69	2.01	2.33	2.69	3.43	4.25	5.09	6.01	6.93
	1	4	5	5	6	7	7	7	7	7	8	9	9	10	10	10
6	.01	.08	.31	.55	.82	1.14	1.46	1.79	2.15	2.51	2.88	3.66	4.49	5.35	6.27	7.32
	1	4	5	6	6	7	7	7	8	8	8	9	9	10	10	16
8	.01	.10	.34	.61	.93	1.26	1.62	1.99	2.36	2.72	3.11	3.94	4.78	6.00	7.65	9.41
	1	4	6	6	7	8	8	8	8	8	9	9	10	18	18	20
10	.01	.11	.37	.67	1.00	1.37	1.73	2.10	2.47	2.86	3.27	4.10	5.52	7.17	8.92	10.95
	2	5	6	7	8	8	8	8	8	9	9	9	18	18	20	30
15	.02	.13	.42	.76	1.13	1.50	1.86	2.24	2.65	3.07	3.73	5.38	7.04	8.88	10.96	13.78
	3	6	7	8	8	8	8	9	9	9	18	18	20	20	30	32
20	.02	.15	.46	.82	1.19	1.56	1.93	2.35	2.82	3.65	4.47	6.12	7.96	9.99	13.71	18.47
	3	6	8	8	8	8	9	9	18	18	18	18	20	30	52	52
25	.02	.16	.49	.86	1.22	1.59	2.00	2.44	3.27	4.09	4.92	6.68	8.52	12.37	17.13	21.94
	3	6	8	8	8	8	9	18	18	18	18	20	20	52	52	56
30	.02	.16	.51	.88	1.24	1.63	2.04	2.74	3.57	4.39	5.23	7.07	10.12	14.89	19.90	25.04
	3	6	8	8	8	9	10	18	18	18	20	20	52	52	56	56
40	.02	.17	.53	.90	1.27	1.70	2.30	3.12	3.95	4.81	5.73	8.98	14.08	19.21	24.35	29.48
	3	7	8	8	9	10	18	18	18	20	20	54	56	56	56	56
50	.02	.18	.55	.91	1.32	1.78	2.53	3.36	4.21	5.13	6.96	12.02	17.16	22.29	27.43	32.56
	4	8	8	8	10	11	18	18	20	20	54	56	56	56	56	56
60	.03	.19	.56	.92	1.37	1.87	2.69	3.51	4.42	6.65	9.17	14.30	19.44	24.57	29.71	34.84
	4	8	8	8	10	11	18	18	20	54	56	56	56	56	56	56
70	.03	.19	.56	.96	1.44	1.97	2.80	3.66	5.79	8.36	10.93	16.06	21.20	26.33	31.47	36.60
	4	8	8	10	11	18	18	20	56	56	56	56	56	56	56	56
80	.03	.20	.56	.99	1.49	2.06	2.88	4.64	7.21	9.77	12.34	17.48	22.61	27.75	32.88	38.02
	4	8	8	10	11	18	18	56	56	56	56	56	56	56	56	56
90	.03	.20	.56	1.03	1.53	2.12	3.07	5.48	8.05	10.61	13.18	18.32	23.45	28.59	33.72	38.95
	4	8	8	11	11	18	30	56	56	56	56	56	56	56	56	58
100	.03	.20	.58	1.07	1.57	2.18	3.61	6.18	8.74	11.31	13.88	19.01	24.15	29.31	34.63	39.95
	4	8	10	11	11	18	56	56	56	56	56	56	56	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KASKASKIA DITCH AT BONDVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

REGION 2

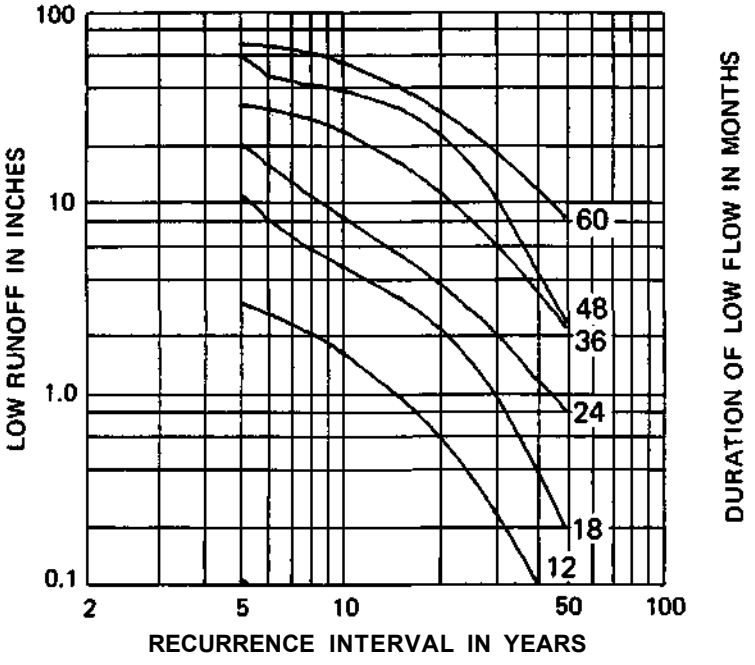


Mauvaisse Terre Creek
55860
55865
Illinois River
55868
Otter Creek
55870
55936
Macoupin Creek
Indian Cr
Mississippi
55880
Missouri River
River
Cahokia Cr
55879
Silver Cr
55944.5
55895
Canteen Cr
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

USGS Gage No.	Name of Station	Drainage Area (sq mi)
55860	North Fork Mauvaise Terre Creek, near Jacksonville	21.9
55865	Hurricane Creek near Roodhouse	2.3
55868	Otter Creek near Palmyra	61.1
55870	Macoupin Creek near Kane	868
55879	Cahokia Creek at Edwardsville	212
55880	Indian Creek at Wanda	36.7
55895	Canteen Creek at Caseyville	22.6
55936	Bluegrass Creek near Raymond	17.3
55944.5	Silver Creek near Troy	154

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
55860	55870	1950-1975	25	1940-1978	38	.85
55865	55870	1950-1975	25	1940-1978	38	.79
55868	55870	1959-1978	19	1940-1978	38	.74
55870	-	1940-1978	38	-	-	.65
55879	55880	1969-1978	9	1940-1978	38	.77
55880	-	1940-1978	38	-	-	.77
55895	-	1939-1978	39	-	-	.85
55936	55870	1960-1978	18	1940-1978	38	.76
55944.5	55895	1967-1978	11	1939-1978	39	.91

55860 - NORTH FORK, MAUVAISE TERRE CREEK NEAR JACKSONVILLE



LOCATION: In SE¼ NW¼ Sec 8, T15N, R9W, Morgan County, at bridge 2.5 miles north of Arnold and 6.0 miles east of Jacksonville

DRAINAGE AREA: 21.9 square miles

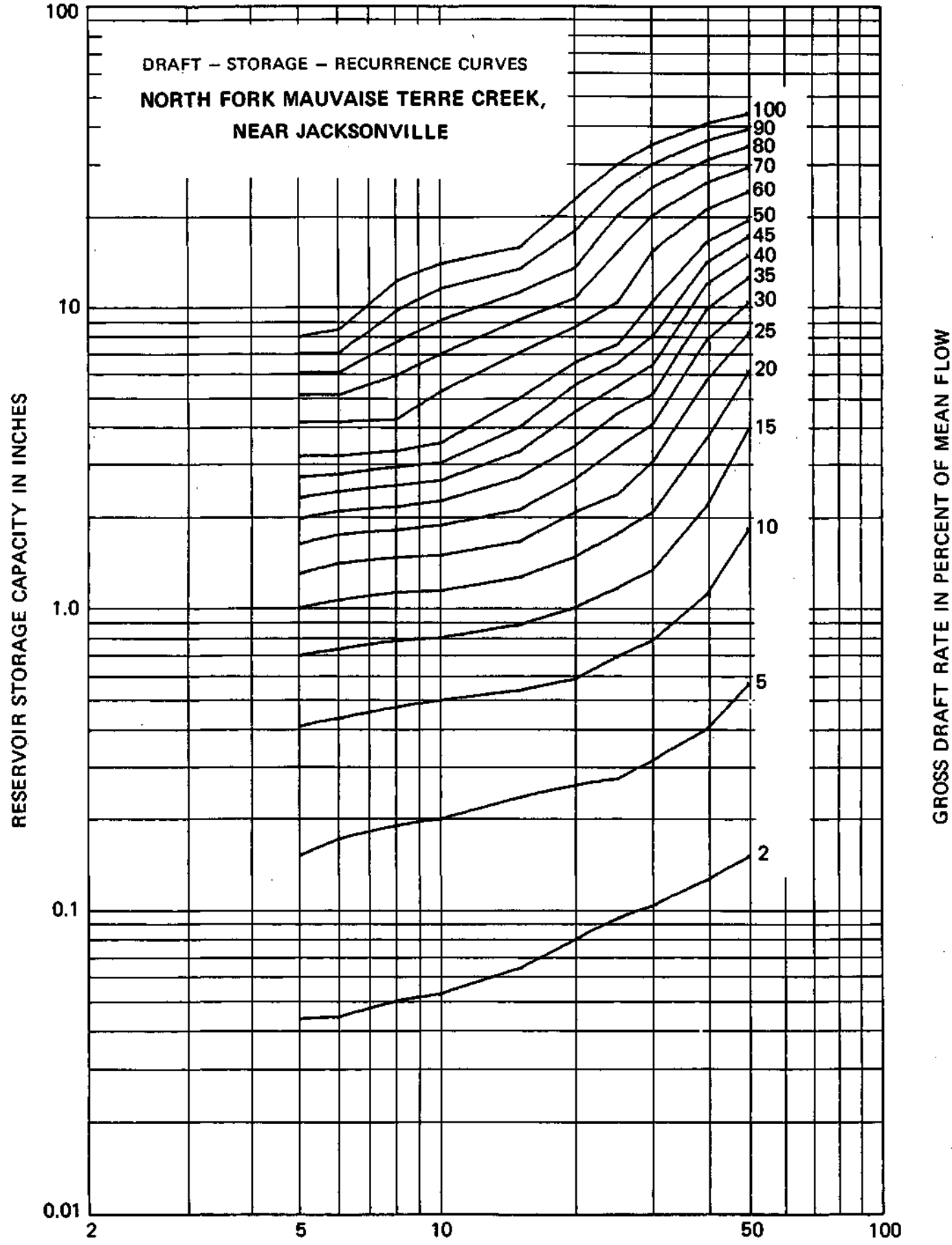
ACTUAL FLOW DATA: Dec 1949 to Oct 1978

INDEX STATION: Macoupin Creek near Kane

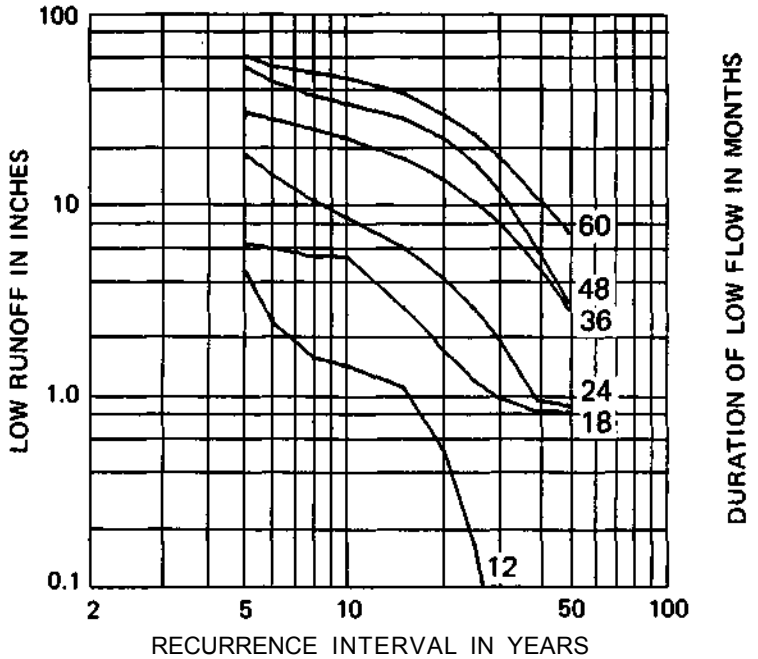
MEAN DISCHARGE: 0.85 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.15	.40	.69	.98	1.28	1.61	1.95	2.28	2.68	3.14	4.07	5.00	5.93	6.85	7.78
	3	6	6	7	7	7	8	8	8	11	11	11	11	11	11	11
6	.04	.17	.43	.72	1.04	1.38	1.72	2.06	2.39	2.73	3.14	4.07	5.00	5.93	6.85	8.24
	3	6	7	7	8	8	8	8	8	9	11	11	11	11	11	20
8	.05	.19	.47	.77	1.11	1.44	1.78	2.13	2.51	2.89	3.27	4.14	5.83	7.51	9.55	11.91
	5	6	7	8	8	8	8	9	9	9	9	20	20	20	28	28
10	.05	.20	.49	.79	1.12	1.47	1.85	2.23	2.61	2.99	3.48	5.17	6.86	8.90	11.26	13.63
	5	6	7	8	8	9	9	9	9	9	20	20	20	28	28	28
15	.06	.23	.53	.87	1.25	1.64	2.09	2.68	3.27	3.94	4.91	6.94	8.96	10.99	13.10	15.43
	6	7	7	9	9	10	14	14	14	22	24	24	24	24	26	32
20	.08	.26	.58	.99	1.46	2.05	2.64	3.41	4.43	5.44	6.45	8.48	10.50	13.23	17.45	22.17
	7	7	9	11	14	14	14	24	24	24	24	24	24	36	56	56
25	.09	.27	.69	1.16	1.75	2.36	3.38	4.39	5.40	6.41	7.43	10.23	14.95	19.68	24.40	29.12
	7	7	11	14	14	24	24	24	24	24	24	36	56	56	56	56
30	.10	.31	.78	1.33	2.06	3.03	4.05	5.08	6.35	7.93	10.27	14.99	19.72	24.44	29.17	33.89
	7	11	11	14	18	24	24	26	30	52	56	56	56	56	56	56
40	.13	.40	1.11	2.18	3.65	5.67	7.70	9.72	11.75	13.86	16.14	20.69	25.37	30.18	35.07	39.96
	8	12	18	30	48	48	48	48	48	54	54	54	56	58	58	58
50	.15	.56	1.82	3.93	6.04	8.15	10.26	12.37	14.59	16.87	19.15	23.73	28.63	33.52	38.41	43.31
	12	18	50	50	50	50	50	50	54	54	54	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
NORTH FORK MAUVAISE TERRE CREEK,
NEAR JACKSONVILLE
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55865 - HURRICANE CREEK NEAR ROODHOUSE



LOCATION: In NE¼ Sec 15, T12N R12W, Greene County, 150 ft downstream from bridge on State Highway 106, 2miles west of Roodhouse

DRAINAGE AREA: 2.30 square miles

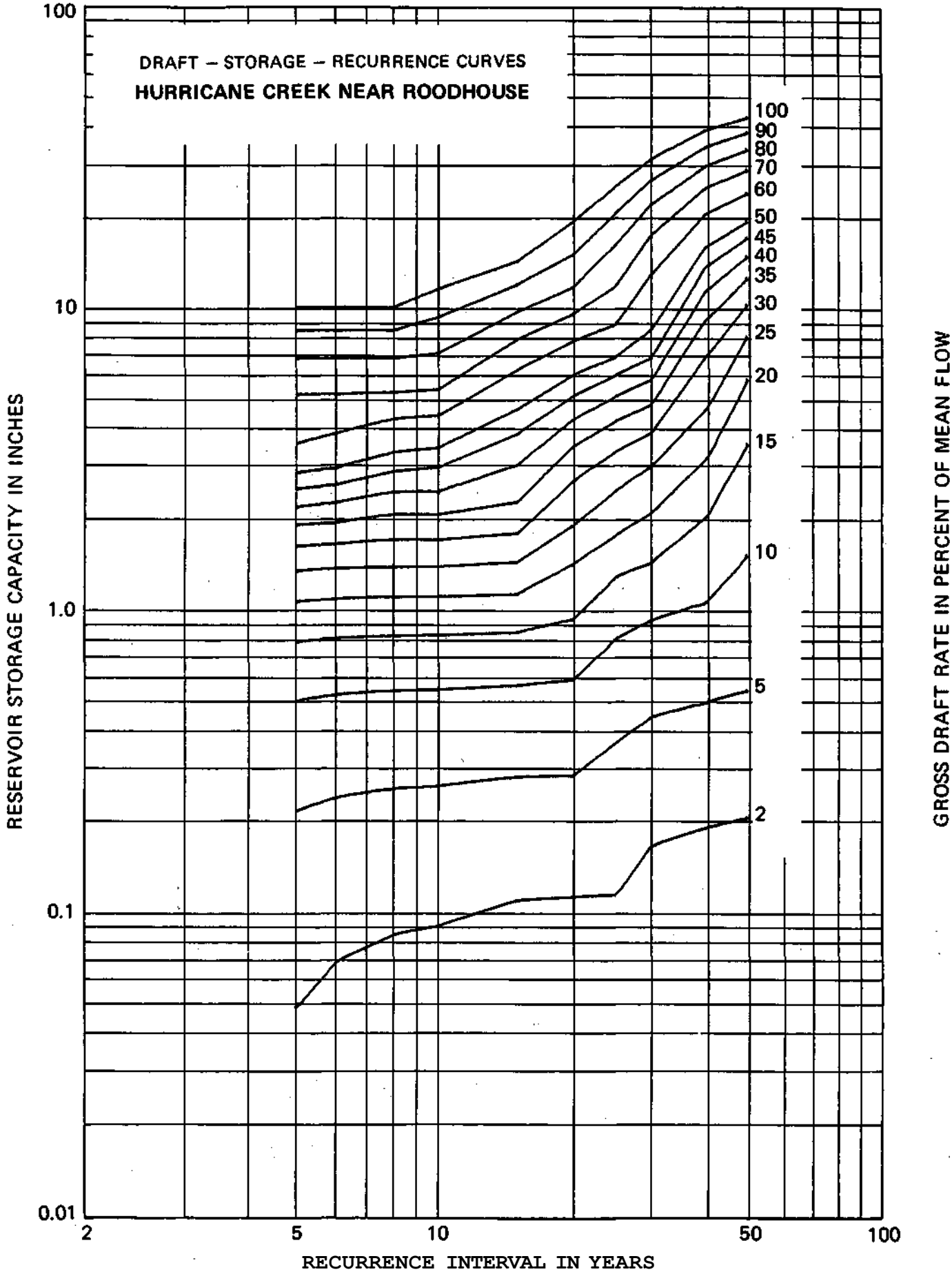
ACTUAL FLOW DATA: Oct 1950 to Sept 1975

INDEX STATION: Macoupin Creek near Kane

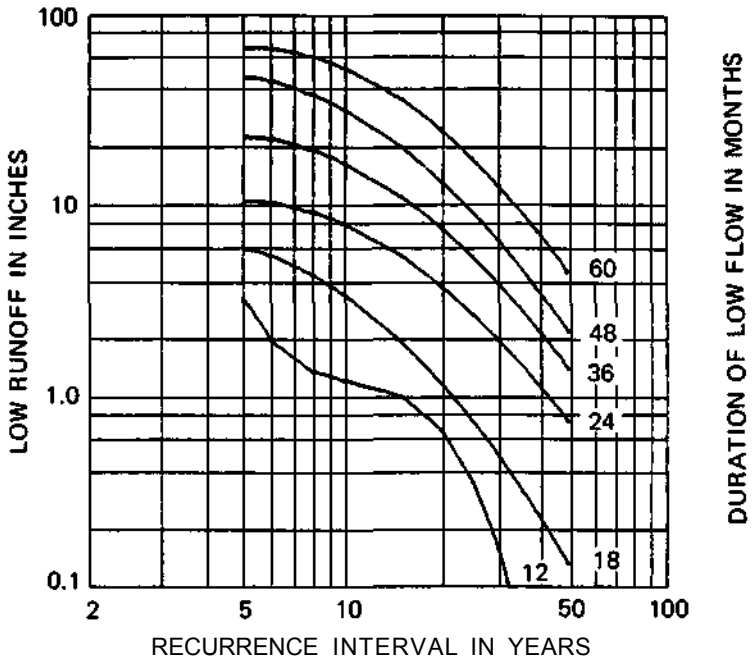
MEAN DISCHARGE: 0.79 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.21	.49	.76	1.04	1.31	1.59	1.86	2.14	2.45	2.77	3.46	5.03	6.60	8.18	9.75
	3	7	7	7	7	7	7	7	7	8	8	20	20	20	20	20
6	.07	.23	.51	.78	1.06	1.33	1.61	1.89	2.21	2.52	2.86	3.73	5.03	6.60	8.18	9.75
	7	7	7	7	7	7	7	8	8	8	11	11	20	20	20	20
8	.08	.25	.52	.80	1.07	1.35	1.66	2.02	2.39	2.79	3.23	4.17	5.11	6.60	8.18	9.75
	7	7	7	7	7	7	9	9	10	10	12	12	12	20	20	20
10	.09	.25	.53	.80	1.08	1.35	1.66	2.02	2.40	2.87	3.35	4.29	5.23	6.89	9.09	11.29
	7	7	7	7	7	7	9	9	12	12	12	12	12	28	28	28
15	.11	.27	.55	.82	1.10	1.41	1.75	2.22	2.94	3.73	4.52	6.09	7.68	9.48	11.68	13.89
	7	7	7	7	7	8	12	12	20	20	20	20	22	28	28	28
20	.11	.28	.57	.91	1.38	1.86	2.61	3.39	4.18	5.00	5.87	7.60	9.33	11.45	14.61	18.77
	7	7	8	12	12	18	20	20	20	22	22	22	22	28	44	60
25	.11	.36	.79	1.25	1.73	2.43	3.28	4.14	5.01	5.88	6.74	8.66	11.58	15.83	20.08	24.63
	8	11	11	12	12	20	22	22	22	22	22	28	54	54	54	60
30	.16	.43	.90	1.40	2.05	2.91	3.78	4.69	5.67	6.69	8.28	12.55	16.95	21.36	25.77	30.22
	11	12	12	14	22	22	22	24	26	26	54	56	56	56	56	58
40	.19	.48	1.04	1.98	3.07	4.52	6.72	8.92	11.13	13.33	15.53	19.94	24.35	28.75	33.20	37.76
	12	14	14	26	30	56	56	56	56	56	56	56	56	56	58	58
50	.20	.53	1.49	3.49	5.69	7.90	10.10	12.30	14.51	16.71	18.91	23.41	27.98	32.54	37.11	41.67
	14	14	30	56	56	56	56	56	56	56	56	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
HURRICANE CREEK NEAR ROODHOUSE
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55868 - OTTER CREEK NEAR PALMYRA



LOCATION: In SE¼ Sec 23, T11N, R8W, Macoupin County, at county highway bridge 3 miles downstream from confluence of East and West Forks, 4 miles southeast of Palmyra

DRAINAGE AREA: 61.1 square miles

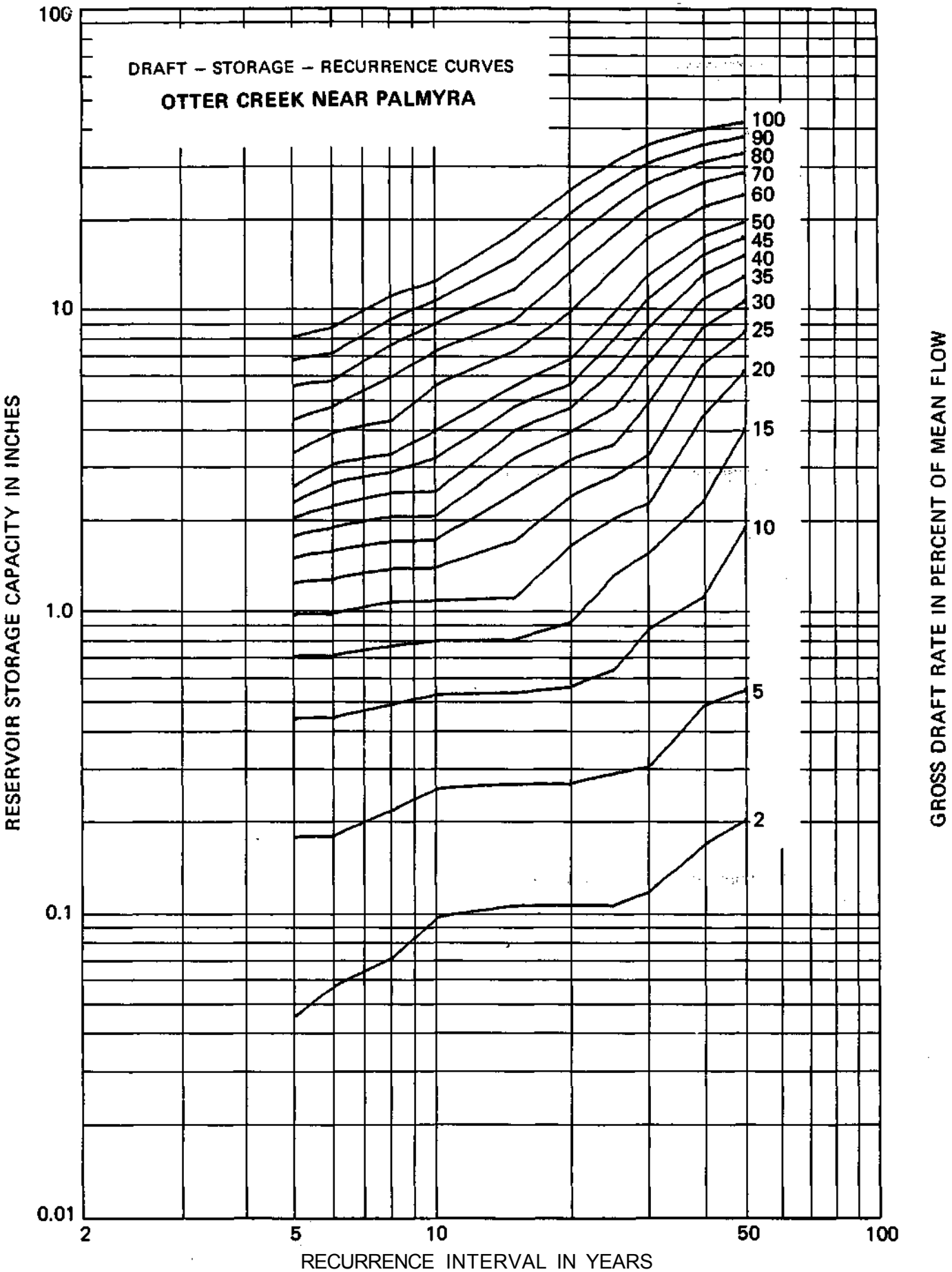
ACTUAL FLOW DATA: Oct 1959 to Oct 1978

INDEX STATION: Macoupin Creek near Kane

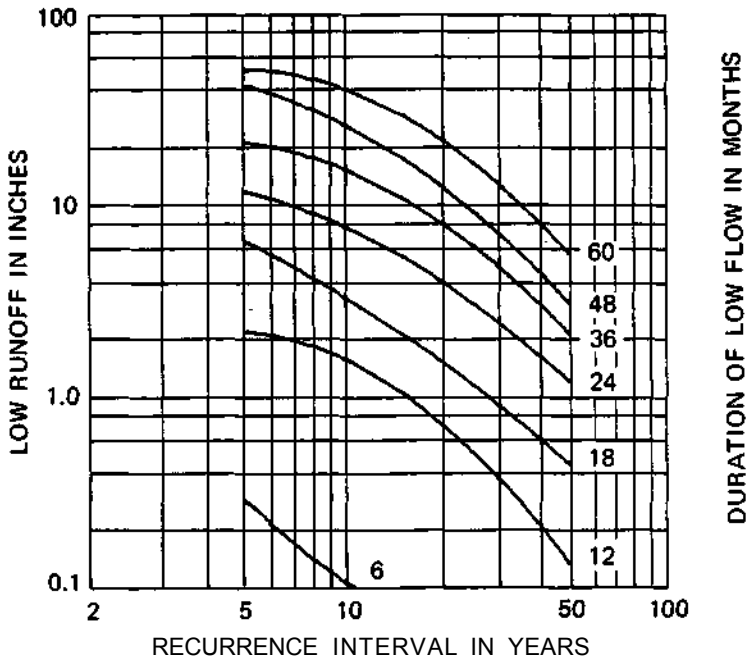
MEAN DISCHARGE: 0.74 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.17	.43	.69	.95	1.21	1.46	1.72	1.98	2.24	2.53	3.27	4.20	5.38	6.57	7.82
	3	6	7	7	7	7	7	7	7	7	9	11	16	16	16	24
6	.06	.17	.43	.69	.95	1.24	1.53	1.83	2.17	2.57	2.98	3.79	4.60	5.58	6.91	8.41
	5	6	7	7	7	8	8	9	9	11	11	11	11	18	18	28
8	.07	.21	.47	.74	1.04	1.33	1.64	1.98	2.38	2.79	3.20	4.13	5.74	7.37	9.00	10.68
	5	7	7	8	8	8	9	10	11	11	11	20	22	22	22	26
10	.10	.25	.51	.77	1.05	1.34	1.66	2.00	2.41	3.11	3.85	5.41	7.04	8.66	10.29	11.92
	7	7	7	7	8	8	9	9	12	20	20	22	22	22	22	22
15	.10	.26	.52	.78	1.07	1.65	2.39	3.13	3.87	4.61	5.40	7.03	8.89	11.25	14.19	17.45
	7	7	7	7	8	20	20	20	20	20	22	22	32	32	44	44
20	.10	.26	.54	.89	1.60	2.34	3.08	3.82	4.56	5.43	6.61	9.50	12.83	16.30	20.15	23.99
	7	7	8	18	20	20	20	20	20	32	32	44	46	52	52	52
25	.10	.28	.62	1.29	1.98	2.72	3.46	4.58	6.06	7.70	9.40	13.11	16.96	21.11	25.41	29.70
	7	8	18	18	20	20	20	32	44	46	46	52	56	58	58	58
30	.12	.30	.86	1.52	2.21	3.22	4.76	6.44	8.47	10.54	12.62	16.76	20.99	25.28	29.58	33.87
	8	11	18	18	20	34	44	46	56	56	56	56	58	58	58	58
40	.17	.48	1.10	2.28	4.35	6.42	8.49	10.57	12.64	14.75	16.90	21.19	25.48	29.77	34.07	38.36
	14	14	18	56	56	56	56	56	56	58	58	58	58	58	58	58
50	.20	.54	1.86	3.94	6.09	8.24	10.38	12.53	14.68	16.82	18.97	23.26	27.55	31.84	36.14	40.43
	14	18	56	58	58	58	58	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
OTTER CREEK NEAR PALMYRA
100
10
1.0
0.1
0.01
RESERVOIR STORAGE CAPACITY IN INCHES
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

55870 - MACOUPIN CREEK NEAR KANE



LOCATION: In SE¼ SE¼ Sec 11, T9N, R12W, Greene County, at bridge on U. S. 267, 3.5 miles northwest of Kane

DRAINAGE AREA: 868 square miles

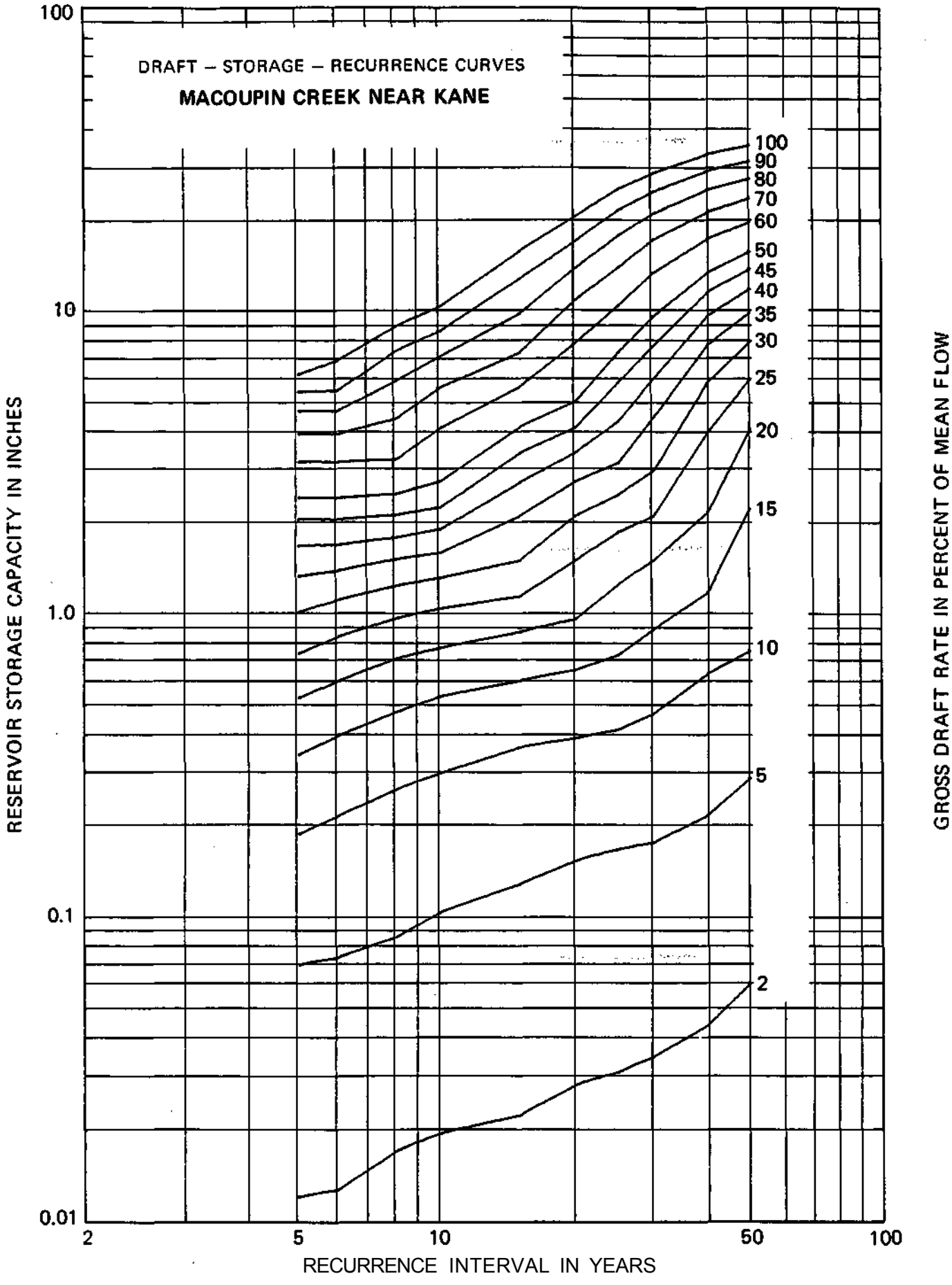
ACTUAL FLOW DATA: Mar 1921 to Nov 1933 May to Aug 1940; Oct 1940 to Oct 1978

INDEX STATION: None

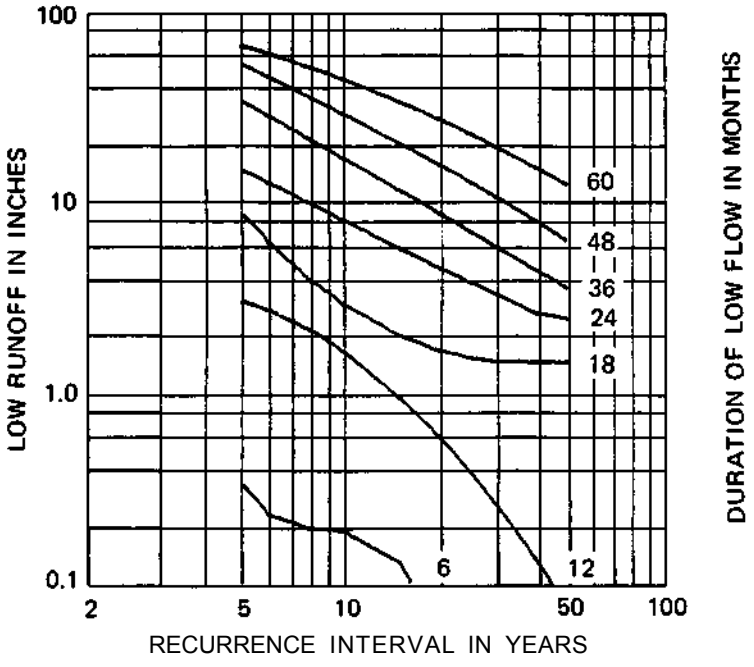
MEAN DISCHARGE: 0.65 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.07	.18	.33	.51	.71	.97	1.27	1.60	1.96	2.32	3.03	3.75	4.47	5.19	5.93
	2	3	4	5	6	8	8	10	11	11	11	11	11	11	11	16
6	.01	.07	.21	.38	.58	.81	1.07	1.33	1.62	1.96	2.32	3.03	3.75	4.47	5.24	6.60
	3	3	5	6	6	8	8	8	10	11	11	11	11	11	16	28
8	.02	.08	.25	.46	.69	.93	1.19	1.45	1.71	2.04	2.39	3.11	4.23	5.66	7.10	8.53
	3	5	6	7	7	8	8	8	8	10	11	11	22	22	22	22
10	.02	.10	.29	.52	.74	1.00	1.26	1.53	1.83	2.16	2.64	3.95	5.39	6.82	8.26	9.92
	3	5	7	7	7	8	8	8	10	11	18	22	22	22	22	28
15	.02	.12	.35	.58	.84	1.10	1.44	2.03	2.61	3.27	3.99	5.42	7.02	9.40	12.27	15.14
	3	6	7	8	8	8	18	18	18	22	22	22	32	44	44	44
20	.03	.15	.38	.63	.93	1.45	2.03	2.64	3.29	3.98	4.86	7.55	10.42	13.33	16.33	19.72
	5	7	7	8	10	18	18	20	20	22	32	44	44	46	46	56
25	.03	.16	.40	.71	1.22	1.80	2.39	3.05	4.18	5.61	7.05	10.00	13.40	17.05	20.70	24.35
	5	7	8	10	18	18	20	20	44	44	44	46	56	56	56	56
30	.03	.17	.45	.86	1.45	2.04	2.87	4.31	5.78	7.40	9.23	12.88	16.53	20.18	23.83	27.48
	7	7	10	18	18	18	44	44	46	56	56	56	56	56	56	56
40	.04	.21	.62	1.15	2.11	3.87	5.65	7.48	9.30	11.13	12.95	16.71	20.49	24.28	28.06	31.84
	7	10	14	18	54	54	56	56	56	56	56	58	58	58	58	58
50	.06	.28	.74	2.18	3.97	5.80	7.67	9.56	11.45	13.34	15.23	19.01	22.80	26.58	30.36	34.14
	10	14	14	54	56	56	58	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
MACOUPIN CREEK NEAR KANE
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55879 - CAHOKIA CREEK AT EDWARDSVILLE



LOCATION: In NW¼ SE¼ Sec 3, T4N, R8W, Madison County

DRAINAGE AREA: 212 square miles

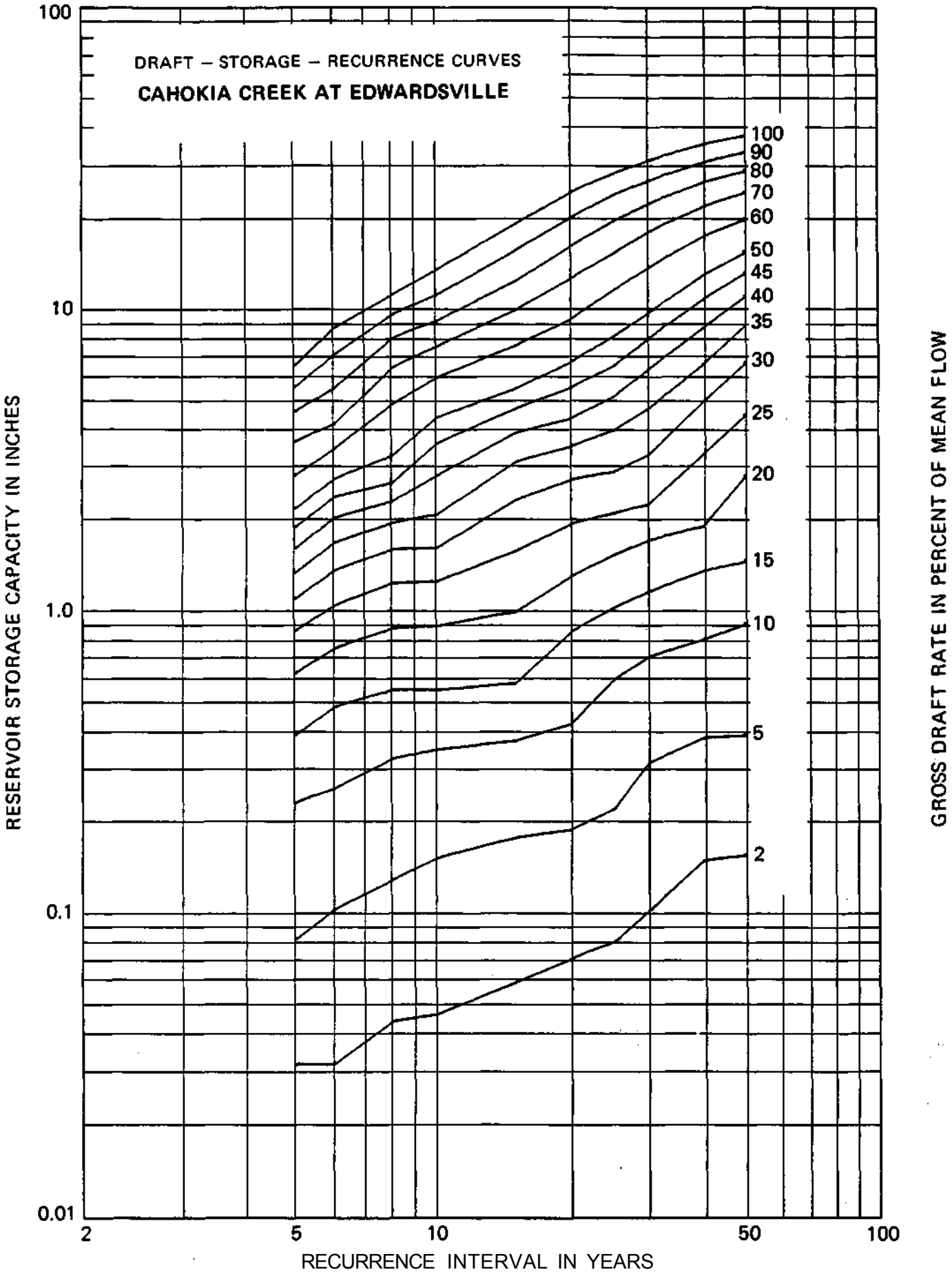
ACTUAL FLOW DATA: Aug 1969 to Oct 1978

INDEX STATION: Indian Creek at Wanda

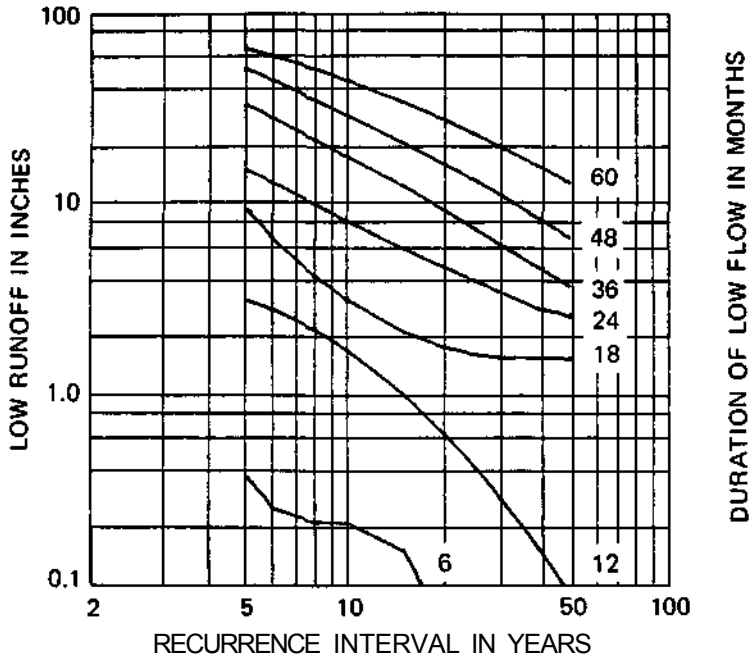
MEAN DISCHARGE: 0.77 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.08	.23	.38	.61	.84	1.07	1.30	1.56	1.82	2.11	2.72	3.52	4.44	5.36	6.34
	2	3	4	4	6	6	6	6	7	7	8	8	12	12	12	14
6	.03	.10	.25	.47	.73	1.01	1.32	1.63	1.96	2.31	2.65	3.34	4.04	5.33	6.87	8.40
	3	3	5	6	7	8	8	8	9	9	9	9	11	20	20	20
8	.04	.12	.32	.53	.85	1.20	1.54	1.89	2.23	2.58	3.17	4.70	6.23	7.77	9.30	10.84
	3	5	5	7	9	9	9	9	9	9	18	20	20	20	20	20
10	.05	.15	.34	.53	.87	1.21	1.56	2.02	2.72	3.49	4.25	5.79	7.32	8.90	10.85	13.15
	3	5	5	7	9	9	9	18	20	20	20	20	20	22	30	30
15	.06	.17	.36	.56	.97	1.53	2.27	3.04	3.80	4.57	5.34	7.40	9.70	12.11	15.22	18.59
	5	5	5	6	11	18	20	20	20	20	20	30	30	40	42	44
20	.07	.18	.41	.84	1.27	1.89	2.65	3.42	4.25	5.40	6.55	9.04	12.37	15.74	19.53	23.61
	5	5	11	11	12	20	20	20	30	30	30	40	44	44	52	54
25	.08	.22	.58	1.01	1.50	2.06	2.82	3.89	5.04	6.36	7.97	11.33	14.95	19.10	23.24	27.38
	6	6	11	12	14	20	20	30	30	42	42	44	54	54	54	54
30	.10	.31	.69	1.13	1.67	2.21	3.23	4.61	6.22	7.83	9.52	13.44	17.58	21.72	25.87	30.16
	8	10	10	14	14	14	30	42	42	44	44	54	54	54	54	56
40	.15	.38	.79	1.33	1.87	3.24	4.85	6.46	8.52	10.59	12.71	17.01	21.31	25.60	29.90	34.20
	10	10	14	14	14	42	42	42	54	54	56	56	56	56	56	56
50	.15	.38	.89	1.43	2.75	4.38	6.53	8.68	10.83	12.98	15.13	19.42	23.72	28.01	32.31	36.61
	10	10	14	14	42	56	56	56	56	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
CAHOKIA CREEK AT EDWARDSVILLE
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55880 - INDIAN CREEK AT WANDA



LOCATION: In SE¼ NW¼ Sec 31, T5N, R8W, Madison County, at bridge on State Highway 143, 0.8 miles northeast of Wanda and 5 miles west of Edwardsville

DRAINAGE AREA: 36.7 square miles

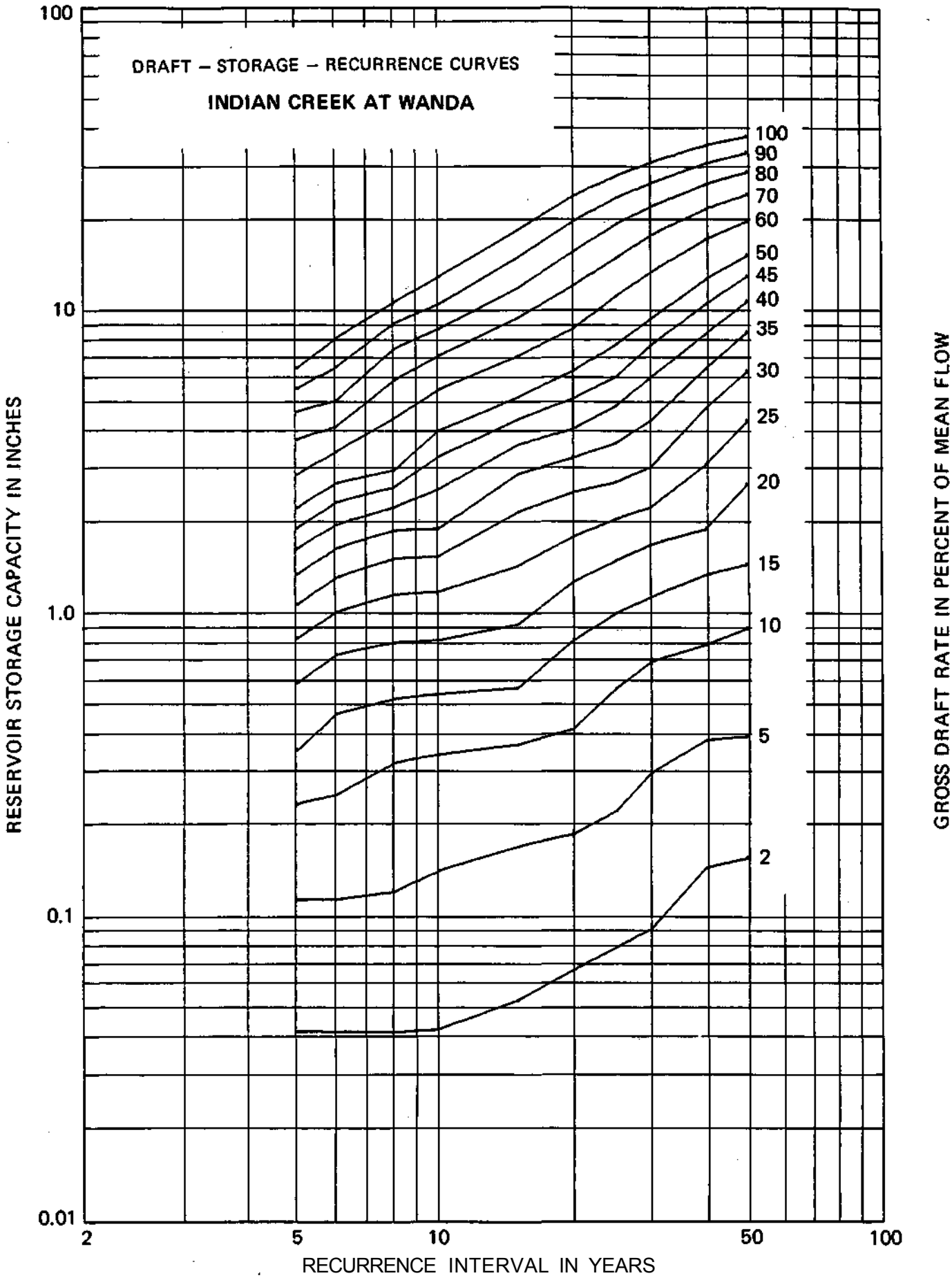
ACTUAL FLOW DATA: April 1940 to Oct 1978

INDEX STATION: None

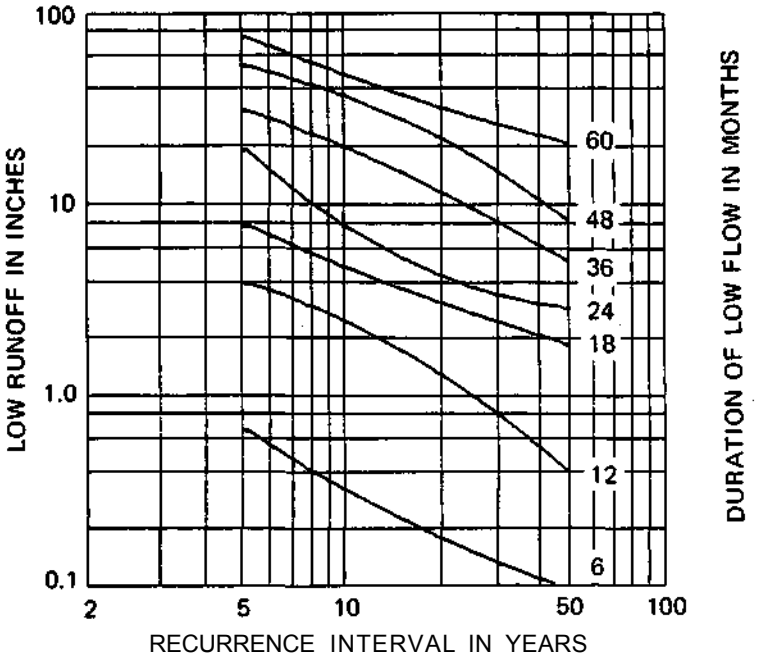
MEAN DISCHARGE: 0.77 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.11	.23	.34	.57	.80	1.03	1.29	1.56	1.83	2.13	2.75	3.59	4.44	5.28	6.19
	3	3	3	3	6	6	6	7	7	7	8	8	11	11	11	12
6	.04	.11	.24	.45	.70	.97	1.26	1.57	1.88	2.23	2.57	3.27	3.96	4.83	6.22	7.76
	3	3	5	6	7	7	8	8	9	9	9	9	9	16	20	20
8	.04	.12	.31	.50	.77	1.11	1.46	1.80	2.15	2.50	2.84	4.23	5.64	7.18	8.72	10.26
	3	5	5	7	7	9	9	9	9	9	9	18	20	20	20	20
10	.04	.14	.33	.52	.79	1.14	1.48	1.83	2.47	3.16	3.86	5.28	6.82	8.37	10.11	12.42
	3	5	5	5	9	9	9	9	18	18	18	20	20	22	30	30
15	.05	.16	.36	.55	.89	1.38	2.08	2.77	3.46	4.21	4.98	6.81	9.12	11.44	14.38	17.71
	4	5	5	5	11	18	18	18	18	20	20	30	30	30	42	44
20	.07	.18	.40	.79	1.23	1.73	2.42	3.15	3.92	4.94	6.10	8.41	11.66	15.05	18.90	22.95
	5	5	6	11	12	18	18	20	20	30	30	30	44	44	52	54
25	.08	.22	.55	.97	1.44	1.98	2.62	3.53	4.68	5.84	7.46	10.79	14.35	18.51	22.68	26.84
	6	6	11	12	14	14	20	30	30	30	42	44	54	54	54	54
30	.09	.29	.67	1.10	1.63	2.17	2.94	4.20	5.82	7.44	9.10	12.91	17.08	21.24	25.40	29.68
	6	10	10	12	14	14	30	42	42	42	44	54	54	54	54	56
40	.14	.37	.77	1.30	1.84	3.00	4.61	6.23	8.11	10.19	12.28	16.58	20.89	25.21	29.53	33.85
	10	10	12	14	14	42	42	42	54	54	54	56	56	56	56	56
50	.15	.38	.88	1.42	2.60	4.22	6.13	8.29	10.45	12.61	14.77	19.09	23.40	27.72	32.04	36.36
	10	10	14	14	42	42	56	56	56	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
INDIAN CREEK AT WANDA
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55895 - CANTEEN CREEK AT CASEYVILLE



LOCATION: In N½ NW¼ Sec 8, T2N, R8W, St. Clair County, at highway bridge at Caseyville, 100 feet upstream from Penn Central Railroad Bridge and 400 feet upstream from Illinois 157 bridge

DRAINAGE AREA: 22.6 square miles

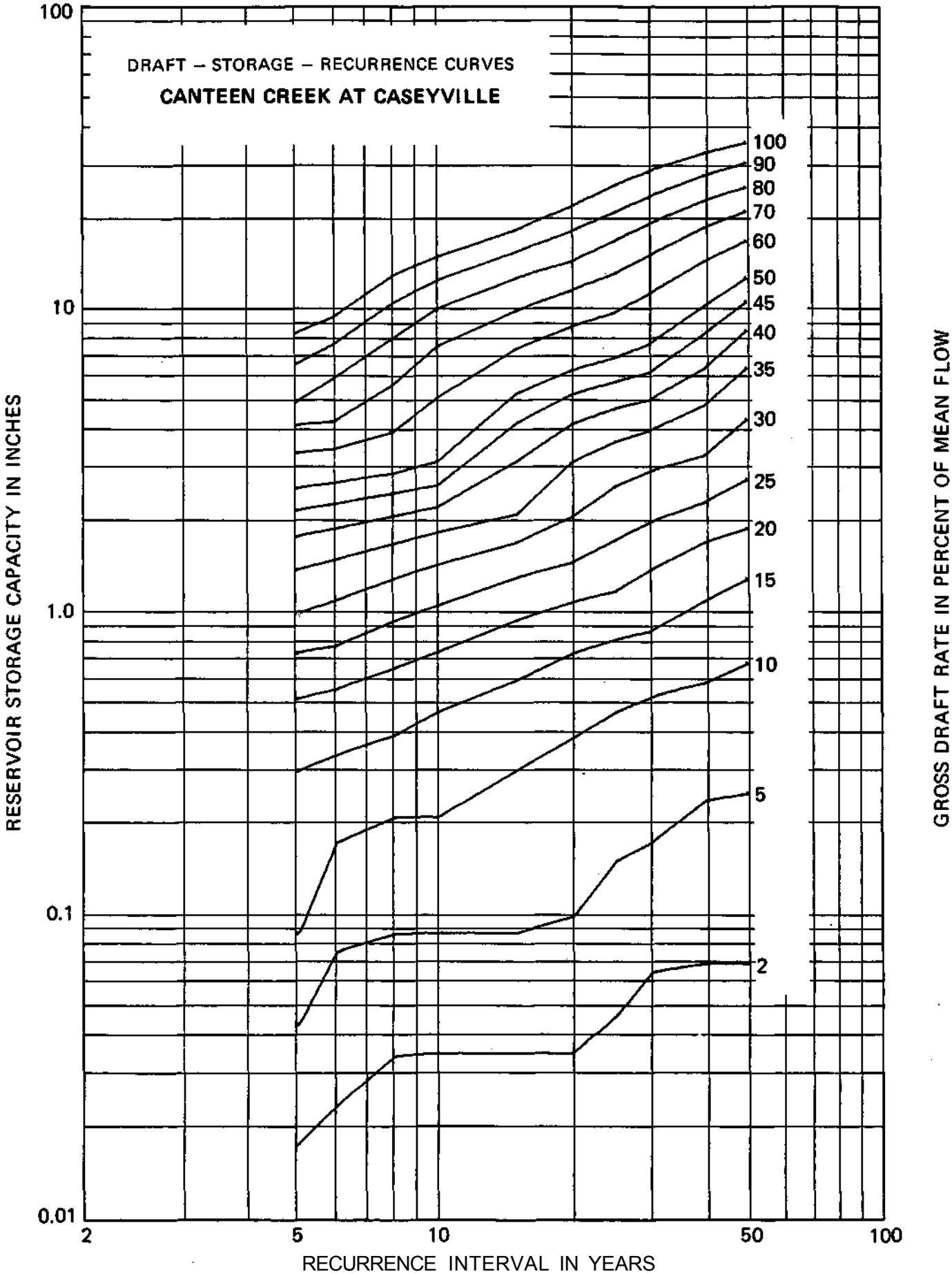
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: None

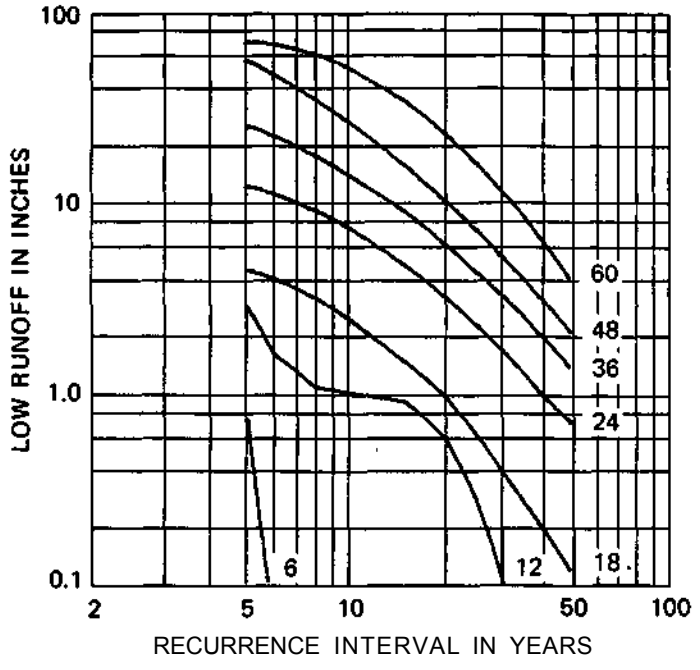
MEAN DISCHARGE: 0.85 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals.
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.04	.08	.29	.50	.71	.95	1.34	1.72	2.10	2.48	3.24	4.00	4.76	6.37	8.07
	1	1	1	5	5	5	9	9	9	9	9	9	9	9	20	20
6	.02	.07	.17	.33	.54	.75	1.06	1.44	1.82	2.20	2.59	3.35	4.11	5.73	7.42	9.11
	2	2	3	5	5	6	9	9	9	9	9	9	9	20	20	20
8	.03	.08	.20	.38	.63	.91	1.25	1.63	2.01	2.39	2.77	3.79	5.42	7.72	10.09	12.46
	2	2	4	6	6	7	9	9	9	9	9	18	20	28	28	28
10	.03	.08	.20	.45	.72	1.02	1.39	1.77	2.15	2.54	3.04	4.91	7.28	9.65	12.02	14.39
	2	2	4	6	7	8	9	9	9	9	18	28	28	28	28	28
15	.03	.08	.29	.58	.92	1.26	1.64	2.04	3.05	4.06	5.08	7.14	9.53	12.24	14.95	17.66
	2	2	6	8	8	9	9	11	24	24	24	28	32	32	32	32
20	.03	.10	.37	.71	1.05	1.42	2.00	3.02	4.03	5.05	6.07	8.45	11.16	13.91	17.47	21.09
	2	4	8	8	8	9	24	24	24	24	24	32	32	42	42	56
25	.05	.15	.45	.79	1.14	1.68	2.52	3.54	4.55	5.57	6.70	9.41	12.69	16.31	20.17	24.82
	4	4	8	8	9	14	24	24	24	24	32	32	42	44	46	56
30	.06	.17	.51	.85	1.34	1.93	2.83	3.85	4.86	5.98	7.43	10.90	14.62	18.51	22.80	27.68
	4	8	8	8	14	14	24	24	24	32	36	44	44	46	56	58
40	.07	.23	.57	1.07	1.66	2.25	3.20	4.67	6.19	8.02	9.91	13.97	18.04	22.10	26.79	31.70
	4	8	8	14	14	14	34	36	36	44	48	48	48	48	58	58
50	.07	.25	.66	1.26	1.85	2.67	4.20	6.20	8.24	10.27	12.30	16.36	20.42	24.56	29.47	34.38
	4	8	14	14	14	36	36	48	48	48	48	48	48	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
CANTEEN CREEK AT CASEYVILLE
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55936 - BLUEGRASS CREEK NEAR RAYMOND



LOCATION: In NE¼ SE¼ Sec 33, T10N, R4W, Montgomery County, at high bridge 0.8 mi east of State Highway 127, and 4 miles southeast of Raymond

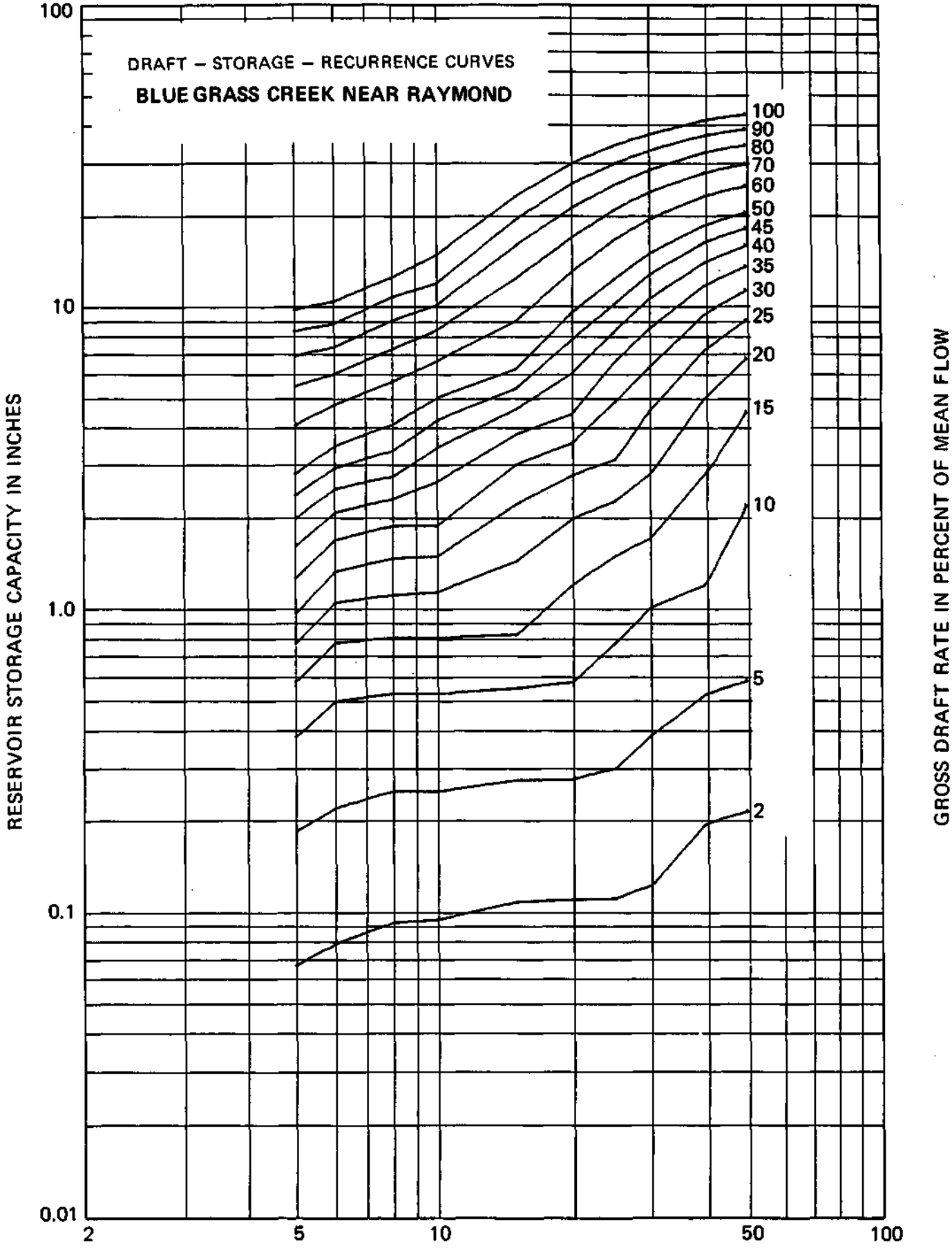
DRAINAGE AREA: 17.3 square miles

ACTUAL FLOW DATA: May 1960 to Oct 1978

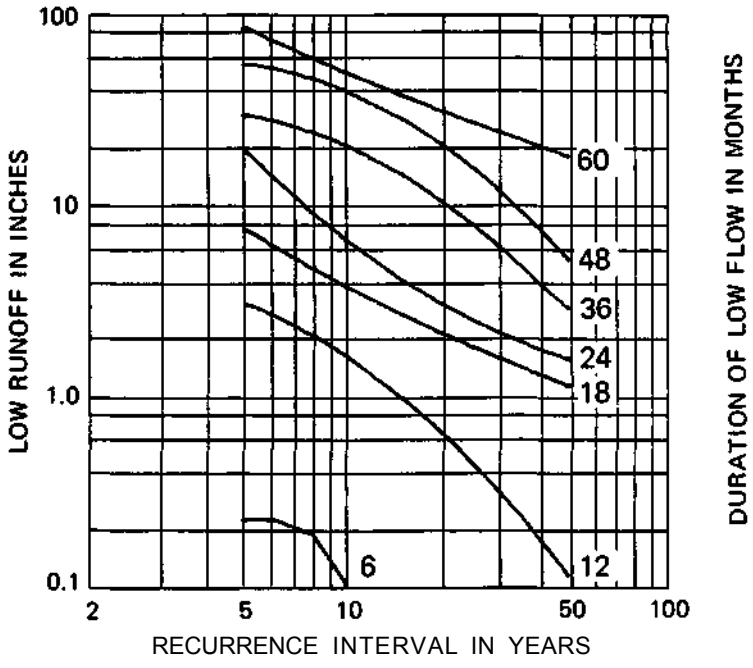
INDEX STATION: Macoupin Creek near Kane

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.18	.37	.56	.75	.94	1.23	1.57	1.93	2.32	2.73	3.95	5.29	6.67	8.05	9.42
	5	5	5	5	5	5	9	9	10	10	16	16	18	18	18	18
6	.08	.21	.48	.75	1.02	1.29	1.64	2.02	2.42	2.84	3.37	4.59	5.82	7.11	8.49	10.04
	5	7	7	7	7	7	10	10	11	11	16	16	16	18	18	22
8	.09	.24	.51	.78	1.08	1.42	1.82	2.24	2.66	3.24	3.95	5.48	7.01	8.69	10.38	12.06
	6	7	7	7	9	10	11	11	11	16	20	20	20	22	22	22
10	.09	.24	.51	.78	1.10	1.45	1.83	2.56	3.33	4.09	4.86	6.42	8.11	9.79	11.54	14.33
	6	7	7	7	9	9	11	20	20	20	20	22	22	22	32	40
15	.11	.27	.53	.80	1.40	2.17	2.93	3.70	4.46	5.23	6.07	8.70	11.99	15.36	18.73	22.34
	7	7	7	7	20	20	20	20	20	22	22	42	44	44	44	52
20	.11	.27	.56	1.16	1.93	2.69	3.46	4.30	5.87	7.56	9.24	12.61	16.31	20.44	24.57	28.71
	7	7	8	20	20	20	20	32	44	44	44	44	54	54	54	54
25	.11	.29	.75	1.46	2.22	3.05	4.72	6.40	8.09	9.90	11.97	16.10	20.24	24.48	28.77	33.06
	8	8	18	20	20	42	44	44	44	54	54	54	54	56	56	56
30	.12	.37	.98	1.67	2.72	4.41	6.17	8.24	10.31	12.40	14.54	18.82	23.11	27.40	31.68	35.97
	8	14	18	18	44	44	54	54	54	56	56	56	56	56	56	56
40	.19	.51	1.17	2.72	4.86	7.01	9.17	11.39	13.61	15.83	18.05	22.49	26.93	31.37	35.80	40.24
	14	14	18	56	56	56	58	58	58	58	58	58	58	58	58	58
50	.21	.57	2.16	4.38	6.60	8.82	11.04	13.26	15.48	17.70	19.92	24.36	28.80	33.24	37.68	42.12
	14	18	58	58	58	58	58	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
BLUE GRASS CREEK NEAR RAYMOND
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55944.5 - SILVER CREEK NEAR TROY



LOCATION: In SE¼ SW¼ Sec 12, T3N, R7W, Madison County, at bridge on U. S. 40, 0.2 miles upstream from Penn Central bridge, 1.9 miles southeast of Troy

DRAINAGE AREA: 154 square miles

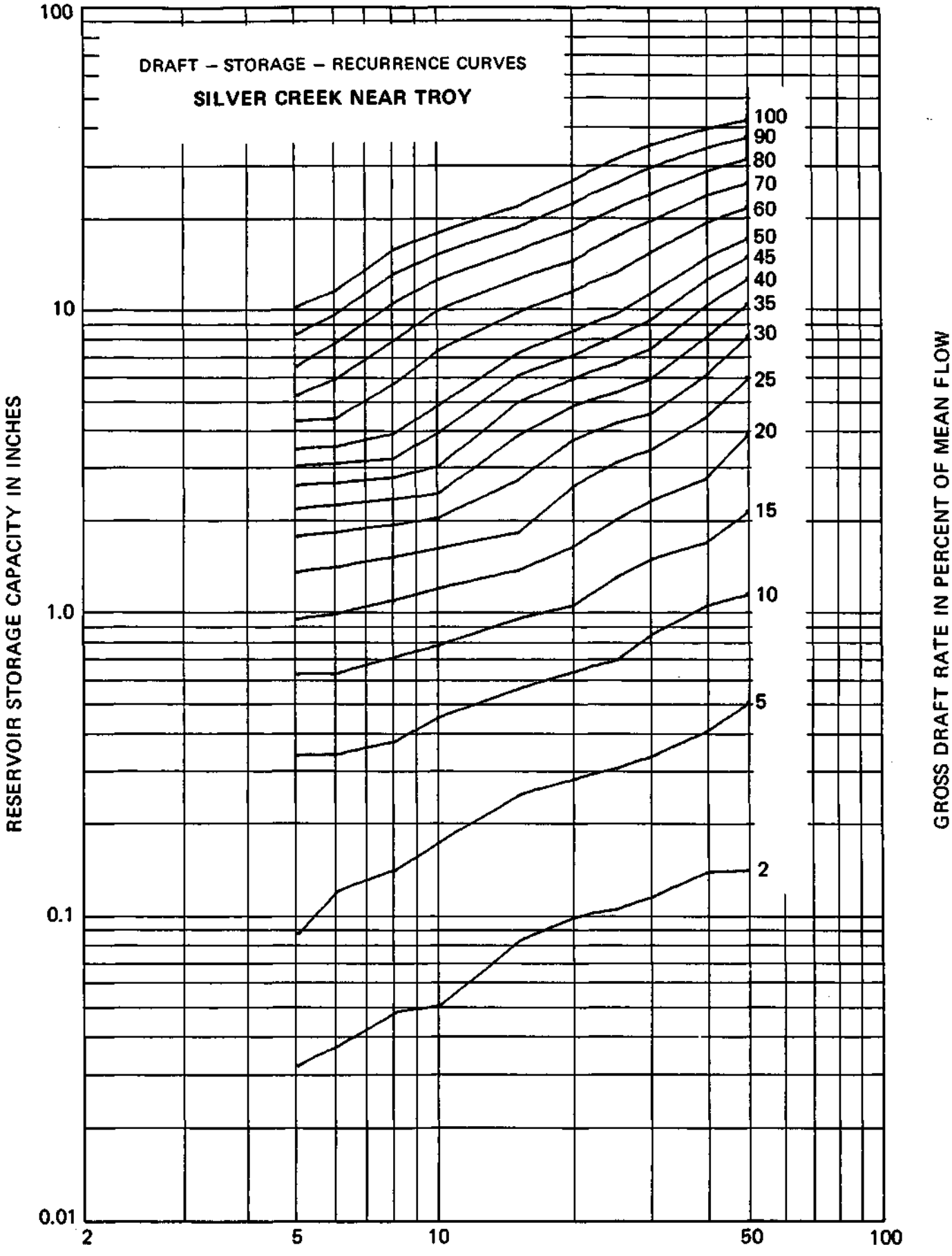
ACTUAL FLOW DATA: Oct 1966 to Oct 1978

INDEX STATION: Canteen Creek at Caseyville

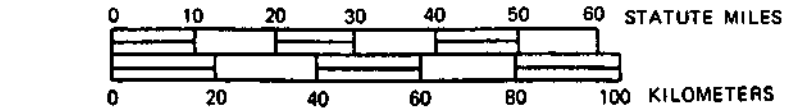
MEAN DISCHARGE: 0.91 inch per month

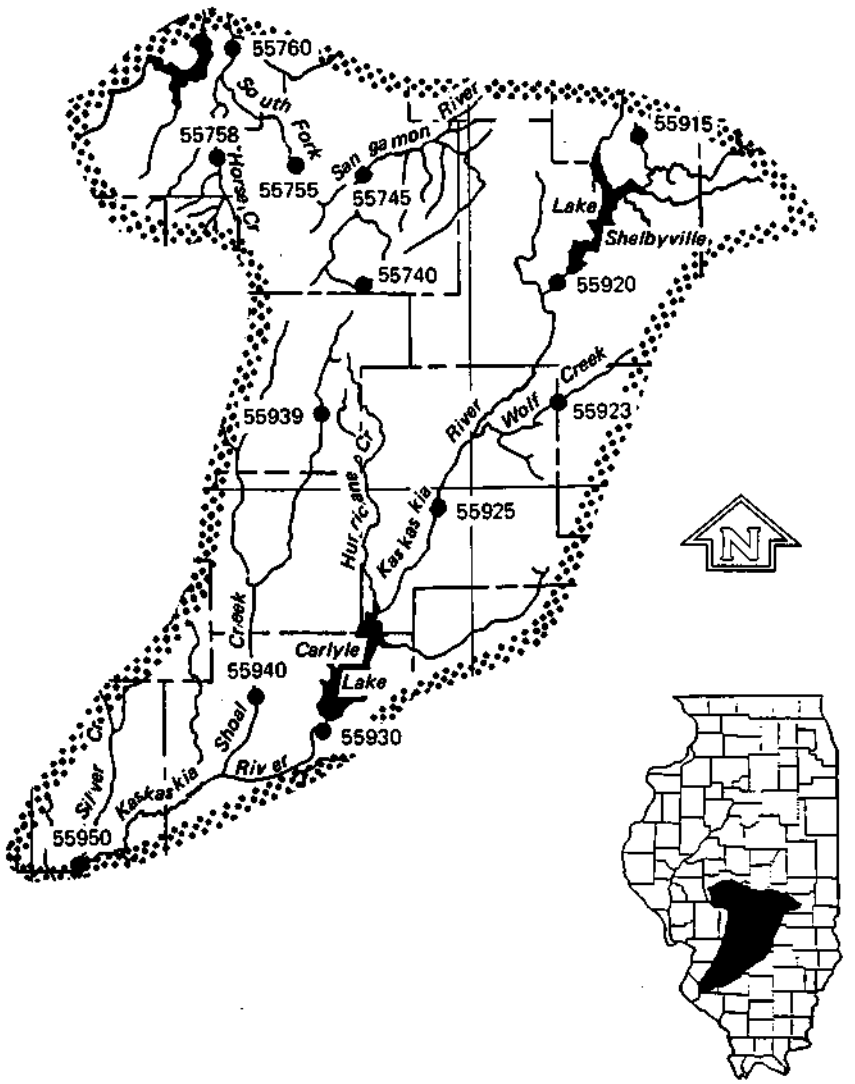
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.09	.33	.61	.93	1.32	1.73	2.14	2.55	2.96	3.37	4.19	5.09	6.37	8.10	9.92
	2	2	6	7	7	9	9	9	9	9	9	9	14	14	20	20
6	.04	.12	.33	.61	.96	1.37	1.78	2.19	2.60	3.01	3.42	4.24	5.80	7.62	9.44	11.26
	3	3	6	7	9	9	9	9	9	9	9	9	20	20	20	20
8	.05	.14	.37	.70	1.08	1.49	1.90	2.30	2.71	3.12	3.79	5.61	7.76	10.31	12.86	15.41
	3	4	6	8	9	9	9	9	9	9	20	20	28	28	28	28
10	.05	.17	.44	.77	1.18	1.59	1.99	2.40	2.97	3.85	4.76	7.21	9.76	12.30	14.85	17.40
	3	6	6	8	9	9	9	9	18	20	20	28	28	28	28	28
15	.08	.25	.55	.94	1.35	1.79	2.69	3.78	4.87	5.96	7.06	9.56	12.31	15.23	18.14	21.25
	6	6	7	9	9	12	24	24	24	24	24	28	32	32	32	42
20	.10	.28	.63	1.04	1.62	2.57	3.66	4.75	5.84	6.94	8.34	11.25	14.17	17.85	21.86	26.06
	6	7	9	9	14	24	24	24	24	24	32	32	32	44	44	58
25	.10	.30	.69	1.28	1.99	3.08	4.18	5.27	6.55	8.01	9.46	12.98	16.98	20.99	25.43	30.71
	7	8	9	14	24	24	24	24	32	32	32	44	44	44	58	58
30	.11	.33	.84	1.47	2.31	3.40	4.49	5.85	7.31	9.10	11.11	15.11	19.14	23.49	28.77	34.05
	8	8	14	14	24	24	24	32	32	44	44	44	46	58	58	58
40	.14	.40	1.04	1.68	2.73	4.37	6.01	7.98	10.10	12.28	14.47	18.84	23.21	27.97	33.25	38.53
	8	14	14	14	36	36	36	46	48	48	48	48	48	58	58	58
50	.14	.50	1.14	2.13	3.84	5.88	8.06	10.25	12.43	14.62	16.80	21.17	25.56	30.84	36.12	41.40
	8	14	14	36	38	48	48	48	48	48	48	48	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
SILVER CREEK NEAR TROY
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

REGION 3

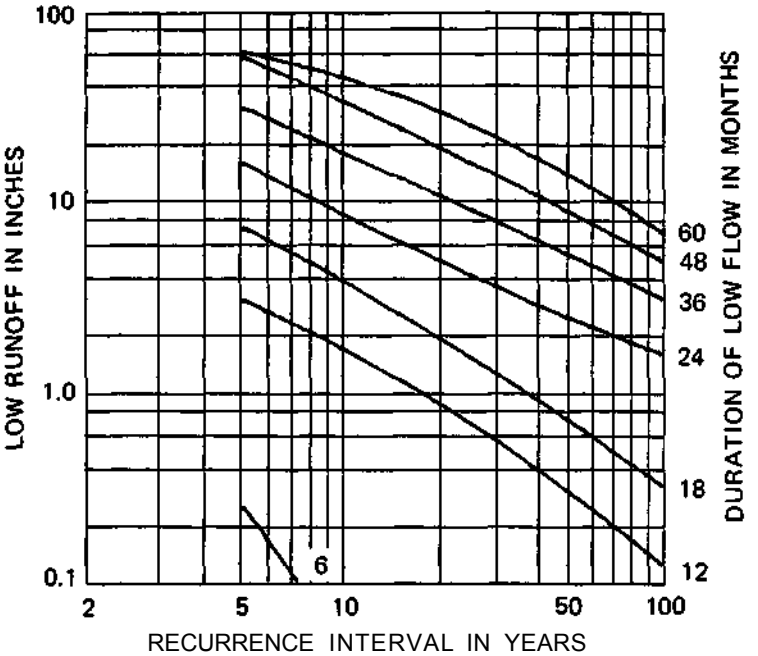

0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS


55760
South Fork
55758
Horse Cr.
55755
Sangamon River
55745
55740
55915
Lake
Shelbyville
55920
55939
Hurricane Cr.
River
Wolf
Creek
55923
Kaskaskia
55925
N
Creek
55940
Carlyle
Lake
55930
Silver Cr.
Kaskaskia
Shoal
River
55950

USGS Gage No.	Name of Station	Drainage Area (sq mi)
55740	South Fork Sangamon River near Nokomis	11.0
55745	Flat Branch near Taylorville	276
55755	South Fork Sangamon River at Kincaid	562
55758	Horse Creek at Pawnee	52.2
55760	South Fork Sangamon River near Rochester	867
55915	Asa Creek at Sullivan	8.05
55920	Kaskaskia River at Shelbyville	1054
55923	Wolf Creek near Beecher City	47.9
55925	Kaskaskia River at Vandalia	1940
55930	Kaskaskia River at Carlyle	2719
55939	East Fork Shoal Creek near Coffeen	55.5
55940	Shoal Creek near Breese	735
55950	Kaskaskia River at New Athens	5220

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
55740	55925	1951-1975	24	1914-1975	61	.73
55745	55925	1949-1978	29	1914-1978	64	.78
55755	55925	1944-1961	17	1914-1968	54	.71
55758	55760	1967-1978	11	1949-1978	29	.69
55760	55925	1949-1978	29	1914-1978	64	.71
55915	55925	1950-1978	28	1914-1978	64	.83
55920	55925	1940-1968	28	1914-1968	54	.80
55923	55925	1958-1978	20	1914-1978	64	.84
55925	-	1914-1968	54	-	-	.82
55930	55925	1938-1968	30	1914-1968	54	.80
55939	55940	1963-1978	15	1945-1978	33	.75
55940	55925	1945-1978	33	1914-1978	64	.73
55950	55925	1934-1967	33	1914-1968	54	.76

55740-SOUTH FORK, SANGAMON RIVER NEAR NOKOMIS



LOCATION: In NE¼ SE¼ Sec 36, T11N, R2W, Christian County, at highway bridge on Illinois 16, 4.0 miles northeast of Nokomis

DRAINAGE AREA: 11.0 square miles

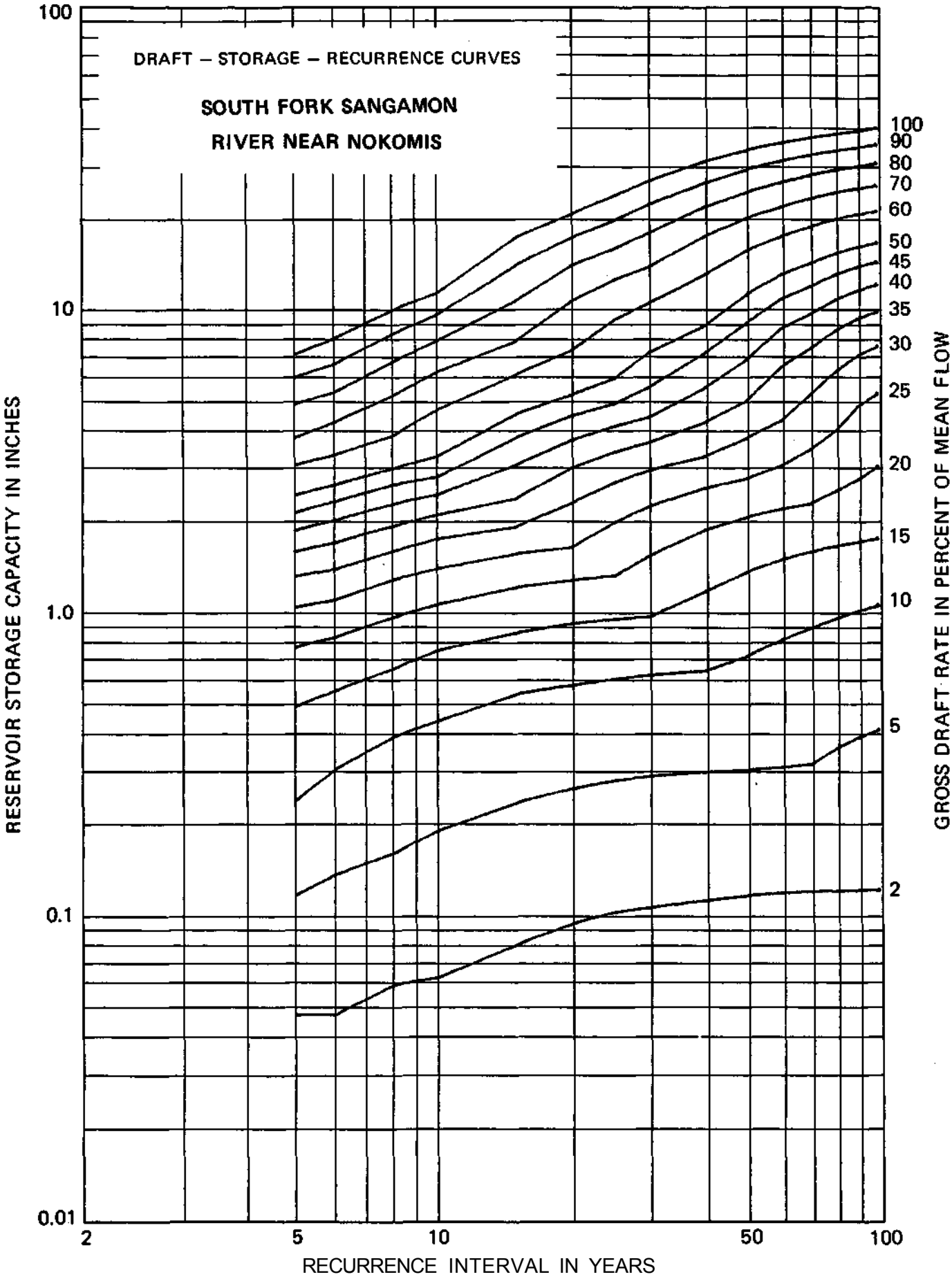
ACTUAL FLOW DATA: Oct 1951 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

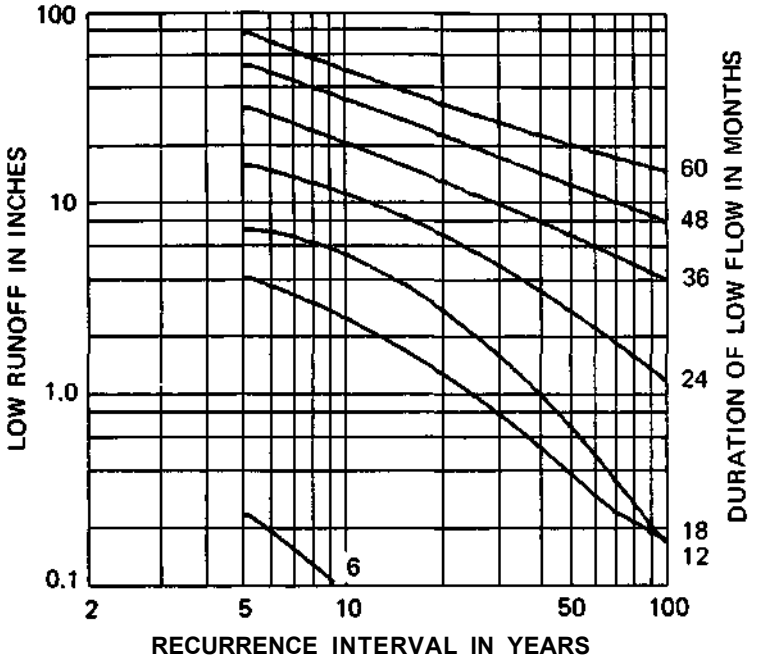
MEAN DISCHARGE: 0.73 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.12	.24	.48	.75	1.02	1.29	1.56	1.83	2.09	2.39	3.00	3.70	4.77	5.84	6.92
	3	3	4	7	7	7	7	7	7	7	8	8	14	14	14	14
6	.05	.13	.30	.54	.81	1.08	1.36	1.66	1.97	2.28	2.58	3.24	4.14	5.21	6.43	7.81
	3	4	6	7	7	7	8	8	8	8	8	9	14	14	18	18
8	.06	.16	.38	.64	.94	1.25	1.56	1.89	2.23	2.58	2.92	3.75	5.08	6.54	8.08	9.69
	4	5	6	8	8	8	8	9	9	9	9	16	18	20	20	22
10	.06	.19	.43	.74	1.04	1.36	1.71	2.05	2.40	2.74	3.21	4.57	6.07	7.68	9.37	11.05
	5	6	7	8	8	9	9	9	9	9	16	18	20	22	22	22
15	.08	.23	.53	.84	1.19	1.53	1.88	2.33	3.01	3.70	4.42	5.97	7.66	10.43	13.65	16.88
	6	7	8	9	9	9	9	16	18	18	20	22	22	42	42	42
20	.09	.26	.57	.91	1.25	1.61	2.25	2.94	3.63	4.37	5.14	7.16	10.39	13.61	16.83	20.14
	7	8	8	9	9	10	18	18	18	20	20	42	42	42	42	52
25	.10	.28	.59	.94	1.30	1.95	2.64	3.33	4.04	4.81	5.82	9.04	12.27	15.49	19.21	23.28
	7	8	9	9	16	18	18	18	20	20	42	42	42	42	52	56
30	.10	.29	.61	.96	1.51	2.20	2.90	3.59	4.34	5.46	7.07	10.29	13.51	17.48	21.78	26.08
	7	8	9	9	18	18	18	18	20	42	42	42	42	56	56	56
40	.11	.29	.63	1.16	1.84	2.53	3.22	4.16	5.42	7.03	8.64	12.76	17.05	21.35	25.65	30.09
	8	8	9	16	18	18	18	32	42	42	42	56	56	56	58	58
50	.12	.30	.71	1.35	2.04	2.73	3.71	4.93	6.70	8.85	11.00	15.30	19.59	23.93	28.38	32.83
	8	8	14	18	18	18	32	32	56	56	56	56	56	58	58	58
60	.12	.31	.80	1.48	2.17	3.01	4.24	6.35	8.49	10.64	12.79	17.09	21.42	25.87	30.32	34.77
	8	9	16	18	18	32	32	56	56	56	56	56	58	58	58	58
70	.12	.31	.88	1.57	2.26	3.41	5.18	7.33	9.50	11.73	13.95	18.40	22.85	27.30	31.75	36.20
	8	14	18	18	18	32	56	56	58	58	58	58	58	58	58	58
80	.12	.36	.95	1.64	2.49	3.93	6.15	8.38	10.60	12.83	15.05	19.50	23.95	28.40	32.85	37.31
	8	14	18	18	32	58	58	58	58	58	58	58	58	58	58	60
90	.12	.39	1.01	1.70	2.73	4.74	6.96	9.19	11.41	13.64	15.86	20.31	24.76	29.21	33.70	38.30
	8	14	18	18	32	58	58	58	58	58	58	58	58	58	60	60
100	.12	.41	1.05	1.74	3.00	5.23	7.45	9.68	11.90	14.13	16.35	20.80	25.30	29.90	34.51	39.11
	8	14	18	18	58	58	58	58	58	58	58	58	60	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
SOUTH FORK SANGAMON
RIVER NEAR NOKOMIS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55745 —FLAT BRANCH NEAR TAYLORVILLE



LOCATION: In SE¼ SE¼ Sec 24, T13N, R2W, Christian County, at bridge on Illinois 29, 1.4 miles east of Taylorville

DRAINAGE AREA: 276 square miles

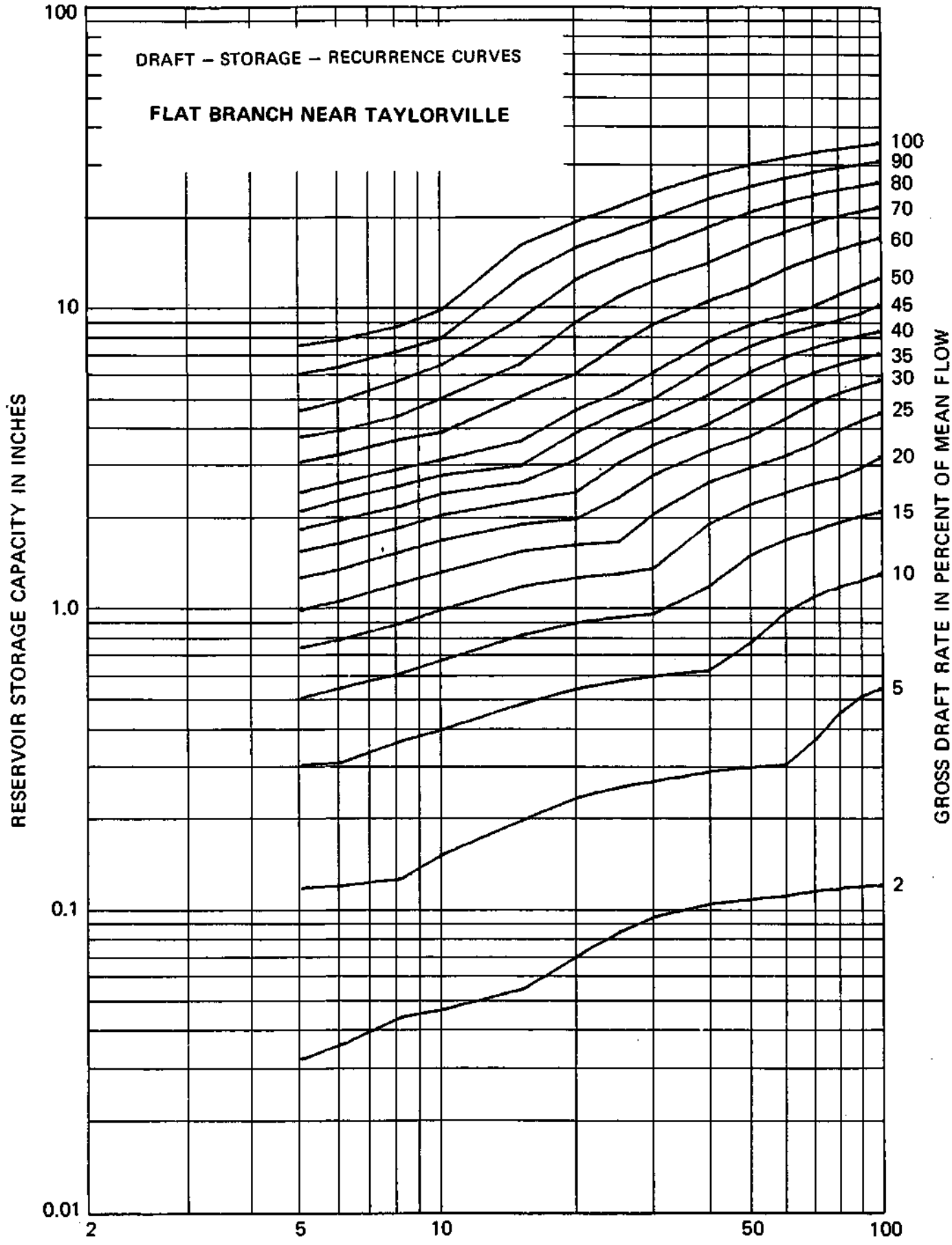
ACTUAL FLOW DATA: Jul 1949 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

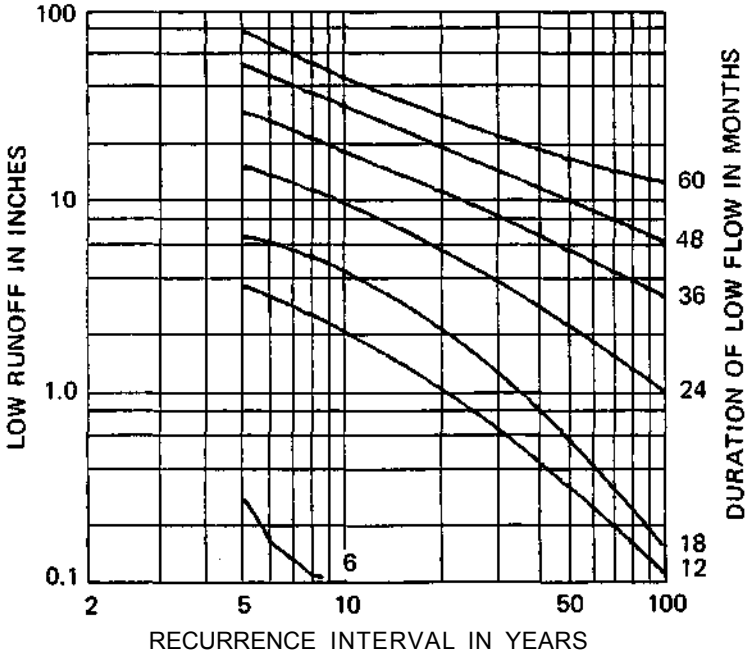
MEAN DISCHARGE: 0.78 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.11	.29	.49	.72	.95	1.22	1.49	1.77	2.04	2.35	2.98	3.60	4.41	5.82	7.23
	2	4	5	5	6	6	7	7	7	7	8	8	8	18	18	18
6	.03	.12	.30	.53	.76	1.02	1.30	1.59	1.90	2.21	2.53	3.15	3.78	4.73	6.14	7.55
	3	4	5	6	6	7	7	8	8	8	8	8	8	18	18	18
8	.04	.12	.35	.58	.86	1.16	1.47	1.79	2.11	2.46	2.81	3.52	4.22	5.51	6.92	8.33
	3	4	6	6	7	8	8	8	9	9	9	9	9	18	18	18
10	.05	.15	.38	.65	.96	1.27	1.63	1.98	2.33	2.68	3.04	3.74	4.85	6.26	7.67	9.50
	3	6	6	7	8	9	9	9	9	9	9	9	18	18	18	32
15	.05	.19	.47	.79	1.14	1.49	1.84	2.20	2.55	2.90	3.50	4.91	6.31	8.84	12.12	15.41
	5	7	8	9	9	9	9	9	9	9	18	18	18	42	42	42
20	.07	.23	.52	.87	1.22	1.57	1.92	2.36	3.04	3.75	4.45	5.86	8.63	11.91	15.20	18.49
	6	7	8	9	9	9	9	16	18	18	18	18	42	42	42	42
25	.08	.25	.55	.91	1.26	1.61	2.27	2.97	3.68	4.38	5.09	7.28	10.51	13.80	17.08	20.81
	7	7	9	9	9	9	18	18	18	18	18	32	42	42	42	54
30	.09	.26	.58	.93	1.32	2.01	2.71	3.41	4.12	4.85	5.93	8.51	11.80	15.08	18.86	23.15
	7	8	9	9	16	18	18	18	18	20	30	42	42	42	54	56
40	.10	.28	.60	1.14	1.85	2.55	3.26	4.01	4.99	6.23	7.48	10.17	13.53	17.76	22.08	26.46
	7	8	9	18	18	18	18	20	30	32	32	42	54	54	56	56
50	.11	.29	.75	1.45	2.16	2.87	3.65	4.73	5.98	7.23	8.48	11.38	15.60	19.93	24.31	28.69
	7	8	18	18	18	20	20	32	32	32	32	54	54	56	56	56
60	.11	.30	.94	1.64	2.36	3.14	4.17	5.43	6.68	7.93	9.18	12.88	17.17	21.55	25.94	30.32
	8	8	18	18	20	20	32	32	32	32	32	54	56	56	56	56
70	.11	.36	1.06	1.77	2.54	3.45	4.69	5.94	7.19	8.44	9.79	14.04	18.42	22.81	27.19	31.57
	8	18	18	18	20	30	32	32	32	32	54	56	56	56	56	56
80	.12	.44	1.15	1.89	2.67	3.82	5.08	6.33	7.58	8.83	10.70	15.04	19.42	23.80	28.19	32.57
	8	18	18	20	20	32	32	32	32	32	54	56	56	56	56	56
90	.12	.50	1.20	1.98	2.88	4.13	5.38	6.63	7.89	9.33	11.47	15.86	20.24	24.62	29.00	33.43
	8	18	18	20	32	32	32	32	32	54	56	56	56	56	56	58
100	.12	.53	1.27	2.05	3.12	4.38	5.63	6.88	8.13	9.97	12.16	16.54	20.93	25.31	29.69	34.15
	8	18	20	20	32	32	32	32	32	56	56	56	56	56	56	58


DRAFT – STORAGE – RECURRENCE CURVES
FLAT BRANCH NEAR TAYLORVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55755 - SOUTH FORK, SANGAMON RIVER AT KINCAID



LOCATION: In SW¼ NE¼ Sec 14, T13N, R3W, Christian County, at bridge on Illinois 104, 1.0 miles southeast of Kincaid

DRAINAGE AREA: 562 square miles

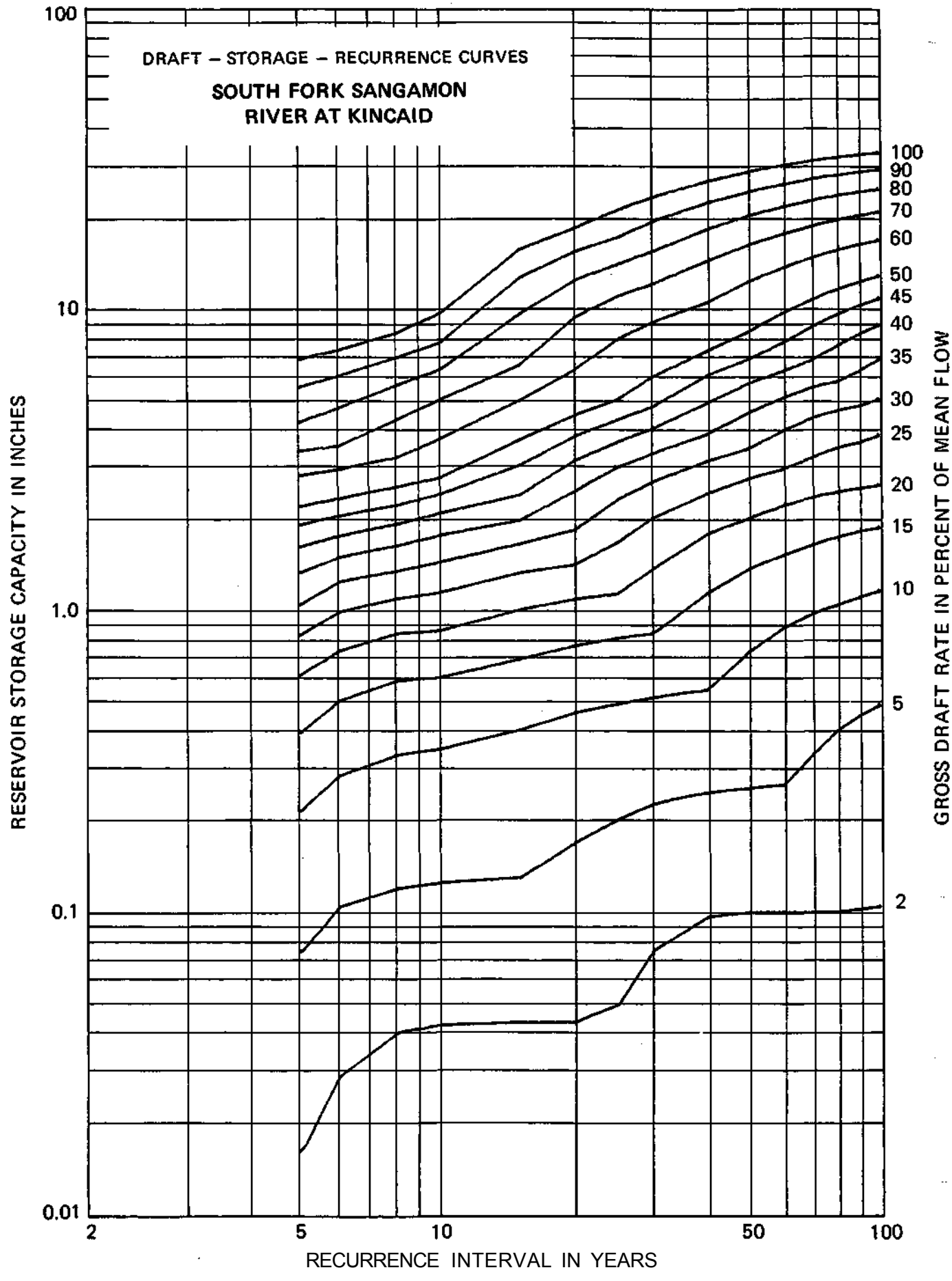
ACTUAL FLOW DATA: May 1917-Oct 1927; Sep 1928-Sep 1930; Oct 1931-Sep 1933; Oct 1944 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

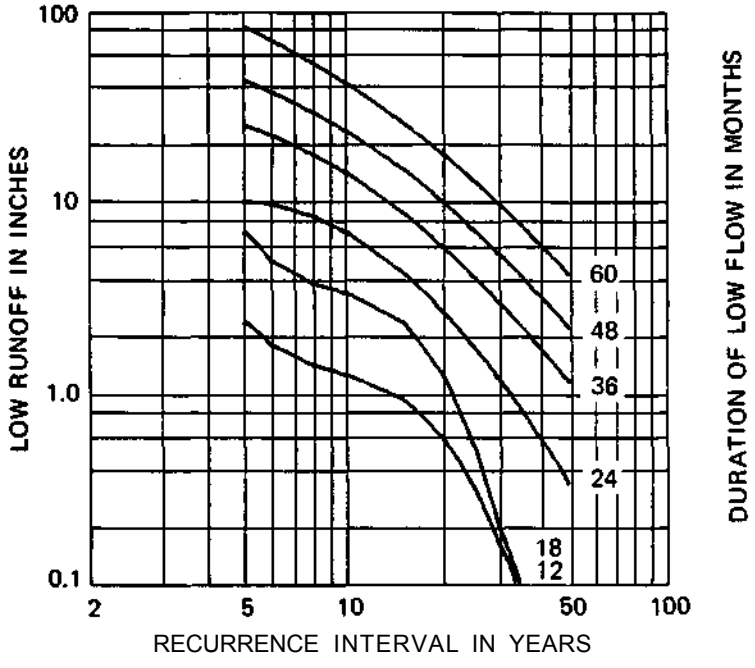
MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value!

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.07	.21	.38	.60	.81	1.02	1.30	1.59	1.87	2.16	2.72	3.29	4.10	5.37	6.65
	2	3	4	6	6	6	6	8	8	8	8	8	8	18	18	18
6	.03	.10	.28	.49	.72	.97	1.22	1.46	1.72	2.00	2.29	2.86	3.42	4.58	5.86	7.14
	3	4	6	6	7	7	7	7	8	8	8	8	8	18	18	18
8	.04	.12	.32	.57	.82	1.07	1.32	1.60	1.88	2.18	2.50	3.14	4.19	5.47	6.75	8.14
	3	5	6	7	7	7	7	8	8	9	9	9	18	18	18	20
10	.04	.12	.34	.59	.84	1.12	1.42	1.74	2.05	2.37	2.69	3.64	4.91	6.19	7.60	9.47
	3	5	7	7	8	8	9	9	9	9	9	18	18	18	26	40
15	.04	.13	.39	.68	.99	1.31	1.63	1.94	2.36	2.96	3.60	4.88	6.41	9.39	12.37	15.35
	3	5	8	8	9	9	9	9	16	18	18	18	42	42	42	42
20	.04	.17	.45	.75	1.07	1.39	1.81	2.44	3.08	3.72	4.36	6.19	9.18	12.16	15.14	18.12
	3	8	8	9	9	16	18	18	18	18	18	42	42	42	42	42
25	.05	.20	.48	.80	1.12	1.65	2.29	2.93	3.57	4.22	4.93	7.80	10.79	13.77	16.91	20.74
	6	8	8	9	9	18	18	18	18	20	20	42	42	42	54	54
30	.07	.22	.51	.83	1.35	1.99	2.63	3.27	3.95	4.68	5.87	8.86	11.84	15.18	19.01	22.92
	7	7	9	9	18	18	18	18	20	32	42	42	42	54	54	56
40	.10	.25	.54	1.12	1.76	2.40	3.08	3.79	4.82	5.95	7.17	10.32	14.16	18.01	21.99	25.97
	7	7	9	18	18	18	20	20	32	32	42	54	54	56	56	56
50	.10	.25	.72	1.36	2.00	2.70	3.41	4.49	5.63	6.76	8.31	12.14	16.05	20.02	24.00	27.98
	7	8	18	18	18	20	20	32	32	32	54	54	56	56	56	56
60	.10	.26	.87	1.51	2.20	2.91	3.92	5.05	6.19	7.68	9.60	13.51	17.48	21.46	25.44	29.42
	7	8	18	18	20	20	32	32	32	54	54	56	56	56	56	56
70	.10	.33	.97	1.64	2.35	3.19	4.33	5.47	6.74	8.65	10.62	14.60	18.57	22.55	26.53	30.50
	7	18	18	20	20	32	32	32	54	54	56	56	56	56	56	56
80	.10	.40	1.04	1.74	2.45	3.45	4.58	5.72	7.50	9.49	11.48	15.45	19.43	23.41	27.39	31.36
	8	18	18	20	20	32	32	32	56	56	56	56	56	56	56	56
90	.10	.45	1.10	1.81	2.52	3.59	4.76	6.21	8.20	10.18	12.17	16.15	20.13	24.10	28.08	32.06
	8	18	20	20	20	32	34	56	56	56	56	56	56	56	56	56
100	.10	.48	1.16	1.87	2.59	3.79	5.00	6.78	8.77	10.76	12.75	16.73	20.70	24.68	28.66	32.64
	8	18	20	20	34	34	34	56	56	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SOUTH FORK SANGAMON
RIVER AT KINCAID
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55758 - HORSE CREEK AT PAWNEE



LOCATION: In NE¼ NE¼ Sec 18, T13N, R4W, Sangamon County, upstream side of bridge on County Highway 28, 0.3 miles south of Pawnee

DRAINAGE AREA: 52.2 square miles

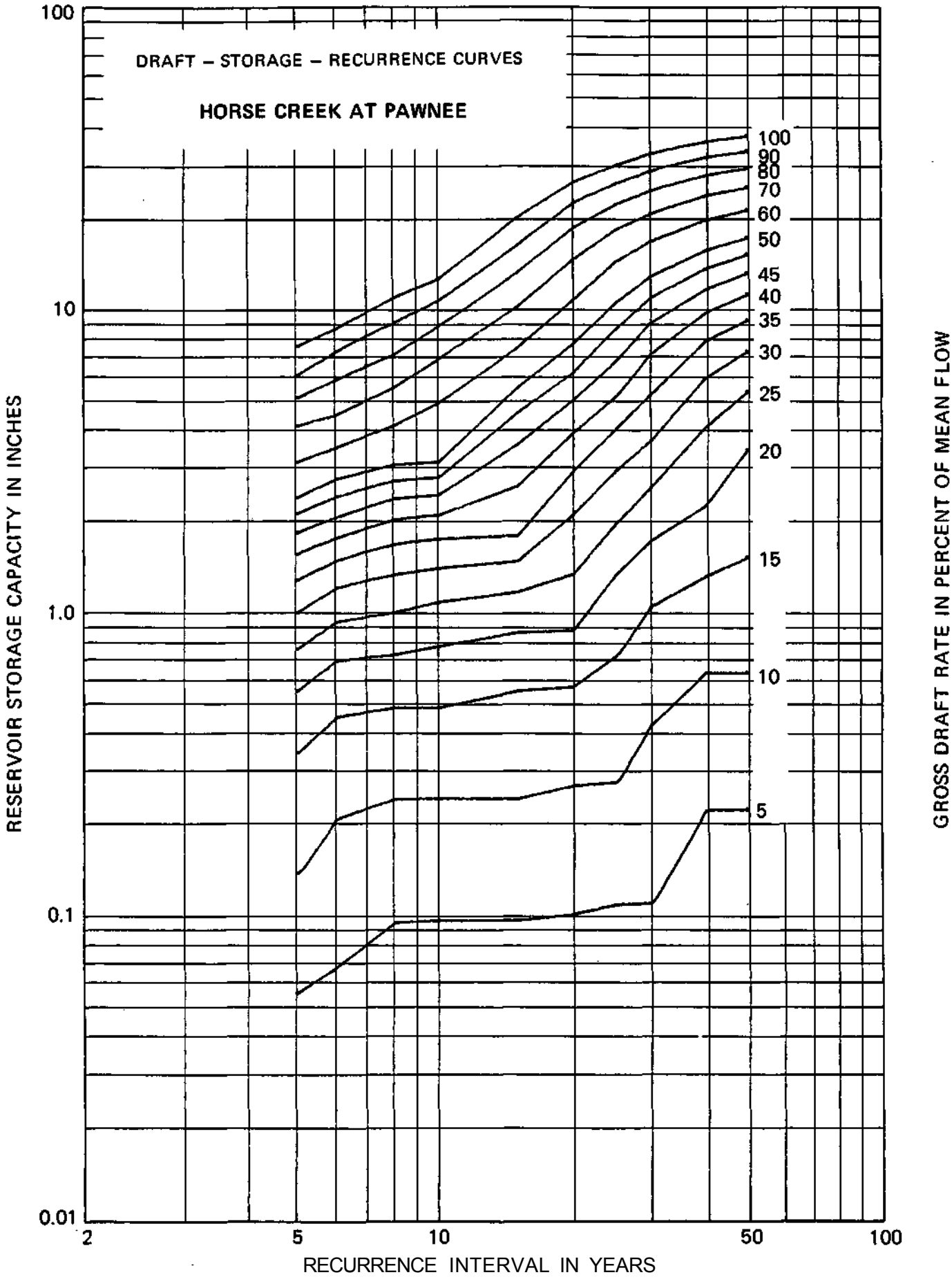
ACTUAL FLOW DATA: Oct 1967 to Oct 1978

INDEX STATION: South Fork Sangamon River near Rochester

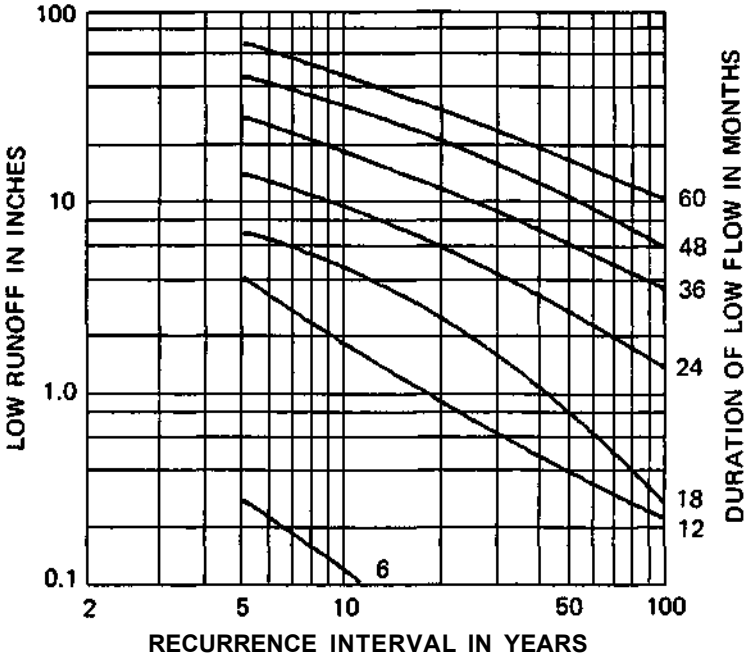
MEAN DISCHARGE: 0.69 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.14	.34	.55	.75	.99	1.27	1.54	1.82	2.09	2.37	3.10	4.06	5.02	5.99	7.45
	4	4	6	6	6	8	8	8	8	8	8	14	14	14	14	22
6	.07	.21	.45	.69	.93	1.20	1.47	1.75	2.04	2.39	2.73	3.46	4.42	5.79	7.17	8.54
	5	7	7	7	7	8	8	8	10	10	10	14	14	20	20	20
8	.09	.24	.48	.72	1.00	1.32	1.67	2.01	2.36	2.70	3.04	4.09	5.47	7.02	8.95	10.87
	7	7	7	8	8	10	10	10	10	10	10	20	20	28	28	28
10	.10	.24	.48	.77	1.08	1.40	1.74	2.08	2.43	2.77	3.12	4.87	6.79	8.72	10.64	12.57
	7	7	7	9	9	10	10	10	10	10	10	28	28	28	28	28
15	.10	.24	.55	.86	1.17	1.48	1.79	2.61	3.57	4.53	5.50	7.42	10.19	13.22	16.24	20.02
	7	7	9	9	9	9	9	28	28	28	28	28	44	44	44	56
20	.10	.27	.57	.88	1.34	2.10	2.91	3.90	5.00	6.15	7.66	10.73	14.58	18.43	22.28	26.13
	8	8	9	9	22	22	28	32	32	44	44	56	56	56	56	56
25	.11	.27	.72	1.34	1.96	2.93	4.03	5.15	6.73	8.62	10.55	14.40	18.25	22.10	25.95	29.80
	8	8	18	18	18	32	32	44	46	56	56	56	56	56	56	56
30	.11	.43	1.05	1.72	2.58	3.68	5.23	7.11	9.04	10.96	12.89	16.74	20.59	24.53	28.52	32.51
	8	18	18	20	32	32	54	56	56	56	56	56	56	58	58	58
40	.22	.63	1.32	2.25	4.08	5.94	7.85	9.77	11.70	13.68	15.67	19.66	23.65	27.63	31.62	35.61
	20	20	20	34	54	54	56	56	56	58	58	58	58	58	58	58
50	.22	.64	1.53	3.44	5.36	7.29	9.28	11.28	13.27	15.26	17.26	21.24	25.23	29.22	33.21	37.20
	20	20	54	56	56	56	58	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
HORSE CREEK AT PAWNEE
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55760 - SOUTH FORK, SANGAMON RIVER NEAR ROCHESTER!



LOCATION: In NE¼4 NW¼ Sec 20, T15N, R4W, Sangamon County on right bank at City of Springfield dam, 1.7 miles southwest of Rochester

DRAINAGE AREA: 867 square miles

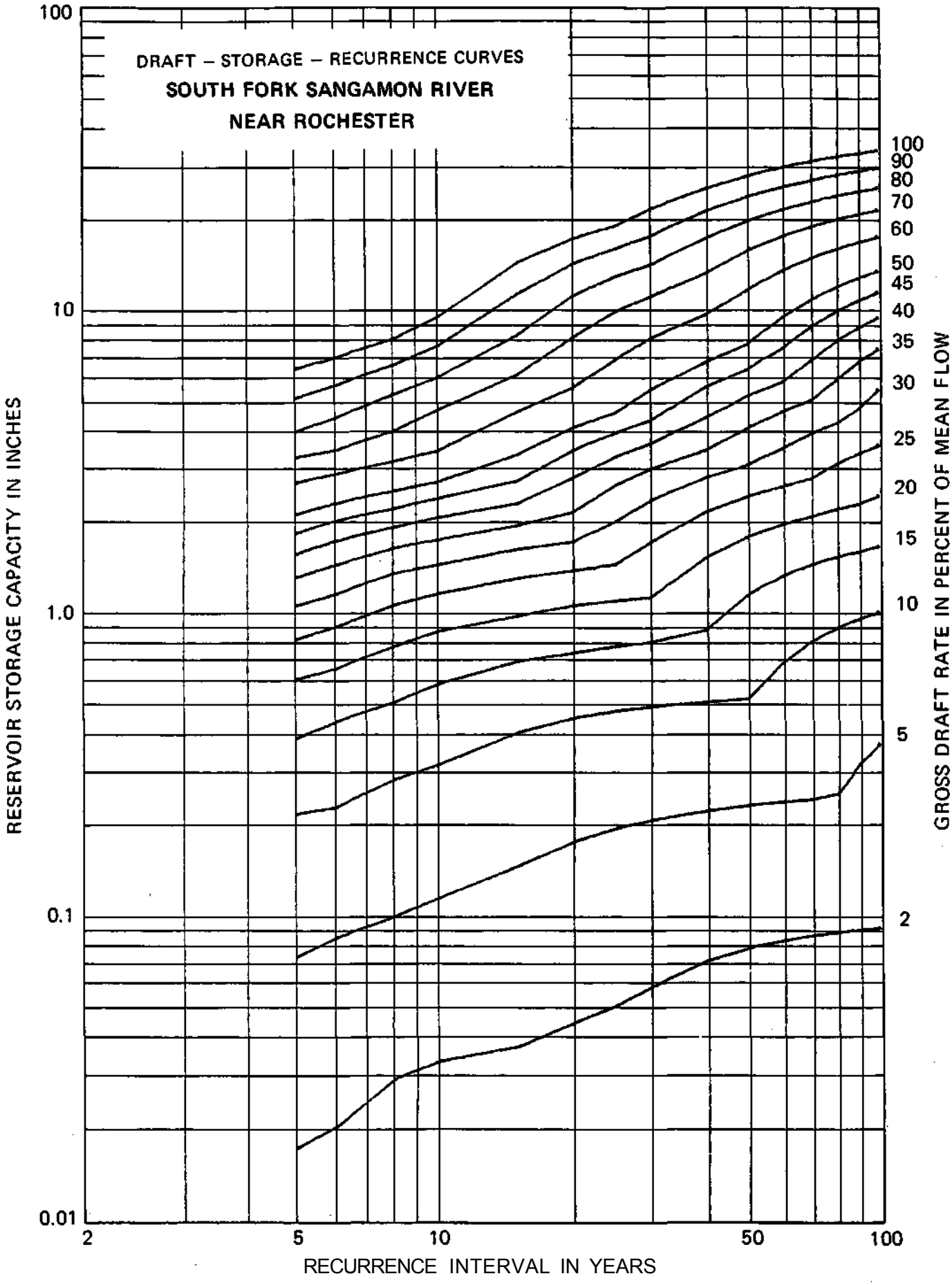
ACTUAL FLOW DATA: Jul 1949 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

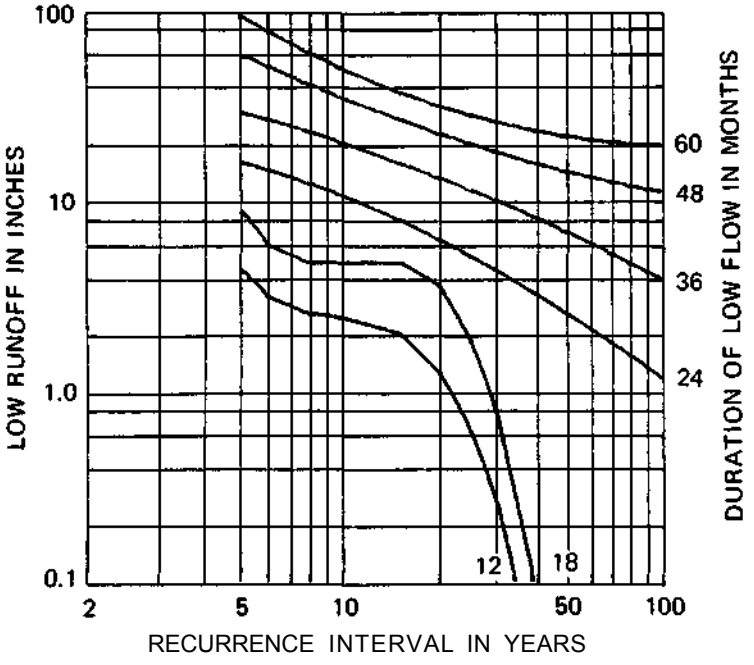
MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.07	.22	.38	.60	.81	1.05	1.30	1.55	1.81	2.10	2.67	3.24	3.94	5.08	6.34
	2	4	4	6	6	6	7	7	7	8	8	8	8	16	16	18
6	.02	.08	.23	.43	.65	.89	1.14	1.43	1.71	2.00	2.28	2.85	3.42	4.38	5.60	6.88
	2	4	4	6	6	7	8	8	8	8	8	8	8	16	18	18
8	.03	.10	.28	.50	.77	1.05	1.34	1.62	1.91	2.19	2.51	3.15	3.96	5.23	6.53	7.95
	3	4	6	7	8	8	8	8	8	8	9	9	16	18	20	20
10	.03	.11	.32	.58	.86	1.15	1.43	1.73	2.06	2.38	2.70	3.42	4.67	5.95	7.55	9.41
	3	5	6	8	8	8	8	9	9	9	9	12	18	18	26	26
15	.04	.15	.40	.69	.97	1.29	1.61	1.93	2.29	2.72	3.33	4.61	6.08	8.20	11.19	14.19
	3	6	8	8	9	9	9	9	12	12	18	18	26	42	42	42
20	.04	.18	.45	.73	1.05	1.37	1.71	2.15	2.79	3.43	4.07	5.53	8.06	11.05	14.05	17.04
	5	7	8	8	9	9	12	18	18	18	18	30	42	42	42	42
25	.05	.19	.47	.77	1.09	1.44	2.00	2.64	3.29	3.93	4.60	6.83	9.82	12.82	15.81	18.82
	6	7	8	9	9	12	18	18	18	18	20	42	42	42	42	56
30	.06	.21	.49	.80	1.12	1.71	2.35	2.99	3.63	4.34	5.46	8.04	11.04	14.03	17.42	21.41
	6	7	8	9	12	18	18	18	18	30	32	42	42	42	56	56
40	.07	.22	.51	.88	1.52	2.16	2.80	3.46	4.43	5.57	6.71	9.63	13.12	17.11	21.10	25.09
	7	8	8	18	18	18	18	20	32	32	32	42	56	56	56	56
50	.08	.23	.52	1.15	1.79	2.43	3.10	4.09	5.23	6.37	7.72	11.63	15.62	19.61	23.60	27.63
	7	8	9	18	18	18	20	32	32	32	54	56	56	56	56	58
60	.08	.24	.69	1.33	1.97	2.63	3.52	4.66	5.80	7.47	9.44	13.44	17.43	21.42	25.41	29.50
	7	8	18	18	18	20	32	32	32	54	56	56	56	56	56	58
70	.09	.24	.81	1.45	2.09	2.80	3.94	5.08	6.83	8.82	10.82	14.81	18.80	22.79	26.79	30.92
	7	8	18	18	18	32	32	32	56	56	56	56	56	56	58	58
80	.09	.26	.90	1.54	2.21	3.12	4.26	5.91	7.90	9.90	11.89	15.89	19.88	23.87	27.91	32.04
	7	18	18	18	20	32	32	56	56	56	56	56	56	56	58	58
90	.09	.32	.96	1.60	2.31	3.38	4.78	6.78	8.77	10.77	12.76	16.75	20.74	24.73	28.82	32.95
	7	18	18	18	20	32	56	56	56	56	56	56	56	56	58	58
100	.09	.37	1.01	1.67	2.46	3.60	5.49	7.49	9.49	11.48	13.48	17.47	21.46	25.45	29.57	33.71
	7	18	18	20	32	32	56	56	56	56	56	56	56	56	58	58


DRAFT – STORAGE – RECURRENCE CURVES
SOUTH FORK SANGAMON RIVER
NEAR ROCHESTER
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55915 - ASA CREEK AT SULLIVAN



LOCATION: In NE¼ NE¼ Sec 35, T14N, R5E, Moultrie County, 0.8 miles north of Sullivan and 5.5 miles upstream from mouth

DRAINAGE AREA: 8.05 square miles

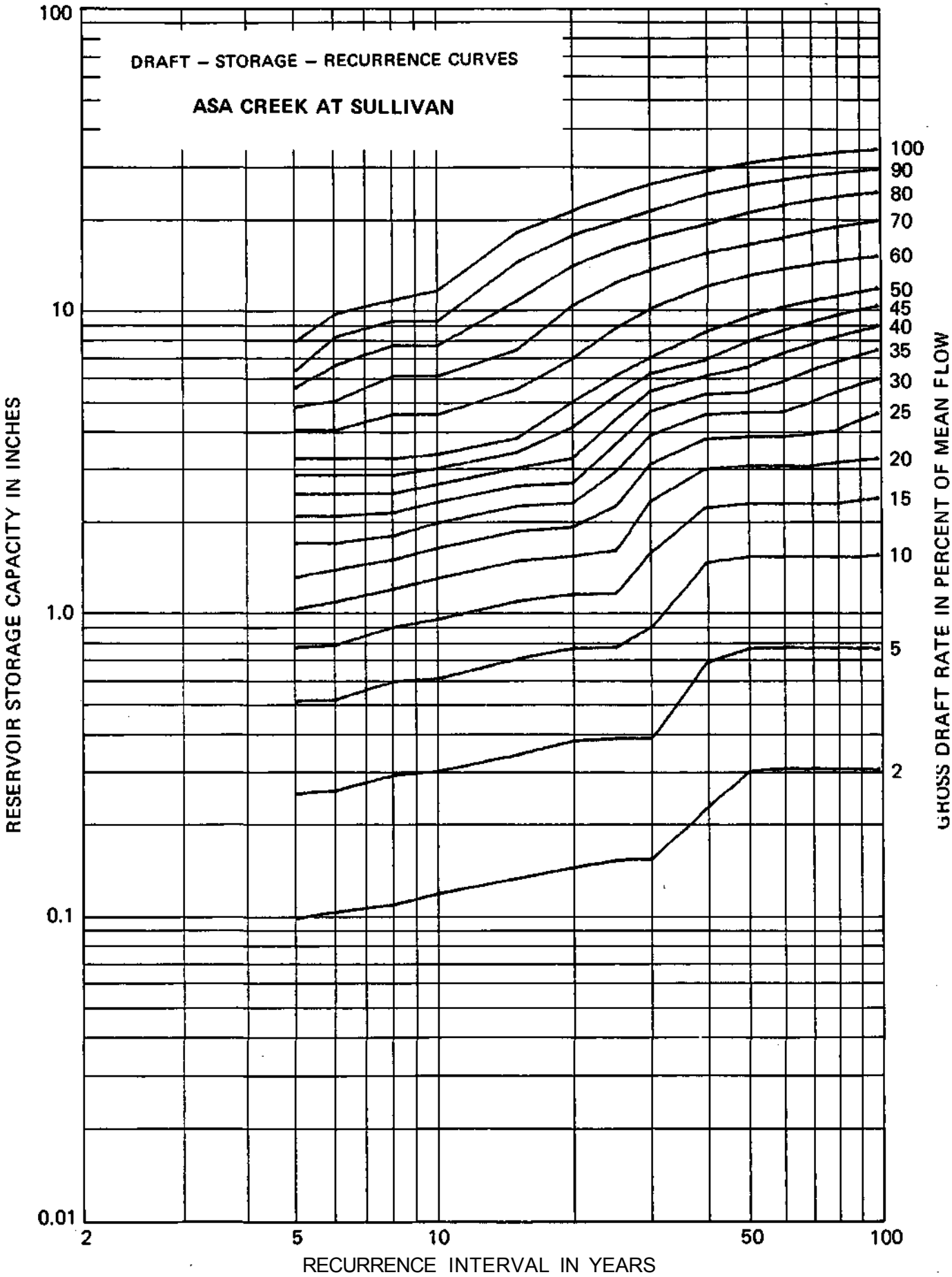
ACTUAL FLOW DATA: Jul 1950 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

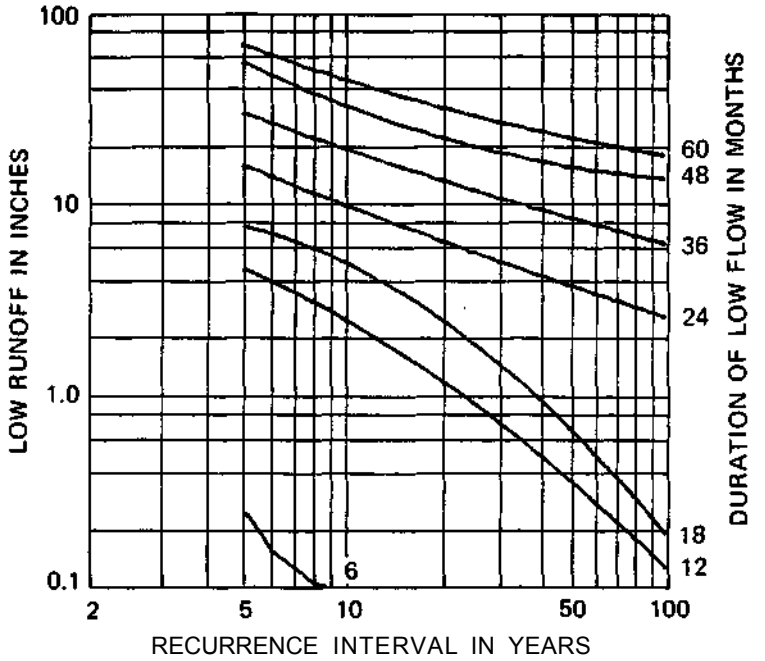
MEAN DISCHARGE: 0.83 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.09	.24	.49	.74	1.00	1.27	1.64	2.02	2.39	2.77	3.14	3.89	4.64	5.39	6.14	7.62
	6	6	6	6	6	9	9	9	9	9	9	9	9	9	9	20
6	.10	.25	.50	.76	1.05	1.34	1.64	2.02	2.39	2.77	3.14	3.89	4.86	6.36	7.86	9.36
	6	6	6	7	7	7	9	9	9	9	9	9	18	18	18	18
8	.11	.28	.57	.86	1.16	1.46	1.74	2.07	2.40	2.77	3.14	4.39	5.89	7.39	8.89	10.40
	7	7	7	7	7	7	7	8	8	9	9	18	18	18	18	18
10	.11	.29	.59	.92	1.25	1.59	1.92	2.25	2.59	2.92	3.25	4.39	5.89	7.39	8.89	11.17
	7	7	8	8	8	8	8	8	8	8	8	18	18	18	18	30
15	.13	.33	.68	1.06	1.43	1.81	2.18	2.56	2.93	3.31	3.68	5.34	7.16	10.36	13.87	17.37
	8	8	9	9	9	9	9	9	9	9	9	20	30	42	42	42
20	.14	.37	.74	1.12	1.49	1.87	2.24	2.62	3.17	4.01	4.84	6.71	9.99	13.49	16.99	20.49
	9	9	9	9	9	9	9	20	20	20	20	30	42	42	42	42
25	.15	.37	.75	1.12	1.56	2.19	2.86	3.52	4.25	5.08	5.91	8.45	11.88	15.38	18.88	23.10
	9	9	9	9	14	16	16	16	20	20	20	40	42	42	42	60
30	.15	.37	.87	1.54	2.28	3.03	3.78	4.53	5.28	6.03	6.78	9.80	13.15	16.65	20.51	25.17
	9	9	16	16	18	18	18	18	18	18	18	40	42	42	54	60
40	.22	.67	1.42	2.17	2.92	3.67	4.42	5.17	5.92	6.67	8.24	11.57	14.91	18.56	23.23	27.90
	18	18	18	18	18	18	18	18	18	18	40	40	40	56	56	56
50	.29	.74	1.49	2.24	3.00	3.75	4.50	5.25	6.32	7.66	9.24	12.57	15.91	20.28	24.95	29.62
	18	18	18	18	18	18	18	18	32	32	40	40	40	56	56	56
60	.30	.75	1.50	2.25	3.00	3.75	4.52	5.69	7.02	8.35	9.93	13.26	16.79	21.46	26.13	30.80
	18	18	18	18	18	18	20	32	32	32	40	40	56	56	56	56
70	.30	.75	1.50	2.25	3.00	3.83	4.87	6.20	7.54	8.92	10.43	13.77	17.66	22.33	27.00	31.67
	18	18	18	18	18	20	32	32	32	34	40	40	56	56	56	56
80	.30	.75	1.50	2.25	3.09	3.93	5.27	6.60	7.98	9.40	10.82	14.15	18.32	22.99	27.66	32.33
	18	18	18	20	20	32	32	32	34	34	40	40	56	56	56	56
90	.30	.75	1.50	2.32	3.15	4.25	5.58	6.95	8.36	9.78	11.20	14.46	18.85	23.52	28.19	32.86
	18	18	18	20	20	32	32	34	34	34	34	40	56	56	56	56
100	.30	.75	1.53	2.36	3.19	4.50	5.84	7.26	8.68	10.09	11.51	14.71	19.28	23.95	28.61	33.28
	18	18	20	20	20	32	34	34	34	34	34	40	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
ASA CREEK AT SULLIVAN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55920 - KASKASKIA RIVER AT SHELBYVILLE



LOCATION: In SE¼ SW¼ Sec 8, T11N, R4E, Shelby County, 700 feet upstream from bridge on Illinois 16 in Shelbyville, 7 miles upstream from Robinson Creek

DRAINAGE AREA: 1054 square miles

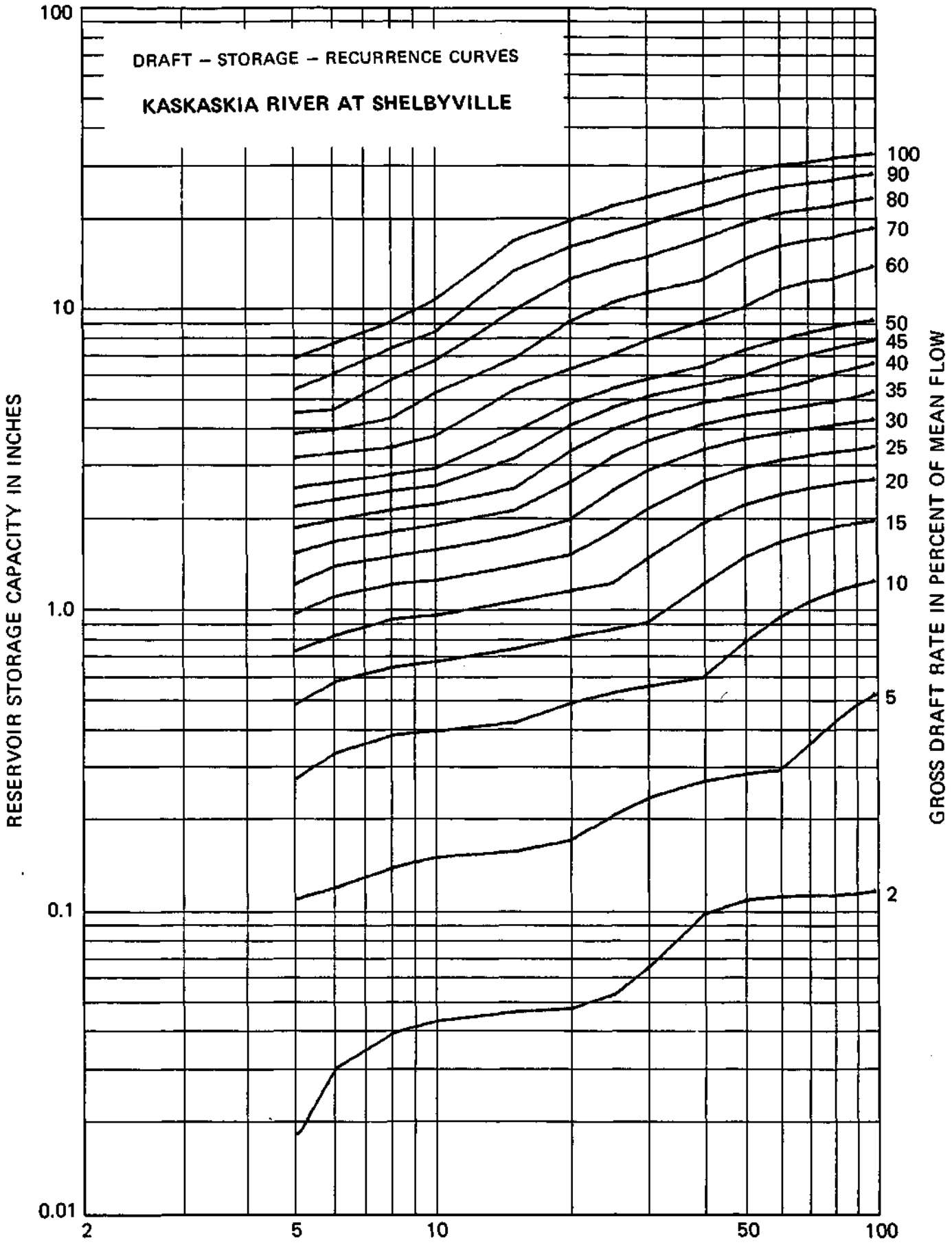
ACTUAL FLOW DATA: Feb 1908 thru Sep 1912; Aug thru Dec 1914; Oct 1940 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

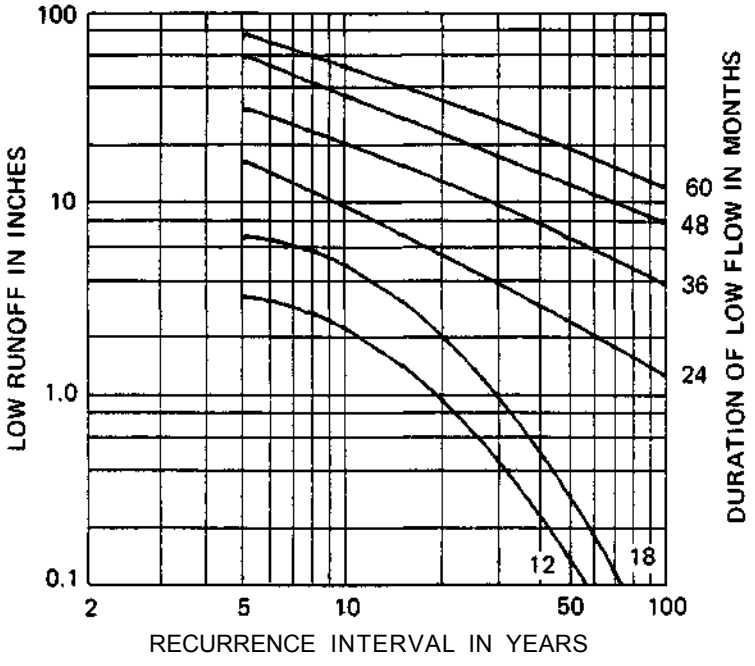
MEAN DISCHARGE: 0.80 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.11	.27	.48	.71	.95	1.19	1.50	1.82	2.14	2.46	3.10	3.74	4.38	5.23	6.67
	3	4	4	6	6	6	6	8	8	8	8	8	8	8	18	18
6	.03	.12	.33	.57	.81	1.09	1.37	1.65	1.94	2.26	2.58	3.22	3.85	4.49	5.91	7.45
	3	4	6	6	7	7	7	7	8	8	8	8	8	8	18	20
8	.04	.14	.38	.63	.91	1.19	1.47	1.77	2.09	2.41	2.73	3.37	4.21	5.65	7.19	8.79
	3	6	6	7	7	7	7	8	8	8	8	8	18	18	20	20
10	.04	.15	.39	.66	.94	1.23	1.55	1.87	2.19	2.52	2.88	3.69	5.13	6.59	8.19	10.44
	3	6	6	7	7	8	8	8	8	9	9	18	18	20	20	30
15	.05	.15	.41	.73	1.05	1.37	1.73	2.09	2.47	3.11	3.80	5.24	6.68	9.62	12.98	16.34
	3	6	7	8	8	8	9	9	16	16	18	18	18	42	42	42
20	.05	.17	.48	.80	1.14	1.50	1.96	2.59	3.29	4.01	4.72	6.16	8.85	12.20	15.56	19.01
	3	7	8	8	9	9	16	16	18	18	18	18	42	42	42	52
25	.05	.20	.52	.85	1.21	1.79	2.44	3.16	3.88	4.60	5.32	6.88	10.23	13.59	17.14	21.29
	5	8	8	9	9	16	18	18	18	18	18	42	42	42	52	52
30	.07	.23	.55	.90	1.46	2.12	2.84	3.56	4.28	5.00	5.72	7.71	11.05	14.48	18.64	22.79
	7	7	8	9	16	18	18	18	18	18	18	40	42	52	52	52
40	.10	.26	.59	1.20	1.91	2.62	3.34	4.06	4.78	5.50	6.33	8.89	12.21	16.63	21.10	25.58
	7	7	9	16	18	18	18	18	18	18	32	32	54	56	56	56
50	.11	.28	.77	1.47	2.19	2.91	3.63	4.35	5.07	5.87	7.15	9.88	14.23	18.71	23.18	27.66
	7	8	16	18	18	18	18	18	18	32	32	54	56	56	56	56
60	.11	.29	.93	1.65	2.37	3.09	3.81	4.53	5.31	6.46	7.74	11.30	15.78	20.25	24.73	29.20
	7	8	18	18	18	18	18	18	20	32	32	56	56	56	56	56
70	.11	.35	1.05	1.77	2.49	3.21	3.93	4.70	5.63	6.91	8.19	12.07	16.54	21.01	25.49	29.96
	7	16	18	18	18	18	18	20	32	32	32	56	56	56	56	56
80	.11	.42	1.14	1.86	2.57	3.29	4.05	4.85	5.99	7.27	8.54	12.36	16.91	21.54	26.17	30.81
	7	18	18	18	18	18	20	20	32	32	32	56	58	58	58	58
90	.11	.48	1.20	1.92	2.64	3.36	4.16	5.00	6.28	7.56	8.84	13.04	17.68	22.31	26.94	31.58
	8	18	18	18	18	20	20	32	32	32	32	58	58	58	58	58
100	.12	.52	1.24	1.96	2.68	3.45	4.24	5.24	6.52	7.80	9.08	13.64	18.28	22.91	27.55	32.18
	8	18	18	18	18	20	20	32	32	32	32	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KASKASKIA RIVER AT SHELBYVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55923 - WOLF CREEK NEAR BEECHER CITY



LOCATION: In NE¼ NE¼ Sec 12, T8N, R3E, Fayette County, at bridge on Illinois 128, 2.2 miles southwest of Beecher City

DRAINAGE AREA: 47.9 square miles

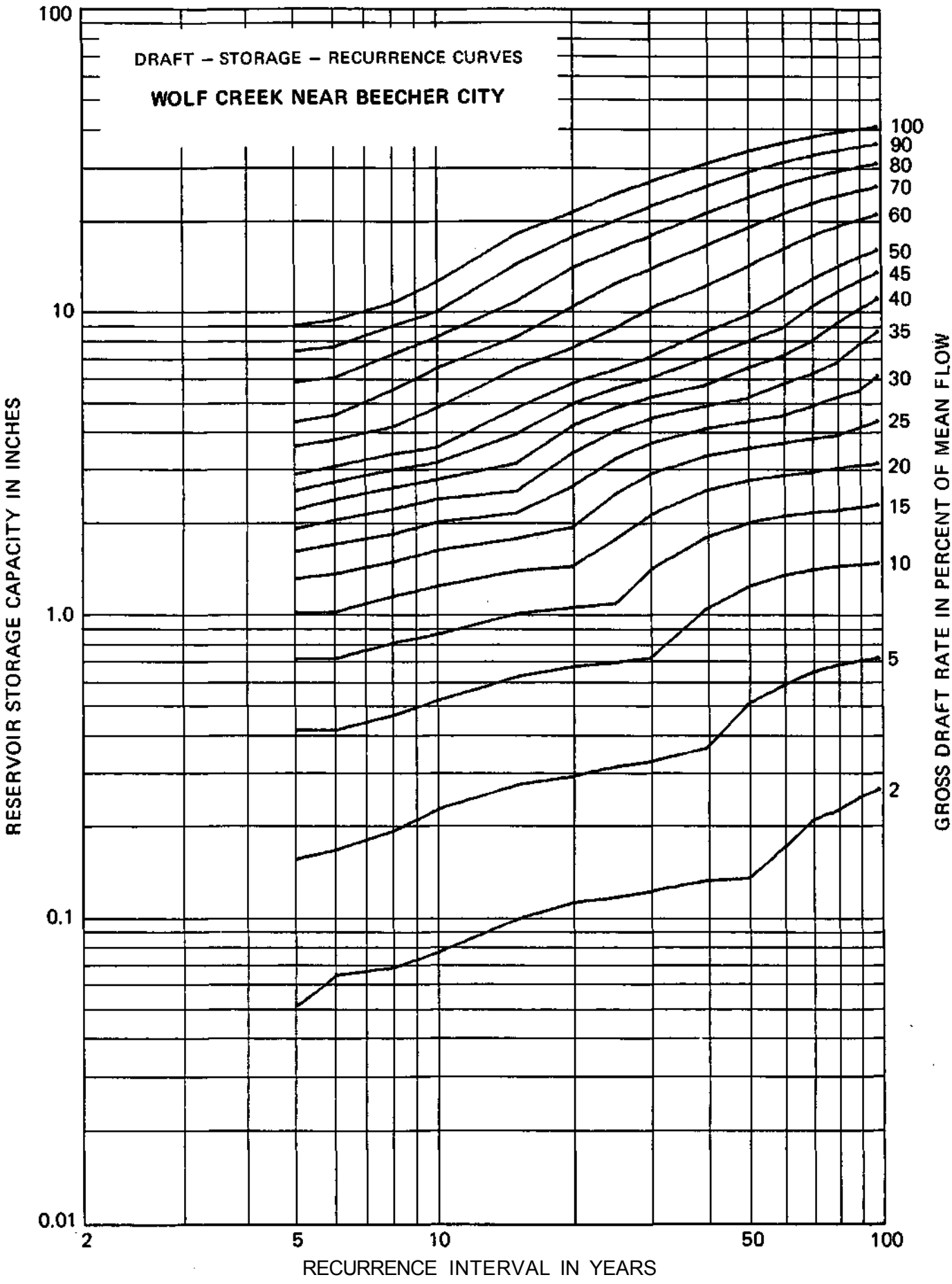
ACTUAL FLOW DATA: Dec 1958 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

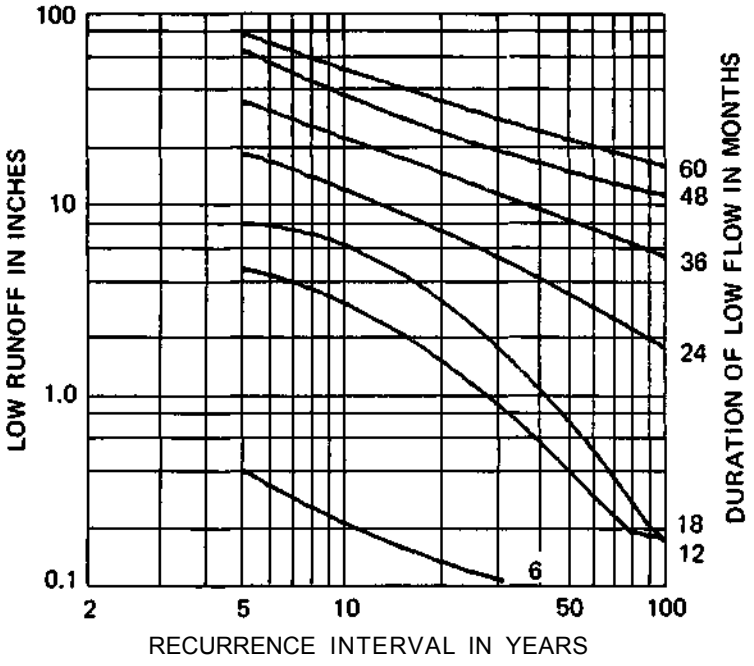
MEAN DISCHARGE: 0.84 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.15	.41	.70	.99	1.29	1.56	1.87	2.17	2.50	2.84	3.51	4.21	5.72	7.22	8.73
	3	6	7	7	7	7	7	7	8	8	8	8	18	18	18	18
6	.06	.16	.41	.70	1.00	1.33	1.67	2.00	2.34	2.67	3.01	3.68	4.43	5.91	7.47	9.15
	4	4	7	7	8	8	8	8	8	8	8	8	10	18	20	20
8	.07	.19	.45	.79	1.12	1.46	1.80	2.18	2.55	2.93	3.31	4.06	5.39	7.06	8.74	10.41
	4	5	8	8	8	8	9	9	9	9	9	9	20	20	20	20
10	.08	.22	.51	.84	1.22	1.59	1.97	2.35	2.73	3.10	3.48	4.70	6.38	8.06	9.77	12.26
	5	6	8	8	9	9	9	9	9	9	9	20	20	20	22	30
15	.10	.27	.61	.99	1.37	1.74	2.12	2.50	3.09	3.85	4.69	6.37	8.07	10.59	14.04	17.56
	6	7	9	9	9	9	9	9	18	20	20	20	30	30	42	42
20	.11	.29	.66	1.04	1.42	1.90	2.59	3.34	4.10	4.85	5.68	7.42	10.16	13.67	17.19	20.71
	7	7	9	9	9	16	18	18	18	18	20	30	42	42	42	42
25	.11	.31	.68	1.07	1.74	2.45	3.21	3.96	4.72	5.48	6.32	8.64	12.16	15.68	19.46	23.81
	7	8	9	16	16	18	18	18	18	20	20	42	42	42	52	52
30	.12	.32	.71	1.38	2.09	2.84	3.60	4.35	5.11	5.92	6.96	10.04	13.56	17.33	21.68	26.17
	8	8	16	16	18	18	18	18	18	20	30	42	42	52	52	54
40	.13	.36	1.03	1.77	2.52	3.27	4.03	4.79	5.63	6.91	8.39	11.91	16.09	20.61	25.14	29.93
	8	16	16	18	18	18	18	20	20	32	42	42	54	54	54	58
50	.13	.50	1.22	1.97	2.73	3.48	4.27	5.10	6.43	7.83	9.59	13.85	18.46	23.24	28.10	32.96
	8	16	18	18	18	18	20	20	32	42	42	54	56	58	58	58
60	.17	.58	1.33	2.08	2.84	3.63	4.46	5.69	7.03	8.71	11.05	15.75	20.59	25.45	30.31	35.17
	16	18	18	18	18	20	20	32	32	56	56	56	58	58	58	58
70	.21	.64	1.39	2.15	2.92	3.76	4.80	6.14	7.87	10.21	12.56	17.41	22.27	27.13	31.99	36.85
	16	18	18	18	20	20	32	32	56	56	56	58	58	58	58	58
80	.22	.68	1.43	2.18	3.01	3.85	5.15	6.71	9.05	11.44	13.87	18.73	23.59	28.45	33.31	38.17
	18	18	18	18	20	20	32	56	56	58	58	58	58	58	58	58
90	.25	.70	1.45	2.24	3.08	4.09	5.43	7.67	10.08	12.51	14.94	19.80	24.66	29.52	34.38	39.24
	18	18	18	20	20	32	32	56	58	58	58	58	58	58	58	58
100	.26	.72	1.47	2.29	3.13	4.32	6.11	8.54	10.97	13.40	15.83	20.69	25.55	30.41	35.27	40.13
	18	18	18	20	20	32	58	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
WOLF CREEK NEAR BEECHER CITY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55925 - KASKASKIA RIVER AT VANDALIA



LOCATION: In SE¼ Sec 16, T6N, R1E, Fayette County, on right bank at upstream side of Gallatin Street Bridge, 3.5 miles upstream from Hickory Creek

DRAINAGE AREA: 1940 square miles

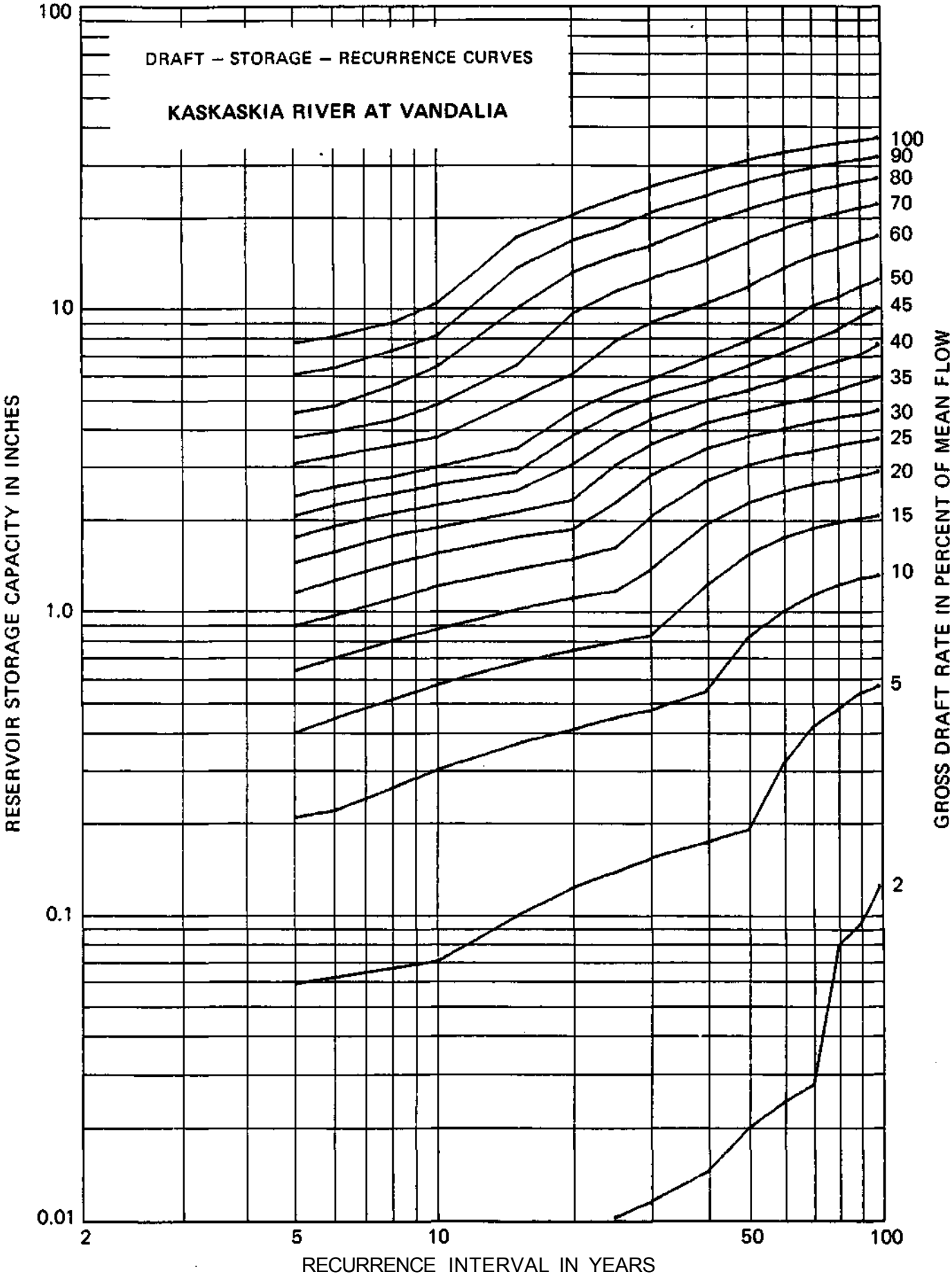
ACTUAL FLOW DATA: Feb 1908 to Dec 1912, Aug 1914 to Oct 1978.

INDEX STATION: None

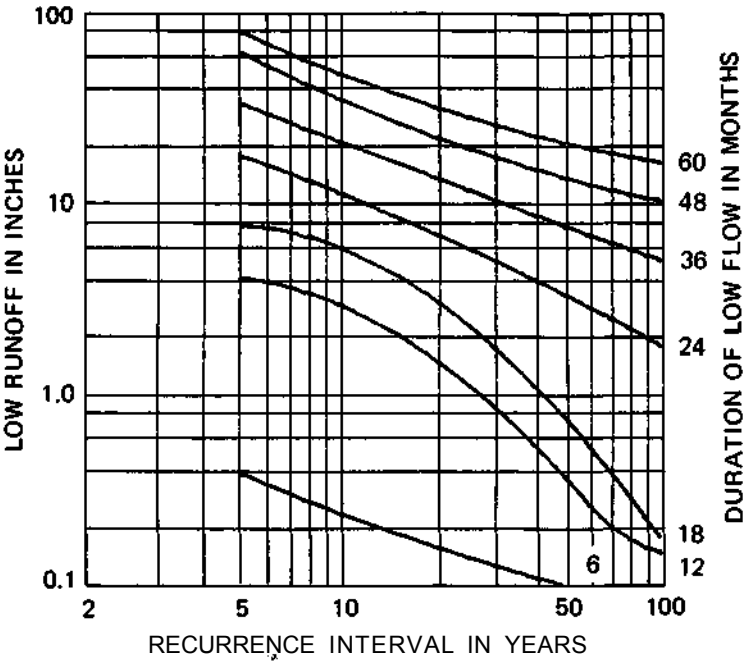
MEAN DISCHARGE: 0.82 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.06	.20	.39	.62	.87	1.11	1.40	1.69	2.00	2.32	2.98	3.63	4.38	5.85	7.43
	1	3	4	5	6	6	7	7	7	8	8	8	8	18	18	20
6	.00	.06	.21	.43	.68	.94	1.23	1.52	1.85	2.17	2.50	3.16	3.81	4.62	6.17	7.80
	1	3	5	6	6	7	7	8	8	8	8	8	8	18	20	20
8	.00	.06	.26	.50	.78	1.07	1.39	1.72	2.05	2.37	2.70	3.43	4.16	5.41	7.05	8.69
	1	3	6	6	7	8	8	8	8	8	8	9	9	20	20	20
10	.01	.07	.29	.56	.85	1.18	1.50	1.83	2.18	2.55	2.92	3.66	4.69	6.27	7.91	10.09
	1	5	6	7	8	8	8	8	9	9	9	9	18	20	20	32
15	.01	.10	.36	.66	.99	1.34	1.71	2.08	2.44	2.81	3.37	4.84	6.34	9.70	13.14	16.57
	2	6	7	8	8	9	9	9	9	9	18	18	20	42	42	42
20	.01	.12	.40	.73	1.08	1.45	1.82	2.29	2.98	3.72	4.46	5.93	9.31	12.75	16.18	19.62
	2	6	8	8	9	9	9	16	18	18	18	18	42	42	42	42
25	.01	.14	.44	.78	1.15	1.59	2.24	2.98	3.72	4.45	5.19	7.62	11.05	14.49	17.95	22.32
	2	7	8	9	9	16	16	18	18	18	18	42	42	42	52	54
30	.01	.15	.46	.82	1.35	2.01	2.75	3.48	4.22	4.96	5.69	8.74	12.17	15.62	20.04	24.46
	2	7	8	9	16	18	18	18	18	18	18	42	42	54	54	54
40	.01	.17	.54	1.19	1.90	2.64	3.37	4.11	4.85	5.61	6.73	10.08	14.03	18.45	22.87	27.57
	4	7	16	16	18	18	18	18	18	20	32	42	54	54	54	58
50	.02	.19	.81	1.51	2.25	2.98	3.72	4.46	5.26	6.35	7.66	11.46	16.04	20.62	25.30	30.04
	4	8	16	18	18	18	18	18	20	32	32	56	56	56	58	58
60	.02	.31	.99	1.72	2.46	3.19	3.94	4.76	5.70	7.01	8.61	13.19	17.77	22.36	27.11	31.85
	4	16	18	18	18	18	20	20	32	32	56	56	56	58	58	58
70	.03	.41	1.12	1.86	2.59	3.34	4.15	4.97	6.20	7.65	9.95	14.53	19.11	23.76	28.51	33.25
	4	16	18	18	18	20	20	20	32	56	56	56	56	58	58	58
80	.08	.47	1.21	1.95	2.68	3.49	4.31	5.29	6.60	8.32	10.64	15.39	20.13	24.88	29.62	34.37
	16	18	18	18	18	20	20	32	32	56	58	58	58	58	58	58
90	.09	.54	1.27	2.01	2.78	3.60	4.42	5.61	6.92	9.19	11.56	16.31	21.05	25.80	30.54	35.29
	18	18	18	18	20	20	20	32	32	58	58	58	58	58	58	58
100	.12	.57	1.30	2.05	2.87	3.69	4.56	5.87	7.50	9.88	12.25	17.00	21.74	26.49	31.23	35.98
	18	18	18	20	20	20	32	32	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KASKASKIA RIVER AT VANDALIA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55930 - KASKASKIA RIVER AT CARLYLE



LOCATION: In SE¼ Sec 18, T2N, R2W, Clinton County at bridge on US 50 at Carlyle

DRAINAGE AREA: 2719 square miles

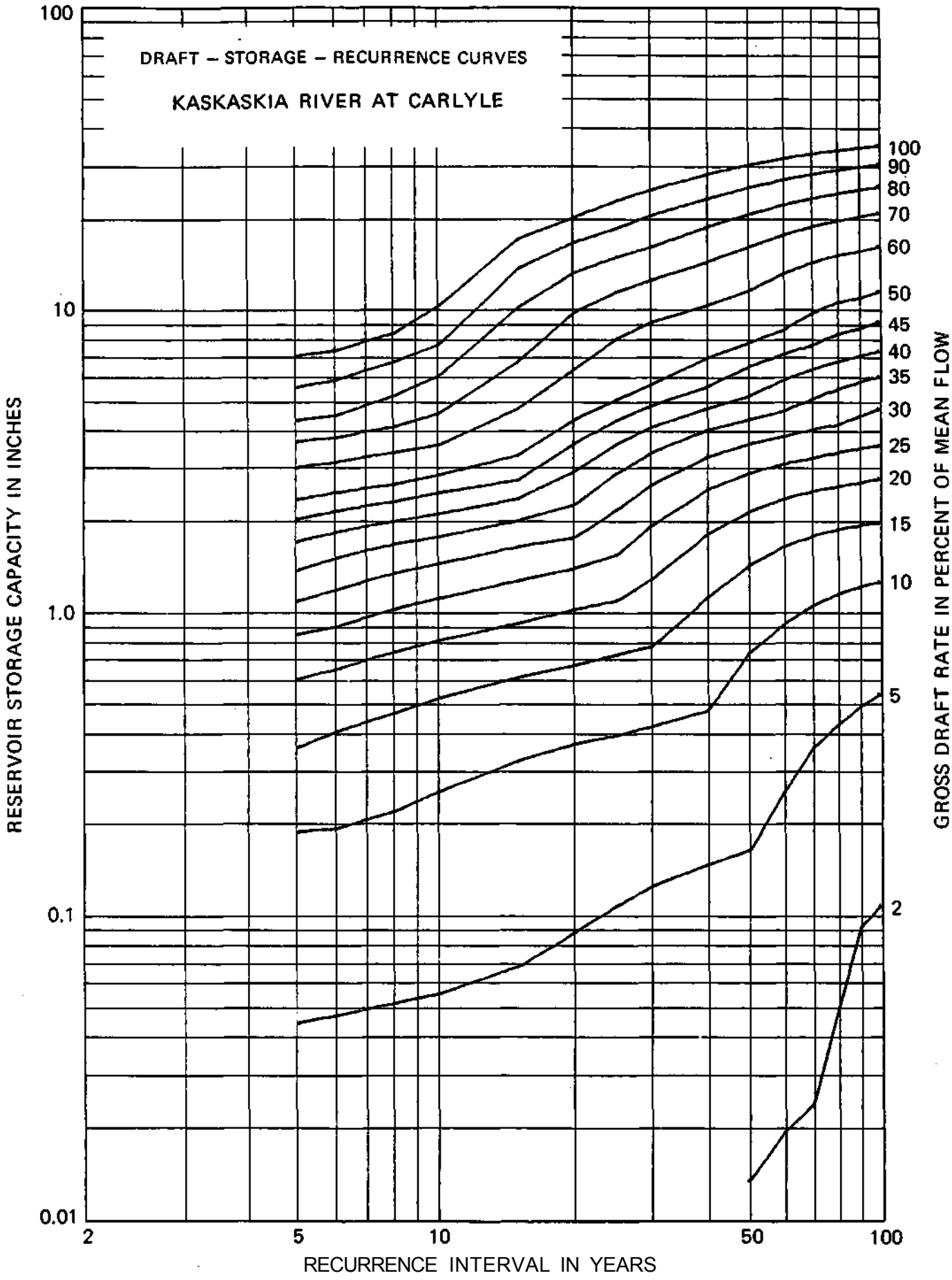
ACTUAL FLOW DATA: Mar 1908 to Sep 1912, May 1938 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

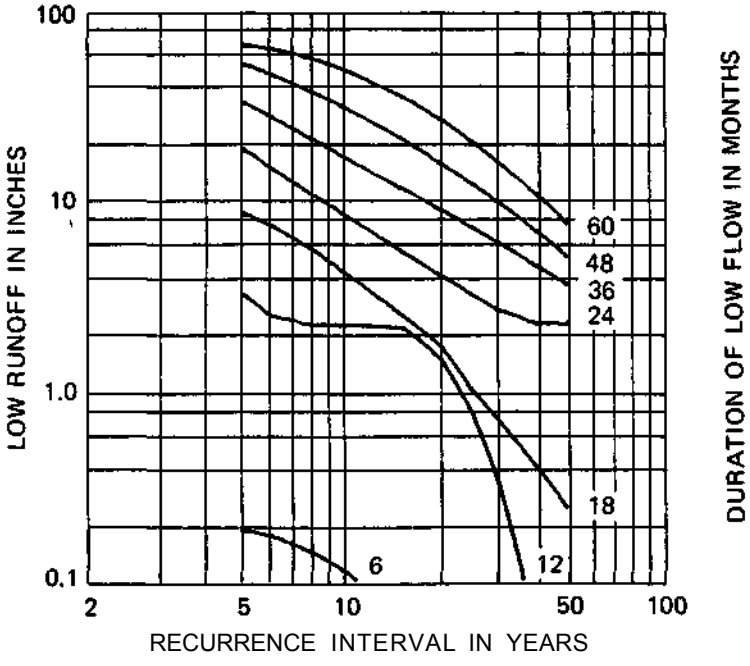
MEAN DISCHARGE: 0.80 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.04	.18	.35	.59	.83	1.07	1.35	1.67	1.99	2.31	2.95	3.59	4.23	5.44	6.88
	3	3	4	5	6	6	6	8	8	8	8	8	8	8	18	18
6	.00	.05	.19	.40	.64	.88	1.16	1.47	1.79	2.11	2.43	3.08	3.72	4.40	5.74	7.19
	4	3	4	6	6	7	7	8	8	8	8	8	8	9	18	18
8	.00	.05	.22	.46	.72	1.00	1.31	1.63	1.95	2.27	2.59	3.31	4.04	5.11	6.59	8.20
	1	3	6	6	7	7	8	8	8	8	9	9	9	18	20	20
10	.00	.05	.25	.51	.79	1.09	1.41	1.73	2.07	2.43	2.79	3.51	4.48	5.94	7.54	10.12
	1	3	6	7	7	8	8	8	9	9	9	9	18	20	20	42
15	.00	.07	.32	.60	.90	1.24	1.60	1.96	2.32	2.69	3.26	4.65	6.63	9.99	13.36	16.72
	1	5	7	7	8	9	9	9	9	9	16	18	42	42	42	42
20	.00	.09	.36	.66	1.00	1.36	1.72	2.22	2.86	3.55	4.27	6.23	9.60	12.96	16.33	19.74
	1	6	7	8	9	9	9	16	16	18	18	42	42	42	42	52
25	.00	.11	.39	.71	1.07	1.52	2.16	2.83	3.55	4.27	4.99	7.90	11.27	14.63	18.21	22.46
	1	7	7	9	9	16	16	18	18	18	18	42	42	42	52	54
30	.01	.12	.41	.76	1.27	1.91	2.61	3.33	4.05	4.77	5.60	8.96	12.33	15.83	20.15	24.48
	2	7	8	9	16	16	18	18	18	18	42	42	42	54	54	54
40	.01	.15	.47	1.11	1.79	2.51	3.23	3.95	4.67	5.49	6.84	10.20	14.11	18.44	22.86	27.51
	2	7	16	16	18	18	18	18	18	32	42	42	54	54	58	58
50	.01	.16	.74	1.42	2.14	2.86	3.58	4.30	5.14	6.42	7.70	11.43	15.92	20.40	25.00	29.65
	4	8	16	18	18	18	18	18	32	32	32	56	56	56	58	58
60	.02	.26	.91	1.63	2.36	3.08	3.80	4.60	5.80	7.09	8.48	12.97	17.45	21.94	26.54	31.18
	4	16	18	18	18	18	18	20	32	32	56	56	56	56	58	58
70	.02	.36	1.05	1.77	2.50	3.22	4.01	5.02	6.30	7.59	9.66	14.15	18.64	23.12	27.71	32.35
	4	16	18	18	18	18	20	32	32	32	56	56	56	56	58	58
80	.05	.43	1.15	1.87	2.59	3.36	4.16	5.42	6.70	8.24	10.49	14.98	19.46	23.99	28.63	33.28
	14	16	18	18	18	20	20	32	32	56	56	56	56	58	58	58
90	.09	.49	1.21	1.94	2.68	3.48	4.45	5.73	7.02	8.62	10.87	15.45	20.10	24.74	29.39	34.04
	16	18	18	18	20	20	32	32	32	56	56	58	58	58	58	58
100	.11	.54	1.26	1.98	2.76	3.57	4.72	6.00	7.28	9.11	11.43	16.08	20.73	25.38	30.02	34.67
	18	18	18	18	20	20	32	32	32	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KASKASKIA RIVER AT CARLYLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55939 - EAST FORK, SHOAL CREEK NEAR COFFEEN



LOCATION: In NW¼ SE¼ Sec 7, T8N, R2W, Montgomery County, at county highway bridge, 4.5 miles northeast of Coffeen

DRAINAGE AREA: 55.5 square miles

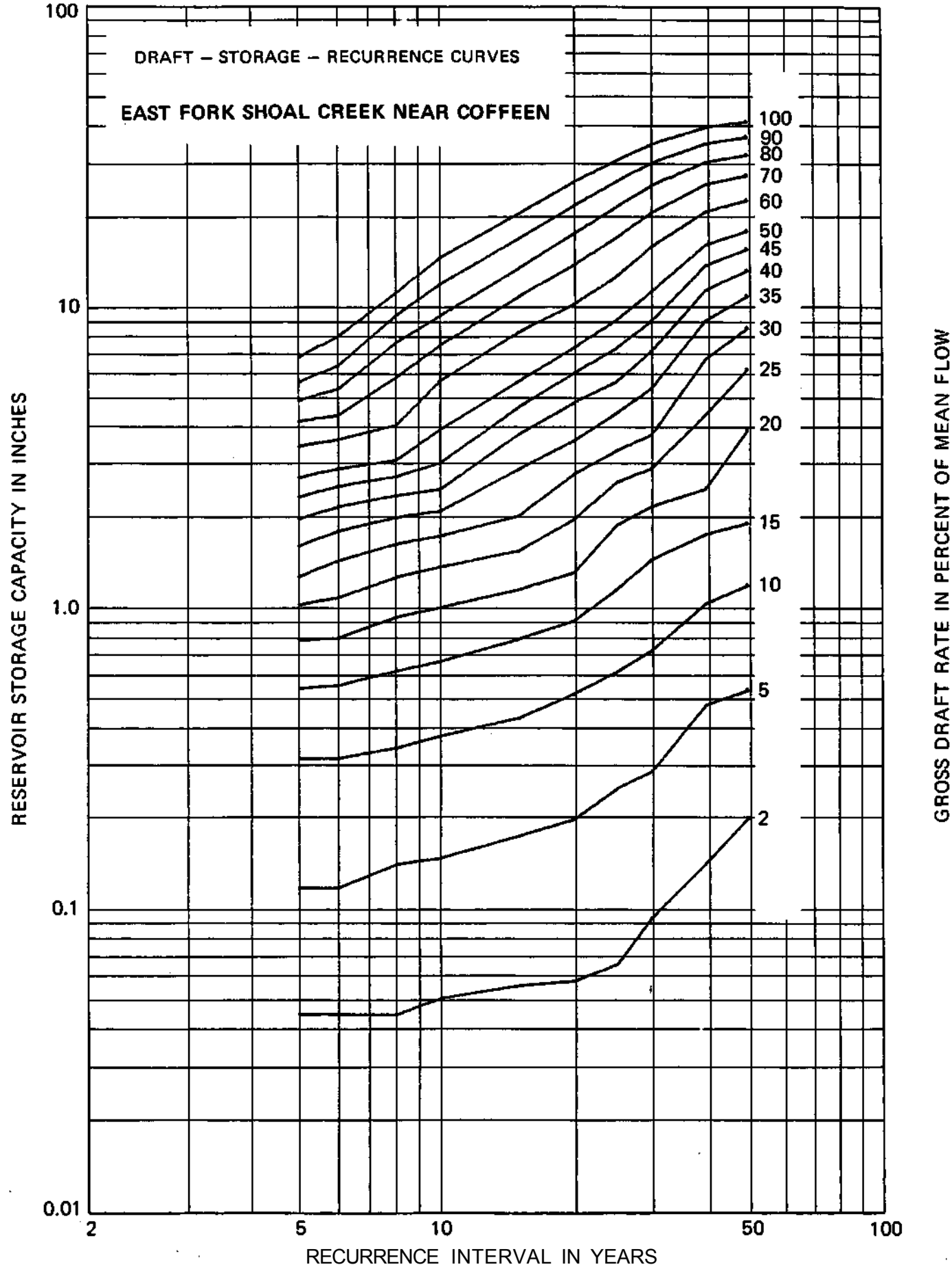
ACTUAL FLOW DATA: Oct 1963 to Oct 1978

INDEX STATION: Shoal Creek near Breese

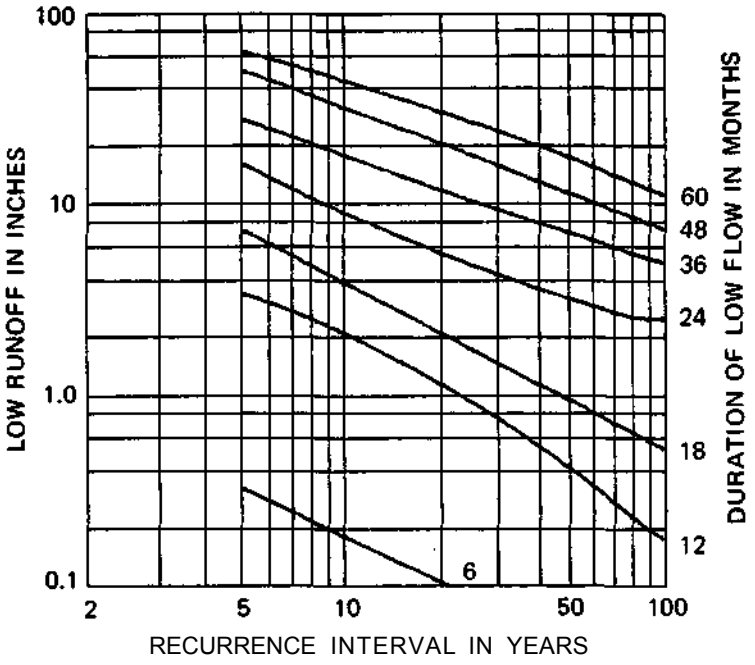
MEAN DISCHARGE: 0.75 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.12	.31	.53	.77	1.01	1.25	1.58	1.93	2.29	2.65	3.36	4.07	4.79	5.50	6.68
	3	3	5	6	6	6	6	9	9	9	9	9	9	9	9	16
6	.04	.12	.31	.54	.78	1.07	1.41	1.77	2.12	2.48	2.84	3.55	4.27	5.22	6.27	7.84
	3	3	5	6	6	8	9	9	9	9	9	9	12	12	16	20
8	.04	.14	.34	.61	.92	1.24	1.60	1.96	2.31	2.67	3.03	3.97	5.71	7.46	9.20	10.94
	3	4	6	7	8	9	9	9	9	9	9	22	22	22	22	22
10	.05	.15	.37	.66	.99	1.35	1.70	2.06	2.43	2.97	3.84	5.59	7.33	9.19	11.73	14.26
	4	4	7	8	9	9	9	9	10	22	22	22	22	32	32	32
15	.06	.17	.43	.78	1.14	1.52	1.99	2.84	3.71	4.58	5.58	8.12	10.65	13.19	16.53	20.01
	4	6	8	9	9	10	20	22	22	22	32	32	32	32	44	44
20	.06	.20	.51	.90	1.29	1.94	2.73	3.54	4.73	5.94	7.21	10.05	13.53	17.14	21.26	25.38
	4	6	9	10	10	20	20	30	30	32	32	44	44	52	52	54
25	.07	.25	.61	1.14	1.86	2.57	3.28	4.38	5.57	7.20	8.94	12.43	16.64	21.04	25.48	29.91
	6	8	10	18	18	18	18	30	30	44	44	44	54	56	56	56
30	.09	.28	.72	1.43	2.14	2.86	3.71	5.29	7.04	8.87	11.09	15.53	20.13	24.72	29.32	33.92
	8	8	18	18	18	18	30	44	44	56	56	56	58	58	58	58
40	.14	.47	1.03	1.74	2.46	4.34	6.63	8.93	11.23	13.53	15.83	20.43	25.02	29.62	34.22	38.82
	14	14	18	18	18	58	58	58	58	58	58	58	58	58	58	58
50	.20	.53	1.18	1.90	3.86	6.16	8.45	10.75	13.05	15.35	17.65	22.25	26.84	31.44	36.04	40.64
	14	14	18	18	58	58	58	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
EAST FORK SHOAL CREEK NEAR COFFEEN
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55940 - SHOAL CREEK NEAR BREESE



LOCATION: In SW¼ SW¼ Sec 13, T2N, R4W, Clinton County at bridge on U. S. 50 about 1.7 miles east of Breese

DRAINAGE AREA: 735 square miles

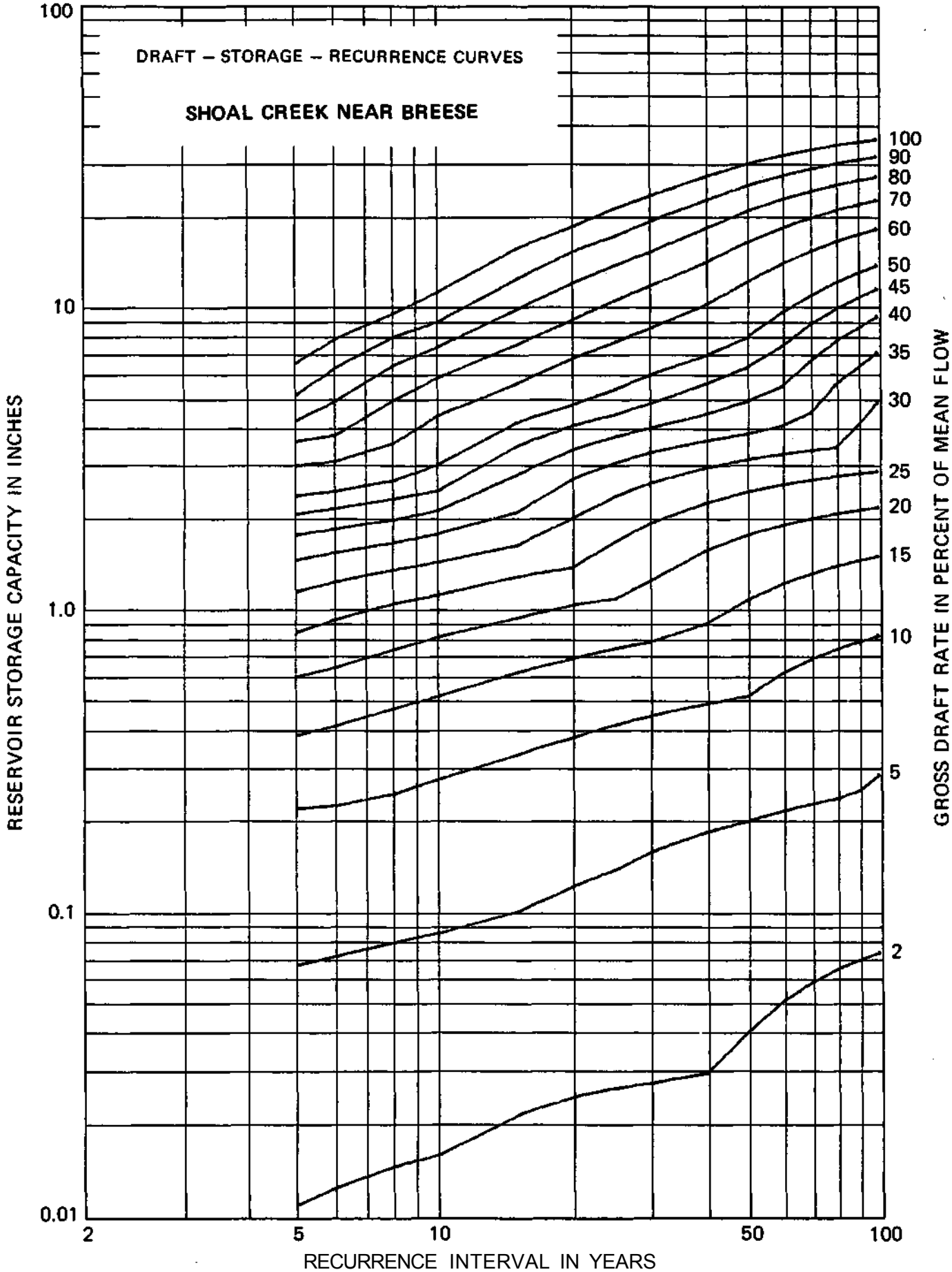
ACTUAL FLOW DATA: Nov 1909 to Dec 1912; Aug to Dec 1914; Oct 1945 to Oct 1978

INDEX STATION: Kaskaskia River at Vandalia

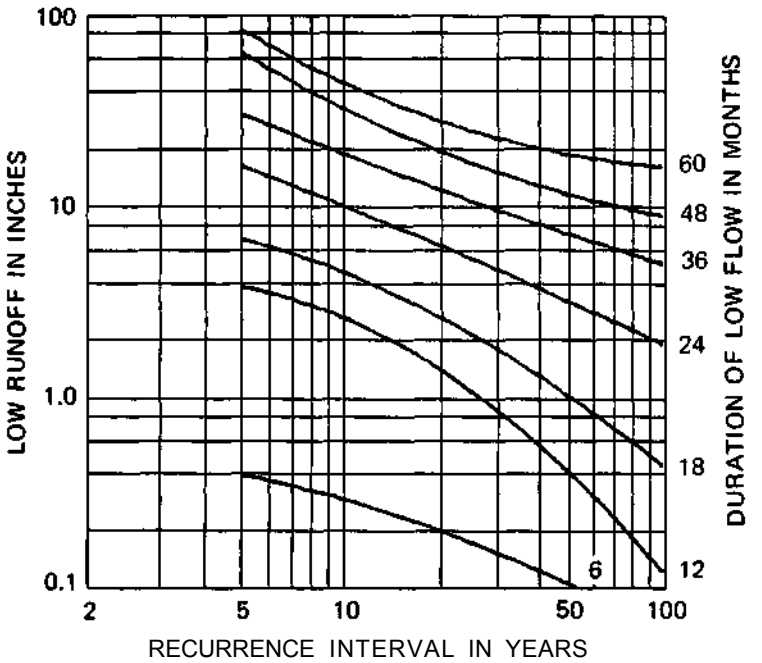
MEAN DISCHARGE: 0.73 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.07	.22	.38	.58	.82	1.12	1.42	1.72	2.02	2.32	2.92	3.52	4.14	5.03	6.38
	2	4	4	5	6	8	8	8	8	8	8	8	8	9	18	18
6	.01	.07	.22	.40	.63	.91	1.21	1.51	1.81	2.11	2.40	3.01	3.69	4.79	6.13	7.63
	2	4	4	6	6	8	8	8	8	8	8	9	9	18	18	20
8	.01	.08	.24	.46	.72	1.02	1.32	1.62	1.93	2.26	2.60	3.46	4.81	6.26	7.75	9.25
	2	4	5	6	8	8	8	8	9	9	9	18	18	20	20	20
10	.02	.08	.27	.51	.80	1.10	1.40	1.74	2.08	2.41	2.94	4.29	5.71	7.21	8.71	10.91
	2	4	6	7	8	8	9	9	9	9	18	18	20	20	20	30
15	.02	.10	.33	.61	.92	1.26	1.59	2.05	2.73	3.40	4.07	5.47	7.32	9.57	12.05	15.20
	3	5	7	8	9	9	9	18	18	18	18	20	30	30	42	42
20	.02	.12	.37	.68	1.01	1.35	1.96	2.64	3.31	3.98	4.66	6.60	8.84	11.68	14.82	17.97
	3	6	7	9	9	9	18	18	18	18	18	30	30	42	42	42
25	.03	.14	.41	.73	1.07	1.65	2.32	3.00	3.67	4.35	5.25	7.50	10.27	13.41	16.78	20.67
	3	6	8	9	9	18	18	18	18	18	30	30	42	42	52	52
30	.03	.16	.44	.77	1.22	1.90	2.57	3.24	3.92	4.73	5.85	8.32	11.47	14.83	18.72	22.76
	3	7	8	9	18	18	18	18	18	30	30	42	42	52	52	54
40	.03	.18	.48	.88	1.54	2.22	2.89	3.56	4.36	5.48	6.76	9.91	13.68	17.79	22.00	26.35
	6	7	9	14	18	18	18	18	30	30	42	42	54	56	58	58
50	.04	.20	.51	1.07	1.74	2.41	3.09	3.76	4.81	6.20	7.77	11.81	16.01	20.29	24.63	28.98
	7	8	9	18	18	18	18	18	30	42	42	56	56	58	58	58
60	.05	.21	.61	1.20	1.88	2.55	3.22	3.99	5.38	7.28	9.38	13.57	17.86	22.20	26.55	30.89
	7	8	14	18	18	18	18	30	44	56	56	56	58	58	58	58
70	.06	.23	.68	1.30	1.98	2.65	3.32	4.43	6.52	8.62	10.72	14.98	19.32	23.66	28.01	32.35
	7	8	14	18	18	18	18	56	56	56	56	58	58	58	58	58
80	.06	.24	.73	1.38	2.05	2.73	3.40	5.47	7.56	9.66	11.79	16.13	20.48	24.82	29.16	33.51
	7	8	14	18	18	18	18	56	56	56	58	58	58	58	58	58
90	.07	.25	.77	1.44	2.11	2.79	4.04	6.21	8.39	10.56	12.73	17.07	21.42	25.76	30.10	34.45
	7	14	14	18	18	18	58	58	58	58	58	58	58	58	58	58
100	.07	.28	.81	1.49	2.16	2.84	4.82	6.99	9.16	11.34	13.51	17.85	22.19	26.54	30.88	35.22
	7	14	18	18	18	18	58	58	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
SHOAL CREEK NEAR BREESE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55950 - KASKASKIA RIVER AT NEW ATHENS



LOCATION: In SW¼ Sec 28, T2S, R7W, St. Clair County, 0.5 miles downstream from the Illinois 13 bridge at New Athens

DRAINAGE AREA: 5220 square miles

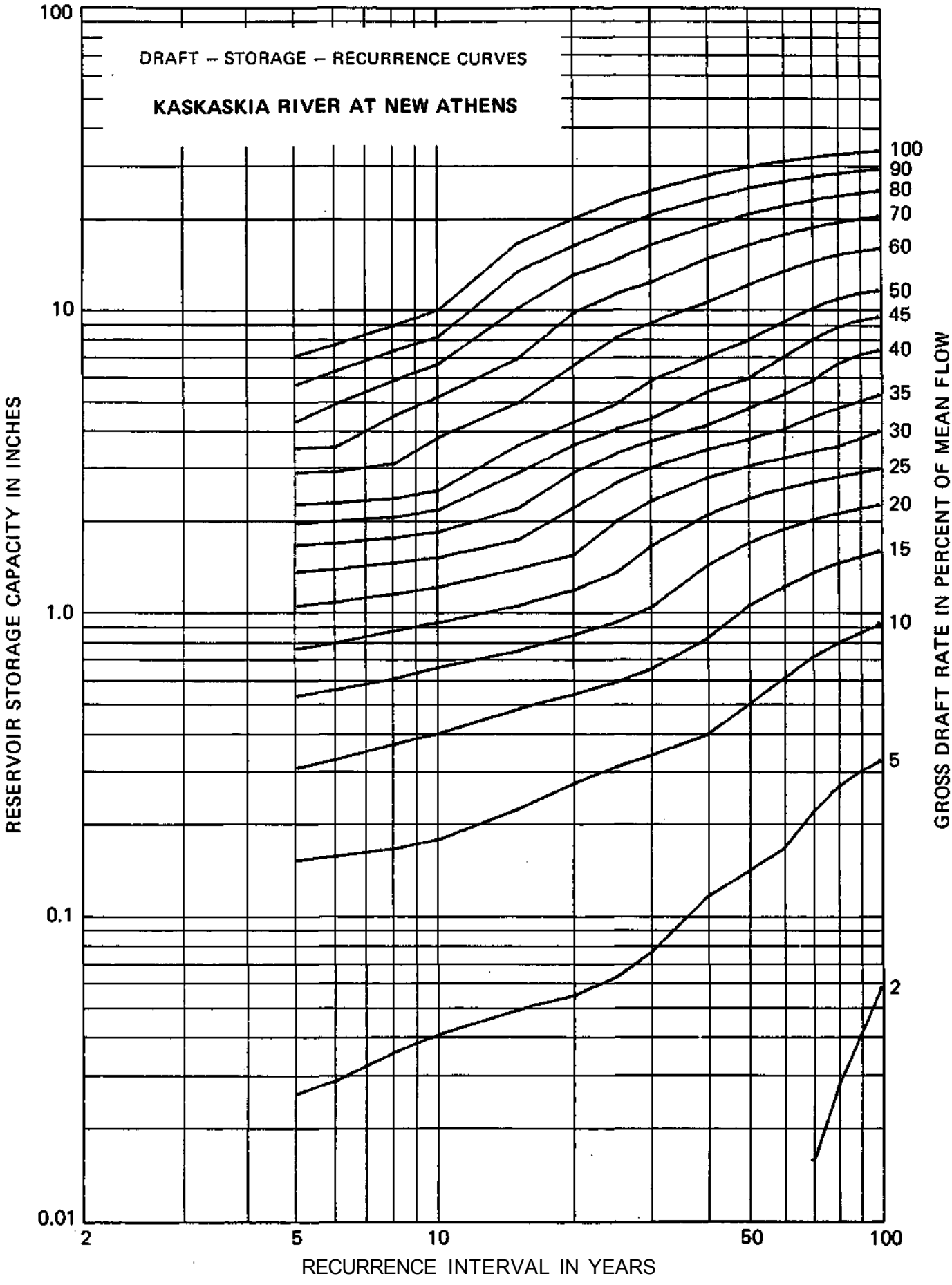
ACTUAL FLOW DATA: Oct 1909 to Dec 1912; Jun 1914 to Sep 1921; Oct 1934 to Sep 1971

INDEX STATION: Kaskaskia River at Vandalia

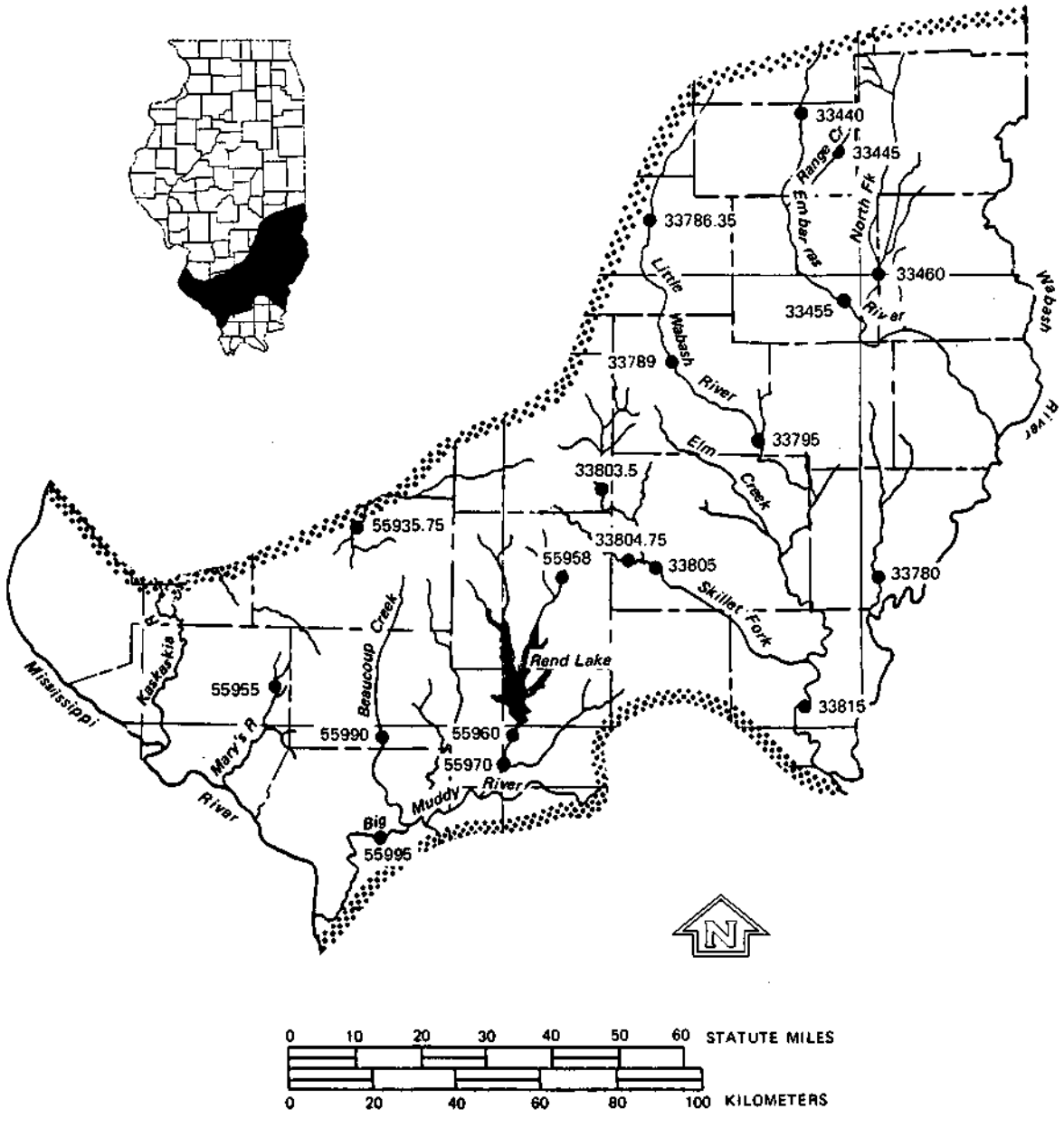
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.03	.15	.31	.53	.75	1.04	1.34	1.65	1.95	2.25	2.85	3.46	4.25	5.61	6.97
	2	2	4	5	6	6	8	8	8	8	8	8	8	18	18	18
6	.00	.03	.16	.33	.55	.79	1.07	1.37	1.68	1.98	2.28	2.89	3.50	4.86	6.21	7.59
	2	3	4	6	6	7	8	8	8	8	8	8	18	18	18	20
8	.00	.04	.17	.37	.60	.86	1.14	1.44	1.74	2.05	2.36	3.08	4.44	5.80	7.25	8.76
	2	3	4	6	7	7	8	8	8	8	9	18	18	18	20	20
10	.00	.04	.18	.40	.66	.92	1.20	1.51	1.83	2.17	2.51	3.78	5.14	6.57	8.08	9.88
	2	3	5	6	7	7	8	8	9	9	9	18	18	20	20	42
15	.00	.05	.23	.48	.75	1.05	1.39	1.73	2.20	2.88	3.56	4.92	6.87	10.04	13.21	16.38
	3	3	6	7	7	9	9	9	18	18	18	18	42	42	42	42
20	.00	.06	.27	.54	.84	1.18	1.54	2.22	2.90	3.58	4.26	6.52	9.69	12.86	16.04	19.72
	3	3	7	7	9	9	16	18	18	18	18	42	42	42	42	52
25	.00	.06	.31	.59	.93	1.36	2.01	2.69	3.37	4.05	4.90	8.07	11.24	14.47	18.39	22.45
	1	5	7	9	9	16	18	18	18	18	42	42	42	52	52	54
30	.00	.08	.34	.66	1.05	1.66	2.34	3.02	3.70	4.39	5.86	9.03	12.25	16.23	20.31	24.42
	1	6	7	9	16	18	18	18	18	20	42	42	52	54	54	58
40	.00	.12	.40	.82	1.43	2.11	2.79	3.47	4.17	5.36	6.94	10.53	14.60	18.68	23.01	27.39
	1	7	9	16	18	18	18	18	20	42	42	54	54	54	58	58
50	.00	.14	.50	1.06	1.71	2.39	3.07	3.77	4.76	5.97	7.94	12.02	16.23	20.52	24.90	29.28
	2	7	12	16	18	18	18	20	32	32	54	54	56	58	58	58
60	.01	.17	.61	1.22	1.90	2.58	3.26	4.07	5.28	6.99	9.10	13.33	17.56	21.84	26.22	30.60
	2	8	14	18	18	18	18	32	32	56	56	56	56	58	58	58
70	.02	.22	.72	1.36	2.04	2.72	3.44	4.46	5.88	7.99	10.11	14.34	18.57	22.83	27.21	31.59
	7	12	16	18	18	18	20	32	56	56	56	56	56	58	58	58
80	.03	.27	.80	1.46	2.14	2.82	3.58	4.77	6.67	8.78	10.90	15.13	19.36	23.60	27.98	32.36
	8	12	16	18	18	20	20	32	56	56	56	56	56	58	58	58
90	.04	.31	.87	1.54	2.22	2.93	3.81	5.05	7.17	9.28	11.40	15.63	19.86	24.22	28.60	32.98
	8	12	16	18	18	20	32	56	56	56	56	56	56	58	58	58
100	.06	.33	.93	1.61	2.29	3.02	4.02	5.30	7.42	9.53	11.65	15.97	20.35	24.73	29.11	33.50
	12	12	18	18	18	20	32	56	56	56	56	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KASKASKIA RIVER AT NEW ATHENS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

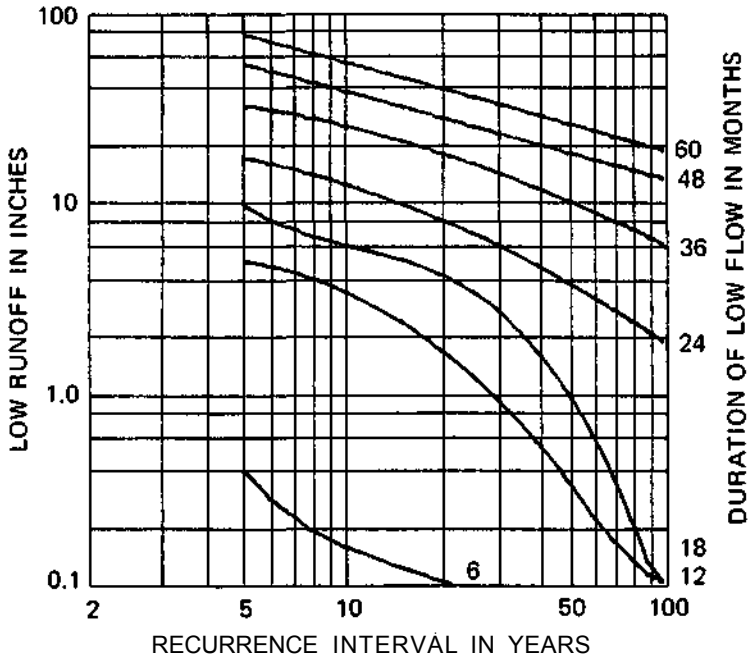
REGION 4


33440
33445
Range Cr
Embarras
North Fk
33786.35
33460
Little Wabash River
33455
River
Wabash
33789
Wabash River
33795
Elm Creek
33803.5
55935.75
33804.75
55958
33805
33780
Skillet Fork
Rend Lake
Beaucoup Creek
Kaskaskia
Mississippi
55955
33815
55990
55960
55970
Mary's R
River
Muddy River
Big
55995
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

USGS Gage No.	Name of Station	Drainage Area (sq mi)
33440	Embarras River near Diona	919
33445	Range Creek near Casey	7.61
33455	Embarras River at Ste. Marie	1516
33460	North Fork Embarras River near Oblong	319
33780	Bonpas Creek at Browns	228
33786.35	Little Wabash River near Effingham	240
33789	Little Wabash River at Louisville	745
33795	Little Wabash River below Clay City	1131
33803.5	Skillet Fork near Iuka	208
33804.75	Horse Creek near Keenes	97.2
33805	Skillet Fork at Wayne City	464
33815	Little Wabash River at Carmi	3102
55935.75	Little Crooked Creek near New Minden	84.3
55955	Marys River near Sparta	17.8
55958	Sevenmile Creek near Mt. Vernon	21.1
55960	Big Muddy River near Benton	498
55970	Big Muddy River at Plumfield	794
55990	Beaucoup Creek near Matthews	292
55995	Big Muddy River at Murphysboro	2162

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
33440	33455	1970-1978	8	1914-1978	64	.92
33445	33455	1950-1978	28	1914-1978	64	.87
33455	-	1914-1978	64	-	-	.90
33460	33455	1940-1978	38	1914-1978	64	.90
33780	33805	1940-1978	38	1928-1978	50	1.07
33786.35	33795	1966-1978	12	1914-1978	64	.83
33789	33795	1965-1978	13	1914-1978	64	.86
33795	-	1914-1978	64	-	-	.87
33803.5	33805	1965-1978	13	1928-1978	50	.93
33804.75	33805	1959-1978	19	1928-1978	50	1.16
33805	-	1928-1978	50	-	-	.92
33815	33795	1939-1978	39	1914-1978	64	.94
55935.75	33805	1967-1978	11	1928-1978	50	.76
55955	55970	1949-1971	22	1914-1971	57	.81
55958	33805	1960-1978	18	1928-1978	50	.85
55960	55970	1945-1978	25	1914-1970	56	.98
55970	-	1914-1970	56	-	-	.99
55990	55970	1945-1978	33	1914-1978	64	.82
55995	55970	1930-1978	48	1914-1978	64	.96

33440 - EMBARRAS RIVER NEAR DIONA



LOCATION: In NW¼ Sec 2, T10N, R9E, Cumberland County, at Ryans Bridge, 2.8 miles southwest of Diona

DRAINAGE AREA: 919 square miles

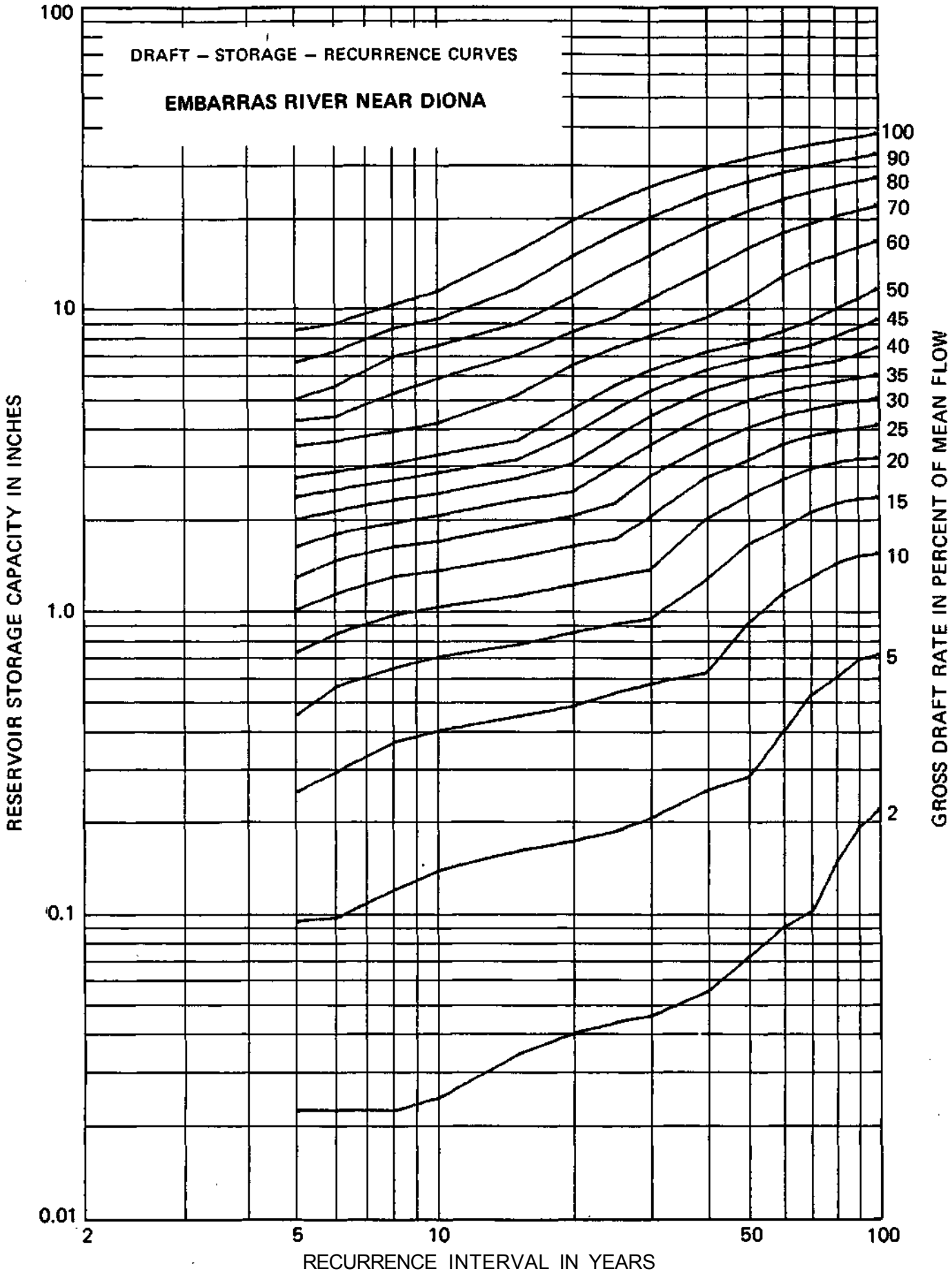
ACTUAL FLOW DATA: Oct 1970 to Oct 1978

INDEX STATION: Embarras River at St. Marie

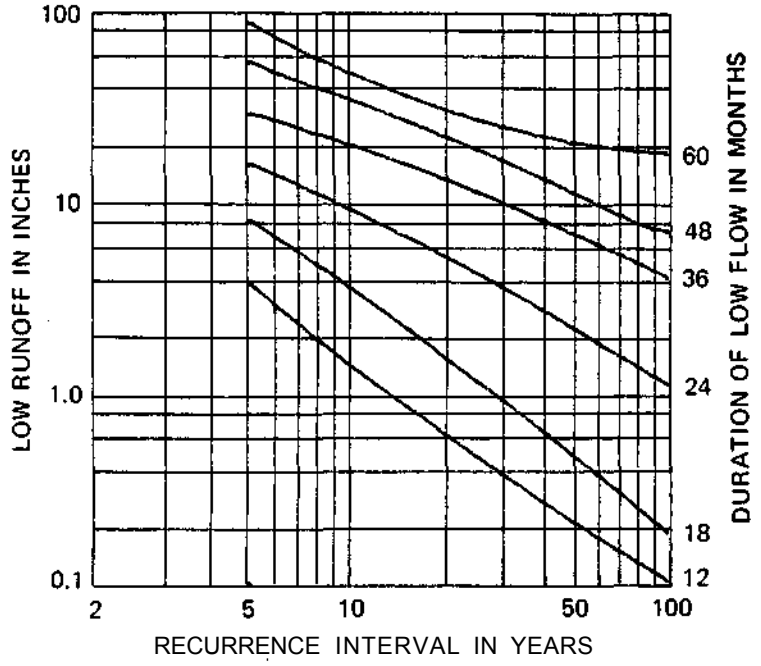
MEAN DISCHARGE: 0.92 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.09	.25	.45	.72	1.00	1.27	1.61	1.98	2.35	2.71	3.45	4.18	4.92	6.52	8.36
	2	3	4	5	6	6	6	8	8	8	8	8	8	8	20	20
6	.02	.10	.29	.55	.83	1.13	1.45	1.77	2.11	2.47	2.84	3.58	4.31	5.44	7.09	8.76
	2	3	5	6	6	7	7	7	8	8	8	8	8	18	18	22
8	.02	.12	.36	.64	.96	1.28	1.60	1.92	2.29	2.65	3.02	3.84	5.14	6.79	8.45	10.10
	2	4	6	6	7	7	7	7	8	8	8	9	18	18	18	18
10	.02	.14	.40	.70	1.02	1.34	1.67	2.04	2.41	2.82	3.23	4.11	5.76	7.42	9.07	11.20
	3	5	6	7	7	7	8	8	8	9	9	18	18	18	18	30
15	.03	.16	.44	.76	1.11	1.48	1.88	2.29	2.71	3.12	3.59	5.08	6.92	8.76	11.44	15.14
	3	5	7	7	8	8	9	9	9	9	16	20	20	20	32	42
20	.04	.17	.48	.84	1.21	1.62	2.03	2.44	3.03	3.76	4.57	6.40	8.24	10.78	14.64	19.21
	3	6	7	8	8	9	9	9	16	16	20	20	20	42	42	52
25	.04	.18	.53	.90	1.29	1.71	2.24	2.98	3.72	4.59	5.51	7.34	9.24	12.94	17.43	22.32
	3	6	8	8	9	9	16	16	16	20	20	20	32	42	52	56
30	.05	.20	.57	.94	1.36	2.03	2.77	3.50	4.35	5.27	6.19	8.03	10.61	14.82	19.74	24.88
	3	7	8	8	14	16	16	16	20	20	20	20	42	52	56	56
40	.05	.25	.62	1.25	1.98	2.72	3.45	4.35	5.27	6.18	7.10	9.18	13.07	18.22	23.37	28.52
	5	8	8	16	16	16	16	20	20	20	20	32	56	56	56	56
50	.07	.28	.91	1.64	2.38	3.11	3.99	4.91	5.83	6.74	7.66	10.63	15.59	20.73	25.88	31.02
	7	8	16	16	16	16	20	20	20	20	20	54	54	56	56	56
60	.09	.40	1.13	1.87	2.69	3.51	4.35	5.27	6.19	7.11	8.30	12.56	17.53	22.60	27.74	32.89
	7	16	16	16	18	18	20	20	20	20	32	54	54	56	56	56
70	.10	.53	1.28	2.11	2.94	3.76	4.61	5.53	6.45	7.51	9.03	13.99	18.96	24.05	29.20	34.45
	7	16	18	18	18	18	20	20	20	32	54	54	54	56	56	58
80	.15	.60	1.43	2.26	3.08	3.91	4.79	5.71	6.68	8.06	9.94	14.94	20.09	25.23	30.41	35.74
	16	18	18	18	18	18	20	20	22	32	54	56	56	56	58	58
90	.20	.69	1.52	2.35	3.17	4.01	4.93	5.88	7.04	8.61	10.77	15.92	21.07	26.22	31.49	36.82
	18	18	18	18	18	20	20	22	32	38	56	56	56	56	58	58
100	.22	.72	1.55	2.37	3.20	4.11	5.04	6.05	7.46	9.20	11.60	16.75	21.90	27.08	32.41	37.74
	18	18	18	18	18	20	22	22	38	38	56	56	56	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
EMBARRAS RIVER NEAR DIONA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33445 - RANGE CREEK NEAR CASEY



LOCATION: In NE¼ SE¼ Sec 12, T10N, R10E, Cumberland County, at Highway bridge 2.5 miles west of State Highway 49 and 3 miles northwest of Casey

DRAINAGE AREA: 7.61 square miles

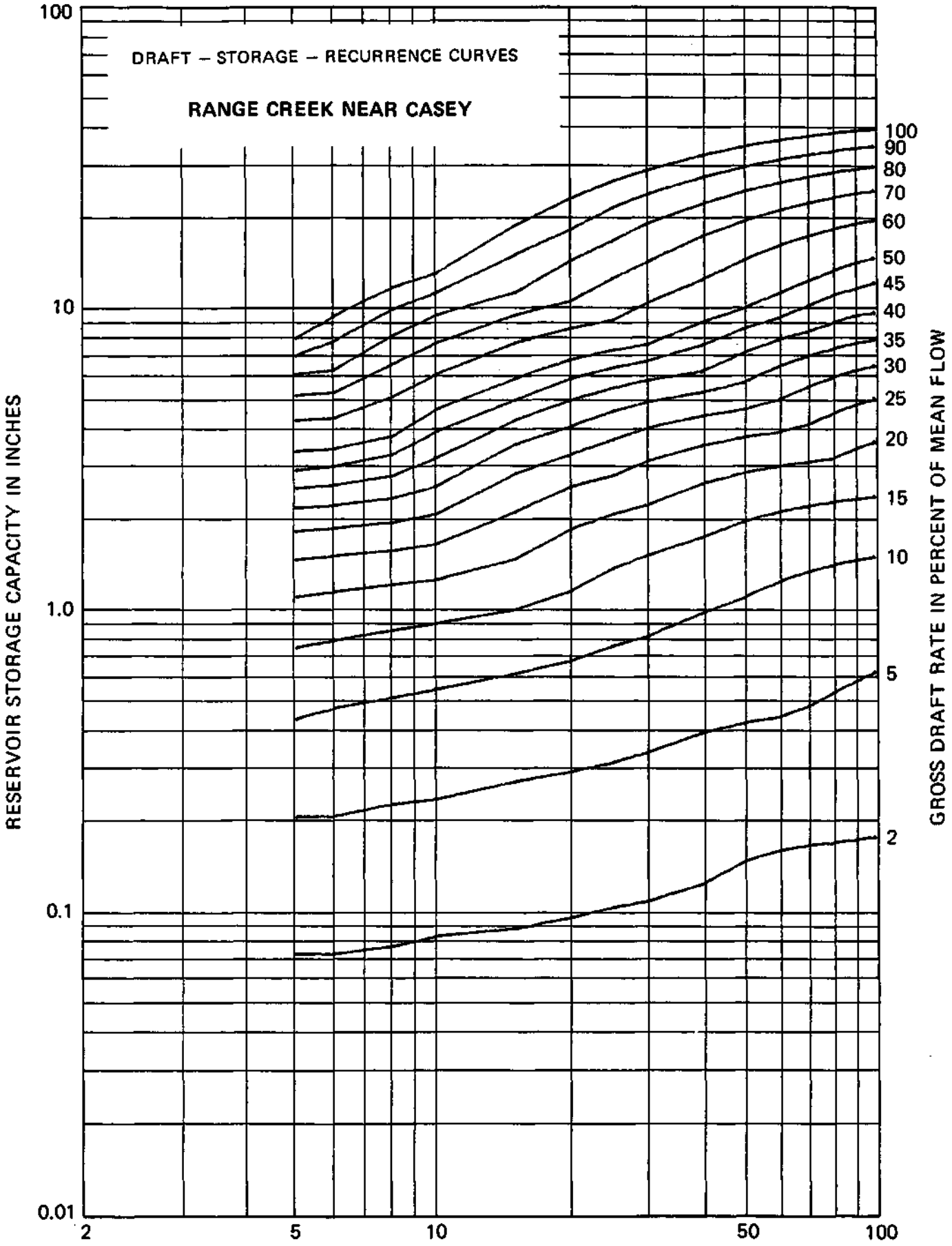
ACTUAL FLOW DATA: Oct 1950 to Oct 1978

INDEX STATION: Embarras River at Ste. Marie

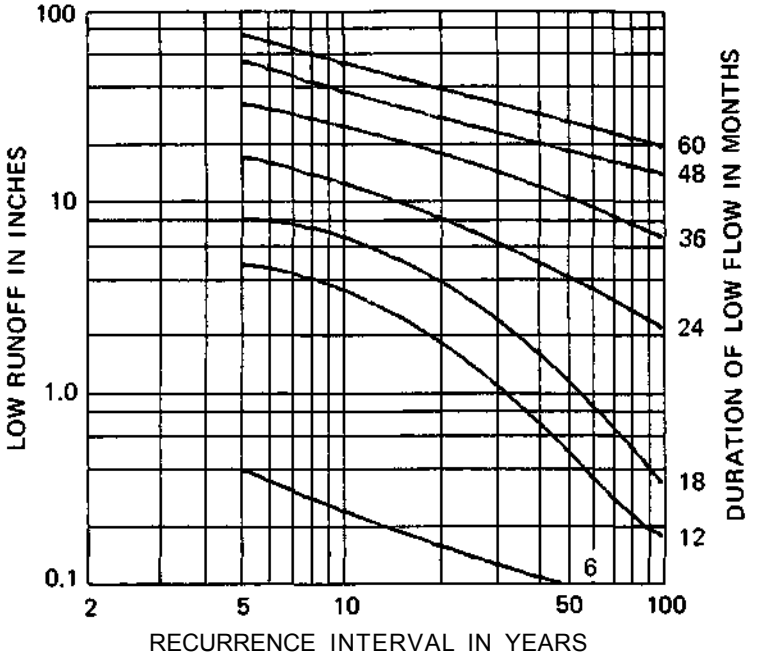
MEAN DISCHARGE: 0.87 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.07	.20	.42	.73	1.08	1.43	1.78	2.13	2.47	2.84	3.27	4.15	5.02	5.89	6.77	7.72
	5	5	6	8	8	8	8	8	8	10	10	10	10	10	10	22
6	.07	.20	.46	.77	1.12	1.47	1.82	2.17	2.53	2.92	3.34	4.22	5.13	6.09	7.57	9.14
	5	5	6	8	8	8	8	8	9	9	10	10	11	11	18	18
8	.07	.22	.50	.83	1.18	1.53	1.90	2.29	2.72	3.20	3.68	4.97	6.36	7.88	9.62	11.37
	5	6	7	8	8	8	9	9	11	11	11	16	16	18	20	20
10	.08	.23	.53	.88	1.23	1.61	2.04	2.52	3.12	3.82	4.52	5.91	7.46	9.21	10.96	12.70
	5	6	7	8	8	9	11	11	16	16	16	16	20	20	20	20
15	.09	.26	.60	.98	1.44	2.07	2.77	3.47	4.17	4.87	5.73	7.48	9.23	10.97	14.57	18.24
	5	7	8	9	11	16	16	16	16	16	20	20	20	20	42	42
20	.09	.28	.66	1.13	1.81	2.51	3.21	3.98	4.85	5.73	6.60	8.35	10.26	13.93	17.66	22.48
	7	8	9	11	16	16	16	20	20	20	20	20	42	42	54	58
25	.10	.31	.74	1.35	2.05	2.74	3.61	4.49	5.36	6.23	7.11	8.92	12.28	16.30	21.02	25.78
	7	9	11	16	16	18	20	20	20	20	20	32	42	54	54	58
30	.11	.33	.80	1.49	2.20	3.07	3.94	4.82	5.69	6.56	7.44	10.17	13.89	18.61	23.33	28.07
	8	9	11	16	18	20	20	20	20	20	20	42	54	54	54	56
40	.12	.38	.96	1.72	2.59	3.47	4.34	5.21	6.09	7.41	8.81	12.18	16.90	21.68	26.57	31.46
	9	10	16	20	20	20	20	20	20	32	32	54	54	56	56	56
50	.15	.42	1.08	1.95	2.82	3.70	4.57	5.62	7.02	8.42	9.81	14.14	19.03	23.92	28.81	33.70
	10	11	18	20	20	20	20	32	32	32	32	56	56	56	56	56
60	.16	.43	1.22	2.09	2.97	3.84	4.93	6.32	7.72	9.12	11.00	15.75	20.64	25.53	30.42	35.31
	10	11	20	20	20	20	32	32	32	32	48	56	56	56	56	56
70	.16	.47	1.32	2.19	3.07	4.07	5.44	6.84	8.24	10.02	12.11	16.98	21.87	26.76	31.65	36.54
	10	18	20	20	20	28	32	32	32	48	48	56	56	56	56	56
80	.17	.52	1.39	2.27	3.16	4.44	5.84	7.23	8.79	10.89	13.06	17.95	22.84	27.73	32.62	37.52
	10	18	20	20	28	32	32	32	48	48	56	56	56	56	56	56
90	.17	.57	1.45	2.32	3.40	4.75	6.15	7.55	9.32	11.41	13.85	18.74	23.64	28.53	33.42	38.31
	11	20	20	20	28	32	32	32	48	48	56	56	56	56	56	56
100	.18	.61	1.49	2.36	3.58	4.98	6.37	7.77	9.53	11.97	14.42	19.31	24.20	29.09	33.98	38.87
	11	20	20	28	28	32	32	32	48	56	56	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
RANGE CREEK NEAR CASEY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33455 - EMBARRAS RIVER AT STE. MARIE



LOCATION: In NW¼ NW¼ Sec 30, T6N, R14W, Jasper County, on right bank at upstream side of highway bridge at St. Marie

DRAINAGE AREA: 1516 square miles

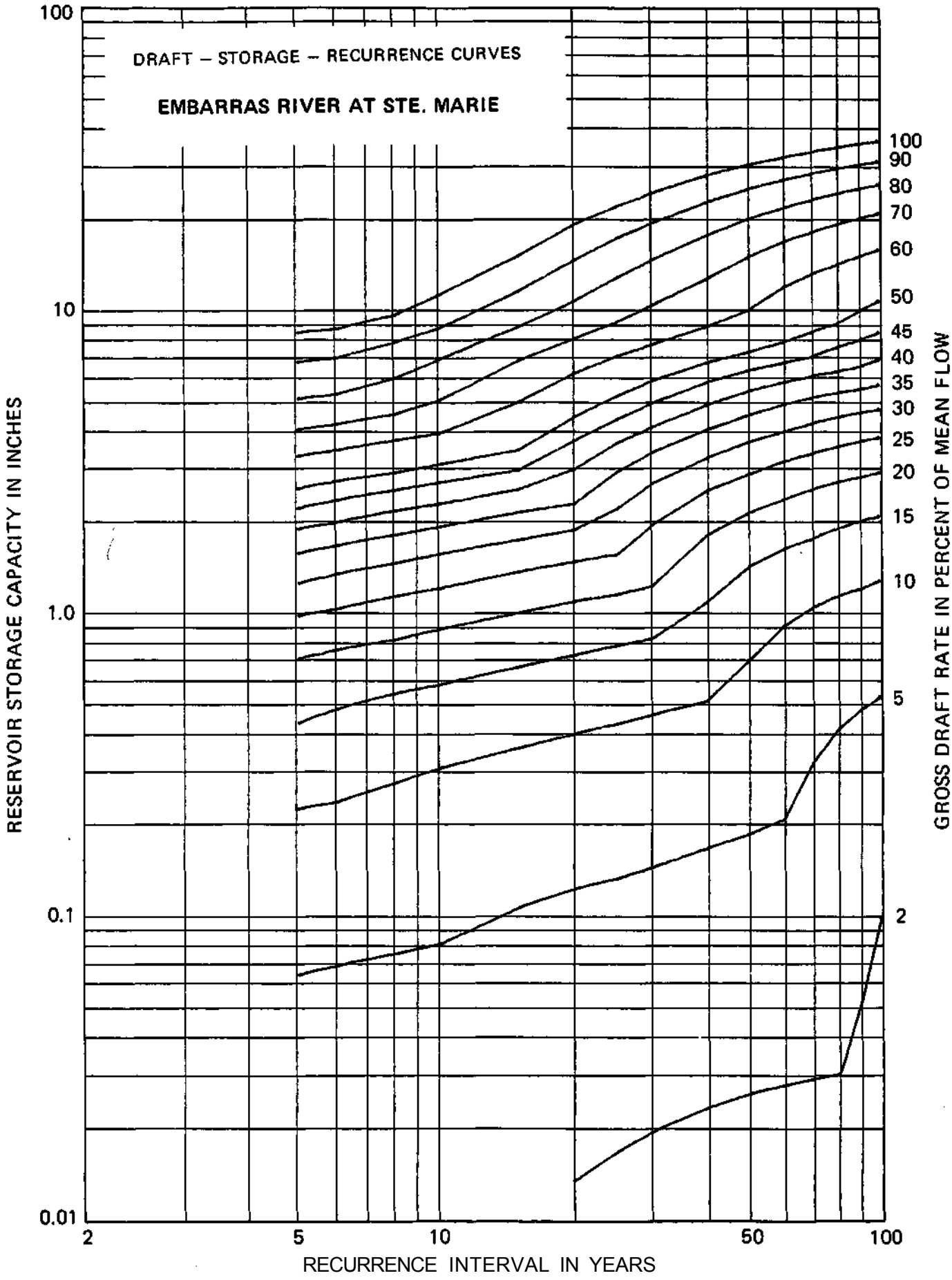
ACTUAL FLOW DATA: Oct 1909 to Dec 1912, Aug 1914 to Oct 1978

INDEX STATION: None

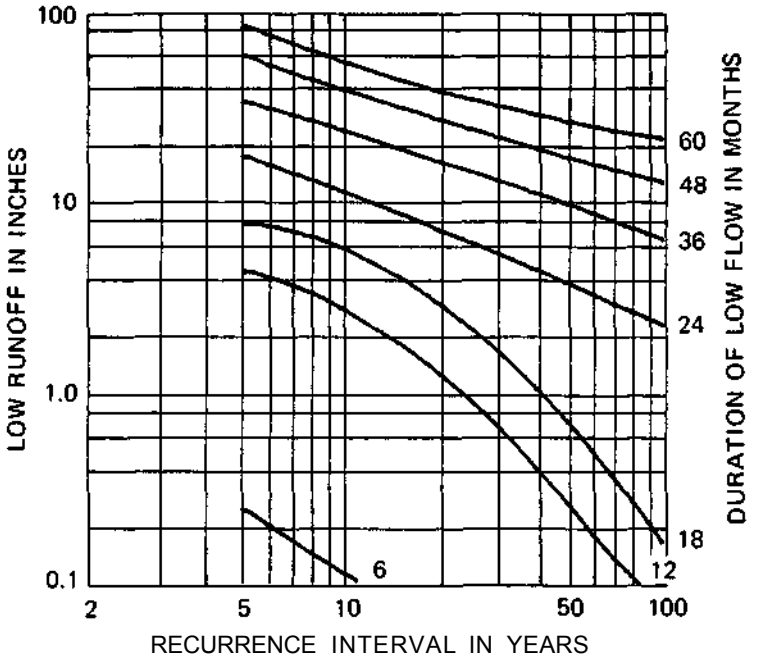
MEAN DISCHARGE: 0.90 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.06	.22	.43	.69	.96	1.23	1.54	1.85	2.17	2.52	3.24	3.95	5.00	6.61	8.22
	1	3	4	6	6	6	6	7	7	7	8	8	8	18	18	18
6	.00	.07	.23	.47	.74	1.01	1.32	1.63	1.95	2.31	2.66	3.38	4.12	5.18	6.79	8.45
	1	3	4	6	6	6	7	7	8	8	8	8	9	18	18	20
8	.01	.07	.27	.54	.80	1.12	1.43	1.78	2.14	2.49	2.85	3.66	4.46	5.86	7.65	9.44
	1	3	5	6	6	7	7	8	8	8	8	9	9	20	20	20
10	.01	.08	.30	.57	.87	1.19	1.54	1.90	2.25	2.65	3.05	3.86	4.96	6.76	8.55	11.02
	1	4	6	6	7	7	8	8	8	9	9	9	20	20	20	30
15	.01	.11	.36	.66	.99	1.35	1.72	2.12	2.52	2.92	3.40	4.91	6.70	8.62	11.31	14.77
	1	5	6	7	8	8	9	9	9	9	16	20	20	30	30	42
20	.01	.12	.39	.72	1.08	1.45	1.86	2.26	2.95	3.67	4.39	6.10	7.89	10.49	14.25	18.76
	2	5	7	8	8	9	9	9	16	16	16	20	20	42	42	52
25	.02	.13	.43	.78	1.14	1.54	2.18	2.90	3.62	4.33	5.16	6.95	9.00	12.54	16.95	21.61
	2	6	7	8	9	9	16	16	16	16	20	20	30	42	52	52
30	.02	.14	.46	.82	1.21	1.93	2.65	3.36	4.08	4.89	5.78	7.57	10.20	14.33	18.99	23.88
	2	6	8	8	16	16	16	16	16	20	20	20	42	52	52	56
40	.02	.17	.51	1.08	1.79	2.51	3.23	4.01	4.85	5.74	6.64	8.70	12.43	17.31	22.33	27.34
	2	7	8	16	16	16	16	18	20	20	20	32	52	56	56	56
50	.03	.19	.70	1.41	2.13	2.86	3.67	4.49	5.39	6.28	7.18	9.88	14.71	19.70	24.71	29.72
	2	7	16	16	16	18	18	20	20	20	20	54	54	56	56	56
60	.03	.21	.90	1.62	2.35	3.16	3.97	4.86	5.76	6.65	7.76	11.72	16.55	21.47	26.48	31.49
	2	8	16	16	18	18	20	20	20	20	32	54	54	56	56	56
70	.03	.32	1.04	1.75	2.56	3.36	4.23	5.13	6.02	6.97	8.40	12.99	17.84	22.85	27.86	32.88
	2	16	16	16	18	18	20	20	20	32	32	54	56	56	56	56
80	.03	.41	1.13	1.89	2.70	3.53	4.43	5.32	6.23	7.48	8.96	13.95	18.96	23.97	28.98	34.05
	2	16	16	18	18	20	20	20	22	32	54	56	56	56	56	58
90	.05	.48	1.20	2.00	2.80	3.68	4.58	5.47	6.48	7.91	9.86	14.88	19.89	24.90	29.92	35.04
	14	16	16	18	18	20	20	20	32	32	56	56	56	56	56	58
100	.10	.53	1.27	2.08	2.91	3.80	4.70	5.64	6.83	8.40	10.65	15.67	20.68	25.69	30.71	35.88
	16	16	18	18	20	20	20	22	32	38	56	56	56	56	56	58


DRAFT – STORAGE – RECURRENCE CURVES
EMBARRAS RIVER AT STE. MARIE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33460 — NORTH FORK, EMBARRAS RIVER NEAR OBLONG



LOCATION: In NE¼ SW¼ Sec 35, T7N, R14W, Crawford County, at pier of bridge on county highway, 200 feet down stream from Illinois Central Gulf Railroad bridge, 2.0 miles west of Oblong

DRAINAGE AREA: 319 square miles

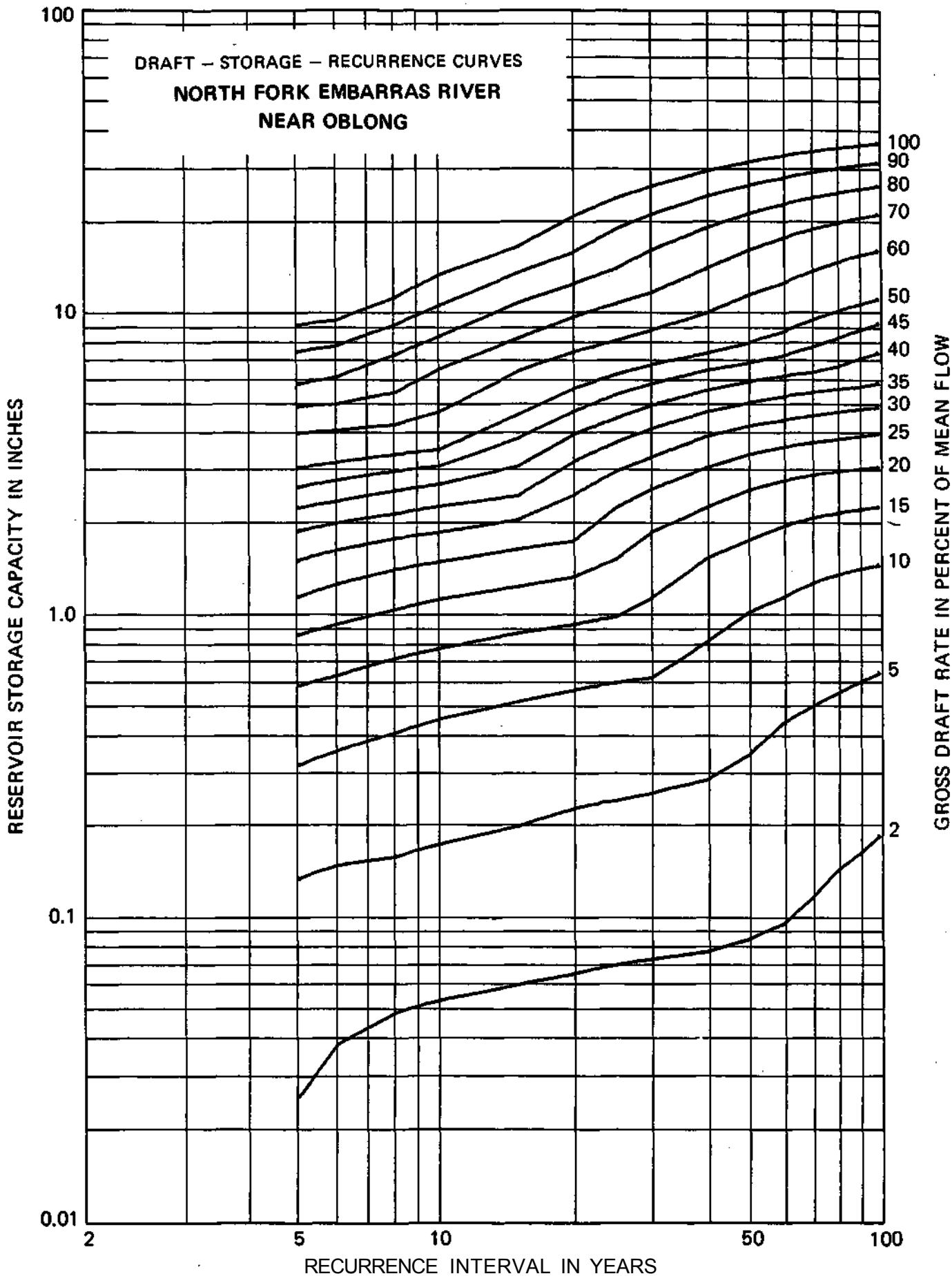
ACTUAL FLOW DATA: Oct 1940 to Oct 1978

INDEX STATION: Embarras River at St. Marie

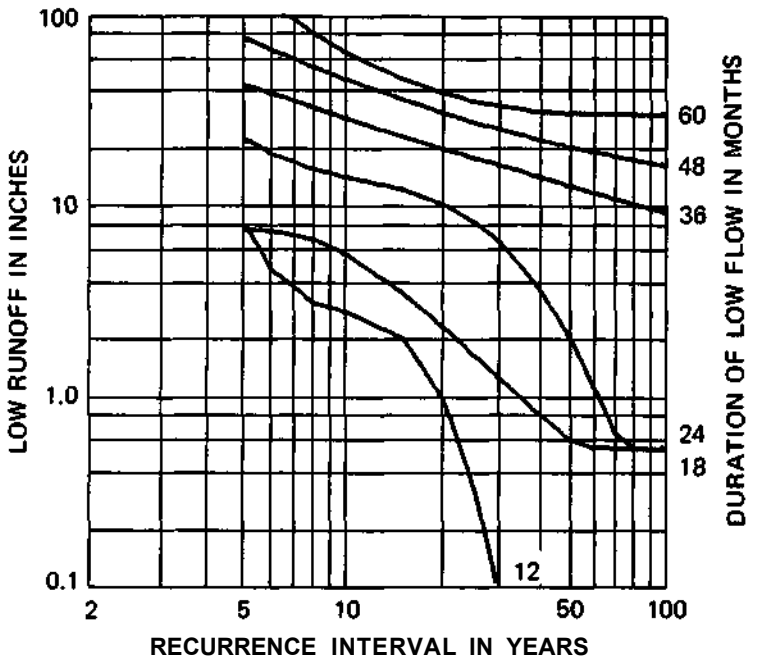
MEAN DISCHARGE: 0.90 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.13	.31	.58	.85	1.13	1.48	1.84	2.20	2.58	2.99	3.89	4.79	5.69	7.30	8.92
	2	4	5	6	6	7	8	8	8	9	10	10	10	10	18	18
6	.04	.15	.35	.62	.91	1.24	1.60	1.96	2.32	2.72	3.12	3.98	4.87	6.00	7.62	9.26
	4	4	6	6	7	8	8	8	8	9	9	10	10	18	18	20
8	.05	.16	.40	.71	1.02	1.38	1.74	2.10	2.51	2.91	3.32	4.15	5.33	7.13	8.93	11.01
	3	4	6	7	7	8	8	9	9	9	9	10	20	20	20	30
10	.05	.17	.45	.76	1.11	1.47	1.83	2.23	2.64	3.04	3.45	4.60	6.40	8.20	10.37	13.06
	4	5	7	7	8	8	9	9	9	9	9	20	20	20	30	30
15	.06	.20	.51	.86	1.22	1.62	2.02	2.42	3.05	3.77	4.52	6.31	8.11	10.62	13.32	16.21
	4	7	7	8	8	9	9	9	16	16	20	20	20	30	30	42
20	.06	.23	.56	.92	1.32	1.72	2.44	3.16	3.88	4.63	5.53	7.33	9.55	12.25	15.51	20.37
	5	7	8	8	9	9	16	16	16	20	20	20	30	30	54	54
25	.07	.24	.59	.98	1.51	2.23	2.95	3.67	4.41	5.31	6.20	8.00	10.61	13.79	18.59	23.44
	5	7	8	9	16	16	16	16	18	20	20	20	30	42	54	54
30	.07	.26	.62	1.12	1.84	2.56	3.28	4.07	4.88	5.78	6.68	8.66	11.54	15.87	20.73	25.69
	5	8	9	16	16	16	16	18	20	20	20	30	42	54	54	56
40	.08	.28	.81	1.52	2.24	3.04	3.84	4.65	5.50	6.40	7.30	9.88	13.84	18.79	23.82	28.86
	6	8	14	16	16	18	18	18	20	20	20	42	54	56	56	56
50	.09	.35	1.01	1.74	2.55	3.36	4.17	4.99	5.89	6.79	7.89	11.32	15.88	20.91	25.95	30.98
	8	14	16	18	18	18	18	20	20	20	28	42	56	56	56	56
60	.10	.44	1.14	1.94	2.75	3.56	4.37	5.25	6.15	7.16	8.60	12.39	17.42	22.46	27.49	32.53
	8	14	16	18	18	18	18	20	20	28	42	56	56	56	56	56
70	.12	.50	1.26	2.07	2.88	3.69	4.54	5.44	6.33	7.66	9.42	13.58	18.61	23.65	28.68	33.72
	14	16	18	18	18	18	20	20	20	34	42	56	56	56	56	56
80	.14	.55	1.35	2.16	2.97	3.78	4.67	5.57	6.63	8.19	10.08	14.53	19.56	24.60	29.63	34.67
	14	16	18	18	18	18	20	20	28	42	42	56	56	56	56	56
90	.16	.60	1.41	2.22	3.03	3.88	4.78	5.68	7.04	8.73	10.62	15.31	20.35	25.38	30.42	35.45
	14	18	18	18	18	20	20	20	34	42	42	56	56	56	56	56
100	.19	.65	1.46	2.27	3.07	3.96	4.86	5.86	7.38	9.19	11.08	15.91	20.94	25.98	31.01	36.05
	16	18	18	18	18	20	20	28	34	42	42	56	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
NORTH FORK EMBARRAS RIVER
NEAR OBLONG
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33780 - BONPAS CREEK AT BROWNS



LOCATION: In NW¼ SE¼ Sec 33, T15N, R14W, Wabash County, on bridge on State Highway 15, 0.5 miles north of Browns

DRAINAGE AREA: 228 square miles

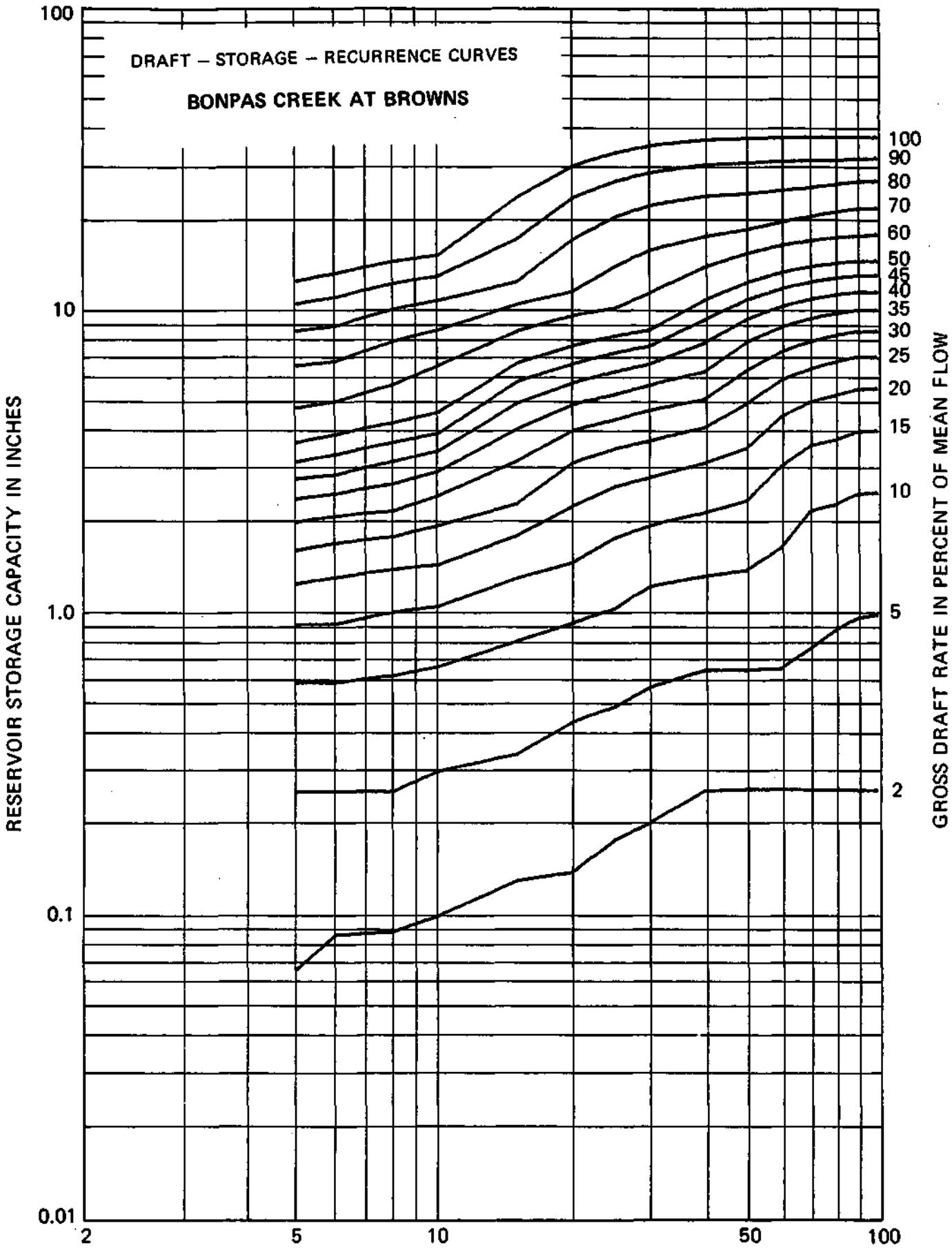
ACTUAL FLOW DATA: Oct 1940 to Oct 1978

INDEX STATION: Skillet Fork at Wayne City

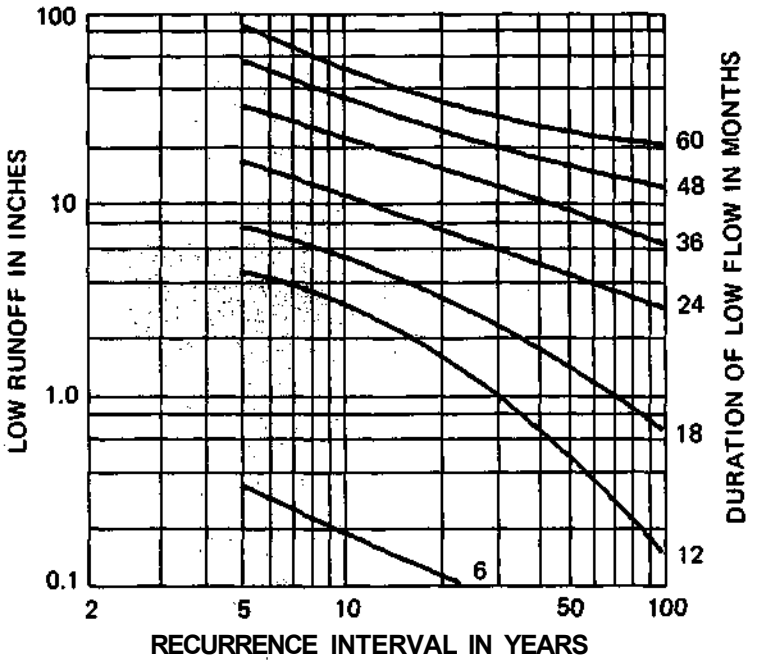
MEAN DISCHARGE: 1.07 inch per year

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.25	.57	.89	1.21	1.55	1.93	2.30	2.67	3.05	3.52	4.59	6.32	8.24	10.16	12.08
	3	6	6	6	6	7	7	7	7	7	10	10	18	18	18	18
6	.08	.25	.57	.89	1.26	1.64	2.01	2.38	2.76	3.21	3.75	4.81	6.52	8.54	10.67	12.80
	4	6	6	7	7	7	7	7	7	10	10	10	18	20	20	20
8	.09	.25	.60	.97	1.35	1.72	2.10	2.58	3.06	3.54	4.11	5.49	7.62	9.76	11.89	14.02
	4	6	7	7	7	7	9	9	9	9	11	20	20	20	20	20
10	.10	.29	.64	1.02	1.40	1.88	2.36	2.84	3.32	3.80	4.45	6.34	8.33	10.46	12.59	14.73
	6	6	7	7	9	9	9	9	9	9	16	18	20	20	20	20
15	.13	.33	.78	1.26	1.74	2.22	3.08	3.93	4.78	5.64	6.49	8.27	10.19	12.11	16.73	22.92
	6	7	9	9	9	16	16	16	16	16	16	18	18	18	58	58
20	.14	.42	.90	1.43	2.19	3.04	3.89	4.75	5.60	6.47	7.43	9.35	11.27	16.67	22.86	29.04
	9	9	9	10	16	16	16	16	16	18	18	18	18	58	58	58
25	.17	.48	1.01	1.73	2.55	3.41	4.26	5.16	6.12	7.08	8.04	9.96	13.65	19.83	26.02	32.21
	9	10	10	14	16	16	16	18	18	18	18	18	58	58	58	58
30	.20	.55	1.19	1.90	2.74	3.62	4.58	5.54	6.50	7.46	8.42	11.20	15.45	21.64	27.83	34.02
	10	12	12	14	16	18	18	18	18	18	18	30	58	58	58	58
40	.25	.64	1.30	2.11	3.07	4.03	4.99	6.16	7.65	9.14	10.64	13.62	17.17	23.35	29.54	35.73
	12	12	14	18	18	18	18	28	28	28	28	28	58	58	58	58
50	.26	.64	1.36	2.31	3.45	4.84	6.22	7.70	9.20	10.69	12.18	15.17	18.16	23.86	30.04	36.23
	12	12	14	18	26	26	26	28	28	28	28	28	28	58	58	58
60	.26	.65	1.62	3.01	4.39	5.78	7.17	8.67	10.16	11.65	13.15	16.13	19.20	24.43	30.41	36.38
	12	14	26	26	26	26	28	28	28	28	28	28	46	56	56	56
70	.26	.76	2.14	3.53	4.92	6.30	7.78	9.27	10.77	12.26	13.76	16.74	20.10	25.01	30.69	36.66
	12	26	26	26	26	26	28	28	28	28	28	28	46	46	56	56
80	.26	.87	2.26	3.69	5.18	6.68	8.17	9.66	11.16	12.65	14.14	17.13	20.81	25.72	30.78	36.76
	12	26	26	28	28	28	28	28	28	28	28	28	46	46	56	56
90	.26	.96	2.45	3.94	5.44	6.93	8.42	9.92	11.41	12.90	14.40	17.38	21.38	26.29	31.19	36.76
	12	28	28	28	28	28	28	28	28	28	28	28	46	46	46	56
100	.26	.98	2.47	3.96	5.46	6.95	8.44	9.94	11.43	12.92	14.42	17.55	21.53	26.44	31.34	36.76
	12	28	28	28	28	28	28	28	28	28	28	30	46	46	46	56


DRAFT – STORAGE – RECURRENCE CURVES
BONPAS CREEK AT BROWNS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33786.35 - LITTLE WABASH RIVER NEAR EFFINGHAM



LOCATION: In NW¼ NW¼ Sec 36, T8N, R5E, Effingham County, left bank at upstream side of dam, 400 feet upstream from Penn Central bridge, 2.2 miles southwest of Effingham

DRAINAGE AREA: 240 square miles

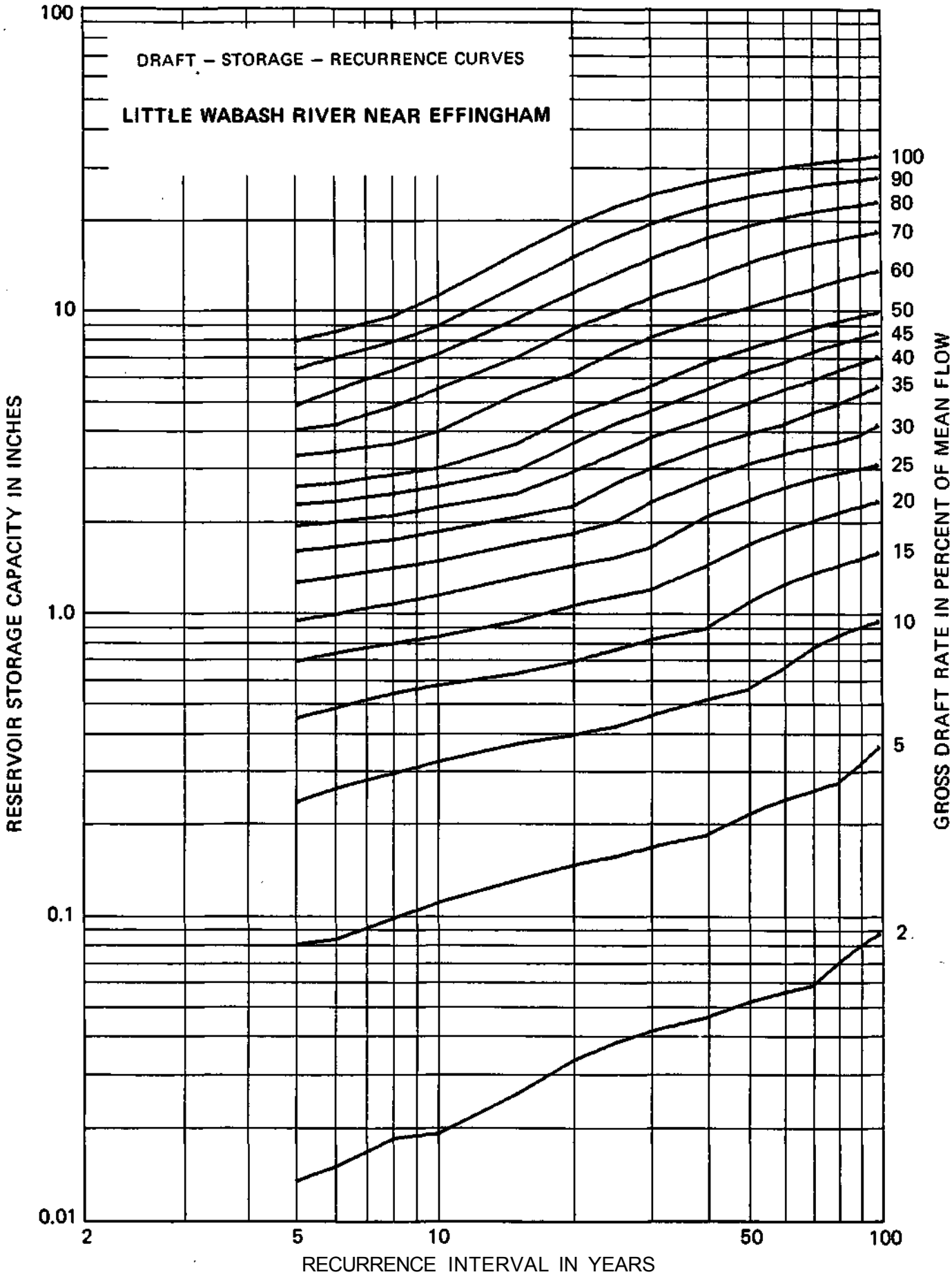
ACTUAL FLOW DATA: Oct 1966 to Oct 1978

INDEX STATION: Little Wabash River below Clay City

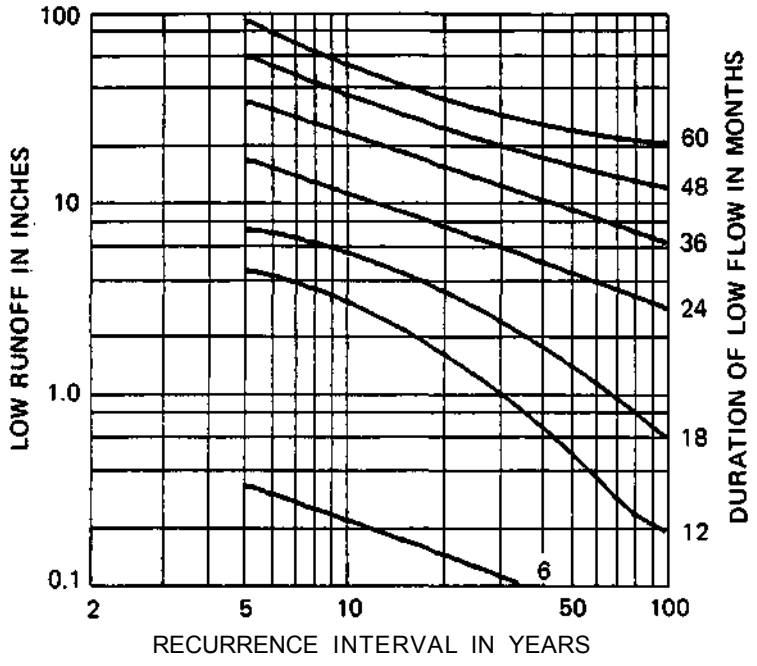
MEAN DISCHARGE: 0.83 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.08	.23	.44	.68	.93	1.24	1.57	1.91	2.24	2.57	3.24	3.93	4.75	6.24	7.74
	1	3	5	5	6	6	8	8	8	8	8	8	9	18	18	18
6	.01	.08	.26	.47	.72	.97	1.29	1.63	1.96	2.29	2.62	3.34	4.09	5.30	6.80	8.29
	2	3	5	6	6	7	8	8	8	8	8	9	9	18	18	18
8	.02	.10	.29	.53	.78	1.06	1.38	1.72	2.06	2.43	2.80	3.55	4.70	6.19	7.70	9.36
	2	4	5	6	6	7	8	8	9	9	9	9	18	18	20	20
10	.02	.11	.32	.57	.82	1.13	1.46	1.83	2.20	2.57	2.95	3.89	5.38	7.02	8.68	10.92
	2	4	6	6	7	8	8	9	9	9	9	18	18	20	20	32
15	.03	.13	.36	.62	.93	1.29	1.67	2.04	2.44	2.90	3.56	5.20	6.86	9.19	11.78	15.14
	3	5	6	7	8	9	9	9	10	16	16	20	20	30	32	42
20	.03	.14	.39	.68	1.04	1.42	1.81	2.22	2.88	3.58	4.41	6.07	8.51	11.18	14.66	18.82
	4	5	6	8	9	9	10	10	16	20	20	20	30	42	42	52
25	.04	.16	.42	.75	1.12	1.51	1.98	2.65	3.33	4.16	4.99	7.19	9.71	13.03	17.10	21.67
	4	6	7	9	9	10	16	16	20	20	20	30	32	42	52	56
30	.04	.17	.45	.81	1.18	1.64	2.30	2.96	3.75	4.58	5.52	8.01	10.81	14.54	19.02	23.67
	4	6	8	9	10	16	16	16	20	20	30	30	42	52	56	56
40	.05	.18	.51	.88	1.42	2.06	2.73	3.49	4.32	5.39	6.63	9.20	12.46	17.05	21.70	26.35
	5	7	8	9	14	16	18	20	20	30	30	32	52	56	56	56
50	.05	.21	.56	1.08	1.67	2.33	3.08	3.86	4.87	6.11	7.36	10.03	14.12	18.77	23.43	28.08
	5	8	9	14	16	16	18	20	30	30	32	34	56	56	56	56
60	.06	.24	.65	1.23	1.85	2.57	3.32	4.14	5.39	6.63	7.99	10.91	15.35	20.00	24.65	29.30
	5	8	14	14	16	18	18	30	30	30	34	44	56	56	56	56
70	.06	.26	.76	1.34	2.00	2.75	3.50	4.53	5.78	7.18	8.59	11.62	16.27	20.92	25.57	30.22
	5	8	14	14	18	18	20	30	30	34	34	54	56	56	56	56
80	.07	.27	.84	1.43	2.13	2.88	3.66	4.84	6.24	7.66	9.07	12.40	16.99	21.64	26.30	30.99
	8	12	14	16	18	18	20	30	34	34	34	54	56	56	56	58
90	.08	.32	.90	1.50	2.24	2.99	3.85	5.23	6.64	8.05	9.46	12.98	17.58	22.23	26.88	31.63
	8	12	14	16	18	18	30	34	34	34	34	54	56	56	56	58
100	.09	.36	.94	1.58	2.33	3.07	4.14	5.56	6.97	8.38	9.79	13.41	18.06	22.72	27.37	32.16
	8	14	14	18	18	18	34	34	34	34	34	56	56	56	56	58


DRAFT – STORAGE – RECURRENCE CURVES
LITTLE WABASH RIVER NEAR EFFINGHAM
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33789 — LITTLE WABASH RIVER AT LOUISVILLE



LOCATION: In NW¼ SE¼ Sec 23, T4N, R6E, Clay County, at City of Louisville pumphouse, 0.5 miles downstream from county highway bridge

DRAINAGE AREA: 745 square miles

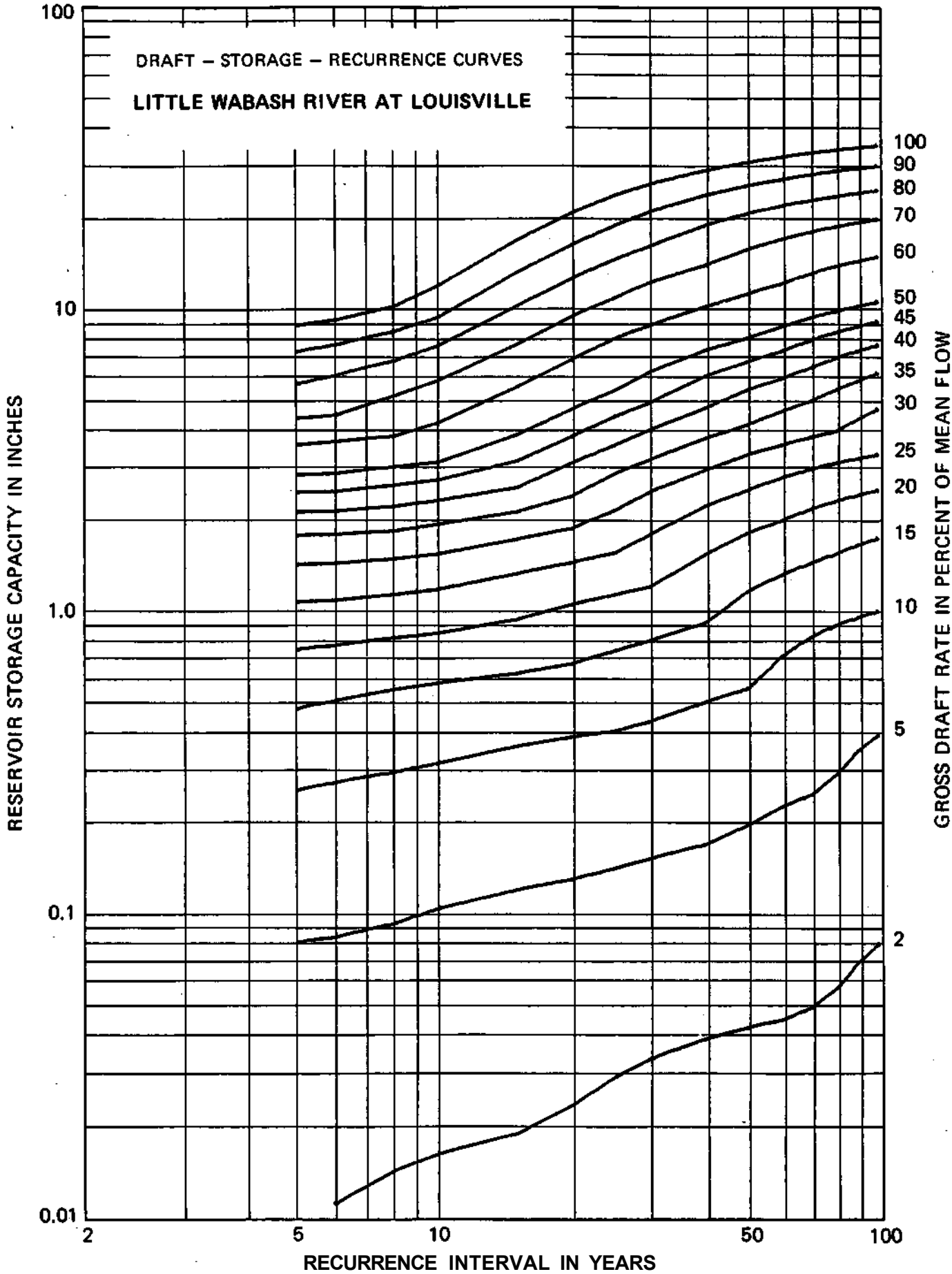
ACTUAL FLOW DATA: Aug 1965 to Oct 1978

INDEX STATION: Little Wabash River below Clay City

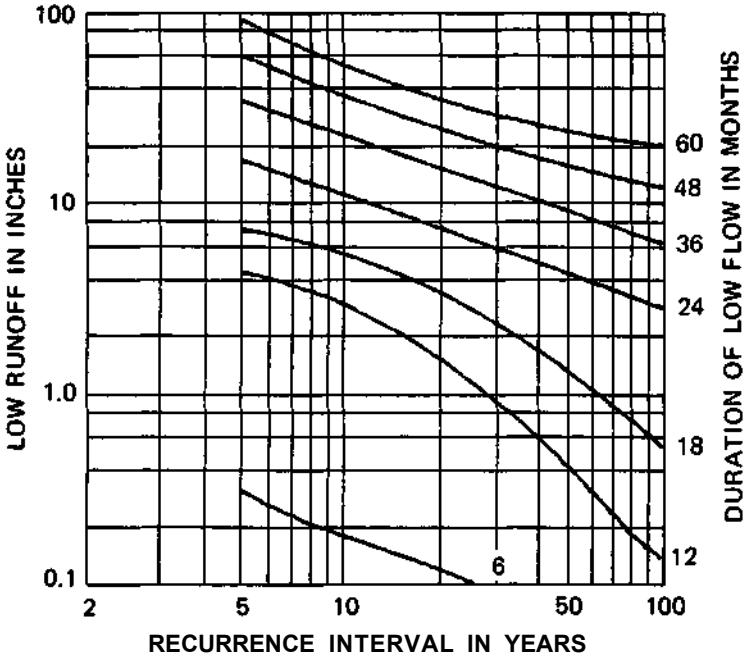
MEAN DISCHARGE: 0.86 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.08	.25	.47	.73	1.05	1.39	1.73	2.08	2.42	2.77	3.48	4.26	5.52	7.07	8.61
	1	3	5	5	7	8	8	8	8	8	8	9	9	18	18	18
6	.01	.08	.27	.49	.75	1.06	1.40	1.75	2.09	2.43	2.80	3.57	4.35	5.89	7.44	8.99
	2	3	5	6	6	8	8	8	8	8	9	9	9	18	18	18
8	.01	.09	.29	.54	.79	1.10	1.45	1.79	2.17	2.56	2.94	3.72	5.05	6.60	8.22	9.94
	2	4	5	6	6	8	8	8	9	9	9	9	18	18	20	20
10	.02	.10	.31	.57	.82	1.15	1.50	1.89	2.28	2.67	3.06	4.12	5.69	7.41	9.18	11.69
	2	4	6	6	7	8	9	9	9	9	10	16	20	20	28	30
15	.02	.12	.35	.61	.92	1.30	1.69	2.09	2.52	3.09	3.78	5.43	7.52	10.02	12.94	16.55
	2	4	6	6	8	9	9	10	10	16	16	20	28	30	42	42
20	.02	.13	.38	.66	1.03	1.42	1.84	2.37	3.05	3.74	4.60	6.72	9.29	12.42	16.03	20.37
	4	5	6	8	9	9	10	16	16	20	20	28	30	42	42	56
25	.03	.14	.39	.73	1.11	1.53	2.13	2.81	3.50	4.35	5.31	7.89	10.73	14.34	18.53	23.34
	4	5	6	9	9	10	16	16	16	20	30	30	42	42	56	56
30	.03	.15	.43	.79	1.18	1.76	2.45	3.14	3.94	4.84	6.13	8.71	12.06	15.86	20.61	25.43
	4	6	8	9	10	16	16	16	20	30	30	30	42	52	56	56
40	.04	.17	.49	.90	1.51	2.20	2.89	3.69	4.64	5.93	7.22	10.03	13.75	18.57	23.38	28.19
	4	6	8	14	16	16	18	20	30	30	30	42	56	56	56	56
50	.04	.19	.55	1.15	1.79	2.49	3.26	4.09	5.34	6.63	7.93	11.07	15.54	20.35	25.16	30.02
	4	8	12	14	16	18	18	20	30	30	32	44	56	56	56	58
60	.04	.22	.70	1.30	1.98	2.75	3.52	4.55	5.83	7.19	8.65	11.99	16.80	21.62	26.43	31.39
	4	8	14	14	16	18	20	30	30	34	34	56	56	56	56	58
70	.05	.25	.81	1.43	2.16	2.94	3.74	4.92	6.34	7.80	9.26	12.94	17.75	22.57	27.43	32.41
	5	8	14	16	18	18	20	30	34	34	34	56	56	56	58	58
80	.06	.29	.89	1.53	2.31	3.08	3.92	5.37	6.83	8.29	9.75	13.73	18.50	23.31	28.23	33.22
	8	14	14	18	18	18	30	34	34	34	34	54	56	56	58	58
90	.07	.35	.95	1.64	2.42	3.19	4.30	5.76	7.23	8.69	10.15	14.29	19.10	23.92	28.88	33.87
	8	14	14	18	18	18	34	34	34	34	34	56	56	56	58	58
100	.08	.39	.99	1.73	2.51	3.29	4.64	6.10	7.56	9.02	10.48	14.79	19.60	24.44	29.42	34.41
	8	14	14	18	18	20	34	34	34	34	34	56	56	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
LITTLE WABASH RIVER AT LOUISVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33795 - LITTLE WABASH RIVER BELOW CLAY CITY



LOCATION: In SE¼ Sec 3, T2N, R8E, Clay County, 300 feet downstream from highway bridge, 0.3 miles downstream from Big Muddy Creek and 5 miles southeast of Clay City

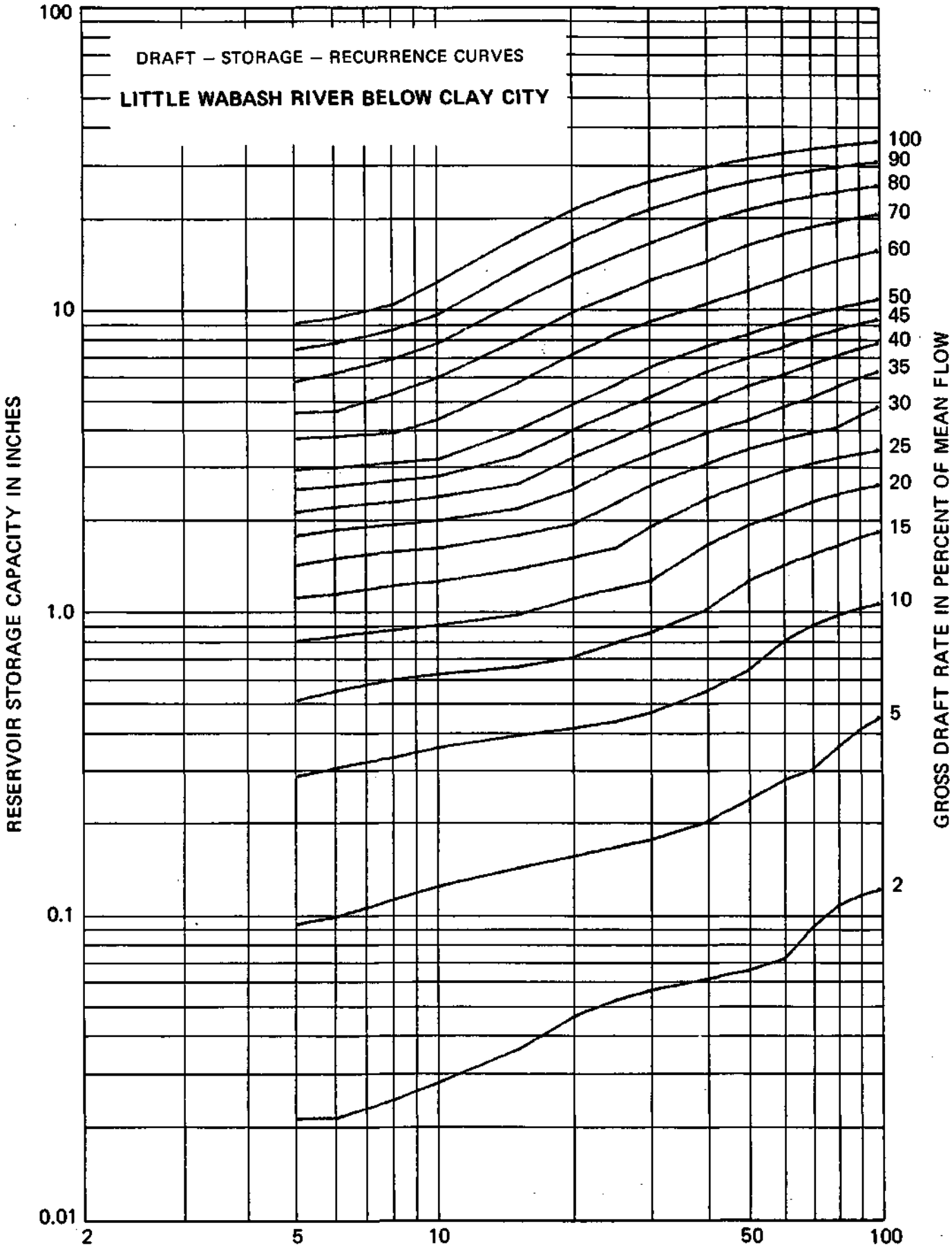
DRAINAGE AREA: 1131 square miles

INDEX STATION: None

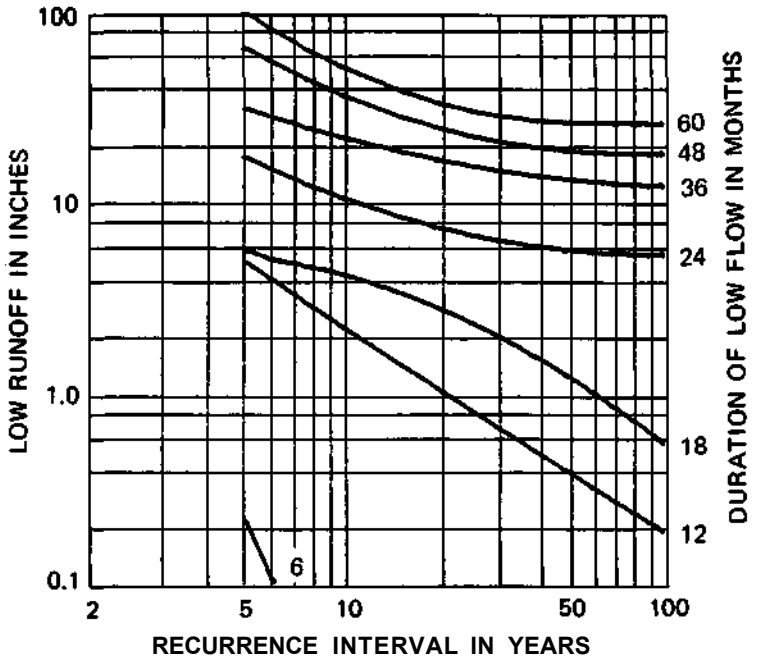
MEAN DISCHARGE: 0.87 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.09	.28	.50	.78	1.08	1.39	1.73	2.08	2.46	2.85	3.64	4.42	5.64	7.21	8.78
	2	3	5	5	7	7	7	8	8	9	9	9	9	18	18	18
6	.02	.10	.30	.54	.81	1.12	1.46	1.81	2.16	2.52	2.91	3.70	4.48	6.02	7.59	9.16
	2	3	5	6	7	7	8	8	8	9	9	9	9	18	18	18
8	.02	.11	.32	.59	.85	1.19	1.54	1.89	2.25	2.64	3.03	3.81	5.16	6.73	8.41	10.15
	3	4	6	6	7	8	8	8	9	9	9	9	18	18	20	20
10	.03	.12	.35	.61	.89	1.23	1.58	1.95	2.34	2.74	3.13	4.23	5.85	7.60	9.45	12.03
	3	4	6	6	7	8	8	9	9	9	9	16	20	20	28	30
15	.04	.14	.38	.65	.96	1.35	1.75	2.15	2.58	3.21	3.90	5.61	7.78	10.37	13.17	16.83
	4	4	6	7	8	9	9	10	10	16	16	20	28	30	42	42
20	.05	.15	.41	.70	1.09	1.48	1.90	2.48	3.18	3.91	4.78	7.01	9.62	12.68	16.34	20.69
	4	5	6	7	9	9	10	16	16	20	20	30	30	42	42	52
25	.05	.17	.43	.78	1.17	1.60	2.25	2.95	3.65	4.52	5.56	8.18	10.94	14.60	18.89	23.66
	4	5	7	9	9	10	16	16	20	20	30	30	42	42	52	56
30	.06	.17	.46	.85	1.25	1.88	2.58	3.28	4.10	5.07	6.38	9.00	12.25	16.20	20.94	25.82
	4	6	7	9	10	16	16	16	20	30	30	30	42	52	56	56
40	.06	.20	.54	1.00	1.63	2.32	3.03	3.84	4.84	6.15	7.45	10.25	14.06	18.95	23.83	28.72
	4	7	9	14	16	16	18	20	30	30	30	42	56	56	56	56
50	.07	.24	.64	1.25	1.90	2.62	3.41	4.25	5.52	6.83	8.16	11.30	15.94	20.83	25.71	30.62
	5	8	14	14	16	18	18	20	30	30	32	44	56	56	56	58
60	.07	.28	.79	1.40	2.09	2.88	3.66	4.70	6.01	7.41	8.90	12.39	17.28	22.16	27.04	32.07
	5	8	14	14	18	18	18	30	30	34	34	56	56	56	56	58
70	.09	.30	.89	1.52	2.28	3.06	3.87	5.06	6.52	8.01	9.49	13.40	18.29	23.17	28.11	33.16
	8	8	14	16	18	18	20	30	34	34	34	56	56	56	58	58
80	.11	.36	.97	1.63	2.42	3.20	4.04	5.51	7.00	8.48	9.96	14.20	19.08	23.96	28.97	34.03
	8	14	14	18	18	18	30	34	34	34	34	56	56	56	58	58
90	.12	.41	1.02	1.74	2.52	3.31	4.42	5.90	7.38	8.86	10.35	14.84	19.73	24.62	29.68	34.73
	8	14	14	18	18	18	34	34	34	34	34	56	56	58	58	58
100	.12	.45	1.06	1.82	2.61	3.40	4.74	6.22	7.70	9.19	10.67	15.38	20.26	25.20	30.26	35.32
	8	14	14	18	18	20	34	34	34	34	34	56	56	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
LITTLE WABASH RIVER BELOW CLAY CITY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33803.5 - SKILLET FORK NEAR IUKA



LOCATION: Near South boundary of Sec 14, T1N, R4E, Marion County at county highway bridge upstream from Poplar Creek, 7.5 miles southeast of Iuka

DRAINAGE AREA: 208 square miles

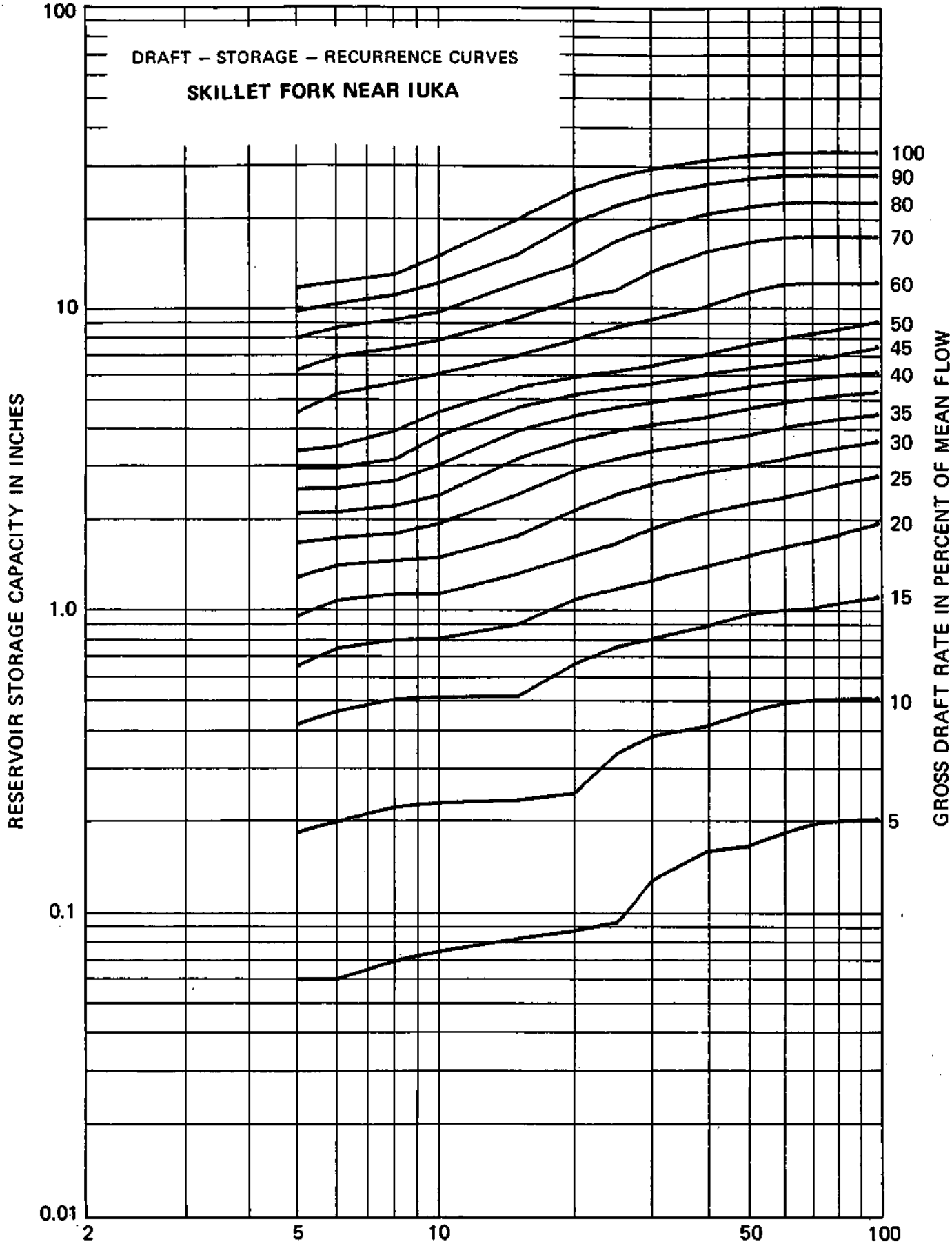
ACTUAL FLOW DATA: Oct 1965 to Oct 1978

INDEX STATION: Skillet Fork at Wayne City

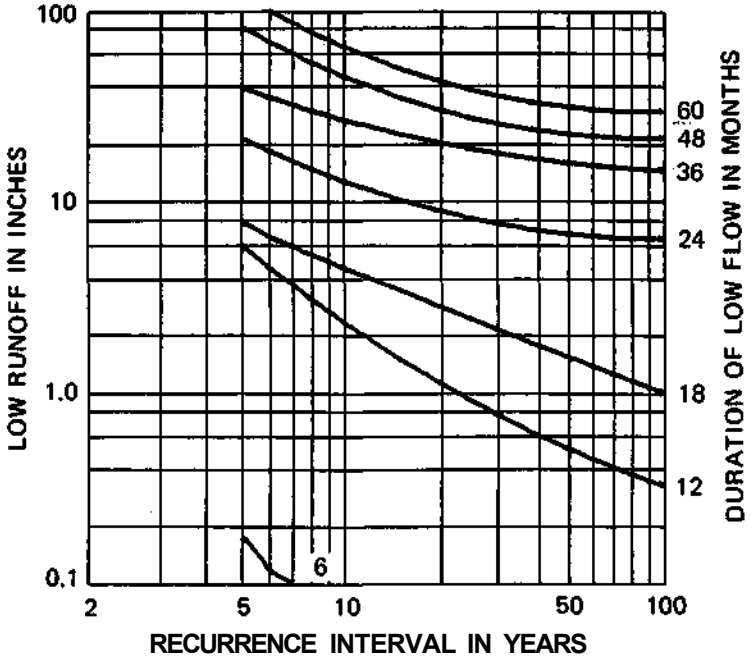
MEAN DISCHARGE: 0.93 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.18	.41	.65	.95	1.27	1.65	2.06	2.48	2.90	3.32	4.46	6.14	7.81	9.60	11.46
	4	5	5	5	7	7	9	9	9	9	9	18	18	18	20	20
6	.06	.20	.45	.73	1.06	1.38	1.71	2.08	2.49	2.91	3.42	5.09	6.76	8.43	10.10	11.94
	4	5	6	7	7	7	7	9	9	9	18	18	18	18	18	20
8	.07	.22	.50	.79	1.11	1.43	1.76	2.18	2.64	3.11	3.86	5.53	7.20	8.98	10.83	12.69
	5	6	6	7	7	7	8	10	10	10	18	18	18	20	20	20
10	.07	.23	.50	.79	1.12	1.47	1.91	2.37	2.98	3.72	4.46	5.95	7.68	9.53	11.89	14.67
	5	6	6	7	7	8	10	10	16	16	16	16	20	20	28	30
15	.08	.23	.51	.89	1.30	1.74	2.39	3.13	3.87	4.61	5.35	6.84	9.13	11.89	14.84	19.50
	5	6	8	9	9	10	16	16	16	16	16	16	28	30	42	56
20	.09	.24	.65	1.07	1.49	2.10	2.85	3.59	4.33	5.07	5.82	7.70	10.48	13.75	18.95	24.15
	5	6	9	9	9	16	16	16	16	16	16	30	30	56	56	58
25	.09	.33	.75	1.17	1.65	2.39	3.13	3.87	4.62	5.36	6.10	8.52	11.31	16.47	21.66	26.99
	6	9	9	9	16	16	16	16	16	16	16	30	30	56	56	58
30	.13	.38	.79	1.24	1.84	2.58	3.32	4.07	4.81	5.55	6.36	9.07	13.04	18.24	23.43	28.76
	9	9	9	10	16	16	16	16	16	16	18	30	56	56	56	58
40	.16	.41	.88	1.39	2.09	2.83	3.57	4.32	5.14	5.98	6.96	9.98	15.18	20.37	25.57	30.77
	9	9	11	11	16	16	16	16	18	18	30	56	56	56	56	56
50	.16	.45	.96	1.51	2.25	2.99	3.77	4.61	5.44	6.28	7.51	11.18	16.38	21.57	26.77	31.97
	9	11	11	14	16	16	18	18	18	18	32	56	56	56	56	56
60	.18	.49	1.00	1.61	2.35	3.15	3.99	4.82	5.66	6.49	7.90	11.91	17.11	22.31	27.50	32.70
	11	11	11	16	16	18	18	18	18	18	32	56	56	56	56	56
70	.20	.50	1.01	1.69	2.48	3.31	4.15	4.98	5.82	6.71	8.19	12.07	17.27	22.46	27.66	32.86
	11	11	11	16	18	18	18	18	18	32	32	56	56	56	56	56
80	.20	.51	1.05	1.77	2.60	3.44	4.27	5.11	5.94	6.93	8.44	12.07	17.27	22.46	27.66	32.86
	11	11	14	18	18	18	18	18	18	32	34	56	56	56	56	56
90	.20	.51	1.08	1.86	2.70	3.54	4.37	5.21	6.04	7.16	8.74	12.07	17.27	22.46	27.66	32.86
	11	11	14	18	18	18	18	18	18	34	34	56	56	56	56	56
100	.20	.51	1.11	1.94	2.78	3.61	4.45	5.28	6.12	7.41	8.99	12.15	17.27	22.46	27.66	32.86
	11	11	18	18	18	18	18	18	18	34	34	34	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SKILLET FORK NEAR IUKA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

33804.75 - HORSE CREEK NEAR KEENES



LOCATION: In NW¼ SW¼ Sec 4, T2S, R5E, Wayne City, at bridge on township road 3 miles northwest of Keenes

DRAINAGE AREA: 97.2 square miles

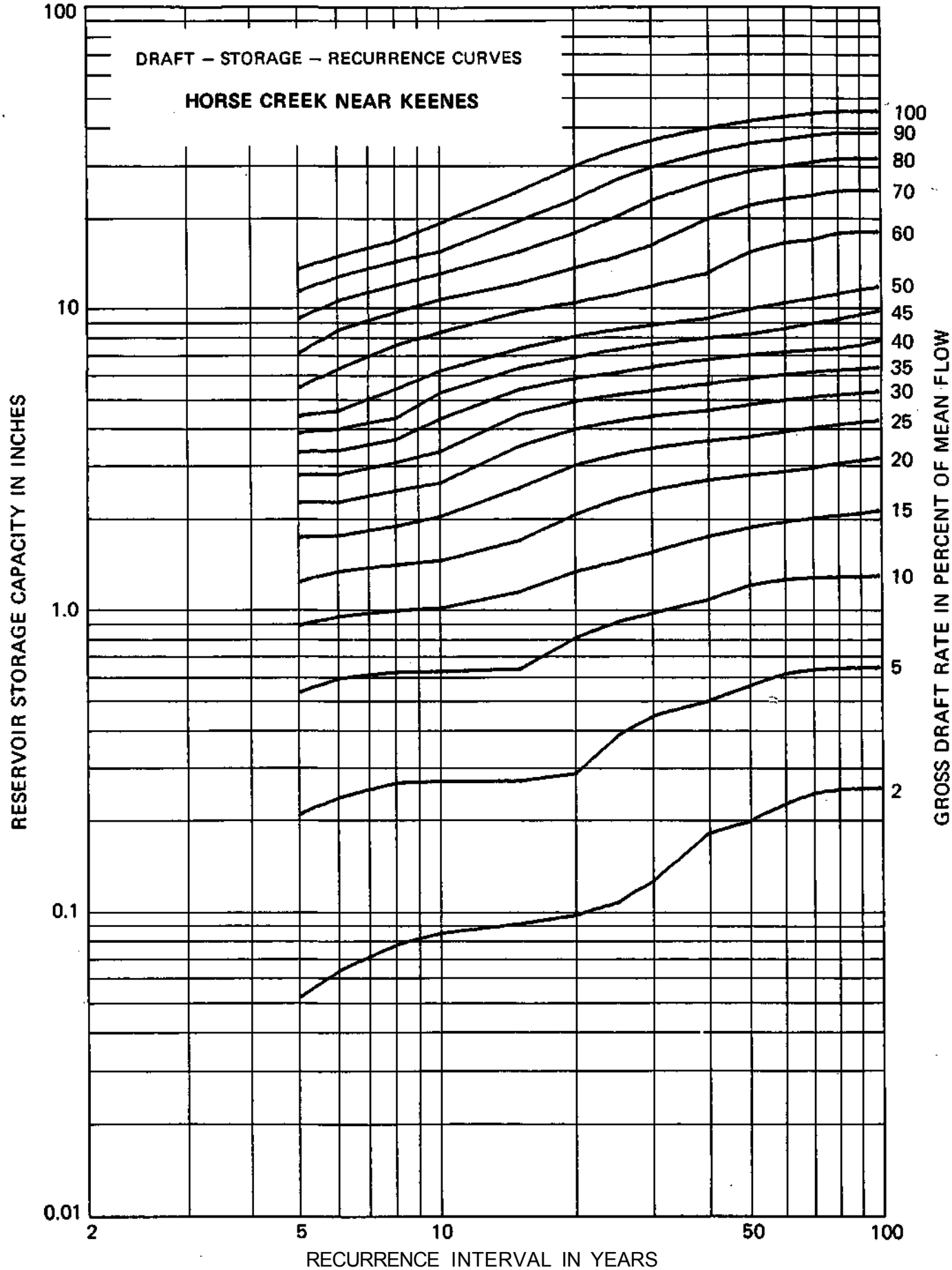
ACTUAL FLOW DATA: Jul 1959 to Oct 1978

INDEX STATION: Skillet Fork at Wayne City

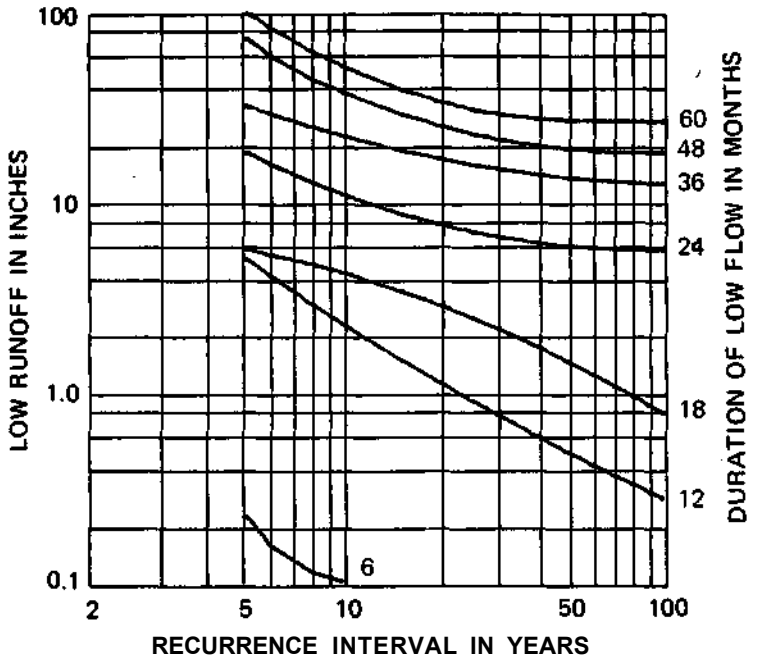
MEAN DISCHARGE: 1.16 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.21	.53	.88	1.23	1.71	2.23	2.76	3.28	3.80	4.33	5.37	6.99	9.08	11.18	13.27
	4	5	6	6	6	9	9	9	9	9	9	9	18	18	18	18
6	.06	.24	.58	.93	1.32	1.73	2.23	2.76	3.31	3.89	4.47	6.18	8.27	10.37	12.46	14.55
	4	6	6	6	7	7	9	9	10	10	10	18	18	18	18	18
8	.08	.26	.61	.97	1.38	1.86	2.44	3.02	3.60	4.24	5.29	7.38	9.47	11.69	14.01	16.34
	4	6	6	7	7	10	10	10	10	18	18	18	18	20	20	20
10	.08	.27	.61	.99	1.43	2.01	2.59	3.29	4.22	5.15	6.08	8.13	10.43	12.76	15.09	18.71
	4	6	6	7	10	10	10	16	16	16	16	18	20	20	20	32
15	.09	.27	.63	1.13	1.67	2.50	3.43	4.36	5.29	6.22	7.19	9.52	11.84	15.06	19.06	23.95
	4	6	8	9	10	16	16	16	16	16	20	20	20	30	42	42
20	.10	.28	.79	1.32	2.04	2.97	3.90	4.83	5.76	6.73	7.90	10.22	13.34	17.36	22.47	28.98
	5	6	9	9	16	16	16	16	16	20	20	20	30	42	56	56
25	.11	.38	.90	1.43	2.30	3.23	4.16	5.09	6.02	7.17	8.33	10.93	14.51	19.78	26.29	32.81
	5	9	9	9	16	16	16	16	16	20	20	30	32	56	56	56
30	.13	.44	.96	1.53	2.46	3.39	4.32	5.25	6.29	7.46	8.62	11.66	15.91	22.42	28.94	35.45
	9	9	9	16	16	16	16	16	20	20	20	30	56	56	56	56
40	.18	.49	1.07	1.73	2.66	3.59	4.52	5.55	6.67	7.83	9.09	12.86	19.37	25.89	32.40	38.91
	9	9	10	14	16	16	16	18	20	20	30	56	56	56	56	56
50	.20	.56	1.19	1.86	2.77	3.70	4.73	5.78	6.90	8.06	9.77	15.05	21.57	28.08	34.59	41.11
	9	11	11	14	16	16	18	18	20	20	32	56	56	56	56	56
60	.22	.61	1.25	1.94	2.84	3.85	4.90	5.95	7.06	8.41	10.27	16.19	22.70	29.22	35.75	42.49
	11	11	11	14	16	18	18	18	20	32	32	56	56	56	58	58
70	.24	.63	1.27	2.00	2.93	3.98	5.02	6.07	7.18	8.77	10.63	16.61	23.36	30.10	36.85	43.59
	11	11	11	14	18	18	18	18	20	32	32	58	58	58	58	58
80	.25	.64	1.28	2.04	3.03	4.08	5.12	6.17	7.26	9.06	11.03	17.45	24.19	30.94	37.69	44.43
	11	11	11	14	18	18	18	18	20	32	34	58	58	58	58	58
90	.25	.64	1.28	2.08	3.11	4.16	5.20	6.25	7.43	9.41	11.39	17.72	24.47	31.21	37.96	44.71
	11	11	11	14	18	18	18	18	34	34	34	58	58	58	58	58
100	.26	.64	1.29	2.13	3.17	4.22	5.27	6.31	7.73	9.71	11.69	17.72	24.47	31.21	37.96	44.71
	11	11	14	18	18	18	18	18	34	34	34	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
HORSE CREEK NEAR KEENES
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33805 - SKILLET FORK AT WAYNE CITY



LOCATION: In SW¼ Sec 7, T2S, R6E, Wayne County, 0.5 mile downstream from Illinois 15 bridge, 1.0 mile north of Wayne City

DRAINAGE AREA: 464 square miles

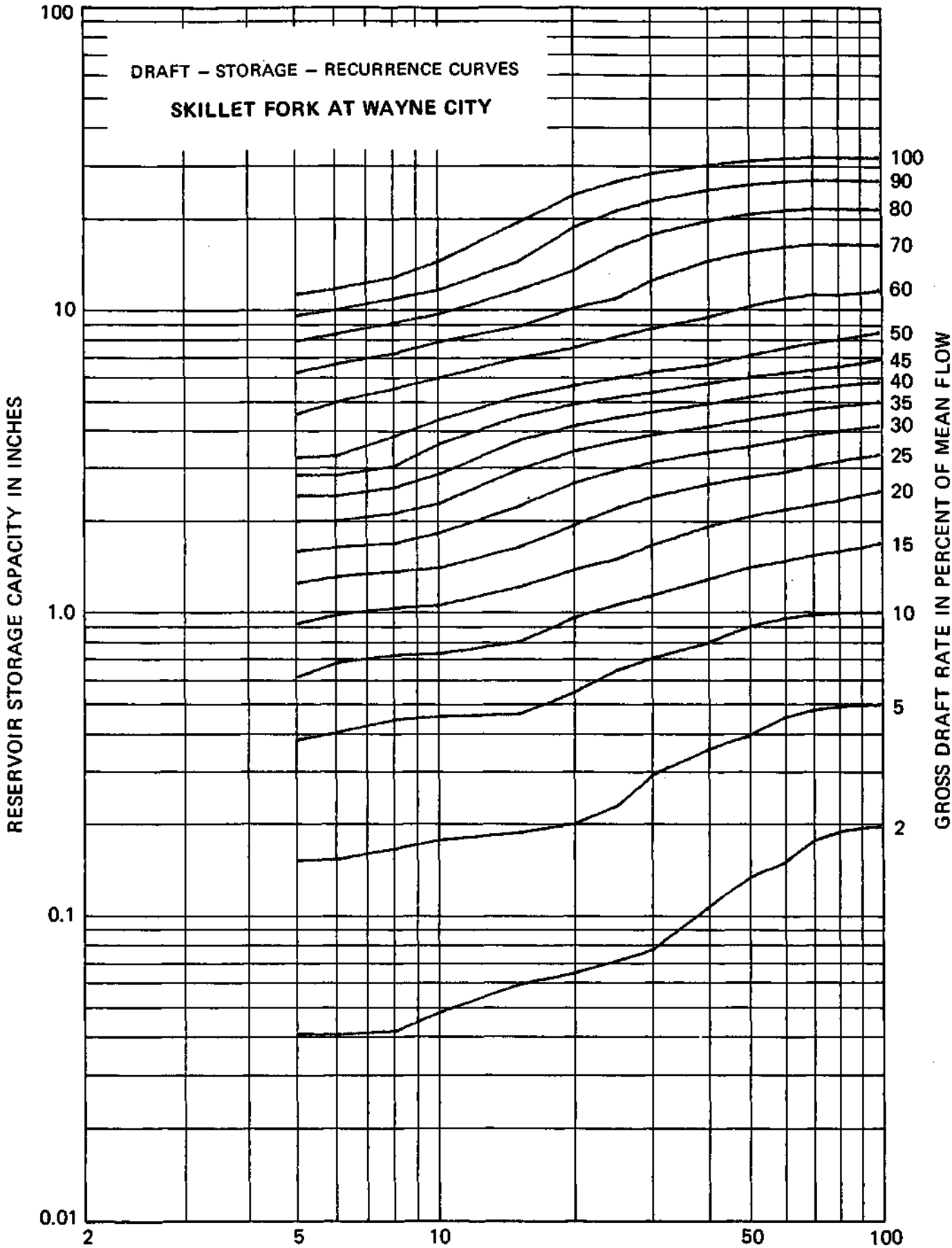
ACTUAL FLOW DATA: Aug 1908 to Dec 1912 ; Jun 1914 to Sep 1921; Jun 1928 to Oct 1978

INDEX STATION: None

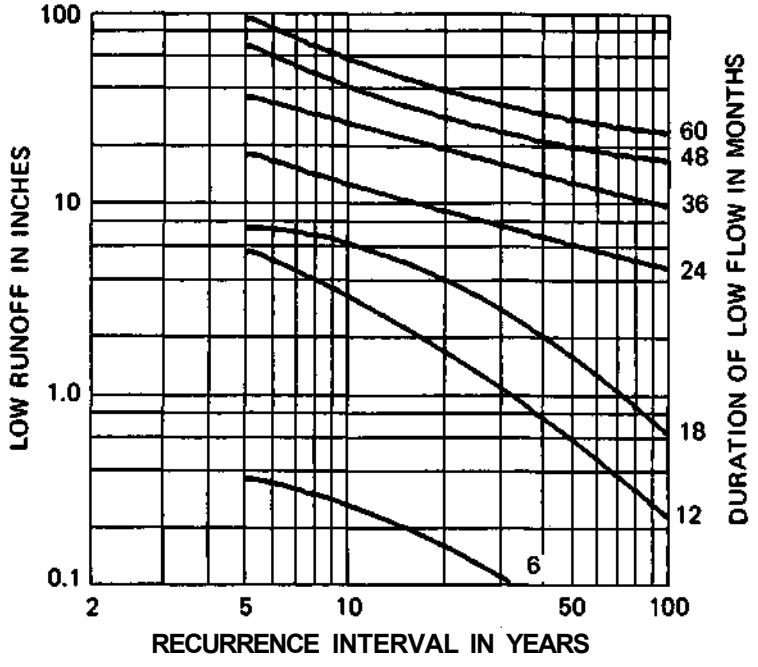
MEAN DISCHARGE: 0.92 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.15	.38	.61	.91	1.23	1.56	1.98	2.39	2.81	3.22	4.49	6.15	7.80	9.46	11.11
	4	4	5	6	7	7	9	9	9	9	9	18	18	18	18	18
6	.04	.15	.40	.68	.97	1.29	1.62	1.98	2.39	2.81	3.26	4.92	6.57	8.23	9.88	11.59
	4	5	6	6	7	7	7	9	9	9	18	18	18	18	18	20
8	.04	.17	.44	.72	1.02	1.35	1.67	2.10	2.56	3.02	3.80	5.45	7.11	8.95	10.79	12.63
	4	6	6	6	7	7	8	10	10	10	18	18	20	20	20	20
10	.05	.18	.45	.73	1.05	1.39	1.81	2.27	2.85	3.59	4.32	5.94	7.78	9.61	11.51	14.27
	4	6	6	6	7	8	10	10	16	16	16	20	20	20	30	30
15	.06	.19	.46	.80	1.20	1.63	2.22	2.96	3.69	4.43	5.17	6.91	8.75	11.48	14.23	19.20
	4	5	6	8	9	10	16	16	16	16	16	20	20	30	30	56
20	.06	.20	.54	.96	1.37	1.93	2.67	3.40	4.14	4.87	5.61	7.45	10.06	13.33	18.48	23.62
	4	5	9	9	9	16	16	16	16	16	20	20	30	56	56	56
25	.07	.23	.64	1.06	1.49	2.21	2.94	3.68	4.41	5.15	5.97	8.11	10.87	15.89	21.04	26.28
	5	9	9	9	10	16	16	16	16	16	20	30	30	56	56	58
30	.08	.29	.71	1.13	1.66	2.40	3.14	3.87	4.61	5.34	6.23	8.65	12.39	17.54	22.69	27.92
	5	9	9	10	16	16	16	16	16	16	20	30	56	56	56	58
40	.11	.35	.79	1.28	1.92	2.65	3.39	4.12	4.91	5.73	6.59	9.44	14.34	19.49	24.64	29.79
	9	9	10	11	16	16	16	16	18	18	20	32	56	56	56	56
50	.13	.40	.90	1.41	2.08	2.81	3.55	4.36	5.18	6.01	7.07	10.25	15.40	20.55	25.70	30.85
	9	10	11	11	16	16	16	18	18	18	32	56	56	56	56	56
60	.15	.45	.96	1.48	2.19	2.92	3.73	4.56	5.39	6.21	7.47	10.86	16.01	21.16	26.31	31.46
	10	11	11	14	16	16	18	18	18	18	32	56	56	56	56	56
70	.18	.48	.99	1.55	2.27	3.06	3.89	4.71	5.54	6.37	7.77	11.21	16.36	21.51	26.66	31.81
	11	11	11	14	16	18	18	18	18	18	32	56	56	56	56	56
80	.19	.49	1.00	1.60	2.35	3.18	4.01	4.84	5.66	6.53	8.00	11.21	16.36	21.51	26.66	31.81
	11	11	11	16	18	18	18	18	18	32	32	56	56	56	56	56
90	.20	.50	1.01	1.65	2.45	3.28	4.11	4.93	5.76	6.71	8.23	11.36	16.36	21.51	26.66	31.81
	11	11	11	16	18	18	18	18	18	32	34	34	56	56	56	56
100	.20	.50	1.01	1.71	2.53	3.36	4.19	5.02	5.84	6.92	8.49	11.61	16.36	21.51	26.66	31.81
	11	11	11	18	18	18	18	18	18	34	34	34	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SKILLET FORK AT WAYNE CITY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

33815 — LITTLE WABASH RIVER AT CARMI



LOCATION: Near center of E½ Sec 25, T5S, R9E, White County, at Possum bridge, 2.5 miles downstream from Carmi

DRAINAGE AREA: 3102 square miles

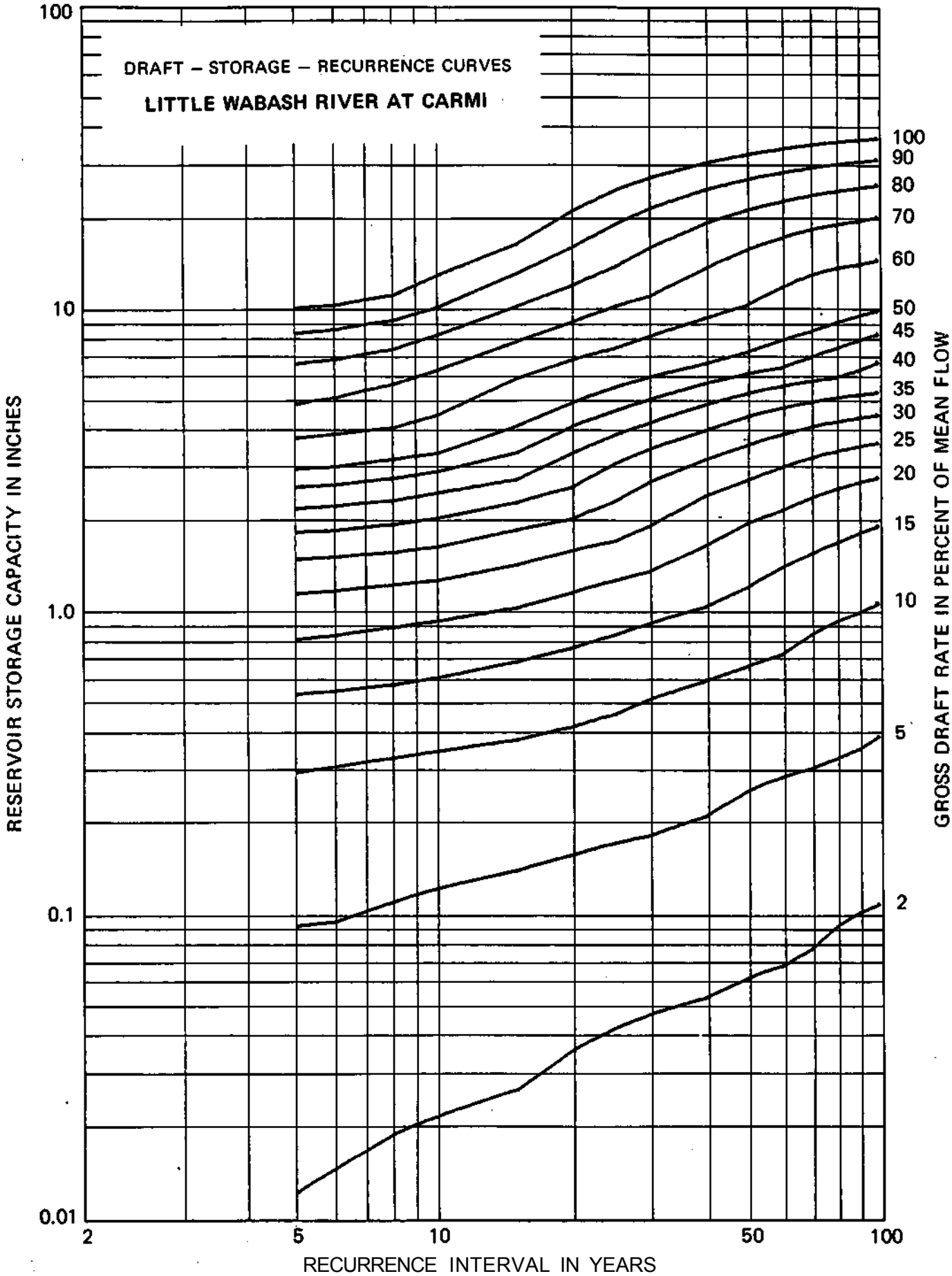
ACTUAL FLOW DATA: Oct 1908 to Dec 1912; gage heights only, Oct 1939 to Oct 1978

INDEX STATION: Little Wabash River below Clay City

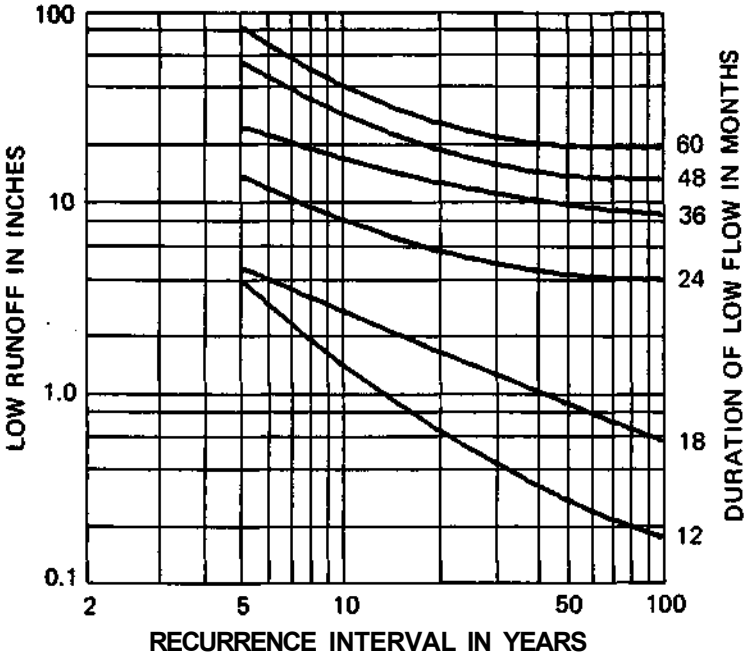
MEAN DISCHARGE: 0.94 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.09	.29	.52	.79	1.12	1.44	1.77	2.13	2.50	2.87	3.63	4.71	6.40	8.08	9.77
	1	3	5	5	7	7	7	7	8	8	8	9	18	18	18	18
6	.01	.09	.30	.53	.81	1.14	1.47	1.80	2.17	2.54	2.91	3.74	4.93	6.62	8.30	9.99
	2	3	5	5	7	7	7	7	8	8	8	9	18	18	18	18
8	.02	.11	.32	.56	.86	1.19	1.52	1.88	2.26	2.67	3.09	3.93	5.48	7.16	8.92	10.80
	2	4	5	6	7	7	7	8	8	9	9	9	18	18	20	20
10	.02	.12	.34	.59	.91	1.24	1.59	1.98	2.40	2.82	3.24	4.34	6.13	8.00	9.87	12.54
	2	4	5	6	7	7	8	9	9	9	9	18	20	20	20	30
15	.03	.14	.37	.67	1.01	1.40	1.82	2.24	2.66	3.27	4.02	5.76	7.63	9.96	12.77	15.94
	3	4	6	7	8	9	9	9	9	16	16	20	20	30	30	42
20	.04	.16	.41	.75	1.14	1.56	1.98	2.52	3.27	4.01	4.79	6.67	8.87	11.67	15.56	20.51
	4	5	6	8	9	9	9	16	16	16	20	20	30	30	52	58
25	.04	.17	.45	.83	1.25	1.68	2.27	3.02	3.77	4.52	5.42	7.29	9.99	13.48	18.56	23.99
	4	5	8	8	9	10	16	16	16	16	20	20	30	52	58	58
30	.05	.18	.51	.90	1.33	1.89	2.64	3.38	4.13	4.94	5.87	8.00	10.81	15.55	20.98	26.41
	4	5	8	9	10	16	16	16	16	20	20	30	30	58	58	58
40	.05	.21	.58	1.03	1.62	2.37	3.12	3.91	4.75	5.59	6.51	9.16	13.30	18.72	24.15	29.58
	4	8	9	10	16	16	16	18	18	18	20	32	56	58	58	58
50	.06	.25	.66	1.19	1.93	2.68	3.50	4.35	5.19	6.03	7.12	10.12	15.36	20.74	26.17	31.60
	5	8	10	14	16	16	18	18	18	18	32	56	56	58	58	58
60	.07	.28	.72	1.39	2.14	2.97	3.81	4.65	5.49	6.34	7.82	11.61	16.85	22.15	27.58	33.01
	5	8	10	16	16	18	18	18	18	18	32	56	56	58	58	58
70	.08	.30	.83	1.54	2.35	3.19	4.03	4.87	5.72	6.87	8.36	12.74	17.98	23.23	28.63	34.06
	8	8	14	16	18	18	18	18	18	32	32	56	56	56	58	58
80	.09	.33	.92	1.67	2.51	3.36	4.20	5.04	5.88	7.34	8.93	13.43	18.68	24.01	29.44	34.87
	8	10	14	18	18	18	18	18	18	34	34	56	56	58	58	58
90	.10	.35	.99	1.80	2.64	3.49	4.33	5.17	6.21	7.81	9.40	13.80	19.23	24.66	30.09	35.52
	8	10	14	18	18	18	18	18	34	34	34	58	58	58	58	58
100	.11	.39	1.06	1.90	2.75	3.59	4.43	5.27	6.61	8.20	9.80	14.33	19.76	25.19	30.62	36.05
	8	14	18	18	18	18	18	18	34	34	34	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
LITTLE WABASH RIVER AT CARMI
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55935 - LITTLE CROOKED CREEK NEAR NEW MINDEN



LOCATION: In center of Sec 15, T1S, R3W, Washington County, at bridge on Illinois 177, 2.5 miles west of New Minden

DRAINAGE AREA: 84.3 square miles

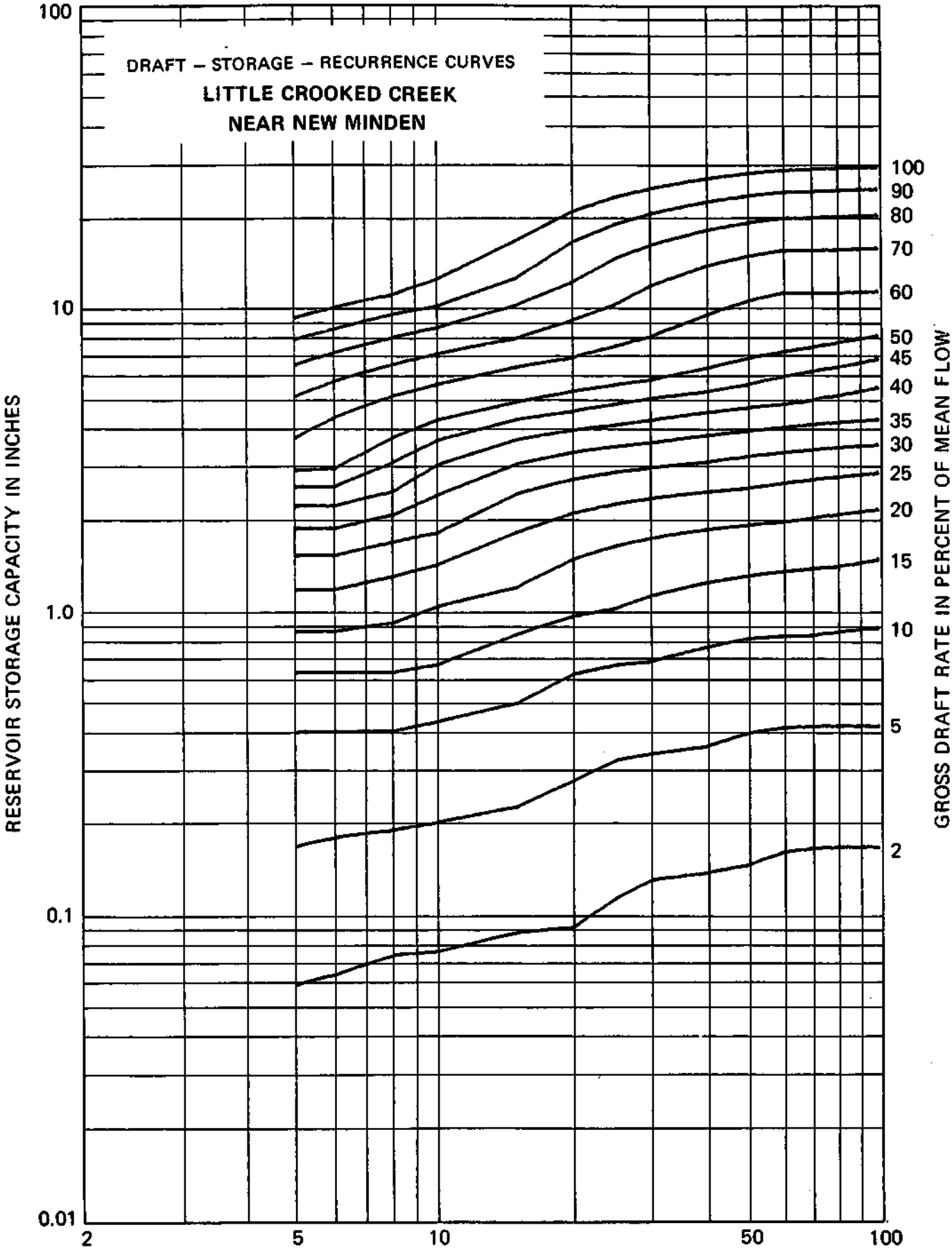
ACTUAL FLOW DATA: Oct 1967 to Oct 1978

INDEX STATION: Skillet Fork at Wayne City

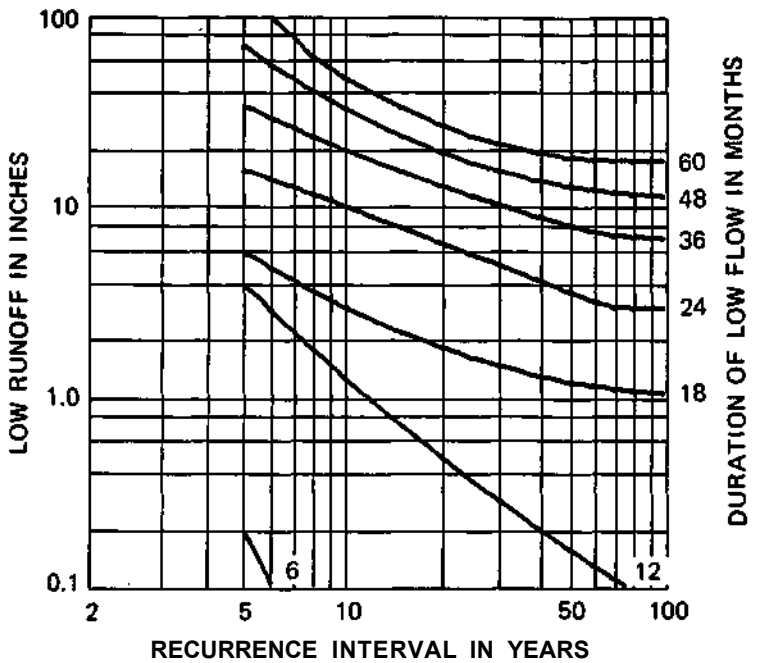
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.17	.39	.62	.85	1.17	1.51	1.85	2.19	2.53	2.88	3.68	5.05	6.41	7.78	9.15
	4	6	6	6	6	9	9	9	9	9	9	18	18	18	18	18
6	.06	.18	.39	.62	.85	1.17	1.51	1.85	2.19	2.53	2.91	4.28	5.65	7.01	8.38	9.87
	5	5	6	6	6	9	9	9	9	9	18	18	18	18	18	20
8	.07	.19	.39	.62	.91	1.29	1.67	2.05	2.44	3.05	3.68	5.04	6.41	7.86	9.38	10.90
	5	5	6	6	10	10	10	10	16	16	18	18	18	20	20	20
10	.07	.20	.43	.66	1.03	1.41	1.79	2.38	2.99	3.59	4.20	5.52	6.96	8.48	10.00	12.28
	5	6	6	7	10	10	10	16	16	16	16	18	20	20	30	30
15	.09	.22	.49	.83	1.19	1.80	2.40	3.01	3.62	4.23	4.84	6.30	7.82	10.08	12.40	16.49
	6	6	9	9	16	16	16	16	16	16	16	20	20	30	32	56
20	.09	.27	.61	.96	1.47	2.08	2.68	3.29	3.90	4.51	5.24	6.76	8.97	12.02	16.27	20.53
	6	9	9	9	16	16	16	16	16	16	20	20	30	56	56	56
25	.11	.32	.66	1.02	1.62	2.23	2.84	3.45	4.06	4.77	5.53	7.39	10.13	14.38	18.64	22.89
	9	9	9	16	16	16	16	16	16	20	20	30	56	56	56	56
30	.13	.33	.68	1.12	1.72	2.33	2.94	3.55	4.22	4.97	5.73	7.92	11.68	15.94	20.19	24.45
	9	9	9	16	16	16	16	16	18	20	20	32	56	56	56	56
40	.14	.35	.76	1.24	1.84	2.45	3.07	3.75	4.48	5.24	6.27	9.33	13.58	17.84	22.09	26.35
	9	10	11	16	16	16	18	18	20	20	32	56	56	56	56	58
50	.15	.39	.81	1.30	1.91	2.53	3.21	3.89	4.65	5.54	6.76	10.43	14.69	18.94	23.20	27.45
	10	11	11	16	16	18	18	18	20	32	32	56	56	56	56	56
60	.16	.41	.83	1.35	1.96	2.63	3.31	4.01	4.77	5.89	7.10	11.13	15.38	19.64	23.89	28.15
	11	11	11	16	16	18	18	20	20	32	32	56	56	56	56	56
70	.16	.42	.83	1.38	2.02	2.70	3.38	4.10	4.92	6.14	7.36	11.16	15.41	19.67	24.05	28.46
	11	11	11	16	18	18	18	20	32	32	32	56	56	56	58	58
80	.17	.42	.86	1.40	2.08	2.76	3.44	4.17	5.12	6.34	7.60	11.16	15.49	19.90	24.31	28.71
	11	11	14	16	18	18	18	20	32	32	34	56	58	58	58	58
90	.17	.42	.87	1.44	2.12	2.81	3.49	4.23	5.28	6.55	7.84	11.24	15.64	20.05	24.46	28.87
	11	11	14	18	18	18	18	20	32	34	34	58	58	58	58	58
100	.17	.42	.89	1.48	2.16	2.85	3.53	4.28	5.46	6.75	8.04	11.32	15.73	20.13	24.54	28.95
	11	11	14	18	18	18	18	20	34	34	34	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
LITTLE CROOKED CREEK
NEAR NEW MINDEN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

55955-MARYS RIVER NEAR SPARTA



LOCATION: In NE¼ SE¼ Sec 9, T5S, R5W, Randolph County, at Illinois 154 bridge, 3.2 miles southeast of Sparta

DRAINAGE AREA: 17.8 square miles

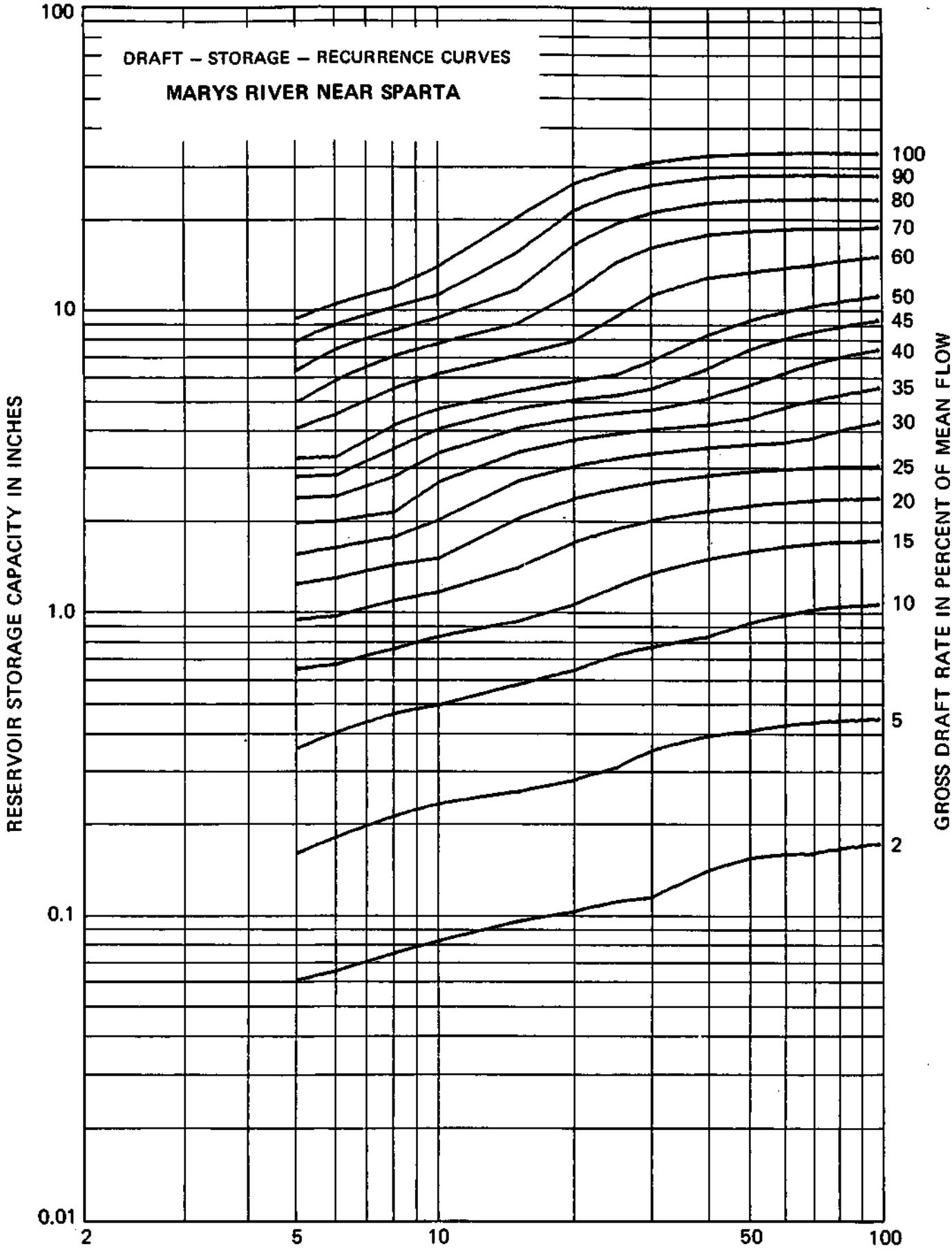
ACTUAL FLOW DATA: May 1949 thru Sep 1971

INDEX STATION: Big Muddy River near Plumfield

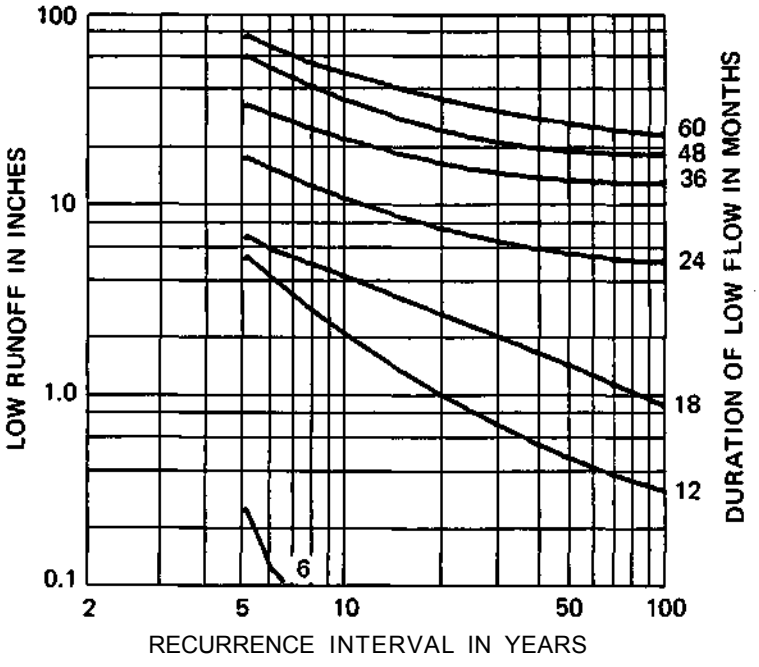
MEAN DISCHARGE: 0.81 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.16	.35	.63	.92	1.20	1.50	1.91	2.32	2.72	3.13	3.94	4.84	6.15	7.61	9.08
	4	4	7	7	7	7	10	10	10	10	10	10	16	18	18	18
6	.06	.18	.39	.65	.94	1.25	1.58	1.93	2.34	2.74	3.15	4.37	5.69	7.15	8.61	10.08
	4	5	6	7	7	8	8	10	10	10	10	16	18	18	18	18
8	.07	.21	.45	.73	1.06	1.39	1.71	2.07	2.72	3.37	4.02	5.34	6.81	8.27	9.85	11.48
	5	6	6	8	8	8	8	16	16	16	16	18	18	18	20	20
10	.08	.23	.48	.81	1.13	1.46	1.96	2.61	3.26	3.91	4.56	5.95	7.48	9.11	10.83	13.44
	6	6	8	8	8	8	16	16	16	16	16	18	20	20	32	32
15	.09	.25	.56	.91	1.36	1.98	2.63	3.28	3.93	4.58	5.24	6.86	8.74	11.34	14.96	19.51
	6	7	8	9	14	16	16	16	16	16	16	20	32	32	56	56
20	.10	.27	.63	1.03	1.65	2.30	2.95	3.60	4.25	4.90	5.65	7.63	11.04	15.75	20.47	25.19
	7	8	10	10	16	16	16	16	16	16	20	32	58	58	58	58
25	.11	.30	.71	1.19	1.84	2.49	3.14	3.79	4.44	5.09	5.93	9.23	13.95	18.67	23.39	28.10
	7	9	10	16	16	16	16	16	16	16	30	58	58	58	58	58
30	.11	.34	.75	1.31	1.96	2.61	3.26	3.91	4.56	5.36	6.58	10.87	15.59	20.30	25.02	29.74
	7	10	10	16	16	16	16	16	16	30	30	58	58	58	58	58
40	.14	.38	.81	1.46	2.11	2.76	3.41	4.07	4.97	6.19	7.98	12.43	17.15	21.87	26.59	31.30
	10	10	16	16	16	16	16	16	30	44	44	58	58	58	58	58
50	.15	.40	.90	1.55	2.20	2.85	3.51	4.28	5.50	7.17	8.96	12.95	17.67	22.39	27.11	31.83
	10	11	16	16	16	16	16	30	30	44	44	56	58	58	58	58
60	.16	.41	.96	1.61	2.26	2.91	3.57	4.64	6.02	7.81	9.59	13.38	17.94	22.50	27.15	32.03
	10	11	16	16	16	16	16	30	44	44	44	56	56	56	60	60
70	.16	.43	1.01	1.66	2.31	2.96	3.69	4.91	6.46	8.25	10.04	13.73	18.13	22.69	27.30	32.18
	10	11	16	16	16	16	30	30	44	44	44	46	56	56	60	60
80	.16	.43	1.03	1.68	2.33	2.98	3.90	5.12	6.79	8.58	10.40	14.14	18.17	22.73	27.30	32.18
	11	11	16	16	16	16	30	30	44	44	46	46	56	56	60	60
90	.17	.44	1.04	1.69	2.34	2.99	4.07	5.29	7.04	8.84	10.71	14.45	18.19	22.73	27.30	32.18
	11	11	16	16	16	16	30	30	44	46	46	46	46	56	60	60
100	.17	.44	1.05	1.70	2.35	3.00	4.20	5.45	7.24	9.09	10.96	14.70	18.44	22.73	27.30	32.18
	11	11	16	16	16	16	30	44	44	46	46	46	46	56	60	60


DRAFT – STORAGE – RECURRENCE CURVES
MARYS RIVER NEAR SPARTA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55958 - SEVENMILE CREEK NEAR MT. VERNON



LOCATION: In NW¼ SW¼ Sec 26, T2S, R3E, Jefferson County, at bridge on Illinois 15, 3 miles east of Mt. Vernon

DRAINAGE AREA: 21.1 square miles

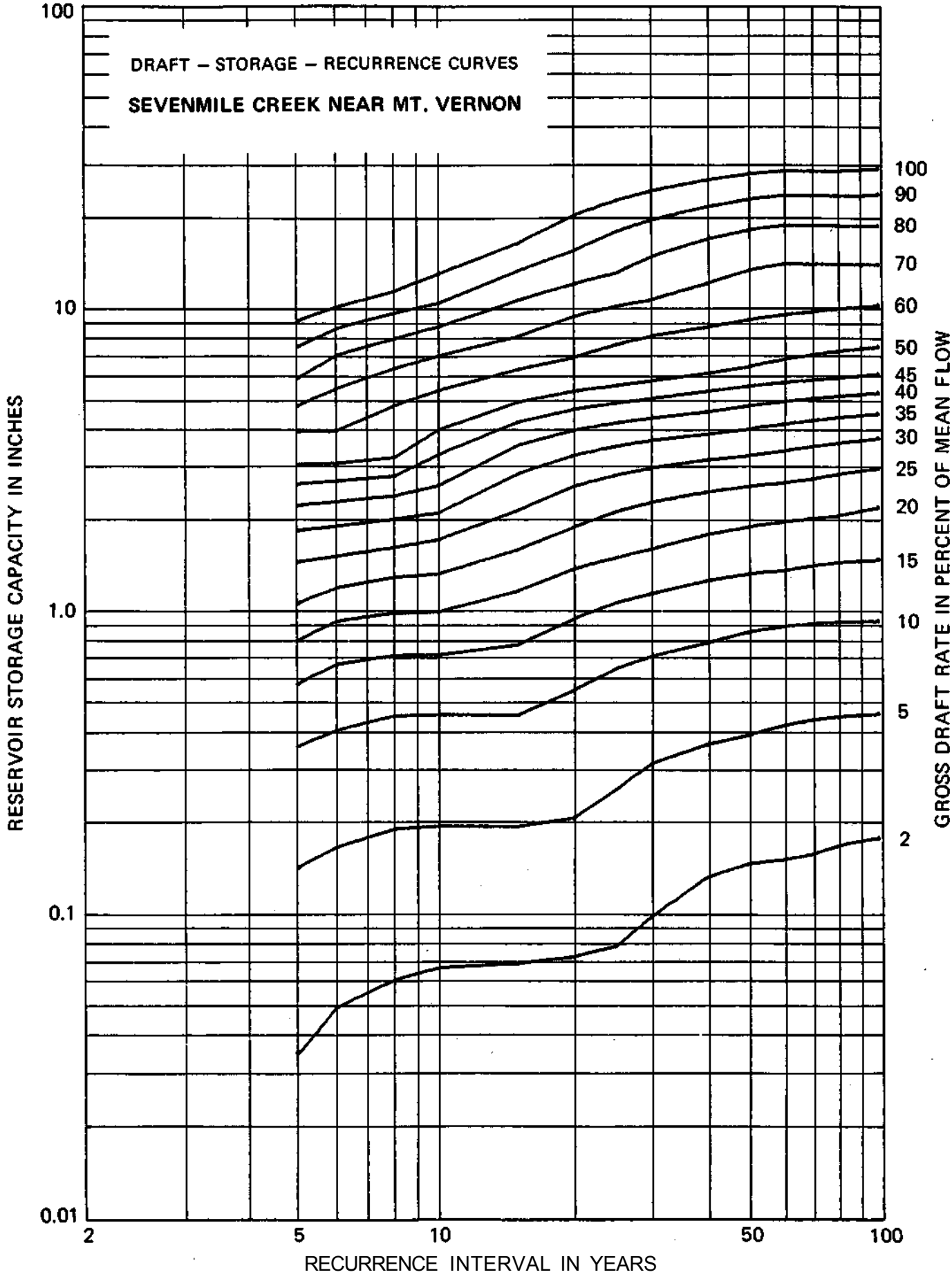
ACTUAL FLOW DATA: Oct 1960 to Oct 1978

INDEX STATION: Skillet Fork at Wayne City

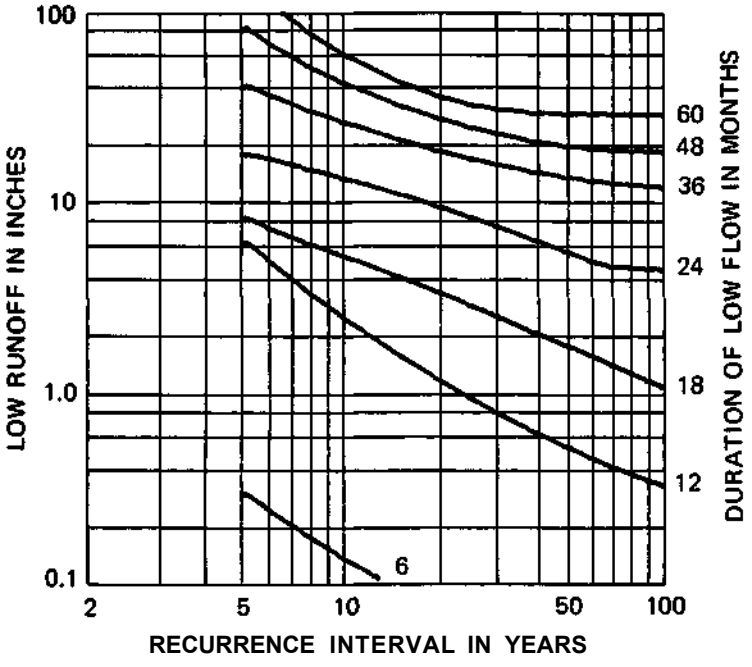
MEAN DISCHARGE: 0.85 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.14	.35	.56	.78	1.04	1.42	1.80	2.19	2.57	2.98	3.84	4.69	5.79	7.32	8.91
	2	5	5	5	6	6	9	9	9	9	10	10	10	18	18	20
6	.05	.16	.40	.65	.91	1.17	1.48	1.86	2.24	2.63	3.01	3.86	5.32	6.86	8.39	9.92
	3	5	6	6	6	7	9	9	9	9	9	10	18	18	18	18
8	.06	.19	.44	.70	.96	1.26	1.58	1.96	2.35	2.73	3.15	4.69	6.22	7.77	9.47	11.17
	4	6	6	6	7	7	9	9	9	9	18	18	18	20	20	20
10	.07	.19	.45	.70	.97	1.30	1.68	2.06	2.54	3.22	3.91	5.28	6.83	8.54	10.24	12.72
	4	6	6	6	7	9	9	9	16	16	16	18	20	20	20	30
15	.07	.19	.45	.76	1.15	1.56	2.11	2.79	3.48	4.16	4.84	6.20	7.93	10.48	13.03	16.08
	4	6	6	9	9	10	16	16	16	16	16	20	30	30	30	52
20	.07	.20	.54	.93	1.35	1.86	2.54	3.22	3.90	4.58	5.26	6.78	9.27	11.82	15.19	19.96
	5	6	9	10	10	16	16	16	16	16	16	20	30	30	56	56
25	.08	.25	.64	1.05	1.48	2.10	2.78	3.46	4.15	4.83	5.51	7.49	10.04	12.87	17.63	22.40
	5	9	9	10	10	16	16	16	16	16	16	30	30	56	56	56
30	.10	.31	.70	1.13	1.58	2.26	2.94	3.62	4.30	4.99	5.72	7.98	10.53	14.52	19.29	24.06
	7	9	10	10	16	16	16	16	16	16	18	30	30	56	56	56
40	.13	.36	.78	1.25	1.77	2.45	3.14	3.82	4.52	5.29	6.06	8.58	11.87	16.64	21.41	26.17
	9	9	10	11	16	16	16	16	18	18	18	32	56	56	56	56
50	.15	.39	.85	1.32	1.89	2.57	3.25	3.98	4.75	5.51	6.37	9.10	13.16	17.92	22.69	27.46
	9	10	11	11	16	16	16	18	18	18	32	32	56	56	56	56
60	.15	.42	.89	1.35	1.96	2.64	3.37	4.14	4.91	5.67	6.73	9.45	13.84	18.61	23.38	28.15
	9	11	11	11	16	16	18	18	18	18	32	32	56	56	56	56
70	.16	.44	.91	1.41	2.02	2.73	3.50	4.26	5.03	5.79	6.98	9.71	13.84	18.61	23.38	28.15
	10	11	11	14	16	18	18	18	18	18	32	32	56	56	56	56
80	.17	.45	.92	1.44	2.06	2.83	3.59	4.36	5.12	5.89	7.17	9.90	13.84	18.61	23.38	28.15
	11	11	11	14	18	18	18	18	18	18	32	32	56	56	56	56
90	.17	.46	.92	1.46	2.14	2.90	3.67	4.44	5.20	5.97	7.32	10.04	13.84	18.61	23.38	28.45
	11	11	11	14	18	18	18	18	18	18	32	32	56	56	56	60
100	.18	.46	.93	1.48	2.20	2.97	3.74	4.50	5.27	6.07	7.43	10.20	13.84	18.61	23.67	28.78
	11	11	11	14	18	18	18	18	18	32	32	34	56	56	60	60


DRAFT – STORAGE – RECURRENCE CURVES
SEVENMILE CREEK NEAR MT. VERNON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55960 - BIG MUDDY RIVER NEAR BENTON



LOCATION: In NE¼ NW¼ Sec 22, T6S, R2E, Franklin County, at bridge on Illinois 14, 3.0 miles west of Benton

DRAINAGE AREA: 498 square miles

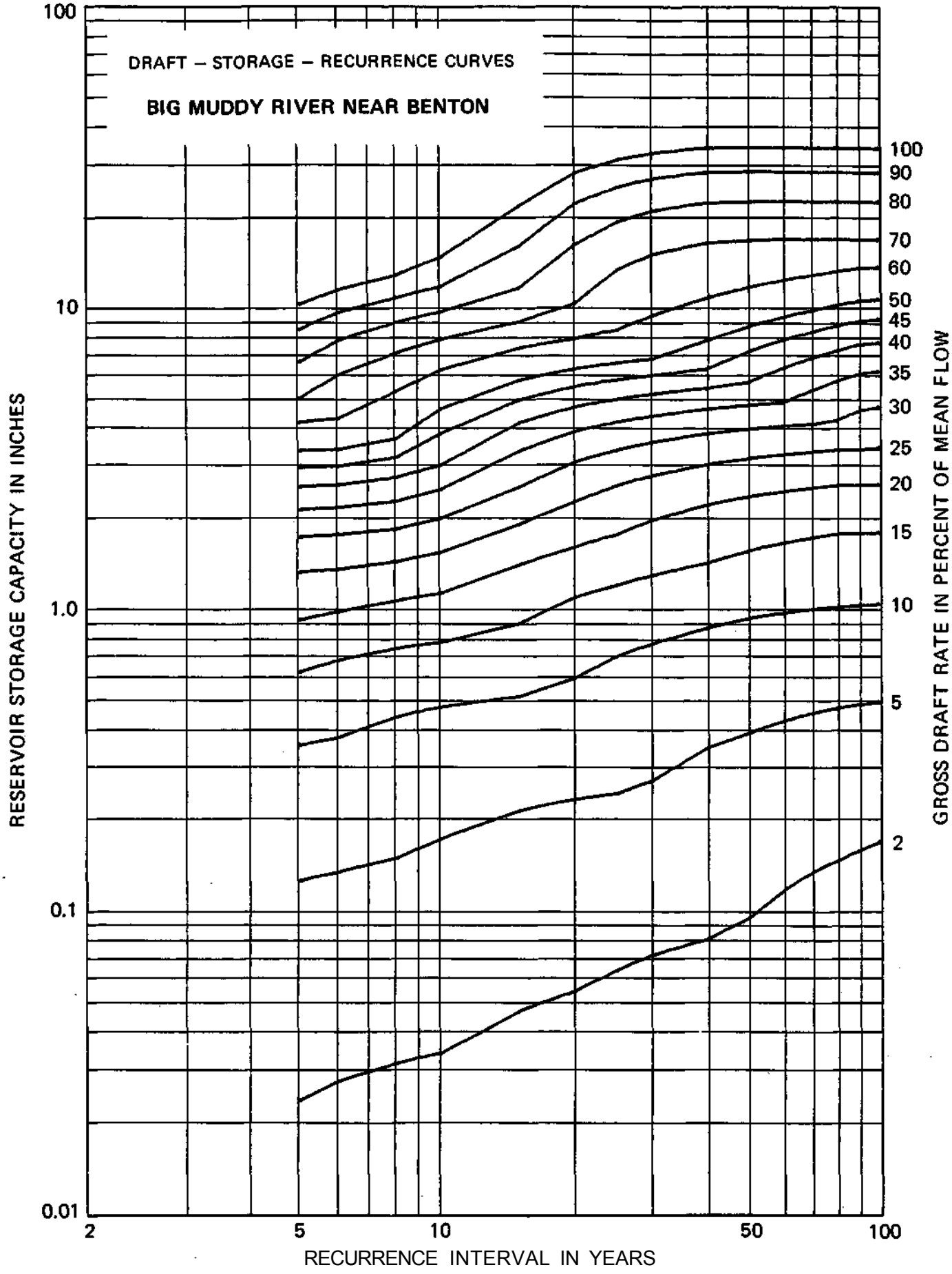
ACTUAL FLOW DATA: Oct 1945 thru Sep 1970

INDEX STATION: Big Muddy River near Plumfield

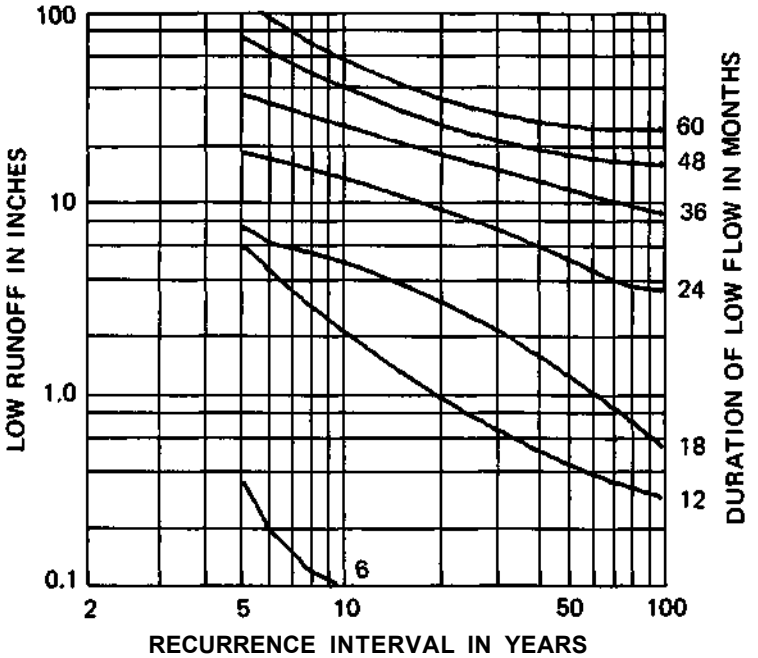
MEAN DISCHARGE: 0.98 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.12	.34	.61	.90	1.29	1.68	2.07	2.47	2.86	3.25	4.04	4.87	6.44	8.21	9.98
	2	4	5	6	6	8	8	8	8	8	8	8	9	18	18	18
6	.03	.13	.37	.66	.96	1.32	1.71	2.10	2.50	2.89	3.28	4.16	5.82	7.59	9.36	11.12
	2	4	6	6	6	8	8	8	8	8	8	9	18	18	18	18
8	.03	.15	.43	.72	1.04	1.39	1.79	2.21	2.65	3.09	3.56	5.13	6.89	8.66	10.46	12.43
	2	5	6	6	7	8	8	9	9	9	16	16	18	18	20	20
10	.03	.17	.46	.76	1.10	1.50	1.94	2.42	2.91	3.70	4.48	6.06	7.63	9.42	11.39	14.28
	4	6	6	6	7	9	9	10	16	16	16	16	16	20	20	34
15	.05	.21	.50	.88	1.37	1.86	2.47	3.26	4.04	4.83	5.62	7.19	8.76	11.32	15.61	21.13
	4	6	6	10	10	10	16	16	16	16	16	16	16	42	54	58
20	.05	.23	.58	1.07	1.56	2.21	3.00	3.78	4.57	5.36	6.14	7.71	10.08	15.75	21.45	27.14
	4	6	10	10	10	16	16	16	16	16	16	16	42	58	58	58
25	.06	.24	.69	1.18	1.73	2.52	3.30	4.09	4.87	5.66	6.45	8.27	13.04	18.74	24.43	30.13
	6	6	10	10	16	16	16	16	16	16	16	30	58	58	58	58
30	.07	.27	.76	1.27	1.93	2.72	3.50	4.29	5.07	5.86	6.64	9.24	14.67	20.37	26.06	31.76
	6	10	10	11	16	16	16	16	16	16	16	30	58	58	58	58
40	.08	.34	.86	1.40	2.18	2.96	3.75	4.53	5.32	6.16	7.63	10.58	16.06	21.75	27.45	33.15
	6	10	11	11	16	16	16	16	16	30	30	30	58	58	58	58
50	.09	.39	.92	1.54	2.32	3.11	3.89	4.68	5.58	7.05	8.53	11.47	16.39	21.96	27.65	33.35
	8	10	11	16	16	16	16	16	30	30	30	30	56	58	58	58
60	.12	.42	.96	1.64	2.42	3.21	3.99	4.78	6.23	7.70	9.18	12.12	16.56	22.06	27.65	33.35
	9	11	11	16	16	16	16	16	30	30	30	30	56	56	58	58
70	.13	.45	.99	1.71	2.49	3.28	4.06	5.26	6.73	8.20	9.68	12.62	16.56	22.06	27.65	33.35
	10	11	11	16	16	16	16	30	30	30	30	30	56	56	58	58
80	.15	.47	1.01	1.76	2.54	3.33	4.18	5.66	7.13	8.60	10.08	13.02	16.56	22.06	27.65	33.35
	10	11	11	16	16	16	30	30	30	30	30	30	56	56	58	58
90	.16	.48	1.02	1.77	2.55	3.34	4.51	5.98	7.46	8.93	10.40	13.35	16.56	22.06	27.65	33.35
	11	11	11	16	16	16	30	30	30	30	30	30	56	56	58	58
100	.17	.49	1.03	1.78	2.56	3.38	4.63	6.10	7.58	9.05	10.52	13.47	16.56	22.06	27.65	33.35
	11	11	11	16	16	18	30	30	30	30	30	30	56	56	58	58


DRAFT – STORAGE – RECURRENCE CURVES
BIG MUDDY RIVER NEAR BENTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55970 - BIG MUDDY RIVER AT PLUMFIELD



LOCATION: In NW¼ Sec 20, T7S, R2E, Franklin County, 0.8 miles upstream from bridge on Illinois 149 at Plumfield, 1.9 miles downstream from Middle Fork Big Muddy River

DRAINAGE AREA: 794 square miles

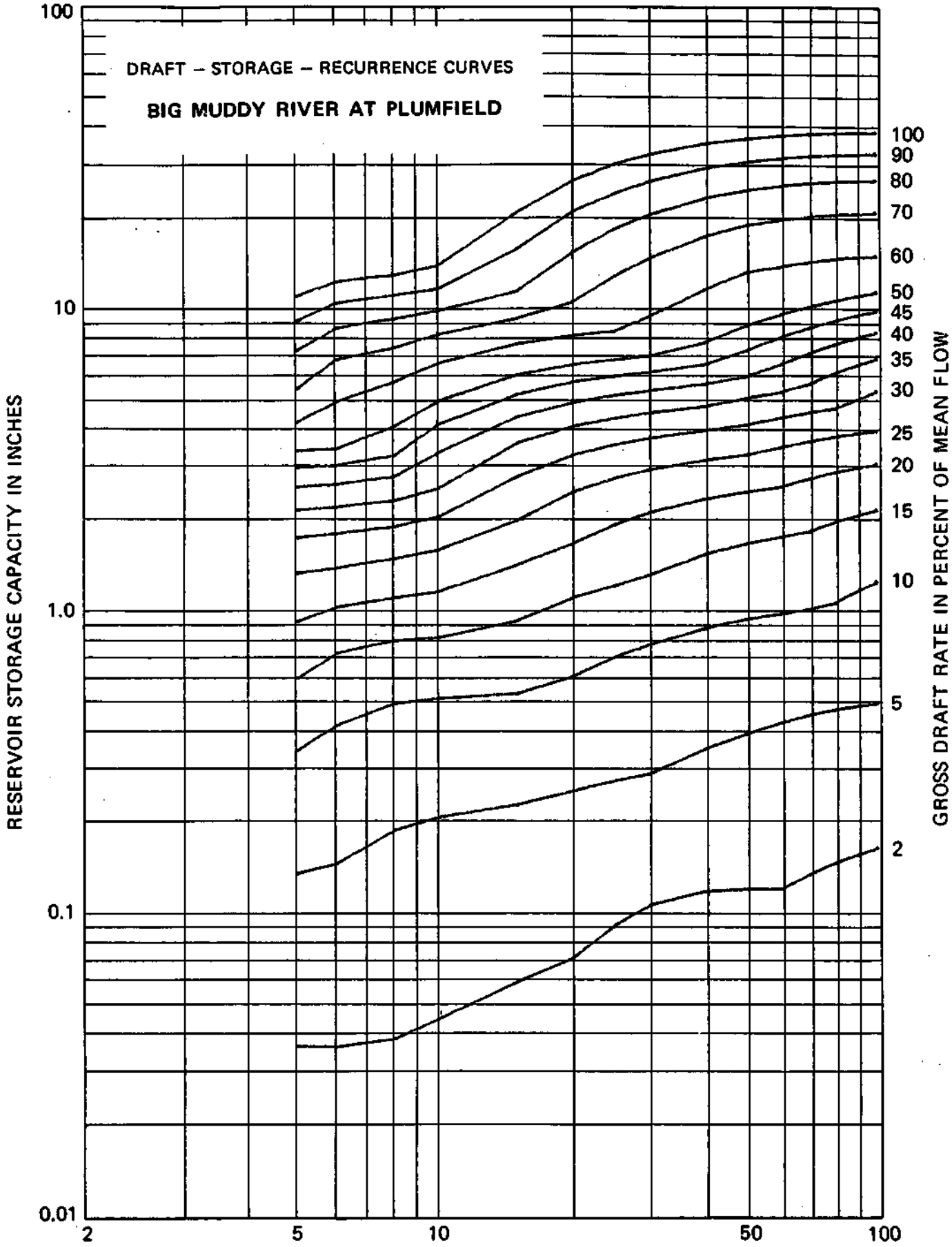
ACTUAL FLOW DATA: Jun 1908 to Sep 1910, Dec 1910 to Dec 1912, Aug 1914 to Oct 1978

INDEX STATION: None

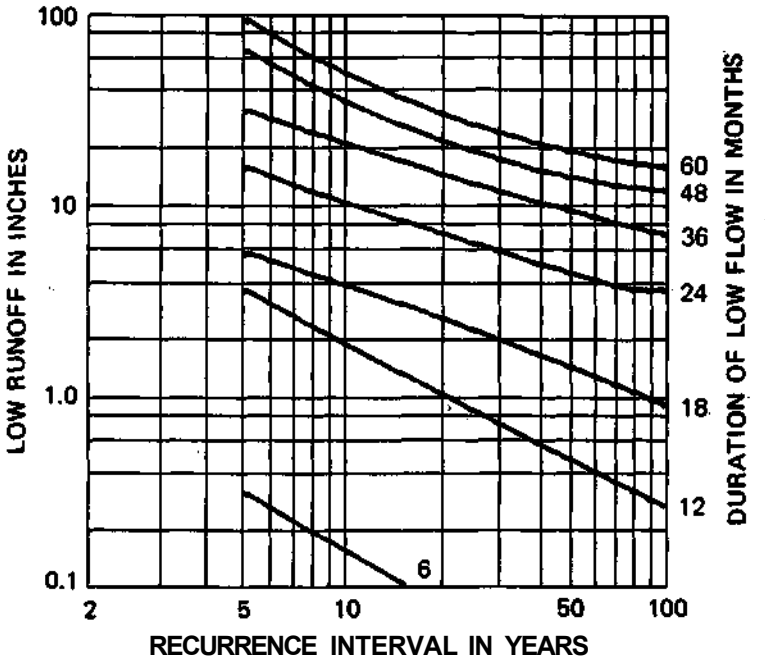
MEAN DISCHARGE: 0.99 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.13	.33	.58	.90	1.29	1.69	2.08	2.48	2.88	3.27	4.06	5.26	7.05	8.83	10.65
	3	4	5	5	7	8	8	8	8	8	8	8	18	18	18	20
6	.04	.14	.41	.70	1.00	1.34	1.74	2.14	2.53	2.93	3.32	4.77	6.56	8.34	10.12	11.91
	3	4	6	6	6	8	8	8	8	8	8	18	18	18	18	18
8	.04	.18	.48	.78	1.07	1.44	1.84	2.24	2.69	3.17	3.96	5.54	7.19	8.97	10.76	12.54
	2	6	6	6	6	8	8	9	9	16	16	16	18	18	18	18
10	.04	.20	.50	.80	1.13	1.54	1.99	2.46	3.24	4.03	4.82	6.41	7.99	9.58	11.32	13.49
	3	6	6	6	7	9	9	10	16	16	16	16	16	16	20	32
15	.06	.22	.52	.91	1.38	1.94	2.70	3.50	4.29	5.08	5.87	7.46	9.04	11.14	15.30	20.17
	4	6	6	9	10	14	16	16	16	16	16	16	16	42	42	54
20	.07	.25	.59	1.08	1.62	2.40	3.19	3.98	4.78	5.57	6.36	7.95	10.24	14.91	20.26	25.61
	5	6	9	10	14	16	16	16	16	16	16	16	42	54	54	54
25	.09	.27	.69	1.19	1.89	2.68	3.47	4.26	5.06	5.85	6.64	8.23	12.53	17.88	23.38	29.13
	6	6	10	11	16	16	16	16	16	16	16	16	54	54	58	58
30	.10	.28	.76	1.29	2.07	2.86	3.66	4.45	5.24	6.03	6.83	9.24	14.34	19.92	25.66	31.41
	6	6	10	11	16	16	16	16	16	16	16	42	54	58	58	58
40	.12	.34	.86	1.50	2.30	3.09	3.88	4.67	5.51	6.41	7.57	11.31	16.87	22.62	28.37	34.11
	6	10	11	16	16	16	16	16	18	18	30	56	58	58	58	58
50	.12	.39	.93	1.64	2.43	3.22	4.07	4.96	5.86	7.14	8.63	12.94	18.49	24.11	29.85	35.60
	6	10	11	16	16	16	18	18	18	30	30	56	56	58	58	58
60	.12	.42	.97	1.73	2.53	3.42	4.31	5.20	6.44	7.92	9.41	13.52	19.25	25.00	30.74	36.49
	6	11	11	16	18	18	18	18	30	30	30	56	58	58	58	58
70	.13	.45	1.00	1.81	2.70	3.59	4.48	5.55	7.04	8.52	10.01	14.06	19.80	25.55	31.29	37.04
	10	11	16	18	18	18	18	30	30	30	30	58	58	58	58	58
80	.15	.47	1.05	1.94	2.83	3.72	4.62	6.03	7.52	9.00	10.49	14.39	20.14	25.89	31.63	37.38
	10	11	18	18	18	18	18	30	30	30	30	58	58	58	58	58
90	.15	.48	1.15	2.04	2.94	3.83	4.94	6.42	7.91	9.39	10.88	14.59	20.34	26.08	31.83	37.58
	10	11	18	18	18	18	30	30	30	30	30	58	58	58	58	58
100	.16	.49	1.23	2.13	3.02	3.91	5.26	6.75	8.24	9.72	11.21	14.69	20.44	26.18	31.93	37.68
	11	11	18	18	18	18	30	30	30	30	30	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
BIG MUDDY RIVER AT PLUMFIELD
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55990 – BEAUCOUP CREEK NEAR MATTHEWS



LOCATION: In SW¼ Sec 29, T6S, R2W, Perry County, at bridge on Illinois 13, 1.2 miles east of Matthews and 7 miles southwest of Du Quoin

DRAINAGE AREA: 292 square miles

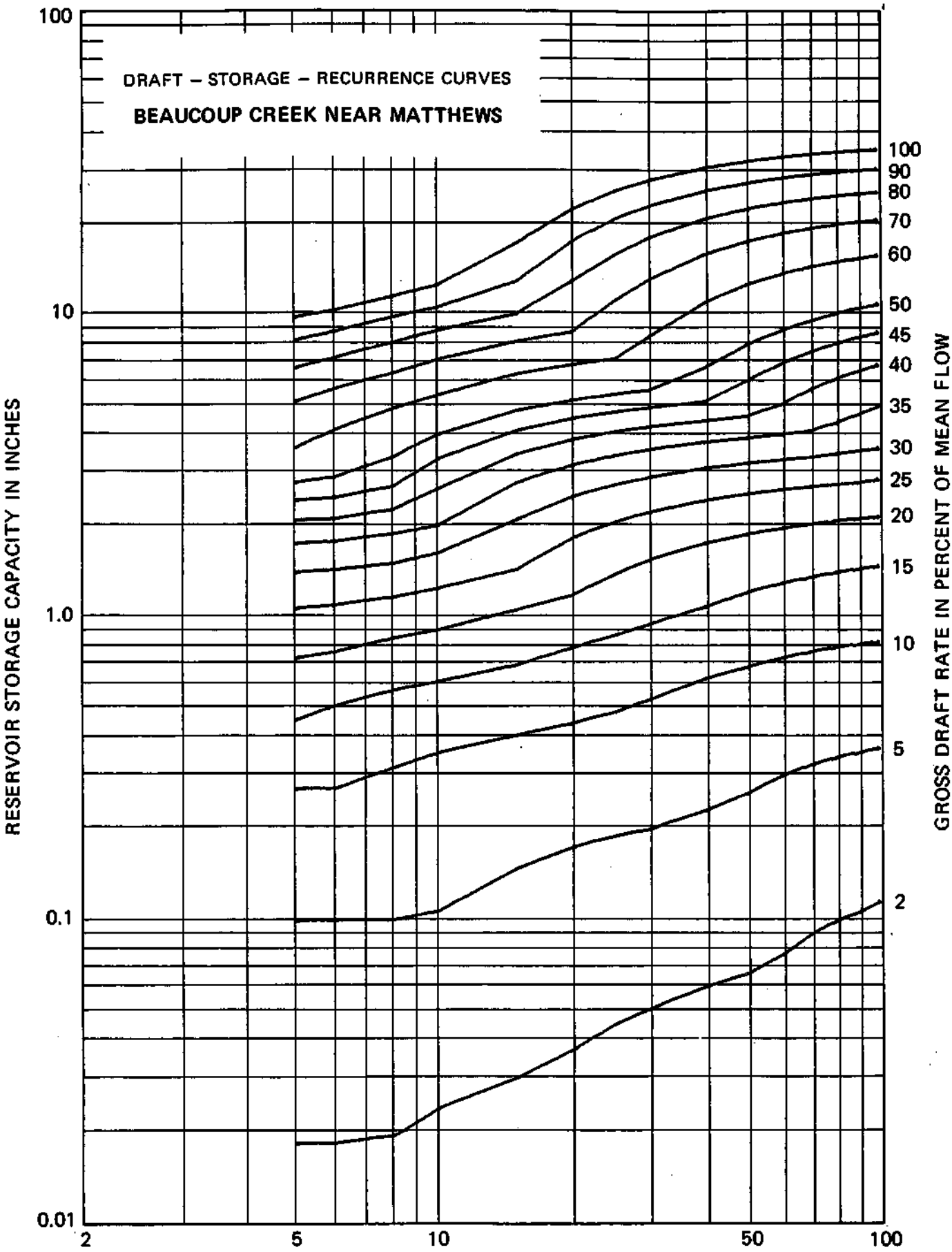
ACTUAL FLOW DATA: Oct 1945 to Oct 1978

INDEX STATION: Big Muddy River near Plumfield

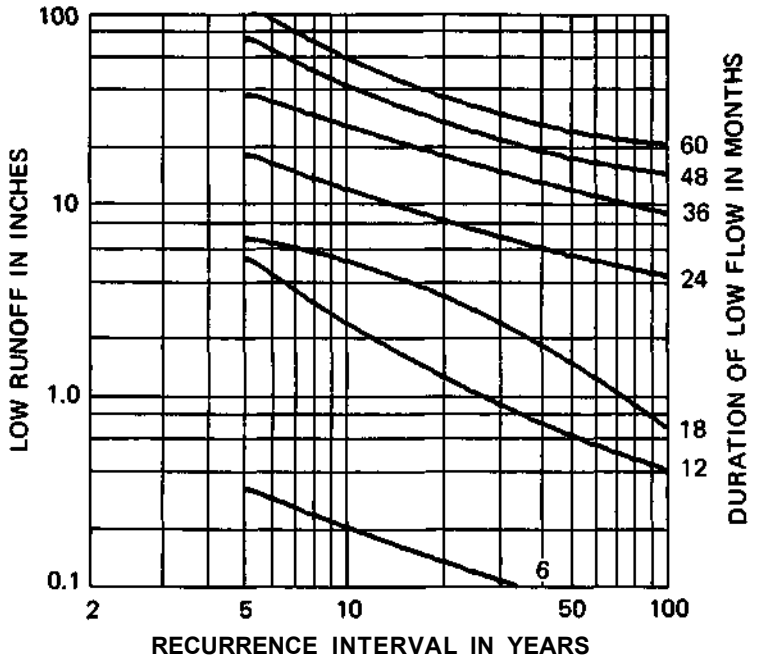
MEAN DISCHARGE: 0.82 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.10	.26	.44	.70	1.03	1.35	1.68	2.00	2.33	2.67	3.48	4.95	6.41	7.88	9.34
	2	4	4	6	8	8	8	8	8	8	10	10	18	18	18	18
6	.02	.10	.26	.49	.73	1.05	1.38	1.70	2.03	2.38	2.79	3.98	5.44	6.91	8.37	9.84
	2	4	4	6	7	8	8	8	8	10	10	18	18	18	18	18
8	.02	.10	.30	.55	.81	1.11	1.44	1.81	2.17	2.59	3.24	4.68	6.14	7.72	9.35	10.98
	2	4	6	6	7	8	9	9	9	16	16	18	18	20	20	20
10	.02	.10	.34	.58	.87	1.19	1.56	1.93	2.54	3.19	3.84	5.19	6.82	8.45	10.07	11.95
	2	4	6	7	7	9	9	9	16	16	16	20	20	20	20	32
15	.03	.14	.39	.66	1.01	1.38	2.02	2.67	3.32	3.97	4.62	6.13	7.81	9.60	12.34	16.55
	2	6	6	7	9	9	16	16	16	16	16	20	22	22	40	54
20	.04	.17	.43	.76	1.14	1.75	2.40	3.05	3.70	4.36	5.01	6.60	8.39	12.39	16.78	21.37
	4	6	7	9	10	16	16	16	16	16	16	20	22	54	54	58
25	.04	.18	.46	.84	1.33	1.98	2.64	3.29	3.94	4.59	5.25	6.90	10.67	15.17	19.89	24.61
	4	6	9	10	16	16	16	16	16	16	20	30	54	58	58	58
30	.05	.19	.51	.91	1.49	2.14	2.79	3.44	4.10	4.75	5.44	8.13	12.60	17.31	22.03	26.75
	4	6	9	10	16	16	16	16	16	16	20	44	58	58	58	58
40	.06	.22	.60	1.04	1.69	2.34	2.99	3.65	4.30	4.98	6.46	10.54	15.26	19.98	24.70	29.41
	5	8	10	16	16	16	16	16	16	18	44	58	58	58	58	58
50	.07	.25	.66	1.17	1.82	2.47	3.12	3.77	4.46	5.86	7.65	12.12	16.84	21.56	26.28	31.00
	6	10	10	16	16	16	16	16	18	44	44	58	58	58	58	58
60	.08	.29	.71	1.25	1.90	2.55	3.20	3.88	4.89	6.68	8.54	13.17	17.89	22.61	27.33	32.05
	8	10	11	16	16	16	16	18	44	44	56	58	58	58	58	58
70	.09	.32	.74	1.31	1.97	2.62	3.27	3.99	5.49	7.28	9.19	13.91	18.63	23.35	28.07	32.79
	8	10	11	16	16	16	16	18	44	44	58	58	58	58	58	58
80	.10	.33	.77	1.36	2.01	2.67	3.36	4.24	5.95	7.74	9.74	14.46	19.18	23.90	28.61	33.33
	8	10	11	16	16	16	18	30	44	44	58	58	58	58	58	58
90	.10	.35	.79	1.40	2.05	2.70	3.43	4.53	6.32	8.11	10.15	14.87	19.59	24.31	29.03	33.75
	8	10	11	16	16	16	18	44	44	44	58	58	58	58	58	58
100	.11	.36	.81	1.43	2.08	2.77	3.50	4.83	6.62	8.41	10.47	15.19	19.91	24.63	29.35	34.07
	10	11	11	16	16	18	18	44	44	44	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
BEAUCOUP CREEK NEAR MATTHEWS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55995 - BIG MUDDY RIVER AT MURPHYSBORO



LOCATION: In SE¼ Sec 8, T9S, R2W, Jackson County, 0.1 miles upstream from Illinois Central Gulf Railroad bridge, at Murphysboro

DRAINAGE AREA: 2162 square miles

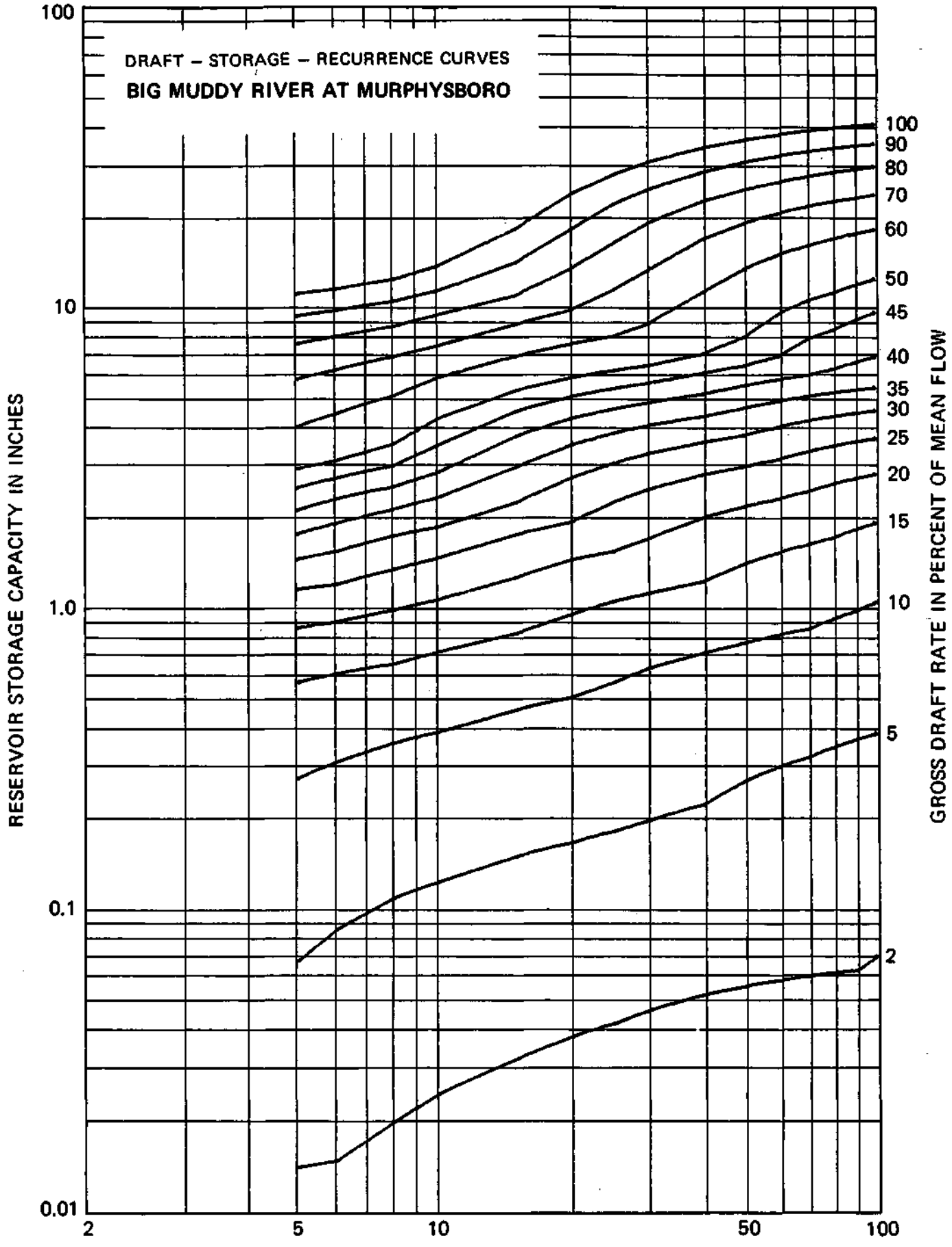
ACTUAL FLOW DATA: Dec 1916 to Oct 1978

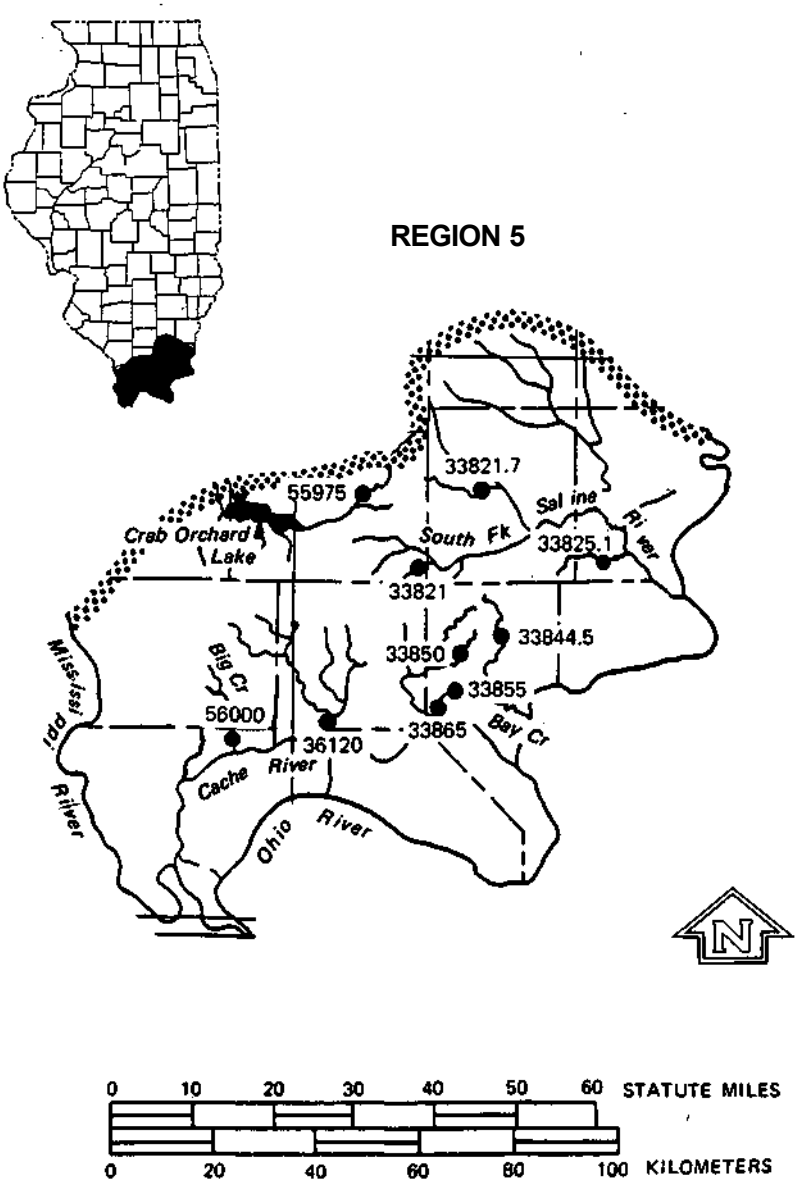
INDEX STATION: Big Muddy River near Plumfield

MEAN DISCHARGE: 0.96 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.07	.27	.56	.85	1.14	1.43	1.74	2.09	2.48	2.86	3.95	5.69	7.43	9.17	10.92
	1	4	6	6	6	6	6	7	8	8	8	18	18	18	18	18
6	.01	.09	.30	.60	.89	1.18	1.52	1.89	2.27	2.66	3.05	4.36	6.10	7.84	9.59	11.33
	1	4	6	6	6	7	7	8	8	8	8	18	18	18	18	18
8	.02	.11	.35	.64	.97	1.32	1.71	2.10	2.49	2.93	3.45	5.00	6.73	8.47	10.28	12.22
	2	4	6	6	7	8	8	8	9	10	16	16	18	18	20	20
10	.02	.12	.38	.71	1.05	1.44	1.83	2.30	2.78	3.43	4.20	5.75	7.32	9.26	11.20	13.53
	2	4	6	7	8	8	9	10	10	16	16	16	20	20	20	32
15	.03	.15	.45	.81	1.25	1.73	2.22	2.91	3.69	4.46	5.23	6.78	8.64	10.81	13.92	17.99
	3	5	7	8	10	10	10	16	16	16	16	16	20	30	42	42
20	.04	.17	.50	.94	1.43	1.91	2.67	3.45	4.22	5.00	5.77	7.44	9.64	13.31	17.87	23.45
	3	5	8	10	10	10	16	16	16	16	16	20	30	42	56	58
25	.04	.18	.56	1.05	1.53	2.23	3.01	3.78	4.56	5.33	6.11	7.92	11.33	16.14	21.75	27.36
	4	7	10	10	10	16	16	16	16	16	16	28	42	58	58	58
30	.05	.20	.63	1.11	1.69	2.46	3.24	4.01	4.79	5.56	6.34	8.71	13.21	18.82	24.43	30.05
	4	7	10	10	16	16	16	16	16	16	18	30	58	58	58	58
40	.05	.22	.71	1.22	1.99	2.76	3.54	4.31	5.13	6.00	6.93	11.15	16.69	22.30	27.91	33.53
	4	9	10	11	16	16	16	16	18	18	30	56	58	58	58	58
50	.06	.27	.76	1.40	2.17	2.95	3.74	4.61	5.48	6.35	7.92	13.34	18.87	24.48	30.10	35.71
	4	10	11	16	16	16	18	18	18	18	56	56	58	58	58	58
60	.06	.30	.82	1.53	2.30	3.12	3.99	4.86	5.73	6.84	9.48	14.90	20.39	26.00	31.61	37.23
	4	10	11	16	16	18	18	18	18	32	56	56	58	58	58	58
70	.06	.32	.85	1.62	2.44	3.31	4.18	5.05	5.92	7.79	10.50	15.92	21.50	27.12	32.73	38.35
	4	10	11	16	18	18	18	18	18	56	56	56	58	58	58	58
80	.06	.35	.92	1.71	2.58	3.45	4.32	5.20	6.20	8.36	11.14	16.75	22.37	27.98	33.60	39.21
	4	11	16	18	18	18	18	18	32	56	58	58	58	58	58	58
90	.06	.37	.98	1.83	2.70	3.57	4.44	5.31	6.53	9.02	11.83	17.44	23.06	28.67	34.28	39.90
	4	11	16	18	18	18	18	18	32	58	58	58	58	58	58	58
100	.07	.38	1.05	1.92	2.79	3.66	4.53	5.40	6.82	9.59	12.39	18.01	23.62	29.23	34.85	40.46
	9	11	18	18	18	18	18	18	32	58	58	58	58	58	58	58

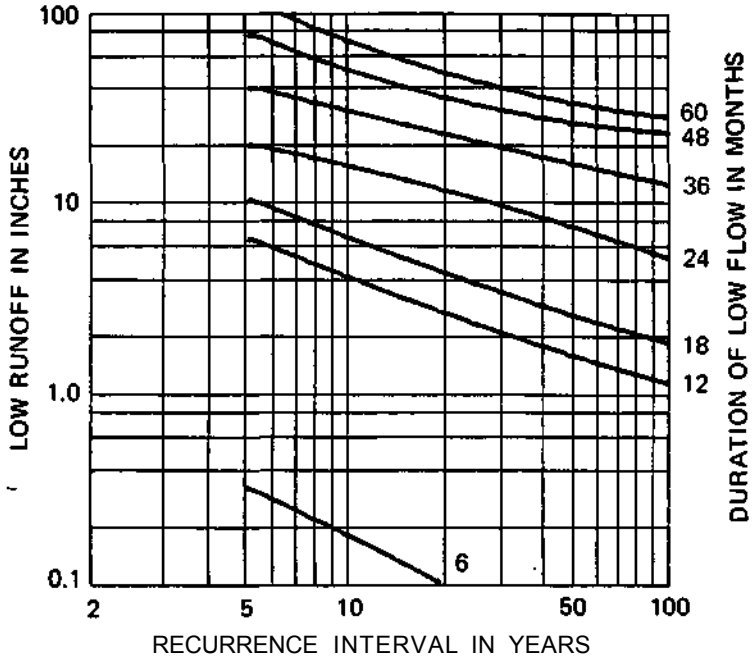

DRAFT – STORAGE – RECURRENCE CURVES
BIG MUDDY RIVER AT MURPHYSBORO
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2


REGION 5
33821.7
55975
Saline River
Crab Orchard Lake
South Fk
33825.1
33821
33844.5
33850
33855
Big Cr
56000
33865
Bay Cr
36120
Cache River
Ohio River
Mississippi River
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

USGS Gage No.	Name of Station	Drainage Area (sq mi)
33821	South Fork Saline River near Carrier Mills	147
33821.7	Brushy Creek near Harco	13.3
33825.1	Eagle Creek near Equality	8.51
33844.5	Lusk Creek near Eddyville	42.9
33850	Hayes Creek at Glendale	19.1
33855	Lake Glendale Inlet near Dixon Springs	1.04
33865	Sugar Creek near Dixon Springs	9.93
36120	Cache River at Forman	244
55975	Crab Orchard Creek near Marion	31.7
56000	Big Creek near Wetaug	32.2

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
33821	36120	1965-1978	13	1922-1978	56	1.17
33821.7	55975	1968-1978	10	1951-1978	27	.87
33825.1	36120	1966-1978	12	1922-1978	56	1.33
33844.5	36120	1967-1978	11	1922-1978	56	1.53
33850	36120	1949-1975	26	1922-1978	56	1.48
33855	36120	1954-1963	9	1922-1978	56	1.53
33865	36120	1950-1971	21	1922-1978	56	1.40
36120	-	1922-1978	56	-	-	1.38
55975	36120	1951-1978	27	1922-1978	56	.87
56000	36120	1940-1971	31	1922-1978	56	1.32

33821 -SOUTH FORK, SALINE RIVER NEAR CARRIER MILLS



LOCATION: In SW¼ NE¼ Sec 20, T10S, R5E, Saline County, at bridge on Illinois 45, 4.5 miles southwest of Carrier Mills

DRAINAGE AREA: 147 square miles

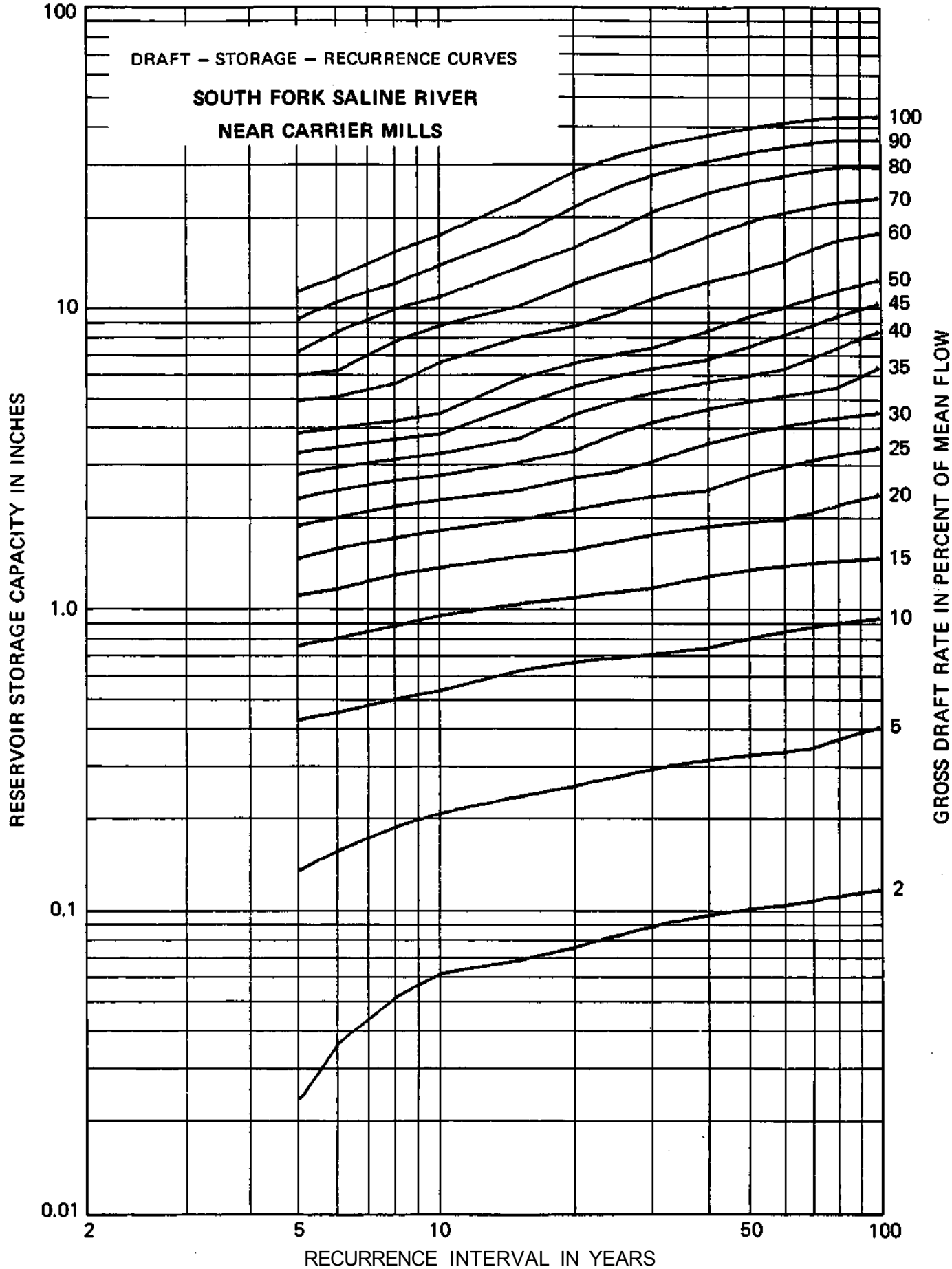
ACTUAL FLOW DATA: Oct 1965 to Oct 1978

INDEX STATION: Cache River at Foreman

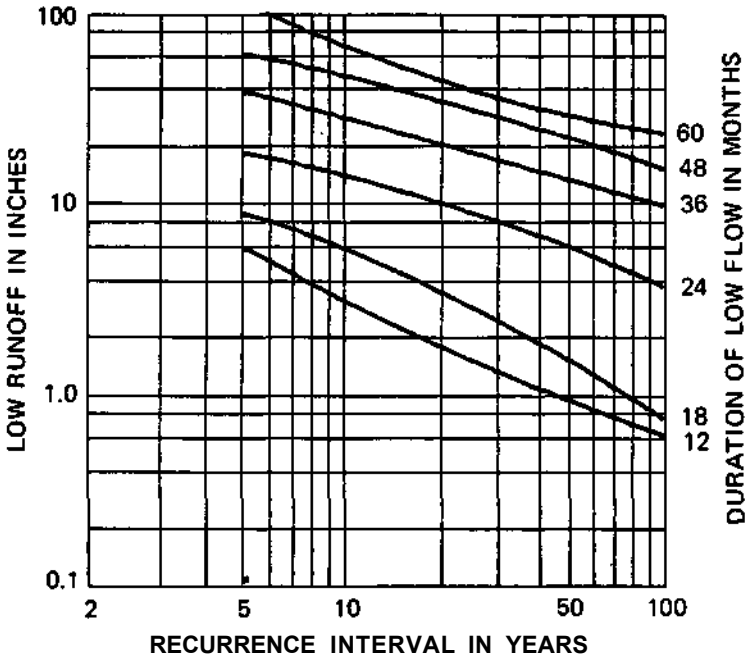
MEAN DISCHARGE: 1.17 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.13	.42	.75	1.10	1.45	1.85	2.28	2.74	3.24	3.76	4.81	5.86	7.05	9.04	11.14
	1	4	5	6	6	6	7	8	8	9	9	9	9	16	18	18
6	.04	.16	.45	.79	1.15	1.56	1.96	2.42	2.89	3.38	3.91	4.96	6.06	8.16	10.26	12.37
	2	4	5	6	7	7	7	8	8	9	9	9	18	18	18	18
8	.05	.19	.49	.87	1.27	1.68	2.14	2.61	3.08	3.59	4.12	5.51	7.61	9.71	11.81	15.01
	3	5	6	7	7	7	8	8	8	9	9	18	18	18	18	30
10	.06	.21	.53	.94	1.35	1.78	2.25	2.72	3.22	3.75	4.36	6.47	8.57	10.67	13.56	17.06
	3	5	6	7	7	8	8	8	9	9	18	18	18	18	30	30
15	.07	.23	.62	1.03	1.47	1.93	2.43	3.01	3.61	4.66	5.72	7.82	9.92	13.32	17.06	22.19
	3	5	7	7	8	8	10	10	18	18	18	18	18	32	32	56
20	.07	.25	.66	1.08	1.54	2.09	2.67	3.29	4.34	5.40	6.45	8.55	11.77	15.51	21.05	27.59
	4	6	7	8	8	10	10	18	18	18	18	18	32	32	56	56
25	.08	.27	.68	1.13	1.65	2.23	2.81	3.76	4.81	5.87	6.92	9.48	13.22	17.92	24.46	31.00
	5	7	7	8	10	10	10	18	18	18	18	32	32	56	56	56
30	.09	.29	.70	1.16	1.74	2.32	3.04	4.09	5.15	6.20	7.25	10.53	14.27	20.30	26.84	33.38
	5	7	7	8	10	10	18	18	18	18	18	32	32	56	56	56
40	.10	.31	.74	1.27	1.85	2.44	3.49	4.54	5.59	6.64	8.23	11.97	16.90	23.44	29.98	36.52
	5	7	8	10	10	18	18	18	18	18	32	32	56	56	56	56
50	.10	.32	.79	1.33	1.92	2.73	3.78	4.83	5.88	7.32	9.19	12.93	18.90	25.44	31.98	38.75
	5	7	9	10	10	18	18	18	18	32	32	32	56	56	56	58
60	.10	.33	.84	1.38	1.96	2.94	3.99	5.04	6.19	8.03	9.89	14.02	20.25	26.79	33.56	40.34
	5	7	9	10	10	18	18	18	30	32	32	46	56	58	58	58
70	.11	.34	.87	1.41	2.06	3.09	4.15	5.20	6.72	8.62	10.61	15.40	21.18	27.95	34.72	41.50
	6	9	9	10	16	18	18	18	30	34	34	46	58	58	58	58
80	.11	.37	.89	1.43	2.19	3.22	4.27	5.40	7.28	9.27	11.25	16.52	22.06	28.83	35.60	42.38
	6	9	9	10	16	18	18	30	34	34	34	46	58	58	58	58
90	.11	.39	.91	1.46	2.29	3.32	4.37	5.84	7.82	9.81	11.80	17.08	22.45	28.99	35.76	42.54
	6	9	9	10	16	18	18	34	34	34	34	46	46	58	58	58
100	.12	.40	.93	1.47	2.37	3.41	4.46	6.30	8.28	10.27	12.25	17.52	22.90	28.99	35.76	42.76
	6	9	9	10	16	18	18	34	34	34	34	46	46	58	58	60


DRAFT – STORAGE – RECURRENCE CURVES
SOUTH FORK SALINE RIVER
NEAR CARRIER MILLS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33821.7 - BRUSHY CREEK NEAR HARCO



LOCATION: IN NW¼ NW¼ Sec 3, T9S, R5E, Saline County, at county highway bridge, 1.4 miles south of Harco

DRAINAGE AREA: 13.3 square miles

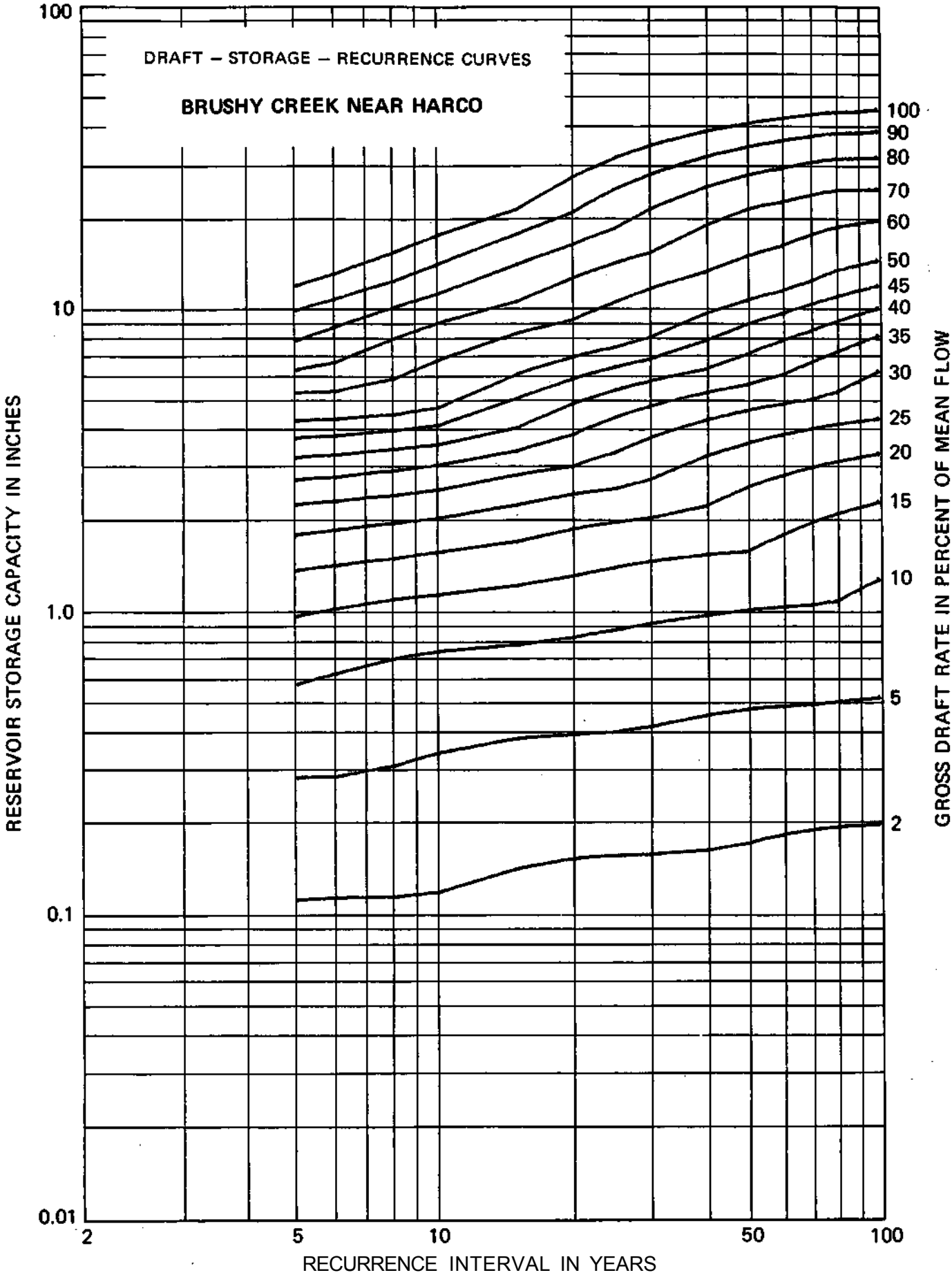
ACTUAL FLOW DATA: July 1968 to Oct 1978

INDEX STATION: Crab Orchard Creek near Marion

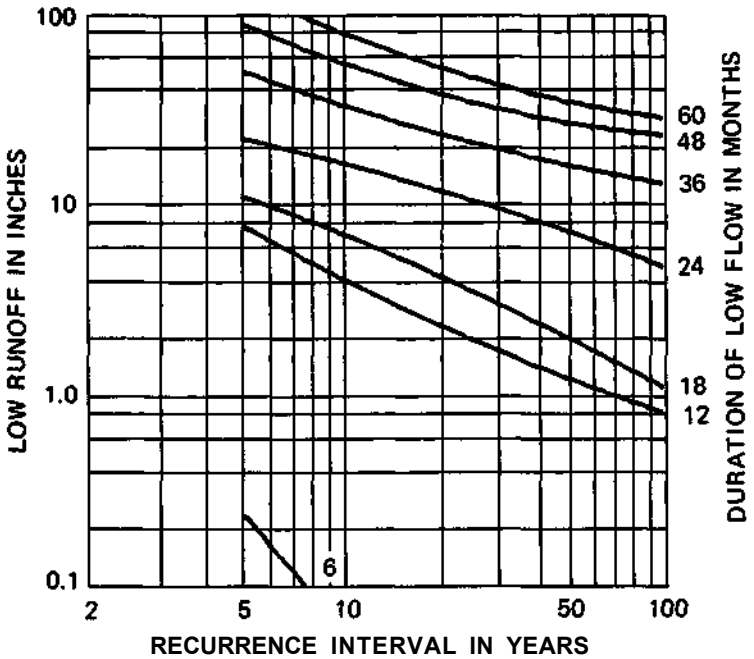
MEAN DISCHARGE: 0.87 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.11	.28	.56	.94	1.33	1.75	2.19	2.63	3.13	3.63	4.13	5.13	6.13	7.61	9.61	11.61
	5	5	6	7	7	8	8	8	9	9	9	9	9	18	18	18
6	.11	.28	.61	1.00	1.39	1.80	2.25	2.69	3.19	3.69	4.19	5.19	6.47	8.47	10.47	12.73
	5	5	7	7	7	8	8	8	9	9	9	9	18	18	18	28
8	.11	.30	.68	1.07	1.46	1.90	2.35	2.83	3.33	3.83	4.33	5.71	7.71	9.80	12.03	14.94
	5	6	7	7	7	8	8	9	9	9	9	18	18	20	20	30
10	.12	.33	.72	1.11	1.53	1.98	2.45	2.95	3.45	3.99	4.58	6.58	8.71	10.94	13.71	17.05
	6	7	7	7	8	8	9	9	9	10	18	18	20	20	30	30
15	.14	.37	.76	1.20	1.67	2.19	2.75	3.31	3.94	4.94	5.94	8.09	10.31	13.68	17.23	20.79
	7	7	7	8	9	10	10	10	18	18	18	20	20	32	32	32
20	.15	.38	.81	1.29	1.83	2.38	2.94	3.74	4.74	5.75	6.75	8.95	12.36	15.92	20.31	26.53
	7	7	8	9	10	10	10	18	18	18	18	20	32	32	56	56
25	.15	.39	.86	1.38	1.93	2.49	3.28	4.28	5.28	6.28	7.29	10.33	13.89	18.08	24.30	30.70
	7	8	9	10	10	10	18	18	18	18	20	32	32	56	56	58
30	.15	.41	.90	1.44	2.00	2.67	3.67	4.67	5.67	6.67	7.89	11.45	15.00	20.90	27.18	33.63
	7	8	9	10	10	18	18	18	18	18	32	32	32	56	58	58
40	.16	.45	.96	1.51	2.19	3.19	4.19	5.19	6.19	7.67	9.45	13.01	18.45	24.68	30.99	37.43
	8	9	10	10	18	18	18	18	18	32	32	32	56	56	58	58
50	.17	.47	1.00	1.55	2.53	3.53	4.53	5.53	6.95	8.73	10.50	14.69	20.91	27.14	33.38	39.83
	9	9	10	10	18	18	18	18	32	32	32	56	56	56	58	58
60	.18	.48	1.02	1.76	2.76	3.76	4.76	5.94	7.72	9.50	11.32	15.94	22.15	28.60	35.04	41.49
	9	9	10	18	18	18	18	32	32	32	34	46	58	58	58	58
70	.19	.49	1.04	1.94	2.94	3.94	4.94	6.53	8.32	10.21	12.19	17.30	23.38	29.82	36.27	42.72
	9	9	10	18	18	18	18	32	34	34	46	46	58	58	58	58
80	.19	.50	1.07	2.07	3.07	4.07	5.23	7.06	8.95	10.84	13.21	18.32	24.28	30.72	37.17	43.62
	9	10	18	18	18	18	32	34	34	34	46	46	58	58	58	58
90	.19	.51	1.18	2.18	3.18	4.18	5.69	7.58	9.47	11.36	13.77	18.88	24.45	30.90	37.34	43.84
	9	10	18	18	18	18	34	34	34	34	46	46	58	58	58	60
100	.20	.51	1.26	2.26	3.26	4.26	6.12	8.01	9.90	11.79	14.25	19.36	24.54	31.09	37.76	44.43
	9	10	18	18	18	18	34	34	34	34	46	46	58	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
BRUSHY CREEK NEAR HARCO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33825.1 - EAGLE CREEK NEAR EQUALITY



LOCATION: At east side of Sec 14, T10S, R7E, Saline County, at highway bridge 5 miles northeast of Herod and 6 miles southwest of Equality

DRAINAGE AREA: 8.51 square miles

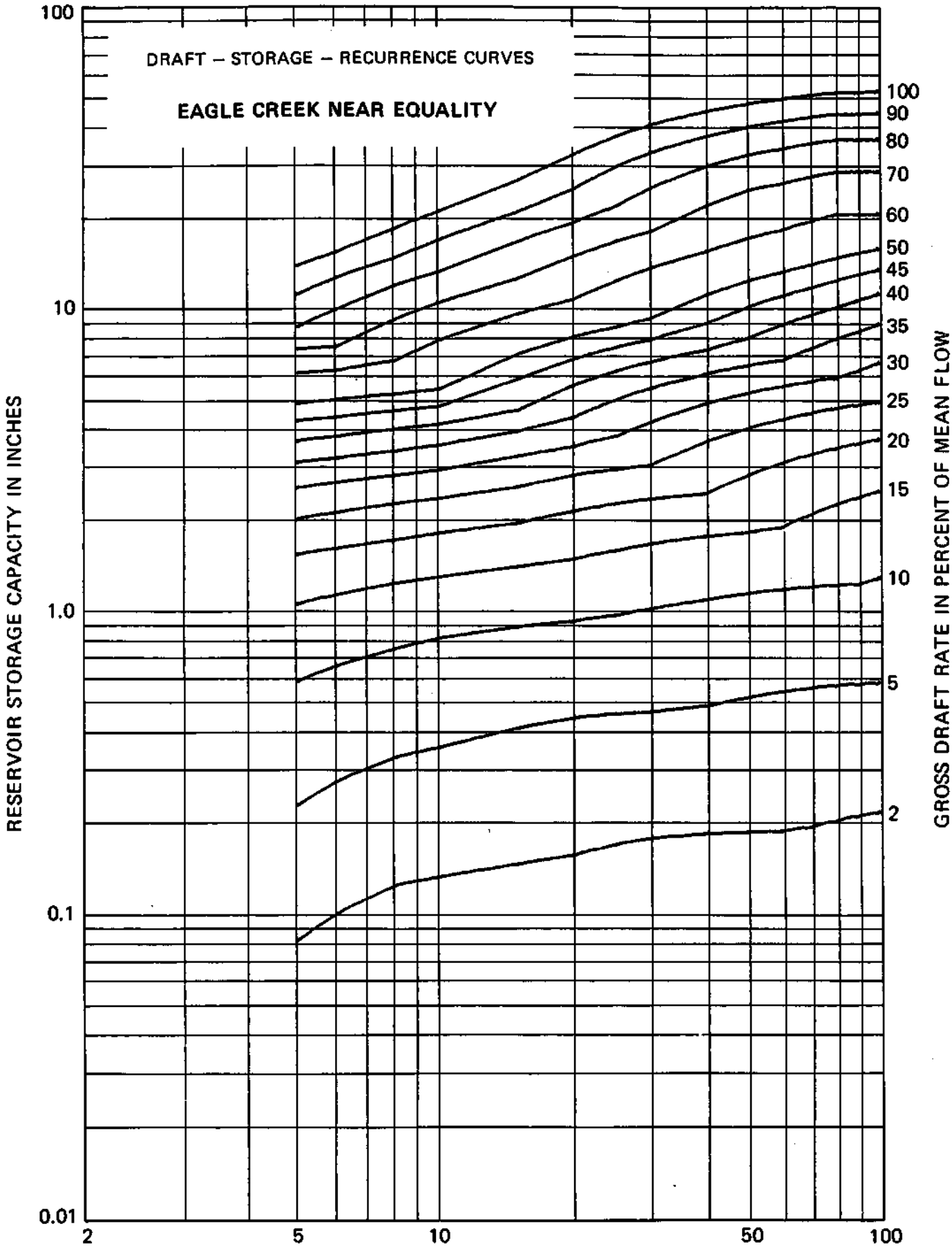
ACTUAL FLOW DATA: June 1966 to Oct 1978

INDEX STATION: Cache River at Foreman

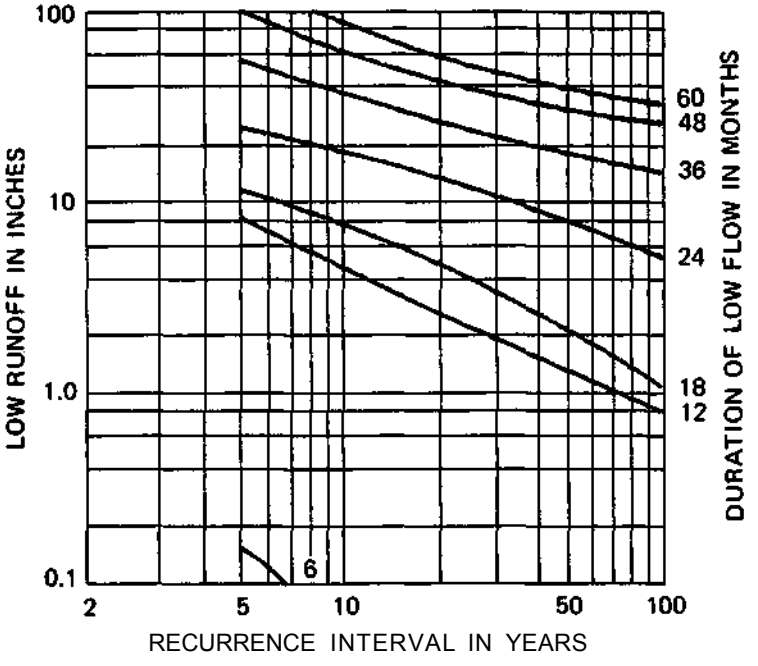
MEAN DISCHARGE: 1.33 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.08	.23	.57	1.03	1.50	1.96	2.49	3.03	3.56	4.15	4.75	5.95	7.15	8.46	10.85	13.43
	3	4	6	7	7	7	8	8	8	9	9	9	9	18	18	20
6	.10	.27	.64	1.10	1.57	2.06	2.59	3.12	3.68	4.28	4.88	6.08	7.28	9.67	12.29	14.95
	4	5	6	7	7	8	8	8	9	9	9	9	18	18	20	20
8	.12	.32	.73	1.20	1.66	2.20	2.73	3.29	3.89	4.49	5.09	6.55	8.95	11.61	14.27	17.87
	5	5	7	7	8	8	8	9	9	9	9	18	18	20	20	30
10	.13	.35	.79	1.26	1.76	2.29	2.85	3.45	4.05	4.65	5.28	7.66	10.21	12.88	16.42	20.42
	5	6	7	7	8	8	9	9	9	9	10	18	20	20	30	30
15	.14	.40	.87	1.37	1.90	2.51	3.18	3.84	4.54	5.74	6.94	9.39	12.28	16.28	20.45	25.98
	6	7	7	8	9	10	10	10	18	18	18	20	30	30	32	42
20	.15	.43	.91	1.45	2.09	2.75	3.42	4.30	5.50	6.70	7.89	10.53	14.57	18.83	24.37	31.61
	6	7	8	9	10	10	10	18	18	18	18	30	32	32	52	56
25	.17	.45	.95	1.56	2.22	2.89	3.73	4.93	6.13	7.33	8.52	12.08	16.35	21.40	28.86	36.37
	7	7	8	10	10	10	18	18	18	18	18	32	32	56	56	58
30	.17	.45	1.00	1.64	2.30	2.98	4.18	5.38	6.58	7.78	9.15	13.38	17.65	24.68	32.14	39.75
	7	7	9	10	10	18	18	18	18	18	30	32	32	56	56	58
40	.18	.48	1.07	1.74	2.40	3.59	4.79	5.99	7.19	8.79	10.92	15.19	21.53	28.99	36.45	44.13
	7	8	10	10	10	18	18	18	18	32	32	32	56	56	56	58
50	.18	.51	1.13	1.79	2.79	3.99	5.18	6.38	7.88	10.01	12.14	16.83	24.29	31.75	39.20	46.87
	7	9	10	10	18	18	18	18	32	32	32	56	56	56	56	58
60	.19	.54	1.16	1.87	3.07	4.27	5.46	6.66	8.76	10.90	13.03	17.97	25.57	33.30	41.02	48.75
	8	9	10	18	18	18	18	18	32	32	32	56	58	58	58	58
70	.19	.55	1.19	2.08	3.28	4.47	5.67	7.32	9.45	11.58	13.82	19.23	26.95	34.68	42.40	50.13
	8	9	10	18	18	18	18	32	32	32	34	58	58	58	58	58
80	.20	.56	1.21	2.24	3.44	4.64	5.84	7.87	10.00	12.26	14.52	20.24	27.96	35.69	43.41	51.14
	9	9	10	18	18	18	18	32	32	34	34	58	58	58	58	58
90	.21	.57	1.22	2.37	3.57	4.77	6.19	8.32	10.57	12.83	15.10	20.32	28.05	35.77	43.50	51.22
	9	9	10	18	18	18	32	32	34	34	34	58	58	58	58	58
100	.22	.58	1.28	2.48	3.68	4.88	6.57	8.79	11.06	13.32	15.59	20.32	28.05	35.80	43.79	51.78
	9	9	18	18	18	18	32	34	34	34	34	58	58	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
EAGLE CREEK NEAR EQUALITY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33844.5 — LUSK CREEK NEAR EDDYVILLE



LOCATION: In SE¼ Sec 16, T12S, R6E, Pope County, 2.8 miles southeast of Eddyville

DRAINAGE AREA: 42.9 square miles

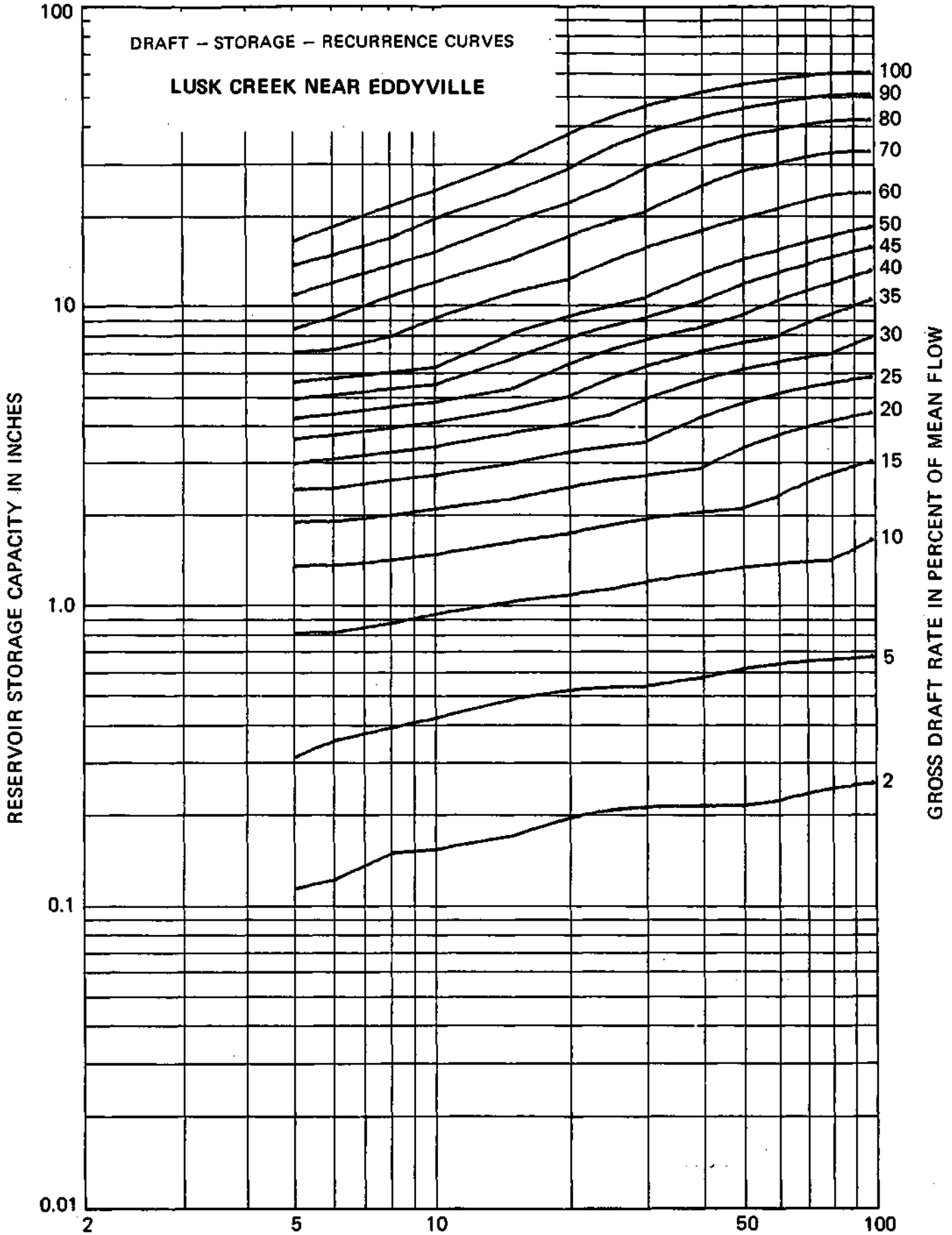
ACTUAL FLOW DATA: Oct 1967 to Oct 1978

INDEX STATION: Cache River at Foreman

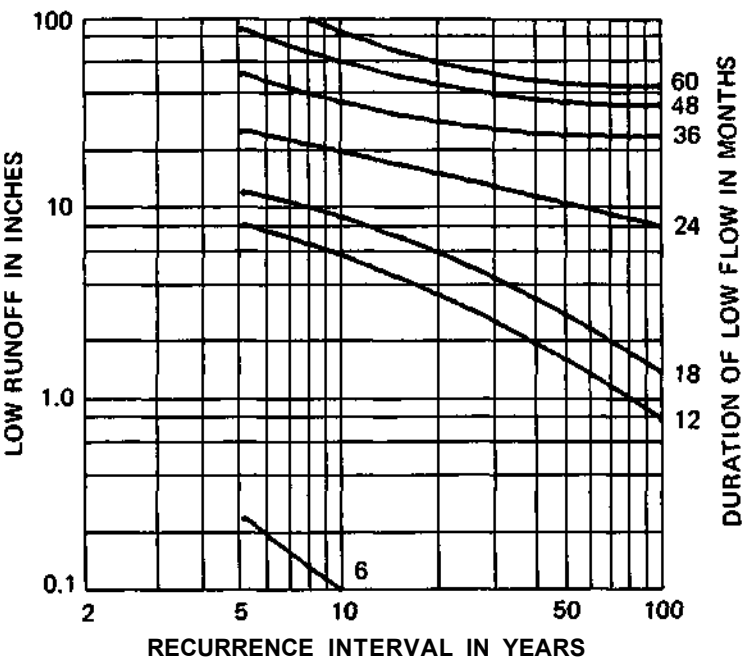
MEAN DISCHARGE: 1.53 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.11	.31	.79	1.33	1.86	2.40	2.93	3.53	4.15	4.82	5.51	6.88	8.26	10.63	13.38	16.15
	4	6	7	7	7	7	7	8	8	9	9	9	9	18	18	28
6	.12	.35	.80	1.33	1.87	2.41	3.03	3.64	4.28	4.96	5.65	7.03	8.93	11.69	14.44	17.94
	4	5	7	7	7	8	8	8	9	9	9	9	18	18	18	28
8	.15	.38	.85	1.39	1.96	2.57	3.18	3.83	4.52	5.21	5.89	7.76	10.51	13.33	16.45	21.04
	5	6	7	7	8	8	8	9	9	9	9	18	18	20	30	30
10	.15	.41	.92	1.45	2.06	2.67	3.32	4.01	4.70	5.39	6.14	8.89	11.76	14.82	19.11	23.69
	5	6	7	7	8	8	9	9	9	9	10	18	20	20	30	30
15	.17	.48	1.01	1.60	2.24	2.94	3.70	4.47	5.23	6.58	7.95	10.86	14.11	18.70	23.56	29.89
	6	7	7	8	9	10	10	10	10	18	18	20	30	30	32	42
20	.19	.51	1.07	1.71	2.45	3.21	3.98	4.93	6.31	7.68	9.06	12.06	16.74	21.63	28.15	36.71
	7	7	8	9	10	10	10	18	18	18	18	20	32	32	56	56
25	.21	.53	1.12	1.83	2.60	3.36	4.30	5.68	7.05	8.43	9.81	13.88	18.77	24.79	33.35	41.91
	7	7	9	10	10	10	18	18	18	18	18	32	32	56	56	56
30	.21	.53	1.18	1.92	2.69	3.47	4.85	6.22	7.60	8.98	10.49	15.39	20.28	28.43	36.99	45.71
	7	7	9	10	10	18	18	18	18	18	32	32	32	56	56	58
40	.21	.57	1.27	2.03	2.84	4.22	5.59	6.97	8.34	10.16	12.61	17.50	24.70	33.26	41.84	50.71
	7	9	10	10	18	18	18	18	18	32	32	32	56	56	58	58
50	.21	.61	1.33	2.09	3.33	4.70	6.08	7.45	9.16	11.60	14.05	19.26	27.82	36.38	44.96	53.82
	7	9	10	10	18	18	18	18	32	32	32	56	56	56	58	58
60	.22	.63	1.37	2.29	3.67	5.04	6.42	7.80	10.22	12.66	15.11	20.72	29.36	38.23	47.09	55.96
	8	9	10	18	18	18	18	18	32	32	32	56	58	58	58	58
70	.23	.65	1.39	2.55	3.92	5.30	6.68	8.60	11.04	13.49	16.09	22.06	30.92	39.79	48.65	57.52
	9	9	10	18	18	18	18	32	32	34	34	58	58	58	58	58
80	.24	.66	1.41	2.74	4.12	5.50	6.87	9.26	11.73	14.32	16.92	23.25	32.11	40.98	49.84	58.71
	9	9	10	18	18	18	18	32	34	34	34	58	58	58	58	58
90	.25	.66	1.53	2.90	4.28	5.65	7.36	9.81	12.41	15.01	17.61	23.65	32.51	41.38	50.25	59.11
	9	9	18	18	18	18	32	34	34	34	34	58	58	58	58	58
100	.26	.67	1.65	3.03	4.40	5.78	7.81	10.39	12.99	15.59	18.18	23.71	32.57	41.44	50.31	59.17
	9	10	18	18	18	18	32	34	34	34	34	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
LUSK CREEK NEAR EDDYVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33850 — HAYES CREEK AT GLENDALE



LOCATION: In SW¼ SW¼ Sec 21, T12S, R5E, Pope County, at bridge on Illinois 145 in Glendale

DRAINAGE AREA: 19.1 square miles

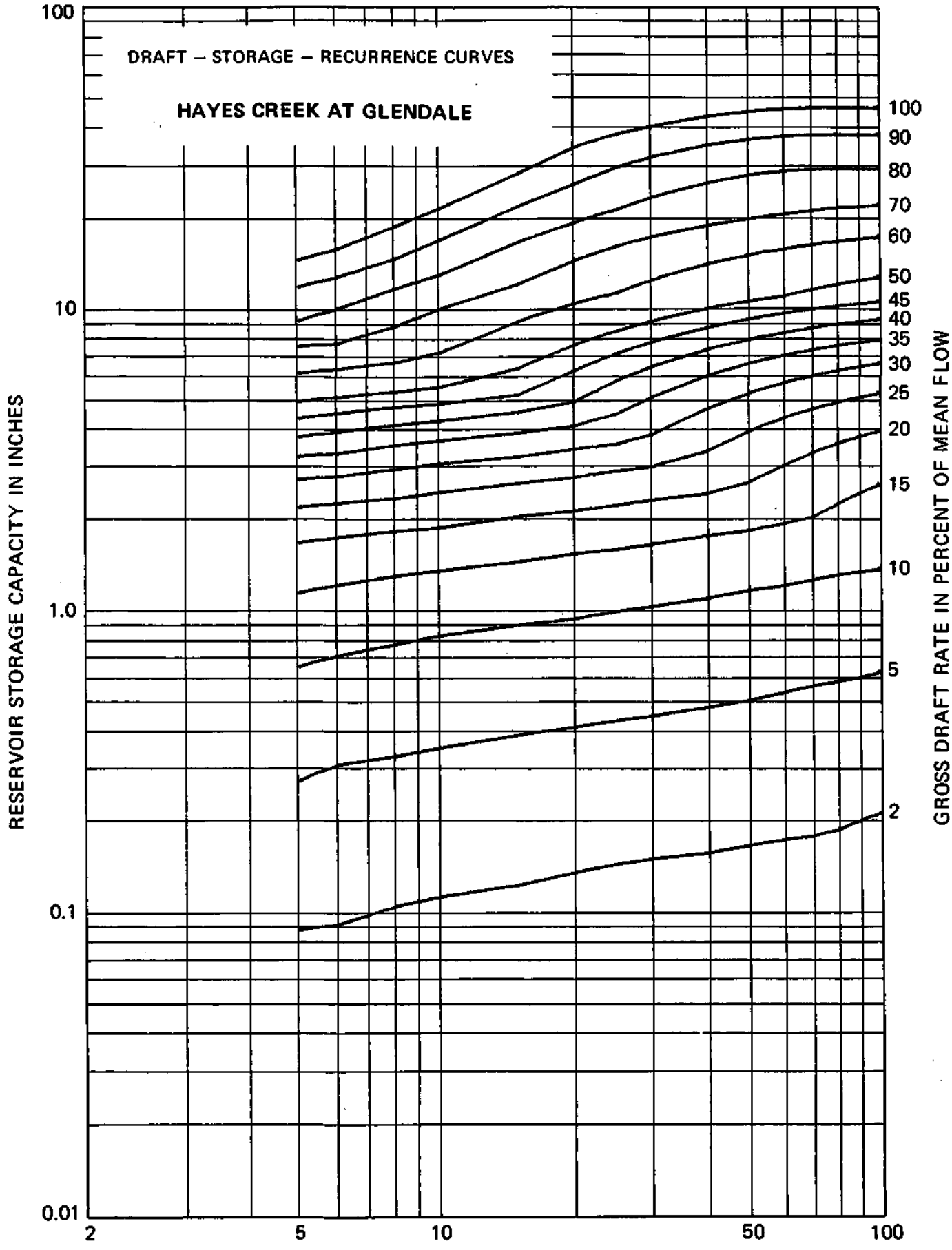
ACTUAL FLOW DATA: May 1949 to Oct 1978

INDEX STATION: Cache River at Foreman

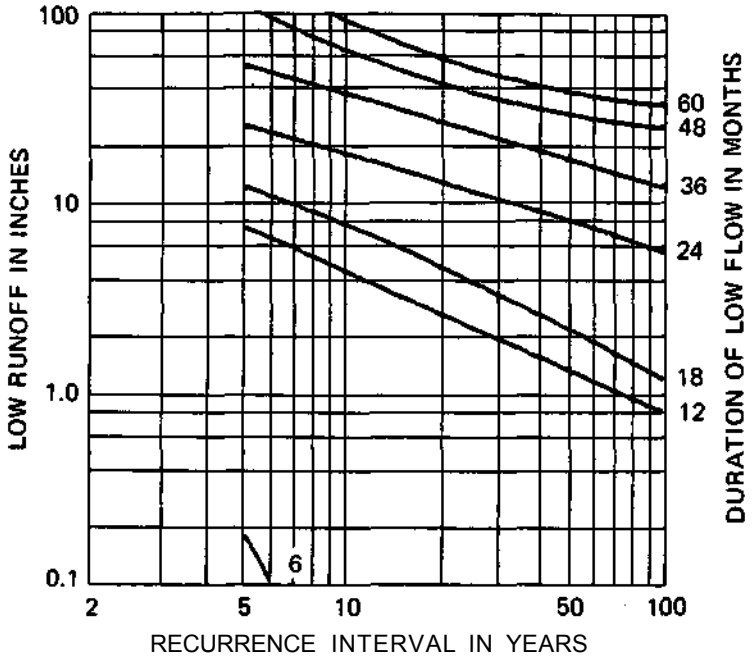
MEAN DISCHARGE: 1.48 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.09	.27	.65	1.13	1.65	2.16	2.68	3.20	3.71	4.28	4.87	6.06	7.39	9.04	11.70	14.35
	4	5	6	7	7	7	7	7	7	8	8	9	9	18	18	18
6	.09	.30	.70	1.19	1.71	2.23	2.75	3.27	3.86	4.45	5.04	6.26	7.58	9.91	12.61	15.56
	4	5	6	7	7	7	7	8	8	8	8	9	9	18	20	20
8	.10	.32	.76	1.28	1.80	2.31	2.89	3.48	4.07	4.66	5.25	6.56	8.66	11.53	14.49	18.41
	5	5	7	7	7	7	8	8	8	8	8	9	18	20	20	30
10	.11	.35	.81	1.33	1.85	2.43	3.02	3.61	4.20	4.80	5.47	7.10	9.89	12.85	16.66	21.17
	5	6	7	7	7	8	8	8	8	9	9	18	20	20	30	34
15	.12	.38	.89	1.43	2.02	2.61	3.20	3.85	4.51	5.18	6.33	9.04	12.00	16.46	21.58	27.78
	5	6	7	8	8	8	8	9	9	9	18	20	20	32	42	42
20	.13	.41	.93	1.52	2.11	2.73	3.40	4.06	4.89	6.22	7.55	10.33	14.30	19.03	25.49	33.68
	6	7	8	8	8	9	9	9	18	18	18	20	32	32	54	56
25	.14	.43	.99	1.58	2.21	2.87	3.54	4.46	5.76	7.08	8.41	11.22	15.95	20.99	29.04	37.31
	6	7	8	8	9	9	9	16	18	18	18	32	32	54	56	56
30	.15	.44	1.02	1.64	2.30	2.97	3.81	5.07	6.40	7.73	9.06	12.39	17.11	23.13	31.39	39.66
	6	7	8	9	9	9	16	18	18	18	18	32	32	56	56	56
40	.16	.48	1.09	1.76	2.42	3.36	4.64	5.97	7.30	8.63	9.96	13.94	18.67	25.89	34.38	42.95
	6	8	9	9	9	16	18	18	18	18	18	32	32	56	58	58
50	.17	.50	1.16	1.83	2.64	3.91	5.24	6.57	7.90	9.23	10.55	14.95	19.67	27.50	36.07	44.63
	7	8	9	10	16	18	18	18	18	18	18	32	32	58	58	58
60	.17	.54	1.20	1.93	3.01	4.34	5.67	7.00	8.33	9.65	11.01	15.66	20.39	28.39	36.95	45.52
	7	9	9	10	18	18	18	18	18	18	30	32	32	58	58	58
70	.18	.57	1.26	2.03	3.33	4.66	5.99	7.32	8.65	9.98	11.58	16.20	20.97	28.82	37.38	45.94
	8	9	10	16	18	18	18	18	18	18	30	32	46	58	58	58
80	.19	.59	1.31	2.25	3.58	4.91	6.24	7.57	8.90	10.22	12.04	16.62	21.53	28.96	37.52	46.09
	8	9	10	18	18	18	18	18	18	18	30	32	46	58	58	58
90	.20	.60	1.34	2.45	3.78	5.11	6.44	7.77	9.10	10.42	12.42	16.96	21.68	28.96	37.52	46.09
	9	10	10	18	18	18	18	18	18	18	30	32	32	58	58	58
100	.21	.63	1.37	2.61	3.94	5.27	6.60	7.93	9.26	10.60	12.74	17.24	21.96	28.96	37.52	46.09
	9	10	10	18	18	18	18	18	18	20	30	32	32	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
HAYES CREEK AT GLENDALE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33855 - LAKE GLENDALE INLET NEAR DIXON SPRINGS



LOCATION: In NE¼ SW¼ Sec 3, T13S, R5E, Pope County, 0.9 miles upstream from Lake Glendale Dam and 2.5 miles north of Dixon Springs

DRAINAGE AREA: 1.04 square miles

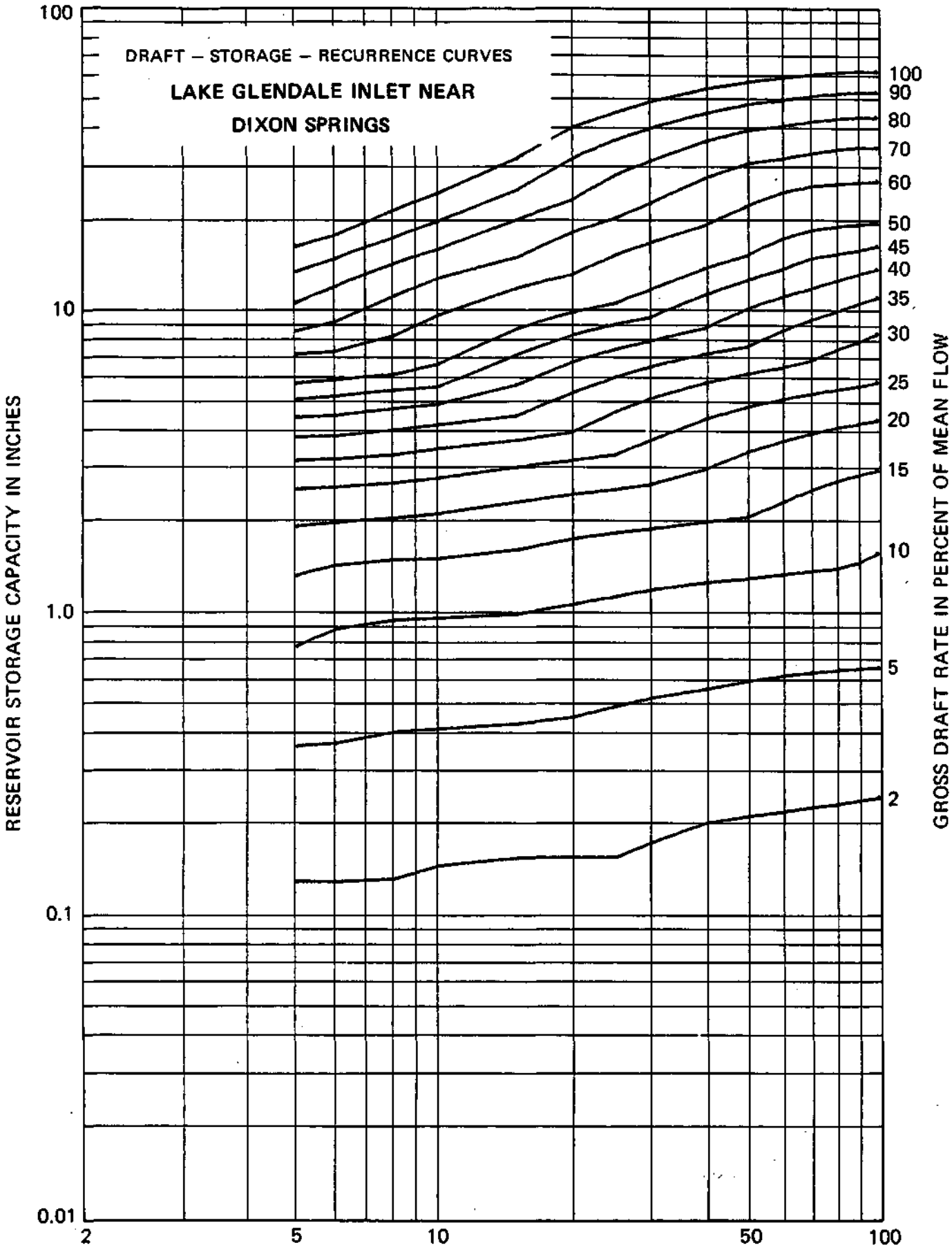
ACTUAL FLOW DATA: August 1954 to Oct 1963

INDEX STATION: Cache River at Foreman

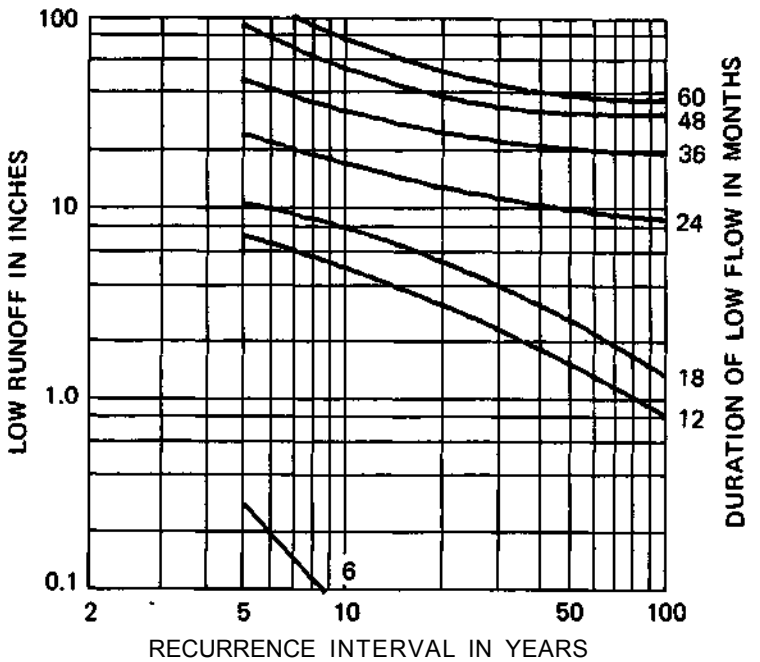
MEAN DISCHARGE: 1.53 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.13	.36	.76	1.30	1.88	2.49	3.10	3.71	4.32	4.93	5.60	6.97	8.35	10.32	13.08	15.83
	5	5	7	7	8	8	8	8	8	8	9	9	9	18	18	18
6	.13	.36	.86	1.40	1.93	2.53	3.14	3.75	4.38	5.07	5.75	7.13	8.93	11.68	14.43	17.30
	5	6	7	7	7	8	8	8	9	9	9	9	18	18	18	20
8	.13	.39	.92	1.46	2.00	2.61	3.23	3.92	4.61	5.30	5.99	8.02	10.84	13.90	16.96	20.93
	5	6	7	7	8	8	9	9	9	9	9	18	20	20	20	30
10	.14	.40	.94	1.47	2.07	2.71	3.40	4.09	4.77	5.46	6.49	9.40	12.46	15.52	19.26	23.85
	5	7	7	7	8	9	9	9	9	9	18	20	20	20	30	30
15	.15	.42	.97	1.56	2.27	2.96	3.64	4.40	5.57	6.99	8.52	11.58	14.63	19.52	24.41	31.06
	5	7	8	8	9	9	9	10	18	20	20	20	20	32	32	54
20	.15	.44	1.04	1.72	2.40	3.12	3.88	5.23	6.61	8.11	9.64	12.85	17.74	22.65	30.90	39.16
	5	7	8	9	9	10	10	18	18	20	20	32	32	54	54	54
25	.15	.48	1.11	1.80	2.50	3.27	4.54	5.92	7.29	8.81	10.34	14.90	19.79	27.33	35.58	44.00
	5	8	9	9	10	10	18	18	18	20	20	32	32	54	54	58
30	.17	.51	1.17	1.86	2.60	3.65	5.03	6.40	7.78	9.29	11.48	16.37	22.10	30.35	38.94	47.81
	7	8	9	9	10	18	18	18	18	20	32	32	54	54	58	58
40	.20	.55	1.24	1.96	2.93	4.31	5.68	7.06	8.60	11.05	13.50	18.76	26.72	35.28	43.84	52.62
	7	8	9	10	18	18	18	18	32	32	32	44	56	56	56	58
50	.21	.59	1.28	2.04	3.36	4.73	6.11	7.49	9.94	12.39	14.95	21.67	29.87	38.43	46.99	55.55
	7	9	9	10	18	18	18	32	32	32	44	44	56	56	56	56
60	.22	.61	1.32	2.28	3.66	5.03	6.41	8.46	10.91	13.45	16.96	23.99	31.03	39.74	48.61	57.48
	8	9	10	18	18	18	18	32	32	46	46	46	46	58	58	58
70	.22	.63	1.35	2.51	3.88	5.26	6.75	9.20	11.64	14.64	18.16	25.19	32.26	41.13	50.00	58.86
	8	9	10	18	18	18	32	32	32	46	46	46	58	58	58	58
80	.23	.64	1.38	2.68	4.06	5.43	7.34	9.78	12.36	15.14	18.66	25.69	33.29	42.16	51.03	59.90
	8	9	10	18	18	18	32	32	34	46	46	46	58	58	58	58
90	.24	.65	1.45	2.82	4.20	5.57	7.82	10.41	13.01	15.61	19.02	26.05	33.95	42.82	51.68	60.55
	9	9	16	18	18	18	32	34	34	34	46	46	58	58	58	58
100	.24	.66	1.56	2.93	4.31	5.77	8.35	10.95	13.55	16.15	19.29	26.33	33.95	42.82	51.68	60.55
	9	9	18	18	18	32	34	34	34	34	46	46	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
LAKE GLENDALE INLET NEAR
DIXON SPRINGS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

33865 - SUGAR CREEK NEAR DIXON SPRINGS



LOCATION: In NW¼ SW¼ Sec 4, T13S, R5E, Pope County, at abandoned highway bridge 2.0 miles north of Dixon Springs

DRAINAGE AREA: 9.93 square miles

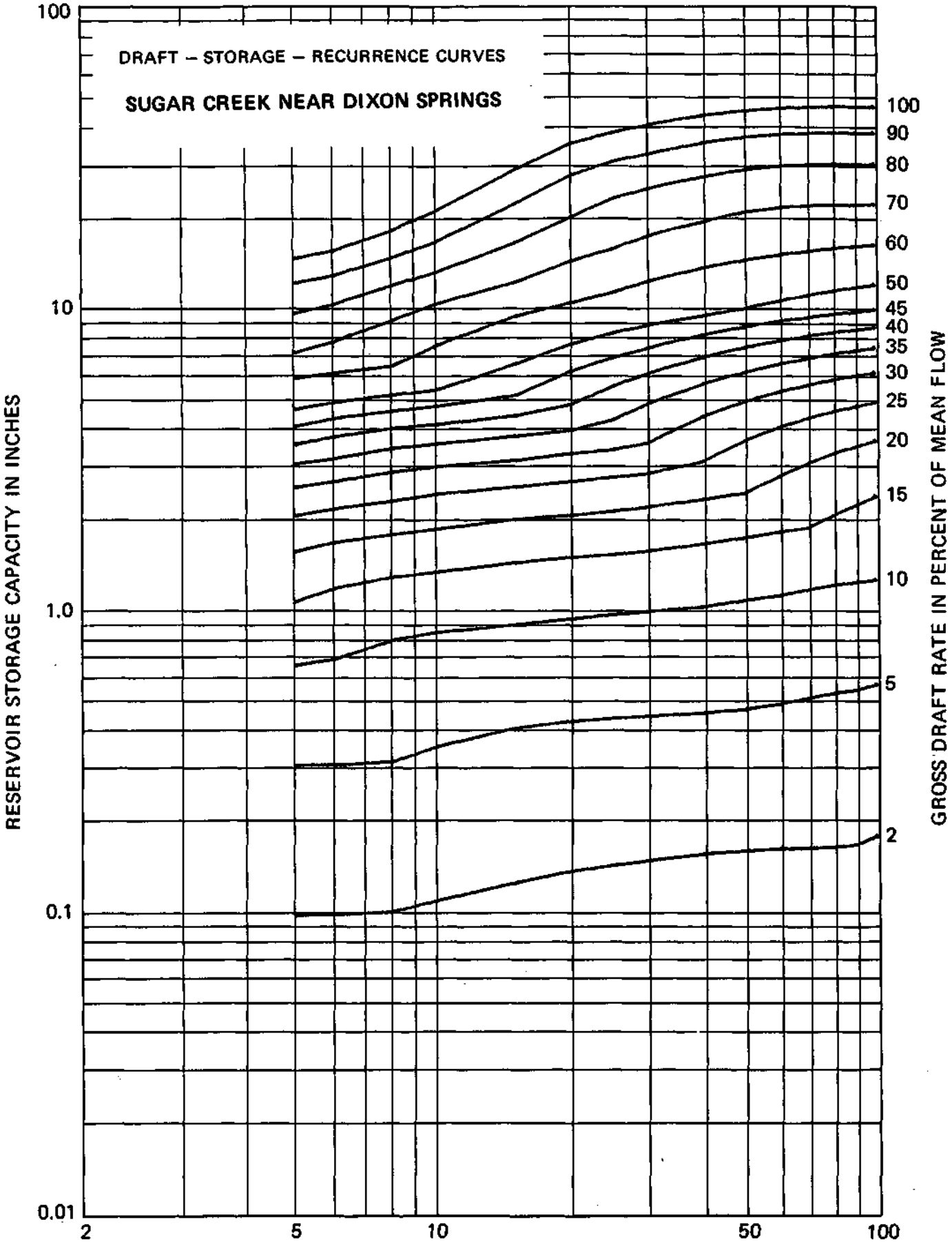
ACTUAL FLOW DATA: Apr 1950 to Oct 1978

INDEX STATION: Cache River at Foreman

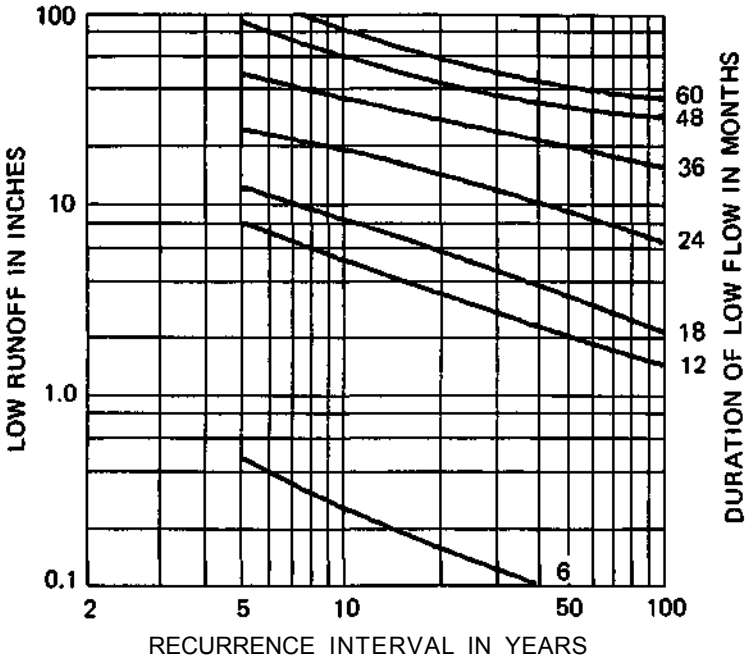
MEAN DISCHARGE: 1.40 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.10	.30	.65	1.06	1.55	2.04	2.53	3.02	3.51	4.02	4.58	5.81	7.06	9.48	12.00	14.51
	4	5	5	7	7	7	7	7	7	8	8	9	9	18	18	18
6	.10	.30	.68	1.17	1.66	2.15	2.64	3.15	3.70	4.26	4.82	6.04	7.65	10.17	12.69	15.40
	4	5	7	7	7	7	7	8	8	8	8	9	18	18	18	20
8	.10	.31	.79	1.28	1.76	2.28	2.84	3.40	3.95	4.51	5.11	6.36	8.98	11.77	14.57	17.94
	5	5	7	7	7	8	8	8	8	8	9	9	20	20	20	30
10	.11	.35	.84	1.33	1.84	2.40	2.96	3.52	4.08	4.69	5.32	7.45	10.24	13.04	16.45	20.92
	5	7	7	7	8	8	8	8	8	9	9	20	20	20	32	32
15	.12	.40	.89	1.43	1.99	2.55	3.11	3.74	4.37	5.11	6.50	9.30	12.10	16.36	22.02	28.73
	5	7	7	8	8	8	9	9	9	20	20	20	20	32	42	54
20	.14	.42	.93	1.49	2.05	2.65	3.28	3.91	4.76	6.15	7.55	10.35	14.22	19.85	27.40	34.95
	6	7	8	8	8	9	9	9	18	20	20	20	32	54	54	54
25	.14	.43	.96	1.52	2.12	2.75	3.38	4.25	5.51	6.84	8.24	11.23	15.70	23.06	30.61	38.16
	6	7	8	8	9	9	9	18	18	20	20	32	32	54	54	54
30	.15	.44	.99	1.57	2.19	2.83	3.56	4.82	6.08	7.34	8.74	12.26	17.33	24.88	32.43	40.38
	7	7	8	9	9	10	18	18	18	20	20	32	54	54	54	58
40	.16	.45	1.03	1.66	2.32	3.10	4.36	5.62	6.88	8.14	9.43	13.62	19.31	27.24	35.35	43.46
	7	8	9	9	10	18	18	18	18	18	20	32	56	58	58	58
50	.16	.47	1.08	1.74	2.44	3.64	4.90	6.16	7.42	8.68	10.01	14.48	20.86	28.82	36.93	45.06
	7	8	9	10	10	18	18	18	18	18	32	32	56	58	58	60
60	.16	.49	1.12	1.82	2.78	4.04	5.30	6.55	7.81	9.07	10.61	15.09	21.55	29.66	37.77	45.99
	7	9	10	10	18	18	18	18	18	18	32	32	58	58	58	60
70	.16	.51	1.18	1.88	3.08	4.33	5.59	6.85	8.11	9.37	11.08	15.53	21.96	30.07	38.18	46.46
	7	9	10	16	18	18	18	18	18	18	30	32	58	58	58	60
80	.16	.53	1.22	2.07	3.31	4.57	5.83	7.08	8.34	9.60	11.47	15.88	22.11	30.22	38.33	46.64
	7	9	10	16	18	18	18	18	18	18	30	32	58	58	58	60
90	.17	.55	1.24	2.24	3.50	4.75	6.01	7.27	8.53	9.79	11.80	16.15	22.17	30.22	38.33	46.64
	9	10	10	18	18	18	18	18	18	18	30	32	46	58	58	60
100	.18	.57	1.27	2.39	3.65	4.91	6.17	7.43	8.68	9.97	12.07	16.37	22.28	30.22	38.33	46.64
	9	10	10	18	18	18	18	18	18	30	30	32	46	58	58	60


DRAFT – STORAGE – RECURRENCE CURVES
SUGAR CREEK NEAR DIXON SPRINGS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

36120 - CACHE RIVER AT FORMAN



LOCATION: In NE¼ NW¼ Sec 6, T14S, R3E, Johnson County, at downstream side of highway bridge, 1.2 miles southwest of Forman

DRAINAGE AREA: 244 square miles

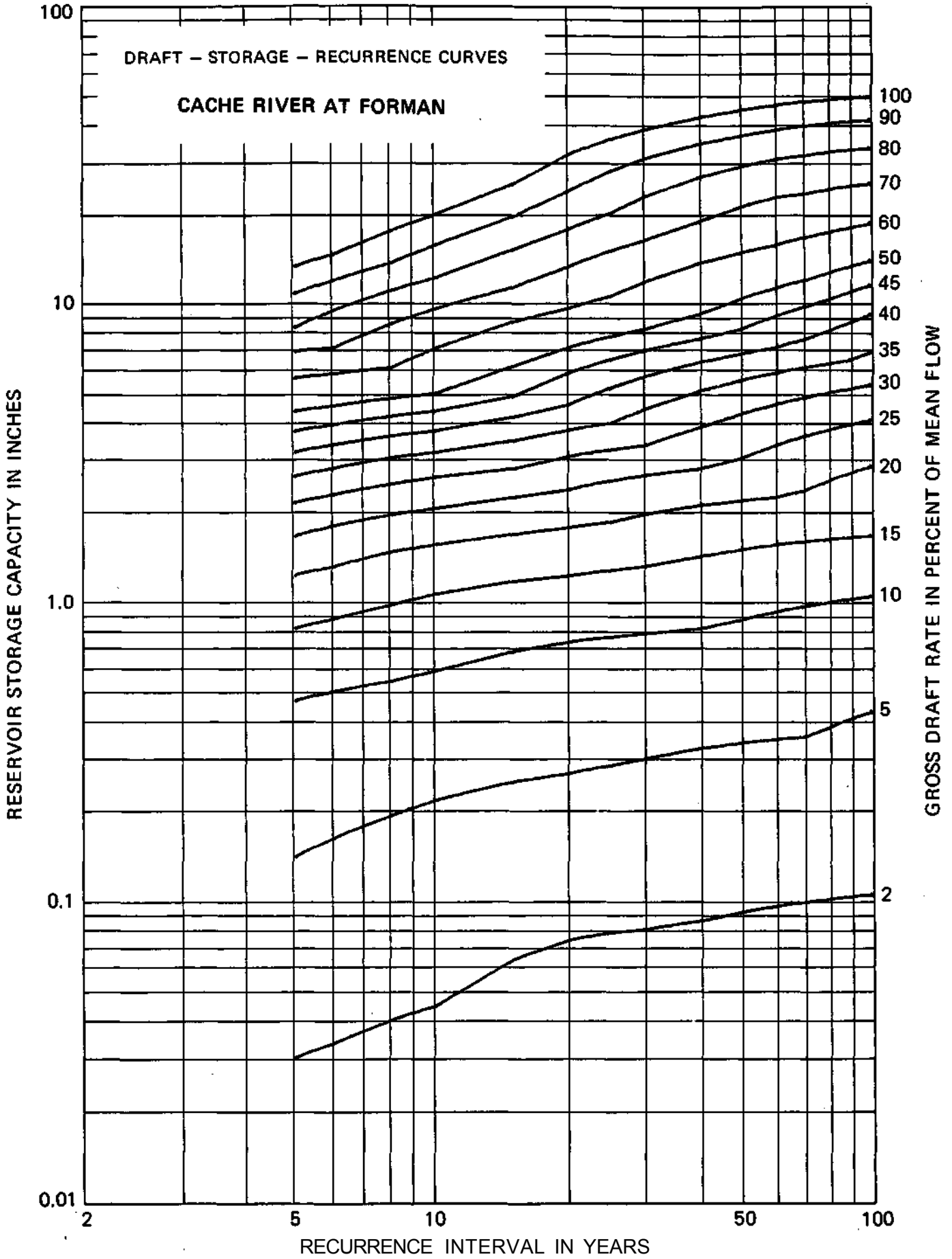
ACTUAL FLOW DATA: Oct 1922 to Jul 1924, Sep 1924 to Oct 1978

INDEX STATION: None

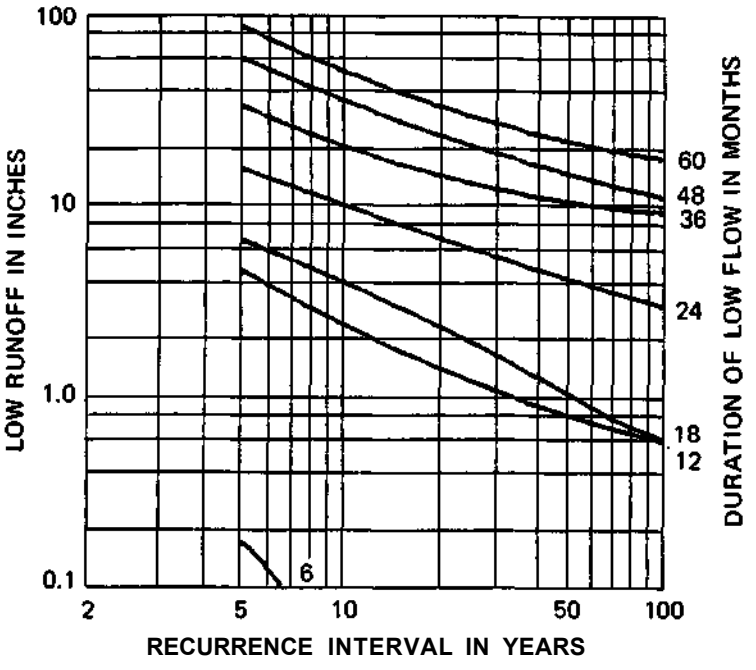
MEAN DISCHARGE: 1.38 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.14	.46	.81	1.21	1.64	2.12	2.60	3.13	3.69	4.31	5.54	6.78	8.14	10.62	13.09
	2	4	5	5	6	7	7	7	8	9	9	9	9	18	18	18
6	.03	.16	.49	.87	1.29	1.77	2.25	2.77	3.32	3.87	4.48	5.72	6.96	9.28	11.76	14.35
	2	4	5	6	7	7	7	8	8	8	9	9	9	18	18	28
8	.04	.19	.53	.96	1.44	1.93	2.44	2.99	3.54	4.12	4.74	5.98	8.37	10.85	13.44	17.21
	2	5	5	7	7	7	8	8	8	9	9	9	18	18	20	30
10	.04	.21	.58	1.05	1.53	2.03	2.58	3.13	3.69	4.31	4.93	6.94	9.42	12.00	15.41	19.54
	2	5	6	7	7	8	8	8	9	9	9	18	18	20	30	30
15	.06	.25	.68	1.16	1.66	2.21	2.76	3.43	4.11	4.84	6.07	8.55	11.18	14.94	19.34	24.89
	3	5	7	7	8	8	8	10	10	18	18	18	20	30	32	56
20	.07	.26	.73	1.21	1.75	2.35	3.04	3.72	4.54	5.78	7.02	9.50	13.13	17.53	23.58	31.28
	3	5	7	7	8	10	10	10	18	18	18	20	32	32	56	56
25	.08	.28	.76	1.26	1.84	2.52	3.21	3.94	5.18	6.42	7.65	10.47	14.87	19.90	27.60	35.31
	3	6	7	8	10	10	10	18	18	18	18	32	32	56	56	56
30	.08	.30	.78	1.30	1.95	2.64	3.33	4.41	5.65	6.88	8.12	11.75	16.15	22.71	30.41	38.11
	3	7	7	8	10	10	10	18	18	18	18	32	32	56	56	56
40	.09	.32	.81	1.41	2.09	2.78	3.82	5.06	6.30	7.53	9.12	13.52	18.70	26.40	34.10	41.82
	5	7	8	9	10	10	18	18	18	18	32	32	56	56	56	58
50	.09	.34	.87	1.49	2.18	3.02	4.26	5.50	6.74	8.13	10.33	14.73	21.04	28.74	36.44	44.35
	5	7	9	10	10	18	18	18	18	32	32	32	56	56	56	58
60	.10	.35	.93	1.55	2.24	3.35	4.58	5.82	7.06	9.02	11.22	15.62	22.66	30.36	38.07	46.04
	5	7	9	10	10	18	18	18	18	32	32	32	56	56	58	58
70	.10	.35	.97	1.59	2.36	3.59	4.83	6.07	7.54	9.71	11.91	16.56	23.33	31.30	39.28	47.26
	5	7	9	10	18	18	18	18	30	32	32	34	58	58	58	58
80	.10	.38	1.00	1.63	2.56	3.79	5.03	6.27	8.08	10.32	12.66	17.34	24.23	32.20	40.18	48.16
	5	9	9	10	18	18	18	18	30	34	34	34	58	58	58	58
90	.10	.41	1.03	1.65	2.72	3.96	5.19	6.46	8.64	10.97	13.31	17.99	24.92	32.89	40.87	48.84
	5	9	9	10	18	18	18	30	34	34	34	34	58	58	58	58
100	.11	.43	1.05	1.67	2.86	4.09	5.33	6.85	9.19	11.53	13.87	18.54	25.26	33.24	41.21	49.19
	5	9	9	10	18	18	18	34	34	34	34	34	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
CACHE RIVER AT FORMAN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

55975 —CRAB ORCHARD CREEK NEAR MARION



LOCATION: In SW¼ SW¼ Sec 16, T9S, R3E, Williamson County, at bridge on Illinois 13, 2 miles east of Marion

DRAINAGE AREA: 31.7 square miles

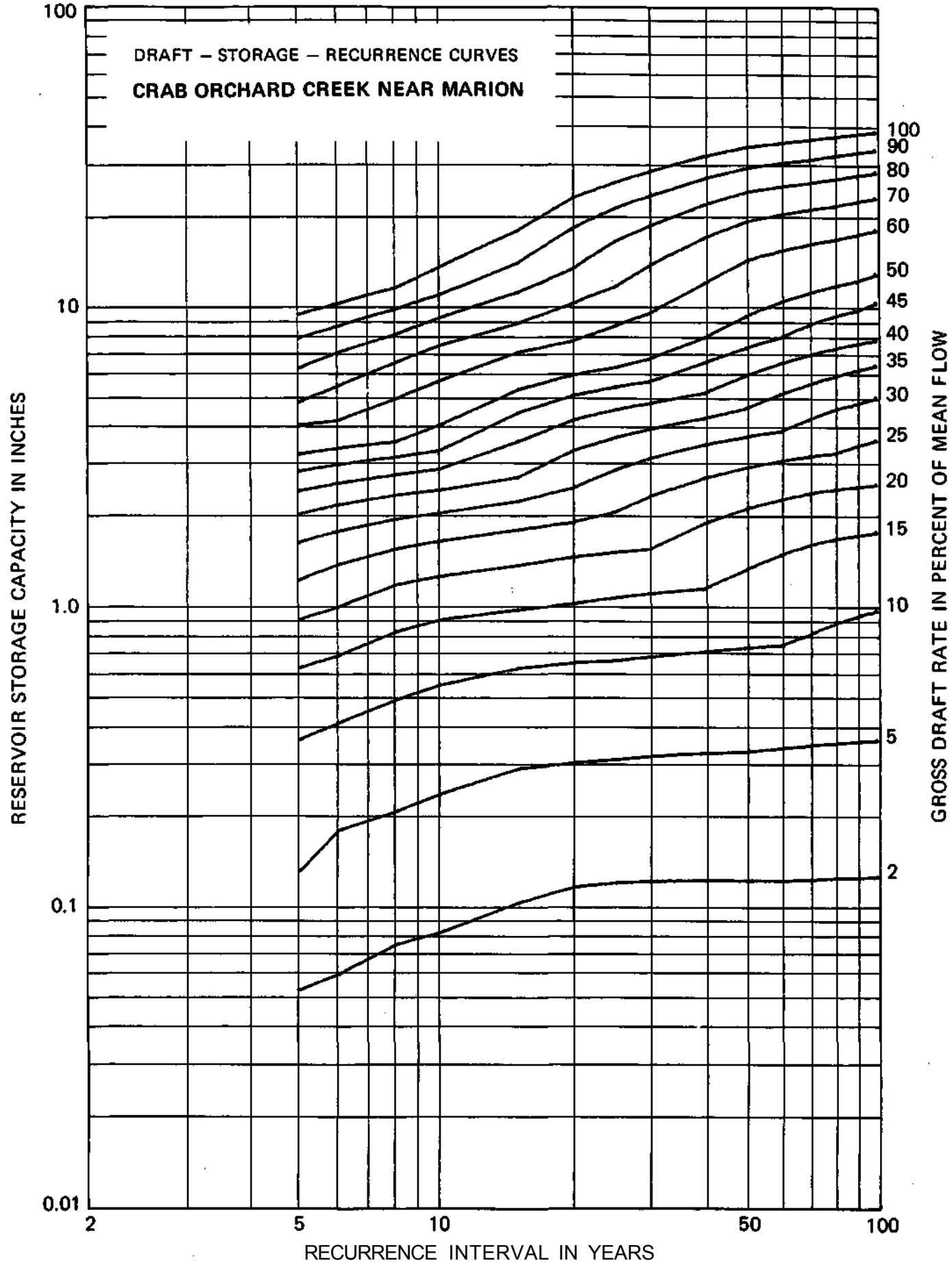
ACTUAL FLOW DATA: Oct 1951 to Oct 1978

INDEX STATION: Cache River at Foreman

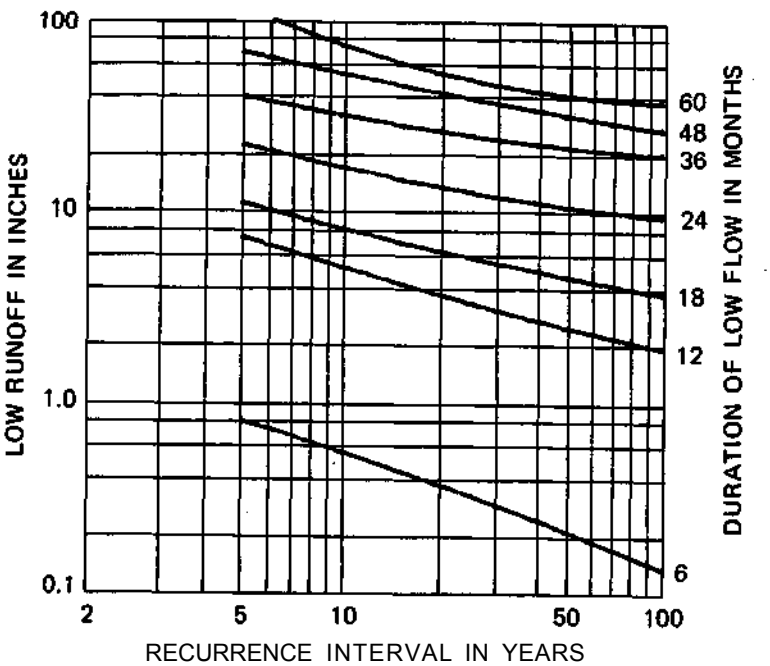
MEAN DISCHARGE: 0.87 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.13	.36	.62	.89	1.21	1.60	1.99	2.39	2.78	3.17	3.96	4.74	6.16	7.73	9.30
	3	3	6	6	7	9	9	9	9	9	9	9	9	18	18	18
6	.06	.18	.40	.68	.98	1.35	1.75	2.14	2.53	2.92	3.32	4.10	5.37	6.94	8.51	10.08
	4	5	6	7	7	9	9	9	9	9	9	9	18	18	18	18
8	.07	.20	.48	.81	1.16	1.52	1.91	2.31	2.70	3.09	3.48	4.85	6.42	7.99	9.67	11.42
	5	5	7	8	8	9	9	9	9	9	9	18	18	18	20	20
10	.08	.23	.54	.89	1.24	1.62	2.01	2.40	2.82	3.26	3.98	5.60	7.34	9.09	10.83	13.42
	5	7	8	8	8	9	9	9	10	10	18	20	20	20	20	32
15	.10	.29	.62	.97	1.35	1.77	2.20	2.65	3.50	4.38	5.25	6.99	8.74	11.10	13.89	17.73
	7	7	8	8	9	10	10	18	20	20	20	20	20	32	32	54
20	.12	.30	.64	1.01	1.44	1.87	2.45	3.27	4.14	5.01	5.89	7.63	10.16	13.32	18.03	22.74
	7	7	8	9	10	10	18	20	20	20	20	20	32	54	54	54
25	.12	.31	.66	1.06	1.50	2.04	2.83	3.63	4.50	5.38	6.25	8.60	11.63	16.34	21.05	25.76
	7	8	8	10	10	18	18	20	20	20	20	32	54	54	54	54
30	.12	.32	.68	1.10	1.53	2.31	3.09	3.88	4.74	5.61	6.68	9.48	13.66	18.38	23.16	28.05
	7	8	9	10	10	18	18	18	20	20	32	32	54	54	56	56
40	.12	.32	.70	1.14	1.88	2.66	3.45	4.23	5.15	6.49	7.89	11.94	16.82	21.71	26.60	31.48
	7	8	9	10	18	18	18	18	30	32	32	56	56	56	56	56
50	.12	.33	.73	1.32	2.10	2.89	3.67	4.58	5.89	7.29	9.28	14.17	19.05	23.94	28.82	33.71
	7	8	10	18	18	18	18	30	32	32	56	56	56	56	56	56
60	.12	.34	.74	1.47	2.26	3.04	3.83	5.11	6.47	7.91	10.36	15.24	20.13	25.01	29.90	34.78
	7	9	10	18	18	18	18	30	32	56	56	56	56	56	56	56
70	.12	.35	.81	1.59	2.38	3.16	4.21	5.52	6.90	8.69	11.13	16.02	20.91	25.79	30.70	35.77
	8	9	18	18	18	18	30	30	32	56	56	56	56	56	58	58
80	.12	.35	.88	1.66	2.45	3.23	4.53	5.85	7.25	9.28	11.72	16.61	21.54	26.60	31.66	36.72
	8	9	18	18	18	18	30	32	32	56	56	56	58	58	58	58
90	.13	.36	.93	1.71	2.50	3.42	4.74	6.14	7.53	9.70	12.19	17.25	22.31	27.37	32.43	37.49
	8	9	18	18	18	30	32	32	32	56	58	58	58	58	58	58
100	.13	.36	.97	1.75	2.54	3.58	4.98	6.37	7.77	10.30	12.83	17.89	22.95	28.01	33.07	38.13
	8	9	18	18	18	32	32	32	58	58	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
CRAB ORCHARD CREEK NEAR MARION
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

56000 — BIG CREEK NEAR WETAUG



LOCATION: In SW¼ Sec 5, T14S, R1E, Pulaski County, 2.0 miles southeast of Wetaug

DRAINAGE AREA: 32.2 square miles

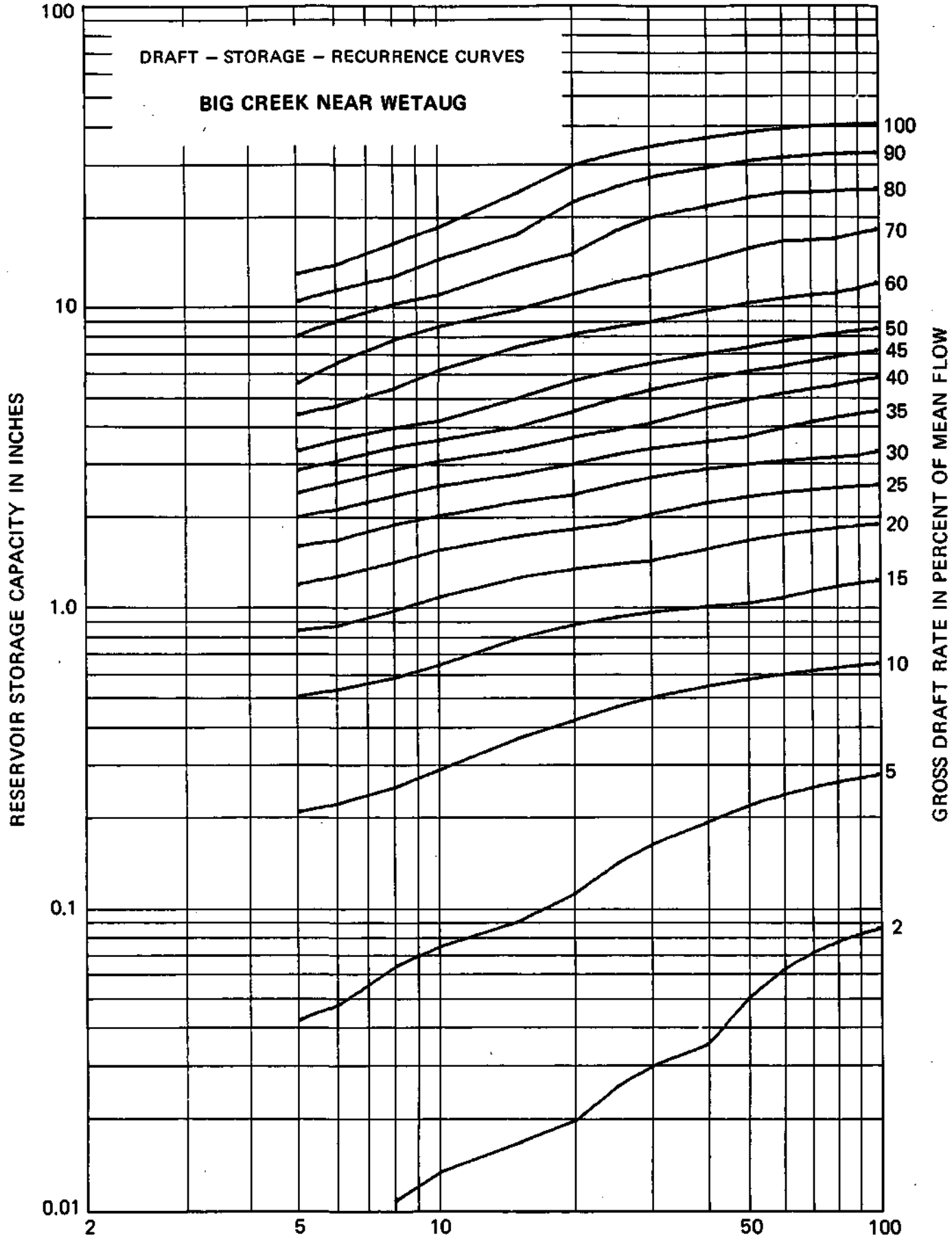
ACTUAL FLOW DATA: Oct 1941 to Oct 1978

INDEX STATION: Cache River at Foreman

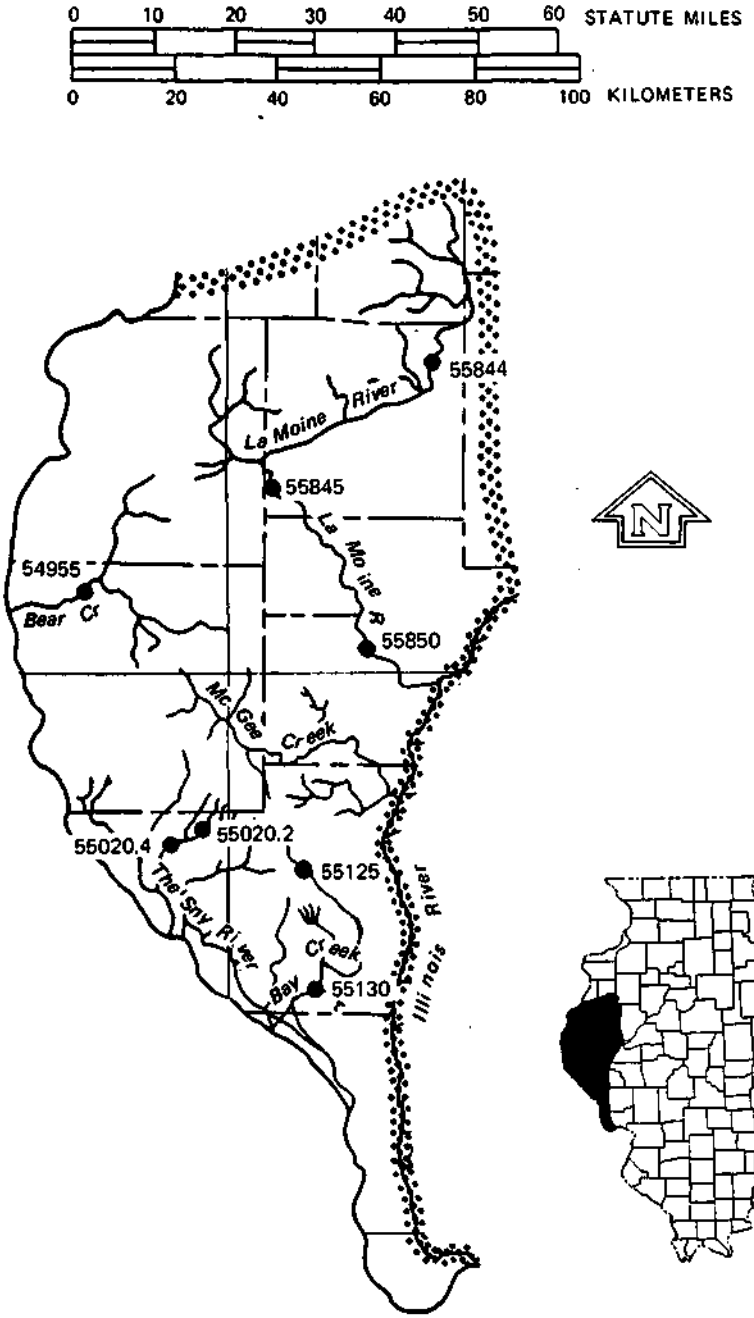
MEAN DISCHARGE: 1.32 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.04	.21	.49	.82	1.17	1.56	1.96	2.35	2.80	3.26	4.30	5.46	7.82	10.19	12.56
	1	1	4	5	5	6	6	6	6	7	7	8	18	18	18	18
6	.01	.05	.22	.52	.85	1.24	1.64	2.08	2.54	3.01	3.54	4.59	6.38	8.75	11.11	13.48
	1	2	4	5	6	6	6	7	7	8	8	8	18	18	18	18
8	.01	.06	.25	.57	.95	1.39	1.85	2.31	2.82	3.34	3.87	5.24	7.61	9.98	12.34	15.96
	1	2	4	5	6	7	7	7	8	8	8	18	18	18	18	30
10	.01	.07	.28	.63	1.06	1.52	1.98	2.48	3.01	3.54	4.09	6.05	8.41	10.78	14.13	18.07
	1	2	5	6	7	7	7	8	8	8	9	18	18	18	30	30
15	.02	.09	.36	.77	1.23	1.69	2.20	2.73	3.30	3.91	4.89	7.25	9.62	13.17	17.11	23.60
	1	2	5	7	7	7	8	8	9	10	18	18	18	30	30	54
20	.02	.11	.41	.86	1.32	1.80	2.33	2.96	3.62	4.40	5.59	7.95	10.83	14.80	21.90	29.00
	2	4	6	7	7	8	9	10	10	18	18	18	30	54	54	54
25	.03	.14	.46	.91	1.37	1.87	2.52	3.18	3.84	4.87	6.06	8.42	11.86	17.58	24.68	31.78
	2	4	6	7	7	9	10	10	10	18	18	18	30	54	54	54
30	.03	.16	.49	.95	1.41	2.01	2.67	3.32	4.03	5.22	6.40	8.77	12.57	19.46	26.56	33.66
	2	4	6	7	7	10	10	10	18	18	18	18	30	54	54	54
40	.03	.19	.54	.99	1.54	2.19	2.85	3.51	4.51	5.69	6.88	9.56	14.07	21.25	28.61	35.97
	2	5	6	7	10	10	10	10	18	18	18	30	54	56	56	56
50	.05	.22	.57	1.02	1.65	2.30	2.96	3.65	4.84	6.02	7.22	10.14	15.38	22.74	30.11	37.63
	4	5	6	7	10	10	10	18	18	18	20	30	56	56	56	60
60	.06	.24	.59	1.07	1.72	2.38	3.04	3.89	5.08	6.26	7.57	10.53	16.32	23.68	31.05	38.75
	4	5	6	10	10	10	10	18	18	18	20	30	56	56	56	60
70	.07	.25	.61	1.12	1.78	2.44	3.09	4.08	5.26	6.52	7.84	10.81	16.47	23.83	31.56	39.45
	4	5	6	10	10	10	10	18	18	20	20	30	56	56	60	60
80	.08	.26	.63	1.16	1.82	2.48	3.14	4.23	5.43	6.74	8.06	11.01	16.70	24.10	31.99	39.88
	4	5	6	10	10	10	10	18	20	20	20	30	46	60	60	60
90	.08	.27	.64	1.20	1.85	2.51	3.17	4.36	5.61	6.92	8.24	11.40	17.36	24.35	32.24	40.13
	4	5	6	10	10	10	18	18	20	20	20	34	46	60	60	60
100	.09	.28	.65	1.22	1.88	2.54	3.28	4.46	5.77	7.08	8.40	11.87	17.92	24.47	32.36	40.25
	4	5	6	10	10	10	18	18	20	20	20	46	46	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
BIG CREEK NEAR WETAUG
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

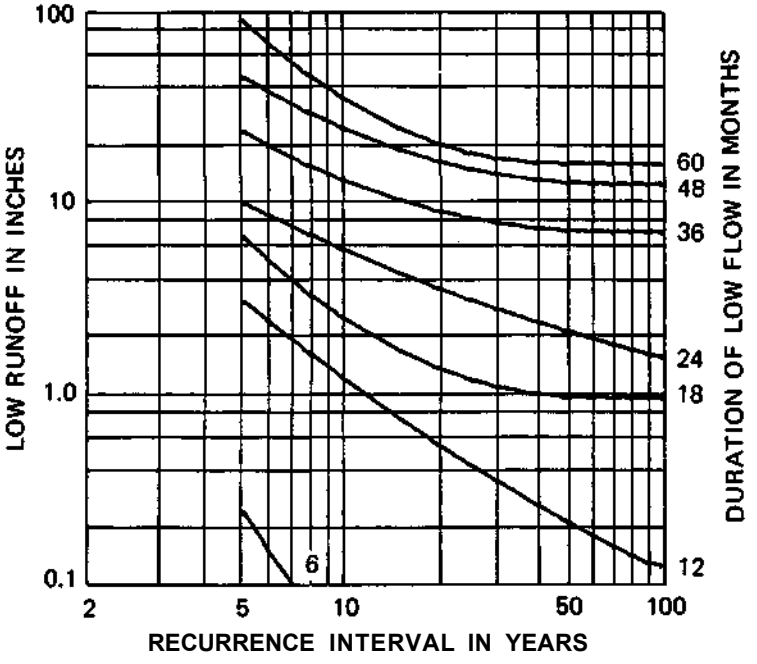
REGION 6


0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS
55844
La Moine River
55845
La Moine R
54955
Bear Cr
55850
McGee Creek
55020.4
55020.2
55125
The Sny River
Bay
Creek
55130
Illinois River
N

USGS Gage No.	Name of Station	Drainage Area (sq mi)
54955	Bear Creek near Marcelline Creek	349
55020.2	Hadley Creek near Barry	40.9
55020.4	Hadley Creek at Kinderhook	72.7
55125	Bay Creek at Pittsfield	39.4
55130	Bay Creek at Nebo	161
55844	Drowning Fork at Bushnell	26.3
55845	LaMoine River at Colmar	655
55850	LaMoine River at Ripley	1293

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
54955	55850	1944-1978	34	1921-1978	57	.62
55020.2	55130	1955-1966	11	1939-1978	39	.82
55020.4	55130	1939-1971	32	1939-1978	39	.81
55125	-	1939-1978	39	-	-	.76
55130	-	1939-1978	39	-	-	.68
55844	55850	1960-1978	18	1921-1978	57	.76
55845	55850	1944-1978	34	1921-1978	57	.72
55850	-	1921-1978	57	-	-	.68

54955 — BEAR CREEK NEAR MARCELLINE



LOCATION: Between Secs 20 and 21, T2N, R8W, Adams County, at highway bridge 2.2 miles northeast of Marcelline, 0.9 miles downstream from Grindstone Creek

DRAINAGE AREA: 349 square miles

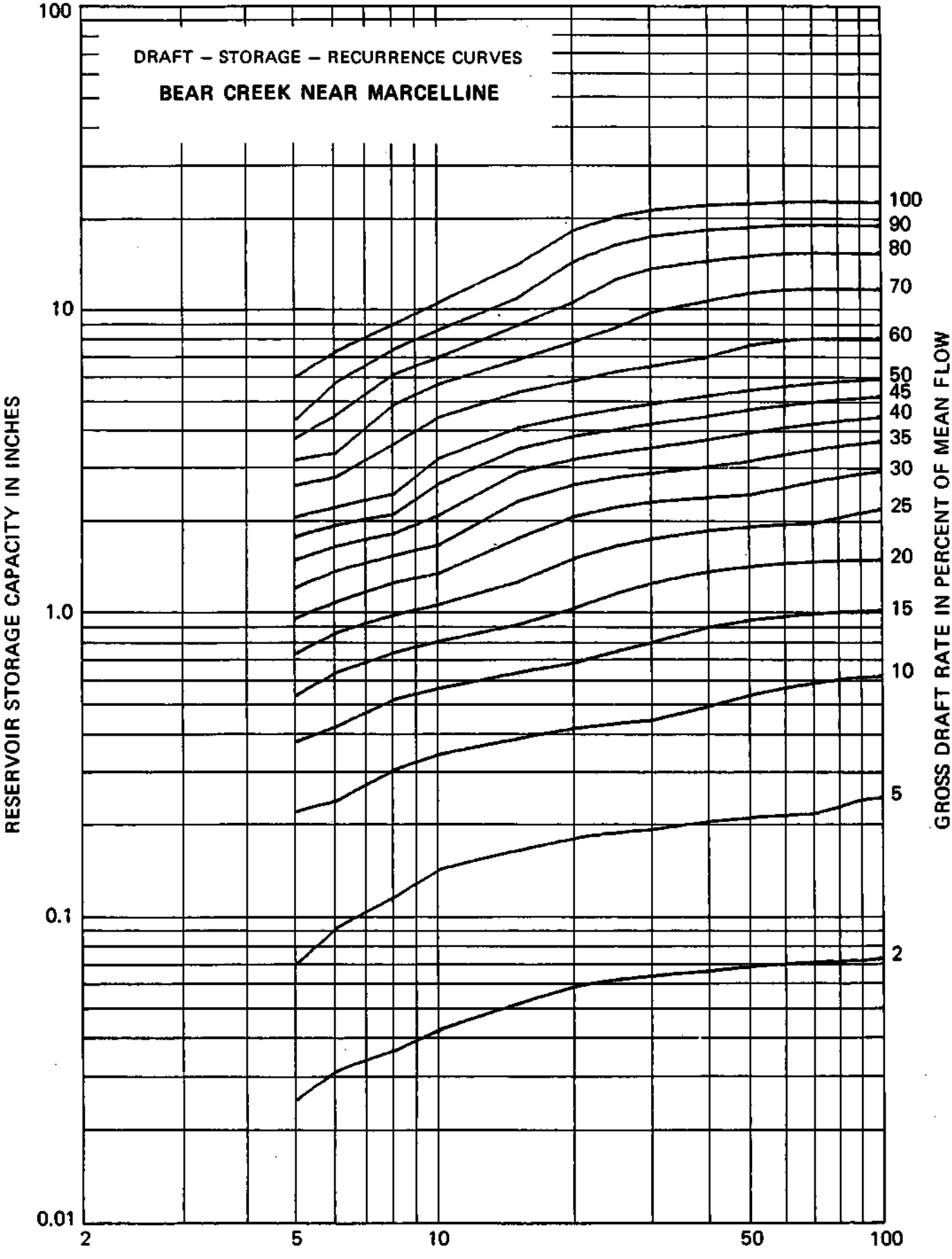
ACTUAL FLOW DATA: Mar 1944 to Oct 1978

INDEX STATION: LaMoine River at Ripley

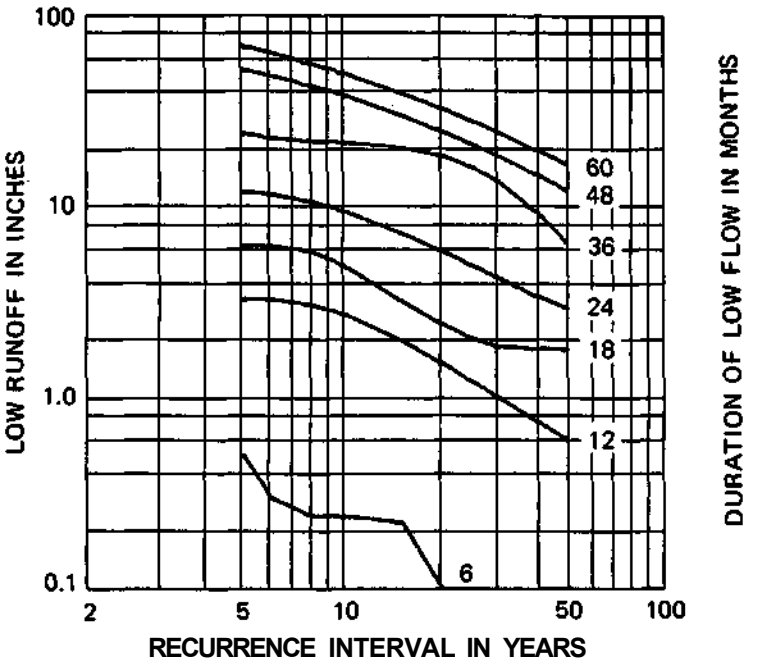
MEAN DISCHARGE: 0.62 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DHAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.07	.22	.37	.53	.73	.95	1.19	1.47	1.75	2.02	2.58	3.14	3.70	4.29	5.91
	2	3	5	5	5	7	7	9	9	9	9	9	9	9	26	26
6	.03	.09	.24	.42	.63	.84	1.06	1.34	1.62	1.90	2.18	2.74	3.29	4.38	5.62	7.11
	3	4	5	6	7	7	9	9	9	9	9	9	9	20	20	26
8	.04	.11	.30	.51	.73	.96	1.23	1.51	1.79	2.07	2.41	3.53	4.76	6.00	7.24	8.76
	3	6	6	7	7	8	9	9	9	11	18	18	20	20	20	28
10	.04	.14	.34	.55	.79	1.04	1.32	1.64	2.05	2.61	3.17	4.33	5.57	6.81	8.40	10.31
	4	6	7	7	8	8	9	11	18	18	18	20	20	20	30	32
15	.05	.16	.38	.63	.90	1.24	1.73	2.29	2.84	3.40	3.99	5.23	6.69	8.68	10.66	13.72
	6	6	7	8	11	11	18	18	18	18	20	20	32	32	32	60
20	.06	.18	.41	.68	1.02	1.48	2.04	2.60	3.16	3.75	4.37	5.71	7.65	10.32	14.04	17.76
	6	7	8	11	11	18	18	18	18	20	20	22	32	60	60	60
25	.06	.19	.43	.74	1.14	1.64	2.20	2.76	3.33	3.96	4.64	6.15	8.57	12.29	16.01	19.73
	6	7	8	11	14	18	18	18	20	22	22	32	60	60	60	60
30	.06	.19	.44	.79	1.23	1.73	2.29	2.85	3.46	4.14	4.82	6.40	9.62	13.34	17.06	20.78
	6	8	11	14	16	18	18	18	22	22	22	32	60	60	60	60
40	.07	.20	.49	.89	1.35	1.84	2.37	2.99	3.68	4.38	5.13	6.86	10.46	14.18	17.90	21.62
	7	8	11	14	16	16	18	22	22	24	24	58	60	60	60	60
50	.07	.21	.53	.94	1.41	1.90	2.43	3.14	3.88	4.63	5.37	7.52	11.11	14.71	18.31	21.90
	7	8	12	14	16	16	22	24	24	24	24	58	58	58	58	58
60	.07	.21	.56	.97	1.44	1.94	2.56	3.31	4.05	4.80	5.54	7.83	11.43	15.02	18.62	22.22
	7	8	12	14	16	16	24	24	24	24	24	58	58	58	58	58
70	.07	.22	.59	.99	1.47	1.96	2.69	3.43	4.18	4.92	5.67	7.95	11.55	15.14	18.74	22.34
	7	8	12	14	16	16	24	24	24	24	24	58	58	58	58	58
80	.07	.23	.60	1.00	1.48	2.04	2.79	3.53	4.28	5.02	5.77	7.99	11.55	15.14	18.74	22.34
	7	12	12	14	16	24	24	24	24	24	24	56	58	58	58	58
90	.07	.24	.61	1.01	1.49	2.12	2.87	3.61	4.36	5.10	5.84	7.99	11.55	15.14	18.74	22.34
	8	12	12	14	16	24	24	24	24	24	24	56	58	58	58	58
100	.07	.25	.62	1.01	1.49	2.19	2.93	3.68	4.42	5.16	5.91	7.99	11.55	15.14	18.74	22.34
	8	12	12	14	16	24	24	24	24	24	24	56	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
BEAR CREEK NEAR MARCELLINE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55020.2 - HADLEY CREEK NEAR BARRY



LOCATION: In SW¼ SW¼ Sec 14, T4S, R6W, Pike County, at U. S. 36 highway bridge, 1.8 miles northwest of Barry

DRAINAGE AREA: 40.9 square miles

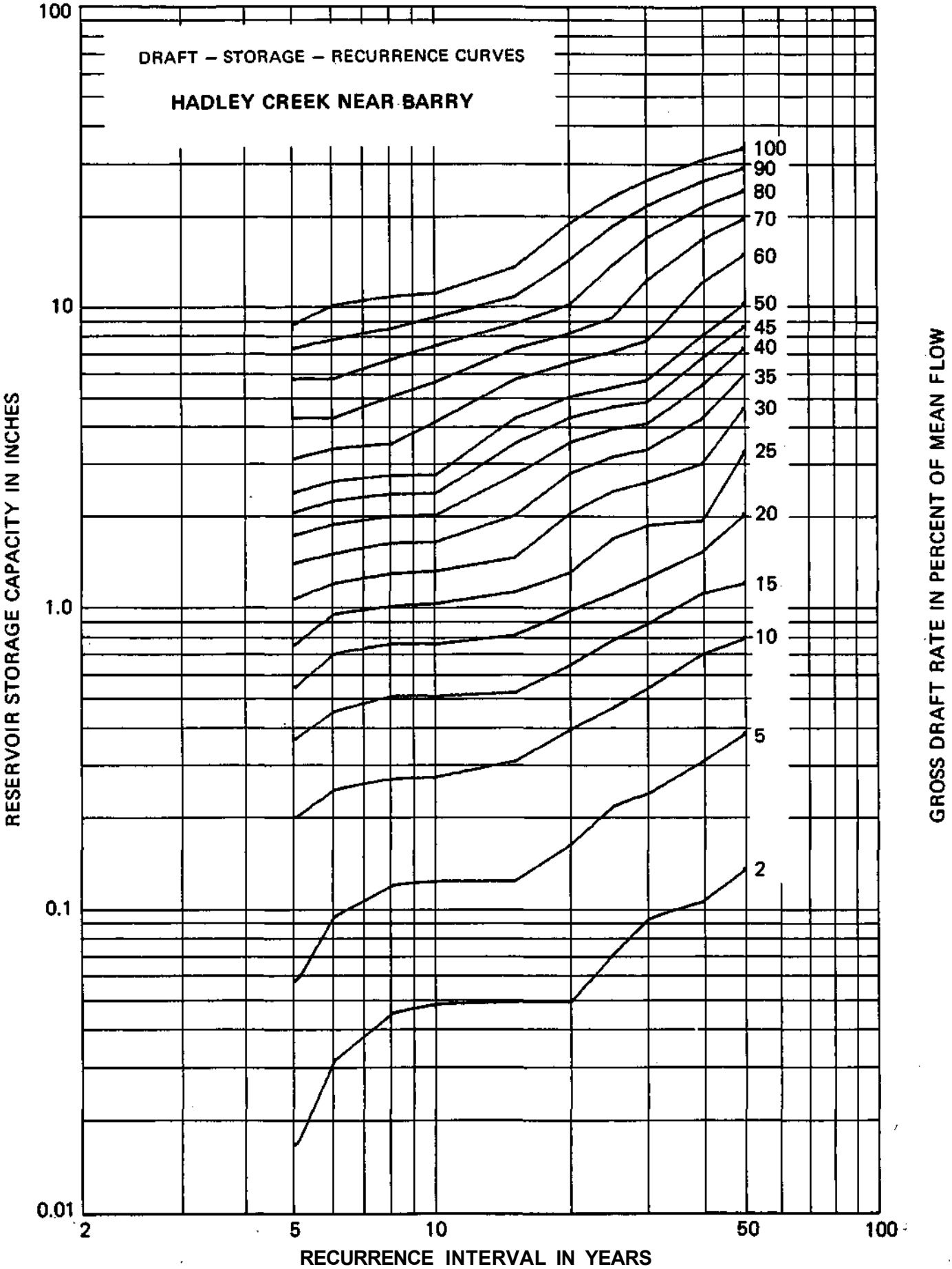
ACTUAL FLOW DATA: Sep 1955 to Oct 1978

INDEX STATION: Bay Creek at Nebo

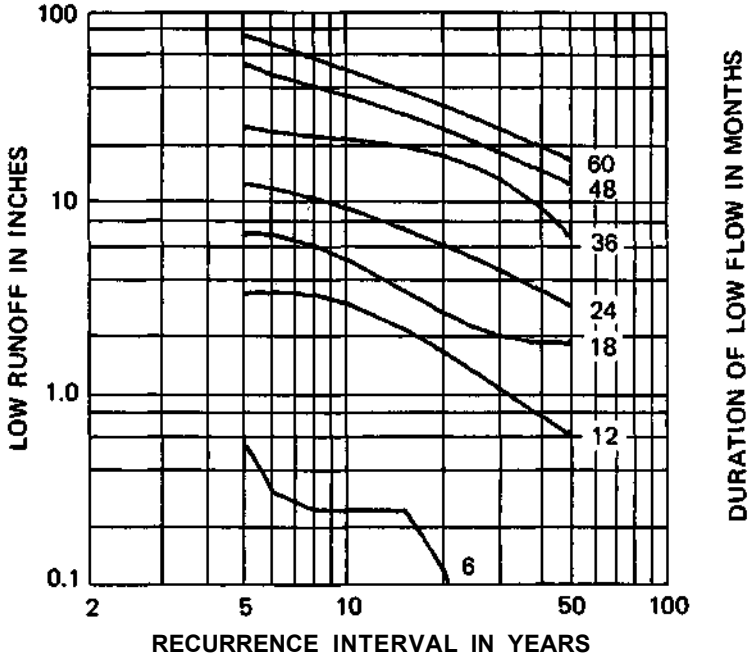
MEAN DISCHARGE: 0.82 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.06	.20	.36	.54	.74	1.05	1.38	1.70	2.03	2.36	3.07	4.18	5.65	7.12	8.59
	1	2	4	4	5	6	8	8	8	8	8	9	18	18	18	18
6	.03	.09	.25	.45	.69	.94	1.18	1.48	1.84	2.21	2.58	3.31	4.18	5.65	7.61	9.89
	2	3	4	6	6	6	6	9	9	9	9	9	18	18	28	28
8	.04	.12	.27	.50	.75	.99	1.27	1.60	1.97	2.33	2.70	3.44	4.94	6.57	8.30	10.59
	3	3	4	6	6	6	7	9	9	9	9	9	20	20	28	28
10	.05	.12	.27	.50	.75	1.01	1.30	1.62	1.98	2.35	2.72	4.08	5.55	7.28	9.08	10.87
	3	3	4	6	6	7	7	9	9	9	9	18	18	22	22	22
15	.05	.12	.30	.52	.80	1.11	1.44	1.99	2.72	3.46	4.19	5.66	7.13	8.63	10.59	13.30
	3	3	5	6	7	8	8	18	18	18	18	18	18	24	24	44
20	.05	.16	.39	.64	.97	1.29	2.03	2.76	3.50	4.23	4.97	6.43	8.05	10.01	14.09	18.50
	3	5	6	8	8	8	18	18	18	18	18	18	24	24	54	54
25	.07	.22	.46	.78	1.10	1.67	2.41	3.14	3.88	4.61	5.35	6.99	9.09	13.54	18.11	22.68
	6	6	6	8	8	18	18	18	18	18	18	24	54	56	56	56
30	.09	.24	.54	.88	1.24	1.85	2.59	3.32	4.06	4.79	5.66	7.62	12.10	16.67	21.24	25.81
	6	6	8	9	9	18	18	18	18	18	24	24	56	56	56	56
40	.11	.31	.70	1.11	1.51	1.92	2.99	4.21	5.44	6.66	7.89	11.81	16.39	20.96	25.53	30.10
	7	9	10	10	10	10	30	30	30	30	30	56	56	56	56	56
50	.14	.38	.79	1.20	2.02	3.25	4.56	5.86	7.17	8.48	10.05	14.62	19.19	23.76	28.34	33.03
	10	10	10	10	30	32	32	32	32	32	56	56	56	56	56	58


DRAFT – STORAGE – RECURRENCE CURVES
HADLEY CREEK NEAR BARRY
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55020.4 - HADLEY CREEK AT KINDERHOOK



LOCATION: In SE¼ NE¼ SEc 25, T4S, R7W, Pike County, at bridge on Illinois 96, 0.8 miles southeast of Kinderhook

DRAINAGE AREA: 72.7 square miles

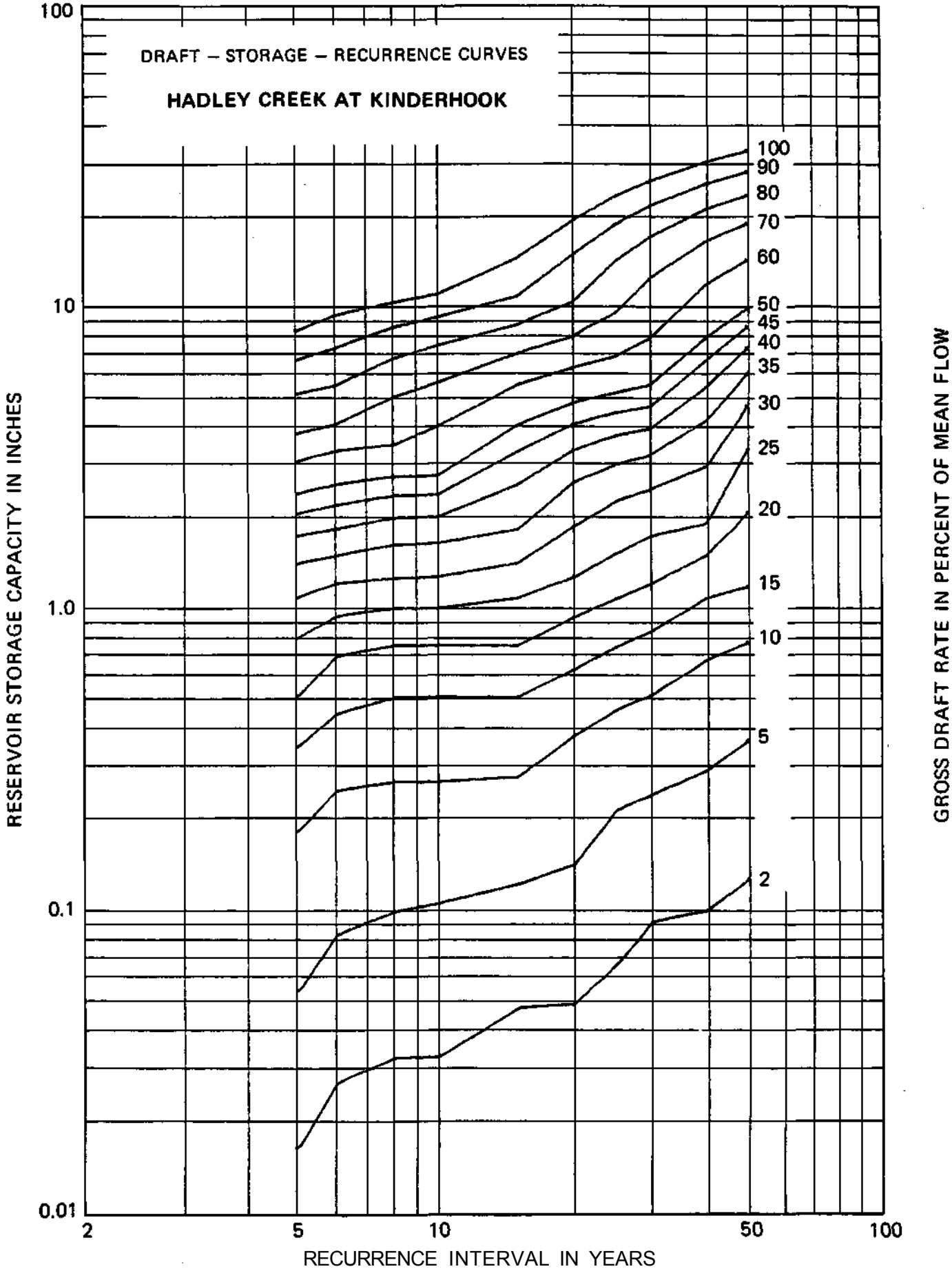
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Bay Creek at Nebo

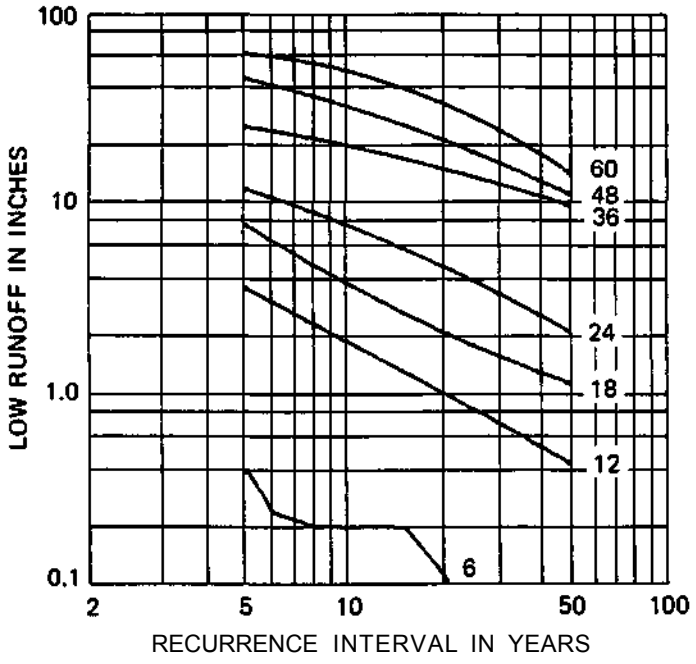
MEAN DISCHARGE: 0.81 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.05	.18	.34	.50	.79	1.07	1.38	1.71	2.03	2.36	3.01	3.72	5.06	6.52	8.16
	1	3	4	4	4	7	7	8	8	8	8	8	10	18	18	28
6	.03	.08	.24	.44	.68	.93	1.19	1.47	1.80	2.17	2.53	3.26	3.99	5.40	7.18	9.21
	2	3	4	6	6	6	7	7	9	9	9	9	9	22	22	28
8	.03	.10	.26	.50	.74	.98	1.24	1.60	1.96	2.33	2.69	3.42	4.94	6.64	8.43	10.21
	2	4	4	6	6	6	7	9	9	9	9	9	20	22	22	22
10	.03	.10	.26	.50	.74	.98	1.25	1.61	1.98	2.34	2.71	3.95	5.54	7.33	9.11	10.90
	2	3	4	6	6	6	9	9	9	9	9	18	22	22	22	22
15	.05	.12	.27	.50	.74	1.06	1.39	1.80	2.53	3.26	3.99	5.45	6.91	8.59	10.74	14.31
	3	3	5	6	6	8	8	18	18	18	18	18	18	24	44	44
20	.05	.14	.37	.62	.92	1.25	1.83	2.56	3.29	4.02	4.75	6.21	7.88	10.29	14.67	19.09
	3	5	6	6	8	8	18	18	18	18	18	18	24	54	54	56
25	.07	.21	.46	.74	1.06	1.50	2.23	2.96	3.69	4.42	5.15	6.79	9.46	14.00	18.55	23.09
	6	6	6	8	8	18	18	18	18	18	18	24	56	56	56	56
30	.09	.24	.51	.83	1.19	1.71	2.44	3.17	3.90	4.63	5.48	7.80	12.34	16.89	21.43	25.97
	6	6	8	8	9	18	18	18	18	18	24	56	56	56	56	56
40	.10	.29	.67	1.08	1.48	1.89	2.91	4.12	5.34	6.56	7.77	11.72	16.26	20.80	25.35	29.89
	7	9	10	10	10	10	30	30	30	30	30	56	56	56	56	56
50	.13	.36	.77	1.18	2.06	3.34	4.64	5.94	7.24	8.54	9.83	14.18	18.72	23.27	27.81	32.52
	9	10	10	10	30	32	32	32	32	32	32	56	56	56	56	60


DRAFT – STORAGE – RECURRENCE CURVES
HADLEY CREEK AT KINDERHOOK
100
10
1.0
0.1
0.01
RESERVOIR STORAGE CAPACITY IN INCHES
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW

55125 — BAY CREEK AT PITTSFIELD



LOCATION: In NE¼ SW¼ Sec 18, T5S, R3W, Pike County, at abandoned highway bridge, 0.1 miles downstream from bridge on Illinois 107, 1.4 miles northeast of Pittsfield

DRAINAGE AREA: 39.4 square miles

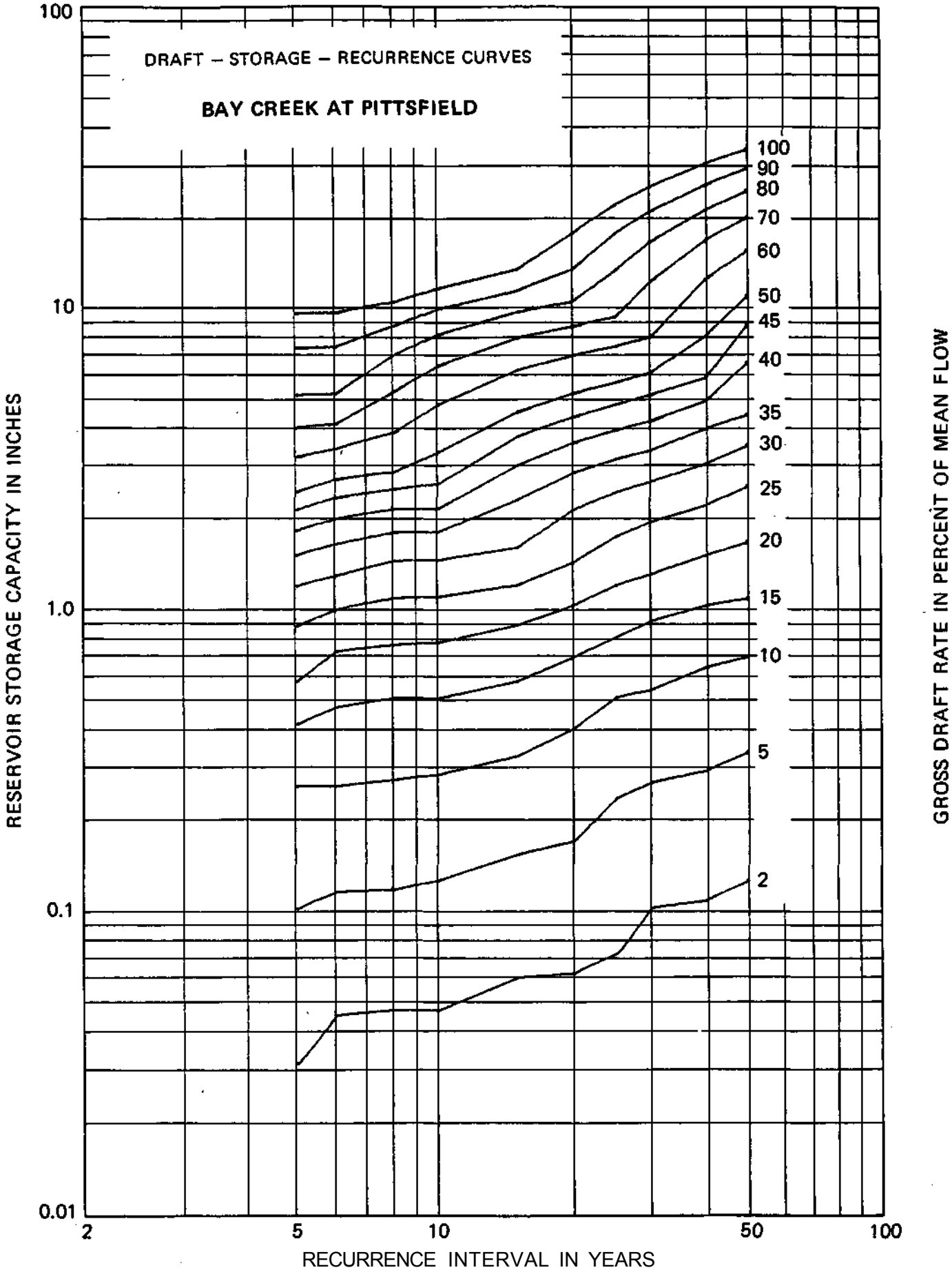
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: None

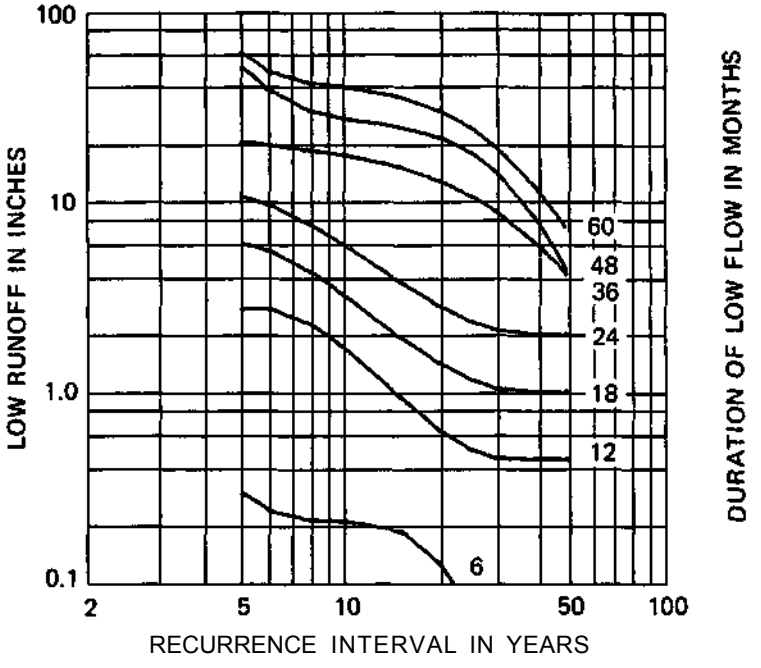
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OK MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.10	.25	.41	.56	.86	1.16	1.47	1.78	2.08	2.39	3.12	3.89	4.99	7.14	9.28
	2	4	4	4	5	8	8	8	8	8	8	10	10	28	28	28
6	.04	.11	.25	.46	.71	.97	1.26	1.60	1.94	2.29	2.63	3.32	4.01	5.05	7.19	9.34
	3	3	4	6	7	7	9	9	9	9	9	9	9	28	28	28
8	.05	.11	.26	.49	.74	1.06	1.41	1.75	2.10	2.44	2.78	3.76	5.14	6.76	8.44	10.13
	3	3	6	6	7	9	9	9	9	9	9	18	20	22	22	22
10	.05	.12	.28	.49	.76	1.07	1.42	1.76	2.11	2.55	3.24	4.66	6.25	7.93	9.61	11.30
	3	4	4	6	8	9	9	9	9	18	18	20	22	22	22	22
15	.06	.15	.32	.56	.87	1.18	1.57	2.26	2.94	3.66	4.42	6.06	7.74	9.42	11.10	13.09
	4	4	5	8	8	8	18	18	18	20	20	22	22	22	22	46
20	.06	.17	.39	.68	1.01	1.40	2.09	2.78	3.49	4.26	5.10	6.78	8.46	10.25	13.11	17.29
	4	5	7	8	10	18	18	18	20	22	22	22	22	24	46	56
25	.07	.23	.50	.79	1.18	1.71	2.40	3.09	3.85	4.69	5.53	7.29	9.12	13.02	17.30	21.58
	7	7	7	10	10	18	18	18	22	22	22	24	24	56	56	56
30	.10	.26	.53	.90	1.28	1.91	2.60	3.30	4.14	5.05	5.96	7.80	11.96	16.24	20.52	24.81
	7	7	7	10	10	18	18	20	22	24	24	24	56	56	56	56
40	.11	.29	.63	1.01	1.49	2.17	2.98	3.90	4.82	5.73	7.87	12.15	16.43	20.71	25.06	29.50
	7	9	9	10	18	18	24	24	24	24	56	56	56	56	58	58
50	.12	.33	.69	1.07	1.64	2.51	3.43	4.35	6.43	8.57	10.73	15.17	19.60	24.04	28.47	32.91
	9	9	10	10	18	24	24	24	56	56	58	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
BAY CREEK AT PITTSFIELD
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55130 - BAY CREEK AT NEBÓ



LOCATION: In NW¼ Sec 19, T7S, R3W, Pike County, 140 feet downstream from highway bridge, 500 feet upstream from Spring Creek, 0.2 miles west of Nebo

DRAINAGE AREA: 161 square miles

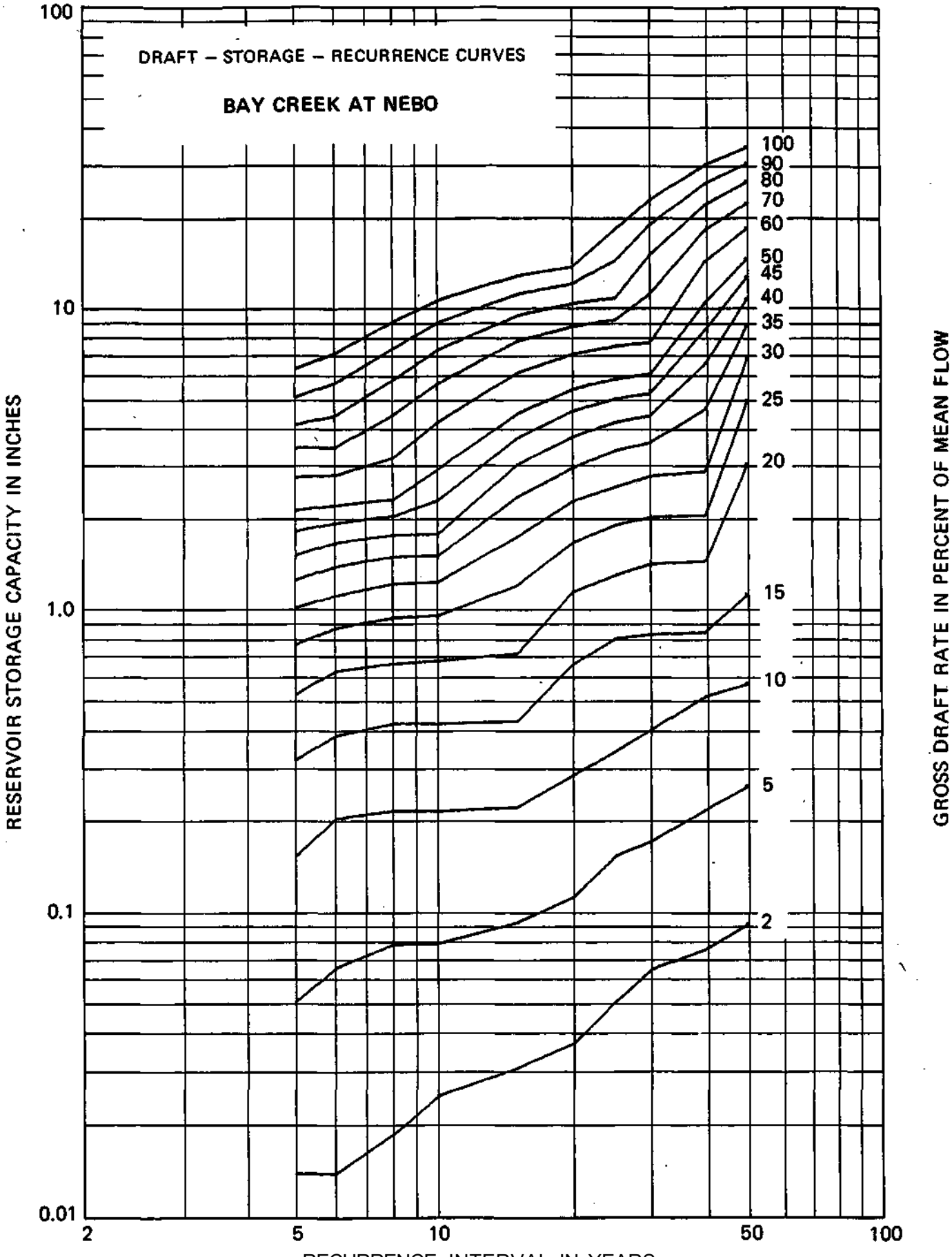
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: None

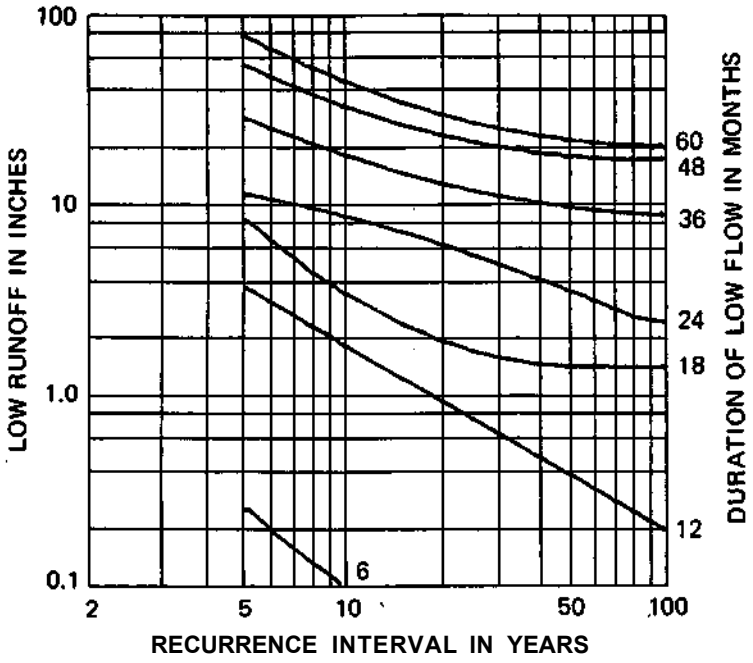
MEAN DISCHARGE: 0.68 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.05	.15	.31	.52	.75	.99	1.22	1.48	1.78	2.08	2.69	3.36	4.04	4.98	6.20
	1	3	3	6	6	7	7	7	9	9	9	9	10	10	18	18
6	.01	.06	.20	.38	.61	.85	1.08	1.35	1.62	1.89	2.16	2.73	3.36	4.31	5.53	6.92
	1	4	4	7	7	7	7	8	8	8	8	9	10	18	18	22
8	.02	.08	.21	.41	.65	.92	1.19	1.46	1.73	2.00	2.27	3.13	4.34	5.68	7.19	8.81
	2	4	4	7	7	8	8	8	8	8	8	18	18	22	24	24
10	.02	.08	.21	.41	.66	.93	1.21	1.48	1.75	2.26	2.86	4.11	5.53	7.13	8.75	10.37
	2	3	4	7	8	8	8	8	8	18	18	20	22	24	24	24
15	.03	.09	.22	.42	.70	1.18	1.71	2.32	2.97	3.65	4.39	6.01	7.63	9.25	10.87	12.49
	3	3	6	6	14	14	18	18	20	20	24	24	24	24	24	24
20	.04	.11	.28	.65	1.12	1.64	2.25	2.91	3.69	4.50	5.31	6.93	8.55	10.17	11.79	13.41
	3	5	6	14	14	18	18	20	24	24	24	24	24	24	24	24
25	.05	.15	.34	.79	1.28	1.89	2.52	3.33	4.14	4.95	5.76	7.38	9.00	10.62	14.11	17.89
	5	5	6	14	18	18	24	24	24	24	24	24	24	24	56	56
30	.06	.17	.40	.82	1.39	2.00	2.74	3.55	4.36	5.17	5.98	7.60	10.99	14.77	18.55	22.40
	5	6	9	14	18	18	24	24	24	24	24	24	56	56	56	58
40	.08	.22	.51	.83	1.43	2.04	2.85	4.58	6.47	8.36	10.25	14.03	17.82	21.60	25.46	29.37
	6	7	9	10	18	24	24	56	56	56	56	56	56	56	58	58
50	.09	.26	.56	1.11	3.00	4.89	6.78	8.67	10.56	12.45	14.34	18.13	21.92	25.83	29.75	33.67
	7	9	9	56	56	56	56	56	56	56	56	56	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
BAY CREEK AT NEBO
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
100
10
1.0
0.1
0.01
2
5
10
50
100
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS

55844 — DROWNING FORK AT BUSHNELL



LOCATION: In NE¼ SE¼ Sec 29, T7N, R1W, McDonough County, at bridge, 200 feet above Burlington Northern Railroad bridge, and 1 mile northwest of Bushnell

DRAINAGE AGREA: 26.3 square miles

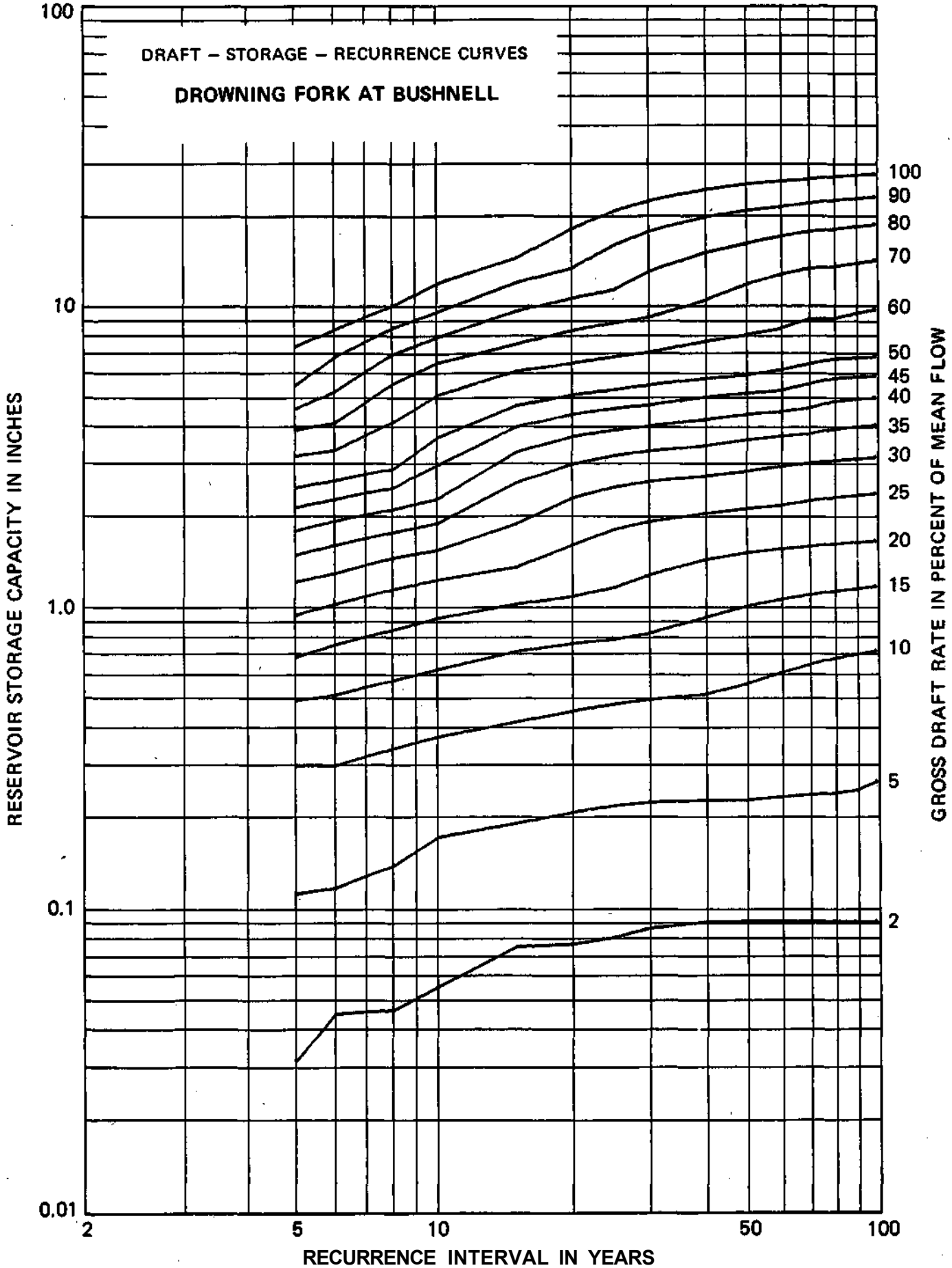
ACTUAL FLOW DATA: Jun 1960 to Oct 1978

INDEX STATION: LaMoine River at Ripley

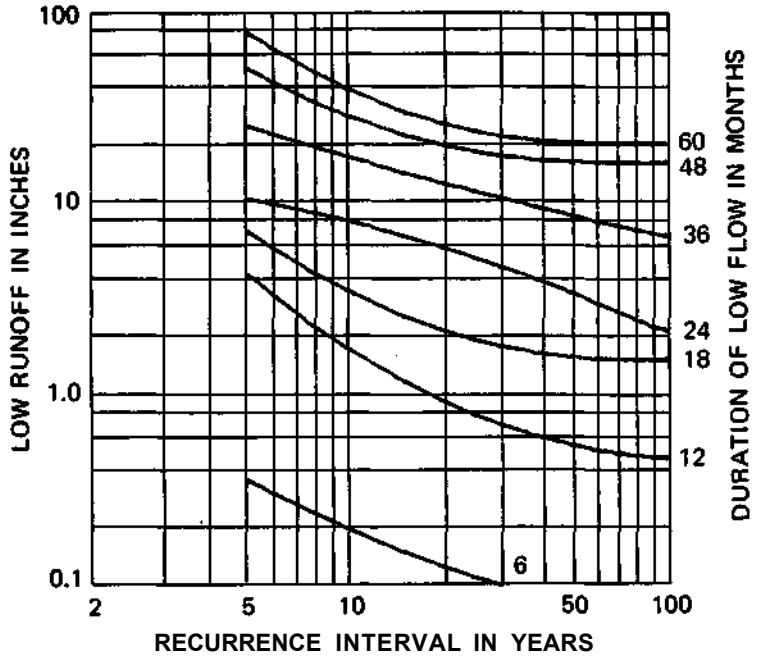
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.11	.29	.48	.67	.93	1.20	1.47	1.76	2.10	2.45	3.14	3.82	4.51	5.39	7.22
	3	4	5	5	5	7	7	7	9	9	9	9	9	10	24	24
6	.04	.12	.29	.50	.74	1.01	1.27	1.57	1.90	2.24	2.58	3.27	4.03	5.12	6.65	8.18
	3	4	5	6	7	7	7	8	9	9	9	9	10	20	20	20
8	.05	.14	.33	.56	.83	1.13	1.43	1.74	2.07	2.44	2.83	4.06	5.43	6.81	8.30	9.83
	3	4	6	6	7	8	8	8	9	10	10	18	18	18	20	20
10	.05	.17	.37	.61	.91	1.21	1.52	1.87	2.25	2.92	3.61	4.99	6.36	7.74	9.39	11.68
	4	5	6	7	8	8	8	10	10	18	18	18	18	18	30	30
15	.07	.19	.41	.71	1.01	1.34	1.87	2.55	3.24	3.93	4.62	6.00	7.37	9.49	11.78	14.22
	5	5	6	8	8	10	18	18	18	18	18	18	18	30	30	40
20	.08	.21	.45	.75	1.08	1.59	2.27	2.96	3.65	4.34	5.03	6.40	8.20	10.49	13.19	17.78
	5	6	8	8	10	18	18	18	18	18	18	18	30	30	60	60
25	.08	.22	.47	.78	1.16	1.80	2.48	3.17	3.86	4.55	5.24	6.74	8.70	11.22	15.80	20.39
	6	6	8	8	11	18	18	18	18	18	18	20	30	60	60	60
30	.09	.22	.49	.82	1.27	1.92	2.60	3.29	3.98	4.67	5.44	6.97	9.09	12.91	17.49	22.08
	6	6	8	11	16	18	18	18	18	20	20	20	28	60	60	60
40	.09	.23	.51	.92	1.43	2.04	2.72	3.43	4.19	4.96	5.72	7.58	10.35	14.92	19.51	24.09
	6	6	8	12	16	16	18	20	20	20	20	28	56	60	60	60
50	.09	.23	.56	1.01	1.51	2.13	2.83	3.60	4.36	5.13	5.89	7.98	11.73	16.02	20.61	25.19
	6	7	11	12	16	16	20	20	20	20	20	28	56	60	60	60
60	.09	.24	.61	1.06	1.57	2.18	2.95	3.71	4.48	5.24	6.15	8.39	12.68	16.96	21.25	25.84
	6	7	12	12	16	20	20	20	20	20	24	56	56	56	60	60
70	.09	.24	.65	1.11	1.60	2.27	3.03	3.79	4.61	5.53	6.45	9.04	13.33	17.61	21.89	26.33
	6	7	12	12	14	20	20	20	24	24	24	56	56	56	58	58
80	.09	.24	.68	1.14	1.63	2.33	3.09	3.94	4.86	5.77	6.69	9.09	13.52	17.96	22.39	26.83
	6	7	12	12	14	20	20	24	24	24	24	56	58	58	58	58
90	.09	.25	.70	1.16	1.66	2.37	3.14	4.02	4.94	5.85	6.77	9.47	13.90	18.34	22.77	27.21
	6	9	12	12	14	20	20	24	24	24	24	58	58	58	58	58
100	.09	.27	.72	1.18	1.68	2.41	3.17	4.07	4.99	5.91	6.82	9.77	14.20	18.64	23.07	27.51
	6	12	12	12	14	20	20	24	24	24	24	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
DROWNING FORK AT BUSHNELL
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55845 — LA MOINE RIVER AT COLMAR



LOCATION: In SE¼ SW¼ Sec 18, T14N, R4W, McDonough County, at bridge on Illinois 61, 1 mile southwest of Colmar, 1.8 miles upstream from Troublesome Creek

DRAINAGE AREA: 655 square miles

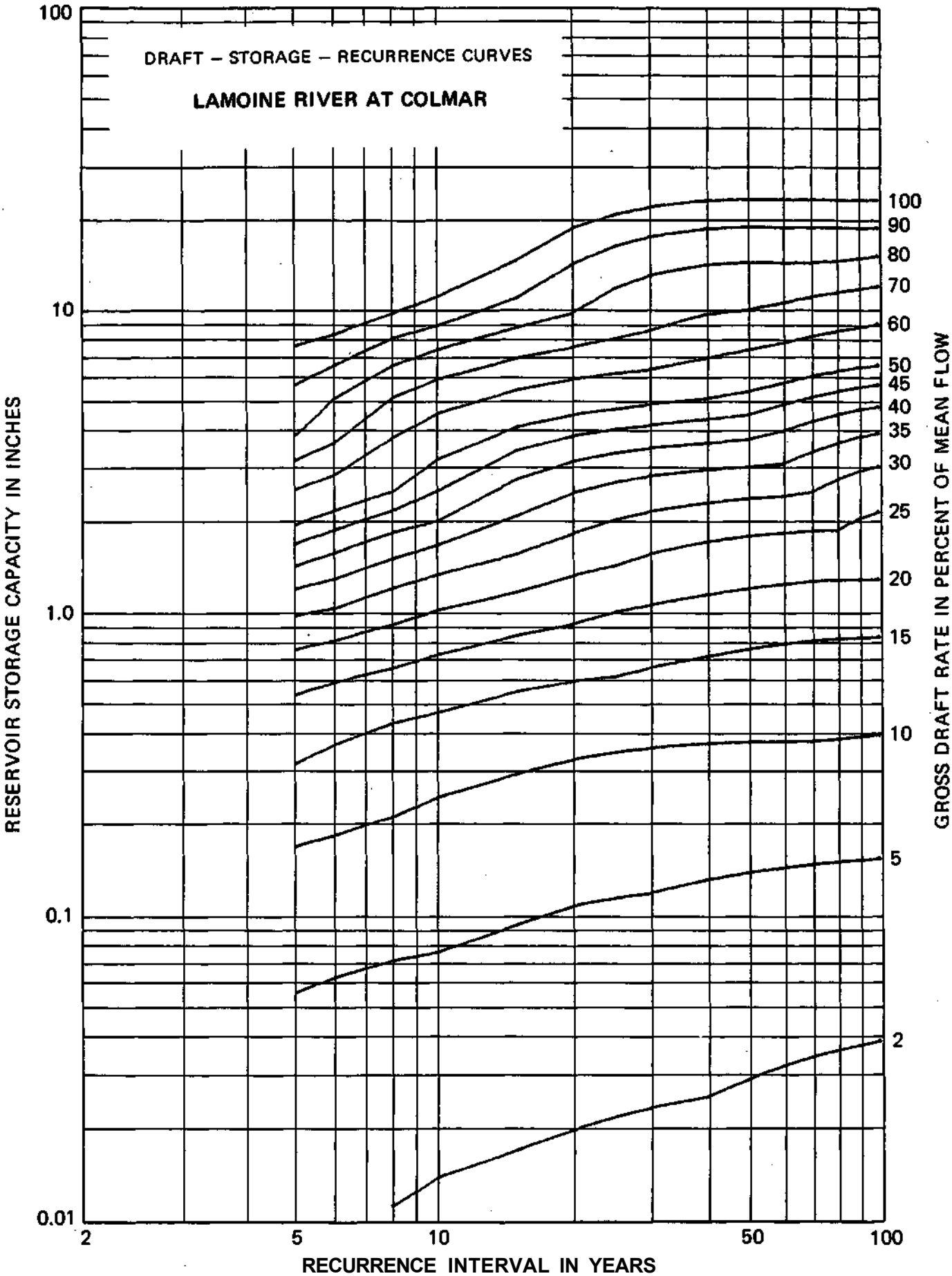
ACTUAL FLOW DATA: Oct 1944 to Oct 1978

INDEX STATION: LaMoine River at Ripley

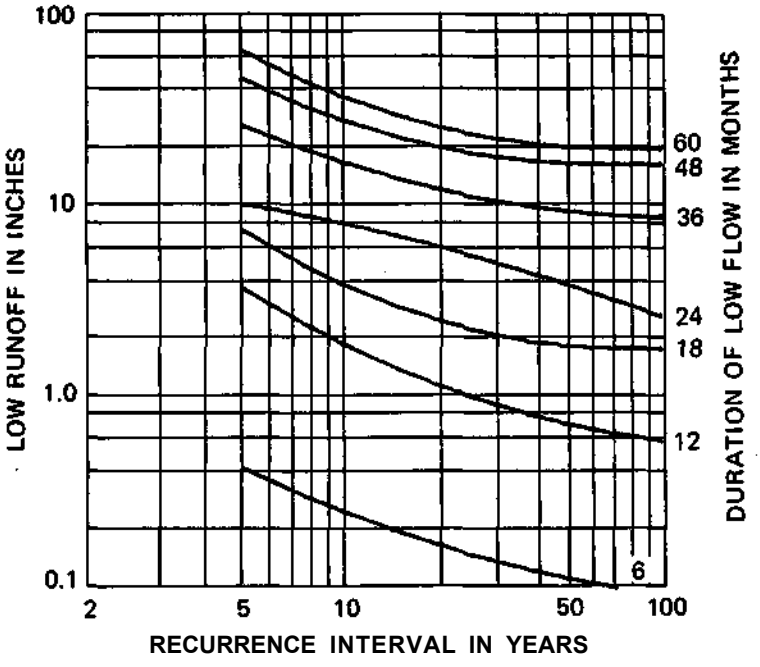
MEAN DISCHARGE: 0.72 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.05	.16	.31	.52	.74	.95	1.17	1.39	1.64	1.90	2.47	3.08	3.73	5.48	7.36
	1	3	4	4	6	6	6	6	7	7	7	8	9	9	26	26
6	.01	.06	.18	.36	.57	.79	1.01	1.26	1.53	1.82	2.11	2.76	3.52	4.93	6.38	8.04
	1	3	4	6	6	6	7	7	8	8	8	9	18	20	20	26
8	.01	.07	.21	.42	.64	.89	1.18	1.47	1.79	2.12	2.44	3.65	4.96	6.36	7.81	9.48
	2	3	5	6	7	7	8	8	9	9	9	18	18	20	20	28
10	.01	.07	.24	.46	.71	1.00	1.30	1.62	1.95	2.45	3.10	4.41	5.72	7.16	8.61	10.76
	2	3	6	6	7	8	9	9	9	18	18	18	20	20	20	30
15	.02	.09	.29	.54	.82	1.14	1.52	2.03	2.69	3.34	3.99	5.29	6.72	8.51	10.68	14.23
	2	5	6	7	8	9	11	18	18	18	18	18	20	30	30	58
20	.02	.11	.32	.58	.90	1.30	1.78	2.42	3.07	3.73	4.38	5.76	7.31	9.52	13.82	18.16
	3	5	7	8	11	11	16	18	18	18	18	20	30	58	60	60
25	.02	.11	.34	.60	.99	1.40	1.98	2.64	3.29	3.94	4.59	6.04	7.86	11.54	15.88	20.22
	3	5	7	8	11	16	18	18	18	18	18	20	30	60	60	60
30	.02	.12	.35	.65	1.05	1.53	2.11	2.76	3.42	4.07	4.77	6.22	8.38	12.72	17.06	21.41
	3	6	7	11	11	16	18	18	18	18	20	20	60	60	60	60
40	.02	.13	.36	.71	1.13	1.68	2.26	2.91	3.56	4.26	4.99	6.78	9.48	13.82	18.16	22.50
	3	6	7	11	12	16	16	18	18	20	20	28	60	60	60	60
50	.03	.14	.37	.75	1.18	1.76	2.34	2.97	3.66	4.41	5.28	7.21	9.81	14.10	18.44	22.78
	4	6	7	12	14	16	16	18	20	24	24	28	44	60	60	60
60	.03	.14	.37	.78	1.23	1.81	2.39	3.04	3.91	4.78	5.65	7.63	10.37	14.10	18.44	22.78
	4	6	7	12	16	16	16	24	24	24	24	36	42	60	60	60
70	.03	.15	.37	.80	1.25	1.83	2.46	3.33	4.20	5.07	5.94	8.04	10.86	14.10	18.44	22.78
	4	6	7	12	16	16	24	24	24	24	24	36	42	60	60	60
80	.04	.15	.38	.81	1.27	1.85	2.70	3.57	4.44	5.30	6.17	8.37	11.24	14.28	18.44	22.78
	4	6	12	12	16	16	24	24	24	24	24	36	42	42	60	60
90	.04	.15	.39	.82	1.27	2.03	2.89	3.76	4.63	5.50	6.37	8.64	11.57	14.60	18.44	22.78
	4	6	12	12	16	24	24	24	24	24	24	36	42	42	60	60
100	.04	.15	.39	.83	1.28	2.12	2.99	3.86	4.73	5.60	6.46	8.87	11.84	14.87	18.44	22.78
	4	6	12	12	16	24	24	24	24	24	24	36	42	42	60	60


DRAFT – STORAGE – RECURRENCE CURVES
LAMOINE RIVER AT COLMAR
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55850 - LA MOINE RIVER AT RIPLEY



LOCATION: In NE¼ Sec 33, T1N, R2W, Brown County, 600 feet downstream from bridge on U.S. 24, 0.2 miles east of Ripley.

DRAINAGE AREA: 1293 square miles

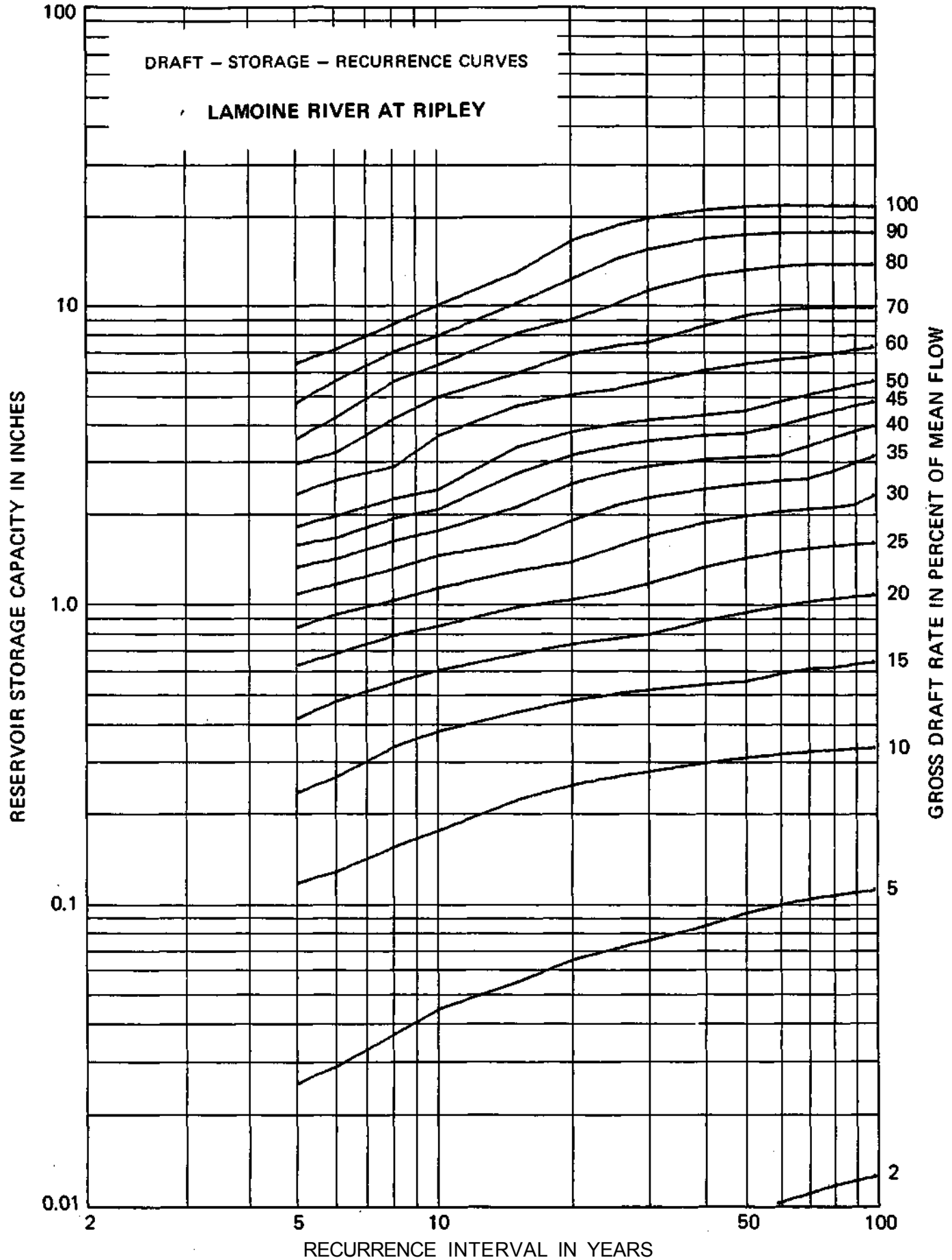
ACTUAL FLOW DATA: Mar 1921 to Oct 1978. Prior to Oct 1931 published as Crooked Creek at Ripley

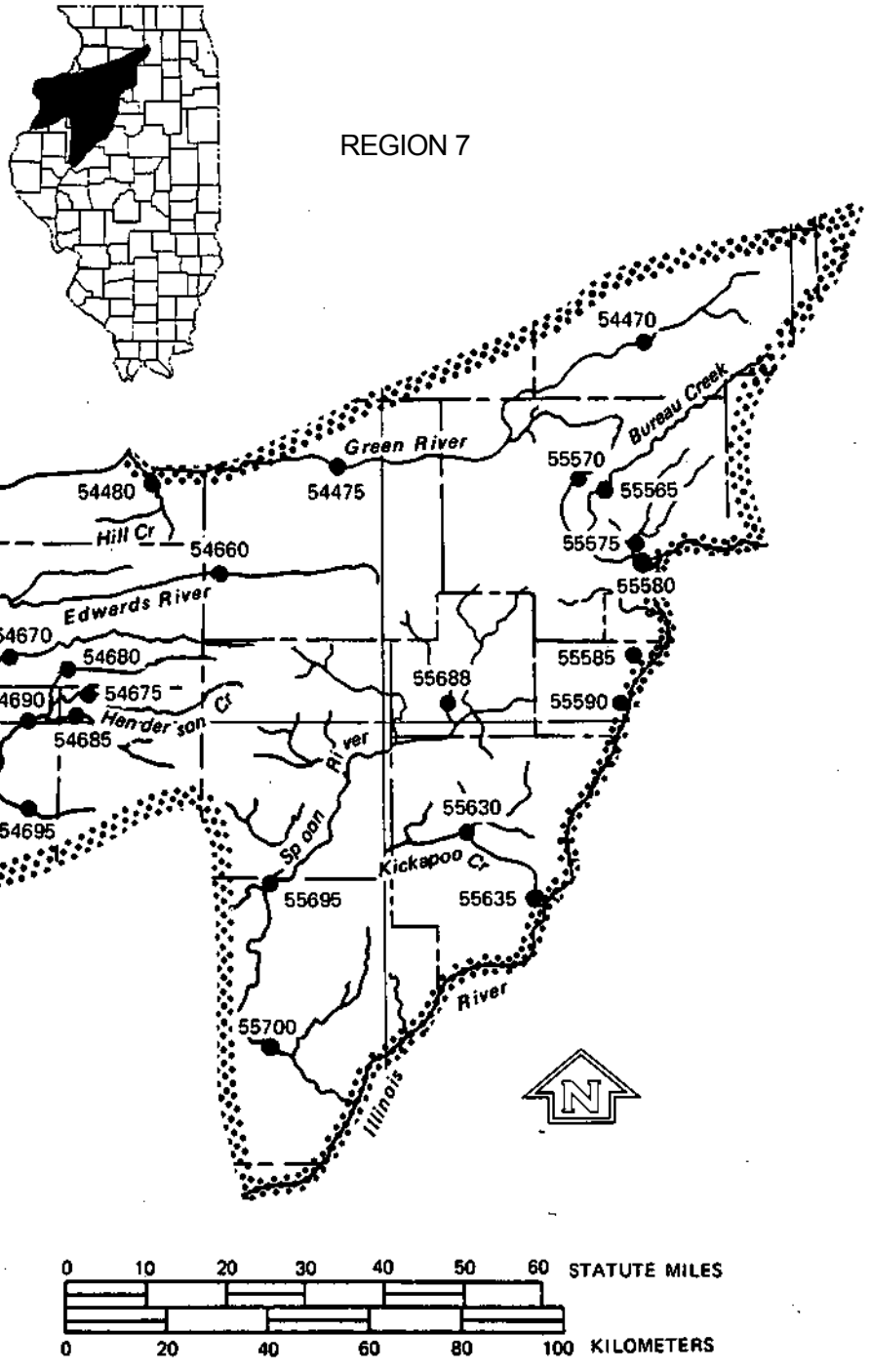
INDEX STATION: None

MEAN DISCHARGE: 0.68 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.11	.23	.41	.61	.82	1.05	1.29	1.53	1.76	2.28	2.89	3.49	4.61	6.23
	1	2	3	4	6	6	7	7	7	7	7	9	9	9	24	24
6	.00	.03	.12	.26	.46	.67	.90	1.14	1.37	1.61	1.92	2.53	3.14	4.10	5.46	6.91
	1	2	3	6	6	6	7	7	7	9	9	9	9	20	20	22
8	.00	.04	.15	.33	.53	.76	1.00	1.27	1.58	1.88	2.19	2.80	4.06	5.42	6.77	8.36
	1	3	4	6	6	7	7	9	9	9	9	18	20	20	20	28
10	.00	.04	.17	.37	.58	.82	1.10	1.41	1.71	2.02	2.35	3.57	4.81	6.16	7.68	9.71
	1	3	5	6	7	7	9	9	9	9	18	18	20	20	30	30
15	.00	.05	.22	.43	.66	.95	1.26	1.56	2.06	2.67	3.28	4.50	5.79	7.82	9.86	12.51
	1	3	6	7	7	9	9	9	18	18	18	18	30	30	30	60
20	.00	.06	.24	.47	.72	1.01	1.35	1.86	2.47	3.08	3.69	4.91	6.69	8.73	11.91	15.98
	1	4	6	7	8	9	11	18	18	18	18	18	30	30	60	60
25	.00	.07	.26	.49	.75	1.08	1.51	2.09	2.70	3.31	3.92	5.14	7.14	9.78	13.85	17.91
	1	4	6	7	8	11	16	18	18	18	18	18	30	60	60	60
30	.01	.07	.27	.51	.78	1.15	1.66	2.23	2.84	3.45	4.06	5.45	7.36	10.97	15.04	19.11
	2	5	6	7	11	12	16	18	18	18	18	28	30	60	60	60
40	.01	.08	.29	.53	.86	1.30	1.84	2.38	2.99	3.60	4.21	5.95	8.32	12.27	16.33	20.40
	2	6	7	8	11	14	16	18	18	18	18	28	56	60	60	60
50	.01	.09	.30	.54	.92	1.40	1.94	2.49	3.07	3.68	4.37	6.27	9.05	12.84	16.91	20.97
	2	6	7	8	12	16	16	16	18	18	28	28	56	56	60	60
60	.01	.10	.31	.58	.97	1.47	2.01	2.55	3.10	3.88	4.70	6.48	9.44	13.23	17.13	21.19
	2	6	7	11	14	16	16	16	18	24	24	28	56	56	60	60
70	.01	.10	.32	.60	1.01	1.52	2.06	2.60	3.34	4.16	4.97	6.64	9.64	13.44	17.23	21.21
	2	6	7	11	14	16	16	16	24	24	24	28	56	56	56	60
80	.01	.11	.32	.61	1.04	1.55	2.09	2.76	3.57	4.38	5.20	6.82	9.72	13.52	17.31	21.21
	2	6	7	12	14	16	16	24	24	24	24	24	56	56	56	60
90	.01	.11	.33	.62	1.05	1.57	2.13	2.95	3.76	4.57	5.39	7.01	9.72	13.52	17.31	21.21
	2	6	7	12	14	16	24	24	24	24	24	24	56	56	56	60
100	.01	.11	.33	.64	1.07	1.59	2.30	3.11	3.92	4.74	5.55	7.18	9.72	13.52	17.31	21.21
	2	6	7	12	14	16	24	24	24	24	24	24	56	56	56	60


DRAFT – STORAGE – RECURRENCE CURVES
LAMOINE RIVER AT RIPLEY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

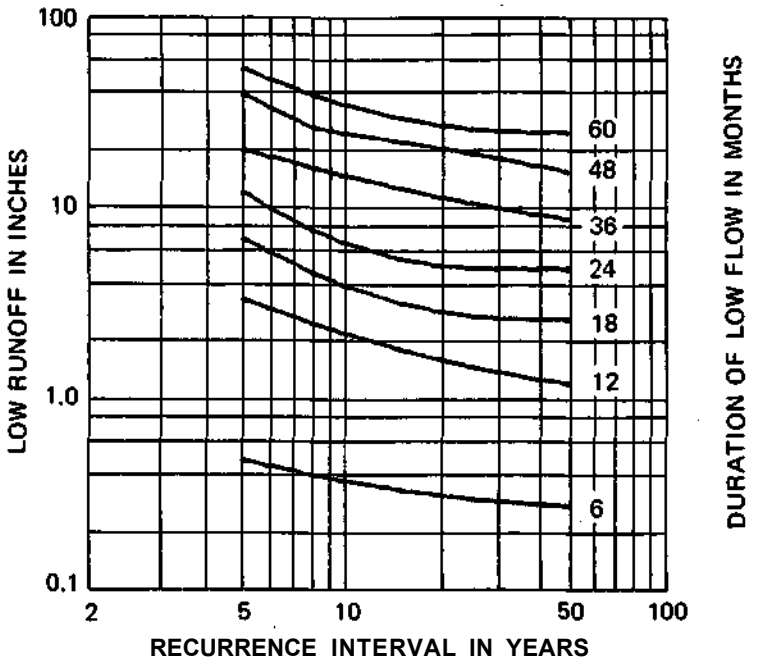

REGION 7
54470
Bureau Creek
Green River
55570
55565
54480
54475
Hill Cr
54660
55575
55580
54665
Edwards River
54670
54680
55585
Mississippi
54690
54675
55688
55590
Henderson Ck
54685
River
55630
54695
Spoon River
Kickapoo Cr
55695
55635
55700
Illinois River
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

REGION 7

USGS Gage No.	Name of Station	Drainage Area (sq mi)
54470	Green River at Amboy	201
54475	Green River near Geneseo	1003
54480	Mill Creek at Milan	62.4
54660	Edwards River near Orion	155
54665	Edwards River near New Boston	445
54670	Pope Creek near Keithsburg	183
54675	Henderson Creek near Little York	151
54680	North Henderson Creek near Seaton	66.4
54685	Cedar Creek at Little York	130
54690	Henderson Creek near Oquawka	432
54695	South Henderson Creek at Biggsville	82.9
55565	Bureau Creek at Princeton	196
55570	West Bureau Creek at Wyanet	86.7
55575	East Bureau Creek near Bureau	99
55580	Bureau Creek at Bureau	481
55585	Crow Creek (west) near Henry	56.2
55590	Gimlet Creek at Sparland	5.66
55630	Kickapoo Creek near Kickapoo	119
55635	Kickapoo Creek at Peoria	297
55688	Indian Creek near Wyoming	62.7
55695	Spoon River at London Mills	1062
55700	Spoon River at Seville	1636

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
54470	54475	1939-1958	19	1936-1978	42	.63
54475	-	1936-1978	42	-	-	.66
54480	-	1941-1978	37	-	-	.76
54660	55700	1940-1978	38	1914-1978	64	.72
54665	55700	1934-1978	44	1914-1978	64	.68
54670	55700	1934-1978	44	1914-1978	64	.64
54675	55700	1940-1958	18	1914-1978	64	.70
54680	55700	1940-1951	11	1914-1978	64	.67
54685	55700	1940-1971	31	1914-1978	64	.79
54690	55700	1934-1978	44	1914-1978	64	.72
54695	55700	1939-1971	32	1914-1978	64	.69
55565	-	1936-1978	42	-	-	.73
55570	55565	1936-1966	30	1936-1978	42	.66
55575	55565	1936-1966	30	1936-1978	42	.57
55580	55565	1940-1951	11	1936-1978	42	.79
55585	55700	1949-1971	22	1914-1978	64	.80
55590	55700	1949-1971	22	1914-1978	64	.79
55630	55700	1944-1962	18	1914-1978	64	.66
55635	55700	1942-1971	29	1914-1978	64	.67
55688	55700	1959-1978	19	1914-1978	64	.70
55695	55700	1942-1978	36	1914-1978	64	.70
55700	-	1914-1978	64	-	-	.71

54470 - GREEN RIVER AT AMBOY



LOCATION: In SE¼ NE¼ Sec 22, T20N, R10E, Lee County, at bridge on U. S. 52, at southeast edge of Amboy

DRAINAGE AREA: 201 square miles

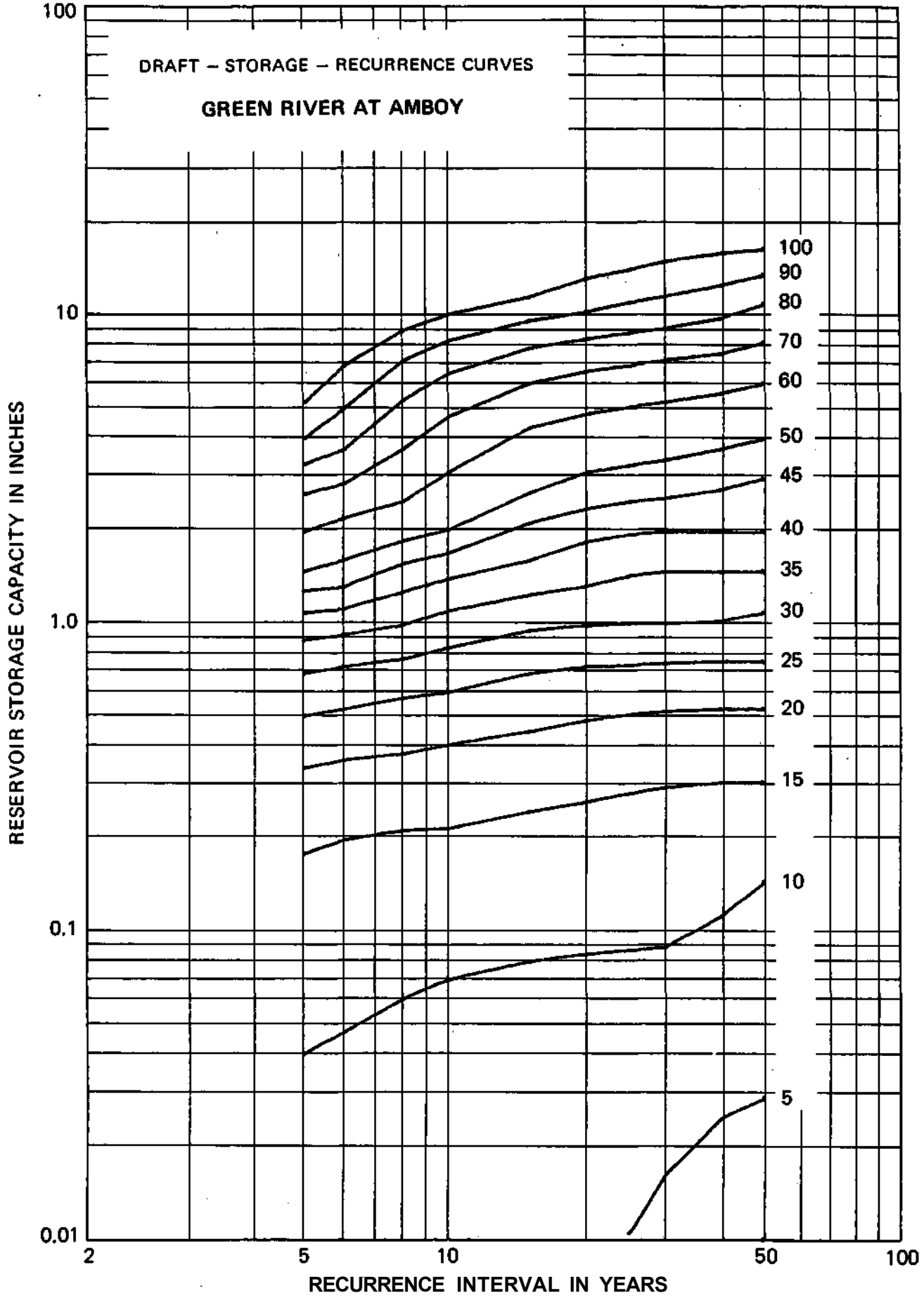
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Green River near Geneseo

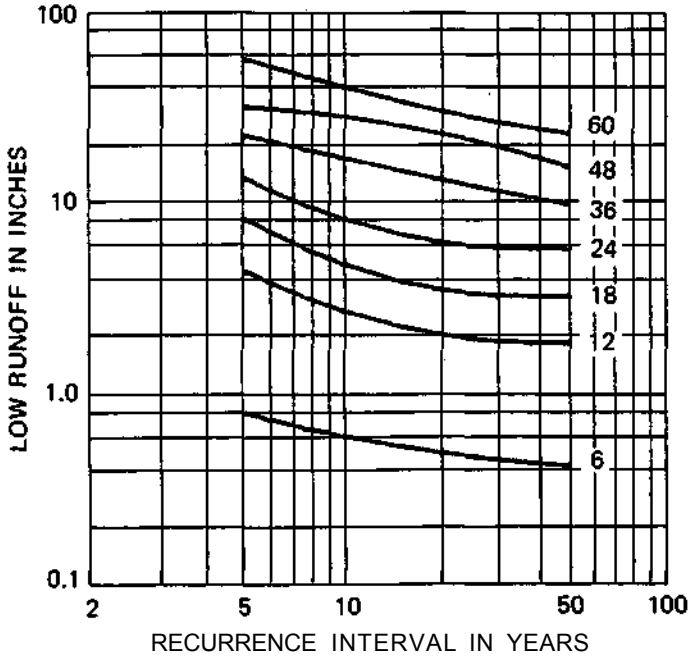
MEAN DISCHARGE: 0.63 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.04	.17	.33	.49	.67	.86	1.05	1.23	1.42	1.91	2.54	3.18	3.87	5.08
	2	1	2	5	5	5	6	6	6	6	6	10	10	11	11	30
6	.00	.00	.05	.19	.35	.51	.70	.89	1.08	1.27	1.55	2.12	2.75	3.55	4.85	6.66
	1	1	3	5	5	6	6	6	6	6	9	10	10	20	28	30
8	.00	.00	.06	.21	.37	.55	.74	.95	1.22	1.50	1.79	2.40	3.58	5.18	6.94	8.70
	1	1	4	5	6	6	6	8	9	9	9	16	20	28	28	28
10	.00	.00	.07	.21	.39	.58	.81	1.06	1.34	1.63	1.94	3.00	4.58	6.30	8.06	9.82
	1	1	4	5	6	6	8	9	9	9	16	20	26	28	28	28
15	.00	.00	.08	.24	.44	.67	.92	1.20	1.54	2.05	2.57	4.21	5.87	7.63	9.40	11.20
	3	1	4	6	7	8	8	9	16	16	26	26	28	28	28	30
20	.00	.01	.08	.26	.47	.71	.96	1.28	1.78	2.29	3.01	4.67	6.43	8.19	10.06	12.87
	3	2	4	6	7	8	9	16	16	16	26	28	28	28	30	46
25	.00	.01	.09	.28	.50	.72	.98	1.39	1.89	2.42	3.18	4.94	6.73	8.62	10.81	13.84
	3	1	4	7	7	8	9	16	16	18	28	28	30	30	46	54
30	.00	.02	.09	.29	.51	.73	.98	1.43	1.93	2.48	3.31	5.14	7.02	8.91	11.31	14.70
	3	1	6	7	7	7	9	16	16	18	28	30	30	30	54	54
40	.01	.02	.11	.30	.52	.74	1.00	1.43	1.93	2.66	3.60	5.49	7.37	9.63	12.30	15.67
	1	1	5	7	7	7	12	14	18	30	30	30	30	42	52	54
50	.01	.03	.14	.30	.52	.74	1.06	1.44	1.93	2.90	3.90	5.91	8.03	10.68	13.32	16.11
	1	1	5	7	7	7	12	12	18	32	32	32	42	42	42	54


DRAFT – STORAGE – RECURRENCE CURVES
GREEN RIVER AT AMBOY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

54475 - GREEN RIVER NEAR GENESEO



LOCATION: In NE¼ SW¼ Sec 4, T17N, R3E, Henry County, at bridge on Illinois 82, 2.5 miles north of Geneseo

DRAINAGE AREA: 1003 square miles

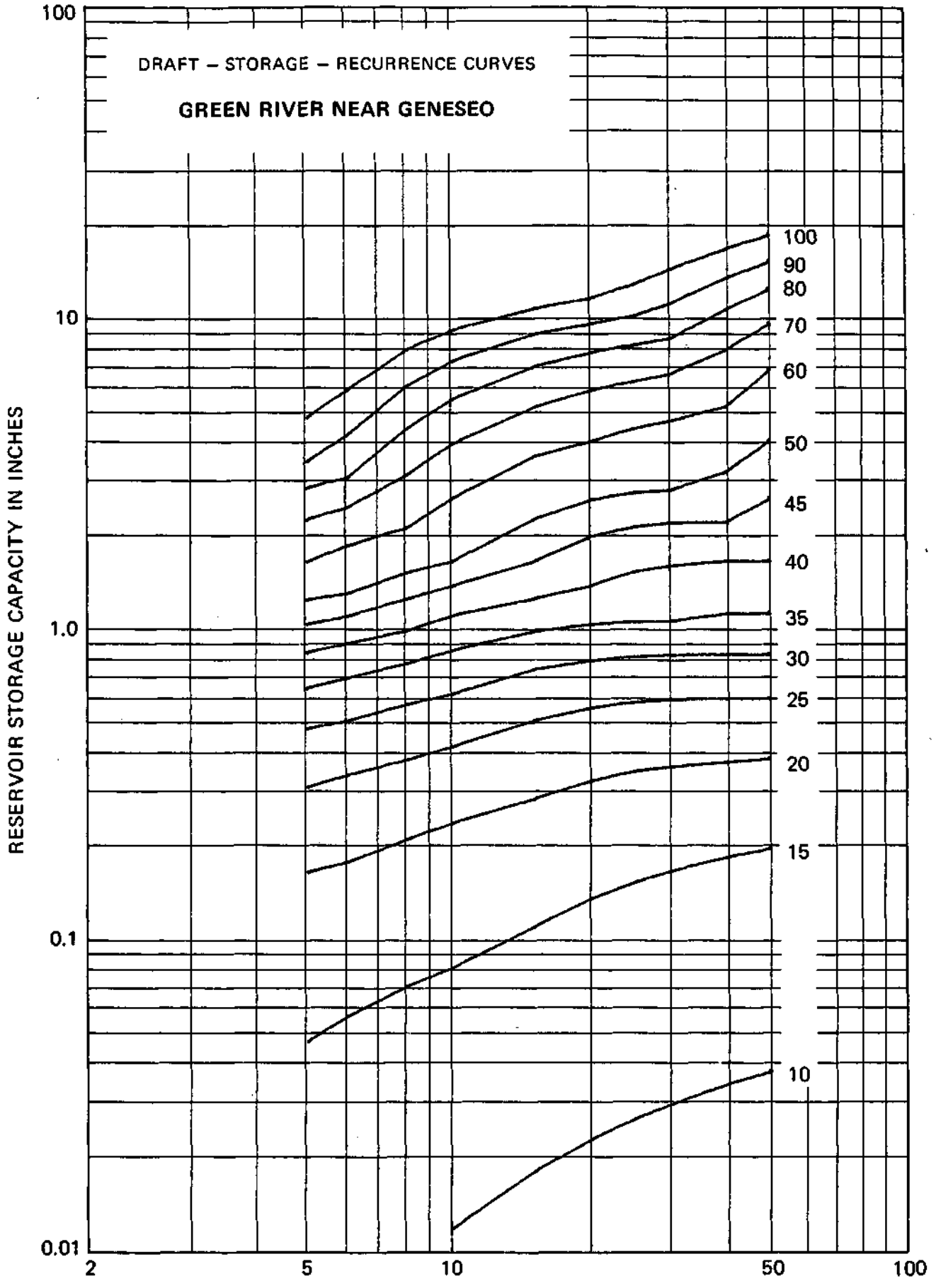
ACTUAL FLOW DATA: Mar 1936 to Oct 1978

INDEX STATION: None

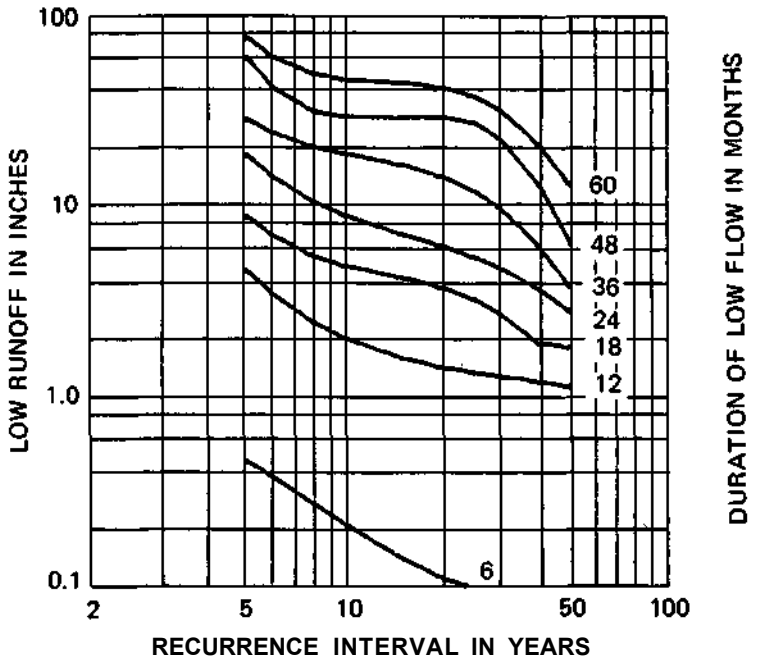
MEAN DISCHARGE: 0.66 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.05	.16	.30	.47	.63	.82	1.02	1.21	1.61	2.19	2.78	3.37	4.68
	--	--	1	2	4	5	5	5	6	6	6	6	9	9	9	42
6	.00	.00	.01	.06	.17	.33	.50	.68	.88	1.08	1.27	1.81	2.41	3.00	4.11	5.77
	--	--	1	2	4	5	5	6	6	6	6	9	9	16	18	30
8	.00	.00	.01	.07	.21	.37	.56	.76	.97	1.22	1.49	2.07	3.06	4.31	5.93	7.77
	--	--	1	3	5	5	6	6	7	8	8	9	18	20	28	28
10	.00	.00	.01	.08	.23	.41	.61	.84	1.08	1.35	1.62	2.58	3.86	5.38	7.15	8.99
	--	--	1	3	5	6	7	7	8	8	9	18	20	26	28	28
15	.00	.00	.02	.11	.28	.50	.73	.97	1.23	1.61	2.21	3.50	5.07	6.87	8.71	10.55
	--	--	1	5	6	7	7	8	8	18	18	20	26	28	28	28
20	.00	.00	.02	.13	.32	.55	.78	1.02	1.35	1.95	2.56	3.94	5.77	7.61	9.45	11.42
	--	--	1	5	7	7	7	8	18	18	20	26	28	28	28	30
25	.00	.00	.03	.15	.34	.57	.80	1.04	1.51	2.10	2.71	4.34	6.19	8.08	10.05	12.69
	--	--	1	5	7	7	7	8	18	18	20	28	28	30	30	54
30	.00	.00	.03	.16	.35	.58	.82	1.05	1.58	2.17	2.76	4.60	6.53	8.51	11.01	14.20
	--	--	1	5	7	7	7	8	18	18	18	28	30	30	42	54
40	.00	.00	.03	.18	.37	.59	.82	1.11	1.64	2.18	3.16	5.14	7.79	10.56	13.32	16.51
	--	1	1	5	6	7	7	16	16	18	30	30	42	42	42	52
50	.00	.00	.04	.19	.38	.59	.82	1.11	1.64	2.60	3.98	6.74	9.51	12.27	15.04	18.25
	--	1	1	5	6	7	7	16	16	42	42	42	42	42	42	52


DRAFT – STORAGE – RECURRENCE CURVES
GREEN RIVER NEAR GENESEO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10

54480 — MILL CREEK AT MILAN



LOCATION: In SW¼ SE¼ Sec 24, T17N, R2W, Rock Island County, at bridge on Knoxville Road 1.0 miles southeast of Milan

DRAINAGE AREA: 62.4 square miles

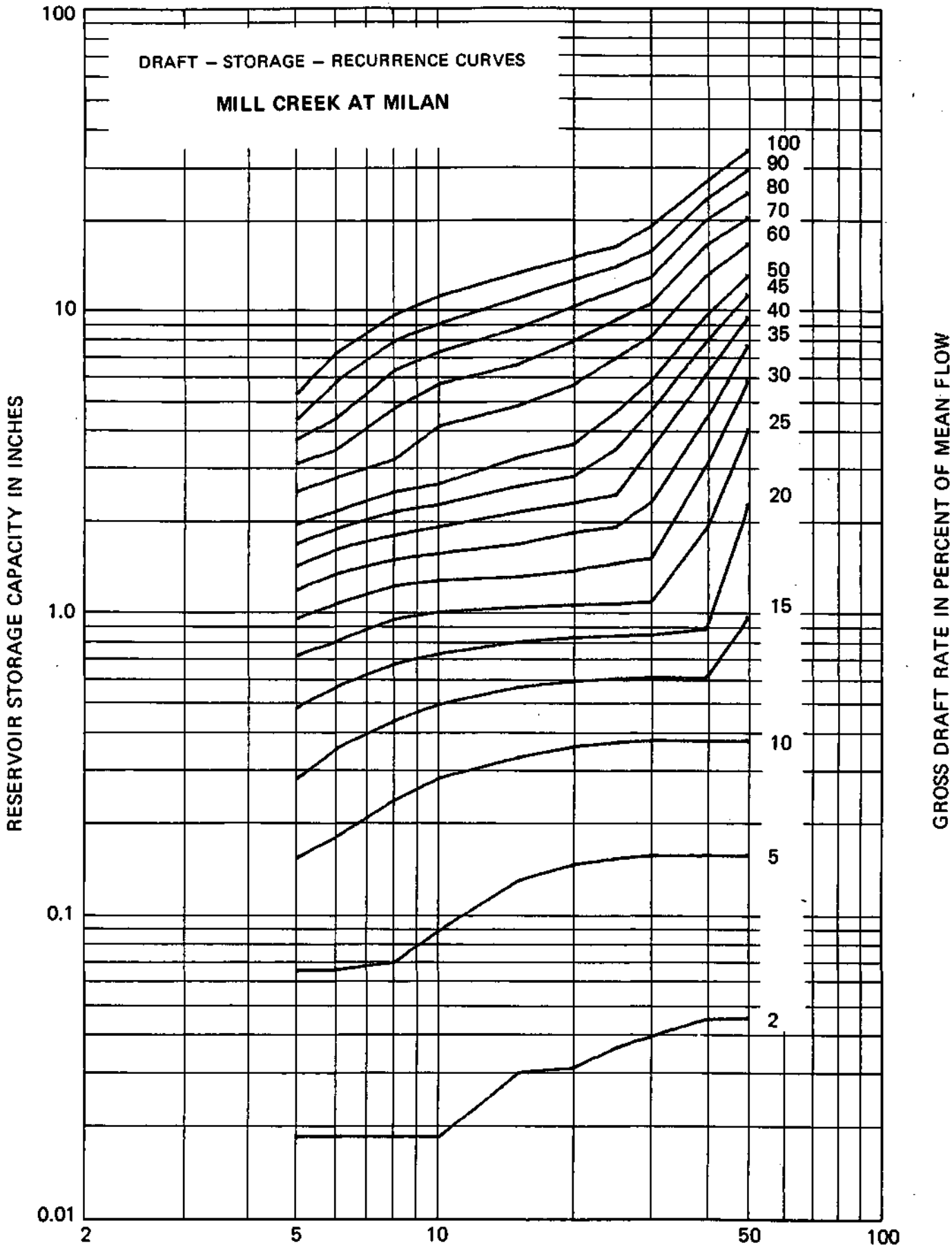
ACTUAL FLOW DATA: Oct 1939 to Sep 1940; (fragmentary), Jul 1941 to Oct 1978

INDEX STATION: None

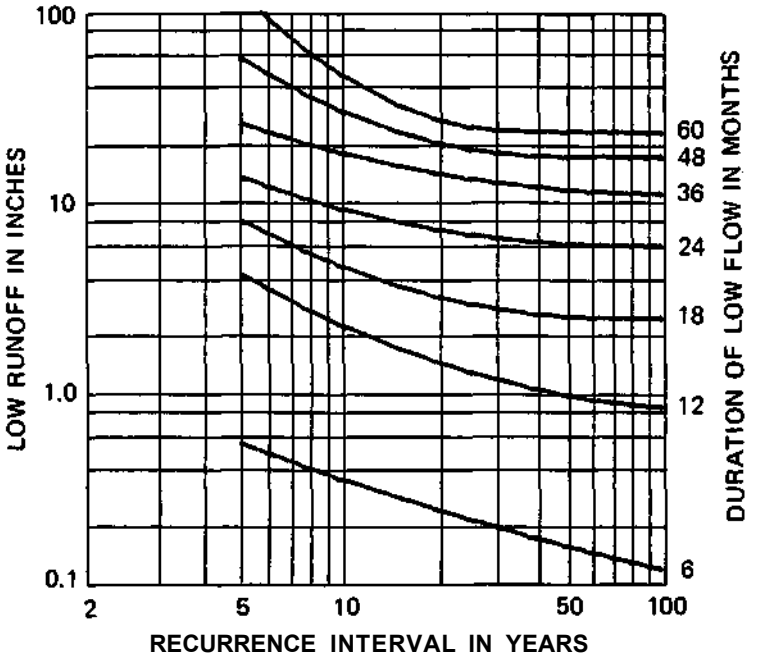
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.06	.15	.27	.47	.70	.93	1.16	1.38	1.64	1.90	2.44	3.03	3.64	4.25	5.18
	2	2	3	4	6	6	6	6	6	7	7	7	8	8	8	18
6	.02	.06	.18	.34	.55	.78	1.04	1.30	1.57	1.84	2.10	2.71	3.36	4.26	5.63	7.00
	2	2	4	5	6	6	7	7	7	7	7	8	9	18	18	18
8	.02	.07	.23	.42	.65	.92	1.19	1.45	1.75	2.09	2.43	3.12	4.60	6.12	7.67	9.36
	2	4	5	5	7	7	7	7	9	9	9	9	20	20	22	30
10	.02	.09	.27	.48	.71	.97	1.24	1.53	1.87	2.21	2.59	4.01	5.54	7.06	8.73	10.80
	2	4	5	6	7	7	7	9	9	9	12	20	20	20	22	28
15	.03	.13	.32	.55	.78	1.02	1.28	1.64	2.10	2.56	3.18	4.71	6.44	8.49	10.66	12.95
	2	5	6	6	6	7	7	10	12	12	20	20	26	28	30	30
20	.03	.14	.35	.58	.81	1.03	1.34	1.80	2.26	2.76	3.53	5.52	7.70	9.99	12.27	14.56
	2	5	6	6	6	6	12	12	12	20	20	28	30	30	30	30
25	.04	.15	.36	.59	.82	1.05	1.43	1.88	2.41	3.41	4.51	6.80	9.08	11.37	13.66	15.94
	5	5	6	6	6	6	12	12	20	28	30	30	30	30	30	30
30	.04	.15	.37	.60	.82	1.06	1.48	2.27	3.42	4.56	5.70	7.99	10.28	12.56	15.33	18.53
	5	5	6	6	6	7	12	30	30	30	30	30	30	30	40	42
40	.04	.15	.37	.60	.86	1.84	2.99	4.28	5.96	7.64	9.31	12.67	16.02	19.38	22.73	26.08
	4	5	6	6	18	30	30	44	44	44	44	44	44	44	44	44
50	.04	.15	.37	.94	2.23	3.95	5.70	7.46	9.21	10.96	12.72	16.22	19.73	24.01	28.58	33.16
	4	5	6	34	34	46	46	46	46	46	46	46	46	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
MILL CREEK AT MILAN
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

54660 - EDWARDS RIVER NEAR ORION



LOCATION: In NE¼ SE¼ Sec 21, T15N, R1E, Henry County, at bridge on U. S. 150, 1.5 miles north of Opheium and 5.5 miles south of Orion

DRAINAGE AREA: 155 square miles

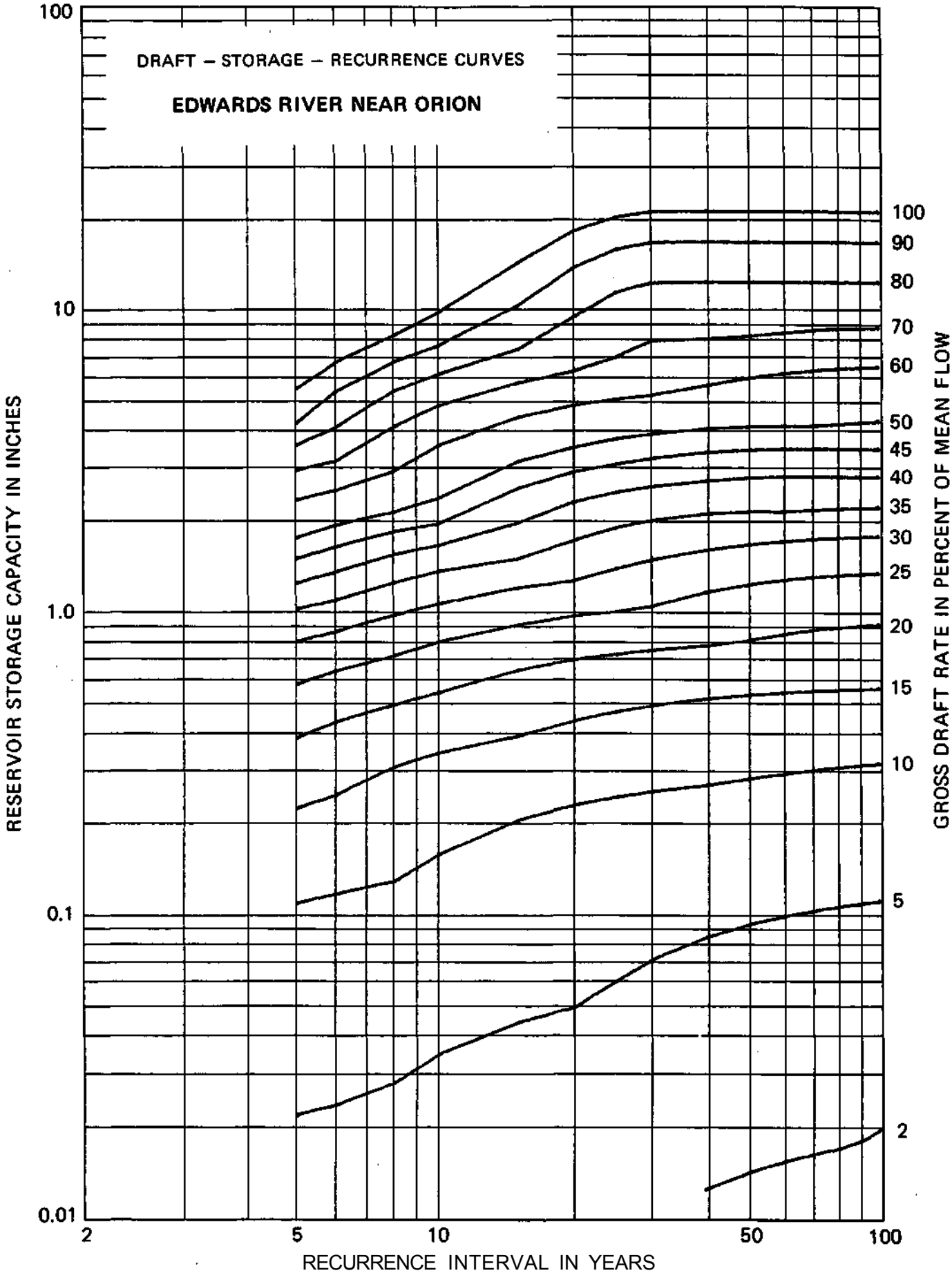
ACTUAL FLOW DATA: Oct 1940 to Oct 1978

INDEX STATION: Spoon River at Seville

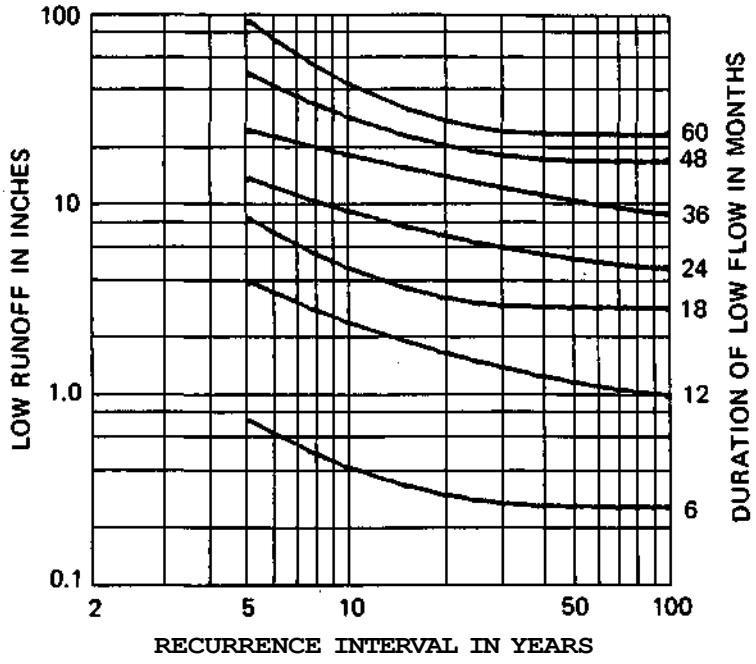
MEAN DISCHARGE: 0.72 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.11	.22	.37	.56	.78	.99	1.21	1.45	1.70	2.27	2.85	3.45	4.10	5.33
	2	1	3	4	5	6	6	6	6	7	7	8	8	9	9	18
6	.00	.02	.11	.24	.42	.62	.83	1.06	1.31	1.59	1.87	2.45	3.06	3.96	5.20	6.50
	1	1	3	5	5	6	6	7	7	8	8	8	9	16	18	18
8	.00	.03	.13	.30	.48	.69	.95	1.21	1.50	1.79	2.07	2.83	3.98	5.24	6.53	7.96
	1	2	3	5	5	7	7	8	8	8	8	16	16	18	18	30
10	.00	.03	.15	.33	.53	.77	1.03	1.32	1.61	1.90	2.31	3.46	4.68	5.97	7.37	9.49
	1	2	5	5	6	7	8	8	8	9	16	16	18	18	20	32
15	.01	.04	.20	.38	.63	.88	1.17	1.46	1.92	2.49	3.07	4.29	5.61	7.19	10.02	13.90
	1	2	5	5	7	8	8	8	16	16	16	18	20	30	54	54
20	.01	.05	.22	.43	.68	.94	1.23	1.68	2.25	2.83	3.42	4.71	6.11	9.17	13.39	17.71
	1	3	5	7	7	8	10	16	16	16	18	18	20	54	60	60
25	.01	.06	.24	.46	.71	.98	1.35	1.86	2.43	3.01	3.65	4.95	6.81	11.12	15.43	19.75
	1	5	5	7	7	8	12	16	16	16	18	20	60	60	60	60
30	.01	.07	.25	.48	.73	1.02	1.45	1.97	2.54	3.15	3.80	5.12	7.67	11.99	16.30	20.62
	2	5	5	7	7	11	12	16	16	18	18	20	60	60	60	60
40	.01	.08	.26	.51	.76	1.14	1.57	2.07	2.66	3.31	3.95	5.53	7.81	12.09	16.41	20.72
	2	5	5	7	7	12	12	16	18	18	18	30	54	60	60	60
50	.01	.09	.28	.52	.79	1.21	1.64	2.11	2.73	3.38	4.02	5.84	8.00	12.09	16.41	20.72
	2	5	6	7	11	12	12	16	18	18	18	30	30	60	60	60
60	.02	.10	.29	.53	.83	1.25	1.68	2.12	2.76	3.40	4.05	6.04	8.20	12.09	16.41	20.72
	2	5	6	7	11	12	12	16	18	18	18	30	30	60	60	60
70	.02	.10	.30	.54	.86	1.28	1.71	2.14	2.76	3.41	4.05	6.17	8.37	12.09	16.41	20.72
	2	5	6	7	11	12	12	12	18	18	18	30	42	60	60	60
80	.02	.10	.30	.54	.88	1.30	1.73	2.16	2.76	3.41	4.11	6.26	8.48	12.09	16.41	20.72
	2	5	6	7	11	12	12	12	18	18	30	30	42	60	60	60
90	.02	.11	.31	.55	.89	1.31	1.75	2.18	2.76	3.41	4.17	6.32	8.53	12.09	16.41	20.72
	3	5	6	7	11	12	12	12	18	18	30	30	42	60	60	60
100	.02	.11	.31	.55	.90	1.32	1.76	2.19	2.76	3.41	4.20	6.36	8.55	12.09	16.41	20.72
	3	5	6	7	11	12	12	12	18	18	30	30	42	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
EDWARDS RIVER NEAR ORION
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

54665 - EDWARDS RIVER NEAR NEW BOSTON



LOCATION: At quarter corner between Sec 21 and 28, T14N, R5W, Mercer County, at downstream side of bridge on Illinois 17, 1.5 miles northeast of New Boston

DRAINAGE AREA: 445 square miles

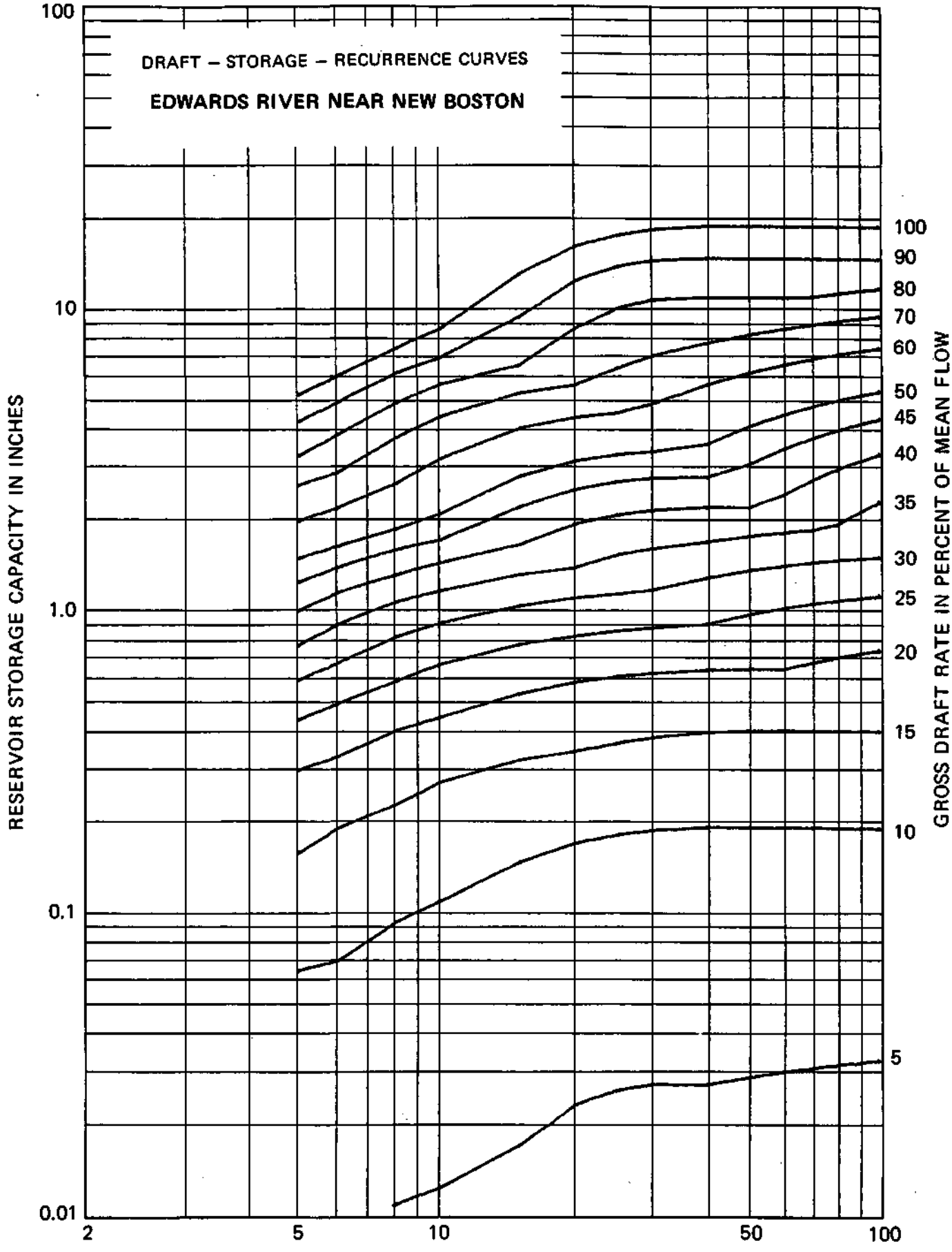
ACTUAL FLOW DATA: Oct 1934 to Oct 1978

INDEX STATION: Spoon River at Seville

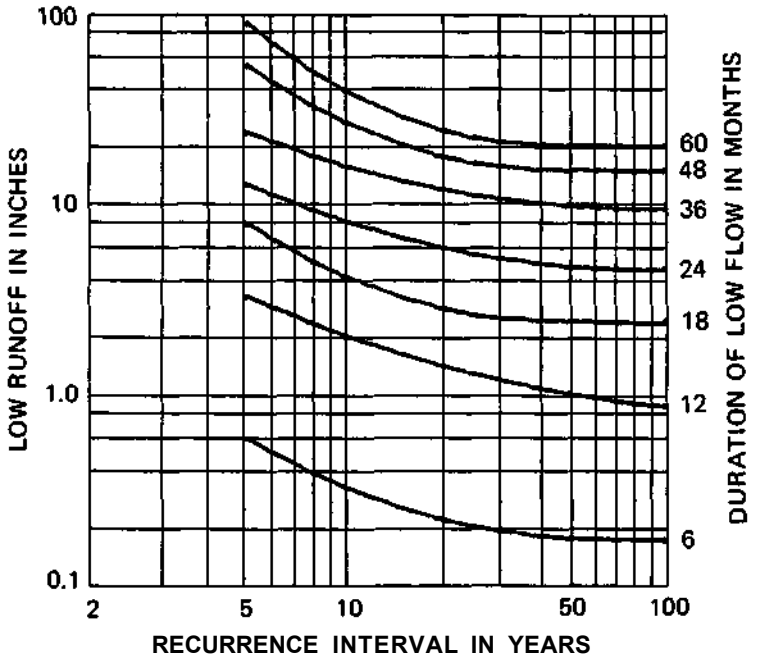
MEAN DISCHARGE: 0.68 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.01	.06	.16	.29	.43	.58	.75	.97	1.21	1.45	1.93	2.54	3.19	4.14	5.10
	2	1	2	4	4	4	5	6	7	7	7	9	9	14	14	14
6	.00	.01	.07	.19	.32	.48	.66	.88	1.11	1.35	1.59	2.14	2.80	3.75	4.81	5.90
	1	1	2	4	4	5	6	7	7	7	7	9	14	14	16	16
8	.00	.01	.09	.22	.39	.57	.80	1.04	1.28	1.55	1.82	2.58	3.67	4.79	6.01	7.23
	1	1	3	4	5	6	7	7	8	8	8	16	16	18	18	18
10	.00	.01	.11	.26	.43	.65	.89	1.13	1.40	1.68	2.05	3.13	4.32	5.55	6.77	8.44
	1	1	4	5	5	7	7	8	8	8	16	16	18	18	18	30
15	.00	.02	.15	.31	.52	.76	1.01	1.29	1.62	2.16	2.74	3.96	5.19	6.41	9.25	12.78
	1	3	5	5	7	7	8	8	16	16	18	18	18	18	52	52
20	.00	.02	.17	.34	.57	.81	1.08	1.36	1.90	2.48	3.09	4.32	5.54	8.47	12.15	15.82
	1	3	5	5	7	8	8	16	16	18	18	18	18	54	54	54
25	.00	.03	.18	.36	.60	.84	1.12	1.50	2.05	2.65	3.26	4.48	6.29	9.91	13.58	17.25
	1	3	5	7	7	8	8	16	16	18	18	18	30	54	54	54
30	.00	.03	.18	.38	.61	.86	1.15	1.58	2.12	2.72	3.34	4.81	6.90	10.57	14.24	18.08
	2	3	5	7	7	8	11	16	16	18	18	30	54	54	54	60
40	.00	.03	.19	.39	.63	.89	1.26	1.67	2.18	2.76	3.54	5.58	7.62	10.81	14.53	18.61
	2	3	5	7	7	11	12	12	16	18	30	30	30	54	60	60
50	.00	.03	.19	.40	.64	.96	1.34	1.75	2.18	3.05	4.07	6.11	8.14	10.81	14.53	18.61
	2	2	5	7	7	11	12	12	16	30	30	30	30	54	60	60
60	.00	.03	.19	.40	.64	1.01	1.39	1.80	2.41	3.43	4.45	6.49	8.53	10.81	14.53	18.61
	2	2	5	7	7	11	12	12	30	30	30	30	30	54	60	60
70	.00	.03	.19	.40	.67	1.04	1.43	1.84	2.70	3.72	4.74	6.78	8.82	10.89	14.53	18.61
	2	2	5	7	11	11	12	12	30	30	30	30	30	32	60	60
80	.00	.03	.19	.40	.70	1.07	1.46	1.92	2.94	3.96	4.98	7.02	9.06	11.17	14.53	18.61
	2	2	5	7	11	11	12	30	30	30	30	30	30	32	60	60
90	.00	.03	.19	.40	.72	1.09	1.48	2.12	3.14	4.16	5.18	7.22	9.26	11.41	14.53	18.61
	3	2	5	7	11	11	12	30	30	30	30	30	30	32	60	60
100	.00	.03	.19	.40	.74	1.11	1.50	2.28	3.30	4.32	5.34	7.38	9.43	11.61	14.53	18.61
	3	2	5	7	11	11	12	30	30	30	30	30	32	32	60	60


DRAFT – STORAGE – RECURRENCE CURVES
EDWARDS RIVER NEAR NEW BOSTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

54670 —POPE CREEK NEAR KEITHSBURG



LOCATION: In SE¼ Sec 11, T13N, R5W, Mercer County, at highway bridge 1.8 miles northeast of Keithsburg

DRAINAGE AREA: 183 square miles

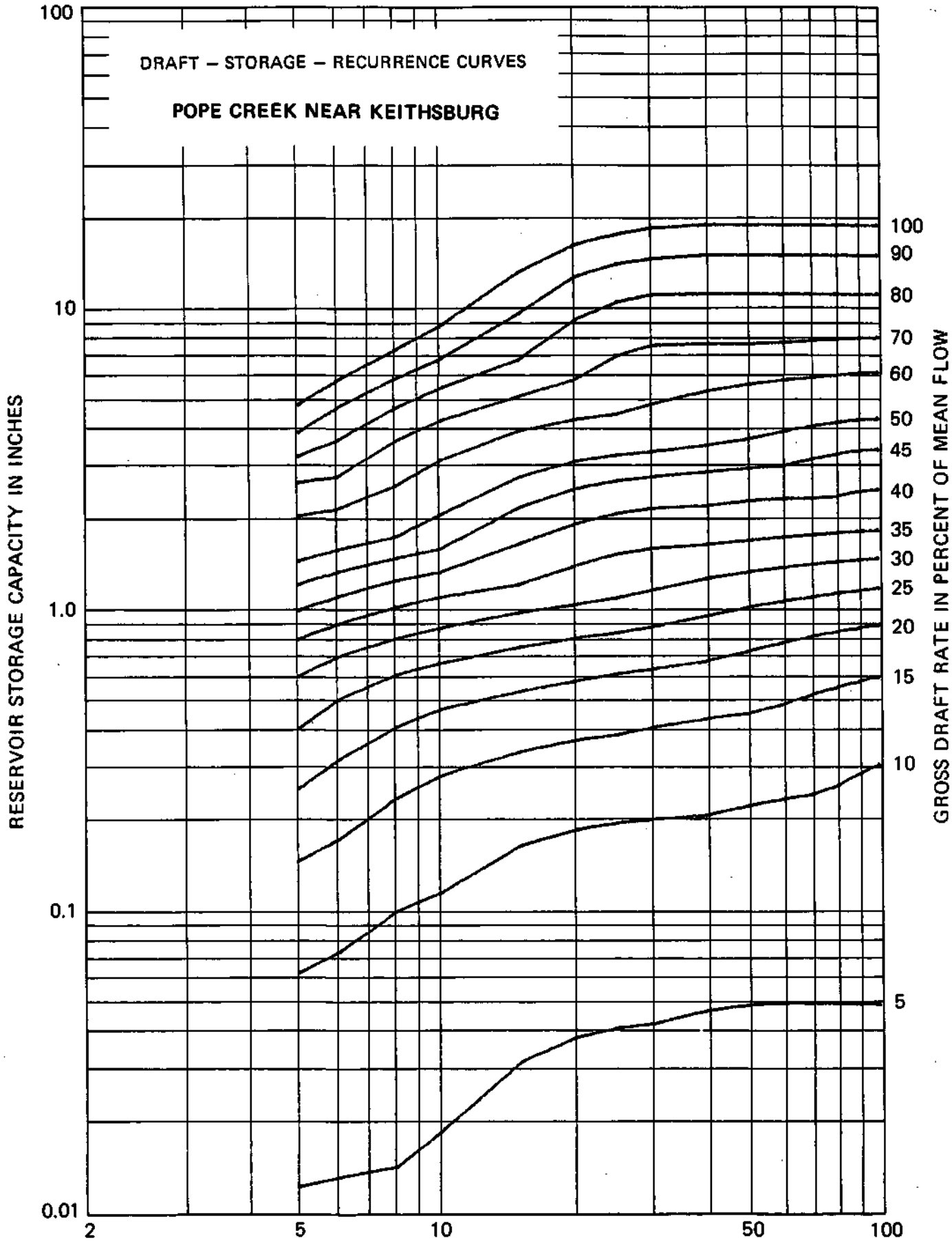
ACTUAL FLOW DATA: Oct 1934 to Oct 1978

INDEX STATION: Spoon River at Seville

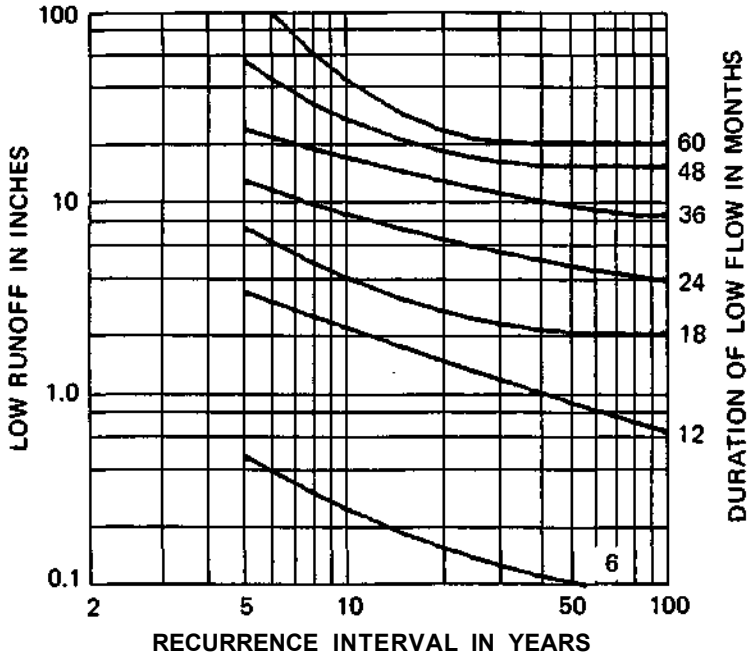
MEAN DISCHARGE: 0.64 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.01	.06	.14	.25	.39	.58	.78	.97	1.18	1.41	1.98	2.56	3.13	3.76	4.66
	2	1	2	3	4	6	6	6	6	7	9	9	9	9	12	16
6	.00	.01	.07	.17	.31	.48	.68	.87	1.07	1.29	1.53	2.09	2.67	3.53	4.55	5.57
	1	1	3	3	5	6	6	6	7	7	8	9	9	16	16	16
8	.00	.01	.10	.23	.40	.59	.78	.99	1.21	1.43	1.69	2.49	3.51	4.54	5.66	7.07
	1	1	3	5	6	6	6	7	7	8	8	16	16	16	18	30
10	.00	.02	.11	.27	.45	.64	.85	1.07	1.29	1.54	2.00	3.03	4.11	5.26	6.58	8.50
	1	2	5	5	6	6	7	7	7	8	16	16	18	18	30	30
15	.00	.03	.16	.33	.52	.73	.95	1.18	1.61	2.12	2.67	3.82	4.97	6.58	9.37	12.82
	1	3	5	6	6	7	7	8	16	16	18	18	18	30	54	54
20	.00	.04	.18	.36	.56	.79	1.01	1.36	1.87	2.44	3.02	4.17	5.64	8.91	12.37	15.82
	1	3	5	6	7	7	8	16	16	18	18	18	30	54	54	54
25	.00	.04	.19	.37	.60	.82	1.07	1.49	2.04	2.61	3.19	4.35	6.80	10.25	13.71	17.18
	1	3	5	6	7	7	8	16	18	18	18	20	54	54	54	60
30	.00	.04	.20	.39	.62	.86	1.14	1.57	2.12	2.70	3.27	4.71	7.39	10.84	14.29	18.07
	2	3	5	7	7	8	11	16	18	18	18	30	54	54	54	60
40	.00	.05	.20	.42	.66	.94	1.25	1.62	2.17	2.81	3.45	5.21	7.51	10.96	14.74	18.58
	2	4	6	7	8	9	11	16	20	20	20	30	54	54	60	60
50	.00	.05	.22	.44	.71	1.00	1.31	1.67	2.26	2.90	3.63	5.50	7.51	10.96	14.74	18.58
	2	4	7	8	9	9	11	12	20	20	28	30	54	54	60	60
60	.00	.05	.23	.48	.76	1.05	1.36	1.72	2.30	2.95	3.85	5.69	7.60	10.96	14.74	18.58
	1	4	7	9	9	9	11	12	20	28	28	30	30	54	60	60
70	.00	.05	.24	.51	.80	1.09	1.40	1.75	2.30	3.11	4.01	5.81	7.73	10.96	14.74	18.58
	1	4	7	9	9	9	11	11	20	28	28	30	30	54	60	60
80	.00	.05	.26	.54	.83	1.12	1.42	1.78	2.34	3.23	4.13	5.92	7.81	10.96	14.74	18.58
	1	4	9	9	9	9	11	11	28	28	28	28	30	54	60	60
90	.00	.05	.28	.57	.86	1.15	1.45	1.80	2.43	3.32	4.22	6.01	7.87	10.96	14.74	18.58
	1	4	9	9	9	9	11	11	28	28	28	28	30	54	60	60
100	.00	.05	.30	.59	.88	1.17	1.46	1.81	2.47	3.36	4.26	6.05	7.91	10.96	14.74	18.58
	1	4	9	9	9	9	11	11	28	28	28	28	30	54	60	60


DRAFT – STORAGE – RECURRENCE CURVES
POPE CREEK NEAR KEITHSBURG
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

54675 — HENDERSON CREEK NEAR LITTLE YORK



LOCATION: Between Sec 8 and 9, T12N, R3W, Warren County, at bridge on Illinois 94 and Illinois 135, 2.2 miles north of Little York.

DRAINAGE AREA: 151 square miles

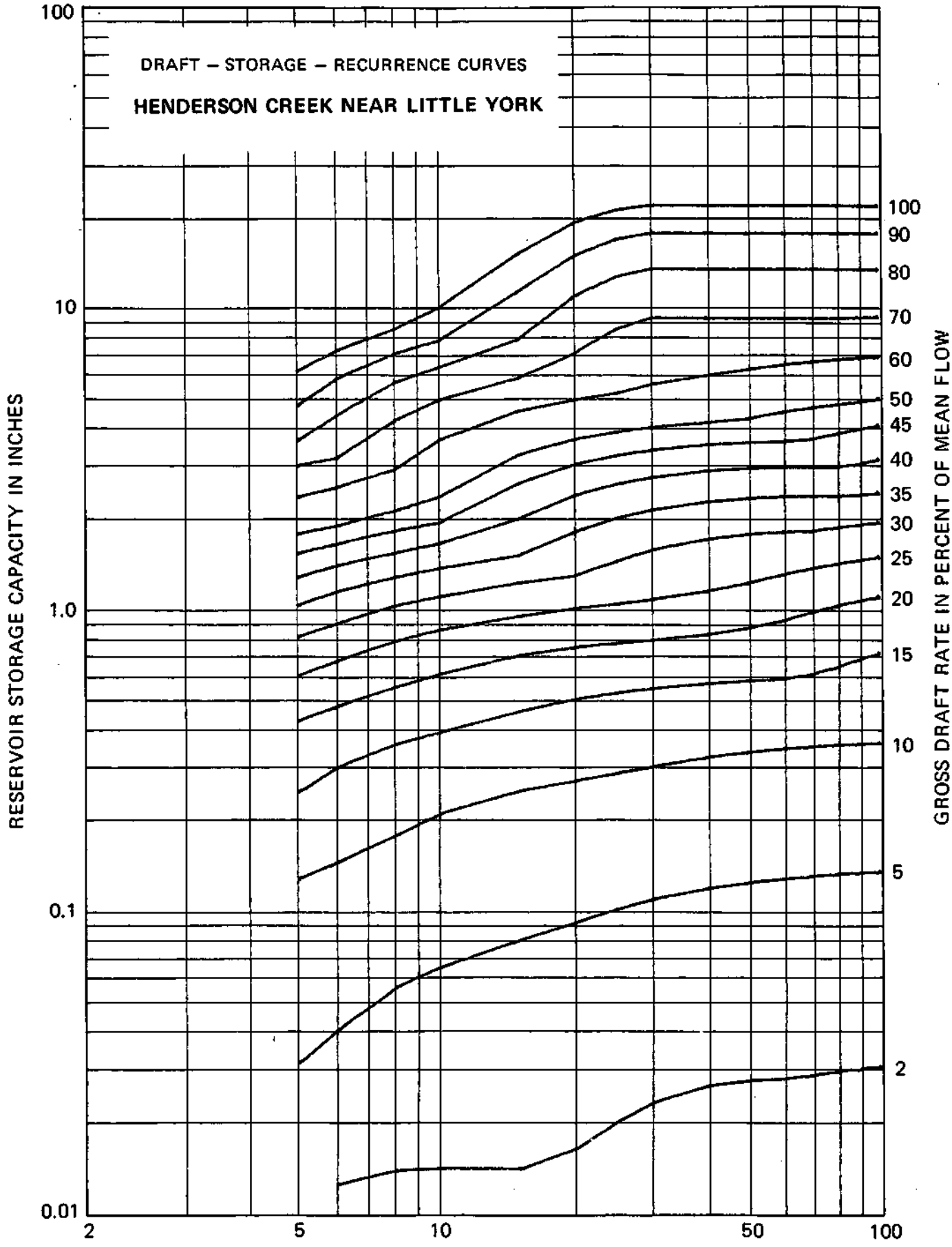
ACTUAL FLOW DATA: Oct 1940 to Sep 1958; Oct 1959 to Oct 1978

INDEX STATION: Spoon River at Seville

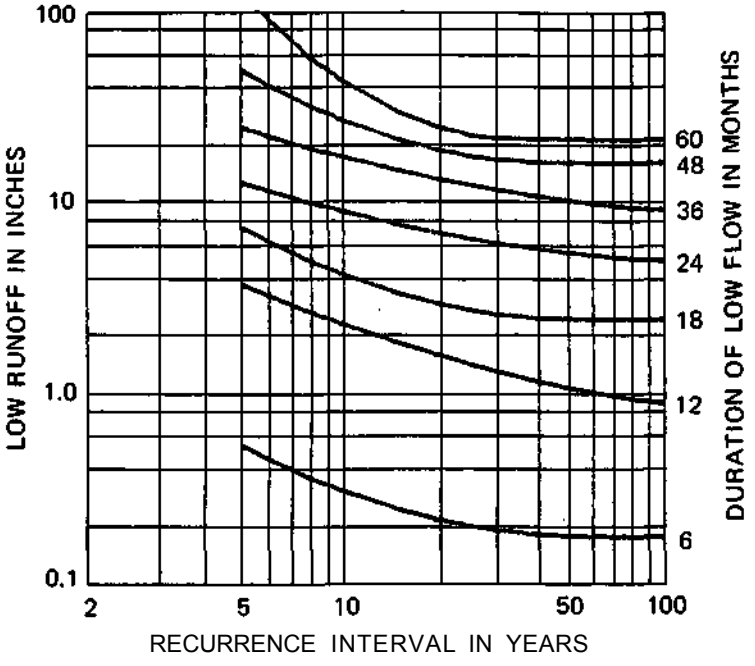
MEAN DISCHARGE: 0.70 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.03	.13	.24	.42	.59	.80	1.02	1.26	1.51	1.75	2.31	2.94	3.56	4.65	6.04
	1	2	3	5	5	5	6	7	7	7	7	9	9	9	20	20
6	.01	.04	.14	.29	.47	.66	.89	1.13	1.37	1.62	1.86	2.48	3.11	4.29	5.69	7.08
	1	2	3	5	5	6	7	7	7	7	8	9	9	20	20	20
8	.01	.06	.17	.35	.54	.77	1.01	1.26	1.51	1.79	2.08	2.85	4.13	5.52	6.91	8.30
	1	3	5	5	6	7	7	7	8	8	9	18	20	20	20	20
10	.01	.06	.21	.38	.60	.84	1.09	1.35	1.62	1.90	2.32	3.57	4.83	6.23	7.63	9.81
	1	3	5	6	7	7	7	8	8	9	18	18	20	20	30	32
15	.01	.08	.24	.45	.69	.93	1.21	1.49	1.96	2.57	3.20	4.45	5.74	7.69	11.13	14.89
	1	4	5	7	7	7	8	8	16	18	18	18	20	30	54	54
20	.02	.09	.26	.49	.74	.99	1.27	1.78	2.34	2.97	3.60	4.85	6.92	10.68	14.64	18.81
	2	4	5	7	7	8	8	16	18	18	18	18	54	54	60	60
25	.02	.10	.28	.52	.76	1.03	1.43	1.98	2.57	3.19	3.82	5.12	8.35	12.50	16.67	20.84
	2	5	6	7	7	8	16	16	18	18	18	30	54	60	60	60
30	.02	.11	.29	.54	.78	1.07	1.55	2.11	2.70	3.33	3.95	5.48	9.12	13.30	17.47	21.65
	2	5	7	7	7	9	16	16	18	18	18	30	60	60	60	60
40	.03	.12	.32	.56	.82	1.14	1.69	2.25	2.85	3.47	4.10	5.89	9.12	13.30	17.47	21.65
	2	5	7	7	9	10	16	16	18	18	18	30	60	60	60	60
50	.03	.12	.33	.57	.86	1.21	1.76	2.31	2.91	3.53	4.23	6.18	9.12	13.30	17.47	21.65
	2	5	7	7	10	11	16	16	18	18	28	28	60	60	60	60
60	.03	.13	.34	.58	.91	1.29	1.79	2.34	2.93	3.56	4.45	6.39	9.12	13.30	17.47	21.65
	2	5	7	7	10	11	16	16	18	18	28	28	60	60	60	60
70	.03	.13	.35	.60	.97	1.35	1.80	2.35	2.93	3.62	4.60	6.54	9.12	13.30	17.47	21.65
	4	5	7	10	11	11	14	16	18	28	28	28	60	60	60	60
80	.03	.13	.35	.64	1.02	1.40	1.85	2.35	2.93	3.78	4.71	6.65	9.12	13.30	17.47	21.65
	4	5	7	11	11	11	14	16	18	26	28	28	60	60	60	60
90	.03	.13	.35	.68	1.06	1.44	1.89	2.38	3.00	3.91	4.81	6.73	9.18	13.30	17.47	21.65
	4	5	7	11	11	11	14	14	26	26	26	28	38	60	60	60
100	.03	.13	.36	.71	1.09	1.48	1.92	2.41	3.11	4.02	4.92	6.80	9.22	13.30	17.47	21.65
	4	5	7	11	11	11	14	14	26	26	26	28	38	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
HENDERSON CREEK NEAR LITTLE YORK
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

54680 — NORTH HENDERSON CREEK NEAR SEATON



LOCATION: North center of Sec 30, T13N, R3W, Warren County at county road bridge 1.6 miles southeast of Seaton

DRAINAGE AREA: 66.4 square miles

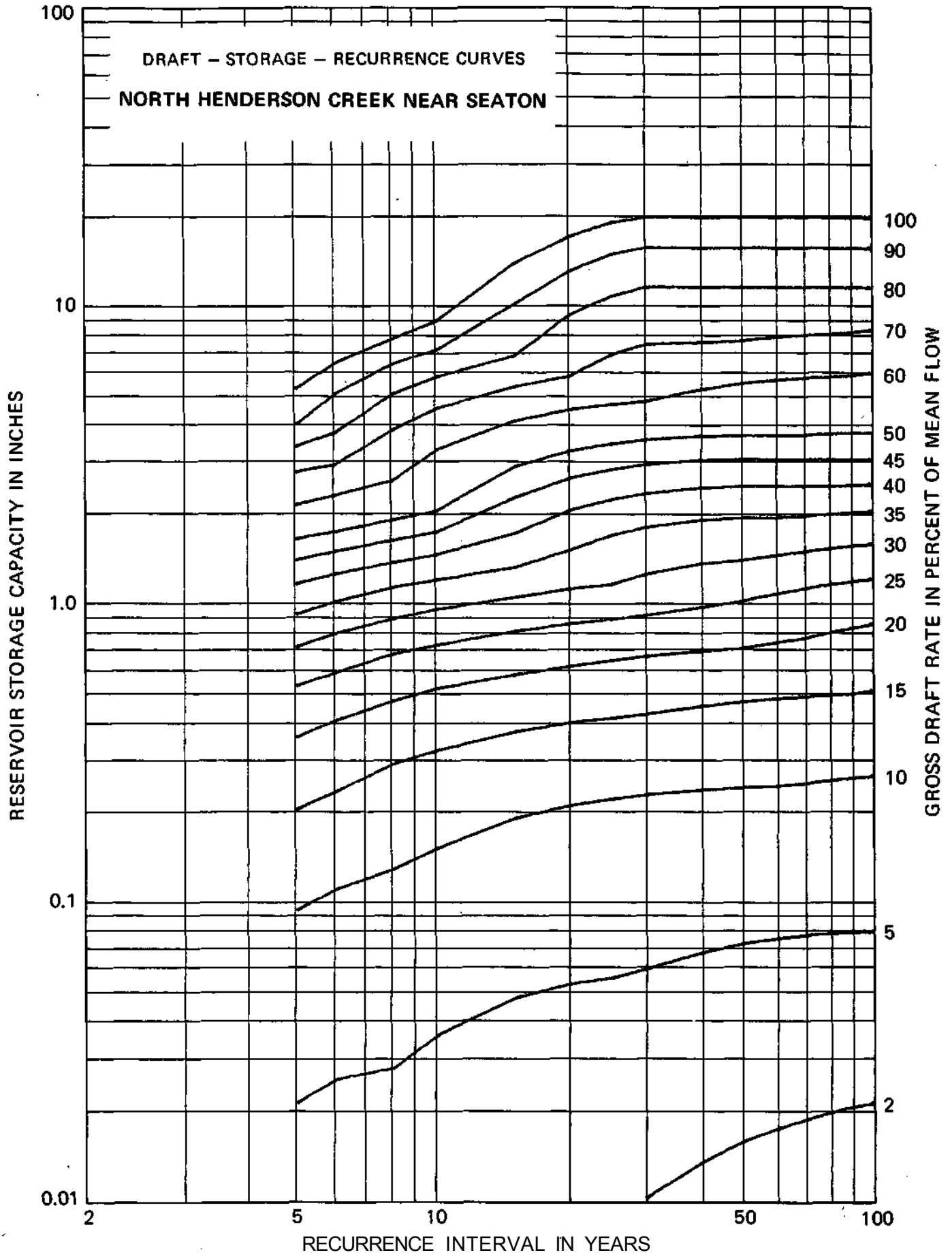
ACTUAL FLOW DATA: Oct 1940 to Sep 1951 gaging discontinued Oct 1, 1951

INDEX STATION: Spoon River at Seville

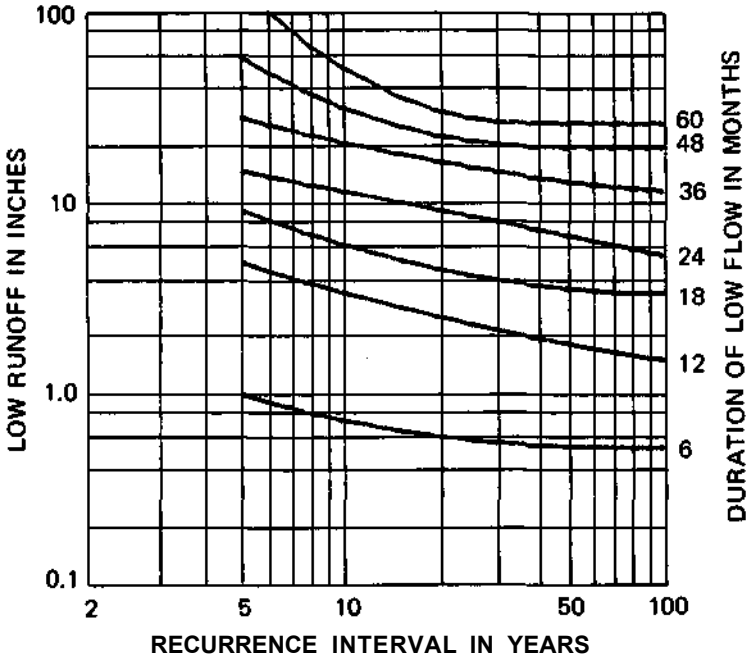
MEAN DISCHARGE: 0.67 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.09	.20	.35	.52	.70	.90	1.13	1.37	1.60	2.09	2.70	3.30	3.90	5.18
	1	1	3	4	5	5	6	6	7	7	7	9	9	9	9	20
6	.01	.03	.11	.23	.40	.57	.78	.99	1.23	1.46	1.69	2.25	2.85	3.66	4.95	6.29
	1	1	3	5	5	6	6	7	7	7	7	9	9	18	20	20
8	.01	.03	.13	.28	.46	.66	.87	1.10	1.34	1.59	1.86	2.52	3.73	4.93	6.25	7.59
	1	1	3	5	6	6	7	7	7	8	8	18	18	18	20	20
10	.01	.04	.15	.32	.51	.71	.93	1.17	1.43	1.69	2.00	3.21	4.41	5.64	6.98	8.70
	1	3	5	5	6	6	7	7	8	8	18	18	18	20	20	32
15	.01	.05	.19	.37	.57	.79	1.03	1.30	1.68	2.22	2.83	4.03	5.24	6.68	9.94	13.57
	1	3	5	6	6	7	8	8	16	18	18	18	18	30	54	54
20	.01	.05	.21	.39	.60	.84	1.10	1.48	2.02	2.59	3.19	4.40	5.68	9.11	12.73	16.67
	1	3	5	6	7	7	8	16	16	18	18	18	30	54	54	60
25	.01	.06	.22	.41	.63	.87	1.14	1.66	2.20	2.78	3.38	4.59	6.75	10.54	14.57	18.59
	1	3	5	6	7	8	9	16	16	18	18	18	54	60	60	60
30	.01	.06	.23	.42	.65	.90	1.23	1.77	2.31	2.89	3.50	4.70	7.31	11.32	15.35	19.37
	1	4	5	7	7	8	16	16	16	18	18	18	54	60	60	60
40	.01	.07	.23	.45	.68	.95	1.34	1.88	2.41	2.99	3.60	5.15	7.43	11.32	15.35	19.37
	2	5	5	7	7	9	16	16	16	18	18	30	54	60	60	60
50	.02	.07	.24	.46	.70	1.00	1.38	1.92	2.45	3.02	3.62	5.41	7.53	11.32	15.35	19.37
	2	5	5	7	7	11	16	16	16	18	18	30	42	60	60	60
60	.02	.07	.24	.47	.73	1.06	1.43	1.92	2.46	3.02	3.62	5.56	7.75	11.32	15.35	19.37
	2	5	5	7	9	11	11	16	16	18	18	30	42	60	60	60
70	.02	.08	.25	.48	.76	1.11	1.48	1.94	2.46	3.02	3.64	5.65	7.86	11.32	15.35	19.37
	2	5	7	7	10	11	11	14	16	18	30	30	42	60	60	60
80	.02	.08	.25	.49	.79	1.14	1.51	1.98	2.46	3.02	3.68	5.70	7.91	11.32	15.35	19.37
	2	5	7	7	10	11	11	14	16	18	30	30	42	60	60	60
90	.02	.08	.26	.49	.82	1.17	1.54	2.00	2.47	3.02	3.70	5.77	8.05	11.32	15.35	19.37
	2	5	7	7	10	11	11	14	14	18	30	34	34	60	60	60
100	.02	.08	.26	.51	.84	1.20	1.56	2.02	2.49	3.02	3.71	5.89	8.18	11.32	15.35	19.37
	2	5	7	10	10	11	11	14	14	18	26	34	34	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
NORTH HENDERSON CREEK NEAR SEATON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

54685 —CEDAR CREEK AT LITTLE YORK



LOCATION: Between Sec 20 and 21, T12N, R3W, Warren County, at bridge on Illinois 13 5 at north edge of Little York

DRAINAGE AREA: 130 square miles

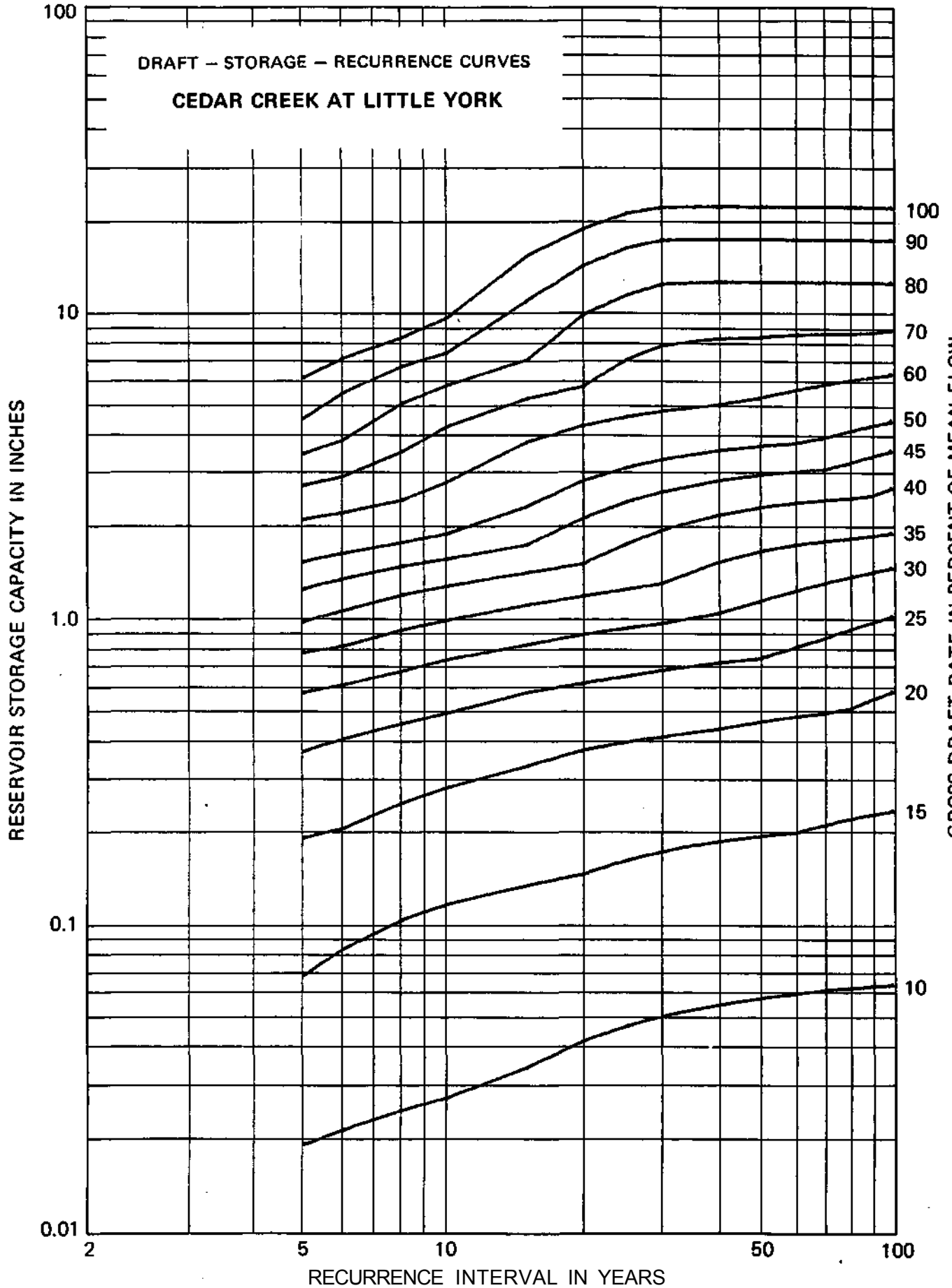
ACTUAL FLOW DATA: Oct 1940 to Oct 1978

INDEX STATION: Spoon River at Seville

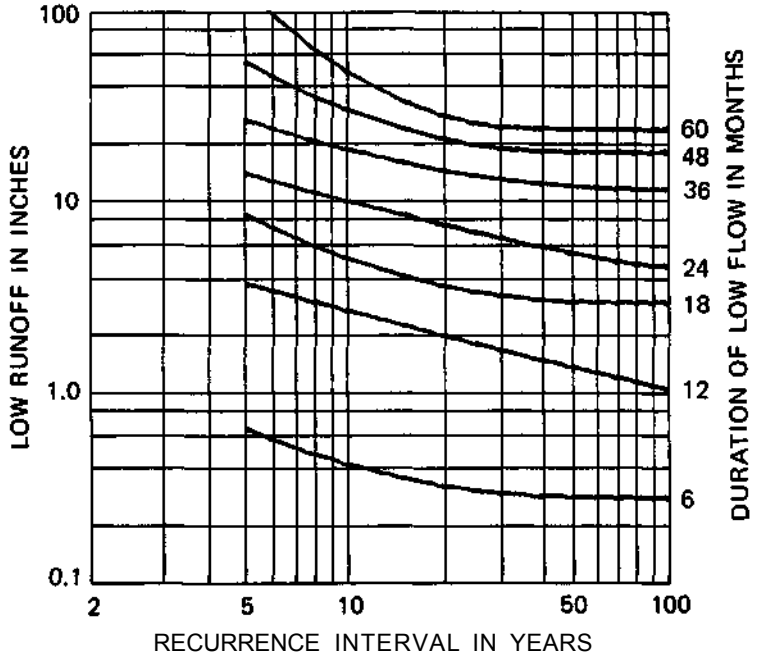
MEAN DISCHARGE: 0.79 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.02	.07	.19	.36	.56	.76	.95	1.21	1.49	2.05	2.64	3.35	4.38	5.97
	1	1	1	3	3	5	5	5	5	7	7	7	9	9	20	20
6	.00	.00	.02	.08	.20	.39	.59	.79	1.03	1.31	1.59	2.15	2.82	3.73	5.31	6.90
	1	1	1	3	3	5	5	6	7	7	7	8	9	20	20	20
8	.00	.00	.02	.10	.24	.44	.66	.90	1.16	1.44	1.72	2.36	3.40	4.91	6.50	8.08
	1	1	1	3	5	5	6	6	7	7	7	9	18	20	20	20
10	.00	.00	.03	.11	.27	.48	.72	.96	1.24	1.52	1.84	2.71	4.14	5.64	7.23	9.39
	1	3	1	3	5	6	6	7	7	7	8	18	18	20	20	30
15	.00	.00	.03	.13	.32	.56	.81	1.08	1.38	1.70	2.26	3.69	5.12	6.85	10.69	14.97
	1	3	2	3	6	6	7	7	8	8	18	18	18	30	54	54
20	.00	.00	.04	.14	.37	.60	.87	1.16	1.48	2.07	2.75	4.18	5.62	9.63	13.91	18.38
	1	3	2	5	6	6	7	8	8	16	18	18	20	54	54	60
25	.00	.00	.05	.16	.39	.64	.91	1.22	1.72	2.35	3.05	4.48	6.90	11.19	15.92	20.68
	1	3	2	5	6	7	7	8	16	16	18	18	54	54	60	60
30	.00	.00	.05	.17	.40	.67	.95	1.28	1.90	2.54	3.25	4.68	7.68	12.16	16.92	21.68
	1	4	2	5	6	7	8	10	16	16	18	18	54	60	60	60
40	.00	.00	.05	.18	.43	.71	1.02	1.50	2.13	2.77	3.49	4.92	8.11	12.40	17.10	21.86
	2	5	2	5	7	7	10	16	16	18	18	18	54	54	60	60
50	.00	.00	.06	.19	.46	.73	1.12	1.63	2.27	2.91	3.62	5.21	8.21	12.40	17.10	21.86
	2	1	2	5	7	7	10	16	16	18	18	28	42	54	60	60
60	.00	.00	.06	.20	.47	.80	1.21	1.71	2.35	2.99	3.70	5.53	8.40	12.40	17.10	21.86
	2	1	2	5	7	10	11	16	16	18	18	28	42	54	60	60
70	.00	.00	.06	.21	.49	.86	1.29	1.77	2.40	3.04	3.87	5.77	8.46	12.40	17.10	21.86
	2	1	2	7	7	10	11	16	16	16	22	28	42	54	60	60
80	.00	.00	.06	.22	.50	.91	1.35	1.80	2.44	3.20	4.07	5.96	8.46	12.40	17.10	21.86
	2	1	2	7	10	11	11	16	16	22	22	28	42	54	60	60
90	.00	.01	.06	.23	.54	.97	1.40	1.84	2.49	3.37	4.24	6.12	8.56	12.40	17.10	21.86
	2	1	2	7	10	11	11	11	22	22	22	28	34	54	60	60
100	.00	.01	.06	.23	.57	1.01	1.45	1.88	2.64	3.51	4.39	6.27	8.70	12.40	17.10	21.86
	2	1	2	7	10	11	11	11	22	22	22	26	34	54	60	60


DRAFT – STORAGE – RECURRENCE CURVES
CEDAR CREEK AT LITTLE YORK
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10

54690 — HENDERSON CREEK NEAR OQUAWKA



LOCATION: In NE¼ SW¼ Sec 28, T12N, R4W, Henderson County, at bridge on Illinois 94, 1.0 mile south of Bald Bluff and 6.5 miles northeast of Oquawka

DRAINAGE AREA: 432 square miles

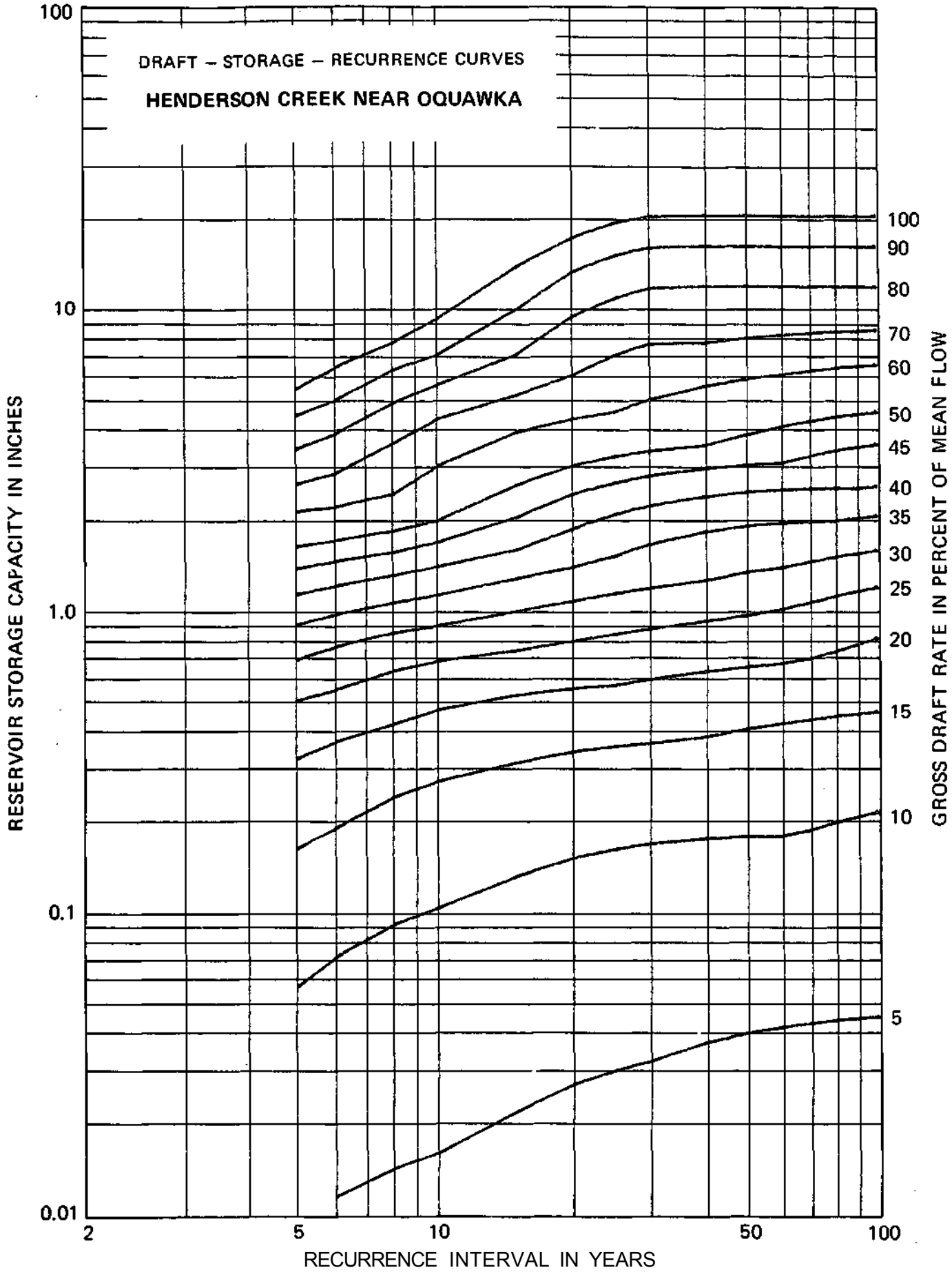
ACTUAL FLOW DATA: Oct 1934 to Oct 1978

INDEX STATION: Spoon River at Seville

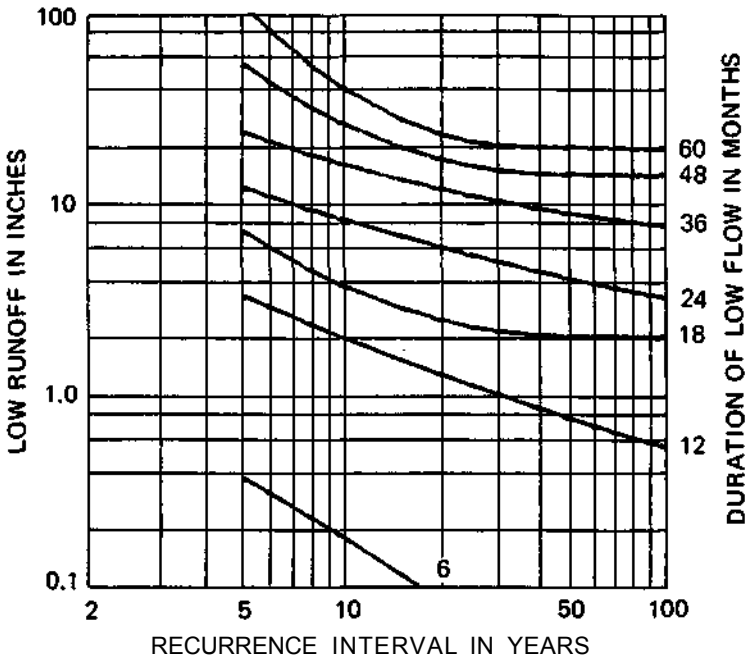
MEAN DISCHARGE: 0.72 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.01	.06	.16	.33	.51	.70	.91	1.15	1.40	1.65	2.16	2.66	3.47	4.48	5.48
	1	1	2	4	5	5	6	6	7	7	7	7	7	14	14	14
6	.00	.01	.07	.19	.37	.55	.77	.98	1.23	1.48	1.73	2.23	2.88	3.89	5.03	6.46
	1	1	3	4	5	6	6	6	7	7	7	7	14	14	20	20
8	.00	.01	.09	.24	.42	.64	.85	1.07	1.33	1.58	1.86	2.46	3.61	4.91	6.33	7.77
	1	1	3	5	5	6	6	7	7	7	8	9	18	18	20	20
10	.00	.02	.10	.27	.47	.69	.90	1.14	1.42	1.70	2.01	3.04	4.33	5.66	7.09	9.35
	1	1	3	5	6	6	6	7	8	8	9	18	18	20	20	32
15	.00	.02	.13	.32	.53	.75	1.01	1.30	1.61	2.06	2.64	3.94	5.23	7.12	10.07	13.96
	1	2	5	6	6	6	8	8	9	16	18	18	18	30	54	54
20	.00	.03	.15	.34	.56	.80	1.09	1.41	1.89	2.46	3.06	4.35	6.08	9.50	13.38	17.33
	1	2	5	6	6	8	8	9	16	16	18	18	30	54	54	60
25	.00	.03	.16	.36	.57	.85	1.16	1.54	2.12	2.69	3.28	4.61	7.09	10.97	15.18	19.49
	1	2	5	6	6	8	9	16	16	16	18	30	54	54	60	60
30	.00	.03	.17	.37	.60	.88	1.21	1.69	2.26	2.84	3.42	5.06	7.72	11.83	16.14	20.45
	1	2	5	6	7	9	9	16	16	16	18	30	54	60	60	60
40	.00	.04	.18	.39	.64	.94	1.28	1.86	2.43	3.01	3.58	5.62	7.81	12.08	16.39	20.70
	1	3	5	7	7	9	16	16	16	16	16	30	54	60	60	60
50	.00	.04	.18	.41	.66	.98	1.37	1.94	2.52	3.09	3.88	5.95	8.10	12.08	16.39	20.70
	1	3	5	7	7	10	16	16	16	16	28	30	30	60	60	60
60	.00	.04	.18	.43	.68	1.03	1.42	1.99	2.56	3.14	4.13	6.15	8.31	12.08	16.39	20.70
	1	3	5	7	7	10	11	16	16	16	28	30	30	60	60	60
70	.00	.04	.19	.44	.71	1.09	1.48	2.01	2.59	3.31	4.31	6.33	8.44	12.08	16.39	20.70
	1	3	7	7	10	11	11	16	16	28	28	28	30	60	60	60
80	.00	.05	.20	.45	.75	1.14	1.54	2.02	2.60	3.44	4.45	6.46	8.53	12.08	16.39	20.70
	1	3	7	7	11	11	11	16	16	28	28	28	30	60	60	60
90	.00	.05	.21	.46	.79	1.19	1.58	2.07	2.60	3.54	4.55	6.56	8.58	12.08	16.39	20.70
	1	3	7	7	11	11	11	14	16	28	28	28	30	60	60	60
100	.00	.05	.22	.47	.83	1.22	1.62	2.11	2.64	3.62	4.63	6.64	8.66	12.08	16.39	20.70
	1	3	7	7	11	11	11	14	26	28	28	28	28	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
HENDERSON CREEK NEAR OQUAWKA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

54695 - SOUTH HENDERSON CREEK AT BIGGSVILLE



LOCATION: Between Sec 16 and 17, T10N, R4W, Henderson County at bridge on Illinois 94 at north edge of Biggsville

DRAINAGE AREA: 82.9 square miles

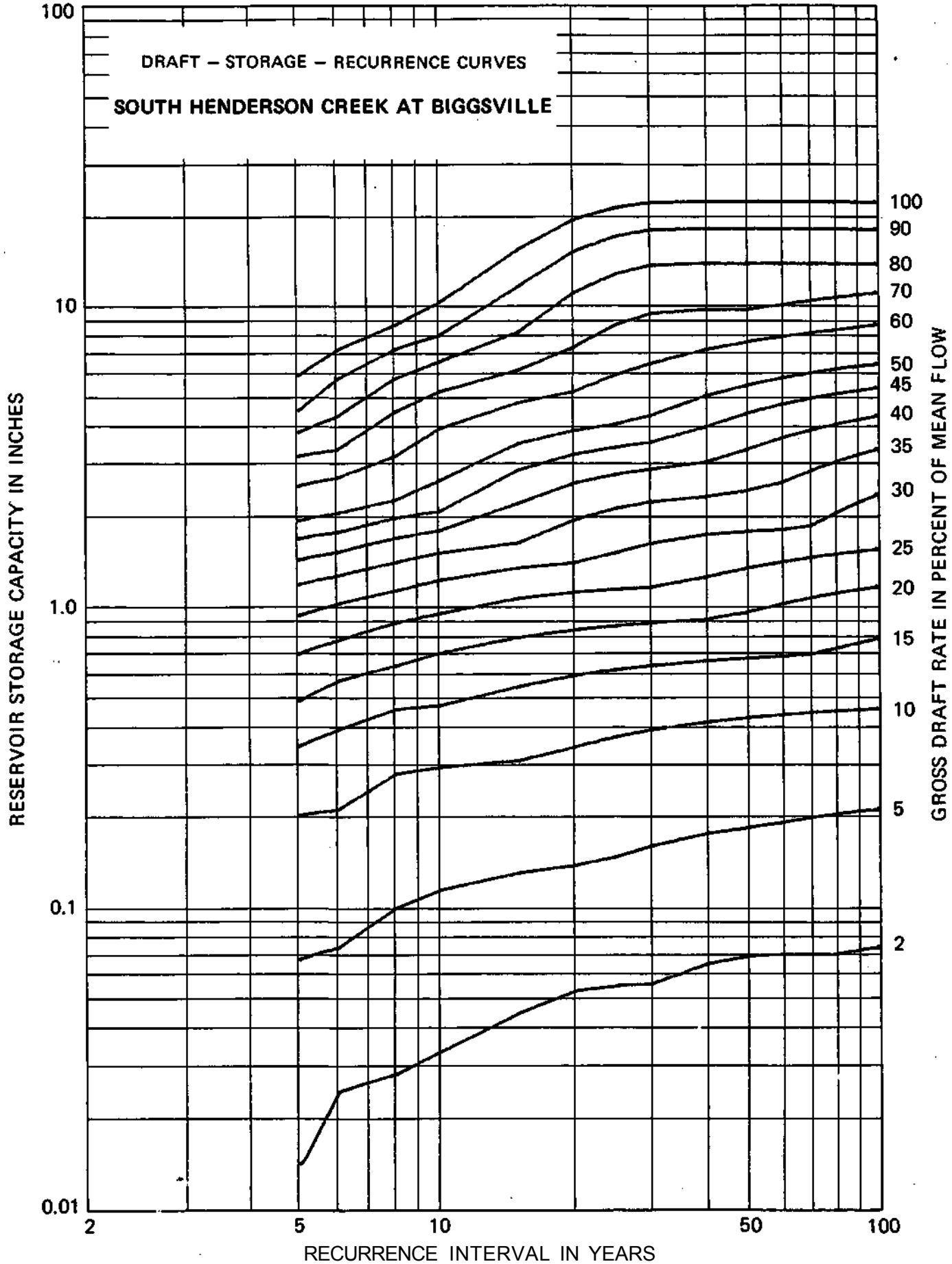
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Spoon River at Seville

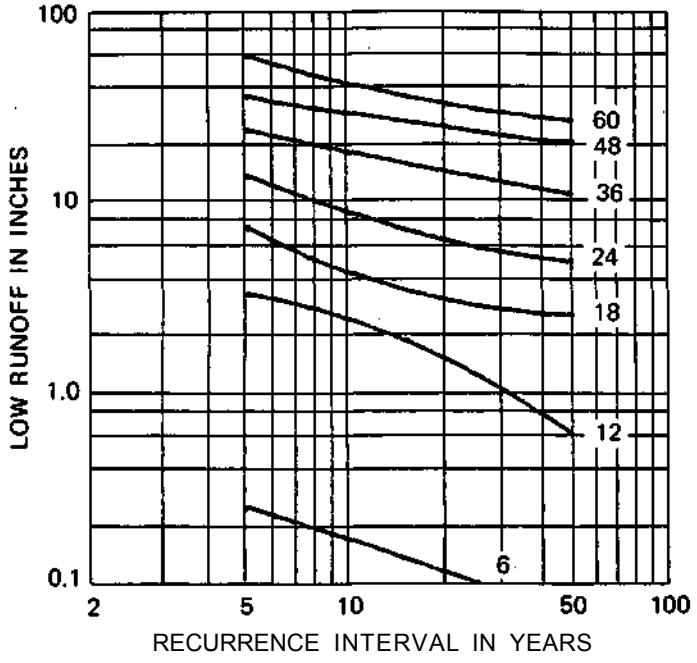
MEAN DISCHARGE: 0.69 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.07	.20	.33	.47	.67	.91	1.15	1.39	1.63	1.87	2.45	3.07	3.69	4.36	5.71
	1	3	4	4	4	6	7	7	7	7	7	9	9	9	10	20
6	.02	.07	.21	.38	.55	.75	.99	1.23	1.47	1.72	1.99	2.61	3.23	4.16	5.54	6.92
	2	3	5	5	5	7	7	7	7	7	8	9	9	18	20	20
8	.03	.10	.27	.44	.62	.86	1.10	1.36	1.64	1.92	2.19	3.07	4.31	5.56	6.93	8.31
	2	5	5	5	7	7	7	8	8	8	8	18	18	20	20	20
10	.03	.11	.28	.46	.68	.92	1.19	1.47	1.74	2.02	2.55	3.79	5.04	6.34	7.72	9.93
	3	5	5	5	7	7	8	8	8	8	18	18	18	20	20	32
15	.04	.13	.30	.53	.77	1.04	1.31	1.59	2.16	2.78	3.40	4.64	5.96	7.93	11.24	14.96
	4	4	6	7	7	8	8	8	18	18	18	18	20	30	54	54
20	.05	.13	.33	.57	.81	1.09	1.37	1.89	2.51	3.14	3.76	5.06	7.08	10.72	14.72	18.82
	4	4	7	7	7	8	8	18	18	18	18	20	30	58	58	60
25	.05	.14	.36	.60	.84	1.12	1.48	2.08	2.70	3.32	3.96	5.77	8.43	12.45	16.59	20.73
	4	6	7	7	8	8	16	18	18	18	20	30	58	60	60	60
30	.05	.16	.38	.62	.86	1.14	1.59	2.19	2.81	3.45	4.23	6.30	9.18	13.30	17.43	21.57
	4	6	7	7	7	8	16	18	18	20	30	30	58	60	60	60
40	.06	.17	.40	.65	.89	1.23	1.70	2.28	2.97	3.88	4.91	6.98	9.48	13.51	17.65	21.79
	5	6	7	7	7	11	16	20	20	30	30	30	54	60	60	60
50	.07	.18	.42	.66	.94	1.32	1.75	2.39	3.28	4.32	5.35	7.42	9.49	13.51	17.65	21.79
	5	6	7	7	11	11	16	20	30	30	30	30	30	60	60	60
60	.07	.19	.43	.67	1.00	1.38	1.78	2.55	3.58	4.62	5.65	7.72	9.85	13.51	17.65	21.79
	5	7	7	7	11	11	12	30	30	30	30	30	34	60	60	60
70	.07	.20	.44	.68	1.05	1.43	1.83	2.78	3.81	4.84	5.88	7.94	10.19	13.51	17.65	21.79
	5	7	7	10	11	11	12	28	30	30	30	30	34	60	60	60
80	.07	.20	.44	.71	1.09	1.47	2.02	2.98	3.98	5.01	6.05	8.12	10.45	13.51	17.65	21.79
	6	7	7	11	11	11	28	28	30	30	30	30	34	60	60	60
90	.07	.21	.45	.74	1.12	1.50	2.19	3.15	4.12	5.15	6.18	8.33	10.67	13.51	17.65	21.79
	6	7	7	11	11	11	28	28	28	30	30	34	34	60	60	60
100	.07	.21	.45	.77	1.15	1.53	2.33	3.29	4.26	5.26	6.30	8.51	10.85	13.51	17.65	21.79
	6	7	7	11	11	11	28	28	28	30	30	34	34	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
SOUTH HENDERSON CREEK AT BIGGSVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55565 - BUREAU CREEK AT PRINCETON



LOCATION: In SW¼ SE¼ Sec 18, T16N, R8W, Bureau County near a bridge on U.S. 6, and U.S. 34, 1.5 miles west of Princeton

DRAINAGE AREA: 196 square miles

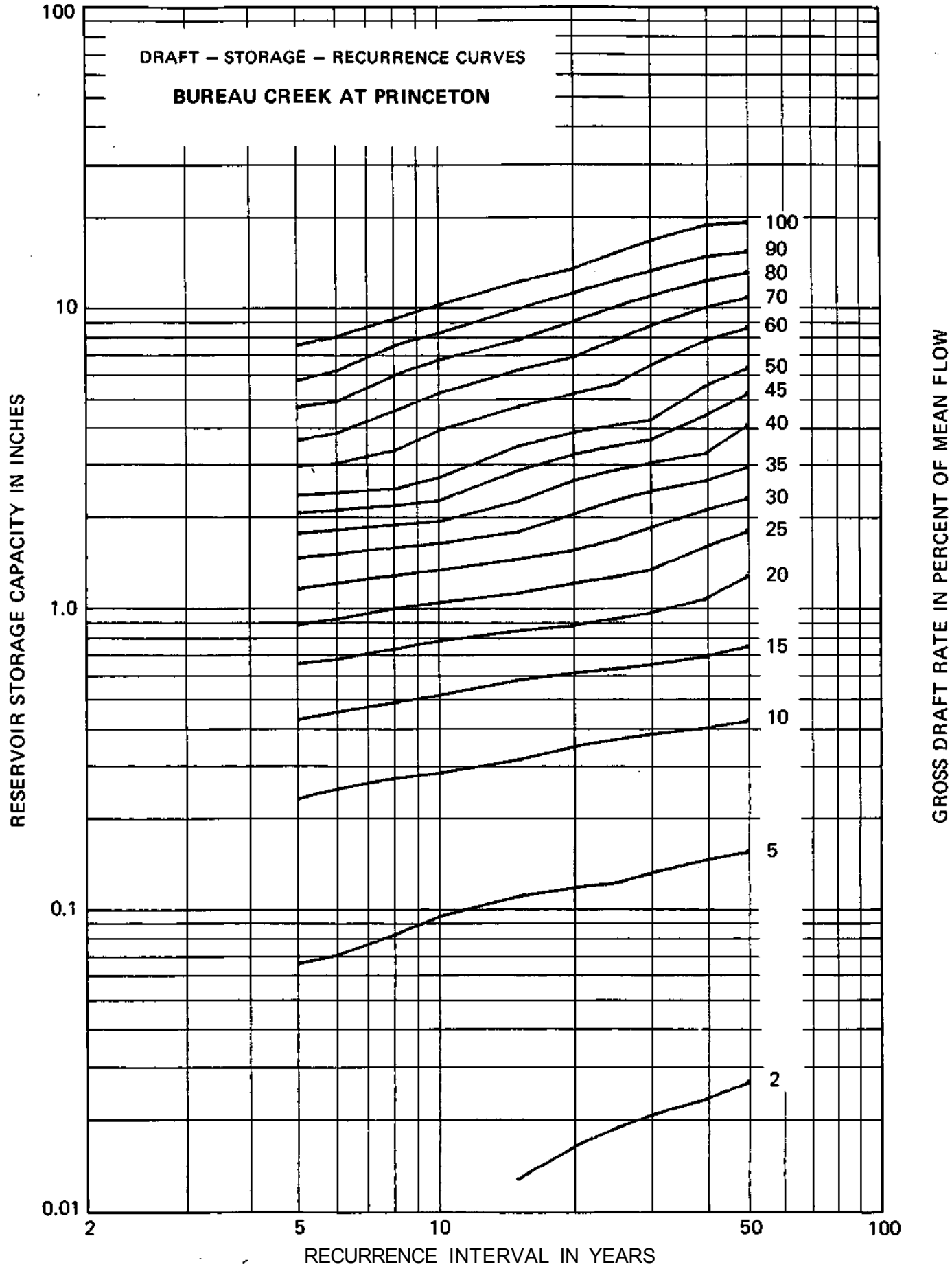
ACTUAL FLOW DATA: Mar 1936 to Oct 1978

INDEX STATION: None

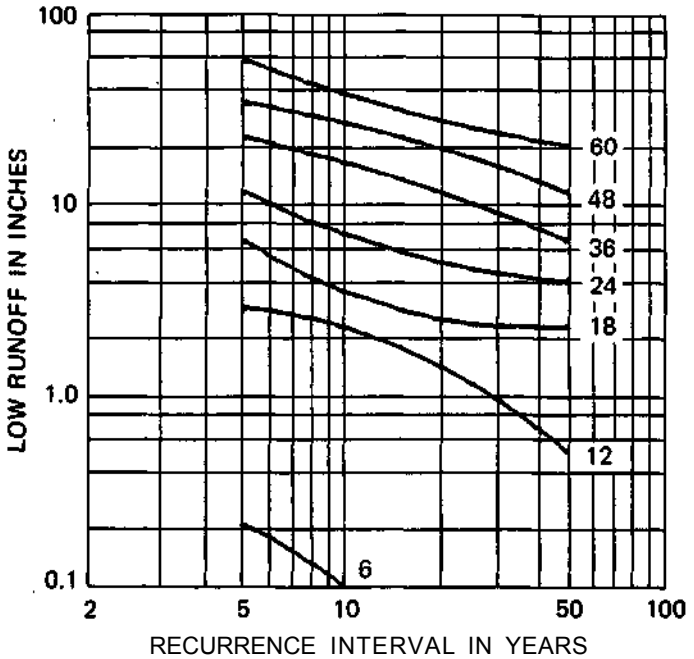
MEAN DISCHARGE: 0.73 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.06	.23	.42	.64	.86	1.12	1.42	1.71	2.00	2.30	2.88	3.52	4.54	5.57	7.30
	2	4	5	6	6	6	8	8	8	8	8	8	14	14	14	30
6	.01	.07	.24	.44	.66	.89	1.17	1.46	1.76	2.05	2.34	2.93	3.72	4.75	6.00	7.76
	1	4	5	6	6	7	8	8	8	8	8	8	14	14	20	30
8	.01	.08	.26	.47	.71	.97	1.24	1.53	1.83	2.12	2.41	3.25	4.43	5.81	7.27	8.92
	1	5	5	6	7	7	8	8	8	8	8	16	16	20	20	28
10	.01	.09	.28	.50	.76	1.01	1.29	1.59	1.88	2.21	2.64	3.81	5.08	6.55	8.02	9.95
	1	5	5	7	7	7	8	8	9	9	16	16	20	20	20	28
15	.01	.11	.31	.56	.82	1.09	1.41	1.74	2.21	2.79	3.38	4.59	6.05	7.61	9.66	11.85
	3	5	6	7	7	8	9	9	16	16	16	20	20	28	28	44
20	.02	.12	.34	.60	.86	1.18	1.51	2.00	2.59	3.17	3.76	5.07	6.70	8.76	10.92	13.12
	3	5	7	7	8	9	10	16	16	16	16	20	28	28	30	30
25	.02	.12	.36	.62	.90	1.24	1.65	2.23	2.82	3.41	3.99	5.48	7.64	9.84	12.04	14.81
	3	5	7	7	9	10	16	16	16	16	16	28	30	30	30	54
30	.02	.13	.37	.64	.95	1.31	1.81	2.39	2.98	3.57	4.15	6.32	8.52	10.72	12.92	16.26
	3	6	7	8	9	10	16	16	16	16	16	30	30	30	30	54
40	.02	.14	.39	.68	1.05	1.56	2.08	2.60	3.22	4.32	5.42	7.62	9.82	12.02	14.41	18.37
	3	6	7	8	14	14	14	16	30	30	30	30	30	30	54	54
50	.03	.15	.42	.73	1.25	1.76	2.27	2.89	3.99	5.09	6.19	8.39	10.59	12.79	14.99	18.76
	4	6	8	14	14	14	14	30	30	30	30	30	30	30	30	54


DRAFT – STORAGE – RECURRENCE CURVES
BUREAU CREEK AT PRINCETON
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55570 - WEST BUREAU CREEK AT WYANET



LOCATION: At Northeast corner of Sec 21, T16N, R8E, Bureau County at bridge on U.S. 6 and U.S. 34, 0.5 miles east of Wyanet

DRAINAGE AREA: 86.7 square miles

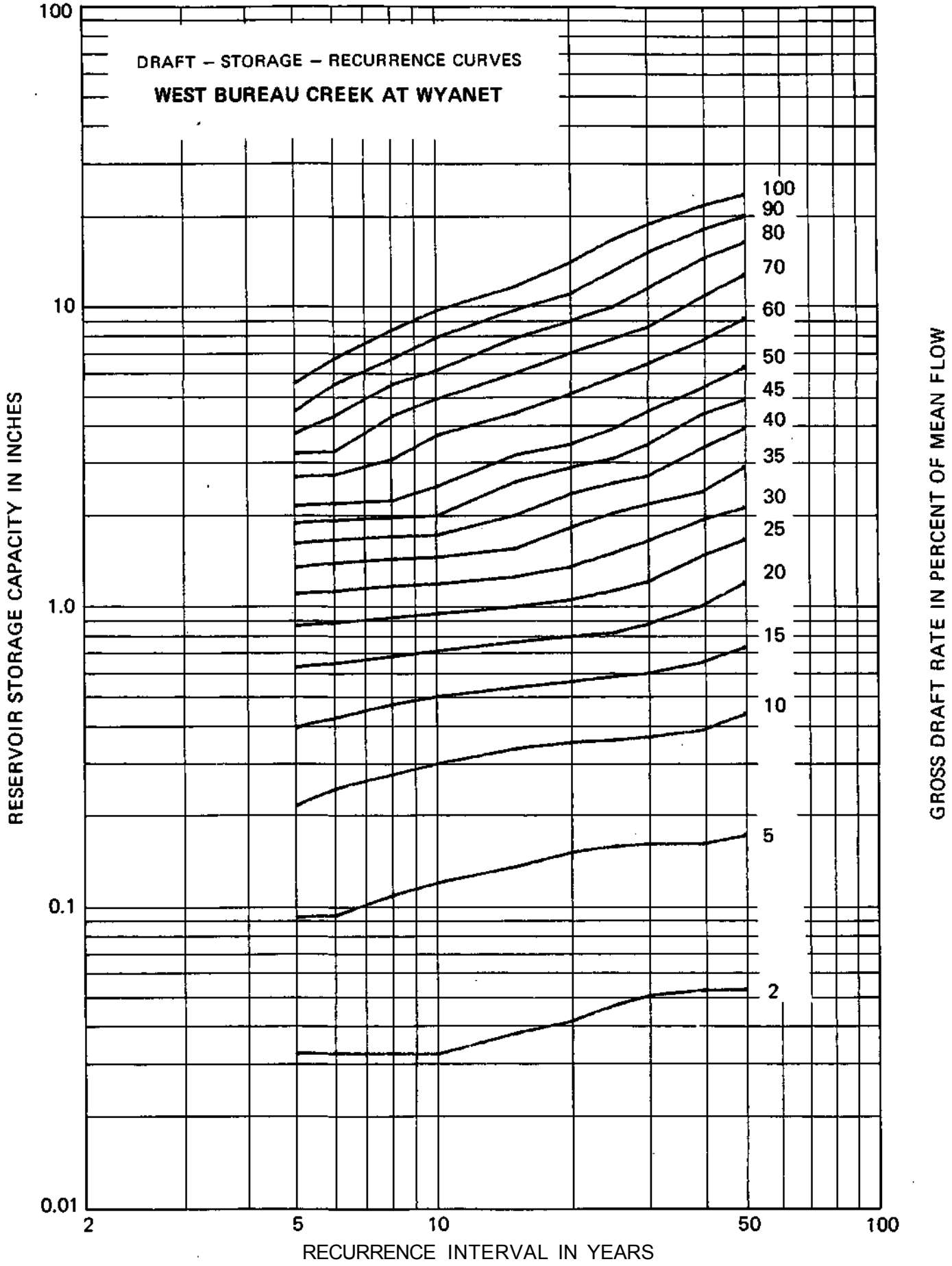
ACTUAL FLOW DATA: Mar 1936 to Oct 1978

INDEX STATION: Bureau Creek at Princeotn

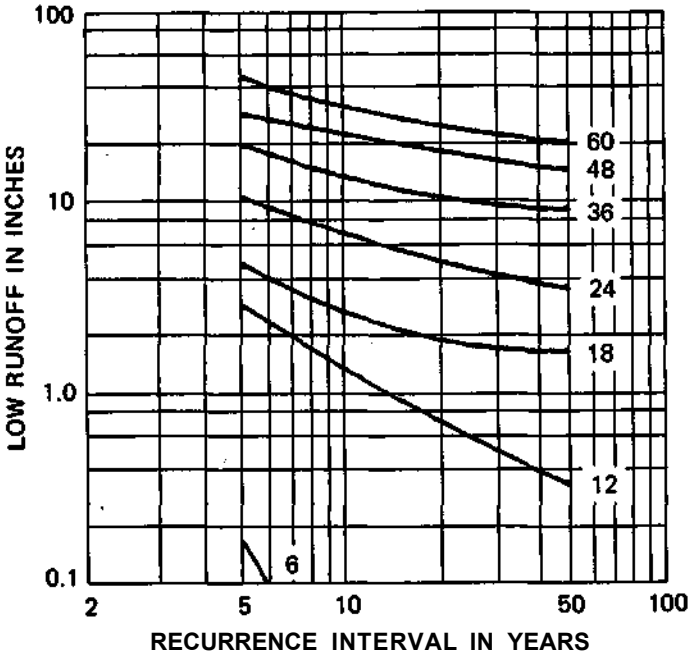
MEAN DISCHARGE: 0.66 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.09	.21	.39	.61	.84	1.07	1.31	1.58	1.84	2.10	2.62	3.15	3.68	4.38	5.45
	3	3	5	6	7	7	7	8	8	8	8	8	8	9	11	18
6	.03	.09	.24	.41	.63	.86	1.10	1.36	1.62	1.88	2.14	2.67	3.19	4.19	5.37	6.55
	3	4	5	6	7	7	8	8	8	8	8	8	8	18	18	18
8	.03	.11	.27	.46	.67	.89	1.14	1.40	1.66	1.92	2.18	3.01	4.19	5.37	6.55	8.16
	3	4	5	6	7	7	8	8	8	8	8	18	18	18	18	26
10	.03	.12	.29	.49	.69	.92	1.16	1.42	1.68	1.95	2.44	3.62	4.80	6.00	7.71	9.46
	3	5	6	6	7	7	8	8	8	9	18	18	18	26	26	28
15	.04	.13	.33	.53	.75	.98	1.23	1.52	1.96	2.54	3.13	4.31	5.89	7.69	9.52	11.40
	3	6	6	6	7	7	9	9	16	18	18	18	26	28	28	30
20	.04	.15	.34	.55	.78	1.03	1.32	1.79	2.31	2.84	3.40	5.02	6.86	8.76	10.80	13.68
	5	6	6	7	7	9	9	16	16	16	18	28	28	30	44	44
25	.05	.16	.35	.57	.80	1.11	1.48	2.00	2.53	3.05	3.83	5.70	7.67	9.78	12.83	16.36
	4	6	6	7	7	10	16	16	16	16	28	30	30	42	54	54
30	.05	.16	.36	.59	.86	1.19	1.62	2.14	2.67	3.40	4.39	6.35	8.39	11.29	14.83	18.36
	4	6	7	7	10	10	16	16	16	30	30	30	42	54	54	54
40	.05	.16	.38	.64	.99	1.45	1.91	2.37	3.32	4.30	5.29	7.59	10.57	14.11	17.65	21.18
	4	6	8	8	14	14	14	14	30	30	30	42	54	54	54	54
50	.05	.17	.43	.72	1.18	1.64	2.10	2.87	3.85	4.83	6.19	8.96	12.50	16.03	19.57	23.10
	5	8	8	14	14	14	14	30	30	30	42	54	54	54	54	54


DRAFT – STORAGE – RECURRENCE CURVES
WEST BUREAU CREEK AT WYANET
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55575 – EAST BUREAU CREEK NEAR BUREAU



LOCATION: In NW¼ NE¼ Sec 31, T16N, R10E, Bureau County at bridge, 0.5 miles downstream from Brush Creek, 3.5 miles north of Bureau

DRAINAGE AREA: 99 square miles

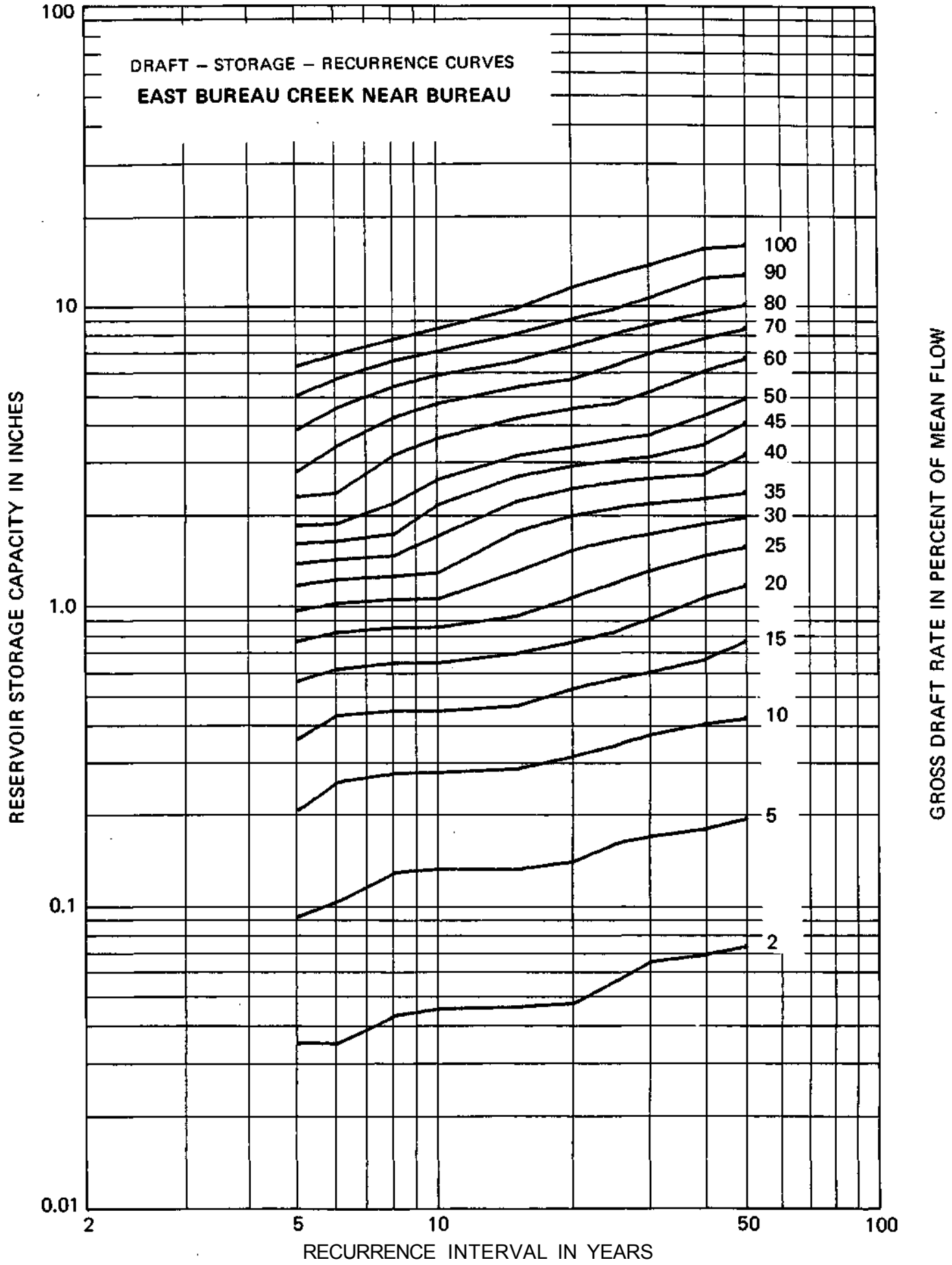
ACTUAL FLOW DATA: Mar 1936 to Oct 1978

INDEX STATION: Bureau Creek at Princeton

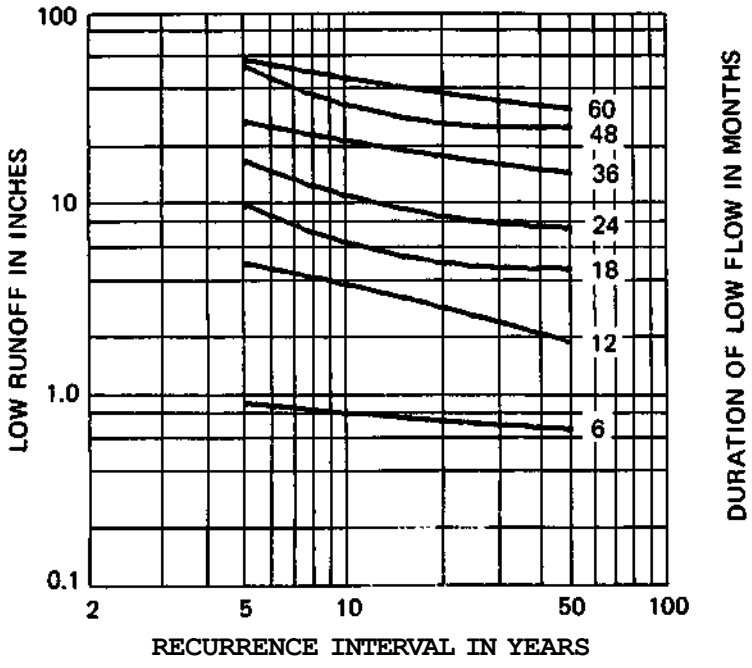
MEAN DISCHARGE: 0.57 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.09	.21	.36	.55	.76	.96	1.16	1.36	1.59	1.82	2.28	2.78	3.82	4.97	6.22
	3	4	4	6	7	7	7	7	8	8	8	8	10	20	20	30
6	.03	.10	.25	.43	.61	.81	1.01	1.21	1.41	1.62	1.85	2.34	3.36	4.50	5.65	6.80
	3	4	6	6	7	7	7	7	7	8	8	10	20	20	20	20
8	.04	.13	.27	.44	.64	.84	1.04	1.24	1.45	1.71	2.17	3.13	4.18	5.33	6.48	7.62
	4	5	5	6	7	7	7	7	8	16	16	18	20	20	20	20
10	.04	.13	.27	.44	.64	.84	1.05	1.28	1.69	2.15	2.61	3.57	4.67	5.81	6.96	8.30
	4	5	5	6	7	7	8	8	16	16	16	18	20	20	20	30
15	.05	.13	.28	.46	.69	.92	1.29	1.75	2.21	2.67	3.12	4.17	5.31	6.46	7.97	9.72
	4	5	6	8	8	8	16	16	16	16	16	20	20	20	30	32
20	.05	.14	.31	.53	.75	1.06	1.52	1.98	2.44	2.89	3.35	4.49	5.64	7.24	8.96	11.46
	5	6	6	8	8	16	16	16	16	16	16	20	20	30	30	52
25	.06	.16	.34	.57	.81	1.18	1.64	2.10	2.56	3.02	3.54	4.69	6.27	7.99	9.71	12.68
	6	6	8	8	10	16	16	16	16	16	20	20	30	30	30	52
30	.06	.17	.37	.60	.90	1.30	1.72	2.18	2.64	3.10	3.68	5.13	6.85	8.57	10.58	13.57
	6	6	8	8	14	14	16	16	16	20	20	30	30	30	52	54
40	.07	.18	.40	.66	1.06	1.46	1.86	2.27	2.72	3.42	4.28	6.00	7.72	9.44	12.34	15.44
	6	7	8	14	14	14	14	14	16	30	30	30	30	30	54	54
50	.07	.19	.42	.76	1.16	1.56	1.97	2.37	3.17	4.03	4.89	6.61	8.33	10.05	12.65	15.86
	7	7	8	14	14	14	14	14	30	30	30	30	30	30	56	56


DRAFT – STORAGE – RECURRENCE CURVES
EAST BUREAU CREEK NEAR BUREAU
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55580 – BUREAU CREEK AT BUREAU



LOCATION: In SE¼ SW¼ Sec 18 T15N, R10E, at bridge on Illinois 29, 1 mile southwest of Bureau and *2V** miles downstream from east Bureau Creek

DRAINAGE AREA: 481 square miles

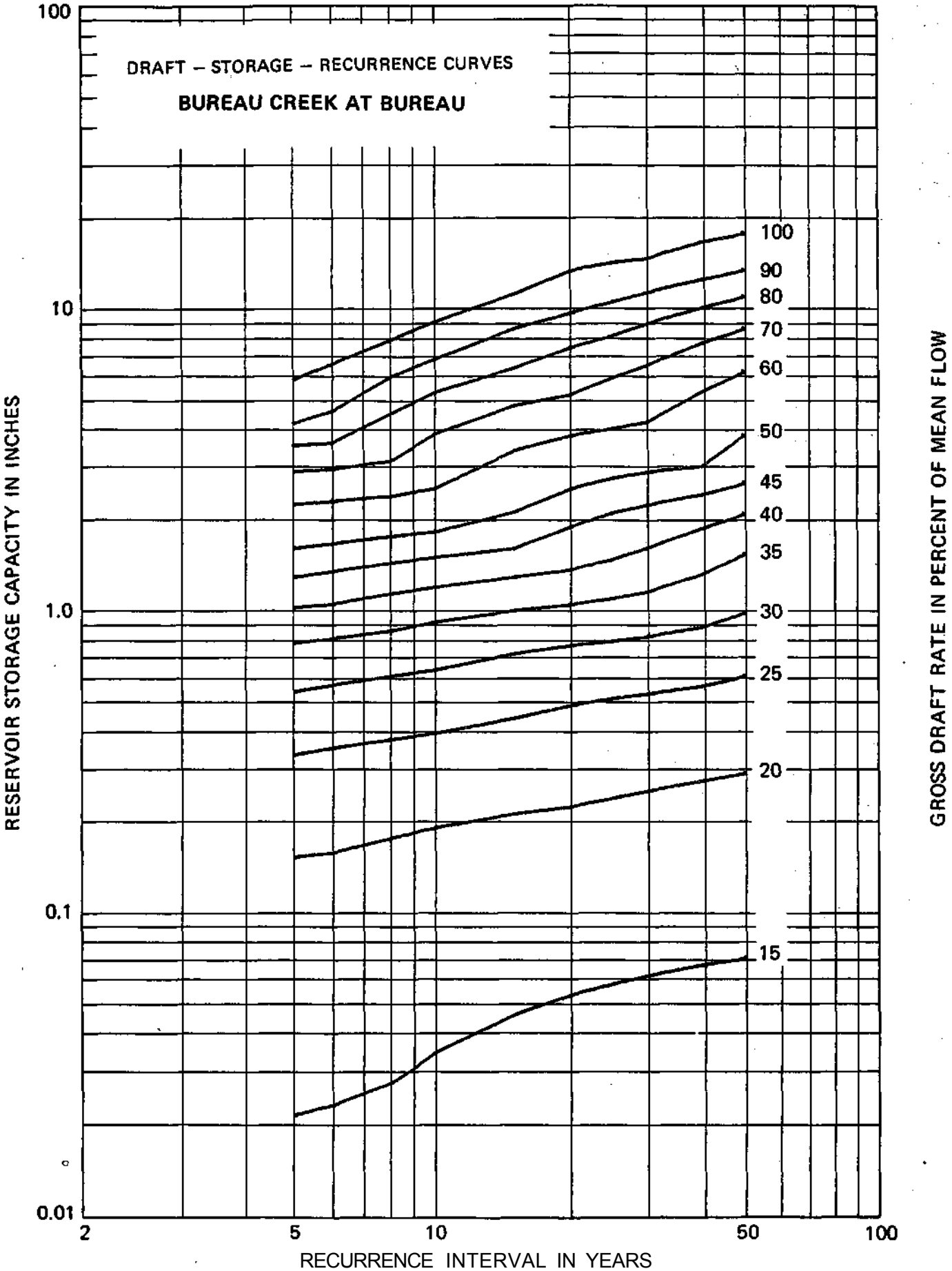
ACTUAL FLOW DATA: Oct 1940 to Sep 1949

INDEX STATION: Bureau Creek at Princeton

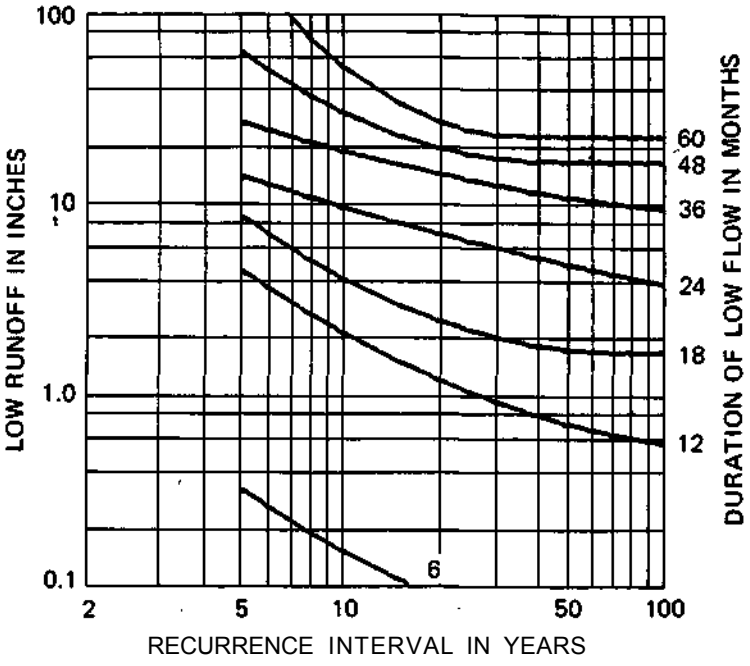
MEAN DISCHARGE: 0.79 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.02	.15	.33	.53	.77	1.01	1.27	1.59	2.22	2.85	3.48	4.12	5.77
	3	4	4	1	4	5	6	6	6	8	8	8	8	8	9	30
6	.00	.00	.00	.02	.16	.35	.56	.80	1.03	1.33	1.65	2.28	2.91	3.55	4.54	6.51
	3	4	6	1	4	5	6	6	6	8	8	8	8	9	20	30
8	.00	.00	.00	.03	.17	.37	.60	.84	1.12	1.42	1.74	2.37	3.10	4.45	5.90	7.80
	4	5	5	2	5	5	6	7	7	8	8	8	16	18	20	28
10	.00	.00	.00	.03	.19	.39	.63	.90	1.18	1.48	1.80	2.51	3.82	5.24	6.75	8.95
	4	5	5	2	5	6	7	7	7	8	8	16	18	18	28	28
15	.00	.00	.00	.05	.21	.44	.71	.99	1.28	1.59	2.11	3.37	4.75	6.31	8.52	11.05
	4	5	6	2	5	7	7	7	8	8	16	16	18	28	28	50
20	.00	.00	.00	.05	.22	.48	.76	1.03	1.35	1.87	2.50	3.76	5.16	7.36	9.57	13.14
	5	6	6	2	5	7	7	8	9	16	16	16	28	28	28	50
25	.00	.00	.00	.06	.24	.51	.78	1.09	1.47	2.10	2.73	3.99	5.87	8.08	10.42	14.04
	6	6	8	2	6	7	7	8	16	16	16	16	28	28	30	50
30	.00	.00	.00	.06	.25	.53	.81	1.14	1.60	2.23	2.86	4.20	6.47	8.83	11.19	14.48
	6	6	8	2	6	7	8	9	16	16	16	28	30	30	30	54
40	.00	.00	.00	.07	.27	.56	.87	1.31	1.86	2.41	2.99	5.29	7.65	10.01	12.38	16.47
	6	7	8	2	7	8	8	14	14	14	16	30	30	30	30	54
50	.00	.00	.00	.07	.29	.60	.97	1.52	2.08	2.63	3.80	6.16	8.52	10.89	13.26	17.51
	7	7	1	2	8	8	14	14	14	14	30	30	30	30	54	54


DRAFT – STORAGE – RECURRENCE CURVES
BUREAU CREEK AT BUREAU
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15

55585 - CROW CREEK (WEST) NEAR HENRY



LOCATION: In SW¼ SE¼ Sec 36, T14N, R9E, Putnam County, at bridge No. 7, 2.4 miles west of Illinois 29, and 36 miles northwest of Henry

DRAINAGE AREA: 56.2 square miles

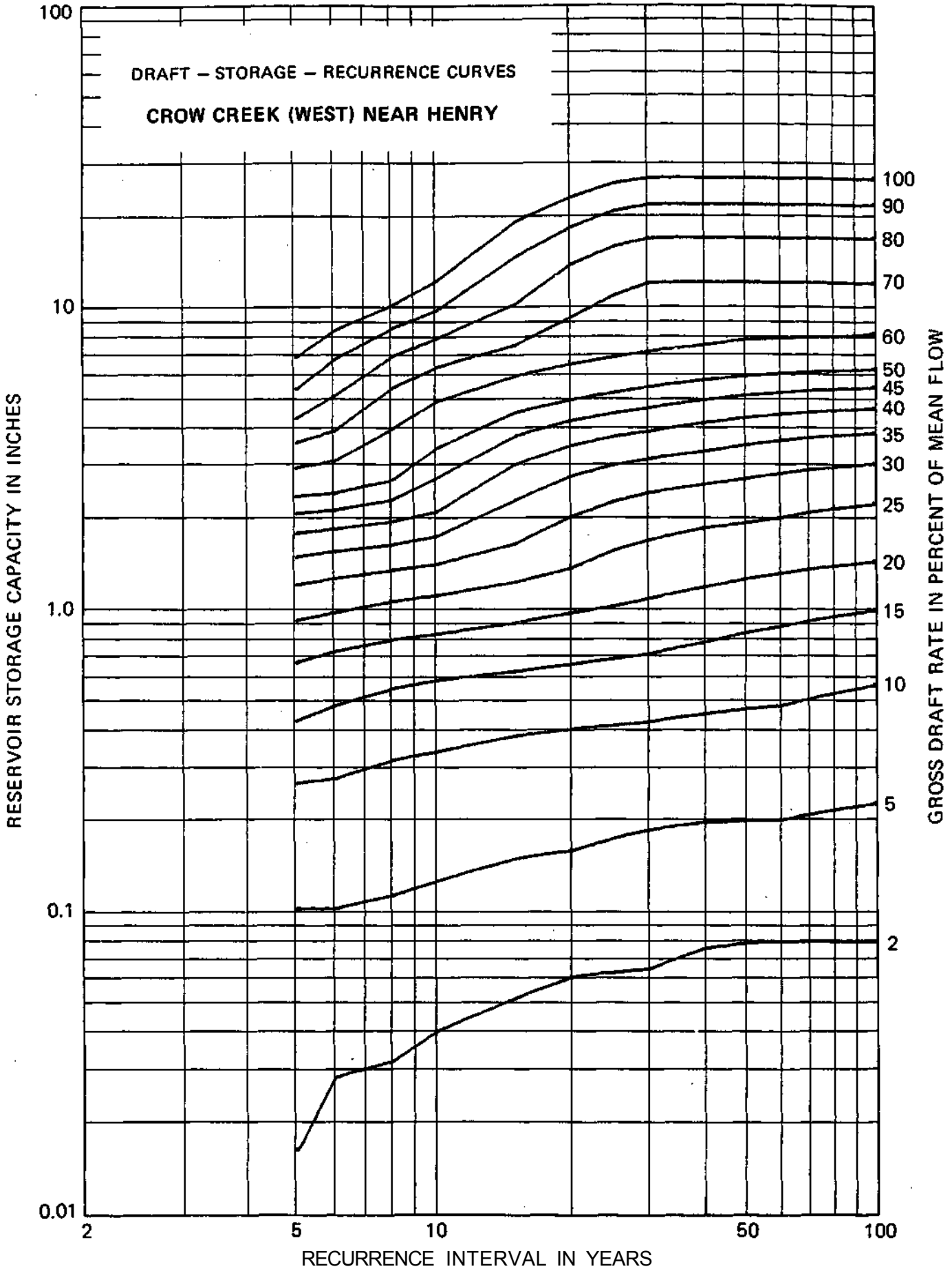
ACTUAL FLOW DATA: May 1949 to Oct 1978

INDEX STATION: Spoon River at Seville

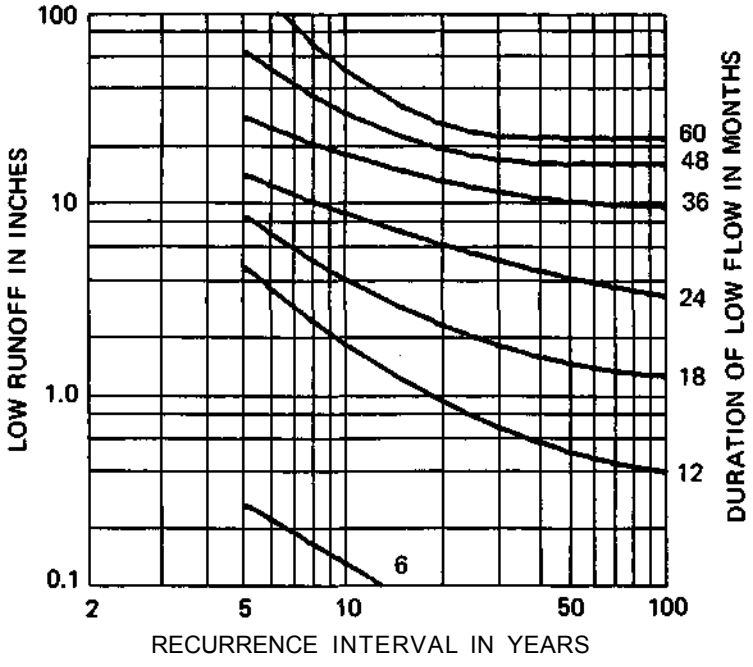
MEAN DISCHARGE: 0.80 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.10	.26	.42	.66	.90	1.18	1.46	1.74	2.03	2.31	2.87	3.49	4.22	5.28	6.72
	1	4	4	4	6	7	7	7	7	7	7	7	9	9	14	20
6	.03	.10	.27	.47	.72	.96	1.24	1.52	1.80	2.08	2.36	3.03	3.82	5.02	6.62	8.22
	2	4	5	6	6	7	7	7	7	7	7	9	14	20	20	20
8	.03	.11	.31	.54	.78	1.04	1.32	1.60	1.90	2.25	2.61	3.87	5.32	6.76	8.36	9.97
	2	5	5	6	6	7	7	7	8	9	9	18	18	18	20	20
10	.04	.12	.33	.57	.82	1.09	1.38	1.71	2.06	2.65	3.35	4.79	6.24	7.74	9.61	12.01
	3	5	6	6	6	7	8	8	9	16	18	18	18	20	30	30
15	.05	.15	.38	.62	.89	1.21	1.62	2.26	2.97	3.69	4.41	5.86	7.40	10.11	14.44	18.87
	4	4	6	6	8	8	16	16	18	18	18	18	20	54	54	56
20	.06	.16	.40	.65	.96	1.35	1.99	2.71	3.43	4.15	4.88	6.40	9.13	13.62	18.11	22.68
	4	5	6	7	8	16	16	18	18	18	18	20	54	56	56	60
25	.06	.17	.41	.68	1.01	1.55	2.24	2.96	3.68	4.41	5.16	6.77	10.78	15.60	20.41	25.22
	4	5	6	8	9	16	18	18	18	18	20	20	60	60	60	60
30	.06	.18	.42	.71	1.08	1.67	2.39	3.12	3.84	4.60	5.41	7.07	11.85	16.66	21.48	26.29
	5	5	7	8	10	18	18	18	18	20	20	30	60	60	60	60
40	.08	.20	.45	.77	1.17	1.84	2.56	3.30	4.10	4.91	5.71	7.42	11.99	16.80	21.62	26.43
	5	5	7	10	10	18	18	20	20	20	20	42	60	60	60	60
50	.08	.20	.47	.83	1.25	1.92	2.68	3.48	4.28	5.09	5.89	7.75	11.99	16.80	21.62	26.43
	5	5	7	10	11	18	20	20	20	20	20	42	60	60	60	60
60	.08	.20	.48	.88	1.31	2.00	2.80	3.60	4.40	5.21	6.01	7.87	11.99	16.80	21.62	26.43
	5	5	7	10	11	20	20	20	20	20	20	42	60	60	60	60
70	.08	.21	.51	.91	1.35	2.08	2.88	3.68	4.49	5.29	6.09	7.91	11.99	16.80	21.62	26.43
	5	7	10	11	11	20	20	20	20	20	20	40	60	60	60	60
80	.08	.22	.53	.95	1.39	2.14	2.94	3.75	4.55	5.35	6.15	7.97	11.99	16.80	21.62	26.43
	5	7	10	11	11	20	20	20	20	20	20	38	60	60	60	60
90	.08	.22	.55	.97	1.41	2.19	2.99	3.79	4.59	5.40	6.20	8.03	11.99	16.80	21.62	26.43
	5	7	10	11	11	20	20	20	20	20	20	38	60	60	60	60
100	.08	.23	.56	1.00	1.44	2.22	3.02	3.83	4.63	5.43	6.23	8.17	11.99	16.80	21.62	26.43
	5	7	10	11	11	20	20	20	20	20	20	36	60	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
CROW CREEK (WEST) NEAR HENRY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55590 - GIMLET CREEK AT SPARLAND



LOCATION: In SE¼ NW¼ Sec 14, T12N, R9E, Marshall County, 120 feet upstream from bridge on State Highway 29 in Sparland

DRAINAGE AREA: 5.66 square miles

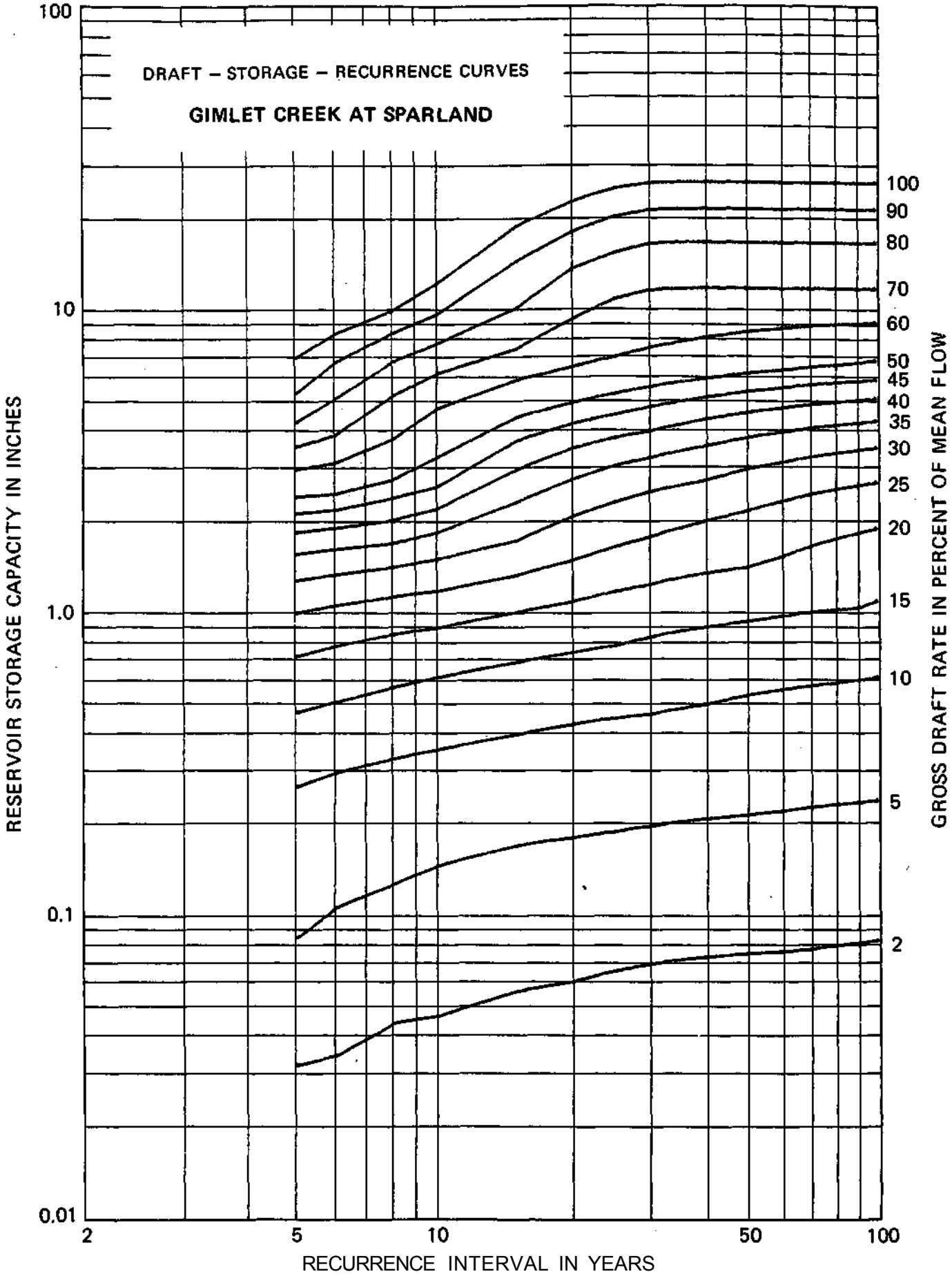
ACTUAL FLOW DATA: Oct 1949 to Oct 1971

INDEX STATION: Spoon River at Seville

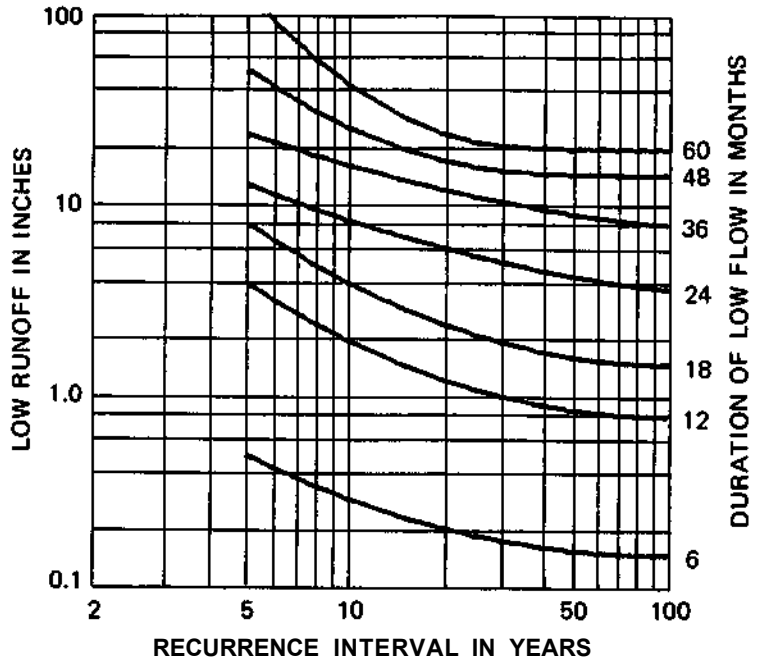
MEAN DISCHARGE: 0.79 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.08	.26	.46	.71	.98	1.26	1.54	1.82	2.09	2.37	2.93	3.48	4.19	5.23	6.82
	2	3	5	5	7	7	7	7	7	7	7	7	7	9	20	20
6	.03	.11	.29	.50	.76	1.04	1.32	1.60	1.87	2.15	2.43	3.08	3.79	4.98	6.57	8.16
	3	3	5	6	7	7	7	7	7	7	7	9	9	20	20	20
8	.04	.13	.32	.56	.84	1.12	1.39	1.67	1.99	2.35	2.71	3.67	5.10	6.61	8.20	9.78
	3	5	5	7	7	7	7	7	9	9	9	18	18	20	20	20
10	.05	.14	.35	.60	.88	1.17	1.49	1.82	2.17	2.57	3.21	4.63	6.06	7.58	9.51	12.05
	3	5	6	7	7	8	8	9	9	16	18	18	18	20	32	32
15	.06	.17	.39	.68	1.00	1.32	1.71	2.29	2.92	3.63	4.35	5.78	7.29	9.98	14.24	18.52
	4	5	6	8	8	10	10	16	16	18	18	18	20	52	54	54
20	.06	.18	.42	.73	1.08	1.48	2.06	2.72	3.43	4.15	4.86	6.38	9.18	13.46	17.75	22.32
	4	5	7	8	10	10	16	18	18	18	18	20	54	54	54	58
25	.07	.19	.44	.77	1.17	1.64	2.30	3.01	3.72	4.44	5.21	6.87	10.72	15.16	19.93	24.69
	5	6	7	10	10	16	18	18	18	18	20	30	54	60	60	60
30	.07	.20	.46	.83	1.23	1.77	2.48	3.20	3.91	4.71	5.50	7.38	11.49	16.25	21.01	25.77
	5	6	8	10	12	18	18	18	20	20	20	30	60	60	60	60
40	.07	.21	.50	.89	1.34	1.99	2.70	3.50	4.29	5.08	5.88	8.02	11.73	16.49	21.25	26.01
	5	6	10	10	12	18	20	20	20	20	20	30	60	60	60	60
50	.08	.21	.53	.93	1.40	2.15	2.94	3.74	4.53	5.32	6.12	8.39	11.73	16.49	21.25	26.01
	5	6	10	11	12	20	20	20	20	20	20	30	60	60	60	60
60	.08	.22	.56	.97	1.52	2.32	3.11	3.90	4.70	5.49	6.28	8.63	11.73	16.49	21.25	26.01
	5	7	10	11	20	20	20	20	20	20	20	30	60	60	60	60
70	.08	.23	.57	1.00	1.65	2.44	3.24	4.03	4.82	5.62	6.42	8.80	11.73	16.49	21.25	26.01
	6	7	10	11	20	20	20	20	20	20	30	30	60	60	60	60
80	.08	.23	.58	1.02	1.75	2.54	3.33	4.13	4.92	5.71	6.53	8.91	11.73	16.49	21.25	26.01
	6	7	11	11	20	20	20	20	20	20	30	30	60	60	60	60
90	.08	.24	.60	1.04	1.82	2.62	3.41	4.20	5.00	5.79	6.64	8.99	11.73	16.49	21.25	26.01
	6	7	11	11	20	20	20	20	20	20	28	30	60	60	60	60
100	.08	.24	.61	1.10	1.89	2.68	3.48	4.27	5.06	5.86	6.75	9.04	11.73	16.49	21.25	26.01
	6	7	11	20	20	20	20	20	20	20	28	30	60	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
GIMLET CREEK AT SPARLAND
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55630 — KICKAPOO CREEK NEAR KICKAPOO



LOCATION: In SW¼ SE¼ Sec 34, T10N, R6E, Peoria highway, at bridge on U. S. 150, 2.5 miles northwest of Kickapoo

DRAINAGE AREA: 119 square miles

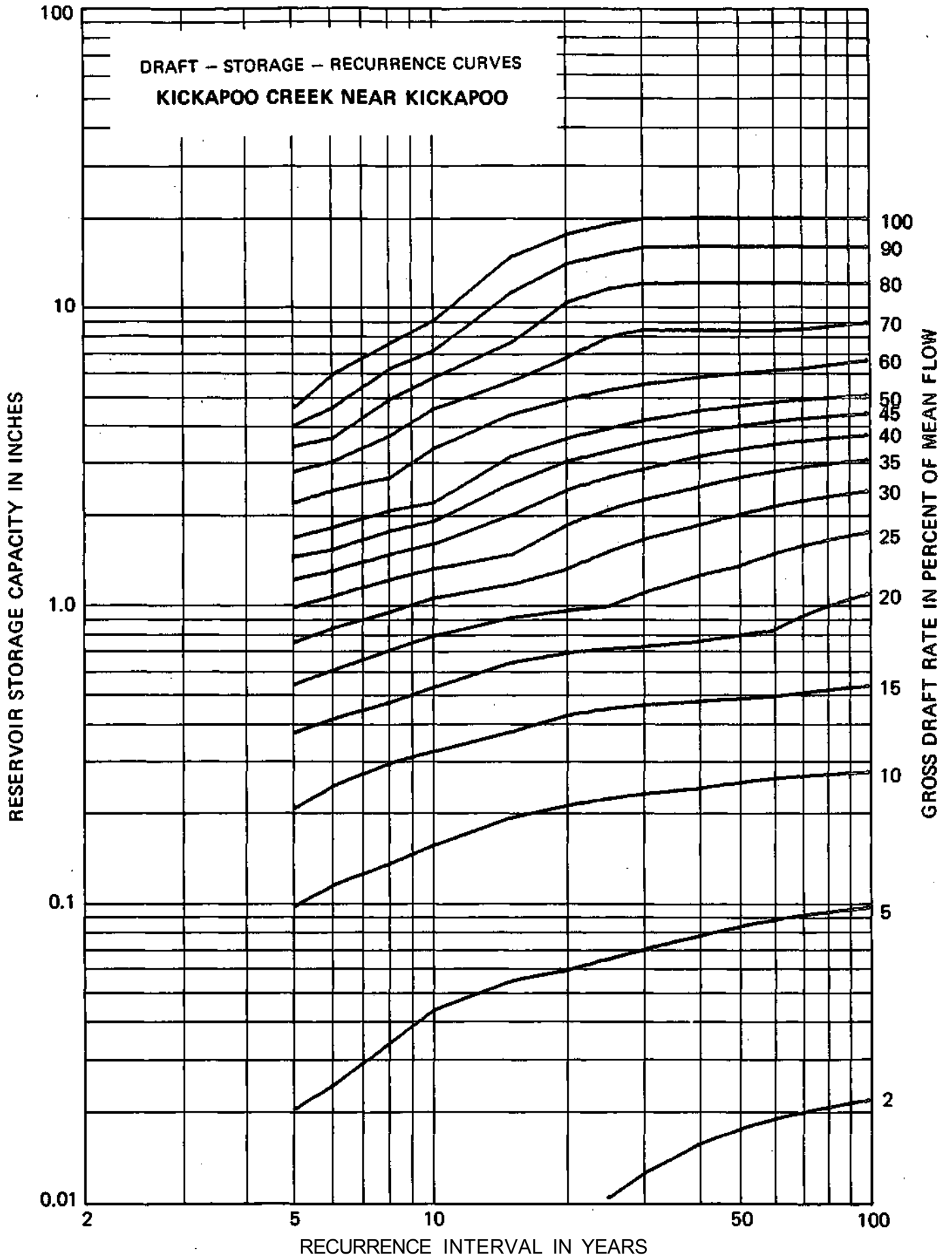
ACTUAL FLOW DATA: Oct 1944 to Oct 1978

INDEX STATION: Spoon River at Seville

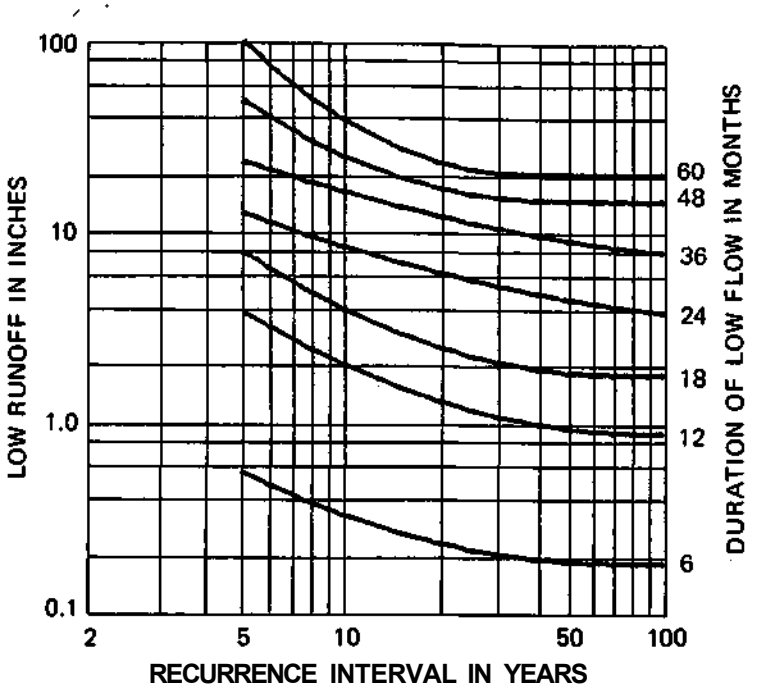
MEAN DISCHARGE: 0.66 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.10	.21	.37	.53	.74	.97	1.20	1.43	1.66	2.18	2.77	3.36	3.95	4.57
	2	1	3	5	5	5	7	7	7	7	7	9	9	9	9	10
6	.00	.02	.11	.24	.41	.59	.82	1.05	1.28	1.51	1.80	2.39	2.98	3.57	4.53	5.84
	1	1	3	5	5	7	7	7	7	7	9	9	9	9	20	20
8	.01	.03	.13	.29	.46	.69	.93	1.20	1.46	1.75	2.04	2.63	3.63	4.81	6.10	7.41
	1	3	4	5	7	7	8	8	8	9	9	9	18	18	20	20
10	.01	.04	.15	.32	.52	.78	1.04	1.30	1.58	1.88	2.17	3.29	4.47	5.69	7.00	8.86
	1	3	5	5	7	8	8	8	9	9	9	18	18	20	20	32
15	.01	.05	.19	.37	.63	.90	1.16	1.46	1.98	2.53	3.13	4.31	5.56	7.48	11.03	14.57
	1	3	5	8	8	8	8	16	16	18	18	18	20	54	54	54
20	.01	.06	.21	.42	.68	.95	1.30	1.83	2.40	2.99	3.59	4.83	6.65	10.20	13.74	17.29
	1	3	5	8	8	8	16	16	18	18	18	20	54	54	54	54
25	.01	.07	.22	.44	.71	.98	1.50	2.07	2.66	3.25	3.88	5.19	7.82	11.36	14.91	18.78
	2	4	5	8	8	9	16	18	18	18	20	20	54	54	54	60
30	.01	.07	.23	.46	.72	1.09	1.64	2.23	2.83	3.47	4.12	5.44	8.28	11.83	15.72	19.66
	2	4	5	8	8	16	18	18	18	20	20	20	54	54	60	60
40	.02	.08	.24	.47	.75	1.24	1.83	2.47	3.12	3.78	4.44	5.75	8.28	11.96	15.90	19.85
	2	5	7	7	10	18	18	20	20	20	20	20	54	60	60	60
50	.02	.08	.25	.48	.79	1.34	2.00	2.66	3.32	3.97	4.63	5.94	8.28	11.96	15.90	19.85
	2	5	7	7	10	20	20	20	20	20	20	20	54	60	60	60
60	.02	.09	.26	.49	.82	1.48	2.13	2.79	3.45	4.10	4.76	6.07	8.28	11.96	15.90	19.85
	2	5	7	7	20	20	20	20	20	20	20	20	54	60	60	60
70	.02	.09	.27	.51	.92	1.57	2.23	2.89	3.54	4.20	4.86	6.17	8.38	11.96	15.90	19.85
	2	5	7	10	20	20	20	20	20	20	20	20	34	60	60	60
80	.02	.09	.27	.52	.99	1.65	2.30	2.96	3.62	4.27	4.93	6.33	8.57	11.96	15.90	19.85
	2	5	7	10	20	20	20	20	20	20	20	34	34	60	60	60
90	.02	.10	.27	.53	1.05	1.70	2.36	3.02	3.67	4.33	4.99	6.48	8.71	11.96	15.90	19.85
	2	5	7	10	20	20	20	20	20	20	20	34	34	60	60	60
100	.02	.10	.28	.54	1.09	1.75	2.41	3.06	3.72	4.38	5.03	6.59	8.82	11.96	15.90	19.85
	2	5	7	10	20	20	20	20	20	20	20	34	34	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
KICKAPOO CREEK NEAR KICKAPOO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55635 — KICKAPOO CREEK AT PEORIA



LOCATION: In NE¼ NW¼ Sec 13, T8N, R7E, Peoria County, at bridge on Illinois 116, 0.5 miles west of Peoria

DRAINAGE AREA: 297 square miles

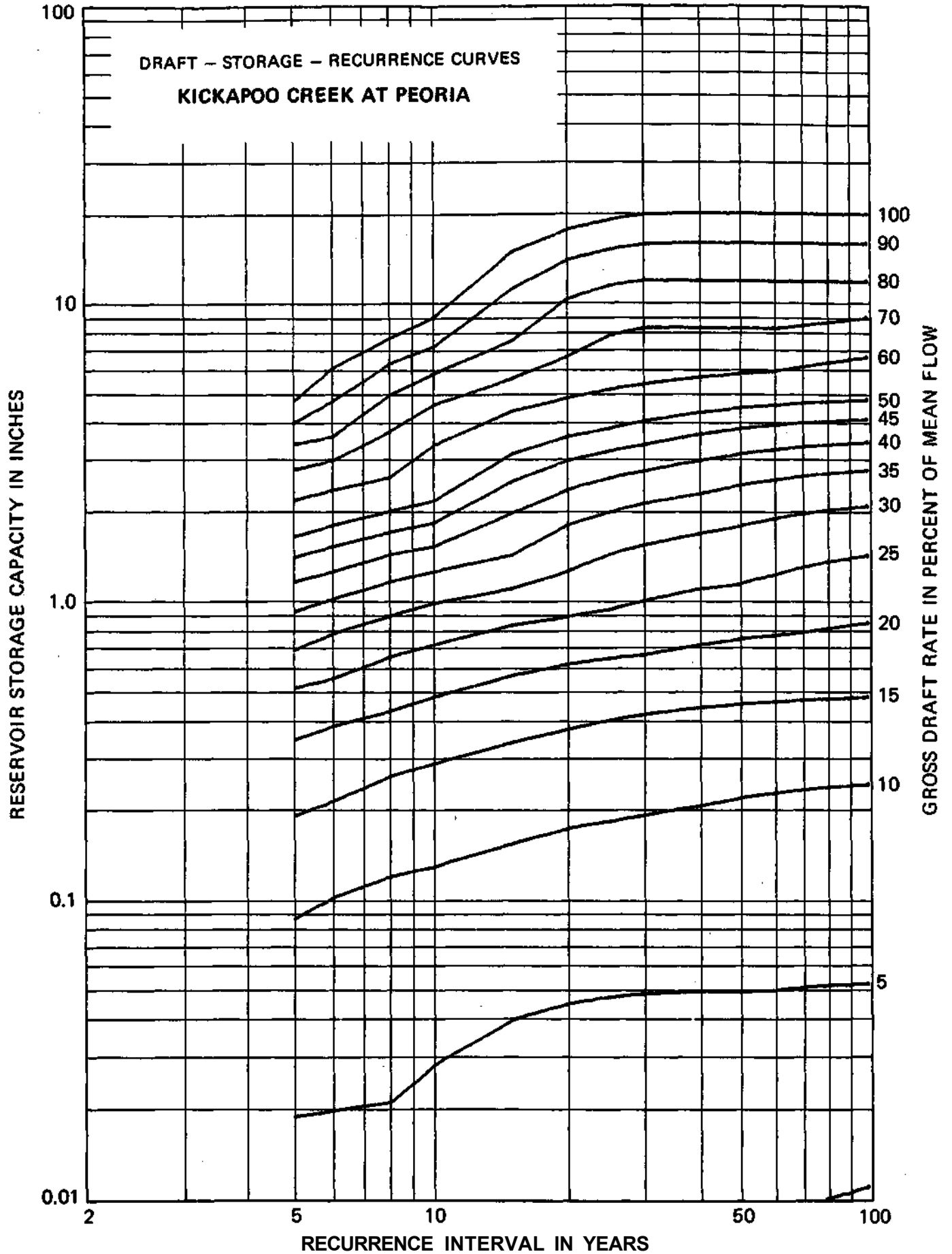
ACTUAL FLOW DATA: Apr 1942 to Oct 1978

INDEX STATION: Spoon River at Seville

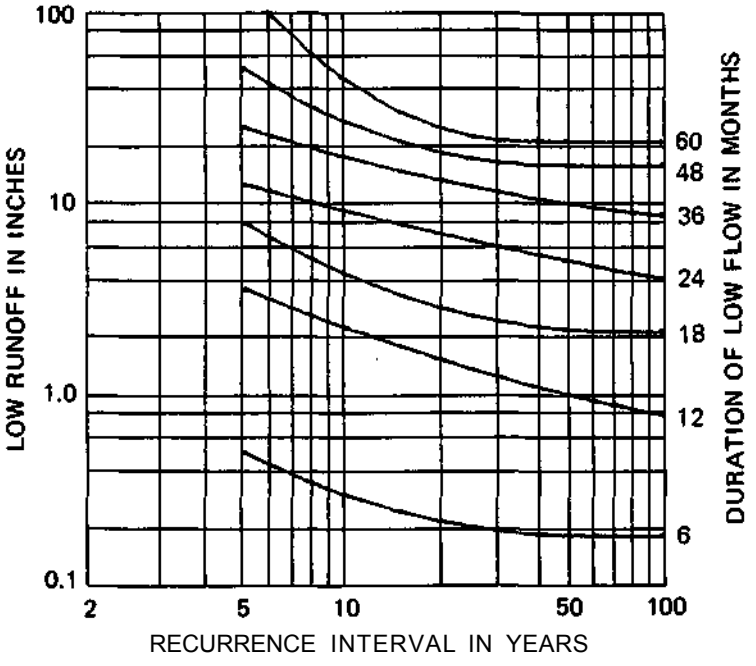
MEAN DISCHARGE: 0.67 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.09	.19	.34	.51	.68	.91	1.14	1.37	1.61	2.15	2.72	3.32	3.92	4.65
	2	1	3	4	5	5	7	7	7	7	8	8	9	9	9	20
6	.00	.02	.10	.21	.38	.54	.76	1.00	1.23	1.50	1.76	2.32	2.92	3.52	4.63	5.96
	1	1	3	4	5	5	7	7	7	8	8	9	9	9	20	20
8	.00	.02	.12	.26	.42	.64	.87	1.14	1.40	1.67	1.96	2.56	3.65	4.85	6.17	7.50
	1	1	3	5	5	7	7	8	8	8	9	9	18	18	20	20
10	.00	.03	.13	.28	.47	.70	.97	1.23	1.50	1.80	2.14	3.30	4.49	5.72	7.05	8.81
	1	3	3	5	7	7	8	8	9	9	16	18	18	20	20	32
15	.00	.04	.15	.33	.56	.82	1.09	1.41	1.94	2.49	3.09	4.29	5.53	7.38	10.98	14.57
	1	3	5	6	7	8	8	16	16	18	18	18	20	54	54	54
20	.00	.04	.17	.37	.61	.87	1.23	1.77	2.33	2.93	3.52	4.76	6.51	10.11	13.70	17.30
	1	3	5	7	8	8	16	16	18	18	18	20	54	54	54	54
25	.01	.05	.18	.40	.64	.92	1.42	1.96	2.56	3.16	3.76	5.09	7.69	11.29	14.88	18.71
	1	3	5	7	8	10	16	18	18	18	20	20	54	54	54	60
30	.01	.05	.19	.41	.66	.99	1.52	2.11	2.71	3.32	3.99	5.32	8.17	11.76	15.52	19.52
	1	3	6	7	8	16	16	18	18	20	20	20	54	54	60	60
40	.01	.05	.20	.44	.71	1.09	1.66	2.27	2.94	3.60	4.27	5.60	8.17	11.76	15.74	19.73
	1	3	7	7	10	16	18	20	20	20	20	20	54	54	60	60
50	.01	.05	.22	.45	.74	1.13	1.77	2.44	3.10	3.77	4.43	5.77	8.17	11.76	15.74	19.73
	1	3	7	7	10	18	20	20	20	20	20	20	54	54	60	60
60	.01	.05	.23	.46	.76	1.22	1.88	2.55	3.21	3.88	4.54	5.88	8.17	11.76	15.74	19.73
	2	4	7	7	10	20	20	20	20	20	20	30	54	54	60	60
70	.01	.05	.23	.47	.78	1.29	1.96	2.62	3.29	3.96	4.62	6.08	8.35	11.76	15.74	19.73
	2	4	7	7	11	20	20	20	20	20	20	34	34	54	60	60
80	.01	.05	.24	.47	.81	1.35	2.01	2.68	3.35	4.01	4.68	6.28	8.56	11.76	15.74	19.73
	2	4	7	7	11	20	20	20	20	20	20	34	36	54	60	60
90	.01	.05	.24	.48	.83	1.39	2.06	2.72	3.39	4.05	4.72	6.44	8.73	11.76	15.74	19.73
	2	4	7	7	11	20	20	20	20	20	20	34	36	54	60	60
100	.01	.05	.24	.48	.84	1.42	2.09	2.75	3.42	4.08	4.75	6.57	8.87	11.76	15.74	19.73
	2	4	7	11	11	20	20	20	20	20	20	34	36	54	60	60


DRAFT – STORAGE – RECURRENCE CURVES
KICKAPOO CREEK AT PEORIA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

55688 — INDIAN CREEK NEAR WYOMING



LOCATION: In SE¼ SE¼ Sec 17, T12N, R6E, Stark County, at highway bridge, 2.5 miles upstream from mouth and 4.5 miles southwest of Wyoming

DRAINAGE AREA: 62.7 square miles

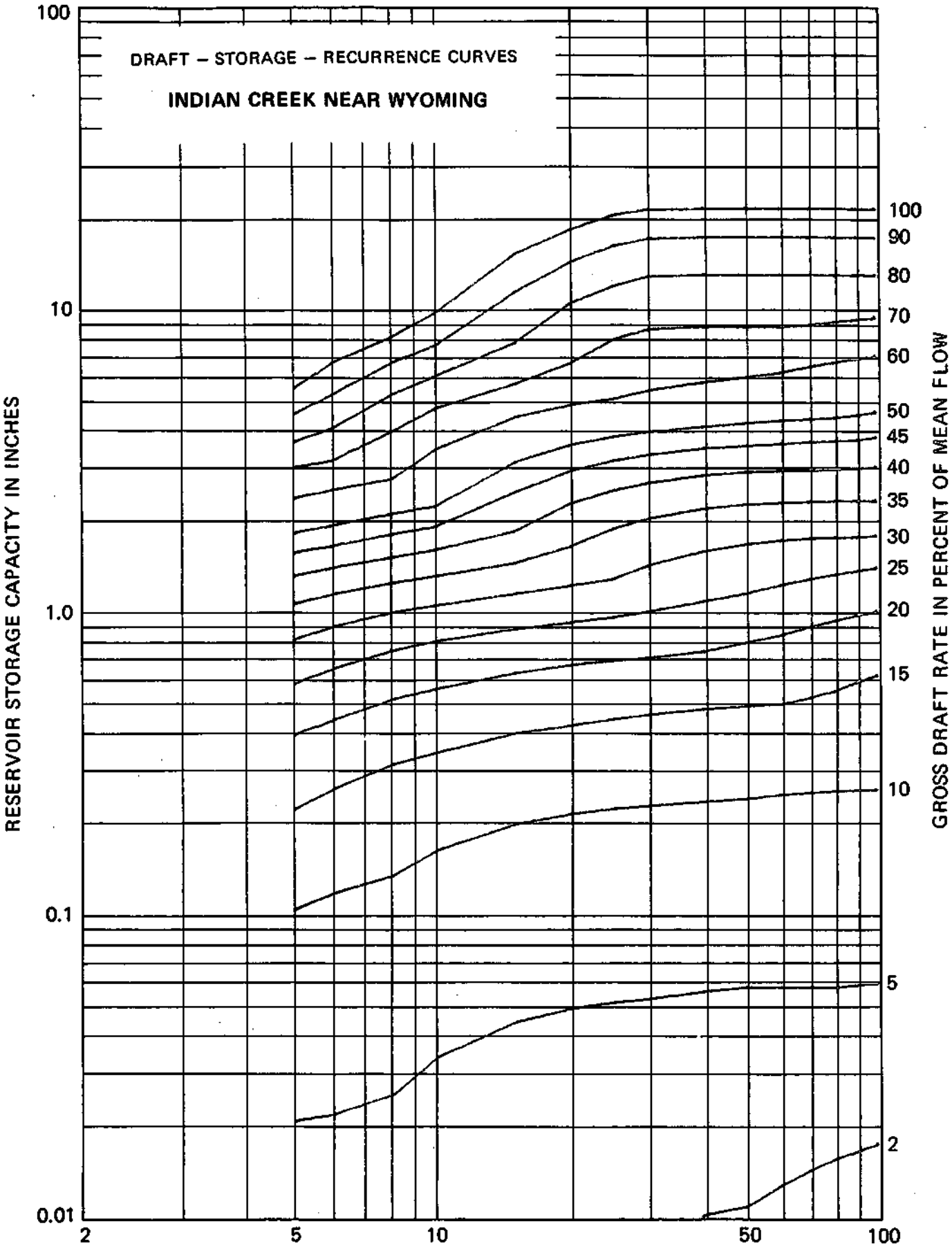
ACTUAL FLOW DATA: Oct 1959 to Oct 1978

INDEX STATION: Spoon River at Seville

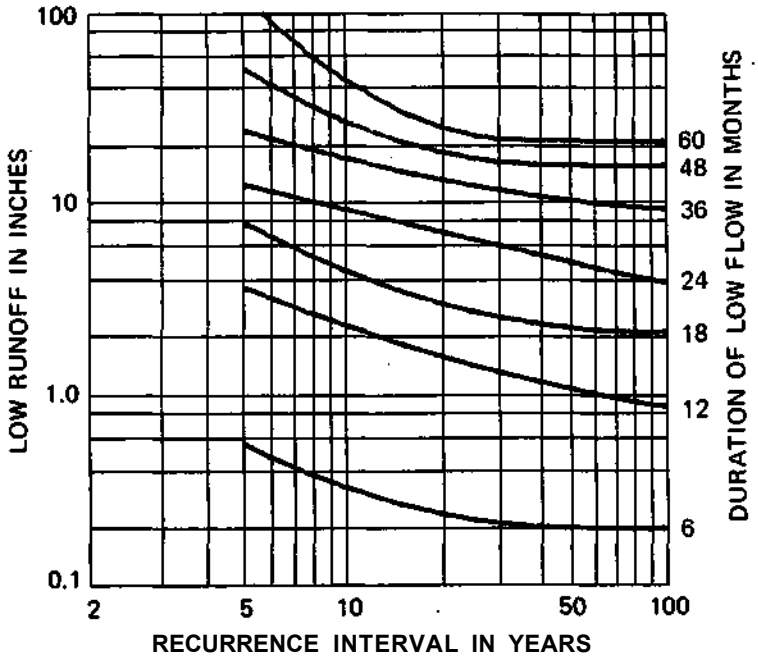
MEAN DISCHARGE: 0.70 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.10	.22	.39	.57	.80	1.04	1.29	1.53	1.78	2.32	2.93	3.57	4.43	5.42
	--	1	3	4	5	6	7	7	7	7	7	8	9	9	14	14
6	.00	.02	.12	.25	.43	.64	.88	1.12	1.37	1.61	1.89	2.47	3.11	3.97	5.15	6.56
	--	1	3	5	5	6	7	7	7	7	8	9	9	14	20	20
8	.00	.02	.13	.31	.50	.73	.97	1.22	1.48	1.76	2.06	2.69	3.86	5.14	6.54	7.95
	1	3	4	5	6	7	7	7	8	8	9	9	18	20	20	20
10	.00	.03	.16	.34	.55	.79	1.03	1.29	1.57	1.87	2.19	3.38	4.65	5.94	7.49	9.59
	1	3	5	6	6	7	7	8	8	9	9	18	18	20	30	30
15	.01	.04	.20	.39	.62	.87	1.13	1.42	1.81	2.44	3.07	4.34	5.60	7.64	11.22	15.02
	1	3	5	6	7	7	8	9	16	18	18	18	18	30	54	54
20	.01	.05	.21	.42	.66	.91	1.20	1.62	2.25	2.88	3.51	4.78	6.56	10.33	14.12	18.04
	1	3	5	6	7	8	9	16	18	18	18	18	30	54	54	60
25	.01	.05	.22	.44	.68	.95	1.27	1.86	2.49	3.12	3.75	5.02	7.84	11.78	16.00	20.21
	1	3	5	7	7	9	16	18	18	18	18	18	54	60	60	60
30	.01	.05	.23	.45	.70	.99	1.41	2.01	2.64	3.27	3.90	5.35	8.50	12.72	16.93	21.15
	1	3	5	7	7	9	16	18	18	18	18	30	60	60	60	60
40	.01	.06	.23	.47	.73	1.07	1.57	2.17	2.80	3.43	4.07	5.70	8.69	12.90	17.12	21.33
	1	5	6	7	9	10	16	18	18	18	18	30	60	60	60	60
50	.01	.06	.24	.48	.79	1.14	1.65	2.24	2.88	3.51	4.18	5.92	8.69	12.90	17.12	21.33
	1	5	7	7	10	11	16	18	18	18	20	32	60	60	60	60
60	.01	.06	.25	.49	.83	1.21	1.70	2.27	2.91	3.56	4.27	6.12	8.69	12.90	17.12	21.33
	2	5	7	7	10	11	16	18	18	20	20	34	60	60	60	60
70	.01	.06	.25	.52	.89	1.27	1.73	2.30	2.91	3.62	4.32	6.41	8.80	12.90	17.12	21.33
	2	5	7	10	11	11	16	16	20	20	20	34	34	60	60	60
80	.02	.06	.25	.55	.93	1.32	1.75	2.31	2.95	3.65	4.37	6.63	9.02	12.90	17.12	21.33
	2	5	7	10	11	11	16	16	20	20	22	34	34	60	60	60
90	.02	.06	.26	.58	.97	1.36	1.76	2.32	2.97	3.69	4.46	6.81	9.20	12.90	17.12	21.33
	2	2	7	11	11	11	16	16	20	22	22	34	34	60	60	60
100	.02	.06	.26	.62	1.00	1.39	1.77	2.32	2.99	3.76	4.57	6.96	9.35	12.90	17.12	21.33
	2	2	7	11	11	11	11	16	22	22	34	34	34	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
INDIAN CREEK NEAR WYOMING
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55695 — SPOON RIVER AT LONDON MILLS



LOCATION: In NW¼ NE¼ Sec 3, T8N, R2E, Fulton County, at bridge in London Mills, 1.4 miles upstream from Cedar Creek, and 2.8 miles downstream from Littler Creek

DRAINAGE AREA: 1062 square miles

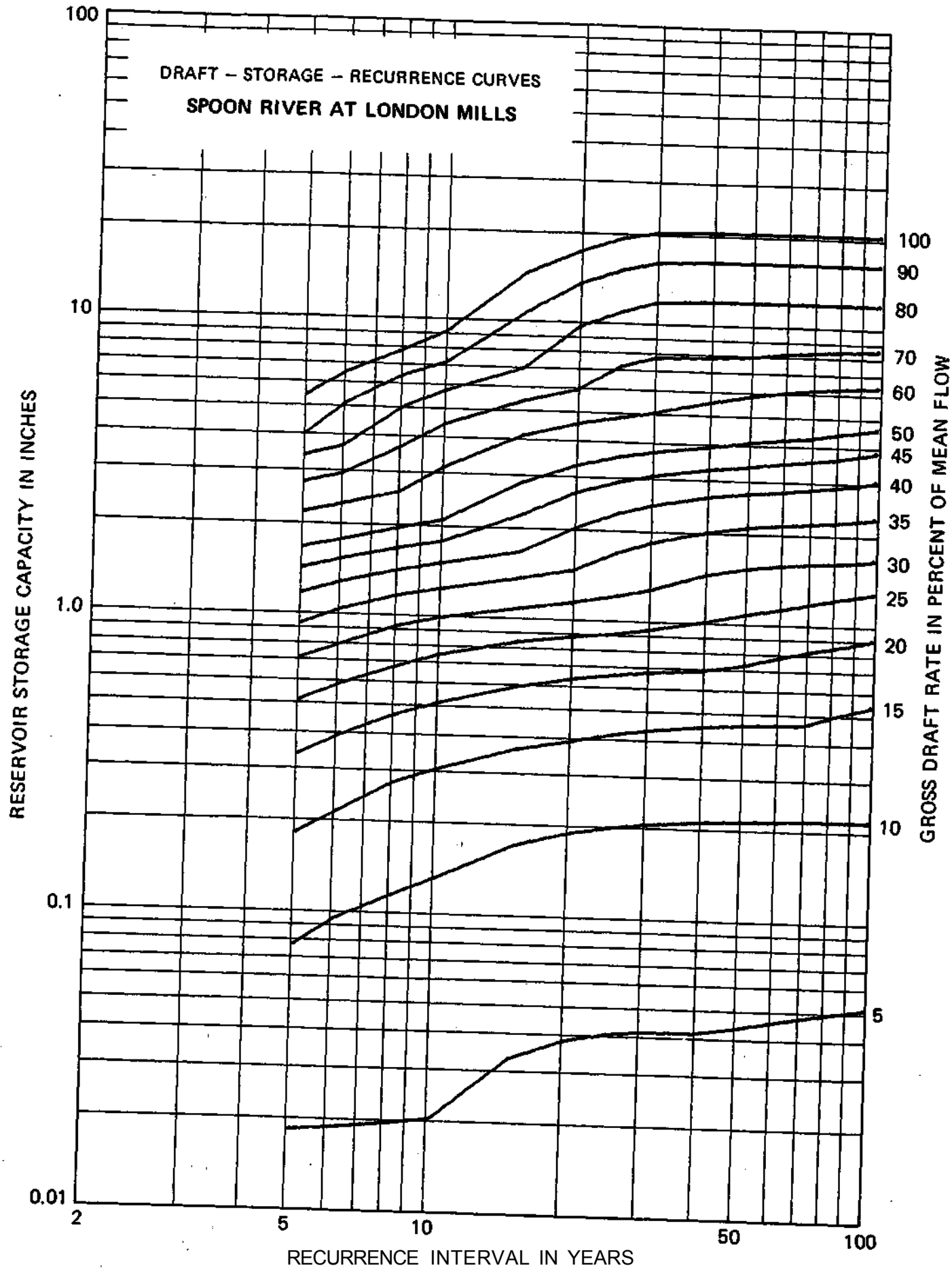
ACTUAL FLOW DATA: Oct 1942 to Oct 1978

INDEX STATION: Spoon River at Seville

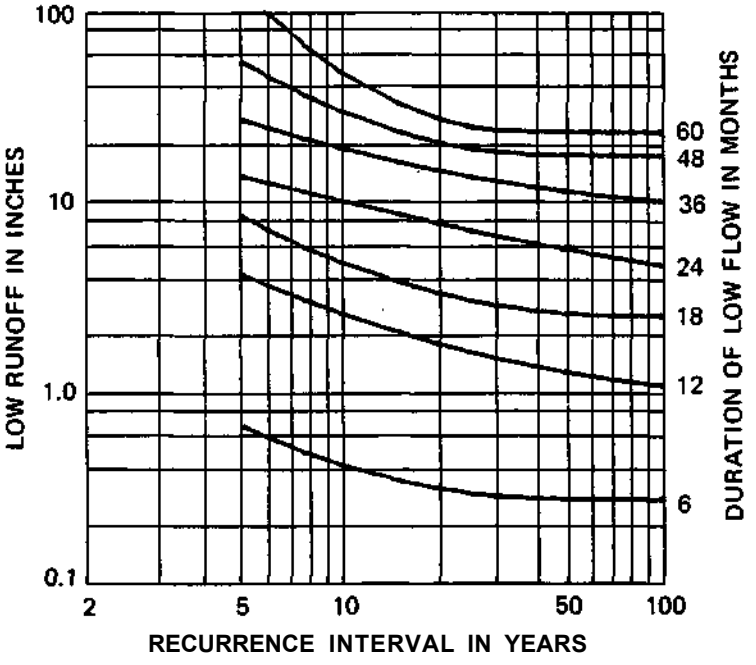
MEAN DISCHARGE: 0.70 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.08	.18	.34	.51	.71	.93	1.18	1.42	1.67	2.19	2.75	3.39	4.02	5.42
	2	1	2	4	5	5	6	7	7	7	7	8	9	9	20	20
6	.00	.02	.09	.22	.39	.58	.79	1.04	1.28	1.53	1.78	2.34	2.96	3.67	5.08	6.48
	1	1	3	4	5	6	7	7	7	7	8	8	9	20	20	20
8	.00	.02	.11	.27	.46	.67	.92	1.16	1.41	1.68	1.96	2.58	3.65	4.96	6.36	7.77
	1	1	3	5	6	7	7	7	7	8	8	9	18	20	20	20
10	.00	.02	.13	.31	.51	.74	.99	1.24	1.50	1.78	2.10	3.15	4.41	5.73	7.13	9.09
	1	1	4	5	6	7	7	7	8	8	9	18	18	20	20	32
15	.00	.03	.17	.36	.59	.84	1.08	1.36	1.67	2.21	2.84	4.10	5.37	6.94	10.65	14.44
	1	3	5	6	7	7	7	8	9	18	18	18	18	30	54	54
20	.00	.04	.19	.39	.63	.88	1.15	1.46	2.03	2.66	3.29	4.56	5.93	9.70	13.48	17.27
	1	3	5	6	7	7	9	16	18	18	18	18	30	54	54	54
25	.00	.04	.20	.41	.66	.91	1.21	1.69	2.29	2.92	3.55	4.81	7.17	10.96	15.09	19.30
	1	3	5	7	7	7	9	16	18	18	18	18	54	54	60	60
30	.00	.04	.21	.43	.68	.94	1.28	1.84	2.45	3.08	3.72	5.03	7.72	11.82	16.03	20.24
	1	3	5	7	7	9	16	16	18	18	18	20	54	60	60	60
40	.01	.04	.21	.45	.69	1.01	1.45	2.01	2.64	3.28	3.91	5.51	7.83	12.04	16.25	20.46
	1	3	5	7	7	10	16	18	18	18	20	30	60	60	60	60
50	.01	.04	.22	.46	.73	1.08	1.54	2.11	2.74	3.38	4.08	5.84	7.94	12.04	16.25	20.46
	1	2	5	7	10	10	16	18	18	20	20	30	30	60	60	60
60	.01	.05	.22	.46	.78	1.13	1.59	2.16	2.80	3.49	4.19	6.04	8.15	12.04	16.25	20.46
	1	2	7	7	10	10	16	18	18	20	20	30	30	60	60	60
70	.01	.05	.22	.47	.82	1.18	1.61	2.19	2.87	3.57	4.28	6.18	8.29	12.04	16.25	20.46
	1	2	7	10	10	11	16	18	20	20	22	30	30	60	60	60
80	.01	.05	.22	.50	.85	1.22	1.63	2.22	2.92	3.64	4.41	6.28	8.38	12.04	16.25	20.46
	1	2	7	10	10	11	16	20	20	22	22	30	30	60	60	60
90	.01	.05	.22	.52	.87	1.26	1.65	2.26	2.98	3.75	4.53	6.34	8.44	12.04	16.25	20.46
	2	2	7	10	11	11	11	20	22	22	22	30	30	60	60	60
100	.01	.05	.22	.54	.91	1.29	1.68	2.30	3.08	3.85	4.62	6.38	8.49	12.04	16.25	20.46
	2	2	7	10	11	11	11	22	22	22	22	30	30	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
SPOON RIVER AT LONDON MILLS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

55700 - SPOON RIVER AT SEVILLE



LOCATION: In NW¼ Sec 24, T6N, R1E, Fulton County, downstream side of bridge on Illinois 95, 500 feet downstream from Shaw Creek, 0.4 miles northeast of Seville

DRAINAGE AREA: 1636 square miles

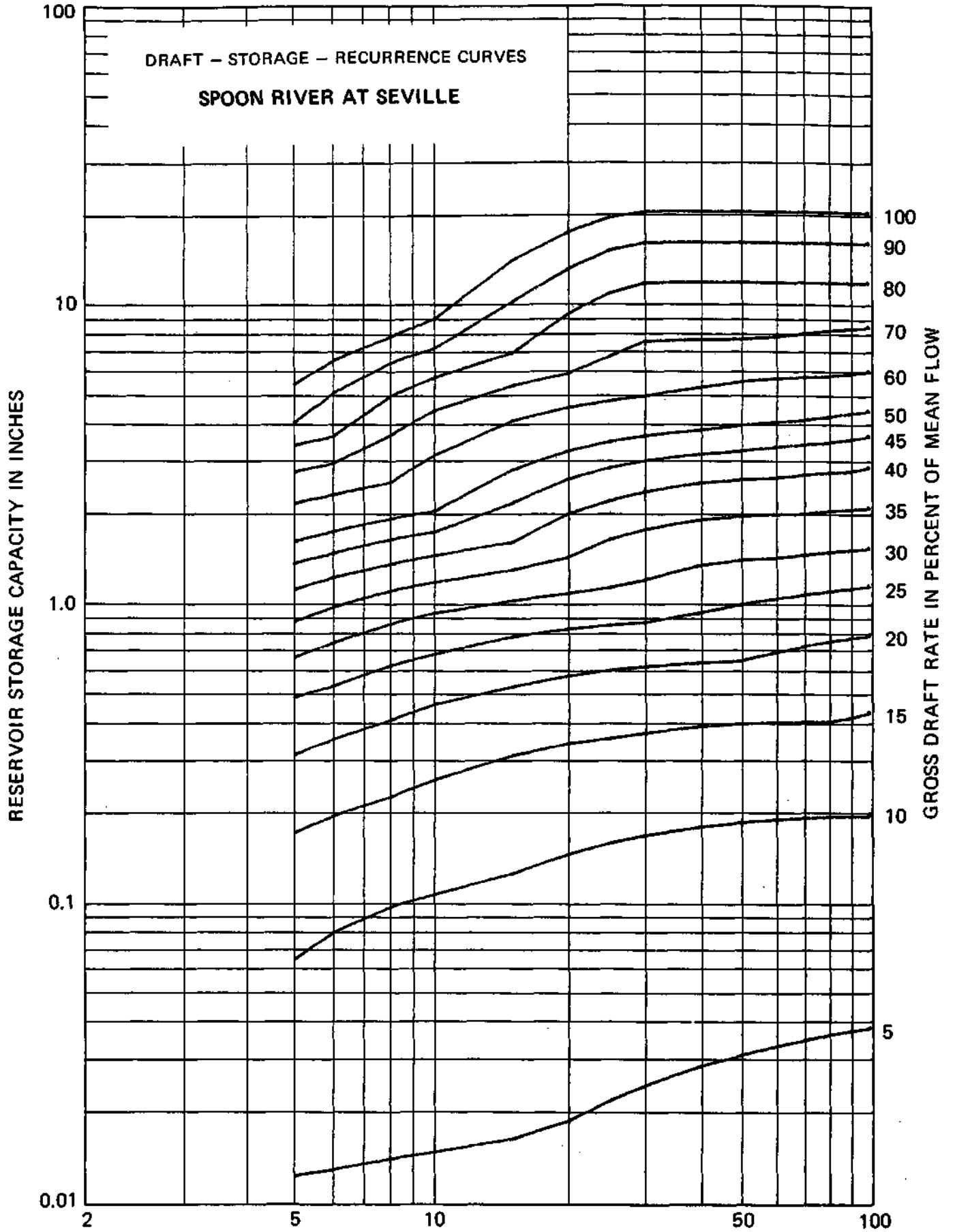
ACTUAL FLOW DATA: Jul 1914 to Oct 1978

INDEX STATION: None

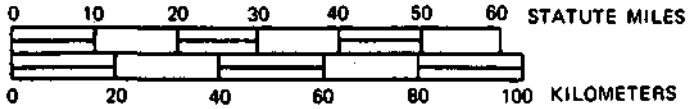
MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.01	.07	.17	.31	.48	.66	.87	1.11	1.36	1.60	2.16	2.74	3.38	4.01	5.38
	2	1	3	3	4	5	5	6	7	7	7	8	9	9	9	20
6	.00	.01	.08	.19	.35	.53	.74	.97	1.22	1.47	1.73	2.30	2.92	3.61	5.03	6.45
	1	1	3	4	5	5	6	7	7	7	8	8	9	20	20	20
8	.00	.01	.10	.23	.40	.62	.85	1.10	1.35	1.62	1.91	2.52	3.64	4.92	6.34	7.76
	1	1	3	5	6	6	7	7	7	8	8	9	18	20	20	20
10	.00	.01	.11	.26	.46	.68	.92	1.17	1.44	1.73	2.03	3.12	4.40	5.69	7.11	8.90
	1	1	3	5	6	7	7	7	8	8	9	18	18	20	20	30
15	.00	.02	.13	.31	.53	.77	1.02	1.30	1.60	2.17	2.80	4.07	5.35	6.89	10.18	14.02
	3	1	4	6	7	7	7	8	16	16	18	18	18	30	54	54
20	.00	.02	.15	.34	.57	.82	1.08	1.42	1.99	2.60	3.24	4.51	5.87	9.23	13.07	17.33
	3	2	5	6	7	7	8	16	16	18	18	18	30	54	60	60
25	.00	.02	.16	.35	.60	.85	1.13	1.64	2.21	2.85	3.48	4.76	6.71	10.90	15.16	19.42
	3	2	5	6	7	7	9	16	16	18	18	18	54	60	60	60
30	.00	.02	.17	.37	.62	.87	1.20	1.77	2.36	3.00	3.64	4.95	7.53	11.79	16.05	20.30
	3	2	5	7	7	7	16	16	18	18	18	20	60	60	60	60
40	.00	.03	.18	.39	.64	.93	1.35	1.91	2.53	3.17	3.81	5.29	7.63	11.89	16.15	20.41
	3	2	5	7	7	10	16	16	18	18	18	30	60	60	60	60
50	.00	.03	.19	.40	.65	1.00	1.41	1.97	2.61	3.25	3.96	5.55	7.68	11.89	16.15	20.41
	4	2	5	7	9	10	16	16	18	20	20	30	30	60	60	60
60	.00	.03	.19	.40	.69	1.05	1.43	2.01	2.65	3.36	4.07	5.69	7.82	11.89	16.15	20.41
	--	2	5	7	10	10	16	18	20	20	20	30	32	60	60	60
70	.00	.04	.19	.41	.73	1.08	1.47	2.01	2.72	3.43	4.14	5.76	8.03	11.89	16.15	20.41
	--	2	5	7	10	10	11	18	20	20	20	30	34	60	60	60
80	.00	.04	.20	.41	.75	1.11	1.50	2.05	2.76	3.47	4.25	5.81	8.21	11.89	16.15	20.41
	1	2	5	7	10	11	11	20	20	20	22	22	34	60	60	60
90	.00	.04	.20	.42	.77	1.14	1.53	2.09	2.80	3.57	4.35	5.93	8.34	11.89	16.15	20.41
	1	2	5	10	10	11	11	20	20	22	22	34	34	60	60	60
100	.00	.04	.20	.44	.79	1.16	1.55	2.11	2.88	3.66	4.44	6.04	8.45	11.89	16.15	20.41
	1	2	5	10	10	11	11	20	22	22	22	34	34	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
SPOON RIVER AT SEVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

REGION 8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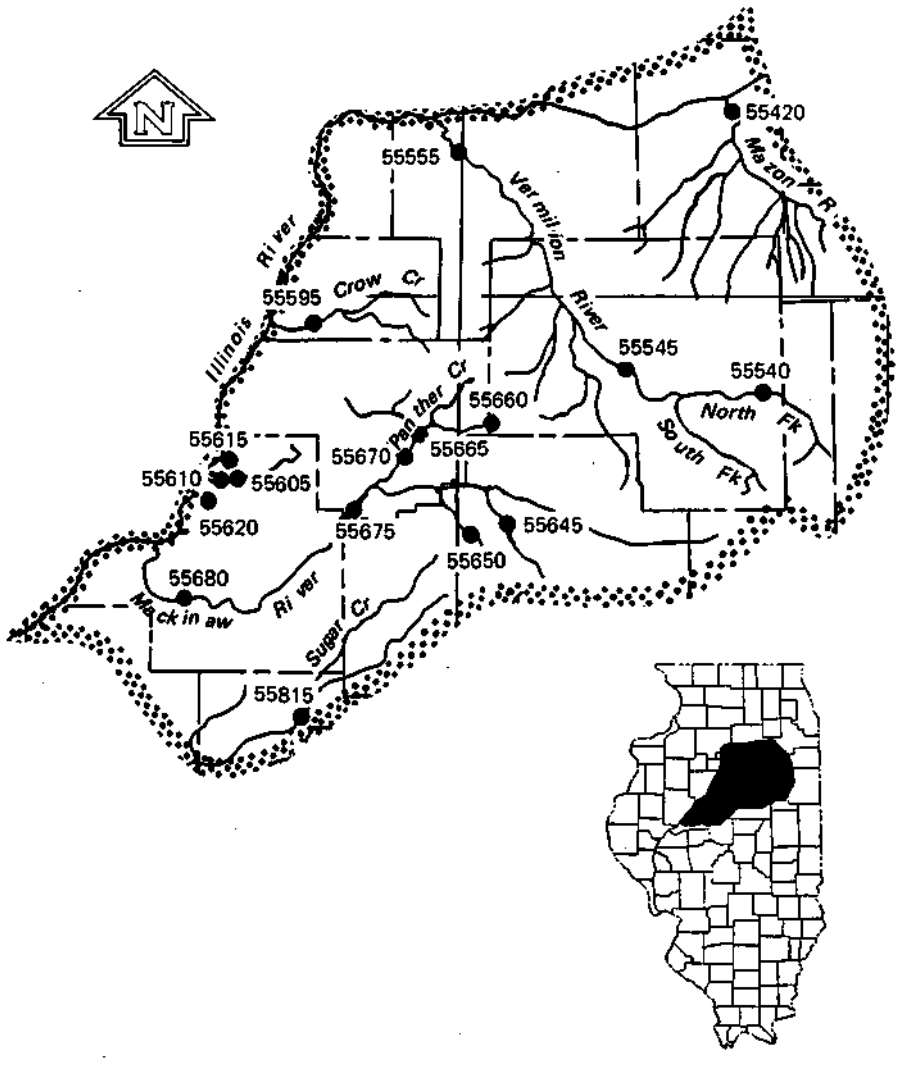
0 20 40 60 80 100 KILOMETERS

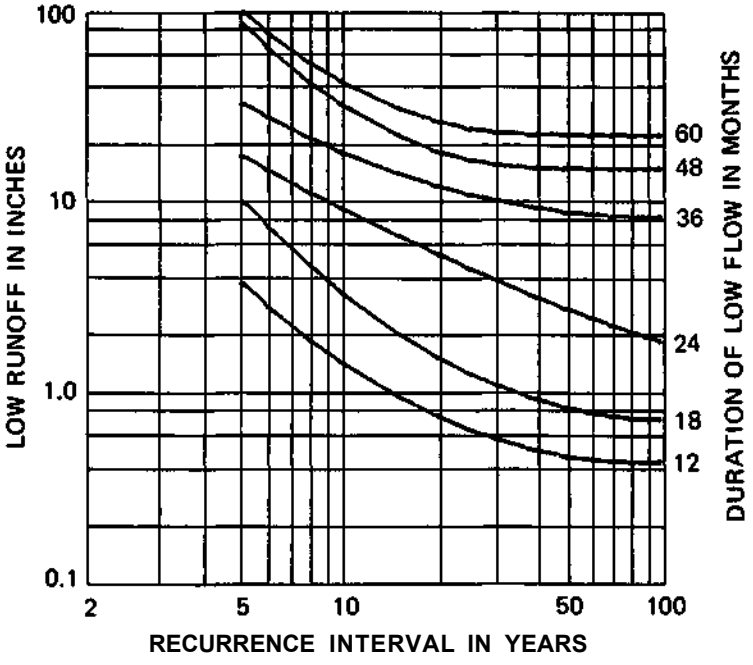

N
55420
55555
Vermilion River
Mazon R.
River
Crow Cr.
55595
Illinois
55545
55540
North Fk
South Fk
Panther Cr
55660
55615
55670
55665
55610
55605
55620
55675
55645
55650
55680
Mackinaw River
Sugar Cr
55815

USGS Gage No.	Name of Station	Drainage Area (sq mi)
55420	Mazon River near Coal City	455
55540	North Fork Vermilion River near Charlotte	186
55545	Vermilion River at Pontiac	579
55555	Vermilion River at Lowell	1230
55595	Crow Creek near Washburn	115
55605	Farm Creek near Farmdale	27.4
55610	Ackerman Creek at Farmdale	11.2
55615	Fondulac Creek near East Peoria	5.54
55620	Farm Creek at East Peoria	61.2
55645	Money Creek above Lake Bloomington	51.9
55650	Hickory Creek above Lake Bloomington	10.1
55660	East Branch Panther Creek near Gridley	6.3
55665	East Branch Panther Creek at El Paso	30.5
55670	Panther Creek near El Paso	93.9
55675	Mackinaw River near Congerville	767
55680	Mackinaw River near Green Valley	1089
55815	Sugar Creek near Hartsburg	333

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
55420	55680	1939-1978	39	1921-1978	57	.77
55540	*	1942-1962	20	1921-1978	57	.73
55545	55680	1942-1978	36	1921-1978	57	.70
55555	*	1931-1971	40	1921-1978	57	.75
55595	*	1944-1971	27	1921-1978	57	.64
55605	55680	1948-1978	30	1921-1978	57	.72
55610	55675	1954-1978	24	1944-1978	34	.65
55615	55680	1948-1978	30	1921-1978	57	.76
55620	55680	1943-1978	35	1921-1978	57	.79
55645	*	1933-1958	22	1921-1978	57	.74
55650	*	1938-1958	20	1921-1978	57	.81
55660	*	1949-1960	11	1921-1978	57	.75
55665	55680	1949-1978	29	1921-1978	57	.67
55670	*	1949-1960	11	1921-1978	57	.72
55675	55680	1944-1978	34	1921-1978	57	.74
55680	55675	1921-1956	35	1921-1978	57	.76
55815	*	1944-1971	27	1921-1978	57	.71

*both stations 55675 and 55680 were used in the extension procedure

55420 —MAZOIN RIVER NEAR COAL CITY



LOCATION: In SW¼ SW¼ Sec 31, T33N, R8E, Grundy County, at bridge on Illinois 113, 0.2 miles downstream from Johnny Run and 4 miles west of Coal City

DRAINAGE AREA: 455 square miles

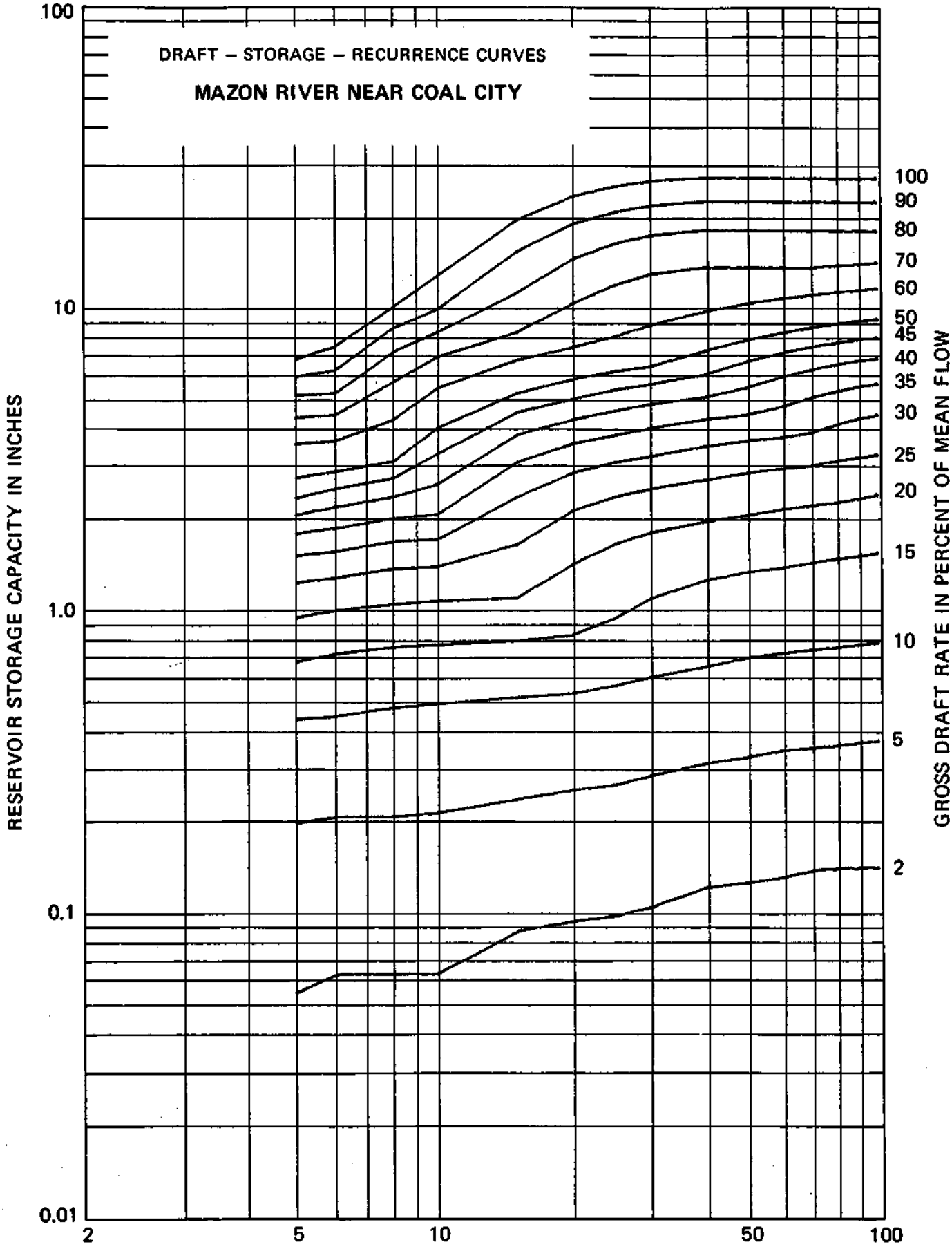
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Mackinaw River near Green Valley

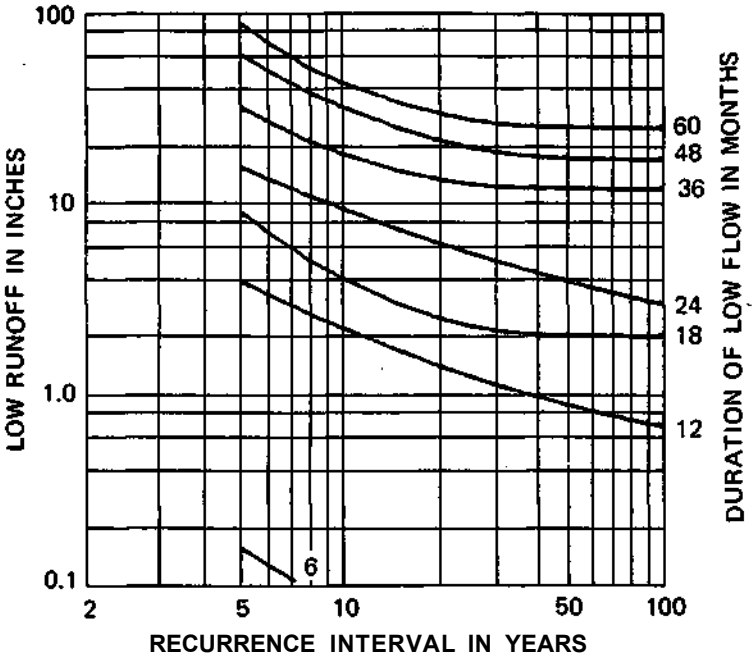
MEAN DISCHARGE: 0.77 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.19	.43	.66	.92	1.19	1.46	1.73	2.00	2.28	2.66	3.44	4.21	4.99	5.76	6.54
	6	6	6	6	7	7	7	7	7	7	10	10	10	10	10	10
6	.06	.20	.43	.70	.97	1.24	1.51	1.81	2.12	2.44	2.79	3.52	4.30	5.07	6.03	7.22
	6	6	6	7	7	7	7	8	8	9	9	10	10	10	14	18
8	.06	.20	.46	.73	1.01	1.32	1.63	1.95	2.30	2.65	3.01	4.14	5.53	6.93	8.32	9.77
	6	6	7	7	8	8	8	9	9	9	14	18	18	18	18	20
10	.06	.21	.48	.75	1.04	1.35	1.67	2.02	2.53	3.20	3.90	5.29	6.69	8.08	9.62	12.39
	4	7	7	7	8	8	9	9	14	18	18	18	18	18	20	44
15	.09	.23	.50	.77	1.07	1.60	2.30	3.00	3.70	4.39	5.09	6.54	8.09	10.90	14.93	18.98
	6	7	7	7	8	18	18	18	18	18	18	20	20	52	52	56
20	.09	.25	.52	.81	1.37	2.07	2.77	3.47	4.16	4.88	5.65	7.20	10.04	14.09	18.43	22.77
	6	7	7	8	18	18	18	18	18	20	20	20	52	56	56	56
25	.10	.26	.55	.92	1.62	2.31	3.01	3.71	4.47	5.24	6.02	7.86	11.60	15.94	20.28	24.62
	7	7	8	18	18	18	18	18	20	20	20	28	56	56	56	56
30	.10	.28	.59	1.06	1.76	2.46	3.16	3.92	4.69	5.47	6.25	8.56	12.57	16.91	21.25	25.59
	7	8	8	18	18	18	18	20	20	20	28	32	56	56	56	56
40	.12	.30	.64	1.22	1.92	2.64	3.41	4.19	4.96	5.88	7.05	9.51	13.31	17.65	21.99	26.33
	8	8	10	18	18	20	20	20	20	30	30	32	56	56	56	56
50	.12	.32	.68	1.30	2.01	2.79	3.56	4.34	5.35	6.51	7.67	10.09	13.31	17.65	21.99	26.33
	8	9	10	18	20	20	20	20	30	30	30	32	56	56	56	56
60	.13	.34	.71	1.35	2.11	2.89	3.66	4.62	5.78	6.94	8.11	10.50	13.31	17.65	21.99	26.33
	9	9	10	18	20	20	20	30	30	30	30	32	56	56	56	56
70	.14	.34	.73	1.40	2.18	2.95	3.80	4.95	6.11	7.27	8.43	10.80	13.31	17.65	21.99	26.33
	9	9	10	20	20	20	22	30	30	30	30	32	56	56	56	56
80	.14	.35	.74	1.45	2.22	3.06	4.04	5.20	6.36	7.52	8.69	11.03	13.51	17.65	21.99	26.33
	9	10	11	20	20	22	30	30	30	30	30	32	32	56	56	56
90	.14	.36	.76	1.48	2.30	3.15	4.24	5.40	6.56	7.73	8.89	11.21	13.69	17.65	21.99	26.33
	9	10	11	20	22	22	30	30	30	30	30	32	32	56	56	56
100	.14	.37	.77	1.52	2.37	3.22	4.36	5.52	6.69	7.85	9.01	11.36	13.84	17.65	21.99	26.33
	9	10	11	22	22	22	30	30	30	30	30	32	32	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
MAZON RIVER NEAR COAL CITY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

55540 — NORTH FORK VERMILION RIVER NEAR CHARLOTTE



LOCATION: In SW¼ SE¼ Sec 4, T27N, R8E, Livingston County, at Foreman highway bridge, 1.2 miles northwest of Charlotte, 5.5 miles north of Chatsworth

DRAINAGE AREA: 186 square miles

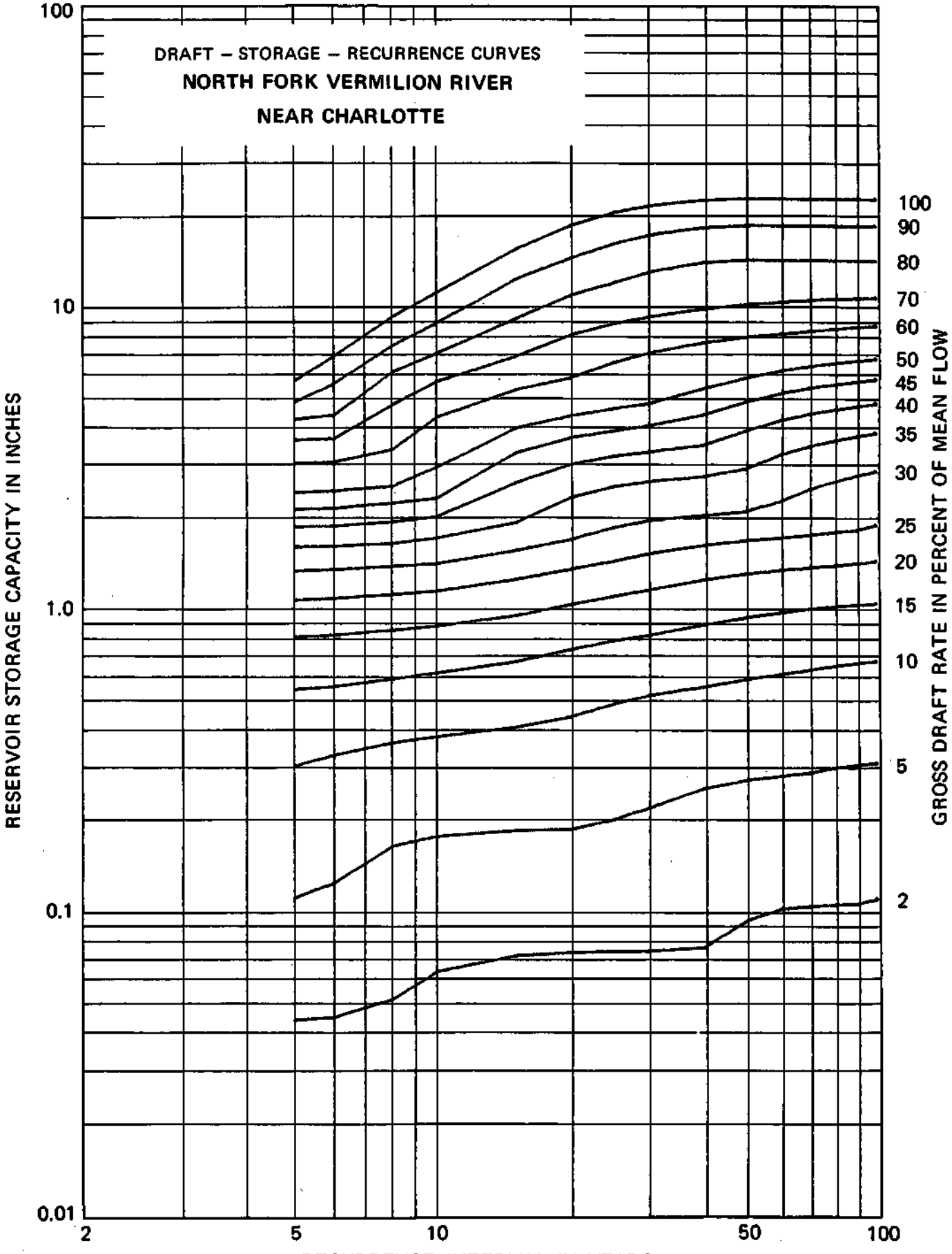
ACTUAL FLOW DATA: Oct 1942 to Oct 1978

INDEX STATION: both Mackinaw River near Congerville and near Green Valley

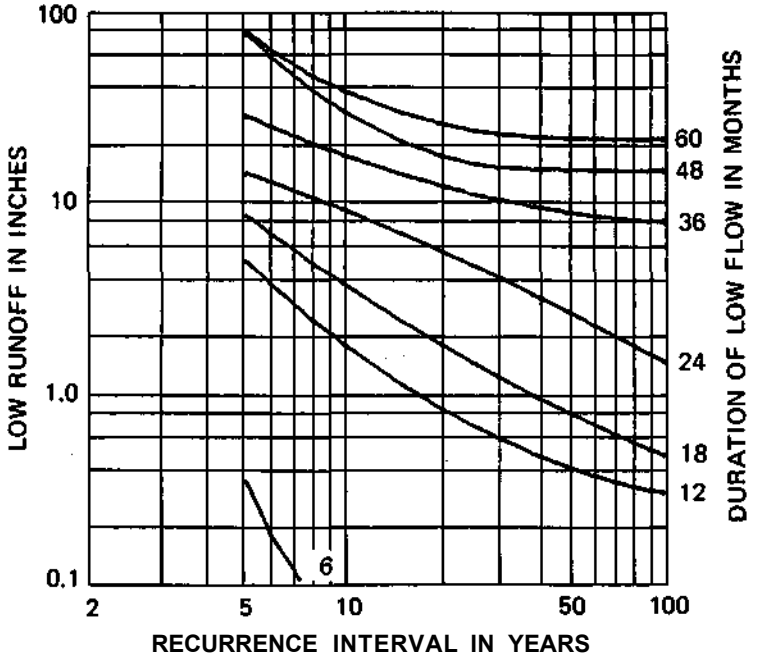
MEAN DISCHARGE: 0.73 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.11	.29	.53	.78	1.04	1.30	1.55	1.81	2.07	2.35	2.94	3.53	4.11	4.70	5.57
	3	3	6	7	7	7	7	7	7	7	8	8	8	8	9	14
6	.04	.12	.32	.54	.80	1.05	1.31	1.57	1.82	2.09	2.38	2.97	3.56	4.26	5.43	6.70
	3	5	6	6	7	7	7	7	7	8	8	8	8	16	16	18
8	.05	.16	.35	.57	.83	1.08	1.34	1.60	1.88	2.17	2.47	3.26	4.58	5.90	7.22	8.99
	4	5	6	6	7	7	7	7	8	8	8	18	18	18	18	28
10	.06	.17	.37	.60	.86	1.11	1.37	1.66	1.96	2.25	2.85	4.17	5.49	6.81	8.59	10.84
	5	5	6	7	7	7	8	8	8	9	18	18	18	18	30	32
15	.07	.18	.40	.65	.93	1.22	1.51	1.87	2.53	3.19	3.85	5.17	6.67	8.91	11.99	15.07
	5	5	7	7	8	8	9	18	18	18	18	18	30	42	42	42
20	.07	.18	.43	.72	1.01	1.32	1.65	2.27	2.93	3.59	4.25	5.68	7.88	10.65	14.08	18.04
	5	5	7	8	8	9	9	18	18	18	18	30	30	42	54	54
25	.07	.20	.48	.77	1.08	1.41	1.81	2.47	3.13	3.79	4.50	6.40	8.60	11.71	15.74	19.84
	5	7	8	8	9	9	18	18	18	18	20	30	30	54	56	56
30	.07	.21	.51	.80	1.13	1.49	1.92	2.58	3.24	3.95	4.69	6.87	9.07	12.68	16.79	20.89
	5	8	8	9	9	10	18	18	18	20	20	30	30	56	56	56
40	.08	.25	.54	.87	1.23	1.59	2.00	2.69	3.42	4.31	5.26	7.46	9.66	13.68	17.79	21.89
	7	8	8	9	10	10	18	20	20	26	26	30	30	56	56	56
50	.09	.27	.58	.92	1.29	1.66	2.06	2.86	3.81	4.77	5.72	7.79	9.99	13.97	18.08	22.19
	8	8	9	10	10	10	16	26	26	26	26	30	30	56	56	56
60	.10	.28	.60	.96	1.33	1.69	2.23	3.19	4.14	5.09	6.05	8.00	10.20	13.97	18.08	22.19
	8	8	9	10	10	10	26	26	26	26	26	30	30	56	56	56
70	.10	.28	.62	.99	1.35	1.73	2.45	3.40	4.36	5.31	6.26	8.17	10.34	13.97	18.08	22.19
	8	9	10	10	10	11	26	26	26	26	26	26	30	56	56	56
80	.10	.30	.64	1.01	1.37	1.77	2.60	3.56	4.51	5.46	6.42	8.32	10.44	13.97	18.08	22.19
	8	9	10	10	10	11	26	26	26	26	26	26	30	56	56	56
90	.11	.30	.66	1.02	1.40	1.80	2.73	3.68	4.63	5.59	6.54	8.45	10.50	13.97	18.08	22.19
	8	9	10	10	11	11	26	26	26	26	26	26	30	56	56	56
100	.11	.31	.67	1.03	1.42	1.88	2.83	3.78	4.73	5.69	6.64	8.55	10.54	13.97	18.08	22.19
	9	9	10	10	11	26	26	26	26	26	26	26	30	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
NORTH FORK VERMILION RIVER
NEAR CHARLOTTE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55545 —VERMILION RIVER AT PONTIAC



LOCATION: In SW¼ Sec 22, T28N, R5E, Livingston County, at Vermilion Street bridge in Pontiac, 0.1 miles upstream from railroad bridge and Illinois 116 bridge

DRAINAGE AREA: 579 square miles

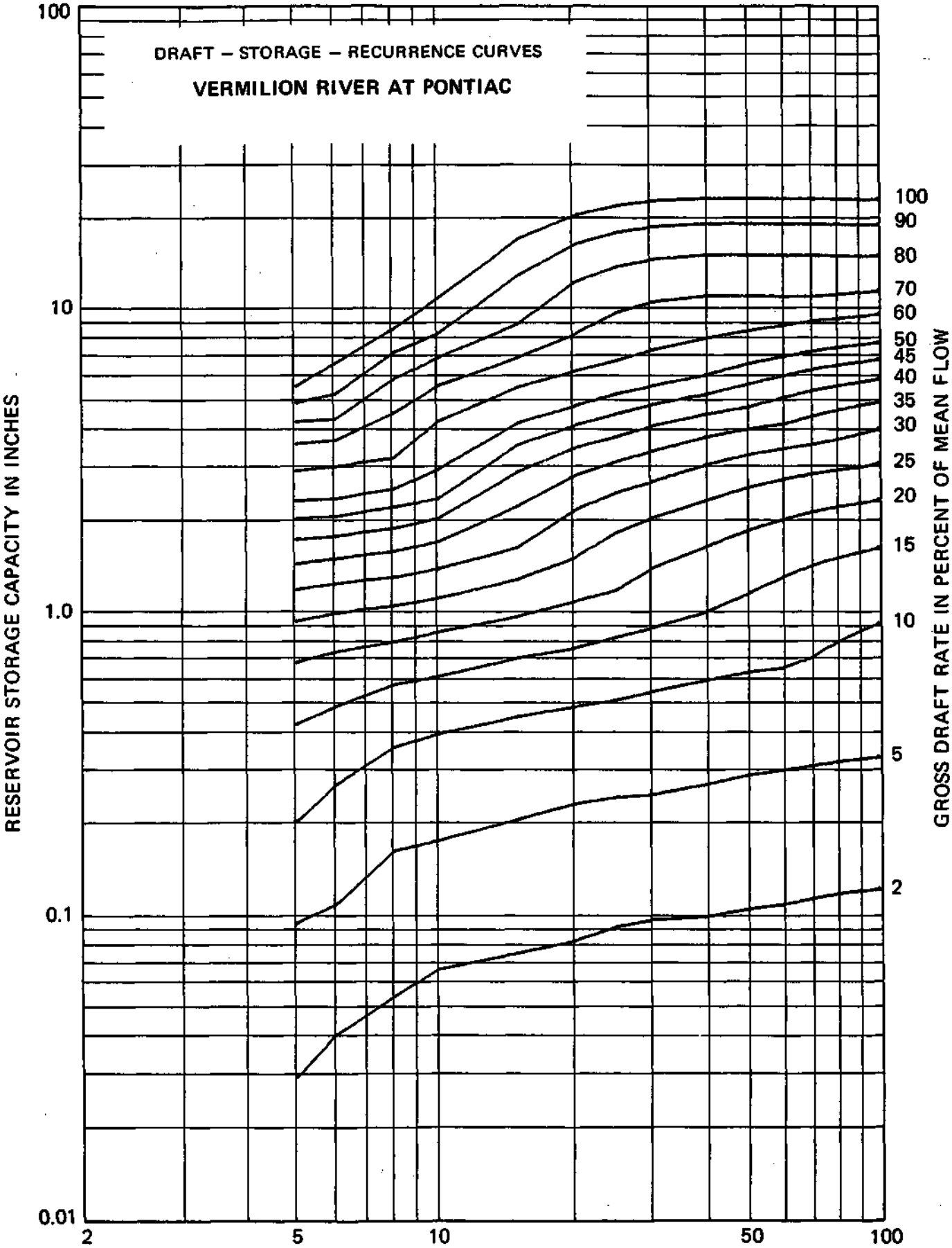
ACTUAL FLOW DATA: Oct 1942 to Oct 1978

INDEX STATION: Mackinaw River near Green Valley

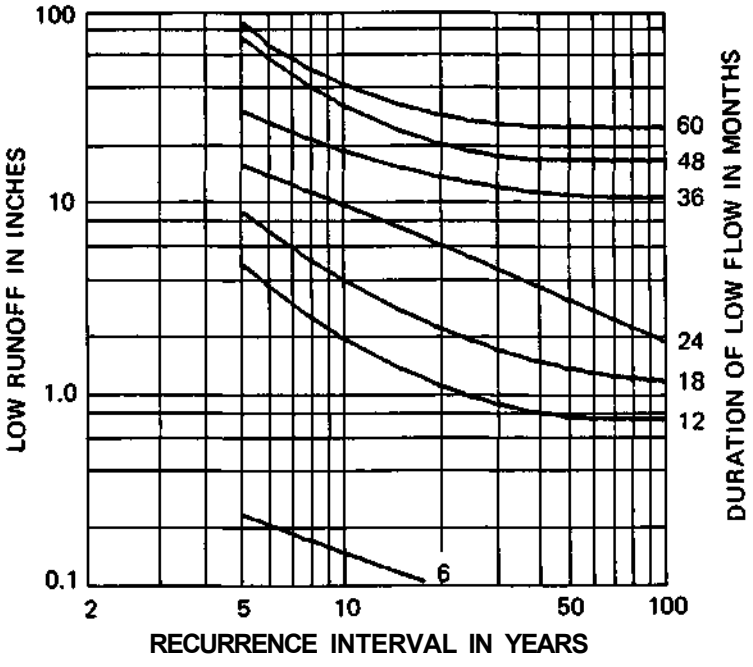
MEAN DISCHARGE: 0.70 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.03	.09	.20	.41	.66	.90	1.15	1.40	1.68	1.96	2.24	2.82	3.45	4.09	4.72	5.36
	3	3	3	7	7	7	7	8	8	8	8	9	9	9	9	9
6	.04	.11	.26	.47	.71	.96	1.21	1.45	1.72	2.00	2.28	2.92	3.55	4.19	5.05	6.39
	3	4	6	6	7	7	7	7	8	8	9	9	9	9	18	20
8	.05	.16	.34	.56	.77	1.02	1.26	1.54	1.83	2.15	2.46	3.11	4.38	5.65	6.92	8.27
	4	5	6	6	7	7	7	8	9	9	9	18	18	18	18	20
10	.06	.17	.38	.59	.83	1.08	1.35	1.66	1.97	2.29	2.86	4.12	5.39	6.66	7.99	10.49
	5	6	6	6	7	7	8	9	9	10	18	18	18	18	20	44
15	.07	.20	.44	.68	.94	1.25	1.59	2.17	2.81	3.44	4.08	5.34	6.68	8.61	12.46	16.41
	6	6	7	7	8	9	10	18	18	18	18	18	20	54	56	56
20	.08	.23	.47	.74	1.06	1.46	2.10	2.73	3.37	4.00	4.64	6.04	7.94	11.81	15.75	19.70
	6	7	7	8	10	18	18	18	18	18	20	20	54	56	56	56
25	.09	.24	.50	.81	1.15	1.78	2.42	3.05	3.69	4.40	5.10	6.57	9.45	13.39	17.34	21.29
	7	7	8	9	10	18	18	18	20	20	20	28	56	56	56	56
30	.10	.24	.53	.86	1.36	1.99	2.63	3.30	4.01	4.71	5.42	7.11	10.26	14.20	18.15	22.09
	7	7	9	10	18	18	18	20	20	20	20	28	56	56	56	56
40	.10	.26	.58	.98	1.61	2.29	3.00	3.70	4.41	5.11	5.93	7.81	10.78	14.73	18.68	22.62
	7	8	10	18	18	20	20	20	20	20	26	28	56	56	56	56
50	.10	.28	.62	1.13	1.83	2.53	3.24	3.94	4.65	5.54	6.46	8.29	10.78	14.73	18.68	22.62
	8	9	10	18	20	20	20	20	20	26	26	26	56	56	56	56
60	.11	.30	.64	1.29	1.99	2.70	3.40	4.11	5.00	5.91	6.83	8.66	10.78	14.73	18.68	22.62
	8	9	10	20	20	20	20	20	26	26	26	26	56	56	56	56
70	.11	.31	.70	1.40	2.11	2.81	3.52	4.36	5.27	6.19	7.10	8.94	10.78	14.73	18.68	22.62
	9	10	20	20	20	20	20	26	26	26	26	26	56	56	56	56
80	.12	.32	.79	1.49	2.20	2.90	3.66	4.57	5.49	6.40	7.32	9.15	10.98	14.73	18.68	22.62
	9	10	20	20	20	20	26	26	26	26	26	26	26	56	56	56
90	.12	.32	.86	1.56	2.27	2.97	3.83	4.74	5.66	6.58	7.49	9.32	11.16	14.73	18.68	22.62
	9	10	20	20	20	20	26	26	26	26	26	26	26	56	56	56
100	.12	.33	.91	1.62	2.32	3.05	3.97	4.88	5.80	6.72	7.63	9.46	11.30	14.73	18.68	22.62
	9	10	20	20	20	26	26	26	26	26	26	26	26	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
VERMILION RIVER AT PONTIAC
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55555 —VERMILION RIVER AT LOWELL



LOCATION: In NE¼ SE¼ Sec 8, T32N, R2E, La Salle County, at bridge on Illinois 178, 0.25 miles north of Lowell, and 7 miles southeast of La Salle

DRAINAGE AREA: 1230 square miles

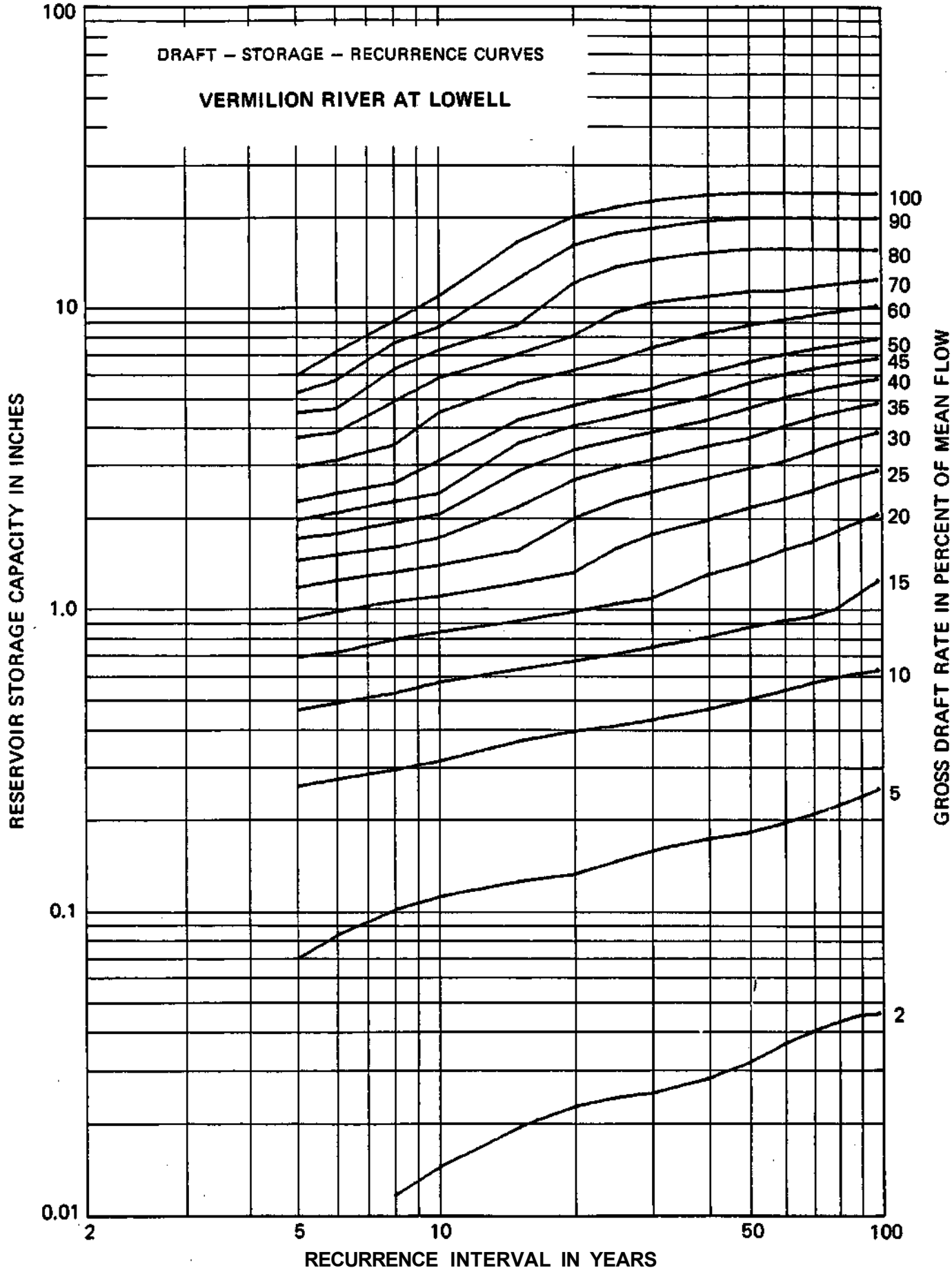
ACTUAL FLOW DATA: May 1931 to Sep 1971

INDEX STATION: both Mackinaw River near Congerville and near Green Valley

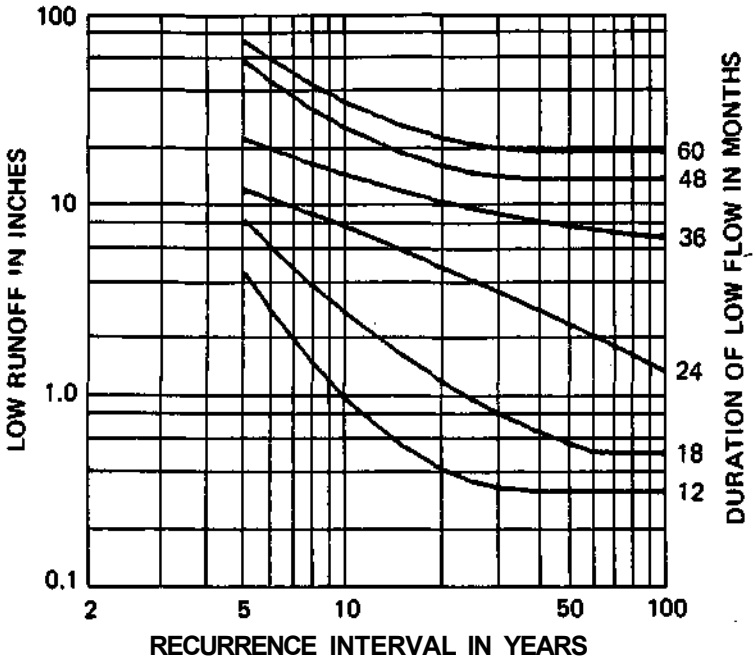
MEAN DISCHARGE: 0.75 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.07	.26	.46	.68	.91	1.16	1.43	1.69	1.95	2.25	2.92	3.64	4.39	5.14	5.89
	1	3	5	6	6	6	7	7	7	7	9	9	10	10	10	10
6	.01	.08	.27	.48	.71	.97	1.23	1.49	1.75	2.06	2.39	3.07	3.80	4.55	5.67	7.02
	2	5	5	6	6	7	7	7	7	9	9	9	10	10	18	18
8	.01	.10	.29	.52	.78	1.05	1.31	1.58	1.91	2.25	2.59	3.46	4.81	6.16	7.51	8.86
	3	5	6	7	7	7	7	8	9	9	9	18	18	18	18	18
10	.01	.11	.31	.57	.83	1.09	1.38	1.70	2.04	2.39	3.06	4.41	5.76	7.11	8.46	10.72
	3	5	6	7	7	7	8	9	9	18	18	18	18	18	18	40
15	.02	.12	.36	.62	.90	1.21	1.54	2.16	2.83	3.51	4.18	5.53	6.90	8.60	12.26	16.16
	4	5	7	7	8	9	9	18	18	18	18	18	20	28	52	52
20	.02	.13	.39	.67	.97	1.31	1.98	2.65	3.33	4.00	4.68	6.11	7.94	11.84	15.74	19.64
	4	6	7	8	9	9	18	18	18	18	18	20	52	52	52	52
25	.02	.15	.41	.70	1.03	1.58	2.25	2.93	3.60	4.29	5.04	6.65	9.52	13.42	17.31	21.21
	4	7	7	8	9	18	18	18	18	20	20	28	52	52	52	52
30	.03	.16	.43	.74	1.08	1.75	2.43	3.10	3.83	4.58	5.33	7.27	10.25	14.15	18.05	22.24
	5	7	8	9	9	18	18	18	20	20	20	28	52	52	52	56
40	.03	.17	.46	.80	1.29	1.96	2.69	3.44	4.19	5.04	6.02	8.11	10.79	14.99	19.19	23.38
	5	7	9	9	18	18	20	20	20	26	26	28	56	56	56	56
50	.03	.18	.50	.87	1.41	2.16	2.91	3.66	4.60	5.58	6.55	8.65	11.21	15.41	19.61	23.80
	6	7	9	10	20	20	20	20	26	26	26	28	56	56	56	56
60	.04	.20	.54	.91	1.56	2.31	3.07	4.00	4.98	5.95	6.94	9.04	11.27	15.47	19.67	23.87
	6	8	10	10	20	20	22	26	26	26	28	28	56	56	56	56
70	.04	.21	.57	.94	1.67	2.47	3.31	4.29	5.26	6.24	7.23	9.37	11.62	15.47	19.67	23.87
	6	9	10	10	20	22	26	26	26	26	28	30	30	56	56	56
80	.04	.22	.60	1.01	1.82	2.64	3.53	4.51	5.48	6.46	7.46	9.67	11.92	15.47	19.67	23.87
	6	9	10	20	22	22	26	26	26	26	28	30	30	56	56	56
90	.05	.24	.61	1.13	1.96	2.78	3.71	4.69	5.66	6.64	7.67	9.92	12.17	15.47	19.67	23.87
	6	10	10	22	22	22	26	26	26	26	30	30	30	56	56	56
100	.05	.26	.63	1.25	2.07	2.89	3.86	4.84	5.81	6.79	7.88	10.13	12.38	15.47	19.67	23.87
	6	10	10	22	22	22	26	26	26	26	30	30	30	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
VERMILION RIVER AT LOWELL
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55595 - CROW CREEK NEAR WASHBURN



LOCATION: In SW¼ Sec 23, T29N, R2W, Marshall County, at highway bridge 2.5 miles northwest of Washburn

DRAINAGE AREA: 115 square miles

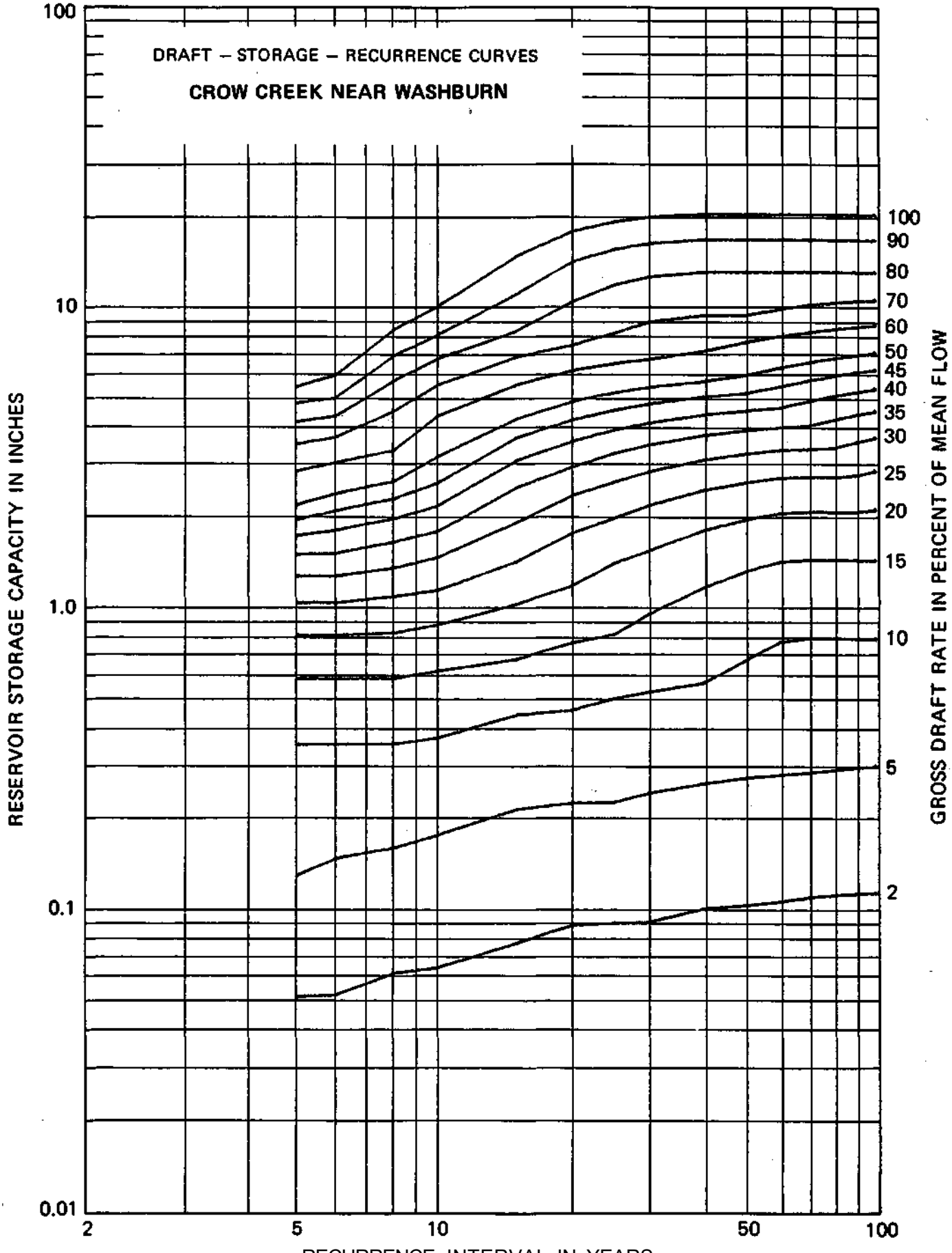
ACTUAL FLOW DATA: Oct 1944 to Oct 1978

INDEX STATION: both Mackinaw River near Congerville and near Green Valley

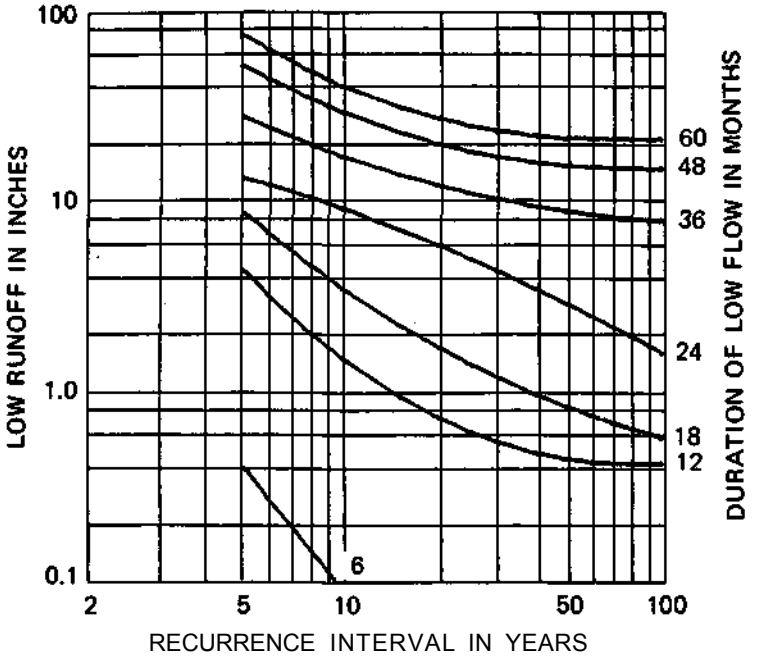
MEAN DISCHARGE: 0.64 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.13	.35	.58	.80	1.03	1.25	1.48	1.70	1.93	2.16	2.81	3.45	4.10	4.74	5.38
	4	4	7	7	7	7	7	7	7	7	10	10	10	10	10	10
6	.05	.15	.35	.58	.80	1.03	1.25	1.49	1.78	2.07	2.36	3.00	3.64	4.29	4.93	5.88
	4	6	7	7	7	7	7	9	9	9	9	10	10	10	10	20
8	.06	.16	.35	.58	.82	1.07	1.33	1.63	1.95	2.27	2.59	3.29	4.45	5.61	6.79	8.26
	5	5	7	7	8	8	8	10	10	10	10	18	18	18	20	32
10	.06	.17	.37	.61	.87	1.13	1.45	1.77	2.16	2.57	3.15	4.31	5.47	6.67	7.98	9.92
	5	6	6	8	8	8	10	12	12	18	18	18	18	20	30	32
15	.08	.21	.44	.67	1.02	1.40	1.90	2.48	3.06	3.64	4.22	5.49	6.78	8.22	10.91	14.52
	7	7	7	8	12	12	18	18	18	18	18	20	20	30	56	56
20	.09	.22	.45	.76	1.17	1.75	2.33	2.91	3.54	4.18	4.83	6.12	7.41	10.28	13.89	17.50
	7	7	9	10	18	18	18	18	20	20	20	20	20	56	56	56
25	.09	.22	.50	.81	1.39	1.97	2.60	3.24	3.89	4.53	5.18	6.47	8.12	11.73	15.34	18.95
	7	7	9	12	18	18	20	20	20	20	20	20	56	56	56	56
30	.09	.24	.52	.95	1.53	2.18	2.82	3.47	4.11	4.76	5.40	6.69	8.87	12.48	16.09	19.70
	7	8	9	18	20	20	20	20	20	20	20	20	56	56	56	56
40	.10	.26	.56	1.16	1.80	2.45	3.09	3.74	4.38	5.03	5.67	7.12	9.37	12.98	16.59	20.20
	8	9	10	20	20	20	20	20	20	20	20	28	56	56	56	56
50	.10	.27	.67	1.31	1.96	2.60	3.25	3.89	4.54	5.18	5.95	7.62	9.37	12.98	16.59	20.20
	8	9	20	20	20	20	20	20	20	20	26	26	56	56	56	56
60	.11	.28	.77	1.41	2.06	2.70	3.35	3.99	4.64	5.46	6.30	7.97	9.82	12.98	16.59	20.20
	9	9	20	20	20	20	20	20	20	26	26	26	38	56	56	56
70	.11	.29	.79	1.44	2.08	2.73	3.37	4.05	4.88	5.72	6.56	8.24	10.16	12.98	16.59	20.20
	9	10	20	20	20	20	20	26	26	26	26	26	38	56	56	56
80	.11	.29	.79	1.44	2.08	2.73	3.41	4.25	5.09	5.93	6.76	8.44	10.32	12.98	16.59	20.20
	9	10	20	20	20	20	26	26	26	26	26	26	38	56	56	56
90	.11	.30	.79	1.44	2.08	2.76	3.57	4.41	5.25	6.09	6.93	8.60	10.45	12.98	16.59	20.20
	9	10	20	20	20	22	26	26	26	26	26	26	38	56	56	56
100	.11	.30	.79	1.44	2.13	2.86	3.70	4.54	5.38	6.22	7.06	8.73	10.54	12.99	16.59	20.20
	9	10	20	20	22	26	26	26	26	26	26	26	38	38	56	56


DRAFT – STORAGE – RECURRENCE CURVES
CROW CREEK NEAR WASHBURN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55605 - FARM CREEK NEAR FARMDALE



LOCATION: In NE¼ SE¼ Sec 36, T26N, R4W, Tazewell County, 200 feet downstream from bridge, 0.2 miles southeast of Farmdale

DRAINAGE AREA: 27.4 square miles

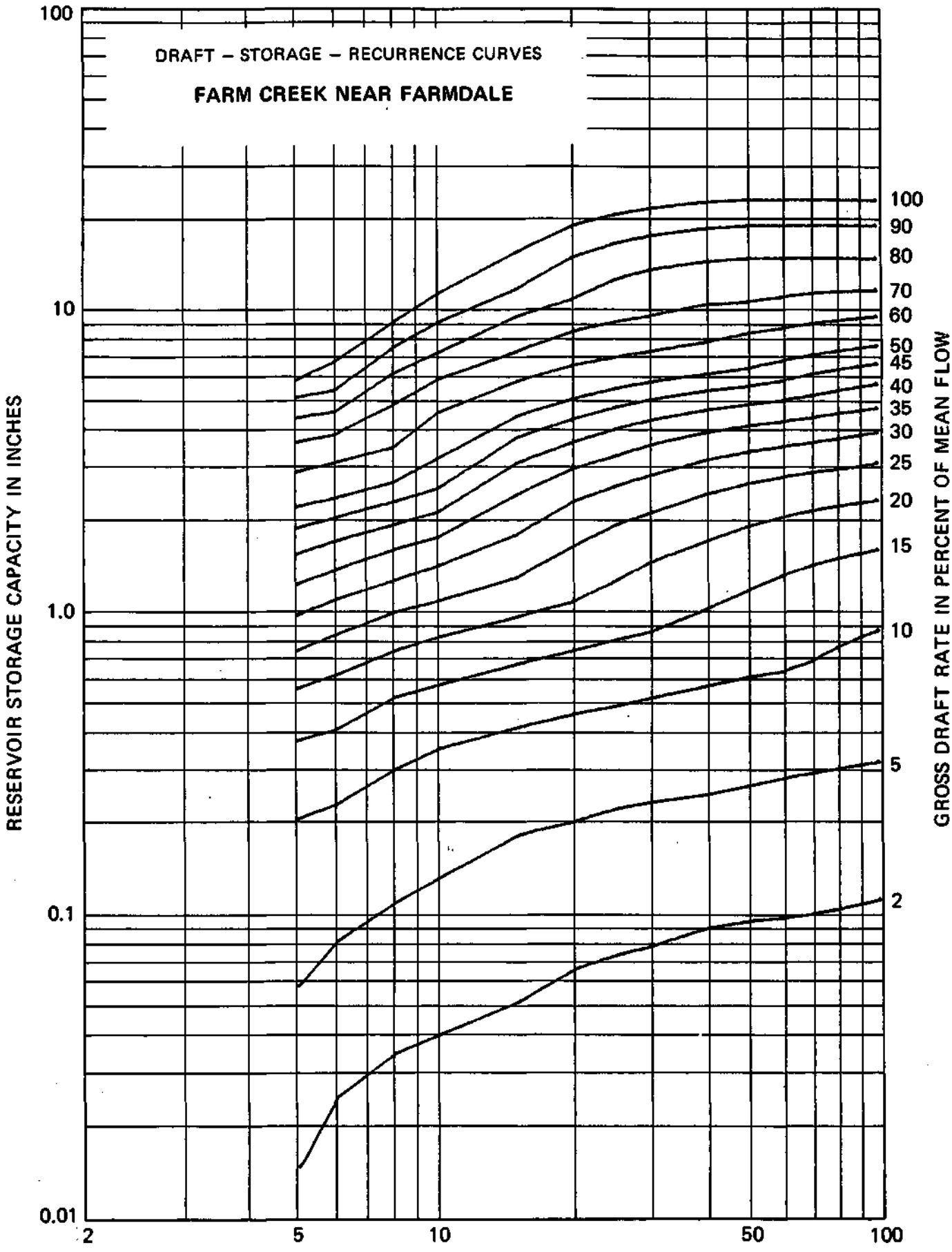
ACTUAL FLOW DATA: Oct 1948 to Oct 1978

INDEX STATION: Mackinaw River at Green Valley

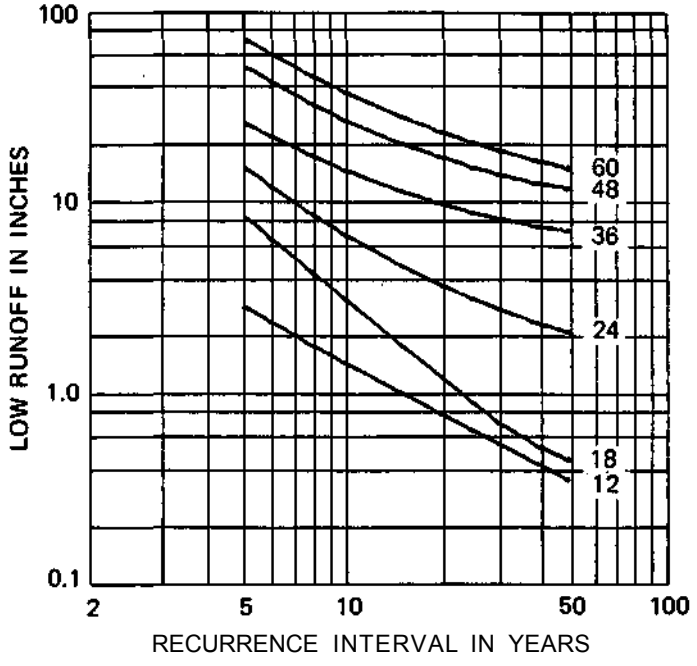
MEAN DISCHARGE: 0.72 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.06	.20	.37	.54	.72	.95	1.20	1.50	1.83	2.15	2.80	3.52	4.23	4.95	5.66
	1	2	4	5	5	5	7	7	9	9	9	10	10	10	10	10
6	.02	.08	.22	.40	.60	.82	1.07	1.34	1.66	1.98	2.30	3.01	3.73	4.45	5.25	6.54
	2	4	4	5	6	7	7	9	9	9	9	10	10	10	18	18
8	.03	.11	.29	.51	.72	.97	1.23	1.55	1.88	2.23	2.59	3.38	4.67	5.96	7.25	8.75
	3	4	6	6	6	7	9	9	9	10	10	18	18	18	18	30
10	.04	.13	.34	.56	.80	1.05	1.38	1.71	2.06	2.47	3.12	4.40	5.69	6.98	8.76	10.91
	3	6	6	6	7	8	9	10	10	18	18	18	18	18	30	30
15	.05	.18	.40	.65	.94	1.26	1.74	2.36	3.01	3.65	4.30	5.62	7.05	9.19	11.34	14.94
	5	6	7	7	9	10	16	18	18	18	18	20	20	30	30	54
20	.06	.20	.45	.72	1.05	1.59	2.23	2.88	3.52	4.19	4.91	6.34	8.20	10.49	14.35	18.22
	6	7	7	9	10	18	18	18	18	20	20	20	30	54	54	54
25	.07	.22	.47	.79	1.23	1.88	2.52	3.18	3.90	4.61	5.33	6.76	8.83	12.18	16.04	19.91
	6	7	8	9	18	18	18	20	20	20	20	20	30	54	54	54
30	.08	.23	.51	.84	1.42	2.06	2.74	3.46	4.18	4.89	5.61	7.07	9.27	13.13	17.00	20.89
	7	7	9	10	18	18	20	20	20	20	20	30	54	54	54	56
40	.09	.24	.55	.99	1.66	2.37	3.09	3.80	4.52	5.24	5.95	7.58	10.12	13.99	17.97	21.98
	7	8	9	18	20	20	20	20	20	20	20	26	54	54	56	56
50	.09	.26	.60	1.15	1.86	2.58	3.30	4.01	4.73	5.44	6.24	8.10	10.34	14.34	18.35	22.36
	7	9	10	20	20	20	20	20	20	20	26	26	56	56	56	56
60	.10	.28	.62	1.29	2.00	2.72	3.43	4.15	4.88	5.68	6.61	8.47	10.73	14.38	18.39	22.40
	7	9	10	20	20	20	20	20	22	26	26	26	38	56	56	56
70	.10	.29	.67	1.39	2.10	2.82	3.53	4.28	5.06	5.95	6.88	8.74	11.03	14.38	18.39	22.40
	8	9	20	20	20	20	20	22	22	26	26	26	38	56	56	56
80	.10	.30	.75	1.46	2.18	2.89	3.63	4.42	5.24	6.17	7.10	8.96	11.17	14.38	18.39	22.40
	8	10	20	20	20	20	22	22	26	26	26	26	38	56	56	56
90	.11	.31	.81	1.52	2.24	2.96	3.74	4.53	5.42	6.35	7.28	9.14	11.26	14.38	18.39	22.40
	9	10	20	20	20	22	22	22	26	26	26	26	38	56	56	56
100	.11	.31	.85	1.57	2.29	3.05	3.84	4.63	5.56	6.49	7.42	9.28	11.32	14.38	18.39	22.40
	9	10	20	20	20	22	22	26	26	26	26	26	38	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
FARM CREEK NEAR FARMDALE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55610 - ACKERMAN CREEK AT FARMDALE



LOCATION: In SE¼ SE¼ Sec 36, T26N, R4W, Tazewell County at New York, Chicago and St. Louis Railroad bridge, 0.45 miles southeast of Farmdale

DRAINAGE AREA: 11.2 square miles

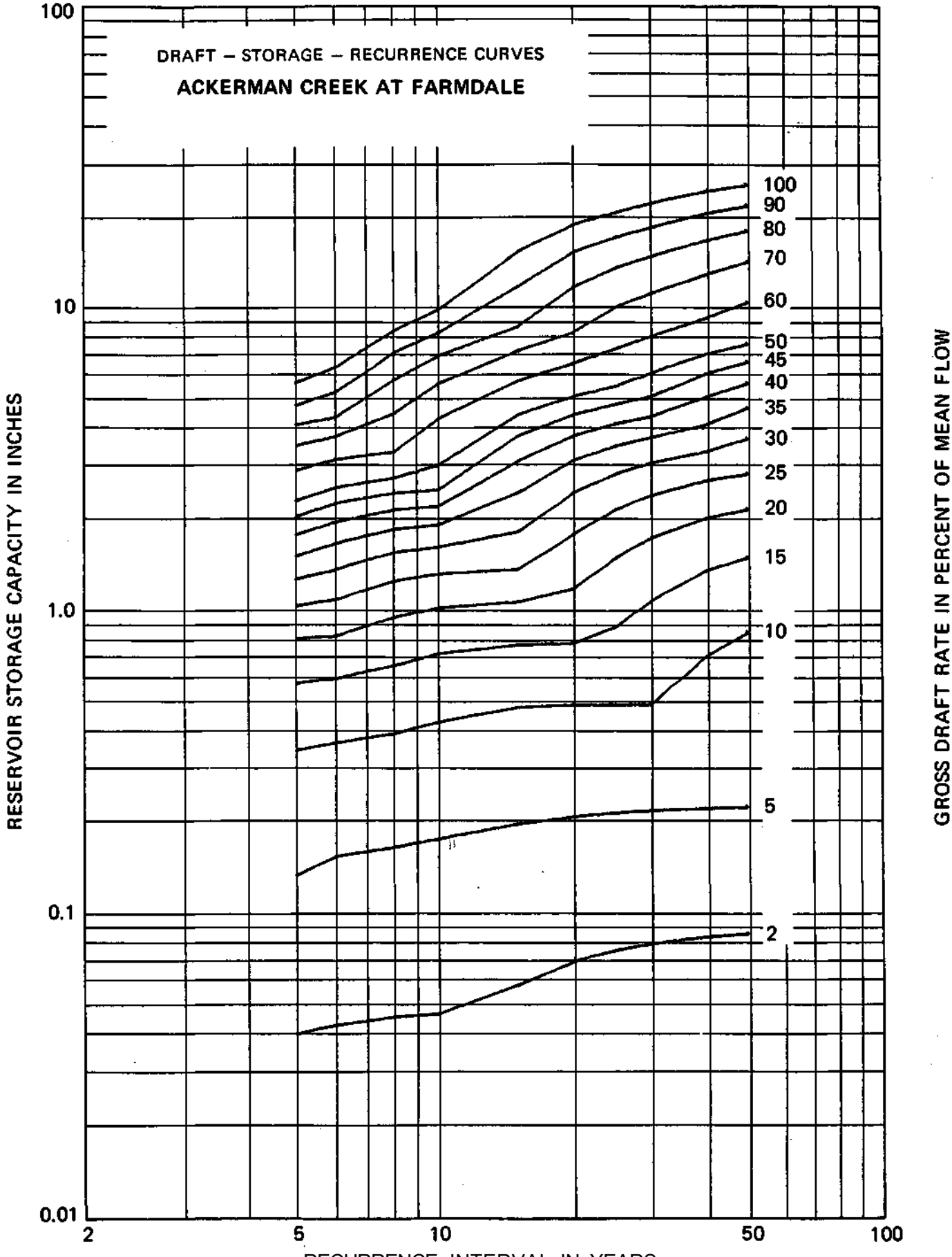
ACTUAL FLOW DATA: Dec 1953 to Oct 1978

INDEX STATION: Mackinaw River at Congerville

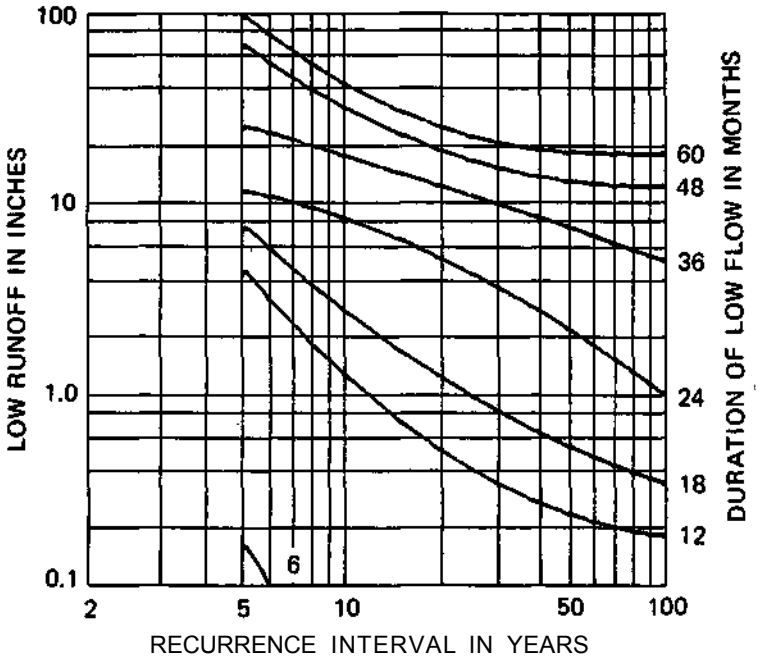
MEAN DISCHARGE: 0.65 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.13	.33	.56	.78	1.01	1.23	1.46	1.72	1.98	2.23	2.81	3.38	3.96	4.59	5.49
	4	5	7	7	7	7	7	8	8	8	8	9	9	9	14	14
6	.04	.15	.35	.58	.80	1.05	1.32	1.61	1.89	2.18	2.47	3.05	3.62	4.20	5.09	6.16
	4	6	7	7	7	8	9	9	9	9	9	9	9	9	14	20
8	.04	.16	.38	.64	.92	1.21	1.50	1.79	2.07	2.36	2.65	3.23	4.31	5.59	6.87	8.15
	6	6	7	9	9	9	9	9	9	9	9	9	20	20	20	20
10	.05	.17	.41	.70	.99	1.28	1.56	1.85	2.14	2.43	2.92	4.16	5.44	6.71	8.02	9.59
	4	7	9	9	9	9	9	9	9	9	16	20	20	20	22	30
15	.06	.19	.47	.75	1.04	1.33	1.76	2.37	3.01	3.65	4.29	5.57	6.98	8.41	11.45	14.90
	7	7	9	9	9	9	16	20	20	20	20	22	22	30	54	54
20	.07	.20	.47	.76	1.15	1.74	2.38	3.02	3.66	4.30	4.94	6.35	8.03	11.39	14.84	18.29
	7	7	9	9	18	20	20	20	20	20	22	22	30	54	54	54
25	.07	.21	.47	.87	1.47	2.11	2.75	3.39	4.02	4.67	5.37	7.13	9.78	13.23	16.69	20.14
	7	7	9	18	20	20	20	20	20	22	22	30	54	54	54	54
30	.08	.21	.48	1.06	1.70	2.34	2.98	3.62	4.26	4.97	5.93	7.84	10.91	14.41	17.99	21.61
	7	7	18	20	20	20	20	20	20	30	30	30	54	56	56	58
40	.08	.22	.70	1.34	1.98	2.61	3.25	3.99	4.95	5.91	6.87	9.04	12.63	16.34	20.05	23.75
	7	7	20	20	20	20	20	30	30	30	30	56	58	58	58	58
50	.08	.22	.84	1.48	2.12	2.76	3.60	4.56	5.51	6.47	7.43	10.24	13.95	17.65	21.36	25.07
	7	7	20	20	20	20	30	30	30	30	30	58	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
ACKERMAN CREEK AT FARMDALE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55615 - FONDULAC CREEK NEAR EAST PEORIA



LOCATION: On line between SW¼ and SE¼ Sec 26, T26N, R4W, Tazewell County, at bridge on Illinois 8, 3 miles northeast of East Peoria

DRAINAGE AREA: 5.54 square miles

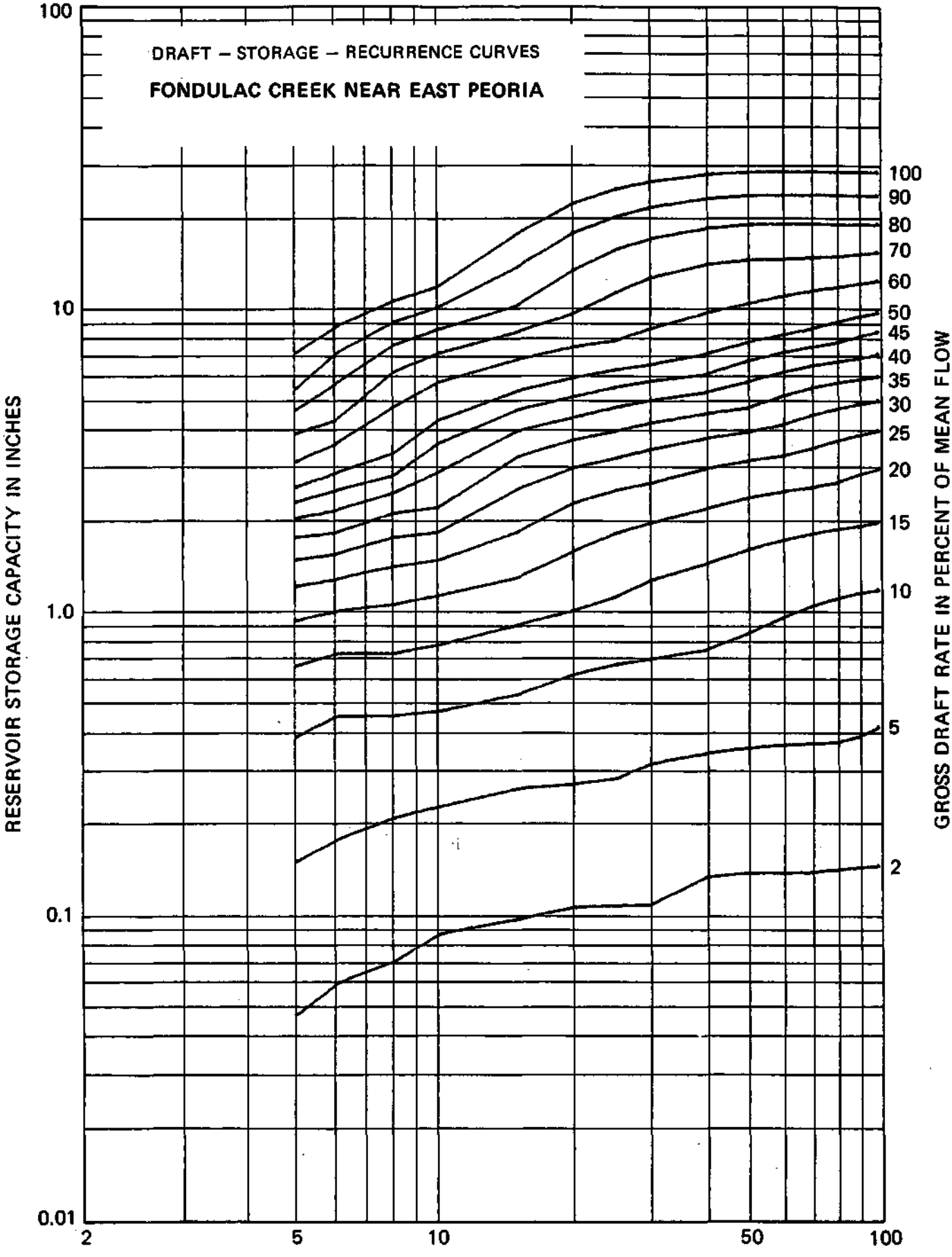
ACTUAL FLOW DATA: Jan 1948 to Oct 1978

INDEX STATION: Mackinaw River at Green Valley

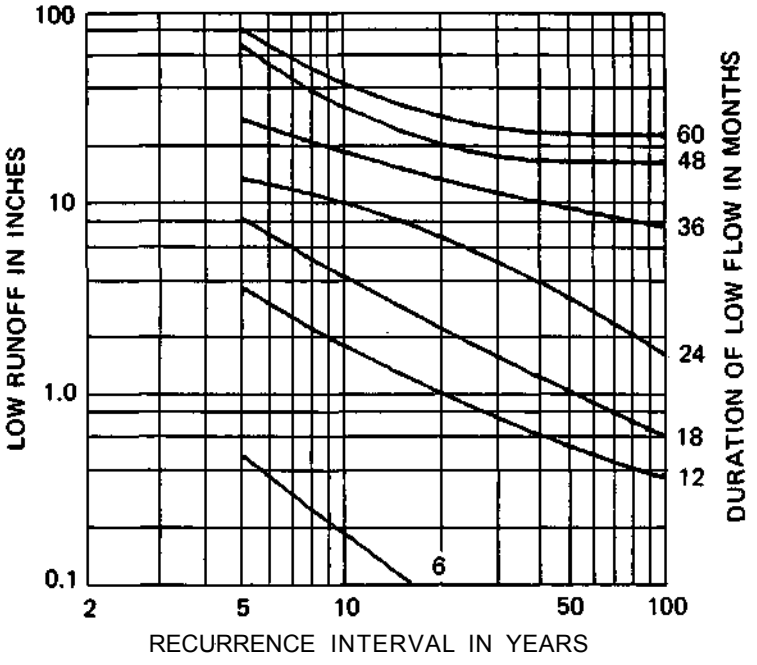
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.15	.38	.65	.91	1.18	1.45	1.72	1.99	2.25	2.52	3.06	3.77	4.53	5.31	6.96
	3	5	7	7	7	7	7	7	7	7	7	7	10	10	20	22
6	.06	.17	.44	.71	.98	1.24	1.51	1.78	2.11	2.45	2.80	3.49	4.17	5.49	6.90	8.43
	4	7	7	7	7	7	7	7	9	9	9	9	9	18	20	20
8	.07	.20	.44	.71	1.03	1.38	1.72	2.07	2.41	2.75	3.26	4.64	6.01	7.39	8.79	10.32
	5	6	7	7	9	9	9	9	9	9	18	18	18	18	20	20
10	.09	.22	.46	.76	1.11	1.45	1.79	2.16	2.82	3.51	4.20	5.58	6.95	8.34	9.87	11.54
	6	6	7	9	9	9	9	10	18	18	18	18	18	20	20	30
15	.10	.26	.52	.89	1.27	1.80	2.49	3.18	3.87	4.56	5.25	6.66	8.19	10.02	13.38	17.26
	7	7	7	10	10	18	18	18	18	18	18	20	20	44	44	56
20	.10	.27	.61	.99	1.56	2.24	2.93	3.62	4.31	5.03	5.80	7.33	9.41	13.08	17.36	21.75
	7	7	10	10	18	18	18	18	18	20	20	20	44	56	56	60
25	.11	.28	.66	1.11	1.80	2.48	3.17	3.90	4.66	5.43	6.19	7.72	11.08	15.37	19.72	24.31
	7	10	10	18	18	18	18	20	20	20	20	20	56	56	60	60
30	.11	.31	.69	1.26	1.94	2.63	3.39	4.15	4.92	5.68	6.45	8.46	12.42	16.71	21.22	25.81
	8	9	10	18	18	18	20	20	20	20	20	44	56	56	60	60
40	.13	.34	.74	1.43	2.17	2.94	3.70	4.47	5.23	6.00	7.00	9.55	13.78	18.13	22.73	27.32
	9	9	18	18	20	20	20	20	20	26	26	52	56	60	60	60
50	.14	.35	.84	1.59	2.36	3.13	3.89	4.67	5.66	6.66	7.65	10.26	14.29	18.70	23.29	27.88
	9	10	18	20	20	20	20	26	26	26	26	40	56	60	60	60
60	.14	.36	.95	1.72	2.48	3.25	4.12	5.12	6.11	7.10	8.10	10.87	14.40	18.82	23.41	28.00
	9	10	20	20	20	20	26	26	26	26	26	40	56	60	60	60
70	.14	.37	1.04	1.80	2.57	3.44	4.44	5.43	6.43	7.42	8.51	11.32	14.58	18.82	23.41	28.00
	10	10	20	20	20	26	26	26	26	26	34	40	50	60	60	60
80	.14	.37	1.10	1.87	2.66	3.66	4.65	5.65	6.64	7.67	8.97	11.67	14.73	18.82	23.41	28.00
	10	10	20	20	26	26	26	26	26	34	34	40	40	60	60	60
90	.14	.39	1.15	1.92	2.83	3.82	4.82	5.81	6.81	8.05	9.35	12.00	15.01	18.82	23.41	28.00
	10	20	20	20	26	26	26	26	26	34	34	38	40	60	60	60
100	.15	.42	1.18	1.98	2.97	3.96	4.96	5.95	7.06	8.36	9.67	12.29	15.24	18.82	23.41	28.00
	10	20	20	22	26	26	26	26	34	34	34	38	40	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
FONDULAC CREEK NEAR EAST PEORIA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55620 - FARM CREEK AT EAST PEORIA



LOCATION: In SW¼ NW¼ Sec 33, T26N, R4W, Tazewell County, about 30 feet upstream from Main Street bridge in East Peoria

DRAINAGE AREA: 61.2 square miles

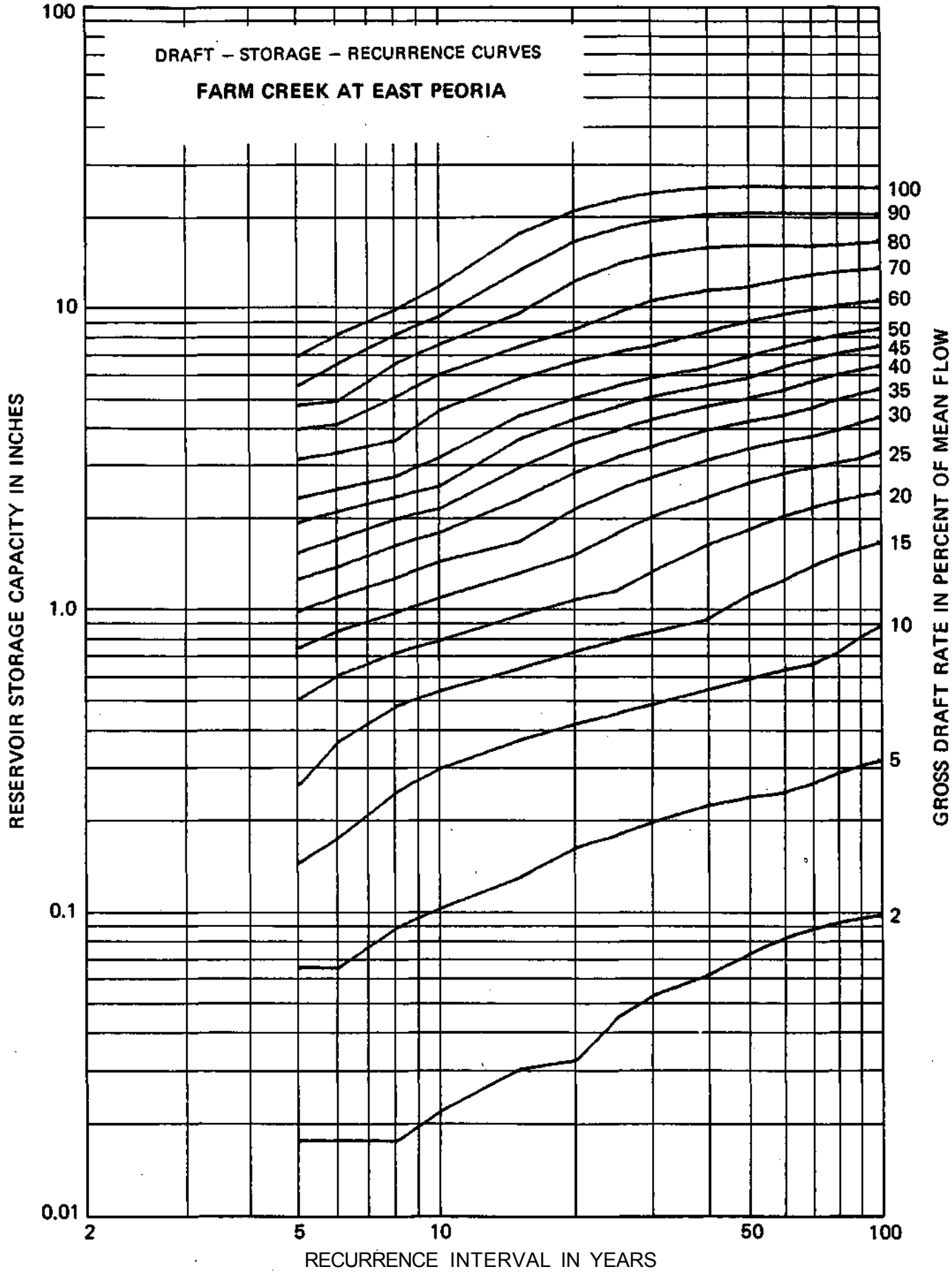
ACTUAL FLOW DATA: May 1943 to Oct 1978

INDEX STATION: Mackinaw River at Green Valley

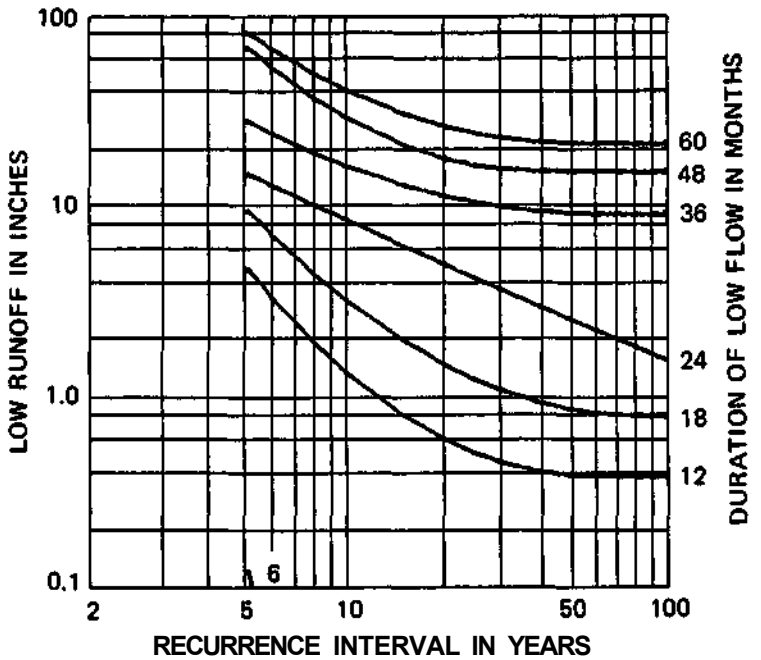
MEAN DISCHARGE: 0.79 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.06	.14	.26	.50	.73	.97	1.24	1.51	1.90	2.29	3.08	3.87	4.65	5.44	6.75
	2	2	2	6	6	6	6	7	7	10	10	10	10	10	10	20
6	.02	.06	.17	.36	.59	.83	1.08	1.35	1.67	2.06	2.46	3.24	4.03	4.81	6.39	7.96
	2	2	3	6	6	6	7	7	9	10	10	10	10	20	20	20
8	.02	.09	.24	.47	.70	.96	1.24	1.60	1.95	2.31	2.71	3.57	4.97	6.40	7.97	9.62
	2	3	4	6	6	7	9	9	9	10	10	16	18	20	20	30
10	.02	.10	.29	.53	.78	1.07	1.41	1.77	2.12	2.52	3.15	4.50	5.91	7.41	9.17	11.52
	3	4	6	6	7	8	9	9	9	16	16	18	18	20	30	30
15	.03	.13	.36	.63	.94	1.29	1.65	2.28	2.91	3.60	4.31	5.72	7.29	9.34	12.91	17.15
	2	6	6	8	9	9	16	16	16	18	18	18	20	30	54	54
20	.03	.16	.41	.71	1.06	1.49	2.12	2.80	3.51	4.21	4.94	6.51	8.27	11.96	16.20	20.44
	5	6	7	8	9	16	16	18	18	18	20	20	30	54	54	54
25	.04	.18	.45	.78	1.14	1.77	2.46	3.17	3.88	4.66	5.44	7.01	9.41	13.66	17.90	22.29
	5	6	8	9	16	16	18	18	18	20	20	20	54	54	54	60
30	.05	.20	.48	.83	1.32	2.01	2.71	3.43	4.22	5.01	5.79	7.36	10.37	14.61	18.93	23.48
	5	7	8	9	16	18	18	20	20	20	20	20	54	54	56	60
40	.06	.22	.54	.91	1.62	2.33	3.11	3.89	4.68	5.46	6.25	8.17	11.19	15.56	19.96	24.60
	5	7	9	10	18	18	20	20	20	20	20	26	54	56	56	60
50	.07	.24	.59	1.11	1.83	2.61	3.40	4.18	4.97	5.81	6.83	8.87	11.55	15.85	20.25	24.88
	7	7	10	18	20	20	20	20	20	26	26	26	40	56	56	60
60	.08	.25	.63	1.24	2.03	2.81	3.60	4.38	5.29	6.31	7.33	9.38	12.22	15.85	20.25	24.88
	7	7	10	18	20	20	20	20	26	26	26	26	38	56	56	60
70	.09	.27	.66	1.39	2.17	2.96	3.75	4.65	5.67	6.69	7.71	9.75	12.70	15.85	20.25	24.88
	7	10	10	20	20	20	20	26	26	26	26	26	38	56	56	60
80	.09	.29	.72	1.50	2.29	3.07	3.92	4.94	5.96	6.99	8.01	10.05	13.00	15.99	20.25	24.88
	7	10	20	20	20	20	26	26	26	26	26	26	38	38	56	60
90	.10	.30	.81	1.59	2.38	3.17	4.16	5.18	6.20	7.22	8.24	10.29	13.25	16.23	20.25	24.88
	7	10	20	20	20	22	26	26	26	26	26	26	38	38	56	60
100	.10	.32	.88	1.66	2.45	3.33	4.35	5.37	6.39	7.42	8.44	10.48	13.45	16.44	20.25	24.88
	7	10	20	20	20	26	26	26	26	26	26	26	38	38	56	60


DRAFT – STORAGE – RECURRENCE CURVES
FARM CREEK AT EAST PEORIA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55645 - MONEY CREEK ABOVE LAKE BLOOMINGTON



LOCATION: In SE¼ SW¼ Sec 18, T25N, R3E, 200 feet north of line between Sec 18 and 19 1 mile upstream from Lake Bloomington

DRAINAGE AREA: 51.9 square miles

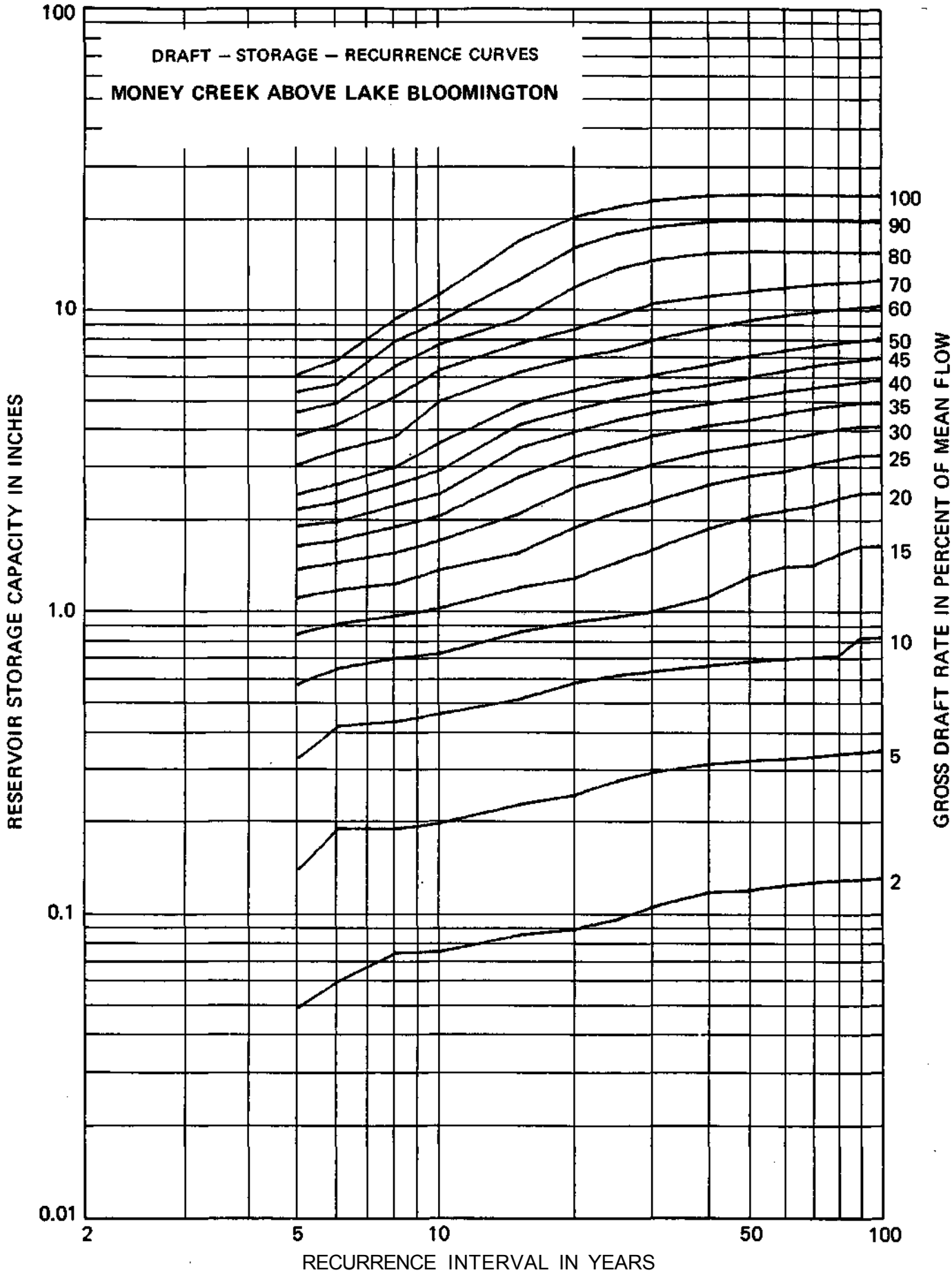
ACTUAL FLOW DATA: Oct 1933 to Sep 1958

INDEX STATION: both Mackinaw River at Congerville and at Green Valley

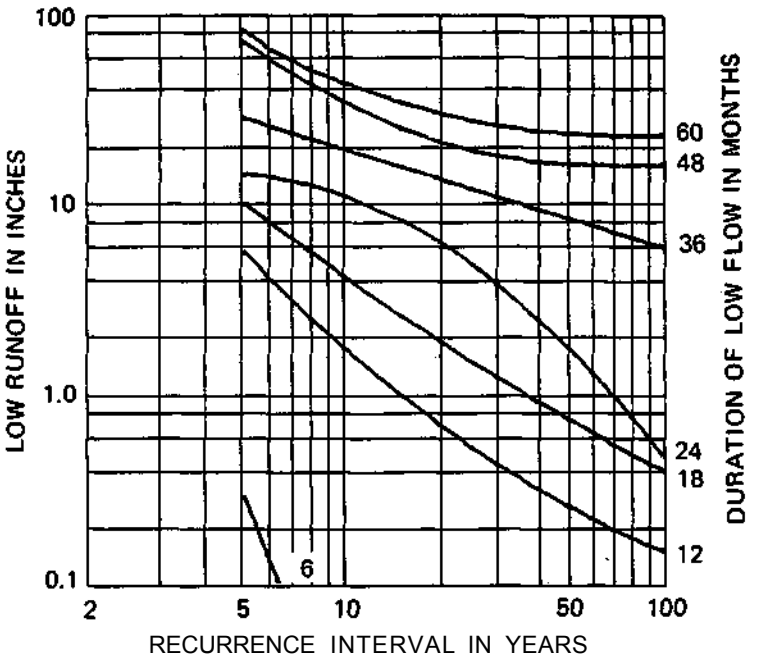
MEAN DISCHARGE: 0.74 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.05	.14	.32	.56	.82	1.08	1.33	1.59	1.85	2.11	2.37	2.97	3.70	4.44	5.18	5.92
	4	4	6	7	7	7	7	7	7	7	7	9	10	10	10	10
6	.06	.18	.41	.63	.88	1.14	1.40	1.66	1.92	2.22	2.56	3.29	4.03	4.76	5.50	6.63
	5	6	6	6	7	7	7	7	7	9	9	10	10	10	10	20
8	.07	.18	.42	.68	.94	1.20	1.51	1.84	2.18	2.55	2.92	3.68	5.00	6.33	7.66	9.10
	5	6	7	7	7	7	9	9	10	10	10	18	18	18	18	20
10	.07	.19	.45	.71	1.00	1.33	1.66	2.01	2.38	2.84	3.50	4.83	6.16	7.49	8.93	10.97
	5	6	7	7	9	9	9	10	10	18	18	18	18	18	20	42
15	.08	.22	.50	.83	1.16	1.51	2.04	2.71	3.37	4.04	4.70	6.06	7.53	9.11	12.24	16.38
	6	7	9	9	9	10	18	18	18	18	18	20	20	34	56	56
20	.09	.24	.57	.90	1.25	1.84	2.51	3.17	3.84	4.55	5.29	6.76	8.41	11.60	15.59	19.65
	6	7	9	9	10	18	18	18	18	20	20	20	28	54	54	56
25	.09	.27	.60	.94	1.42	2.08	2.75	3.47	4.21	4.95	5.69	7.19	9.36	13.34	17.33	21.37
	7	9	9	10	18	18	18	20	20	20	20	28	54	54	54	56
30	.10	.29	.62	.98	1.56	2.25	2.99	3.73	4.47	5.21	5.95	7.77	10.24	14.22	18.21	22.35
	8	9	9	10	18	20	20	20	20	20	20	28	54	54	56	56
40	.12	.31	.65	1.09	1.83	2.57	3.31	4.04	4.78	5.52	6.44	8.53	10.85	14.98	19.12	23.25
	8	9	10	20	20	20	20	20	20	20	28	30	56	56	56	56
50	.12	.32	.67	1.28	2.02	2.75	3.49	4.23	5.03	5.87	6.90	9.05	11.27	15.20	19.34	23.47
	8	9	10	20	20	20	20	20	22	28	28	30	30	56	56	56
60	.12	.32	.69	1.38	2.12	2.86	3.65	4.46	5.27	6.19	7.22	9.41	11.63	15.20	19.34	23.47
	9	9	10	20	20	20	22	22	22	28	28	30	30	56	56	56
70	.13	.33	.70	1.40	2.20	3.01	3.82	4.63	5.45	6.43	7.46	9.68	11.89	15.20	19.34	23.47
	9	10	10	20	22	22	22	22	22	28	30	30	30	56	56	56
80	.13	.34	.71	1.52	2.33	3.14	3.96	4.77	5.58	6.61	7.67	9.88	12.10	15.20	19.34	23.47
	9	10	22	22	22	22	22	22	22	28	30	30	30	56	56	56
90	.13	.34	.81	1.62	2.43	3.25	4.06	4.87	5.72	6.76	7.83	10.05	12.26	15.20	19.34	23.47
	9	10	22	22	22	22	22	22	28	28	30	30	30	56	56	56
100	.13	.34	.81	1.63	2.44	3.25	4.06	4.87	5.84	6.88	7.97	10.18	12.40	15.20	19.34	23.47
	9	10	22	22	22	22	22	22	28	28	30	30	30	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
MONEY CREEK ABOVE LAKE BLOOMINGTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55650 - HICKORY CREEK ABOVE LAKE BLOOMINGTON



LOCATION: In SE¼ Sec 11, T25N, R2E, McLean County, 0.25 mile upstream from Lake Bloomington and 3.0 miles northeast of Hudson

DRAINAGE AREA: 10.1 square miles

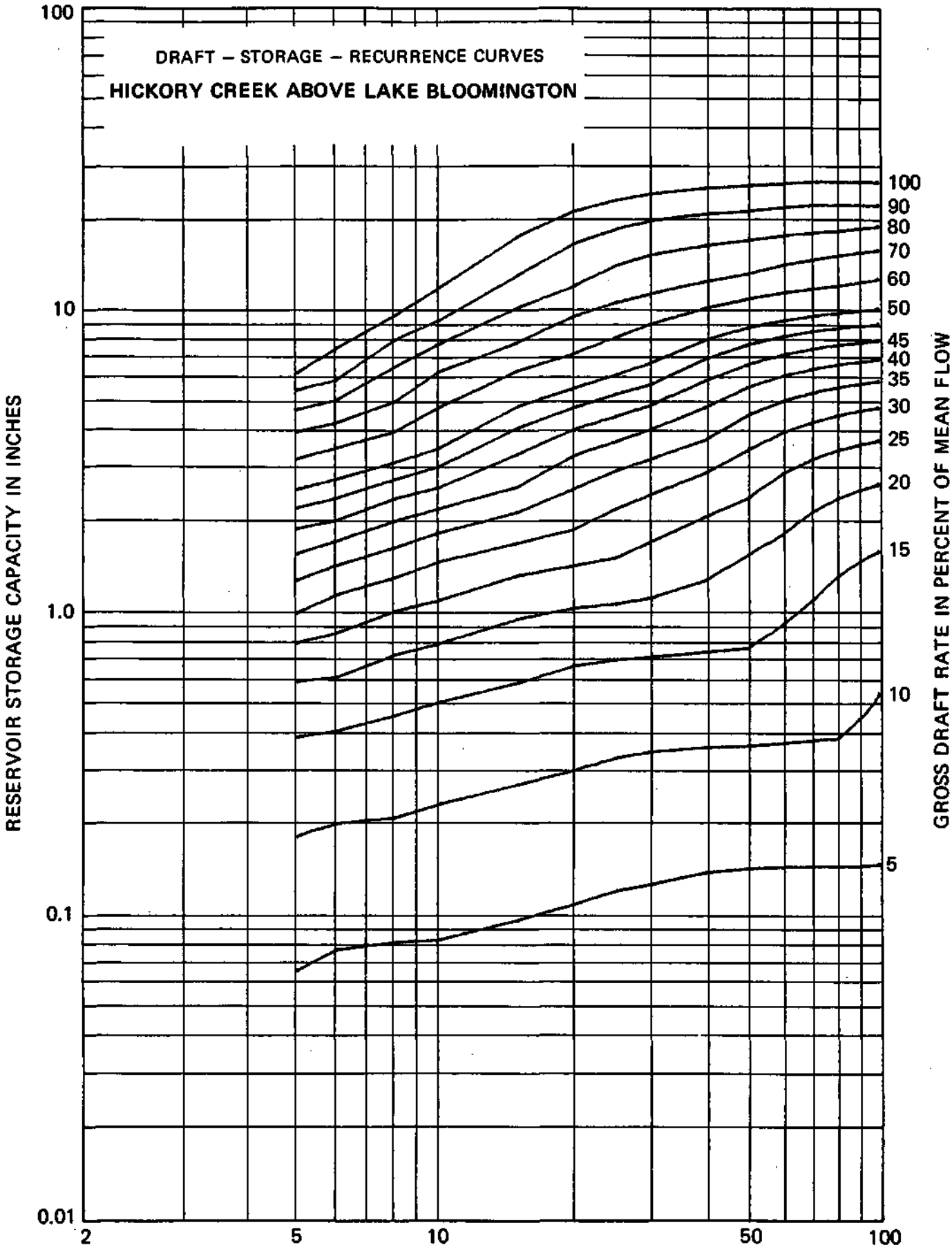
ACTUAL FLOW DATA: Oct 1938 thru Sep 1958; gaging discontinued Oct 1, 1958

INDEX STATION: both Mackinaw River at Congerville and at Green Valley

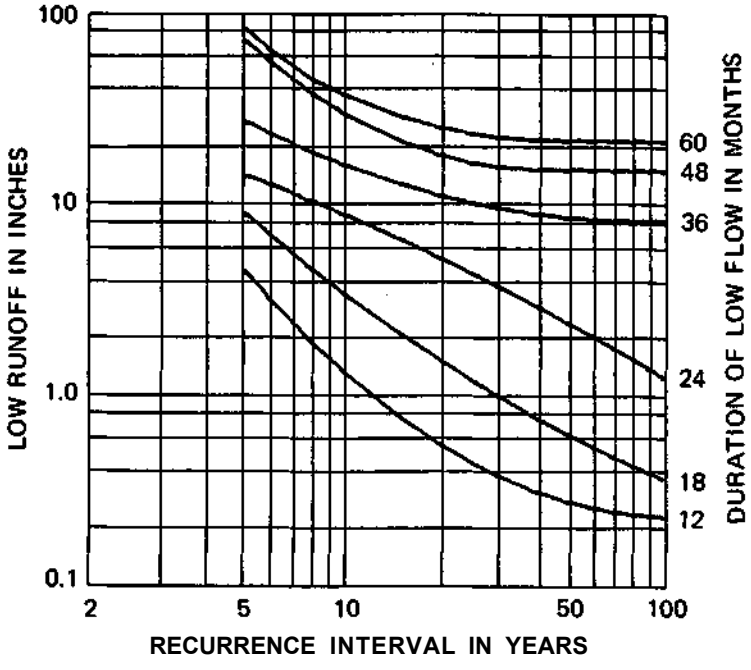
MEAN DISCHARGE: 0.81 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.18	.38	.58	.78	.98	1.25	1.53	1.85	2.18	2.50	3.16	3.88	4.61	5.33	6.08
	4	5	5	5	5	5	7	7	8	8	8	9	9	9	9	10
6	.08	.20	.40	.60	.84	1.12	1.40	1.69	1.98	2.34	2.70	3.43	4.15	4.94	5.75	7.31
	5	5	5	6	6	7	7	7	9	9	9	9	9	10	10	20
8	.08	.20	.45	.71	.99	1.27	1.60	1.97	2.33	2.69	3.06	3.87	4.88	6.33	7.78	9.37
	5	6	6	7	7	7	9	9	9	9	10	10	18	18	18	20
10	.08	.23	.49	.78	1.08	1.44	1.80	2.17	2.54	2.97	3.42	4.68	6.13	7.58	9.06	11.62
	6	6	7	7	9	9	9	9	10	11	11	18	18	18	20	32
15	.09	.26	.58	.94	1.30	1.67	2.11	2.56	3.28	4.01	4.73	6.18	7.68	10.02	12.79	17.16
	7	7	9	9	9	11	11	18	18	18	18	18	20	30	42	56
20	.11	.30	.65	1.02	1.40	1.84	2.51	3.23	3.96	4.68	5.42	7.03	9.34	11.76	16.23	20.74
	7	8	9	9	11	11	18	18	18	18	20	20	30	30	56	56
25	.12	.33	.69	1.05	1.49	2.17	2.89	3.62	4.39	5.20	6.00	8.00	10.42	13.83	18.18	22.66
	8	9	9	9	11	18	18	18	20	20	20	30	30	54	54	56
30	.12	.34	.70	1.10	1.69	2.41	3.17	3.98	4.78	5.59	6.60	8.86	11.16	15.02	19.37	23.80
	8	9	9	11	18	18	20	20	20	20	28	28	30	54	54	56
40	.14	.35	.73	1.26	2.05	2.85	3.67	4.72	5.77	6.82	7.86	10.03	12.29	16.11	20.47	24.92
	9	9	10	18	20	20	26	26	26	26	26	28	28	54	54	56
50	.14	.36	.76	1.53	2.35	3.40	4.45	5.50	6.54	7.59	8.64	10.76	13.02	16.77	20.96	25.40
	9	9	10	20	26	26	26	26	26	26	26	28	28	52	52	60
60	.14	.37	.91	1.79	2.84	3.89	4.94	5.98	7.03	8.08	9.13	11.27	13.93	17.37	21.56	25.75
	9	10	20	26	26	26	26	26	26	26	26	28	38	52	52	52
70	.14	.38	1.09	2.12	3.17	4.22	5.26	6.31	7.36	8.41	9.45	11.63	14.52	17.76	21.95	26.14
	9	10	22	26	26	26	26	26	26	26	26	28	38	52	52	52
80	.14	.38	1.30	2.35	3.39	4.44	5.49	6.54	7.59	8.63	9.68	11.90	14.96	18.02	21.99	26.18
	9	10	26	26	26	26	26	26	26	26	26	28	38	38	52	52
90	.14	.44	1.46	2.51	3.56	4.61	5.65	6.70	7.75	8.80	9.86	12.27	15.33	18.39	21.99	26.18
	9	22	26	26	26	26	26	26	26	26	28	38	38	38	52	52
100	.15	.54	1.58	2.63	3.68	4.73	5.78	6.82	7.87	8.92	10.03	12.58	15.64	18.70	21.99	26.18
	10	26	26	26	26	26	26	26	26	26	28	38	38	38	52	52


DRAFT – STORAGE – RECURRENCE CURVES
HICKORY CREEK ABOVE LAKE BLOOMINGTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

55660 - EAST BRANCH PANTHER CREEK NEAR GRIDLEY



LOCATION: Between Sec 29 and 30, T27N, R3E, Livingston County, at highway bridge 2.0 miles northwest of Gridley

DRAINAGE AREA: 6.3 square miles

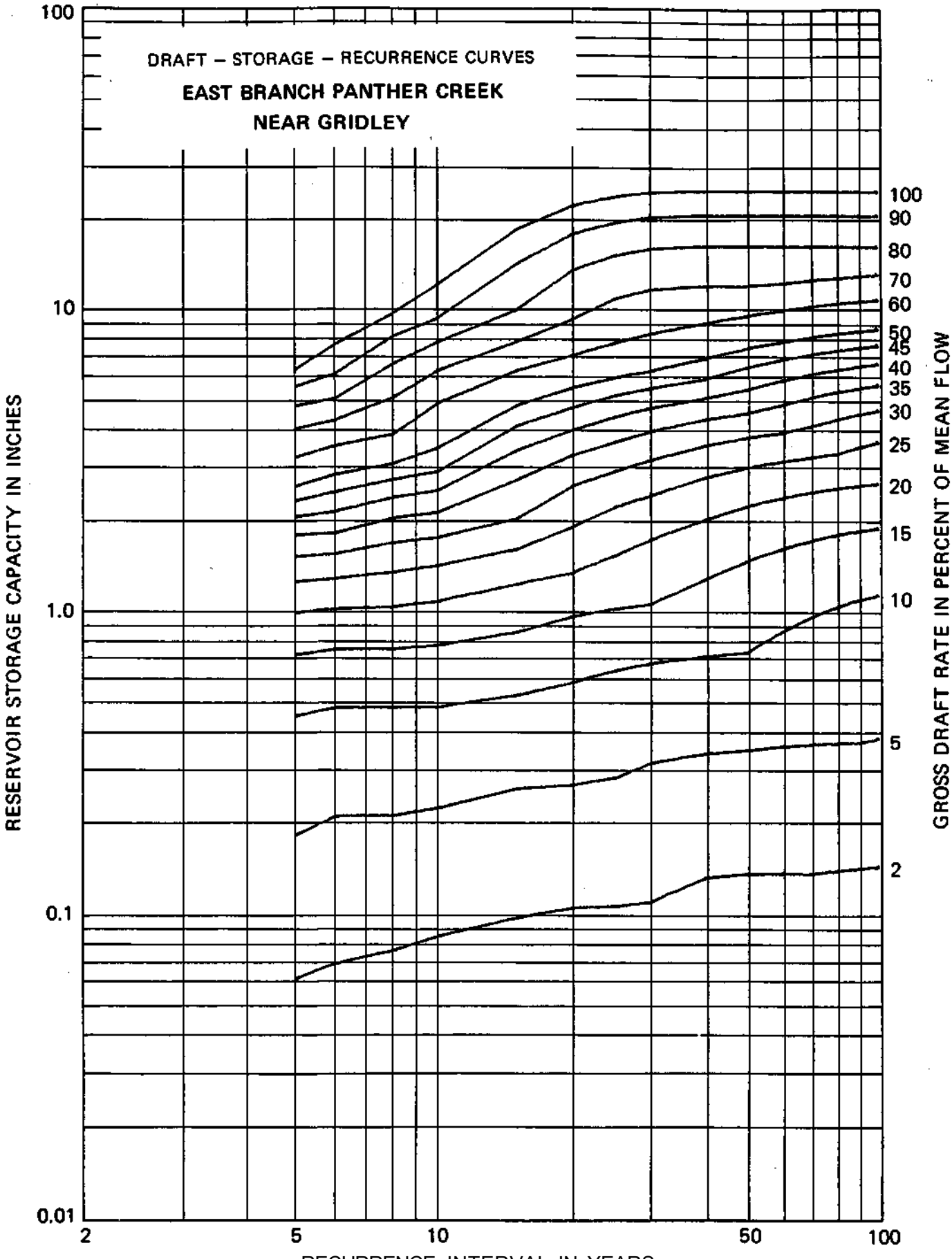
ACTUAL FLOW DATA: Oct 1942 to Sep 1960

INDEX STATION: both Mackinaw River at Congerville and at Green Valley

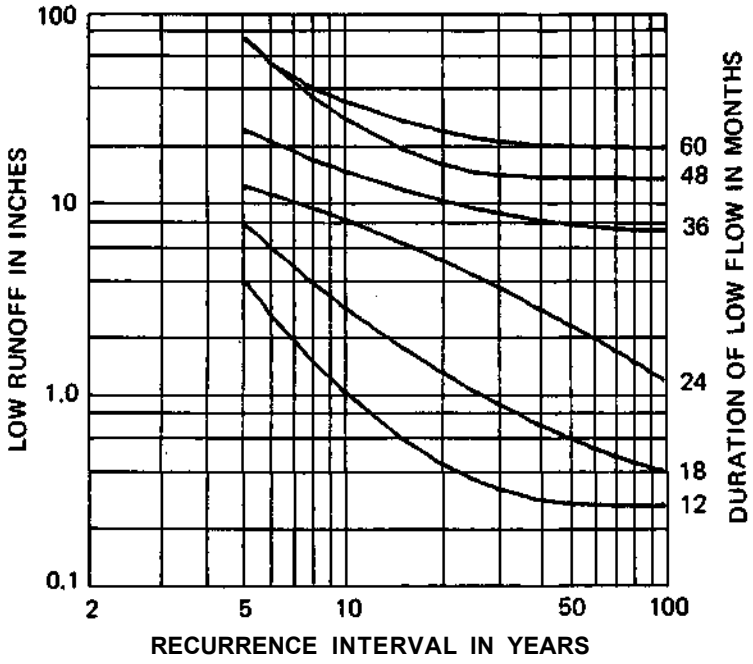
MEAN DISCHARGE: 0.75 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.06	.18	.44	.70	.97	1.23	1.49	1.75	2.01	2.28	2.54	3.16	3.90	4.65	5.40	6.15
	4	7	7	7	7	7	7	7	7	7	7	10	10	10	10	10
6	.07	.21	.47	.73	.99	1.25	1.52	1.78	2.09	2.43	2.77	3.44	4.17	4.92	5.93	7.42
	5	7	7	7	7	7	7	7	9	9	9	9	10	10	20	20
8	.07	.21	.47	.73	1.01	1.32	1.65	1.99	2.33	2.67	3.01	3.76	4.96	6.41	7.91	9.40
	5	7	7	7	8	9	9	9	9	9	10	10	18	20	20	20
10	.08	.22	.47	.75	1.05	1.39	1.73	2.08	2.46	2.83	3.39	4.74	6.09	7.57	9.07	11.75
	6	6	7	8	9	9	9	10	10	10	18	18	18	20	20	44
15	.10	.25	.52	.83	1.21	1.58	1.99	2.67	3.34	4.01	4.69	6.11	7.61	9.72	13.79	17.98
	7	7	7	10	10	10	18	18	18	18	18	20	20	44	56	56
20	.10	.26	.57	.94	1.32	1.88	2.55	3.22	3.90	4.62	5.37	6.87	9.03	13.14	17.34	21.53
	7	7	10	10	10	18	18	18	18	20	20	20	54	56	56	56
25	.10	.28	.63	1.00	1.51	2.18	2.86	3.57	4.32	5.07	5.82	7.58	10.59	14.78	18.97	23.17
	7	9	10	10	18	18	18	20	20	20	20	28	56	56	56	56
30	.11	.31	.66	1.04	1.71	2.38	3.12	3.87	4.62	5.36	6.11	8.11	11.36	15.56	19.75	23.94
	9	9	10	10	18	18	20	20	20	20	20	28	56	56	56	56
40	.13	.33	.70	1.26	1.99	2.74	3.49	4.23	4.98	5.76	6.74	8.80	11.72	15.92	20.11	24.30
	9	9	10	18	20	20	20	20	20	26	26	28	56	56	56	56
50	.13	.34	.72	1.46	2.21	2.96	3.70	4.45	5.34	6.31	7.28	9.32	11.72	15.92	20.11	24.30
	9	10	18	20	20	20	20	20	26	26	26	30	56	56	56	56
60	.13	.35	.85	1.60	2.35	3.10	3.85	4.74	5.72	6.69	7.66	9.72	11.97	15.92	20.11	24.30
	9	10	20	20	20	20	20	26	26	26	26	30	30	56	56	56
70	.13	.36	.95	1.70	2.45	3.20	4.05	5.02	6.00	6.97	7.94	10.02	12.27	15.92	20.11	24.30
	9	10	20	20	20	20	26	26	26	26	26	30	30	56	56	56
80	.14	.36	1.03	1.78	2.53	3.29	4.26	5.24	6.21	7.18	8.16	10.26	12.51	15.92	20.11	24.30
	10	10	20	20	20	26	26	26	26	26	26	30	30	56	56	56
90	.14	.37	1.09	1.84	2.58	3.46	4.43	5.41	6.38	7.35	8.33	10.45	12.70	15.92	20.11	24.30
	10	10	20	20	20	26	26	26	26	26	26	30	30	56	56	56
100	.14	.38	1.13	1.87	2.63	3.60	4.57	5.55	6.52	7.49	8.47	10.61	12.85	15.92	20.11	24.30
	10	20	20	20	26	26	26	26	26	26	26	30	30	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
EAST BRANCH PANTHER CREEK
NEAR GRIDLEY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55665 - EAST BRANCH PANTHER CREEK AT EL PASO



LOCATION: At line between Sec 32 and 33, T27N, R2E, Woodford County at highway bridge, 0.9 miles north of El Paso

DRAINAGE AREA: 30.5 square miles

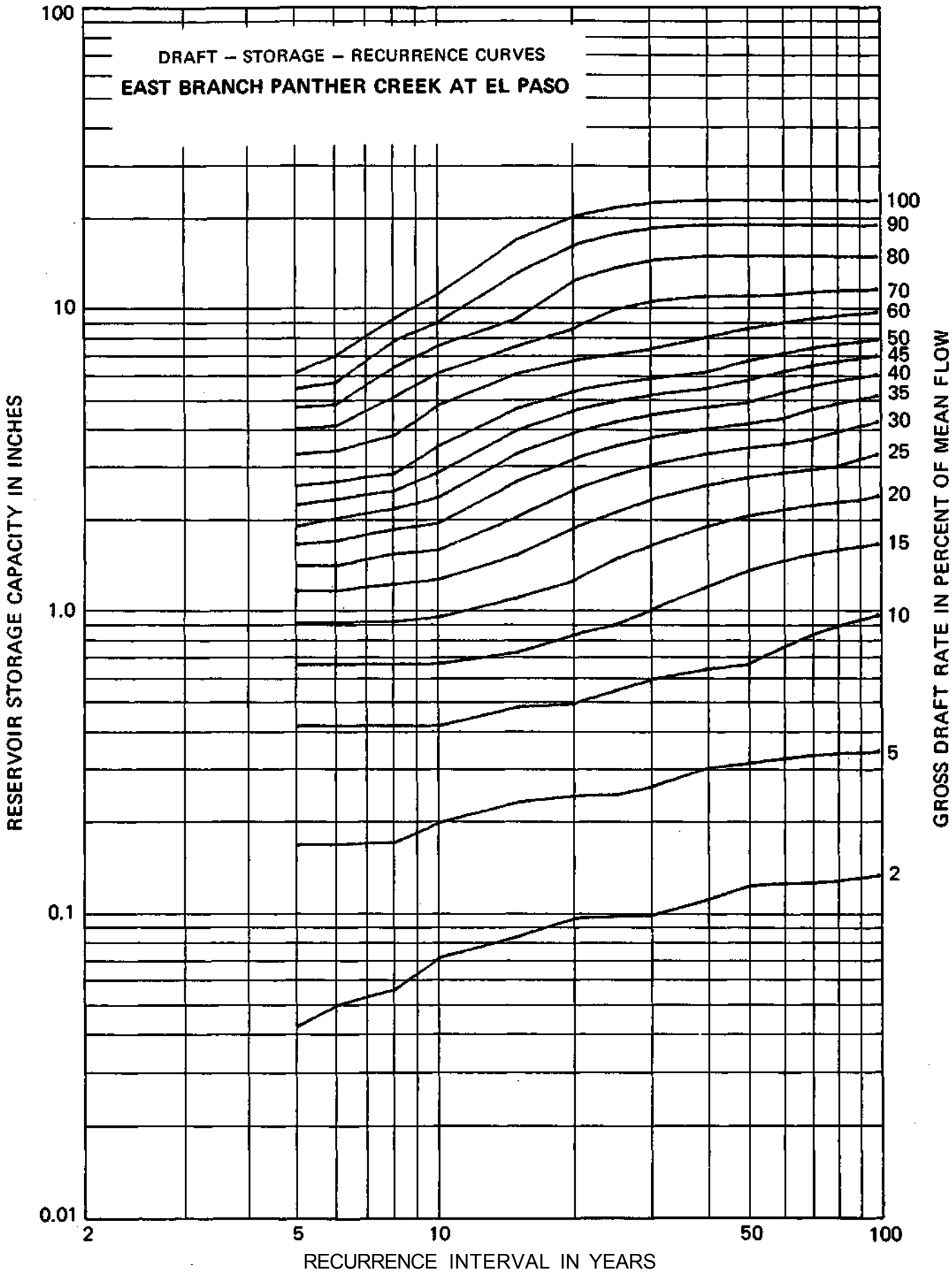
ACTUAL FLOW DATA: Oct 1949 to Oct 1978

INDEX STATION: Mackinaw River at Green Valley

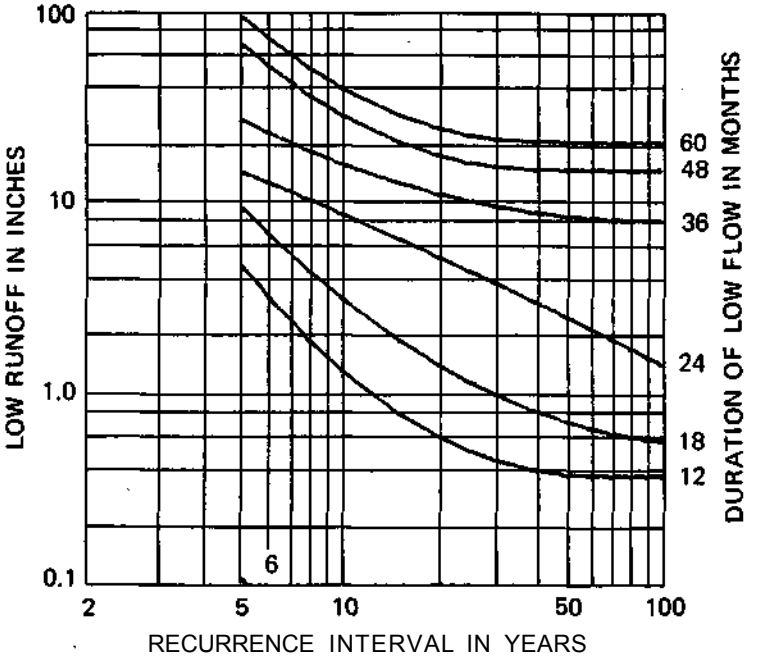
MEAN DISCHARGE: 0.67 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.17	.41	.66	.91	1.15	1.40	1.65	1.89	2.23	2.58	3.29	3.99	4.70	5.40	6.11
	3	7	7	7	7	7	7	7	7	10	10	10	10	10	10	10
6	.05	.17	.41	.66	.91	1.15	1.40	1.69	2.01	2.32	2.66	3.37	4.07	4.78	5.63	6.94
	4	7	7	7	7	7	7	9	9	9	10	10	10	10	18	20
8	.06	.17	.41	.66	.91	1.21	1.53	1.85	2.16	2.48	2.82	3.79	5.05	6.32	7.73	9.14
	4	6	7	7	8	9	9	9	9	9	10	18	18	18	20	20
10	.07	.20	.41	.66	.95	1.26	1.58	1.93	2.36	2.86	3.49	4.76	6.07	7.48	8.89	11.05
	6	6	7	8	8	9	9	12	12	18	18	18	20	20	20	44
15	.08	.23	.48	.72	1.10	1.52	2.04	2.67	3.31	3.94	4.64	6.05	7.46	9.16	12.96	16.78
	7	7	7	7	12	12	18	18	18	18	20	20	20	54	54	56
20	.10	.24	.49	.83	1.25	1.86	2.50	3.16	3.86	4.56	5.27	6.68	8.47	12.17	15.97	19.90
	7	7	7	12	12	18	18	20	20	20	20	20	52	54	54	56
25	.10	.25	.54	.90	1.48	2.11	2.80	3.51	4.21	4.92	5.62	7.03	9.84	13.55	17.48	21.42
	7	7	10	12	18	18	20	20	20	20	20	20	52	54	56	56
30	.10	.26	.59	1.00	1.64	2.33	3.03	3.74	4.44	5.14	5.85	7.31	10.47	14.33	18.27	22.22
	7	8	10	18	18	20	20	20	20	20	20	28	52	56	56	56
40	.11	.30	.64	1.19	1.90	2.60	3.31	4.01	4.72	5.42	6.14	7.98	10.94	14.88	18.82	22.77
	9	9	10	20	20	20	20	20	20	20	26	26	56	56	56	56
50	.12	.31	.66	1.36	2.06	2.76	3.47	4.17	4.88	5.78	6.70	8.53	10.94	14.88	18.82	22.77
	9	9	10	20	20	20	20	20	20	26	26	26	56	56	56	56
60	.13	.33	.76	1.46	2.17	2.87	3.57	4.34	5.25	6.17	7.08	8.92	11.06	14.88	18.82	22.77
	9	10	20	20	20	20	20	26	26	26	26	26	40	56	56	56
70	.13	.33	.83	1.54	2.24	2.95	3.71	4.62	5.54	6.46	7.37	9.20	11.28	14.88	18.82	22.77
	9	10	20	20	20	20	26	26	26	26	26	26	40	56	56	56
80	.13	.34	.89	1.59	2.30	3.01	3.93	4.84	5.76	6.68	7.59	9.42	11.43	14.88	18.82	22.77
	10	10	20	20	20	26	26	26	26	26	26	26	40	56	56	56
90	.13	.34	.93	1.64	2.34	3.19	4.10	5.02	5.93	6.85	7.76	9.60	11.53	14.88	18.82	22.77
	10	10	20	20	20	26	26	26	26	26	26	26	40	56	56	56
100	.13	.35	.97	1.67	2.41	3.33	4.24	5.16	6.08	6.99	7.91	9.74	11.60	14.88	18.82	22.77
	10	10	20	20	26	26	26	26	26	26	26	26	40	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
EAST BRANCH PANTHER CREEK AT EL PASO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55670 - PANTHER CREEK NEAR EL PASO



LOCATION: In center of Sec 26, T27N, R1E, Woodford County, at highway bridge just downstream from East Branch Panther Creek and 3.8 miles northwest of El Paso.

DRAINAGE AREA: 93.9 square miles

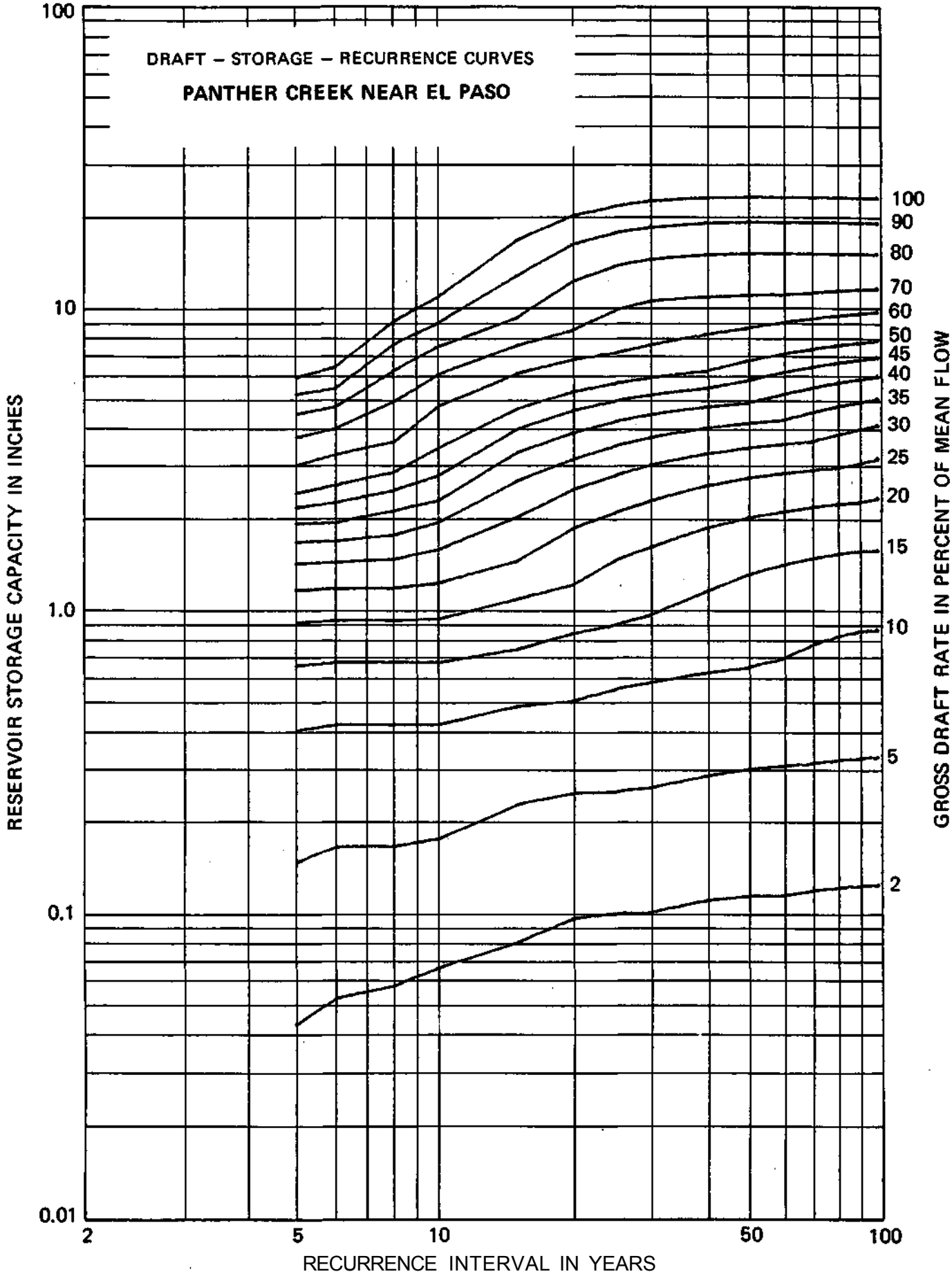
ACTUAL FLOW DATA: Oct 1949 to Oct 1978

INDEX STATION: both Mackinaw River at Congerville and at Green Valley

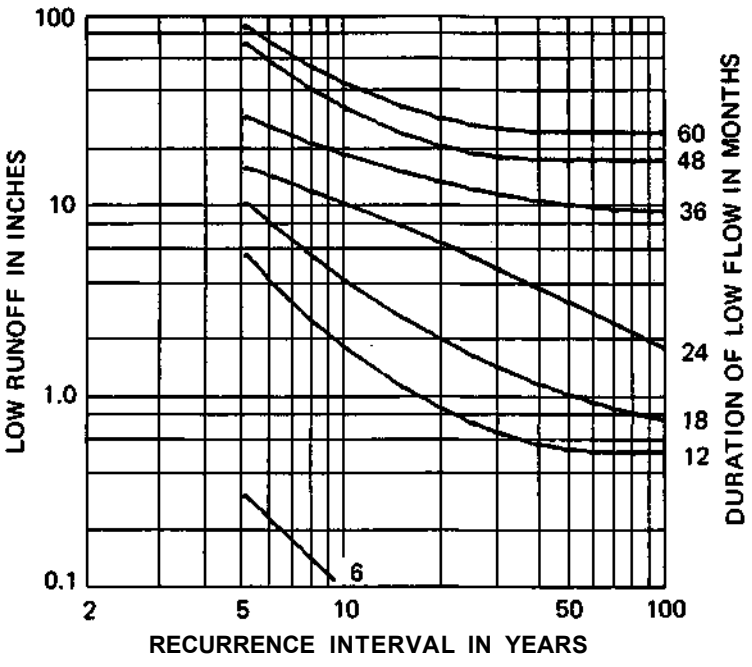
MEAN DISCHARGE: 0.72 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.04	.15	.40	.65	.91	1.16	1.41	1.66	1.92	2.17	2.42	2.99	3.71	4.44	5.16	5.88
	3	7	7	7	7	7	7	7	7	7	7	9	10	10	10	10
6	.05	.16	.42	.67	.92	1.18	1.43	1.68	1.94	2.26	2.58	3.25	3.97	4.70	5.42	6.36
	4	7	7	7	7	7	7	7	7	9	9	10	10	10	10	18
8	.06	.16	.42	.67	.92	1.18	1.46	1.76	2.12	2.48	2.84	3.59	4.89	6.19	7.54	8.99
	4	7	7	7	7	7	8	9	10	10	10	18	18	18	20	20
10	.07	.17	.42	.67	.93	1.22	1.58	1.94	2.30	2.78	3.43	4.73	6.03	7.44	8.89	10.81
	5	5	7	7	8	9	10	10	10	18	18	18	18	20	20	32
15	.08	.23	.48	.74	1.09	1.45	2.03	2.68	3.33	3.98	4.65	6.10	7.54	9.28	12.71	16.61
	6	7	7	9	10	10	18	18	18	18	20	20	20	30	54	54
20	.10	.25	.50	.84	1.21	1.86	2.51	3.16	3.88	4.60	5.32	6.77	8.47	12.18	16.09	19.99
	7	7	9	10	18	18	18	18	20	20	20	20	30	54	54	54
25	.10	.25	.55	.90	1.47	2.12	2.80	3.53	4.25	4.97	5.69	7.14	9.82	13.72	17.63	21.53
	7	7	9	10	18	18	20	20	20	20	20	20	54	54	54	54
30	.10	.26	.58	.97	1.62	2.32	3.04	3.76	4.48	5.21	5.93	7.61	10.54	14.45	18.35	22.43
	7	8	9	18	18	20	20	20	20	20	20	30	54	54	54	60
40	.11	.29	.62	1.15	1.87	2.60	3.32	4.04	4.77	5.49	6.24	8.23	10.92	14.97	19.01	23.06
	8	9	10	20	20	20	20	20	20	20	26	30	56	56	56	56
50	.12	.30	.65	1.31	2.04	2.76	3.48	4.20	4.93	5.83	6.77	8.65	11.08	15.12	19.17	23.22
	8	9	10	20	20	20	20	20	20	26	26	26	56	56	56	56
60	.12	.31	.70	1.42	2.14	2.86	3.59	4.32	5.26	6.20	7.14	9.01	11.11	15.12	19.17	23.22
	8	9	20	20	20	20	20	26	26	26	26	38	56	56	56	56
70	.12	.32	.77	1.49	2.22	2.94	3.66	4.59	5.53	6.47	7.41	9.29	11.28	15.12	19.17	23.22
	9	10	20	20	20	20	20	26	26	26	26	26	40	56	56	56
80	.12	.32	.83	1.55	2.27	2.99	3.86	4.80	5.74	6.68	7.62	9.50	11.47	15.12	19.17	23.22
	9	10	20	20	20	20	26	26	26	26	26	26	40	56	56	56
90	.12	.33	.86	1.59	2.31	3.09	4.03	4.97	5.91	6.85	7.79	9.67	11.60	15.12	19.17	23.22
	9	10	20	20	20	22	26	26	26	26	26	26	40	56	56	56
100	.13	.34	.87	1.60	2.38	3.23	4.17	5.11	6.05	6.99	7.92	9.80	11.69	15.12	19.17	23.22
	9	10	20	20	22	26	26	26	26	26	26	26	40	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
PANTHER CREEK NEAR EL PASO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55675 - MACKINAW RIVER NEAR CONGERVILLE



LOCATION: In NE¼ SW¼ Sec 17, T25N, R1W, Woodford County at bridge on U.S. 150, 2 miles northwest of Congerville

DRAINAGE AREA: 767 square miles

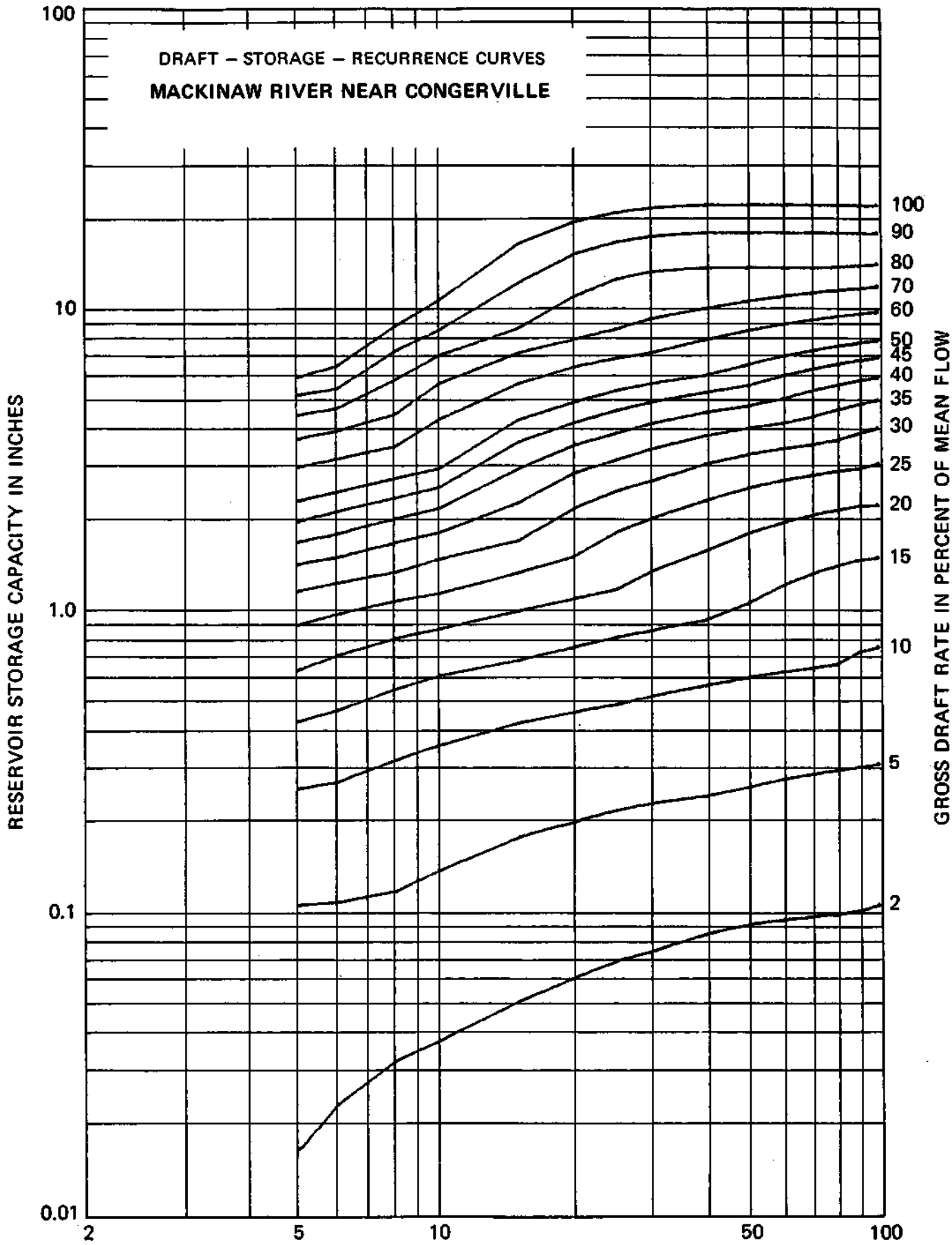
ACTUAL FLOW DATA: Oct 1944 to Oct 1978

INDEX STATION: Mackinaw River at Green River

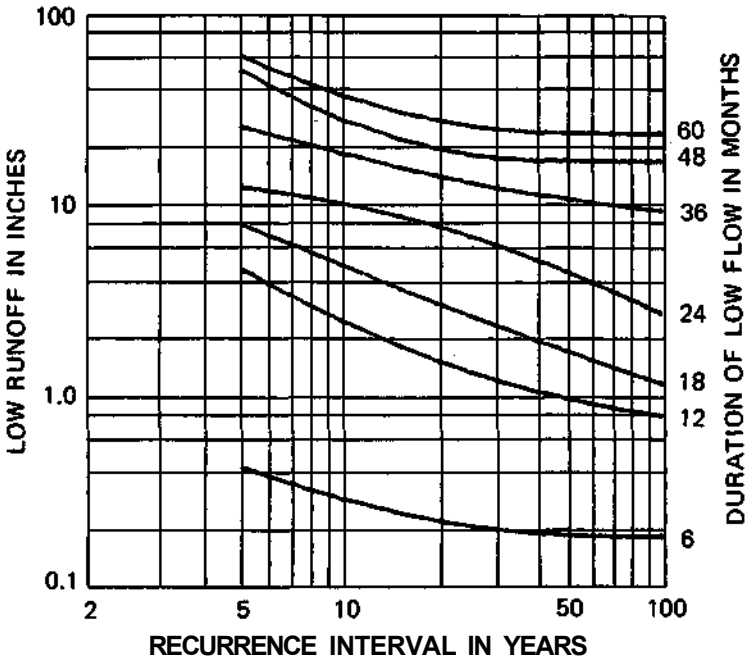
MEAN DISCHARGE: 0.74 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.02	.10	.25	.42	.62	.88	1.14	1.39	1.65	1.93	2.26	2.92	3.62	4.35	5.09	5.82
	4	4	4	5	7	7	7	7	7	9	9	9	10	10	10	10
6	.02	.11	.26	.46	.70	.96	1.21	1.47	1.76	2.09	2.42	3.12	3.85	4.59	5.32	6.33
	2	4	5	6	7	7	7	7	9	9	9	10	10	10	10	20
8	.03	.12	.31	.54	.80	1.05	1.31	1.65	1.98	2.32	2.69	3.42	4.38	5.70	7.10	8.57
	3	5	6	7	7	7	9	9	9	10	10	10	18	18	20	20
10	.04	.14	.35	.60	.86	1.12	1.45	1.78	2.14	2.51	2.90	4.22	5.55	6.89	8.36	10.51
	3	5	6	7	7	9	9	9	10	10	18	18	18	20	20	44
15	.05	.18	.42	.68	.98	1.31	1.68	2.24	2.90	3.56	4.23	5.55	7.02	8.49	12.00	16.12
	5	6	7	7	9	9	10	18	18	18	18	18	20	20	56	56
20	.06	.20	.45	.75	1.08	1.48	2.15	2.81	3.47	4.13	4.84	6.31	7.78	10.84	14.95	19.07
	5	7	7	9	9	18	18	18	18	18	20	20	20	54	56	56
25	.07	.22	.48	.81	1.16	1.80	2.46	3.12	3.82	4.56	5.29	6.77	8.45	12.39	16.41	20.53
	6	7	8	9	10	18	18	18	20	20	20	20	28	54	56	56
30	.07	.23	.52	.85	1.33	1.99	2.65	3.39	4.12	4.86	5.60	7.07	9.17	13.15	17.17	21.29
	6	7	9	10	18	18	18	20	20	20	20	20	54	54	56	56
40	.09	.24	.56	.92	1.56	2.29	3.03	3.77	4.50	5.24	5.97	7.82	9.95	13.57	17.69	21.81
	7	8	9	10	18	20	20	20	20	20	20	28	30	56	56	56
50	.09	.26	.60	1.05	1.79	2.52	3.26	3.99	4.73	5.52	6.48	8.39	10.52	13.57	17.69	21.81
	7	9	10	20	20	20	20	20	20	26	26	26	30	56	56	56
60	.10	.27	.63	1.20	1.94	2.68	3.41	4.15	4.99	5.95	6.90	8.82	10.92	13.57	17.69	21.81
	7	9	10	20	20	20	20	20	26	26	26	26	30	56	56	56
70	.10	.29	.64	1.32	2.05	2.79	3.52	4.35	5.31	6.27	7.22	9.13	11.22	13.57	17.69	21.81
	7	9	10	20	20	20	20	26	26	26	26	26	30	56	56	56
80	.10	.29	.66	1.40	2.14	2.87	3.64	4.60	5.56	6.51	7.47	9.38	11.45	13.66	17.69	21.81
	7	9	20	20	20	20	26	26	26	26	26	26	30	30	56	56
90	.10	.30	.73	1.47	2.20	2.94	3.84	4.80	5.76	6.71	7.67	9.58	11.64	13.85	17.69	21.81
	9	10	20	20	20	20	26	26	26	26	26	26	30	30	56	56
100	.11	.31	.76	1.49	2.23	3.05	4.01	4.96	5.92	6.88	7.83	9.75	11.80	14.01	17.69	21.81
	9	10	20	20	20	26	26	26	26	26	26	26	30	30	56	56


DRAFT – STORAGE – RECURRENCE CURVES
MACKINAW RIVER NEAR CONGERVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55680 - MACKINAW RIVER NEAR GREEN VALLEY



LOCATION: In SE¼ NW¼ Sec 15, T23N, R5W, Tazewell County, at bridge on Illinois 29, 3 miles north of Green Valley and 13 miles upstream from mouth.

DRAINAGE AREA: 1089 square miles

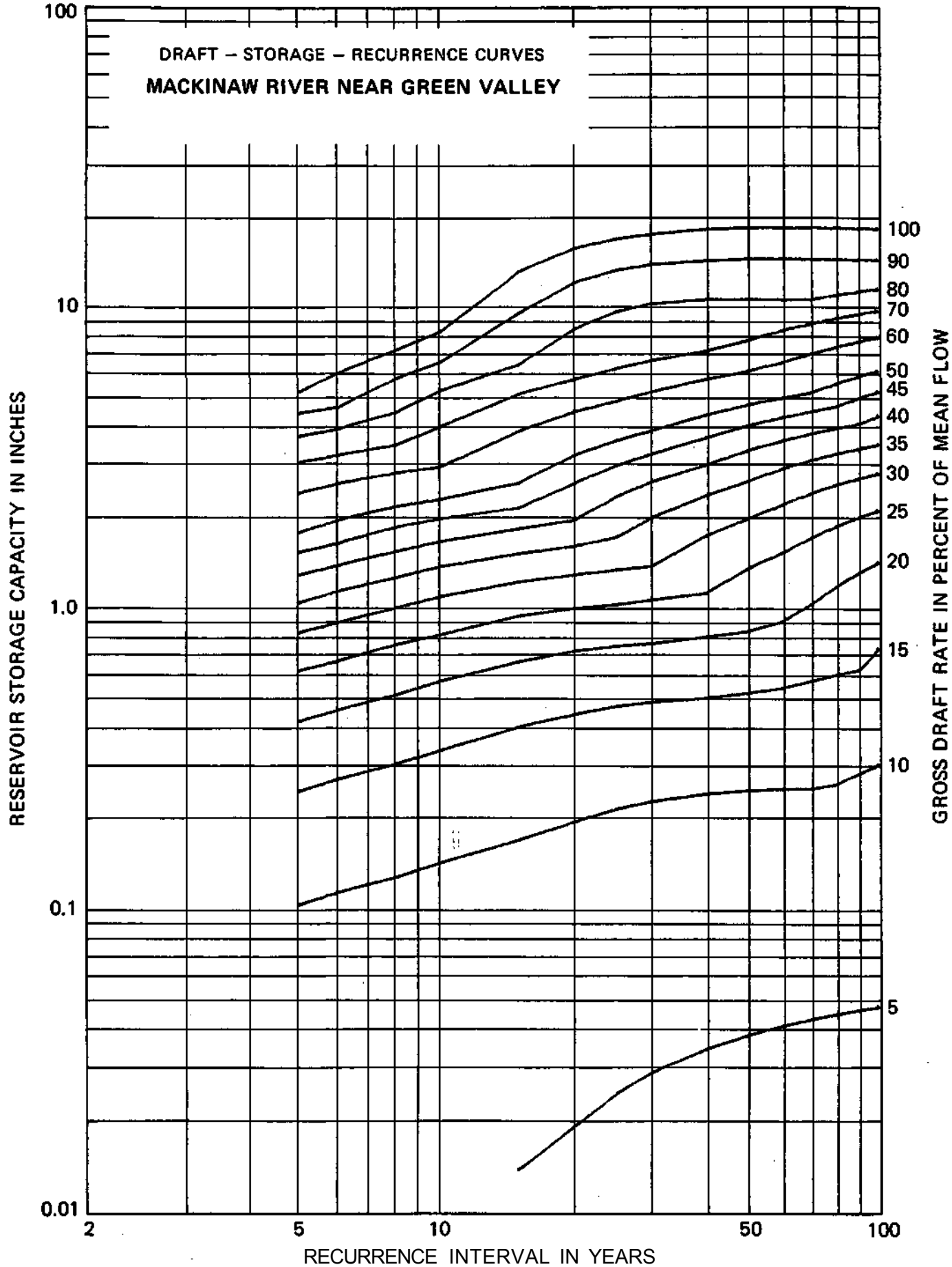
ACTUAL FLOW DATA: Apr 1921 thru Sep 1956; 1957-58; 1968 to Oct 1978

INDEX STATION: Mackinaw River at Congerville

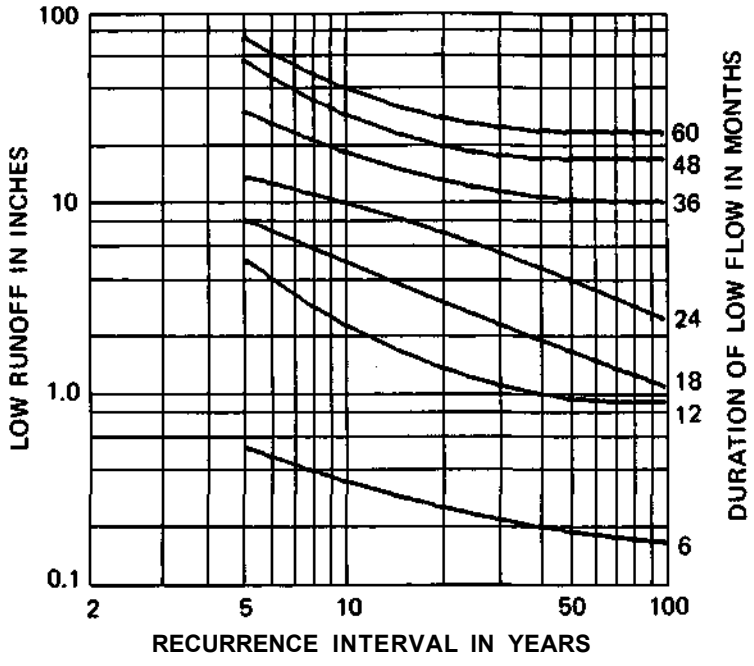
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.01	.10	.24	.41	.60	.81	1.02	1.26	1.49	1.73	2.34	2.95	3.61	4.29	5.06
	4	1	4	5	5	6	6	7	7	7	7	9	9	10	10	20
6	.00	.01	.11	.26	.44	.65	.87	1.11	1.35	1.59	1.90	2.51	3.12	3.80	4.48	5.83
	2	1	4	5	6	6	7	7	7	9	9	9	9	10	10	20
8	.00	.01	.12	.30	.50	.74	.97	1.23	1.50	1.80	2.11	2.72	3.37	4.31	5.58	6.94
	3	1	4	6	6	7	7	8	8	9	9	9	10	18	20	20
10	.00	.01	.14	.33	.56	.79	1.06	1.34	1.62	1.92	2.23	2.85	3.87	5.10	6.35	8.00
	3	1	5	6	7	7	8	8	9	9	9	10	18	18	20	42
15	.00	.01	.17	.39	.65	.92	1.19	1.48	1.79	2.09	2.53	3.76	4.98	6.25	9.24	12.75
	5	2	6	7	8	8	8	9	9	9	18	18	18	44	44	52
20	.00	.02	.19	.43	.71	.98	1.26	1.57	1.91	2.52	3.13	4.36	5.59	8.18	11.72	15.26
	5	3	7	8	8	8	9	9	18	18	18	18	20	52	52	52
25	.00	.02	.21	.46	.73	1.01	1.32	1.68	2.30	2.91	3.52	4.74	6.10	9.41	12.94	16.48
	6	4	7	8	8	9	9	18	18	18	18	18	20	52	52	52
30	.00	.03	.22	.48	.75	1.05	1.35	1.96	2.57	3.18	3.79	5.12	6.49	10.02	13.56	17.10
	6	4	7	8	8	9	9	18	18	18	18	20	52	52	52	52
40	.00	.03	.24	.49	.79	1.11	1.71	2.32	2.93	3.60	4.28	5.64	7.00	10.39	14.00	17.80
	7	4	7	8	9	10	18	18	18	20	20	20	20	52	56	56
50	.00	.04	.24	.52	.83	1.34	1.95	2.60	3.28	3.96	4.64	6.00	7.59	10.40	14.21	18.01
	7	4	7	9	10	18	18	20	20	20	20	20	26	56	56	56
60	.00	.04	.25	.54	.90	1.51	2.18	2.86	3.54	4.22	4.90	6.42	8.18	10.40	14.21	18.01
	7	4	7	9	18	18	20	20	20	20	20	26	26	56	56	56
70	.00	.04	.25	.57	1.02	1.69	2.37	3.05	3.73	4.41	5.11	6.88	8.65	10.42	14.21	18.01
	7	4	7	10	18	20	20	20	20	20	26	26	26	26	56	56
80	.00	.04	.26	.60	1.17	1.85	2.53	3.21	3.89	4.60	5.49	7.25	9.02	10.79	14.21	18.01
	7	4	9	10	20	20	20	20	20	26	26	26	26	26	56	56
90	.00	.05	.28	.62	1.30	1.98	2.66	3.34	4.03	4.91	5.79	7.56	9.33	11.10	14.21	18.01
	9	4	10	20	20	20	20	20	26	26	26	26	26	26	56	56
100	.00	.05	.30	.73	1.41	2.09	2.77	3.45	4.28	5.17	6.05	7.82	9.59	11.36	14.21	18.01
	9	4	10	20	20	20	20	20	26	26	26	26	26	26	56	56


DRAFT – STORAGE – RECURRENCE CURVES
MACKINAW RIVER NEAR GREEN VALLEY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

55815 - SUGAR CREEK NEAR HARTSBURG



LOCATION: In SE¼ SW¼ Sec 35, T21N, R3W, Logan County, at bridge 0.4 mile upstream from State Highway 121, 2.6 miles southeast of Hartsburg

DRAINAGE AREA: 333 square miles

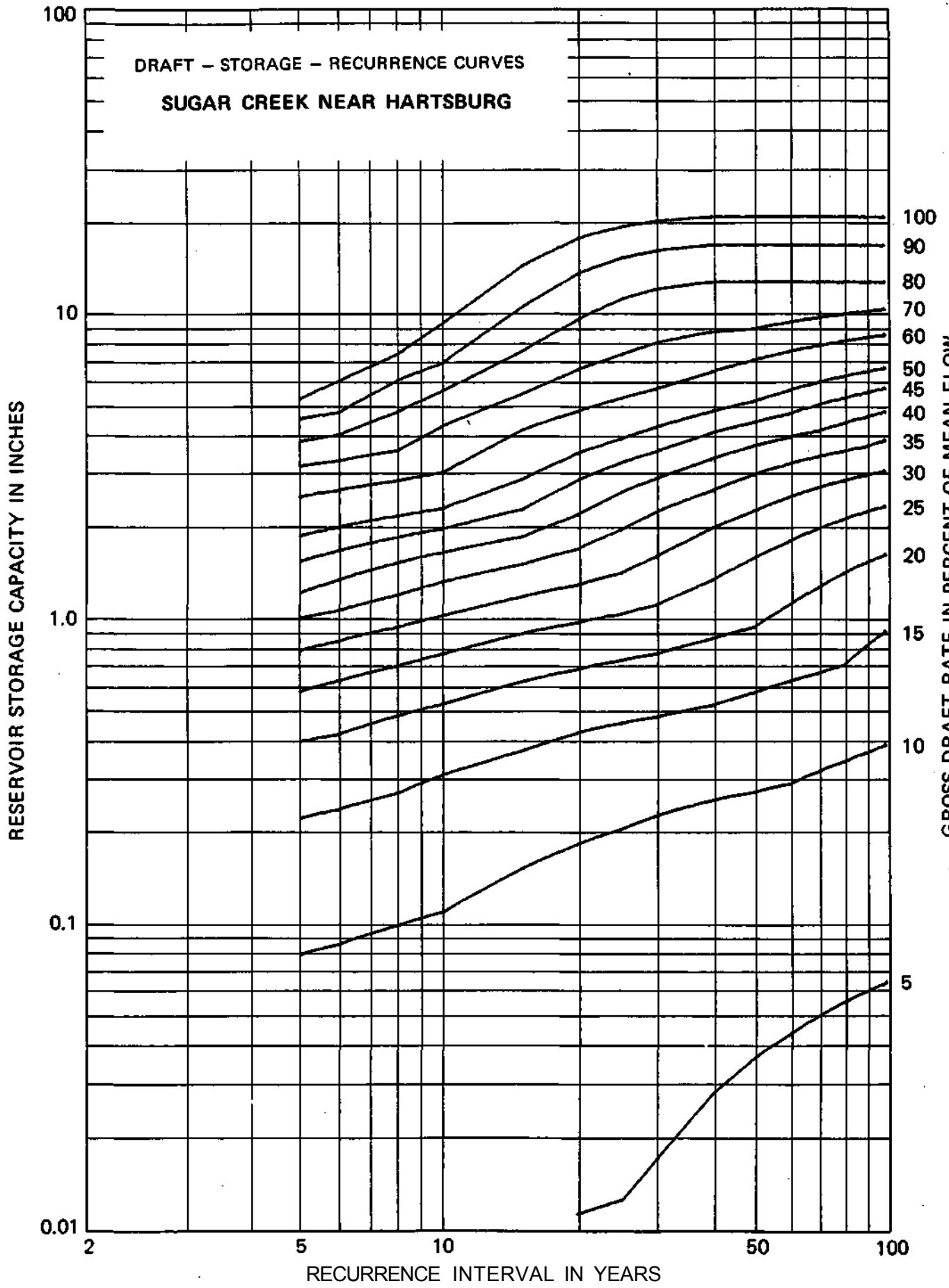
ACTUAL FLOW DATA: Oct 1944 to Oct 1971

INDEX STATION: both Mackinaw River near Congerville and near Green Valley

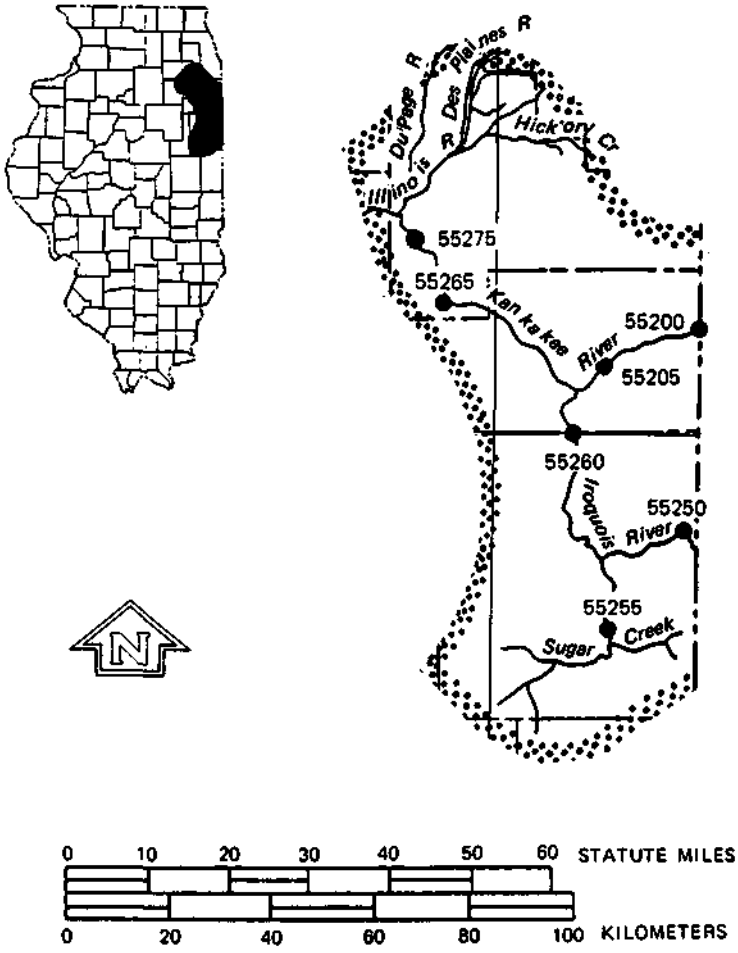
MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.08	.22	.39	.56	.77	.98	1.19	1.50	1.82	2.45	3.09	3.72	4.41	5.12
	--	--	3	4	5	5	6	6	6	9	9	9	9	9	10	10
6	.00	.00	.08	.23	.41	.61	.83	1.04	1.31	1.63	1.95	2.58	3.22	3.91	4.62	5.89
	--	1	4	5	5	6	6	6	9	9	9	9	9	10	18	18
8	.00	.00	.10	.26	.47	.68	.92	1.17	1.49	1.81	2.13	2.77	3.48	4.66	5.93	7.20
	--	1	4	5	6	6	7	9	9	9	9	10	10	18	18	18
10	.00	.01	.11	.30	.52	.75	1.00	1.29	1.61	1.93	2.25	2.96	4.20	5.47	6.75	9.07
	--	1	4	6	6	7	8	9	9	9	10	10	18	18	32	44
15	.00	.01	.15	.36	.61	.88	1.16	1.47	1.82	2.24	2.81	4.08	5.35	7.37	10.28	14.04
	--	1	6	7	7	8	8	9	10	12	18	18	18	32	52	56
20	.00	.01	.18	.42	.67	.96	1.27	1.66	2.17	2.80	3.44	4.71	6.45	9.36	13.28	17.24
	--	1	6	7	8	8	10	12	18	18	18	18	32	52	56	56
25	.00	.01	.20	.45	.72	1.02	1.39	1.93	2.57	3.20	3.84	5.22	7.21	10.95	14.90	18.86
	--	1	7	7	8	10	12	18	18	18	18	20	32	56	56	56
30	.00	.02	.22	.47	.76	1.10	1.58	2.21	2.85	3.49	4.20	5.61	7.88	11.83	15.79	19.74
	--	3	7	7	9	10	18	18	18	20	20	20	56	56	56	56
40	.00	.03	.25	.52	.85	1.32	1.95	2.60	3.31	4.01	4.72	6.35	8.58	12.53	16.48	20.44
	--	4	7	9	10	18	18	20	20	20	20	26	56	56	56	56
50	.00	.04	.27	.57	.93	1.56	2.24	2.94	3.65	4.35	5.12	6.95	8.79	12.54	16.50	20.45
	--	4	7	10	18	18	20	20	20	20	26	26	26	56	56	56
60	.00	.04	.29	.62	1.10	1.77	2.48	3.19	3.89	4.64	5.56	7.39	9.23	12.54	16.50	20.45
	--	5	9	10	18	20	20	20	20	26	26	26	26	56	56	56
70	.00	.05	.32	.66	1.25	1.96	2.66	3.37	4.08	4.97	5.89	7.73	9.56	12.54	16.50	20.45
	--	5	9	10	20	20	20	20	20	26	26	26	26	56	56	56
80	.00	.06	.34	.70	1.40	2.10	2.81	3.51	4.32	5.24	6.16	8.00	9.83	12.54	16.50	20.45
	--	5	9	18	20	20	20	20	26	26	26	26	56	56	56	56
90	.00	.06	.36	.81	1.51	2.22	2.92	3.63	4.54	5.46	6.38	8.22	10.05	12.54	16.50	20.45
	2	5	10	20	20	20	20	20	26	26	26	26	26	56	56	56
100	.01	.06	.38	.90	1.61	2.32	3.02	3.81	4.73	5.65	6.56	8.40	10.24	12.54	16.50	20.45
	2	5	10	20	20	20	20	26	26	26	26	26	26	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SUGAR CREEK NEAR HARTSBURG
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

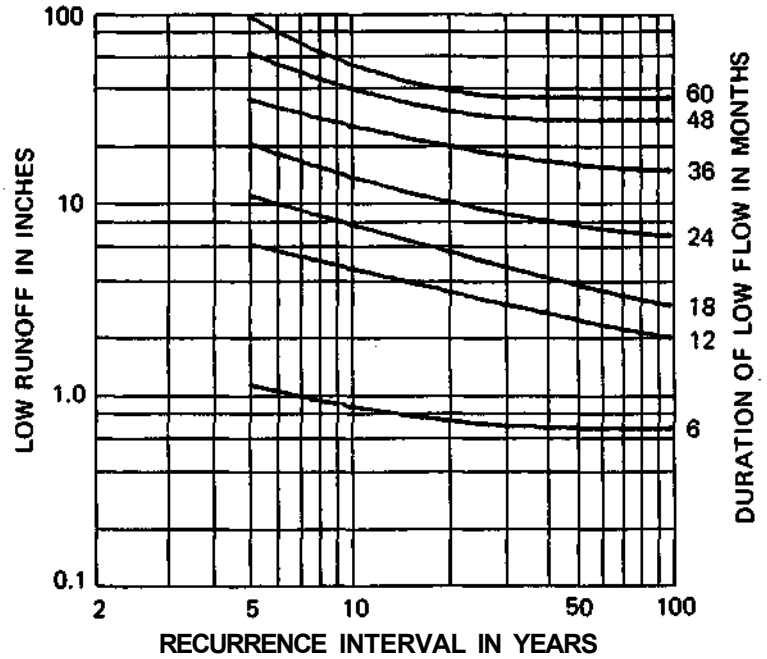
REGION 9


Des Plaines R
Du Page R
Illinois R
Hick'ory Cr
55275
55265
Kan ka kee River
55200
55205
55260
Iroquois River
55250
55255
Sugar Creek
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

USGS Gage No.	Name of Station	Drainage Area (sq mi)
55200	Singleton Ditch at Illinoi	219
55205	Kankakee River at Momence	2294
55250	Iroquois River at Iroquois	686
55255	Sugar Creek at Milford	446
55260	Iroquois River near Chebanse	2091
55265	Terry Creek near Custer Park	12.1
55275	Kankakee River at Wilmington	5150

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
55200	55205	1944-1976	32	1915-1978	63	.84
55205	-	1915-1978	63	-	-	.95
55250	55260	1944-1978	34	1923-1978	55	.86
55255	55260	1948-1978	30	1923-1978	55	.85
55260	-	1923-1978	55	-	-	.86
55265	55260	1949-1975	26	1923-1978	55	.85
55275	-	1915-1978	63	-	-	.86

55200 —SINGLETON DITCH AT ILLINOI



LOCATION: In SW¼ NW¼ Sec 8, T31N, R15E, Kankakee County, at county highway bridge at Illinoi, at Illinois-Indiana state line, 7.0 miles east of Momence.

DRAINAGE AREA: 219 square miles

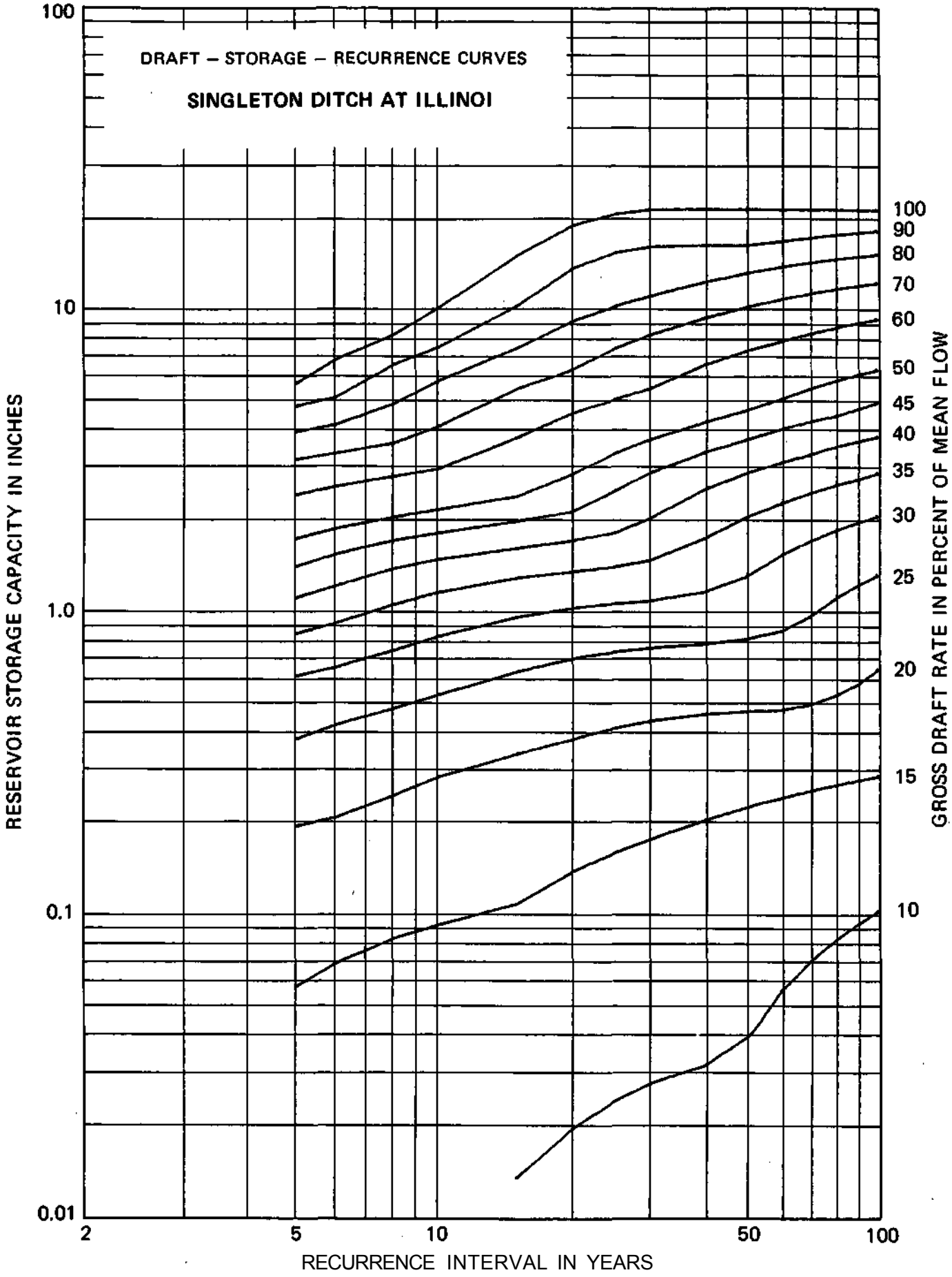
ACTUAL FLOW DATA: Oct 1944 to Sep 1976

INDEX STATION: Kankakee River at Momence

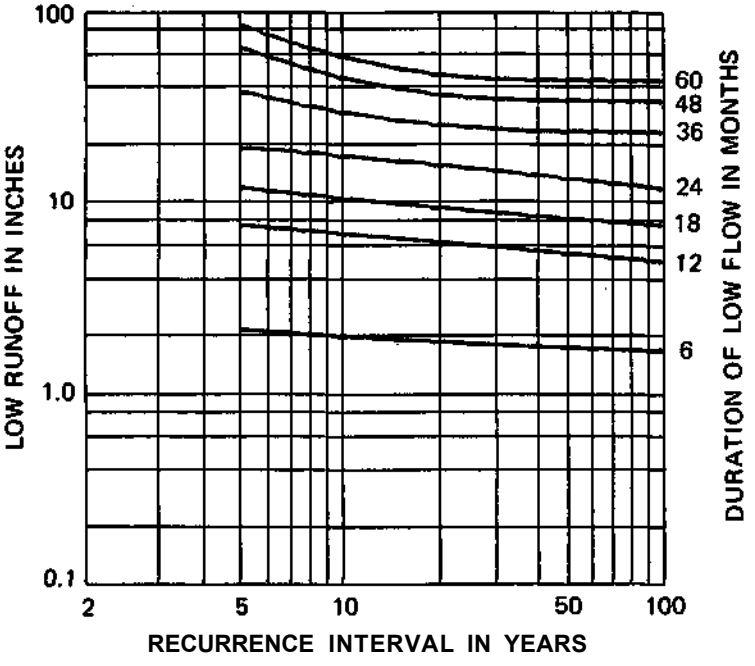
MEAN DISCHARGE: 0.84 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.06	.19	.37	.60	.83	1.09	1.38	1.70	2.36	3.10	3.83	4.64	5.55
	--	2	1	2	3	5	5	5	6	7	7	8	8	8	9	18
6	.00	.00	.00	.07	.20	.41	.64	.90	1.19	1.51	1.83	2.52	3.25	4.04	4.97	6.62
	--	2	1	2	4	5	5	6	7	7	7	8	8	9	18	18
8	.00	.00	.01	.08	.24	.47	.73	1.03	1.35	1.68	2.00	2.72	3.52	4.74	6.39	8.04
	--	3	1	2	5	5	6	7	7	7	7	8	9	18	18	18
10	.00	.00	.01	.09	.28	.52	.81	1.13	1.45	1.78	2.12	2.89	4.00	5.65	7.30	9.83
	--	3	1	2	5	6	7	7	7	7	8	9	18	18	18	30
15	.00	.00	.01	.11	.33	.62	.95	1.27	1.59	1.94	2.35	3.68	5.33	7.27	10.02	14.67
	1	4	1	3	5	7	7	7	7	8	9	18	18	30	30	56
20	.00	.00	.02	.14	.37	.69	1.01	1.33	1.68	2.10	2.79	4.44	6.19	8.94	13.34	18.47
	1	4	2	5	6	7	7	7	8	9	18	18	30	30	56	56
25	.00	.00	.02	.16	.41	.73	1.05	1.39	1.79	2.46	3.29	4.94	7.29	10.04	15.06	20.19
	1	4	2	5	7	7	7	8	9	18	18	18	30	30	56	56
30	.00	.00	.03	.17	.43	.75	1.07	1.46	2.00	2.83	3.65	5.37	8.10	10.86	15.81	20.94
	1	5	2	4	7	7	7	9	18	18	18	20	30	32	56	56
40	.00	.00	.03	.20	.46	.78	1.15	1.72	2.50	3.33	4.16	6.45	9.20	12.12	16.03	21.02
	1	5	2	4	7	7	9	16	18	18	20	30	30	32	54	56
50	.00	.00	.04	.22	.47	.81	1.30	2.03	2.83	3.66	4.58	7.20	10.03	12.97	16.03	21.02
	1	4	4	4	7	8	16	16	18	20	20	30	32	32	54	56
60	.00	.00	.06	.24	.47	.86	1.52	2.25	3.08	3.97	4.99	7.74	10.66	13.59	16.53	21.02
	1	4	4	4	8	10	16	16	18	20	30	30	32	32	32	56
70	.00	.00	.07	.25	.49	.96	1.70	2.44	3.29	4.20	5.41	8.21	11.14	14.08	17.01	21.02
	1	6	4	4	8	16	16	18	20	20	30	32	32	32	32	56
80	.00	.00	.08	.27	.53	1.10	1.84	2.59	3.48	4.39	5.74	8.60	11.53	14.47	17.40	21.02
	1	6	4	4	10	16	16	18	20	20	30	32	32	32	32	56
90	.00	.00	.09	.28	.58	1.22	1.95	2.72	3.63	4.64	6.02	8.92	11.86	14.79	17.73	21.02
	1	6	4	4	10	16	16	18	20	30	30	32	32	32	32	56
100	.00	.00	.10	.29	.64	1.32	2.05	2.85	3.77	4.89	6.27	9.20	12.13	15.07	18.00	21.02
	1	6	4	4	11	16	16	20	20	28	32	32	32	32	32	56


DRAFT – STORAGE – RECURRENCE CURVES
SINGLETON DITCH AT ILLINOI
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10

55205 — KANKAKEE RIVER AT MOMENCE



LOCATION: In NE¼ Sec 24, T31N, R13E, Kankakee County, 0.2 miles downstream from bridge on Illinois 1 and 17, 1.2 miles upstream from Tower Creek

DRAINAGE AREA: 2294 square miles

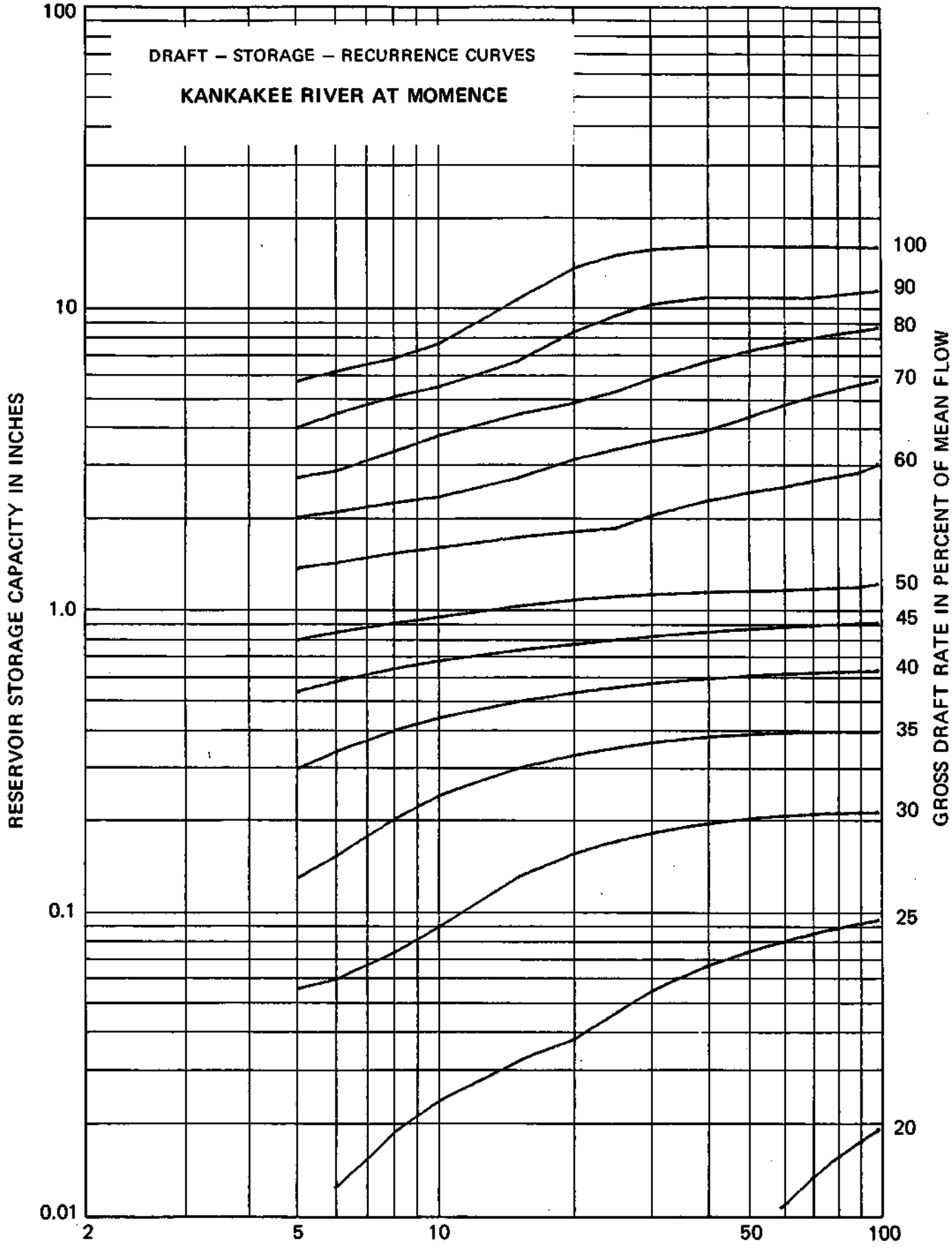
ACTUAL FLOW DATA: Feb to Dec 1905; Feb to Jul 1906; Dec 1914 to Oct 1978

INDEX STATION: None

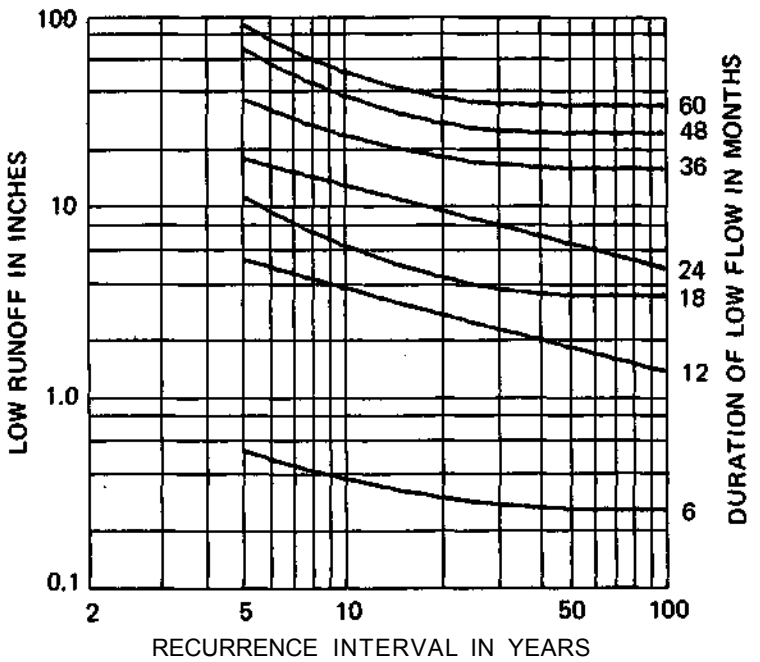
MEAN DISCHARGE: 0.95 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.01	.06	.13	.30	.53	.79	1.36	1.99	2.70	3.94	5.65
	--	--	--	--	--	1	1	2	5	5	6	6	7	9	18	18
6	.00	.00	.00	.00	.00	.01	.06	.15	.34	.57	.83	1.41	2.08	2.84	4.39	6.09
	--	--	--	--	--	1	1	3	5	5	6	7	7	9	18	18
8	.00	.00	.00	.00	.00	.02	.07	.20	.40	.63	.90	1.52	2.23	3.30	5.01	6.71
	--	--	--	--	--	1	2	4	5	5	6	7	8	18	18	18
10	.00	.00	.00	.00	.00	.02	.09	.24	.43	.67	.94	1.59	2.33	3.72	5.43	7.52
	--	--	--	--	--	1	2	4	5	5	6	7	8	18	18	28
15	.00	.00	.00	.00	.00	.03	.13	.30	.49	.73	1.02	1.72	2.71	4.39	6.61	10.59
	--	--	--	--	--	1	3	4	5	5	7	8	16	18	42	42
20	.00	.00	.00	.00	.00	.04	.16	.33	.53	.77	1.07	1.80	3.11	4.80	8.24	13.37
	--	--	--	--	--	1	3	4	5	5	7	8	16	18	42	58
25	.00	.00	.00	.00	.00	.05	.17	.35	.55	.80	1.11	1.85	3.38	5.27	9.39	14.82
	--	--	--	--	--	2	3	4	5	6	7	16	18	30	54	58
30	.00	.00	.00	.00	.00	.06	.18	.36	.57	.82	1.12	2.04	3.59	5.82	10.21	15.51
	--	--	--	--	--	2	3	4	5	6	7	16	18	30	54	58
40	.00	.00	.00	.00	.00	.07	.20	.38	.59	.85	1.15	2.29	3.89	6.62	10.82	15.94
	--	--	--	--	1	2	3	4	5	6	8	16	18	30	54	54
50	.00	.00	.00	.00	.01	.08	.20	.39	.61	.87	1.16	2.44	4.33	7.18	10.82	15.94
	--	--	--	--	1	2	3	4	5	6	8	16	30	30	54	54
60	.00	.00	.00	.00	.01	.08	.21	.39	.62	.88	1.17	2.55	4.76	7.60	10.82	15.94
	--	--	--	--	1	2	3	4	5	6	6	16	30	30	54	54
70	.00	.00	.00	.00	.01	.09	.21	.40	.62	.90	1.18	2.67	5.09	7.94	10.82	15.94
	--	--	--	--	1	2	3	4	5	6	6	18	30	30	54	54
80	.00	.00	.00	.00	.02	.09	.21	.40	.63	.90	1.19	2.77	5.37	8.22	11.06	15.94
	--	--	--	--	1	2	3	4	5	6	6	18	30	30	54	54
90	.00	.00	.00	.00	.02	.09	.22	.40	.63	.91	1.20	2.85	5.61	8.45	11.30	15.94
	--	--	--	--	1	2	3	4	5	6	16	18	30	30	30	54
100	.00	.00	.00	.00	.02	.10	.22	.40	.64	.92	1.23	3.04	5.81	8.65	11.50	15.94
	--	--	--	--	1	2	3	5	5	6	16	28	30	30	30	54


DRAFT – STORAGE – RECURRENCE CURVES
KANKAKEE RIVER AT MOMENCE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20

55250 — IROQUOIS RIVER AT IROQUOIS



LOCATION: In SE¼ Sec 15, T27N, R11W, Iroquois County, at bridge on U. S. 52 at Iroquois, 4.5 miles downstream from Indiana-Illinois state line

DRAINAGE AREA: 686 square miles

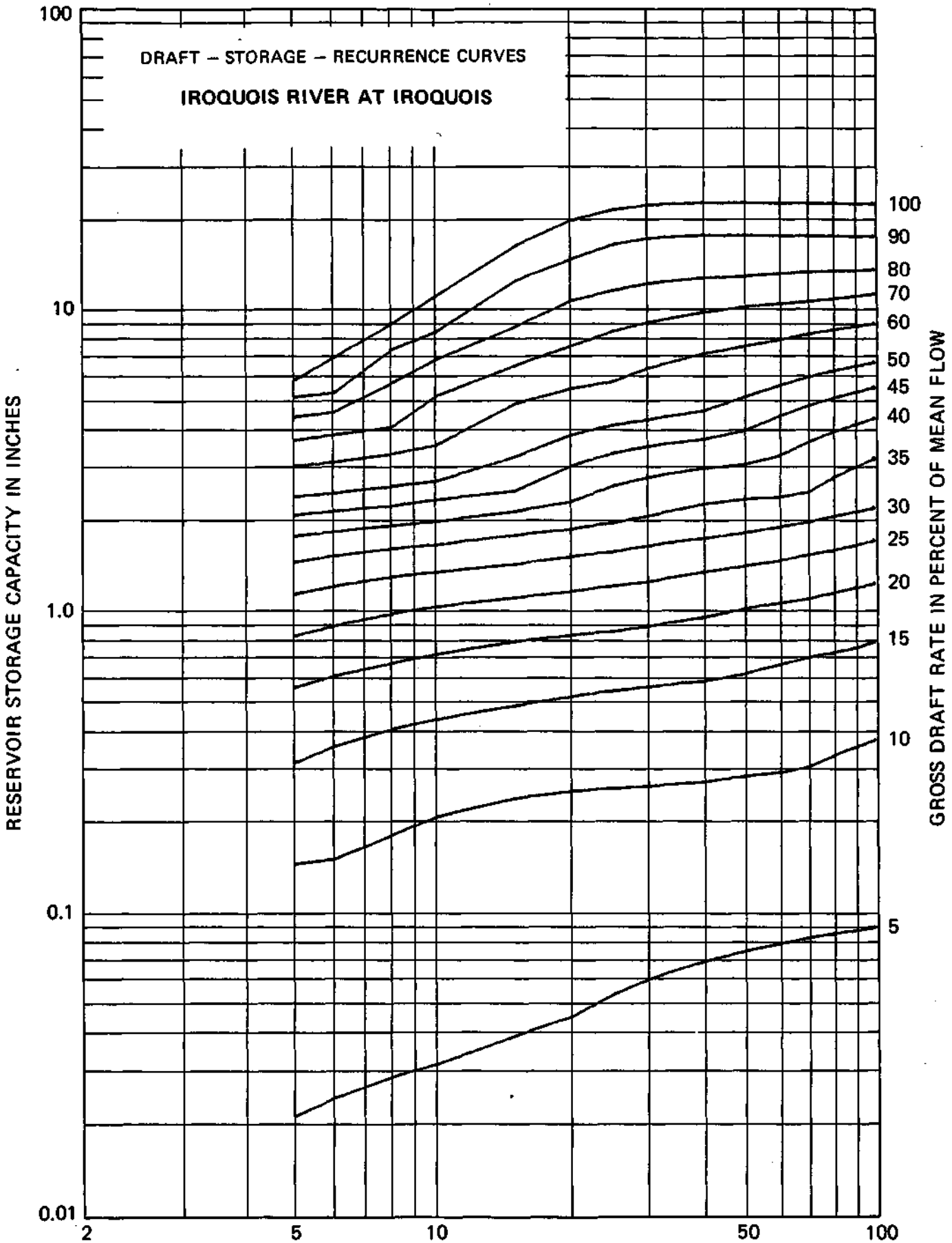
ACTUAL FLOW DATA: Oct 1944 to Oct 1978

INDEX STATION: Iroquois River at Chebanse

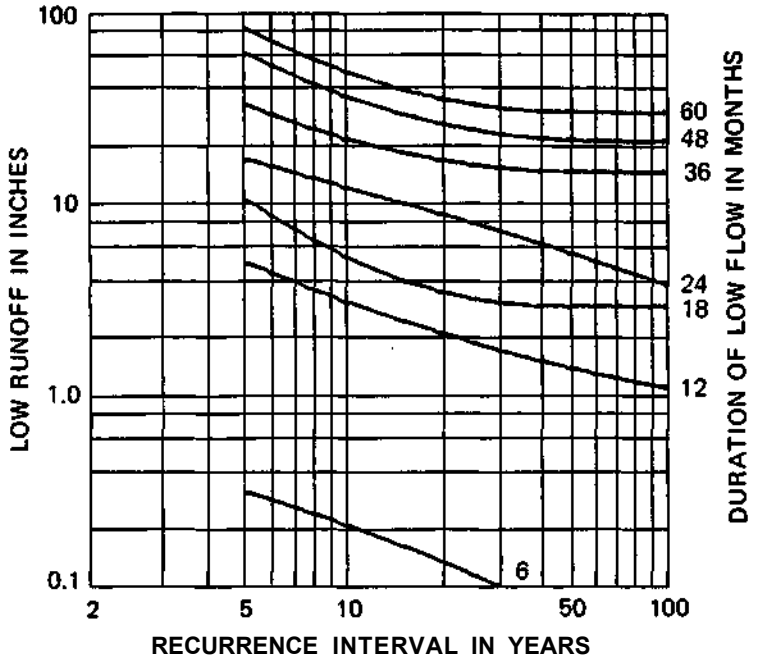
MEAN DISCHARGE: 0.86 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.14	.30	.54	.80	1.09	1.40	1.70	2.00	2.30	2.91	3.54	4.23	4.92	5.61
	--	2	3	5	6	6	7	7	7	7	7	7	8	8	8	8
6	.00	.02	.15	.34	.59	.86	1.16	1.46	1.77	2.07	2.37	3.00	3.69	4.38	5.07	6.60
	--	2	3	5	6	7	7	7	7	7	7	8	8	8	8	18
8	.00	.03	.18	.39	.65	.94	1.25	1.55	1.85	2.15	2.50	3.19	3.91	5.46	7.02	8.57
	--	2	5	5	6	7	7	7	7	7	8	8	18	18	18	18
10	.00	.03	.20	.42	.69	1.00	1.30	1.60	1.92	2.26	2.61	3.42	4.97	6.53	8.08	10.63
	--	2	5	6	7	7	7	7	8	8	8	18	18	18	18	30
15	.00	.04	.23	.47	.77	1.07	1.38	1.73	2.08	2.43	3.14	4.70	6.25	8.39	11.94	15.56
	1	3	5	6	7	7	8	8	8	9	18	18	18	30	42	42
20	.00	.04	.25	.50	.81	1.12	1.47	1.81	2.24	2.93	3.71	5.27	7.27	10.30	14.10	18.94
	1	4	5	7	7	8	8	8	16	18	18	18	30	42	56	56
25	.00	.05	.25	.53	.83	1.18	1.53	1.92	2.53	3.24	4.02	5.58	8.16	11.15	15.80	20.63
	1	4	5	7	7	8	9	9	16	18	18	18	30	42	56	56
30	.00	.06	.26	.54	.87	1.22	1.60	2.02	2.71	3.43	4.20	6.16	8.76	11.79	16.63	21.47
	1	4	6	7	8	9	9	16	16	18	18	30	30	56	56	56
40	.00	.07	.26	.57	.93	1.32	1.71	2.22	2.91	3.62	4.49	6.90	9.49	12.34	17.06	21.89
	1	4	6	8	9	9	9	16	16	20	20	30	30	54	56	56
50	.00	.07	.28	.60	.99	1.38	1.78	2.31	3.00	3.87	4.99	7.33	9.92	12.51	17.06	21.89
	1	4	7	9	9	9	10	16	16	26	26	30	30	30	56	56
60	.00	.08	.29	.65	1.04	1.44	1.87	2.34	3.21	4.33	5.45	7.70	10.19	12.78	17.06	21.89
	1	4	7	9	9	10	10	16	26	26	26	26	30	30	56	56
70	.00	.08	.30	.69	1.08	1.51	1.94	2.44	3.56	4.68	5.81	8.05	10.37	12.96	17.06	21.89
	1	4	9	9	9	10	10	26	26	26	26	26	30	30	56	56
80	.00	.08	.33	.72	1.13	1.56	2.03	2.72	3.85	4.97	6.09	8.34	10.58	13.08	17.06	21.89
	1	4	9	9	10	10	11	26	26	26	26	26	26	30	56	56
90	.00	.09	.35	.74	1.17	1.63	2.10	2.96	4.08	5.20	6.33	8.57	10.82	13.16	17.06	21.89
	1	4	9	10	10	11	11	26	26	26	26	26	26	30	56	56
100	.00	.09	.37	.78	1.21	1.69	2.16	3.16	4.28	5.40	6.52	8.77	11.02	13.26	17.06	21.89
	1	4	9	10	11	11	11	26	26	26	26	26	26	26	56	56


DRAFT – STORAGE – RECURRENCE CURVES
IROQUOIS RIVER AT IROQUOIS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

55255 —SUGAR CREEK AT MILFORD



LOCATION:. In N½ Sec 16, T25N, R12W, Iroquois County, at highway bridge 1 mile west of Milford

DRAINAGE AREA: 446 square miles

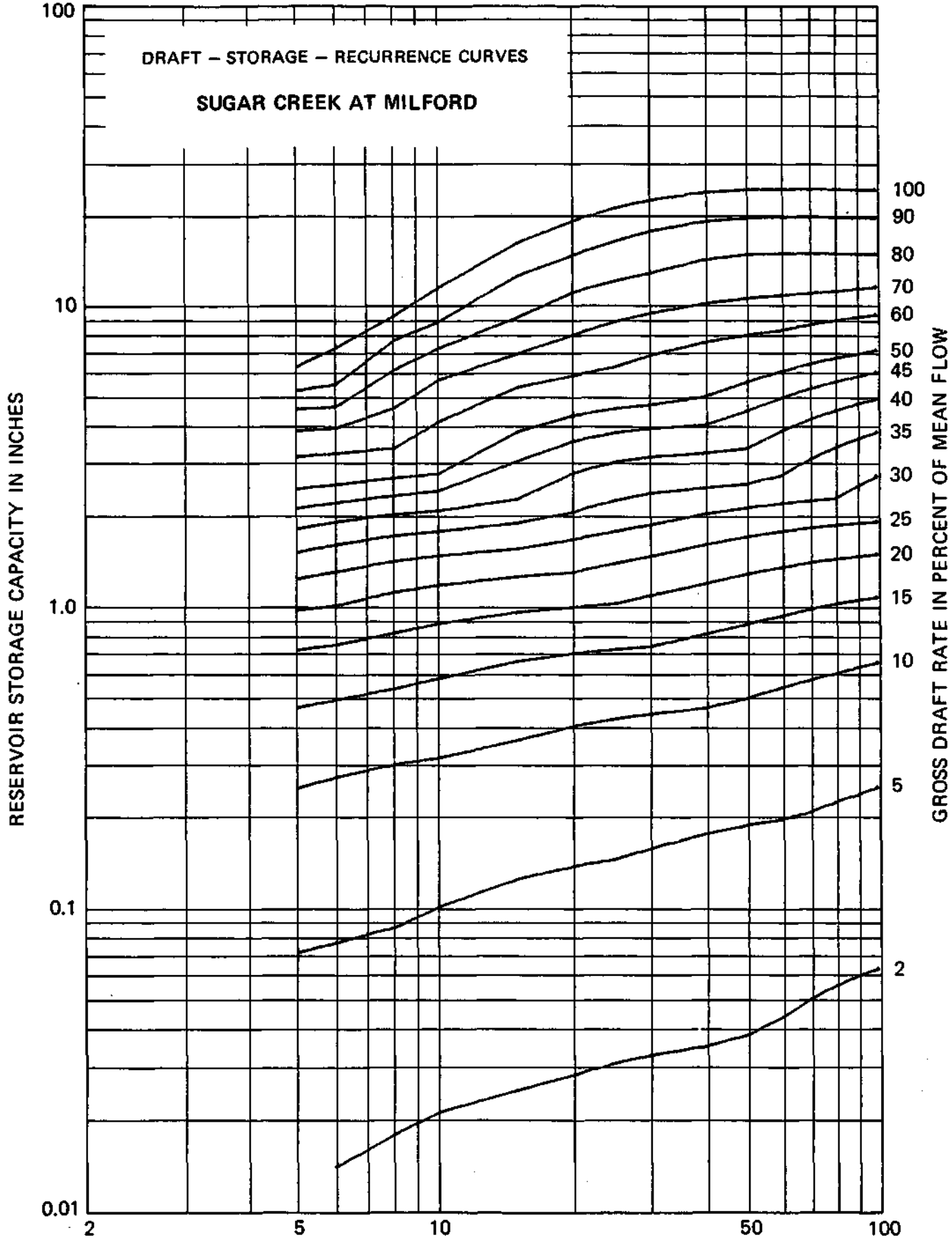
ACTUAL FLOW DATA: Jul 1948 to Oct 1978

INDEX STATION: Iroquois River at Chebanse

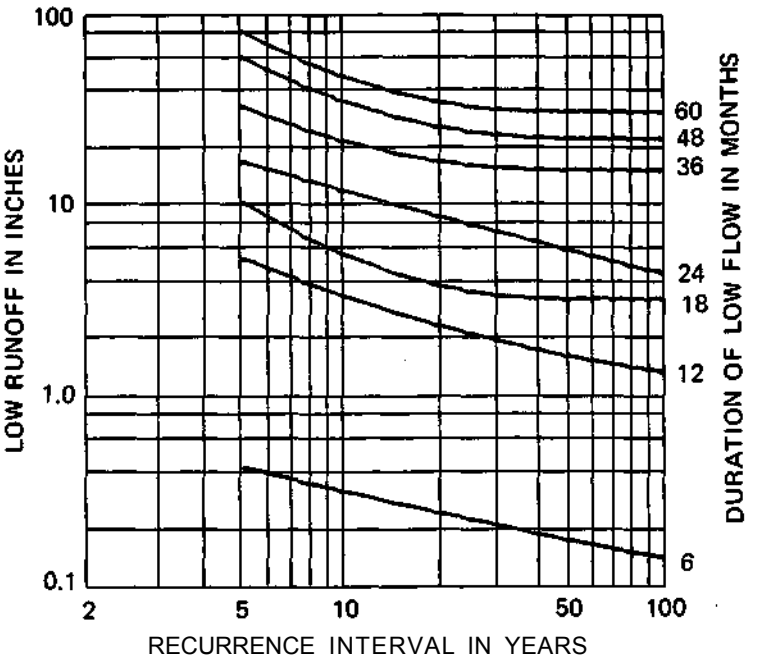
MEAN DISCHARGE: 0.85 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.01	.07	.25	.46	.71	.97	1.22	1.50	1.80	2.09	2.43	3.11	3.79	4.47	5.15	6.19
	1	4	5	5	6	6	6	7	7	7	8	8	8	8	8	22
6	.01	.08	.27	.49	.74	1.00	1.29	1.59	1.89	2.19	2.52	3.20	3.88	4.56	5.43	7.14
	1	4	5	6	6	7	7	7	7	7	8	8	8	9	18	22
8	.02	.09	.30	.53	.81	1.11	1.40	1.70	2.00	2.31	2.65	3.33	4.52	6.05	7.58	9.12
	2	4	5	6	7	7	7	7	7	8	8	8	18	18	18	30
10	.02	.10	.31	.57	.87	1.17	1.47	1.76	2.06	2.40	2.74	4.08	5.61	7.14	8.74	11.29
	2	5	5	7	7	7	7	7	8	8	8	18	18	18	30	30
15	.03	.12	.36	.66	.95	1.25	1.55	1.88	2.26	3.02	3.79	5.32	6.85	9.04	12.36	15.93
	2	5	7	7	7	7	7	8	9	18	18	18	18	30	42	42
20	.03	.14	.40	.70	.99	1.30	1.66	2.05	2.76	3.53	4.29	5.82	7.92	10.92	14.49	18.89
	3	5	7	7	7	8	9	9	18	18	18	18	30	42	42	54
25	.03	.14	.42	.72	1.02	1.39	1.78	2.25	3.01	3.78	4.54	6.23	8.78	11.97	16.20	20.92
	3	5	7	7	8	9	9	18	18	18	18	30	30	42	54	56
30	.03	.16	.44	.74	1.09	1.47	1.87	2.38	3.15	3.91	4.68	6.81	9.36	12.73	17.49	22.26
	3	6	7	7	9	9	10	18	18	18	18	30	30	56	56	56
40	.04	.18	.46	.81	1.19	1.61	2.03	2.49	3.24	4.01	4.99	7.54	10.09	14.14	18.90	23.66
	3	6	7	9	9	10	10	16	18	18	30	30	30	56	56	56
50	.04	.19	.50	.88	1.29	1.71	2.14	2.56	3.37	4.47	5.58	7.97	10.52	14.71	19.47	24.23
	4	6	8	9	10	10	10	10	26	26	26	30	30	56	56	56
60	.04	.20	.54	.94	1.36	1.79	2.21	2.74	3.84	4.95	6.05	8.26	10.79	14.87	19.63	24.39
	6	6	9	10	10	10	10	26	26	26	26	26	30	56	56	56
70	.05	.21	.57	.99	1.41	1.84	2.26	3.10	4.21	5.31	6.42	8.63	10.98	14.87	19.63	24.39
	6	8	9	10	10	10	10	26	26	26	26	26	30	56	56	56
80	.06	.23	.60	1.03	1.45	1.88	2.30	3.40	4.50	5.61	6.71	8.92	11.13	14.87	19.63	24.39
	6	8	10	10	10	10	10	26	26	26	26	26	26	56	56	56
90	.06	.24	.64	1.06	1.49	1.91	2.53	3.64	4.74	5.85	6.95	9.17	11.38	14.87	19.63	24.39
	6	8	10	10	10	10	26	26	26	26	26	26	26	56	56	56
100	.06	.25	.66	1.09	1.51	1.94	2.74	3.84	4.95	6.05	7.16	9.37	11.58	14.87	19.63	24.39
	6	9	10	10	10	10	26	26	26	26	26	26	26	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
SUGAR CREEK AT MILFORD
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55260 — IROQUOIS RIVER NEAR CHEBANSE



LOCATION: In SW¼ Sec 10, T29N, Rl 3W, Kankakee County, at highway bridge, 4.5 miles east of Chebanse

DRAINAGE AREA: 2091 square miles

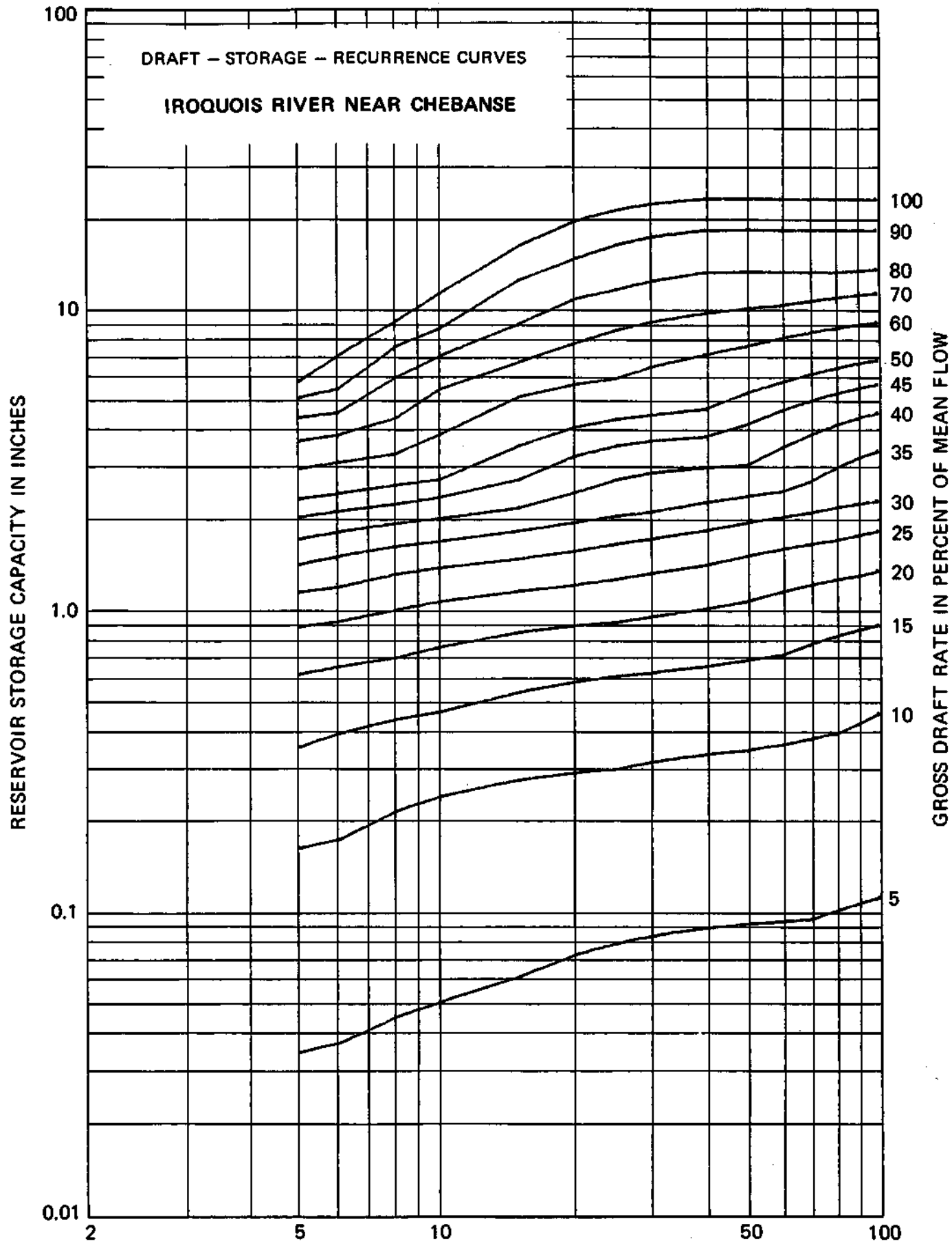
ACTUAL FLOW DATA: Apr 1923 to Oct 1978

INDEX STATION: None

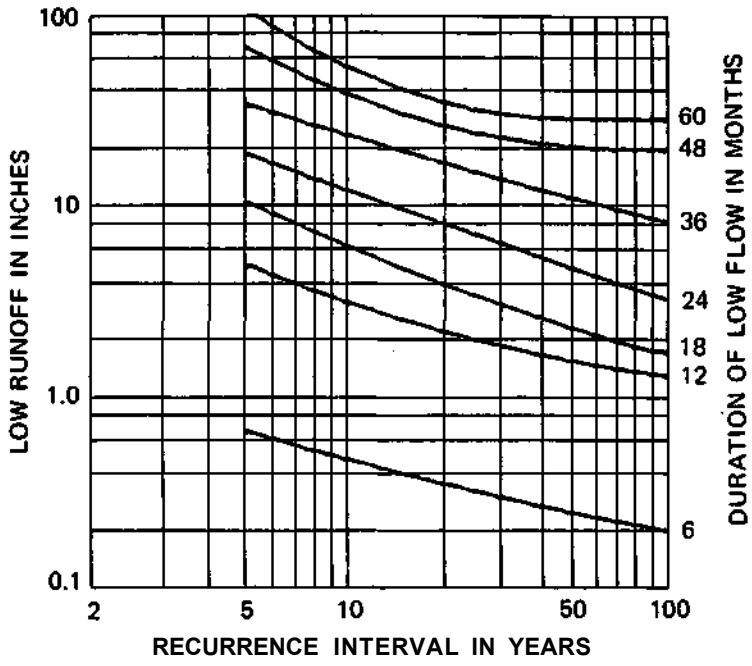
MEAN DISCHARGE: 0.86 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.03	.16	.35	.60	.86	1.12	1.38	1.67	1.98	2.28	2.88	3.55	4.24	4.94	5.63
	--	2	3	5	6	6	6	6	7	7	7	7	8	8	8	8
6	.00	.04	.17	.38	.64	.90	1.17	1.47	1.77	2.07	2.37	3.02	3.71	4.40	5.29	6.84
	--	2	4	5	6	6	7	7	7	7	7	8	8	8	18	18
8	.00	.04	.21	.43	.68	.98	1.28	1.58	1.88	2.19	2.53	3.22	4.23	5.78	7.34	8.89
	--	3	5	5	6	7	7	7	7	7	8	8	18	18	18	18
10	.00	.05	.24	.45	.74	1.04	1.35	1.65	1.96	2.31	2.65	3.74	5.30	6.85	8.44	11.03
	--	3	5	6	7	7	7	7	8	8	8	18	18	18	30	32
15	.00	.06	.27	.53	.83	1.13	1.44	1.79	2.13	2.65	3.43	4.98	6.54	8.74	12.20	15.83
	1	4	5	7	7	7	8	8	8	18	18	18	18	30	42	42
20	.00	.07	.28	.57	.87	1.18	1.53	1.91	2.40	3.17	3.95	5.51	7.55	10.57	14.35	19.02
	1	4	5	7	7	8	8	9	18	18	18	18	30	42	54	54
25	.00	.08	.29	.60	.90	1.24	1.62	2.01	2.66	3.44	4.22	5.79	8.38	11.42	16.00	20.78
	1	4	7	7	7	8	9	9	18	18	18	30	30	42	54	56
30	.00	.08	.31	.61	.94	1.30	1.69	2.08	2.81	3.59	4.36	6.33	8.92	12.17	17.01	21.84
	1	5	7	7	8	9	9	9	18	18	18	30	30	56	56	56
40	.00	.09	.33	.64	1.00	1.39	1.81	2.24	2.92	3.70	4.57	6.97	9.56	13.05	17.89	22.73
	1	5	7	8	9	9	10	10	18	18	26	30	30	56	56	56
50	.00	.09	.34	.68	1.06	1.49	1.92	2.35	2.98	4.07	5.20	7.44	9.90	13.12	17.96	22.80
	1	4	7	8	10	10	10	10	20	26	26	26	30	56	56	56
60	.00	.09	.36	.70	1.14	1.57	2.00	2.44	3.41	4.53	5.66	7.90	10.16	13.12	17.96	22.80
	1	4	8	10	10	10	10	11	26	26	26	26	28	56	56	56
70	.00	.09	.37	.77	1.20	1.63	2.07	2.64	3.77	4.89	6.01	8.26	10.50	13.12	17.96	22.80
	1	6	8	10	10	10	11	26	26	26	26	26	26	56	56	56
80	.00	.10	.39	.81	1.25	1.68	2.16	2.93	4.05	5.17	6.30	8.54	10.79	13.12	17.96	22.80
	1	6	8	10	10	11	11	26	26	26	26	26	26	56	56	56
90	.00	.11	.42	.85	1.28	1.75	2.22	3.16	4.29	5.41	6.53	8.78	11.02	13.27	17.96	22.80
	1	6	10	10	10	11	11	26	26	26	26	26	26	26	56	56
100	.00	.11	.45	.89	1.33	1.80	2.28	3.33	4.45	5.58	6.70	8.95	11.19	13.44	17.96	22.80
	1	6	10	10	11	11	11	26	26	26	26	26	26	26	56	56


DRAFT – STORAGE – RECURRENCE CURVES
IROQUOIS RIVER NEAR CHEBANSE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

55265 —TERRY CREEK NEAR CUSTER PARK



LOCATION: Near southwest corner of SE¼ Sec 20, T32N, R10E, Will County, at bridge on Illinois 113 south about 1.5 miles southeast of Custer Park

DRAINAGE AREA: 12.0 square miles

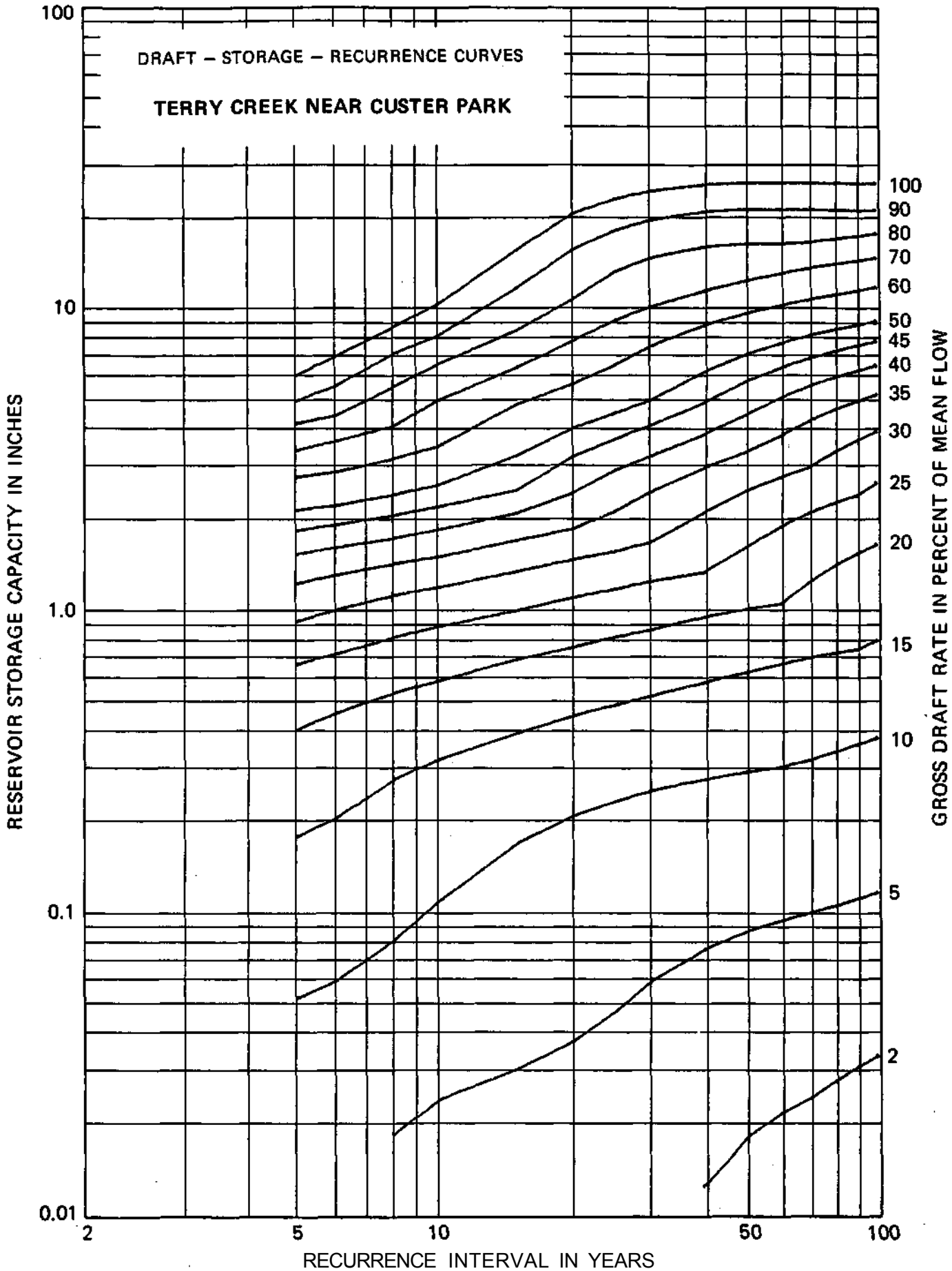
ACTUAL FLOW DATA: Jul 1949 to Sep 1975

INDEX STATION: Iroquois River at Chebanse

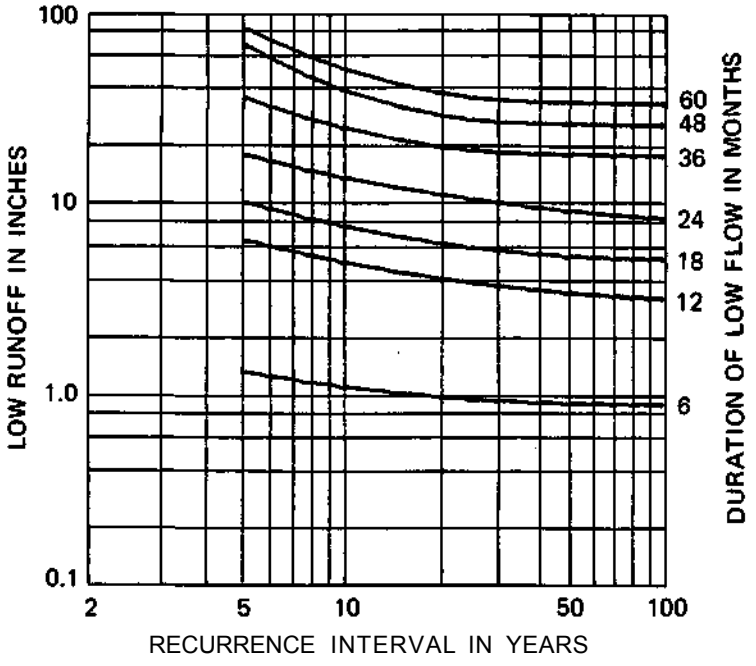
MEAN DISCHARGE: 0.85 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.05	.17	.39	.64	.90	1.19	1.49	1.78	2.08	2.67	3.28	4.02	4.78	5.82
	1	4	2	3	6	6	6	7	7	7	7	7	8	9	9	14
6	.00	.01	.06	.20	.45	.70	.98	1.27	1.57	1.87	2.16	2.79	3.52	4.28	5.38	6.73
	1	1	2	5	6	6	7	7	7	7	7	8	9	9	14	18
8	.00	.02	.08	.27	.52	.79	1.09	1.38	1.68	2.00	2.34	3.08	3.95	5.35	6.87	8.39
	2	1	3	5	6	7	7	7	7	8	8	9	16	18	18	18
10	.00	.02	.11	.31	.57	.86	1.16	1.46	1.80	2.14	2.52	3.38	4.83	6.35	7.87	10.03
	2	1	4	6	7	7	7	8	8	9	9	16	18	18	18	32
15	.00	.03	.17	.38	.67	.98	1.31	1.66	2.04	2.43	3.17	4.69	6.22	8.20	11.36	15.13
	1	1	5	6	7	8	8	9	9	10	18	18	20	32	42	56
20	.01	.04	.20	.44	.74	1.08	1.44	1.82	2.38	3.14	3.90	5.48	7.57	10.40	15.13	19.86
	1	2	5	7	8	8	9	9	18	18	18	20	30	56	56	56
25	.01	.05	.23	.48	.80	1.15	1.53	2.08	2.84	3.60	4.41	6.35	8.88	12.86	17.60	22.33
	1	2	5	7	8	9	9	18	18	18	20	30	30	56	56	56
30	.01	.06	.25	.51	.85	1.22	1.64	2.40	3.16	4.00	4.85	7.29	9.85	14.28	19.01	23.74
	1	3	5	8	8	9	18	18	18	20	20	30	32	56	56	56
40	.01	.08	.27	.57	.94	1.32	2.06	2.90	3.75	4.78	6.05	8.58	11.19	15.61	20.34	25.07
	2	3	5	8	9	9	18	20	20	30	30	30	32	56	56	56
50	.02	.09	.29	.62	1.00	1.59	2.44	3.28	4.37	5.64	6.91	9.44	12.08	15.99	20.72	25.45
	2	3	5	9	9	20	20	20	30	30	30	30	32	56	56	56
60	.02	.09	.30	.66	1.04	1.87	2.71	3.73	4.99	6.26	7.53	10.06	12.79	15.99	20.72	25.45
	2	3	5	9	9	20	20	30	30	30	30	30	34	56	56	56
70	.02	.10	.32	.69	1.23	2.08	2.93	4.20	5.47	6.73	8.00	10.54	13.35	16.22	20.72	25.45
	2	3	8	9	20	20	30	30	30	30	30	30	34	34	56	56
80	.03	.11	.34	.72	1.39	2.24	3.31	4.58	5.84	7.11	8.38	10.92	13.79	16.66	20.72	25.45
	3	5	9	9	20	20	30	30	30	30	30	32	34	34	56	56
90	.03	.11	.36	.74	1.53	2.37	3.62	4.88	6.15	7.42	8.68	11.28	14.16	17.03	20.72	25.45
	3	5	9	9	20	20	30	30	30	30	30	34	34	34	56	56
100	.03	.12	.38	.79	1.64	2.60	3.87	5.14	6.41	7.67	8.94	11.59	14.46	17.34	20.72	25.45
	3	5	9	20	20	30	30	30	30	30	30	34	34	34	56	56


DRAFT – STORAGE – RECURRENCE CURVES
TERRY CREEK NEAR CUSTER PARK
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55275 - KANKAKEE RIVER AT WILMINGTON



LOCATION: In NW¼ Sec 15, T33N, R9E, Will County, 0.4 miles downstream from Prairie Creek, 0.5 miles upstream from bridge on Illinois 55,5 miles downstream from Wilmington

DRAINAGE AREA: 5150 square miles

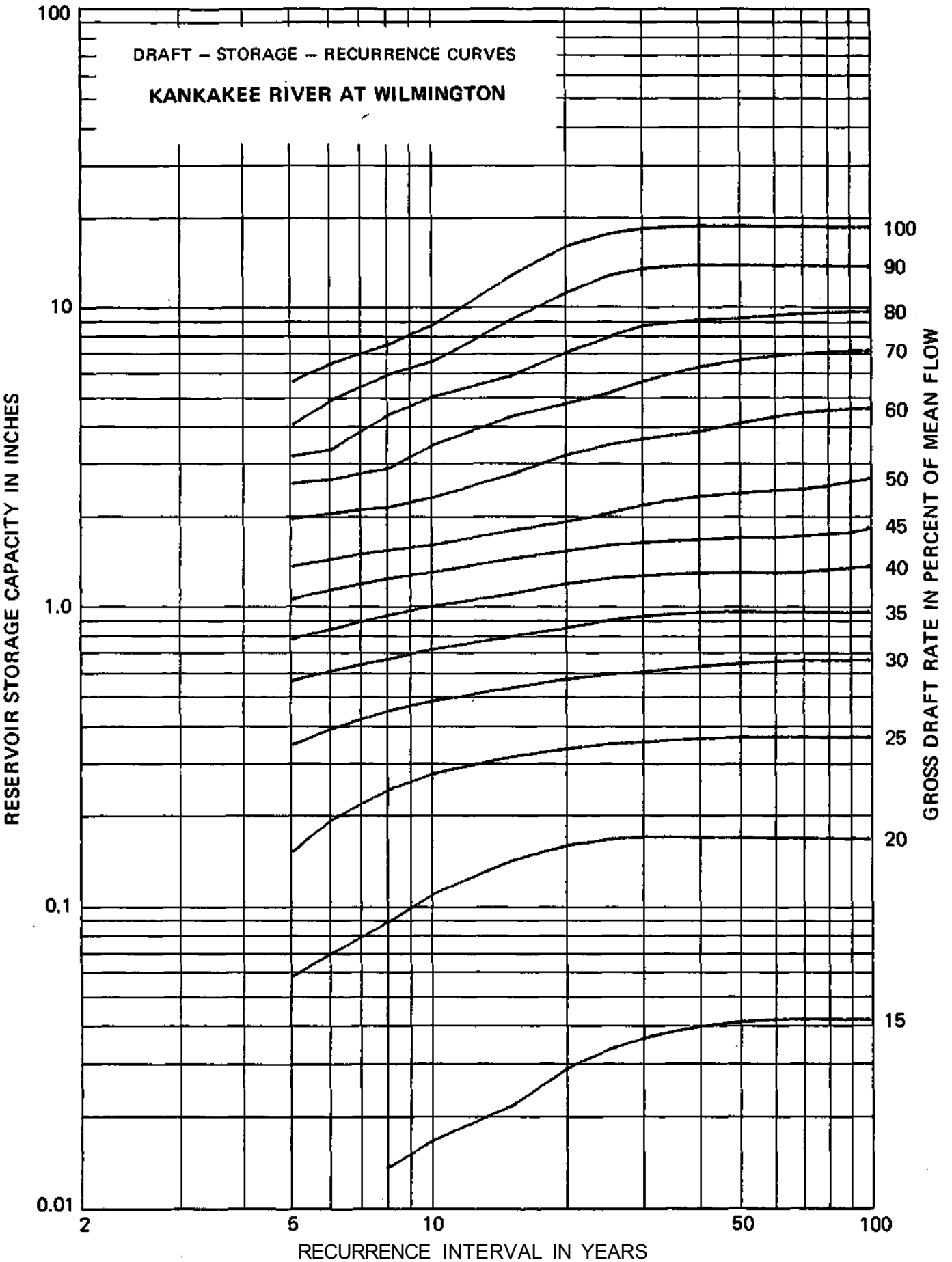
ACTUAL FLOW DATA: Oct 1933 to Oct 1978

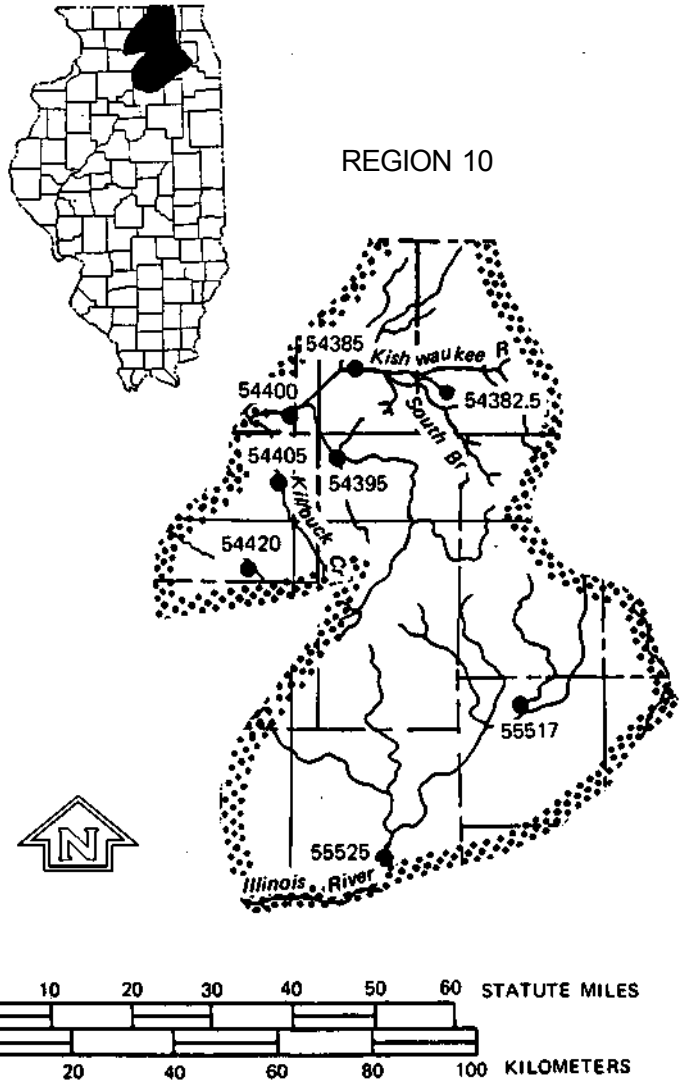
INDEX STATION: None

MEAN DISCHARGE: 0.86 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.06	.15	.35	.56	.78	1.05	1.36	1.96	2.56	3.16	4.04	5.60
	--	2	3	1	2	3	5	5	5	7	7	7	7	7	18	20
6	.00	.00	.00	.01	.07	.19	.39	.60	.84	1.13	1.43	2.03	2.64	3.32	4.87	6.41
	--	2	4	1	2	4	5	5	6	7	7	7	7	18	18	18
8	.00	.00	.00	.01	.09	.25	.45	.66	.93	1.23	1.53	2.14	2.88	4.36	5.90	7.45
	--	3	5	1	3	4	5	6	7	7	7	7	9	18	18	18
10	.00	.00	.00	.02	.11	.28	.48	.72	1.00	1.30	1.60	2.31	3.44	4.99	6.54	8.68
	--	3	5	1	3	4	5	6	7	7	7	9	18	18	18	42
15	.00	.00	.00	.02	.14	.31	.53	.79	1.10	1.44	1.80	2.76	4.31	5.86	9.08	12.73
	1	4	5	2	4	4	6	7	8	8	9	18	18	18	42	56
20	.00	.00	.00	.03	.16	.34	.57	.85	1.20	1.54	1.93	3.21	4.76	7.03	11.17	15.99
	1	4	5	2	4	5	6	8	8	9	9	18	18	42	56	56
25	.00	.00	.00	.03	.17	.35	.59	.90	1.25	1.61	2.06	3.48	5.17	7.94	12.76	17.58
	1	4	7	2	4	5	6	8	8	9	16	18	28	56	56	56
30	.00	.00	.00	.04	.17	.36	.61	.94	1.28	1.65	2.20	3.66	5.66	8.73	13.54	18.36
	1	5	7	2	4	5	6	8	8	9	16	18	30	56	56	56
40	.00	.00	.00	.04	.17	.36	.63	.97	1.31	1.69	2.36	3.87	6.30	9.12	13.93	18.75
	1	5	7	2	4	6	7	8	8	9	16	18	30	56	56	56
50	.00	.00	.00	.04	.17	.37	.65	.97	1.32	1.72	2.42	4.14	6.68	9.26	13.93	18.75
	1	4	7	2	4	6	7	8	8	16	18	28	30	30	56	56
60	.00	.00	.00	.04	.17	.37	.66	.97	1.32	1.73	2.48	4.36	6.91	9.50	13.93	18.75
	1	4	8	2	4	6	7	8	8	16	18	28	30	30	56	56
70	.00	.00	.00	.04	.17	.37	.67	.97	1.33	1.76	2.50	4.50	7.07	9.65	13.93	18.75
	1	6	8	2	4	6	7	8	10	10	18	28	30	30	56	56
80	.00	.00	.00	.04	.17	.37	.67	.97	1.35	1.78	2.58	4.59	7.16	9.74	13.93	18.75
	1	6	8	2	4	6	7	8	10	10	20	28	30	30	56	56
90	.00	.00	.00	.04	.17	.37	.67	.98	1.37	1.80	2.66	4.64	7.22	9.80	13.93	18.75
	1	6	10	2	4	7	7	7	10	10	20	28	30	30	56	56
100	.00	.00	.00	.04	.17	.37	.68	.98	1.39	1.87	2.73	4.68	7.26	9.84	13.93	18.75
	1	6	10	2	4	7	7	7	10	20	20	28	30	30	56	56

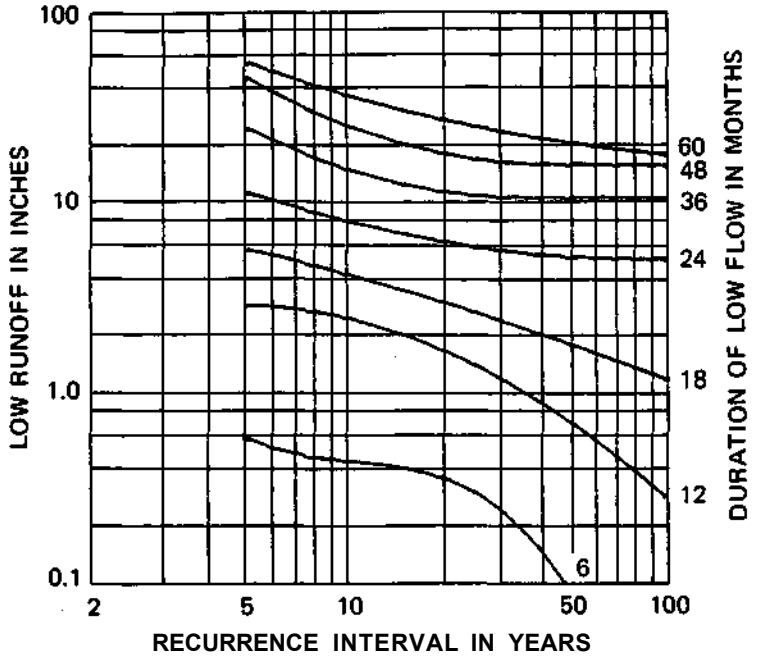

DRAFT – STORAGE – RECURRENCE CURVES
KANKAKEE RIVER AT WILMINGTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS


REGION 10
54385
Kish wau kee R
54400
54382.5
South Br
54405
54395
Kinnouck Cr
54420
55517
55525
Illinois River
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

USGS Gage No.	Name of Station	Drainage Area (sq mi)
54382.5	Coon Creek at Riley	85.1
54385	Kishwaukee River at Belvidere	538
54395	South Branch Kishwaukee River near Fairdale	387
54400	Kishwaukee River near Perryville	1099
54405	Killbuck Creek near Monroe Center	117
54420	Kyte River near Flagg Center	125
55517	Blackberry Creek near Yorkville	70.2
55525	Fox River at Dayton	2642

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
54382.5	55525	1961-1978	17	1924-1978	54	.64
54385	55525	1939-1978	39	1924-1978	54	.66
54395	55525	1939-1978	39	1924-1978	54	.67
54400	55525	1939-1978	39	1924-1978	54	.66
54405	55525	1939-1971	32	1924-1978	54	.63
54420	55525	1939-1971	32	1924-1978	54	.58
55517	55525	1960-1978	18	1924-1978	54	.63
55525	-	1924-1978	54	-	-	.71

54382.5 - COON CREEK AT RILEY



LOCATION: In SE¼ SW¼ Sec 22, T43N, R5E, McHenry County, at bridge on Riley-Harmony Road, 0.8 miles southwest of Riley

DRAINAGE AREA: 85.1 square miles

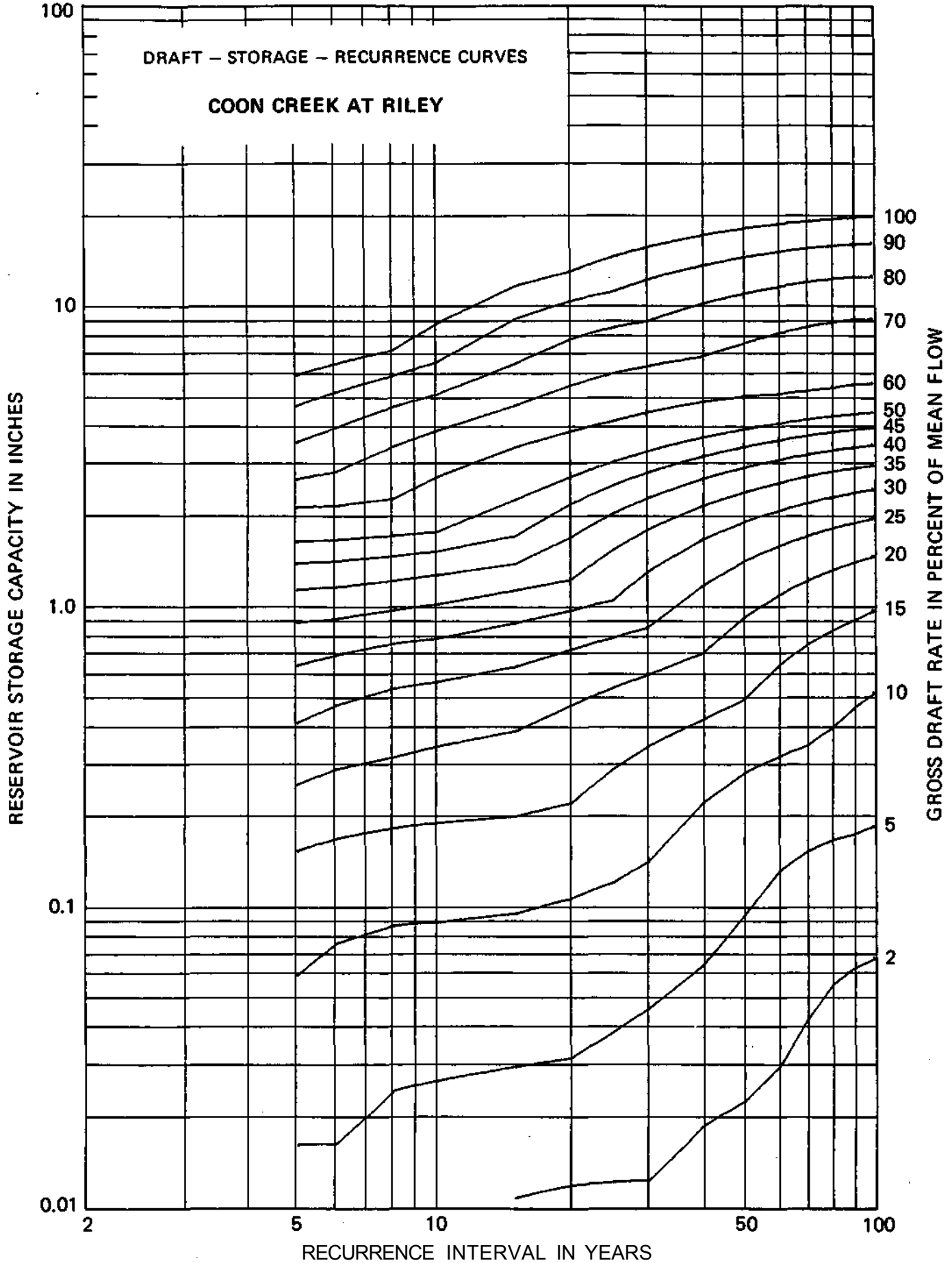
ACTUAL FLOW DATA: Aug 1961 to Oct 1978

INDEX STATION: Fox River at Dayton

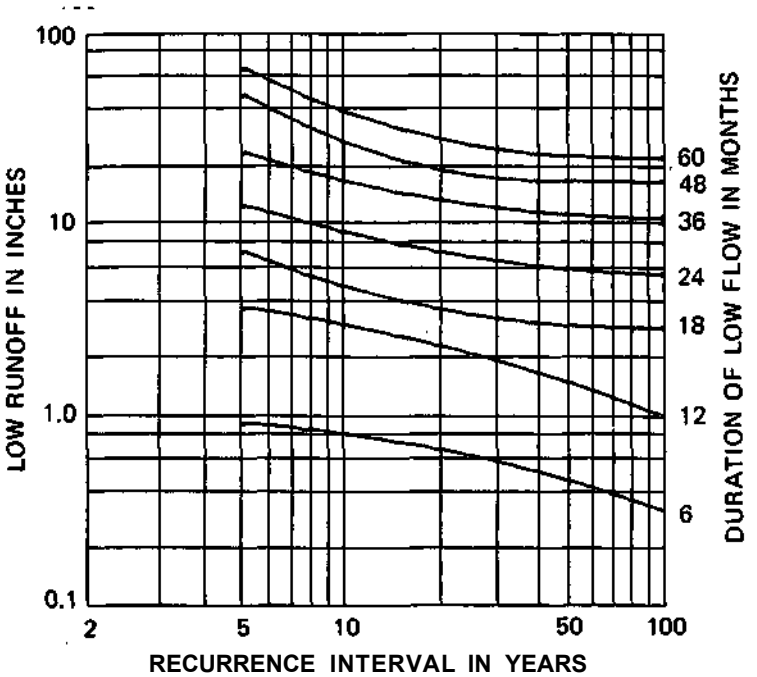
MEAN DISCHARGE: 0.64 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.02	.06	.15	.25	.41	.63	.88	1.13	1.38	1.63	2.13	2.65	3.52	4.66	5.90
	--	1	3	3	5	5	8	8	8	8	8	8	9	18	20	20
6	.00	.02	.08	.17	.29	.47	.69	.91	1.16	1.40	1.65	2.15	2.80	3.92	5.16	6.40
	--	1	2	3	5	7	7	8	8	8	8	8	18	18	20	20
8	.00	.02	.09	.18	.31	.53	.75	.97	1.21	1.46	1.71	2.27	3.39	4.61	5.85	7.10
	--	2	2	4	7	7	7	7	8	8	8	18	18	20	20	20
10	.01	.03	.09	.19	.34	.56	.78	1.01	1.26	1.51	1.76	2.69	3.84	5.08	6.50	8.69
	1	2	2	4	7	7	7	8	8	8	8	18	20	20	28	42
15	.01	.03	.10	.20	.39	.63	.88	1.13	1.38	1.71	2.27	3.39	4.67	6.43	9.02	11.64
	1	1	3	4	7	8	8	8	8	16	18	18	28	30	42	42
20	.01	.03	.11	.22	.47	.72	.97	1.22	1.69	2.19	2.71	3.83	5.46	7.75	10.36	12.98
	1	2	3	8	8	8	8	9	16	16	18	18	30	42	42	42
25	.01	.04	.12	.29	.54	.79	1.05	1.54	2.04	2.53	3.03	4.15	5.98	8.47	11.16	14.52
	1	2	3	8	8	8	9	16	16	16	16	28	30	42	54	54
30	.01	.05	.14	.34	.59	.85	1.30	1.80	2.30	2.79	3.29	4.44	6.31	8.88	12.24	15.60
	1	2	4	8	8	9	16	16	16	16	16	30	30	42	54	54
40	.02	.06	.22	.42	.70	1.17	1.67	2.16	2.66	3.16	3.66	4.83	6.81	10.17	13.59	17.07
	2	3	6	8	14	16	16	16	16	16	16	30	54	54	56	56
50	.02	.10	.28	.49	.92	1.41	1.91	2.41	2.91	3.41	3.90	5.03	7.53	11.02	14.50	17.99
	2	6	6	9	14	16	16	16	16	16	16	30	56	56	56	56
60	.03	.13	.32	.64	1.09	1.59	2.09	2.59	3.08	3.58	4.08	5.14	8.12	11.61	15.10	18.58
	4	6	6	14	16	16	16	16	16	16	16	30	56	56	56	56
70	.04	.16	.35	.75	1.22	1.72	2.22	2.72	3.21	3.71	4.21	5.26	8.53	12.02	15.50	18.99
	6	6	7	14	16	16	16	16	16	16	16	18	56	56	56	56
80	.06	.17	.40	.84	1.32	1.82	2.32	2.82	3.32	3.81	4.31	5.37	8.82	12.30	15.79	19.31
	6	6	14	14	16	16	16	16	16	16	16	18	56	56	56	60
90	.06	.18	.47	.91	1.40	1.90	2.40	2.90	3.40	3.90	4.39	5.53	9.02	12.51	15.99	19.62
	6	6	14	16	16	16	16	16	16	16	16	56	56	56	56	60
100	.07	.19	.52	.97	1.47	1.97	2.47	2.96	3.46	3.96	4.46	5.57	9.05	12.54	16.13	19.86
	6	7	14	16	16	16	16	16	16	16	16	56	56	56	60	60


DRAFT – STORAGE – RECURRENCE CURVES
COON CREEK AT RILEY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

54385 - KISHWAUKEE RIVER AT BELVIDERE



LOCATION: In SE¼ SE¼ Sec 27, T44N, R3E, at Belvidere sewage treatment plant, 1.3 miles downstream from State Street bridge in Belvidere

DRAINAGE AREA: 538 square miles

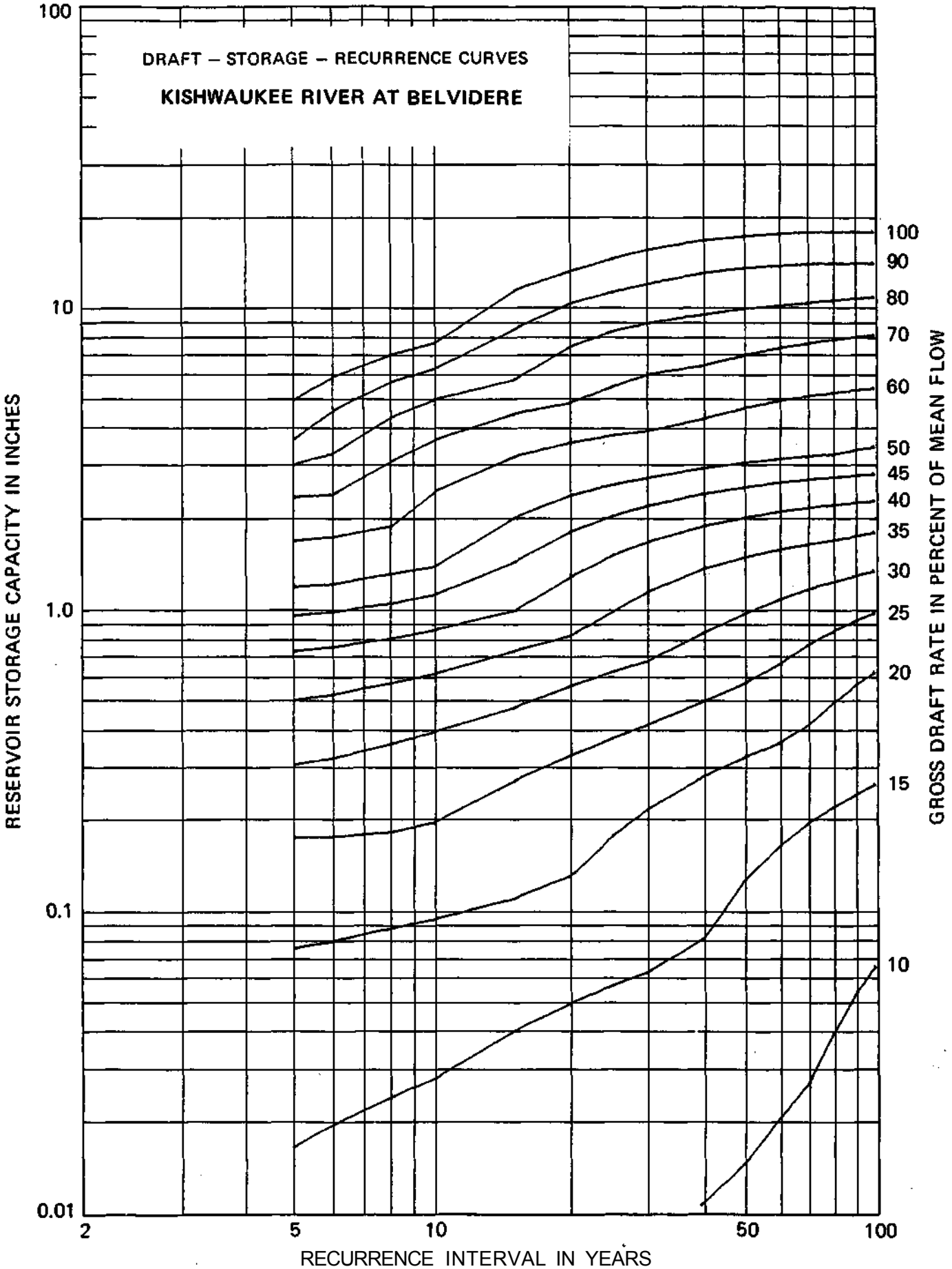
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Fox River at Dayton

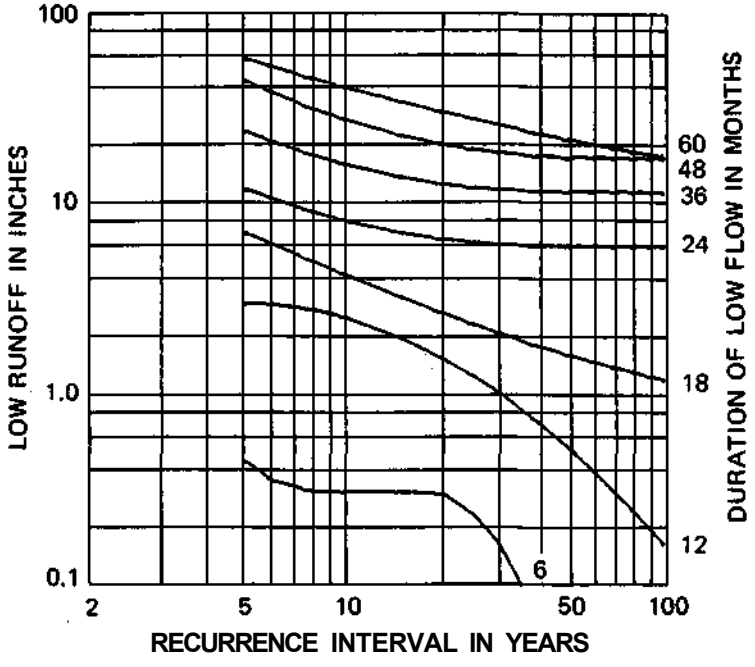
MEAN DISCHARGE: 0.66 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5.	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.02	.08	.17	.30	.50	.72	.95	1.18	1.67	2.33	2.99	3.64	4.91
	--	1	3	1	3	3	5	6	7	7	7	10	10	10	10	20
6	.00	.00	.00	.02	.08	.17	.32	.52	.75	.98	1.21	1.72	2.37	3.25	4.51	5.82
	--	1	2	1	2	3	6	7	7	7	7	8	10	18	20	20
8	.00	.00	.00	.02	.09	.18	.36	.57	.80	1.04	1.30	1.87	3.05	4.29	5.60	6.91
	--	2	2	1	2	3	6	7	7	8	8	18	18	20	20	20
10	.00	.00	.00	.03	.09	.20	.39	.61	.86	1.12	1.38	2.43	3.61	4.92	6.23	7.59
	1	2	2	2	2	6	6	7	8	8	8	18	18	20	20	30
15	.00	.00	.00	.04	.11	.27	.47	.73	.99	1.43	2.00	3.18	4.42	5.73	8.43	11.31
	1	1	3	2	3	6	7	8	8	16	18	18	20	20	44	44
20	.00	.00	.00	.05	.13	.33	.56	.82	1.28	1.80	2.37	3.55	4.80	7.38	10.26	13.15
	1	2	1	2	6	6	8	8	16	16	18	18	20	44	44	44
25	.00	.00	.01	.06	.18	.37	.62	.99	1.51	2.03	2.58	3.76	5.45	8.33	11.22	14.49
	1	2	1	2	6	6	8	16	16	16	18	18	44	44	44	54
30	.00	.00	.01	.06	.22	.41	.68	1.15	1.67	2.20	2.72	3.90	5.98	8.87	11.92	15.52
	1	2	1	2	6	7	8	16	16	16	16	18	44	44	54	56
40	.00	.00	.01	.08	.28	.49	.84	1.36	1.89	2.41	2.93	4.27	6.42	9.46	13.01	16.68
	2	3	1	3	6	8	16	16	16	16	16	30	44	54	56	56
50	.00	.00	.01	.13	.32	.57	.97	1.50	2.02	2.54	3.07	4.64	6.96	9.96	13.56	17.23
	2	6	2	6	6	9	14	16	16	16	16	30	42	54	56	56
60	.00	.00	.02	.17	.36	.66	1.09	1.59	2.11	2.64	3.16	4.90	7.36	10.16	13.79	17.56
	4	6	2	6	6	11	14	16	16	16	16	30	42	54	56	58
70	.00	.00	.03	.20	.42	.77	1.17	1.65	2.18	2.70	3.23	5.09	7.65	10.40	13.98	17.78
	6	6	3	6	9	11	14	16	16	16	16	30	42	42	58	58
80	.00	.00	.04	.22	.49	.85	1.24	1.71	2.23	2.75	3.28	5.24	7.86	10.62	14.07	17.88
	6	6	4	6	11	11	14	16	16	16	16	30	42	42	58	58
90	.00	.00	.05	.24	.56	.93	1.30	1.76	2.27	2.79	3.38	5.35	8.03	10.78	14.09	17.89
	6	6	4	6	11	11	14	14	16	16	30	30	42	42	58	58
100	.00	.00	.07	.27	.63	.99	1.35	1.81	2.30	2.83	3.47	5.44	8.15	10.90	14.09	17.89
	6	7	4	11	11	11	14	14	16	16	30	30	42	42	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KISHWAUKEE RIVER AT BELVIDERE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10

54395 - SOUTH BRANCH, KISHWAUKEE RIVER NEAR FAIRDALE



LOCATION: In SW¼ SW¼ Sec 16, T42N, R3E, DeKalb County, at bridge on Irene Road, 1.2 miles downstream from Owens Creek, 1.8 miles northeast of Fairdale

DRAINAGE AREA: 387 square miles

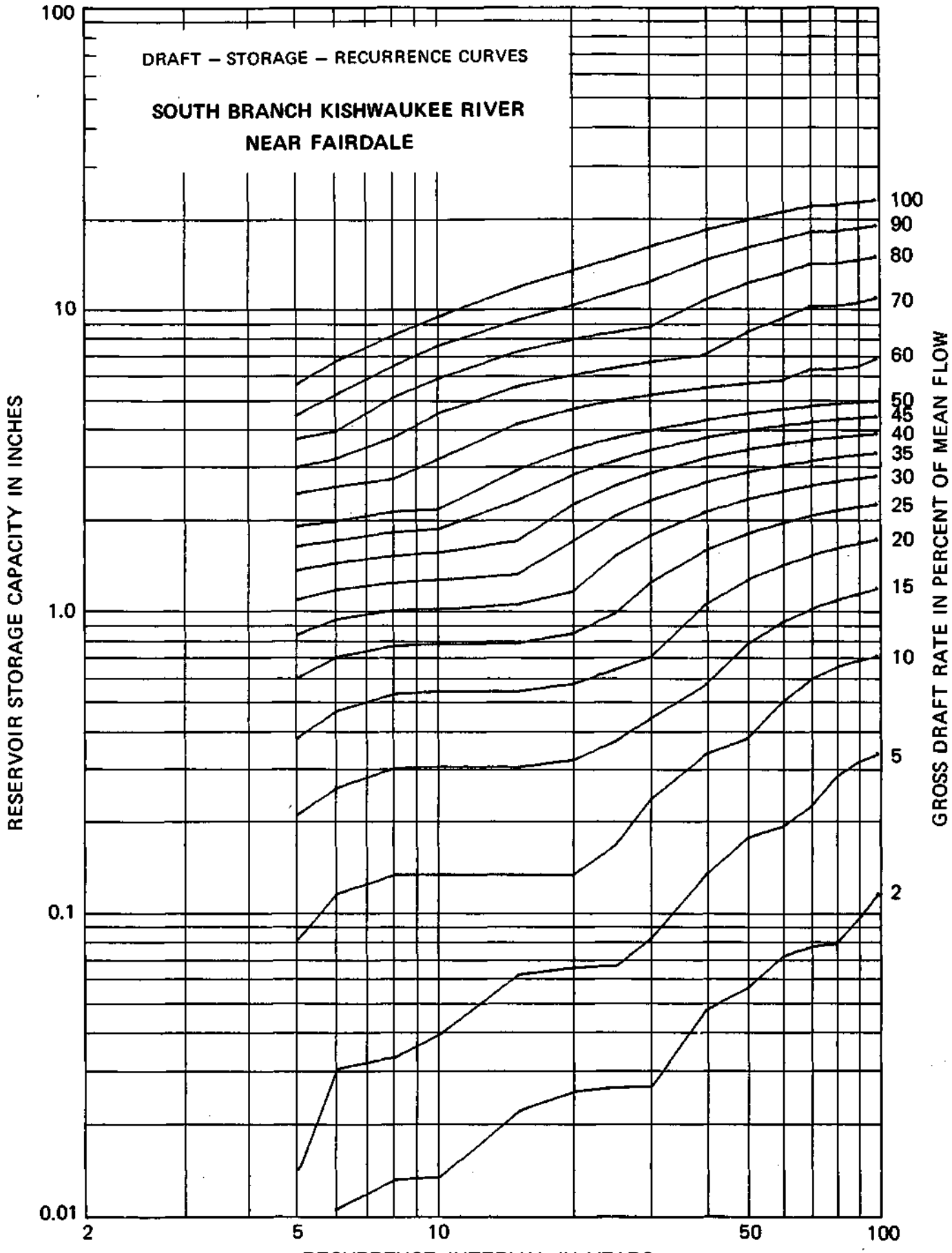
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Fox River at Dayton

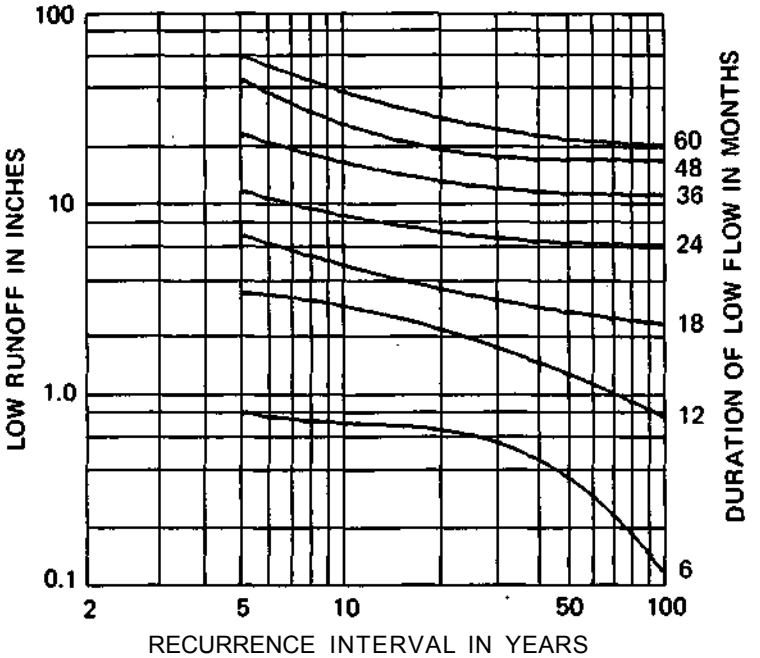
MEAN DISCHARGE: 0.67 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.01	.08	.21	.38	.60	.83	1.09	1.35	1.62	1.89	2.43	2.96	3.68	4.42	5.58
	--	2	2	5	5	7	7	8	8	8	8	8	8	11	11	22
6	.01	.03	.12	.26	.46	.70	.93	1.17	1.43	1.70	1.97	2.56	3.17	3.90	5.15	6.63
	1	1	4	6	7	7	7	7	8	8	8	9	10	11	22	22
8	.01	.03	.13	.30	.53	.76	1.00	1.23	1.51	1.81	2.11	2.71	3.71	5.05	6.39	8.11
	1	1	4	6	7	7	7	7	9	9	9	9	20	20	20	28
10	.01	.04	.13	.30	.54	.77	1.01	1.26	1.55	1.85	2.15	3.15	4.47	5.81	7.48	9.36
	1	2	4	7	7	7	7	8	9	9	9	18	20	20	28	30
15	.02	.06	.13	.30	.54	.78	1.05	1.31	1.70	2.30	2.90	4.13	5.47	7.15	9.12	11.66
	2	2	4	7	7	8	8	8	18	18	18	20	20	28	32	42
20	.03	.07	.13	.32	.57	.84	1.16	1.69	2.23	2.80	3.41	4.63	5.97	7.86	10.20	13.30
	2	2	4	7	8	8	16	16	16	18	18	20	20	32	42	50
25	.03	.07	.17	.37	.64	.98	1.52	2.05	2.59	3.13	3.72	4.93	6.32	8.34	11.26	14.61
	2	2	6	6	8	16	16	16	16	16	18	18	28	32	50	50
30	.03	.08	.24	.44	.70	1.24	1.77	2.31	2.85	3.38	3.94	5.15	6.62	8.69	12.20	15.96
	2	3	6	6	8	16	16	16	16	16	18	18	30	50	56	56
40	.05	.13	.34	.57	1.04	1.58	2.12	2.65	3.19	3.73	4.26	5.44	6.99	10.63	14.39	18.14
	4	6	6	14	16	16	16	16	16	16	16	18	54	56	56	56
50	.06	.18	.38	.78	1.26	1.80	2.34	2.87	3.41	3.95	4.48	5.62	8.32	12.08	15.84	19.59
	6	6	6	14	16	16	16	16	16	16	16	18	56	56	56	56
60	.07	.19	.50	.92	1.41	1.95	2.49	3.02	3.56	4.10	4.63	5.75	9.24	13.05	16.95	20.84
	6	6	11	14	16	16	16	16	16	16	16	18	56	58	58	58
70	.08	.23	.60	1.01	1.52	2.06	2.60	3.14	3.67	4.21	4.75	6.27	10.16	14.06	17.95	21.84
	6	11	11	14	16	16	16	16	16	16	16	58	58	58	58	58
80	.08	.28	.65	1.08	1.61	2.15	2.68	3.22	3.76	4.29	4.83	6.29	10.18	14.07	17.96	21.96
	6	11	11	14	16	16	16	16	16	16	16	58	58	58	58	60
90	.10	.32	.69	1.14	1.68	2.21	2.75	3.29	3.82	4.36	4.90	6.40	10.42	14.45	18.47	22.50
	11	11	11	16	16	16	16	16	16	16	16	60	60	60	60	60
100	.12	.34	.71	1.19	1.73	2.27	2.80	3.34	3.88	4.41	4.95	6.85	10.87	14.90	18.93	22.95
	11	11	14	16	16	16	16	16	16	16	16	60	60	60	60	60


DRAFT – STORAGE – RECURRENCE CURVES
SOUTH BRANCH KISHWAUKEE RIVER
NEAR FAIRDALE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

54400 — KISHWAUKEE RIVER NEAR PERRYVILLE



LOCATION: In NE¼ NE¼ Sec 21, T43N, R2E, Winnebago County, at upstream side of bridge on Blackhawk Road, 1.4 miles downstream from South Branch Kishwaukee River, 2 miles southwest of Perryville

DRAINAGE AREA: 1099 square miles

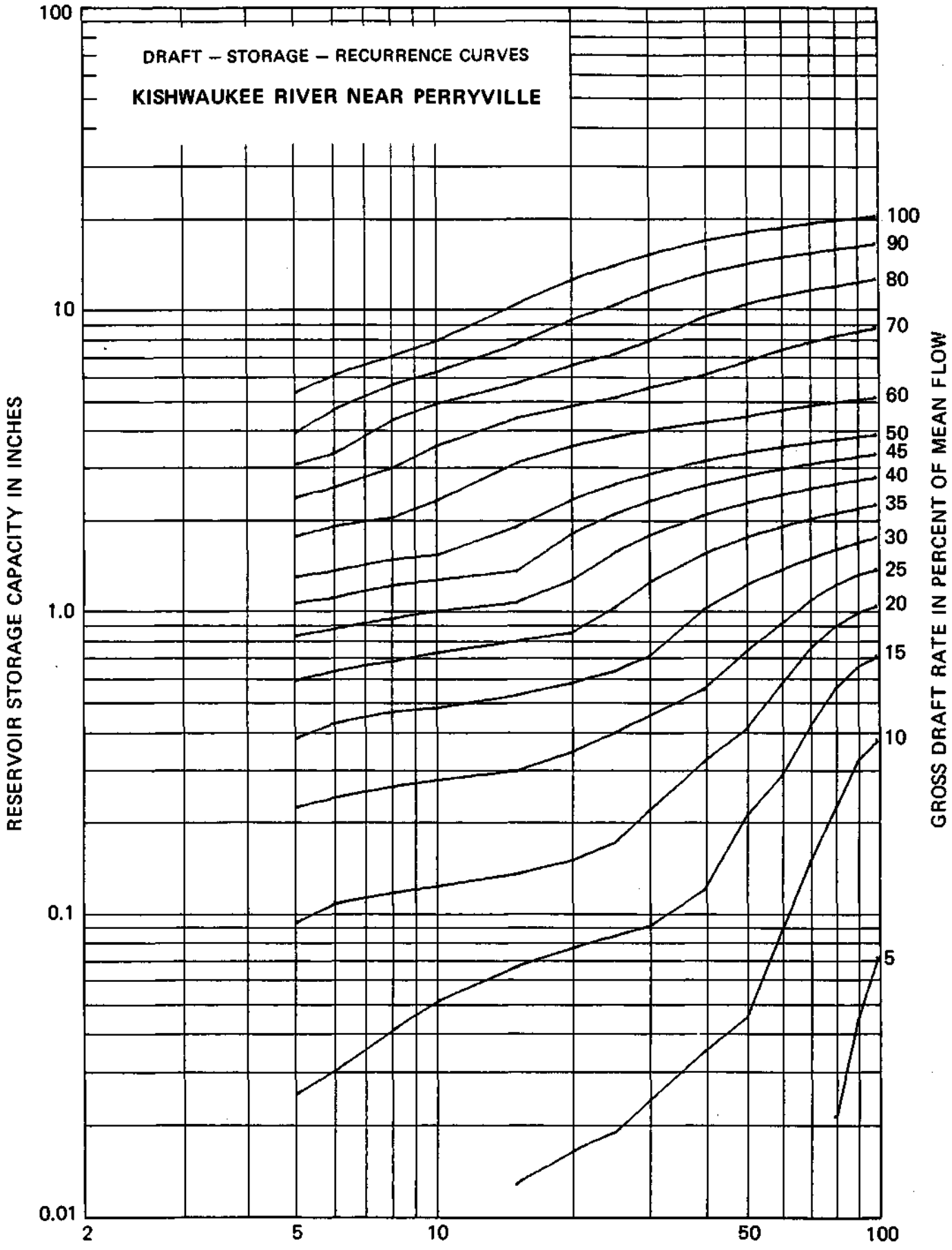
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Fox River at Dayotn

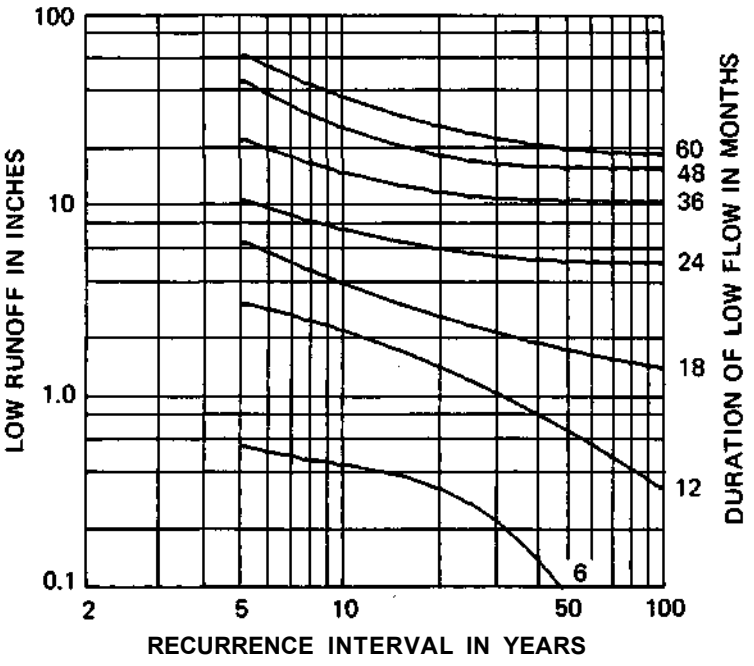
MEAN DISCHARGE: 0.66 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.03	.09	.22	.37	.58	.81	1.04	1.26	1.72	2.32	2.99	3.82	5.19
	--	2	2	1	3	4	6	7	7	7	7	7	10	11	20	22
6	.00	.00	.00	.03	.11	.24	.42	.62	.85	1.08	1.32	1.86	2.50	3.25	4.56	5.92
	1	1	4	1	4	4	6	7	7	7	8	9	10	20	20	22
8	.00	.00	.00	.04	.11	.26	.45	.66	.92	1.18	1.44	1.99	2.91	4.19	5.50	6.83
	1	1	1	2	3	6	6	7	8	8	8	10	18	20	20	22
10	.00	.00	.01	.05	.12	.27	.47	.71	.97	1.24	1.50	2.27	3.46	4.77	6.08	7.69
	1	2	1	2	3	6	6	8	8	8	8	18	20	20	20	30
15	.00	.00	.01	.07	.13	.29	.52	.78	1.04	1.33	1.86	3.04	4.26	5.58	7.50	10.10
	2	2	1	2	3	6	8	8	8	16	18	18	20	20	32	42
20	.00	.00	.02	.08	.15	.34	.57	.83	1.24	1.76	2.29	3.45	4.69	6.38	9.00	12.14
	2	2	1	2	3	7	8	8	16	16	16	18	20	30	48	48
25	.00	.00	.02	.08	.17	.39	.62	1.01	1.53	2.06	2.58	3.72	5.01	6.97	10.05	13.59
	2	2	1	2	6	7	8	16	16	16	16	18	30	30	54	54
30	.00	.00	.02	.09	.22	.44	.70	1.22	1.75	2.27	2.80	3.90	5.42	7.70	11.24	14.79
	2	3	2	2	6	7	16	16	16	16	16	18	30	54	54	56
40	.00	.00	.03	.12	.32	.55	1.00	1.52	2.05	2.57	3.10	4.15	5.96	9.23	12.79	16.46
	4	6	2	6	7	7	16	16	16	16	16	18	30	54	56	56
50	.00	.00	.05	.21	.41	.73	1.20	1.73	2.25	2.77	3.30	4.35	6.61	10.15	13.81	17.48
	6	6	3	6	6	14	16	16	16	16	16	16	54	54	56	56
60	.00	.00	.09	.28	.56	.89	1.35	1.87	2.40	2.92	3.45	4.58	7.22	10.82	14.50	18.18
	6	6	6	6	10	10	16	16	16	16	16	30	54	56	56	58
70	.00	.00	.15	.41	.74	1.07	1.47	1.99	2.52	3.04	3.56	4.74	7.64	11.31	14.99	18.79
	6	11	6	10	10	10	14	16	16	16	16	30	56	56	58	58
80	.00	.02	.22	.55	.88	1.21	1.58	2.08	2.61	3.13	3.66	4.87	8.00	11.67	15.46	19.26
	6	4	10	10	10	10	14	16	16	16	16	30	56	56	58	58
90	.00	.05	.32	.65	.98	1.30	1.66	2.16	2.69	3.21	3.73	4.97	8.26	12.03	15.83	19.63
	11	4	10	10	10	10	14	16	16	16	16	30	56	58	58	58
100	.00	.07	.37	.70	1.03	1.36	1.73	2.23	2.75	3.28	3.80	5.05	8.52	12.33	16.13	19.93
	11	6	10	10	10	10	14	16	16	16	16	30	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KISHWAUKEE RIVER NEAR PERRYVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

54405 - KILLBUCK CREEK NEAR MONROE CENTER



LOCATION: In NW¼ SW¼ Sec 19, T42N, R2E, Ogle County, 800 feet downstream from railroad bridge and 800 feet upstream from bridge on Illinois 72, 3.0 miles west of Monroe Center

DRAINAGE AREA: 117 square miles

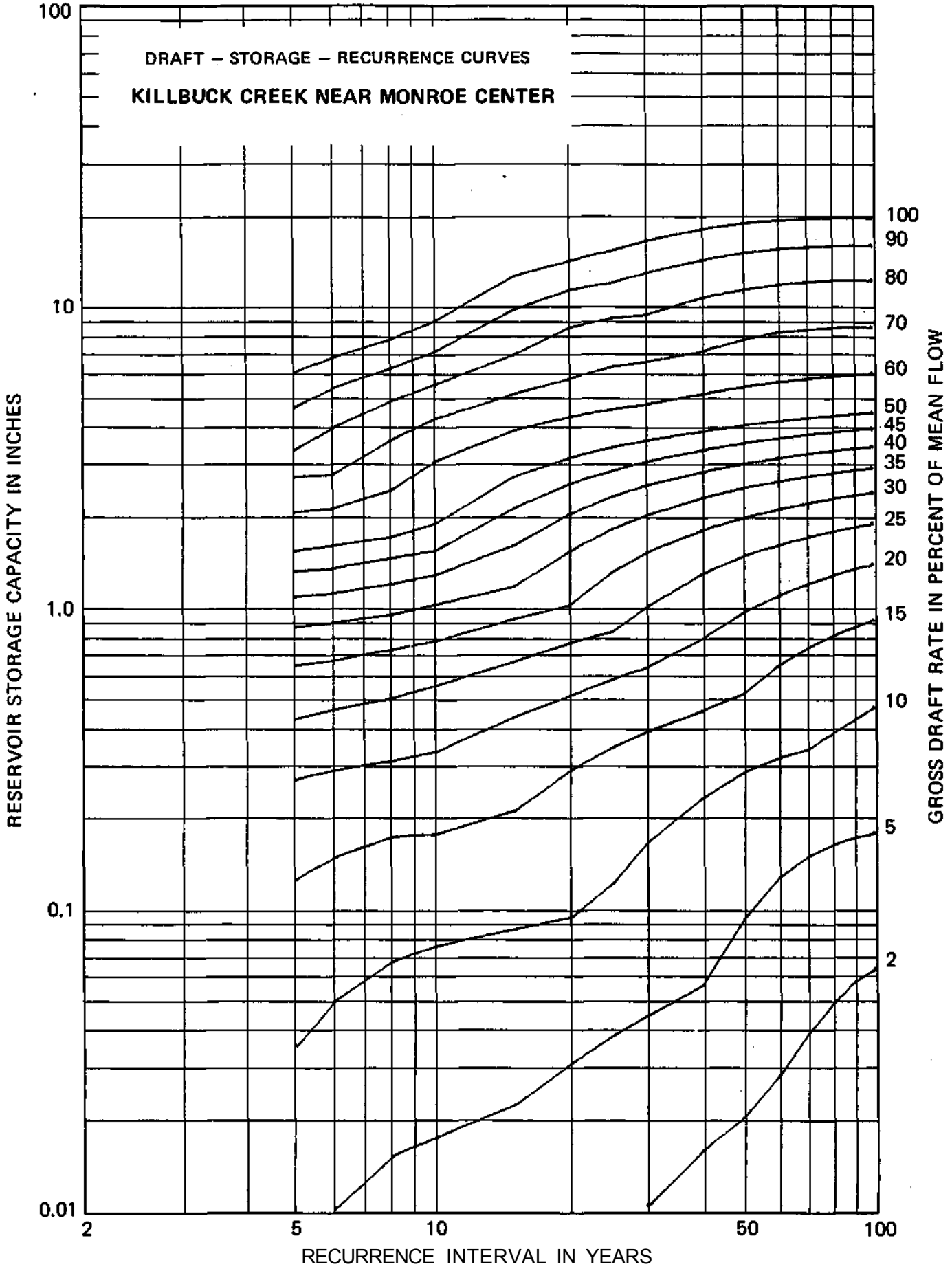
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Fox River at Dayton

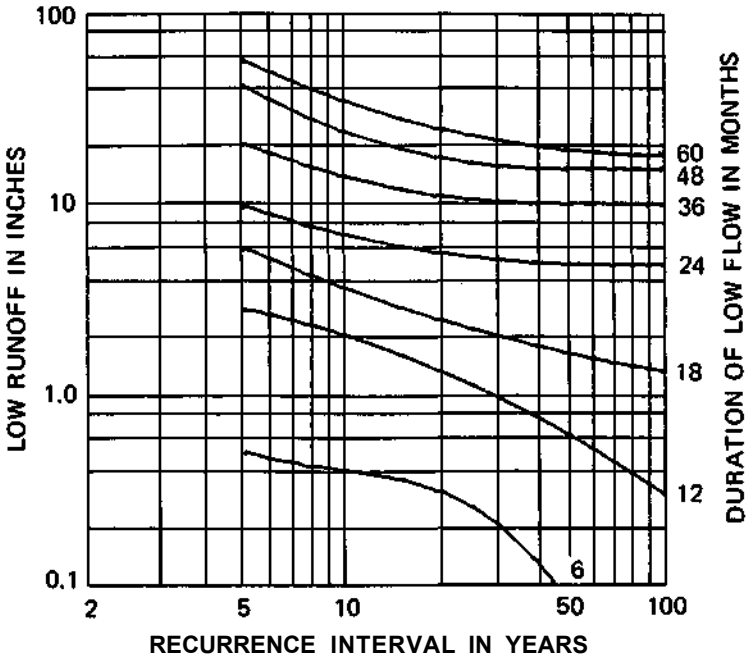
MEAN DISCHARGE: 0.63 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.04	.12	.27	.42	.64	.86	1.08	1.30	1.52	2.05	2.68	3.31	4.58	5.97
	--	1	1	3	5	5	7	7	7	7	7	10	10	10	22	22
6	.00	.01	.05	.15	.29	.46	.66	.88	1.11	1.33	1.59	2.11	2.72	3.90	5.29	6.68
	1	1	3	4	5	6	7	7	7	8	8	9	10	22	22	22
8	.00	.02	.07	.17	.31	.50	.72	.94	1.18	1.44	1.69	2.41	3.55	4.78	6.17	7.66
	1	1	2	4	6	7	7	7	8	8	8	18	18	20	22	30
10	.00	.02	.08	.17	.33	.55	.77	1.02	1.27	1.52	1.87	3.01	4.18	5.44	6.99	8.80
	1	1	2	4	6	7	7	8	8	8	18	18	20	20	28	30
15	.00	.02	.09	.21	.43	.66	.91	1.16	1.59	2.12	2.69	3.82	5.05	6.83	9.61	12.39
	1	2	2	7	7	8	8	8	16	18	18	18	20	44	44	44
20	.01	.03	.09	.29	.51	.76	1.01	1.52	2.02	2.54	3.11	4.25	5.68	8.38	11.16	13.94
	1	2	2	7	7	8	8	16	16	18	18	18	28	44	44	44
25	.01	.04	.12	.34	.58	.83	1.30	1.80	2.31	2.81	3.37	4.51	6.25	9.03	11.81	15.13
	1	2	7	7	8	8	16	16	16	16	18	18	44	44	44	56
30	.01	.04	.17	.39	.63	1.00	1.50	2.01	2.52	3.02	3.55	4.69	6.49	9.27	12.75	16.29
	1	2	7	7	8	16	16	16	16	16	18	18	44	44	56	56
40	.02	.06	.23	.45	.79	1.28	1.79	2.29	2.80	3.30	3.81	5.06	6.99	10.53	14.08	17.74
	2	3	6	8	14	16	16	16	16	16	16	30	56	56	58	58
50	.02	.09	.28	.52	.96	1.47	1.97	2.48	2.98	3.49	3.99	5.36	7.65	11.22	14.89	18.56
	2	6	6	14	14	16	16	16	16	16	16	30	56	58	58	58
60	.03	.13	.32	.64	1.09	1.60	2.10	2.61	3.11	3.62	4.13	5.57	8.12	11.69	15.35	19.02
	4	6	6	14	16	16	16	16	16	16	16	30	54	58	58	58
70	.04	.15	.34	.74	1.19	1.70	2.20	2.71	3.22	3.72	4.23	5.71	8.29	11.95	15.61	19.28
	4	6	6	14	16	16	16	16	16	16	16	30	54	58	58	58
80	.05	.16	.38	.81	1.27	1.78	2.28	2.79	3.29	3.80	4.31	5.82	8.42	12.08	15.75	19.41
	6	6	11	14	16	16	16	16	16	16	16	30	58	58	58	58
90	.06	.17	.43	.87	1.34	1.84	2.35	2.85	3.36	3.86	4.37	5.91	8.47	12.13	15.80	19.46
	6	6	11	14	16	16	16	16	16	16	16	30	58	58	58	58
100	.06	.18	.47	.91	1.39	1.89	2.40	2.90	3.41	3.92	4.42	5.97	8.47	12.13	15.80	19.46
	6	6	14	14	16	16	16	16	16	16	16	30	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KILLBUCK CREEK NEAR MONROE CENTER
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

54420 - KYTE RIVER NEAR FLAGG CENTER



LOCATION: In Sec 18T, 40N, R1E, at bridge on county highway, 2 miles west of Flagg Center

DRAINAGE AREA: 125 square miles

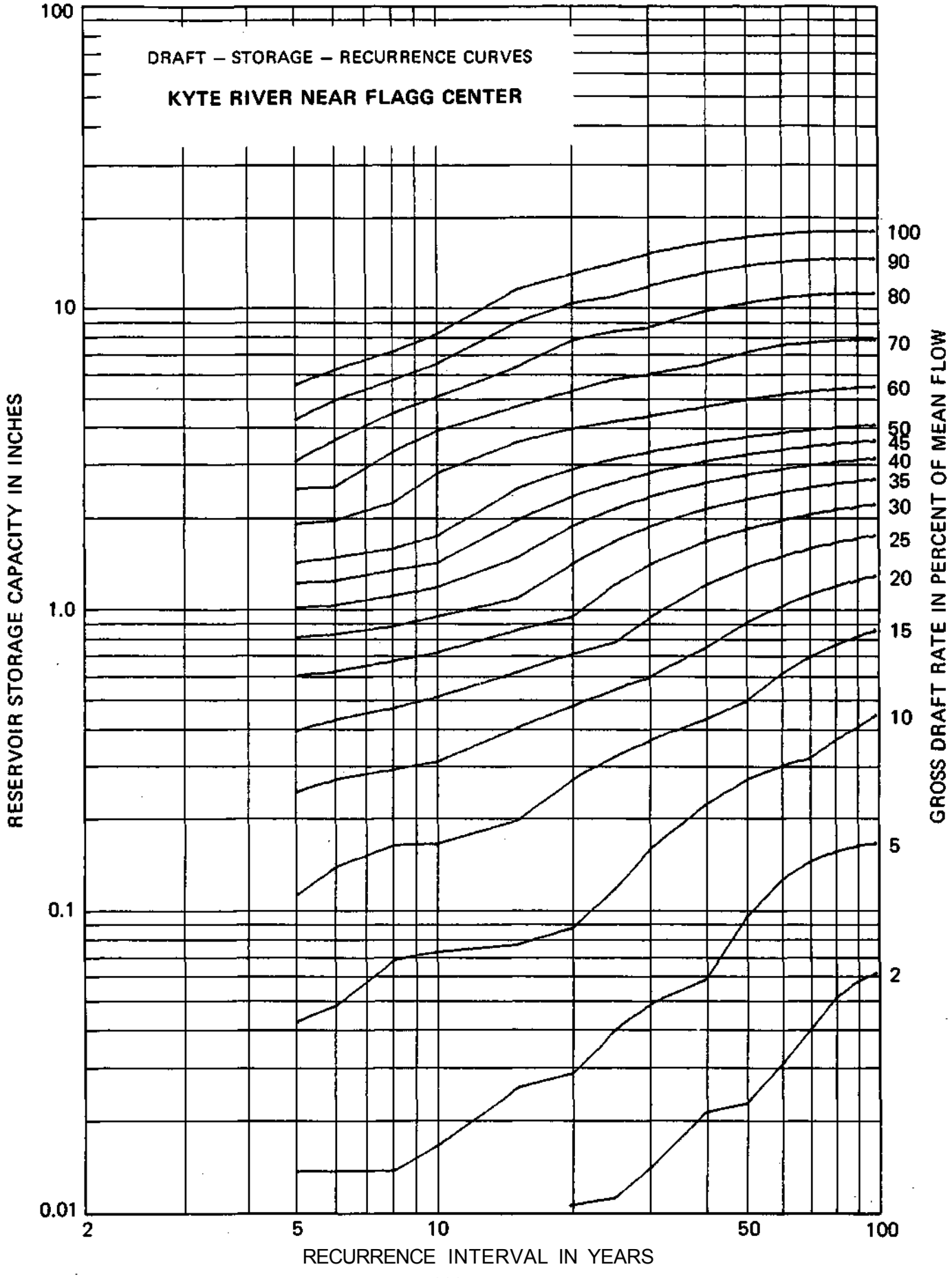
ACTUAL FLOW DATA: Oct 1939 to Sep 1971

INDEX STATION: Fox River at Dayton

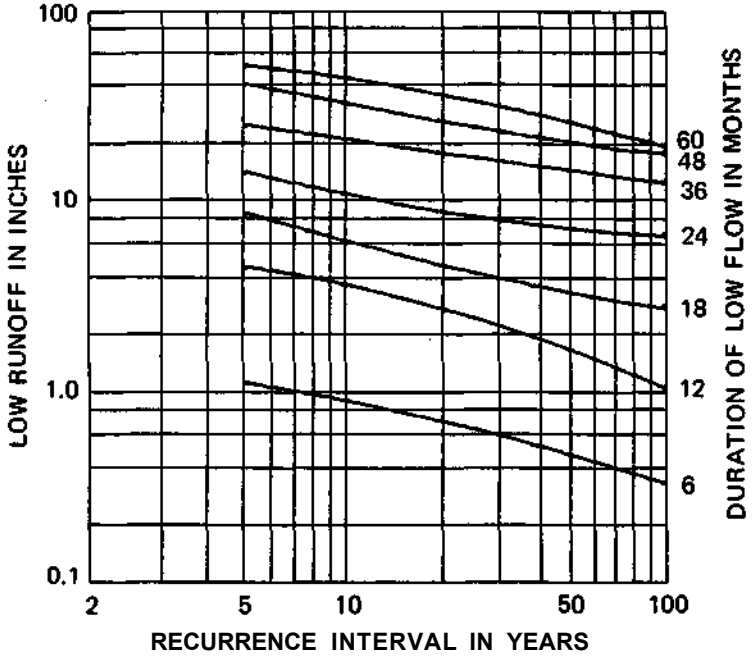
MEAN DISCHARGE: 0.58 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.01	.04	.11	.24	.39	.59	.79	.99	1.19	1.39	1.87	2.45	3.02	4.17	5.43
	---	1	1	3	5	7	7	7	7	7	7	10	10	10	22	22
6	.00	.01	.05	.14	.26	.42	.61	.81	1.01	1.22	1.45	1.92	2.48	3.55	4.82	6.08
	1	1	2	4	5	6	7	7	7	8	8	9	10	22	22	22
8	.00	.01	.07	.16	.28	.46	.65	.86	1.08	1.31	1.54	2.19	3.23	4.35	5.62	6.97
	1	1	2	4	6	6	7	7	8	8	8	18	18	22	22	30
10	.00	.02	.07	.16	.30	.50	.70	.92	1.16	1.39	1.70	2.74	3.80	4.95	6.36	8.02
	1	1	2	4	6	7	7	8	8	8	18	18	20	20	28	30
15	.01	.03	.08	.19	.39	.60	.83	1.06	1.45	1.93	2.45	3.48	4.60	6.21	8.75	11.28
	1	1	2	7	7	8	8	8	16	18	18	18	20	44	44	44
20	.01	.03	.09	.26	.47	.69	.93	1.38	1.85	2.31	2.83	3.87	5.17	7.62	10.16	12.69
	1	2	2	7	7	8	8	16	16	18	18	18	28	44	44	44
25	.01	.04	.12	.32	.53	.76	1.19	1.65	2.11	2.57	3.07	4.11	5.68	8.22	10.75	13.77
	1	2	7	7	8	8	16	16	16	16	18	18	44	44	44	56
30	.01	.05	.16	.36	.58	.92	1.38	1.84	2.30	2.76	3.24	4.28	5.90	8.43	11.61	14.83
	2	2	7	7	8	16	16	16	16	16	18	18	44	44	56	56
40	.02	.06	.22	.42	.73	1.18	1.64	2.10	2.56	3.02	3.48	4.61	6.37	9.60	12.83	16.17
	2	3	6	8	14	16	16	16	16	16	16	30	56	56	58	58
50	.02	.10	.27	.49	.89	1.35	1.81	2.27	2.73	3.19	3.66	4.88	6.99	10.24	13.58	16.92
	2	6	6	14	14	16	16	16	16	16	16	30	56	58	58	58
60	.03	.13	.30	.60	1.01	1.47	1.93	2.40	2.86	3.32	3.78	5.07	7.42	10.67	14.01	17.35
	4	6	6	14	16	16	16	16	16	16	16	30	54	58	58	58
70	.04	.14	.32	.69	1.11	1.57	2.03	2.49	2.95	3.41	3.87	5.20	7.57	10.91	14.26	17.60
	6	6	6	14	16	16	16	16	16	16	16	30	58	58	58	58
80	.05	.16	.36	.75	1.18	1.64	2.10	2.56	3.02	3.48	3.94	5.30	7.71	11.05	14.39	17.73
	6	6	11	14	16	16	16	16	16	16	16	30	58	58	58	58
90	.06	.16	.40	.81	1.24	1.70	2.16	2.62	3.08	3.54	4.00	5.37	7.76	11.10	14.44	17.78
	6	6	14	14	16	16	16	16	16	16	16	30	58	58	58	58
100	.06	.17	.45	.85	1.28	1.75	2.21	2.67	3.13	3.59	4.05	5.43	7.76	11.10	14.44	17.78
	6	6	14	14	16	16	16	16	16	16	16	30	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
KYTE RIVER NEAR FLAGG CENTER
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
2

55517 - BLACKBERRY CREEK NEAR YORKVILLE



LOCATION: In SE¼ NW¼ Sec 21, T37N, R7E, Kendall County, 300 feet upstream from bridge on State Highway 47, 2 miles north of Yorkville

DRAINAGE AREA: 70.2 square miles

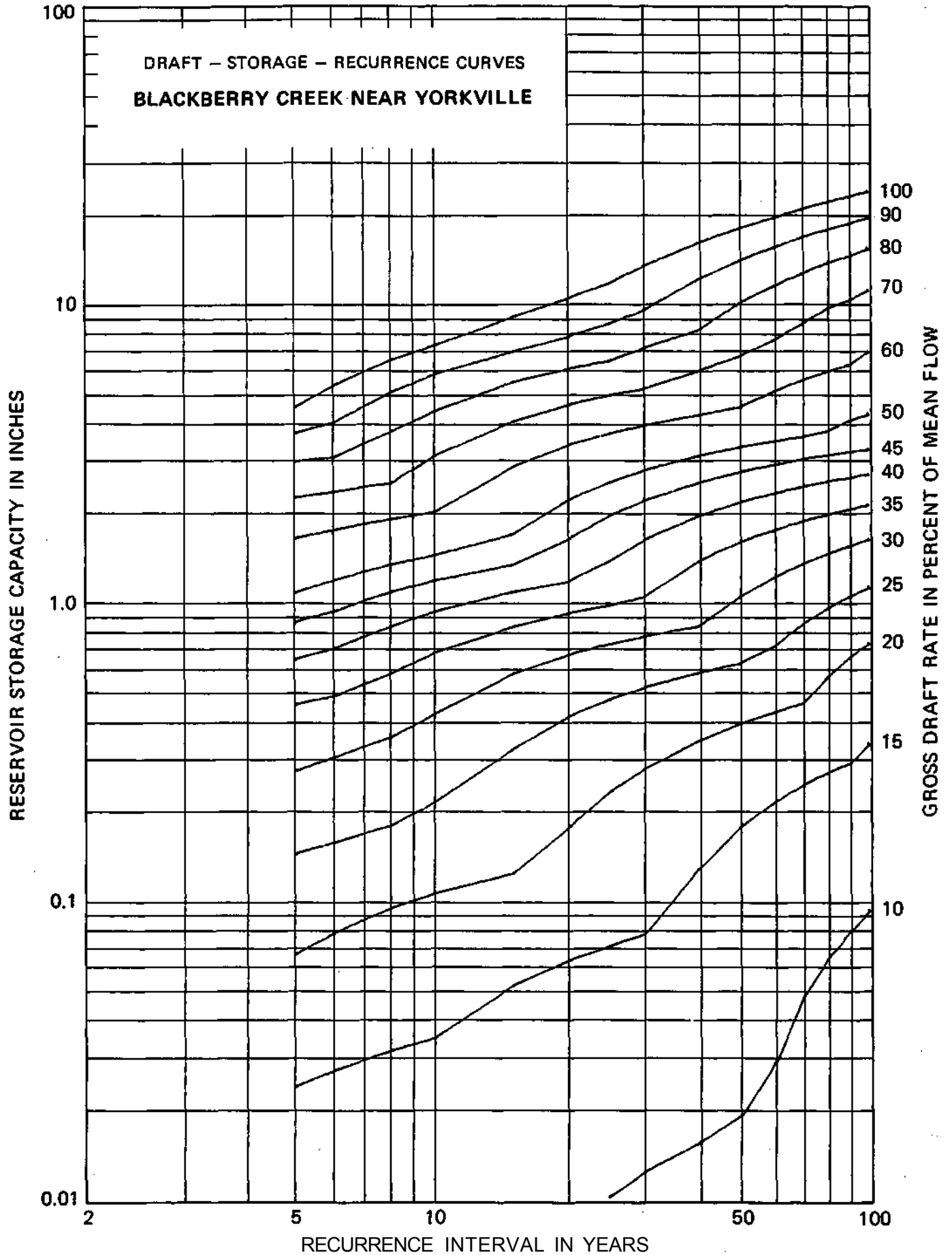
ACTUAL FLOW DATA: Oct 1960 to Oct 1978

INDEX STATION: Fox River at Dayton

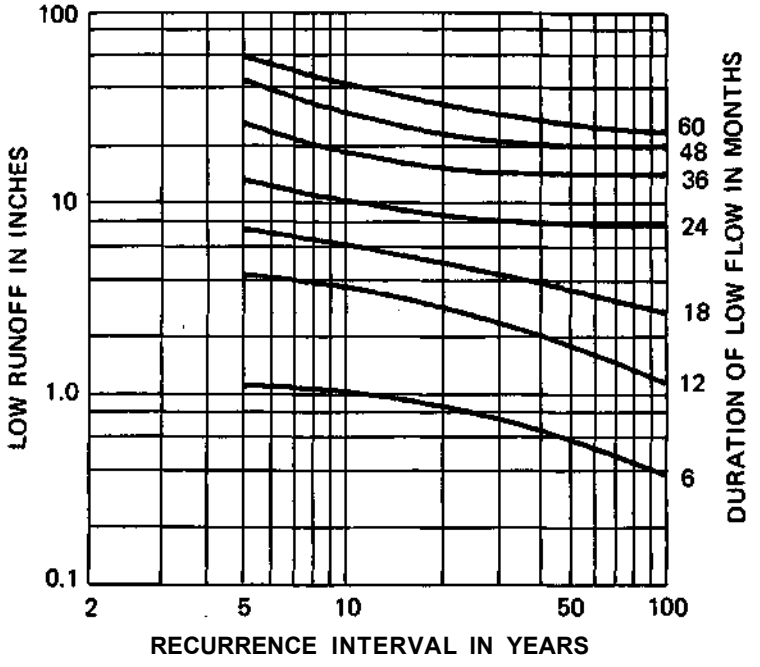
MEAN DISCHARGE: 0.63 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.02	.07	.14	.27	.45	.63	.85	1.06	1.61	2.20	2.91	3.62	4.45
	--	1	1	1	2	3	5	5	6	6	6	8	9	10	10	18
6	.00	.00	.00	.03	.08	.15	.30	.48	.69	.92	1.17	1.71	2.30	3.00	3.94	5.22
	1	1	2	1	2	3	5	5	6	7	7	8	9	10	18	18
8	.00	.00	.00	.03	.09	.18	.35	.57	.82	1.07	1.31	1.87	2.47	3.67	4.95	6.35
	1	1	2	1	2	3	5	7	7	7	7	8	9	18	18	20
10	.00	.00	.00	.03	.10	.21	.42	.67	.91	1.16	1.41	1.97	3.04	4.32	5.70	7.13
	1	1	2	1	2	5	7	7	7	7	7	8	16	18	20	20
15	.00	.00	.00	.05	.12	.32	.57	.82	1.07	1.31	1.66	2.80	3.98	5.36	6.79	8.87
	1	1	1	2	2	7	7	7	7	7	16	16	18	20	20	42
20	.00	.00	.01	.06	.17	.41	.66	.90	1.15	1.60	2.17	3.31	4.51	5.94	7.62	10.22
	1	2	1	2	6	7	7	7	7	16	16	16	20	20	30	42
25	.00	.00	.01	.07	.23	.47	.72	.97	1.36	1.93	2.50	3.64	4.87	6.34	8.47	11.54
	1	2	1	2	6	7	7	7	16	16	16	16	20	30	30	54
30	.00	.00	.01	.08	.27	.51	.76	1.03	1.60	2.17	2.74	3.88	5.12	7.01	9.37	13.22
	2	2	1	3	6	7	7	16	16	16	16	16	20	30	54	54
40	.00	.00	.02	.13	.34	.57	.82	1.36	1.93	2.50	3.07	4.21	5.87	8.06	11.90	15.75
	2	3	1	6	6	7	7	16	16	16	16	16	30	54	54	54
50	.00	.00	.02	.18	.39	.62	1.04	1.58	2.15	2.72	3.29	4.46	6.60	9.92	13.77	17.68
	2	6	2	6	6	7	14	16	16	16	16	30	30	54	54	56
60	.00	.00	.03	.21	.43	.71	1.21	1.74	2.31	2.88	3.45	5.03	7.50	11.34	15.23	19.22
	4	6	3	6	6	11	14	16	16	16	16	30	54	54	56	56
70	.00	.00	.05	.24	.46	.84	1.34	1.86	2.43	3.00	3.57	5.49	8.50	12.49	16.48	20.55
	6	6	4	6	6	11	14	16	16	16	16	30	56	56	56	60
80	.00	.00	.07	.27	.56	.95	1.45	1.96	2.53	3.10	3.73	5.87	9.54	13.53	17.51	21.68
	6	6	4	6	11	11	14	16	16	16	30	30	56	56	56	60
90	.00	.00	.08	.29	.65	1.04	1.54	2.04	2.61	3.18	4.05	6.19	10.16	14.29	18.42	22.65
	6	6	4	6	11	11	14	16	16	16	30	30	58	58	58	60
100	.00	.00	.09	.33	.73	1.12	1.61	2.11	2.67	3.24	4.25	6.86	10.99	15.12	19.25	23.50
	6	6	6	11	11	11	14	14	16	16	30	58	58	58	58	60


DRAFT – STORAGE – RECURRENCE CURVES
BLACKBERRY CREEK NEAR YORKVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10

55525 - FOX RIVER AT DAYTON



LOCATION: In SE¼ Sec 29, T34N, R4E, La Salle County, on right bank in tailwater of plant of north counties Hydro-Electric Co., in Dayton, 5.6 miles upstream from mouth

DRAINAGE AREA: 2642 square miles

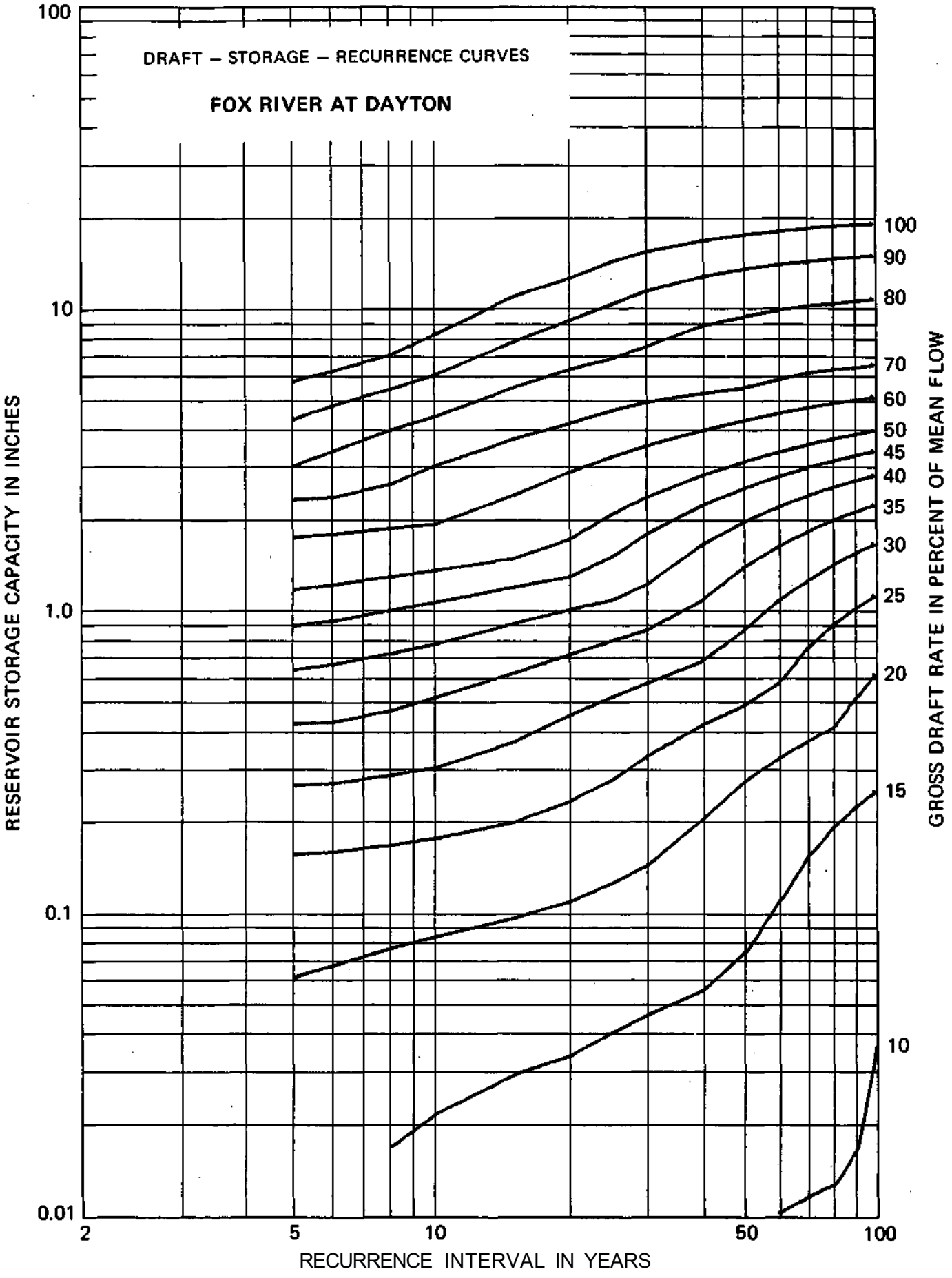
ACTUAL FLOW DATA: Nov 1914 to Oct 1978
Prior to April 1925, published as "At Wedron."

INDEX STATION: None

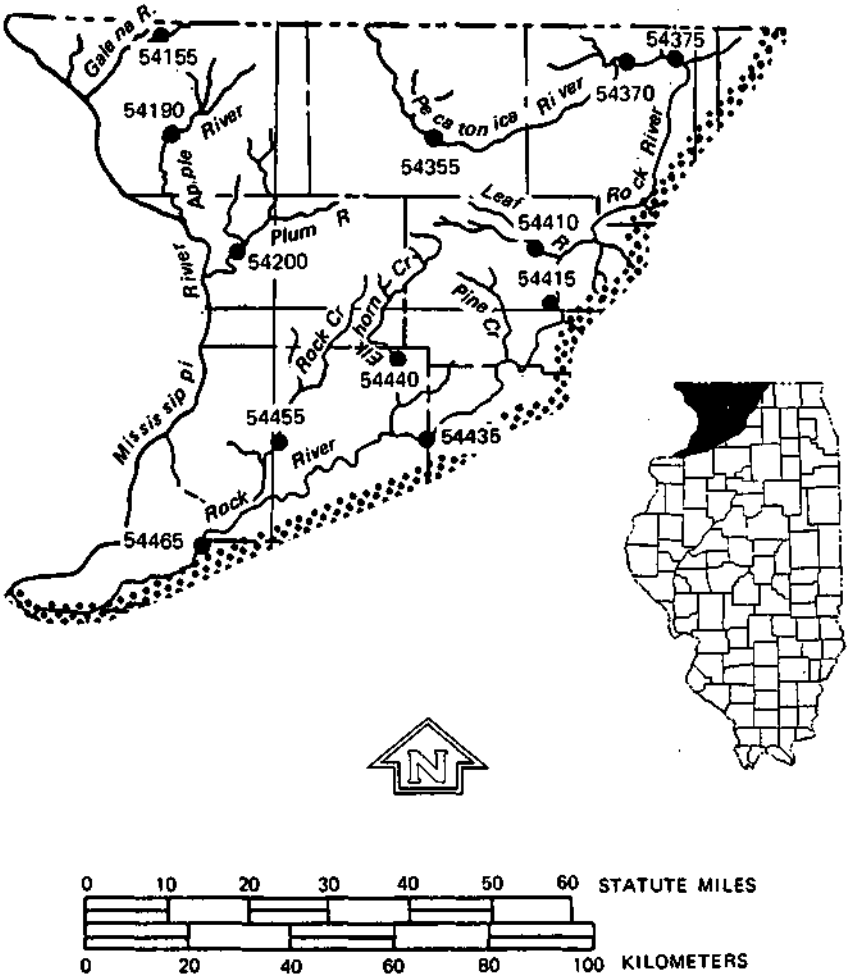
MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.06	.15	.26	.42	.63	.88	1.16	1.72	2.29	2.98	4.26	5.68
	--	--	--	1	2	3	3	5	7	7	8	8	8	18	18	20
6	.00	.00	.00	.01	.07	.16	.26	.42	.65	.91	1.19	1.76	2.33	3.33	4.69	6.11
	--	--	--	1	2	3	4	5	7	8	8	8	8	18	20	20
8	.00	.00	.00	.02	.08	.16	.28	.46	.71	.98	1.27	1.83	2.58	3.89	5.31	6.88
	--	--	--	1	2	3	4	7	7	8	8	8	18	20	20	30
10	.00	.00	.00	.02	.08	.17	.30	.51	.76	1.05	1.33	1.90	2.97	4.33	5.94	8.07
	--	--	--	1	2	3	4	7	8	8	8	8	18	20	30	30
15	.00	.00	.00	.03	.10	.20	.36	.61	.89	1.17	1.46	2.37	3.65	5.40	7.64	10.75
	--	--	--	1	2	4	7	7	8	8	8	18	18	30	42	44
20	.00	.00	.00	.03	.11	.23	.45	.70	.99	1.27	1.70	2.83	4.10	6.21	8.98	12.30
	--	--	--	1	3	4	7	8	8	8	16	16	18	30	44	54
25	.00	.00	.00	.04	.12	.27	.51	.78	1.07	1.49	2.05	3.19	4.54	6.74	10.14	13.97
	--	--	--	2	3	6	7	8	8	16	16	16	30	42	54	54
30	.00	.00	.00	.05	.14	.33	.57	.85	1.20	1.77	2.34	3.48	4.84	7.38	11.21	15.05
	--	--	1	2	4	6	7	8	16	16	16	16	30	54	54	54
40	.00	.00	.01	.06	.20	.41	.67	1.06	1.63	2.20	2.77	3.90	5.18	8.62	12.45	16.39
	--	--	1	3	6	6	8	14	16	16	16	16	30	54	54	56
50	.00	.00	.01	.07	.27	.48	.85	1.37	1.94	2.51	3.08	4.22	5.41	9.25	13.23	17.21
	--	--	1	3	6	6	14	16	16	16	16	16	54	56	56	56
60	.00	.00	.01	.11	.32	.57	1.07	1.61	2.18	2.75	3.32	4.46	5.76	9.73	13.71	17.69
	--	--	1	6	6	14	14	16	16	16	16	16	56	56	56	56
70	.00	.00	.01	.15	.37	.74	1.24	1.81	2.38	2.94	3.51	4.65	6.05	10.03	14.00	18.11
	--	--	1	6	6	14	14	16	16	16	16	16	56	56	56	58
80	.00	.00	.01	.19	.41	.88	1.40	1.97	2.54	3.10	3.67	4.81	6.21	10.19	14.31	18.43
	--	--	1	6	11	14	16	16	16	16	16	16	56	56	58	58
90	.00	.00	.02	.22	.51	1.00	1.53	2.10	2.67	3.24	3.81	4.94	6.30	10.42	14.54	18.66
	--	--	3	6	14	14	16	16	16	16	16	16	56	58	58	58
100	.00	.00	.04	.25	.61	1.10	1.65	2.22	2.78	3.35	3.92	5.06	6.46	10.58	14.70	18.82
	--	--	6	6	14	14	16	16	16	16	16	16	58	58	58	58


DRAFT – STORAGE – RECURRENCE CURVES
FOX RIVER AT DAYTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

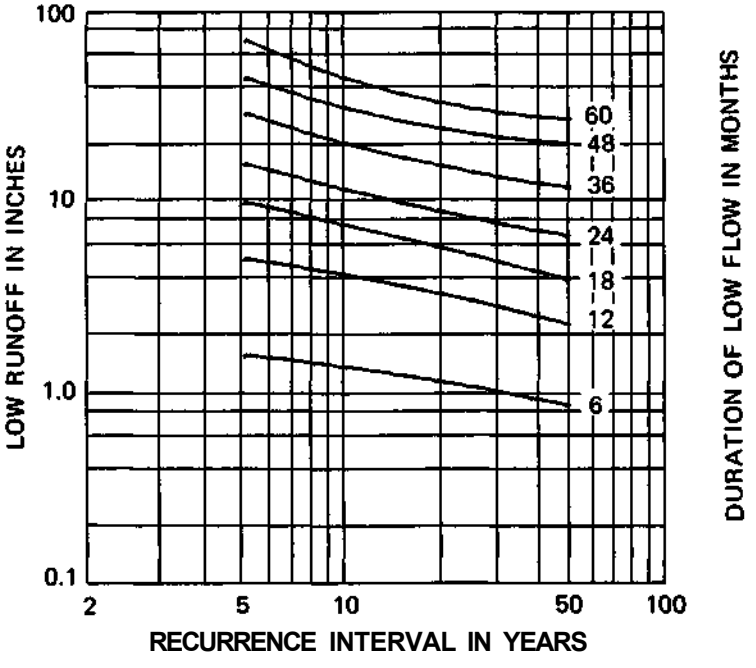
REGION 11


Galena R.
54155
54190
River
Apple
River
Mississippi
Plum
R
54200
Rock Cr
Milkhorn Cr
54440
54455
Rock
River
54465
54435
Pine Cr
Leaf
R
54410
54415
Pecatonica River
54355
54375
54370
Rock River
N
0 10 20 30 40 50 60 STATUTE MILES
0 20 40 60 80 100 KILOMETERS

USGS Gage No.	Name of Station	Drainage Area (sq mi)
54155	East Fork Galena River at Council Hill	20.1
54190	Apple River near Hanover	247
54200	Plum River below Carroll Creek near Savanna	231
54355	Pecatonica River at Freeport	1326
54370	Pecatonica River at Shirland	2540
54375	Rock River at Rockton	6363
54410	Leaf River at Leaf River	103
54415	Rock River at Oregon	8120
54435	Rock River at Como	8755
54440	Elkhorn Creek near Penrose	146
54455	Rock Creek near Morrison	164
54465	Rock River near Joslin	9551

Gage No.	Index Station	Historical Record Period	Historical Record Years	Extended Record Period	Extended Record Years	Mean Flow, inches/month
54155	54190	1939-1968	29	1934-1978	44	.74
54190	-	1934-1978	44	-	-	.76
54200	54190	1940-1977	37	1934-1978	44	.71
54355	-	1914-1978	64	-	-	.76
54370	54355	1939-1958	19	1914-1978	64	.75
54375	54435	1939-1978	39	1914-1978	64	.69
54410	54440	1939-1958	19	1939-1978	39	.72
54415	54435	1939-1949	10	1914-1971	57	.66
54435	-	1914-1971	57	-	-	.66
54440	-	1939-1978	39	-	-	.73
54455	54440	1942-1958	16	1939-1978	39	.77
54465	15535	1939-1978	39	1914-1978	64	.71

54155 - EAST FORK, GALENA RIVER AT COUNCIL HILL



LOCATION: In W½ Sec 31, T29N, R2E, Jo Daviess County, at Council Hill, and 6.0 miles northeast of Galena

DRAINAGE AREA: 20.1 square miles

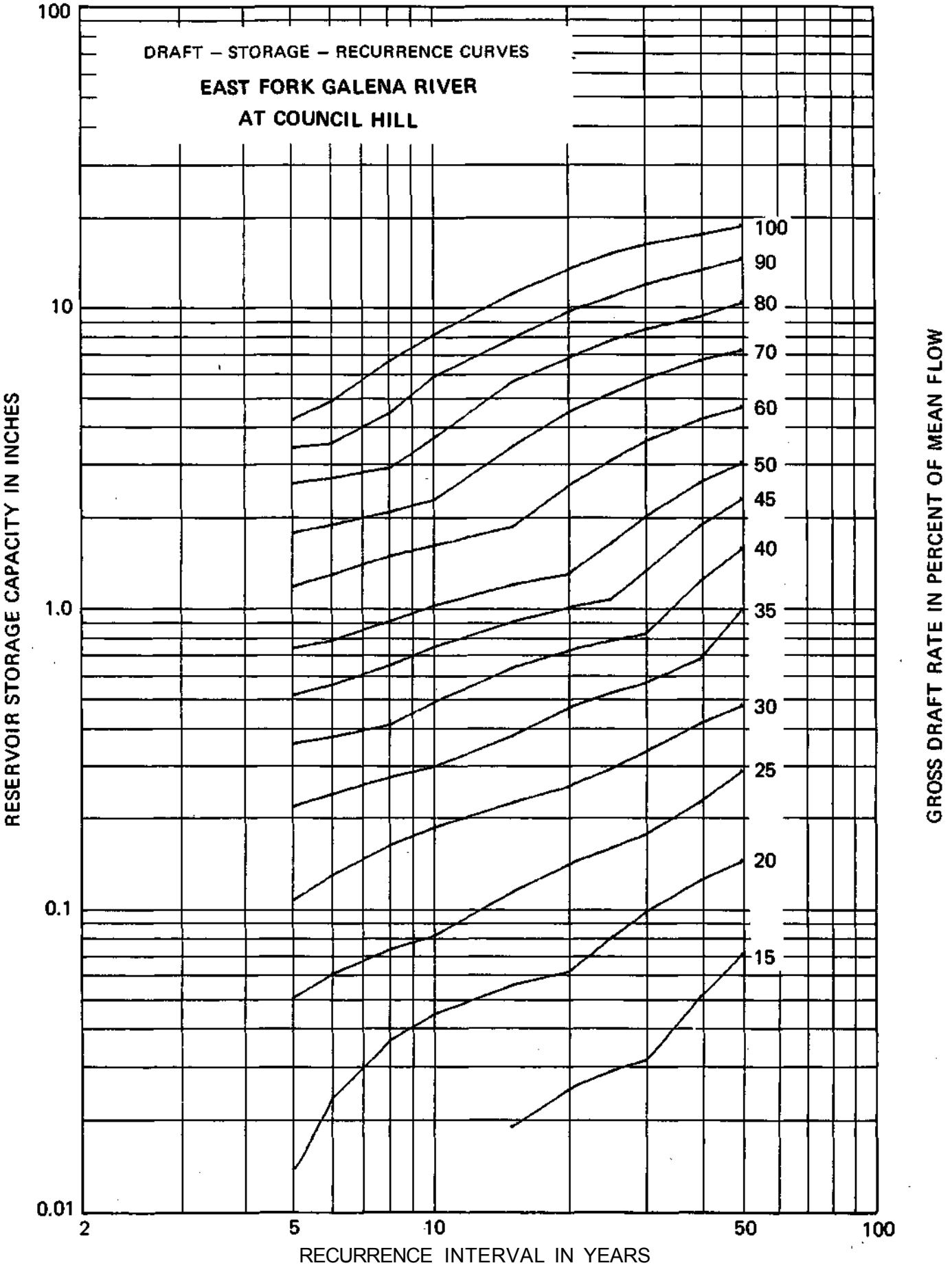
ACTUAL FLOW DATA: Sep 1939 to Sep 1968

INDEX STATION: Apple River near Hanover

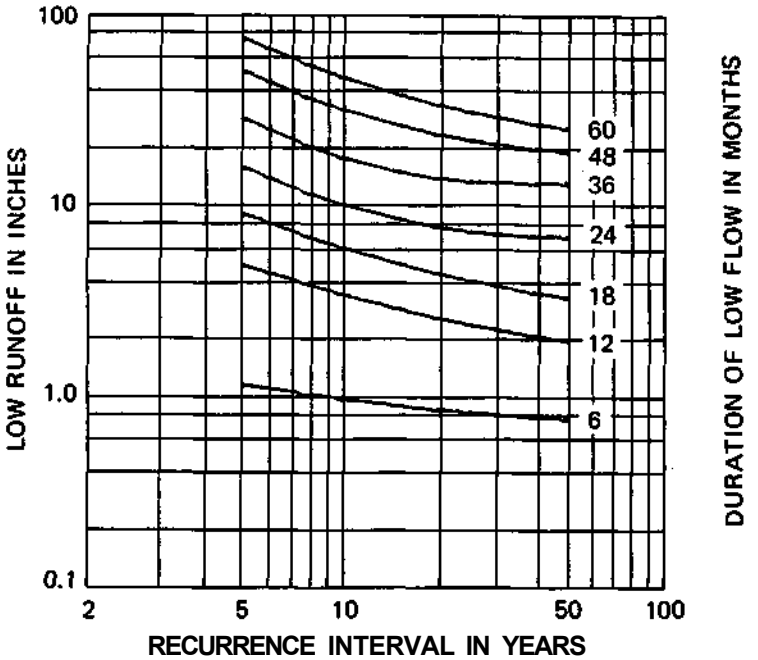
MEAN DISCHARGE: 0.74 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.01	.05	.11	.22	.35	.51	.73	1.17	1.76	2.57	3.38	4.19
	11	11	11	11	1	1	3	3	4	6	6	6	11	11	11	11
6	.00	.00	.00	.00	.02	.06	.13	.24	.37	.55	.78	1.29	1.87	2.68	3.49	4.83
	12	12	12	18	1	1	3	3	4	6	6	8	8	11	11	22
8	.00	.00	.00	.00	.04	.07	.16	.27	.41	.64	.90	1.48	2.07	2.89	4.40	6.59
	12	18	20	20	1	1	3	3	6	7	7	8	11	12	22	30
10	.00	.00	.00	.01	.04	.08	.18	.30	.48	.74	1.02	1.60	2.27	3.64	5.85	8.05
	20	20	20	1	1	1	3	3	7	7	8	8	12	30	30	30
15	.00	.00	.00	.02	.06	.11	.22	.38	.63	.90	1.20	1.86	3.43	5.64	7.84	11.07
	20	20	24	1	1	3	3	7	7	8	8	18	30	30	30	50
20	.00	.00	.00	.03	.06	.14	.25	.46	.72	1.01	1.30	2.53	4.46	6.74	9.63	13.31
	24	24	24	1	1	3	4	7	7	8	8	20	30	36	50	50
25	.00	.00	.00	.03	.08	.16	.29	.52	.78	1.07	1.64	3.09	5.15	7.75	10.80	15.06
	24	24	24	1	2	3	4	7	7	12	18	28	28	36	50	58
30	.00	.00	.00	.03	.10	.18	.33	.57	.83	1.33	2.02	3.58	5.79	8.44	11.91	16.18
	24	24	24	1	2	4	6	7	7	18	20	28	36	36	58	58
40	.00	.00	.00	.05	.13	.23	.42	.68	1.23	1.89	2.62	4.24	6.69	9.33	13.30	17.42
	24	24	24	2	2	4	6	14	16	20	20	28	36	36	56	56
50	.00	.00	.00	.07	.15	.29	.48	1.00	1.59	2.32	3.05	4.66	7.24	10.42	14.54	18.66
	24	24	24	2	2	5	6	16	16	20	20	34	36	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
EAST FORK GALENA RIVER
AT COUNCIL HILL
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20
15

54190 - APPLE RIVER NEAR HANOVER



LOCATION: In NE¼ NW¼ Sec 16, T26N, R2E, Jo Daviess County on right bank 0.3 miles southwest of Hanover

DRAINAGE AREA: 247 square miles

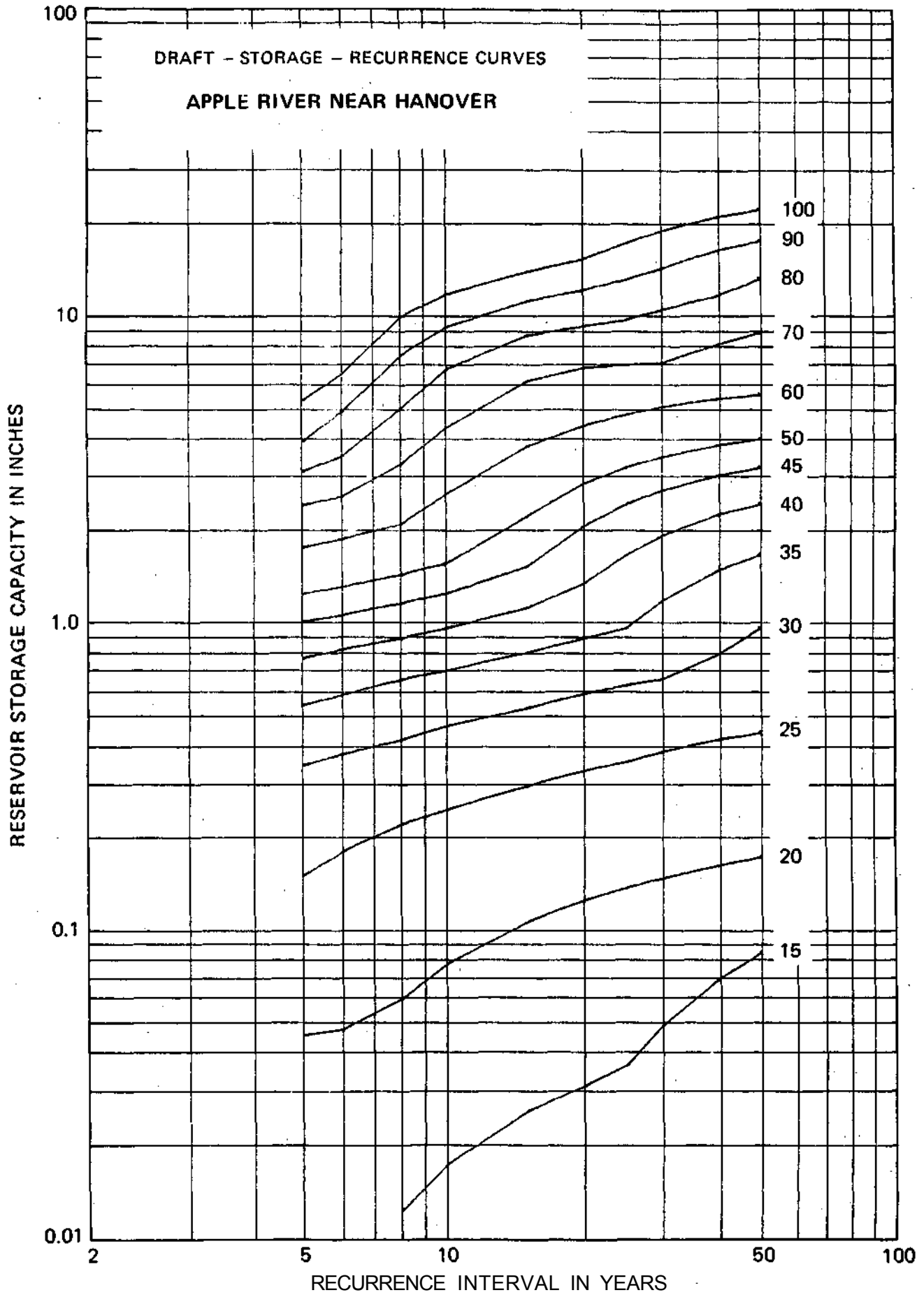
ACTUAL FLOW DATA: Oct 1934 to Oct 1978

INDEX STATION: None

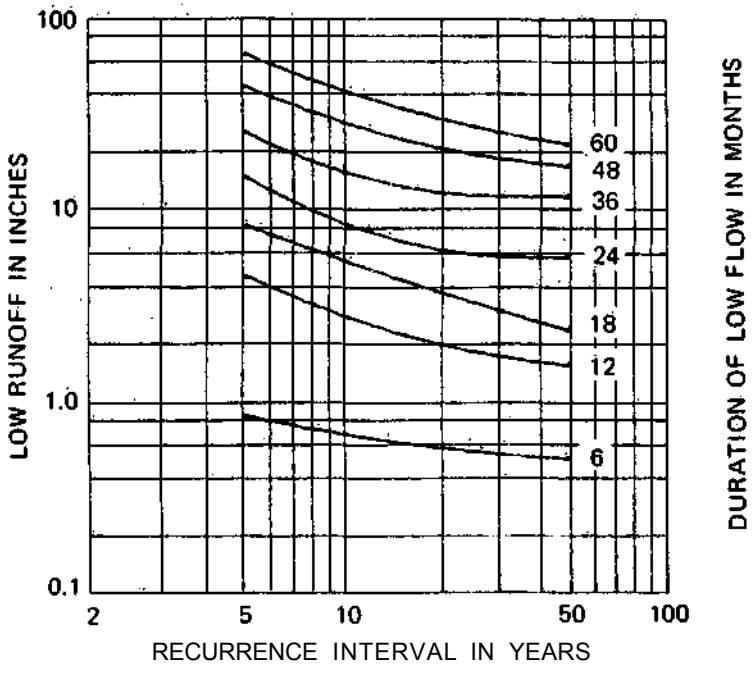
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.04	.15	.34	.53	.75	.98	1.20	1.71	2.34	3.03	3.82	5.19
	--	--	--	--	2	5	5	5	6	6	6	7	9	9	18	18
6	.00	.00	.00	.00	.05	.18	.37	.57	.80	1.03	1.27	1.82	2.50	3.40	4.77	6.33
	--	--	--	1	2	5	5	6	6	6	7	9	9	18	18	32
8	.00	.00	.00	.01	.06	.22	.41	.64	.87	1.12	1.39	2.04	3.21	4.90	7.24	9.68
	--	--	--	1	3	5	6	6	6	7	7	10	18	30	32	32
10	.00	.00	.00	.02	.08	.24	.45	.68	.93	1.21	1.51	2.56	4.22	6.53	8.97	11.40
	--	--	--	1	3	5	6	6	7	8	8	18	30	32	32	32
15	.00	.00	.00	.03	.10	.29	.52	.78	1.09	1.48	2.16	3.67	5.98	8.42	10.85	13.47
	--	--	--	1	3	6	6	8	8	18	18	20	32	32	32	38
20	.00	.00	.00	.03	.12	.33	.58	.87	1.30	2.01	2.77	4.29	6.62	9.05	11.79	14.83
	--	--	--	1	3	6	7	8	18	20	20	20	32	32	40	40
25	.00	.00	.00	.04	.14	.35	.62	.94	1.62	2.39	3.15	4.69	6.75	9.49	12.76	16.80
	--	--	--	2	3	7	7	11	20	20	20	22	32	40	44	58
30	.00	.00	.00	.05	.15	.38	.64	1.15	1.88	2.64	3.40	4.97	6.89	10.24	13.86	18.42
	--	--	--	2	3	7	7	18	20	20	20	22	44	44	60	60
40	.00	.00	.00	.07	.16	.41	.77	1.44	2.20	2.96	3.72	5.28	7.91	11.34	15.91	20.47
	--	--	1	2	3	7	16	20	20	20	20	22	42	60	60	60
50	.00	.00	.01	.08	.17	.43	.94	1.63	2.39	3.16	3.92	5.45	8.68	12.85	17.11	21.66
	--	--	2	2	3	7	16	20	20	20	20	22	54	56	56	60


DRAFT – STORAGE – RECURRENCE CURVES
APPLE RIVER NEAR HANOVER
100
10
1.0
0.1
0.01
RESERVOIR STORAGE CAPACITY IN INCHES
100
90
80
70
60
50
45
40
35
30
25
20
15
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS

54200 -PLUM RIVER BELOW CARROLL CREEK, NEAR SAVANNA



LOCATION: In NE¼ SW¼ Sec 31, T25N, R4E, Carroll County, 0.7 miles upstream from Camp Creek, 2.6 miles downstream from Carroll Creek arid 3.5 miles northeast of Savanna

DRAINAGE AREA: 231 square miles

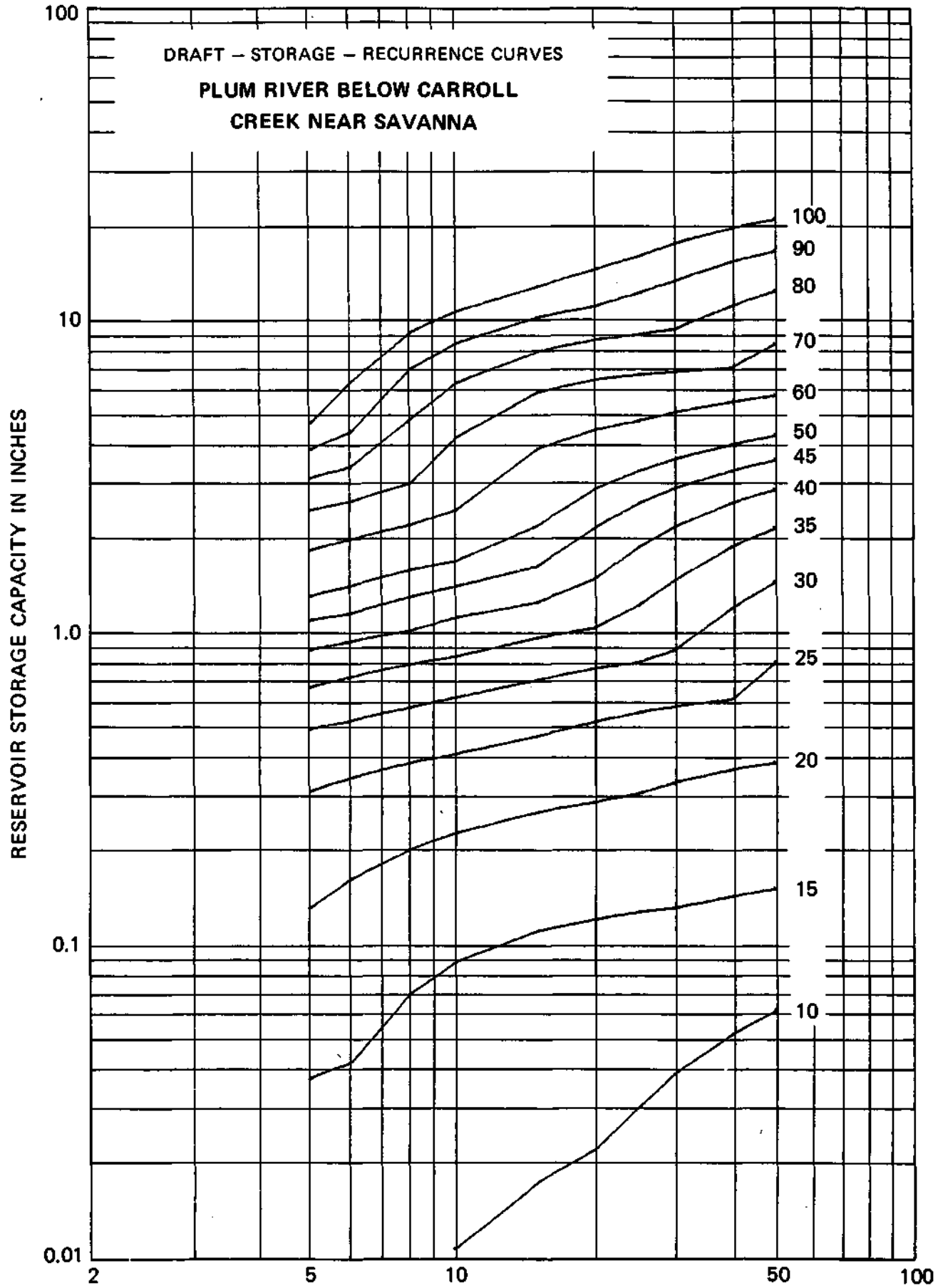
ACTUAL FLOW DATA: Oct 1940 to Sep 1978

INDEX STATION: Apple River near Hanover

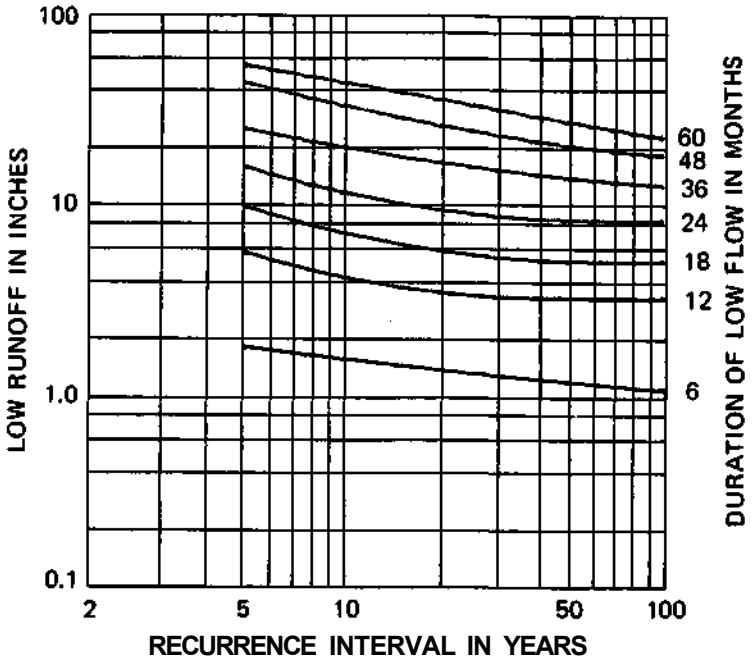
MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.04	.13	.31	.48	.66	.87	1.08	1.29	1.81	2.43	3.06	3.81	4.63
	11	11	11	2	5	5	5	5	6	6	6	8	9	9	11	18
6	.00	.00	.00	.04	.16	.34	.51	.71	.92	1.13	1.39	1.95	2.58	3.34	4.32	6.21
	12	12	1	2	5	5	5	6	6	6	8	8	9	11	20	30
8	.00	.00	.01	.07	.20	.37	.57	.78	1.00	1.28	1.56	2.17	2.95	4.75	6.87	8.99
	12	18	1	3	5	5	6	6	8	8	8	11	11	30	30	30
10	.00	.00	.01	.09	.22	.40	.61	.83	1.10	1.38	1.67	2.42	4.16	6.21	8.33	10.49
	20	20	1	3	5	5	6	7	8	8	8	11	28	30	30	32
15	.00	.00	.02	.11	.26	.46	.70	.95	1.24	1.61	2.17	3.84	5.82	7.85	10.07	12.61
	20	20	1	3	5	6	7	8	8	11	20	28	28	30	32	36
20	.00	.00	.02	.12	.28	.51	.76	1.02	1.47	2.13	2.84	4.41	6.39	8.56	10.96	14.29
	24	24	1	3	5	7	7	11	16	20	20	28	28	32	40	52
25	.00	.00	.03	.13	.30	.55	.80	1.22	1.86	2.57	3.27	4.74	6.65	8.91	12.10	15.86
	24	24	2	4	7	7	7	16	20	20	20	22	32	32	52	60
30	.00	.00	.04	.13	.33	.58	.87	1.46	2.17	2.87	3.58	5.06	6.80	9.29	13.24	17.48
	24	24	2	4	7	7	16	20	20	20	20	22	32	52	60	60
40	.00	.00	.05	.14	.36	.61	1.19	1.87	2.58	3.29	3.99	5.46	7.02	11.05	15.29	19.53
	24	24	2	5	7	7	18	20	20	20	20	22	22	60	60	60
50	.00	.00	.06	.15	.38	.80	1.44	2.15	2.85	3.56	4.26	5.72	8.36	12.32	16.53	20.77
	24	1	2	5	7	18	20	20	20	20	20	22	56	56	60	60


DRAFT – STORAGE – RECURRENCE CURVES
PLUM RIVER BELOW CARROLL
CREEK NEAR SAVANNA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10

54355 - PECATONICA RIVER AT FREEPORT



LOCATION: In SE¼ Sec 30, T27N, R8E, Stephenson County on property of Commonwealth Edison Company at Freeport, 0.3 miles upstream from Stephenson Street bridge.

DRAINAGE AREA: 1326 square miles

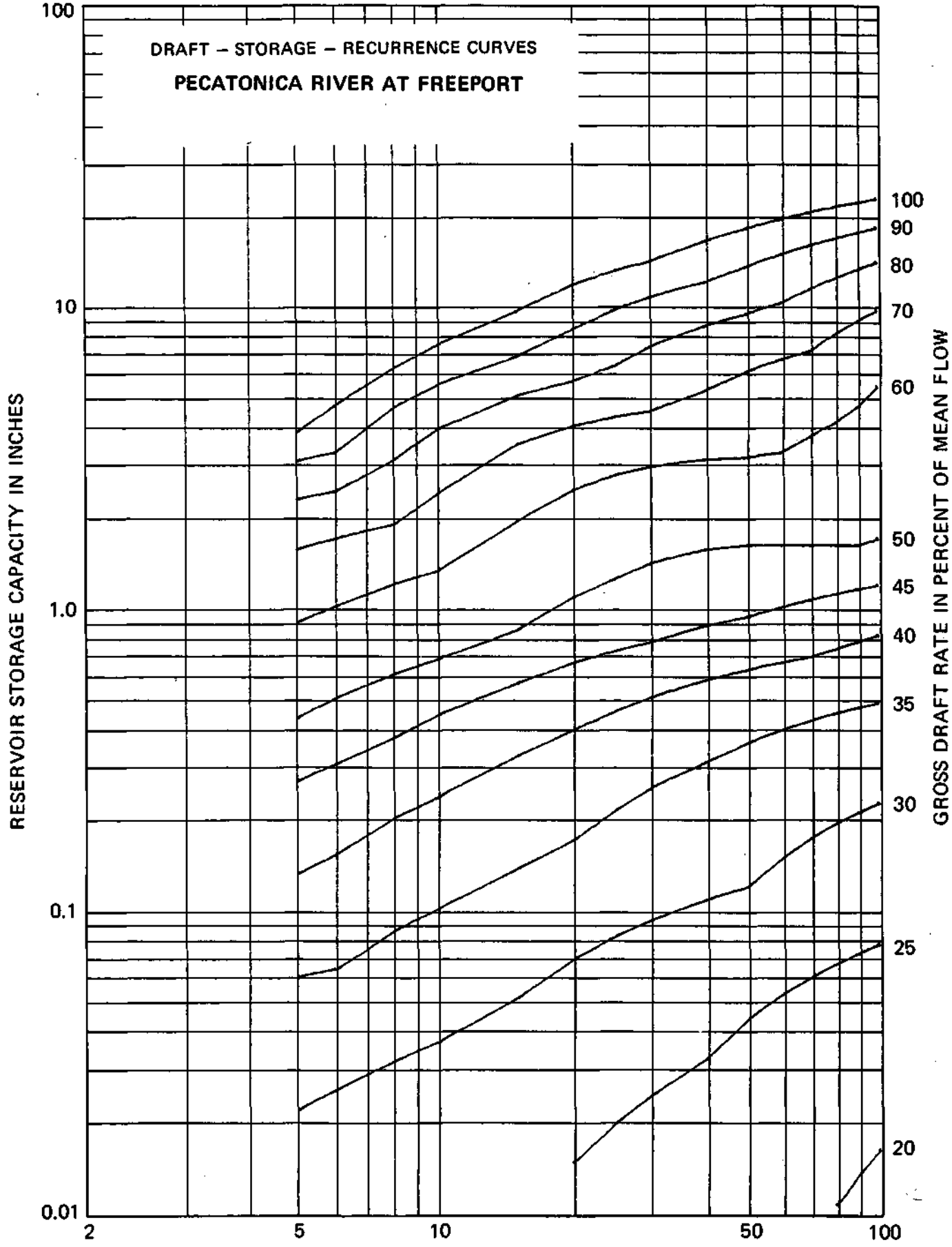
ACTUAL FLOW DATA: Sep 1914 to Oct 1978

INDEX STATION: None .

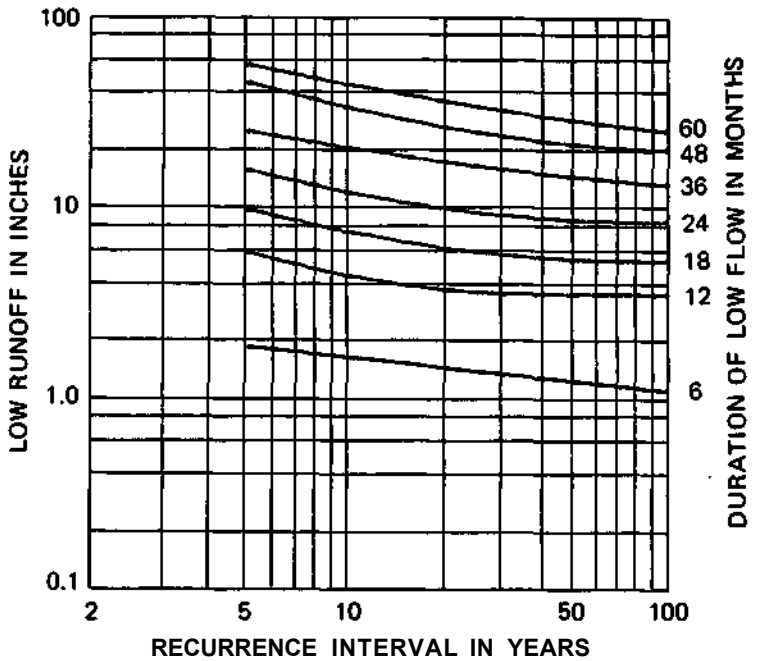
MEAN DISCHARGE: 0.76 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.00	.02	.06	.13	.26	.43	.88	1.54	2.25	3.01	3.77
	11	11	11	11	11	11	1	1	3	4	6	6	9	10	10	10
6	.00	.00	.00	.00	.00	.00	.03	.06	.15	.30	.50	1.00	1.67	2.40	3.22	4.62
	12	12	12	18	18	18	1	2	3	4	6	8	9	10	18	20
8	.00	.00	.00	.00	.00	.00	.03	.08	.20	.37	.59	1.18	1.86	3.03	4.53	6.10
	12	18	20	20	20	20	1	2	4	6	6	9	9	18	20	32
10	.00	.00	.00	.00	.00	.00	.04	.10	.23	.44	.67	1.31	2.36	3.85	5.38	7.29
	20	20	20	20	20	20	1	2	4	6	7	9	18	20	22	34
15	.00	.00	.00	.00	.00	.01	.05	.14	.32	.56	.84	1.91	3.42	4.94	6.67	9.45
	20	20	24	24	24	1	2	4	6	7	8	18	20	22	34	44
20	.00	.00	.00	.00	.00	.01	.07	.17	.39	.65	1.07	2.42	3.94	5.52	8.21	11.54
	24	24	24	24	24	1	2	4	6	7	14	20	20	22	44	44
25	.00	.00	.00	.00	.00	.02	.08	.21	.45	.72	1.24	2.71	4.23	6.23	9.56	12.89
	24	24	24	24	24	1	2	6	7	7	18	20	20	44	44	44
30	.00	.00	.00	.00	.00	.02	.09	.25	.50	.76	1.39	2.89	4.40	7.19	10.52	13.85
	24	24	24	24	24	1	2	6	7	7	18	20	20	44	44	44
40	.00	.00	.00	.00	.00	.03	.11	.31	.57	.87	1.55	3.06	5.14	8.47	11.80	16.15
	24	24	24	24	24	2	2	6	7	18	20	20	44	44	44	60
50	.00	.00	.00	.00	.00	.04	.12	.36	.62	.93	1.60	3.12	5.97	9.30	13.32	17.86
	24	24	24	24	24	2	2	7	7	10	20	20	44	44	60	60
60	.00	.00	.00	.00	.00	.05	.15	.39	.66	1.00	1.60	3.24	6.54	10.09	14.63	19.17
	--	--	--	--	1	2	6	7	7	10	18	42	44	60	60	60
70	.00	.00	.00	.00	.01	.06	.17	.42	.69	1.06	1.60	3.66	6.99	11.22	15.67	20.21
	--	--	--	--	1	2	6	7	7	10	18	40	56	56	60	60
80	.00	.00	.00	.00	.01	.07	.19	.45	.73	1.11	1.60	4.07	7.97	12.21	16.53	21.07
	--	--	--	--	1	2	6	7	10	10	18	40	56	56	60	60
90	.00	.00	.00	.00	.01	.07	.21	.47	.77	1.15	1.60	4.58	8.82	13.06	17.30	21.80
	--	--	--	--	1	2	6	7	10	10	18	56	56	56	56	60
100	.00	.00	.00	.00	.02	.08	.23	.48	.81	1.19	1.69	5.33	9.56	13.80	18.04	22.43
	--	--	--	--	1	2	6	7	10	10	40	56	56	56	56	60


DRAFT – STORAGE – RECURRENCE CURVES
PECATONICA RIVER AT FREEPORT
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20

54370 — PECATONICA RIVER AT SHIRLAND



LOCATION: In SW¼ Sec 11, T28N, R11E, Winnebago County, at mouth of Sugar River, 0.5 miles south of Shirland and 6.0 miles southwest of Rockton

DRAINAGE AREA: 2540 square miles

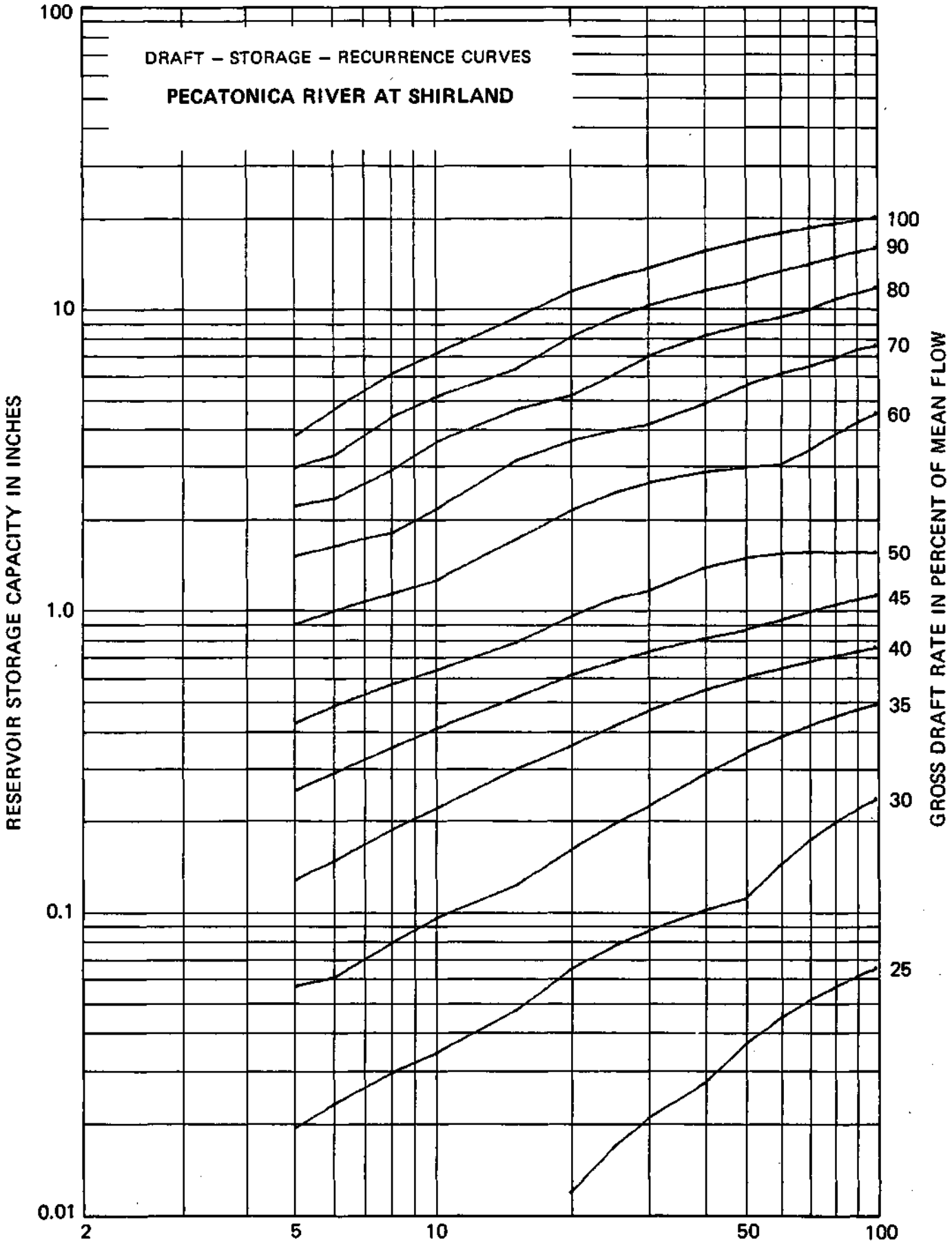
ACTUAL FLOW DATA: Oct 1939 to Sep 1958 gaging discontinued Oct 1, 1958

INDEX STATION: Pecatonica River at Freeport

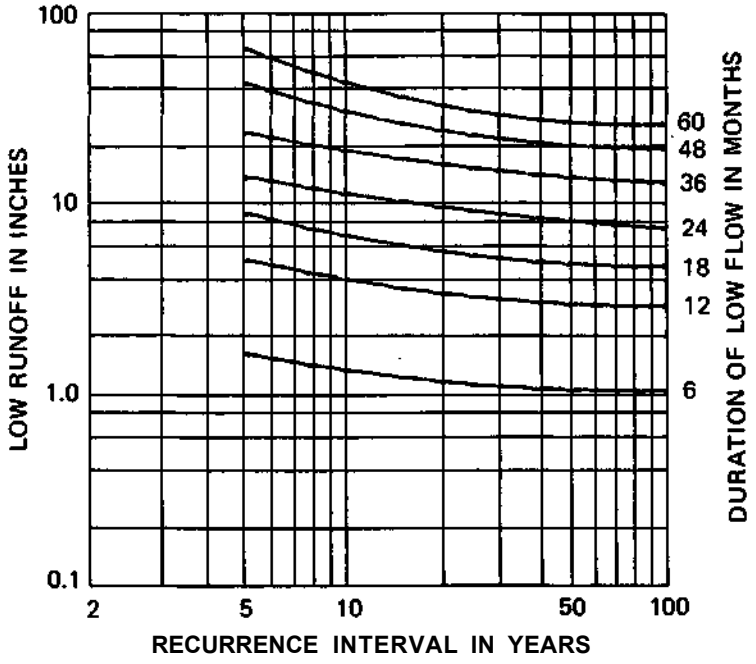
MEAN DISCHARGE: 0.75 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.00	.02	.06	.13	.25	.42	.89	1.49	2.19	2.94	3.78
	11	11	11	2	5	5	1	1	3	4	6	8	8	10	10	18
6	.00	.00	.00	.00	.00	.00	.02	.06	.15	.29	.48	.99	1.61	2.32	3.23	4.61
	12	12	1	2	5	5	1	1	3	4	6	8	9	10	18	20
8	.00	.00	.00	.00	.00	.00	.03	.08	.19	.35	.57	1.12	1.79	2.89	4.34	6.04
	12	18	1	3	5	5	1	2	4	5	6	8	9	18	20	32
10	.00	.00	.00	.00	.00	.00	.03	.10	.22	.40	.63	1.25	2.15	3.60	5.09	7.07
	20	20	1	3	5	5	1	2	4	6	6	9	18	20	20	34
15	.00	.00	.00	.00	.00	.01	.05	.12	.30	.51	.78	1.71	3.11	4.61	6.27	9.27
	20	20	1	3	5	1	2	3	5	7	8	14	20	20	34	44
20	.00	.00	.00	.00	.00	.01	.06	.16	.36	.61	.95	2.14	3.63	5.14	8.02	11.31
	24	24	1	3	5	1	2	5	6	7	14	20	20	22	44	44
25	.00	.00	.00	.00	.00	.02	.08	.20	.42	.68	1.09	2.44	3.94	6.03	9.32	12.60
	24	24	2	4	7	1	2	5	7	7	14	20	20	44	44	44
30	.00	.00	.00	.00	.00	.02	.09	.23	.47	.73	1.16	2.64	4.14	6.94	10.22	13.51
	24	24	2	4	7	1	2	6	7	7	18	20	20	44	44	44
40	.00	.00	.00	.00	.00	.03	.10	.29	.55	.81	1.38	2.87	4.84	8.13	11.42	15.41
	24	24	2	5	7	1	2	6	7	7	20	20	44	44	44	60
50	.00	.00	.00	.00	.00	.04	.11	.34	.60	.86	1.49	2.99	5.59	8.88	12.28	16.76
	24	1	2	5	7	2	2	7	7	7	20	20	44	44	60	60
60	.00	.00	.00	.00	.00	.05	.14	.38	.65	.93	1.55	3.04	6.10	9.39	13.27	17.75
	--	--	--	--	1	2	6	7	7	10	20	20	44	44	60	60
70	.00	.00	.00	.00	.00	.05	.17	.42	.68	1.00	1.57	3.41	6.46	9.94	14.03	18.51
	--	--	--	--	1	2	6	7	7	10	20	40	44	52	60	60
80	.00	.00	.00	.00	.01	.06	.20	.45	.71	1.05	1.57	3.85	6.87	10.75	14.77	19.11
	--	--	--	--	1	2	6	7	7	10	20	40	52	52	56	60
90	.00	.00	.00	.00	.01	.06	.22	.47	.74	1.09	1.57	4.23	7.36	11.25	15.41	19.61
	--	--	--	--	1	2	6	7	7	10	20	40	52	52	56	60
100	.00	.00	.00	.00	.01	.07	.24	.50	.76	1.13	1.57	4.55	7.60	11.79	15.97	20.15
	--	--	--	--	1	2	6	7	10	10	20	40	56	56	56	56


DRAFT – STORAGE – RECURRENCE CURVES
PECATONICA RIVER AT SHIRLAND
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25

54375 — ROCK RIVER AT ROCKTON



LOCATION: In SW¼ NE¼ Sec 24, T46N, R1E, Winnebago County, downstream from Illinois 75, in Rockton, 1.0 miles downstream from Pecatonica River

DRAINAGE AREA: 6363 square miles

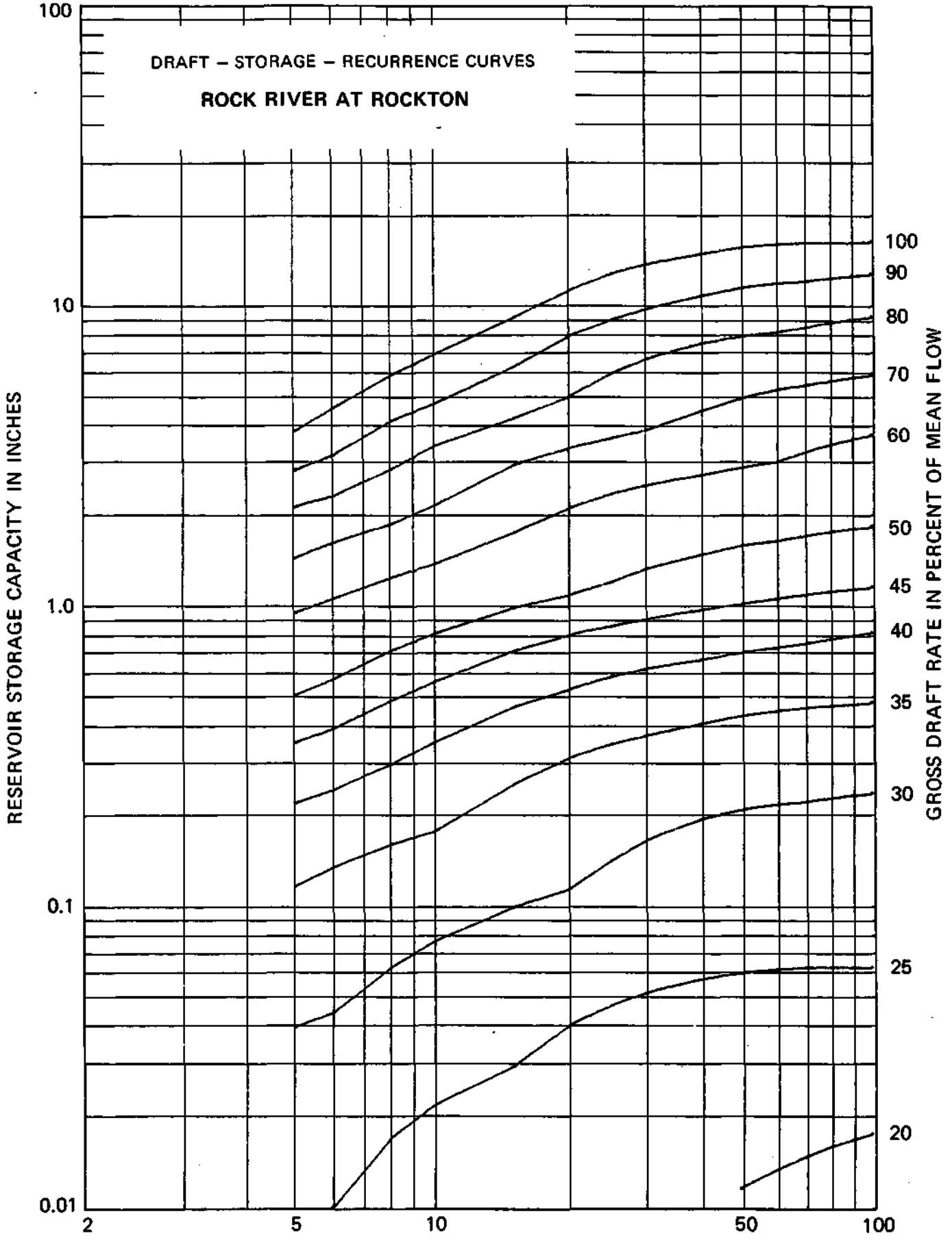
ACTUAL FLOW DATA: Jun 1903-Jul 1906; Oct 1906-Mar 1909; Jul 1914-Sep 1919; Oct 1939 to Oct 1978

INDEX STATION: Rock River near Como

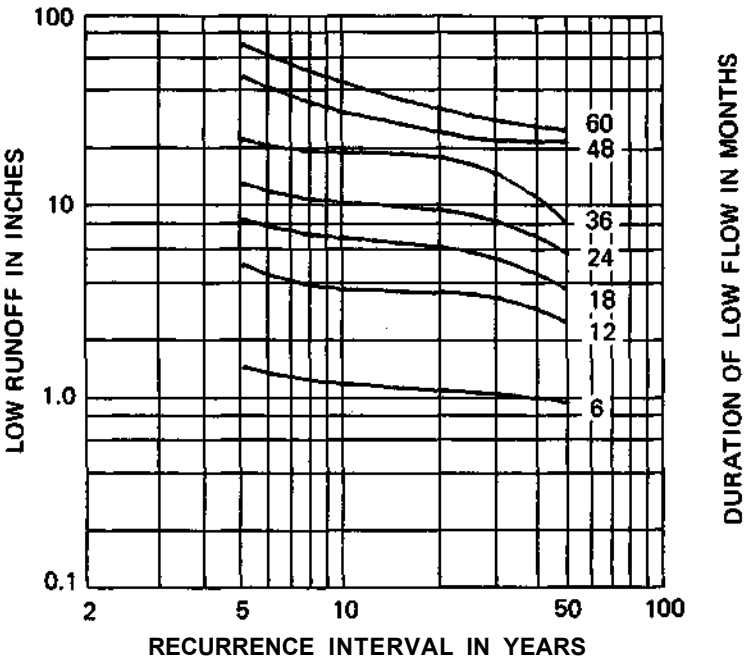
MEAN DISCHARGE: 0.69 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.01	.04	.12	.22	.35	.50	.94	1.43	2.11	2.80	3.78
	11	11	11	2	5	1	1	3	3	4	5	7	9	10	10	22
6	.00	.00	.00	.00	.00	.01	.04	.13	.24	.39	.57	1.05	1.61	2.29	3.14	4.53
	12	12	1	2	5	1	1	3	4	5	7	7	9	10	20	22
8	.00	.00	.00	.00	.00	.02	.06	.16	.30	.48	.71	1.23	1.85	2.82	4.10	5.83
	12	18	1	3	5	1	2	3	5	6	7	8	10	18	20	32
10	.00	.00	.00	.00	.00	.02	.08	.18	.35	.56	.81	1.37	2.15	3.38	4.70	6.87
	20	20	1	3	5	1	2	3	6	7	8	9	18	18	20	32
15	.00	.00	.00	.00	.00	.03	.10	.25	.46	.71	.98	1.74	2.93	4.20	6.25	9.11
	20	20	1	3	5	1	3	6	6	8	8	16	18	20	34	44
20	.00	.00	.00	.00	.00	.04	.11	.31	.53	.80	1.09	2.10	3.34	4.97	7.89	11.21
	24	24	1	3	5	2	3	6	8	8	9	18	18	32	44	58
25	.00	.00	.00	.00	.00	.05	.14	.35	.58	.86	1.20	2.35	3.61	5.95	8.97	12.77
	24	24	2	4	1	2	6	6	8	8	16	18	20	44	44	58
30	.00	.00	.00	.00	.01	.05	.17	.37	.62	.91	1.33	2.52	3.85	6.66	9.77	13.74
	24	24	2	4	1	2	6	6	8	9	16	18	32	44	56	58
40	.00	.00	.00	.00	.01	.06	.20	.41	.67	.98	1.49	2.73	4.49	7.50	10.83	14.87
	24	24	2	5	1	2	6	7	9	9	18	20	32	44	56	60
50	.00	.00	.00	.00	.01	.06	.21	.44	.71	1.02	1.60	2.90	4.96	7.95	11.54	15.65
	24	1	2	5	1	2	6	7	9	10	18	20	42	44	60	60
60	.00	.00	.00	.00	.01	.06	.22	.45	.74	1.07	1.66	3.03	5.28	8.20	11.94	16.06
	--	--	--	--	1	2	6	7	9	10	18	32	42	44	60	60
70	.00	.00	.00	.00	.02	.06	.22	.46	.76	1.10	1.73	3.28	5.48	8.54	12.13	16.25
	--	--	--	--	1	2	6	7	10	10	20	32	42	52	60	60
80	.00	.00	.00	.00	.02	.06	.23	.47	.79	1.13	1.78	3.47	5.67	8.86	12.43	16.30
	--	--	--	--	1	2	7	7	10	10	20	32	32	52	52	60
90	.00	.00	.00	.00	.02	.06	.24	.48	.81	1.15	1.82	3.63	5.82	9.10	12.67	16.30
	--	--	--	--	--	1	2	7	7	10	10	20	32	32	52	52	60
100	.00	.00	.00	.00	.02	.06	.24	.49	.83	1.17	1.85	3.76	5.96	9.29	12.86	16.45
	--	--	--	--	1	2	7	10	10	10	20	32	32	52	52	54


DRAFT – STORAGE – RECURRENCE CURVES
ROCK RIVER AT ROCKTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20

54410 — LEAF RIVER AT LEAF RIVER



LOCATION: In NW¼ Sec 31, T25N, R10E, Ogle County, at bridge on Illinois 72, 0.6 miles east of town of Leaf River

DRAINAGE AREA: 103 square miles

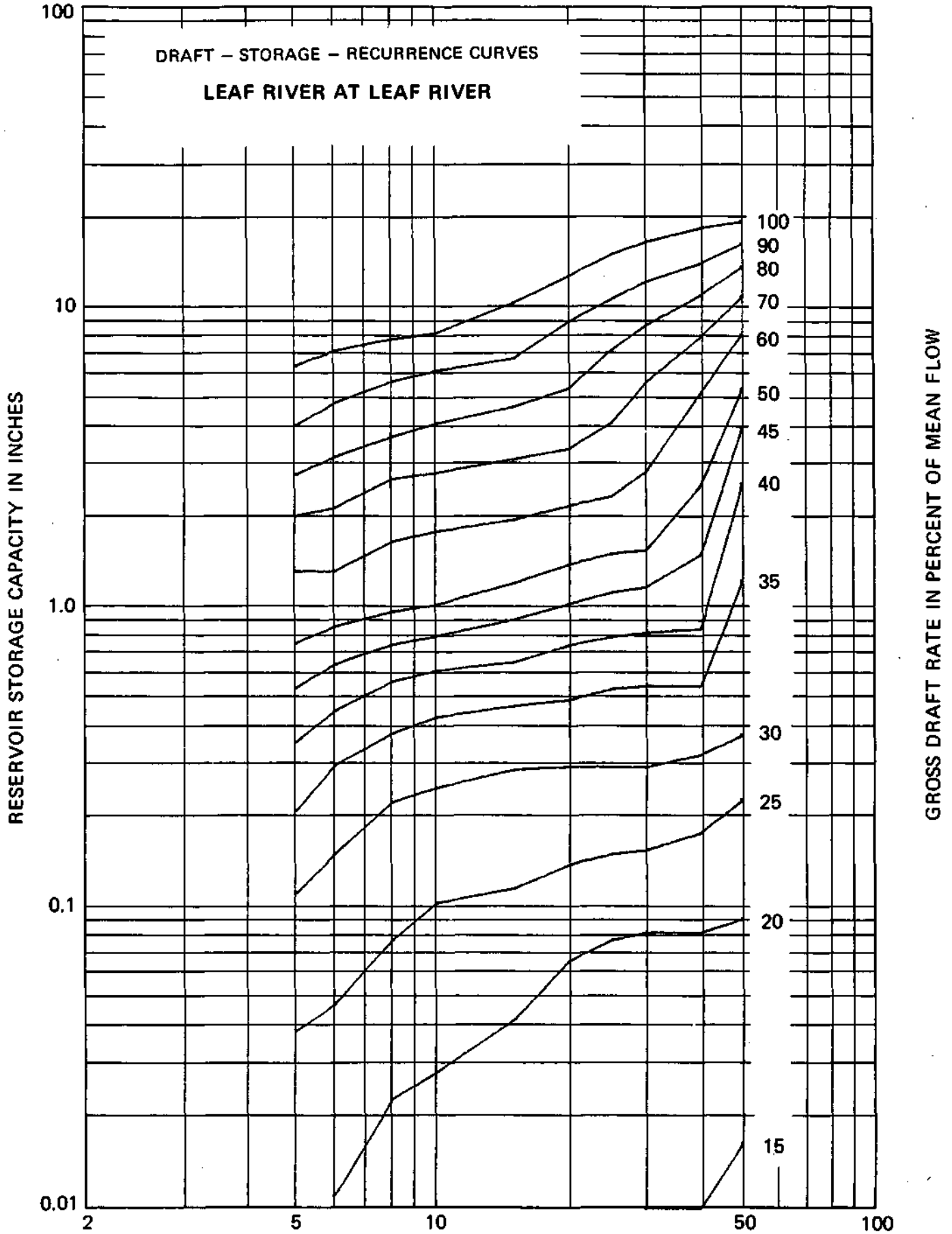
ACTUAL FLOW DATA: Oct 1939-Sep 1958; 1959 to Oct 1978

INDEX STATION: Elkhorn Creek near Penrose

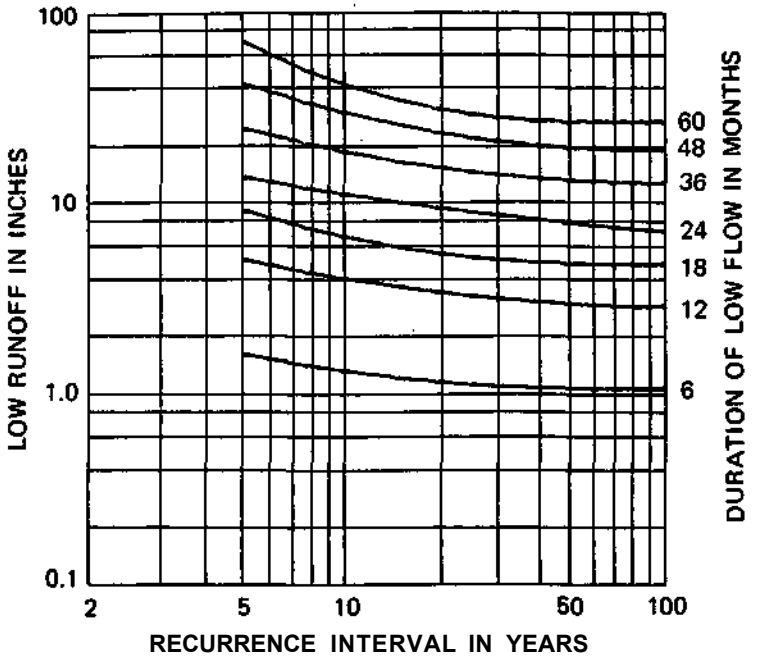
MEAN DISCHARGE: 0.72 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.04	.11	.21	.35	.53	.75	1.29	1.99	2.73	3.98	6.28
	11	11	11	2	5	2	2	4	4	6	6	9	10	11	32	32
6	.00	.00	.00	.00	.01	.05	.15	.29	.44	.63	.85	1.29	2.11	3.12	4.72	7.03
	12	12	1	2	1	1	4	4	5	6	6	9	14	14	32	32
8	.00	.00	.00	.00	.02	.08	.22	.37	.55	.74	.95	1.63	2.64	3.65	5.58	7.70
	12	18	1	3	1	4	4	5	5	6	6	14	14	14	28	32
10	.00	.00	.00	.00	.03	.10	.25	.42	.60	.79	1.00	1.76	2.77	4.04	6.06	8.07
	20	20	1	3	1	4	4	5	5	6	6	14	16	28	28	28
15	.00	.00	.00	.00	.04	.11	.28	.46	.65	.90	1.19	1.94	3.09	4.62	6.68	10.28
	20	20	1	3	2	4	5	5	7	8	8	16	16	28	50	50
20	.00	.00	.00	.00	.07	.14	.29	.49	.74	1.01	1.38	2.17	3.35	5.33	8.86	12.59
	24	24	1	3	2	2	5	7	7	8	11	11	20	44	50	60
25	.00	.00	.00	.01	.08	.15	.29	.53	.79	1.11	1.50	2.33	4.09	7.11	10.59	14.90
	24	24	2	2	2	2	5	7	8	10	11	20	42	42	60	60
30	.00	.00	.00	.01	.08	.15	.29	.54	.81	1.16	1.54	2.82	5.59	8.61	12.10	16.42
	24	24	2	2	2	2	5	7	8	10	11	30	42	42	60	60
40	.00	.00	.00	.01	.08	.18	.32	.54	.84	1.49	2.53	5.14	7.87	10.89	13.92	18.23
	24	24	2	2	2	4	4	7	18	18	30	38	42	42	42	60
50	.00	.00	.00	.02	.09	.23	.37	1.21	2.58	3.95	5.31	8.05	10.78	13.51	16.25	19.22
	24	1·	2	1	3	4	6	38	38	38	38	38	38	38	38	60


DRAFT – STORAGE – RECURRENCE CURVES
LEAF RIVER AT LEAF RIVER
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15

54415 - ROCK RIVER AT OREGON



LOCATION: Near center of Sec 3 T23N, R10E, 1000 feet upstream from bridge on Illinois 64, 2 miles upstream from Kyte River and 110 miles upstream from mouth

DRAINAGE AREA: 8120 square miles

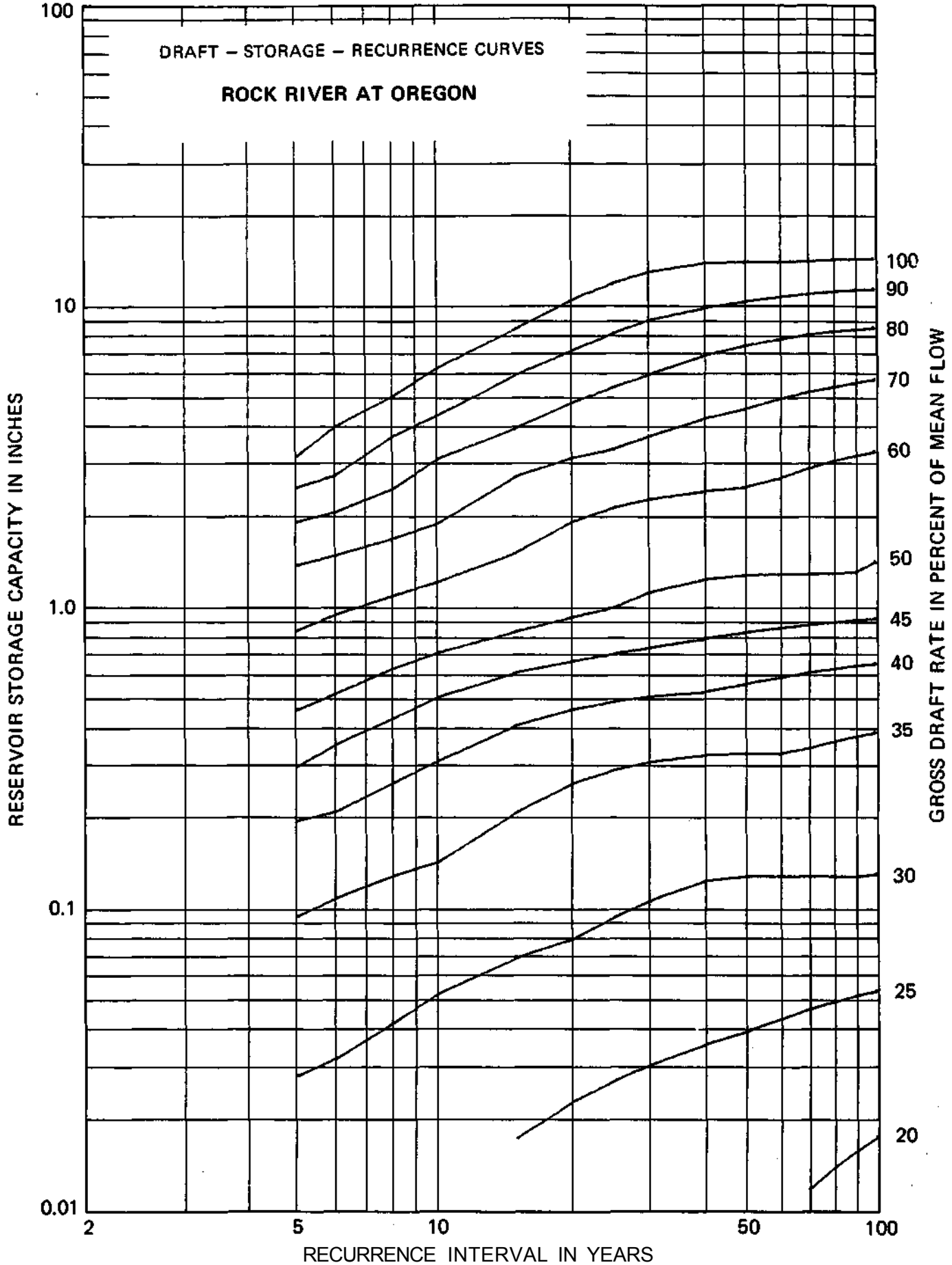
ACTUAL FLOW DATA: Oct 1939 to Sep 1949

INDEX STATION: Rock River near Como

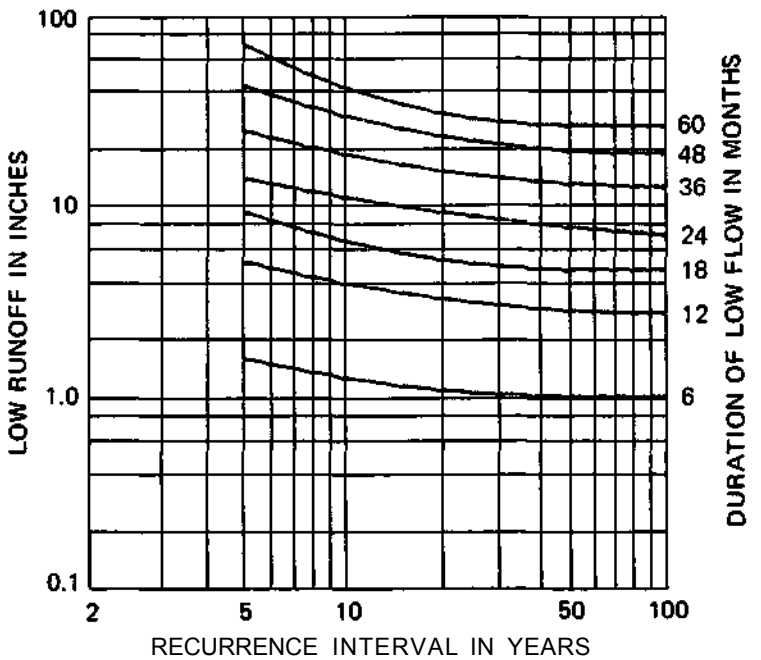
MEAN DISCHARGE: 0.66 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.00	.03	.09	.19	.29	.45	.83	1.36	1.89	2.46	3.12
	11	11	11	2	5	2	1	3	3	3	5	8	8	8	10	10
6	.00	.00	.00	.00	.00	.00	.03	.11	.21	.35	.51	.93	1.46	2.03	2.69	3.90
	12	12	1	2	1	1	1	3	3	5	5	8	8	10	10	20
8	.00	.00	.00	.00	.00	.00	.04	.13	.26	.42	.62	1.08	1.66	2.43	3.62	4.94
	12	18	1	3	1	1	2	3	5	5	6	8	10	18	18	20
10	.00	.00	.00	.00	.00	.01	.05	.14	.31	.50	.70	1.19	1.86	3.05	4.25	6.14
	20	20	1	3	1	1	2	3	5	6	7	9	18	18	20	32
15	.00	.00	.00	.00	.00	.02	.07	.21	.40	.60	.82	1.49	2.67	3.87	5.83	8.26
	20	20	1	3	2	1	2	5	6	6	7	16	18	18	32	44
20	.00	.00	.00	.00	.00	.02	.08	.26	.45	.66	.91	1.88	3.07	4.69	6.95	10.23
	24	24	1	3	2	1	2	6	6	7	9	18	18	32	44	56
25	.00	.00	.00	.00	.00	.03	.09	.29	.48	.69	.99	2.11	3.30	5.30	7.99	11.74
	24	24	2	2	2	1	5	6	6	7	16	18	18	32	56	58
30	.00	.00	.00	.00	.00	.03	.11	.30	.50	.72	1.10	2.25	3.63	5.83	8.83	12.75
	24	24	2	2	2	1	5	6	6	9	16	18	30	42	56	60
40	.00	.00	.00	.00	.00	.04	.12	.32	.52	.78	1.22	2.40	4.17	6.72	9.67	13.65
	24	24	2	2	1	1	6	6	6	8	16	18	32	42	60	60
50	.00	.00	.00	.00	.01	.04	.13	.33	.55	.82	1.27	2.48	4.50	7.28	10.19	13.81
	24	1	2	1	1	1	6	6	8	8	18	20	32	42	44	60
60	.00	.00	.00	.00	.01	.04	.13	.33	.58	.85	1.28	2.66	4.88	7.66	10.58	13.81
	--	--	--	--	1	2	6	6	8	8	18	28	42	44	44	60
70	.00	.00	.00	.00	.01	.05	.13	.34	.61	.87	1.28	2.86	5.14	7.93	10.85	13.89
	--	--	--	--	1	2	6	8	8	8	18	28	42	44	44	52
80	.00	.00	.00	.00	.01	.05	.13	.36	.62	.89	1.29	3.02	5.33	8.13	11.04	14.05
	--	--	--	--	1	2	6	8	8	8	20	28	42	44	44	52
90	.00	.00	.00	.00	.02	.05	.13	.37	.64	.90	1.30	3.15	5.51	8.27	11.18	14.14
	--	--	--	--	1	2	6	8	8	8	28	28	40	44	44	52
100	.00	.00	.00	.00	.02	.05	.13	.38	.65	.91	1.41	3.26	5.66	8.38	11.29	14.20
	--	--	--	--	1	2	3	8	8	8	28	28	40	44	44	44


DRAFT – STORAGE – RECURRENCE CURVES
ROCK RIVER AT OREGON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20

54435 - ROCK RIVER AT COMO



LOCATION: In NE¼ Sec 25, T21N R6E, Whiteside County, 1.0 mile upstream from Como and 3.0 miles downstream from Rock Falls

DRAINAGE AREA: 8755 square miles

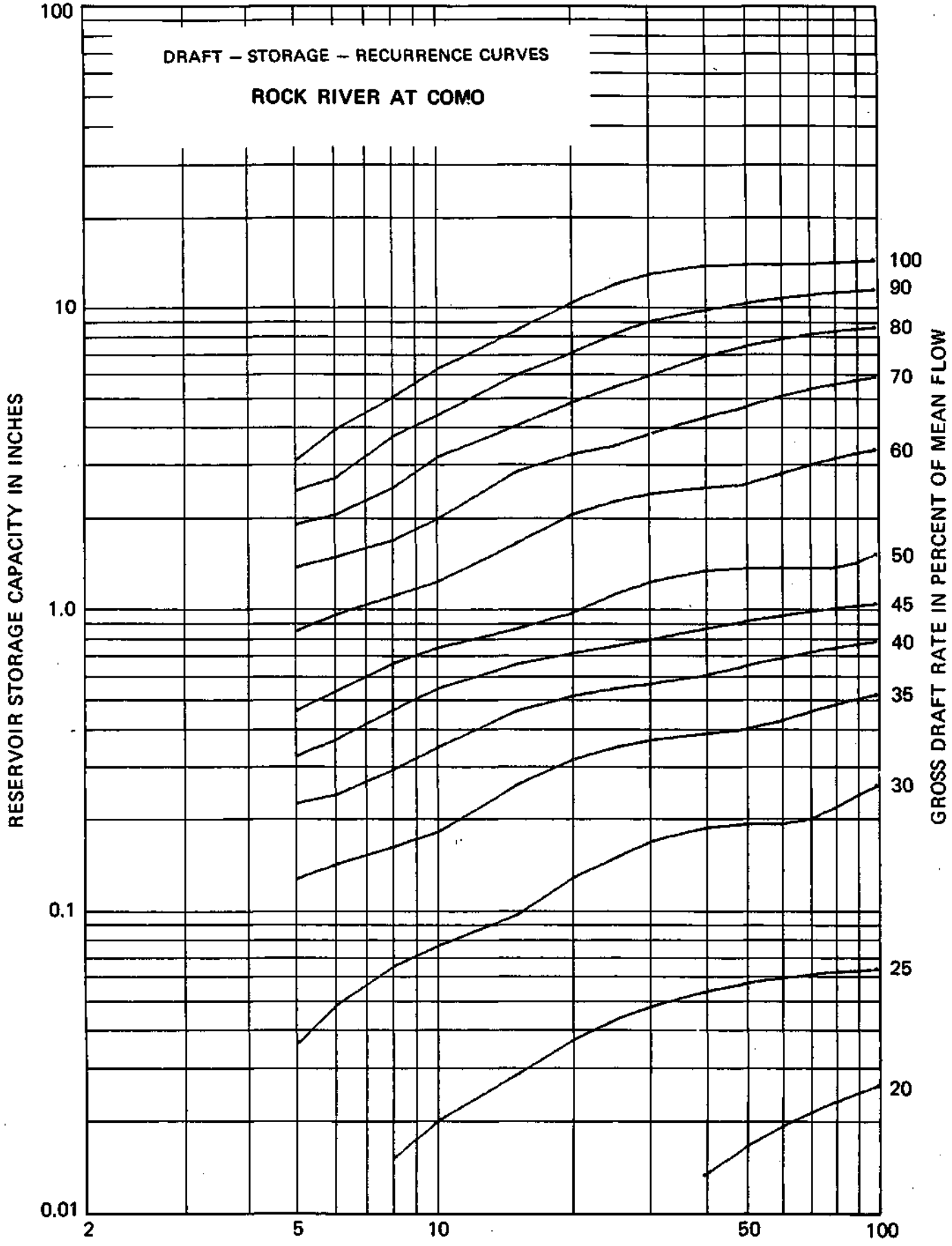
ACTUAL FLOW DATA: Mar to Dec 1905, Oct to Sep 1971, annual maximum 1972-77, Oct 1977 to Oct 1978

INDEX STATION: None

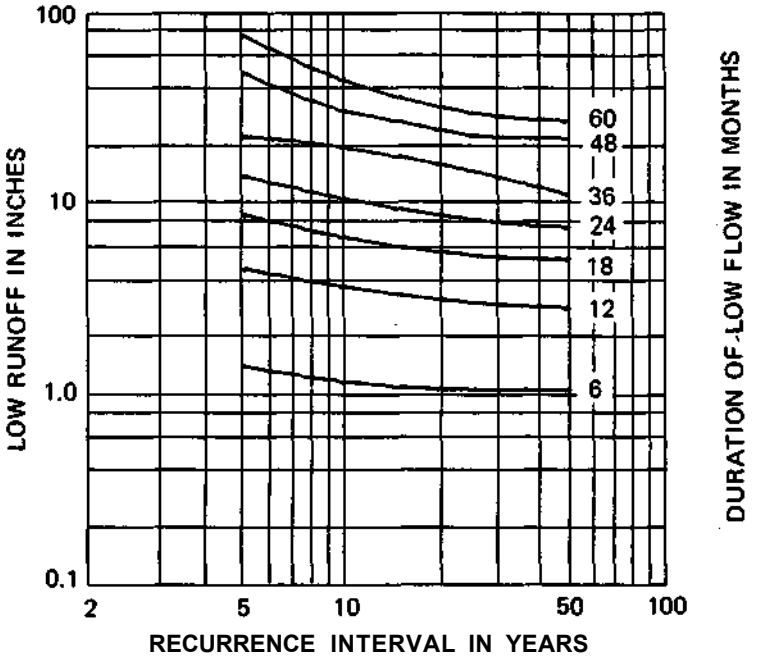
MEAN DISCHARGE: 0.66 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.00	.04	.13	.23	.32	.46	.84	1.37	1.89	2.44	3.10
	11	11	11	11	11	1	2	3	3	3	5	8	8	8	10	10
6	.00	.00	.00	.00	.00	.01	.05	.14	.24	.36	.53	.95	1.47	2.02	2.68	3.86
	12	12	12	18	18	1	2	3	3	5	5	8	8	10	10	20
8	.00	.00	.00	.00	.00	.02	.07	.16	.29	.46	.66	1.09	1.67	2.49	3.67	4.96
	12	18	20	20	20	1	2	3	5	6	6	8	10	18	18	20
10	.00	.00	.00	.00	.00	.02	.08	.18	.34	.54	.74	1.22	1.97	3.15	4.33	6.18
	20	20	20	20	20	1	2	5	5	6	6	9	18	18	18	32
15	.00	.00	.00	.00	.00	.03	.10	.26	.46	.65	.85	1.64	2.82	4.00	5.90	8.25
	20	20	24	24	24	1	3	6	6	6	7	18	18	18	32	44
20	.00	.00	.00	.00	.00	.04	.13	.31	.51	.71	.96	2.04	3.22	4.78	6.99	10.24
	24	24	24	24	1	2	5	6	6	6	9	18	18	32	44	56
25	.00	.00	.00	.00	.01	.04	.15	.35	.54	.75	1.12	2.26	3.44	5.40	8.04	11.77
	24	24	24	24	1	2	6	6	6	7	16	18	18	32	56	60
30	.00	.00	.00	.00	.01	.05	.17	.37	.56	.79	1.23	2.39	3.77	5.90	8.89	12.79
	24	24	24	24	1	2	6	6	6	9	16	18	30	42	56	60
40	.00	.00	.00	.00	.01	.05	.19	.38	.60	.86	1.34	2.52	4.28	6.83	9.75	13.69
	24	24	24	24	1	2	6	6	7	8	18	18	32	42	60	60
50	.00	.00	.00	.00	.02	.06	.19	.40	.65	.91	1.37	2.58	4.65	7.41	10.29	13.85
	24	24	24	24	1	2	6	7	8	8	18	30	42	42	44	60
60	.00	.00	.00	.00	.02	.06	.19	.43	.69	.95	1.37	2.80	5.05	7.80	10.69	13.85
	--	--	--	--	1	2	6	8	8	8	18	28	42	44	44	60
70	.00	.00	.00	.00	.02	.06	.20	.46	.72	.98	1.37	2.99	5.33	8.08	10.97	13.92
	--	--	--	--	1	2	7	8	8	8	18	28	42	44	44	52
80	.00	.00	.00	.00	.02	.06	.22	.48	.74	1.01	1.37	3.15	5.54	8.29	11.18	14.07
	--	--	--	--	1	2	8	8	8	8	20	28	42	42	44	52
90	.00	.00	.00	.00	.03	.06	.24	.50	.77	1.03	1.43	3.27	5.72	8.45	11.33	14.22
	--	--	--	--	1	2	8	8	8	8	28	28	40	42	44	44
100	.00	.00	.00	.00	.03	.06	.26	.52	.78	1.05	1.53	3.37	5.89	8.57	11.45	14.33
	--	--	--	--	1	2	8	8	8	8	28	28	40	42	44	44


DRAFT – STORAGE – RECURRENCE CURVES
ROCK RIVER AT COMO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20

54440 — ELKHORN CREEK NEAR PENROSE



LOCATION: In SW¼ SE¼ Sec 9, T22N, R7E, Whiteside Ccounty, 50 feet upstream from highway bridge 2.0 miles northwest of Penrose, 2.2 miles downstream from Buffalo Creek

DRAINAGE AREA: 146 square miles

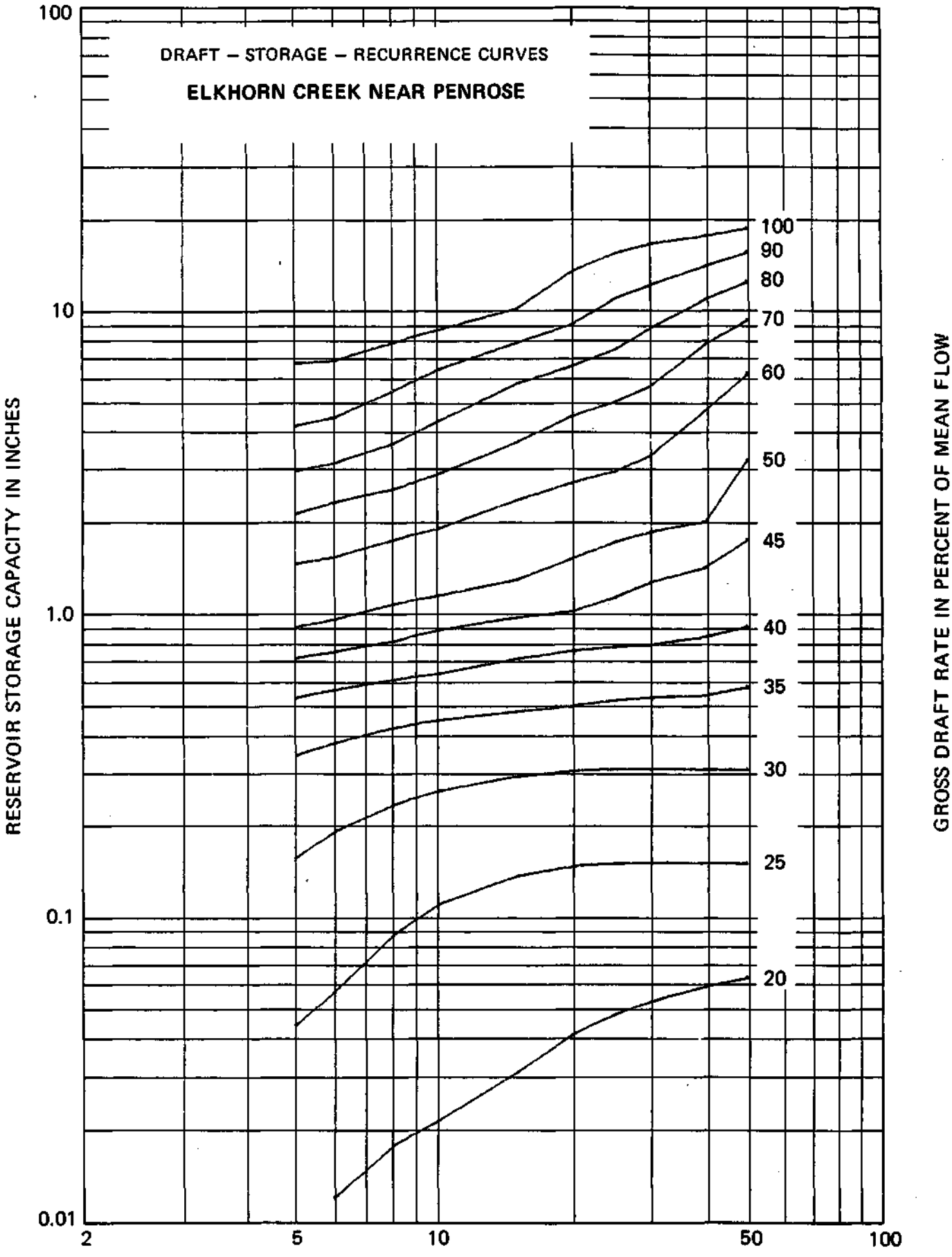
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: None

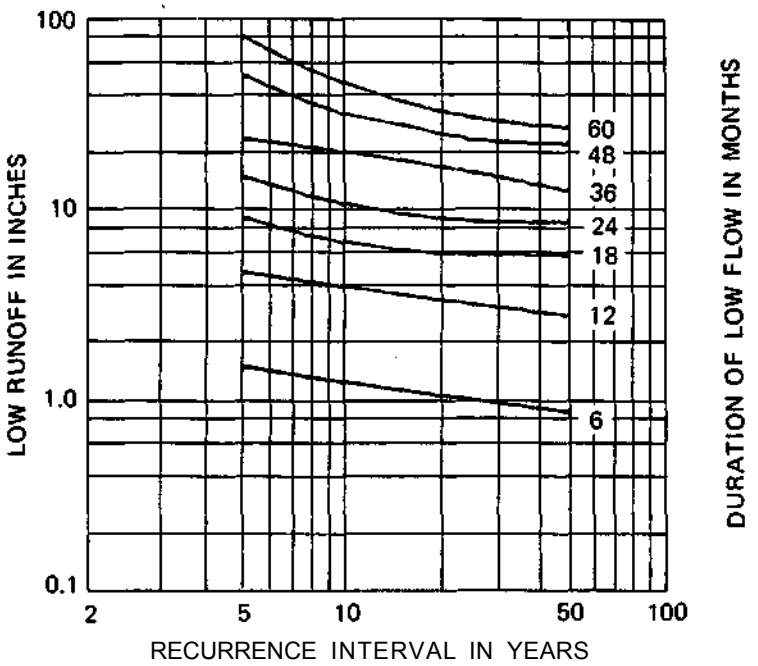
MEAN DISCHARGE: 0.73 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.01	.04	.16	.34	.52	.70	.89	1.43	2.09	2.89	4.08	6.57
	11	11	11	11	1	1	5	5	5	5	5	9	11	11	34	34
6	.00	.00	.00	.00	.01	.06	.19	.37	.55	.74	.94	1.50	2.28	3.08	4.36	6.70
	12	12	12	18	1	2	5	5	5	5	7	9	11	11	32	34
8	.00	.00	.00	.00	.02	.09	.23	.41	.60	.80	1.05	1.71	2.52	3.57	5.34	7.68
	12	18	20	20	1	3	5	5	5	7	7	11	11	18	32	32
10	.00	.00	.00	.00	.02	.11	.26	.44	.62	.87	1.12	1.87	2.83	4.23	6.28	8.48
	20	20	20	20	1	3	5	5	6	7	7	11	16	28	28	32
15	.00	.00	.00	.00	.03	.14	.29	.47	.70	.96	1.27	2.33	3.63	5.67	7.72	9.99
	20	20	24	24	2	3	5	5	7	7	11	16	28	28	28	32
20	.00	.00	.00	.00	.04	.15	.30	.49	.75	1.00	1.50	2.67	4.43	6.48	8.92	13.23
	24	24	24	24	2	3	5	7	7	7	16	16	28	28	44	60
25	.00	.00	.00	.00	.05	.15	.31	.52	.77	1.12	1.71	2.92	4.96	7.37	10.81	15.19
	24	24	24	24	2	3	5	7	7	16	16	28	28	44	60	60
30	.00	.00	.00	.00	.05	.15	.31	.53	.78	1.25	1.84	3.29	5.58	8.66	11.93	16.32
	24	24	24	24	2	4	5	7	7	16	16	28	32	44	60	60
40	.00	.00	.00	.00	.06	.15	.31	.54	.83	1.41	1.99	4.65	7.68	10.75	13.82	17.35
	24	24	24	24	2	4	5	7	9	16	16	40	42	42	42	60
50	.00	.00	.00	.00	.06	.15	.31	.57	.90	1.75	3.21	6.15	9.22	12.29	15.36	18.43
	24	24	24	24	2	4	5	9	16	40	40	42	42	42	42	42


DRAFT – STORAGE – RECURRENCE CURVES
ELKHORN CREEK NEAR PENROSE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20

54460 — ROCK CREEK NEAR MORRISON



LOCATION: In NW¼ Sec 19, T21N, R5E, Whiteside County, 15 feet downstream of county road bridge, 0.2 miles upstream from French Creek, 0.8 miles southwest of Morrison

DRAINAGE AREA: 164 square miles

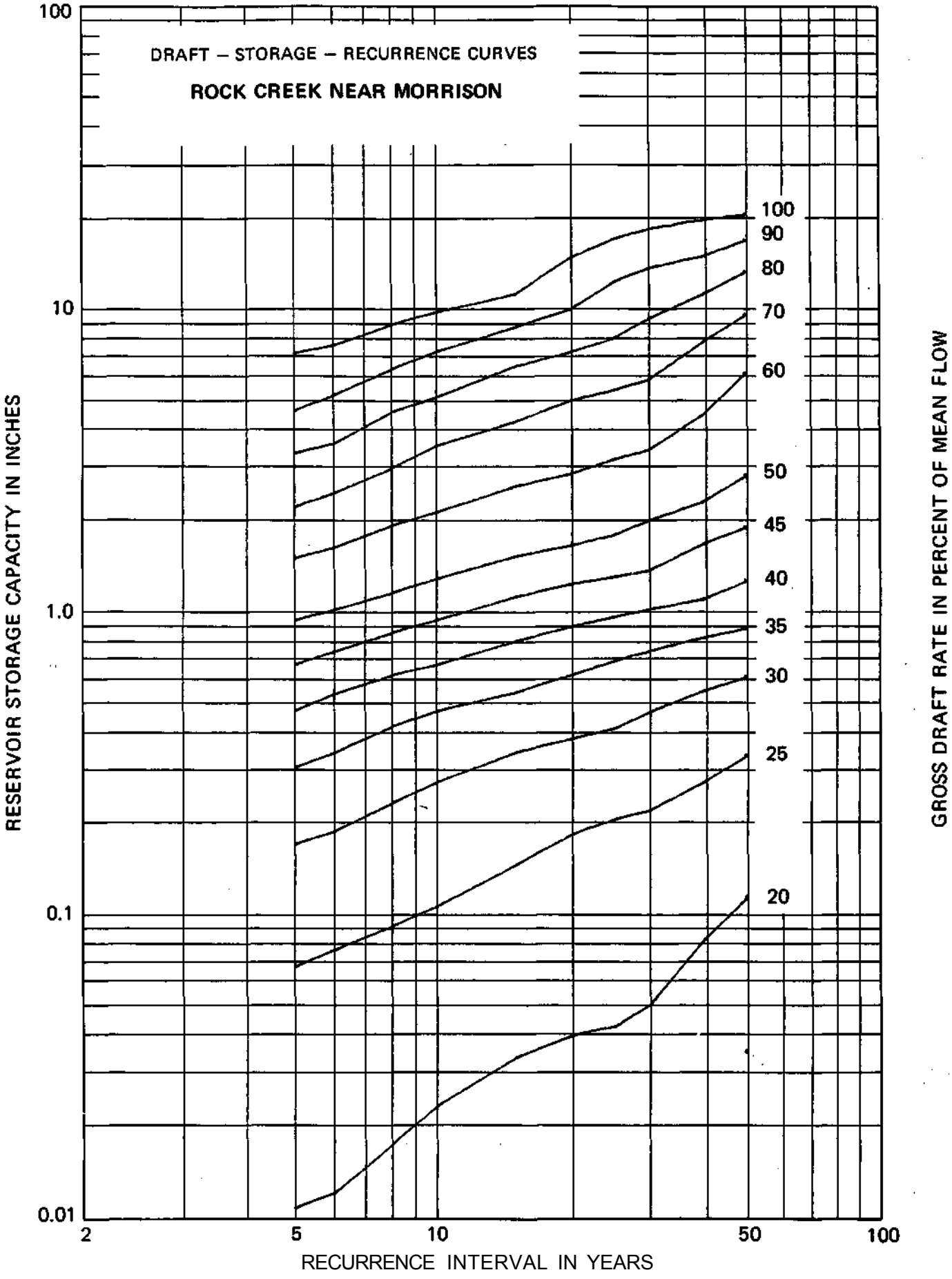
ACTUAL FLOW DATA: Oct 1942 to Sep 1958 gaging annual maximums 1959-71; Oct 1977 to current year. Published as "Near Morrison 1942-58."

INDEX STATION: Elkhorn Creek near Penrose

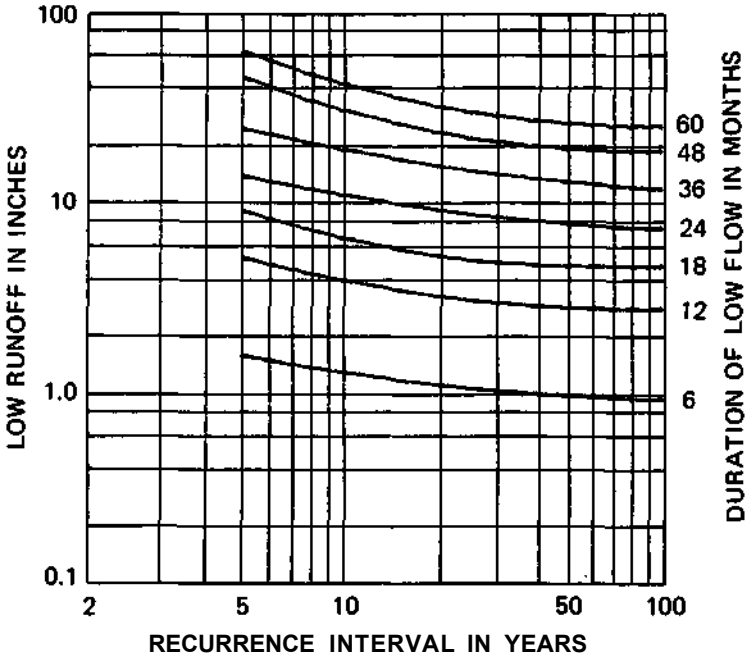
MEAN DISCHARGE: 0.77 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals (Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.01	.07	.17	.30	.46	.65	.91	1.46	2.15	3.22	4.46	6.90
	11	11	11	2	1	2	3	4	5	5	7	8	14	14	22	34
6	.00	.00	.00	.00	.01	.07	.18	.33	.52	.72	.99	1.58	2.38	3.48	5.03	7.34
	12	12	1	2	1	2	3	4	5	7	7	8	11	20	22	34
8	.00	.00	.00	.00	.02	.09	.23	.41	.60	.83	1.12	1.87	2.88	4.42	6.12	8.58
	12	18	1	3	1	3	4	5	5	7	8	11	20	20	32	32
10	.00	.00	.00	.00	.02	.10	.27	.46	.65	.91	1.25	2.06	3.41	4.95	7.00	9.46
	20	20	1	3	1	3	5	5	5	8	9	11	20	20	32	32
15	.00	.00	.00	.00	.03	.14	.34	.53	.78	1.10	1.48	2.52	4.13	6.29	8.47	10.90
	20	20	1	3	1	5	5	5	7	9	11	20	28	28	30	32
20	.00	.00	.00	.00	.04	.18	.37	.60	.87	1.20	1.61	2.77	4.85	7.00	9.72	14.33
	24	24	1	3	1	5	5	7	7	10	11	20	28	28	60	60
25	.00	.00	.00	.00	.04	.20	.40	.67	.94	1.27	1.74	3.09	5.25	7.79	11.94	16.56
	24	24	2	1	1	5	7	7	7	10	16	28	28	44	60	60
30	.00	.00	.00	.00	.05	.22	.46	.73	.99	1.33	1.95	3.33	5.68	9.07	13.26	17.87
	24	24	2	1	2	5	7	7	7	16	16	28	44	44	60	60
40	.00	.00	.00	.00	.08	.27	.54	.81	1.08	1.63	2.25	4.37	7.60	10.93	14.57	19.18
	24	24	2	2	2	7	7	7	7	16	16	42	42	44	60	60
50	.00	.00	.00	.03	.11	.33	.60	.87	1.24	1.85	2.74	5.97	9.35	12.88	16.42	19.96
	24	1	2	2	2	7	7	7	16	16	42	42	46	46	46	46


DRAFT – STORAGE – RECURRENCE CURVES
ROCK CREEK NEAR MORRISON
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1.0
0.1
0.01
2
5
10
50
100
100
90
80
70
60
50
45
40
35
30
25
20

54465 - ROCK RIVER NEAR JOSLIN



LOCATION: In NE¼ Sec 18, T18N, R3E, Rock Island county, at bridge on jSTate Highway 93.

LOCATION: In NE¼ Sec 18, T18N, R3E, Rock Island County, at bridge on state highway 92, 1.8 miles east of Joslin.

DRAINAGE AREA: 9,549 square miles

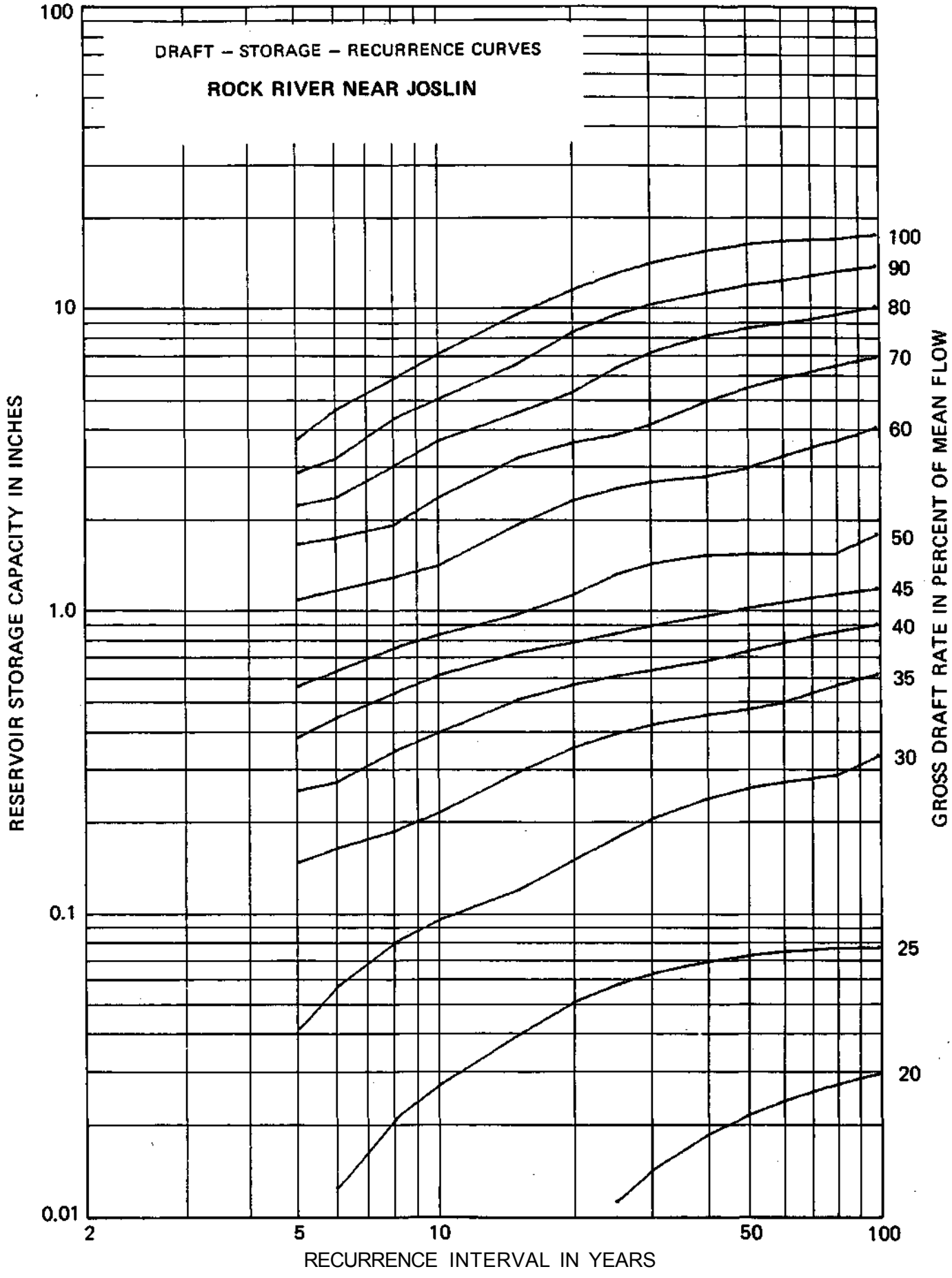
ACTUAL FLOW DATA: Oct 1939 to Oct 1978

INDEX STATION: Rock River near Como

MEAN DISCHARGE: 0.71 inch per month

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

RECURRENCE INTERVAL, YEARS	GROSS DRAFT RATE IN PERCENT OF MEAN FLOW															
	2	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
5	.00	.00	.00	.00	.00	.01	.04	.15	.25	.38	.56	1.08	1.65	2.22	2.86	3.70
	11	11	11	2	1	1	1	3	3	5	5	8	8	8	10	22
6	.00	.00	.00	.00	.00	.01	.06	.16	.27	.44	.63	1.16	1.73	2.35	3.18	4.58
	12	12	1	2	1	1	3	3	3	5	7	8	8	10	18	22
8	.00	.00	.00	.00	.00	.02	.08	.19	.34	.53	.75	1.28	1.91	3.00	4.30	5.81
	12	18	1	3	1	1	3	3	5	6	7	8	10	18	20	32
10	.00	.00	.00	.00	.00	.03	.10	.22	.39	.61	.83	1.40	2.36	3.64	4.98	7.00
	20	20	1	3	1	1	3	5	6	6	7	9	18	18	20	32
15	.00	.00	.00	.00	.00	.04	.12	.29	.51	.72	.97	1.92	3.20	4.49	6.50	9.43
	20	20	1	3	1	2	3	6	6	6	9	18	18	20	32	44
20	.00	.00	.00	.00	.01	.05	.15	.35	.57	.78	1.12	2.31	3.59	5.24	8.25	11.38
	24	24	1	3	1	2	5	6	6	7	16	18	18	32	44	44
25	.00	.00	.00	.00	.01	.06	.18	.39	.60	.83	1.31	2.53	3.81	6.30	9.43	12.91
	24	24	2	1	1	2	6	6	6	9	16	18	18	44	44	58
30	.00	.00	.00	.00	.01	.06	.21	.42	.63	.89	1.42	2.66	4.11	7.08	10.20	13.99
	24	24	2	1	1	2	6	6	6	9	16	18	32	44	44	58
40	.00	.00	.00	.00	.02	.07	.24	.45	.68	.96	1.52	2.78	4.88	8.01	11.14	15.35
	24	24	2	2	1	2	6	6	7	8	16	18	44	44	44	60
50	.00	.00	.00	.00	.02	.07	.26	.47	.73	1.02	1.54	2.97	5.44	8.52	11.85	16.12
	24	1	2	2	1	2	6	6	8	8	16	30	42	44	60	60
60	.00	.00	.00	.00	.02	.08	.27	.50	.78	1.06	1.54	3.24	5.85	8.83	12.26	16.53
	--	--	--	--	1	2	6	7	8	8	16	32	42	42	60	60
70	.00	.00	.00	.00	.03	.08	.28	.53	.82	1.10	1.54	3.47	6.14	9.12	12.72	16.73
	--	--	--	--	1	2	6	8	8	8	16	32	42	42	52	60
80	.00	.00	.00	.00	.03	.08	.29	.57	.85	1.14	1.54	3.65	6.43	9.45	13.15	16.84
	--	--	--	--	1	2	7	8	8	8	16	32	40	52	52	52
90	.00	.00	.00	.00	.03	.08	.31	.59	.88	1.16	1.67	3.84	6.69	9.79	13.49	17.18
	--	--	--	--	1	2	8	8	8	8	28	40	40	52	52	52
100	.00	.00	.00	.00	.03	.08	.33	.62	.90	1.19	1.80	4.06	6.90	10.07	13.77	17.46
	--	--	--	--	1	2	8	8	8	8	28	40	40	52	52	52


DRAFT – STORAGE – RECURRENCE CURVES
ROCK RIVER NEAR JOSLIN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1.0
0.1
0.01
2
5
10
50
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20

Continued on next page

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