DEPARTMENT OF THE INTERIOR
Hubert Work, Secretary

U. S. GEOLOGICAL SURVEY
George Otis Smith, Director

WATER-SUPPLY PAPER 581

SURFACE WATER SUPPLY OF THE UNITED STATES

1924

PART I. NORTH ATLANTIC SLOPE DRAINAGE BASINS

NATHAN C. GROVER, Chief Hydraulic Engineer

C. H. PIERCE, A. W. HARRINGTON
O. W. HARTWELL, and A. H. HORTON
District Engineers

Prepared in cooperation with the States of
MAINE, NEW HAMPSHIRE, MASSACHUSETTS, NEW YORK
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ILLUSTRATION

SURFACE WATER SUPPLY OF NORTH ATLANTIC SLOPE DRAINAGE BASINS, 1924

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of flow made on streams in the United States during the year ending September 30, 1924.

The data presented in these reports were collected by the United States Geological Survey under the following authority contained in the organic law (20 Stat. L., p. 394):

Provided, That this officer [the Director] shall have the direction of the Geological Survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies relating to irrigation in the arid West. Since the fiscal year ending June 30, 1895, successive appropriation bills passed by Congress have carried the following item:

For gaging the streams and determining the water supply of the United States and for the investigation of underground currents and artesian wells, and for the preparation of reports upon the best methods of utilizing the water resources.

Annual appropriations for the fiscal years ended June 30, 1895–1925

1895	$12,500.00
1896	[1] 24,500.00
1897 to 1899, inclusive	50,000.00
1900	[2] 70,000.00
1901 to 1902, inclusive	100,000.00
1903 to 1906, inclusive	200,000.00
1907	150,000.00
1908 to 1910, inclusive	100,000.00
1911 to 1917, inclusive	150,000.00
1918	175,000.00
1919	148,244.10
1920	175,000.00
1921 to 1923, inclusive	180,000.00
1924 to 1925, inclusive	170,000.00

In the execution of the work many private and State organizations have cooperated either by furnishing data or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on pages 10 and 11.

[1] Includes $4,500 appropriated in act of Apr. 25, 1896.
[2] Inclu des $20,000 appropriated in deficiency act of Mar. 30, 1900.

Measurements of stream flow have been made at about 5,800 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1924, 1,670 gaging stations were being maintained by the Geological Survey and the cooperating organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, rivers profiles, and water power in many sections of the country and will be made available in water-supply papers from time to time.

DEFINITION OF TERMS

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, miner's inches, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet, and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, run-off in inches, and acre-feet. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in depth in inches.

An "acre-foot," equivalent to 43,560 cubic feet, is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

The following terms not in common use are here defined:

"Stage-discharge relation," an abbreviation for the term "relation of gage height to discharge."

"Control," a term used to designate the natural section or stretch of the channel or artificial structure below the gage which determines the stage-discharge relation at the gage. It should be noted that the control may not be the same section or sections at all stages.

The "point of zero flow" for a gaging station is that point on the gage—the gage height—at which water ceases to flow over the control.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1923, and ending September 30, 1924. At the beginning of January in most parts of the United States much of the precipitation in the preceding three months is stored as ground water in the form of snow or ice, or in ponds, lakes, and swamps, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to

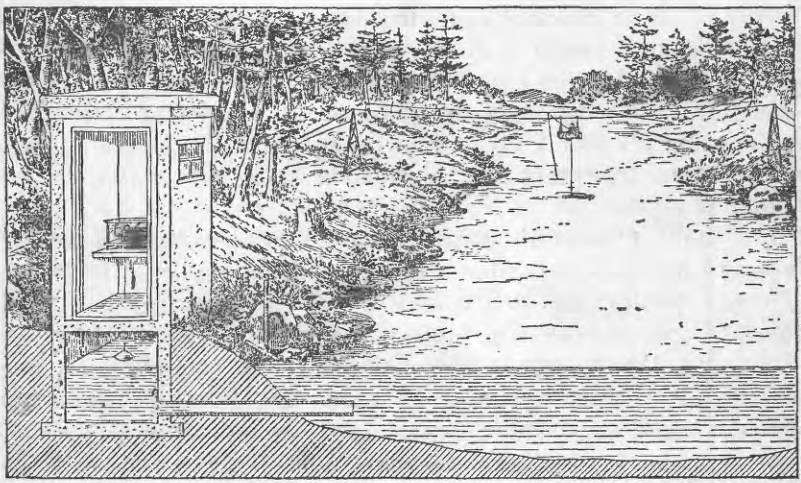

FIGURE 1.—Typical gaging station

supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a staff gage, chain gage, or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter. The general methods are outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily gage height to these rating tables gives the daily discharge from which the monthly and yearly mean discharge is determined.

The data presented for each gaging station in the area covered by this report comprise a description of the station, a table giving results of discharge measurements, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and run-off.

If the base data are insufficient to determine the daily discharge, tables giving daily gage height and results of discharge measurements are published.

The description of the station gives, in addition to statements regarding location and equipment, information in regard to any conditions that may affect the permanence of the stage-discharge relation, covering such subjects as the occurrence of ice, the use of the stream for log driving, shifting of control, and the cause and effect of backwater; it gives also information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded stages, and the accuracy of the records.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the mean of the gage heights read each day. At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders the mean daily discharge may be obtained by averaging discharge at regular intervals during the day, or by using the discharge integrator, an instrument operating on the principle of the planimeter and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Maximum" gives the mean flow for the day when the mean gage height was highest. As the gage height is the mean for the day it does not indicate correctly the stage when the water surface was at crest height and the corresponding discharge was consequently larger than given in the maximum column. Likewise, in the column headed "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow computations recorded in the remaining columns, which are defined on page 2, are based.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanence of the stage-discharge relation and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

A paragraph in the description of the station gives information regarding the (1) permanence of the stage-discharge relation, (2) precision with which the discharge rating curve is defined, (3) refinement of gage readings, (4) frequency of gage readings, and (5) methods of applying daily gage heights to the rating table to obtain the daily discharge.

For the rating tables "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined," within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and run-off in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area, by lack of information concerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above the station. "Second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable. The computations are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches. All figures representing "second-feet per square mile" and "run-off in inches" published by the Geological Survey in earlier reports should be used with caution because of possible inherent sources of error not known to the Geological Survey.

Many gaging stations on streams in the irrigated areas of the United States are located above most of the diversions from those streams, and the discharge recorded does not show the water supply available for further development, as prior appropriations below the stations must first be satisfied. To give an idea of the amount of prior appropriations, a paragraph on diversions is presented in each station description. The figures given can not be considered exact but represent the best information available.

The table of monthly discharge gives only a general idea of the flow at the station and should not be used for other than preliminary estimates; the tables of daily discharge allow more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigations of such closely allied subjects as irrigation, water storage, water powers, underground waters, and quality of waters. Most of the results of these investigations have been published in the series of water-supply papers, but some have appeared in the bulletins, professional papers, monographs, and annual reports.

The results of stream-flow measurements are now published annually in 12 parts, each part covering an area whose boundaries coincide with natural drainage features, as indicated below:

Part I. North Atlantic slope basins.
II. South Atlantic slope and eastern Gulf of Mexico basins.
III. Ohio River basin.
IV. St. Lawrence River basin.
V. Upper Mississippi River and Hudson Bay basins.
VI. Missouri River basin.
VII. Lower Mississippi River basin.
VIII. Western Gulf of Mexico basins.
IX. Colorado River basin.
X. Great Basin.
XI. Pacific slope basins in California.
XII. North Pacific slope basins in three volumes:
A. Pacific slope basins in Washington and upper Columbia River basin.
B. Snake River basin.
C. Lower Columbia River basin and Pacific slope basins in Oregon.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below:

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will, on application, furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Complete sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Boston, Mass., 2500 Customhouse.
Albany, N. Y., 904 Home Savings Bank Building.
Trenton, N. J., Statehouse.
Charlottesville, Va., care of University of Virginia.
Asheville, N. C., 608 City Hall.
Chattanooga, Tenn., 830 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Chicago, Ill., 1510 Consumers Building.
Madison, Wis., care of Railroad Commission of Wisconsin.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Helena, Mont., 45–46 Federal Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Tacoma, Wash., 404 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 600 Federal Building.
Tucson, Ariz., 106 College of Law Building, University of Arizona.
Austin, Tex., State Capitol.
Honolulu, Hawaii, Territorial Office Building.

A list of the Geological Survey's publications may be obtained by applying to the Director, United States Geological Survey, Washington, D. C.

Stream-flow records have been obtained at about 5,800 points in the United States, and the data obtained have been published in the reports tabulated below.

Stream-flow data in reports of the United States Geological Survey

[A=Annual Report; B=Bulletin; W=Water-Supply Paper]

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept., 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
W 15	Descriptions, measurements, and gage heights eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River, and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.
W 82 to 85	Complete data	1902.
W 97 to 100	do	1903.
W 124 to 135	do	1904.
W 165 to 178	do	1905.
W 201 to 214	do	1906.
W 241 to 252	do	1907–8.
W 261 to 272	do	1909.
W 281 to 292	do	1910.
W 301 to 312	do	1911.
W 321 to 332	do	1912.
W 351 to 362	do	1913.
W 381 to 394	do	1914.
W 401 to 414	do	1915.
W 431 to 444	do	1916.
W 451 to 464	do	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919 and 1920.
W 521 to 534	do	1921.
W 541 to 554	do	1922.
W 561 to 574	do	1923.
W 581 to 594	do	1924.

NOTE.—No stream flow data are given in the 15th and 17th annual reports.

The records at most of the stations discussed in these reports extend over a series of years and miscellaneous measurements at many points other than regular gaging stations have been made each year. An index of the reports containing records obtained prior to 1904 has been published in Water-Supply Paper 119.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1924. The data for any particular station will be found in the reports covering the years during which the station was maintained. For example, data from 1902 to 1922 for any station in the area covered by Part III are published in Water-Supply Papers 83, 98, 128, 169, 205, 243, 263, 283, 303, 323, 353, 383, 403, 433, 453, 473, 503, 523, and 543, which contain records for the Ohio River basin for those years.

Numbers of water-supply papers containing results of stream measurements, 1899–1924

[For basins included see p. 6]

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
												A	B	C
1899 [a]	35	[b] 35, 36	36	36	36	[c] 36, 37	37	37	[d] 37, 38	38, [e] 39	38, [f] 39	38	38	38
1900 [g]	47, [h] 48	48	48, [i] 49	49	49	49, [j] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[k] 65. 66, 75	66, 75	[b] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[b] 82, 83	83	[l] 82, 83	[k] 83, 85	84	[k] 83, 84	84	85	85	85	85	85	85
1903	97	[b] 97, 98	98	97	[k] 98, 99, [m] 100	99	[k] 98, 99	99	100	100	100	100	100	100
1904	[n] 124, [o] 125 [p] 126	[p] 126, 127	128	129	[k] 128, 130	130, [q] 131	[k] 128, 131	132	133	133, [r] 134	134	135	135	135
1905	[n] 165, [o] 166 [p] 167	[p] 167, 168	169	170	171	172	[k] 169, 173	174	175, [s] 177	176, [r] 177	177	178	178	[t] 177, 178
1906	[n] 201, [s] 202 [p] 203	[p] 203, 204	205	206	207	208	[k] 205, 209	210	211	212, [r] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [r] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [r] 271	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332–A	332–B	332–C
1913	251	352	353	354	355	356	357	358	359	360	361	362–A	362–B	362–C
1914	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919–20	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924	581	582	583	584	585	586	587	588	589	590	591	592	593	594

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in Twenty-first Annual Report, Part IV.
[b] James River only.
[c] Gallatin River.
[d] Green and Gunnison Rivers and Grand River above junction with Gunnison.
[e] Mohave River only.
[f] Kings and Kern Rivers and south Pacific slope basins.
[g] Rating tables and index to Water-Supply Papers 47-52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Tables of monthly discharge for 1900 on Twenty-second Annual Report, Part IV.
[h] Wissahickon and Schuylkill Rivers to James River.
[i] Scioto River.
[j] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[k] Tributaries of Mississippi from east.
[l] Lake Ontario and tributaries to St. Lawrence River proper.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] Great Basin in California except Truckee and Carson River basins.
[s] Below junction with Gila.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

Records in Maine were obtained in cooperation with the Public Utilities Commission of Maine, Charles E. Gurney, chairman.

The work in New Hampshire was done in cooperation with the Public Service Commission of New Hampshire, William T. Gunnison, Thomas W. D. Worthen, and John W. Storrs, commissioners.

In Massachusetts the work was carried on in cooperation with the department of public works, division of waterways and public lands, William F. Williams, chairman, Richard K. Hale, commissioner (waterways).

Work in New York has been carried on in cooperation with the State and at certain stations in cooperation with the following organizations: Hudson River Regulating District (Hudson River at North Creek, N. Y., and Schroon River at Riverbank, N. Y.); Indian River Co. (Indian Lake Reservoir, Indian River near Indian Lake, N. Y., Hudson River at Hadley N. Y., and Sacandaga River at Hadley, N. Y.); Adirondack Power & Light Corporation (Hudson River at Hadley, N. Y., Hoosic River near Eagle Bridge, N. Y., and Fox Creek at West Berne, N. Y.); West Virginia Pulp & Paper Co. (Hudson River at Mechanicville, N. Y.); I. C. Blandy (Batten Kill at Battenville, N. Y.); Utica Gas & Electric Co. (West Canada Creek at Hinckley, N. Y., and West Canada Creek at Kast Bridge, N. Y.); Rensselaer Polytechnic Institute (Poesten Kill near Troy, N. Y.); United Hudson Electric Corporation (Wallkill River at Pellets Island Mountain, N. Y.); New York State Gas & Electric Corporation (Susquehanna River at Colliersville, N. Y., and Unadilla River near New Berlin, N. Y.).

The work in New Jersey was carried on in cooperation with the State department of conservation and development, H. B. Kümmel, director, and H. T. Critchlow, hydraulic engineer.

Financial assistance in New Jersey was rendered by the Hackensack Water Co., Weehawken; city of Morristown (William H. Frapwell, commissioner of streets and sewers); The Borough of Pompton Lakes; Taylor Wharton Iron & Steel Co., High Bridge; Somerset Lake and Game Club, Far Hills (Col. F. S. Tainter, engineer); Tintern Manor Water Co. (Wellington LaMonte, general manager, Long Branch); Atlantic City Water Department (Mr. L. Van Gilder, engineer and superintendent); and Warren Manufacturing Co., New Milford.

Financial assistance in New England was rendered by the Orono Pulp & Paper Co., New England Power Co., Turners Falls Power & Electric Co., Connecticut Valley Lumber Co., Holyoke Water Power Co., International Paper Co., Eastern Connecticut Power Co., Keene Gas & Electric Co., Profile Falls Power Co., Connecticut Power Co., Bradford Electric Light Co., Mascoma River Improvement Co.,

Worcester Electric Light Co., W. H. McElwain Co., Upper Connecticut River & Lake Improvement Co., Kennebec Water Power Co., Milo Electric Light Co., St. Croix Paper Co., and Thomas W. Clark.

Financial assistance was rendered in Virginia by the Spottsylvania Power Co., in West Virginia by the Potomac Edison Co., in Maryland by the Washington Suburban Sanitary District, and in Pennsylvania by F. M. Waring, Juniata River Water Power Co., and Watts Water & Power Co.

DIVISION OF WORK

The data for stations in New England were collected and prepared for publication under the direction of C. H. Pierce, district engineer. M. R. Stackpole, assistant engineer, had immediate supervision of the work in Maine. The other assistants in New England were Lillian H. McCarthy, H. F. Hill, jr., and E. W. Downs.

Data for stations in New York were collected and prepared for publication under the direction of Arthur W. Harrington, district engineer, assisted by E. B. Shupe, J. L. Lamson, A. E. Johnson, J. W. McConnell, and Agnes D. Buchanan.

Data for stations in New Jersey were collected and prepared for publication under the direction of O. W. Hartwell, district engineer, assisted by Otto Lauterhahn, H. C. Barksdale, and Mary G. Tracy.

Data for stations in Maryland, Virginia, and West Virginia were collected and prepared for publication under the direction of A. H. Horton, district engineer, assisted by J. J. Dirzulaitis, W. C. Wiggins, Karl Jetter, and O. D. Mussey.

The manuscript was assembled and reviewed by J. W. Mangan.

GAGING-STATION RECORDS

ST. JOHN RIVER BASIN

ST. JOHN RIVER AT VAN BUREN, ME.

LOCATION.—At international bridge at Van Buren, Aroostook County, 14 miles above Grand Falls.

DRAINAGE AREA.—8,270 square miles.

RECORDS AVAILABLE.—May 4, 1908, to September 30, 1924.

GAGE.—Gage painted vertically on second pier from Van Buren end of bridge; read by W. H. Scott.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Control practically permanent; banks high, rocky, cleared, and not subject to overflow except at very high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 25.4 feet at 8 a. m. May 17 (discharge, 110,000 second-feet); minimum discharge, 2,100 second-feet several days in March (stage-discharge relation affected by ice.)

1908–1924: Maximum stage recorded, 29.0 feet May 2, 1923 (discharge, by extension of rating curve, 134,000 second-feet); minimum discharge estimated at 720 second-feet March 18, 1923 (stage-discharge relation affected by ice).

ICE.—Stage-discharge relation seriously affected by ice, usually from December to April.

REGULATION.—The little storage which is used for log driving probably does not materially affect flow.

ACCURACY.—Stage-discharge relation practically permanent except when affected by ice. Rating curve well defined. Gage read to tenths once daily, occasionally twice daily. Daily discharge ascertained by applying to rating table mean daily gage height with corrections for effect of ice during winter. Records good during open-water periods and fair during winter.

Discharge measurements of St. John River at Van Buren, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	2.53	4,030	Oct. 23	1.68	2,570	Feb. 27	[a] 4.10	2,250
Oct. 10	2.47	3,860	Do.	1.67	2,530			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of St. John River at Van Buren, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,940	13,600	21,500	5,400	3,700	2,200	2,700	51,500	34,500	7,730	5,320	4,320
2	4,920	13,300	25,500	4,900	3,700	2,200	2,600	73,200	31,500	7,490	4,920	5,320
3	5,320	12,800	35,000	4,700	3,500	2,200	2,600	88,200	29,000	7,260	4,520	6,810
4	5,320	11,600	33,200	5,000	3,300	2,200	2,600	96,000	27,400	6,810	3,940	6,160
5	5,320	10,600	29,000	5,600	3,400	2,200	2,600	103,000	25,900	6,370	4,320	7,260
6	5,120	9,500	25,900	5,600	3,400	2,200	2,700	108,000	24,700	5,740	4,320	7,030
7	4,920	9,500	25,100	5,800	3,400	2,100	3,000	106,000	22,900	5,320	4,320	7,030
8	4,130	11,600	24,000	5,800	3,300	2,100	3,200	106,000	21,500	4,920	4,520	5,950
9	4,130	13,900	24,400	5,600	3,300	2,200	3,400	106,000	19,800	4,520	4,520	5,950
10	3,940	24,400	24,000	5,600	3,300	2,200	3,500	106,000	18,500	4,520	4,320	6,160
11	3,760	23,600	22,600	5,600	3,200	2,200	3,700	106,000	17,600	4,320	4,320	5,740
12	3,580	20,200	20,800	5,200	3,100	2,200	4,000	104,000	16,600	4,130	4,520	5,740
13	3,410	17,200	19,200	5,200	3,100	2,200	4,200	97,900	16,000	3,760	4,320	5,740
14	3,070	15,100	18,200	5,200	3,000	2,200	4,300	106,000	15,100	3,580	3,760	8,220
15	2,750	13,300	16,500	5,200	3,000	2,200	4,400	108,000	14,500	3,580	3,760	7,970
16	2,910	12,500	16,000	5,200	2,900	2,100	4,700	108,000	14,200	3,580	3,760	7,490
17	2,750	11,400	13,500	5,000	2,800	2,100	4,900	109,000	14,500	3,410	3,580	6,590
18	2,590	11,100	12,000	4,800	2,700	2,100	5,800	102,000	13,900	3,580	2,750	5,740
19	2,440	10,600	7,000	4,800	2,700	2,100	6,400	96,600	13,600	4,520	3,410	5,120
20	2,590	10,000	7,000	4,800	2,500	2,100	6,800	92,700	12,500	6,160	3,240	4,920
21	2,440	9,500	8,000	4,800	2,500	2,100	7,400	84,200	11,900	9,760	3,070	4,130
22	2,290	8,980	9,600	4,800	2,500	2,100	9,000	75,000	10,800	9,760	2,910	3,410
23	2,590	8,470	11,000	4,600	2,500	2,300	9,600	63,000	10,300	8,470	2,750	3,940
24	2,440	7,730	10,500	4,400	2,400	2,600	12,000	59,200	9,760	7,030	2,750	3,940
25	3,070	9,240	9,600	4,300	2,300	2,700	15,000	54,500	9,240	6,160	2,750	3,410
26	9,500	16,300	9,200	4,200	2,300	2,700	16,500	51,000	9,500	5,740	2,910	3,070
27	25,100	27,400	9,200	4,000	2,200	2,700	21,500	48,000	8,720	5,740	3,240	2,910
28	25,100	30,600	7,600	4,000	2,200	2,600	25,000	44,500	8,220	5,950	3,940	2,750
29	21,200	26,200	6,600	3,800	2,200	2,600	27,400	41,500	7,260	7,030	4,320	2,150
30	17,200	22,600	6,600	3,800	-------	2,600	40,600	39,600	7,730	6,810	4,920	2,750
31	15,100	-------	6,000	3,800	-------	2,600	-------	36,800	-------	5,740	4,320	-------

NOTE.—Stage-discharge relation affected by ice Dec. 15 to Apr. 28; discharge for this period determined from gage heights corrected for effect of ice by means of one discharge measurement and records at Grand Falls.

Monthly discharge of St. John River at Van Buren, Me., for the year ending September 30, 1924

[Drainage area, 8,270 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	25,100	2,290	6,550	0.792	0.91
November	30,600	7,730	14,800	1.79	2.00
December	35,000	6,000	16,600	2.01	2.32
January	5,800	3,800	4,890	.591	.68
February	3,700	2,200	2,910	.352	.38
March	2,700	2,100	2,290	.277	.32
April	40,600	2,600	8,740	1.06	1.18
May	109,000	36,800	82,900	10.02	11.55
June	34,500	7,260	16,600	2.01	2.24
July	9,760	3,410	5,790	.700	.81
August	5,320	2,750	3,880	.469	.54
September	8,220	2,150	5,260	.636	.71
The year	109,000	2,100	14,400	1.74	23.64

ST. CROIX RIVER BASIN

ST. CROIX RIVER NEAR BAILEYVILLE, ME.

LOCATION.—A short distance below power house of St. Croix Paper Co. at Grand Falls, Baileyville Township, 3½ miles east of Baileyville station of Maine Central Railroad, Washington County.

DRAINAGE AREA.—1,320 square miles (measured on map compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—November 25, 1919, to September 30, 1924.

GAGE.—Water-stage recorder on right bank; inspected by employee of St. Croix Paper Co.

DISCHARGE MEASUREMENTS.—Made from cable.

CHANNEL AND CONTROL.—Bed covered with gravel and boulders; control for low and medium stages formed by series of riffles near gage; control for high stages not clearly defined.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 5.26 feet at 10 a. m. May 3 (discharge, 6,470 second-feet); minimum discharge, December 9, July 20 and 27 (discharge by extension of rating curve, 100 second-feet).

1919–1924: Maximum stage recorded, 13.90 feet on May 1 1923 (discharge by extension of rating curve, 23,300 second-feet); minimum discharge, same as for 1924.

ICE.—River remains open throughout winter; stage-discharge relation probably not affected by ice or by logs.

REGULATION.—About 30,000,000,000 cubic feet of storage has been developed in lakes and ponds above station. Variations in use of water at the power plant a short distance above gage cause fluctuations in stage.

ACCURACY.—Stage-discharge relation for low water changed slightly during high water in May. Rating curves fairly well defined between 500 and 10,000 second-feet and extended below. Operation of water-stage recorder satisfactory except as indicated in footnote to daily discharge table. Daily discharge ascertained by application of rating table to mean daily gage height as determined by inspection of recorder sheets. Records good.

Discharge measurements of St. Croix River near Baileyville, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 27	2.15	1,470	May 1	4.65	5,470	June 23	2.36	1,820
Mar. 10	2.20	1,560	May 2	5.13	5,930	June 24	2.34	1,800

Daily discharge, in second-feet, of St. Croix River near Baileyville, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,460	1,470	1,520	1,510	1,220	1,390	1,460	5,100	1,280	2,010	1,800	1,330
2	1,250	1,320	750	1,650	1,290	1,050	1,510	6,000	1,520	2,010	1,940	1,940
3	1,010	1,290	1,610	1,720	1,210	1,150	1,530	6,180	1,590	1,280	1,440	1,800
4	974	922	1,650	1,650	1,530	1,120	1,520	5,460	1,650	430	1,200	1,730
5	935	1,320	1,720	1,650	1,460	1,130	1,430	5,820	2,150	2,150	1,460	1,800
6	922	1,360	1,780	1,440	1,400	1,120	1,130	5,460	1,700	1,800	1,290	1,800
7	786	1,290	2,490	1,720	1,550	1,180	1,380	4,060	1,550	2,150	1,330	1,190
8	858	1,140	3,160	1,600	1,510	1,250	1,720	3,120	1,630	2,010	2,010	1,370
9	935	1,260	380	1,460	1,480	948	1,990	2,600	1,940	2,010	1,800	1,700
10	935	1,270	3,200	1,560	1,180	1,310	2,130	2,520	1,870	2,010	1,530	1,650
11	935	883	2,350	1,650	1,550	1,400	2,340	1,730	2,010	2,010	1,940	1,800
12	948	1,360	2,340	1,470	1,460	1,400	2,490	2,150	2,300	2,150	2,150	1,660
13	935	1,360	2,200	1,350	1,430	1,380	2,420	2,080	2,010	1,270	2,150	1,800
14	738	1,250	2,200	1,530	1,580	1,550	2,720	2,080	1,730	1,440	1,660	1,150
15	822	1,160	2,130	1,620	1,570	1,400	3,020	2,080	1,330	1,550	2,150	1,800
16	948	1,290	558	1,650	1,510	909	3,160	1,940	2,150	1,400	1,560	1,660
17	1,090	1,200	2,720	1,510	1,100	974	3,400	1,800	2,010	1,270	1,270	1,870
18	1,210	880	1,850	1,650	1,550	1,170	3,560	1,200	1,800	1,870	1,650	1,870
19	1,300	1,350	1,720	1,650	1,650	1,130	3,800	1,400	1,940	1,620	1,590	1,870
20	1,380	1,340	1,650	1,290	1,510	1,040	3,560	1,730	2,220	100	1,700	1,700
21	1,230	1,260	1,850	1,400	1,570	1,060	3,890	1,320	2,010	2,380	1,620	1,330
22	1,520	1,130	1,920	1,260	1,620	1,290	4,230	1,370	1,400	1,660	1,480	1,660
23	1,400	1,120	1,200	1,230	1,490	922	4,920	1,630	1,600	1,420	1,590	1,400
24	1,310	1,290	1,250	1,250	1,080	1,130	5,640	1,350	1,870	1,510	1,100	1,450
25	1,290	534	920	1,340	1,460	1,220	5,640	1,150	2,220	1,270	1,940	1,730
26	1,780	1,500	1,720	1,310	1,520	1,080	5,640	1,870	2,220	736	1,800	1,940
27	1,920	1,350	1,480	1,250	1,380	1,140	5,280	1,630	2,010	1,380	1,800	1,940
28	1,320	1,350	1,340	1,380	1,350	1,140	5,460	1,560	1,730	2,750	1,870	1,440
29	1,350	1,650	1,390	1,270	1,470	1,120	4,920	1,800	1,220	2,010	2,010	1,800
30	1,380	1,650	1,420	1,230	-------	1,250	4,740	1,940	1,800	1,800	1,940	1,490
31	1,430	-------	1,510	1,210	-------	1,200	-------	1,530	-------	1,730	1,090	-------

NOTE.—Daily discharge Nov. 18, 19, 26–30, Dec. 9–11, 23–25, Mar. 2, 3, May 18, July 20, Aug. 24 estimated by comparison with output in kilowatt-hours of hydroelectric station just above.

Monthly discharge of St. Croix River near Baileyville, Me., for the year ending September 30, 1924

[Drainage area, 1,320 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,920	738	1,170	0.886	1.02
November	1,650	534	1,250	.947	1.06
December	3,200	380	1,740	1.32	1.52
January	1,720	1,210	1,470	1.11	1.28
February	1,650	1,080	1,440	1.09	1.18
March	1,550	909	1,180	.894	1.03
April	5,640	1,130	3,220	2.44	2.72
May	6,180	1,150	2,630	1.99	2.29
June	2,300	1,220	1,820	1.38	1.54
July	2,750	100	1,650	1.25	1.44
August	2,150	1,090	1,670	1.27	1.46
September	1,940	1,150	1,660	1.26	1.41
The year	6,180	100	1,740	1.32	17.95

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches do not represent natural flow from the basin because of artificial storage. (See "Regulation.")

PENOBSCOT RIVER BASIN

WEST BRANCH OF PENOBSCOT RIVER AT MILLINOCKET, ME.

LOCATION.—At Quakish Lake Dam and Millinocket mill of Great Northern Paper Co., Millinocket, Penobscot County.

DRAINAGE AREA.—1,910 square miles (measured on map compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—January 11, 1901, to September 30, 1924.

GAGE.—Water-stage recorder at Quakish Lake Dam and gages in forebay and tailrace at mill.

CHANNEL AND CONTROL.—Crest of concrete dam.

DISCHARGE.—Flow computed by considering the flow over the dam, the flow through the wheels, and the water used through log sluices and filters. The wheels were rated at Holyoke, Mass., before being placed in position and were tested later by numerous tube-float and current-meter measurements. Ratings for four new wheels installed in 1917 are based on acceptance test on one unit after installation; discharge at various gate openings being measured by the use of Pitot tubes. When the flow of river is less than 3,500 second-feet, all the water generally flows through the wheels of the mill.

ICE.—Determination of discharge not seriously affected by ice. Ferguson Pond, just above entrance to canal, eliminates effect from anchor ice.

REGULATION.—Except for a short time during the high-water period, run-off is regulated by storage in North Twin and Ripogenus Lakes, the combined capacity of which is about 45 billion cubic feet. Records corrected for storage.

COOPERATION.—Records furnished by engineers of Great Northern Paper Co.

Monthly discharge of West Branch of Penobscot River at Millinocket, Me., for the year ending September 30, 1924

[Drainage area, 1,910 square miles]

Month	Discharge in second-feet			Corrected run-off in inches
	Observed mean	Corrected for storage		
		Mean	Per square mile	
October	2,470	1,560	0.817	0.94
November	2,020	2,340	1.23	1.37
December	2,460	4,120	2.16	2.49
January	2,660	1,010	.529	.61
February	2,720	413	.216	.23
March	2,730	300	.157	.18
April	2,690	4,510	2.36	2.63
May	2,660	13,000	6.81	7.85
June	2,720	2,060	1.08	1.20
July	2,470	1,310	.686	.79
August	2,490	1,650	.864	1.00
September	2,510	411	.215	.24
The year	2,550	2,740	1.43	19.53

WEST BRANCH OF PENOBSCOT RIVER NEAR MEDWAY, ME.

LOCATION.—Just above Nichatou Rapids, half a mile above mouth of East Branch of Penobscot River and village of Medway, Penobscot County, and 2 miles below East Millinocket.

DRAINAGE AREA.—2,120 square miles (measured on maps compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—February 20, 1916, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by Scott Nadeau.

DISCHARGE MEASUREMENTS.—Made from cable.

CHANNEL AND CONTROL.—Bed fairly smooth at measuring section; covered with rocks and boulders above and below gage. Channel divides a few hundred feet below gage, but practically entire flow passes to left of Nichatou Island. Control formed by Nichatou Island and head of Nichatou Rapids; somewhat shifting.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.64 feet at 2 p. m. May 2 (discharge, 6,740 second-feet); minimum discharge estimated at 100 second-feet on several Sundays when gates in dam above were closed.

1916–1924: Maximum stage recorded, 9.88 feet June 18, 1917 (discharge by extension of rating curve, about 20,000 second-feet); minimum discharge estimated at 100 second-feet at various times during 1923 and 1924 when water was held back by dams.

ICE.—Ice forms along both banks, but the main channel remains open; stage-discharge relation not seriously affected.

REGULATION.—Flow at ordinary stages completely regulated by dams and storage reservoirs above station.

ACCURACY.—Stage-discharge relation shifted slightly during high water. Rating curves well defined between 1,000 and 6,000 second-feet. Daily discharge ascertained by application of rating table to mean daily gage height determined from recorder graph. Records good.

Discharge measurements of West Branch of Penobscot River near Medway, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	2.27	1,130	May 12	3.92	2,920	June 29	2.39	1,180
Do	3.30	2,060	May 28	4.52	4,070	Do	3.52	2,400
Do	4.58	4,090	June 29	2.66	1,380			

Daily discharge, in second-feet, of West Branch of Penobscot River near Medway Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,740	2,890	3,050	3,050	3,470	2,970	3,450	4,600	3,540	2,700	2,630	2,560
2	3,210	2,970	2,560	3,050	3,130	2,480	3,640	5,800	3,100	2,780	2,860	2,860
3	3,560	2,970	2,820	3,050	2,340	2,890	3,840	5,320	3,180	2,700	2,340	3,450
4	3,470	2,220	3,050	3,050	3,210	3,130	3,540	4,490	3,360	1,880	2,780	3,270
5	2,890	2,820	2,970	3,000	3,300	3,210	3,270	4,720	3,540	2,580	2,940	3,360
6	3,210	2,890	3,050	2,300	3,470	3,210	2,780	4,600	3,540	2,700	2,940	3,540
7	2,290	2,970	3,050	2,890	3,470	3,050	3,270	3,640	3,360	2,860	3,100	3,050
8	2,820	3,050	3,300	2,970	3,560	2,820	4,050	3,740	2,600	2,700	2,940	3,100
9	2,970	3,050	2,820	2,970	3,470	2,700	4,160	3,840	2,860	2,940	3,020	3,360
10	3,130	3,050	2,820	3,050	2,650	2,970	4,050	3,840	3,180	3,180	2,380	3,360
11	3,130	2,250	3,130	3,300	2,820	3,050	3,540	3,520	3,540	3,270	2,260	3,450
12	3,210	2,740	3,210	3,210	3,130	3,210	3,740	3,270	3,100	2,630	2,400	3,640
13	3,210	2,970	3,210	2,040	3,130	3,380	3,450	3,640	3,020	2,360	2,400	3,360
14	2,460	2,970	3,380	2,890	3,050	3,210	3,840	4,720	2,780	3,100	2,630	3,020
15	2,970	2,970	3,210	3,050	3,100	2,890	4,720	4,490	2,650	3,180	2,560	3,270
16	2,970	2,970	2,930	3,210	3,100	2,590	4,490	4,720	3,100	3,100	2,480	3,180
17	3,050	2,740	2,820	3,470	2,300	2,820	4,600	4,490	3,270	3,450	2,040	3,540
18	3,050	2,130	3,050	3,380	3,000	3,050	4,380	3,590	3,450	3,360	2,710	3,270
19	3,050	2,820	3,130	3,130	3,200	3,300	3,840	3,270	3,740	3,360	3,020	3,270
20	3,130	2,590	3,130	2,480	3,300	3,300	3,840	3,270	3,020	2,950	2,700	3,540

Daily discharge, in second-feet, of West Branch of Penobscot River near Medway Me., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	2,860	2,590	3,130	2,890	3,300	3,210	3,840	3,360	3,020	3,180	3,270	2,440
22	2,660	2,520	3,210	3,470	3,400	3,300	4,600	3,450	2,410	3,360	3,180	3,540
23	3,050	2,660	2,670	3,650	3,300	2,900	4,960	4,160	2,860	3,360	2,940	3,740
24	3,050	2,970	2,590	3,840	2,400	2,970	4,600	3,740	3,020	3,270	2,930	3,840
25	3,130	2,370	1,850	3,840	3,200	3,470	4,160	3,070	3,020	2,940	3,020	3,840
26	3,210	2,890	2,450	3,560	3,470	3,560	3,940	2,860	3,270	3,020	3,180	3,940
27	3,130	3,130	3,210	2,700	3,470	3,560	4,160	3,450	3,100	2,940	3,270	3,940
28	2,620	2,970	3,300	3,050	3,380	3,380	4,380	3,940	3,020	2,940	3,540	3,560
29	2,820	3,050	3,300	3,300	3,300	2,890	4,720	4,050	2,750	2,700	2,860	2,700
30	2,890	2,970	2,550	3,300	-------	2,740	4,600	3,940	2,860	2,700	3,180	3,100
31	2,970	-------	2,660	3,740	-------	2,970	-------	3,640	-------	2,780	2,700	-------

NOTE.—Discharge estimated Jan. 5, 6, and Feb. 15–25.

Monthly discharge of West Branch of Penobscot River near Medway, Me., for the year ending September 30, 1924

[Drainage area, 2,120 square miles]

Month	Discharge in second-feet					Corrected run-off in inches
	Observed			Corrected for storage		
	Maximum	Minimum	Mean	Mean	Per square mile	
October	3,560	2,290	3,000	2,090	0.986	1.14
November	3,130	2,130	2,800	3,120	1.47	1.64
December	3,380	1,850	2,960	4,620	2.18	2.51
January	3,840	2,040	3,130	1,480	.698	.80
February	3,560	2,300	3,150	843	.398	.43
March	3,560	2,480	3,070	640	.302	.35
April	4,960	2,780	4,020	5,840	2.75	3.07
May	5,800	2,860	3,980	14,300	6.75	7.78
June	3,740	2,410	3,110	2,450	1.16	1.29
July	3,450	1,880	2,930	1,770	.835	.96
August	3,540	2,040	2,810	1,970	.929	1.07
September	3,940	2,440	3,340	1,240	.585	.65
The year	5,800	1,850	3,190	3,380	1.59	21.69

PENOBSCOT RIVER AT WEST ENFIELD, ME.

LOCATION.—At steel highway bridge, 1,000 feet below mouth of Piscataquis River and 3 miles west of Enfield railroad station, Penobscot County.

DRAINAGE AREA.—6,600 square miles.

RECORDS AVAILABLE.—November 5, 1901, to September 30, 1924.

GAGE.—Water-stage recorder on left bank, downstream side of left abutment; installed December 11, 1912; inspected by Maxine M. Swett and Harvey Thompson.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Channel at gage broken by four bridge piers; straight above and below gage. Banks high and rocky and not subject to overflow. Control is at Passadumkeag Rips, 5 miles below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 13.20 feet at 1 a. m. May 3 (discharge, 53,800 second-feet); minimum stage, 1.50 feet at 4 p. m. October 1 (discharge, 2,280 second-feet).

1902–1924: Maximum stage recorded, 25.15 feet May 1, 1923 (discharge by extension of rating curve, 153,000 second-feet); minimum stage recorded, 1.0 foot October 29, 1905 (discharge, 1,470 second-feet).

ICE.—Stage-discharge relation usually affected by ice from December to April; discharge ascertained by comparison with records at Sunkhaze Rips which were collected by Thomas W. Clark.

REGULATION.—Flow largely controlled by storage, principally in lakes tributary to the West Branch. Records not corrected for storage.

ACCURACY.—Stage-discharge relation changed slightly during high water in May; affected by ice and occasionally by logs. Rating curves well defined. Operation of water-stage recorder satisfactory throughout year. Daily discharge ordinarily ascertained by applying rating table to mean daily gage height taken from recorder sheets with corrections for effect of ice and log jams; at times of serious fluctuations in stage daily discharge is ascertained by using average discharge of 12 two-hour periods. Records good.

COOPERATION.—Gage-height record furnished by Thomas W. Clark, hydraulic engineer, Old Town, Maine. Occasional discharge measurements made by students of the University of Maine under the direction of Prof. A. C. Lyon.

Discharge measurements of Penobscot River at West Enfield, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	2.41	4,240	Aug. 12	2.29	4,130
July 14	2.48	4,670	Sept. 15	2.94	5,610

Daily discharge, in second-feet, of Penobscot River at West Enfield, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,940	4,620	10,700	5,600	7,000	5,400	9,400	37,400	11,400	6,220	4,630	3,690
2	3,530	4,620	15,800	5,800	6,600	4,800	9,600	49,200	10,900	6,220	4,630	3,690
3	4,060	4,620	14,300	5,800	6,200	4,400	9,200	51,000	10,200	5,980	4,520	5,070
4	4,620	4,280	13,400	5,800	5,000	5,000	9,200	44,600	9,850	5,640	4,210	5,290
5	4,500	3,630	12,500	6,000	5,400	5,000	9,600	41,900	9,850	4,740	4,320	4,960
6	3,950	4,060	12,100	6,000	5,800	5,400	9,800	41,300	9,560	5,290	4,420	5,180
7	4,170	4,620	16,400	5,400	5,800	5,600	10,200	37,100	9,120	5,400	4,420	4,850
8	3,230	6,020	18,200	5,400	5,800	5,600	12,500	33,200	8,690	5,640	4,420	4,630
9	3,630	7,840	15,800	5,600	5,800	5,400	17,200	30,700	8,270	5,750	4,320	4,850
10	3,950	7,580	13,700	5,600	5,800	5,200	18,000	27,000	8,270	5,750	4,100	5,180
11	3,950	6,910	12,600	6,000	5,200	5,800	17,800	23,800	8,270	5,400	4,100	5,520
12	3,950	5,540	11,600	7,000	5,400	6,200	17,400	21,200	8,140	5,520	4,000	8,270
13	4,060	5,650	10,800	8,000	5,400	6,400	17,400	20,900	7,340	5,290	4,420	6,960
14	3,950	5,540	10,700	7,800	5,600	6,400	17,600	27,000	7,340	4,630	4,320	5,750
15	3,230	5,300	11,000	8,600	5,600	6,200	18,800	26,500	7,340	4,740	4,420	5,520
16	3,630	5,420	9,720	8,800	5,600	5,800	19,500	27,200	7,080	4,850	4,320	5,180
17	3,740	5,080	8,980	9,200	5,400	5,400	19,700	27,000	7,860	4,960	4,100	4,850
18	3,840	4,840	7,980	9,800	4,500	5,600	20,800	23,500	8,410	5,640	3,790	4,960
19	3,950	4,280	7,040	10,000	4,800	5,800	22,000	20,300	8,410	5,750	3,900	4,740
20	4,060	4,840	6,390	9,800	5,000	5,800	22,500	18,600	8,270	5,520	4,100	4,630
21	4,280	4,620	7,040	9,000	5,400	6,200	21,500	16,300	8,000	5,070	4,000	4,210
22	4,060	4,840	7,980	9,200	5,600	7,200	22,800	15,800	8,000	5,290	4,320	4,210
23	3,840	4,840	8,120	9,200	5,600	8,600	28,300	15,600	7,340	5,290	4,420	4,520
24	4,280	4,960	7,300	9,200	5,600	9,600	33,000	15,000	6,840	5,290	4,210	4,630
25	5,080	6,260	6,650	8,800	5,000	10,000	32,400	13,900	6,710	5,180	4,320	4,630
26	6,390	9,270	5,540	8,600	5,200	11,000	31,300	13,900	6,710	4,960	4,320	4,740
27	6,260	10,700	6,200	7,800	5,600	10,500	31,000	13,400	6,710	4,850	4,630	4,630
28	5,420	10,200	6,400	6,000	5,600	9,800	33,000	12,900	6,580	4,000	4,520	4,520
29	4,960	8,830	6,200	6,200	5,600	9,200	35,300	12,500	6,340	4,520	4,520	4,520
30	4,840	8,680	5,600	6,400	-------	9,200	35,900	12,700	5,980	4,630	4,100	4,320
31	4,730	-------	5,400	6,600	-------	9,200	-------	12,200	-------	4,740	4,520	-------

NOTE.—Stage-discharge relation affected by ice Dec. 27 to Apr. 6; discharge for this period computed from gage heights corrected for effect of ice and by comparison with data at Sunkhaze furnished by Thomas W. Clark.

Monthly discharge of Penobscot River at West Enfield, Me., for the year ending September 30, 1924

[Drainage area, 6,600 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	6,390	2,940	4,230	0.641	0.74
November	10,700	3,630	5,950	.902	1.01
December	18,200	5,400	10,100	1.53	1.76
January	10,000	5,400	7,390	1.12	1.29
February	7,000	4,500	5,550	.841	.91
March	11,000	4,400	6,830	1.03	1.19
April	35,900	9,200	20,400	3.09	3.45
May	51,000	12,000	25,300	3.83	4.42
June	11,400	5,980	8,130	1.23	1.37
July	6,220	4,000	5,250	.795	.92
August	4,630	3,790	4,300	.652	.75
September	8,270	3,690	4,960	.752	.84
The year	51,000	2,940	9,040	1.37	18.65

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches do not represent the natural run-off from the basin because of artificial storage. (See "Regulation.")

EAST BRANCH OF PENOBSCOT RIVER AT GRINDSTONE, ME.

LOCATION.—At Bangor & Aroostook Railroad bridge half a mile south of railroad station at Grindstone, Penobscot County, one-eighth mile above Grindstone Falls, and 9½ miles above confluence with West Branch at Medway.

DRAINAGE AREA.—1,070 square miles; includes approximately 240 square miles of Chamberlain Lake drainage (measured on maps compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—October 23, 1902, to September 30, 1924.

GAGE.—Chain gage on railroad bridge; read by R. D. Porter.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Practically permanent; stream confined by abutments of bridge and broken by one pier at ordinary stages; velocity of current medium at moderate and high stages but sluggish at low water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.2 feet at 7.30 a. m. May 2 (discharge, 13,900 second-feet); minimum stage, 4.10 feet August 30–31 (discharge, 185 second-feet).

1902–1924: Maximum stage recorded, 16.5 feet May 2, 1923 (discharge by extension of rating curve, 35,100 second-feet); minimum open-water stage recorded, 3.8 feet October 29–31, 1905 (discharge, 140 second-feet). Estimated minimum discharge of 30 second-feet occurred February 28, 1904, when stage-discharge relation was affected by ice.

ICE.—Ice forms to a considerable thickness at the gage and down to the head of Grindstone Falls, and although the falls usually remain open during the greater part of the winter, the stage-discharge relation is somewhat affected.

REGULATION.—Dams maintained at outlets of a number of lakes and ponds near source of river are regulated for log driving; during the summer and fall gates are generally left open. The basin of the East Branch since about 1840 includes about 240 square miles of territory draining into Chamberlain Lake that formerly drained into the St. John River basin, the diversion being made through what is known as the Telos Canal. Results not corrected for storage and diversions.

ACCURACY.—Stage-discharge relation permanent; affected by backwater from ice. Rating curve well defined. Gage read to hundredths once or twice daily. Daily discharge ascertained by applying rating table to mean daily gage height with corrections for effect of ice during winter. Records good.

Discharge measurements of East Branch of Penobscot River at Grindstone, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 31	a5.84	770	Mar. 25	a5.56	834
Feb. 26	a5.55	502	Aug. 14	4.63	440

a Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of East Branch of Penobscot River at Grindstone, Me. for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	345	490	1,810	1,150	760	520	860	9,060	3,320	1,110	730	201
2	430	490	2,700	1,100	740	520	860	13,900	3,320	1,020	620	193
3	460	430	2,320	1,100	720	540	780	12,000	3,160	930	620	295
4	400	400	1,950	1,100	700	540	860	11,400	3,160	890	550	370
5	400	370	1,880	1,100	700	540	840	10,800	3,000	850	520	295
6	370	370	1,950	1,050	700	540	980	10,200	2,850	810	490	295
7	370	400	3,860	1,050	660	560	1,100	9,340	2,850	770	490	270
8	370	1,300	3,160	1,050	600	580	1,250	9,060	2,700	730	490	243
9	320	1,360	2,850	1,000	560	620	1,500	7,990	2,700	730	270	252
10	320	1,300	2,550	1,000	540	640	1,500	7,220	2,550	690	270	234
11	320	1,020	2,320	1,000	540	660	1,500	6,730	2,550	690	270	890
12	345	975	2,180	1,050	580	660	1,540	6,250	2,400	655	550	730
13	460	890	2,100	1,100	600	660	1,600	6,730	2,400	655	490	490
14	460	850	2,100	1,150	540	660	1,740	7,990	2,320	620	460	370
15	460	850	1,420	1,100	560	660	1,810	6,970	2,250	585	430	370
16	550	810	1,500	980	520	640	1,810	8,520	2,250	585	400	370
17	550	770	1,500	1,000	520	640	2,250	7,220	2,250	620	370	320
18	490	770	1,550	960	500	640	2,550	6,970	2,100	890	370	295
19	520	730	1,550	1,000	500	660	2,550	6,730	2,100	1,020	320	295
20	585	520	1,500	980	500	700	2,700	5,790	1,950	1,060	320	270
21	550	585	1,480	920	500	720	2,700	4,870	1,810	1,000	345	270
22	550	730	1,880	900	500	780	2,850	4,650	1,810	900	320	270
23	520	655	1,670	840	540	820	3,670	4,440	1,740	810	320	345
24	550	655	1,540	840	520	840	4,240	4,240	1,540	770	320	400
25	810	930	1,540	800	490	840	4,240	4,440	1,540	690	295	320
26	890	2,180	1,480	760	500	840	4,650	4,240	1,480	730	270	295
27	1,060	1,810	1,300	720	520	840	5,330	3,490	1,360	730	320	295
28	655	1,480	1,300	720	500	840	6,970	3,160	1,250	655	243	348
29	620	1,360	1,200	720	500	840	7,730	3,490	1,250	655	201	490
30	585	1,300	1,150	740	-------	860	7,990	3,490	1,200	620	185	430
31	460	-------	1,150	760	-------	860	-------	3,490	-------	730	185	-------

NOTE.—Stage-discharge relation affected by ice Dec. 16–20 and Dec. 28 to Apr. 11; discharge for this period based on gage heights corrected for effect of ice. Discharge estimated July 21 and 22.

Monthly discharge of East Branch of Penobscot River at Grindstone, Me., for the year ending September 30, 1924

[Drainage area, 1,070 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,060	320	509	0.476	0.55
November	2,180	370	893	.835	.93
December	3,860	1,150	1,890	1.77	2.04
January	1,150	720	959	.896	1.03
February	760	490	573	.536	.58
March	860	520	686	.641	.74
April	7,990	780	2,700	2.52	2.81
May	13,900	3,160	6,930	6.48	7.47
June	3,320	1,200	2,240	2.09	2.33
July	1,110	585	781	.730	.84
August	730	185	388	.363	.42
September	890	193	350	.327	.36
The year	13,900	185	1,580	1.48	20.10

MATTAWAMKEAG RIVER AT MATTAWAMKEAG, ME.

LOCATION.—At Maine Central Railroad bridge at Mattawamkeag, Penobscot County, half a mile above mouth of river.

DRAINAGE AREA.—1,500 square miles.

RECORDS AVAILABLE.—August 26, 1902, to September 30, 1924.

GAGE.—Chain gage on railroad bridge; read by W. T. Mincher.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel at bridge broken by two piers; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.5 feet at 5 p. m. May 2 (discharge, 14,200 second-feet); minimum stage, 3.52 feet October 1 (discharge, 162 second-feet).

1902–1924: Maximum stage recorded, 19.55 feet May 1, 1923 (discharge by extension of rating curve, 43,900 second-feet); minimum discharge of 86 second-feet on October 4–12, 1905; September 19 and October 6, 1906; September 24–29, 1908; and October 14–17, 1910.

ICE.—Stage-discharge relation usually affected by ice for several months each winter.

REGULATION.—Dams are maintained at outlets of several large lakes and ponds, but the stored water is used only for log driving.

ACCURACY.—Stage-discharge relation permanent during year; affected by backwater from log jams and ice. Rating curve well defined. Gage read to quarter-tenths twice daily, except during winter when it was read once daily. Daily discharge ascertained by applying rating table to mean daily gage height, with corrections for ice and other obstructions. Records good.

Discharge measurements of Mattawamkeag River at Mattawamkeag, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 9	[a] 6.80	933	Mar. 12	[a] 5.82	715	Aug. 12	3.61	207
Feb 11	[a] 6.00	784	June 29	[b] 4.35	766			

[a] Stage-discharge relation affected by ice.
[b] Stage-discharge relation affected by pulpwood.

Daily discharge, in second-feet, of Mattawamkeag River at Mattawamkeag, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	675	3,610	1,200	840	640	2,000	12,700	2,090	820	412	223
2	180	630	4,000	1,150	840	660	2,100	14,200	1,960	820	352	210
3	198	630	4,400	1,100	840	660	2,200	14,200	1,700	760	310	420
4	210	585	4,400	1,100	820	600	2,300	13,900	1,570	760	310	345
5	223	542	4,000	1,050	820	640	2,600	13,600	1,570	720	262	345
6	242	500	3,800	1,000	800	640	2,800	13,300	1,440	880	262	331
7	242	585	4,200	1,000	800	660	3,000	12,700	1,440	920	262	405
8	242	770	4,810	1,000	800	640	3,400	11,600	1,640	920	242	405
9	242	1,310	4,810	940	780	680	3,700	9,960	1,570	960	223	382
10	242	1,440	4,600	940	780	720	4,000	8,640	1,250	1,000	198	382
11	242	1,380	4,200	940	780	720	4,400	7,100	1,020	1,000	180	468
12	242	1,080	3,610	980	800	740	4,600	6,140	970	960	210	585
13	242	870	3,230	1,000	800	740	5,020	5,460	1,080	960	216	675
14	223	770	3,040	1,100	760	740	5,240	5,020	1,250	940	236	675
15	210	675	3,040	1,100	760	740	5,680	5,020	1,500	920	198	630

Daily discharge, in second-feet, of Mattawamkeag River at Mattawamkeag, Me., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	198	630	2,700	1,150	760	740	5,910	5,020	1,700	920	210	585
17	198	585	2,700	1,100	760	680	5,910	5,020	1,500	920	210	500
18	204	585	2,380	1,100	700	680	6,140	5,460	1,310	960	210	428
19	236	630	2,090	1,100	720	680	6,140	4,810	1,080	960	210	375
20	242	870	2,090	1,100	680	700	6,140	4,200	920	870	180	352
21	275	630	2,230	1,100	660	780	6,370	4,000	675	630	210	331
22	275	722	1,830	1,050	640	900	6,850	3,800	585	542	210	310
23	275	675	1,700	1,000	660	1,100	8,120	3,040	630	436	210	289
24	310	675	1,570	960	660	1,350	9,420	2,870	722	420	198	310
25	405	970	1,500	940	640	1,500	9,420	2,870	585	382	198	310
26	500	1,830	1,500	920	700	1,650	9,420	2,530	542	345	198	310
27	630	2,530	1,440	920	740	1,700	9,960	2,380	620	345	249	331
28	675	2,700	1,440	900	740	1,750	11,000	2,090	720	360	282	310
29	675	2,870	1,350	880	640	1,800	11,600	2,230	760	375	262	310
30	630	3,040	1,300	860	-------	1,900	12,200	2,380	880	420	242	310
31	585	-------	1,250	840	-------	1,950	--------	2,380	-------	420	242	-------

NOTE.—Stage-discharge relation affected by ice Dec. 29 to Apr. 9; discharge for this period based on gage heights corrected for effect of ice. Stage-discharge relation slightly affected by pulpwood June 27 to July 19; discharge for this period computed from gage heights corrected for effect of pulpwood by means of one discharge measurement, observer's notes, and weather records.

Monthly discharge of Mattawamkeag River at Mattawamkeag, Me., for the year ending September 30, 1924

[Drainage area, 1,500 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	675	162	311	0.207	0.24
November	3,040	500	1,080	.720	.80
December	4,810	1,250	2,870	1.91	2.20
January	1,200	840	1,020	.680	.78
February	840	640	749	.499	.54
March	1,950	600	970	.647	.75
April	12,200	2,000	5,920	3.95	4.41
May	14,200	2,090	6,730	4.49	5.18
June	2,090	542	1,180	.787	.88
July	1,000	345	730	.487	.56
August	412	180	239	.159	.18
September	675	210	395	.263	.29
The year	14,200	162	1,850	1.23	16.81

PISCATAQUIS RIVER NEAR FOXCROFT, ME.

LOCATION.—At highway bridge known as Lows Bridge, halfway between Guilford and Foxcroft, Piscataquis County, three-quarters of a mile above mouth of Black Stream, and 3 miles below Mill Stream.

DRAINAGE AREA.—286 square miles.

RECORDS AVAILABLE.—August 17, 1902, to September 30, 1924.

GAGE.—Staff attached to left abutment of bridge; read by A. F. D. Harlow.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Banks high and subject to overflow only during extreme floods; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.0 feet at 6 a. m. May 2 (discharge by extension of rating curve, 8,300 second-feet); minimum stage, 1.27 feet during several days in August (discharge by extension of rating curve, 11 second-feet).

1902–1924: Maximum discharge recorded, 21,700 second-feet on September 29, 1909 (by extension of rating curve); minimum discharge, 5 second-feet August 6, 1905, and November 22, 1908 (water held back by dams).

ICE.—Stage-discharge relation affected by ice during winter.

REGULATION.—The stream is used to develop power at two manufacturing plants at the dam in Guilford; distribution of flow somewhat affected by operation of wheels.

ACCURACY.—Stage-discharge relation changed during high water in May; affected by backwater from ice. Rating curves well defined below 5,000 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying rating table to mean daily gage height with corrections for effect of ice. Records fair.

Discharge measurements of Piscataquis River near Foxcroft, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 25	[a] 3.47	468	May 13	5.81	3,090	Aug. 19	2.65	264
Feb. 13	[a] 3.19	170	Aug. 13	1.69	35.0	Aug. 28	1.82	44.8
Mar. 26	[a] 3.38	493	Aug. 19	2.50	215	Sept. 10	1.71	35.6

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Piscataquis River near Foxcroft, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	44	2,000	240	210	135	355	4,470	345	127	36	42
2	15	31	1,700	260	200	230	355	6,870	372	173	26	50
3	15	51	1,100	200	165	260	355	4,450	294	81	26	50
4	15	51	800	190	190	260	355	3,840	209	57	17	50
5	24	90	720	155	230	135	260	2,560	209	64	17	85
6	31	46	925	92	150	76	440	2,150	209	57	17	87
7	15	100	2,320	150	72	76	880	2,050	81	130	22	23
8	15	840	1,330	76	96	78	1,900	1,750	26	60	22	44
9	15	680	970	64	130	48	2,000	1,750	72	60	17	42
10	31	380	800	145	145	140	1,900	1,650	127	64	11	50
11	15	305	800	155	140	140	1,510	1,550	147	141	11	2,050
12	15	280	570	140	110	80	1,330	1,550	173	72	17	940
13	15	280	640	200	72	105	1,510	2,890	20	57	29	430
14	15	240	640	200	49	110	1,800	3,240	20	58	25	320
15	15	120	305	230	98	110	1,800	2,450	20	60	13	249
16	15	260	145	195	94	210	1,330	2,450	209	64	13	209
17	15	280	240	180	31	380	1,600	2,560	34	58	13	141
18	15	120	640	500	43	600	2,000	1,550	26	52	24	69
19	31	160	540	450	58	560	1,510	1,450	72	35	114	57
20	46	80	205	320	72	540	1,900	1,550	39	35	141	36
21	120	31	260	360	66	680	2,100	1,100	39	35	147	35
22	240	40	560	500	72	500	2,650	905	34	35	107	87
23	46	31	175	480	74	500	2,760	730	34	35	37	50
24	84	32	240	380	74	580	2,760	730	34	31	28	50
25	500	500	280	380	100	600	2,320	730	44	31	22	81
26	605	1,330	280	360	100	470	2,100	660	72	26	22	81
27	280	640	290	260	130	540	2,540	660	72	26	47	39
28	122	500	410	210	110	260	3,420	660	44	31	35	34
29	205	570	230	145	130	260	2,980	660	57	41	32	44
30	40	720	110	170	-------	280	2,870	460	64	36	30	44
31	42	-------	110	200	-------	330	-------	400	-------	36	23	-------

NOTE.—Stage-discharge relation affected by ice Dec. 17–19, 22, and Dec. 27 to Mar. 28; discharge for this period based on gage height corrected for effect of ice.

Monthly discharge of Piscataquis River near Foxcroft, Me., for the year ending September 30, 1924

[Drainage area, 286 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	605	15	86.2	0.301	0.35
November	1,330	31	294	1.03	1.15
December	2,320	110	656	2.29	2.64
January	500	64	245	.857	.99
February	230	31	111	.388	.42
March	680	48	299	1.05	1.21
April	3,420	260	1,720	6.01	6.70
May	6,870	400	1,950	6.82	7.86
June	372	20	107	.374	.42
July	173	26	60.3	.211	.24
August	147	11	36.8	.129	.15
September	2,050	23	186	.650	.73
The year	6,870	11	480	1.68	22.86

PISCATAQUIS RIVER AT MEDFORD, ME.

LOCATION.—At lower ferry at Medford, Piscataquis County, 1¾ miles above mouth of Schoodic Stream and 14 miles above confluence with Penobscot River.

DRAINAGE AREA.—1,170 square miles (measured on maps compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—June 27 to September 30, 1924.

GAGE.—Inclined staff gage on left bank 300 feet below ferry; read by A. W. Boobar.

DISCHARGE MEASUREMENTS.—Made from ferryboat or by wading.

CHANNEL AND CONTROL.—Bed of gravel and alluvial deposits. Control well defined by riffle of boulders one-fourth mile below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 5.08 feet at 5.30 a. m. September 12 (discharge, 3,170 second-feet); minimum stage, 2.08 feet at 6.30 a. m. September 22 (discharge, 245 second-feet).

ICE.—Stage-discharge relation affected by ice during winter.

REGULATION.—Distribution of flow during low-water periods somewhat affected by operation of power plants on main river and tributaries above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying rating table to mean daily gage height. Records good.

Discharge measurements of Piscataquis River at Medford, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
June 27	3.02	802	Aug. 12	2.73	557
July 14	2.42	391	Aug. 29	2.16	275

Daily discharge, in second-feet, of Piscataquis River at Medford, Me., for the year ending September 30, 1924

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1		740	665	312	16		595	490	665
2		780	595	356	17		980	380	860
3		740	560	740	18		1,190	356	700
4		630	525	860	19		860	430	665
5		490	525	560	20		595	430	740
6		430	525	630	21		780	460	460
7		490	525	460	22		820	630	405
8		700	490	595	23		860	560	560
9		900	380	490	24		900	460	700
10		740	430	630	25		860	560	595
11		700	525	940	26		740	430	740
12		665	405	2,730	27	780	665	665	525
13		525	560	1,370	28	700	595	490	525
14		490	460	940	29	630	630	333	490
15		595	490	900	30	860	630	405	525
					31		630	356	

Monthly discharge of Piscataquis River at Medford, Me., for the year ending September 30, 1924

[Drainage area, 1,170 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
June 27–30			742	0.634	0.09
July	1,190	430	708	.605	.70
August	665	333	487	.416	.48
September	2,730	312	722	.617	.69
The period	2,730	312	642	.549	1.96

PLEASANT RIVER AT MILO, ME.

LOCATION.—At highway bridge known locally as Snows Bridge in Milo, Piscataquis County.

DRAINAGE AREA.—325 square miles (measured on map compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—June 4, 1920, to September 30, 1924.

GAGE.—Chain gage on downstream side of bridge near left abutment; read by H. S. Snow, Ralph Quint, and Almon Stevens.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed covered with coarse gravel. Control for low stages is well-defined riffle 100 feet below gage; control at high stages formed by series of riffles extending 1 mile below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year, 6.85 feet at 5 a. m. May 2 (discharge by extending rating curve, 7,020 second-feet); minimum stage, 2.34 feet at 6.30 a. m. September 1 and 6 a. m. September 2 (discharge, 48 second-feet).

1920–1924: Maximum stage recorded, 14.33 feet April 30, 1923 (discharge by extension of rating curve, 24,400 second-feet); minimum stage, 2.10 feet July 29, August 2, and September 11, 1921 (discharge, 22 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—The flow is partly regulated by a power development at Brownville and by storage dams at the headwaters which are used during log-driving season.

ACCURACY.—Stage-discharge relation changed during high water May 2. Rating curves fairly well defined between 100 and 6,000 second-feet. Gage read to hundredths twice daily except during winter when readings were obtained once daily. Daily discharge ascertained by applying rating table to mean daily gage height. Records fair.

Discharge measurements of Pleasant River at Milo, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 10	[a] 4.11	180	Apr. 24	4.55	2,220	June 25	2.99	396
Feb. 12	[a] 4.60	310	Do	4.52	2,160	Aug. 13	2.61	138
Mar. 13	[a] 4.60	213	May 13	4.60	2,290	Aug. 28	2.58	129
Mar. 25	[a] 4.53	392	May 28	3.28	597			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Pleasant River at Milo, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	218	1,700	230	250	200	310	3,790	569	196	267	50
2	83	193	1,700	230	230	200	340	6,470	545	163	228	54
3	81	153	1,150	230	210	200	350	4,730	500	158	185	294
4	81	137	940	175	210	200	350	3,890	609	147	152	373
5	83	137	1,150	175	220	200	350	3,270	545	131	147	215
6	78	264	1,220	165	220	195	353	3,270	500	113	163	90
7	100	398	2,600	170	220	220	392	2,300	462	122	163	66
8	177	668	1,780	175	210	220	1,220	1,510	410	267	163	196
9	169	668	1,450	165	195	200	1,150	2,670	577	577	152	141
10	153	398	1,150	175	110	190	901	2,670	670	185	158	163
11	145	322	875	260	200	175	888	1,880	425	196	158	538
12	129	264	379	290	290	200	836	1,510	253	168	152	706
13	137	264	405	310	280	200	702	2,670	679	136	136	388
14	111	210	542	300	260	200	875	3,680	522	131	141	240
15	114	405	940	300	250	200	849	3,070	1,080	131	136	185
16	100	413	1,080	250	250	195	738	3,890	857	131	136	163
17	100	405	774	260	120	250	940	3,270	1,140	601	122	253
18	94	360	580	270	155	300	1,450	2,040	888	661	108	253
19	114	326	470	280	165	330	1,870	1,260	402	260	104	228
20	153	336	400	290	185	370	1,700	1,260	697	196	95	203
21	228	437	340	260	195	380	1,450	1,510	1,380	485	90	163
22	236	570	300	260	195	390	1,450	1,960	975	432	75	158
23	197	477	290	250	175	370	2,600	2,040	975	448	131	190
24	228	210	270	250	125	390	2,230	857	470	478	168	315
25	552	613	250	250	195	390	2,050	795	337	440	179	253
26	714	1,010	230	240	195	360	1,870	857	288	410	147	215
27	429	1,010	220	240	190	330	2,050	795	260	351	158	185
28	272	646	200	230	195	310	2,600	661	240	234	113	147
29	228	353	195	230	195	310	2,600	997	425	222	99	141
30	205	366	180	260	-------	330	2,980	1,080	267	234	95	113
31	201	-------	190	280	-------	340	-------	601	-------	301	81	-------

NOTE.—Stage-discharge relation affected by ice Dec. 18 to Apr. 5; discharge for this period computed from gage heights corrected for effect of ice by means of four discharge measurements, observer's notes, and weather records.

Monthly discharge of Pleasant River at Milo, Me., for the year ending September 30, 1924.

[Drainage area, 325 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	714	78	187	0.575	0.66
November	1,010	137	408	1.26	1.41
December	2,600	180	773	2.38	2.74
January	310	165	240	.738	.85
February	290	110	203	.625	.67
March	390	175	269	.828	.95
April	2,980	310	1,280	3.94	4.40
May	6,470	601	2,300	7.08	8.16
June	1,380	240	598	1.84	2.05
July	661	113	281	.865	1.00
August	267	75	142	.437	.50
September	706	50	223	.686	.77
The year	6,470	50	577	1.78	24.16

PASSADUMKEAG RIVER AT LOWELL, ME.

LOCATION.—Half a mile below dam and highway bridge at Lowell, Penobscot County, and 10 miles above mouth of river.

DRAINAGE AREA.—301 square miles.

RECORDS AVAILABLE.—October 1, 1915, to September 30, 1924.

GAGE.—Water-stage recorder on right bank half a mile below highway bridge; inspected by M. J. Leard.

DISCHARGE MEASUREMENTS.—Made from cable near gage or by wading.

CHANNEL AND CONTROL.—Channel rough and somewhat irregular above gage; fairly smooth below. Control for low and medium stages is well-defined riffle 150 feet below gage; for high stages not well defined.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.40 feet at 2 p. m. April 26 (discharge, 1,520 second-feet); minimum stage, 0.45 foot on several days in October when gates at dam were closed (discharge, 15 second-feet).

1916–1924: Maximum stage recorded, 9.40 feet at 4 p. m. May 2, 1923 (discharge by extension of rating curve, 5,680 second-feet); minimum discharge, estimated at 5 second-feet several days in July and August, 1921, when gates at dam were closed.

ICE.—Stage-discharge relation usually affected by ice from December to April.

REGULATION.—Distribution of flow somewhat affected by use of storage reservoirs above station. A small dam and mill half a mile above gage cause diurnal fluctuations in stage when mill is in operation, usually from May to November.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined below 3,500 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by applying rating table to mean daily gage height as determined from inspection of recorder sheets with corrections for effect of ice. For days when large variations in stage occurred, mean bi-hourly discharges were used. Records good.

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Discharge measurements of Passadumkeag River at Lowell, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 9	[a] 3.68	148	Mar. 12	[a] 1.85	171
Feb. 11	[a] 2.55	193	June 30	2.14	370

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Passadumkeag River at Lowell, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	168	492	200	220	170	366	1,070	1,130	359	165	42
2	176	319	567	190	220	170	373	1,130	1,070	277	161	162
3	135	285	608	180	220	170	373	1,130	1,160	196	150	227
4	91	257	608	175	220	170	373	1,100	1,100	300	142	218
5	83	227	576	170	220	170	366	1,100	925	262	132	256
6	88	201	585	160	220	170	373	1,100	875	257	127	37
7	26	196	675	155	220	170	408	1,100	1,010	230	125	164
8	183	204	700	150	220	170	504	1,000	800	265	127	268
9	142	230	700	150	210	170	608	960	1,010	492	98	191
10	108	249	675	150	210	170	675	875	825	380	33	169
11	70	271	652	165	210	170	750	775	775	319	34	204
12	83	274	608	170	210	170	825	585	775	306	57	171
13	82	265	554	170	210	170	850	652	700	306	189	165
14	51	254	500	190	200	170	850	700	700	306	169	376
15	145	235	480	210	200	170	875	700	825	291	38	384
16	118	219	440	220	195	175	900	652	800	274	74	332
17	85	204	410	240	195	175	900	850	775	271	126	332
18	112	196	390	250	190	175	900	925	775	294	197	342
19	104	186	360	270	185	175	925	980	675	309	38	252
20	107	174	340	280	185	175	1,010	980	652	325	59	227
21	22	165	310	300	180	188	980	980	580	332	209	319
22	146	169	300	300	180	206	1,040	1,010	558	312	119	322
23	100	188	288	290	175	227	1,160	980	558	276	39	265
24	184	217	274	280	170	260	1,220	1,010	553	246	85	240
25	224	265	265	270	170	274	1,250	1,190	524	161	200	227
26	97	338	254	260	170	322	1,310	1,370	520	150	162	166
27	130	436	246	250	170	345	1,250	1,250	508	152	195	60
28	194	472	240	240	170	356	1,160	1,190	460	167	230	224
29	281	472	230	240	170	356	1,100	1,160	352	163	183	288
30	238	452	220	230	-------	352	1,040	1,160	359	134	182	214
31	237	-------	210	230	-------	359	-------	1,220	-------	93	193	-------

NOTE.—Stage-discharge relation affected by ice Dec. 14-21 and Dec. 28 to Mar. 20; discharge for these periods computed from gage heights corrected for effect of ice by means of three discharge measurements, observer's notes, weather records, and gage heights from chain gage half a mile above. Discharge May 4-9 based on chain gage readings.

Monthly discharge of Passadumkeag River at Lowell, Me., for the year ending September 30, 1924

[Drainage area, 301 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	281	22	129	0.429	0.49
November	472	165	260	.864	.96
December	700	210	444	1.48	1.71
January	300	150	217	.721	.83
February	220	170	197	.654	.71
March	359	170	215	.714	.82
April	1,310	366	824	2.74	3.06
May	1,370	585	996	3.31	3.82
June	1,160	352	744	2.47	2.76
July	492	93	265	.880	1.01
August	230	33	130	.432	.50
September	384	37	228	.757	.84
The year	1,370	22	387	1.29	17.51

KENNEBEC RIVER BASIN

MOOSE RIVER NEAR ROCKWOOD, ME.

LOCATION.—Just below outlet of Brassau Lake, 3 miles above Moosehead Lake and 4 miles west of Kineo station and Rockwood post office, Rockwood Township, Somerset County.

DRAINAGE AREA.—708 square miles (revised from map compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—September 7, 1902, to December 31, 1908; May 16, 1910, to September 18, 1912; November 1, 1919, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by W. H. Maynard.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel consists of ledge rock and gravel. Control well defined and fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 7.23 feet at 4.30 p. m. May 15 (discharge, 7,460 second-feet); minimum stage, 1.82 feet at 5 p. m. March 17 (discharge, 166 second-feet).

1902–1908; 1910–1912; and 1919–1924: Maximum stage recorded, 9.58 feet at noon May 1, 1923 (discharge by extension of rating curve, 12,200 second-feet); minimum stage, 1.30 feet December 16, 1903 (discharge, by extension of rating curve, 70 second-feet).

ICE.—Stage-discharge relation not usually affected by ice.

REGULATION.—During April, May, and June, the operation of Long Pond for log-driving causes a small diurnal fluctuation.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve fairly well defined. Operation of water-stage recorder satisfactory except as noted in footnote to daily discharge table. Daily discharge ascertained by applying rating table to mean daily gage height. Records good.

Discharge measurements of Moose River near Rockwood, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 12	3.24	1,060	Feb. 19	2.05	267	June 11	4.02	1,860
Nov. 20	2.90	773	May 7	6.92	6,770	Sept. 30	2.24	360
Jan. 23	2.48	488						

Daily discharge, in second-feet, of Moose River near Rockwood, Me, for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	310	760	1,520	790	412	213	290	5,200	1,920	1,680	385	270
2	310	752	1,800	752	401	209	330	6,400	1,800	1,110	360	270
3	305	722	1,920	715	390	209	330	6,600	1,360	722	340	260
4	305	708	1,920	686	375	200	335	6,400	1,260	780	340	250
5	305	679	1,860	665	370	200	330	6,600	1,310	840	360	240
6	290	658	1,800	658	385	204	315	6,800	1,180	900	370	230
7	276	679	1,920	644	380	204	330	6,800	1,290	966	412	226
8	281	820	1,980	630	375	218	396	6,800	1,410	1,060	428	218
9	276	1,000	2,040	616	355	218	440	7,000	1,360	890	423	213
10	276	1,100	1,980	616	345	218	478	7,000	1,410	842	428	222
11	272	1,090	1,860	637	345	218	518	6,600	1,680	798	1,080	325
12	267	1,060	1,740	637	340	218	581	6,200	1,860	693	1,040	412
13	262	1,010	1,680	637	325	213	651	6,200	1,630	637	1,050	478
14	267	975	1,630	644	320	209	715	7,000	1,410	672	1,000	478
15	267	930	1,180	630	310	204	798	7,200	1,140	679	880	456

Daily discharge, in second-feet, of Moose River near Rockwood, Me., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	258	898	1,410	595	295	196	874	7,000	966	616	760	440
17	258	866	1,410	595	285	183	966	6,600	906	798	630	423
18	253	850	1,360	588	276	196	1,120	5,800	1,240	966	574	401
19	258	882	1,250	574	267	209	1,460	5,600	1,130	708	512	390
20	267	812	1,180	548	276	209	1,740	5,200	1,080	782	467	385
21	262	760	1,130	536	281	213	1,860	5,000	1,070	858	412	375
22	262	752	1,080	512	272	218	2,040	4,410	1,060	898	396	370
23	401	722	1,060	489	258	222	2,230	4,140	1,010	1,310	370	370
24	524	730	1,040	484	258	235	2,300	3,960	1,050	1,460	350	370
25	623	828	1,000	478	249	240	2,360	3,710	948	1,460	325	370
26	730	1,020	975	450	244	244	2,500	3,070	828	1,310	310	360
27	768	1,200	939	467	240	249	2,710	2,710	984	708	290	360
28	760	1,310	914	440	240	253	3,140	2,360	1,150	467	276	360
29	752	1,300	898	434	222	262	3,800	2,300	1,410	434	253	360
30	686	1,290	858	423	-------	285	4,410	2,300	1,520	418	244	360
31	752	-------	820	418	-------	290	-------	1,980	-------	406	262	-------

NOTE.—No gage-height record July 4–6, Aug. 14–16, Sept. 1–6, 22–29; discharge estimated by comparison with records of Dead River at The Forks and precipitation records.

Monthly discharge of Moose River near Rockwood, Me., for the year ending September 30, 1924

[Drainage area, 708 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	768	253	390	0.551	0.64
November	1,310	658	905	1.28	1.43
December	2,040	820	1,420	2.01	2.32
January	790	418	580	.819	.94
February	412	222	313	.442	.48
March	290	183	221	.312	.36
April	4,410	290	1,340	1.89	2.11
May	7,200	1,980	5,320	7.51	8.66
June	1,920	828	1,280	1.81	2.02
July	1,680	406	867	1.22	1.41
August	1,080	244	494	.698	.80
September	478	213	341	.482	.54
The year	7,200	183	1,130	1.60	21.71

MOOSEHEAD LAKE AT EAST OUTLET, ME.

LOCATION.—At wharf at east outlet of lake, at Moosehead, Piscataquis County.

DRAINAGE AREA.—1,240 square miles.

RECORDS AVAILABLE.—April 1, 1895, to September 30, 1924.

GAGE.—Staff at end of boat landing; two data have been used at east outlet; the first (or original datum) is 1,011.20 feet above mean sea level and approximately 10 feet below sills of outlet gates; gage is read to this datum; the second, to which all gage readings published to and including 1911 have been referred, is 10 feet higher; that is, the zero is at the sill of the gates; as it is believed that low water may go below the sill of the gates (zero of second datum), gage heights since 1912 are published as read; that is, to original datum.

REGULATION.—The lake is regulated to a capacity of 23,735 million cubic feet. The dam at the east outlet is controlled by 39 gates, the sills of the gates being at elevations varying from 8.0 feet to 11.4 feet. At extreme low stages the flow from the lake is controlled by a bar above the dam at an approximate gage height of 9 feet. The records show only fluctuations in the level of the lake and are used in the studies of regulation of the lake and in computing the natural flow of Kennebec River at The Forks.

COOPERATION.—Record furnished by Hollingsworth & Whitney Co.

Daily gage height, in feet, of Moosehead Lake at east outlet, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.0				13.2						15.45	13.85
2		12.25		13.65			11.1	13.75	17.5	16.75		
3	13.0		12.85			12.0						13.8
4				13.65	13.1		11.05		17.5	16.65	15.25	
5	12.9	12.2	13.0			11.85		14.65				13.7
6					13.05				17.45		15.15	
7		12.2	13.1	13.6		11.8	11.0	15.15		16.5		
8	12.8				13.0						15.1	13.55
9		12.3		13.55			11.05	15.65	17.35	16.4		
10	12.8		13.3			11.7					14.95	13.4
11				13.55	12.9		11.1		17.3	16.35		
12		12.2	13.45			11.55		16.2				13.5
13	12.6				12.8				17.3		14.9	
14		12.2	13.5	13.5		11.5	11.25	16.65		16.2		
15	12.5				12.75						14.8	13.55
16		12.35		13.5			11.35	17.1	17.3	16.1		
17	12.4		13.6			11.4						13.5
18				13.5	12.6		11.4		17.25	16.1	14.65	
19	12.3	12.3	13.65			11.3		17.45				13.5
20					12.5				17.15		14.55	
21		12.25	13.7	13.45		11.25	11.8	17.5		16.0		
22	12.2				12.45						14.4	13.3
23		12.25		13.45			12.1	17.5	17.1	15.95		
26	12.25		13.7			11.1						13.25
25				13.4	12.35		12.2		17.0	15.85	14.2	
26	12.3	12.4	13.7			11.1		17.5				13.15
27					12.3				16.9		14.1	
28		12.45	13.7	13.35		11.1	12.7	17.5		15.7		
29	12.3				12.1						14.0	13.05
30		12.5		13.25			13.1	17.5	16.8	15.55		
31	12.3		13.7			11.1						

KENNEBEC RIVER AT MOOSEHEAD, ME.

LOCATION.—At Canadian Pacific Railway bridge one-fourth mile below east outlet dam on Moosehead Lake, half a mile northwest of Moosehead railroad station in Big Squaw Mountain Township, Piscataquis County, and 4.4 miles from Somerset Junction.

DRAINAGE AREA.—1,240 square miles (measured on map compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—October 1, 1919, to September 30, 1924.

GAGE.—Chain gage near middle of bridge, downstream side; read by Odilon Bruneau. Sanborn water-stage recorder on west pier of bridge used May 6 to July 22, 1924.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Large boulders and gravel. Control is a series of rapids; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.10 feet at 7 a. m. May 21 (discharge, 6,290 second-feet); minimum stage, 0.84 foot December 4 (discharge by extension of rating curve, 195 second-feet).

1919–1924: Maximum stage recorded, 7.13 feet May 12 and 13, 1920 (discharge by extension of rating curve, 13,400 second-feet); minimum stage, 0.61 foot April 7–15, 1923 (discharge, by extension of rating curve, 62 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Leakage through west outlet dam and occasional opening of gates in this dam allow some water to pass down the west channel which is not included in records of flow at this station.

REGULATION.—Discharge is regulated by operation of gates at Moosehead Lake; large diurnal fluctuations occur during log-driving season.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined above 300 second-feet. Chain gage read to hundredths twice daily except from January 25 to March 31 when it was read once daily. Water-stage recorder operated satisfactorily during log-sluicing period May 7 to July 22. Daily discharge determined by applying rating table to mean daily gage height. Records good.

Discharge measurements of Kennebec River at Moosehead, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 24	2.78	1,590	May 7	1.43	403	July 22	2.47	1,210
May 7	1.43	396	July 22	3.21	2,210			

Daily discharge, in second-feet, of Kennebec River at Moosehead, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,560	750	261	1,190	1,630	2,190	1,370	252	3,030	2,790	2,490	2,650
2	1,440	1,250	216	1,310	1,700	2,190	1,310	252	3,150	2,980	2,490	2,650
3	1,310	1,250	255	1,830	1,630	2,040	1,310	365	2,740	2,990	2,490	2,650
4	1,310	1,250	202	1,830	1,630	2,190	1,250	385	2,670	2,770	2,490	2,490
5	1,310	1,250	246	1,830	1,760	2,040	1,310	385	3,030	3,600	2,490	2,490
6	1,560	1,080	258	1,760	1,760	2,190	1,310	408	3,230	2,800	2,490	2,490
7	1,440	920	249	1,560	1,900	2,190	1,310	385	3,030	2,740	2,490	2,490
8	1,440	675	234	1,630	1,760	1,900	572	408	2,920	2,620	2,490	2,490
9	1,500	712	234	1,630	1,830	1,760	210	385	3,080	2,460	2,490	2,490
10	1,440	605	264	1,700	1,760	1,760	210	385	2,800	2,540	2,490	2,190
11	1,440	675	277	1,630	1,830	1,760	208	408	2,490	2,690	2,340	1,020
12	1,370	750	274	1,630	1,900	1,760	208	408	2,470	2,490	2,490	365
13	1,440	675	284	1,560	1,760	1,630	213	408	2,380	2,340	2,490	345
14	1,440	1,310	258	1,560	1,760	1,560	202	3,530	3,020	2,270	2,340	341
15	1,440	1,250	302	1,500	1,760	1,500	205	430	2,880	2,810	2,340	317
16	1,310	1,190	280	1,500	1,830	1,500	216	455	2,690	2,840	2,190	675
17	1,370	1,250	267	1,500	1,760	1,500	219	3,240	2,880	2,730	2,340	750
18	1,310	1,250	1,130	1,080	1,760	1,500	222	2,560	2,880	2,680	2,340	640
19	1,250	1,250	1,130	1,130	1,760	1,500	222	1,400	2,470	2,540	2,340	1,630
20	1,250	1,130	1,190	1,020	1,760	1,370	231	3,140	2,740	2,770	2,340	1,900
21	1,250	1,190	1,370	1,080	1,760	1,440	243	3,270	2,890	2,640	2,340	1,900
22	1,250	1,190	1,250	1,130	1,760	1,370	249	3,570	2,850	2,440	2,340	1,900
23	1,250	1,190	1,250	1,310	1,760	1,370	249	4,900	2,800	2,340	2,340	1,900
24	970	1,370	1,130	1,560	1,760	1,370	246	4,630	2,950	2,650	2,490	1,700
25	675	252	1,250	1,630	1,830	1,370	225	3,410	3,020	2,650	2,650	1,310
26	408	225	1,190	1,500	1,760	216	213	3,180	2,820	2,490	2,650	1,310
27	225	228	1,190	1,630	1,900	210	210	3,270	2,820	2,490	2,650	1,250
28	258	237	1,250	1,630	2,040	210	243	2,160	2,960	2,340	2,650	1,310
29	261	246	1,310	1,560	2,040	1,310	246	2,130	2,550	2,490	2,650	1,250
30	325	258	1,250	1,630	-------	1,250	249	2,540	3,020	2,490	2,650	1,250
31	455	-------	1,250	1,630	-------	1,310	-------	2,160	-------	2,490	2,650	-------

Monthly discharge of Kennebec River at Moosehead, Me., for the year ending September 30, 1924

[Drainage area, 1,240 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,560	225	1,140	0.919	1.06
November	1,370	225	895	.722	.81
December	1,370	202	694	.560	.65
January	1,830	1,020	1,510	1.22	1.41
February	2,040	1,630	1,790	1.44	1.55
March	2,190	210	1,530	1.23	1.42
April	1,370	202	489	.394	.44
May	4,900	252	1,770	1.43	1.65
June	3,230	2,380	2,840	2.29	2.56
July	3,600	2,270	2,640	2.13	2.46
August	2,650	2,190	2,470	1.99	2.29
September	2,650	317	1,600	1.29	1.44
The year	4,900	202	1,610	1.30	17.74

NOTE.—Two gates at west outlet dam were open from Apr. 30 to May 7, four gates open May 8–12, three gates open May 13–28, allowing water to pass down west channel; also leakage through gates at west outlet at high stages of Moosehead Lake. For the above reasons the measured discharge at gage does not include the total run-off from the basin. The monthly discharge in second-feet per square mile and run-off in inches do not represent natural flow. (See "Regulation.")

KENNEBEC RIVER AT THE FORKS, ME.

LOCATION.—Half a mile above highway bridge at The Forks, Somerset County, and 1 mile above mouth of Dead River.

DRAINAGE AREA.—1,570 square miles.

RECORDS AVAILABLE.—September 28, 1901, to September 30, 1924.

GAGE.—Water-stage recorder on right bank half a mile above highway bridge; inspected by S. C. Durgin.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Channel at bridge is subject to slight changes; control well defined.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 6.25 feet at 1.30 p. m. May 14 (discharge, 9,120 second-feet); minimum stage, 1.64 feet at 6 a. m. March 28 (discharge, 370 second-feet).

1901–1924: Maximum stage recorded, 10.1 feet by water-stage recorder from 4 to 12 p. m. June 18, 1917 (discharge by extension of rating curve, 23,700 second-feet); minimum stage, 0.3 foot by chain gage at 7 a. m. October 27, 1911 (discharge, 215 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

REGULATION.—Flow regulated by storage in Moosehead Lake. During May, June, July, and August, the operation of Indian Pond for log driving causes a large diurnal fluctuation. Records of monthly discharge have been corrected for storage by adding or subtracting a discharge corresponding to the amount of water stored in or released from Moosehead Lake.

ACCURACY.—Stage-discharge relation permanent; affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory, except as stated in footnote to daily-discharge table. Daily discharge October 1 to May 17 ascertained by application of rating table to mean daily gage height determined by inspection of recorder sheets, with corrections for effect of ice during winter; daily discharge May 18 to September 30 ascertained by use of discharge integrator. Records good.

Discharge measurements of Kennebec River at The Forks, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 22	a 2.90	952	Mar. 27	1.74	432
Feb. 19	a 4.15	2,120	Apr. 9	2.52	1,060

a Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Kennebec River at The Forks, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,660	1,540	1,410	1,750	1,850	2,500	1,540	5,180	3,000		2,700	2,700
2	1,660	1,540	1,600	1,750	1,850	2,600	1,540	6,200	2,900		2,750	2,400
3	1,660	1,540	1,470	1,750	1,850	2,600	1,540	6,200	2,700	3,100	2,550	2,400
4	1,600	1,540	1,180	1,850	1,850	2,600	1,540	4,440	3,100		2,700	2,400
5	1,600	1,540	1,070	2,200	1,850	2,600	1,470	4,440	3,300		2,650	2,500
6	1,600	1,540	1,020	2,200	1,950	2,600	1,600	4,080	3,150	2,700	2,550	2,500
7	1,730	1,730	1,180	2,200	2,100	2,600	1,660	3,530	3,300	2,900	2,550	2,500
8	1,660	1,800	1,180	2,100	2,100	2,600	1,660	3,530	2,900	2,750	2,500	2,450
9	1,660	1,730	1,070	1,950	2,100	2,500	960	3,430	3,000	2,700	2,500	3,000
10	1,600	1,540	900	1,850	2,100	2,400	850	3,230	2,950	2,750	2,400	2,750
11	1,600	1,410	811	1,850	2,000	2,400	960	3,030	2,900	2,700	2,450	2,000
12	1,600	1,290	722	1,800	2,000	2,300	1,020	3,230	2,800	2,700	2,400	1,400
13	1,540	1,230	690	1,800	2,000	2,200	1,070	3,970	2,700	2,500	2,500	1,400
14	1,540	1,230	766	1,800	2,000	2,100	1,180	7,010	2,800	2,500	2,400	1,200
15	1,540	1,600	890	1,800	2,000	2,100	1,350	4,930	3,050	2,550	2,300	920
16	1,540	1,660	940	1,800	2,000	2,000	1,350	3,750	3,200	3,100	2,250	1,140
17	1,470	1,660	910	1,800	2,100	2,000	1,410	5,430	3,100	3,150	2,200	890
18	1,470	1,660	930	1,150	2,100	1,950	1,660	5,800	3,250	3,100	2,450	1,580
19	1,470	1,660	1,650	1,150	2,100	1,900	2,030	5,000	3,000	3,650	2,500	1,680
20	1,470	1,600	1,850	1,150	2,100	1,870	1,870	5,400	3,100	3,200	2,700	1,950
21	1,410	1,600	1,850	1,000	2,100	1,800	1,730	5,750	3,050	3,100	3,200	2,200
22	1,410	1,600	1,850	980	2,100	1,730	1,870	4,800	3,200	3,050	3,100	2,150
23	1,410	1,600	1,870	1,400	2,100	1,730	1,870	6,900	3,100	3,050	3,050	2,050
24	1,540	1,600	1,870	1,750	2,100	1,730	1,950	7,000	2,900	3,000	2,950	1,900
25	1,350	1,800	1,870	1,750	2,000	1,660	1,660	5,700	3,000	3,000	3,000	1,950
26	1,120	1,180	1,800	1,700	2,000	802	1,410	5,200	2,900	3,000	2,900	1,600
27	643	1,070	1,800	1,700	2,100	448	1,540	5,100	2,850	2,900	2,950	1,700
28	556	830	1,800	1,850	2,500	375	1,870	2,950	3,150	2,800	3,200	1,400
29	550	722	1,800	1,900	2,500	793	2,370	2,700	3,100	2,800	3,000	1,400
30	550	690	1,800	1,950	-------	1,410	3,130	2,800		2,600	2,800	1,500
31	1,180	-------	1,750	1,850	-------	1,540	-------	2,700	-------	2,700	2,600	-------

NOTE.—Stage-discharge relation affected by ice Dec. 19–22 and Dec. 29 to Mar. 19; discharge for these periods based on gage heights corrected for effect of ice and by comparison with records of discharge from Moosehead Lake, two discharge measurements, observer's notes, and weather records. Water-stage recorder not in operation May 24, 25, June 15, 29, 30, July 1–5, Aug. 25–30, and Sept. 20; discharge estimated by comparison with records of discharge from Moosehead Lake. Braced figure shows estimated mean discharge for period indicated.

Monthly discharge of Kennebec River at The Forks, Me., for the year ending September 30, 1924

[Drainage area, 1,570 square miles]

Month	Discharge in second-feet					Corrected run-off in inches
	Observed			Corrected for storage		
	Maximum	Minimum	Mean	Mean	Per square mile	
October	1,730	550	1,400	520	0.331	0.38
November	1,800	690	1,460	1,700	1.08	1.20
December	1,870	690	1,360	2,770	1.76	2.03
January	2,200	980	1,730	1,200	.764	.88
February	2,500	1,850	2,050	610	.389	.42
March	2,600	375	1,950	780	.497	.57
April	3,130	850	1,590	4,010	2.55	2.84
May	7,010	2,700	4,630	9,870	6.29	7.25
June	3,300	2,700	3,020	2,150	1.37	1.53
July	3,650	2,500	2,920	1,360	.866	1.00
August	3,200	2,200	2,670	770	.490	.56
September	3,000	890	1,920	880	.561	.63
The year	7,010	375	2,230	2,230	1.42	19.29

KENNEBEC RIVER AT WATERVILLE, ME.

LOCATION.—At dam and mill of Hollingsworth & Whitney Co. at Waterville, Kennebec County, 2 miles above confluence with Sebasticook River.

DRAINAGE AREA.—4,270 square miles.

RECORDS AVAILABLE.—March 22, 1892, to September 30, 1924.

GAGES.—Rod gages in pond above dam and in tailrace of mill. A water-stage recorder in pond above dam is used in connection with computations of discharge through the wheels, over the dam, and through waste gates in the dam.

DETERMINATION OF DISCHARGE.—Discharge computed from flow over dam, through logway, and through wheels of mill. When flow is less than about 3,500 second-feet practically all the water is used through the wheels.

ICE.—Stage-discharge relation not generally affected by ice; in most winters the entire flow passes through wheels of mill.

REGULATION.—Numerous power plants and much storage above station; results not corrected for storage.

COOPERATION.—Records furnished by Hollingsworth & Whitney Co.

Daily discharge, in second-feet, of Kennebec River at Waterville, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,280	2,460	10,200	2,260	3,780	3,270	8,020	23,100	4,570	4,360	3,560	2,070
2	2,790	942	12,200	2,590	3,320	1,980	6,680	36,200	6,530	4,780	2,480	3,180
3	2,560	1,760	11,000	2,840	2,840	3,570	4,960	27,400	5,820	4,620	1,970	3,230
4	2,310	2,180	8,700	3,420	3,520	4,170	4,450	23,200	5,740	4,740	3,010	3,840
5	1,980	1,860	7,460	2,560	3,790	3,690	4,510	21,800	5,940	4,940	3,590	3,830
6	2,310	3,130	7,080	1,480	3,500	3,400	7,120	20,400	6,270	5,650	3,340	3,790
7	1,060	2,830	11,500	3,590	3,230	3,560	7,650	17,300	5,710	5,030	3,180	1,780
8	2,260	3,920	11,000	3,100	3,360	3,140	16,500	15,500	6,390	4,540	3,690	4,330
9	2,560	3,640	8,450	3,660	2,940	2,040	23,100	15,500	5,820	3,880	4,250	3,560
10	2,590	5,080	7,480	2,850	2,000	4,000	15,200	16,500	5,830	2,950	4,270	4,780
11	2,280	4,480	6,370	3,420	3,320	4,280	13,400	12,500	4,380	3,200	3,460	21,700
12	2,270	3,660	5,730	2,820	3,220	4,120	13,000	12,300	4,020	3,140	3,770	12,400
13	2,290	3,020	4,300	2,920	3,030	4,140	13,000	22,900	4,300	4,520	2,930	7,460
14	1,000	3,310	4,400	4,740	3,030	3,540	12,800	28,500	4,340	3,500	2,650	5,970
15	1,980	2,880	4,120	4,340	3,130	3,320	14,500	26,000	5,170	3,890	3,610	4,920
16	1,690	3,430	1,620	3,660	2,460	2,390	12,900	22,200	5,290	3,110	3,010	4,060
17	2,280	3,360	4,330	4,640	2,020	3,800	11,200	18,400	5,280	3,410	2,820	3,900
18	2,590	2,360	3,190	6,260	3,150	3,710	11,400	17,400	4,380	3,630	2,390	3,800
19	2,180	2,440	407	5,930	3,520	3,500	11,800	16,200	4,610	3,140	2,800	3,800
20	2,280	2,240	3,350	5,760	3,380	3,610	15,100	12,800	4,110	4,260	2,740	3,800
21	750	2,550	3,430	4,990	3,580	3,470	14,500	12,700	4,250	4,880	2,700	2,900
22	1,940	2,540	3,160	4,520	2,970	5,000	14,400	12,200	2,380	4,400	3,770	3,360
23	2,550	3,120	4,500	4,050	2,850	4,100	18,500	10,200	4,200	3,710	3,380	3,840
24	2,420	2,530	5,170	2,570	1,800	6,640	15,500	11,600	4,380	3,990	2,840	3,320
25	2,850	1,550	4,170	3,430	2,850	7,230	14,400	10,800	4,700	4,040	2,900	3,180
26	4,830	6,180	4,490	3,410	3,000	9,800	14,700	10,200	3,440	3,500	3,640	3,170
27	4,110	6,980	4,440	3,190	2,690	9,270	12,400	8,950	4,010	2,720	3,660	3,150
28	3,800	5,890	3,500	3,070	3,050	8,530	13,900	8,950	3,740	3,580	3,460	2,940
29	3,380	5,310	3,210	2,820	2,970	6,820	16,700	7,850	4,800	3,850	2,840	3,050
30	3,340	4,510	1,160	2,900	-------	6,640	18,500	5,470	4,240	3,700	3,570	3,160
31	2,940	-------	2,160	2,840	-------	4,600	--------	6,300	-------	3,580	3,340	-------

NOTE.—Discharge estimated Sept. 11–30 because of break in dam.

Monthly discharge of Kennebec River at Waterville, Me., for the year ending September 30, 1924

[Drainage area, 4,270 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,830	750	2,470	0.578	0.67
November	6,980	942	3,340	.782	.87
December	12,200	407	5,560	1.30	1.50
January	6,260	1,480	3,570	.836	.96
February	3,790	1,800	3,040	.712	.77
March	9,800	1,980	4,560	1.07	1.23
April	23,100	4,450	12,700	2.97	3.31
May	36,200	5,470	16,500	3.86	4.45
June	6,530	2,380	4,820	1.13	1.26
July	5,650	2,720	3,980	.932	1.07
August	4,270	1,970	3,210	.752	.87
September	21,700	1,780	4,610	1.08	1.20
The year	36,200	407	5,700	1.33	18.16

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches do not represent the natural flow from the basin because of artificial storage. The yearly discharge and run-off doubtless represent more nearly the natural flow, for probably little stored water is held over from year to year.

DEAD RIVER AT THE FORKS, ME.

LOCATION.—One-eighth mile above farmhouse of Jeremiah Durgin, 1½ miles west of The Forks, Somerset County.

DRAINAGE AREA.—878 square miles.

RECORDS AVAILABLE.—September 29, 1901, to August 15, 1907; March 16, 1910, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; installed September 29, 1923; inspected by H. J. Farley. Records including 1923, obtained from staff gage 300 feet below present gage.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Stream bed rough; control practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 8.25 feet at 12.30 p. m. May 11 (discharge by extension of rating curve, 15,500 second-feet); minimum stage, 1.76 feet at noon September 2 (discharge, 178 second-feet).

1901–1907; 1910–1924: Maximum stage recorded, 8.25 feet May 11, 1924 (discharge by extension of rating curve, 15,500 second-feet); minimum stage, 0.2 foot September 12–13, 17, 1918 (water held back by logging dams) discharge not determined.

ICE.—Stage-discharge relation seriously affected by ice.

REGULATION.—A number of dams on lakes above; used for log driving during May and June.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 200 and 12,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying rating table to mean daily gage height as determined from inspection of recorder sheets with corrections for effect of ice during winter. Records good.

Discharge measurements of Dead River at The Forks, Me., during the year ending September 30, 1923

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 6	3.16	1,690	Mar. 27	[a] 3.45	448	May	6.43	10,000
Jan. 21	[a] 3.98	675	May 5	6.06	8,490	July 23	2.23	528
Feb. 18	[a] 2.59	281						

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Dead River at The Forks, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	581	650	1,980	680	540	300	410	7,980	1,240	1,280	274	184
2	536	620	3,140	660	460	300	460	9,690	1,210	1,170	254	189
3	527	581	2,830	660	440	280	600	9,690	1,210	1,040	248	236
4	491	527	2,260	640	410	280	760	8,130	1,410	1,200	254	309
5	464	491	1,850	620	390	280	920	8,840	1,460	1,400	402	330
6	437	473	1,690	620	390	300	1,300	7,750	1,270	1,520	590	354
7	394	563	2,080	600	390	320	1,500	6,300	812	509	630	437
8	386	1,140	2,540	600	390	360	1,850	6,460	1,360	394	590	464
9	378	1,690	2,260	600	390	410	2,100	6,430	980	419	527	419
10	370	1,600	1,890	660	380	410	2,400	7,370	789	509	437	545
11	346	1,230	1,650	700	350	390	2,700	5,880	712	500	362	4,760
12	330	1,000	1,440	740	340	420	2,730	6,240	824	464	323	6,450
13	316	860	1,310	780	330	430	1,980	6,550	680	410	316	5,390
14	295	756	1,280	780	320	410	1,860	9,450	824	370	309	2,930
15	281	670	1,320	780	300	410	2,080	9,300	908	346	316	1,850

Daily discharge, in second-feet, of Dead River at The Forks, Me., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	274	620	1,280	780	300	360	2,150	8,300	908	338	330	1,380
17	254	600	1,270	760	280	320	1,910	6,840	712	394	302	1,080
18	248	590	1,250	720	280	310	1,270	6,870	670	581	281	908
19	267	572	1,200	720	260	300	1,570	5,650	680	800	267	778
20	295	536	1,130	700	260	300	2,320	4,760	734	860	254	680
21	338	482	872	680	260	350	3,030	3,780	670	712	260	600
22	330	455	848	680	310	430	2,530	3,030	712	610	260	580
23	316	446	884	640	310	520	1,540	2,540	872	554	248	540
24	437	473	896	600	300	540	2,490	2,630	712	518	248	500
25	1,130	848	908	560	300	560	3,240	2,350	756	491	236	482
26	1,690	1,690	836	520	300	500	3,030	2,540	824	464	230	437
27	1,450	1,980	812	520	300	450	1,880	2,350	824	437	224	410
28	1,090	1,660	767	500	300	420	3,910	2,100	848	428	212	394
29	860	1,480	701	490	300	410	6,400	1,960	1,100	378	200	362
30	701	1,200	700	480	-------	410	6,930	1,720	1,020	330	195	362
31	660	-------	700	470	-------	410	-------	1,270	-------	309	189	-------

NOTE.—Stage-discharge relation affected by ice Dec. 30 to Apr. 11; discharge for this period computed from gage heights corrected for effect of ice by means of three discharge measurements, observer's notes, and weather records. Discharge estimated July 4–5 and Sept. 21–23.

Monthly discharge of Dead River at The Forks, Me., for the year ending September 30, 1924

[Drainage area, 878 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,690	248	531	0.605	0.70
November	1,690	446	883	1.01	1.13
December	3,140	700	1,440	1.64	1.89
January	780	470	643	.732	.84
February	540	260	341	.388	.42
March	560	280	384	.437	.50
April	6,930	410	2,260	2.57	2.87
May	9,690	1,270	5,640	6.42	7.40
June	1,460	670	924	1.05	1.17
July	1,520	309	637	.726	.84
August	630	189	315	.359	.41
September	6,450	184	1,140	1.30	1.45
The year	9,690	184	1,270	1.45	19.62

COBBOSSEECONTEE STREAM AT GARDINER, ME.

LOCATION.—At dam of Gardiner Water Power Co. in Gardiner, Kennebec County.

DRAINAGE AREA.—220 square miles.

RECORDS AVAILABLE.—June 16, 1890, to September 30, 1924.

GAGES.—Staff in pond above dam and in tailrace of power house. There are also gages to indicate the water wheel gate and the waste gate openings.

DETERMINATION OF DISCHARGE.—Discharge determined by considering (1) flow over dam, usually nothing except for a short time in the spring; (2) flow through two gates; (3) flow through 39-inch Victor wheel installed in 1907; (4) flow through the 39-inch Hercules wheel installed in 1895; and (5) leakage. Daily discharge computed from tables based on coefficients and experiments. The accuracy of these tables was verified by a series of weir measurements in August, 1921. Corrections have been made for leakage.

ICE.—Not affected by ice.

REGULATION.—Numerous lakes in the basin are regulated by dams at the outlets. Results not corrected for storage.

COOPERATION.—Computation of daily discharge made by engineers of S. D. Warren Co., Cumberland Mills, Me.

Daily discharge, in second-feet, of Cobbosseecontee Stream at Gardiner, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	160	210	270	270	290	290	1,310	13	270	270	190
2	190	160	13	270	270	13	290	2,300	280	270	270	190
3	190	160	260	270	13	290	290	2,080	270	270	13	190
4	190	13	260	270	270	290	290	1,800	270	185	270	190
5	190	160	260	270	270	290	290	1,060	270	95	210	190
6	190	160	260	13	270	290	13	395	270	13	210	190
7	13	160	260	270	270	290	290	495	270	270	210	13
8	160	160	260	270	270	290	915	598	13	270	210	190
9	160	160	13	270	280	13	1,530	765	270	270	210	190
10	160	160	260	270	13	290	1,440	892	270	270	13	190
11	160	13	260	270	280	290	1,200	835	270	270	210	190
12	160	160	260	270	280	290	790	634	270	270	210	190
13	160	160	260	13	280	290	415	963	270	13	210	190
14	13	160	260	270	280	290	305	1,630	270	270	210	13
15	160	160	260	270	280	290	335	1,640	13	270	210	210
16	160	160	13	270	280	13	375	1,280	270	270	210	210
17	160	160	260	270	13	290	389	900	270	270	13	210
18	160	13	260	270	280	290	375	565	270	270	210	210
19	160	210	260	270	280	290	1,080	405	270	270	210	210
20	160	210	260	13	280	290	1,760	405	270	13	210	210
21	13	210	260	270	280	290	1,500	405	270	270	210	13
22	160	210	260	270	280	290	1,020	405	13	270	210	210
23	160	210	13	270	280	13	831	405	270	270	210	210
24	160	210	185	270	13	290	848	395	270	270	13	210
25	160	13	70	270	280	290	765	400	270	270	210	210
26	160	210	135	270	280	290	545	410	270	270	210	210
27	160	210	270	13	280	290	210	400	270	13	210	210
28	13	210	270	270	290	290	315	490	270	270	210	13
29	160	110	270	270	290	290	315	578	13	270	210	210
30	160	160	13	270	-------	13	315	579	270	270	210	210
31	160	-------	270	270	-------	290	-------	490	-------	270	13	-------

Monthly discharge of Cobbosseecontee Stream at Gardiner, Me., for the year ending September 30, 1924

[Drainage area, 220 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	190	13	147	0.668	0.77
November	210	13	154	.700	.78
December	270	13	207	.941	1.08
January	270	13	237	1.08	1.24
February	290	13	241	1.10	1.19
March	290	13	245	1.11	1.28
April	1,760	13	644	2.93	3.27
May	2,300	395	836	3.80	4.38
June	280	13	228	1.04	1.16
July	270	13	228	1.04	1.20
August	270	13	184	.836	.96
September	210	13	176	.800	.89
The year	2,300	13	294	1.34	18.20

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches do not represent the natural run-off from the basin because of storage. (See "Regulation.")

ANDROSCOGGIN RIVER BASIN

ANDROSCOGGIN RIVER AT RUMFORD, ME.

LOCATION.—At two dams of Rumford Falls Power Co., at Rumford, Oxford County.

DRAINAGE AREA.—2,090 square miles.

RECORDS AVAILABLE.—May 18, 1892, to September 30, 1924.

GAGES.—One in pond above each dam and in tailrace of power station and mills.

DISCHARGE.—Computed from discharge over the dam by use of Francis weir formula with modified coefficient, and the quantities passing through the various wheels of the power station and mills, which have been carefully rated.

ICE.—Stage-discharge relation little affected by ice.

REGULATION.—Storage in Rangeley system of lakes at headwaters of Androscoggin River aggregates about 29.6 billion cubic feet. The stored water is regulated in the interests of the water power users above and below. Results not corrected for storage.

COOPERATION.—Records obtained and computations made by Mr. Charles A. Mixer, engineer, Rumford Falls Power Co.

Daily discharge, in second-feet, of Androscoggin River at Rumford, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,850	1,970	6,860	2,230	2,270	2,030	2,680	19,900	2,060	2,130	1,930	1,800
2	1,750	1,900	4,360	2,060	2,230	1,950	2,530	17,200	2,770	2,200	1,730	2,380
3	1,750	1,640	3,430	2,270	2,270	2,010	2,610	12,100	2,710	1,900	1,580	3,140
4	1,730	1,390	3,080	2,340	2,440	2,070	2,670	10,600	2,780	1,750	2,040	2,960
5	1,720	2,000	2,870	2,420	2,220	2,050	3,110	13,200	2,810	1,580	2,720	2,460
6	1,850	1,790	4,100	2,200	2,210	2,040	3,610	11,400	2,590	1,830	2,740	3,540
7	1,090	2,010	6,670	2,390	2,230	2,120	3,790	10,500	2,420	2,280	2,360	2,950
8	1,780	2,530	4,430	2,380	2,180	2,110	4,790	10,600	1,990	2,210	2,140	2,430
9	1,630	2,200	3,280	2,450	2,150	1,960	4,220	10,900	2,710	3,030	2,100	2,270
10	1,630	2,050	3,290	2,350	2,300	2,160	3,890	9,550	2,680	2,650	1,700	19,800
11	1,600	1,550	2,900	2,410	2,300	2,120	4,220	8,780	2,610	2,480	2,070	26,200
12	1,590	1,910	2,790	3,060	2,070	2,060	3,890	10,700	2,630	1,790	2,020	12,500
13	1,690	1,820	2,750	3,010	2,030	2,020	3,190	17,200	2,520	1,690	1,980	9,210
14	1,340	1,880	3,010	2,990	2,190	1,930	5,900	13,500	2,950	2,350	1,930	6,990
15	1,770	1,920	2,570	2,490	2,280	1,940	6,290	13,100	2,310	2,140	2,070	5,550
16	1,650	1,900	1,960	2,500	2,120	1,730	4,930	11,700	2,850	2,200	2,100	4,090
17	1,610	1,820	2,470	3,000	2,270	2,060	4,540	9,510	2,560	2,120	1,930	3,090
18	1,700	1,540	1,690	3,810	2,260	2,030	5,010	8,390	2,430	2,690	1,940	2,900
19	1,820	1,770	1,520	3,080	2,170	2,070	5,800	8,370	2,510	2,390	2,130	2,700
20	2,070	1,710	1,970	2,690	2,210	2,120	5,470	6,340	2,330	1,510	2,030	2,590
21	1,380	1,820	2,600	2,670	2,220	2,270	5,770	4,920	1,780	2,320	2,460	2,270
22	1,910	1,830	2,820	2,440	2,240	2,490	5,840	4,340	2,070	2,020	2,180	2,610
23	1,770	1,830	2,420	2,530	2,260	2,500	6,120	3,870	2,430	2,050	1,700	2,700
24	2,930	4,100	2,530	2,500	2,110	3,100	5,700	3,370	2,270	2,040	1,890	2,780
25	4,380	10,000	2,140	2,410	2,230	2,810	5,050	3,940	2,500	2,030	2,150	2,420
26	2,980	5,780	2,470	2,430	2,150	2,900	4,730	4,350	2,940	1,740	2,170	2,400
27	2,300	3,840	2,470	2,230	2,190	2,720	5,700	3,720	2,630	1,600	2,420	2,180
28	1,580	3,060	2,050	2,160	2,130	2,690	8,360	3,530	2,240	2,130	2,310	1,810
29	2,090	2,700	2,020	2,210	2,080	2,890	9,030	3,980	1,950	1,920	2,180	2,270
30	1,860	2,720	1,940	2,420	-------	2,330	9,150	2,790	2,460	1,920	2,090	3,400
31	2,030	-------	2,280	2,520	-------	2,750	-------	2,650	-------	1,910	1,690	-------

Monthly discharge of Androscoggin River at Rumford, Me., for the year ending September 30, 1924

[Drainage area, 2,090 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,380	1,090	1,900	0.909	1.05
November	10,000	1,390	2,500	1.20	1.34
December	6,860	1,520	2,960	1.42	1.64
January	3,810	2,060	2,540	1.22	1.41
February	2,440	2,030	2,210	1.06	1.14
March	3,100	1,730	2,260	1.08	1.24
April	9,150	2,530	4,950	2.37	2.64
May	19,900	2,650	8,870	4.24	4.89
June	2,950	1,780	2,480	1.19	1.33
July	3,030	1,510	2,080	.995	1.15
August	2,740	1,580	2,080	.995	1.15
September	26,200	1,800	4,810	2.30	2.57
The year	26,200	1,090	3,310	1.58	21.55

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches do not represent the natural run-off from the basin because of artificial storage. (See "Regulation.") The indicated minimum discharge usually occurs on Sundays, when water is held back by dams.

MAGALLOWAY RIVER AT AZISCOHOS DAM, ME.

LOCATION.—At Aziscohos Dam, Oxford County, 15 miles above mouth.

DRAINAGE AREA.—233 square miles (revised from map compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—January 1, 1912, to September 30, 1924.

GAGE.—Vertical staff in two sections, the lower attached to one of the concrete buttresses of the dam and the upper on the concrete gate tower.

DETERMINATION OF DISCHARGE.—Discharge determined from readings of gate openings. Gates have been rated by current-meter measurements at a station 1 mile below dam.

REGULATION.—The storage of about 9,593 million cubic feet is completely regulated, and the discharge corresponds to requirements of water users below. The operation of the gates is planned to maintain as nearly as possible a constant flow at Berlin, N. H. Results not corrected for storage.

COOPERATION.—Discharge computed and furnished for publication by Union Water Power Co., Lewiston, Me.

Monthly discharge of Magalloway River at Aziscohos Dam, Me., for the year ending September 30, 1924

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,340	141	697	2.99	3.45
November	1,190	142	322	1.38	1.54
December	151	144	148	.635	.73
January	152	151	151	.648	.75
February	152	151	151	.648	.70
March	1,660	150	1,090	4.68	5.40
April	1,770	132	442	1.90	2.12
May	785	139	348	1.49	1.72
June	1,650	154	914	3.92	4.37
July	1,530	154	620	2.66	3.07
August	1,480	141	832	3.57	4.12
September	152	141	148	.635	.71
The year	1,770	132	491	2.11	28.68

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches do not represent the natural run-off from the basin because of artificial storage. (See "Regulation.")

LITTLE ANDROSCOGGIN RIVER NEAR SOUTH PARIS, ME.

LOCATION.—At left end of an old dam at Bisco Falls 200 feet below highway bridge and 5½ miles above South Paris, Oxford County.

DRAINAGE AREA.—75 square miles.

RECORDS AVAILABLE.—September 14, 1913, to April 30, 1924, when station was discontinued.

GAGE.—Chain gage on left bank; read by G. A. Jackson.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—At low and medium stages water flows through opening at left of old stone dam; opening was enlarged by high water of April 9, 1914, and again by high water of March, 1921; water flows over dam at gage height 5.30 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 7.4 feet at 1 p. m. April 8 (discharge, 1,300 second-feet); minimum stage, 0.86 foot at 5 p. m. October 15 (discharge, 2.6 second-feet).

1914–1924: Maximum stage recorded, 9.87 feet April 14, 1920 (discharge, by extension of rating curve, 3,540 second-feet); minimum stage, 0.7 foot at 6 p. m. August 16, 1914 (discharge, 1 second-foot).

ICE.—Control remains open throughout winter; stage-discharge relation seldom affected by ice.

REGULATION.—Storage at Snow Falls, 1½ miles above station, and at West Paris, 4 miles above, has some effect on regimen of stream.

ACCURACY.—Stage-discharge relation subject to change at infrequent intervals. Rating curve well defined. Gage read to half-tenths once daily. Daily discharge ascertained by applying rating table to daily gage height. Records fair.

The following discharge measurement was made:

January 29, 1924: Gage height, 2.74 feet; discharge, 86 second-feet. Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Little Androscoggin River near South Paris, Me., for the period October 1, 1923, to April 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1	12	15	404	68	68	40	189
2	11	12	312	64	68	46	199
3	9.0	12	199	64	68	48	189
4	9.0	11	140	61	68	50	179
5	8.4	13	140	58	66	52	272
6	6.0	16	340	54	64	54	312
7	4.0	24	312	54	62	58	440
8	3.8	124	260	58	60	58	1,300
9	3.0	124	219	54	60	58	735
10	3.2	124	159	47	60	56	650
11	3.0	108	140	47	58	56	482
12	2.8	100	124	159	58	54	440
13	3.0	100	124	124	58	54	482
14	2.8	84	124	132	56	54	440
15	2.6	47	100	124	54	54	440
16	3.0	18	100	179	52	54	422
17	2.8	18	96	532	50	58	388
18	3.0	15	96	372	45	60	356
19	4.0	16	84	249	43	62	440
20	16	15	84	209	40	68	460

Daily discharge, in second-feet, of Little Androscoggin River near South Paris, Me., for the period October 1, 1923, to April 30, 1924—Continued.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
21	16	15	80	124	37	112	404
22	9.0	16	76	120	40	149	616
23	4.0	17	80	116	40	159	558
24	124	47	84	100	39	159	532
25	199	159	84	96	39	179	586
26	116	209	80	92	39	209	650
27	80	169	76	90	40	189	532
28	29	140	76	88	40	159	404
29	29	108	76	86	40	179	340
30	24	64	76	84	-------	189	284
31	20	-------	72	80	-------	199	-------

NOTE.—Stage-discharge relation affected by ice Jan. 26–30, Feb. 2–19, and Feb. 24 to Mar. 19; discharge for these periods computed from gage heights corrected for effect of ice by means of one discharge measurement, weather records, and observer's notes.

Monthly discharge of Little Androscoggin River near South Paris, Me., for the period October 1, 1923, to April 30, 1924

[Drainage area, 75 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	199	2.6	24.6	0.328	0.38
November	209	11	64.7	.863	.96
December	404	72	142	1.89	2.18
January	532	47	122	1.63	1.88
February	68	37	52.1	.695	.75
March	209	40	96.0	1.28	1.48
April	1,300	179	457	6.09	6.80

PRESUMPSCOT RIVER BASIN

PRESUMPSCOT RIVER AT OUTLET OF SEBAGO LAKE, ME.

LOCATION.—At outlet dam of Sebago Lake and hydroelectric plant at Eel Weir Falls, 1 mile below lake outlet.

DRAINAGE AREA.—436 square miles.

RECORDS AVAILABLE.—January 1, 1887, to September 30, 1924.

GAGE.—On bulkhead of gatehouse at outlet dam and in forebay and tailrace of power plant.

DISCHARGE.—Prior to March, 1904, discharge was determined from records of opening of gates in dam; since March, 1904, flow from lake has been recorded by three Allen meters, one on each of three pairs of 30-inch Hercules wheels; wheels and recording meters checked by current-meter measurements, brake tests of wheels, and electrical readings of the generator output. Water wasted at regulating gates is measured from records of gate openings and coefficients determined from current-meter measurements. Water taken from Sebago Lake for supply of Portland water district and water leaking through reservoir dam, a total of about 18 second-feet, not included in tables of discharge.

REGULATION.—Sebago Lake (area, 46 square miles) is under complete regulation. Results not corrected for storage.

COOPERATION.—Record in cubic feet per minute furnished by S. D. Warren Co.; computations on basis of cubic feet per second made by engineers of the Geological Survey.

Daily discharge, in second-feet, of Presumpscot River at outlet of Sebago Lake, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	635	592	523	426	579	681	582	631	428	617	341	176
2	615	594	98	617	410	278	567	605	816	626	299	576
3	620	563	615	584	158	781	559	622	785	563	89	566
4	702	222	598	588	627	806	560	157	812	271	548	546
5	500	620	571	593	578	810	528	743	826	289	563	602
6	462	590	532	253	579	797	78	716	815	172	540	563
7	344	586	412	632	561	803	539	730	730	557	644	266
8	597	628	414	582	558	716	598	766	229	609	442	618
9	571	575	103	586	504	220	601	722	760	591	212	705
10	600	305	605	591	79	807	505	746	782	558	266	585
11	591	51	597	570	579	697	545	170	802	249	519	629
12	590	202	597	419	564	765	545	1,120	808	259	541	543
13	625	654	590	128	579	778	102	2,090	828	215	491	362
14	92	683	586	614	544	747	672	1,790	689	517	587	94
15	638	595	437	592	556	747	562	840	232	556	472	499
16	590	592	257	582	585	166	552	825	786	595	343	561
17	622	580	601	496	138	737	587	770	768	598	180	632
18	590	310	592	506	562	766	775	1,370	811	642	539	725
19	608	622	614	521	570	791	442	1,750	827	295	568	726
20	494	593	599	102	625	740	154	1,220	801	154	562	405
21	96	592	592	689	604	736	614	812	804	589	564	266
22	639	577	390	575	585	667	541	817	220	566	423	592
23	592	572	8	578	602	143	542	884	753	561	310	572
24	585	405	43	588	259	596	570	811	684	612	168	616
25	597	101	154	581	707	534	640	418	626	438	534	657
26	580	555	602	415	687	558	611	835	654	283	561	595
27	416	597	599	188	631	573	150	830	657	260	496	488
28	184	592	577	610	644	550	664	837	408	477	507	182
29	623	432	550	623	672	526	645	884	172	613	592	704
30	625	559	93	604	-------	139	677	795	540	533	400	642
31	592	-------	418	600	-------	572	-------	811	-------	616	148	-------

Monthly discharge of Presumpscot River at outlet of Sebago Lake, Me., for the year ending September 30, 1924

[Drainage area, 436 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	702	92	536	1.23	1.42
November	683	51	505	1.16	1.29
December	615	8	451	1.03	1.19
January	689	102	517	1.19	1.37
February	707	79	528	1.21	1.30
March	810	139	620	1.42	1.64
April	775	78	524	1.20	1.34
May	2,090	157	875	2.01	2.32
June	828	172	662	1.52	1.70
July	642	154	467	1.07	1.23
August	644	89	434	.995	1.15
September	726	94	523	1.20	1.34
The year	2,090	8	554	1.27	17.29

NOTE.—The monthly discharge does not represent the natural flow from the basin because of artificial storage. The yearly discharge and run-off probably represent more nearly the natural flow, because comparatively little stored water is held over from year to year.

SACO RIVER BASIN

SACO RIVER AT CORNISH, ME.

LOCATION.—At highway bridge at Cornish, York County, half a mile below mouth of Ossipee River.

DRAINAGE AREA.—1,300 square miles.

RECORDS AVAILABLE.—June 4, 1916, to September 30, 1924.

GAGE.—Water-stage recorder on left bank 300 feet above highway bridge; installed October 30, 1919; inspected by A. H. Guimont.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Channel covered with sand and boulders; broken by one pier at bridge.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.63 feet at 4 p. m. May 4 (discharge, 12,900 second-feet); minimum stage, 1.07 feet at 7 a. m. October 12 (discharge by extension of rating curve, 118 second-feet; water held back by dams).

1916–1924: Maximum stage recorded, 14.72 feet May 2, 1923 (discharge by extension of rating curve, 23,000 second-feet); minimum open-water stage, 0.03 foot by chain gage October 1, 1921 (discharge by extension of rating curve, 90 second-feet; water held back by dams).

ICE.—Stage-discharge relation seriously affected during most winters.

REGULATION.—Distribution of flow somewhat affected by power development at Great Falls, 3½ miles above gage.

ACCURACY.—Stage-discharge relation changed slightly during high water in May. Rating curves well defined above 450 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge October 1–24 ascertained by use of discharge integrator; during remainder of year by applying rating table to mean daily gage height, as determined by inspection of recorder sheets, with corrections for effect of ice. Records good.

Discharge measurements of Saco River at Cornish, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 5	a 5.30	1,770	Mar. 29	4.01	2,600	July 30	2.42	907
Feb. 28	a 4.94	1,400	Apr. 23	8.51	10,700	Aug. 22	2.30	818

a Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Saco River at Cornish, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	570	1,340	5,350	2,100	1,900	1,350	2,780	9,000	3,990	1,040	863	762
2	465	1,270	5,530	2,000	1,850	1,350	2,710	9,800	3,910	980	815	740
3	455	1,220	5,710	1,950	1,850	1,350	2,780	11,600	4,080	998	649	808
4	485	1,150	5,890	1,900	1,800	1,300	2,780	12,800	3,910	972	815	785
5	440	1,130	5,710	1,850	1,750	1,300	2,970	12,200	3,680	920	642	755
6	495	1,060	6,260	1,800	1,700	1,300	3,310	11,400	3,460	912	621	1,020
7	305	1,010	6,260	1,750	1,750	1,300	4,670	10,800	3,240	998	628	946
8	430	977	6,070	1,700	1,700	1,300	7,400	10,200	3,040	972	785	1,200
9	425	977	6,070	1,700	1,700	1,300	6,640	9,400	2,900	980	863	1,160
10	415	1,000	5,890	1,700	1,650	1,350	6,450	9,000	2,840	1,070	691	1,520

Daily discharge, in second-feet, of Saco River at Cornish, Me., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	390	1,010	5,710	1,700	1,650	1,350	6,640	8,800	2,780	1,410	863	2,530
12	395	1,000	5,350	1,900	1,600	1,350	6,640	9,000	2,710	1,370	785	3,170
13	356	1,000	5,010	2,200	1,550	1,300	6,640	9,800	2,410	989	740	3,380
14	275	977	4,670	2,700	1,550	1,300	7,020	9,600	2,180	1,200	748	3,600
15	386	878	4,420	2,700	1,550	1,300	7,400	10,000	1,960	1,180	698	3,990
16	416	746	4,160	2,700	1,550	1,300	7,600	10,200	1,960	1,140	656	3,760
17	441	762	3,910	3,100	1,500	1,350	7,600	10,000	1,900	989	587	3,380
18	475	762	3,530	3,600	1,450	1,400	7,600	9,400	1,740	946	656	3,100
19	580	738	3,170	3,600	1,450	1,450	9,000	8,800	1,700	871	607	2,700
20	440	746	2,970	3,200	1,400	1,550	9,600	8,200	1,750	863	614	2,470
21	490	754	2,840	2,900	1,400	1,650	9,600	7,600	1,800	871	684	2,180
22	518	746	2,710	2,900	1,400	1,750	10,000	7,020	1,790	863	684	2,010
23	524	754	2,650	3,000	1,400	1,820	10,600	6,450	1,680	847	670	1,840
24	816	1,050	2,710	2,900	1,350	2,110	10,400	5,890	1,840	871	642	1,570
25	1,210	1,990	2,590	2,800	1,400	2,290	10,200	5,350	1,790	1,060	719	1,570
26	1,770	3,530	2,530	2,600	1,350	2,410	9,600	5,010	1,840	1,030	823	1,620
27	1,820	4,240	2,410	2,500	1,350	2,410	9,200	4,670	1,410	998	963	1,570
28	1,720	4,330	2,290	2,400	1,350	2,470	8,600	4,500	1,220	920	871	1,390
29	1,600	4,330	2,230	2,200	1,350	2,590	8,200	4,240	1,220	895	800	1,390
30	1,550	4,240	2,200	2,100	-------	2,590	8,000	4,160	1,250	839	762	1,340
31	1,440	-------	2,100	1,950	-------	2,710	-------	4,080	-------	831	778	-------

NOTE.—Stage-discharge relation affected by ice Dec. 30 to Mar. 22; discharge for this period computed from gage heights corrected for effect of ice by means of two discharge measurements, observer's notes, weather records, and records from West Buxton. Discharge estimated June 19–21.

Monthly discharge of Saco River at Cornish, Me., for the year ending September 30, 1924

[Drainage area, 1,300 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,820	275	713	0.548	0.63
November	4,330	738	1,520	1.17	1.30
December	6,260	2,100	4,160	3.20	3.69
January	3,600	1,700	2,390	1.84	2.12
February	1,900	1,350	1,560	1.20	1.29
March	2,710	1,300	1,670	1.28	1.48
April	10,600	2,710	7,090	5.45	6.08
May	12,800	4,080	8,350	6.42	7.40
June	4,080	1,220	2,400	1.85	2.06
July	1,410	831	994	.765	.88
August	963	587	733	.564	.65
September	3,990	740	1,940	1.49	1.66
The year	12,800	275	2,800	2.15	29.24

SACO RIVER AT WEST BUXTON, ME.

LOCATION.—At hydroelectric plant of Cumberland County Power & Light Co., at West Buxton, York County.

DRAINAGE AREA.—1,550 square miles.

RECORDS AVAILABLE.—October 19, 1907, to September 30, 1916, and January 1, 1919, to September 30, 1924.

GAGES.—One in pond above dam; another in tailrace of power house.

CHANNEL AND CONTROL.—Crest of concrete dam about 300 feet long.

DISCHARGE.—Flow over dam and through wheels of power plant determined by means of hourly gage readings.

ICE.—Stage-discharge relation not affected by ice.

REGULATION.—Distribution of flow somewhat affected by power developments above gage.

COOPERATION.—Records furnished by Cumberland County Power & Light Co., Portland, Me.

Daily discharge, in second-feet, of Saco River at West Buxton, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	671	1,880	5,620	1,800	2,430	1,630	4,200	10,200	4,540	1,920	1,160	612
2	676	1,770	5,360	2,410	1,920	1,120	4,140	11,700	4,030	1,310	718	1,250
3	583	1,450	6,020	1,770	1,760	1,870	4,000	13,000	4,180	1,000	554	1,130
4	604	930	5,940	1,550	2,980	1,670	4,060	14,200	3,880	434	830	1,370
5	481	1,400	5,800	2,020	2,190	1,700	4,200	14,400	3,900	1,000	914	1,320
6	320	1,300	6,270	1,230	2,010	1,650	4,740	13,500	3,680	1,010	794	922
7	152	1,340	6,650	1,960	2,190	1,700	6,790	12,600	2,460	1,180	952	131
8	670	1,150	6,240	1,880	2,190	1,580	11,600	11,800	3,090	1,390	817	1,640
9	683	1,220	5,620	1,880	1,920	1,170	11,300	11,000	3,340	1,280	909	1,710
10	588	1,030	6,030	1,810	1,500	2,470	10,100	10,300	3,120	1,460	579	2,260
11	564	1,170	5,490	2,030	2,180	2,370	9,650	9,930	2,850	1,410	1,050	2,540
12	412	999	5,410	1,550	1,900	2,060	9,430	10,300	2,820	1,370	1,410	3,440
13	385	1,280	5,060	2,090	1,920	1,660	9,040	12,300	2,290	1,060	1,200	3,770
14	131	1,370	4,890	3,260	1,750	1,980	9,550	12,200	2,370	1,570	1,110	3,470
15	533	1,500	4,350	2,940	1,960	1,680	5,800	12,300	1,910	1,490	650	4,250
16	601	1,380	3,720	2,970	1,880	1,580	9,650	12,300	2,840	1,490	598	4,040
17	641	1,360	4,390	3,040	1,310	2,500	9,510	12,000	2,400	1,540	645	3,700
18	660	558	3,880	3,870	2,310	2,070	9,720	11,200	2,190	1,330	1,010	3,420
19	558	1,270	3,390	3,870	1,900	2,010	11,200	10,900	1,830	1,350	1,280	3,170
20	252	1,120	3,110	3,520	1,780	1,920	12,900	9,870	1,870	618	1,240	2,800
21	351	988	2,720	4,200	1,970	2,060	13,000	9,000	1,720	915	728	2,360
22	706	990	2,570	3,660	1,460	2,470	12,100	8,260	1,050	1,080	508	3,090
23	819	858	2,170	3,500	1,960	2,420	12,900	7,720	2,430	1,100	585	2,290
24	1,230	1,210	2,920	3,470	1,140	3,500	12,900	7,060	1,660	1,360	707	2,220
25	1,560	1,530	2,170	3,180	1,280	3,890	12,300	6,570	1,690	987	1,050	2,010
26	1,910	3,790	2,760	3,030	1,780	3,650	11,500	6,310	1,680	1,320	1,350	1,740
27	1,720	4,520	2,720	2,580	1,800	3,530	10,000	5,680	1,640	917	1,640	1,680
28	1,660	4,680	2,480	3,610	1,560	3,550	10,600	5,400	1,450	1,170	1,490	598
29	2,760	4,200	2,360	2,730	1,810	3,790	9,670	5,260	926	1,110	1,380	671
30	2,040	4,520	1,640	2,750	-------	3,630	9,180	5,030	1,780	1,190	1,100	2,100
31	2,000	-------	2,290	2,600	-------	4,390	--------	4,900	-------	850	395	-------

Monthly discharge of Saco River at West Buxton, Me., for the year ending September 30, 1924

[Drainage area, 1,550 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,760	131	868	0.560	0.65
November	4,680	558	1,760	1.14	1.27
December	6,650	1,640	4,190	2.70	3.11
January	4,200	1,230	2,670	1.72	1.98
February	2,980	1,140	1,890	1.22	1.32
March	4,390	1,120	2,360	1.52	1.75
April	13,000	4,000	9,190	5.93	6.62
May	14,400	4,900	9,910	6.39	7.37
June	4,540	926	2,520	1.63	1.82
July	1,920	434	1,200	.774	.89
August	1,640	395	947	.611	.70
September	4,250	131	2,190	1.41	1.57
The year	14,400	131	3,310	2.14	29.05

OSSIPEE RIVER AT CORNISH, ME.

LOCATION.—At highway bridge in Cornish, York County, 1¼ miles above confluence with Saco River.

DRAINAGE AREA.—455 square miles (measured on map compiled by Maine Water Power Commission).

RECORDS AVAILABLE.—July 5, 1916, to September 30, 1924.

GAGE.—Chain gage on bridge; read by O. W. Adams.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel of sand and gravel; shifts slightly occasionally; broken by one pier at bridge.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.12 feet at 7 a. m. April 23 (discharge, 4,240 second-feet); minimum stage, 0.15 foot at 8 a. m. October 18 (discharge by extension of rating curve, 66 second-feet).

1916–1924: Maximum stage recorded, 8.76 feet April 30, 1923 (discharge by extension of rating curve, 6,740 second-feet); minimum stage, 0.15 foot on October 18, 1923 (discharge by extension of rating curve, 66 second-feet).

ICE.—Ice forms to considerable thickness and stage-discharge relation is seriously affected during most winters.

REGULATION.—Flow regulated by dam at outlet of Great Ossipee Lake. Power developments at Kezar Falls, 5 miles above gage, may have some effect on distribution of flow.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined above 200 second-feet and extended below. Gage read to hundredths twice daily. Daily discharge ascertained by applying rating table to mean daily gage height with corrections for effect of ice. Records good.

Discharge measurements of Ossipee River at Cornish, Me., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 5	[a] 2.67	636	Mar. 29	2.30	932	Aug. 22	0.91	266
Feb. 28	[a] 2.90	539	Apr. 23	6.00	4,230	Do	.87	255

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Ossipee River at Cornish, Me., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	425	1,820	780	720	500	1,050	3,130	1,050	155	402	279
2	214	425	2,140	780	720	500	1,120	3,400	920	112	402	282
3	211	402	2,230	760	720	500	1,190	3,400	860	127	360	259
4	211	340	2,060	760	640	500	1,260	3,310	800	127	320	246
5	205	300	1,900	760	640	500	1,190	3,220	770	137	286	259
6	182	290	2,230	740	640	500	1,260	3,040	710	142	286	425
7	152	340	2,320	740	640	500	2,060	2,860	680	196	320	545
8	152	320	2,230	740	640	500	3,760	2,770	650	214	402	520
9	165	279	2,140	740	640	500	3,760	2,410	620	214	470	495
10	163	252	1,980	740	620	520	2,950	2,140	570	221	425	650
11	108	252	1,820	860	620	520	2,770	2,060	545	246	402	680
12	140	252	1,740	900	620	520	2,770	2,060	545	425	425	402
13	115	259	1,580	900	620	520	2,950	2,320	545	495	360	272
14	218	255	1,500	880	600	540	3,130	2,860	520	470	320	340
15	168	221	1,400	880	620	540	3,220	2,590	520	448	296	360

Daily discharge, in second-feet, of Ossipee River at Cornish, Me., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	122	290	1,300	860	620	540	3,220	2,410	495	470	320	425
17	117	259	1,200	860	600	560	3,220	2,230	495	340	246	380
18	108	252	1,100	1,150	580	560	3,130	2,060	470	272	246	402
19	152	246	980	1,350	560	560	4,030	1,980	448	218	236	380
20	221	249	920	1,500	560	580	4,120	1,820	425	199	236	360
21	199	246	920	1,500	560	595	4,030	1,660	448	196	320	340
22	202	249	860	1,250	560	620	4,120	1,500	425	218	293	360
23	259	272	860	1,100	560	680	4,220	1,340	380	227	286	380
24	425	425	860	980	560	770	4,120	1,340	360	239	286	425
25	595	1,050	860	920	560	800	4,030	1,260	340	402	300	448
26	570	1,340	860	800	600	860	3,940	1,190	340	448	340	448
27	620	1,580	800	820	560	920	3,760	1,120	340	448	470	425
28	595	1,500	820	840	560	920	2,950	1,050	340	448	425	402
29	495	1,420	800	860	540	920	2,680	1,120	320	425	320	402
30	425	1,420	780	840	-------	980	2,680	1,120	360	402	300	402
31	425	-------	780	780	-------	1,050	-------	1,050	-------	402	286	-------

NOTE.—Stage-discharge relation affected by ice Dec. 15–19 and Dec. 28 to Mar. 20; discharge for these periods computed from gage heights corrected for effect of ice by means of two discharge measurements, observer's notes, and weather records.

Monthly discharge of Ossipee River at Cornish, Me., for the year ending September 30, 1924

[Drainage area, 455 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	620	108	263	0.578	0.67
November	1,580	221	514	1.13	1.26
December	2,320	780	1,410	3.10	3.57
January	1,500	740	915	2.01	2.32
February	720	540	610	1.34	1.44
March	1,050	500	631	1.39	1.60
April	4,220	1,050	2,960	6.51	7.26
May	3,400	1,050	2,120	4.66	5.37
June	1,050	320	543	1.19	1.33
July	495	112	293	.644	.74
August	470	236	335	.736	.85
September	680	246	400	.879	.98
The year	4,220	108	9,160	2.01	27.39

MERRIMACK RIVER BASIN

PEMIGEWASSET RIVER AT PLYMOUTH, N. H.

LOCATION.—At two-span highway bridge in Plymouth, Grafton County, three-quarters mile below mouth of Bakers River.

DRAINAGE AREA.—615 square miles.

RECORDS AVAILABLE.—January 1, 1886, to September 30, 1924.

GAGES.—Vertical staff gage in three sections; two lower sections 40 feet above bridge; upper section on bridge abutment; read by A. F. Morse.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Right channel is rocky and practically permanent; left channel covered with fine gravel which shifts occasionally. Control for low stages is gravel bed of river which shifts occasionally. At high stages banks are overflowed below bridge and control is somewhat indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.7 feet at 2 p. m. September 10 (discharge, 13,700 second-feet); minimum discharge, 45 second-feet at 7 a. m. October 20.

1903–1924: Maximum stage recorded, 18.17 feet at 2 p. m. April 29, 1923 (discharge from extension of rating curve, 22,400 second-feet); minimum discharge, 45 second-feet, August 11, several times during September, and October 20, 1923.

ICE.—River freezes over and stage-discharge relation is affected by ice usually from December to March.

REGULATION.—Several small ponds on Bakers River and other tributaries but practically no storage regulation. At very low stages the paper mill at Livermore Falls is obliged to shut down several times daily and at these times the ponding of water affects the distribution of flow at Plymouth.

ACCURACY.—Stage-discharge relation for low water changed at time ice went out March 23. Rating curves well defined. Gage read twice daily to half-inches. Daily discharge ascertained by applying rating table to mean daily gage height, with corrections for effect of ice. Records good.

Discharge measurements of Pemigewasset River at Plymouth, N. H. during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	0.62	72	Mar. 6	[a] 2.29	342	Sept. 2	0.60	107
Jan. 31	[a] 3.27	638	Aug. 1	.83	210			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Pemigewasset River at Plymouth, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	119	960	11,400	980	680	330	1,300	10,900	1,270	635	210	305
2	125	570	4,500	700	600	310	1,200	9,220	1,130	428	200	181
3	277	407	3,020	780	580	270	1,620	5,210	1,130	414	200	1,200
4	131	372	2,450	1,050	520	260	1,010	4,950	1,090	353	172	918
5	131	277	2,080	1,050	580	310	1,500	7,160	1,090	353	181	512
6	74	356	2,920	1,050	580	340	2,920	4,870	1,010	329	172	2,190
7	199	570	5,300	600	580	400	2,510	4,280	927	305	172	1,570
8	90	1,620	3,050	640	580	400	4,230	4,550	954	329	181	786
9	86	1,280	2,560	600	560	380	2,820	6,270	855	575	200	620
10	74	860	2,140	540	540	360	2,610	5,300	786	561	200	10,300
11	64	740	1,960	470	540	370	3,100	4,030	873	428	190	9,390
12	60	452	1,650	5,800	520	300	2,710	3,500	786	341	200	3,550
13	74	356	1,500	3,700	470	280	2,610	5,510	682	305	200	2,350
14	64	452	2,420	3,000	440	260	5,130	3,970	927	305	245	1,930
15	74	340	1,930	2,500	460	260	5,300	5,130	1,050	293	225	1,370
16	60	372	1,930	2,100	450	250	3,230	4,340	837	269	172	1,170
17	68	255	1,530	3,700	450	240	3,020	3,500	682	329	172	927
18	74	308	1,220	4,000	380	220	3,630	3,300	666	1,070	146	927
19	64	308	1,320	3,400	380	260	8,640	3,970	590	891	146	730
20	64	255	1,500	3,000	360	320	6,430	2,710	575	590	154	682
21	530	125	1,570	2,300	380	480	4,340	2,190	456	393	414	590
22	240	292	1,620	1,650	380	770	4,410	1,980	442	353	547	526
23	113	292	1,530	1,700	380	1,280	5,130	1,790	561	365	456	855
24	1,440	490	1,620	1,700	380	2,400	3,860	1,570	561	329	428	1,130
25	4,740	9,220	1,470	1,600	370	1,620	3,520	2,400	456	305	972	802
26	2,080	3,920	1,370	1,300	330	1,370	2,970	1,980	682	269	1,090	620
27	1,280	2,540	1,300	1,000	370	1,180	3,600	1,530	620	281	819	526
28	1,050	2,320	860	700	360	1,160	4,770	2,240	498	245	561	526
29	530	1,720	1,110	700	380	1,280	4,870	2,590	526	225	512	442
30	434	1,550	1,130	760	-------	1,350	4,740	2,000	698	210	341	470
31	610	-------	1,050	650	-------	1,530	-------	1,620	-------	210	137	-------

NOTE.—Stage-discharge relation affected by ice Jan. 1 to Mar. 22; daily discharge for this period computed from gage heights corrected for effect of ice by means of two discharge measurements, observer's notes, and weather records.

Monthly discharge of Pemigewasset River at Plymouth, N. H., for the year ending September 30, 1924

[Drainage area, 615 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,740	60	484	0.787	0.91
November	9,220	125	1,120	1.82	2.03
December	11,400	860	2,290	3.72	4.29
January	5,800	470	1,730	2.81	3.24
February	680	330	468	.761	.82
March	2,400	220	663	1.08	1.24
April	8,640	1,010	3,590	5.84	6.52
May	10,900	1,530	4,020	6.54	7.54
June	1,270	442	780	1.27	1.42
July	1,070	210	396	.644	.74
August	1,090	137	323	.525	.61
September	10,300	181	1,600	2.60	2.90
The year	11,400	60	1,460	2.37	32.26

MERRIMACK RIVER AT FRANKLIN JUNCTION, N. H.

LOCATION.—At covered wooden bridge of Boston & Maine Railroad, 1 mile below confluence of Pemigewasset and Winnepesaukee Rivers, at Franklin Junction, Merrimack County.

DRAINAGE AREA.—1,460 square miles.

RECORDS AVAILABLE.—July 8, 1903, to September 30, 1924.

GAGE.—Water-stage recorder on right bank 350 feet above railroad bridge installed September 12, 1923; inspected by M. E. Merrill.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Composed of coarse gravel and boulders; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 14.50 feet at 6 a. m. September 11 (discharge, 19,300 second-feet); minimum stage, 3.19 feet at 6.15 p. m. June 22 (discharge, 466 second-feet).

1903–1924: Maximum stage recorded, 23.5 feet April 30, 1923 (discharge by extension of rating curve, 41,000 second-feet); minimum discharge by extension of rating curve, 250 second-feet October 4, 1903.

ICE.—Stage-discharge relation affected by ice for short periods during severe winters.

REGULATION.—Flow affected by storage in Winnepesaukee, Squam, and New Found Lakes, and by operation of mills above station.

ACCURACY.—Stage-discharge relation apparently permanent during year. Rating curve well defined below 10,000 second-feet and fairly well defined above. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by discharge integrator. Records good.

Discharge measurements of Merrimack River at Franklin Junction, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 2	5.14	2,080	May 13	9.35	8,970	Aug. 3	3.98	991
Mar. 5	4.79	1,760	May 14	8.28	6,930			

Daily discharge, in second-feet, of Merrimack River at Franklin Junction, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,040	1,460	10,500	1,660	2,300	1,580	3,000	12,000	2,850	1,540	960	950
2	1,000	1,380	7,110	1,680	1,960	1,400	2,950	15,800	2,600	1,340	920	1,020
3	1,040	1,120	5,200	1,660	1,860	1,380	2,750	9,250	2,450	1,140	870	1,340
4	1,020	1,040	4,350	1,820	1,960	1,420	2,700	7,560	2,100	1,200	810	1,960
5	1,040	1,160	4,300	1,980	2,000	1,500	3,250	11,100	1,950	1,020	900	1,640
6	960	1,080	5,960	1,820	2,300	1,620	4,800	8,400	1,920	970	900	2,050
7	730	1,240	8,870	2,200	2,150	1,720	6,480	7,000	1,780	990	960	2,750
8	960	1,780	3,980	2,300	2,150	1,780	9,540	6,800	1,640	1,080	920	1,860
9	1,000	2,000	4,130	2,050	2,150	1,780	7,200	7,840	1,620	1,220	890	1,640
10	900	1,620	3,550	1,860	2,050	1,880	6,300	7,840	1,800	1,380	810	6,900
11	930	1,280	3,300	1,880	2,050	1,920	6,600	6,820	1,680	1,360	900	15,900
12	870	1,300	2,950	3,600	2,000	1,960	6,000	6,200	1,680	1,180	1,000	6,650
13	770	1,260	2,600	5,000	2,000	1,880	5,300	8,120	1,340	1,060	1,040	4,250
14	780	1,260	3,150	3,600	1,980	1,820	7,020	7,380	1,060	1,080	940	3,350
15	880	1,260	3,350	3,100	1,880	1,760	9,920	7,380	1,160	1,000	990	2,800
16	870	1,160	2,450	2,700	1,880	1,640	6,840	7,470	1,640	1,100	960	2,350
17	800	1,140	2,500	3,750	1,910	1,580	5,900	6,100	1,740	1,280	840	2,050
18	820	970	1,820	5,800	1,870	1,540	6,000	5,400	1,980	1,440	810	1,920
19	840	1,100	1,800	4,250	1,730	1,540	11,800	5,700	1,880	1,740	900	1,840
20	810	1,120	1,920	3,550	1,890	1,620	14,200	5,200	1,600	1,320	960	1,420
21	820	1,060	2,200	2,950	2,110	1,820	8,960	4,300	1,300	1,240	1,100	1,300
22	940	1,020	2,450	2,600	2,000	2,050	8,870	3,900	720	1,200	1,220	1,360
23	890	970	2,550	2,650	2,000	2,350	10,700	3,650	750	1,180	1,220	1,480
24	1,200	1,580	2,650	2,450	1,760	2,850	8,400	3,600	1,160	1,200	1,040	2,040
25	4,950	11,200	2,350	2,250	1,960	3,250	7,290	3,700	1,220	1,180	990	1,980
26	3,650	7,560	2,350	2,250	1,720	3,150	6,400	3,800	1,320	1,080	1,580	1,840
27	2,150	4,200	2,350	2,200	1,820	2,950	6,300	3,250	1,420	980	1,940	1,680
28	1,520	3,300	1,900	2,350	1,680	2,800	7,200	3,250	1,400	920	1,540	1,360
29	1,440	2,750	1,640	2,400	1,660	3,000	7,660	4,350	1,100	990	1,240	1,380
30	1,320	2,450	1,760	2,200	-------	3,050	7,290	3,750	1,320	1,040	1,180	1,680
31	1,320	-------	1,600	2,150	-------	3,100	-------	3,150	-------	1,040	1,040	-------

NOTE.—Water-stage recorder not in operation Dec. 6–8 and May 24–25; discharge estimated by comparison with other records in Merrimack River basin.

Monthly discharge of Merrimack River at Franklin Junction, N. H., for the year ending September 30, 1924

[Drainage area, 1,460 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,950	730	1,230	0.842	0.97
November	11,200	970	2,060	1.41	1.57
December	10,500	1,600	3,470	2.38	2.74
January	5,800	1,660	2,670	1.83	2.11
February	2,300	1,660	1,960	1.34	1.44
March	3,250	1,380	2,050	1.40	1.61
April	14,200	2,700	6,920	4.74	5.29
May	15,800	3,150	6,450	4.42	5.10
June	2,850	720	1,610	1.10	1.23
July	1,740	920	1,180	.808	.93
August	1,940	810	1,040	.712	.82
September	15,900	950	2,690	1.84	2.05
The year	15,900	720	2,780	1.90	25.86

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches, shown by the table, do not represent the natural flow from the basin because of artificial storage.

MERRIMACK RIVER AT LAWRENCE, MASS.

LOCATION.—At dam of Essex Co., in Lawrence, Essex County.

DRAINAGE AREA.—Total of Merrimack River basin above Lawrence, 4,663 square miles; net drainage area, exclusive of diverted parts of Nashua and Sudbury Rivers and Lake Cochituate basins, 4,452 square miles.

RECORDS AVAILABLE.—January 1, 1880, to September 30, 1924.

COMPUTATIONS OF DISCHARGE.—Accurate record is kept of the flow over the dam and through the various wheels and gates. This flow includes water wasted into the Merrimack from the Nashua, Sudbury, and Cochituate drainage basins. Estimates of the quantity wasted from these basins is furnished by the Metropolitan Water and Sewerage Board of Boston, and subtracted from the quantity measured at Lawrence to obtain the net flow from the net drainage area of 4,452 square miles.

DIVERSIONS.—Practically the entire flow of the South Branch of Nashua River, Sudbury River, and Lake Cochituate is diverted for use by the Metropolitan water district of Boston.

REGULATION.—Flow regulated to some extent by storage in Lake Winnepesaukee and other storage reservoirs. The low-water flow is affected by operation of various power plants above Lawrence.

STORAGE.—There are several reservoirs in the basin. It is estimated that the water surface is about 3.5 per cent of entire drainage area.

COOPERATION.—The entire record has been furnished by R. A. Hale, chief engineer of the Essex Co.; rearranged in form for climatic year by engineers of the Geological Survey.

Daily discharge, in second-feet, of Merrimack River at Lawrence, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,288	3,108	10,707	5,835	5,319	3,663	13,640	14,725	6,705	3,079	1,836	1,425
2	2,260	2,503	19,771	6,640	5,380	3,926	13,395	19,025	8,675	2,827	804	2,769
3	2,046	2,021	19,839	5,630	5,444	4,435	11,790	22,700	7,265	2,538	463	2,925
4	1,789	2,196	14,935	5,700	5,957	3,721	11,585	17,830	7,080	995	1,894	2,467
5	1,835	3,624	12,002	6,035	5,233	4,177	12,945	16,010	7,060	1,066	1,938	2,159
6	1,039	2,782	14,342	6,240	4,897	4,514	15,590	17,360	5,700	1,721	2,081	1,425
7	365	2,899	20,590	6,290	4,847	5,052	24,000	15,370	5,360	2,944	1,815	2,055
8	1,838	2,583	22,262	5,895	4,626	5,666	46,524	13,315	4,790	2,807	1,468	3,888
9	1,943	2,609	17,925	5,980	4,632	6,049	47,669	12,900	5,605	2,788	725	3,331
10	1,922	3,247	15,579	5,990	4,309	7,293	39,969	14,645	3,337	2,317	103	3,875
11	1,866	2,605	13,291	6,150	5,142	8,004	31,950	16,375	3,695	2,086	1,868	5,221
12	267	3,606	11,819	8,940	4,927	9,210	28,160	16,485	3,299	933	2,384	12,544
13	348	2,966	10,320	12,190	4,417	7,895	24,155	18,905	3,482	641	2,447	7,943
14	126	3,036	9,924	14,460	4,042	6,905	22,085	23,730	3,461	2,937	2,237	4,663
15	1,972	2,905	8,722	12,740	3,682	6,835	22,525	22,560	3,206	2,637	1,660	4,639
16	2,158	2,777	8,074	11,180	4,160	6,420	23,790	20,090	4,080	2,484	782	3,622
17	1,952	1,823	8,876	12,230	3,640	6,955	20,330	18,020	3,357	2,164	141	3,511
18	1,961	918	7,792	16,454	4,787	6,080	17,710	15,120	3,193	1,750	1,838	3,088
19	1,920	2,865	6,221	17,327	4,310	6,135	18,605	13,855	2,886	1,499	2,134	2,884
20	778	2,720	5,551	15,030	4,244	6,080	28,315	12,475	2,979	1,486	2,117	3,234
21	318	2,633	5,740	13,835	4,018	6,890	31,480	11,450	3,208	3,359	2,043	945
22	1,806	2,535	5,351	12,631	2,757	8,515	26,200	9,960	2,690	2,903	1,600	3,724
23	1,766	2,305	6,206	10,420	3,771	10,270	24,580	8,915	3,791	2,276	1,064	2,994
24	2,298	2,178	8,519	8,378	3,461	12,075	25,595	8,980	3,206	1,997	224	2,774
25	2,647	10,075	8,236	7,459	4,430	13,690	22,940	8,340	2,983	2,109	1,852	2,345
26	7,034	26,362	9,401	7,904	4,168	14,020	19,685	8,035	2,608	1,349	2,342	2,046
27	6,518	22,337	8,505	5,911	4,207	13,345	17,060	9,120	2,031	464	2,685	1,414
28	3,895	16,896	7,614	5,823	3,979	12,460	16,035	8,260	2,584	1,828	2,128	1,635
29	4,834	11,141	5,425	5,707	3,771	12,125	15,095	8,240	2,362	2,025	1,860	3,211
30	3,495	10,211	4,545	5,694	-------	13,130	14,620	8,180	3,369	2,141	1,408	2,879
31	3,405	-------	6,006	5,951	-------	14,185	-------	7,455	-------	2,089	968	-------

Weekly discharge, in second-feet, of Merrimack River at Lawrence, Mass., for the year ending September 30, 1924

[Weeks arranged in order of dryness]

Week ending Sunday	Measured at Lawrence (total drainage area, 4,663 square miles)	Wasting into Merrimack River from diverted drainage basins (211 square miles)	From net drainage area of 4,452 square miles	Per square mile of net drainage area
Oct. 14	1,187	11	1,176	0.264
Aug. 10	1,432	15	1,417	.318
Aug. 24	1,574	10	1,564	.351
Oct. 21	1,580	13	1,567	.352
Aug. 3	1,598	12	1,586	.356
Aug. 17	1,646	12	1,634	.367
Oct. 7	1,660	10	1,650	.371
Aug. 31	1,892	45	1,847	.415
July 27	2,065	7	2,058	.462
July 13	2,074	9	2,065	.464
July 20	2,137	8	2,129	.478
Sept. 7	2,175	24	2,151	.483
July 6	2,228	10	2,218	.498
Sept. 28	2,419	20	2,399	.539
Nov. 18	2,576	36	2,540	.571
June 29	2,795	15	2,780	.624
Nov. 11	2,907	40	2,867	.644
Nov. 4	3,080	64	3,016	.677
Sept. 21	3,132	24	3,108	.698
June 22	3,199	25	3,174	.713
Nov. 25	3,616	144	3,472	.780
Oct. 28	3,709	71	3,638	.817
June 15	3,726	45	3,681	.827
Feb. 24	3,907	67	3,840	.863
Mar. 2	4,021	65	3,956	.889
Feb. 17	4,287	75	4,212	.946
Mar. 9	4,802	92	4,710	1.058
Feb. 10	4,929	95	4,834	1.086
Feb. 3	5,617	110	5,507	1.237
Sept. 14	5,924	70	5,854	1.315
Jan. 6	6,012	164	5,848	1.314
Dec. 23	6,534	156	6,378	1.433
June 8	6,561	69	6,492	1.458
Mar. 23	7,275	194	7,081	1.591
Jan. 13	7,348	186	7,162	1.609
Dec. 30	7,464	172	7,292	1.638
Mar. 16	7,509	226	7,283	1.636
June 1	7,999	173	7,826	1.758
Jan. 27	9,505	157	9,348	2.100
May 25	10,568	178	10,390	2.334
Dec. 16	11,104	251	10,853	2.438
Mar. 30	12,978	264	12,714	2.856
Apr. 6	13,304	270	13,034	2.928
Jan. 20	14,203	243	13,960	3.136
May 11	15,139	177	14,962	3.361
Dec. 2	16,775	292	16,483	3.702
May 4	17,147	304	16,843	3.783
Dec. 9	17,414	284	17,130	3.848
May 18	19,273	512	18,761	4.214
Apr. 20	21,909	439	21,470	4.823
Apr. 27	23,934	455	23,479	5.274
Apr. 13	34,632	701	33,931	7.622

Monthly discharge of Merrimack River at Lawrence, Mass., for the year ending September 30, 1924

Month	Mean discharge in second-feet				Run-off		Rainfall in inches
	Measured at Lawrence (total drainage area, 4,663 square miles)	Wasting into Merrimack from diverted drainage basins (211 square miles)	From net drainage area of 4,452 square miles	Per square mile of net drainage area	Inches	Per cent of rainfall	
October	2,216	31	2,185	0.491	0.566	12.3	4.61
November	5,349	109	5,240	1.177	1.313	23.9	5.49
December	10,777	217	10,560	2.372	2.735	60.5	4.52
January	8,924	179	8,745	1.964	2.264	59.0	3.84
February	4,433	80	4,353	.978	1.055	40.1	2.63
March	8,055	188	7,867	1.767	2.037	110.1	1.85
April	22,934	453	22,481	5.050	5.636	101.9	5.53
May	14,143	276	13,867	3.115	3.592	101.2	3.55
June	4,135	39	4,096	.920	1.027	59.0	1.74
July	2,072	8	2,064	.464	.535	20.7	2.58
August	1,578	20	1,558	.350	.404	9.5	4.27
September	3,388	34	3,354	.753	.840	14.3	5.86
The year	7,332	137	7,195	1.616	22.004	47.35	46.47

NOTE.—The monthly discharge in second-feet per square mile and run-off in inches, shown by the table, do not represent the natural flow from the basin because of artificial storage.

SMITH RIVER NEAR BRISTOL, N. H.

LOCATION.—At highway bridge in South Alexandria, 3 miles from Bristol, Grafton County.

DRAINAGE AREA.—78.5 square miles (measured on Walker map).

RECORDS AVAILABLE.—May 11, 1918, to September 30, 1924.

GAGE.—Vertical staff on downstream side of left abutment of highway bridge; read by Lillian R. Bucklin.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel rough and covered with boulders; control ledge rock and boulders.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.88 feet at 8.15 a. m. April 19 (discharge by extension of rating curve, 1,060 second-feet); minimum discharge, 3.5 second-feet on August 3 and 16.

1918–1924: Maximum stage recorded, 4.7 feet March 29, 1919 (discharge by extension of rating curve, 1,510 second-feet); minimum discharge, same as for 1924.

ICE.—Ice forms to a considerable thickness during winter; stage-discharge relation affected.

REGULATION.—A few small mills above gage, but no serious effect from their operation. Several small lakes in the basin have little if any storage regulation.

ACCURACY.—Stage-discharge relation changed slightly when ice went out in March. Rating curves well defined below 700 second-feet and extended above. Gage read to hundredths twice daily except during winter when readings were obtained once daily. Daily discharge ascertained by applying rating table to mean daily gage height, with corrections for effect of ice. Records good.

Discharge measurements of Smith River near Bristol, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 4	0.63	7.5	Dec. 10	1.78	204	May 14	2.71	522
Oct. 16	.62	6.05	Feb. 1	[a] 1.98	79	Do	2.68	504
Dec. 10	1.78	199	Mar. 4	[a] 2.18	50	Aug. 1	.80	26

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Smith River near Bristol, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	31	546	270	68	50	220	690	72	31	20	33
2	12	29	492	250	66	26	169	690	68	25	21	25
3	11	28	284	240	62	24	148	535	60	14	4.0	88
4	10	25	221	210	60	16	169	455	60	19	9.6	56
5	11	24	196	160	60	41	259	475	59	23	17	39
6	10	24	475	165	62	52	435	365	58	12	15	114
7	10	57	492	160	80	56	415	295	53	19	17	156
8	9.1	89	374	145	68	56	645	244	45	23	16	58
9	9.1	59	253	125	62	39	620	235	42	36	12	42
10	9.1	45	208	100	64	62	620	295	42	39	13	415
11	9.1	37	184	125	68	47	645	265	39	40	12	345
12	8.3	35	168	270	66	36	575	295	37	30	17	435
13	8.3	32	150	280	64	33	455	575	36	33	19	217
14	8.3	44	216	250	64	30	825	475	39	32	18	197
15	9.1	29	152	210	62	23	825	330	37	27	11	154
16	9.1	28	145	170	64	41	690	262	36	22	5.4	114
17	9.1	28	110	340	41	35	600	208	33	50	5.4	96
18	9.1	27	100	340	40	30	555	172	32	74	10	92
19	11	26	230	280	39	29	1,020	162	27	45	11	98
20	12	40	260	250	35	52	1,020	146	26	30	14	68
21	13	31	110	220	28	66	780	126	30	23	62	62
22	16	29	100	145	20	84	825	118	28	22	48	53
23	16	32	122	130	39	115	825	112	25	23	32	56
24	100	166	146	110	54	170	735	114	24	19	21	56
25	182	600	139	100	50	253	645	112	25	18	27	49
26	104	457	124	86	43	200	535	96	32	15	152	42
27	54	564	110	64	43	188	495	93	27	10	142	39
28	40	492	98	50	52	208	495	100	30	12	70	37
29	35	422	150	60	44	241	475	102	30	25	53	34
30	32	457	270	68	-------	222	400	92	32	13	33	72
31	35	-------	280	78	-------	228	-------	82	-------	12	30	-------

NOTE.—Stage-discharge relation affected by ice Dec. 16–22 and Dec. 27 to Mar. 24; daily discharge computed from gage heights corrected for effect of ice by means of two discharge measurements, observer's notes, and weather records.

Monthly discharge of Smith River near Bristol, N. H., for the year ending September 30, 1924

[Drainage area, 78.5 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	182	8.3	26.6	0.339	0.39
November	600	24	133	1.69	1.89
December	546	98	223	2.84	3.27
January	340	50	176	2.24	2.58
February	80	20	54.1	.689	.74
March	253	16	88.8	1.13	1.30
April	1,020	148	571	7.27	8.11
May	690	82	268	3.41	3.93
June	72	24	39.5	.503	.56
July	74	10	26.3	.335	.39
August	152	4.0	30.2	.385	.44
September	435	25	111	1.41	1.57
The year	1,020	4.0	145	1.85	25.17

CONTOOCOOK RIVER NEAR ELMWOOD, N. H.

LOCATION.—At covered highway bridge on county road between Hancock and Greenfield, Hillsborough County, half a mile below mouth of Kimball Brook and 1½ miles south of Elmwood railroad station.

DRAINAGE AREA.—168 square miles (measured on topographic maps.)

RECORDS AVAILABLE.—September 20, 1917, to September 30, 1924, when station was discontinued.

GAGE.—Chain on upstream side of bridge; read by Mrs. G. M. Elliott and Mrs. D. S. Rockwell.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Stream bed is covered with boulders and gravel. Control at low stages is rock ledge 50 feet below gage and is well defined; at high stages control is probably at a storage dam 3 miles downstream.

EXTREMES OF DISCHARGE.—Maximum stage during year from high-water marks, 11.5 feet April 8 (discharge by extension of rating curve, 4,720 second-feet); minimum stage recorded, 1.05 feet at 6 p. m. July 26 (discharge by extension of rating curve, 3 second-feet).

1917–1924: Maximum open-water stage recorded, that of April 8, 1924. A stage of 11.9 feet was recorded March 10, 1921, but the channel was obstructed by ice. Minimum stage recorded, that of July 26, 1924.

ICE.—River is usually covered with ice for several months during winter.

REGULATION.—Considerable storage has been developed in Nubanusit Lake and other reservoirs on the main river and tributaries. Water power is used at various places on river above station; first dam above the gage is at North Peterboro, 4 miles upstream. Records obtained from self-registering gage used during August and September, 1921, showed very little diurnal fluctuation.

ACCURACY.—Stage-discharge relation changed April 7. Rating curves fairly well defined between 15 and 2,400 second-feet. Gage read to hundredths twice daily except during winter, when it was read once daily. Daily discharge ascertained by applying rating table to mean daily gage height, with corrections for effect of ice during winter. Records fair.

Discharge measurements of Contoocook River near Elmwood, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 6	2.97	190	May 15	4.78	774	July 17	1.78	35.5
Mar. 12	[a] 3.28	196	Do	4.76	789	Aug. 4	1.50	18.8
Apr. 9	8.45	2,260	July 17	1.76	33.7			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Contoocook River near Elmwood, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	144	1,360	240	201	260	820	530	126	45	5	17
2	108	101	1,020	240	168	230	600	530	126	15	10	41
3	108	95	605	270	152	184	580	408	172	17	15	111
4	82	61	321	369	201	176	720	353	152	20	17	104
5	76	71	425	300	210	192	1,040	303	84	33	41	49
6	61	101	1,320	230	201	300	1,540	292	90	29	53	68
7	22	129	1,500	230	230	321	2,500	315	53	37	41	41
8	19	168	940	270	201	300	4,500	292	53	29	41	41
9	47	129	574	240	176	260	2,100	408	49	33	20	90
10	56	88	220	250	220	280	1,680	594	68	49	17	162

Daily discharge, in second-feet, of Contoocook River near Elmwood, N. H., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	43	88	396	745	220	220	1,500	530	68	68	8	118
12	25	129	454	1,770	201	201	1,280	627	58	26	29	97
13	22	144	344	1,810	184	210	1,070	1,280	63	29	53	73
14	19	129	369	745	168	230	1,230	950	53	58	49	58
15	31	82	396	425	152	220	1,230	730	23	58	45	84
16	52	76	250	300	137	210	870	594	49	26	45	78
17	52	82	270	1,140	122	192	870	437	33	26	29	58
18	56	47	290	1,060	137	260	562	353	33	29	49	53
19	61	71	300	745	144	321	1,320	353	58	20	68	49
20	61	95	240	425	160	230	1,500	303	49	26	78	53
21	10	82	201	396	176	300	990	268	49	20	58	63
22	43	82	184	270	184	344	870	245	17	33	58	49
23	101	101	321	300	192	321	1,230	257	20	29	29	53
24	425	369	484	240	210	484	950	292	41	49	45	84
25	369	2,220	454	260	230	640	730	328	58	63	23	63
26	144	1,720	321	220	250	574	594	315	37	4	58	68
27	129	940	344	201	260	514	437	257	23	15	90	58
28	115	675	484	210	280	454	380	257	104	17	68	41
29	101	344	454	240	260	605	353	234	20	37	68	33
30	129	484	396	240	-------	860	328	257	29	58	15	73
31	176	-------	210	260	-------	940	-------	202	-------	45	26	-------

NOTE.—Stage-discharge relation affected by ice Feb. 20 to Mar. 16; discharge based on gage heights corrected for effect of ice.

Monthly discharge of Contoocook River near Elmwood, N. H., for the year ending September 30, 1924

[Drainage area, 168 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	425	10	89.7	0.534	0.62
November	2,220	47	302	1.80	2.01
December	1,500	184	498	2.96	3.41
January	1,810	201	472	2.81	3.24
February	280	122	194	1.15	1.24
March	940	176	349	2.08	2.40
April	4,500	328	1,150	6.85	7.64
May	1,280	202	422	2.51	2.89
June	172	17	61.9	.368	.41
July	68	4	33.6	.199	.23
August	90	5	40.4	.240	.28
September	162	17	67.7	.402	.45
The year	4,500	4	306	1.82	24.82

NUBANUSIT BROOK NEAR PETERBORO, N. H.

LOCATION.—At highway bridge 1½ miles above Peterboro, Hillsborough County.

DRAINAGE AREA.—54.3 square miles.

RECORDS AVAILABLE.—November 18, 1920, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by F. E. Moore.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Control formed by boulders 75 feet below gage; bed covered with small boulders, probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.3 feet on morning of April 8 (discharge by extension of rating curve, 990 second-feet); minimum stage, 1.58 feet at 8 a. m. July 9 (discharge, 1.8 second-feet; water held back by dams).

1920–1924: Maximum open-water stage recorded, 5.4 feet at noon March 10, 1921 (discharge by extension of rating curve, 1,050 second-feet, revised; a stage of 5.6 feet was recorded at 8.30 a. m. January 21, 1921, but channel was obstructed by ice at the time); minimum stage, 1.51 feet July 26 and 27, 1923 (discharge, 1.3 second-feet; water held back by dams).

ICE.—Ice forms along banks and on rocks below gage; stage-discharge relation affected.

REGULATION.—Distribution of flow affected by operation of mills at West Peterboro, half a mile upstream. There are several storage reservoirs on main stream and tributaries above gage.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined below 600 second-feet and extended above. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by use of discharge integrator. Records good.

Discharge measurements of Nubanusit Brook near Peterboro, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 5	[a] 2.93	51	Apr. 9	4.49	553	May 16	3.82	275
Feb. 6	[a] 4.89	102	Do	4.47	544	July 18	1.98	12.1
Mar. 13	[a] 4.82	123	May 16	3.84	280			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Nubanusit Brook near Peterboro, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	38	450	56	50	62	135	156	57	19	3.5	4.5
2	38	44	390	122	33	47	121	168	63	14	2.5	42
3	36	20	275	115	18	68	130	162	86	16	2.5	42
4	40	3.4	190	68	21	59	122	157	53	13	39	31
5	38	40	205	52	58	85	164	155	34	25	38	8.5
6	21	41	450	59	88	79	206	131	18	16	39	7.0
7	2.5	45	530	156	86	76	555	108	20	42	15	4.4
8	43	46	390	163	85	58	884	108	24	50	3.0	47
9	40	45	292	153	115	50	614	160	46	36	2.5	48
10	42	36	240	100	147	52	486	157	59	9.0	2.5	52
11	38	16	190	66	124	56	438	185	41	3.0	41	53
12	2.4	55	163	97	102	70	424	195	22	2.5	49	45
13	2.3	55	127	103	126	74	375	295	29	2.5	43	22
14	2.1	50	126	86	110	34	380	318	44	5.0	44	5.5
15	36	47	117	88	133	33	389	276	26	10	42	43
16	39	43	97	85	131	22	320	260	48	15	20	52
17	38	23	130	100	131	48	240	208	38	15	2.5	50
18	3.0	8.6	116	107	113	36	216	156	36	12	39	46
19	5.3	49	106	92	68	34	400	140	9.0	10	51	44
20	4.8	42	78	82	72	48	452	120	6.0	5.0	43	20
21	3.6	40	52	99	103	69	335	113	5.0	45	47	4.1
22	40	40	63	110	124	48	294	98	5.0	38	44	47
23	45	44	57	111	103	68	378	109	42	41	24	47
24	57	72	121	105	115	90	349	95	43	16	4.2	46
25	63	570	113	103	105	107	292	122	39	4.0	42	46
26	107	590	129	54	105	105	239	133	9.0	3.0	53	45
27	81	410	113	68	99	105	182	106	3.0	3.0	43	22
28	49	330	102	82	90	105	133	87	2.5	44	48	4.6
29	59	258	82	88	91	123	135	96	5.0	38	40	48
30	53	258	78	66	-------	150	123	60	8.5	40	21	44
31	61	-------	98	36	-------	152	-------	75	-------	18	4.2	-------

NOTE.—Stage-discharge relation affected by ice Jan. 2 to Mar. 26; daily discharge for this period based on gage heights corrected for effect of ice.

Monthly discharge of Nubanusit Brook near Peterboro, N. H., for the year ending September 30, 1924

[Drainage area, 54.3 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	107	2.1	36.3	0.668	0.77
November	590	3.4	112	2.06	2.30
December	530	52	183	3.37	3.89
January	163	36	92.6	1.71	1.97
February	147	18	94.7	1.74	1.88
March	152	22	71.4	1.31	1.51
April	884	121	317	5.84	6.52
May	318	60	152	2.80	3.23
June	86	2.5	30.7	.565	.63
July	50	2.5	19.7	.363	.42
August	53	2.5	28.8	.530	.61
September	53	4.1	34.0	.626	.70
The year	884	2.1	97.4	1.79	24.43

SUNCOOK RIVER AT NORTH CHICHESTER, N. H.

LOCATION.—100 feet below highway bridge and 500 feet from Chichester depot, North Chichester, Merrimack County, 2½ miles above mouth of Little Suncook River.

DRAINAGE AREA.—157 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 21, 1918, to September 30, 1920, and June 15, 1921, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by M. H. Gamage.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed covered with gravel and other alluvial deposits. Low-water control at head of rapids 150 feet below gage; at high water control is probably formed by crest of an old dam near Epsom.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 11.25 feet at midnight April 7 (discharge by extension of rating curve, 3,420 second-feet); minimum stage, 0.88 foot from 4 to 10 p. m. August 16 (discharge by extension of rating curve, 2.8 second-feet).

1918–1924: Maximum stage recorded, 13.0 feet April 7, 1923 (discharge by extension of rating curve, 4,300 second-feet); minimum stage, 0.80 foot November 25, 1923 (discharge by extension of rating curve, 2 second-feet).

ICE.—River is covered with ice for several months during winter.

REGULATION.—Storage has been developed at several points above Pittsfield. The operation of mills at Pittsfield causes a large variation in discharge during the days when mills are in operation.

ACCURACY.—Stage-discharge relation apparently permanent except when affected by ice. Rating curve well defined between 10 and 2,200 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily discharge table. Daily discharge ascertained by discharge integrator with corrections for effect of ice during winter. Records good.

Discharge measurements of Suncook River at North Chichester, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 17	1.11	11.7	Apr. 11	7.36	1,510	June 28	1.57	42
Feb. 4	[a] 5.81	331	Apr. 12	6.94	1,390	Aug. 4	1.12	8.6
Mar. 24	[a] 6.21	614	Do	6.83	1,350	Do	1.12	10.1
Apr. 11	7.36	1,510						

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Suncook River at North Chichester, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	39	770	290	310	170	495	600	130	13	13	13
2	70	70	555	320	240	110	445	710	172	10	11	10
3	80	62	450	280	260	270	425	550	128	27	10	15
4	102	23	365	300	280	210	450	485	132	32	18	6.4
5	84	148	415	280	230	210	610	500	124	20	24	9.6
6	79	115	1,040	370	260	230	840	420	126	20	25	20
7	16	43	1,080	390	260	240	2,020	355	74	25	31	26
8	84	126	750	310	130	190	3,050	300	16	38	30	68
9	93	84	625	290	176	240	2,360	320	124	38	25	64
10	16	65	500	270	210	270	1,880	400	126	39	14	116
11	10	23	440	300	220	270	1,640	390	128	35	18	236
12	9	95	400	560	230	270	1,340	395	130	30	14	262
13	9	120	355	580	200	250	1,060	700	130	20	6.9	206
14	9	33	425	520		220	940	680	79	28	4.2	184
15	30	36	360	460		165	940	540	17	27	3.0	166
16	35	34	318	380		210	850	445	124	29	3.0	128
17	34	86	295	640		230	710	380	130	35	36	104
18	34	14	280	720		180	610	330	118	29	11	88
19	112	114	285	540		185	1,420	295	118	22	3.5	95
20	58	31	250	460		190	1,800	245	118	17	3.7	21
21	14	32	193	370	154	270	1,320	230	80	14	3.5	48
22	19	35	146	410		380	1,040	205	20	23	3.7	94
23	28	38	255	420		490	1,170	196	116	21	11	75
24	74	465	380	370		600	900	160	120	59	5.5	74
25	162	1,060	345	370		600	680	225	130	31	63	68
26	189	900	290	360		620	540	250	126	17	75	59
27	96	465	247	340		540	470	192	122	14	65	13
28	18	295	450	370		550	410	194	69	13	68	36
29	118	217	450	370		550	355	210	21	12	46	88
30	109	270	390	380	-------	570	335	156	30	13	22	72
31	42	-------	350	330	-------	550	-------	152	-------	13	15	-------

NOTE.—Stage-discharge relation affected by ice Dec. 28 to Mar. 27; daily discharge for this period based on gage heights corrected for effect of ice. Water-stage recorder not in operation Oct. 1–3, Nov. 10–13, 24–25, Feb. 14–29, and Aug. 22; discharge estimated. Braced figures shows estimated mean discharge for period indicated.

Monthly discharge of Suncook River at North Chichester, N. H., for the year ending September 30, 1924

[Drainage area, 157 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	189	9	61.3	0.390	0.45
November	1,060	14	171	1.09	1.22
December	1,080	146	434	2.76	3.18
January	720	270	398	2.54	2.93
February	310	130	188	1.20	1.29
March	620	110	324	2.06	2.38
April	3,050	335	1,030	6.56	7.32
May	710	152	362	2.31	2.66
June	172	16	103	.656	.73
July	39	10	24.6	.157	.18
August	75	3.0	22.0	.140	.16
September	262	6.4	82.2	.524	.58
The year	3,050	3.0	267	1.70	23.08

SOUHEGAN RIVER AT MERRIMACK, N. H.

LOCATION.—At head of Atherton Falls, 7 miles below mouth of Beaver Brook and 1½ miles above confluence with Merrimack River at Merrimack, Hillsborough County.

DRAINAGE AREA.—168 square miles.

RECORDS AVAILABLE.—July 13, 1909, to September 30, 1924.

GAGE.—Water-stage recorder on left bank 350 feet above falls installed October 15, 1913; inspected by employee of W. H. McElwain Co.

DISCHARGE MEASUREMENTS.—Made by wading below falls or from cable.

CHANNEL AND CONTROL.—Channel opposite gage is a pool in which velocity is very low. Control of this pool is a rock ledge at head of Atherton Falls and is permanent.

ICE.—Ice forms on control for short periods during some winters.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 11.82 feet at 4.15 a. m. April 8 (discharge by extension of rating curve, 7,120 second-feet); minimum discharge, 15 second-feet several times during October.

1909–1924: Maximum stage recorded, that of April 8, 1924; minimum discharge, 15 second-feet September 8, 1909, and several times during October 1923.

REGULATION.—Flow slightly affected by the operation of mills at Milford, 8 miles above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 2,000 second-feet and extended above. Operation of water-stage recorder satisfactory except as noted in footnote to daily-discharge table. Daily discharge ascertained by applying rating table to mean daily gage height. Records good.

The following discharge measurements were made:

May 1, 1924: Gage height, 4.13 feet; discharge, 623 second-feet.

May 1, 1924: Gage height, 4.19 feet; discharge, 657 second-feet.

June 28, 1924: Gage height, 2.47 feet; discharge, 79 second-feet.

Daily discharge, in second-feet, of Souhegan River at Merrimack, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	162	1,200	255	295	158	775	590	200	70	36	30
2	34	135	920	260	220	135	585	590	200	57	39	32
3	32	115	637	280	160	145	570	428	220	54	29	33
4	29	100	500	340	220	135	720	420	204	41	29	28
5	29	85	500	300	260	145	1,170	418	180	44	32	29
6	35	90	1,720	245	216	190	1,470	420	160	51	29	43
7	28	115	1,720	235	225	195	2,690	416	140	48	29	33
8	26	165	980	235	213	190	5,550	408	130	54	32	37
9	27	160	670	285	195	180	2,410	480	120	42	39	45
10	18	138	520	255	185	185	1,710	580	130	48	30	55
11	30	98	450	680	188	180	1,500	520	120	48	33	76
12	25	92	610	1,600	192	180	1,260	1,000	110	48	39	80
13	30	100	400	1,750	182	180	1,040	2,100	100	34	29	70
14	28	88	420	700	180	185	1,070	1,440	80	39	41	39
15	25	90	430	430	201	180	1,010	1,120	70	39	48	35
16	26	88	280	355	201	175	775	1,000	80	36	41	33
17	20	82	290	1,000	190	175	637	820	70	46	29	31
18	22	64	310	940	155	225	580	640	70	76	29	36
19	29	64	330	700	168	253	1,300	490	80	64	29	40
20	52	76	210	430	158	274	1,430	403	80	44	22	37
21	44	72	190	360	158	367	950	340	84	35	23	31
22	49	58	180	300	158	411	830	280	68	34	29	30
23	52	72	350	330	148	545	1,300	290	58	34	35	33
24	219	288	490	290	122	775	890	320	65	45	31	31
25	610	2,130	460	280	140	920	692	360	80	42	32	32
26	359	1,640	430	260	155	830	585	330	86	43	38	33
27	219	830	410	245	155	637	506	300	120	33	33	31
28	150	605	500	240	158	665	478	280	86	33	33	35
29	125	456	460	250	155	830	434	260	68	29	48	30
30	130	411	400	295	-------	890	411	280	72	28	45	31
31	140	-------	250	311	-------	920	-------	240	-------	29	32	-------

NOTE.—Recorder not in operation Oct. 28–30, Nov. 2–7, Dec. 9–11, 13–18, 21–25, 27–31, Jan. 1–2, 4–8, 10–15, 17–22, 24–29, Feb. 2–4, 11, Mar. 5–17, May 2–5, 8–12, 15–19, 21–31, June 1–3, 5–9, 11–19, and 23–25; discharge estimated by comparison with records in adjacent drainage basins.

Monthly discharge of Souhegan River at Merrimack, N. H., for the year ending September 30, 1924

[Drainage area, 168 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	610	18	86.6	0.515	0.59
November	2,130	58	289	1.72	1.92
December	1,720	180	555	3.30	3.80
January	1,750	235	466	2.77	3.19
February	295	122	185	1.10	1.19
March	920	135	370	2.20	2.54
April	5,550	411	1,180	7.02	7.83
May	2,100	240	567	3.38	3.90
June	220	58	111	.661	.74
July	76	28	44.1	.262	.30
August	48	22	33.6	.200	.23
September	80	28	38.6	.230	.26
The year	5,550	18	327	1.95	26.49

SOUTH BRANCH OF NASHUA RIVER BASIN (WACHUSETT DRAINAGE BASIN) NEAR CLINTON, MASS.

LOCATION.—At Wachusett Dam, near Clinton, Worcester County.

DRAINAGE AREA.—119 square miles 1896 to 1907; 118.19 square miles 1908–1913; 108.84 square miles 1914–1924.

RECORDS AVAILABLE.—July, 1896, to September, 1924.

REGULATION.—Flow affected by storage in Wachusett Reservoir and other ponds. Beginning with 1897, the determinations of discharge have been corrected for gain or loss in the reservoir and ponds, so that the record shows approximately the natural flow of the stream.

The yield per square mile is the yield of the drainage area including the water surfaces. For the year 1896 to 1902, inclusive, the water surface amounted to 2.2 per cent of the total area; 1903, 2.4 per cent; 1904, 3.6 per cent; 1905, 4.1 per cent; 1906, 5.1 per cent; 1907, 6.0 per cent; 1908 and subsequent years, 7.0 per cent.

COOPERATION.—Record furnished by the water division of the Metropolitan District Commission; rearranged in form of climatic year by engineers of the Geological Survey.

Yield and rainfall in South Branch of Nashua River basin (Wachusett drainage area) near Clinton, Mass., for the year ending September 30, 1924

[Drainage area, 108.84 square miles]

Month	Total yield (million gallons)	Yield per square mile		Run-off		Rainfall in inches
		Million gallons per day	Second-feet	In inches	Per cent of rainfall	
October	1,449.2	0.430	0.665	0.766	14.9	5.16
November	3,181.0	.974	1.507	1.682	28.7	5.87
December	5,791.7	1.717	2.656	3.062	60.4	5.07
January	6,328.9	1.876	2.902	3.346	79.2	4.23
February	2,520.1	.798	1.235	1.332	40.3	3.31
March	5,726.6	1.697	2.626	3.028	125.6	2.41
April	13,736.0	4.213	6.518	7.262	110.4	6.58
May	6,655.9	1.973	3.052	3.519	99.0	3.55
June	1,465.6	.449	.695	.775	68.4	1.13
July	442.6	.131	.203	.234	9.0	2.60
August	849.6	.252	.390	.449	9.7	4.61
September	1,044.7	.320	.494	.552	11.5	4.79
The year	49,191.9	1.236	1.912	26.007	52.74	49.31

SUDBURY RIVER AND LAKE COCHITUATE BASINS NEAR FRAMINGHAM AND COCHITUATE MIDDLESEX COUNTY, MASS.

DRAINAGE AREA.—Area of Sudbury basin from 1875 to 1878, inclusive, was 77.8 square miles; 1879–80, 78.2 square miles; 1881–1924, 75.2 square miles. Area of Cochituate basin from 1863 to 1909, inclusive, was 18.87 square miles; 1910, 17.8 square miles; 1911 to 1924, 17.58 square miles.

RECORDS AVAILABLE.—Of Sudbury River, January, 1875, to September, 1924; of Lake Cochituate, January, 1863, to September, 1924. Records of rainfall have been kept in the Sudbury basin since 1875 and in the Cochituate basin since 1852, but the latter are considered of doubtful accuracy previous to 1872.

REGULATION.—The greater part of the flow from these basins is controlled by storage reservoirs operated by the Metropolitan Water and Sewerage Board. Lake Cochituate, which drains into Sudbury River a short distance below Framingham, is controlled as a storage reservoir for the Metropolitan waterworks system. In the Sudbury River basin the water surfaces exposed to evaporation have been increased from time to time by the construction of additional storage reservoirs. From 1875 to 1878, inclusive, the water surface amounted to 1.9 per cent of the total area; from 1879 to 1884, to 3 per cent; 1885 to 1893, to 3.4 per cent; 1894 to 1897, to 3.9 per cent; 1898 and subsequent years, 6.5 per cent.

DETERMINATION OF DISCHARGE.—In determining the run-off of the Sudbury and Cochituate drainage areas the water diverted for the municipal supply of Framingham, Natick, and Westboro, which discharge their sewerage outside the basins, is taken into consideration; the results, however, are probably less accurate since the sewerage diversion works were constructed.

Water from the Wachusett drainage area also passes into the reservoirs in the Sudbury basin and must be measured to determine the yield of the Sudbury basin; the small errors unavoidable in the measurement of large quantities of water decrease the accuracy of the determination of the Sudbury water supply during the months of low yield for years subsequent to 1897.

COOPERATION.—Record furnished by the water division of the Metropolitan District Commission; rearranged in form of climatic year by engineers of the Geological Survey.

Yield and rainfall in Sudbury River basin near Framingham, Mass., for the year ending September 30, 1924

[Drainage area, 75.2 square miles]

Month	Total yield (million gallons)	Yield per square mile		Run-off		Rainfall in inches
		Million gallons per day	Second-feet	In inches	Per cent of rainfall	
October	924.5	0.397	0.614	0.707	12.4	5.71
November	2,572.6	1.140	1.764	1.969	33.8	5.83
December	5,123.3	2.198	3.400	3.921	79.1	4.96
January	4,187.6	1.796	2.779	3.205	89.1	3.60
February	1,559.5	.715	1.106	1.193	46.7	2.56
March	4,523.8	1.941	3.002	3.462	130.0	2.66
April	6,884.4	3.056	4.728	5.268	96.1	5.49
May	3,261.2	1.399	2.164	2.495	77.6	3.22
June	633.5	.281	.434	.485	32.5	1.49
July	−122.2	−.052	−.081	−.094	−2.9	3.19
August	270.2	.116	.179	.207	4.4	4.73
September	922.5	.408	.632	.706	12.4	5.67
The year	30,740.9	1.116	1.727	23.524	47.90	49.11

Yield and rainfall in Lake Cochituate basin near Cochituate, Mass., for the year ending September 30, 1924

[Drainage area, 17.58 square miles]

Month	Total yield (million gallons)	Yield per square mile		Run-off		Rainfall in inches
		Million gallons per day	Second-feet	In inches	Per cent of rainfall	
October	172.9	0.317	0.491	0.57	8.8	5.10
November	434.6	.824	1.275	1.42	26.7	5.33
December	1,019.0	1.870	2.893	3.33	60.8	5.49
January	859.8	1.578	2.441	2.81	80.0	3.52
February	381.1	.748	1.157	1.25	46.5	2.68
March	1,073.8	1.970	3.049	3.51	125.5	2.80
April	1,268.6	2.409	3.727	4.15	78.0	5.30
May	738.3	1.355	2.096	2.42	75.5	3.20
June	203.8	.386	.598	.67	39.0	1.71
July	1.4	.003	.004	.01	.2	2.78
August	121.1	.222	.344	.39	7.7	5.16
September	266.1	.504	.780	.87	14.5	6.0
The year	6,540.5	1.016	1.571	21.40	43.61	49.07

TAUNTON RIVER BASIN

TAUNTON RIVER AT TITICUT, NEAR BRIDGEWATER, MASS.

LOCATION.—At Summer Street Bridge on road between Bridgewater and Middleboro, Plymouth County, half a mile from the Titicut railroad station and 1 mile above confluence with Namasket River.

DRAINAGE AREA.—185 square miles.

RECORDS AVAILABLE.—March 1, 1920, to September 30, 1924.

GAGE.—Chain on upstream side of highway bridge; temporary staff gage on piling above bridge during construction work at bridge site; read by Emily H. Pratt and Harold Pratt.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Channel deep, with hard bottom covered with rocks and gravel. River overflows banks at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.39 feet at 5 p. m. October 24 (discharge, 1,210 second-feet); minimum discharge by extension of rating curve, 23 second-feet at 5 p. m. August 10.

1920–1924: Maximum stage of 15.5 feet occurred March 19, 1920 (determined from high-water marks; approximate discharge by extension of rating curve, 5,150 second-feet); minimum discharge, that of August 10, 1924.

ICE.—River freezes over; stage-discharge relation occasionally affected by ice.

REGULATION.—Nearest dam above gage is at Paper Mill Village, near Bridgewater, where water power is used by a paper mill. The operation of this mill does not materially affect the distribution of flow at the gage.

ACCURACY.—Stage-discharge relation for low stages changed by construction work at new bridge during summer of 1924, and occasionally affected by backwater from dam at East Taunton. Rating curve well defined between 400 and 3,400 second-feet, and fairly well defined between 30 and 400 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying rating table to mean daily gage height. Records fair.

Discharge measurements of Taunton River at Titicut, near Bridgewater, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 19	[a]5.50	369	Feb. 23	5.38	360	Apr. 2	6.90	799
Feb. 23	5.32	355	Apr. 1	6.76	802	July 9	3.68	174

[a] Probably backwater effect from dam.

Daily discharge, in second-feet, of Taunton River at Titicut, near Bridgewater, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	111	182	115	205	195	255	760	710	310	220	34	325
2	107	188	130	235	205	235	790	740	295	200	34	295
3	103	182	135	275	235	255	820	760	280	176	30	230
4	99	195	125	275	275	255	850	790	270	168	47	192
5	99	140	205	315	360	275	790	790	240	184	42	184
6	107	152	295	315	510	295	820	345	220	210	51	160
7	99	152	790	275	485	315	880	345	295	144	47	152
8	95	158	620	255	460	315	930	325	485	168	34	168
9	95	164	485	220	255	315	1,040	385	210	184	30	120
10	68	164	295	235	188	295	1,100	435	240	210	26	184
11	71	176	255	205	195	255	1,040	410	250	200	30	510
12	71	195	255	220	195	295	820	485	270	144	38	435
13	71	205	235	235	188	335	650	620	310	144	47	410
14	74	188	220	275	182	410	600	680	240	144	38	410
15	80	188	255	385	182	485	510	570	250	101	70	385
16	86	170	235	435	182	540	385	540	280	75	47	295
17	89	146	220	410	188	600	385	510	270	60	47	230
18	92	146	205	360	188	620	325	385	230	60	38	192
19	107	140	235	335	188	600	310	345	230	51	34	192
20	120	135	235	335	182	570	325	345	240	56	38	184
21	164	125	195	315	188	510	990	310	220	56	30	220
22	170	115	182	275	195	485	1,020	270	192	42	34	250
23	385	103	188	255	385	540	1,040	270	184	38	47	210
24	1,160	95	188	235	295	570	1,070	270	200	42	38	200
25	188	99	195	235	335	710	1,100	345	200	56	95	192
26	158	107	220	235	335	850	1,040	345	192	47	250	192
27	170	111	195	235	315	880	1,070	325	160	47	710	210
28	182	107	182	220	295	740	1,100	280	168	47	620	220
29	195	103	188	220	275	680	960	295	200	34	485	230
30	205	103	195	205	-------	740	790	270	230	34	325	210
31	188	-------	195	195	-------	760	-------	230	-------	30	345	-------

NOTE.—Stage-discharge relation affected by ice Jan. 25–30; discharge based on gage height corrected for effect of ice.

Monthly discharge of Taunton River at Titicut, near Bridgewater, Mass., for the year ending September 30, 1924

[Drainage area, 185 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,160	68	162	0.876	1.01
November	205	95	148	.800	.89
December	790	115	247	1.34	1.54
January	435	195	272	1.47	1.70
February	510	182	264	1.43	1.54
March	880	235	483	2.61	3.01
April	1,100	310	810	4.38	4.89
May	790	230	443	2.39	2.76
June	485	160	245	1.32	1.47
July	220	30	109	.589	.68
August	710	26	122	.659	.76
September	510	120	246	1.33	1.48
The year	1,160	26	295	1.59	21.73

PROVIDENCE RIVER BASIN

BLACKSTONE RIVER AT WORCESTER, MASS.

LOCATION.—150 feet below highway bridge on Webster Street, Worcester, Worcester County, three-quarters of a mile above mouth of Tatnuck Brook and 1 mile below Kettle Brook.

DRAINAGE AREA.—31.5 square miles, including 6.3 square miles from which water is diverted to water-supply system of Worcester (measured on topographic maps).

RECORDS AVAILABLE.—August 14, 1923, to September 30, 1924.

GAGE.—Water-stage recorder on right bank; inspected by R. Brown.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel smooth, subject to growth of aquatic vegetation during summer. Control for low stages at riffles 200 feet below gage; at high stages control is in vicinity of railroad bridge, half a mile below gage.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 740 second-feet at 11.30 p. m. April 7; minimum discharge, 2.2 second-feet from 2 to 7 a. m. October 13.

ICE.—At times of very low temperature ice forms along banks of river; stage-discharge relation not affected.

DIVERSIONS.—Water is diverted from 6.3 square miles as a part of the water-supply system of Worcester. Occasionally water from this diverted area wastes back into the river.

REGULATION.—Operation of several storage reservoirs above gage affects the distribution of flow; diurnal variation in stage is also caused by operation of a small mill 200 feet above gage.

ACCURACY.—Stage-discharge relation affected by aquatic vegetation during several months of summer, discharge May to October determined from results of frequent discharge measurements and variation diagram correction method. Standard rating curve well defined below 600 second-feet, used from November to April, discharge ascertained by discharge integrator. Operation of water-stage recorder satisfactory during year. Water diverted into the water-supply system of Worcester is measured by Venturi meters. Table of daily discharge shows flow past the gage without correction for diversion. Monthly discharge table shows mean monthly discharge as measured at the gage and also as corrected for diversion. Records good.

Discharge measurements of Blackstone River at Worcester, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 19	0.51	6.1	Jan. 28	2.02	128	June 13	[a] 1.44	52
Do	1.23	38.7	Mar. 14	1.69	87	July 28	[a] 1.52	31.6
Dec. 7	2.84	214	Do	2.34	168	Do	[a] .56	6.2
Jan. 4	1.66	85	Do	2.26	150	Sept. 5	[a] .90	10.2
Do	2.04	126	Apr. 8	4.12	548	Sept. 13	[a] 1.12	14.9
Do	2.32	159	Do	3.94	495	Do	[a] 2.02	49.1
Jan. 28	1.57	62	May 26	[a] 1.91	79	Sept. 14	[a] 1.52	26.4
Do	1.64	74	June 8	[a] 1.30	26.1	Sept. 28	[a] .71	8.4

[a] Stage-discharge relation affected by aquatic vegetation.

Daily discharge, in second-feet, of Blackstone River at Worcester, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	12	20	100	60	52	15	96	92		9.2	7.2	13
2	12	19	100	56	40	10	91	103		8.9	3.9	13
3	10	19	100	57	37	32	72	105	45	8.6	3.9	12
4	11	11	66	72	60	41	102	99		6.2	3.8	12
5	10	11	80	87	49	41	134	95		4.9	4.5	11
6	6.8	16	173	94	54	48	147	75		6.7	16	11
7	2.6	14	174	84	44	58	432	64		11	22	11
8	9.6	13	115	71	29	27	483	69	35	9.2	8.5	11
9	9.4	14	111	66	13	39	276	74		14	7.2	12
10	8.6	10	102	62	12	98	194	55		23	5.7	24
11	8.8	7.0	110	106	22	116	186	88	24	25	5.4	38
12	2.4	16	112	228	19	78	134	110	22	15	7.0	27
13	7.6	7.0	101	150	18	64	139	190	22	18	6.7	18
14	2.6	4.5	93	136	22	60	128	160	14	18	6.2	13
15	7.4	22	81	104	25	40	104	115	10	27	6.2	11
16	7.4	20	83	90	16	28	86	84	16	18	5.9	11
17	10	11	84	176	10	48	96	68	19	12	5.7	15
18	8.2	6.2	76	168	27	42	90	58	18	11	7.5	15
19	4.4	7.0	57	125	31	31	149	60	13	8.6	8.9	16
20	4.6	10	46	112	41	50	183	54	9.2	8.6	9.2	20
21	2.9	13	48	104	40	62	152	56	9.6	9.2	9.9	12
22	7.6	12	34	83	16	129	137	58	9.6	8.2	9.2	11
23	9.4	12	36	66	14	127	140	52	9.6	8.9	7.2	12
24	28	68	92	61	13	71	110	52	16	9.2	7.2	12
25	49	200	105	65	29	115	107	70	12	8.6	7.5	10
26	39	137	93	61	37	134	102	76	13	7.0	10	10
27	26	104	72	55	28	105	110	58	21	24	26	11
28	13	68	69	60	23	102	98	54	13	22	32	8
29	19	49	70	56	20	108	79	58	10	5.9	21	7
30	20	89	63	58	------	141	83	68	10	8.6	23	9
31	17	------	64	60	------	120	------	56	------	4.7	15	------

Monthly discharge of Blackstone River at Worcester, Mass., for the year ending September 30, 1924

[Drainage area, 31.5 square miles]

Month	Observed discharge (second-feet)			Corrected for diversion to water-supply system of Worcester (second-feet)		Corrected run-off in inches
	Maximum	Minimum	Mean	Mean	Per square mile	
October	49	2.4	12.5	22.2	0.705	0.81
November	200	4.5	33.7	43.3	1.37	1.53
December	174	34	87.4	96.8	3.07	3.54
1924						
January	228	55	91.4	101	3.21	3.70
February	60	10	29.0	38.7	1.23	1.33
March	141	10	70.3	80.2	2.55	2.94
April	483	72	148	158	5.02	5.60
May	190	52	79.9	90.0	2.86	3.30
June	------	9.2	23.0	33.7	1.07	1.19
July	27	4.7	12.2	23.7	.752	.87
August	32	3.8	10.3	20.9	.663	.76
September	38	7	13.9	24.2	.768	.86
The year	483	2.4	51.0	61.1	1.94	26.43

PAWTUXET RIVER AT FISKEVILLE, R. I.

LOCATION.—At an unused mill dam in Fiskeville, Providence County.

DRAINAGE AREA.—101.8 square miles.[3]

RECORDS AVAILABLE.—January 1, 1916, to September 30, 1924.

DETERMINATION OF DISCHARGE.—Discharge determined from records of stage obtained by Gurley water-stage recorder. The dam, which is about 140 feet long, has been rated by laboratory tests on a full-size model and by current-meter measurements made at bridge a short distance upstream. Rating curve well defined below 1,400 second-feet.

REGULATION.—Previous to April, 1919, there were four reservoirs in the basin with a capacity of 385 million cubic feet; since April, 1919, there have been five reservoirs with a total capacity of 441 million cubic feet. Monthly discharge has been corrected for gain or loss in amount of water held in storage. A few small mill ponds near Fiskeville hold back water Saturday afternoons and Sundays, when the stage of the river is low.

DIVERSIONS.—The Pawtuxet Valley Water Co. diverts part of the flow from 1.3 square miles just above Fiskeville, correction for which has been made.

COOPERATION.—Data collected and compiled under the direction of Frank E. Winsor, chief engineer, City of Providence Water Supply Board.

Daily discharge, in second-feet, of Pawtuxet River at Fiskeville, R. I., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	149	127	365	273	246	135	451	294	164	78	74	73
2	136	112	451	234	223	146	406	318	180	78	45	97
3	144	66.5	371	391	216	176	391	283	152	85	29	80
4	140	102	294	754	212	147	460	253	136	29	98	71
5	119	149	328	575	231	175	504	232	157	74	68	83
6	65.9	102	957	405	353	196	470	212	163	67	66	45
7	65.2	114	1,153	390	264	230	1,364	201	150	100	33	54
8	121	99.5	649	268	240	207	1,822	191	114	45	30	104
9	53.2	98.3	456	244	208	199	877	209	175	44	38	76
10	41.7	59	388	248	193	240	612	310	143	8	36	198
11	34.5	82.6	385	319	195	264	507	314	140	5	94	213
12	30.8	91.2	373	478	182	264	423	439	100	33	33	160
13	23.5	147	334	418	174	245	374	824	75	40	59	96
14	2.7	105	332	332	167	233	357	621	74	83	38	102
15	50.8	89.1	294	271	160	209	320	439	52	61	35	132
16	29.7	59.1	265	242	138	195	289	366	133	44	20	83
17	29.4	56.4	259	816	155	191	269	317	106	6	3	46
18	25.5	16	227	778	177	185	257	274	116	23	50	70
19	40.3	110	204	495	152	208	700	261	102	40	29	65
20	51.2	64.2	201	421	158	239	760	229	101	34	20	39
21	62.2	60.7	203	366	235	279	519	235	97	86	27	11
22	129	57.6	199	382	219	272	451	241	74	66	26	100
23	112	60.5	297	255	186	310	508	223	136	68	23	71
24	342	374	382	230	176	393	429	204	90	65	3	72
25	301	652	364	347	184	519	349	287	89	69	46	64
26	232	433	306	455	164	469	318	299	99	39	176	5
27	184	244	260	550	164	398	288	257	88	52	271	24
28	159	219	271	449	166	385	262	230	90	93	180	33
29	173	200	307	236	163	412	244	214	47	67	131	111
30	134	215	262	231	-------	504	233	218	130	87	72	83
31	110	-------	261	258	-------	576	-------	199	-------	65	83	-------

[3] Includes a water area of 2.5 square miles and a swamp area of 2 square miles.

Monthly discharge of Pawtuxet River at Fiskeville, R. I., for the year ending September 30, 1924

[Drainage area, 101.8 square miles]

Month	Observed discharge (second-feet)			Gain or loss in storage (millions of cubic feet)	Discharge corrected for storage (second-feet)		Run-off in inches	Rainfall in inches
	Maximum	Minimum	Mean		Mean	Per square mile		
October	342	2.7	106	16.7	112	1.10	1.27	5.67
November	652	16.0	146	97.0	183	1.80	2.01	5.68
December	1,153	199	368	95.6	403	3.96	4.57	5.10
January	816	230	391	23.5	400	3.92	4.52	4.49
February	353	138	197	46.9	178	1.75	1.88	2.92
March	576	135	278	67.5	303	2.97	3.43	2.80
April	1,822	233	507	33.3	520	5.11	5.70	6.12
May	824	191	297	5.1	298	2.93	3.38	3.66
June	180	47	116	50.7	96.3	.950	1.05	1.49
July	100	5	55.9	102	18.0	.180	.20	1.72
August	271	3	62.5	35.4	49.3	.480	.56	5.85
September	213	5	82	50.7	62.5	.610	.68	5.28
The year	1,822	2.7	217	53.0	219	2.15	29.25	50.78

NOTE.—The rainfall was computed as a weighted mean of records obtained at Hopkins Mills, Rocky Hill, South Scituate, and Fiskeville, using weights of 2, 2, 2, and 1, respectively.

THAMES RIVER BASIN

QUINEBAUG RIVER AT JEWETT CITY, CONN.

LOCATION.—1,000 feet below railroad bridge and 570 feet below outlet of canal from Slater Mills (mouth of Pachaug River); Jewett City, town of Griswold, New London County.

DRAINAGE AREA.—712 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 17, 1918, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by Theodore Davis.

DISCHARGE MEASUREMENTS.—Made from cable.

CHANNEL AND CONTROL.—Channel of gravel and alluvial deposits; control for low stages is fairly well defined riffle a few hundred feet below gage, at high stages control is at head of rapids 2½ miles below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 14.8 feet at 11 a. m. April 8 (discharge by extension of rating curve, 9,070 second-feet); minimum stage, 3.65 feet at 7 a. m. October 14 (discharge by extension of rating curve, 46 second-feet; water held back by dams).

1918–1924: Maximum stage, approximately 16.3 feet during high water of March 14–19, 1920 (approximate discharge by extension of rating curve, 10,800 second-feet); minimum discharge, 30 second-feet August 23, 1919 (water held back by dams).

ICE.—Not affected by ice.

REGULATION.—Flow of Pachaug River, which drains 59.7 square miles and enters Quinebaug River through the canal 570 feet above gage, is under almost complete regulation. Numerous small reservoirs and power developments on the main river and tributaries above the station also affect the distribution of flow. The operation of mills at Jewett City causes a large variation in discharge.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined between 200 and 6,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily discharge table. Daily discharge ascertained by use of discharge integrator. Records fair.

The following discharge measurements were made:
November 18, 1923: Gage height, 4.53 feet; discharge, 206 second-feet.
September 13, 1924: Gage height, 5.24 feet; discharge, 514 second-feet.
September 13, 1924: Gage height, 5.02 feet; discharge, 375 second-feet.

Daily discharge, in second-feet, of Quinebaug River at Jewett City, Conn., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	430	775	2,400	1,540	1,630	660	2,600	1,810	950	490	265	
2	395	720	2,340	1,550	1,420	520	2,170	2,010	1,160	500	205	
3	455	500	2,180	2,150	1,030	820	1,890	1,860	1,300	510	162	
4	370	345	1,820	3,250	1,320	970	2,050	1,510	1,180	360	380	415
5	360	560	2,000	2,850	1,530	1,090	2,370	1,710	1,280	270	395	
6	79	690	4,400	1,780	1,730	1,250	2,450	1,630	1,100	210	425	
7	54	645	5,450	1,990	1,530	1,380	5,070	1,530	790	400	340	
8	290	630	4,050	1,950	1,480	1,350	8,690	1,330	719	445	295	
9	305	585	3,100	1,840	1,170	900	7,380	1,280	1,000	450	290	
10	350	470	2,870	1,800	770	1,670	5,800	1,570	1,110	410	180	470
11	395	255	2,650	2,040	1,210	2,130	4,600	1,550	1,120	360	365	
12	360	445	2,500		1,190	1,920	3,770	2,100	1,060	340	395	
13	82	540	2,300	2,100	1,160	1,710	3,500	3,500	800	194	500	430
14	49	590	2,140		1,030	1,640	3,140	3,230	470	395	470	315
15	350	575	1,880		960	1,260	2,520	2,730	350	510	410	455
16	330	525	1,480		810	930	2,320	2,450	630	445	265	430
17	345	410	1,730	2,780	475	1,050	2,100	2,030	850	415	200	445
18	290	230	1,700		840	1,080	1,900	1,710	850	340	390	445
19	81	515	1,540		960	1,120	3,410	1,870	670	260	400	420
20	92	545	1,400	2,920	970	1,160	4,150	1,730	580	200	430	240
21	58	530	1,440	2,550	1,170	1,400	3,770	1,580		390	430	205
22	360	520	1,200	1,600	980	1,280	3,320	1,410		465	365	435
23	445	525	1,240	2,000	780	1,300	3,410	1,300	495	480	200	455
24	1,650		1,960	1,800	520	2,050	3,230	1,180		365	78	465
25	2,420		1,910	2,080	760	2,350	2,780	1,470		365	315	440
26	1,900	2,240	2,050	2,150	820	2,400	2,360	1,840		285	460	405
27	1,280		1,830	1,320	780	2,160	2,040	1,820		175		255
28	860		1,800	1,560	770	2,080	2,100	1,660	420	420		180
29	990		1,700	1,660	770	1,820	1,940	1,560		400	520	415
30	790		1,410	1,760	-------	2,150	1,800	1,190		380		475
31	790	-------	1,320	1,730	-------	2,870	-------	1,080	-------	320		-------

NOTE.—Water-stage recorder not in operation Oct. 8-9, Nov. 24-30, Dec. 1, Jan. 12-19, June 11-14, 21-30, July 1-2, 26-29, and Aug. 27 to Sept. 12; discharge estimated.

Monthly discharge of Quinebaug River at Jewett City, Conn., for the year ending September 30, 1924

[Drainage area, 712 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,420	49	549	0.771	0.89
November	----------	230	927	1.30	1.45
December	5,450	1,200	2,190	3.08	3.55
January	3,250	1,320	2,110	2.96	3.41
February	1,730	475	1,050	1.47	1.58
March	2,870	520	1,500	2.11	2.43
April	8,690	1,800	3,290	4.62	5.16
May	3,500	1,080	1,780	2.50	2.88
June	1,300	----------	751	1.05	1.17
July	510	175	373	.524	.60
August	----------	78	362	.508	.59
September	----------	180	407	.572	.64
The year	8,690	49	1,270	1.78	24.35

CONNECTICUT RIVER BASIN

SECOND CONNECTICUT LAKE NEAR PITTSBURG, N. H.

LOCATION.—At dam of Upper Connecticut River & Lake Improvement Co. at outlet of Second Lake, 12 miles northeast of Pittsburg, Coos County.

DRAINAGE AREA.—41.5 square miles (reported by engineers of Upper Connecticut River & Lake Improvement Co.).

RECORDS AVAILABLE.—October 1, 1922, to September 30, 1924.

GAGE.—Vertical staff on cribwork of dam.

EXTREMES OF STAGE.—Maximum stage recorded during year, 15.8 feet on September 11 (water stored, 1,045 million cubic feet); minimum stage recorded, 0.9 foot February 17 to March 22 and April 4 (water stored, 39.4 million cubic feet).

1919–1924: Maximum stage recorded, 15.8 feet on September 11, 1924 (water stored, 1,045 million cubic feet); minimum stage recorded, 0.7 foot February 1 to March 19, 1923 (water stored, 30.3 million cubic feet).

REGULATION.—Normal capacity of lake is 979 million cubic feet at gage height 15.0 feet; the maximum stage of September 11, 1924, was due to unusual conditions, as ordinarily the water is not allowed to rise above 15.0 feet gage height. Records show fluctuations in level of the lake and are used in making corrections for effect of storage to observed records of flow of Connecticut River.

Daily gage height, in feet, of Second Connecticut Lake near Pittsburg, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	8.25	2.8	1.45	1.2	0.9	0.95	4.6	13.55	13.05	13.25	12.8
2	8.55	8.4	3.0	1.4	1.2	.9	.95	6.6	13.5	13.1	13.25	12.8
3	8.65	8.55	3.1	1.4	1.2	.9	.95	7.35	13.45	13.1	13.25	12.95
4	8.7	8.65	2.9	1.4	1.15	.9	.9	7.5	13.45	13.1	13.3	13.0
5	8.75	8.75	2.9	1.35	1.15	.9	1.0	7.9	13.4	13.05	13.9	13.0
6	8.8	8.85	2.75	1.35	1.1	.9	1.0	8.0	13.4	13.05	13.6	13.0
7	8.9	8.05	2.95	1.35	1.1	.9	1.05	7.9	13.35	13.0	12.9	13.4
8	8.95	7.65	3.05	1.3	1.05	.9	1.05	8.05	13.35	13.0	12.3	13.45
9	9.0	7.2	3.1	1.3	1.05	.9	1.05	8.55	13.3	13.0	12.4	13.5
10	9.0	6.65	2.95	1.2	1.0	.9	1.05	8.8	13.25	13.15	12.5	13.95
11	9.05	5.4	2.8	1.2	1.0	.9	1.1	8.85	13.25	13.25	12.55	15.8
12	9.1	4.4	2.65	1.45	.95	.9	1.1	8.85	13.2	13.3	12.6	13.65
13	9.1	3.7	2.5	1.65	.95	.9	1.1	8.9	13.15	13.3	12.65	12.1
14	9.15	3.0	2.5	1.75	.95	.9	1.15	8.9	13.2	13.3	12.65	12.3
15	9.2	2.4	2.45	1.8	.95	.9	1.15	9.1	13.25	13.3	12.7	12.55
16	9.2	2.2	2.4	1.7	.95	.9	1.15	9.45	13.25	13.25	12.7	12.75
17	9.25	2.1	2.35	1.6	.9	.9	1.15	9.55	13.3	13.25	12.7	12.85
18	8.45	1.95	2.25	1.5	.9	.9	1.2	9.35	13.25	13.4	12.75	12.95
19	7.4	1.8	2.2	1.45	.9	.9	1.2	9.45	13.25	14.1	12.8	12.95
20	6.6	1.75	2.1	1.4	.9	.9	1.25	10.25	13.25	13.45	12.8	13.0
21	5.7	1.6	1.95	1.35	.9	.9	1.25	10.8	13.2	12.8	12.85	13.0
22	4.9	1.55	1.95	1.35	.9	.9	1.3	11.2	13.2	12.1	12.85	13.0
23	4.95	1.5	2.0	1.3	.9	.95	1.35	11.55	13.2	12.35	12.9	13.0
24	5.3	1.5	2.0	1.3	.9	.95	1.4	11.8	13.15	12.6	12.9	13.05
25	6.1	2.2	1.95	1.3	.9	1.0	1.45	12.2	13.1	12.75	12.9	13.05
26	6.75	3.7	1.8	1.3	.9	1.0	1.45	12.55	13.1	12.95	12.85	13.05
27	7.1	3.75	1.75	1.25	.9	1.0	1.5	12.8	13.1	13.05	12.85	13.0
28	7.3	3.7	1.7	1.25	.9	.95	1.5	13.05	13.05	13.15	12.85	12.95
29	7.55	3.3	1.6	1.25	.9	.95	2.5	13.25	13.0	13.2	12.85	12.9
30	7.7	2.9	1.55	1.25	-------	.95	3.5	13.45	13.05	13.2	12.8	12.9
31	7.95	-------	1.5	1.25	-------	.95	-------	13.5	-------	13.25	12.8	-------

FIRST CONNECTICUT LAKE NEAR PITTSBURG, N. H.

LOCATION.—At dam of Upper Connecticut River & Lake Improvement Co., at outlet of First Lake, 6 miles northeast of Pittsburg, Coos County.

DRAINAGE AREA.—81.4 square miles (from survey by Connecticut Valley Lumber Co.).

RECORDS AVAILABLE.—October 1, 1916, to September 30, 1924.

GAGE.—Four staffs, one near each outlet gate, all to the same datum, which is 0.9 foot above the sill of the lowest outlet gate.

EXTREMES OF STAGE.—Maximum stage recorded during year, 24.5 feet May 20 (water stored, 2,690 million cubic feet[4]); minimum stage recorded, 3.2 feet October 17 (water stored, 347.4 million cubic feet[4]).

1917–1924: Maximum stage recorded, 24.5 feet May 20, 1924 (water stored 2,690 million cubic feet[4]); minimum stage recorded, 2.1 feet February 17, 1917, and May 6, 7, 1922 (water stored, 252.5 million cubic feet[4]).

REGULATION.—During the summer of 1924 the dam at outlet of First Connecticut Lake was raised to give a total capacity of 3,025 million cubic feet at gage height 27 feet. Dam is controlled by three gates, the sills of the gates varying from −0.9 foot to 14.4 feet on the gage. The records show fluctuations in the level of the lake and are used in making corrections for effect of storage to observed records of flow of Connecticut River. Additional storage has been developed in Second Lake and on tributary streams.

Daily gage height, in feet, of First Connecticut Lake near Pittsburg, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.75	3.95	11.15	16.25	18.2	10.85	8.1	13.0	23.65	16.3	17.25	15.15
2	4.55	3.95	11.5	16.25	18.25	10.35	8.1	14.0	23.5	16.3	17.25	15.05
3	4.35	3.9	11.75	16.3	18.25	9.8	8.1	14.7	23.35	16.25	17.25	14.85
4	4.2	3.9	11.95	16.4	18.3	9.35	8.05	15.35	23.15	16.25	17.2	14.85
5	4.05	4.0	12.25	16.45	18.35	8.8	8.05	16.15	22.9	16.2	17.35	14.8
6	4.0	3.95	12.35	16.55	18.4	8.8	8.05	16.75	22.65	16.2	17.8	15.0
7	3.85	4.45	12.65	16.6	18.35	8.8	8.05	17.35	22.45	16.15	18.35	15.05
8	3.7	5.2	12.9	16.65	18.3	8.7	8.2	17.95	22.2	15.9	18.9	15.1
9	3.4	5.7	13.2	16.7	18.3	8.7	8.3	18.6	22.0	15.7	18.95	15.1
10	3.5	6.15	13.35	16.75	18.3	8.65	8.45	19.2	21.75	15.45	19.0	15.3
11	3.4	6.75	13.55	16.85	18.3	8.65	8.5	19.85	21.5	15.25	19.0	17.5
12	3.35	7.25	13.65	16.95	18.3	8.6	8.55	20.45	21.2	15.1	19.05	19.6
13	3.3	7.6	13.9	17.05	18.3	8.6	8.65	21.05	20.9	15.1	19.05	20.75
14	3.25	7.9	13.95	17.15	18.25	8.5	8.8	21.65	20.9	15.1	19.05	21.1
15	3.25	8.15	14.05	17.25	17.9	8.5	8.95	22.2	20.95	15.05	19.05	21.15
16	3.25	8.35	14.25	17.3	17.35	8.5	9.1	22.8	21.0	15.05	18.8	21.25
17	3.2	8.45	14.45	17.45	16.95	8.4	9.2	23.3	20.6	15.05	18.45	21.3
18	3.5	8.6	14.55	17.5	16.5	8.35	9.35	23.85	20.3	15.15	18.15	21.35
19	3.7	8.7	14.65	17.55	16.0	8.35	9.65	24.35	19.95	15.35	17.75	21.4
20	4.0	8.75	14.75	17.65	15.55	8.3	9.85	24.5	19.6	16.0	17.5	21.45
21	4.3	8.85	14.9	17.75	15.1	8.3	10.05	24.55	19.15	16.6	17.15	21.4
22	4.45	8.95	15.05	17.8	14.65	8.25	10.25	24.5	18.8	17.05	16.8	21.4
23	4.25	9.05	15.2	17.85	14.25	8.2	10.45	24.5	18.45	17.15	16.35	21.45
24	4.15	9.2	15.35	17.9	13.75	8.2	10.7	24.45	18.2	17.15	16.0	21.5
25	4.2	9.65	15.5	18.05	13.25	8.15	10.85	24.45	17.9	17.2	15.7	21.55
26	4.1	10.0	15.6	18.05	12.9	8.15	11.0	24.4	17.65	17.2	15.3	21.35
27	4.0	10.25	15.7	18.05	12.35	8.15	11.15	24.35	17.4	17.2	15.2	21.1
28	3.9	10.5	15.8	18.1	11.85	8.1	11.45	24.3	17.05	17.25	15.2	20.85
29	3.9	10.75	15.95	18.15	11.35	8.1	11.8	24.25	16.75	17.3	15.2	20.8
30	3.85	11.0	16.05	18.15	-------	8.1	12.25	24.05	16.4	17.3	15.2	20.85
31	3.9	-------	16.15	18.2	-------	8.1	-------	23.85	-------	17.3	15.15	-------

CONNECTICUT RIVER AT FIRST CONNECTICUT LAKE, NEAR PITTSBURG, N. H.

LOCATION.—At outlet of First Connecticut Lake, 6 miles northeast of Pittsburg, Coos County.

DRAINAGE AREA.—81.4 square miles (from surveys by engineers of Connecticut Valley Lumber Co.).

RECORDS AVAILABLE.—April 1, 1917, to September 30, 1924.

GAGE.—Water-stage recorder on right bank one-fourth mile below outlet dam; inspected by H. H. Young.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet above gage or by wading.

[4] Does not include water stored in Second Lake or tributaries.

CHANNEL AND CONTROL.—Bed rough with rock bottom; channel at cable section has been improved by removal of rocks and ledges. Control for river gage is rock ledge extending completely across stream; about 3 feet of fall immediately below ledge.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.18 feet at 9 p. m. June 4 (discharge, 714 second-feet; water being released from storage); minimum discharge, 7 second-feet from 2 to 6 p. m. October 9 (gates closed at dam).

1917–1924: Maximum discharge recorded, 1,460 second-feet at 1.45 a. m. April 9, 1921; minimum discharge, 3 second-feet during several days in April, 1917 (gates closed at dam).

ICE.—During extremely cold weather, when stage of river is low, ice occasionally forms on rocks at the control for a few hours each day. Gage heights corrected by comparison of recorder graph with records of gate openings at dam.

REGULATION.—About 4.1 billion cubic feet of storage has been developed in lakes and ponds above gage; records of monthly discharge have been corrected for effect of storage in First Lake since April, 1917, and for effect of storage in Second Lake since October, 1919.

ACCURACY.—Stage-discharge relation for low water changed slightly during high water in spring. Rating curve well defined. Operation of water-stage recorder satisfactory throughout year. Discharge ascertained by applying rating table to gage height, using weighted mean discharge for days when variations occurred from opening and closing gates at dam. Records good.

The following discharge measurements were made:

July 30, 1924: Gage height, 1. 70 feet; discharge, 22.6 second-feet.

July 30, 1924: Gage height 1.92 feet; discharge, 65 second-feet.

July 31, 1924: Gage height, 1.88 feet; discharge, 53 second-feet.

Daily discharge, in second-feet, of Connecticut River at First Connecticut Lake, near Pittsburg, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	272	71	18	14	20	660	69	12	392	107	89	95
2	253	71	18	15	20	656	69	13	390	105	90	356
3	232	71	18	15	21	652	70	14	390	104	92	232
4	214	42	18	15	21	650	70	16	422	102	214	95
5	201	14	25	15	57	431	71	17	545	101	376	95
6	193	13	15	15	83	8	71	18	532	101	30	84
7	188	14	15	15	86	125	34	21	468	250	31	23
8	210	14	15	15	71	156	8	23	442	492	32	23
9	98	15	15	16	64	101	8	26	445	492	32	23
10	54	15	15	16	64	86	8	27	452	446	33	38
11	126	15	16	16	63	69	8	30	533	272	33	41
12	134	16	16	16	62	68	8	32	505	168	34	50
13	126	16	23	16	61	68	8	33	454	82	35	56
14	122	16	19	16	369	67	8	36	92	107	46	57
15	119	16	16	16	606	67	8	39	92	107	176	58
16	155	16	16	17	613	81	8	43	358	107	526	59
17	188	16	16	17	636	98	8	48	590	107	524	60
18	223	16	17	17	666	86	9	52	594	77	522	61
19	258	15	18	18	664	86	10	54	598	18	520	62
20	277	15	16	18	662	86	9	56	590	19	519	112
21	297	15	13	19	660	86	9	117	598	21	533	180
22	312	15	13	19	650	86	10	172	562	71	554	71
23	307	15	13	20	643	83	10	170	492	101	554	70
24	302	15	13	20	636	71	10	168	485	78	554	69
25	297	16	13	20	650	71	9	166	488	65	554	128
26	282	15	13	20	666	71	9	164	490	39	386	326
27	240	15	14	20	660	71	9	162	492	27	49	348
28	135	15	14	20	650	70	9	160	492	35	43	413
29	66	15	14	20	636	70	10	335	492	52	43	229
30	69	16	14	20	-------	69	10	271	406	60	73	65
31	71	-------	14	20	-------	69	-------	356	-------	67	95	-------

Monthly discharge of Connecticut River at First Connecticut Lake, near Pittsburg, N. H., for the year ending September 30, 1924

[Drainage area, 81.4 square miles]

Month	Observed discharge (second-feet)			Gain or loss in storage at First and Second Connecticut Lakes (millions of cubic-feet)	Discharge corrected for storage (second-feet)		Run-off in inches
	Maximum	Minimum	Mean		Mean	Per square mile	
October	312	54	194	−109.8	153	1.88	2.17
November	71	13	21.6	+389.3	172	2.11	2.35
December	25	13	15.9	+493.9	200	2.46	2.84
January	20	14	17.3	+227.8	102	1.25	1.44
February	666	20	371	−780.1	60	.737	.79
March	660	8	165	−334.8	40	.491	.57
April	71	8	21.9	+557.3	237	2.91	3.25
May	356	12	92.0	+2,061.8	862	10.59	12.21
June	598	92	463	−949.1	97	1.19	1.33
July	492	18	128	+120.4	173	2.13	2.46
August	554	30	238	−282.1	133	1.63	1.88
September	413	23	119	+683.7	383	4.71	5.26
The year	666	8	153	+2,078.3	219	2.69	36.55

CONNECTICUT RIVER AT SOUTH NEWBURY, VT.

LOCATION.—At covered highway bridge between South Newbury, Orleans County, Vt., and Haverhill, Grafton County, N. H., half a mile below Oliverian Brook and 4 miles above mouth of Waits River.

DRAINAGE AREA.—2,830 square miles.

RECORDS AVAILABLE.—July 22, 1918, to December 20, 1921, and August 19, 1922, to September 30, 1924.

GAGE.—Chain gage on downstream side of bridge; datum is 8.8 feet higher than datum of gage at Orford.

DISCHARGE MEASUREMENTS.—Made from bridge or from cable 300 feet above.

CHANNEL AND CONTROL.—Channel wide and deep, with gravelly bottom; control not clearly defined. There are several distinct riffles between South Newbury and Orford.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 23.94 feet at 8 a. m. September 13 (discharge from extension of rating curve, 32,200 second-feet); minimum stage, 0.78 foot at 7 a. m. October 13 (discharge, 680 second-feet).

1918–1924: Maximum stage recorded, 30.65 feet May 1, 1923 (discharge by extension of rating curve, 43,600 second-feet); minimum stage, 0.30 foot September 24, 1921 (discharge, 460 second-feet).

ICE.—Stage-discharge relation affected by ice, usually from December to March; ice cover generally remains in place throughout winter.

REGULATION.—About 4,100 million cubic feet of storage has been developed at First and Second Connecticut Lakes and tributary streams above Pittsburg. There are several power developments above the station, but the operation of these mills does not seriously affect the distribution of flow.

ACCURACY.—Stage-discharge relation probably permanent during year. Rating curve well defined up to 28,000 second-feet and extended above. Chain gage read to hundredths four times daily. Daily discharge ascertained by applying rating table to mean daily gage height, with correction for effect of ice. Records good.

Discharge measurements of Connecticut River at South Newbury, Vt., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	1.86	1,410	Mar. 7	a 5.00	2,220	July 27	2.86	2,240
Dec. 14	6.79	6,400	Apr. 24	13.58	15,000			
Jan. 29	a 4.79	1,900	Do	13.49	14,700			

a Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Connecticut River at South Newbury, Vt., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,310	3,100	13,100	4,650	2,150	2,150	5,860	21,600	4,100	2,830	1,380	1,200
2	1,450	3,100	15,300	4,300	2,050	2,100	5,420	28,000	3,700	2,740	1,340	1,200
3	1,380	2,560	12,900	4,200	2,000	2,050	4,650	27,900	3,600	2,300	1,200	1,900
4	1,450	2,220	10,000	4,200	1,800	2,150	4,000	25,800	3,500	2,380	1,070	2,920
5	1,410	1,900	7,860	4,100	1,700	2,000	5,090	25,700	3,400	1,550	1,240	3,010
6	1,270	1,620	7,980	4,100	1,950	2,200	7,380	22,200	3,010	1,480	4,870	4,000
7	1,100	1,940	10,000	4,100	1,900	2,300	8,960	18,500	2,920	1,590	7,500	5,640
8	950	4,540	9,350	4,050	1,850	2,400	12,000	15,800	2,920	1,410	6,080	5,310
9	1,170	6,080	8,220	4,050	1,800	2,100	10,400	16,200	2,830	2,220	4,540	3,800
10	1,040	5,640	6,780	4,050	1,650	2,000	10,300	16,700	2,650	3,010	3,500	20,100
11	890	4,320	5,970	4,550	1,700	2,000	10,800	16,600	2,650	3,300	2,830	30,500
12	860	3,400	5,310	10,000	1,750	1,900	10,100	14,400	2,470	3,200	2,380	31,400
13	800	2,740	4,980	10,400	1,750	1,900	9,610	13,500	2,380	2,560	2,180	31,400
14	1,070	2,650	5,970	10,400	1,600	2,000	11,500	13,700	2,830	2,140	1,980	22,500
15	800	2,380	6,080	9,200	1,650	1,800	14,300	14,100	3,400	1,900	1,780	12,900
16	980	2,220	5,200	7,500	1,600	1,800	12,800	13,700	3,400	1,900	1,480	8,100
17	980	2,140	4,210	8,700	1,450	1,900	10,300	11,800	2,920	1,550	1,170	6,190
18	920	1,780	4,430	9,750	1,450	1,800	10,000	10,000	2,560	2,830	1,380	5,200
19	860	1,700	4,870	8,350	1,750	1,800	17,700	10,300	2,470	5,200	1,550	4,210
20	950	1,820	5,200	6,800	1,900	1,750	20,900	8,960	2,650	4,870	1,780	3,700
21	980	1,660	5,860	5,850	1,900	1,750	17,600	7,860	2,560	3,900	1,900	3,200
22	1,100	1,480	6,300	4,550	2,050	1,900	15,500	6,540	2,380	2,920	2,380	2,920
23	1,170	1,700	7,260	3,700	2,050	3,400	16,400	5,970	2,560	2,220	2,380	2,920
24	2,180	1,860	7,260	3,500	2,000	4,200	15,300	5,530	2,380	1,940	1,820	3,600
25	7,740	12,400	6,300	3,200	1,900	4,000	12,900	5,860	2,380	2,300	1,780	3,600
26	9,090	15,800	5,750	3,400	1,900	3,800	11,000	6,900	3,700	2,300	1,820	3,100
27	7,020	14,100	5,300	2,400	2,000	3,500	10,300	6,080	3,600	2,180	1,520	2,650
28	4,980	11,400	5,000	2,000	2,050	4,200	12,100	5,530	2,740	2,740	1,520	2,560
29	3,700	8,460	4,950	1,900	2,050	4,200	14,600	5,420	2,380	2,140	1,660	2,470
30	2,830	6,660	4,450	2,050	------	5,200	16,100	4,980	2,220	1,860	1,480	2,470
31	2,650	------	4,450	2,150	------	6,900	------	4,540	------	1,620	1,310	------

NOTE.—Stage-discharge relation affected by ice Dec. 26 to Mar. 30; discharge for this period based on gage heights corrected for effect of ice.

Monthly discharge of Connecticut River at South Newbury, Vt., for the year ending September 30, 1924

[Drainage area, 2,830 square miles]

Month	Observed discharge (second-feet)			Gain or loss in storage at First and Second Connecticut Lakes (millions of cubic-feet)	Discharge corrected for storage (second-feet)		Run-off in inches
	Maximum	Minimum	Mean		Mean	Per square mile	
October	9,090	800	2,100	−109.8	2,060	0.728	0.84
November	15,800	1,480	4,450	+389.3	4,600	1.63	1.82
December	15,300	4,210	6,990	+493.9	7,170	2.53	2.92
January	10,400	1,900	5,230	+227.8	5,320	1.88	2.17
February	2,150	1,450	1,840	−780.1	1,530	.541	.58
March	6,900	1,750	2,680	−334.8	2,560	.905	1.04
April	20,900	4,000	11,500	+537.3	11,700	4.13	4.61
May	28,000	4,540	13,200	+2,061.8	14,000	4.95	5.71
June	4,100	2,220	2,910	−949.1	2,540	.898	1.00
July	5,200	1,410	2,490	+120.4	2,540	.898	1.04
August	7,500	1,070	2,280	−282.1	2,180	.770	.89
September	31,400	1,200	7,820	+683.7	8,080	2.86	3.19
The year	31,400	800	5,300	+2,078.3	5,370	1.90	25.81

CONNECTICUT RIVER AT WHITE RIVER JUNCTION, VT.

LOCATION.—At railroad bridge between Westboro, Lebanon Township, Grafton County, N. H., and White River Junction, Hartford Township, Windsor County, Vt. Mascoma River enters 1 mile below gage.

DRAINAGE AREA.—4,120 square miles.

RECORDS AVAILABLE.—November 1, 1911, to September 30, 1924.

GAGE.—Chain gage over west channel installed June 16, 1918; read by F. H. Chipman.

DISCHARGE MEASUREMENTS.—Made at highway bridges one-fourth mile above gage, flow in White River and in Connecticut River above confluence of the two streams being measured separately, the sum of the two being the discharge at the gage.

CHANNEL AND CONTROL.—Channel deep, bed covered with alluvial deposits, gravel, and rock ledge; control formed by rock outcrop extending across river at various places below gage; control for high water is probably at Quechee Falls, 7 miles downstream.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.8 feet at 8 a. m. May 2 (discharge, 40,900 second-feet); minimum stage, 3.2 feet at 8 a. m. and 4 p. m. October 14 (discharge, 820 second-feet).

1912–1924: Maximum stage recorded, 26.8 feet April 12, 1922 (approximate discharge by extension of rating curve, 88,500 second-feet); minimum stage, 2.8 feet September 8, 1913 (discharge by extension of rating curve, 560 second-feet).

ICE.—River covered with ice each winter, usually from December to March; stage-discharge relation seriously affected.

REGULATION.—Distribution of flow not seriously affected by power plants, except for low water on Sundays caused by Sunday shutdown of paper mill at Wilder, 2 miles above gage. About 4,100 million cubic feet of storage at Connecticut lakes and tributary streams above Pittsburg, N. H., has some effect on the low-water discharge.

ACCURACY.—Stage-discharge relation practically permanent except when affected by ice. Rating curve well defined. Gage read to tenths twice daily. Daily discharge ascertained by applying rating table to mean daily gage height with correction for effect of ice. Records good except for winter period for which they are fair.

The following discharge measurements were made:

October 13, 1923: Gage height, 3.54 feet; discharge, 983 second-feet.

July 24, 1924: Gage height, 4.92 feet; discharge, 2,640 second-feet.

Daily discharge, in second-feet, of Connecticut River at White River Junction, Vt., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,980	3,680	25,000	4,600	3,300	2,800	8,690	33,200	5,830	3,860	2,110	1,850
2	1,980	3,680	22,500	4,980	3,150	2,250	7,680	40,000	5,390	3,680	1,980	1,720
3	1,980	3,860	20,400	4,980	2,100	3,000	6,730	38,300	5,390	3,320	1,850	2,390
4	1,600	2,530	16,400	5,390	2,650	3,000	6,730	36,600	4,980	2,820	1,720	3,500
5	1,600	3,500	13,500	5,390	2,800	2,800	9,230	37,000	4,980	2,250	1,600	4,220
6	1,400	3,150	15,700	3,860	2,650	2,800	12,900	32,400	4,790	2,250	2,530	4,600
7	1,110	3,500	19,700	6,270	2,550	3,000	17,000	27,300	4,600	1,980	7,680	6,730
8	1,500	4,220	17,000	5,830	2,400	2,800	22,200	23,200	3,500	2,250	8,180	6,960
9	1,500	7,440	14,100	5,390	2,250	2,100	18,300	23,200	3,860	2,530	6,500	5,830
10	1,500	7,930	12,600	4,980	1,700	2,800	18,700	24,700	3,860	3,500	4,980	21,800
11	1,400	5,830	11,100	5,180	2,250	2,650	19,700	23,900	3,500	4,600	4,040	33,600
12	1,200	4,980	9,770	17,000	2,250	2,650	18,300	21,800	3,680	4,410	3,680	35,700
13	1,030	3,860	9,230	13,800	2,250	2,650	18,700	23,200	3,680	3,860	3,150	37,000
14	820	3,500	11,400	13,200	2,250	2,550	26,900	21,100	3,680	3,150	2,820	31,600
15	1,300	3,320	12,600	11,400	2,100	2,550	26,200	21,100	4,040	2,820	2,530	20,400

Daily discharge, in second-feet, of Connecticut River at White River Junction, Vt., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	1,110	2,980	7,930	9,770	2,100	1,500	23,200	20,800	5,390	2,670	2,250	12,600
17	1,500	3,150	7,440	11,100	1,700	2,100	19,700	18,300	4,600	2,670	1,720	9,500
18	1,110	2,110	5,830	12,600	2,250	1,850	18,300	15,700	3,860	3,150	1,720	7,680
19	960	3,500	5,390	10,300	2,250	2,000	32,400	14,800	3,680	5,390	1,720	6,730
20	1,110	2,820	5,610	9,230	2,550	2,100	35,300	13,500	3,500	6,270	1,980	5,830
21	1,030	2,820	5,830	8,200	2,650	2,400	30,000	12,000	3,500	5,390	2,530	4,980
22	1,500	2,820	6,500	6,950	2,700	2,800	27,300	10,600	3,500	4,600	2,980	4,410
23	1,720	2,820	7,440	6,050	2,800	2,650	28,400	9,500	3,500	3,680	3,150	4,220
24	3,860	4,040	7,930	5,600	2,250	6,050	26,200	8,690	3,500	2,820	2,670	4,980
25	11,700	10,900	7,930	4,800	3,000	6,050	23,200	8,690	3,150	2,670	2,820	4,980
26	12,000	18,700	7,200	4,400	3,000	5,600	20,100	9,770	4,220	2,980	2,820	4,600
27	10,300	18,300	6,500	4,800	3,000	5,400	18,300	9,770	4,600	2,820	2,670	4,220
28	7,200	17,000	5,830	5,000	3,000	5,850	19,700	8,690	4,220	2,820	2,530	3,860
29	6,050	12,600	5,180	5,000	3,000	7,200	22,200	8,430	3,500	3,150	2,530	3,500
30	4,600	10,300	3,860	4,200	-------	7,680	23,900	7,680	3,500	2,820	2,390	3,860
31	4,220	-------	4,600	3,500	-------	9,770	-------	7,200	-------	2,530	2,250	-------

NOTE.—Stage-discharge relation affected by ice Jan. 21 to Mar. 29; discharge for this period based on gage height corrected for effect of ice.

Monthly discharge of Connecticut River at White River Junction, Vt., for the year ending September 30, 1924

[Drainage area, 4,120 square miles]

Month	Observed discharge (second-feet)			Gain or loss in storage at First and Second Connecticut Lakes (millions of cubic-feet)	Discharge corrected for storage (second-feet)		Run-off in inches
	Maximum	Minimum	Mean		Mean	Per square mile	
October	12,000	820	2,960	−109.8	2,920	0.709	0.82
November	18,700	2,110	5,990	+389.3	6,140	1.49	1.66
December	25,000	3,860	10,700	+493.9	10,900	2.65	3.06
January	17,000	3,500	7,220	+227.8	7,300	1.77	2.04
February	3,300	1,700	2,510	−780.1	2,200	.534	.58
March	9,770	1,500	3,590	−334.8	3,470	.842	.97
April	35,300	6,730	20,200	+557.3	20,400	4.95	5.52
May	40,000	7,200	19,700	+2,061.8	20,500	4.98	5.74
June	5,830	3,150	4,130	−949.1	3,760	.913	1.02
July	6,270	1,980	3,350	+120.4	3,400	.825	.95
August	8,180	1,600	3,030	−282.1	2,930	.711	.82
September	37,000	1,720	10,100	+683.7	10,400	2.52	2.81
The year	40,000	820	7,800	+2,078.3	7,870	1.91	25.99

CONNECTICUT RIVER AT SUNDERLAND, MASS.

LOCATION.—At five-span steel highway bridge at Sunderland, Franklin County, on road leading to South Deerfield, 18 miles in direct line and 24 miles by river above dam at Holyoke. Deerfield River enters Connecticut River from west 8 miles above station.

DRAINAGE AREA.—8,000 square miles.

RECORDS AVAILABLE.—March 31, 1904, to September 30, 1924.

GAGES.—Water-stage recorder on left bank near downstream side of bridge; inspected by H. E. Russ and P. J. Hogan.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Channel deep, with bottom of coarse gravel and alluvial deposits. Control at low stages not well defined but practically permanent. At high stages the control is at crest of dam at Holyoke.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 19.3 feet at 9 p. m. April 7 (discharge, 60,900 second-feet); minimum stage, 0.60 foot at 6 a. m. October 15 (discharge, 780 second-feet).

1904–1924: Maximum stage recorded, 30.7 feet during night of March 28, 1913, determined by leveling from floodmarks (revised discharge, 135,000 second-feet); minimum stage, 0.0 August 29, 1921 (discharge by extension of rating curve, 450 second-feet).

ICE.—River usually freezes over early in winter but ice is likely to break up at times of sudden rises in stage and form ice jams at Northampton, 10 miles below station causing several feet of backwater at gage.

REGULATION.—Distribution of flow affected by operation of power plants at Turners Falls, and by regulation of Deerfield River (see Deerfield at Charlemont, Mass.) The effect of regulation is shown by low water at gage on Sundays and Mondays. Records of monthly discharge corrected for storage in First and Second Connecticut Lakes and in Somerset and Davis Bridge Reservoirs.

ACCURACY.—Stage-discharge relation practically permanent except when affected by ice. Rating curve well defined. Operation of water-stage recorder was generally satisfactory. Daily discharge ascertained by applying rating table to mean daily gage height corrected for effect of ice. Records good.

Discharge measurements of Connecticut River at Sunderland, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 28	11.78	30,500	Mar. 22	4.92	7,980
Feb. 3	[a] 6.11	4,250	May 23	8.86	19,400

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Connecticut River at Sunderland, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,200	8,420	42,300	12,600	9,200	7,200	22,100	44,700	10,700	6,720	5,830	1,290
2	3,330	8,690	45,500	13,000	8,700	5,600	18,400	55,300	11,300	6,720	4,790	4,400
3	3,020	6,270	40,800	13,000	6,000	7,200	17,000	47,800	9,520	6,950	2,720	4,590
4	2,580	4,400	34,600	15,000	8,400	7,000	16,000	50,500	8,160	4,030	2,870	4,990
5	2,870	6,950	32,300	17,000	8,200	7,200	18,800	51,700	9,240	3,330	3,500	4,990
6	3,850	7,180	40,800	14,000	7,400	8,400	30,800	50,500	10,100	2,580	3,500	5,410
7	2,200	6,720	48,600	14,700	6,500	10,700	49,800	46,600	8,420	4,030	3,500	4,210
8	2,080	10,700	42,000	13,000	7,200	10,400	59,700	42,700	5,620	5,400	6,270	7,660
9	2,720	12,000	36,100	13,000	7,900	8,400	52,100	40,400	6,050	5,200	8,420	11,300
10	2,720	12,000	32,300	13,300	7,000	11,000	46,200	40,800	7,420	5,600	6,950	21,000
11	3,020	8,690	31,900	17,800	6,300	11,300	46,200	41,200	7,910	4,790	8,690	32,300
12	3,020	9,810	23,200	30,800	7,900	11,700	43,500	42,000	7,420	4,400	6,950	38,000
13	2,450	10,100	22,100	38,000	7,700	12,600	38,800	47,800	6,050	4,210	6,050	39,200
14	1,290	8,690	21,700	33,400	7,400	12,300	45,500	45,800	5,830	6,050	5,620	40,000
15	1,840	6,950	23,600	32,300	7,700	10,100	56,500	42,300	4,400	6,720	4,790	36,100
16	2,450	6,270	18,100	30,000	7,900	7,900	49,800	40,800	6,050	6,950	3,330	26,200
17	2,320	4,790	17,000	35,700	6,000	9,500	42,700	40,800	7,910	6,490	1,290	18,100
18	2,450	4,210	16,000	34,600	7,400	11,000	43,900	33,400	8,160	5,410	3,020	15,700
19	2,320	6,050	12,300	30,000	7,700	9,500	54,100	23,600	7,660	4,590	3,670	14,300
20	1,960	7,180	8,420	24,300	7,000	9,000	59,700	25,500	6,050	3,670	3,500	8,160
21	1,620	5,620	8,420	20,000	7,000	7,420	56,100	23,600	5,830	7,420	3,500	4,590
22	1,960	5,410	13,600	17,000	7,400	7,420	49,000	21,000	4,590	7,910	4,400	5,410
23	2,320	5,200	14,300	15,000	7,000	6,490	56,100	19,900	5,830	7,420	4,210	5,830
24	18,400	6,270	17,400	14,300	5,000	12,600	52,500	19,500	6,720	6,950	3,020	6,720
25	33,400	22,100	16,000	15,000	7,000	61,000	47,400	14,000	5,830	6,050	4,790	7,660
26	25,500	29,300	15,700	13,300	7,400	17,000	43,500	13,300	5,830	4,400	5,410	8,420
27	18,800	32,300	14,300	8,200	7,000	15,700	39,200	15,700	5,200	2,450	8,160	6,270
28	13,300	32,700	14,300	9,500	7,000	14,700	38,400	15,700	5,620	3,670	6,270	3,850
29	13,000	29,300	10,700	9,500	7,400	15,300	37,300	14,300	4,400	4,590	4,210	6,720
30	9,810	24,300	7,910	9,000	-------	18,500	38,400	14,700	6,270	4,590	3,500	9,240
31	9,240	-------	13,000	9,200	-------	19,500	-------	11,000	-------	4,990	1,510	-------

NOTE.—Stage-discharge relation affected by ice Jan. 4 to Mar. 20. Daily discharge for this period based on gage height corrected for effect of ice.

Monthly discharge of Connecticut River at Sunderland, Mass., for the year ending September 30, 1924

[Drainage area, 8,000 square miles]

Month	Observed discharge (second-feet)			Gain or loss in storage at Connecticut Lakes, Somerset and Davis Bridge Reservoirs (millions of cubic-feet)	Discharge corrected for storage (second-feet)		Run-off in inches
	Maximum	Minimum	Mean		Mean	Per square mile	
October	33,400	1,290	6,390	−165	6,330	0.791	0.91
November	32,700	4,210	11,600	+438	11,800	1.48	1.65
December	48,600	7,910	23,700	+767	24,000	3.00	3.46
January	38,000	8,200	18,900	+228	19,000	2.38	2.74
February	9,200	5,000	7,300	−1,005	6,900	.862	.93
March	19,500	5,600	10,900	−265	10,800	1.35	1.56
April	59,700	16,000	42,300	+4,953	44,200	5.52	6.16
May	55,300	11,000	33,400	+3,741	34,800	4.35	5.02
June	11,300	4,400	7,000	−1,695	6,350	.794	.89
July	7,910	2,450	5,300	−1,133	4,880	.610	.70
August	8,690	1,290	4,650	−1,090	4,240	.530	.61
September	40,000	1,290	13,400	+48	13,400	1.68	1.87
The year	59,700	1,290	15,400	+4,822	15,600	1.95	26.50

WHITE RIVER AT WEST HARTFORD, VT.

LOCATION.—500 feet above highway bridge at West Hartford, Windsor County, 7 miles above mouth of river.

DRAINAGE AREA.—687 square miles.

RECORDS AVAILABLE.—June 9, 1915, to September 30, 1924.

GAGE.—Inclined staff gage on left bank; read by F. P. Morse.

DISCHARGE MEASUREMENTS.—Made from cable 1,500 feet below gage or by wading.

CHANNEL AND CONTROL.—Channel wide and of fairly uniform cross section at measuring section; covered with gravel and small boulders. Control formed by rock ledge 100 feet below gage; well defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.1 feet at 7 a. m. April 19 (discharge by extension of rating curve, 12,300 second-feet); minimum stage, 2.68 feet at 7 a. m. October 14 (discharge, 106 second-feet).

1915–1924: Maximum stage recorded, 16.9 feet, April 12, 1922 (discharge by extension of rating curve, 24,500 second-feet); minimum stage recorded, 2.05 feet June 27, 1923 (discharge, by extension of rating curve, 19 second-feet).

The high water of March 27, 1913, reached a stage of 18.9 feet as determined from reference point on scale platform opposite gage (discharge, approximately 30,000 second-feet).

ICE.—River freezes over at gage; control usually remains partly open, although ice on rocks and along shore affects stage-discharge relation.

REGULATION.—There are several power plants on the main stream and tributaries above the station, the nearest being that of Vermont Copper Co. at Sharon; when this plant is in operation it causes some diurnal fluctuation in discharge at low stages. The effect of power plants farther upstream is practically eliminated by the large amount of pondage at Sharon.

ACCURACY.—Stage-discharge relation practically permanent, except when affected by ice. Rating curve well defined between 100 and 5,000 second-feet. Staff gage read to quarter-tenths twice daily. Daily discharge ascertained by applying rating table to mean daily gage height, with corrections for effect of ice during winter. Records good.

Discharge measurements of White River at West Hartford, Vt., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	2.75	107	Mar. 8	*4.51	612	July 24	3.06	200
Jan. 28	*4.58	693	Apr. 25	7.23	4,600			

* Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of White River at West Hartford, Vt., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	620	9,370	640	720	285	1,650	10,800	1,120	345	162	175
2	132	395	3,820	660	600	265	1,460	8,110	1,040	285	150	200
3	124	445	2,700	720	560	285	1,200	4,920	960	247	146	370
4	132	395	2,200	760	500	265	1,280	6,300	925	247	130	345
5	136	370	1,860	720	480	265	2,840	5,300	890	215	187	247
6	128	370	4,000	680	470	395	4,540	3,820	785	215	285	620
7	120	820	5,500	660	460	620	3,470	3,140	652	175	200	560
8	110	1,370	3,140	620	440	620	4,180	3,640	530	265	200	370
9	118	1,040	2,700	580	420	600	2,990	4,000	717	560	200	285
10	116	750	2,700	600	400	620	5,110	4,360	652	420	175	3,640
11	112	652	2,200	1,550	400	580	4,360	3,300	472	370	187	1,860
12	116	560	1,970	7,900	395	560	4,360	2,990	500	395	175	1,200
13	112	530	1,860	3,300	395	500	5,300	5,900	500	187	200	890
14	108	420	3,300	2,570	390	440	10,000	4,000	590	305	162	717
15	112	420	2,990	1,750	385	420	7,300	3,640	717	285	152	652
16	112	472	2,990	1,460	380	400	4,920	3,640	652	285	162	590
17	118	370	1,750	3,300	370	390	4,540	2,840	420	345	140	472
18	112	345	1,120	2,320	360	380	4,730	2,440	370	925	142	370
19	112	345	1,040	1,860	345	370	11,500	2,570	370	855	146	305
20	136	370	1,200	1,500	325	370	7,100	2,080	345	345	162	230
21	136	285	1,370	1,280	315	390	5,300	1,860	325	305	325	230
22	132	325	1,550	1,000	310	470	6,500	1,860	445	215	345	285
23	148	445	1,370	800	310	820	6,300	1,650	420	200	230	325
24	2,440	530	1,370	780	305	1,000	5,110	1,460	305	187	200	345
25	3,640	1,860	1,040	760	305	1,000	4,730	2,080	325	200	200	305
26	1,370	1,120	1,000	620	305	920	4,000	1,650	652	200	325	265
27	925	1,040	900	560	300	920	4,360	1,550	420	187	285	230
28	652	1,280	760	680	300	1,280	5,300	1,650	325	155	265	247
29	472	1,120	680	780	300	1,750	5,300	1,650	325	175	345	215
30	325	1,120	600	760	-------	1,550	5,300	1,370	305	155	247	685
31	420	-------	580	820	-------	1,970	-------	1,200	-------	138	175	-------

NOTE.—Stage-discharge relation affected by ice Dec. 26 to Jan. 10 and Jan. 20 to Mar. 27; discharge for these periods based on gage heights corrected for effect of ice.

Monthly discharge of White River at West Hartford, Vt., for the year ending September 30, 1924

[Drainage area, 687 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,640	108	422	0.614	0.71
November	1,860	285	673	.980	1.09
December	9,370	580	2,250	3.28	3.78
January	7,900	560	1,390	2.02	2.33
February	720	300	398	.579	.62
March	1,970	265	668	.972	1.12
April	11,500	1,200	4,830	7.03	7.84
May	10,800	1,200	3,410	4.96	5.72
June	1,120	305	568	.827	.92
July	925	138	303	.441	.51
August	345	130	207	.301	.35
September	3,640	175	574	.836	.93
The year	11,500	108	1,310	1.91	25.92

MASCOMA RIVER AT MASCOMA, N. H.

LOCATION.—250 feet below railroad bridge and 500 feet below outlet of Mascoma Lake, in Mascoma, Grafton County.

DRAINAGE AREA.—148 square miles (measured on Walker map).

RECORDS AVAILABLE.—August 16, 1923, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by John Greeley.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Channel opposite gage is a pool in which velocity is very low. Control is well defined at head of rapids 200 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year, 5.12 feet at 6 p. m. April 20 (discharge by extending rating curve, 2,060 second-feet); minimum stage, 1.06 feet at 10 a. m. July 27 (discharge by current-meter measurement, 1.6 second-feet; gates closed at outlet of Mascoma Lake).

Maximum and minimum stages during period August 16, 1923, to September 30, 1924, same as for 1924.

ICE.—Not affected by ice.

REGULATION.—Operation of gates in storage dam 500 feet above gage causes considerable fluctuation in discharge during ordinary stages. About 1.5 billion cubic feet of storage has been developed in ponds and lakes in the drainage basin above gage.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined below 1,700 second-feet and extended above. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying rating table to gage heights using weighted mean discharge for days when variations occurred from opening and closing gates at dam. Records good.

Discharge measurements of Mascoma River at Mascoma, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 4	1.80	46.7	Apr. 23	4.74	1,600	July 26	1.81	49.5
Dec. 15	2.61	234	Do	4.53	1,390	Do	2.10	98
Apr. 23	4.48	1,290	July 26	2.10	100	July 27	1.06	1.6
Do	4.30	1,110						

Daily discharge, in second-feet, of Mascoma River at Mascoma, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	64	93	80	84	196	117	760	135	117	93	80
2	48	63	73	80	80	191	120	1,010	133	116	101	89
3	46	62	78	82	82	185	123	1,060	133	115	104	91
4	43	36	88	82	80	183	125	820	131	115	102	92
5	43	56	87	82	82	180	127	748	130	114	102	101
6	40	58	83	82	78	180	133	688	130	113	100	94
7	28	58	151	80	74	175	322	564	129	112	103	84
8	46	60	341	80	76	175	784	471	129	111	101	99
9	44	63	333	80	74	173	1,030	457	130	110	99	104
10	45	63	298	80	73	170	892	453	130	109	91	109
11	46	40	265	123	74	168	853	466	132	108	95	129
12	48	66	238	238	78	165	860	444	131	107	94	349
13	50	67	209	318	78	164	754	448	130	105	99	475
14	32	67	215	326	74	163	860	518	130	104	95	370
15	51	67	215	318	80	160	1,280	471	129	103	93	311

Daily discharge, in second-feet, of Mascoma River at Mascoma, N. H., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	49	68	188	262	206	158	1,310	400	128	103	88	262
17	50	68	173	275	204	156	996	360	128	102	80	221
18	48	44	140	340	201	153	846	325	127	101	86	209
19	48	73	120	347	199	151	1,160	290	126	100	85	196
20	48	68	103	318	196	149	1,960	260	125	100	74	180
21	31	69	95	294	191	147	1,810	232	125	99	74	158
22	47	70	93	247	188	149	1,360	201	124	99	73	144
23	48	70	109	215	194	151	1,330	185	124	98	73	137
24	51	71	129	196	215	156	1,240	175	123	98	69	139
25	34	42	127	163	212	158	988	165	122	97	74	144
26	61	66	125	133	209	163	804	155	121	97	77	140
27	63	58	117	105	206	168	700	145	120	90	78	142
28	40	65	109	101	204	151	682	140	119	97	81	136
29	63	78	89	97	200	109	712	145	118	96	84	142
30	65	99	84	86	-------	111	718	142	117	95	96	129
31	64	-------	84	84	-------	115	-------	135	-------	95	78	-------

NOTE.—Water-stage recorder not working properly May 18–20, 25–27, June 10–20, 27–30, July 1–15, and 24–25; discharge for these periods computed from observer's readings and records of gate opening at Mascoma Lake Dam.

Monthly discharge of Mascoma River at Mascoma, N. H., for the year ending September 30, 1924

[Drainage area, 148 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	65	28	47.4	0.320	0.37
November	99	36	63.3	.428	.48
December	341	73	150	1.01	1.16
January	347	80	174	1.18	1.36
February	215	73	138	.932	1.01
March	196	109	160	1.08	1.24
April	1,960	117	833	5.63	6.28
May	1,060	135	414	2.80	3.23
June	135	117	127	.858	.96
July	117	90	104	.703	.81
August	104	69	88.5	.598	.69
September	475	80	169	1.14	1.27
The year	1,960	28	205	1.39	18.86

NOTE.—The monthly discharge in second-feet per square mile and the run-off in inches do not represent the natural run-off from the basin because of artificial storage. (See "Regulation.")

ASHUELOT RIVER NEAR GILSUM, N. H.

LOCATION.—At stone-arch highway bridge on Keene-Newport road, 1 mile below Gilsum, and 8 miles north of Keene, Cheshire County.

DRAINAGE AREA.—68.5 square miles (measured on Hitchcock map).

RECORDS AVAILABLE.—August 18, 1922, to September 30, 1924.

GAGE.—Water-stage recorder on right bank 60 feet above bridge; inspected by employee of Keene Gas & Electric Co.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Channel rough with steep slope; control formed by rocks and boulders near highway bridge.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 7.75 feet at 1.45 a. m. April 8 (discharge, 1,280 second-feet); minimum discharge, 4.0 second-feet, from 8 to 11.30 a. m. October 9.

1922–1924: Maximum stage from water-stage recorder, 8.25 feet at 4 p. m. April 29, 1923 (discharge by extension of rating curve, 1,460 second-feet); minimum discharge approximately 1 second-foot October 6, 1922, and July 10, 1923, when water was held back by dams.

ICE.—Ice forms on rocks and along banks, occasionally affecting stage-discharge relation.

REGULATION.—Flow affected by operation of mills at Gilsum. Several lakes and ponds above gage provide opportunity for storage, but little if any utilization has been made of the storage.

ACCURACY.—Stage-discharge relation subject to occasional changes. Rating curve well defined below 400 second-feet and fairly well defined below 1,100 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying rating table to mean daily gage height with correction for ice during winter. Records good.

Discharge measurements of Ashuelot River near Gilsum, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 16	3.02	139	Mar. 10	[a] 2.51	77	July 20	2.04	38.4
Jan. 4	[a] 3.19	117	Apr. 8	6.84	1,010	July 21	1.96	34.3
Do	[a] 3.20	115	May 17	3.96	274			
Jan. 26	[a] 3.22	62	Do	3.94	262			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Ashuelot River near Gilsum, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	99	1,030	64	130	31	143	530	68	13	24	25
2	33	72	715	78	130	31	112	580	61	9.4	24	51
3	21	62	492	105	110	41	102	492	47	8.1	22	25
4	18	52	370	105	84	44	106	442	54	7.1	20	22
5	14	41	370	105	84	49	183	430	48	12	19	22
6	14	48	610	90	82	74	330	370	42	14	20	35
7	11	112	635	90	74	78	880	320	47	12	21	27
8	9.2	182	467	82	80	58	1,060	260	35	18	20	28
9	5.5	145	350	84	86	64	855	242	32	24	19	33
10	6.4	96	290	86	88	76	855	270	25	37	21	140
11	13	78	235	290	70	72	825	270	25	35	23	121
12	16	79	195	480	62	50	690	290	21	30	21	58
13	18	64	180	320	58	55	660	480	22	32	27	48
14	18	55	195	420	62	46	880	555	23	38	23	46
15	18	61	163	370	60	50	970	442	27	34	26	38
16	9.2	48	137	180	58	41	770	183	25	28	28	32
17	6.2	64	124	270	60	50	660	280	22	53	24	27
18	5.6	42	113	280	44	38	580	220	23	79	22	28
19	5.3	37	127	230	50	38	1,090	197	20	51	26	21
20	8.0	36	148	175	52	48	1,030	171	22	36	19	19
21	22	46	103	140	38	53	800	143	27	34	23	15
22	22	46	81	115	36	73	770	127	25	30	23	20
23	15	48	126	92	35	91	940	114	24	29	25	22
24	191	251	163	70	38	128	715	106	26	26	26	20
25	275	940	146	56	48	128	580	121	40	30	23	19
26	178	715	115	62	48	137	442	114	42	26	32	18
27	94	635	98	115	45	111	400	95	26	24	39	16
28	63	530	80	185	55	134	390	112	19	27	32	19
29	60	380	78	200	52	151	380	114	17	23	26	20
30	52	467	82	190	-------	171	370	96	18	23	26	26
31	106	-------	92	175	-------	178	-------	81	-------	24	26	-------

NOTE.—Stage-discharge relation affected by ice Dec. 26 to Feb. 20 and Mar. 6–11; discharge for these periods based on gage heights corrected for effect of ice.

Monthly discharge of Ashuelot River near Gilsum, N. H., for the year ending September 30, 1924

[Drainage area, 68.5 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	275	5.3	43.7	0.623	0.72
November	940	36	184	2.69	3.00
December	1,030	78	262	3.82	4.40
January	480	56	171	2.50	2.88
February	130	35	66.2	.966	1.04
March	178	31	77.1	1.13	1.30
April	1,090	102	619	9.04	10.09
May	580	81	266	3.88	4.47
June	68	17	31.8	.464	.52
July	79	7.1	27.9	.407	.47
August	39	19	24.2	.353	.41
September	141	15	34.0	.496	.55
The year	1,090	5.3	150	2.19	29.85

ASHUELOT RIVER AT HINSDALE, N. H.

LOCATION.—At lower steel highway bridge a quarter of a mile below dam of Fisk Paper Co. and 1¼ miles above mouth of river at Hinsdale, Cheshire County.

DRAINAGE AREA.—440 square miles.

RECORDS AVAILABLE.—February 22, 1907, to December 31, 1909, and July 11, 1914, to September 30, 1924.

GAGE.—Chain gage on downstream side of bridge; read by Teresa Golden.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel covered with coarse gravel and boulders. Control is a short distance below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.27 feet at 7 a. m. April 9 (discharge by extension of rating curve, 4,840 second-feet); minimum stage, 2.31 feet at 4 p. m. August 17 (discharge, 31 second-feet).

1914–1924: Maximum stage recorded, 9.98 feet March 29, 1920 (discharge by extension of rating curve, 8,940 second-feet); minimum stage, 1.87 feet August 12, 1923 (discharge, 5 second-feet).

ICE.—Ice forms below bridge on control affecting stage-discharge relation for short periods.

REGULATION.—The mills immediately above station are operated continuously except Sundays and holidays, but cause little fluctuation in stage. Several reservoirs and ponds on the river and tributaries have some effect on distribution of flow.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve fairly well defined below 4,000 second-feet and extended above. Gage read to hundredths twice daily. Discharge ascertained by applying rating table to mean daily gage height, with corrections for effect of ice. Records good.

Discharge measurements of Ashuelot River at Hinsdale, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 25	[a] 4.11	653	May 16	4.82	1,340	July 22	3.12	207
Mar. 11	[a] 4.02	638	Do	4.78	1,310			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Ashuelot River at Hinsdale, N. H., for the year ending September 30, 1924

Day	Oct.	Nov	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	273	555	3,000	500	560	310	1,150	1,320	490	191	127	82
2	264	660	4,150	500	470	280	900	1,670	375	158	191	124
3	197	460	3,000	500	420	255	950	1,670	430	182	75	300
4	191	375	2,300	560	430	280	950	1,370	490	164	55	260
5	191	375	1,670	600	450	300	1,210	1,610	400	104	49	243
6	106	375	2,720	680	410	360	2,040	1,370	400	108	82	239
7	72	460	3,430	640	420	450	3,000	1,320	350	120	108	255
8	82	900	3,140	640	410	500	4,590	1,050	305	179	57	209
9	164	1,160	2,170	600	400	520	4,740	1,000	273	108	58	231
10	152	730	1,670	540	450	580	3,720	1,100	315	96	66	625
11	173	490	1,490	600	480	640	3,000	1,210	315	134	63	900
12	167	490	1,320	1,800	480	580	2,720	1,210	212	200	94	625
13	102	520	1,260	2,720	420	540	2,040	1,610	227	188	102	350
14	81	460	1,100	2,170	500	500	2,300	1,910	212	158	134	291
15	82	375	1,100	1,670	360	490	2,580	1,670	215	132	86	291
16	75	400	900	1,150	340	390	2,440	1,490	212	194	65	273
17	215	340	855	1,670	300	420	2,040	1,100	223	231	35	260
18	134	350	770	2,170	270	450	2,040	1,000	227	215	84	235
19	203	320	625	1,910	320	490	2,300	900	188	194	194	223
20	167	310	555	1,490	280	490	3,000	900	173	164	111	173
21	90	235	660	1,000	310	660	3,720	770	194	182	111	106
22	158	310	660	820	300	695	2,860	770	173	194	182	120
23	170	330	810	700	300	730	3,000	695	182	155	111	206
24	660	660	1,260	760	300	950	3,140	625	206	161	62	209
25	2,040	3,430	1,000	640	290	1,050	2,440	695	179	150	72	139
26	1,790	4,010	1,000	720	280	1,100	2,040	770	200	111	65	161
27	900	3,140	810	720	260	950	1,670	770	212	115	179	203
28	625	2,440	855	800	290	950	1,490	625	158	134	167	137
29	490	2,170	730	680	300	1,100	1,430	695	158	120	152	106
30	400	2,170	460	600	-------	1,210	1,260	555	176	94	86	223
31	590	-------	460	580	-------	1,320	-------	490	-------	79	96	-------

NOTE.—Stage-discharge relation affected by ice Jan. 1–12 and Jan. 22 to Mar. 18; daily discharge for these periods based on gage height corrected for effect of ice.

Monthly discharge of Ashuelot River at Hinsdale, N. H., for the year ending September 30, 1924

[Drainage area, 440 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,040	72	355	0.807	0.93
November	4,010	235	967	2.20	2.46
December	4,150	460	1,480	3.36	3.87
January	2,720	500	1,000	2.27	2.62
February	560	260	372	.845	.91
March	1,320	255	630	1.43	1.65
April	4,740	900	2,360	5.36	5.98
May	1,910	490	1,090	2.48	2.86
June	490	158	262	.595	.66
July	231	79	152	.345	.40
August	194	35	101	.230	.27
September	900	82	260	.591	.66
The year	4,740	35	753	1.71	23.27

OTTER BROOK NEAR KEENE, N. H.

LOCATION.—At highway bridge on road from Keene to Sullivan, three-tenths of a mile above Ferry Brook, 3½ miles above confluence with Minnewawa Brook and 3½ miles northeast of Keene, Cheshire County.

DRAINAGE AREA.—39.5 square miles (measured on topographic map).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by J. H. Jackson.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed covered with coarse gravel and boulders; pool opposite gage. Control is riffle a short distance below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.98 feet at 2 p. m. April 7 (discharge, by extension of rating curve, 1,440 second-feet); minimum stage, 2.00 feet from 2 p. m. August 24 to 6 p. m. August 25 (discharge, 2 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSION.—Discharge from old mill pond enters below gage but is included in results of current-meter measurements.

REGULATION.—Two small mills above gage, the nearest at East Sullivan, 3 miles upstream, cause fluctuation in discharge. Several lakes and ponds above gage provide opportunity for storage, but little if any utilization has been made of these possibilities.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 800 second-feet. Operation of water-stage recorder generally satisfactory, except as shown in footnote to daily discharge table. Daily discharge ascertained by applying rating table to mean daily gage height. Records good.

Discharge measurements of Otter Brook near Keene, N. H., during the years ending September 30, 1923 and 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
1923	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*
Sept. 28	2.29	11.8	Jan. 26	[a] 3.91	29.9	May 17	3.12	112
Sept. 29	2.61	34.9	Mar. 10	[a] 3.24	53	Do	3.10	106
Dec. 16	2.93	73	Apr. 8	4.70	730	July 20	2.22	8.7
1924			Do	4.66	685			
Jan. 4	[a] 4.04	71						

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Otter Brook near Keene, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	73	670	50	44	50	94	233	42	16	11	4.3
2	10	60	342	54	45	34	84	203	42	15	9.7	7.1
3	7.5	54	233	54	45	38	81	157	39	13	4.0	13
4	6.8	48	172	66	46	43	87	162	39	10	2.6	11
5	6.1	41	197	80	47	49	145	170	38	7.5	2.6	13
6	5.7	30	385	88	47	64	197	132	34	7.5	2.6	25
7	5.4	73	322	84	48	68	850	116	31	10	3.2	18
8	5.0	81	218	80	52	44	720	100	25	15	4.3	19
9	4.7	42	160	88	50	43	452	114	28	17	3.4	23
10	13	31	134	96	44	50	407	150	27	18	2.8	110
11	7.1	26	123	340	40	54	407	127	25	18	2.8	90
12	6.4	29	108	300	54	56	322	165	24	15	4.3	42
13	8.4	27	102	210	58	56	302	284	23	12	7.1	25
14	7.5	24	118	170	56	54	452	233	23	14	4.0	35
15	5.7	21	98	140	52	50	452	155	19	13	6.1	25
16	6.8	21	77	185	41	44	302	138	21	12	6.1	26
17	9.3	21	71	266	41	58	249	110	21	25	5.0	25
18	7.5	16	77	180	42	54	233	90	20	20	3.8	24
19	12	18	112	138	60	50	695	96	18	14	5.7	23
20	23	26	150	106	62	48	497	87	18	8.4	5.4	21

Daily discharge, in second-feet, of Otter Brook near Keene, N. H., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	30	19	77	84	60	54	322	64	21	8.4	4.3	16
22	13	21	59	66	54	58	363	65	14	10	3.6	21
23	15	24	100	60	44	66	452	64	18	10	3.0	29
24	145	175	127	54	44	72	302	60	18	10	2.4	24
25	127	595	86	50	45	68	233	71	18	10	3.0	22
26	65	342	76	46	64	64	203	64	18	13	16	21
27	76	284	62	44	60	65	170	57	16	6.8	16	19
28	71	249	56	43	60	74	162	82	15	6.4	11	15
29	64	175	54	42	58	77	145	79	11	10	10	16
30	63	266	50	45	-------	94	136	60	13	10	11	19
31	94	-------	40	44	-------	112	-------	49	-------	10	6.4	-------

NOTE.—Stage-discharge relation affected by ice Dec. 25 to Mar. 26; discharge based on gage height corrected for effect of ice. Water-stage recorder not in operation July 18 and Sept. 7–12; discharge estimated by comparison with records at other stations in Ashuelot River basin.

Monthly discharge of Otter Brook near Keene, N. H., for the year ending September 30, 1924

[Drainage area, 39.5 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	145	4.7	30.1	0.762	0.88
November	595	16	97.1	2.46	2.75
December	670	40	150	3.80	4.38
January	340	42	108	2.73	3.15
February	64	40	50.4	1.28	1.38
March	112	34	58.4	1.48	1.71
April	850	81	317	8.03	8.96
May	284	49	121	3.06	3.53
June	42	11	24.0	.608	.68
July	25	6.4	12.4	.314	.36
August	16	2.4	5.91	.149	.17
September	110	4.3	26.0	.658	.73
The year	850	2.4	83.2	2.11	28.68

SOUTH BRANCH OF ASHUELOT RIVER AT WEBB, NEAR MARLBORO, N. H.

LOCATION.—At highway bridge on State road between Keene and Troy, a quarter of a mile from Webb railroad station, Marlboro, Cheshire County.

DRAINAGE AREA.—36.6 square miles (measured on topographic map).

RECORDS AVAILABLE.—November 16, 1920, to September 30, 1924.

GAGE.—Water-stage recorder on right bank; inspected by W. L. Goodell.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Large pool opposite gage, water swift above and below. Control is formed by boulders 50 feet below gage; probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.98 feet at 3 p. m. April 7 (discharge by extension of rating curve, 938 second-feet); minimum stage, 0.89 foot at 3 p m. July 30 (discharge, 1.0 second-foot).

1920–1924: Maximum open-water stage from water-stage recorder, 5.2 feet April 29, 1923 (discharge by extension of rating curve, 1,020 second-feet; a stage of 5.8 feet was recorded at 10 p. m. March 9, 1921, but the channel was obstructed by ice at the time); minimum discharge, 1.0 second-foot on July 30, 1924.

ICE.—Channel obstructed by ice during winter.

REGULATION.—Distribution of flow affected by operation of mills at Troy, 4 miles upstream; several small storage ponds on main stream and tributaries above gage.

ACCURACY.—Stage-discharge relation apparently permanent during year. Rating curve fairly well defined between 3 and 500 second-feet. Operation of water-stage recorder generally satisfactory throughout year. Daily discharge October 1 to June 24 and September 1–30 ascertained by use of discharge integrator; for remainder of year by application of rating table to mean daily gage height, as determined from inspection of recorder sheets, with correction for effect of ice. Records good.

Discharge measurements of South Branch of Ashuelot River at Webb, near Marlboro, N. H., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 5	[a]2.73	51	Mar. 11	[a]2.13	18.9	July 21	1.09	5.3
Jan. 27	[a]3.88	53	May 18	1.94	58.5			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of South Branch of Ashuelot River at Webb, near Marlboro, N. H., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	47	580	44	54	31	92	178	25	5.8	2.7	4.0
2	14	34	250	56	42	11	62	162	40	6.5	2.3	10
3	7.0	25	167	56	46	38	70	96	38	7.4	2.5	39
4	8.6	13	118	62	48	39	97	108	38	5.6	2.5	26
5	8.2	30	188	56	56	40	155	117	39	5.1	1.9	13
6	6.5	24	430	56	62	74	230	95	32	4.6	1.4	56
7	6.5	45	300	70	46	135	740	86	18	4.0	1.5	33
8	7.4	70	165	68	45	47	500	77	14	5.1	1.4	28
9	14	62	120	52	39	35	320	84	27	5.3	1.5	22
10	5.8	42	110	48	41	62	265	85	28	5.8	2.1	138
11	6.0	28	136	240	61	31	275	87	27	7.0	3.1	88
12	6.3	36	128	410	49	62	240	118	26	5.3	6.0	39
13	8.2	32	102	192	33	116	220	184	26	6.5	8.0	24
14	5.8	25	118	130	28	98	280	132	12	9.4	4.8	16
15	6.3	23	90	132	39	68	235	109	12	7.0	4.6	20
16	6.3	21	69	156	31	56	170	86	12	4.2	4.4	9.8
17	15	23	79	350	14	102	142	64	23	8.0	4.6	16
18	4.6	13	92	216	35	68	164	60	27	9.0	4.4	23
19	5.1	25	157	126	25	64	540	67	24	6.0	4.0	23
20	11	25	182	112	32	90	290	61	22	4.6	3.5	12
21	11	11	56	97	27	102	218	58	14	4.4	2.9	6.5
22	26	30	45	90	38	71	252	54	11	4.2	2.5	11
23	15	28	129	115	33	78	330	48	22	4.4	2.7	21
24	182	295	155	100	11	112	206	34	20	4.2	2.5	26
25	233	685	100	68	24	120	160	74	6.3	4.4	2.7	22
26	91	266	80	56	28	92	135	70	6.5	4.6	5.1	21
27	44	218	64	50	43	76	102	62	6.3	4.2	6.3	14
28	27	202	58	68	35	90	100	68	5.6	3.5	4.8	7.0
29	35	129	55	66	44	102	95	62	5.6	2.9	4.2	16
30	33	215	54	60	-------	116	92	38	5.8	2.3	4.0	30
31	47	-------	72	64	-------	125	-------	39	-------	2.9	3.1	-------

NOTE.—Stage-discharge relation affected by ice Dec. 30 to Jan. 11 and Jan. 22 to Mar. 16; discharge for these periods based on gage heights corrected for effect of ice.

Monthly discharge of South Branch of Ashuelot River at Webb, near Marlboro, N. H., for the year ending September 30, 1924

[Drainage area, 36.6 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	233	4.6	29.9	0.817	0.94
November	685	11	90.7	2.48	2.77
December	580	45	144	3.93	4.53
January	410	44	112	3.06	3.53
February	62	11	38.2	1.04	1.12
March	135	11	75.8	2.07	2.39
April	740	62	226	6.17	6.88
May	184	34	85.9	2.35	2.71
June	40	5.6	20.4	.557	.62
July	9.4	2.3	5.30	.145	.17
August	8.0	1.4	3.48	.095	.11
September	138	4.0	27.1	.740	.83
The year	740	1.4	71.5	1.95	26.60

MILLERS RIVER NEAR WINCHENDON, MASS.

LOCATION.—At steel highway bridge known as Nolan's Bridge, half a mile below mouth of Sip Pond Brook and 2 miles west of Winchendon, Worcester County.

DRAINAGE AREA.—80.0 square miles.

RECORDS AVAILABLE.—June 5, 1916, to September 30, 1924.

GAGE.—Water-stage recorder on right bank below highway bridge; inspected by H. D. Sawyer.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel covered with gravel and alluvial deposits. Control for low and medium stages is gravel bar 80 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 8.37 feet at noon April 8 (discharge by extension of rating curve, 1,210 second-feet); minimum stage, 2.61 feet at 8 p. m. July 13 (discharge by extension of rating curve, 7.5 second-feet; water held back by dams).

1916–1924: Maximum discharge recorded, 1,280 second-feet (by extension of rating curve) June 25, 1922; minimum discharge, practically zero at 5 a. m. September 20, 1918 (water held back by dams).

ICE.—Ice cover usually forms during winter and owing to large diurnal fluctuation caused by operation of power plants in the vicinity of Winchendon, water frequently overflows ice.

REGULATION.—The distribution of flow is affected by operation of power plants at and below Winchendon and by storage in Lake Monomonac and other reservoirs.

ACCURACY.—Stage-discharge relation somewhat shifting on account of gravel bar 80 feet below gage. Rating curve fairly well defined below 400 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by discharge integrator with corrections for effect of ice. Records good for open water periods when water-stage recorder was in operation and fair for other periods.

Discharge measurements of Millers River near Winchendon, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	3.14	59	May 19	4.66	325	Sept. 4	3.44	128
Feb. 7	[a] 4.00	142	Aug. 3	2.78	18.0	Sept. 5	2.78	16.6
Mar. 27	3.44	133	Sept. 4	3.22	85	Do	2.77	15.9
Apr. 24	5.30	412						

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Millers River near Winchendon, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	81	245	130	150	100	250	275	40	62	35	14
2	38	62	184	102	110	80	235	230	174	60	36	26
3	36	48	250	120	80	110	200	200	146	64	19	64
4	29	23	210	130	110	100	200	178	122	22	20	58
5	40	72	220	120	100	100	210	275	102	14	56	62
6	36	41	320	60	100	140	375	240	100	10	50	70
7	22	49	350	155	100	130	820	210	70	49	38	13
8	50	61	290	140	100	130	1,110	194	30	68	40	29
9	38	71	205	120	100	95	970	186	58	54	20	45
10	30	49	245	110	80	170	830	196	76	40	10	61
11	24	22	245	250	120	180	720	140	100	40	18	52
12	36	32	210	360	120	170	475	350	88	31	112	54
13	30	58	235	280	130	150	430	495	79	10	90	34
14	24	58	240	330	130	132	475	400	56	21	65	13
15	36	46	205	290	130	124	470	255	26	20	56	36
16	32	52	124	370	110	77	440	260	52	28	42	52
18	26	40	140	640	80	116	350	200	70	29	18	54
17	24	20	146	480	100	70	400	190	56	32	60	60
19	25	52	116	420	110	64	500	220	52	33	60	60
20	21	38	138	360	110	86	650	186	66	16	54	38
21	16	48	120	300	110	98	600	170	53	26	58	17
22	29	36	68	280	120	110	575	148	26	41	60	36
23	42	40	85	260	120	76	550	142	52	42	40	54
24	100	99	168	240	80	118	500	110	71	34	16	53
25	96	385	120	220	130	116	470	170	110	63	55	52
26	98	385	170	195	120	144	410	235	96	33	56	46
27	40	315	140	170	120	146	350	122	68	19	50	41
28	38	215	144	180	120	158	300	140	48	36	54	12
29	48	128	118	185	110	162	260	148	17	78	53	20
30	50	174	77	180	-------	144	230	53	50	68	38	37
31	66	-------	116	175	-------	240	-------	75	-------	43	22	-------

NOTE.—Stage-discharge relation affected by ice Jan. 1–10 and Jan. 21 to Mar. 13; daily discharge for these periods based on gage height corrected for effect of ice. Water-stage recorder not in operation Apr. 19–21, 23, 26–30, and Aug. 22–27; discharge for these periods estimated by comparisons with that for other stations in Millers River basin.

Monthly discharge of Millers River near Winchendon, Mass., for the year ending September 30, 1924

[Drainage area, 80 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	100	16	41.1	0.514	0.59
November	385	20	93.3	1.17	1.30
December	350	68	182	2.28	2.63
January	640	60	237	2.96	3.41
February	150	80	110	1.38	1.49
March	240	64	124	1.55	1.79
April	1,110	200	478	5.98	6.67
May	495	53	206	2.58	2.97
June	174	17	71.8	.898	1.00
July	78	10	38.3	.479	.55
August	112	10	45.2	.565	.65
September	70	12	42.1	.526	.59
The year	1,110	10	139	1.74	23.64

MILLERS RIVER AT ERVING, MASS.

LOCATION.—One-fourth mile below dam at Erving, Franklin County, 8 miles above confluence with Connecticut River, and below all important tributaries.

DRAINAGE AREA.—372 square miles.

RECORDS AVAILABLE.—August 1, 1914, to September 30, 1924.

GAGE.—Water-stage recorder on right bank; inspected by Napoleon Lemire.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel covered with coarse gravel and boulders; control section a short distance below gage is practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.53 feet at 4 p. m. April 8 (discharge, 5,270 second-feet); minimum stage, 1.00 feet at 5 a. m. to 8.45 a. m. October 15 (discharge, 10 second-feet); water held back by dams.

1914–1924: Maximum open-water stage recorded, 5.74 feet at 10 a. m. March 28, 1920 (discharge, 5,800 second-feet); (a stage of 5.97 feet was recorded at 8.30 a. m. February 27, 1918, but channel was obstructed by ice at the time); minimum discharge, practically zero at various times during 1915 and 1916, when water was held back by dams above gage.

ICE.—River freezes over below gage during some winters.

REGULATION.—Distribution of flow affected by operation of various power plants and storage reservoirs above station.

ACCURACY.—Stage-discharge relation practically permanent during year. Rating curve well defined between 90 and 4,000 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by use of discharge integrator. Records good.

The following discharge measurements were made:

August 2, 1924: Gage height, 2.50 feet; discharge, 410 second-feet.

September 23, 1924: Gage height, 2.06 feet; discharge, 231 second-feet.

Daily discharge, in second-feet, of Millers River at Erving, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	285	1,500	550	690	350	1,280	1,000	315	205	230	36
2	114	280	1,480	520	560	325	1,120	1,160	415	220	245	195
3	104	220	1,250	450	430	395	1,000	1,080	440	220	85	240
4	98	160	1,100	590	560	345	1,020	840	490	45	50	170
5	98	180	1,100	600	490	450	1,240	960	460	125	19	150
6	62	156	2,100	560	450	530	1,650	890	455	105	55	370
7	21	200	2,300	700	470	660	3,550	900	380	130	60	320
8	88	194	1,800	640	455	660	4,950	700	335	100	120	185
9	110	265	1,400	530	510	465	4,850	800	310	135	85	140
10	104	220	1,100	510	465	730	4,050	860	380	150	50	400
11	85	144	1,060	1,000	560	740	3,250	810	275	160	90	435
12	19	195	1,050	2,300	500	630	2,550	1,040	360	210	100	310
13	55	215	920	2,020	650	610	2,100	1,580	265	120	150	260
14	13	220	920	1,760	620	550	1,780	1,620	300	160	175	135
15	92	184	790	1,300	500	500	1,680	1,360	175	135	155	225
16	100	205	520	1,100	445	400	1,540	1,020	285	160	150	110
17	94	180	630	2,350	380	510	1,340	940	260	160	35	190
18	98	135	470	2,350	430	465	1,180	680	250	200	140	175
19	93	255	510	1,920	500	460	2,450	900	295	160	110	175
20	76	170	465	1,600	440	480	3,050	660	215	80	120	160
21	15	205	475	1,340	485	580	2,750	590	170	195	125	60
22	100	180	480	1,300	600	630	2,500	640	165	150	135	175
23	108	186	510	1,200	540	670	2,800	510	305	115	70	120
24	360	275	920	1,100	500	940	2,600	640	210	70	45	190
25	620	1,400	920	980	600	960	2,100	630	230	120	85	160
26	530	2,000	680	900	425	1,060	1,720	940	325	105	75	145
27	460	1,650	770	800	500	950	1,340	740	350	100	145	140
28	240	1,300	620	820	510	920	1,200	660	275	150	175	45
29	280	950	510	820	460	1,030	990	660	180	100	145	155
30	275	880	450	820	-------	1,150	920	470	320	80	160	130
31	265	-------	480	760	-------	1,300	-------	455	-------	145	75	-------

Monthly discharge of Millers River at Erving, Mass., for the year ending September 30, 1924

[Drainage area, 372 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	620	13	157	0.422	0.49
November	2,000	135	436	1.17	1.30
December	2,300	450	945	2.54	2.93
January	2,350	450	1,100	2.96	3.41
February	690	380	508	1.37	1.48
March	1,300	325	660	1.77	2.04
April	4,950	920	2,150	5.78	6.45
May	1,620	455	862	2.32	2.68
June	490	165	306	.823	.92
July	220	45	139	.374	.43
August	245	19	112	.301	.35
September	435	36	190	.511	.57
The year	4,950	13	630	1.69	23.05

SIP POND BROOK NEAR WINCHENDON, MASS.

LOCATION.—500 feet above highway bridge, one-fourth mile below Massachusetts-New Hampshire State line, 1½ miles below outlet of Sip Pond, and 3 miles northwest of Winchendon, Worcester County.

DRAINAGE AREA.—18.8 square miles.

RECORDS AVAILABLE.—May 29, 1916, to September 30, 1924.

GAGE.—Water-stage recorder on left bank 500 feet above highway bridge; inspected by Mary N. Greenall.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Channel fairly uniform in section near gage; control clearly defined.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.18 feet at 2 a. m. April 8 (discharge, 292 second-feet); minimum stage, 4.72 feet at noon August 25 (discharge, 0.1 second-foot).

1916–1924: Maximum stage recorded, 9.34 feet at 1 p. m. May 23, 1919 (discharge by extension of rating curve, 339 second-feet); minimum discharge, 0.1 second-foot, August 25, 1924.

ICE.—Channel usually remains open during winter; ice occasionally forms in float well, interfering with operation of water-stage recorder.

REGULATION.—Distribution of flow is considerably affected by operation of mills at State Line, N. H. and by storage in Pearly and Sip Ponds.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined below 250 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily discharge table. Daily discharge for June determined by discharge integrator; for remainder of year by applying rating table to mean daily gage height. Records good.

Discharge measurements of Sip Pond Brook near Winchendon, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 28	5.66	14.8	Feb. 8	6.21	34.4	Sept. 4	4.99	2.1
Do	5.66	14.8	Mar. 28	6.54	52.8	Do	4.98	1.7
Dec. 1	7.10	86	Apr. 25	7.38	115			
Feb. 8	6.16	33.9	May 18	6.31	41.4			

Daily discharge, in second-feet, of Sip Pond Brook near Winchendon, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	15	84	31	27	21	67	61	23	2.9	0.6	0.7
2	3.2	15	96	31	25	15	61	67	24	4.1	.7	1.2
3	7.4	14	84	27	19	20	55	64	21	3.6	.5	2.2
4	4.4	13	67	33	24	21	49	58	22	1.7	.5	2.2
5	4.4	16	64	33	25	21	67	58	19	1.4	.5	2.5
6	2.6	13	96	31	27	20	92	52	19	1.2	2.2	4.2
7	4.4	16	118	31	27	22	190	46	18	1.2	.8	3.3
8	2.5	17	96	31	27	24	261	46	16	1.7	.5	9.0
9	2.3	16	80	29	21	25	190	46	18	1.5	.4	12
10	2.6	16	76	25	14	29	170	49	17	1.2	.2	11
11	4.7	13	73	41	18	29	150	49	15	.9	.3	7.6
12	6.1	14	70	109	17	29	141	55	16	.7	.6	6.6
13	5.4	15	67	106	16	29	123	58	17	.5	.8	8.6
14	4.2	13	61	92	14	29	118	58	13	.5	.6	7.0
15	1.7	16	52	73	17	27	109	55	7.0	.4	.5	8.5
16	1.7	14	35	61	29	25	96	49	14	.4	.5	8.0
17	1.7	11	44	114	29	29	88	44	10	1.0	.5	7.5
18	2.8	9	37	132	26	27	80	39	13	.7	.5	6.6
19	2.9	12	33	105	25	23	132	39	10	.5	.5	6.0
20	2.2	10	31	80	23	23	160	35	10	.5	.5	5.5

Daily discharge, in second-feet, of Sip Pond Brook near Winchendon, Mass., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	2.1	11	29	67	25	25	141	33	12	0.5	2.2	4.1
22	4.9	13	27	55	25	27	123	27	5.5	2.2	.8	6.1
23	17	11	37	45	25	22	150	29	11	1.2	.4	5.7
24	21	27	61	39	22	31	141	31	11	.8	.2	4.9
25	19	73	55	41	25	39	114	41	9.0	2.2	.1	4.1
26	16	132	52	41	22	44	88	41	8.0	.5	.8	3.6
27	13	100	37	35	21	46	73	37	4.0	.4	.9	3.6
28	16	80	37	30	20	44	70	35	3.8	.4	.9	3.6
29	15	64	37	27	21	52	64	33	3.6	.3	.9	3.3
30	15	61	31	27	-------	64	61	33	5.7	.3	.8	4.1
31	16	-------	33	27	-------	73	-------	27	-------	.5	.7	-------

NOTE.—No record Oct. 23-31, Nov. 1-3, Jan. 20-23, 27-28, Feb. 2, 7, and Sept. 15-20; discharge for these periods based on observer's readings and comparison with records in adjacent drainage basins.

Monthly discharge of Sip Pond Brook near Winchendon, Mass., for the year ending September 30, 1924

[Drainage area, 18.8 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	21	1.7	7.27	0.387	0.45
November	132	9	28.3	1.51	1.68
December	118	27	58.1	3.09	3.56
January	132	25	53.2	2.83	3.26
February	29	14	22.6	1.20	1.29
March	73	15	30.8	1.64	1.89
April	261	49	114	6.06	6.76
May	67	27	45.0	2.39	2.76
June	24	3.6	13.2	.702	.78
July	4.1	.3	1.16	.062	.07
August	2.2	.1	.674	.036	.04
September	12	.7	5.44	.289	.32
The year	261	.1	31.6	1.68	22.86

PRIEST BROOK NEAR WINCHENDON, MASS.

LOCATION.—At highway bridge 3 miles above confluence with Millers River and 3½ miles west of Winchendon, Worcester County.

DRAINAGE AREA.—18.8 square miles.

RECORDS AVAILABLE.—May 25, 1916, to September 30, 1917; July 18, 1918, to September 30, 1924.

GAGE.—Sloping staff on left bank 200 feet below highway bridge; read by Lazare Thibault and Mary Routhier.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel above station is straight with fairly uniform section and gravel bottom. Control is formed by foundation of an old dam 30 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.62 feet at 5.45 p. m. April 7 (discharge by extension of rating curve, 360 second-feet); minimum stage, 2.23 feet at 5 p. m. August 4 (discharge, 0.8 second-foot).

Maximum discharge during periods May 25, 1916, to September 30, 1917, and July 18, 1918, to September 30, 1924, approximately 700 second-feet (by extension of rating curve) at 7 a. m. March 28, 1919; minimum discharge during these periods, 0.4 second-foot at 8 a. m. August 21, 1921.

ICE.—Brook freezes over at gage, but usually remains open at control; stage-discharge relation seldom affected.

REGULATION.—Flow not appreciably affected by regulation.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined below 150 second-feet. Gage read to hundredths twice daily except as noted in footnote to daily-discharge table. Daily discharge ascertained by applying rating table to mean daily gage height. Records good for periods of daily readings, fair for estimated periods.

Discharge measurements of Priest Brook near Winchendon, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	2.84	10.8	Feb. 7	2.94	16.3	May 18	3.24	32
Do	2.84	10.9	Mar. 27	3.38	44.8	Aug. 3	2.27	1.3
Feb. 7	2.94	15.8	Apr. 24	4.10	125			

Daily discharge, in second-feet, of Priest Brook near Winchendon, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.
1	2.6	17	135	36	11	5.8	89	33	27	2.0	1.0	
2	3.0	16	185	33	16	7.4	83	56	20	2.1	1.0	
3	2.9	15	149	41	45	8.4	66	66	13	1.8	.9	
4	4.6	14	102	52	36	5.8	72	48	15	1.7	.9	
5	3.9	15	102	47	31	11	89	52	15	1.6	.9	
												8.0
6	3.2	15	170	36	13	16	102	47	15	1.6	9	
7	2.8	14	170	39	16	19	308	49	11	1.3	1.2	
8	3.4	29	142	45	19	18	308	45	9.0	1.4	.9	
9	2.7	35	177	43	13	19	230	53	8.4	1.8	.9	
10	2.4	31	185	41	13	25	185	66	11	1.2	.9	
11	4.4	25	72	44	5.8	22	177	72	15	2.6	1.1	
12	2.8	23	61	43	9.0	22	142	66	11	2.7	1.2	
13	2.2	21	61	115	11	23	142	66	9.0		1.7	
14	2.3	19	72	108	14	22	142	66	7.1		1.3	
15	3.9	17	72	102	19	19	128	66	7.7		.9	
16	4.8		52	115	22	22	115	51	6.8		.9	7.0
17	3.2		61	142	19	21	89	44	5.3	2.0	1.0	
18	3.2		61	163	13	20	121	36	4.8		.9	
19	3.6		54	142	9.0	19	185	33	4.4		.9	
20	5.6	17	49	89	14	21	185	31	3.6		1.5	
21	5.8		33	66	16	22	156	28	4.4		1.2	
22	4.8		20	41	18	21	128	27	4.4		.9	2.1
23	5.3		43	39	13	28	142	27	2.7		.9	1.8
24	47		45	32	13	51	142	28	2.2			1.7
25	44		56	56	5.8	61	163	49	3.0			2.2
26	38		51	13	7.4	66	121	49	6.4	1.1		2.2
27	29	180	41	13	9.0	46	61	42	5.3		1.5	2.7
28	22		47	19	5.8	45	52	35	4.4			2.8
29	17		33	13	9.0	45	41	28	2.9			2.7
30	21		26	19	-------	47	32	83	2.9			2.0
31	31	-------	30	9	-------	96	-------	72	-------			-------

NOTE.—Gage not read regularly during periods Nov. 1-30, July 13 to Aug. 2, and Aug. 24 to Sept. 21; discharge estimated from occasional readings and comparison with records in adjacent drainage basins. Braced figures show estimated mean discharge for periods indicated.

Monthly discharge of Priest Brook near Winchendon, Mass., for the year ending September 30, 1924

[Drainage area, 18.8 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	47	2.2	10.7	0.569	0.66
November			51.3	2.73	3.05
December	185	20	82.5	4.39	5.06
January	163	9	57.9	3.08	3.55
February	45	5.8	15.4	.819	.88
March	96	5.8	28.2	1.50	1.73
April	308	32	133	7.07	7.89
May	83	27	48.8	2.60	3.00
June	27	2.2	8.59	.457	.51
July			1.64	.087	.10
August		.9	1.16	.062	.07
September			5.91	.314	.35
The year	308	.9	37.1	1.97	26.85

EAST BRANCH OF TULLY RIVER NEAR ATHOL, MASS.

LOCATION.—At highway bridge half a mile below mouth of Lawrence Brook and 3½ miles north of Athol, Worcester County.

DRAINAGE AREA.—50.2 square miles.

RECORDS AVAILABLE.—June 13, 1916, to September 30, 1924.

GAGE.—Vertical staff on downstream side of right abutment; read by W. A. Thompson.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Two channels under bridge, one channel above; 200 feet below gage the channel is divided by an island. Control well defined by rocks and boulders near head of island.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.81 feet at 7 a. m. April 8 (discharge by extension of rating curve, 755 second-feet); minimum stage, 0.25 foot several times during July and August (discharge, 2.5 second-feet).

1916–1924: Maximum stage recorded, 4.2 feet at 7 a. m. March 29, 1920 (discharge by extension of rating curve, 1,000 second-feet); minimum stage, 0.22 foot several times during August and September, 1921 (discharge, 2.2 second-feet).

ICE.—River freezes slightly along banks, but stage-discharge relation is seldom affected.

DIVERSIONS.—About half a mile below station water is at times diverted through a canal into Packard Pond. The following measurements of this diversion were made: October 30, 1923, 14.1 second-feet; May 19, 1924, 13.9 second-feet; September 22, 0.3 second-foot.

REGULATION.—Flow not seriously affected by regulation.

ACCURACY.—Stage-discharge relation apparently permanent during year. Rating curve well defined below 300 second-feet. Gage read to hundredths twice daily, except from January 1 to March 1, when it was read once daily. Daily discharge ascertained by applying rating table to mean daily gage height. Records good.

Discharge measurements of East Branch of Tully River near Athol, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	1.13	38.3	Mar. 26	2.09	145	Sept. 22	0.52	8.1
Feb. 6	1.38	56	May 19	1.70	92			
Do	1.38	58	Sept. 22	.52	8.1			

Daily discharge, in second-feet, of East Branch of Tully River near Athol, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.2	60	312	79	69	29	187	143	55	10	3.8	5.2
2	7.9	49	382	69	65	29	143	174	47	9.4	3.6	5.4
3	6.8	38	286	67	63	28	137	160	41	7.3	3.5	28
4	6.2	31	222	88	63	25	152	145	36	6.6	3.1	28
5	5.6	29	187	95	63	33	200	143	44	6.4	2.9	19
6	5.0	25	305	90	58	43	271	132	41	6.0	3.3	57
7	5.0	32	440	83	56	67	480	129	37	5.6	3.1	69
8	4.4	56	340	75	56	71	725	125	33	5.2	2.7	60
9	3.8	60	262	73	52	72	540	106	31	5.6	2.5	58
10	3.8	52	209	65	51	86	460	114	29	5.2	3.5	68
11	3.8	46	191	108	46	91	420	120	26	5.4	5.4	94
12	3.5	46	189	400	44	79	337	125	24	5.0	5.4	75
13	3.6	35	166	351	43	74	280	172	23	5.2	7.0	50
14	3.8	30	150	277	41	63	265	189	22	5.6	7.0	40
15	4.2	28	132	232	40	61	248	166	22	5.2	5.4	29
16	4.6	26	119	170	38	54	225	141	20	4.8	4.6	24
17	4.6	26	106	283	40	51	195	122	19	6.0	4.4	21
18	5.0	24	88	330	38	52	174	103	18	11	3.6	21
19	5.2	23	77	265	34	58	316	89	15	9.0	3.6	14
20	6.0	21	69	218	41	61	460	82	13	7.0	3.3	12
21	6.2	20	74	170	30	73	368	77	15	6.4	3.8	10
22	6.6	22	80	132	33	85	305	72	14	5.6	3.6	8.2
23	9.8	24	103	106	32	99	375	69	13	5.4	3.1	13
24	66	66	172	88	33	122	337	64	13	4.6	5.2	18
25	150	389	156	79	32	148	283	104	13	4.0	4.6	16
26	145	420	148	81	32	150	211	116	23	3.6	4.8	13
27	106	305	125	83	32	141	178	98	18	3.3	11	12
28	76	245	106	75	31	134	158	86	15	3.3	11	10
29	54	202	99	71	32	154	136	81	12	3.1	9.0	9.0
30	47	168	79	67	-------	193	126	74	11	2.7	7.0	8.2
31	51	-------	82	71	-------	213	-------	63	-------	3.1	5.8	-------

Monthly discharge of East Branch of Tully River near Athol, Mass., for the year ending September 30, 1924

[Drainage area, 50.2 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	150	3.5	26.4	0.526	0.61
November	420	20	86.6	1.73	1.93
December	440	69	176	3.51	4.05
January	400	65	143	2.85	3.29
February	69	30	44.4	.884	.95
March	213	25	85.1	1.70	1.96
April	725	126	290	5.78	6.45
May	189	63	116	2.31	2.66
June	55	11	24.8	.494	.55
July	11	2.7	5.7	.114	.13
August	11	2.5	4.9	.098	.11
September	94	5.2	29.8	.594	.66
The year	725	2.5	86.0	1.71	23.35

MOSS BROOK AT WENDELL DEPOT, MASS.

LOCATION.—One-fourth mile above confluence with Millers River and one-fourth mile north of Wendell Depot, Franklin County.

DRAINAGE AREA.—12.2 square miles.

RECORDS AVAILABLE.—June 6, 1916, to September 30, 1924.

GAGE.—Sloping staff gage on left bank; read by M. C. Eno.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel composed principally of ledge rock and boulders; control formed by large boulders 25 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.81 feet at 5 p. m. April 7 (discharge by extension of rating curve, 181 second-feet); minimum stage, 0.87 foot at 5 p. m. August 20 (discharge, 1.0 second-foot).

1916–1924: Maximum discharge, 190 second-feet (by extension of rating curve) on March 28, 1919, and June 22, 1922; minimum discharge, 0.7 second-foot August 19, 1923.

ICE.—Stage-discharge relation affected by ice for short periods.

REGULATION.—Flow not affected by regulation.

ACCURACY.—Stage-discharge relation probably permanent during year. Rating curves fairly well defined below 60 second-feet. Gage read to hundredths twice daily, except from January 31 to March 15, when it was read once daily. Daily discharge ascertained by applying rating table to mean daily gage height with corrections for effect of ice. Records fair.

Discharge measurements of Moss Brook at Wendell Depot, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	1.44	8.0	May 20	1.72	21.3	Sept. 23	1.34	5.4
Do	1.44	8.0	Do	1.72	19.9	Do	1.34	6.0
Feb. 5	1.65	16.3	Aug. 2	1.03	1.7			

Daily discharge, in second-feet, of Moss Brook at Wendell Depot, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	2.6	14	116	19	25	8.3	43	53	16	3.4	3.2	1.4
2	2.3	9.3	79	18	19	7.2	32	50	12	3.1	2.2	12
3	2.1	8.0	64	18	22	6.8	43	39	10	2.8	2.0	18
4	2.0	7.6	46	32	20	8.3	39	36	11	2.6	1.7	9.2
5	1.8	9.0	53	46	16	14	53	36	12	2.4	1.5	3.8
6	1.8	8.0	125	46	18	18	75	30	12	2.9	1.5	25
7	1.8	18	107	43	17	19	180	30	10	3.8	1.7	16
8	1.7	20	67	21	16	23	161	28	8.3	3.5	2.2	6.8
9	1.6	13	57	18	16	20	67	26	7.6	3.6	1.4	6.2
10	1.7	12	50	17	15	23	79	32	7.0	3.2	1.4	53
11	1.8	11	53	53	15	28	67	32	6.4	2.5	2.5	33
12	1.7	12	46	116	14	24	64	36	6.2	1.7	3.1	18
13	2.3	10	39	87	14	22	60	46	5.6	2.5	4.7	11
14	2.1	9.0	43	79	13	20	53	39	5.8	2.9	2.7	7.0
15	3.2	8.0	43	75	12	17	46	36	6.2	2.4	1.7	5.6
16	2.6	7.8	29	67	10	18	43	32	5.6	2.2	1.5	5.1
17	2.2	7.6	28	103	10	19	39	29	5.1	4.7	1.6	4.7
18	2.3	8.0	26	91	8.3	19	31	28	4.7	6.8	1.7	5.3
19	2.9	7.8	24	64	8.0	21	103	26	4.4	4.4	1.4	4.5
20	3.7	7.4	23	53	7.6	33	83	19	3.8	2.7	1.1	3.9

Daily discharge, in second-feet, of Moss Brook at Wendell Depot, Mass., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	3.2	6.8	22	67	7.4	26	71	19	3.9	2.2	2.2	3.2
22	2.6	12	23	107	7.2	36	71	20	4.1	1.9	1.8	3.2
23	4.1	14	39	67	7.2	33	99	19	4.1	1.7	2.0	6.0
24	57	53	57	50	6.6	39	67	21	3.7	1.4	1.7	5.0
25	64	143	57	33	8.3	50	57	32	3.8	1.3	1.7	3.9
26	36	125	39	33	7.4	46	50	27	12	1.3	5.6	3.6
27	18	83	28	36	6.0	36	43	22	6.4	1.7	5.6	3.1
28	11	60	21	32	13	36	33	20	5.1	1.5	3.8	2.8
29	9.3	50	20	28	10	43	30	27	5.0	1.3	2.0	2.7
30	8.3	50	20	25	-------	50	27	24	4.1	1.1	1.8	10
31	20	-------	19	23	-------	53	-------	20	-------	1.3	1.7	-------

NOTE.—Stage-discharge relation affected by ice Dec. 18–20, 29–31; Jan. 1–3, 23–30, and Feb. 8–12; discharge based on gage heights corrected for effect of ice.

Monthly discharge of Moss Brook at Wendell Depot, Mass., for the year ending September 30, 1924

[Drainage area, 12.2 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	64	1.6	8.96	0.734	0.85
November	143	6.8	26.8	2.20	2.45
December	125	19	47.2	3.87	4.46
January	116	17	50.5	4.14	4.77
February	25	6.0	12.7	1.04	1.12
March	53	6.8	26.3	2.16	2.49
April	180	27	63.6	5.21	5.81
May	53	19	30.1	2.47	2.85
June	16	3.7	7.06	.579	.65
July	6.8	1.1	2.61	.214	.25
August	5.6	1.1	2.28	.187	.22
September	53	1.4	9.77	.801	.89
The year	180	1.1	24.0	1.97	26.81

DEERFIELD RIVER AT CHARLEMONT, MASS.

LOCATION.—1 mile below Charlemont, Franklin County.

DRAINAGE AREA.—362 square miles.

RECORDS AVAILABLE.—June 19, 1913, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by E. F. Spear.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel of coarse gravel and boulders; fairly uniform section; control practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.6 feet at 6 p. m. October 24 (discharge by extension of rating curve, 16,600 second-feet); minimum stage, 1.42 feet at 6.30 a. m. August 25 (discharge, 33 second-feet; water held back by dams at power stations above gage).

1913–1924: Maximum stage recorded, 15.7 feet on July 8, 1915 (discharge by extension of rating curve, 45,000 second-feet); minimum stage, 0.70 foot on June 17, 1921 (practically dry; water held back by dams).

ICE.—River usually frozen over during greater part of winter; ice jams occasionally form below gage, causing several feet of backwater.

REGULATION.—Flow regulated by storage reservoirs at Somerset and Whitingham, Vt. Several power plants above station cause diurnal fluctuation.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined below 10,000 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge during open-water period ascertained by discharge integrator; during remainder of year by applying rating table to mean daily gage height from recorder sheets with correction for effect of ice. Records good.

Discharge measurements of Deerfield River at Charlemont, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 4	[a] 3.89	777	Sept. 23	3.10	1,020	Sept. 24	2.47	490
May 21	2.56	545	Sept. 24	2.48	519			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Deerfield River at Charlemont, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	320	1,140	8,700	680	640	470	480	1,940	560	750	710	61
2	295	760	2,800	700	480	370	405	1,320	570	750	600	260
3	295	490	1,760	990	250	390	395	890	425	550	135	355
4	300	500	1,260	1,460	410	440	470	850	760	315	520	385
5	240	720	1,300	1,120	320	540	990	1,300	660	335	690	505
6	132	570	6,600	660	185	640	1,160	1,580	590	290	600	430
7	74	1,680	4,300	740	390	760	4,200	1,560	560	580	590	265
8	295	2,100	2,000	840	420	540	1,700	1,460	320	710	410	455
9	280	1,260	1,480	740	290	560	1,020	1,960	720	640	110	930
10	280	910	1,580	660	180	580	1,520	2,900	650	640	68	1,120
11	260	670	1,520	2,850	240	540	1,500	2,300	690	550	425	450
12	280	590	1,140	4,850	290	520	1,180	3,300	740	495	560	420
13	106	710	980	1,960	260	520	1,720	4,500	570	260	480	205
14	80	680	1,580	1,320	220	560	3,850	2,850	95	530	600	130
15	300	690	1,180	900	410	480	2,100	2,050	66	710	510	435
16	300	630	860	830	260	440	1,420	1,620	650	720	230	530
17	350	500	900	3,950	190	540	1,200	1,180	720	750	84	460
18	385	475	680	2,050	400	440	1,460	900	650	710	275	450
19	260	640	620	1,320	350	330	4,500	1,160	730	430	425	510
20	285	490	760	1,040	360	400	1,940	1,060	640	265	420	490
21	370	530	750	700	350	400	1,260	890	490	470	435	340
22	355	500	690	600	400	420	1,780	780	375	660	340	640
23	325	700	1,100	860	400	240	1,980	680	760	740	380	840
24	13,000	1,260	1,380	730	350	405	1,200	660	790	700	73	750
25	7,100	2,600	810	720	360	485	1,120	810	710	750	395	730
26	2,050	1,460	780	400	580	420	890	700	790	480	570	760
27	1,160	1,300	680	330	520	325	960	560	590	305	460	570
28	760	1,420	560	640	450	435	1,060	910	80	640	460	380
29	650	930	540	920	480	590	1,100	1,040	57	760	415	660
30	500	2,200	410	700	-------	630	930	750	500	650	255	1,200
31	1,460	-------	720	610	-------	800	-------	690	-------	650	81	-------

NOTE.—Stage-discharge relation affected by ice Jan. 21–22, 26–30, and Feb. 1 to Mar. 20, daily discharge for these periods based on gage heights corrected for effect of ice by one discharge measurement, observer's notes, weather records, and comparisons with power-plant records at New England Power Co.'s plant No. 4 at Shelburne Falls.

Monthly discharge of Deerfield River at Charlemont, Mass., for the year ending September 30, 1924

[Drainage area, 362 square miles]

Month	Observed discharge (second-feet)			Gain or loss in storage in Somerset and Davis Bridge Reservoirs [a] (millions of cubic feet)	Discharge corrected for storage (second-feet)		Run-off in inches
	Maximum	Minimum	Mean		Mean	Per square mile	
October	13,000	74	1,060	−55	1,040	2.87	3.31
November	2,600	475	970	+49	989	2.73	3.05
December	8,700	410	1,630	+273	1,730	4.78	5.51
January	4,850	330	1,190	0	1,190	3.29	3.79
February	640	180	360	−225	270	.746	.80
March	800	240	491	+70	517	1.43	1.65
April	4,500	395	1,520	+4,396	3,210	8.87	9.90
May	4,500	560	1,460	+1,679	2,090	5.77	6.65
June	790	57	550	−746	262	.724	.81
July	760	260	574	−1,253	106	.293	.34
August	710	68	397	−808	95	.262	.30
September	1,200	61	524	−636	279	.771	.86
The year	13,000	57	896	+2,744	983	2.72	36.97

[a] Regulation by Davis Bridge Reservoir became effective February 11, 1924.

WARE RIVER AT GIBBS CROSSING, MASS.

LOCATION.—Between highway and electric railway bridges at Gibbs Crossing, Hampshire County, three-quarters of a mile above mouth of Beaver Brook, and 3 miles below Ware.

DRAINAGE AREA.—201 square miles.

RECORDS AVAILABLE.—August 20, 1912, to September 30, 1924.

GAGE.—Water-stage recorder on right bank; inspected by Marion G. Moore.

DISCHARGE MEASUREMENTS.—Made from electric railway bridge or by wading.

CHANNEL AND CONTROL.—Channel rough and subject to growth of aquatic vegetation during summer. Control free from weeds and at ordinary stages well defined at a section near gage; shifts occasionally; at high stages control is probably at the dam at Thorndike, 4 miles below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 6.25 feet at 9 a. m. April 8 (discharge, 2,950 second-feet); minimum stage, 1.24 feet at 9 a. m. October 8 (discharge, 17 second-feet; water held back by dams).

1912–1924: Maximum discharge, that of April 8, 1924; minimum discharge, 5 second-feet on October 26, 1914 (water held back by dams).

ICE.—River usually freezes over, and the stage-discharge relation is affected by ice during most winters.

REGULATION.—Flow affected by operation of mills at Ware, which at low stages causes a large variation in discharge on days when the mills are in operation, and a low discharge on Sundays and holidays.

ACCURACY.—Stage-discharge relation apparently permanent throughout year except when affected by ice. Rating curve well defined below 1,800 second-feet and fairly well defined below 2,700 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by discharge integrator with corrections for effect of ice. Records good.

Discharge measurements of Ware River at Gibbs Crossing, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 30	2.70	452	Mar. 16	2.26	228	May 25	2.78	434
Do	2.67	428	Apr. 10	4.75	2,110	Sept. 27	1.66	56
Mar. 16	2.22	218						

Daily discharge, in second-feet, of Ware River at Gibbs Crossing, Mass., for the year ending September 30, 1924

Day	Oct	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	134	630	290	330	114	710	520	270	132	102	36
2	52	124	620	290	275	102	580	580	295	120	34	98
3	48	88	500	320	240	198	530	500	300	37	25	110
4	59	54	410	405	280	180	580	435	220	38	61	93
5	66	148	420	380	270	162	710	450	250	76	68	69
6	45	182	850	320	240	220	970	400	255	25	55	134
7	18	198	1,020	365	220	350	2,000	385	184	90	88	104
8	59	154	730	345	250	300	2,820	350	200	90	65	118
9	62	140	600	320	200	340	2,500	355	270	120	79	136
10	60	78	550	275	195	540	1,980	390	250	96	38	200
11	59	33	590	790	230	455	1,560	425	205	126	120	170
12	19	122	580	1,900	235	350	1,280	520	185	39	138	152
13	17	136	510	1,320	190	305	1,100	680	150	24	194	59
14	18	116	450	1,060	180	270	930	690	59	102	156	51
15	60	116	375	740	170	240	840	650	84	89	122	120
16	52	108	315	580	130	220	750	580	194	112	45	92
17	52	70	365	940	140	260	670	465	188	82	35	144
18	51	26	335	970	150	255	610	422	154	76	106	100
19	42	79	245	790	145	230	1,020	390	140	40	99	93
20	50	70	230	700	120	250	1,340	360	108	24	128	32
21	20	79	260	550	100	300	1,140	365	46	43	108	26
22	39	96	240	400	105	335	1,080	360	34	92	71	42
23	49	106	365	420	170	410	1,300	320	174	94	36	72
24	270	170	640	350	160	570	1,100	230	160	77	24	99
25	420	840	530	350	165	620	890	400	145	91	35	87
26	300	890	490	325	150	560	760	445	158	32	63	82
27	160	650	400	265	145	485	620	410	94	23	150	36
28	56	510	365	345	138	510	590	350	39	44	99	25
29	164	370	330	355	140	570	510	325	41	46	104	44
30	160	390	290	275	-------	710	470	280	114	84	38	112
31	172	-------	305	340	-------	830	-------	280	-------	90	29	-------

NOTE.—Stage-discharge relation affected by ice Feb. 17–27; discharge for this period based on gage heights corrected for effect of ice.

Monthly discharge of Ware River at Gibbs Crossing, Mass., for the year ending September 30, 1924

[Drainage area, 201 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	420	17	88.5	0.440	0.51
November	890	26	209	1.04	1.16
December	1,020	230	469	2.33	2.69
January	1,900	265	551	2.74	3.16
February	330	100	188	.935	1.01
March	830	102	363	1.81	2.09
April	2,820	470	1,060	5.27	5.88
May	690	280	429	2.13	2.47
June	300	34	166	.826	.92
July	132	23	72.7	.362	.42
August	194	24	81.1	.403	.46
September	200	25	91.2	.454	.51
The year	2,820	17	314	1.56	21.28

SWIFT RIVER AT WEST WARE, MASS.

LOCATION.—1,000 feet below old dam opposite West Ware station of Boston & Albany Railroad, Hampshire County, 6 miles downstream from Enfield, and 3 miles below confluence of East and West Branches of Swift River.

DRAINAGE AREA.—186 square miles.

RECORDS AVAILABLE.—July 15, 1910, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by H. C. Davis.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Gravel and alluvial deposits; some aquatic vegetation in channel during summer. Control shifts slightly at various times; at high stages the control is probably at dam at Bondsville, 4 miles below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year, 7.66 feet at 4 a. m. April 9 (discharge by extension of rating curve, 1,820 second-feet); minimum stage, 1.91 feet at 10 a. m. October 10 (discharge, 33 second-feet).

1910–1924: Maximum discharge recorded, 2,390 second-feet (by extension of rating curve) on April 7, 1923; minimum discharge, 22 second-feet on September 22, 1914.

ICE.—River usually freezes over, and stage-discharge relation is affected by ice during most winters.

REGULATION.—Operation of mills at Enfield 6 miles above station has at times affected distribution of flow at low and medium stages; not seriously affected during present year.

ACCURACY.—Stage-discharge relation probably permanent during year. Rating curves well defined between 100 and 1,500 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by applying rating table to mean daily gage height determined by inspection of recorder graph, with corrections for effect of ice. Records good.

Discharge measurements of Swift River at West Ware, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 31	2.77	226	Jan. 31	3.54	384	May 24	3.13	275
Do.	2.80	222	Mar. 17	2.91	228	Sept. 26	2.10	62
Jan. 31	3.58	385	Apr. 12	5.34	943			

Daily discharge, in second-feet, of Swift River at West Ware, Mass., during the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	205	690	347	350	163	570	465	275	118	69	62
2	74	174	825	321	350	165	525	495	244	120	71	63
3	76	165	765	373	325	150	480	495	225	114	67	72
4	76	143	645	413	312	158	480	480	244	106	80	76
5	72	126	585	413	325	173	540	437	275	94	62	78
6	64	124	765	413	510	239	660	425	250	88	60	94
7	45	143	1,010	413	325	312	1,000	387	237	84	65	100
8	61	174	1,100	400	262	312	1,660	362	222	86	69	92
9	59	186	955	373	237	362	1,760	362	211	114	67	94
10	59	165	810	334	234	412	1,420	275	203	134	69	132
11	61	146	750	540	232	425	1,120	400	192	150	72	146
12	74	141	720	1,000	230	412	950	450	175	130	80	128
13	52	139	660	1,220	220	362	800	570	167	100	100	116
14	42	139	615	1,080	209	325	680	600	161	96	98	106
15	55	135	555	825	203	287	630	570	152	88	90	96

Daily discharge, in second-feet, of Swift River at West Ware, Mass., during the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	63	126	497	660	194	247	570	525	140	78	86	90
17	61	128	455	920	182	227	510	465	148	78	80	96
18	63	115	427	1,170	171	244	480	412	142	80	74	98
19	61	107	373	1,100	169	244	730	375	136	80	72	94
20	66	113	360	920	171	250	970	350	124	72	76	71
21	55	111	347	735	175	287	1,020	325	120	72	80	62
22	63	109	334	690	207	312	970	312	130	69	76	67
23	74	107	400	630	184	362	1,020	300	120	67	76	71
24	282	232	540	525	192	412	1,040	287	120	65	80	88
25	441	630	570	469	179	465	930	387	126	65	59	90
26	413	840	555	450	163	465	780	450	128	63	72	72
27	347	780	511	440	171	437	645	437	116	62	100	57
28	245	705	483	440	161	425	570	412	110	63	98	59
29	193	585	441	430	161	412	510	375	110	59	86	56
30	172	511	373	420	-------	510	450	337	116	57	74	53
31	202	-------	347	387	-------	570	-------	300	-------	62	67	-------

NOTE.—Stage-discharge relation affected by ice Jan. 26–30 and Feb. 5–7; discharge for these periods based on gage height corrected for effect of ice.

Monthly discharge of Swift River at West Ware, Mass., for the year ending September 30, 1924

[Drainage area, 186 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	441	42	121	0.651	0.75
November	840	107	250	1.34	1.50
December	1,100	334	596	3.20	3.69
January	1,220	321	608	3.27	3.77
February	510	161	235	1.26	1.36
March	570	150	327	1.76	2.03
April	1,760	450	816	4.39	4.90
May	600	287	417	2.24	2.58
June	275	110	171	.919	1.03
July	150	57	87.5	.470	.54
August	100	59	76.6	.412	.48
September	146	53	86.0	.462	.52
The year	1,760	42	316	1.70	23.15

QUABOAG RIVER AT WEST BRIMFIELD, MASS.

LOCATION.—At two-span highway bridge near West Brimfield station of Boston & Albany Railroad, Hampden County, one-third mile above mouth of Blodgett Mill Brook.

DRAINAGE AREA.—150 square miles

RECORDS AVAILABLE.—August 23, 1909, to September 30, 1924.

GAGE.—Water-stage recorder on left bank, upstream side of bridge; inspected by Mrs. G. G. Allen.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Stream bed covered with boulders, gravel, and alluvial deposits; slight shifts in control have occurred at various times.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 1,750 second-feet at 9 a. m. April 7; minimum discharge, 10 second-feet at 7 p. m. October 17 (water held back by dams).

1909–1924: Maximum discharge recorded, 1,980 second-feet March 17, 1920; minimum discharge, 2.5 second-feet September 17 and 18, 1910 (water held back by dams).

ICE.—Ice usually forms on rocks and along banks, and stage-discharge relation is affected during most winters.

REGULATION.—Flow affected by operation of power plants at several places above gage. At low stages this causes a large variation in discharge on days when the mills are in operation and a low discharge on Sundays and holidays.

ACCURACY.—Stage-discharge relation changed slightly at various times. Rating curves well defined. Operation of water-stage recorder satisfactory throughout year. Daily discharge for open-water periods ascertained by discharge integrator; during winter by applying rating table to mean daily gage height corrected for effect of ice. Records good.

Discharge measurements of Quaboag River at West Brimfield, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 5	[a] 3.40	350	Apr. 11	[b] 5.17	1,300	July 29	1.85	17.7
Do	[a] 3.22	327	Apr. 23	[b] 4.33	812	Sept. 26	1.93	37.9
Jan. 29	[a] 3.45	444	May 26	[b] 3.07	273	Do	1.95	40.2
Mar. 15	2.87	244	June 8	[b] 2.74	187	Sept. 27	2.13	67
Do	2.99	283	July 28	[b] 2.23	71			

[a] Stage-discharge relation affected by ice.
[b] Stage-discharge relation affected by débris.

Daily discharge, in second-feet, of Quaboag River at West Brimfield, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	126	380	300	435	175	610	490	220	72	80	73
2	34	112	355	265	345	200	570	475	215	67	52	82
3	35	95	315	285	310	200	540	455	200	67	62	97
4	33	98	285	380	295	215	610	420	205	61	68	80
5	35	98	335	370	285	155	730	370	225	63	59	77
6	33	84	620	370	205	210	790	345	220	60	53	82
7	36	98	550	480	220	270	1,310	320	200	54	57	82
8	41	104	500	600	215	225	1,430	305	186	53	61	81
9	39	88	480	570	215	260	1,550	310	190	52	48	82
10	35	72	460	400	225	375	1,480	315	180	61	58	112
11	35	72	520	750	215	410	1,330	300	166	60	72	106
12	33	85	485	920	205	320	1,230	360	150	65	78	97
13	28	61	445	880	210	275	1,130	415	140	74	97	91
14	38	63	435	820	210	265	990	395	130	81	85	86
15	40	75	420	740	255	300	900	410	124	69	73	85
16	32	71	415	780	225	240	860	395	116	65	55	83
17	32	70	370	980	180	230	760	370	112	69	62	81
18	32	74	350	980	160	285	730	350	106	60	67	78
19	28	73	370	940	220	295	830	315	104	52	58	71
20	32	69	320	880	205	300	810	315	89	46	56	73
21	39	71	300	650	200	340	790	290	104	65	57	67
22	40	80	280	490	240	365	830	285	110	51	48	77
23	54	83	380	640	255	430	820	265	106	48	60	82
24	235	235	430	640	225	495	770	265	99	43	52	77
25	235	450	400	520	205	530	730	280	114	47	66	74
26	172	390	365	355	205	510	680	265	128	37	90	62
27	138	355	365	300	200	480	610	260	110	45	104	54
28	134	330	365	580	195	490	570	255	83	51	93	56
29	124	300	335	540	195	500	520	265	88	38	90	68
30	114	305	340	405	-------	620	490	245	82	42	72	63
31	138	-------	330	395	-------	600	-------	225	-------	48	79	-------

NOTE.—Stage-discharge relation affected by ice Jan. 3–10 and Jan. 21 to Feb. 27; discharge for these periods based on gage height corrected for effect of ice.

Monthly discharge of Quaboag River at West Brimfield, Mass., for the year ending September 30, 1924

[Drainage area, 150 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	235	28	68.2	0.455	0.52
November	450	61	143	.953	1.06
December	620	280	397	2.65	3.06
January	980	265	587	3.91	4.51
February	435	160	233	1.55	1.67
March	620	155	341	2.27	2.62
April	1,550	490	867	5.78	6.45
May	490	225	333	2.22	2.56
June	225	82	143	.953	1.06
July	81	37	57.0	.380	.44
August	104	48	68.1	.454	.52
September	112	54	79.3	.529	.59
The year	1,550	28	276	1.84	25.06

WESTFIELD RIVER AT KNIGHTSVILLE, MASS.

LOCATION.—At single-span steel highway bridge known locally as Pitcher Bridge, in Knightville, town of Huntington, Hampshire County, 1 mile north of outlet of Norwich Lake and 3 miles above confluence with Middle Branch of Westfield River.

DRAINAGE AREA.—162 square miles.

RECORDS AVAILABLE.—August 26, 1909, to September 30, 1924.

GAGE.—Chain attached to downstream side of highway bridge; read by Russell Burr.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel rough, covered with boulders and ledge rock; control practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.8 feet at 9 a. m. April 7 (discharge by extension of rating curve, 10,500 second-feet); minimum stage, 0.87 foot at 7 a. m. July 30 and 5 p. m. August 10 (discharge, 17 second-feet).

1909–1924: Maximum stage recorded, that of April 7, 1924; minimum stage recorded, 0.60 foot on August 10, 1913 (discharge, 4 second-feet).

ICE.—Ice usually forms in the river early in winter and seriously affects the stage-discharge relation.

REGULATION.—Flow not seriously affected by regulation.

ACCURACY.—Stage-discharge relation practically permanent. Although individual discharge measurements have at times appeared erratic, the rough and irregular channel causes difficulty in obtaining accurate discharge measurements. Rating curve fairly well defined below 3,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying rating table to mean daily gage heights, with corrections for effect of ice. Records good.

The following discharge measurements were made:

March 19, 1924: Gage height, 1.90 feet[5]; discharge, 159 second-feet.

April 9, 1924: Gage height, 3.87 feet; discharge, 1,260 second-feet.

June 10, 1924: Gage height, 1.86 feet; discharge, 177 second-feet.

[5] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Westfield River at Knightville, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	330	1,930	275	240	110	625	1,200	225	54	73	20
2	47	292	812	225	210	100	1,050	945	210	49	58	54
3	38	250	595	330	200	120	980	625	225	49	37	90
4	39	180	460	747	210	125	1,930	540	292	49	26	81
5	42	190	747	390	190	200	2,580	512	330	49	23	85
6	30	160	2,940	292	200	370	2,940	412	257	46	21	175
7	24	540	1,280	275	210	400	7,020	370	240	43	37	100
8	24	485	812	292	175	310	2,360	205	186	56	21	64
9	36	330	685	275	160	290	1,280	485	191	117	19	186
10	39	225	512	257	135	350	1,730	910	163	82	18	1,730
11	37	210	812	1,930	165	320	1,540	1,280	158	70	24	350
12	36	210	567	1,830	145	270	1,120	1,730	153	60	47	225
13	33	196	460	780	140	220	1,050	1,360	141	51	77	134
14	37	165	512	567	145	180	1,830	812	113	90	61	109
15	37	151	330	350	135	170	1,280	685	106	81	37	92
16	37	144	330	330	125	160	910	540	100	60	26	76
17	39	153	292	2,360	120	155	747	460	97	41	22	70
18	37	158	240	877	115	150	685	412	92	156	39	65
19	39	156	210	595	120	155	3,180	460	89	77	33	61
20	47	117	257	485	125	175	1,280	390	82	51	31	60
21	56	121	292	292	150	240	945	350	85	46	26	57
22	47	191	292	225	135	275	1,360	330	95	42	23	58
23	39	196	715	225	120	390	1,450	310	89	37	36	99
24	4,090	945	655	240	105	567	910	275	81	29	29	99
25	2,360	1,360	435	310	130	625	715	715	82	20	33	93
26	715	512	350	240	125	485	595	412	104	18	136	85
27	412	540	310	199	120	435	485	330	76	21	146	77
28	292	540	275	210	125	655	485	485	74	20	64	70
29	225	370	275	240	115	812	435	412	68	18	43	61
30	210	512	194	280	-------	1,050	435	350	60	18	28	58
31	310	-------	275	300	-------	910	-------	275	-------	28	22	-------

NOTE.—Stage-discharge relation affected by ice Jan. 28 to Mar. 20; discharge for this period based on gage height corrected for effect of ice.

Monthly discharge of Westfield River at Knightville, Mass., for the year ending September 30, 1924

[Drainage area, 162 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,090	24	307	1.90	2.19
November	1,360	117	331	2.04	2.28
December	2,940	194	608	3.75	4.32
January	2,360	199	523	3.23	3.72
February	240	105	151	.932	1.01
March	1,050	100	348	2.15	2.48
April	7,020	435	1,460	9.01	10.05
May	1,730	205	599	3.70	4.27
June	330	60	142	.877	.98
July	156	18	52.5	.324	.37
August	146	18	42.5	.262	.30
September	1,730	20	153	.944	1.05
The year	7,020	18	393	2.43	33.02

WESTFIELD RIVER NEAR WESTFIELD, MASS.

LOCATION.—At Trap Rock Crossing, 1 mile below mouth of Big Brook, 2 miles below mouth of Westfield Little River, and 3 miles east of Westfield, Hampden County.

DRAINAGE AREA.—496 square miles.

RECORDS AVAILABLE.—June 27, 1914, to September 30, 1924.

GAGE.—Water-stage recorder on right bank; inspected by Andrew Kelly.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed covered with gravel and alluvial deposits; some aquatic vegetation in channel during summer. Riffle of boulders 200 feet below gage forms control at low and medium stages. At high stages control is probably formed by crest of storage dam at Mittineague, 3 miles below station.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 22.13 feet at 2 p. m. April 7 (discharge by extension of rating curve, 24,500 second-feet); minimum stage, 3.17 feet at 2 a. m. October 5 (discharge, by extension of rating curve, 84 second-feet).

1914–1924: Maximum stage recorded, that of April 7, 1924; minimum stage, 2.78 feet on October 2, 1921 (discharge by extension of rating curve, 9 second-feet).

ICE.—Stage-discharge relation seldom, if ever, affected by ice. River freezes over above and below gage, but control remains open throughout winter.

DIVERSIONS.—Water is diverted from Westfield Little River and carried to Springfield for municipal use.

REGULATION.—There are several power plants above station but diurnal fluctuation is small; nearest dam is at Westfield.

ACCURACY.—Stage-discharge relation probably changed during high water in April. Rating curves well defined between 100 and 7,500 second-feet. Operation of-water-stage recorder satisfactory throughout year except as indicated in footnote to daily-discharge table. Daily discharge ascertained by application of rating table to mean daily gage height as determined from recorder sheets. Records good.

Discharge measurements of Westfield River near Westfield, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 20	4.14	366	Feb. 1	4.84	728	July 31	3.43	189
Do	4.14	364	Mar. 18	4.26	456	Sept. 25	3.51	199
Nov. 26	5.38	1,190	June 9	4.64	712	Sept. 26	3.54	202
Feb. 1	4.90	862						

Daily discharge, in second-feet, of Westfield River near Westfield, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	171	942	4,520	779	821	328	1,580	2,260	717	229	177	155
2	180	667	2,120	590	730	302	1,250	2,030	704	214	170	150
3	160	514	1,550	842	681	365	1,210	1,510	652	208	172	220
4	130	410	1,250	1,620	716	348	1,320	1,400	639	211	185	320
5	127	472	1,400	1,210	625	400	2,350	1,400	925	229	175	185
6	140	390	5,300	835	625	681	3,320	1,170	848	193	120	278
7	127	737	3,660	870	646	1,060	17,100	1,100	806	202	165	288
8	132	1,210	2,120	744	534	842	7,600	1,030	678	190	165	278
9	125	863	1,620	702	472	786	3,900	1,320	672	217	167	217
10	145	660	1,400	744	375	1,020	4,260	2,300	572	278	157	3,320

Daily discharge, in second-feet, of Westfield River near Westfield, Mass., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	150	490	1,660	3,210	496	863	4,020	1,740	475	241	165	1,280
12	152	534	1,620	5,580	440	751	3,210	3,430	440	208	205	620
13	142	455	1,280	2,500	420	646	2,900	4,390	396	226	187	396
14	155	490	1,360	1,900	430	562	3,540	2,700	344	193	193	257
15	177	440	1,100	1,360	405	576	3,210	2,030	332	205	185	285
16	150	466	950	1,320	370	390	2,260	1,740	360	199	172	217
17	150	472	950	5,580	348	490	1,940	1,470	313	205	160	190
18	147	425	744	2,700	425	460	1,820	1,250	285	210	162	205
19	160	435	576	1,980	356	490	6,700	1,320	278	230	130	199
20	155	370	660	1,660	352	490	3,660	1,170	260	220	125	190
21	174	356	800	1,210	352	681	2,700	1,100	250	210	135	155
22	165	348	800	985	352	632	2,900	1,060	271	200	137	202
23	207	478	1,360	835	356	934	4,020	960	344	190	150	208
24	11,000	1,620	1,900	856	309	1,430	2,550	890	250	185	145	196
25	5,250	2,250	1,320	863	390	1,700	2,030	1,660	264	180	165	226
26	1,850	1,430	1,130	886	352	1,430	1,740	1,360	271	175	214	211
27	1,100	1,280	926	814	336	1,060	1,510	1,060	281	180	185	202
28	850	1,360	856	886	375	1,250	1,400	1,100	250	180	226	180
29	604	950	800	793	320	1,860	1,280	1,140	235	175	196	202
30	466	1,280	590	856	-------	2,400	1,250	925	244	170	180	264
31	1,130	-------	716	910	-------	2,500	-------	820	-------	170	185	-------

NOTE.—Water-stage recorder not in operation Oct. 24–28, July 18–19, and 21–30; discharge for these periods estimated by comparison with other records in Westfield River basin.

Monthly discharge of Westfield River near Westfield, Mass., for the year ending September 30, 1924

[Drainage area, 496 square miles]

Month	Observed discharge in second-feet			Diversion from Westfield Little River in millions of gallons	Total discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean		Mean	Per square mile	
October	11,000	125	831	401.41	851	1.72	1.98
November	2,250	348	760	422.88	782	1.58	1.76
December	5,300	576	1,520	399.11	1,540	3.10	3.57
January	5,580	590	1,500	401.11	1,520	3.06	3.53
February	821	309	462	379.47	482	.972	1.05
March	2,500	302	894	415.19	915	1.84	2.12
April	17,100	1,210	3,280	426.11	3,300	6.65	7.42
May	4,390	820	1,580	420.65	1,600	3.23	3.72
June	925	235	445	425.20	467	.942	1.05
July	278	170	204	480.10	228	.460	.53
August	226	120	170	447.46	192	.387	.45
September	3,320	150	377	460.70	401	.808	.90
The year	17,100	120	1,000	5,079.39	1,020	2.06	28.08

NOTE.—The effect of storage in Borden Brook Reservoir not taken into account in computing the total discharge.

MIDDLE BRANCH OF WESTFIELD RIVER AT GOSS HEIGHTS, MASS.

LOCATION.—At highway bridge in Goss Heights, Hampshire County, half a mile above confluence of Middle and North Branches of Westfield River, and 1½ miles above Huntington.

DRAINAGE AREA.—53 square miles.

RECORDS AVAILABLE.—July 14, 1910, to September 30, 1924.

GAGE.—Water-stage recorder on right bank upstream side of bridge abutment; inspected by Chester W. Cady.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel covered with coarse gravel and boulders. Control somewhat shifting.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.88 feet at 4 a. m. April 7 (discharge from extension of rating curve, 2,270 second-feet); minimum discharge, 2.5 second-feet several times during October.

1910–1924: Maximum open-water stage recorded, 7.33 feet on July 8, 1915 (discharge by extension of rating curve, 4,500 second-feet; a gage height of 7.8 feet was recorded on March 13, 1920, but channel was obstructed by ice at the time); minimum discharge, practically zero on October 26–27, 1914.

ICE.—River usually frozen over during greater part of winter; ice jams occasionally form below gage, causing several feet of backwater.

REGULATION.—Flow somewhat affected at times by operation of small power plant 2 miles above station.

ACCURACY.—Stage-discharge relation changed during high water in April. Rating curves well defined below 1,000 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by applying rating table to mean daily gage height determined by inspection of recorder graph with corrections for effect of ice. Records good during open-water periods and fair during winter.

Discharge measurements of Middle Branch of Westfield River at Goss Heights, Mass., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 21	1.04	36.1	Apr. 9	2.51	521	Aug. 1	0.77	7.9
Do	1.04	42.1	June 10	1.04	55	Sept. 25	.80	14.4
Feb. 2	[a] 1.63	62	Do	1.04	51	Do	.80	14.8
Mar. 19	[a] 1.55	45						

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Middle Branch of Westfield River at Goss Heights, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.0	152	682	100	70	35	182	312	56	12	12	12
2	8.0	120	248	135	62	32	142	206	47	12	13	31
3	7.0	108	179	220	58	39	140	152	41	12	13	35
4	6.0	104	147	190	62	44	163	142	42	12	12	14
5	5.0	108	251	135	54	56	354	125	125	12	12	15
6	5.0	106	980	115	70	100	450	107	76	12	12	31
7	3.0	204	378	100	78	130	1,160	94	72	12	12	19
8	3.0	190	236	100	66	105	517	86	53	12	12	12
9	3.0	108	195	115	56	100	472	142	53	21	12	184
10	3.5	68	171	165	46	120	565	215	47	19	12	410
11	3.5	68	242	980	60	105	490	155	42	13	13	86
12	4.0	68	195	878	54	84	361	472	35	13	15	42
13	3.5	68	166	233	52	70	372	382	32	12	23	28
14	3.0	68	187	171	54	56	517	224	31	12	15	21
15	3.5	70	152	137	54	48	351	182	28	11	14	19
16	3.0	68	135	176	48	41	239	150	23	11	15	15
17	3.5	70	115	715	46	48	192	125	18	10	16	15
18	3.0	74	105	251	54	46	206	107	16	10	18	14
19	4.0	79	100	179	44	48	1,010	112	16	11	18	14
20	8.0	62	115	135	48	52	351	96	15	11	16	13

Daily discharge, in second-feet, of Middle Branch of Westfield River at Goss Heights, Mass., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	12	52	100	105	60	79	260	90	15	12	15	12
22	10	48	90	90	52	83	380	90	16	13	15	12
23	10	58	221	84	44	122	442	78	15	13	15	16
24	1,120	257	242	90	40	182	254	80	13	13	15	19
25	490	248	166	94	44	184	200	192	14	13	15	15
26	176	150	145	90	43	150	170	115	14	14	16	13
27	113	174	125	80	42	125	152	90	14	14	24	11
28	94	171	115	86	41	190	135	112	14	13	18	11
29	85	127	110	90	38	215	117	102	13	13	15	13
30	79	297	100	92	-------	350	112	80	13	13	14	223
31	204	-------	94	100	-------	297	-------	66	-------	12	13	-------

NOTE.—Stage-discharge relation affected by ice Dec. 16–22, Dec. 29 to Jan. 10, and Jan. 20 to Mar. 21; discharge for these periods based on gage height corrected for effect of ice.

Monthly discharge of Middle Branch of Westfield River at Goss Heights, Mass., for the year ending September 30, 1924

[Drainage area, 53 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,120	3.0	80.1	1.51	1.74
November	297	48	118	2.23	2.49
December	980	90	209	3.94	4.54
January	980	80	201	3.79	4.37
February	78	38	53.1	1.00	1.08
March	350	32	108	2.04	2.35
April	1,160	112	349	6.58	7.34
May	472	66	151	2.85	3.29
June	125	13	33.6	.634	.71
July	21	10	12.7	.240	.28
August	24	12	14.8	.279	.32
September	410	11	45.8	.864	.96
The year	1,160	3.0	115	2.17	29.47

FARMINGTON RIVER NEAR NEW BOSTON, MASS.

LOCATION.—At highway bridge a quarter of a mile below Clam River and 1 mile south of New Boston, Berkshire County.

DRAINAGE AREA.—92.7 square miles.

RECORDS AVAILABLE.—May 27, 1913, to September 30, 1924.

GAGE.—Water-stage recorder on left bank, downstream side of bridge; inspected by George Snow.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel rocky and covered with boulders; control practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 7.84 feet at 9 a. m. April 7 (discharge by extension of rating curve, 3,450 second-feet); minimum stage, 2.53 feet at midnight September 1 (discharge, 18 second-feet).

1913–1924: Maximum discharge, that of April 7, 1924; minimum stage, 2.22 feet on August 27, 1913 (discharge, 4.4 second-feet; water held back by dam).

ICE.—River usually frozen over during greater part of winter with occasional ice jams below gage.

REGULATION.—Flow affected by storage in Otis Reservoir about 5 miles above New Boston, which has a capacity of 880,000,000 cubic feet, and by operation of a woodworking shop just above station.

ACCURACY.—Stage-discharge relation practically permanent during year. Rating curve well defined below 1,700 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by applying rating table to mean daily gage height determined by inspection of recorder graph, with corrections for ice. Records good.

The following discharge measurements were made:

November 22, 1923: Gage height, 3.22 feet; discharge, 71 second-feet.

March 21, 1924: Gage height, 3.47 feet; discharge, 111 second-feet.

June 12, 1924: Gage height, 3.23 feet; discharge, 74 second-feet.

Daily discharge, in second-feet, of Farmington River near New Boston, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	175	525	131	210	130	238	455	141	44	102	20
2	93	130	356	173	197	130	185	375	131	38	99	162
3	122	112	269	269	162	120	197	320	122	36	98	302
4	122	96	210	238	151	120	210	302	141	39	96	238
5	122	88	286	210	150	140	375	269	173	40	96	185
6	118	84	625	224	140	356	515	238	162	65	96	99
7	53	210	435	280	130	238	2,510	173	173	73	105	52
8	59	224	320	280	130	151	1,200	162	141	87	120	122
9	116	162	238	240	130	122	740	238	131	91	86	162
10	114	131	197	185	185	131	882	302	116	91	61	140
11	112	114	302	1,060	195	118	764	254	104	96	78	120
12	116	105	238	770	185	112	625	740	90	90	112	100
13	87	96	210	455	160	107	580	710	90	91	68	84
14	59	90	238	320	150	106	704	525	87	94	48	68
15	105	88	185	224	140	107	625	395	80	90	36	59
16	105	87	162	302	140	131	478	302	71	88	27	45
17	106	74	141	710	130	122	395	269	70	87	36	40
18	104	71	120	375	130	102	478	238	60	93	96	39
19	82	75	120	286	130	100	1,220	238	61	86	131	73
20	75	85	115	238	150	107	710	197	52	93	151	76
21	70	73	120	131	175	110	550	185	65	104	151	81
22	110	74	131	122	150	122	740	173	66	105	141	93
23	105	73	286	160	150	162	710	162	60	104	90	162
24	1,310	70	320	150	140	254	478	173	54	100	90	151
25	740	85	224	200	150	224	375	435	75	100	87	151
26	337	98	185	230	150	162	320	286	90	67	86	105
27	224	238	151	300	140	141	269	238	65	64	36	105
28	162	238	151	440	140	197	254	269	59	70	27	110
29	122	185	122	500	140	238	286	210	54	94	26	104
30	106	356	122	337	------	435	269	185	47	94	23	210
31	254	------	141	238	------	356	------	162	------	98	22	------

NOTE.—Stage-discharge relation affected by ice Dec. 19–21, Jan. 7–9, 23–28, and Feb. 5 to Mar. 5; discharge or t hese periods based on gage height corrected for effect of ice.

Monthly discharge of Farmington River near New Boston, Mass., for the year ending September 30, 1924

[Drainage area, 92.7 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,310	53	177	1.91	2.20
November	356	70	126	1.36	1.52
December	625	115	234	2.52	2.90
January	1,060	122	315	3.40	3.92
February	210	130	153	1.65	1.78
March	435	100	166	1.79	2.06
April	2,510	185	596	6.43	7.17
May	740	162	296	3.19	3.68
June	173	47	94.4	1.02	1.14
July	105	36	81.0	.874	1.01
August	151	22	81.3	.877	1.01
September	302	20	115	1.24	1.38
The year	2,510	20	203	2.19	29.77

HOUSATONIC RIVER BASIN

HOUSATONIC RIVER NEAR GREAT BARRINGTON, MASS.

LOCATION.—At highway bridge one-fourth mile northeast of Van Deusenville station of New York, New Haven & Hartford Railroad and 2 miles north of Great Barrington, Berkshire County.

DRAINAGE AREA.—280 square miles.

RECORDS AVAILABLE.—May 17, 1913, to September 30, 1924.

GAGES.—Inclined staff attached to concrete anchorages on downstream side of left abutment of highway bridge; vertical high-water section attached to bridge abutment; read by Mrs. Herbert Armstrong.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; control for high stages not well defined; at low stages control is riffle a few hundred feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.6 feet at 6 p. m. April 7 (discharge by extension of rating curve, 4,900 second-feet); minimum stage, 0.4 foot at 6 p. m. August 30 (discharge, 4 second-feet).

1913–1924: Maximum stage recorded, 8.0 feet on March 31, 1916 (discharge by extension of rating curve, 5,300 second-feet). Zero flow recorded at various times caused by storage of water at dams above.

ICE.—Stage-discharge relation seldom, if ever, affected by ice, although river freezes over a few hundred feet downstream from gage.

REGULATION.—Storage above dam of a paper mill 1 mile above station causes low flow on Sundays and holidays.

ACCURACY.—Stage-discharge relation probably permanent during year. Rating curve fairly well defined between 10 and 2,000 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying rating table to mean daily gage height. Records fair.

The following discharge measurement was made:

June 11, 1924: Gage height, 2.13 feet; discharge, 398 second-feet.

Daily discharge, in second-feet, of Housatonic River near Great Barrington, Mass., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96	780	1,570	365	415	175	885	920	320	365	175	115
2	76	745	1,890	710	440	105	675	990	415	280	150	162
3	175	390	1,810	640	415	190	675	885	390	175	222	260
4	175	320	1,410	780	260	365	675	815	440	120	240	300
5	205	390	1,200	640	320	260	580	990	390	140	240	342
6	140	465	1,340	390	342	390	990	920	222	92	175	240
7	43	465	1,650	675	342	465	3,550	780	150	135	240	53
8	205	580	1,570	640	320	365	4,700	640	390	130	280	260
9	140	745	1,270	580	162	260	4,100	710	342	280	90	365
10	162	710	1,200	550	260	415	3,190	675	320	260	43	1,060
11	150	520	1,200	990	240	520	2,830	492	365	260	162	990
12	162	520	1,270	2,380	465	465	2,470	780	260	190	130	850
13	145	675	1,130	1,970	260	390	1,890	1,130	320	205	280	550
14	43	520	990	1,490	320	240	1,970	1,200	280	62	190	320
15	96	465	990	1,200	300	150	2,290	1,130	365	125	205	465
16	190	440	640	990	300	300	2,050	780	240	260	110	465
17	145	465	640	1,270	96	260	1,970	640	440	240	24	280
18	117	280	640	1,410	342	342	1,270	610	260	222	24	240
19	120	320	610	1,270	280	240	1,970	745	260	100	205	175
20	28	320	580	1,060	190	280	2,210	675	320	53	162	22
21	55	280	580	850	205	280	2,470	520	320	120	205	40
22	76	280	550	675	162	342	2,130	492	260	80	260	150
23	162	390	520	520	205	320	2,290	465	205	162	32	205
24	885	640	920	492	240	520	2,210	390	205	205	16	260
25	2,560	710	745	610	280	815	1,810	440	280	140	76	260
26	2,210	1,130	990	492	280	780	1,410	520	205	62	145	175
27	1,340	920	780	390	222	640	1,060	745	175	84	162	137
28	440	1,060	710	240	240	610	920	675	150	48	162	43
29	610	815	710	440	240	492	990	640	127	162	150	342
30	492	990	640	440	-------	550	885	520	205	175	13	280
31	780	-------	465	492	-------	745	-------	465	-------	240	18	-------

Monthly discharge of Housatonic River near Great Barrington, Mass., for the year ending September 30, 1924

[Drainage area, 280 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,560	28	394	1.41	1.63
November	1,130	280	578	2.06	2.30
December	1,890	465	1,010	3.61	4.16
January	2,380	240	827	2.95	3.40
February	465	96	281	1.00	1.08
March	815	105	396	1.41	1.63
April	4,700	580	1,900	6.79	7.58
May	1,200	390	722	2.58	2.97
June	440	127	287	1.02	1.14
July	365	48	167	.596	.69
August	280	13	148	.529	.61
September	1,060	22	314	1.12	1.25
The year	4,700	13	585	2.09	28.44

HOUSATONIC RIVER AT FALLS VILLAGE, CONN.

LOCATION.—Half a mile below power plant of Connecticut Power Co., at Falls Village, Litchfield County.

DRAINAGE AREA.—644 square miles.

RECORDS AVAILABLE.—July 11, 1912, to September 30, 1924.

GAGE.—Water-stage recorder on left bank; inspected by an employee of the Connecticut Power Co.

DISCHARGE MEASUREMENTS.—Made from cable 150 feet above gage or by wading.

CHANNEL AND CONTROL.—Channel deep and fairly uniform in cross section; one channel at all stages. Control not clearly defined except at low stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 12.86 feet at 6 p. m. April 7 (discharge, 8,390 second-feet); minimum stage, 0.25 foot at 3 p. m. September 7 (discharge, practically nil, by extension of rating curve; water held back by dam).

1912–1924: Maximum stage recorded, 13.3 feet March 29, 1914 (discharge, 8,830 second-feet); minimum stage, zero flow at various times when water was held back by dam.

ICE.—Stage-discharge relation affected by ice during some winters.

REGULATION.—Low-water flow is completely regulated by power plant at Falls Village.

ACCURACY.—Stage-discharge relation fairly permanent. Rating curve fairly well defined between 100 and 7,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by use of discharge integrator. Records fair.

The following discharge measurements were made:

June 12, 1924: Gage height, 2.90 feet; discharge, 868 second-feet.

June 12, 1924: Gage height, 2.53 feet; discharge, 763 second-feet.

Daily discharge, in second-feet, of Housatonic River at Falls Village, Conn., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	1,460	2,850	1,160	1,020	490	1,580	1,800	750	239	226	242
2	265	1,360	3,400	1,000	930	285	1,380	1,850	850	368	185	306
3	230	1,180	3,250	1,360	760	305	1,200	1,850	850	392	107	286
4	205	880	2,950	1,400	750	330	1,200	1,680	925	121	269	412
5	220	790	2,500	1,740	700	540	1,380	1,630	1,080	249	216	303
6	285	860	2,800	1,440	730	820	2,200	1,520	775	83	191	514
7	130	1,120	3,350	1,380	770	980	6,200	1,410	900	282	197	216
8	198	1,360	3,200	1,380	610	850	7,330	1,220	675	269	384	320
9	190	1,420	2,850	1,440	560	710	6,560	1,280	775	429	316	800
10	215	1,400	2,300	1,340	480	850	5,760	1,410	640	564	149	2,120
11	168	980	2,200	2,200	520	770	5,250	1,180	775	429	303	2,070
12	188	1,040	2,200	4,100	440	890	4,590	1,520	630	356	469	1,680
13	164	1,100	2,050	3,600	640	750	3,950	2,360	630	229	469	1,360
14	59	860	1,980	3,250	630	600	3,470	2,180	630	252	388	595
15	174	840	1,920	2,550	630	530	3,320	2,020	514	249	356	546
16	184	900	1,700	2,000	630	230	3,100	1,800	537	303	309	650
17	140	680	1,580	2,650	390	450	2,800	1,520	514	292	216	460
18	136	690	1,360	2,650	450	440	2,360	1,220	514	269	282	384
19	136	640	1,240	2,400	500	470	3,470	1,280	514	242	242	337
20	102	420	1,160	2,000	770	380	4,190	1,330	438	236	258	337
21	150	660	1,140	1,440	580	740	4,110	1,200	483	203	262	144
22	168	480	1,180	1,360	530	670	3,870	1,180	573	203	275	469
23	200	670	1,240	1,700	440	800	4,030	1,150	460	203	249	416
24	1,980	1,040	1,760	1,520	415	1,140	3,790	1,050	404	286	107	372
25	3,550	1,500	1,760	1,240	500	1,240	3,400	1,520	537	226	185	384
26	3,550	1,520	1,660	1,120	405	1,280	2,800	1,520	555	168	236	272
27	3,100	1,780	1,440	1,220	420	1,060	2,240	1,280	384	70	282	216
28	2,200	1,980	1,400	1,120	440	1,080	1,960	1,200	303	206	330	216
29	1,380	1,940	1,400	1,020	440	1,260	1,850	1,300	203	182	326	303
30	1,080	1,820	1,040	1,140	-------	1,300	1,740	900	303	168	424	800
31	1,260	-------	1,020	1,080	-------	1,500	-------	900	-------	191	176	-------

Monthly discharge of Housatonic River at Falls Village, Conn., for the year ending September 30, 1924

[Drainage area, 644 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,550	59	719	1.12	1.29
November	1,980	420	1,110	1.72	1.92
December	3,400	1,020	2,000	3.11	3.58
January	4,100	1,000	1,770	2.75	3.17
February	1,020	390	589	.915	.99
March	1,500	230	766	1.19	1.37
April	7,330	1,200	3,370	5.23	5.84
May	2,360	900	1,460	2.27	2.62
June	1,080	203	604	.939	1.05
July	564	70	257	.399	.46
August	469	107	270	.419	.48
September	2,120	144	584	.908	1.01
The year	7,330	59	1,120	1.74	23.78

NAUGATUCK RIVER NEAR NAUGATUCK, CONN.

LOCATION.—One-fifth mile above Beacon Hill Brook and 1.3 miles below city of Naugatuck, New Haven County.

DRAINAGE AREA.—247 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 15, 1918, to September 30, 1924, when station was discontinued.

GAGE.—Water-stage recorder on left bank; inspected by T. C. Melbourne.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel deep and fairly uniform in section at gage; control is well-defined riffle a few hundred feet downstream.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 12.08 feet at noon, April 7 (discharge by extension of rating curve, 10,800 second-feet); minimum discharge, 62 second-feet at 2 a. m. October 2 (water held back by dams).

1918–1924: Maximum stage recorded, that of April 7, 1924. Minimum discharge, 34 second-feet August 31, 1921, and several times during October, 1921 (water held back by dams).

ICE.—Ice forms near gage, but stage-discharge relation not affected.

REGULATION.—Distribution of flow somewhat affected by operation of mills at Naugatuck and towns above, also by several small reservoirs.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 90 and 2,500 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by applying rating table to mean daily gage height, as taken from recorder sheets. Records good.

COOPERATION.—Occasional discharge measurements and assistance in maintaining station equipment furnished by Professor Roscoe H. Suttie of Sheffield Scientific School, Yale University.

Discharge measurements of Naugatuck River near Naugatuck, Conn., during 1923–24

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
1923	*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*
Nov. 23	1.30	184	Nov. 24	2.87	926	Oct. 7	1.04	130
Do	1.31	208	Dec. 16	1.96	395			

Daily discharge, in second-feet, of Naugatuck River near Naugatuck, Conn., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	327	1,470	420	440	195	680	638	334	147	93	82
2	83	273	710	378	382	190	540	662	321	135	87	95
3	82	240	535	842	374	219	520	495	303	130	82	101
4	83	204	435	1,270	374	252	614	430	510	116	83	105
5	82	190	620	746	350	330	1,150	394	947	114	85	133
6	73	190	2,310	490	354	495	1,630	350	550	106	83	130
7	65	358	1,390	465	338	704	7,140	374	510	110	92	96
8	67	354	856	425	309	406	2,760	370	415	103	92	99
9	77	276	680	398	270	406	1,670	870	406	106	83	110
10	76	222	608	402	249	734	1,390	1,150	342	110	174	294
11	77	197	632	2,310	270	590	1,150	740	297	103	118	199
12	79	210	602	2,220	255	550	975	1,790	270	96	261	140
13	66	187	510	1,120	231	420	870	2,220	255	124	216	110
14	66	185	515	863	219	358	856	1,270	249	162	118	90
15	80	177	445	644	222	324	746	1,010	246	130	97	90
16	80	177	402	905	202	279	638	870	240	114	82	92
17	79	165	402	3,220	179	276	572	740	204	110	83	92
18	77	160	350	1,470	210	291	560	638	197	108	93	87
19	79	162	312	1,040	197	342	2,670	692	190	99	92	87
20	87	160	315	940	199	334	1,430	590	182	95	90	80
21	76	152	330	716	202	470	1,080	578	261	93	93	82
22	85	162	370	490	199	398	1,040	584	228	93	88	88
23	162	185	814	515	177	550	1,470	470	192	93	95	187
24	2,490	740	1,040	480	170	698	940	465	172	93	83	135
25	1,470	680	722	835	190	734	758	752	167	92	95	103
26	638	475	550	800	192	614	668	560	172	95	240	96
27	386	378	460	460	187	485	602	435	165	85	190	83
28	288	366	465	410	190	470	545	465	162	83	118	82
29	267	312	475	415	195	584	490	445	147	83	101	87
30	246	490	402	445	-------	1,150	480	460	160	83	85	225
31	318	-------	406	450	-------	1,040	-------	390	-------	88	82	-------

Monthly discharge of Naugatuck River near Naugatuck, Conn., for the year ending September 30, 1924

[Drainage area, 247 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,490	65	257	1.04	1.20
November	740	152	278	1.13	1.26
December	2,310	312	649	2.63	3.03
January	3,220	378	858	3.47	4.00
February	440	170	253	1.02	1.10
March	1,150	190	480	1.94	2.24
April	7,140	480	1,220	4.94	5.51
May	2,220	350	706	2.86	3.30
June	947	147	293	1.19	1.33
July	162	83	106	.429	.49
August	261	82	112	.453	.52
September	294	80	116	.470	.52
The year	7,140	65	445	1.80	24.50

HUDSON RIVER BASIN

HUDSON RIVER AT GOOLEY, NEAR INDIAN LAKE, N. Y.

LOCATION.—Half a mile above Gooley, Essex County, 1½ miles below mouth of Cedar River, 1 mile above mouth of Indian River, and 5 miles northeast of Indian Lake village, Hamilton County.

DRAINAGE AREA.—418 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 30, 1916, to September 30, 1924.

GAGE.—Gurley printing water-stage recorder on right bank; inspected by engineers from Albany office of Geological Survey.

DISCHARGE MEASUREMENTS.—Made from cable 100 yards below gage or by wading.

CHANNEL AND CONTROL.—Solid ledge overlain with coarse gravel; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year not recorded; minimum stage from water-stage recorder, 1.54 feet from 1 p. m. October 22 to 11 p. m. October 23 (0.05 foot backwater effect from logs on control; discharge, 83 second-feet).

1916–1924: Maximum stage recorded, 10.0 feet at 8.15 a. m. April 12, 1922 (discharge, 13,900 second-feet); minimum stage, 1.38 feet from 8 p. m. August 22 to 10 p. m. August 23, 1923 (discharge, 44 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Large diurnal fluctuation due to logging operations during spring. Seasonal distribution of flow slightly affected by storage.

ACCURACY.—Stage-discharge relation practically permanent except as affected by backwater from logs and by ice. Rating curve very well defined between 200 and 7,500 second-feet. Operation of water-stage recorder satisfactory except during periods indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height obtained by averaging the hourly gage heights, with corrections for ice or log effect wherever necessary. Records good, except during periods of ice and log effect and estimate, for which they are fair.

Discharge measurements of Hudson River at Gooley, near Indian Lake, N. Y. during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 13	[a] 2.04	257	Apr. 13	3.57	1,520
Feb. 14	[b] 2.89	446	July 10	[a] 2.25	379

[a] Stage-discharge relation affected by logs on control.
[b] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Hudson River at Gooley, near Indian Lake, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150		1,700	550	380	280	800				180	240
2	140		2,200	600	460	280	800				170	240
3	130		1,900		800	280	800				160	420
4	130		1,400		650	260					150	380
5	120		1,200		600	240				480	240	340
6	150		1,100			240					420	320
7	220	340	1,600			220					650	320
8	190		1,600			220	2,000				700	320
9	160		1,400			220					600	360
10	140		1,300		600	220				360	500	750
11	130		1,100	1,300		220				320	480	1,000
12	120		950			200				280	420	1,000
13	120		900			200				260	380	950
14	110	650	1,000		440	200	2,550			320	340	850
15	110	440	900		340	200	3,320			280	340	700
16	100	400	850		280	240	3,180	3,200	440	260	300	550
17	100	380	750		280	240	2,970			240	260	500
18	95	360	750		260	240	2,970			260	240	460
19	90	320	800		260	260	3,940			260	220	400
20	90	300	750	1,300	240	240	4,180			240	220	380
21	90	380	550	1,200	240	260	3,400			240	320	320
22	85	400	600	1,200	240	300	3,040			220	320	260
23	85	300	650	1,200	220	360	2,900			220	360	240
24	150	240	700	1,000	220	440	2,620			200	440	220
25	480	220	650	850	220	500				220	460	220
26	550	260	500	750	220	550				220	440	200
27	600	240	480	650	220	500	4,200			220	380	200
28	550	280	500	650	240	480				200	360	190
29		320	500	600	260	600				190	320	220
30	380	360	480	480	-------	700				180	280	1,700
31		-------	500	400	-------	800	-------		-------	180	260	-------

NOTE.—Water-stage recorder not operating satisfactorily and discharge for following periods estimated from comparison with records of Hudson River at North Creek and Indian River near Indian Lake: Oct. 29–31, Nov. 1–13, Jan. 3–19, Feb. 6–13, Apr. 4–13, 25–30, May 1 to July 9, and Sept. 29–30. Discharge, Oct. 1–28, Nov. 14 to Dec. 29, and July 10 to Sept. 29, determined from gage heights corrected for backwater effect from logs on control, by means of two discharge measurements; and from Dec. 30 to Jan. 2, Jan. 20 to Feb. 5, and Feb. 14 to Apr. 3, from gage heights corrected for ice effect by means of one discharge measurement, study of gage-height graph, weather records, and comparison with North Creek and Indian Lake records.

Monthly discharge of Hudson River at Gooley, near Indian Lake, N. Y., for the year ending September 30, 1924

[Drainage area, 418 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	600	85	204	0.488	0.56
November	650	220	342	.818	.91
December	2,200	480	976	2.33	2.69
January	----------	400	1,080	2.58	2.97
February	800	220	409	.978	1.05
March	800	200	329	.787	.91
April	----------	800	2,760	6.60	7.36
May	----------	----------	3,200	7.66	8.83
June	----------	----------	440	1.05	1.17
July	----------	180	313	.749	.86
August	700	150	352	.842	.97
September	1,700	190	475	1.14	1.27
The year	----------	85	908	2.17	29.55

HUDSON RIVER AT NORTH CREEK, N. Y.

LOCATION.—At two-span steel highway bridge in North Creek, Warren County, immediately above mouth of North Creek.

DRAINAGE AREA.—804 square miles.

RECORDS AVAILABLE.—September 21, 1907, to September 30, 1924.

GAGE.—Chain gage on upstream side of left span of bridge; read by William Alexander.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Heavy gravel; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.95 feet at 6.30 a. m. May 2 (discharge, 11,800 second-feet); minimum stage, 2.20 feet at 7 a. m. October 9 (discharge, 246 second-feet).

1907–1924: Maximum stage recorded, 12.0 feet during evening of March 27, 1913 (discharge, about 30,000 second-feet); minimum stage, 1.92 feet at 7.30 a. m. and 5 p. m. September 2, 1923 (discharge, 128 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Numerous lakes and ponds in the basin of the upper Hudson have a decided effect on the low-water flow, especially the reservoir at Indian Lake. Many of the reservoirs are used to make flood waves in the spring in connection with log driving.

ACCURACY.—Stage-discharge relation at low stages changed presumably at time of high water May 6; affected by ice from January 28 to March 16. Rating curve used before change well defined between 250 and 7,000 second-feet; that used after change well defined between 400 and 7,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Open-water records good except during log-driving season when mean daily gage height computed from two gage readings daily may be in error owing to large variations in stage caused by operation of sluice gates in logging dams above station. Records for period of ice effect, fair.

Discharge measurements of Hudson River at North Creek, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 13	[a] 3.70	1,360	July 11	2.56	496	Aug. 21	3.26	1,130
Apr. 12	4.42	2,780	Do	2.54	488			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Hudson River at North Creek, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	514	477	2,420	590	550	1,000	1,080	10,700	2,020	845	892	515
2	590	381	3,100	630	700	1,100	1,300	11,400	1,460	845	845	755
3	675	346	2,580	675	1,100	1,000	1,080	8,610	1,270	515	892	1,520
4	675	477	1,950	1,200	1,700	950	1,030	10,100	940	432	990	1,270
5	630	477	1,590	770	1,600	950	1,390	11,400	990	393	1,100	845
6	630	514	1,660	590	1,500	850	2,420	8,320	892	990	1,390	552
7	590	411	2,100	514	1,500	900	4,280	8,900	940	755	1,660	515
8	477	399	2,420	477	1,400	950	3,860	6,160	1,800	755	1,460	1,040
9	251	405	1,950	514	1,400	900	3,470	4,720	1,270	755	990	1,150
10	514	477	1,800	477	1,400	800	3,280	7,210	892	630	940	1,390

Daily discharge, in second-feet, of Hudson River at North Creek, N. Y., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	630	411	1,590	1,520	1,400	850	2,920	7,210	755	515	1,100	1,270
12	630	375	1,390	4,280	1,400	850	2,750	6,420	755	445	1,040	1,210
13	630	357	1,260	3,660	1,400	850	2,580	6,940	712	800	990	1,150
14	590	920	1,320	3,280	1,300	800	3,100	6,940	670	990	940	1,390
15	590	514	1,260	2,750	1,200	800	4,500	8,610	940	990	755	1,270
16	590	477	1,260	2,420	1,200	800	5,180	7,760	892	940	670	1,150
17	550	477	1,140	2,750	1,100	870	4,720	8,040	990	940	940	1,150
18	550	411	870	2,750	1,100	820	4,950	5,660	990	552	1,040	1,040
19	550	387	630	2,420	1,000	820	6,940	5,660	845	406	990	590
20	550	399	720	2,020	1,000	770	6,680	4,950	590	515	990	515
21	550	399	720	1,800	950	820	5,420	4,280	590	670	1,150	990
22	514	411	820	1,520	950	820	5,180	3,280	1,040	670	990	1,040
23	514	399	870	1,520	900	870	4,950	2,420	990	845	892	990
24	720	351	920	1,200	900	975	4,280	2,100	990	845	1,270	940
25	720	307	820	1,030	950	770	4,500	1,950	940	845	1,330	940
26	675	296	770	870	900	720	4,070	2,420	940	892	892	892
27	675	329	630	720	950	720	5,660	1,660	755	940	552	892
28	675	346	630	650	950	720	5,910	1,590	712	1,100	480	845
29	550	399	550	600	900	770	6,680	1,590	845	1,100	419	892
30	477	477	444	600	-------	920	8,040	1,800	892	1,040	380	2,920
31	411	-------	590	550	-------	1,030	-------	1,520	-------	1,040	362	-------

NOTE.—Discharge, estimated Feb. 23–24; no gage-height record. Discharge, Jan. 28 to Mar. 16, determined from gage-heights corrected for ice effect from one discharge measurement, study of observer's notes, gage-height graph, and weather records, and comparison with records of other Hudson River stations.

Monthly discharge of Hudson River at North Creek, N. Y., for the year ending September 30, 1924

[Drainage area, 804 square miles.]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	720	251	577	0.718	0.83
November	920	296	427	.531	.59
December	3,100	444	1,320	1.64	1.89
January	4,280	477	1,460	1.82	2.10
February	1,700	550	1,150	1.43	1.54
March	1,100	720	863	1.07	1.23
April	8,040	1,030	4,060	5.05	5.63
May	11,400	1,520	5,820	7.24	8.35
June	2,020	590	977	1.22	1.36
July	1,100	393	774	.963	1.11
August	1,660	362	946	1.18	1.36
September	2,920	515	1,050	1.31	1.46
The year	11,400	251	1,620	2.01	27.45

NOTE.—The monthly discharge in second-feet per square mile and run-off in inches shown by the table do not represent the natural flow from the basin because of artificial storage, mainly in Indian Lake reservoir. The yearly discharge and run-off doubtless represent more nearly the natural flow.

HUDSON RIVER AT HADLEY, N. Y.

LOCATION.—At Hadley, Saratoga County, a quarter of a mile above mouth of Sacandaga River and dam formerly owned by Nuera Paper Co., and just below mouth of Lake Luzerne outlet.

DRAINAGE AREA.—1,660 square miles (from Fourth Annual Report of New York State Water Supply Commission).

RECORDS AVAILABLE.—July 15, 1921, to September 30, 1924.

GAGE.—Friez 7-day graph water-stage recorder on right bank, installed August 28. From October 1 to August 28, Gurley 7-day graph water-stage recorder was in operation. Recorders inspected by J. F. Kelly.

DISCHARGE MEASUREMENTS.—Made from cable 100 yards above gage.

CHANNEL AND CONTROL.—Solid ledge with some large boulders; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 13.25 feet at midnight May 4 (discharge, 19,500 second-feet); minimum stage from water-stage recorder, 1.36 feet from 10 a. m. to noon October 1 (discharge, 424 second-feet).

1921–1924: Maximum stage recorded, 19.71 feet at 3.30 p. m. April 12, 1922 (discharge, 33,100 second-feet); minimum stage, 1.19 feet at 9.30 a. m. September 3, 1923 (discharge, 362 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Discharge regulated to some extent by the storage reservoirs at Indian, Schroon, and Brant Lakes and mills on Schroon River.

ACCURACY.—Stage-discharge relation permanent; affected by ice December 25 to March 22. Rating curve very well defined between 700 and 25,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of gage-height graph, or for days of considerable fluctuation, by averaging discharge for intervals of day. Records excellent, except during periods of ice effect and estimate, for which they are fair.

Discharge measurements of Hudson River at Hadley, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 11	* 4.18	2,360	July 13	2.24	837	Aug. 28	2.31	893
Mar. 7	3.29	1,740	July 14	2.87	1,300	Aug. 29	2.00	736

* Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Hudson River at Hadley, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	520	938	5,610	1,600	1,600	1,400	3,320	16,600	3,750	1,400	1,320	610
2	808	842	5,130	1,300	1,700	1,400	2,910	18,300	3,110	1,400	1,100	1,060
3	872	764	4,200	1,400	1,700	1,500	2,910	15,200	2,780	1,320	1,060	1,550
4	950	797	3,390	1,900	1,900	1,500	3,040	16,400	2,140	999	1,100	1,600
5	896	944	3,040	2,000	2,400	1,500	4,050	19,200	2,020	1,060	1,270	1,400
6	902	985	3,650	1,400	2,600	1,600	5,290	16,400	1,860	1,040	1,450	1,010
7	971	964	4,650	1,200	2,400	1,800	9,680	13,400	1,750	1,400	1,700	836
8	890	908	4,350	1,200	2,400	1,800	9,490	11,300	2,360	1,180	1,860	1,130
9	651	890	3,820	1,100	2,200	1,700	8,050	10,000	3,020	1,180	1,600	1,500
10	533	824	3,460	1,100	2,000	1,700	7,870	11,300	2,130	1,100	1,100	1,920
11		1,060	3,320	1,800	2,200	1,700	8,230	12,200	1,550	926	1,180	1,750
12		920	2,910	7,500	2,200	1,600	7,330	11,300	1,500	819	1,320	1,650
13		836	2,660	6,500	2,200	1,600	7,150	11,800	1,450	842	1,270	1,550
14		1,120	2,600	5,500	2,000	1,600	10,400	11,700	1,400	1,320	1,180	1,500
15		1,340	2,480	4,800	1,900	1,500	12,400	13,000	1,450	1,360	1,100	1,600
16		1,020	2,360	4,400	1,900	1,500	11,300	13,400	1,650	1,270	908	1,650
17	800	964	2,300	5,500	1,600	1,500	10,600	12,200	1,500	1,400	896	1,650
18		1,140	1,860	5,500	1,600	1,500	10,600	10,600	1,650	1,360	1,140	1,600
19		991	1,650	5,000	1,600	1,600	16,000	9,670	1,550	932	1,220	1,450
20		754	1,700	4,400	1,500	1,600	14,700	9,130	1,450	797	1,180	1,010
21		738	1,920	3,800	1,400	1,700	12,800	8,050	1,220	900	1,360	926
22		1,010	1,920	3,400	1,400	1,800	12,600	6,800	1,360	971	1,360	1,360
23		1,060	2,080	3,000	1,400	2,020	13,900	5,450	1,650	1,060	1,220	1,450
24	1,680	1,270	1,920	2,800	1,400	2,480	11,800	4,650	1,600	1,140	1,320	1,360
25	2,420	1,400	1,700	2,600	1,400	2,840	10,900	4,500	1,550	1,140	1,750	1,360
26	1,860	1,240	1,600	2,400	1,400	2,480	10,000	5,290	1,550	1,140	1,700	1,320
27	1,500	1,450	1,500	2,200	1,400	2,190	9,670	3,900	1,550	1,180	1,060	1,270
28	1,400	1,400	1,400	1,900	1,400	2,360	11,300	3,750	1,360	1,450	836	1,180
29	1,220	1,320	1,300	1,800	1,400	2,840	11,300	3,600	1,360	1,600	736	1,220
30	1,100	2,570	1,200	1,700	-------	2,980	12,400	4,200	1,400	1,500	690	3,800
31	932	-------	1,200	1,700	-------	3,680	-------	3,320	-------	1,360	650	-------

NOTE.—Discharge Oct. 11-23 estimated by comparison with records of Hudson River at North Creek and of Schroon River at Riverbank; gage heights presumably affected by backwater. Discharge Dec. 25 to Mar. 22 determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with records of stations in upper drainage basin.

Monthly discharge of Hudson River at Hadley, N. Y., for the year ending September 30, 1924

[Drainage area, 1,660 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,420	520	984	0.593	0.68
November	2,570	738	1,080	.651	.73
December	5,610	1,200	2,670	1.61	1.86
January	7,500	1,100	2,980	1.80	2.08
February	2,600	1,400	1,800	1.08	1.16
March	3,680	1,400	1,900	1.14	1.31
April	16,000	2,910	9,400	5.66	6.32
May	19,200	3,320	10,200	6.14	7.08
June	3,750	1,220	1,820	1.10	1.23
July	1,600	797	1,180	.711	.82
August	1,860	650	1,210	.729	.84
September	3,800	610	1,440	.867	.97
The year	19,200	520	3,060	1.84	25.08

NOTE.—The monthly discharge in second-feet per square mile and run-off in inches shown by the table do not necessarily represent the natural flow from basin because of artificial storage, mainly in Indian Lake Reservoir, Schroon and Brant Lakes. The yearly discharge and run-off doubtless represent very nearly the natural flow.

HUDSON RIVER AT MECHANICVILLE, N. Y.

LOCATION.—At Duncan Dam of West Virginia Pulp & Paper Co. in Mechanicville, Saratoga County, 3,700 feet above mouth of Anthony Kill, 1¼ miles below mouth of Hoosic River, and 9 miles above mouth of Mohawk River.

DRAINAGE AREA.—4,500 square miles.

RECORDS AVAILABLE.—October 1, 1887, to September 30, 1924.

GAGE.—Water-stage recorder at dam, installed in 1910.

EXTREMES OF DISCHARGE.—Maximum daily discharge during year, 39,800 second-feet April 19; minimum daily discharge, 820 second-feet October 21.

1887–1924: Maximum discharge recorded, 120,000 second-feet at 6 a. m. March 28, 1913. The plant is occasionally shut down and the flow of river stored in the pond so that the discharge below station at these times becomes practically zero.

DIVERSIONS.—Water is diverted from Hudson River through the Glens Falls feeder and the old Champlain Canal into the summit level of the Barge Canal. A portion flows north into Lake Champlain. No correction has been made for this diversion.

ACCURACY.—Discharge over spillway determined from a rating curve based on coefficients derived by the United States Geological Survey for dams of ogee section. Discharge through turbines computed from records of their operation. Discharge at lock and through Barge Canal turbines at lock computed from records of the number of lockages a day.

From a study of records from stations above this point, it is believed that the record as published is from 5 to 10 per cent small.

COOPERATION.—Discharge over the spillway and through turbines of the West Virginia Pulp & Paper Co. furnished by Mr. W. J. Barnes, engineer of the company. Records of lockages obtained from the office of New York State Department of Public Works.

Daily discharge, in second-feet, of Hudson River at Mechanicville, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,550	2,970	28,200	4,000	6,010	2,800	10,300	28,700	8,020	2,420	2,260	1,380
2	1,280	3,150	22,000	3,570	5,040	3,670	9,330	33,400	8,390	2,530	2,100	1,240
3	1,300	3,160	18,400	4,910	3,530	2,630	9,190	31,100	7,230	2,610	1,240	1,480
4	1,850	2,340	13,400	5,650	3,800	3,470	9,800	31,200	5,780	1,350	1,140	2,400
5	1,720	2,250	14,100	5,230	4,780	3,820	10,700	34,800	4,480	1,110	1,550	3,040
6	1,280	2,290	15,000	3,870	5,160	5,230	16,800	33,900	4,300	976	1,810	2,750
7	937	5,080	15,200	4,660	4,920	6,280	33,200	28,800	4,390	1,600	1,610	2,180
8	1,260	7,080	13,700	4,720	4,830	6,340	33,300	24,200	2,930	2,420	1,670	1,700
9	1,240	4,830	12,400	4,650	4,740	4,430	29,700	22,900	3,800	2,480	1,970	2,500
10	1,070	4,760	11,500	4,770	4,140	5,040	27,600	22,600	4,820	2,330	1,650	7,250
11	1,040	4,420	11,300	19,500	3,770	6,320	25,900	22,700	4,300	2,040	1,390	5,940
12	1,110	3,660	9,790	24,200	4,520	5,150	22,300	22,300	3,790	1,760	1,590	5,740
13	1,130	3,990	8,390	22,500	5,080	4,890	20,900	22,400	3,850	1,420	2,090	4,820
14	750	3,880	8,980	19,900	3,780	5,090	24,000	22,300	3,480	1,530	2,270	3,620
15	1,100	3,470	7,250	15,200	3,350	4,430	28,100	22,900	2,450	2,340	2,070	3,360
16	1,040	3,650	5,930	15,500	3,250	3,330	26,500	23,400	2,140	2,310	1,780	3,460
17	949	3,860	6,420	18,100	3,460	3,560	25,400	22,200	3,060	2,570	1,230	3,120
18	1,040	3,320	5,840	17,400	2,380	4,090	26,700	20,000	3,270	3,460	1,220	3,030
19	948	2,500	4,950	16,200	3,070	4,430	39,800	18,900	3,160	3,060	1,110	2,850
20	983	2,150	4,320	15,500	3,140	4,590	38,900	17,300	2,880	2,420	1,580	2,660
21	820	2,500	4,350	13,000	3,170	5,040	34,500	15,500	2,630	1,420	2,030	1,510
22	1,040	2,900	4,970	13,400	2,790	5,800	36,800	14,100	2,330	2,320	1,810	1,900
23	1,260	2,470	3,770	11,300	2,670	4,120	37,100	11,800	1,600	2,110	2,020	2,760
24	7,470	3,370	3,600	8,330	3,440	7,340	33,300	10,100	2,260	2,260	1,640	2,590
25	11,200	6,310	3,650	7,890	2,050	8,670	29,500	10,700	3,050	2,200	1,870	2,920
26	7,340	4,910	4,940	6,230	3,150	8,630	26,500	11,500	2,340	1,900	3,630	2,880
27	6,340	7,720	4,900	5,100	3,080	8,190	24,100	10,100	2,740	1,040	3,030	2,870
28	4,810	7,780	4,810	5,310	3,410	7,850	24,300	10,200	2,310	1,290	2,600	2,130
29	2,750	6,560	4,580	4,700	3,350	7,310	24,300	10,300	1,610	1,810	2,450	1,700
30	3,260	13,800	2,450	5,100	-------	7,750	23,800	9,580	1,540	2,220	2,290	4,300
31	4,410	-------	3,170	6,070	-------	11,200	-------	8,490	-------	1,860	1,340	-------

NOTE.—Flashboards damaged by high water December 1; flashboards carried away by high water January 13; 30 inches of flashboards placed on dam June 9; discharge corrected accordingly.

Monthly discharge of Hudson River at Mechanicville, N. Y., for the year ending September 30, 1924

[Drainage area, 4,500 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	11,200	820	2,400	0.533	0.61
November	13,800	2,150	4,370	.971	1.08
December	28,200	2,450	9,110	2.02	2.33
January	24,200	3,570	10,200	2.27	2.62
February	6,010	2,050	3,790	.842	.91
March	11,200	2,630	5,530	1.23	1.42
April	39,800	9,190	25,400	5.64	6.29
May	34,800	8,490	20,300	4.51	5.20
June	8,390	1,540	3,630	.807	.90
July	3,460	976	2,040	.453	.52
August	3,630	1,110	1,870	.416	.48
September	7,250	1,240	3,000	.667	.74
The year	39,800	820	7,640	1.70	23.10

NOTE.—The monthly discharge in second-feet per square mile and run-off in depth in inches shown by the table do not necessarily represent the natural flow from the basin because of artificial storage. See "Diversions" above.

INDIAN LAKE RESERVOIR NEAR INDIAN LAKE, N. Y.

LOCATION.—At masonry storage dam at outlet of Indian Lake, 2 miles south of Indian Lake village, Hamilton County, and 7½ miles above mouth of Indian River.

DRAINAGE AREA.—131 square miles, including 9.3 square miles of water surface of Indian Lake at the elevation of crest of spillway (measured on topographic maps).

RECORDS AVAILABLE.—July 22, 1900, to September 30, 1924.

GAGES.—Elevation of water surface in reservoir is determined by chain gage on dam near gate house; prior to November 17, 1911, a staff gage at same site was used. Mean elevation of crest of spillway is at gage height 33.38 feet. Widths of sluice gate openings determined by gage scales at sides of gate stems inside gate house. Gages read by Frank Brown.

EXTREMES OF STAGE.—Maximum elevation of water surface in reservoir, 35.05 feet May 10–12; minimum elevation, 9.25 feet October 24.

1900–1924: Maximum elevation recorded, 38.8 feet March 28, 1913; minimum elevation, 2.0 feet March 9–18, 1907, and January 3–17, 1910.

REGULATION.—At ordinary stages discharge is completely regulated by operation of sluice gates. Water is held in storage until needed to supplement the flow of the upper Hudson during the low-water period. The storage capacity is about 4.7 billion cubic feet, equivalent to a flow of about 600 second-feet for 90 days.

COOPERATION.—Record of gate openings furnished by Indian River Co.

Daily gage height, in feet, of Indian Lake reservoir near Indian Lake, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14.35	10.65	12.55	19.55	26.05	19.65	13.15	28.55	34.95	32.45	27.9	21.75
2	14.15	10.75	13.55	19.65	26.1	19.35	13.2	29.95	34.85	32.25	27.7	21.45
3	13.85	10.85	14.45	19.8	26.15	19.05	13.25	31.15	34.75	32.2	27.3	21.15
4	13.6	10.9	14.85	19.95	25.95	18.75	13.3	31.75	34.75	32.2	27.0	20.85
5	13.35	11.0	15.1	20.0	25.65	18.45	13.35	32.85	34.75	32.2	26.65	20.65
6	13.05	11.05	15.3	20.05	25.45	18.15	13.65	33.75	34.85	32.2	26.3	20.65
7	12.85	11.1	15.65	20.1	25.15	17.85	14.05	34.25	34.85	32.2	26.05	20.65
8	12.95	11.15	16.15	20.15	24.85	17.55	14.55	34.65	34.5	32.25	25.75	20.4
9	12.9	11.25	16.5	20.2	24.65	17.35	14.95	34.95	33.75	32.25	25.55	20.05
10	12.7	11.3	16.75	20.25	24.45	17.15	15.45	35.05	33.75	32.35	25.55	19.8
11	12.5	11.35	16.95	20.3	24.25	16.95	15.95	35.05	33.65	32.4	25.35	19.65
12	12.25	11.4	17.2	21.1	24.05	16.65	16.35	35.05	33.65	32.4	25.1	19.95
13	12.0	11.45	17.4	22.25	23.95	16.35	16.85	34.95	33.7	32.25	24.85	20.15
14	11.75	11.5	17.55	23.05	23.75	16.05	17.35	34.85	33.7	32.1	24.6	20.15
15	11.5	11.55	17.85	23.4	23.65	15.75	17.75	34.85	33.7	31.8	24.45	19.95
16	11.15	11.6	17.95	23.7	23.55	15.45	18.35	34.95	33.75	31.55	24.35	19.75
17	11.0	11.65	18.05	23.95	23.35	15.25	18.85	34.95	33.65	31.35	24.15	19.6
18	10.75	11.65	18.2	24.3	23.15	15.05	19.45	34.85	33.55	31.25	23.85	19.35
19	10.5	11.7	18.3	24.6	22.95	14.75	20.05	34.75	33.45	31.3	23.55	19.25
20	10.25	11.75	18.35	24.75	22.75	14.55	20.85	34.55	33.35	31.3	23.25	19.25
21	10.0	11.75	18.5	24.95	22.45	14.25	21.65	34.55	33.4	31.15	22.95	19.2
22	9.8	11.8	18.6	25.0	22.05	14.05	22.45	34.45	33.35	31.0	22.65	18.95
23	9.55	11.85	18.7	25.05	21.75	13.65	23.25	34.35	33.25	30.85	22.45	18.65
24	9.25	11.85	18.85	25.25	21.45	13.25	23.95	34.35	33.1	30.55	22.15	18.35
25	9.45	11.95	18.95	25.45	21.15	12.85	24.65	34.45	32.95	30.3	21.95	17.95
26	9.65	12.05	19.05	25.55	20.85	12.85	25.15	34.6	32.85	30.1	21.65	17.65
27	10.05	12.1	19.15	25.65	20.55	12.9	25.65	34.75	32.75	29.8	21.65	17.3
28	10.25	12.2	19.25	25.75	20.25	13.05	26.25	34.75	32.75	29.5	21.7	16.95
29	10.4	12.25	19.35	25.75	19.95	13.1	26.95	34.95	32.75	29.05	21.7	16.75
30	10.45	12.3	19.45	25.75	-------	13.05	27.75	34.95	32.6	28.65	21.7	16.55
31	10.55	-------	19.5	25.9	-------	13.1	-------	35.0	-------	28.3	21.8	-------

INDIAN RIVER NEAR INDIAN LAKE, N. Y.

LOCATION.—Three-fourths of a mile below dam at outlet of Indian Lake, 2 miles south of Indian Lake village, Hamilton County, 1 mile above mouth of Big Brook, and 6½ miles above mouth of Indian River.

DRAINAGE AREA.—132 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 1, 1912, to June 30, 1914; and June 5, 1915, to September 30, 1924.

GAGE.—Gurley 7-day graph water-stage recorder on right bank; installed August 30, 1916; inspected by Frank Brown.

DISCHARGE MEASUREMENTS.—Made from cable near gage or by wading.

CHANNEL AND CONTROL.—Control is a reef of coarse gravel; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 6.01 feet at 11 a. m. June 7 (discharge, 2,150 second-feet); minimum stage, 0.04 foot from 10 a. m. to 2 p. m. November 18 (discharge, 1.3 second-feet).

1912–1924: Maximum stage recorded, 7.8 feet at 4 p. m. March 28, 1913 (discharge, 3,460 second-feet); minimum discharge, 0.7 second-foot at midnight September 30, 1918.

ICE.—Stage-discharge relation only slightly affected by ice.

REGULATION.—Discharge is regulated by operation of sluice gates at Indian Lake dam.

ACCURACY.—Stage-discharge relation practically permanent; affected by ice January 10 to February 1. Rating curve well defined between 15 and 1,500 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of gage-height graph, or for days when there have been changes in openings of sluice gates at Indian Lake dam, by averaging discharge for intervals of the day. Records good, except for periods of ice effect and estimate, for which they are fair.

The following discharge measurements were made:

January 20, 1924: Gage height, 0.27 foot; [6] discharge, 3.63 second-feet.

July 10, 1924: Gage height, 0.71 foot; discharge, 32.7 second-feet.

September 30, 1924: Gage height, 0.74 foot; discharge, 35.7 second-feet.

Daily discharge, in second-feet, of Indian River near Indian Lake, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	411	1.9	12	1.7	3	603	3.7	22	496	359	564	664
2	508	1.8	6.5	1.7	24	603	3.5	21	322	182	619	684
3	489	1.7	5.4	1.7	440	584	3.1	18	108	31	746	618
4	489	1.6	4.5	1.8	810	564	3.3	25	70	32	746	391
5	489	1.6	4.2	1.8	810	564	7.5	22	45	32	746	100
6	223	1.6	5.1	1.8	639	564	11	21	43	32	725	168
7	2.5	1.7	7.6	1.6	526	564	13	24	1,490	32	632	567
8	65	1.7	6.8	1.5	508	545	6.2	286	1,410	32	304	664
9	275	1.7	6.5	1.4	555	545	4.5	887	220	32	126	579
10	453	1.7	4.8	2	704	545	5.1	1,240	334	31	453	170
11	453	1.7	4.5	8	767	526	5.6	1,200	291	31	489	2.7
12	453	1.6	4.8	7	767	526	4.5	1,140	198	272	471	1.9
13	453	1.6	4.8	4	746	526	6.0	1,140	162	584	471	216
14	436	1.6	5.9	3	746	508	17	1,050	105	584	345	411
15	418	1.6	4.8	2	725	508	7.6	1,050	92	584	259	411

[6] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Indian River near Indian Lake, N. Y., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	418	1.5	3.9	2	725	489	5.6	1,140	249	584	410	411
17	415	1.4	3.5	5	725	489	5.1	1,100	398	264	684	408
18	411	1.3	3.3	4	725	489	6.8	1,010	395	26	684	195
19	408	1.4	3.1	4	725	471	10	1,010	222	114	684	5.4
20	405	1.4	2.9	4	704	471	6.8	886	51	338	684	382
21	395	1.4	3.1	4	684	453	6.8	569	247	355	550	623
22	385	1.5	3.5	4	664	453	10	215	372	564	436	623
23	382	1.6	3.7	4	643	453	10	80	375	564	570	603
24	167	1.8	3.9	3	643	285	10	33	375	545	704	603
25	3.9	1.9	3.3	3	643	5.1	10	32	372	545	501	603
26	2.7	2.1	1.5	3	623	3.7	9.7	33	158	670	5.6	603
27	1.9	2.5	1.5	3	623	3.3	10	37	35	810	2.7	584
28	1.9	2.9	1.6	3	603	3.3	11	71	142	788	1.9	584
29	1.8	2.7	1.6	3	603	3.5	14	173	363	788	1.6	564
30	1.8	4.2	1.6	4	-------	4.2	16	207	363	788	1.5	345
31	1.8	-------	1.6	3	-------	4.5	-------	410	-------	661	296	-------

NOTE.—Discharge for following periods estimated from a study of the fragmentary automatic records and a record of gate changes at Indian Lake dam: Dec. 28-31, Jan. 1-4, Feb. 21-22, 29, Mar. 6-7, Apr. 19, 25, and Sept. 13-14; water-stage recorder not operating satisfactorily. Discharge Jan. 10 to Feb. 1 determined from gage heights corrected for ice effect by means of one discharge measurement, study of gage-height graph, and weather records.

Monthly discharge of Indian River near Indian Lake, N. Y., for the year ending September 30, 1924

[Drainage area, 132 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	508	1.8	291	2.20	2.54
November	4.2	1.3	1.82	.014	.02
December	12	1.5	4.25	.032	.04
January	8	1.4	3.13	.024	.03
February	810	3	624	4.73	5.10
March	603	3.3	399	3.02	3.48
April	17	3.1	8.11	.061	.07
May	1,240	18	489	3.70	4.27
June	1,490	35	317	2.40	2.68
July	810	26	363	2.75	3.17
August	746	1.5	449	3.40	3.92
September	684	1.9	426	3.23	3.60
The year	1,490	1.3	280	2.12	28.92

NOTE.—The monthly discharge in second-feet per square mile and run-off in inches shown by the table do not represent the natural flow from the basin because of artificial storage in Indian Lake reservoir.

NORTH CREEK AT NORTH CREEK, N. Y.

LOCATION.—125 feet below dam at North Creek, Warren County, and 1,000 feet above mouth.

DRAINAGE AREA.—21.8 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 9 to September 30, 1924.

GAGE.—Vertical staff on left bank; read by William Alexander.

DISCHARGE MEASUREMENTS.—Made from highway bridge above dam or by wading.

CHANNEL AND CONTROL.—Gravel and small boulders; probably shifting under extreme conditions.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 3.95 feet at 5.30 p. m. September 30 (discharge, 574 second-feet); minimum stage, 1.10 feet at 7.30 a. m. August 17 (discharge, 2.3 second-feet).

ICE.—Stage-discharge relation slightly affected by ice.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 350 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:

July 9, 1924: Gage height, 1.35 feet; discharge, 9.02 second-feet.

July 11, 1924: Gage height, 1.31 feet; discharge, 7.61 second-feet.

August 21, 1924: Gage height, 1.40 feet; discharge, 9.47 second-feet.

Daily discharge, in second-feet, of North Creek at North Creek, N. Y., for the year ending September 30, 1924

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-------	4.9	3.9	11	6.6	4.1	18	21	8.4	10	5.2
2	-------	5.2	9.7	12	8.1	3.9	13	22	6.9	9.4	5.5
3	-------	4.4	25	13	10	4.1	10	23	6.9	8.4	5.8
4	-------	4.1	18	14	8.1	6.1	9.7	24	6.6	7.5	5.2
5	-------	7.2	12	15	10	5.8	8.4	25	6.1	7.2	4.9
6	-------	6.6	9.4	16	8.8	5.5	7.2	26	5.8	11	5.2
7	-------	6.1	12	17	19	3.4	7.2	27	6.1	10	5.2
8	-------	6.3	5.5	18	14	3.9	6.3	28	6.9	9.7	5.2
9	8.4	4.7	17	19	8.8	3.7	5.5	29	6.3	8.8	7.0
10	7.5	4.4	41	20	10	4.4	5.2	30	4.7	6.3	392
								31	4.9	5.8	-------

Monthly discharge of North Creek at North Creek, N. Y., for the year ending September 30, 1924

[Drainage area, 21.8 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
July 9-31	19	4.7	8.21	0.377	0.32
August	11	3.4	6.22	.285	.33
September	392	3.9	22.8	1.05	1.17

SCHROON RIVER AT RIVERBANK, N. Y.

LOCATION.—At steel highway bridge near Riverbank, Warren County, 9 miles below Schroon Lake and 9 miles above Warrensburg.

DRAINAGE AREA.—534 square miles.

RECORDS AVAILABLE.—September 2, 1907, to September 30, 1924.

GAGE.—Chain gage on upstream side of bridge; read by J. H. Roberts.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Gravel; occasionally shifting. Logs become lodged on control at times nearly every year.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.11 feet from 5 p. m. May 5 to 8 a. m. May 6 (discharge, 5,200 second-feet); minimum stage, 1.10 feet several times, October 17–23 (discharge, 98 second-feet).

1907–1924: Maximum stage recorded, 10.7 feet at 5 p. m. March 28, 1913 (discharge, about 13,500 second-feet); minimum stage, 0.85 foot at 5 p. m. October 17, 1909 (discharge, 28 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Flow affected by storage in Schroon and Brant Lakes.

ACCURACY.—Stage-discharge relation practically permanent except as affected by ice and by logs. Rating curve well defined between 150 and 7,000 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying mean daily gage height to rating table. Open-water records good except for days when the sluice gates in dams above station are operated, for which one gage reading a day may not give the true mean daily gage height. Records for periods of ice and log effect, fair.

Discharge measurements of Schroon River at Riverbank, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 22	[a] 4.02	1,260	Apr. 11	5.14	2,700	Aug. 29	[b] 1.60	190
Feb. 12	[a] 3.14	504	July 12	[b] 1.69	212			

[a] Stage-discharge relation affected by ice.
[b] Stage-discharge relation affected by logs on control.

Daily discharge, in second-feet, of Schroon River at Riverbank, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	142	345	535	600	260	1,060	3,760	1,550	600	170	200
2	121	151	310	560	500	280	1,100	4,410	860	600	160	200
3	119	175	277	512	500	280	1,200	4,410	440	550	160	190
4	119	167	560	424	500	280	1,300	4,800	800	550	160	190
5	121	175	585	400	500	300	1,370	5,060	460	600	170	190
6	118	177	690	360	500	340	1,460	5,190	460	240	170	190
7	119	190	745	380	460	363	2,140	4,800	460	220	170	190
8	112	190	800	340	460	363	2,470	4,410	360	220	170	200
9	114	190	690	340	420	345	2,580	4,020	360	200	170	200
10	112	190	920	420	400	345	2,690	3,890	400	200	160	220
11	104	190	920	550	380	363	2,690	3,640	420	220	170	220
12	104	190	772	750	400	382	2,800	3,520	420	220	170	220
13	106	190	772	1,300	380	382	2,800	3,520	420	220	160	240
14	104	203	745	1,300	380	424	3,040	3,640	420	200	160	260
15	103	203	745	1,300	340	382	3,640	3,640	420	240	160	360
16	100	203	718	1,200	320	402	3,890	3,640	400	300	160	460
17	98	190	690	1,400	320	402	3,890	3,520	400	240	170	460
18	101	177	662	1,400	300	382	3,890	3,160	400	220	170	420
19	98	190	610	1,300	300	363	4,410	2,920	380	220	170	420
20	100	177	585	1,300	300	402	4,930	2,470	380	200	170	400
21	104	175	585	1,300	300	402	4,930	2,360	380	190	180	380
22	100	177	560	1,300	380	424	4,930	2,040	360	200	190	380
23	98	177	535	1,200	380	424	4,930	1,740	340	220	180	380
24	104	190	535	900	280	490	4,930	1,840	340	200	220	360
25	246	203	512	960	280	512	4,670	1,640	340	190	220	340
26	217	203	512	800	260	585	4,150	1,550	650	180	200	320
27	175	217	490	750	260	800	4,280	1,460	650	190	200	300
28	175	217	468	700	260	860	3,760	1,290	650	190	190	280
29	170	217	468	650	260	860	3,760	1,290	300	220	190	300
30	170	327	468	600	-------	920	3,640	1,130	650	200	180	460
31	140	-------	560	600	-------	990	-------	1,060	-------	180	190	-------

NOTE.—Discharge, Jan. 5 to Mar. 6 and Apr. 2–4, determined from gage heights corrected for ice effect by means of two discharge measurements, study of observer's notes, gage-height graph, weather records, and comparison with records of Hudson River at North Creek and Hadley. Discharge June 3 to Sept. 30 determined from gage heights corrected for log effect by means of two discharge measurements.

Monthly discharge of Schroon River at Riverbank, N. Y., for the year ending September 30, 1924

[Drainage area, 534 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	246	98	126	0.236	0.27
November	327	142	192	.360	.40
December	920	277	608	1.14	1.31
January	1,400	340	831	1.56	1.80
February	600	260	377	.706	.76
March	990	260	462	.865	1.00
April	4,930	1,060	3,240	6.07	6.77
May	5,190	1,060	3,090	5.79	6.68
June	1,550	300	496	.929	1.04
July	600	180	272	.509	.59
August	220	160	176	.330	.38
September	460	190	298	.558	.62
The year	5,190	98	848	1.59	21.62

NOTE.—The monthly discharge in second-feet per square mile and run-off in inches shown by the table do not necessarily represent the natural flow from the basin because of artificial storage in Schroon and Brant Lakes.

SACANDAGA RIVER NEAR HOPE, N. Y.

LOCATION.—1½ miles below junction of East and West Branches, 4½ miles above Hope, Hamilton County, and 12 miles above Northville.

DRAINAGE AREA.—494 square miles (measured on topographic maps).

RECORDS AVAILABLE.—September 15, 1911, to September 30, 1924.

GAGE.—Staff in three sections on left bank, the lower inclined, and the middle and upper, vertical; read by Melvin Willis.

DISCHARGE MEASUREMENTS.—Made from cable near gage or by wading.

CHANNEL AND CONTROL.—Rocky; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.40 feet at 6.45 a. m. April 19 (discharge, 11,000 second-feet); minimum stage, 1.40 feet from 6.15 p. m. August 4 to 6.20 p. m. August 5 (discharge, 82 second-feet).

1911–1924: Maximum stage recorded, 11.7 feet during flood of March 25–30, 1913, determined by leveling from floodmarks (discharge above limits of rating curve); minimum stage, 1.17 feet at 7.55 a. m. September 30, 1913 (discharge, about 16 second-feet).

ICE.—Stage-discharge relation affected by ice.

ACCURACY.—Stage-discharge relation practically permanent, except as affected by ice. Rating curve fairly well defined between 100 and 10,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except during periods of ice effect and estimate, for which they are fair.

The following discharge measurements were made:

November 26, 1923: Gage height, 2.38 feet; discharge, 419 second-feet.

February 15, 1924: Gage height, 2.52 feet; discharge, 497 second-feet.

April 18, 1924: Gage height, 5.44 feet; discharge, 4,990 second-feet.

Daily discharge, in second-feet, of Sacandaga River near Hope, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	160	267	7,530	460	750	360	895	6,930	850	150	114	247
2	145	227	3,540	500	700	400	805	7,230	760	138	103	366
3	136	220	2,560	650	700	360	760	6,930	680	131	99	578
4	136	201	1,940	950	700	400	895	7,840	610	127	85	394
5	136	247	1,810	900	700	420	1,140	8,160	610	116	82	366
6	122	340	2,560	850	700	460	4,230	8,490	545	110	99	366
7	114	314	3,990	800	650	500	9,540	8,160	545	108	114	366
8	108	314	2,930	750	600	500	5,790	6,500	483	118	129	340
9	99	267	1,940	700	600	480	3,760	5,500	483	152	122	423
10	114	227	1,690	1,400	600	440	3,540	4,600	423	160	122	760
11	127	220	1,460	2,930	550	440	3,130	4,200	423	140	122	610
12	116	201	1,350	5,520	550	420	2,930	4,100	366	114	114	483
13	103	188	1,240	4,230	550	400	3,760	4,200	366	118	103	483
14	99	180	1,140	2,930	500	380	3,990	4,500	314	136	108	423
15	108	177	1,040	2,080	500	400	4,230	4,730	267	122	114	423
16	103	162	1,040	1,810	500	380	4,480	3,540	267	114	103	366
17	99	155	760	3,990	480	360	4,730	2,930	227	314	114	366
18	103	145	483	3,130	480	360	5,790	2,740	224	366	103	314
19	114	136	514	2,390	460	380	10,300	2,390	207	314	96	314
20	103	114	545	2,080	460	400	7,230	2,080	188	210	96	247
21	99	103	645	1,940	440	423	5,790	1,940	182	160	103	201
22	99	99	610	1,570	420	453	7,840	1,810	177	145	96	267
23	92	97	610	1,350	380	610	6,640	1,810	168	136	103	314
24	220	188	545	1,240	360	850	5,790	1,690	160	129	108	267
25	1,350	366	483	1,040	360	895	5,520	1,690	155	122	514	267
26	760	340	480	940	340	850	5,250	1,570	145	114	578	210
27	423	483	460	850	340	850	4,990	1,460	136	103	514	188
28	366	483	440	750	320	895	5,790	1,350	122	103	394	171
29	314	514	400	750	340	850	6,350	1,240	140	97	340	366
30	314	3,130	400	750	-------	1,240	6,350	1,140	145	103	290	4,230
31	267	-------	420	800	-------	1,300	-------	990	-------	114	267	-------

NOTE.—Discharge Feb. 12–16 and May 8–14 estimated from comparison with record of Sacandaga River at Hadley; gage-height record either missing or doubtful. Discharge, Dec. 26 to Jan. 10 and Jan. 28 to Mar. 20, determined from gage heights corrected for ice effect by means of one discharge measurement, study of gage-height graph and weather records, and comparison with record at Hadley.

Monthly discharge of Sacandaga River near Hope, N. Y., for the year ending September 30, 1924

[Drainage area, 494 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,350	92	214	0.433	0.50
November	3,130	97	337	.682	.76
December	7,530	400	1,470	2.98	3.44
January	5,520	460	1,650	3.34	3.85
February	750	320	518	1.05	1.13
March	1,300	360	563	1.14	1.31
April	10,300	760	4,740	9.60	10.71
May	8,490	990	3,950	8.00	9.22
June	850	122	346	.700	.78
July	366	97	148	.300	.35
August	578	82	176	.356	.41
September	4,230	171	491	.994	1.11
The year	10,300	82	1,220	2.47	33.57

SACANDAGA RIVER AT HADLEY, N. Y.

LOCATION.—Half a mile west of Hadley, Saratoga County, 1 mile above mouth of river, and 4½ miles below site of proposed storage dam at Conklingville.

DRAINAGE AREA.—1,060 square miles (measured on topographic maps).

RECORDS AVAILABLE.—January 1, 1911, to September 30, 1924.

GAGE.—Friez 7-day graph water-stage recorder on the left bank, installed August 28. From October 1 to August 28, a Gurley 7-day graph water-stage recorder was in operation. Recorders inspected by J. F. Kelly.

DISCHARGE MEASUREMENTS.—Made from highway bridge half a mile below gage or by wading.

CHANNEL AND CONTROL.—Very rough but practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.05 feet at 10 p. m. April 20 (discharge, 15,000 second-feet); minimum stage, 2.60 feet from 10 a. m. August 6 to 8 a. m. August 7 (discharge, 181 second-feet).

1911–1924: Maximum stage from water-stage recorder, 12.36 feet from 11 a. m. to noon March 28, 1913 (discharge, about 35,500 second-feet); minimum stage, 2.25 feet all day September 16, 1913 (discharge, about 61 second-feet).

ICE.—Stage-discharge relation affected by ice.

ACCURACY.—Stage-discharge relation practically premanent except as affected by ice. Rating curve well defined between 150 and 12,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of gage-height graph, or for days of considerable fluctuation, by averaging discharge for intervals of day. Records good, except during period of ice effect, for which they are fair.

Discharge measurements of Sacandaga River at Hadley, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 17	3.18	499	Mar. 26	5.33	3,210
Jan. 23	5.44	3,370	July 14	3.11	470

Daily discharge, in second-feet, of Sacandaga River at Hadley, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	462	766	6,410	750	1,600	900	4,220	9,370	2,460	365	206	455
2	390	774	8,050	850	1,500	900	3,770	10,800	1,990	359	206	429
3	334	710	8,050	950	1,400	800	3,260	11,500	1,720	328	206	497
4	300	618	6,980	1,200	1,400	900	3,080	11,500	1,550	306	198	766
5	272	574	5,860	1,500	1,300	850	3,460	12,200	1,440	283	189	710
6	257	553	5,600	1,600	1,300	900	4,820	12,600	1,330	272	181	640
7	243	655	6,410	1,600	1,200	950	8,050	11,100	1,260	272	189	618
8	228	782	6,980	1,600	1,200	1,200	11,500	9,370	1,190	422	223	618
9	219	782	6,410	1,500	1,100	1,100	11,900	8,050	1,110	546	262	625
10	223	782	5,470	1,500	1,200	1,000	10,800	6,980	1,030	567	272	1,120
11	223	718	4,700	2,200	1,200	1,000	9,370	6,270	938	532	248	1,680
12	219	678	3,990	4,400	1,200	1,000	8,370	6,000	857	448	219	1,320
13	215	640	3,360	5,470	1,100	1,000	7,430	6,000	798	403	215	1,080
14	210	602	3,170	5,470	1,100	1,100	7,740	5,860	758	455	206	947
15	210	574	2,890	5,340	1,100	1,000	9,030	6,000	750	455	202	893

Daily discharge, in second-feet, of Sacandaga River at Hadley, N. Y., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	210	539	2,220	4,820	1,100	1,100	10,000	6,270	718	448	202	806
17	210	518	2,060	5,080	1,100	1,000	10,000	6,410	655	483	198	718
18	198	518	1,560	5,340	1,000	1,000	9,710	6,140	588	806	194	640
19	202	469	1,200	5,600	1,000	1,000	11,900	5,600	532	929	194	574
20	210	429	1,200	5,470	1,000	1,000	14,300	5,210	511	790	194	511
21	219	422	1,320	4,950	1,000	1,040	14,300	4,580	532	640	202	455
22	219	403	1,430	3,990	1,000	1,190	12,600	3,990	532	518	219	422
23	219	390	1,380	3,360	950	1,490	12,600	3,460	518	448	248	429
24	463	694	1,340	3,080	950	2,050	13,000	3,080	476	396	311	504
25	1,840	920	1,210	2,600	900	2,800	11,500	3,260	476	371	422	525
26	2,220	929	1,150	2,140	900	3,260	10,400	3,360	455	340	662	469
27	1,680	1,080	1,110	1,790	900	3,260	9,370	3,170	416	306	866	429
28	1,340	1,390	938	1,600	900	3,260	8,700	2,980	416	272	726	396
29	1,070	1,520	800	1,500	850	3,360	8,370	3,170	390	248	610	422
30	875	2,480	800	1,600	-------	3,560	8,370	2,980	365	228	553	2,140
31	774	-------	750	1,600	-------	4,100	-------	2,630	-------	210	518	-------

NOTE.—Discharge Dec. 29 to Jan. 12 and Jan. 28 to Mar. 20 determined from gage heights corrected for ice effect by means of study of gage-height graph, weather records, and comparison with records of Sacandaga River near Hope and Hudson River at Hadley.

Monthly discharge of Sacandaga River at Hadley, N. Y., for the year ending September 30, 1924

[Drainage area, 1,060 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,220	198	515	0.486	0.56
November	2,480	390	764	.721	.80
December	8,050	750	3,380	3.19	3.68
January	5,600	750	2,920	2.75	3.17
February	1,600	850	1,120	1.06	1.14
March	4,100	850	1,590	1.50	1.73
April	14,300	3,080	9,060	8.55	9.54
May	12,600	2,630	6,450	6.08	7.01
June	2,460	365	892	.842	.94
July	929	210	434	.409	.47
August	866	181	308	.291	.34
September	2,140	422	728	.687	.77
The year	14,300	181	2,350	2.22	30.15

BATTEN KILL AT BATTENVILLE, N. Y.

LOCATION.—1 mile southwest of Battenville, Washington County, 3 miles below mouth of Whitaker Brook (outlet of Cossayuna Lake), and 11 miles above mouth, just above Schuylerville.

DRAINAGE AREA.—397 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1922, to September 30, 1924.

GAGE.—Gurley 7-day graph water-stage recorder on left bank; inspected by employee of Blandy Paper Co.

DISCHARGE MEASUREMENTS.—Made from cable 400 feet below gage or by wading.

CHANNEL AND CONTROL.—Solid rock ledge extending practically across channel, overlain with some gravel on right side; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 8.60 feet at noon December 1 (discharge, 6,240 second-feet); minimum stage, 1.74 feet at 8 a. m. August 21 (discharge, 49 second-feet).

1922–1924: Maximum stage recorded, that of current year; minimum stage, that of current year.

ICE.—Stage-discharge relation seriously affected by ice.

REGULATION.—Some diurnal fluctuation, due to operation of mills at Battenville and above, is noticeable during low water.

ACCURACY.—Stage-discharge relation permanent except as affected by ice. Rating curve very well defined between 80 and 6,000 second-feet. Operation of water-stage recorder satisfactory throughout year. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph or for days of considerable fluctuation, by averaging discharge for intervals of day. Records good, except during period of ice effect, for which they are fair.

Discharge measurements of Batten Kill at Battenville, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 23	[a] 3.49	636	Mar. 25	3.34	772
Feb. 20	[a] 2.76	285	July 14	2.58	328

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Batten Kill at Battenville, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	186	606	5,780	660	600	240	726	2,740	702	239	138	192
2	179	507	4,700	588	500	240	690	3,380	642	222	149	300
3	176	446	3,160	804	440	260	666	2,420	600	214	132	280
4	168	408	2,220	1,190	440	280	726	2,320	660	194	152	230
5	147	386	1,950	980	440	360	1,060	2,420	678	191	121	194
6	131	375	2,320	824	440	800	1,430	2,180	600	185	159	276
7	136	766	2,470	830	440	1,400	2,280	1,900	570	174	142	275
8	154	1,430	2,130	824	420	1,400	2,620	1,820	512	180	151	226
9	145	1,120	1,820	766	400	772	2,080	1,860	502	202	145	266
10	125	882	1,770	714	380	702	2,080	1,860	468	225	118	1,550
11	141	844	1,680	2,040	380	726	2,000	1,590	436	198	121	1,190
12	130	850	1,430	4,220	360	624	1,770	1,430	414	179	142	740
13	130	772	1,270	3,160	340	534	1,640	1,720	397	168	129	588
14	105	714	1,700	2,180	340	534	2,070	1,680	380	290	154	618
15	150	666	1,390	1,550	340	496	2,470	1,640	355	242	158	529
16	124	630	1,190	1,310	320	430	2,220	1,430	330	179	136	458
17	140	600	1,120	1,590	320	408	1,770	1,270	310	375	123	402
18	123	570	915	1,390	320	419	1,680	1,120	325	772	138	360
19	126	546	798	1,100	300	480	3,270	1,310	320	448	118	340
20	189	502	785	1,000	280	485	3,740	1,120	275	310	127	305
21	269	480	850	800	280	618	2,940	980	315	244	147	266
22	194	463	850	650	260	666	2,720	980	365	226	206	262
23	176	452	882	600	260	778	3,380	882	295	202	172	325
24	1,270	616	948	600	240	818	2,940	830	275	179	137	330
25	2,220	980	824	550	240	792	2,320	915	262	179	158	275
26	1,460	882	759	550	240	720	1,950	824	262	179	380	244
27	882	1,120	702	500	240	660	1,820	740	257	159	378	244
28	672	1,350	672	480	260	660	1,820	988	230	162	270	214
29	582	1,190	648	500	240	654	1,950	1,050	214	139	239	214
30	529	1,880	558	500	-------	740	2,040	882	234	145	194	292
31	648	-------	606	650	-------	850	-------	785	-------	144	161	-------

NOTE.—Discharge Jan. 19 to Mar. 8 determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph, and weather records.

Monthly discharge of Batten Kill at Battenville, N. Y., for the year ending September 30, 1924

[Drainage area, 397 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,200	105	381	0.960	1.11
November	1,880	375	768	1.93	2.15
December	5,780	558	1,580	3.98	4.59
January	4,220	480	1,100	2.77	3.19
February	600	240	347	.874	.94
March	1,400	240	631	1.59	1.83
April	3,740	666	2,030	5.11	5.70
May	3,380	740	1,520	3.83	4.42
June	702	214	406	1.02	1.14
July	772	139	230	.579	.67
August	380	118	168	.423	.49
September	1,550	192	399	1.01	1.13
The year	5,780	105	798	2.01	27.36

HOOSIC RIVER NEAR EAGLE BRIDGE, N. Y.

LOCATION.—1½ miles southeast of Eagle Bridge, Rensselaer County, half a mile below mouth of Walloomsac River, 2 miles above Owl Kill and 22 miles above mouth, just below Stillwater.

DRAINAGE AREA.—512 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 13, 1910, to March 31, 1922; July 25, 1923, to September 30, 1924.

GAGE.—Gurley 7-day graph water-stage recorder on left bank; inspected by J. E. Sherman.

DISCHARGE MEASUREMENTS.—Made from cable half a mile below gage or by wading.

CHANNEL AND CONTROL.—Gravel, occasionally shifting.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 11.36 feet at 7 a. m. December 1 (discharge, 11,700 second-feet); minimum stage not recorded.

1910–1924: Maximum stage recorded, 13.5 feet at 7.30 a. m. July 9, 1915 (discharge, about 16,700 second-feet), possibly higher stages previous to August 17, 1914, as gage was inaccessible at extremely high water; minimum stage, 6.1 feet (old datum) at 5 p. m. September 14, 1913 (discharge, practically zero).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—During medium and low stages there is considerable diurnal fluctuation in flow caused by the power plant of the Walter A. Wood Co. at Hoosick Falls, 3½ miles above gage and by sawmills on Walloomsac River.

ACCURACY.—Stage-discharge relation practically permanent except as affected by ice. Rating curve fairly well defined between 50 and 10,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph or for days of considerable fluctuation by averaging discharge for intervals of day. Records good, except during periods of ice effect and estimate, for which they are fair.

Discharge measurements of Hoosic River near Eagle Bridge, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 16	4.45	996	Mar. 1	[a] [b] 3.44	277	Apr. 23	7.22	4,180
Nov. 28	5.90	2,250	Mar. 25	4.46	1,020	Apr. 29	6.05	2,330
Jan. 22	[a] 3.79	512	Apr. 8	[b] 7.65	4,640			

[a] Stage-discharge relation affected by ice. [b] Referred to slope gage.

Daily discharge, in second-feet, of Hoosic River near Eagle Bridge, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	304	1,070	9,430	1,100	750	280	933	3,100	981	282	169	296
2	266	842	4,420	834	650	360	803	3,030	855	268	165	335
3	251	695	2,980	1,700	550	300	787	2,380	758	265	114	310
4	233	605	2,260	1,900	500	320	891	2,330	738	255	156	246
5	225	562	2,380	1,400	480	950	1,480	2,500	790	199	182	218
6	192	556	4,090	1,100	480	1,600	2,660	1,980	719	194	180	259
7	129	2,130	3,560	1,050	460	1,370	6,990	1,820	677	188	184	335
8	192	2,860	2,400	1,050	460	876	5,580	1,570	611	183	319	303
9	204	1,720	2,090	1,030	440	588	3,460	1,480	594	233	262	444
10	183	1,300	1,920	960	440	848	4,110	1,770	572	324	143	2,490
11	176	1,300	2,250	5,480	420	627	3,720	1,670	540	328	386	1,220
12	180	1,260	1,770	6,490	420	581	2,920	1,520	468	275	296	732
13	180	1,110	1,520	2,940	400	495	3,180	2,140	421	215	381	550
14	117	1,030	2,040	2,200	400	506	4,630	2,090	426	421	292	605
15	183	960	1,440	1,570	400	478	4,970	1,770	377	275	207	510
16	193	883	1,220	1,410	360	366	3,360	1,520	381	227	187	405
17	176	836	1,180	3,080	380	467	2,740	1,300	377	296	139	381
18	162	796	953	2,010	380	406	2,620	1,180	339	822	212	343
19	168	803	842	1,480	340	455	6,360	1,480	335	381	230	328
20	187	653	829	1,480	340	447	5,050	1,350	306	239	137	296
21	218	556	925	850	360	659	3,720	1,140	331	238	268	249
22	226	588	918	650	360	617	4,140	1,070	405	207	289	292
23	244	665	1,350	700	300	883	5,530	995	385	206	256	369
24	5,240	1,360	1,580	750	340	1,080	3,720	918	339	216	177	373
25	5,620	2,140	1,140	650	320	967	3,050	1,110	321	186	216	289
26	2,190	1,570	1,070	650	320	827	2,680	1,140	358	173	326	289
27	1,390	2,660	953	550	300	695	2,500	967	354	153	370	243
28	1,030	2,380	897	550	280	767	2,440	1,310	306	157	265	199
29	911	1,720	861	800	280	883	2,500	1,620	272	171	233	240
30	770	3,260	762	850	-------	1,220	2,380	1,300	265	162	187	541
31	1,440	-------	848	950	-------	1,300	-------	1,140	-------	159	144	-------

NOTE.—Discharge Dec. 19–20, Jan. 3–8, 26–28, Feb. 4–29, Mar. 1–2, Apr. 5–6, and July 18–19 determined from estimated mean daily gage heights; water-stage recorder not operating satisfactorily. Discharge Jan. 21 to Mar. 6 determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with record of Batten Kill at Battenville.

Monthly discharge of Hoosic River near Eagle Bridge, N. Y., for the year ending September 30, 1924

[Drainage area, 512 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	5,620	117	748	1.46	1.68
November	3,260	556	1,300	2.54	2.83
December	9,430	762	1,960	3.83	4.42
January	6,490	550	1,560	3.05	3.52
February	750	280	411	.803	.87
March	1,600	280	717	1.40	1.61
April	6,990	787	3,330	6.50	7.25
May	3,100	918	1,640	3.20	3.69
June	981	265	487	.951	1.06
July	822	153	255	.498	.57
August	386	114	228	.445	.51
September	2,490	199	456	.891	.99
The year	9,430	114	1,090	2.13	29.00

MOHAWK RIVER AT VISCHER FERRY DAM, N. Y.

LOCATION.—At Vischer Ferry dam of Barge Canal (Lock No. 7), 1 mile above Stony Creek and Vischer Ferry, 7 miles below Schenectady, Schenectady County, and 11 miles above mouth.

DRAINAGE AREA.—3,430 square miles (measured on topographic maps).

RECORDS AVAILABLE.—Discharge, June 24, 1913, to September 30, 1919; water surface elevations only, October 1, 1919, to September 30, 1924.

GAGE.—Stevens continuous water-stage recorder (showing head on crest of spillway) in the southern corner of the basin near upper end of Barge Canal lock. Staff gage in masonry of outer lock wall just above upper gates. Datum of staff gage 12.1 feet lower than that of recorder. Recorder inspected and staff gage read by J. J. Hannan, lock tender at Lock 7.

CHANNEL AND CONTROL.—The control is crest of spillway.

EXTREMES OF STAGE.—Maximum stage during year from water-stage recorder, 4.64 feet at 10.30 a. m. January 12; minimum stage, −1.05 feet at 9 a. m. April 29, caused by opening floodgates.

1913–1924: Maximum stage recorded, 7.6 feet just before noon March 28, 1914, determined by leveling from floodmarks. This stage lasted but a few moments and was caused by the breaking of an ice jam near Schenectady. Minimum stage occurred during periods when floodgates were opened and water drawn below crest of spillway.

EXTREMES OF DISCHARGE.—1913–1919: Maximum discharge, about 140,000 second-feet just before noon March 28, 1914 (estimated by engineers of the Department of New York State Engineer and Surveyor). Minimum discharge, about 290 second-feet from 4 to 5 a. m. and 4 to 6 p. m. October 31, 1914.

DIVERSIONS.—Barge Canal Lock No. 7 at south end of dam was put in operation May 15, 1915. Discharge records included flow over spillway and through lock and water wheels.

REGULATION.—Considerable diurnal fluctuation is caused by operation of Lock No. 7, floodgates at dam, and movable dams upstream. Seasonal regulation affected by operation of Hinckley and Delta Reservoirs.

Daily gage height, in feet, of Mohawk River at Vischer Ferry dam, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.44	0.68	2.75	0.77	0.96	-------	1.46	1.60	0.68	0.42	0.24	0.36
2	.39	.58	1.71	.90	.87	-------	1.15	2.05	.61	.40	.35	.32
3	.37	.60	1.40	1.06	.79	-------	.97	1.73	.90	.37	.35	.40
4	.35	.52	1.17	1.63	.74	-------	1.00	2.1	.45	.36	.32	.56
5	.36	.47	1.37	1.50	.69	-------	1.61	2.1	.45	.39	.33	.49
6	.35	.45	2.25	1.12	.69	-------	2.05	1.67	.67	.38	.29	.53
7	.44	.60	2.25	.88	.70	-------	3.4	1.67	.61	.37	.33	.58
8	.44	.66	1.55	.90	.68	-------	-------	1.31	.56	.39	.34	.69
9	.40	.81	1.30	.91	.64	-------	-------	1.23	.51	.46	.37	.60
10	.41	.57	1.25	.87	.60	-------	-------	1.64	.51	.50	.38	.89
11	.37	.57	1.26	1.32	.54	-------	-------	1.72	.55	.46	.37	.64
12	.36	.61	1.32	3.2	.57	-------	-------	1.63	.44	.40	.38	.70
13	.35	.57	1.35	1.78	-------	-------	-------	2.6	.48	.40	.39	.63
14	.35	.59	1.44	1.20	-------	-------	-------	1.80	.46	.42	.38	.58
15	.36	.54	1.12	.71	-------	-------	-------	2.15	.52	.53	.37	.55
16	.37	.55	1.29	.82	-------	-------	-------	1.85	.48	.50	.36	.57
17	.37	.54	1.08	1.46	-------	0.66	-------	1.65	.45	.50	.34	.61
18	.41	.65	1.06	1.70	-------	.66	-------	1.31	.48	.88	.30	.54
19	.40	.57	.83	1.36	-------	.67	-------	1.26	.45	.71	.34	.52
20	.39	.53	.76	1.20	-------	.70	-------	1.29	.40	.56	.35	.53
21	.41	.58	.77	1.26	-------	.80	1.63	1.09	.37	.51	.60	.50
22	.35	.56	.85	.80	-------	1.02	1.61	1.08	.40	.53	.46	.47
23	.34	.56	.92	.70	-------	1.54	2.3	.96	.50	.51	.46	.48
24	.66	.67	1.10	.90	-------	2.1	1.83	.76	.51	.49	.49	.53
25	1.38	.71	1.04	.83	.56	1.96	1.39	.80	.53	.49	.49	.52
26	.95	.69	.93	.76	.54	1.63	1.10	.90	.51	.42	.48	.52
27	.66	.89	.90	.77	-------	1.30	.74	.75	.47	.40	.43	.52
28	.70	1.10	.86	.97	-------	1.28	.08	1.10	.45	.37	.40	.52
29	.48	.96	.87	.96	-------	1.48	−.07	.91	.44	.33	.38	.48
30	.52	1.43	.82	.95	-------	1.68	1.27	.78	.42	.31	.37	1.51
31	.65	-------	.75	.91	-------	1.93	-------	.78	-------	.27	.36	-------

NOTE.—Mean daily gage height Jan. 27 and 28 partly estimated; no gage-height record Feb. 13–24, Feb. 27 to Mar. 16, and Apr. 8–20; water-stage recorder not operating satisfactorily.

MOHAWK RIVER AT CRESCENT DAM, N. Y.

LOCATION.—At Crescent dam of Barge Canal, 3 miles above mouth of river at Cohoes, Albany County.

DRAINAGE AREA.—3,490 square miles (furnished by the Department of State Engineer and Surveyor).

RECORDS AVAILABLE.—December 1, 1917, to September 30, 1924.

GAGE.—Au continuous water-stage recorder on left bank 50 feet above guard gate at head of Waterford flight of locks and 200 yards from left end of spillway; inspected by Mark Gribbon.

DISCHARGE MEASUREMENTS.—Made from steel highway bridge at Crescent, 1½ miles upstream.

CHANNEL AND CONTROL.—Control is crest of spillway.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.60 feet from 11 p. m. April 7 to 1 a. m. April 8 (discharge, 71,500 second-feet); minimum daily discharge, 986 second-feet October 23.

1917–1924: Maximum stage recorded, that of current year; minimum daily discharge, 880 second-feet July 9, 1919.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Water is diverted at this point for canal purposes through Lock 6 and is not returned to the river. The following tables of discharge include the flow over spillway, through Barge Canal power house, and that diverted through and around Lock 6.

REGULATION.—Seasonal distribution of flow regulated by the Delta Reservoir on the upper Mohawk, and by Hinckley Reservoir on West Canada Creek. Large diurnal fluctuations occur during low water caused by operation of movable dams upstream.

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve well defined between 1,000 and 50,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge for spillway ascertained by applying to rating table mean daily gage height determined by inspection of gage-height graph, or for days of considerable fluctuation, by averaging discharge for intervals of day. To this is added the discharge through power plant, computed from records of run of turbines, and diversion through and around Lock 6. Records good.

On basis of recent low-water discharge measurements, rating table has been revised and records from December 1, 1917, to September 30, 1923, have been recomputed and republished herewith.

The following discharge measurement was made:

March 31, 1924: Gage height, 6.45 feet; discharge, 18,000 second-feet.

Daily discharge, in second-feet, of Mohawk River at Crescent dam, N. Y., for the years ending September 30, 1918–1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1917–18												
1			5,320		1,590	15,300	17,000	8,390	4,000	2,050	1,210	2,660
2			5,480	2,290	1,540	14,800	19,400	9,800	3,590	4,680	1,220	1,700
3			5,560		1,540	12,600	20,600	8,100	2,980	2,560	1,260	1,540
4			5,960		1,400	12,200	18,200	5,890	2,910	2,740	1,290	1,560
5			4,790	2,090	1,450	10,000	14,200	6,010	2,830	2,020	1,300	1,610
6			5,720	2,030	1,880	8,860	11,800	4,850	2,840	2,320	1,240	1,880
7			3,930	1,980	1,780	10,900	11,000	4,920	3,200	2,060	1,350	2,790
8			3,590	1,830	1,590	11,000	10,800	5,140	4,000	1,350	2,300	2,180
9			2,530	1,690	1,490	8,950	15,400	3,570	3,050	1,760	1,360	2,020
10			1,550	1,590	1,450	7,410	22,600	3,300	3,480	2,040	2,500	1,790
11			1,470	1,540	1,400	6,360	18,200	4,910	4,050	2,910	1,930	2,040
12			2,160	1,730	1,320	6,270	15,200	4,910	7,240	2,610	1,600	2,180
13			2,320	1,490	1,360	8,060	12,800	6,400	10,600	2,840	1,590	2,360
14			2,270	1,490	1,930	16,500	12,400	15,800	8,230	3,470	1,350	2,530
15			1,850	1,690	4,470	14,300	16,400	11,800	5,080	4,590	1,550	2,470
16			1,750	1,590	5,460	9,530	15,200	8,360	3,980	4,960	1,210	2,220
17			1,900	1,980	5,380	7,320	14,200	5,200	3,580	3,110	1,310	1,940
18			2,160	1,880	4,920	16,500	15,800	4,860	3,450	3,130	1,030	3,800
19			2,380	1,590	4,260	22,000	20,600	4,190	2,650	3,260	961	3,660
20			2,380	1,640	11,900	24,000	17,000	3,780	2,240	2,740	1,060	3,590
21			2,380	1,980	31,600	29,000	13,400	5,000	2,510	2,320	1,020	3,340
22			2,160	1,640	15,700	32,000	16,400	4,420	3,290	1,780	1,010	3,550
23				1,640	11,300	41,700	20,600	4,700	3,050	2,270	1,020	2,620
24				1,540	8,860	36,800	17,000	3,860	2,680	1,940	1,130	3,120
25			2,420	1,730	8,400	26,800	13,600	3,800	3,340	1,930	1,400	2,660
26				1,690	10,000	21,300	11,000	3,450	2,550	1,760	1,190	6,230
27				1,730	20,700	15,900	8,120	4,800	2,500	1,660	997	11,400
28			2,430	1,930	17,000	11,900	7,310	6,190	2,020	1,480	973	7,620
29			2,430	1,980	-------	11,100	6,860	5,070	2,280	1,360	1,160	4,380
30			2,330	1,640	-------	13,700	7,310	4,480	1,740	1,370	1,270	3,490
31			2,330	1,640	-------	15,900	-------	3,870	-------	1,250	1,780	-------

Daily discharge, in second-feet, of Mohawk River at Crescent dam, N. Y., for the years ending September 30, 1918–1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1918–19												
1	3,100	17,200	3,900	4,790	3,400	6,630	10,200	5,490	3,220	1,260	2,390	1,710
2	2,810	11,500	2,890	10,300	2,540	12,800	8,970	7,430	2,820	1,520	2,130	1,900
3	2,710	8,050	2,930	14,300	2,270	10,900	8,330	10,300	3,020	1,520	1,280	5,790
4	3,620	6,940	3,380	9,650	2,960	9,070	8,970	8,260	2,420	1,250	1,200	14,400
5	3,430	5,970	3,540	6,470	3,140	9,070	11,600	9,930	2,800	1,390	1,050	6,250
6	2,950	4,760	4,580	4,710	2,960	10,200	14,300	9,550	2,400	1,210	1,180	4,450
7	5,660	4,310	3,720	4,420	2,840	7,610	15,900	8,070	2,670	1,120	2,080	3,120
8	6,580	3,990	4,120	4,140	2,660	5,810	16,500	9,460	2,440	989	2,210	2,470
9	4,270	3,440	5,390	5,250	2,430	6,450	15,300	8,150	2,140	880	1,710	2,620
10	3,960	3,820	6,900	4,280	2,110	15,300	17,000	8,330	2,180	1,090	1,740	2,230
11	3,010	3,120	6,970	3,140	2,000	14,300	18,200	16,100	2,020	2,900	1,320	2,280
12	2,610	3,110	6,760	2,540	2,050	10,600	28,800	18,200	2,000	2,360	1,350	2,460
13	2,470	3,180	5,750	2,380	2,220	8,510	32,000	19,400	1,840	2,120	1,290	2,010
14	2,300	3,240	5,430	2,780	2,380	8,150	24,000	13,900	1,660	1,630	1,430	2,070
15	2,570	2,760	8,870	3,530	3,020	6,890	16,500	10,100	2,130	1,430	1,290	1,780
16	2,470	2,970	13,000	4,070	4,280	5,810	13,600	8,350	3,350	1,970	1,330	1,640
17	2,320	2,730	10,600	4,140	3,660	6,630	10,000	7,670	3,440	1,940	1,230	1,920
18	2,480	5,230	9,370	3,860	3,020	14,500	11,800	10,600	2,940	2,300	1,200	1,870
19	2,110	8,100	4,550	3,860	2,780	17,000	10,200	13,100	1,910	1,760	2,270	1,740
20	2,190	7,920	3,070	3,790	2,380	13,300	8,690	9,950	1,950	1,270	1,510	1,750
21	8,200	6,600	4,510	3,790	2,660	13,300	6,990	8,460	1,840	1,170	1,460	1,450
22	7,500	5,520	4,370	3,790	2,720	13,500	6,550	7,990	1,640	2,660	1,680	1,560
23	4,890	5,300	6,690	3,790	2,660	12,000	6,150	9,950	1,760	5,970	1,540	2,010
24	4,080	3,980	13,300	5,010	2,780	9,830	6,550	9,940	1,550	3,620	1,530	3,180
25	3,240	4,200	18,300	6,470	2,780	9,270	6,730	9,370	1,330	2,290	2,370	2,390
26	3,780	4,220	19,400	6,730	3,470	9,730	7,170	9,390	1,240	2,370	1,870	2,040
27	7,620	3,420	12,400	5,490	3,330	8,970	6,730	7,020	1,480	2,120	1,540	2,130
28	5,790	3,430	8,630	4,870	3,530	10,400	5,730	6,280	1,750	7,090	1,850	2,300
29	5,000	3,080	6,070	4,490	------	15,300	6,990	4,600	2,010	5,870	1,540	1,920
30	4,600	4,120	4,510	4,140	------	12,400	6,890	3,620	1,760	3,370	1,390	2,180
31	19,300	------	4,370	3,790	------	11,100	------	2,870	------	2,780	2,090	------
1919–20												
1	2,070	13,000	9,860	2,830	2,860	1,590	32,100	17,100	1,940	1,730	1,540	1,820
2	2,080	13,500	8,710	2,650	2,740	1,640	32,900	13,800	2,230	1,960	1,490	1,500
3	2,300	11,800	7,460	2,370	2,350	1,690	32,100	11,500	2,160	1,890	1,600	1,440
4	2,300	8,370	5,350	2,370	2,300	1,590	25,500	8,410	1,960	1,860	1,800	1,400
5	2,350	12,200	7,980	2,040	2,800	1,740	21,400	5,250	2,600	1,770	1,180	1,280
6	2,330	11,400	4,370	1,940	2,620	2,030	32,100	4,540	2,270	2,020	1,190	1,240
7	4,740	8,110	2,440	2,240	2,400	2,300	20,800	4,950	2,180	1,390	1,390	1,210
8	3,690	6,000	5,020	2,510	2,130	3,670	16,000	4,510	2,180	1,780	1,600	1,240
9	3,880	5,440	5,970	2,860	1,980	4,220	12,500	5,650	2,670	1,520	1,430	1,090
10	4,830	5,200	12,000	2,980	1,980	4,570	10,800	5,810	2,320	1,580	1,370	1,500
11	5,700	5,210	12,600	2,860	1,980	4,570	10,500	5,420	2,000	1,360	2,960	1,500
12	4,250	9,200	9,090	2,510	1,880	4,790	10,600	4,880	1,750	1,410	5,220	2,860
13	3,250	10,900	8,520	2,460	1,880	14,500	10,500	5,340	1,570	1,780	3,760	14,500
14	3,250	11,300	15,600	2,510	1,980	30,200	14,000	4,730	1,550	2,120	3,640	7,260
15	2,700	9,190	13,400	2,130	2,030	20,200	17,100	4,750	1,660	2,240	5,360	3,760
16	3,440	7,270	7,920	2,240	1,740	17,700	13,400	3,890	1,820	3,030	3,620	2,540
17	6,420	6,060	5,940	2,980	1,690	24,100	16,600	3,560	2,600	2,160	3,520	3,070
18	5,130	5,350	3,780	2,800	1,690	31,400	17,100	2,940	9,180	1,680	3,370	2,500
19	4,740	5,280	3,850	2,620	1,640	24,100	14,400	4,160	8,980	1,550	2,380	1,850
20	3,760	4,540	4,360	2,680	1,690	18,900	12,000	3,110	5,500	3,240	2,100	1,700
21	3,230	4,100	4,430	2,860	1,830	15,400	11,100	4,810	4,230	3,210	2,170	1,370
22	7,030	3,550	4,650	2,860	2,080	12,700	18,300	5,800	3,240	1,720	2,230	1,040
23	9,280	5,810	4,650	2,800	1,980	12,600	20,800	5,800	3,120	1,540	1,500	1,480
24	6,670	6,070	4,580	2,740	1,880	20,200	20,200	4,250	2,540	1,580	1,720	1,520
25	4,670	5,980	4,580	2,980	1,830	31,400	18,300	5,100	2,060	2,540	1,840	1 890
26	4,740	6,490	4,080	2,860	1,830	39,300	13,800	3,450	2,260	1,870	1,760	1,170
27	7,780	22,900	3,740	2,680	1,880	53,000	11,200	3,800	1,590	1,750	1,630	1,170
28	7,920	16,200	3,670	2,510	2,030	52,300	12,300	3,500	1,580	1,840	1,540	2,250
29	7,360	9,950	3,340	2,510	1,880	40,100	21,400	2,850	1,580	1,890	1,420	2,750
30	6,410	10,800	3,090	2,460	------	36,900	18,900	2,370	2,110	1,830	1,290	4,400
31	6,770	------	2,910	2,350	------	33,700	------	2,470	------	1,310	1,160	------

Daily discharge, in second-feet, of Mohawk River at Crescent dam, N. Y., for the years ending September 30, 1918–1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1920–21												
1	36,700	2,650	6,930	3,870	2,300	5,130	12,500	20,800	2,160	1,940	1,760	1,620
2	24,800	2,700	29,000	4,080	2,300	8,590	13,400	17,500	1,840	2,080	1,730	1,760
3	9,270	5,400	25,200	8,910	2,190	13,600	10,500	10,700	1,730	1,660	1,880	1,850
4	5,360	7,400	14,900	10,500	2,130	24,800	8,410	7,080	1,700	1,980	1.870	1,390
5	5,480	4,850	19,300	8,590	2,240	14,000	7,700	5,650	1,610	1,480	1,710	1,060
6	4,110	3,350	41,000	8,320	3,220	8,500	7,060	4,760	1,590	1,420	1,560	1,300
7	3,510	3,510	19,300	7,330	3,740	19,400	6,210	4,950	1,490	1,360	1,140	1,320
8	3,500	3,200	11,500	5,320	3,610	24,800	4,000	4,050	1,430	1,420	1,430	1,410
9	3,070	3,130	7,080	4,950	2,920	29,100	4,240	3,420	1,520	1,720	1,180	1,430
10	2,970	5,020	6,400	4,080	2,510	35,300	4,460	3,070	1,300	1,370	1,430	1,580
11	2,600	5,680	6,180	3,290	2,460	22,800	4,330	2,960	1,420	1,310	1,600	999
12	2,540	3,630	5,760	3,350	2,510	17,700	4,380	2,940	1,360	3,630	1,960	1,550
13	2,550	2,670	8,210	2,510	2,400	16,600	3,820	3,010	1,360	2,580	2,520	1,390
14	2,500	2,920	8,610	1,980	2,190	17,700	2,460	3,300	1,250	2,050	1,980	1,440
15	2,380	2,990	38,500	2,800	2,190	14,400	2,300	3,420	1,260	3,240	1,750	1,340
16	2,370	2,980	26,000	4,500	2,400	16,600	2,130	3,180	1,230	4,990	1,410	1,280
17	1,660	4,210	18,300	4,010	4,090	19,500	2,700	2,900	1,310	3,370	1,530	1,220
18	2,110	8,720	14,900	1,710	14,400	16,000	9,250	2,580	1,140	1,940	1,760	1,110
19	2,380	8,990	11,500	1,330	9,340	13,800	9,720	2,530	1,030	1,840	2,160	1,330
20	2,390	6,520	5,590	1,980	5,890	14,500	8,240	2,380	1,320	6.740	2,400	1,330
21	1,920	5,330	5,340	2,190	3,480	20,200	6,460	2,390	1,150	6,140	1,570	1,310
22	2,080	4,260	5,190	3,250	2,800	19,500	6,040	2,360	1,110	4,220	1,720	1,400
23	1,730	15,900	4,670	6,040	2,680	17,700	6,460	1,950	1,040	3,460	1,400	1,580
24	2,020	25,500	6,140	5,800	2,800	12,500	8,720	1,900	1,030	1,900	1,440	1,320
25	1,650	14,900	5,980	3,860	2,570	10,900	10,600	2,100	1,140	2,180	1,460	976
26	1,810	11,700	4,100	2,400	2,460	12,900	7,420	2,700	1,100	1,720	1,530	1,300
27	2,170	7,080	3,020	1,740	2,240	16,600	5,880	2,740	1,210	1,810	1,660	1,150
28	2,080	5,350	1,820	2,130	2,570	14,400	4,230	1,880	1,200	1,630	1,190	1,220
29	3,300	6,250	3,120	2,300	-------	13,600	4,610	1,840	1,200	1,680	1,180	1,160
30	2,960	6,340	3,570	2,570	-------	12,000	11,200	1,790	1,310	2,430	1,190	1,340
31	2,650	-------	3,760	2,300	-------	10,000	-------	1,710	-------	2,570	1,170	-------
1921–22												
1	1,400	1,930	17,900	1,820	1,970	4,750	16,700	3,230	2,610	9,410	1,440	1,980
2	1,040	2,560	14,000	3,080	2,270	4,360	15,000	2,020	2,560	14,400	1,810	2,060
3	1,350	3,920	30,300	3,000	2,310	3,700	13,200	2,450	4,180	14,400	1,980	2,000
4	1,260	3,810	23,900	2,980	5,270	3,670	14,500	3,350	13,100	13,400	1,790	1,960
5	1,430	2,840	14,300	3,790	5,500	3,970	16,100	10,900	12,100	7,100	2,640	1,690
6	1,310	3,890	11,200	4,260	4,390	4,110	29,800	16,400	7,300	5,530	2,270	1,890
7	1,340	2,550	9,020	7,650	4,490	6,140	31,200	11,200	6,170	3,680	4,870	2,190
8	1,640	3,030	5,720	5,350	3,900	26,300	29,600	11,500	3,790	2,030	13,900	2,040
9	1,020	2,770	5,810	3,650	3,750	28,500	30,400	9,630	3,220	2,160	9,850	1,870
10	1,390	2,890	4,720	3,780	3,070	20,900	26,000	7,120	2,690	2,580	6,050	1,700
11	1,410	6,020	4,560	3,820	2,510	16,700	26,700	5,520	12,500	1,590	3,120	1,600
12	1,570	5,520	4,960	2,870	2,450	13,200	50,300	4,470	45,200	1,300	1,870	1,600
13	1,630	4,100	5,410	2,210	2,540	12,000	41,600	4,450	24,800	1,290	2,600	2,140
14	1,750	3,090	4,820	1,520	2,840	16,200	28,200	3,600	16,100	1,720	2,490	2,220
15	1,970	3,440	4,660	1,720	2,830	35,400	23,200	2,940	9,320	2,160	1,790	1,900
16	1,210	4,050	4,290	2,250	2,600	29,200	28,200	2,950	5,710	2,160	1,830	3,260
17	1,490	7,680	3,340	1,830	1,720	17,200	21,200	2,580	3,220	1,920	1,680	2,410
18	1,340	14,900	5,940	2,260	2,590	10,800	21,200	3,270	2,920	2,160	1,640	1,710
19	1,360	14,500	12,000	2,030	2,800	8,160	23,200	3,780	5,930	3,190	1,950	1,600
20	1,830	16,500	7,740	2,370	2,360	10,400	19,300	8,500	4,840	2,290	2,100	1,570
21	2,980	14,100	4,650	2,510	3,210	21,500	15,200	5,200	6,340	1,150	2,020	1,450
22	3,930	11,100	3,020	2,080	6,310	16,100	12,100	4,160	28,400	1,740	1,510	1,650
23	2,050	6,970	2,330	2,610	5,980	11,400	8,370	3,440	31,400	1,720	1,660	1,820
24	2,490	6,840	3,410	2,110	13,000	9,450	6,940	3,540	25,500	1,530	2,100	1,330
25	2,140	7,230	2,310	1,330	16,100	11,700	5,910	3,380	16,100	2,360	2,510	1,400
26	1,610	9,220	2,360	2,030	13,000	12,600	4,020	9,020	8,620	2,610	3,310	1,350
27	1,700	8,570	3,000	2,140	9,830	17,800	2,800	8,240	5,650	1,450	4,060	1,330
28	1,720	25,000	2,340	1,810	7,530	24,200	4,780	5,730	4,270	1,900	2,470	1,450
29	1,970	37,000	2,080	1,740	-------	34,600	4,260	4,490	7,060	2,150	3,000	1,340
30	1,150	20,900	2,250	2,130	-------	29,200	3,450	2,700	8,850	1,890	2,180	1,500
31	1,570	-------	2,290	1,810	-------	20,300	-------	2,780	-------	1,700	2,280	-------

Daily discharge, in second-feet, of Mohawk River at Crescent dam, N. Y., for the years ending September 30, 1918–1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1922-23												
1	1,640	1,910	1,810	2,210	3,620	2,550	6,160	16,400	2,600	2,020	1,710	1,130
2	1,560	2,020	3,070	7,840	3,890	2,620	5,510	10,200	2,070	1,850	1,620	1,110
3	1,420	1,980	3,140	13,500	4,310	2,850	6,500	7,860	2,030	1,660	1,480	1,140
4	1,220	1,990	2,030	9,220	4,650	3,150	14,600	7,240	2,110	1,560	1,380	1,100
5	1,080	2,020	2,340	6,240	4,600	4,740	33,500	6,200	2,640	1,420	1,360	1,050
6	1,280	2,020	2,600	5,760	4,600	9,500	55,800	5,230	2,290	1,230	1,200	1,060
7	1,380	2,090	2,330	4,360	4,300	11,400	48,500	4,400	2,490	1,170	1,260	1,020
8	1,670	2,680	2,150	3,490	4,170	9,120	36,700	3,750	6,850	1,320	1,030	1,080
9	2,640	2,360	2,090	2,920	4,300	7,110	30,400	5,170	10,100	1,320	1,010	1,330
10	3,170	2,150	2,270	3,170	4,300	5,830	21,900	8,940	9,040	1,310	1,080	1,520
11	2,950	2,200	2,690	3,100	3,940	5,270	18,100	7,720	4,730	1,420	1,150	1,580
12	3,330	2,260	2,120	3,480	3,420	4,960	18,100	7,440	2,940	1,450	1,240	1,540
13	2,850	2,170	2,680	2,920	3,280	4,820	16,400	7,570	2,570	1,400	1,240	1,420
14	1,770	2,190	1,840	2,670	3,220	4,520	15,200	6,230	2,200	1,360	1,150	1,440
15	1,910	2,340	1,930	2,620	3,030	4,740	14,200	5,810	1,880	1,360	1,340	1,270
16	1,870	3,840	1,550	2,800	2,980	4,890	12,000	6,860	2,050	1,580	1,210	1,130
17	1,520	3,740	2,990	3,040	2,910	11,900	10,600	16,500	2,190	2,590	1,130	1,110
18	1,810	2,940	3,550	2,980	2,780	25,300	9,210	17,500	1,850	1,960	1,110	1,090
19	2,010	2,850	3,710	2,980	2,860	22,600	8,280	11,900	2,010	1,540	1,140	1,040
20	1,910	2,530	4,160	3,170	2,800	19,300	4,560	7,310	2,140	1,320	1,080	1,070
21	1,610	2,350	3,780	3,160	2,860	14,200	6,800	5,930	2,130	1,370	1,080	2,930
22	1,770	2,490	4,330	3,290	2,860	13,400	10,000	7,400	1,930	1,270	1,030	6,980
23	1,790	2,750	2,470	7,660	2,800	18,200	15,800	5,800	1,870	1,230	951	4,220
24	2,090	2,500	2,330	7,570	2,860	43,300	14,700	5,100	1,900	1,240	893	2,850
25	2,070	2,250	2,260	5,920	2,840	34,600	11,000	4,030	1,750	1,390	1,090	2,330
26	2,650	2,000	2,140	5,360	2,680	22,600	9,010	3,350	1,630	1,280	1,100	1,560
27	2,030	1,610	2,230	4,970	2,450	16,400	7,180	3,050	1,830	1,260	1,140	1,450
28	2,050	1,530	2,400	4,740	2,490	11,700	8,630	3,180	2,160	1,820	1,110	1,590
29	2,020	1,700	1,920	4,310	-------	7,750	26,800	2,960	2,040	3,800	3,160	1,710
30	1,800	1,480	1,860	3,620	-------	6,930	21,900	2,800	2,170	1,650	1,550	1,910
31	1,730	-------	1,700	3,490	-------	7,650	-------	2,780	-------	1,520	1,110	-------
1923-24												
1	1,690	3,320	30,500	3,400	4,820	2,380	11,900	12,000	3,760	1,370	1,120	1,530
2	1,400	2,310	16,500	4,440	4,300	2,370	8,370	18,700	3,380	1,230	1,350	1,340
3	1,310	2,540	10,300	6,240	3,730	2,110	6,240	15,800	6,010	1,200	1,350	1,510
4	1,170	2,160	7,260	12,500	3,430	2,070	6,490	18,800	2,590	1,130	1,260	2,800
5	1,290	1,990	8,670	12,100	3,100	2,270	12,400	20,600	2,630	1,430	1,230	2,380
6	1,270	1,800	21,100	7,370	3,100	2,850	20,000	15,000	3,580	1,350	1,200	2,530
7	1,420	2,580	24,100	4,830	3,420	4,660	46,400	13,400	3,610	1,340	1,500	2,510
8	1,380	3,810	12,700	4,530	2,610	6,150	50,900	10,100	3,180	1,380	1,490	3,390
9	1,270	4,310	8,680	4,590	2,490	5,020	26,000	8,740	2,590	1,750	1,580	2,980
10	1,240	2,830	7,800	4,590	2,490	4,370	23,900	12,700	2,370	2,130	1,580	4,690
11	1,160	2,940	7,980	8,730	2,500	4,100	21,900	15,400	2,900	2,050	1,570	3,460
12	1,100	2,910	8,990	38,600	2,060	4,100	16,400	13,300	2,160	1,570	1,600	3,100
13	1,030	2,930	9,190	22,700	1,960	4,820	13,000	29,000	2,240	1,560	1,520	2,770
14	1,080	2,970	10,500	14,100	1,860	5,190	14,700	17,200	2,240	1,800	1,450	2,550
15	1,140	2,420	7,080	9,120	1,960	4,740	21,200	20,500	2,320	2,290	1,360	2,330
16	1,100	2,470	8,330	6,510	2,060	3,600	16,900	17,500	2,230	2,270	1,280	2,290
17	1,120	2,050	7,250	9,380	3,080	2,850	13,000	13,700	2,030	2,240	1,240	2,550
18	1,150	2,960	6,540	14,700	2,280	2,600	11,300	9,640	2,000	4,340	1,230	2,250
19	1,140	2,460	4,120	10,500	2,070	2,790	22,700	9,160	2,020	3,660	1,260	1,960
20	1,210	2,040	3,500	8,170	2,740	3,030	24,600	9,200	1,670	2,180	1,330	1,970
21	1,320	2,270	3,450	4,890	2,180	3,810	20,600	6,960	1,710	1,680	2,410	1,820
22	1,120	2,320	3,907	2,660	2,060	5,410	20,600	6,590	1,770	1,890	2,250	1,790
23	986	2,080	4,750	1,920	2,270	10,700	31,200	5,660	1,880	1,890	1,860	2,070
24	2,770	2,520	6,690	4,090	2,260	18,100	23,200	3,890	1,800	1,770	2,040	2,180
25	9,760	4,040	5,960	4,160	2,170	16,900	16,900	4,160	2,030	1,920	1,950	2,120
26	6,790	2,760	5,050	3,280	1,950	13,400	14,200	5,040	2,020	1,650	2,190	2,040
27	3,210	4,740	4,550	2,480	2,220	9,970	10,300	4,770	1,780	1,520	1,820	2,050
28	3,200	6,210	4,320	2,550	2,380	9,210	7,310	6,620	1,720	1,330	1,650	2,010
29	2,310	5,450	4,170	3,610	2,380	11,700	3,630	6,460	1,430	1,240	1,640	1,730
30	2,040	9,170	3,600	4,300	-------	14,200	7,730	4,530	1,380	1,360	1,550	10,400
31	2,770	-------	3,030	3,810	-------	18,100	-------	4,650	-------	1,290	1,570	-------

NOTE.—Discharge over spillway, Dec. 9–10, 23–27, 3–31, 1917, Jan, 1–4, Feb. 1–2, Mar. 1–5, 16–17, May 11, Aug. 11, Sept. 6–7, 11–14, 1918, May 13–17, Sept. 9, Oct. 19–21, 27–29, Nov. 18, 1922, May 29 to June 9, 15–20, Aug. 27 to Sept. 5, 1923, Jan. 21, 27–31, and Feb. 4–17, 1923, determined from gage heights estimated from recorder graph and staff gage readings at dam; water-stage recorder not operating satisfactorily. Discharge, May 23–29, July 15–17, 1920, estimated by comparison with record of Mohawk River at Vischer Ferry dam; no gage-height record.

Monthly discharge of Mohawk River at Crescent dam, N. Y., for the years ending September 30, 1918–1924

[Drainage area, 3,490 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
1917–18					
December	5,960	1,470	2,940	0.842	0.97
January		1,490	1,810	.519	.60
February	31,600	1,320	6,490	1.85	1.94
March	41,700	6,270	16,100	4.61	5.32
April	22,600	6,860	14,700	4.21	4.70
May	15,800	3,300	5,800	1.66	1.91
June	10,600	1,740	3,660	1.05	1.17
July	4,960	1,250	2,460	.705	.81
August	2,500	961	1,340	.384	.44
September	11,400	1,540	3,160	.906	1.01
1918–19					
October	19,300	2,110	4,440	1.27	1.46
November	17,200	2,760	5,210	1.49	1.66
December	19,400	2,890	7,040	2.02	2.33
January	14,300	2,380	4,990	1.43	1.65
February	4,280	2,000	2,820	.808	.84
March	17,000	5,810	10,500	3.01	3.47
April	32,000	5,730	12,200	3.50	3.90
May	19,400	2,870	9,410	2.70	3.11
June	3,440	1,240	2,190	.628	.70
July	7,090	880	2,300	.659	.76
August	2,390	1,050	1,610	.461	.53
September	14,400	1,450	2,850	.817	.91
The year	32,000	880	5,490	1.57	21.32
1919–20					
October	9,280	2,070	4,680	1.34	1.54
November	22,900	3,550	8,710	2.50	2.79
December	15,600	2,440	6,390	1.83	2.11
January	2,980	1,940	2,590	.742	.86
February	2,860	1,640	2,050	.587	.63
March	53,000	1,590	18,200	5.22	6.02
April	32,900	10,500	18,000	5.16	5.76
May	17,100	2,370	5,440	1.56	1.80
June	9,180	1,550	2,780	.797	.89
July	3,240	1,310	1,900	.544	.63
August	5,360	1,160	2,220	.636	.73
September	14,500	1,040	2,480	.711	.79
The year	53,000	1,040	6,280	1.80	24.55
1920–21					
October	36,700	1,650	4,730	1.36	1.57
November	25,500	2,650	6,440	1.85	2.06
December	41,000	1,820	12,000	3.44	3.97
January	10,500	1,330	4,130	1.18	1.36
February	14,400	2,130	3,450	.989	1.03
March	35,300	5,130	16,600	4.76	5.49
April	13,400	2,130	6,650	1.91	2.13
May	20,800	1,710	4,340	1.24	1.43
June	2,160	1,030	1,350	.387	.43
July	6,740	1,310	2,510	.719	.83
August	2,520	1,140	1,620	.464	.53
September	1,850	976	1,350	.387	.43
The year	41,000	976	5,460	1.57	21.26
1921–22					
October	3,930	1,020	1,680	.481	.55
November	37,000	1,930	8,560	2.45	2.73
December	30,300	2,250	7,250	2.08	2.40
January	7,650	1,330	2,730	.782	.90
February	16,100	1,720	4,900	1.40	1.46
March	35,400	3,670	15,600	4.47	5.15
April	50,300	2,800	19,100	5.47	6.10
May	16,400	2,020	5,540	1.59	1.83
June	45,200	2,560	11,000	3.15	3.51
July	14,400	1,150	3,700	1.06	1.22
August	13,900	1,440	3,060	.877	1.01
September	3,260	1,330	1,800	.516	.58
The year	50,300	1,020	7,070	2.03	27.44

Monthly discharge of Mohawk River at Crescent dam, N. Y., for the years ending September 30, 1918–1924—Continued

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
1922–23					
October	3,330	1,080	1,950	0.559	0.64
November	3,840	1,480	2,300	.659	.74
December	4,330	1,550	2,530	.725	.84
January	13,500	2,210	4,600	1.32	1.52
February	4,650	2,450	3,420	.980	1.02
March	43,300	2,550	11,700	3.35	3.86
April	55,800	4,560	17,300	4.96	5.53
May	17,500	2,780	6,990	2.00	2.31
June	10,100	1,630	2,870	.822	.92
July	3,800	1,170	1,570	.450	.52
August	3,160	893	1,260	.361	.42
September	6,980	1,020	1,730	.496	.55
The year	55,800	893	4,850	1.39	18.87
1923–24					
October	9,760	986	1,970	0.565	0.65
November	9,170	1,800	3,180	.911	1.02
December	30,500	3,030	8,730	2.50	2.88
January	38,600	1,920	7,900	2.26	2.61
February	4,820	1,860	2,620	.751	.81
March	18,100	2,070	6,570	1.88	2.17
April	50,900	3,630	18,100	5.19	5.79
May	29,000	3,890	11,600	3.32	3.83
June	6,010	1,380	2,430	.696	.78
July	4,340	1,130	1,800	.516	.59
August	2,410	1,120	1,560	.447	.52
September	10,400	1,340	2,640	.757	.84
The year	50,900	986	5,770	1.65	22.49

WEST CANADA CREEK AT HINCKLEY, N. Y.

LOCATION.—1 mile below Hinckley dam at Hinckley, Oneida County, 1½ miles above Prospect, and 4 miles above Trenton Falls.

DRAINAGE AREA.—373 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 14, 1919, to September 30, 1924.

GAGE.—Gurley 7-day graph water-stage recorder on right bank; inspected by Charles D. Cady.

DISCHARGE MEASUREMENTS.—Made from cable 1,000 feet above gage.

CHANNEL AND CONTROL.—Large boulders on solid rock bottom; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 7.43 feet at 9 a. m. May 5 (discharge, 6,570 second-feet); minimum stage, 2.50 feet from 1 to 4 p. m. August 31 (discharge, practically zero), caused by closing of gates in dam.

1919–1924: Maximum stage recorded, 8.93 feet at 2 p. m. April 12, 1922 (discharge, 10,800 second-feet); minimum stage, 2.50 feet from 1 to 4 p. m. August 31, 1924 (discharge practically zero), caused by closing of gates in dam.

ICE.—Stage-discharge relation not affected by ice.

REGULATION.—Seasonal flow regulated by storage in Hinckley Reservoir, Consolidated Water Co.'s reservoir on Black Creek at Grey, and several small lakes. Diurnal flow affected slightly at low stages by operation of Fibre Co.'s mill at Hinckley.

DIVERSIONS.—Consolidated Water Co. of Utica diverts water for Utica from Hinckley Reservoir.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined between 100 and 6,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph, or for days of considerable fluctuation, by averaging discharge for intervals of day. Records excellent, except during period when intake was partly obstructed, for which they are fair.

Discharge measurements of West Canada Creek at Hinckley, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	3.94	507	Apr. 26	5.70	2,610	Aug. 6	3.72	367
Feb. 12	4.63	1,140	June 9	4.13	636			

Daily discharge, in second-feet, of West Canada Creek at Hinckley, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	382	639	832	930	1,080	910	870	5,500	920	468	420	288
2	382	655	920	930	1,130	832	880	5,740	804	468	404	325
3	382	663	980	930	1,130	767	890	4,380	749	462	382	360
4	382	663	880	930	1,130	758	890	4,700	722	462	376	370
5	382	663	749	930	1,110	749	900	5,240	671	462	376	370
6	382	655	749	842	1,140	722	950	4,270	639	462	376	376
7	382	655	823	722	1,130	713	1,150	3,250	639	462	370	376
8	382	655	870	722	1,110	713	1,360	2,970	639	462	370	376
9	382	655	880	713	1,090	713	1,410	2,970	639	456	370	382
10	382	647	880	704	1,090	713	1,310	3,160	639	456	370	382
11	382	639	880	749	1,100	731	1,210	2,970	631	450	376	387
12	438	639	930	776	1,130	722	1,210	2,530	631	450	376	398
13	512	631	970	823	1,130	722	1,220	2,200	631	450	370	409
14	526	623	970	1,090	1,130	740	1,270	2,120	631	450	370	446
15	526	631	960	1,370	1,110	776	1,420	2,440	631	444	370	546
16	526	623	950	1,320	1,110	767	1,380	2,880	631	444	370	573
17	532	623	940	1,470	1,130	767	1,250	2,440	631	450	370	566
18	512	508	930	1,820	1,130	785	1,210	2,040	623	444	370	559
19	506	623	930	1,670	1,140	776	1,280	2,040	623	444	370	559
20	506	623	930	1,470	1,140	767	2,960	1,960	623	444	370	573
21	506	615	930	1,230	1,110	776	3,250	1,670	623	444	370	601
22	500	615	940	1,160	1,080	794	3,060	1,400	615	444	365	615
23	500	615	960	1,150	1,070	804	4,700	1,190	608	444	370	628
24	506	615	960	1,140	1,020	823	3,960	1,100	608	444	365	623
25	506	615	970	1,110	991	832	3,060	1,140	601	444	365	623
26	512	679	960	1,100	960	852	2,700	1,200	594	444	370	623
27	512	722	950	1,090	940	842	2,790	970	594	444	365	639
28	506	731	940	1,090	920	842	3,250	1,010	537	438	365	647
29	500	740	940	1,080	910	861	3,650	1,260	474	480	360	647
30	580	758	940	1,080	-------	870	3,850	1,230	468	519	360	671
31	631	-------	940	1,080	-------	870	-------	1,060	-------	462	165	-------

NOTE.—Slope gage readings used Jan. 26 to Feb. 8; discharge Aug. 16–18 estimated as indicated in above table as determined from estimated mean daily gage heights; no automatic record. Discharge Apr. 10 to June 8 determined from gage heights corrected for partly obstructed intake and from daily slope gage readings.

Monthly discharge of West Canada Creek at Hinckley, N. Y., for the year ending September 30, 1924

[Drainage area, 373 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	631	382	469	1.26	1.45
November	758	508	647	1.73	1.93
December	980	749	916	2.46	2.84
January	1,820	704	1,070	2.87	3.31
February	1,140	910	1,080	2.90	3.13
March	910	713	784	2.10	2.42
April	4,700	870	1,980	5.31	5.92
May	6,240	970	2,580	6.92	7.98
June	920	468	636	1.71	1.91
July	519	438	455	1.22	1.41
August	420	165	366	.981	1.13
September	671	288	498	1.34	1.50
The year	6,240	165	956	2.56	34.93

NOTE.—The monthly discharge in second-feet per square mile and run-off in inches shown by the table do not represent the natural flow from the basin because of artificial storage mainly in Hinckley Reservoir. The yearly discharge and run-off doubtless represent very nearly the natural flow.

WEST CANADA CREEK AT KAST BRIDGE, N. Y.

LOCATION.—500 feet below highway bridge in hamlet of Kast Bridge, Herkimer County, and 4 miles above mouth at Herkimer.

DRAINAGE AREA.—575 square miles (from report of State engineer).

RECORDS AVAILABLE.—May 15, 1905, to December 31, 1910; January 1, 1912, to December 31, 1913; October 1, 1920, to September 30, 1924.

GAGE.—Gurley 7-day graph water-stage recorder on left bank; inspected by engineers from the Department of State Engineer and Surveyor.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Small boulders and coarse gravel; shifting occasionally.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 6.35 feet at 3 p. m. September 30 (discharge, 11,900 second-feet); minimum stage, 1.10 feet from 4 to 6 p. m. September 1 (discharge, about 110 second-feet).

1920–1924: Maximum stage from water-stage recorder, 7.30 feet at 11 a. m. June 21, 1922 (discharge, about 16,500 second-feet); minimum stage, 1.10 feet from 4 to 6 p. m. September 1, 1924 (discharge, about 110 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Seasonal flow regulated by storage in Hinckley Reservoir, Consolidated Water Co.'s reservoir on Black Creek at Gray, and several small lakes. Diurnal flow affected by operation of mills and power plants upstream.

DIVERSIONS.—Consolidated Water Co. of Utica diverts water supply for Utica from Hinckley Reservoir. Water is diverted below Trenton Falls power plant during the navigation season through Ninemile feeder and Ninemile Creek into the Barge Canal.

A continuous record of the amount of diversion through Ninemile feeder from the West Canada Creek at Trenton Falls during the navigation season is published as a separate station, "Ninemile feeder near Holland Patent, N. Y."

ACCURACY.—Stage-discharge relation practically permanent, except as affected by ice. Rating curve well defined between 200 and 5,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph, or for days of considerable fluctuation, by averaging discharge for intervals of day. Records good, except during period of ice effect, for which they are fair.

Discharge measurements of West Canada Creek at Kast Bridge, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	1.75	484	Apr. 18	2.76	1,730	Aug. 7	1.66	441
Feb. 14	[a] 2.55	1,210	Apr. 30	4.05	4,100			
Mar. 4	2.17	934	June 13	2.08	760			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of West Canada Creek at Kast Bridge, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	307	764	2,250	1,280	1,610	1,000	1,480	6,240	1,320	474	456	187
2	307	708	1,440	1,300	1,700	1,000	1,400	7,530	1,210	458	391	516
3	327	721	1,520	1,760	1,550	950	1,370	5,360	1,100	479	415	514
4	310	594	1,270	1,740	1,620	1,000	1,710	5,890	1,060	446	328	375
5	332	740	1,770	1,440	1,640	1,140	2,490	6,860	1,020	492	370	496
6	348	679	2,220	1,240	1,680	1,380	3,500	4,960	951	452	438	698
7	295	880	1,520	1,110	1,620	1,230	5,040	3,890	964	445	416	779
8	348	890	1,280	1,070	1,550	1,150	2,600	3,280	946	584	442	467
9	287	765	1,160	1,030	1,490	993	2,260	3,280	971	622	398	713
10	315	738	1,200	1,080	1,400	1,090	2,840	3,780	954	482	401	830
11	323	680	1,380	2,730	1,400	1,040	2,300	3,480	857	466	381	546
12	316	776	1,150	2,730	1,400	1,110	2,000	3,190	878	450	361	503
13	442	700	1,720	1,620	1,400	1,210	2,290	2,820	895	598	348	582
14	379	660	1,540	1,440	1,300	1,070	3,330	2,690	872	612	353	548
15	499	675	1,230	1,840	1,300	1,090	2,300	3,380	798	459	309	617
16	474	660	1,240	1,870	1,300	990	2,040	3,380	840	443	349	620
17	464	697	1,240	2,820	1,200	1,030	1,880	3,000	822	1,080	434	610
18	454	660	1,070	2,380	1,300	997	2,350	2,600	784	599	356	602
19	461	623	1,070	2,140	1,300	978	3,130	2,640	695	504	354	600
20	540	678	1,110	1,920	1,200	995	3,180	2,470	671	437	365	585
21	372	649	1,320	1,350	1,300	1,180	4,000	2,140	780	461	370	610
22	483	652	1,240	1,370	1,300	1,820	5,440	1,870	764	456	341	681
23	454	645	1,320	1,620	1,300	2,390	5,500	1,610	674	474	513	842
24	1,010	791	1,340	1,540	1,100	2,520	4,580	1,560	676	415	413	696
25	894	636	1,230	1,520	1,200	2,060	3,580	1,620	714	444	326	641
26	630	736	1,240	1,340	1,200	1,820	3,190	1,580	690	529	367	620
27	587	1,220	1,210	1,230	1,100	1,680	3,100	1,480	647	405	357	630
28	476	1,050	1,180	1,540	1,100	2,210	3,480	1,800	666	413	345	663
29	582	883	1,160	1,560	1,000	2,090	3,890	1,760	558	384	345	975
30	612	2,740	1,180	1,720	-------	2,380	4,220	1,660	507	468	341	6,780
31	940	-------	1,230	1,840	-------	1,920	-------	1,490	-------	542	366	-------

NOTE.—Discharge Nov. 11 estimated as indicated in above table, as determined from estimated gage height for part of day; water-stage recorder not operating satisfactorily. Discharge, Feb. 10 to Mar. 4, determined from gage heights corrected for ice effect by means of one discharge measurement, study of gage-height graph and weather records, and comparison with record of West Canada Creek at Hinckley.

Monthly discharge of West Canada Creek at Kast Bridge, N. Y., for the year ending September 30, 1924

[Drainage area, 575 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,010	287	470	0.817	0.94
November	2,740	594	810	1.41	1.57
December	2,250	1,070	1,360	2.37	2.73
January	2,820	1,030	1,650	2.87	3.31
February	1,700	1,000	1,360	2.37	2.56
March	2,520	950	1,410	2.45	2.82
April	5,500	1,370	3,020	5.25	5.86
May	7,530	1,480	3,200	5.57	6.42
June	1,320	507	843	1.47	1.64
July	1,080	384	502	.873	1.01
August	513	309	379	.659	.76
September	6,780	187	818	1.42	1.58
The year	7,530	187	1,320	2.30	31.20

NOTE.—The monthly discharge in second-feet per square mile and run-off in inches shown by table do not represent the natural flow from the basin because of artificial storage, mainly in Hinckley Reservoir. The yearly discharge and run-off doubtless represent very nearly the natural flow, except for the diversion out of the basin, during the navigation season, through Ninemile feeder and Ninemile Creek into the Barge Canal.

NINEMILE FEEDER NEAR HOLLAND PATENT, N. Y.

LOCATION.—At mouth of Ninemile feeder, 4 miles east of Holland Patent, Oneida County, half a mile below highway bridge near farm of P. A. Wade, 4 miles south and 1 mile west of village of Barneveld.

RECORDS AVAILABLE.—June 5, 1919, to September 30, 1924. Operation of station was assumed by department of state engineer and surveyor July 1, 1921.

GAGE.—Gurley 7-day graph water-stage recorder on right bank; inspected by D. G. Humphrey.

DISCHARGE MEASUREMENTS.—Made from highway bridge half a mile above gage or by wading.

CONTROL.—Suppressed weir of concrete with a lip about 1.5 feet high and a spillway inclined about 1:2; permanent.

REGULATION.—Flow in the feeder is regulated by gates at the intake of the canal just below the power plant at Trenton Falls.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined between 30 and 200 second-feet. Operation of water-stage recorder satisfactory, except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph, or for days of considerable fluctuation, by averaging discharge for intervals of day. Records excellent.

Discharge measurements of Ninemile feeder near Holland Patent, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	1.71	107	Aug. 6	1.36	77.7
July 17	1.46	86.3	Sept. 27	1.38	78.6

Daily discharge, in second-feet, of Ninemile feeder near Holland Patent, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	June	July	Aug.	Sept.	Day	Oct.	Nov.	June	July	Aug.	Sept.
1	111	105	------	81	80	68	16	111	102	------	84	80	80
2	112	105	------	80	80	80	17	111	103	------	92	80	80
3	112	105	------	81	78	78	18	111	102	------	83	79	80
4	112	104	------	80	79	78	19	111	102	------	81	79	80
5	111	104	------	80	80	80	20	109	102	------	80	79	80
6	111	104	------	80	80	84	21	107	102	84	81	79	80
7	110	106	------	81	80	81	22	107	101	82	81	80	82
8	109	104	------	84	80	79	23	106	101	83	81	81	81
9	110	104	------	82	79	81	24	114	100	82	80	79	80
10	110	104	------	80	80	80	25	108	98	84	80	80	80
11	110	104	------	81	80	79	26	105	101	82	80	79	80
12	110	104	------	81	79	78	27	105	78	82	80	79	80
13	112	103	------	87	79	80	28	104	------	83	80	79	80
14	110	101	------	82	79	79	29	105	------	81	80	79	88
15	110	101	------	81	79	80	30	106	------	80	81	79	140
							31	106	------	------	80	69	------

NOTE.—Discharge Nov. 18 estimated as indicated in above table, as determined from estimated mean daily gage height; water-stage recorder not operating satisfactorily. Diversion discontinued for winter Nov. 27, 1923.

Monthly discharge of Ninemile feeder near Holland Patent, N. Y., for the year ending September 30, 1924

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	114	104	109	July	92	80	81.5
November 1–27	106	78	102	August	81	69	79.1
June 21–30	84	80	82.3	September	140	68	81.9

POESTEN KILL NEAR TROY, N. Y.

LOCATION.—500 feet below steel highway bridge on Troy-Eagle Mills road, 1½ miles west of Eagle Mills, Rensselaer County, 3 miles east of Troy, and 4½ miles below mouth of Quaken Kill.

DRAINAGE AREA.—88 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 15, 1923, to September 30, 1924.

GAGE.—Au continuous water-stage recorder on left bank, installed June 4. From October 1 to June 4, a Gurley 7-day graph water-stage recorder was in operation. Gurley water-stage recorder inspected by students of Rensselaer Polytechnic Institute, under direction of Department of Geodesy and Surveying; Au water-stage recorder inspected by engineers from Albany office of United States Geological Survey.

DISCHARGE MEASUREMENTS.—Made from cable 500 feet below gage or by wading.

CHANNEL AND CONTROL.—Solid rock ledge; permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.89 feet at 2 a. m. December 1 (discharge, 2,940 second-feet); minimum stage, 0.90 foot at 5 p. m. July 25 (discharge, 4.6 second-feet).

1923–1924: Maximum stage from water-stage recorder, that of current year; minimum stage, 0.89 foot at 5 p. m. July 23 and 7.30 a. m. July 24, 1923 (discharge, 4.5 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Some regulation on Quaken Kill due to storage reservoirs for water supply for city of Troy.

DIVERSIONS.—City of Troy diverts water for its water supply from the Quaken Kill about 1 mile below Quakenkill. During low water this diversion amounts to the entire flow of the Quaken Kill at this point.

ACCURACY.—Stage-discharge relation permanent, except as affected by ice. Rating curve fairly well defined below 2,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph, or for days of considerable fluctuation, by averaging discharge for intervals of day. Records good, except during periods of ice effect and estimate, for which they are fair.

Discharge measurements of Poesten Kill near Troy, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 27	2.19	187	Dec. 3	2.98	544	Mar. 24	1.94	133
Dec. 1	4.59	1,630	Jan. 29	[a] 1.73	56.4	May 10	2.13	178
Dec. 2	3.58	879	Mar. 4	[a] 1.34	15.7	Sept. 2	.97	5.23

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Poesten Kill near Troy, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	211	2,020	184	55	12	157	230	80	10	21	5.9
2	25	144	848	144	50	12	119	244	67	27	12	6.0
3	19	109	514	306	44	14	127	190	57	15	6.3	7.6
4	18	90	360	346		16	161	211	49	10	7.5	8.3
5	16	80	435	262		340	445	201	47	8.0	16	8.4
6	15	74	710	200		460	634	187	46	6.3	19	20
7	13	469	550	180		220	1,500	173	55	5.9	21	20
8	12	966	377	160		149	886	152	54	5.9	15	14
9	9.8	516	290	140		162	746	152	57	6.0	9.3	185
10	9.8	332	244	140		134	1,020	176	49	7.6	7.0	709
11	9.8	306	324	1,340		105	870	152	44	6.7	5.7	287
12	9.3	302	255	1,160		84	596	173	40	6.3	6.3	141
13	9.0	234	217	535		73	606	195	38	7.6	10	94
14	9.3	195	298	359		75	694	178	34	14	11	92
15	9.3	165	198	230		56	580	201	30	11	6.7	69
16	9.3	147	167	224	26	70	400	173	25	7.6	5.6	52
17	9.0	127	147	490		73	306	139	24	11	5.6	38
18	8.3	116	109	286		65	298	122	21	49	12	29
19	8.6	102	100	227		49	950	198	18	22	13	23
20	17	86	100	198		49	640		17	12	8.0	19
21	30	80	111	110		73	530		34	7.3	20	16
22	26	78	120	110		86	806		46	5.9	22	14
23	24	76	210	100		127	849		28	5.3	18	44
24	702	172	259	100		142	520		16	4.7	15	49
25	655	412	192	95		127	364	120	16	5.8	14	30
26	311	389	162	90		116	282		19	17	21	20
27	192	973	139	55		102	227		16	18	17	15
28	142	723	132	50		113	195		11	19	12	13
29	116	473	127	55		142	173		11	18	8.0	12
30	126	1,030	105	80	-------	298	154		10	19	6.0	71
31	306	-------	116	85	-------	248	-------	90	-------	23	5.4	-------

NOTE.—Discharge for following periods estimated from imperfect and fragmentary automatic record: Feb. 4–29, May 20–30. For following days as determined from estimated mean daily gage heights: Oct. 21, Jan. 27–29, Mar. 1–5, and May 19 and 31; water-stage recorder not operating satisfactorily. Discharge, Jan. 6–10 and Jan. 21 to Mar. 7, determined from gage heights corrected for ice effect by means of two discharge measurements and study of gage-height graph and weather records.

Monthly discharge of Poesten Kill near Troy, N. Y., for the year ending September 30, 1924

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	702	8.3	93.6	May	244	90	157
November	1,030	74	306	June	80	10	35.3
December	2,020	100	321	July	49	4.7	12.6
January	1,340	50	259	August	22	5.4	12.1
February	55		28.4	September	709	5.9	70.4
March	460	12	122				
April	1,500	119	528	The year	2,020	4.7	162

NOTE.—The above figures do not represent the natural flow from the basin because of the diversion from the Quaken Kill by the city of Troy for water-supply purposes.

WALLKILL RIVER AT PELLETS ISLAND MOUNTAIN, N. Y.

LOCATION.—At highway bridge in village of Pellets Island Mountain, 4½ miles south of Middletown, Orange County, and 5½ miles below mouth of Pochuck Creek.

DRAINAGE AREA.—385 square miles (measured on topographic maps).

RECORDS AVAILABLE.—December 29, 1919, to September 30, 1924.

GAGE.—Chain gage on downstream side of highway bridge. Datum of gage raised 5.00 feet October 1, 1923. Gage read by Michael Meduski.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading 2 miles below.

CHANNEL AND CONTROL.—Channel mostly silt and control coarse gravel; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.65 feet at 7 a. m. April 9 (discharge, 5,240 second-feet); minimum stage, 2.50 feet repeatedly October 8–19 (discharge, 29 second-feet).

1920–1924: Maximum stage recorded, 20.7 feet at 7.30 a. m. March 16, 1920 (discharge, 8,350 second-feet); minimum stage, 7.39 feet from 5 p. m. August 20 to 7 a. m. August 24, 1923 (discharge, 18 second-feet).

ICE.—Stage-discharge relation usually affected by ice.

ACCURACY.—Stage-discharge relation practically permanent, except as affected by ice. Rating curve well defined below 3,000 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good, except during period of ice effect, for which they are fair.

Discharge measurements of Wallkill River at Pellets Island Mountain, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	2.60	42.0	Apr. 8	11.37	4,770
Jan. 28	[a] 5.62	712	July 27	2.67	51.5
Feb. 25	[a] 3.39	146			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Wallkill River at Pellets Island Mountain, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	279	612	612	460	140	1,350	650	538	148	53	44
2	41	266	1,050	538	420	140	1,000	650	485	128	53	39
3	41	214	1,050	612	380	150	950	612	418	110	51	35
4	35	190	1,050	1,050	360	150	1,100	538	385	89	49	35
5	35	190	1,150	1,000	360	240	1,400	502	369	82	46	35
6	35	168	1,450	950	420	750	1,630	434	338	78	42	31
7	35	266	2,190	900	440	1,400	3,380	401	323	78	41	31
8	31	434	1,400	850	400	1,450	4,830	418	308	78	41	31
9	29	434	1,570	700	360	1,450	5,100	538	279	168	41	34
10	29	434	1,450	500	360	1,750	4,420	1,050	252	418	41	44
11	29	308	1,350	770	360	1,810	3,380	1,000	252	401	44	61
12	29	252	1,150	1,570	340	1,690	2,470	1,400	214	323	65	74
13	29	226	950	1,570	300	1,570	1,930	2,050	202	214	148	65
14	35	202	950	1,350	240	1,350	1,570	2,190	202	202	179	57
15	35	179	860	1,200	190	1,250	1,250	2,190	226	179	148	53
16	29	168	770	1,250	150	860	1,050	2,050	202	148	101	51
17	29	158	690	1,690	150	1,050	905	1,750	179	110	81	49
18	29	158	650	1,570	150	770	950	1,570	158	101	71	46
19	29	158	612	1,570	150	860	1,250	1,400	158	78	60	42
20	41	138	434	1,510	150	860	1,250	1,200	138	70	57	41
21	54	128	401	1,400	160	860	1,300	1,050	138	67	60	39
22	54	119	468	1,200	160	815	1,350	1,050	138	62	53	39
23	68	138	612	1,200	150	770	1,350	950	119	62	54	54
24	119	279	905	1,300	150	815	1,250	860	119	55	54	57
25	770	354	950	1,300	150	860	1,100	950	119	53	71	62
26	815	369	860	1,000	150	860	950	905	128	49	68	54
27	538	401	860	900	150	815	815	770	128	49	71	44
28	538	385	815	750	140	860	770	690	128	48	62	41
29	385	308	770	500	140	905	650	690	138	48	57	68
30	308	418	730	460	-------	1,350	612	690	138	44	54	252
31	252	-------	730	500	-------	1,510	-------	690	-------	44	51	-------

NOTE.—Discharge Jan. 6–10 and Jan. 21 to March 6 determined from gage heights corrected for ice-effect by means of two discharge measurements and study of gage-height graph and weather records.

Monthly discharge of Wallkill River at Pellets Island Mountain, N. Y., for the year ending September 30, 1924

[Drainage area, 385 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	815	29	148	0.384	0.44
November	434	119	257	.668	.75
December	2,190	401	951	2.47	2.85
January	1,690	460	1,040	2.70	3.11
February	460	140	258	.670	.72
March	1,810	140	971	2.52	2.90
April	5,100	612	1,710	4.44	4.95
May	2,190	401	1,030	2.68	3.09
June	538	119	231	.600	.67
July	418	44	122	.317	.37
August	179	41	66.7	.173	.20
September	252	31	53.6	.139	.16
The year	5,100	29	572	1.49	20.21

HACKENSACK RIVER BASIN

HACKENSACK RIVER AT NEW MILFORD, N J.

LOCATION.—At pumping plant of Hackensack Water Co., New Milford, Bergen County, 3½ miles below mouth of Dwars Kill.

DRAINAGE AREA.—113 square miles, revised (measured on State topographic map).

RECORDS AVAILABLE.—October 28, 1921, to September 30, 1924.

GAGES.—Water-stage recorder on right bank 40 feet above south dam. Previous to November 23, 1923, a staff gage 30 feet above dam was read. Vertical staff gage in Oradell Reservoir is read once daily. Gages read and recorder inspected by employees of Hackensack Water Co.

DISCHARGE MEASUREMENTS.—Measured from highway bridge at Oradell, half a mile upstream.

CHANNEL AND CONTROL.—Two spillways and sluice gates at pumping-plant forebay form control.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.05 feet at 4 p. m. April 7 (discharge, 1,880 second-feet); no water going over dams a great part of time.

1922–1924: Maximum stage recorded, 4.05 feet at 4 p. m. April 7, 1924 (discharge, 1,880 second-feet); no water going over dams a great part of time.

DIVERSION.—Water is diverted above control by the Hackensack Water Co. This diversion is measured by Venturi meter and included in the table of monthly discharge.

REGULATION.—Water is stored in the Oradell Reservoir, 1 mile above gage. Correction for storage has been applied to monthly record.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined between 40 and 900 second-feet. Previous to installation of water-stage recorder, staff gage was read to hundredths once daily. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table, or for days of considerable fluctuation, by averaging discharge for intervals of day. Records good.

No discharge measurements made during year.

Daily discharge, in second-feet, of Hackensack River at New Milford, N. J., for the year ending September 30, 1924

Day	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1			162	107	103	234	274	154		
2			162	76	107	229	253	96		
3			279	59	107	174	192	72		
4			466	62	145	150	188	100		
5		75	332	247	290	174	129	192	31	
6		179	154	530	316	305	40	192	21	
7		530	89	352	434	940	27	99		
8		497	119	166	497	1,490	27	76	3	
9		316	150	103	298	708	693	76	231	
10		197	125	66	192	596	497	76	195	
11		162	193	95	202	415	385	76	61	
12		154	344	166	370	170	675	54	6	
13		82	344	131	466	174	842	24	7	23
14		79	244	66	373	174	800	52	2	85
15		118	110	66	258	179	564	96	3	66
16		133	56	66	202	179	333	73	3	57
17		107	608	66	162	267	202	30	3	57
18		76	735	51	85	562	248	10	2	40
19		92	434	40	56	770	316	10		48
20		85	373	37	76	1,070	316	2		33

Daily discharge, in second-feet, of Hackensack River at New Milford, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
21		34	222		107	960	316	6		16
22		10	107		154	480	284	7		14
23		145	70	60	150	404	176	2		67
24		244	48		141	318	92			125
25	18	110	259		137	118	312			125
26		129		103	141	85	284	3		73
27		133	200	103	137	85	206	6	2	48
28		125		99	141	120	152	14		48
29		210		103	188	279	128	54		45
30	10	239	107		234	268	225	43		186
31		162	107		234		174			

NOTE.—This table does not include diversion nor storage. Flashboards on all spillways Aug. 4 to Sept. 12. No flow Oct. 1–24, 26–29, 31, Nov. 1 to Dec. 4, June 7, 19–26, 28–31, and Aug. 1 to Sept. 12. Braced figures show estimated mean discharge for periods indicated.

Monthly discharge of Hackensack River at New Milford, N. J., for the year ending September 30, 1924

[Drainage area, 113 square miles]

Month	Discharge in second-feet						Run-off in inches
	Observed			Gain or loss in storage at Oradell Reservoir plus diversion	Corrected for storage and diversion		
	Maximum	Minimum	Mean		Mean	Per square mile	
October	18	0	0.9	93.9	94.8	0.839	0.97
November	0	0	0	72.1	72.1	.638	.71
December	530	0	143	67	210	1.86	2.14
January	735	48	232	45	277	2.45	2.82
February	530	37	112	53	165	1.46	1.58
March	497	56	210	46	256	2.27	2.62
April	1,490	85	403	50	453	4.01	4.47
May	842	27	302	54	356	3.15	3.63
June	192	0	56.5	53.5	110	.973	1.09
July	231	0	18.4	40.5	58.9	.521	.60
August	0	0	0	51.0	51.0	.451	.52
September	186	0	38.5	16.5	55.0	.487	.54
The year	1,490	0	126	54	180	1.59	21.69

PASSAIC RIVER BASIN

PASSAIC RIVER NEAR MILLINGTON, N. J.

LOCATION.—At highway bridge known as Davis Bridge, 1 mile above Millington, Somerset County, 1½ miles below mouth of Black Brook and three-fourths mile above gaging station formerly maintained at Millington.

DRAINAGE AREA.—55 square miles (measured on State topographic map).

RECORDS AVAILABLE.—November 10, 1921, to September 30, 1924. At Millington three-fourths mile downstream November 25, 1903, to July 15, 1906.

GAGE.—Inclined staff gage on right bank 200 feet below Davis Bridge; read by Mrs. A. H. Schmidt.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed of coarse gravel. There is a low concrete control 70 feet below gage for low and medium stages; at high stages, riffle 300 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.00 feet at 6 p. m. April 7 (discharge, 1,100 second-feet); minimum discharge, about 2 second-feet during early part of October.

1903–1906; 1922–1924: Maximum stage recorded, 7.50 feet March 8, 1904 (discharge, 2,000 second-feet); minimum discharge, same as for current year.

ICE.—Stage-discharge relation usually not seriously affected by ice during winter.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve fairly well defined between 5 and 1,200 second-feet. Gage read to hundredths twice daily. Discharge ascertained by applying mean daily gage height to rating table. No record of discharge for October because of construction of concrete control in channel. Records good.

Discharge measurements of Passaic River near Millington, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	(a)	2.8	Feb. 5	4.40	57	Apr. 8	7.65	963
Oct. 18	(a)	2.5	Feb. 22	4.49	63	Apr. 9	6.87	686
Oct. 26	(a)	66	Mar. 14	5.51	269	July 18	4.08	25.0
Oct. 31	4.25	33.8	Mar. 29	4.97	148	Aug. 11	3.80	9.4

a Gage destroyed.

Daily discharge, in second-feet, of Passaic River near Millington, N. J., for the year ending September 30, 1924

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	100	134	56	54	91	164	80	51	8.3	8.3
2	28	100	118	54	67	86	125	70	42	7.9	7.1
3	23	83	268	54	73	113	103	61	35	8.7	18
4	20	54	319	54	93	154	96	56	28	7.9	15
5	20	70	243	67	154	196	80	51	24	6.8	10
6	18	196	208	219	268	293	70	47	23	6.4	8.7
7	20	219	243	174	319	1,020	70	49	21	8.7	8.3
8	20	185	96	150	219	980	100	50	37	9.9	7.5
9	17	138	61	106	196	735	372	51	130	8.7	16
10	13	113	56	70	174	460	490	52	100	9.9	103
11	14	93	196	64	319	332	430	44	83	9.9	100
12	14	73	219	56	372	196	525	47	64	24	75
13	13	64	164	52	306	150	665	44	73	40	54
14	14	61	126	44	268	126	525	44	75	31	37
15	12	59	100	36	219	111	400	51	54	24	28
16	12	55	73	30	154	96	293	42	40	19	23
17	12	49	372	30	120	86	219	36	32	15	22
18	11	43	332	28	103	130	154	31	27	11	23
19	11	35	280	27	94	460	154	27	24	11	18
20	10	30	219	27	90	400	144	24	21	11	14
21	9.5	36	174	51	84	358	136	23	18	11	11
22	8.7	44	113	66	80	256	130	21	17	10	14
23	11	174	59	59	77	219	123	19	17	9.5	42
24	42	219	47	52	75	185	123	18	17	9.1	39
25	43	185	91	47	75	134	138	67	18	8.7	30
26	36	150	130	41	80	93	125	154	12	27	21
27	30	113	108	38	120	60	108	150	10	29	15
28	25	100	64	41	154	44	110	138	9.5	22	12
29	22	116	56	47	152	80	110	100	11	15	14
30	23	110	54	.....	144	86	103	67	12	11	103
31	.....	108	56	.....	123	.....	93	.....	9.5	10	.....

Monthly discharge of Passaic River near Millington, N. J., for the year ending September 30, 1924

[Drainage area, 55 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
November	43	8.7	19.6	0.356	0.40
December	219	30	102	1.85	2.13
January	372	47	154	2.80	3.23
February	219	27	63.4	1.15	1.24
March	372	54	156	2.84	3.27
April	1,020	44	258	4.69	5.23
May	665	70	209	3.80	4.38
June	154	18	57.1	1.04	1.16
July	130	9.5	36.6	.665	.77
August	40	6.4	14.2	.258	.30
September	103	7.1	29.9	.544	.61
The period	1,020	6.4	100	1.82	22.72

ROCKAWAY RIVER AT BOONTON, N. J.

LOCATION.—At dam of Jersey City waterworks at Boonton, Morris County.

DRAINAGE AREA.—119 square miles (measured on State topographic map).

RECORDS AVAILABLE.—January 1, 1906, to September 30, 1924.

GAGES.—Elevation of water surface in reservoir determined by measuring from a reference point on dam to water surface with a graduated rod. Read once daily by an employee of the Jersey City waterworks.

Automatic water-stage recorder on left bank a quarter of a mile below dam; inspected by an employee of the Jersey City waterworks.

DETERMINATION OF DISCHARGE.—Discharge determined at gaging station below dam. Previous to March 3, 1918, discharge over dam was determined from elevation of water surface in reservoir and rating curve for spillway.

DISCHARGE MEASUREMENTS.—Made by wading near water-stage recorder.

CHANNEL AND CONTROL.—Coarse gravel; probably permanent.

REGULATION.—Records are corrected for storage above dam.

DIVERSION.—Water diverted to Jersey City through pipe line measured by Venturi meter. Records corrected for this diversion.

COOPERATION.—Gage-height records and records of diversion furnished by the Bureau of Water, Department of Streets and Public Improvements, Jersey City, N. J.

The following discharge measurements were made:

February 25, 1924: Gage height, 1.01 feet;[7] discharge, 43.4 second-feet.

March 28, 1924: Gage height, 1.93 feet;[7] discharge, 206 second-feet.

[7] Some stumps and rocks have been dumped near control.

Monthly discharge of Rockaway River at Boonton, N. J., for the year ending September 30, 1924

[Drainage area, 119 square miles]

Month	Discharge in second-feet		Run-off in inches	Month	Discharge in second-feet		Run-off in inches
	Mean	Per square mile			Mean	Per square mile	
October	77.0	0.647	0.75	May	475	3.99	4.60
November	78.0	.655	.73	June	134	1.13	1.26
December	255	2.14	2.47	July	120	1.01	1.16
January	398	3.34	3.85	August	45.6	.383	.44
February	196	1.65	1.78	September	41.4	.348	.39
March	241	2.03	2.34				
April	611	5.13	5.72	The year	223	1.87	25.49

NOTE.—No correction made for evaporation from surface of reservoir.

WHIPPANY RIVER AT MORRISTOWN, N. J.

LOCATION.—At Morristown sewage-disposal plant, three-fourths mile below Morristown, Morris County, and 8 miles above mouth of river.

DRAINAGE AREA.—29 square miles (measured on State topographic map).

RECORDS AVAILABLE.—August 26, 1921, to September 30, 1924.

GAGE.—Vertical staff on left bank 150 feet above chlorination house of sewage-disposal plant; read under direction of William H. Frapwell.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel sand and fine gravel; right bank is overflowed at very high stages. Control is riffle 50 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year, estimated from hydrograph 6.50 feet at 4 a. m. April 7 (discharge, about 830 second-feet); minimum stage recorded, 0.84 foot October 5–12 (discharge, 8 second-feet).

1921–1924: Maximum stage, estimated from hydrograph 6.50 feet at 4 a. m. April 7, 1924 (discharge, about 830 second-feet); minimum stage recorded, 0.80 foot at 5.30 p. m. October 5 and 7, 1921 (discharge, 6.3 second-feet).

ICE.—Stage-discharge relation affected by ice during extreme cold.

ACCURACY.—Stage-discharge relation permanent, except when affected by ice. Rating curve well defined below 350 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying to rating table mean daily gage height. Records good.

COOPERATION.—Gage read by an employee of the commissioner of streets and sewers, city of Morristown.

No discharge measurement made during year.

Daily discharge, in second-feet, of Whippany River at Morristown, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	19	76	53	46	45	47	129	54	26	12	12
2	10	17	35	37	42	41	54	81	52	25	12	18
3	10	14	26	163	43	43	51	70	50	23	11	21
4	10	14	21	92	43	50	76	70	51	22	12	16
5	8	13	50	57	70	86	92	60	49	20	12	16
6	8	13	156	38	122	163	92	59	46	20	19	14
7	8	18	59	34	81	92	640	60	49	20	15	12
8	8	17	38	32	50	60	215	92	49	86	12	12
9	8	14	32	34	49	59	156	309	49	149	12	52
10	8	13	31	38	46	65	142	156	42	42	12	54

Daily discharge, in second-feet, of Whippany River at Morristown, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	8	13	30	92	44	98	122	129	39	29	12	25
12	8	13	26	92	40	116	104	429	48	26	65	19
13	10	12	25	53	34	70	92	230	45	30	29	14
14	10	13	31	47	34	60	86	178	48	27	18	14
15	10	12	25	33	30	55	81	185	40	24	14	14
16	10	12	25	38	30	41	76	142	37	24	12	12
17	10	13	25	309	30	51	70	129	33	22	12	12
18	10	12	23	86	33	44	98	110	33	19	14	12
19	14	12	21	76	32	46	309	136	36	17	12	12
20	22	12	20	70	42	45	136	104	33	16	12	12
21	12	12	24	57	86	46	136	118	33	16	16	12
22	12	12	26	46	48	44	116	104	33	16	12	17
23	20	17	116	42	39	43	110	81	33	22	12	60
24	185	50	70	48	34	43	86	92	29	17	12	22
25	46	27	41	136	33	43	81	92	35	15	12	15
26	28	20	35	104	34	49	76	70	51	14	48	14
27	18	18	31	46	36	55	70	70	35	14	18	12
28	16	16	41	44	39	76	70	92	32	14	13	12
29	15	16	50	46	43	57	65	76	33	13	12	29
30	14	70	35	49	-------	60	70	70	27	11	12	230
31	28	-------	39	50	-------	50	-------	58	-------	13	12	-------

NOTE.—Stage-discharge relation affected by ice Jan. 6-8, 22, 23, 27, 28, Feb. 14, 15, 20, when discharge was estimated from study of graph and weather records.

Monthly discharge of Whippany River at Morristown, N. J., for the year ending September 30, 1924

[Drainage area, 29 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	185	8	19.2	0.662	0.76
November	50	12	17.8	.614	.68
December	156	20	41.4	1.43	1.65
January	309	32	69.1	2.38	2.74
February	122	30	46.0	1.59	1.72
March	163	41	61.2	2.11	2.43
April	640	47	121	4.17	4.65
May	429	58	122	4.21	4.85
June	54	27	40.8	1.41	1.57
July	149	11	26.8	.924	1.07
August	65	11	16.4	.566	.65
September	230	12	26.5	.914	1.02
The year	640	8	50.7	1.75	23.79

RAMAPO RIVER NEAR MAHWAH, N. J.

LOCATION.—At concrete highway bridge 1 mile west of Mahwah, Bergen County, three-fourths mile below mouth of Mahwah River.

DRAINAGE AREA.—118 square miles (measured on State topographic map).

RECORDS AVAILABLE.—February 10, 1903, to July 31, 1914; and September 1, 1922, to September 30, 1924. Records from 1907 to 1914 consist of gage heights only; published by United States Weather Bureau.

GAGE.—Water-stage recorder on right bank just below bridge, installed September 1, 1922; inspected by Clarence Wanamaker.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Coarse gravel; control is gravel riffle 150 feet below bridge; probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 7.90 feet at 12.30 p. m. April 7 (discharge, 2,400 second-feet); minimum stage, 1.66 feet at noon October 7 (discharge, 15 second-feet).

1922–1924: Maximum stage recorded, 7.90 feet at 12.30 p. m. April 7, 1924 (discharge, 2,400 second-feet); minimum stage, 1.57 feet at 9 a. m. September 20, 1923 (discharge, 11 second-feet).

ICE.—Stage-discharge relation affected by ice only during short periods of extreme weather.

REGULATION.—Daily distribution of flow affected by water powers at points upstream.

ACCURACY.—Stage-discharge relation probably permanent, except when affected by ice. Rating curve well defined below 2,000 second-feet. Daily discharge determined from automatic gage records by use of discharge integrator. Operation of water-stage recorder unsatisfactory at various times; see footnote to daily-discharge table. Records fair.

The following discharge measurements were made:
January 12, 1924: Gage height, 5.56 feet; discharge, 1,020 second-feet.
August 23, 1924: Gage height, 2.00 feet; discharge, 36.4 second-feet.

Daily discharge, in second-feet, of Ramapo River near Mahwah, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	180	878	251	200	111	454	423	187	48	28	29
2	23	150	671	221	190	87	397	322	172	46	32	30
3	23	120	452	408	193	104	404	266	149	44	26	27
4	20	110	348	528	194	108	488	252	146	44	26	26
5	20	110	340	403	228	147	612	212	140	44	26	27
6	21	110	1,090	320	259	289	831	186	125	30	28	31
7	20	110	1,250	260	208	344	2,270	175	122	45	24	23
8	25	130	800	220	184	223	1,830	175	106	148	25	27
9	25	130	700	198	156	203	1,300	750	133	273	28	57
10	23	98	600	198	142	319	945	875	110	119	25	209
11	25	99	512	493	141	337	738	671	97	83	23	108
12	25	101	443	941	135	366	606	1,080	94	70	50	74
13	25	96	413	619	123	278	482	1,540	76	65	90	57
14	25	85	390	467	111	247	452	1,060	91	85	65	46
15	25	85	278	373	112	217	394	806	97	80	50	40
16	25	79	230	445	126	187	336	671	92	70	42	35
17	25	89	223	1,390	105	178	294	543	75	65	36	31
18	25	59	197	1,040	121	190	670	467	73	65	32	33
19	25	75	175	684	103	238	1,040	460	66	66	30	50
20	25	72	165	574	100	234	772	401	64	31	32	29
21	25	60	169	482	134	269	638	389	78	32	32	28
22	25	59	170	380	138	235	574	360	65	29	32	32
23	55	68	260	300	145	279	543	300	66	29	36	49
24	600	245	380	266	128	325	423	271	62	28	35	57
25	1,300	220	320	442	113	351	394	308	59	27	63	38
26	700	188	260	480	105	365	336	255	55	28	74	31
27	340	165	240	360	101	358	308	224	58	23	79	26
28	220	149	253	280	102	403	280	254	59	26	59	30
29	260	126	280	240	102	458	252	267	53	25	50	34
30	150	282	238	220	-------	549	305	284	50	24	31	668
31	190	-------	229	210	-------	543	-------	224	-------	26	26	-------

NOTE.—Discharge Oct. 13 to Nov. 8, Dec. 8–10, 14, 22–27, Jan. 6–8, 22, 23, 27–31, Feb. 1, 2, June 30, July 1–5, 12–18, Aug. 12–23, Sept. 14, and 15, estimated from study of gage-height graph, weather records, and record for Ramapo River at Pompton Lakes; water-stage recorder not operating satisfactorily.

Monthly discharge of Ramapo River near Mahwah, N. J., for the year ending September 30, 1924

[Drainage area, 118 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,300	20	140	1.19	1.37
November	282	59	122	1.03	1.15
December	1,250	165	418	3.54	4.08
January	1,390	198	442	3.75	4.32
February	259	101	145	1.23	1.33
March	549	87	276	2.34	2.70
April	2,270	252	646	5.47	6.10
May	1,540	175	467	3.96	4.56
June	187	50	94.0	.797	.89
July	273	23	58.6	.497	.57
August	90	23	39.8	.337	.39
September	668	23	66.1	.560	.62
The year	2,270	20	243	2.06	28.08

RAMAPO RIVER AT POMPTON LAKES, N. J.

LOCATION.—At municipal hydroelectric plant in Borough of Pompton Lakes, Passaic County, 1½ miles above mouth of Ramapo River.

DRAINAGE AREA.—160 square miles (measured on State topographic map).

RECORDS AVAILABLE.—October 29, 1921, to September 30, 1924.

GAGES.—Water-stage recorders at right end of dam and on left bank of tailrace, respectively. Wicket-gate opening for each turbine is recorded hourly from indicators on turbine governors. Recorders inspected and gages read by power-house operators.

DISCHARGE MEASUREMENTS.—For spillway made from cable and by wading 300 feet below dam; for tailrace made from temporary footbridge at gage.

DETERMINATION OF DISCHARGE.—Flow at this station determined by computing discharge over spillway and through the two turbines (measured in the tailrace).

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.58 feet at 7 p. m. April 7 (discharge, about 6,800 second-feet).

1921–1924: Maximum stage recorded, 2.58 feet at 7 p. m. April 7, 1924 (discharge, about 6,800 second-feet).

REGULATION.—Record indicates flow as released by power plant. No correction made for storage in pond or for evaporation from its surface.

ACCURACY.—Rating curve for spillway well defined between 100 and 2,500 second-feet. Discharge rating for tailrace well defined. Discharge over spillway determined by applying mean daily gage height to rating table and by use of discharge integrator. Discharge through tailrace ascertained by use of discharge integrator; and for periods of backwater from wicket-gate openings. Records good.

COOPERATION.—Borough of Pompton Lakes has provided the shelters for water-stage recorders and furnishes power-plant records for computation of discharge.

Measurements of discharge over spillway on Ramapo River at Pompton Lakes, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 8	0.32	156	Mar. 31	0.64	570	May 12	1.10	1,480
Feb. 21	.256	125	Do	.63	546	Do	1.15	1,550
Mar. 13	.49	343	May 12	1.00	1,300	May 13	1.31	1,940

NOTE.—Total flow of river measured from cable and discharge of three turbines subtracted to obtain spillway discharge.

Discharge measurements of tailrace on Ramapo River at Pompton Lakes, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 9	8.41	106	Sept. 23	7.59	37.8	Sept. 23	8.07	72
Feb. 21	8.45	112	Do	8.37	102	Do	8.03	68
Sept. 23	7.59	37.9	Do	8.33	96			

Daily discharge, in second-feet, of Ramapo River at Pompton Lakes, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	207	872	294	296	133	530	523	241	83	36	40
2	50	168	739	283	254	124	460	445	221	83	37	47
3	50	140	482	463	241	142	431	346	195	76	33	44
4	51	126	363	673	246	143	523	297	196	50	36	45
5	51	126	350	535	273	189	652	274	191	74	36	47
6	48	123	1,030	357	412	309	804	241	177	36	35	45
7	20	131	1,410	331	304	480	5,300	222	168	69	36	39
8	2	148	846	296	253	339	4,290	234	143	44	36	44
9	2	138	568	263	221	267	1,950	794	172	341	12	50
10	2	124	450	250	190	386	1,310	1,230	155	211	1.4	127
11	2	103	410	460	194	432	990	921	137	128	1.4	144
12	44	108	415	1,100	183	561	743	1,300	133	100	18	95
13	53	102	350	801	168	416	607	2,030	119	82	100	75
14	50	104	331	545	156	348	545	1,540	124	104	86	59
15	54	101	292	459	157	307	454	1,100	116	92	64	59
16	51	98	248	439	146	260	393	889	122	84	56	57
17	53	95	247	1,650	129	243	351	713	108	72	49	48
18	24	68	220	1,400	154	242	474	582	100	71	43	44
19	2	82	195	871	132	278	1,510	573	94	73	41	43
20	2	84	182	740	139	282	1,060	513	83	40	45	48
21	41	83	180	584	199	315	823	492	94	73	44	46
22	55	76	194	372	187	292	730	467	94	42	44	50
23	61	85	303	392	161	301	694	389	84	38	48	50
24	679	239	443	331	129	343	577	341	95	37	45	62
25	1,520	261	360	518	137	373	487	371	88	34	44	68
26	776	214	304	649	133	392	407	329	86	36	65	54
27	382	183	271	406	125	408	360	284	75	28	93	51
28	242	165	291	327	129	449	335	309	79	33	67	47
29	302	138	347	308	128	492	308	321	63	35	58	50
30	175	306	287	299	-------	634	303	344	89	34	56	399
31	214	-------	277	303	-------	649	-------	297	-------	37	40	-------

Monthly discharge of Ramapo River at Pompton Lakes, N. J., for the year ending September 30, 1924

[Drainage area, 160 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,520	2	165	1.03	1.19
November	306	68	138	.862	.96
December	1,410	180	428	2.68	3.09
January	1,650	250	539	3.37	3.88
February	412	125	192	1.20	1.29
March	649	124	340	2.12	2.44
April	5,300	303	947	5.92	6.60
May	2,030	222	604	3.78	4.36
June	241	63	128	.800	.89
July	341	28	75.5	.472	.54
August	100	1.4	45.3	.283	.33
September	399	39	69.2	.432	.48
The year	5,300	1.4	306	1.91	26.05

NOTE.—No correction made for storage or evaporation in Pompton Lakes.

GREENWOOD LAKE AT THE GLENS, N. J.

LOCATION.—On Erie Railroad bridge, 100 feet above dam at The Glens, Passaic County.

DRAINAGE AREA.—27 square miles (measured on State topographic maps).

RECORDS AVAILABLE.—June 1, 1898 to November 16, 1903, and June 1, 1907, to September 30, 1924.

GAGE.—Vertical staff gage on railroad trestle; read to half-tenths once daily by A. Pepitone.

CONTROL.—A masonry dam with two wooden sluice gates. Average elevation of spillway crest at gage height 100.0 feet.

EXTREMES OF STAGES.—Maximum stage recorded during year, 102.0 feet April 7; minimum stage, 95.95 feet October 23.

1898–1903; 1907–1924: Maximum stage recorded, 102.37 feet several days in March, 1902 (also gage height was reported as "2 feet over gage"—approximately 104.0 feet—October 9–14, 1903); minimum stage, 93.25 feet several days in November, 1900.

REGULATION.—The Greenwood Lake Dam was constructed to provide a storage reservoir for the water supply of the Morris Canal. The Morris Canal was taken over by the State of New Jersey March 1, 1923. Navigation was abandoned by act of the State legislature March 13, 1924. Very little regulation of the lake required for canal after March 13.

COOPERATION.—Records furnished by Morris Canal & Banking Co.

Daily gage height, in feet, of Greenwood Lake at The Glens, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97.1	97.15	98.35	100.5	100.45	100.18	100.6	100.5	100.3	100.0	99.85	99.5
2	97.0	97.2	98.45	100.5	100.4	100.15	100.65	100.45	100.3	100.0	99.85	99.5
3	97.0	97.25	98.55	100.55	100.4	100.15	100.7	100.4	100.3	100.0	99.85	99.5
4	96.9	97.25	98.65	100.55	100.4	100.15	100.7	100.4	100.25	100.0	99.85	99.45
5	96.9	97.3	98.75	100.55	100.4	100.2	100.75	100.35	100.25	100.0	99.8	99.45
6	96.8	97.3	99.2	100.6	100.4	100.2	100.8	100.35	100.2	100.0	99.8	99.35
7	96.7	97.32	99.7	100.55	100.4	100.2	102.0	100.3	100.2	100.0	99.8	99.3
8	96.7	97.4	99.9	100.55	100.4	100.2	101.8	100.3	100.2	100.0	99.8	99.3
9	96.6	97.42	100.0	100.5	100.4	100.25	101.6	100.45	100.2	100.3	99.8	99.3
10	96.6	97.45	100.15	100.45	100.4	100.3	101.4	100.5	100.2	100.3	99.7	99.4

Daily gage height, in feet, of Greenwood Lake at The Glens, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	96.5	97.45	100.2	100.58	100.38	100.3	101.2	100.7	100.2	100.3	99.7	99.4
12	96.45	97.45	100.2	100.80	100.35	100.35	101.05	100.7	100.2	100.3	100.8	99.35
13	96.4	97.45	100.2	100.8	100.32	100.4	100.95	101.0	100.15	100.3	100.8	99.35
14	96.35	97.5	100.3	100.75	100.3	100.4	100.8	101.0	100.15	100.25	99.8	99.3
15	96.3	97.5	100.3	100.7	100.28	100.45	100.7	100.95	100.15	100.25	99.8	99.3
16	96.3	97.5	100.3	100.65	100.25	100.45	100.6	100.9	100.15	100.25	99.7	99.3
17	96.2	97.5	100.3	101.15	100.2	100.45	100.55	100.8	100.15	100.25	99.7	99.25
18	96.2	97.5	100.3	101.28	100.2	100.42	100.5	100.8	100.1	100.2	99.7	99.2
19	96.15	97.5	100.3	101.05	100.25	100.4	100.4	100.7	100.1	100.1	99.65	99.2
20	96.05	97.5	100.25	101.0	100.25	100.4	100.55	100.7	100.1	100.1	99.65	99.2
21	96.05	97.5	100.25	101.0	100.28	100.4	100.7	100.6	100.1	100.1	99.6	99.2
22	96.0	97.5	100.25	100.9	100.3	100.4	100.75	100.6	100.1	100.05	99.6	99.2
23	95.95	97.55	100.3	100.85	100.3	100.4	100.7	100.5	100.1	100.05	99.55	99.15
24	96.3	97.6	100.35	100.8	100.3	100.4	100.7	100.5	100.1	100.0	99.55	99.12
25	96.8	97.6	100.4	100.7	100.28	100.4	100.7	100.45	100.05	100.0	99.5	99.1
26	96.8	97.7	100.4	100.7	100.25	100.45	100.6	100.45	100.05	99.95	99.7	99.1
27	97.0	97.8	100.4	100.65	100.22	100.5	100.55	100.4	100.05	99.95	99.6	99.1
28	97.0	97.85	100.45	100.6	100.22	100.55	100.45	100.4	100.05	99.92	99.6	99.05
29	96.95	97.9	100.5	100.55	100.2	100.6	100.35	100.4	100.05	99.92	99.55	99.05
30	97.1	98.1	100.5	100.5	-------	100.6	100.3	100.35	100.05	99.9	99.55	99.25
31	97.15	-------	100.5	100.45	-------	100.6	-------	100.3	-------	99.9	99.5	-------

WANAQUE RIVER AT GREENWOOD LAKE, N.J.

LOCATION.—600 feet below dam at outlet of Greenwood Lake, at The Glens, Passaic County.

DRAINAGE AREA.—27 square miles (measured on State topographic maps).

RECORDS AVAILABLE.—May 13, 1919, to September 30, 1924.

GAGE.—Vertical staff on left bank 600 feet below dam; read by an employee of the North Jersey District Water Supply Commission.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Coarse gravel and boulders. Control is riffle of small boulders 200 feet below gage; probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.72 feet at 5 p. m. April 7 (discharge, about 600 second-feet).

1919–1924: Maximum stage recorded, 3.72 feet at 5 p. m. April 7, 1924 (discharge, about 600 second-feet); minimum stage occurs whenever the gates at Greenwood Lake are closed and no water is passing over spillway.

ICE.—Stage-discharge relation probably not affected by ice.

REGULATION.—Flow regulated by operation of sluice gates at outlet of lake, which is a storage reservoir of Morris Canal.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined between 5 and 200 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Gage heights observed under direction of the North Jersey District Water Supply Commission and furnished by that commission for publication.

The following discharge measurement was made:

November 22, 1923: Gage height, 0.32 foot; discharge, 9.3 second-feet.

Daily discharge, in second-feet, of Wanaque River at Greenwood Lake, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	4	7	62	62	22	120	72	50	12	8	21
2	37	3	7	58	54	20	114	120	46	12	8	21
3	36	3	7	67	50	19	108	62	42	10	8	21
4	36	3	7	76	50	19	108	62	42	9	8	21
5	36	3	7	81	54	19	114	58	43	8	8	21
6	36	3	7	86	58	22	134	50	39	8	8	21
7	36	3	7	81	58	26	540	50	34	8	8	21
8	36	3	7	72	54	30	510	72	33	8	8	21
9	36	3	9	72	50	35	420	86	33	36	8	21
10	41	3	13	76	46	40	333	114	30	50	8	21
11	46	3	22	86	43	46	284	120	26	46	18	21
12	46	3	27	114	43	58	210	158	25	39	41	21
13	46	3	30	127	40	58	166	183	23	40	41	21
14	46	3	31	120	37	54	150	192	22	38	41	21
15	46	3	34	114	34	54	134	183	21	33	39	21
16	46	5	34	134	32	54	102	166	20	27	39	21
17	43	9	35	230	30	50	92	142	17	23	39	21
18	50	9	35	240	28	46	86	134	16	20	30	21
19	58	9	34	210	28	46	120	120	15	16	22	20
20	46	9	34	192	31	50	127	108	15	14	22	20
21	34	9	34	158	35	50	127	97	14	12	22	20
22	38	9	36	127	38	54	120	86	13	11	22	20
23	43	8	43	108	34	58	114	81	13	11	22	21
24	46	8	58	92	31	62	102	76	12	10	22	21
25	46	8	58	102	28	72	102	72	12	9	22	21
26	23	8	58	108	27	76	92	62	12	9	22	21
27	5	8	58	97	25	81	81	58	12	9	22	21
28	5	8	58	81	23	86	72	58	12	8	22	21
29	5	8	58	76	23	92	67	58	12	8	22	21
30	4	8	58	72	-------	108	62	58	12	8	22	21
31	4	-------	62	62	-------	120	-------	54	-------	8	22	-------

Monthly discharge of Wanaque River at Greenwood Lake, N. J., for the year ending September 30, 1924

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	58	4	35.3	May	192	50	97.2
November	9	3	5.63	June	50	12	23.8
December	62	7	31.4	July	50	8	18.1
January	240	58	109	August	41	8	21.1
February	62	23	39.5	September	21	20	20.9
March	120	19	52.5				
April	540	62	164	The year	540	3	51.6

WANAQUE RIVER AT WANAQUE, N. J.

LOCATION.—100 feet below Erie Railroad bridge and 400 feet below highway bridge in Wanaque, Passaic County.

DRAINAGE AREA.—91 square miles (measured on State topographic map).

RECORDS AVAILABLE.—December 16, 1903, to December 31, 1905; May 1, 1912, to May 1, 1915; May 13, 1919, to September 30, 1924.

GAGE.—Water-stage recorder on left bank, 100 feet below railroad bridge; installed April 2, 1922; inspected by an engineer of the North Jersey District Water Supply Commission.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Sand and fine gravel. Control is gravel riffle 50 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 8.01 feet at 6 a. m. April 7 (discharge, 5,050 second-feet); minimum stage, 0.18 foot at 5 p. m. October 8 (discharge, 1.4 second-feet).

1903–1905; 1912–1915; 1919–1923: Maximum stage, 8.35 feet July 22 or 23, 1919, determined by level from high-water marks (discharge uncertain); minimum stage recorded, 0.18 foot at 5 p. m. October 8, 1923 (discharge, 1.4 second-feet).

REGULATION.—Flow regulated by operation of sluice gates at Greenwood Lake 11 miles upstream. See record of Wanaque River at Greenwood Lake, N. J., for effect of this regulation.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined below 4,000 second-feet. Daily discharge ascertained by applying mean daily gage height to rating table, except for days of considerable fluctuation when discharge for intervals of day were averaged. Records good.

COOPERATION.—Station maintained and gage heights furnished by North Jersey District Water Supply Commission.

Discharge measurements of Wanaque River at Wanaque, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	0.18	1.40	Dec. 6	4.07	1,175	Apr. 7	7.09	3,622
Oct. 24	3.24	797	Jan. 17	4.13	1,193	Apr. 8	5.04	1,695
Oct. 25	2.17	437	Jan. 18	3.03	719	Do	4.85	1,577
Do	2.05	400	Do	2.56	588			

Daily discharge, in second-feet, of Wanaque River at Wanaque, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	83	495	208	223	79	325	362	145	39	25	28
2	46	66	290	192	192	79	325	273	129	33	19	44
3	46	56	223	334	189	77	325	240	119	30	19	33
4	46	54	183	420	183	81	381	208	114	28	18	29
5	45	49	186	325	192	102	470	192	109	26	18	27
6	44	48	854	256	256	151	540	177	102	25	18	27
7	45	56	590	273	223	189	3,630	168	100	23	18	26
8	24	64	400	240	189	156	1,760	240	96	91	17	26
9	41	56	308	208	162	156	1,090	530	102	290	17	39
10	44	48	273	208	148	192	870	625	89	116	19	68
11	52	45	256	443	151	223	690	625	79	87	18	38
12	55	45	240	625	145	290	560	891	74	68	39	32
13	55	42	208	440	132	240	500	910	74	74	70	32
14	55	41	208	381	114	223	440	655	74	81	55	31
15	55	40	180	325	124	192	362	590	72	62	49	29
16	56	39	171	355	109	177	325	530	64	52	46	29
17	55	39	168	1,210	96	168	290	440	56	46	44	29
18	55	41	156	760	100	174	348	381	55	41	32	29
19	70	41	140	590	83	186	830	381	52	34	30	29
20	81	39	132	530	91	186	560	344	48	31	29	28
21	58	39	129	400	137	208	530	325	48	28	29	27
22	48	39	134	273	116	192	470	308	46	27	28	30
23	60	42	223	308	102	223	470	256	41	26	28	49
24	565	168	273	290	96	256	381	223	42	24	28	39
25	455	151	223	325	91	273	344	240	39	23	44	34
26	208	107	208	344	89	273	308	208	39	23	63	33
27	114	94	189	290	87	273	273	186	37	20	46	32
28	79	85	192	256	83	308	240	189	38	19	34	32
29	66	77	223	256	81	344	208	208	40	19	31	33
30	63	262	208	240	-------	400	223	192	42	18	29	366
31	91	-------	192	240	-------	381	-------	171	-------	19	28	-------

Monthly discharge of Wanaque River at Wanaque, N. J., for the year ending September 30, 1924

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	565	24	91.1	May	910	168	363
November	262	39	68.5	June	145	37	72.2
December	854	129	253	July	290	18	49.1
January	1,210	192	372	August	70	17	31.9
February	256	81	137	September	366	26	44.3
March	400	77	208				
April	3,630	208	602	The year	3,630	17	191

PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, N. J.

LOCATION.—At Macopin intake dam of the Newark waterworks, 3 miles above Butler, Morris County.

DRAINAGE AREA.—63.7 square miles (measured on State topographic map).

RECORDS AVAILABLE.—January 1, 1892, to September 30, 1924.

GAGES.—Head on spillway at dam indicated by water-stage recorder in standard shelter. Water diverted measured by Venturi meter. Elevation of water surface in various storage reservoirs indicated by staff gage.

DETERMINATION OF DISCHARGE.—Rating for spillway of intake dam determined by constructing weir at head of pond and making a series of simultaneous observations of head on the weir and dam. Daily discharge computed by bureau of water, city of Newark.

DIVERSIONS.—Water diverted from the stream at intake dam only. Diversion included in the records.

STORAGE.—Flow above dam regulated by several reservoirs. Gages in reservoirs read once a week and storage correction computed in million gallons per week. In converting storage correction to monthly units the division of overlapping weeks was made after graphic comparison with temperature and precipitation records. No correction made for evaporation from reservoirs.

COOPERATION.—Monthly discharge computed from records furnished by the city of Newark, bureau of water, Morris R. Sherrerd, consulting engineer, John A. Foulks, chief engineer.

Monthly discharge of Pequannock River at Macopin intake dam, N. J., for the year ending September 30, 1924

[Drainage area, 63.7 square miles]

Month	Discharge in second-feet		Run-off in inches	Month	Discharge in second-feet		Run-off in inches
	Mean	Per square mile			Mean	Per square mile	
October	41.0	0.644	0.74	May	293	4.60	5.30
November	59.7	.937	1.05	June	68.3	1.07	1.19
December	173	2.72	3.14	July	37.6	.590	.68
January	237	3.72	4.29	August	17.5	.275	.32
February	88.1	1.38	1.49	September	21.4	.336	.37
March	135	2.12	2.44				
April	302	4.74	5.29	The year	123	1.93	26.30

SADDLE RIVER AT LODI, N. J.

LOCATION.—At highway bridge, 1 mile above Lodi, Bergen County, and 2¾ miles above mouth of river.

DRAINAGE AREA.—55 square miles (measured on State topographic map).

RECORDS AVAILABLE.—September 21, 1923, to September 30, 1924.

GAGE.—Water-stage recorder on left bank at upstream end of bridge; inspected by W. C. Thorne.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel of coarse gravel and rock. Control is riffle 75 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.44 feet at 4 p. m. on April 7 (discharge, 1,280 second-feet); minimum stage, 1.49 feet at 5.30 p. m. November 22 (discharge, 5.3 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSION.—None.

REGULATION.—Daily distribution of flow affected by small water-power plants upstream.

ACCURACY.—Stage-discharge relation subject to occasional changes, due to repairs made on small dam 400 feet below control, also affected by ice in winter. Rating curves fairly well defined between 10 and 1,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height or for days of considerable fluctuation by averaging discharge for intervals of day. Records fair.

Discharge measurements of Saddle River at Lodi, N. J., during the period September 14, 1923, to September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
1923	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*
Sept. 14	1.97	37.8	Feb. 21	2.38	109	May 14	3.32	354
Sept. 18	1.53	6.8	Mar. 13	2.87	227	Do	3.21	335
Sept 21	1.65	13.0	Apr. 1	2.33	101	Sept. 15	2.90	243
Dec. 1	2.55	138	May 13	3.83	553	Sept. 22	1.64	15.0
1924			Do	3.80	523	Do	1.65	16.2
Feb. 7	2.84	215						

Daily discharge, in second-feet, of Saddle River at Lodi, N. J., for the years ending September 30, 1923 and 1924

Day	Sept.	Day	Sept.	Day	Sept.
1923		1923		1923	
1		11		21	24
2		12		22	31
3		13		23	33
4		14		24	47
5		15		25	36
6		16		26	24
7		17		27	20
8		18		28	19
9		19		29	18
10		20		30	18

Daily discharge, in second-feet, of Saddle River at Lodi, N. J., for the years ending September 30, 1923 and 1924—Continued

Day	Oct.	Nov	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1924												
1	16	54	158	84	92	87	100	148	100	45	40	22
2	14	42		81	85	92	90	224	87	39	31	22
3	14	34		111	85	96	106	148	80	38	25	23
4	14	32		229	87	106	148	121	81	36	24	25
5	11	31		188	116	148	184	106	102	35	23	21
6	13	29		120	246	184	184	96	102	36	24	25
7	13	30		90	248	251	775	90	87	34	22	23
8	14	32	130	70	145	197	550	96	80	40	25	20
9	11	30		59	102	134	266	245	78	182	23	23
10	10	28		57	90	136	210	564	80	287	31	85
11	11	28		92	90	159	184	296	76	112	27	152
12	16	27		200	81	252	148	287	62	58	42	68
13	14	26		188	74	237	134	592	63	50	76	43
14	14	25		104	63	172	125	326	66	55	56	37
15	13	23	175	76	57	125	112	237	68	47	37	32
16	13	23	96	86	55	104	100	197	60	40	29	27
17	13	28	77	366	55	90	92	172	52	35	27	25
18	12	23	67	361	55	89	126	159	48	33	26	22
19	13	23	64	204	55	90	748	159	44	30	24	22
20	22	23	60	148	60	89	412	172	45	29	22	20
21	27	21	60	118	100	87	237	159	50	29	22	25
22	20	21	56	100	148	85	197	159	50	28	22	26
23	23	28	82	90	132	85	197	148	52	27	21	40
24	113	79	138	83	132	83	172	131	45	25	20	51
25	365	124	117	123	99	80	131	159	47	25	21	37
26	232	74	74	210	78	87	116	172	55	24	55	36
27	90	47	61	220	73	108	108	127	46	24	75	24
28	50	38	69	160	71	118	100	123	48	22	51	22
29	39	34	104	120	80	114	94	148	54	20	31	29
30	37	58	104	100	-------	114	98	131	55	18	27	92
31	52	-------	82	96	-------	136	-------	127	-------	22	25	-------

NOTE.—Daily discharge estimated Dec. 2–14, Jan. 22–23, 27–30, Feb. 16–21, and June 21–22, when recorder was not operating satisfactorily, from study of comparison with record of flow for Ramapo River near Mahwah. Stage-discharge relation corrected for ice effect Jan. 6 and 7.

Monthly discharge of Saddle River at Lodi, N. J., for the years ending September 30, 1923 and 1924

[Drainage area, 55 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
1923					
September 21–30	47	18	27.0	0.491	0.18
1923–24					
October	365	10	42.5	.772	.89
November	124	21	37.2	.676	.75
December	-------	-------	108	1.96	2.26
January	366	57	140	2.55	2.94
February	248	-------	98.4	1.79	1.93
March	252	80	127	2.31	2.66
April	775	90	208	3.78	4.22
May	592	90	194	3.53	4.07
June	102	44	65.4	1.19	1.33
July	287	18	49.2	.895	1.03
August	76	20	32.4	.589	.68
September	152	20	37.3	.678	.76
The year	775	10	95.0	1.73	23.52

ELIZABETH RIVER BASIN

ELIZABETH RIVER AT ELIZABETH, N. J.

LOCATION.—Just above Westfield Avenue Bridge in Elizabeth, Union County, and 2½ miles above mouth.

DRAINAGE AREA.—20 square miles (measured on State topographic map).

RECORDS AVAILABLE.—October 5, 1921, to September 30, 1924.

GAGE.—Water-stage recorder installed May 18, 1923, on left bank 10 feet above dam; inspected by L. Gallagher.

DISCHARGE MEASUREMENTS.—Made by wading.

CONTROL.—Concrete dam, crest 48.5 feet long, at gage-height elevation 5.00 feet, with sluice gate 24 inches in diameter, elevation of invert about gage height 0.3 foot. When the sluice gate is open and flowing part full, a riffle of small stone below dam becomes the control.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 8.16 feet at 11.30 p. m. July 8 (discharge, about 1,250 second-feet).

1921–1924: Maximum stage recorded, 8.16 feet at 11.30 p. m. July 8, 1924 (discharge, about 1,250 second-feet); no flow during part of each year.

DIVERSIONS.—The Elizabethtown Water Co. diverts water from Elizabeth River above this point, at the Ursina Lake pumping station and through wells at its Hummock pumping station. Correction for these diversions have been applied to the monthly table.

ACCURACY.—Stage-discharge relation over spillway permanent; through gate shifting. Rating curve well defined below 150 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table. On days of considerable fluctuation, discharge for serveral periods of the day are averaged. Records good.

Discharge measurements of Elizabeth River at Elizabeth, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 14	5.316	25.0	July 18	5.129	6.03	Aug. 22	5.043	1.07
May 27	5.240	15.8	Aug. 22	5.060	1.92	Sept. 18	5.048	1.23
June 24	[a] 1.49	10.2						

[a] Sluice gate open.

Daily discharge, in second-feet, of Elizabeth River at Elizabeth, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	5.7	18	22	7.1	45	14	35	15	17	2.6	4.4
2	.4	5.0	9.3	12	8.7	42	21	15	8.5	9.1	2.1	12
3	.1	5.0	7.6	36	9.5	36	41	13	3.2	5.2	1.2	7.6
4	------	9	6.8	22	9.5	42	40	12	3.2	1.3	2.6	2.6
5	------	4.6	43	10	98	40	26	11	2.6	3.8	6.8	5.2
6	------	4.8	89	9.5	49	53	141	10	2.6	5.0	7.4	6.2
7	------	12	18	9.5	19	38	441	10	13	5.7	.7	4.4
8	------	6.6	13	7.1	12	31	66	31	21	138	------	4.4
9	------	3.8	12	5.0	12	28	41	340	13	186	------	60
10	------	.8	12	5.0	11	28	34	68	10	38	3.2	42
11	------	2.2	14	80	11	95	27	47	8.7	19	2.1	7.1
12	------	3.8	9.8	25	10	88	22	292	13	10	148	3.8
13	------	4.0	7.6	15	10	33	20	96	8.7	18	10	3.8
14	------	3.8	17	12	10	25	19	50	11	8.7	.4	4.4
15	------	3.3	11	7.1	9.5	20	12	36	11	8.7	1	2.8

Daily discharge, in second-feet, of Elizabeth River at Elizabeth, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	-------	1.4	10	98	9.5	18	11	28	7.9	5.7	1	3.8
17	-------	3.5	11	145	8.7	14	13	26	7.9	5.7	3	6.0
18	-------	4.0	9.2	25	8.7	13	164	21	13	5.0	6.4	3.7
19	-------	3.1	6.0	20	8.7	13	135	27	13	3.2	3.8	3.2
20	-------	1.6	2.9	19	100	13	42	18	12	4.4	1.6	2.1
21	-------	1.4	5.7	14	50	14	39	28	6.4	5.0	3.2	3.4
22	0.7	1.1	15	9.5	25	13	42	22	7.9	3.8	.7	5.2
23	50	35	68	7.1	25	12	27	16	12	9.1	2.1	24
24	161	28	28	7.1	25	12	21	37	14	4.4	3.8	4.0
25	10	7.6	18	126	25	11	18	38	87	3.2	3.2	3.2
26	5.0	6.0	15	25	27	24	15	18	62	3.2	170	3.2
27	8.7	4.2	11	19	28	26	14	16	28	3.2	20	5.0
28	8.7	2.2	33	10	46	20	13	25	11	3.8	7.1	6.4
29	8.7	3.8	17	10	44	18	22	29	26	5.0	3.2	5.4
30	9	59	14	6.4	-------	27	26	66	19	3.8	2.6	196
31	18	-------	40	6.4	-------	15	-------	16	-------	3.2	3.2	-------

NOTE.—This table does not include diversions. Sluice gate open Nov. 4 to Jan. 5, June 18–20, 23–27, 30, July 1–3, and discharge through gate has been applied in the table. No flow on days for which no discharge is given.

Monthly discharge of Elizabeth River at Elizabeth, N. J., for the year ending September 30, 1924

[Drainage area, 20 square miles]

Month	Discharge in second-feet					Run-off in inches
	Observed			Corrected for diversion		
	Maximum	Minimum	Mean	Mean	Per square mile	
October	161	0	9.15	17.8	0.890	1.03
November	59	.8	7.88	16.3	.815	.91
December	89	2.9	19.1	26.3	1.32	1.52
January	145	5.0	26.6	35.0	1.75	2.02
February	100	7.1	24.7	32.8	1.64	1.77
March	95	11	29.3	36.4	1.82	2.10
April	441	11	52.2	59.8	2.99	3.34
May	340	10	48.3	55.5	2.78	3.20
June	87	2.6	15.7	23.5	1.18	1.32
July	186	1.3	17.6	26.2	1.31	1.51
August	170	0	13.6	23.2	1.16	1.34
September	196	2.1	14.8	23.8	1.19	1.33
The year	441	0	23.2	31.4	1.57	21.39

RAHWAY RIVER BASIN

RAHWAY RIVER AT RAHWAY, N. J.

LOCATION.—At Church Street Bridge in Rahway, Union County, half a mile above mouth of Robinsons Branch of Rahway River.

DRAINAGE AREA.—41 square miles (measured on State topographic map).

RECORDS AVAILABLE.—July 10, 1908, to April 29, 1915; October 1, 1921, to September 30, 1924.

GAGE.—Vertical staff gage attached to tree on right bank 40 feet below bridge; read by W. M. Ritchie.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Channel is fine gravel; control head of riffle 300 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year estimated from hydrograph, 5.1 feet at 2 p. m. July 9 (discharge, about 1,100 second-feet); minimum stage, 0.47 foot at 10 a. m. October 14 (discharge about 2 second-feet).

1908–1915; 1921–1924: Maximum stage estimated from hydrograph, 5.1 feet at 2 p. m. July 9, 1924 (discharge, about 1,100 second-feet); minimum stage, zero December 1, 1912 (discharge uncertain).

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—Water is diverted from Rahway River above Rahway by Orange Water Co., South Orange Waterworks (wells), Short Hills Water Co. (wells), Springfield station of Elizabethtown Water Co. (wells), and Rahway Waterworks. The total flow diverted is about 17 second-feet and is included in the monthly discharge table.

ACCURACY.—Stage-discharge relation probably permanent except for children constructing dam at control. Standard rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying to rating table mean daily gage height, corrected for backwater when control is obstructed. Records fair.

Discharge measurements of Rahway River at Rahway, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 26	0.83	23.4	May 27	[a] 0.94	40.5	Aug. 22	0.69	14.6
Nov. 30	.92	30.9	June 23	[a] .73	14.8	Sept. 19	.68	11.7
Feb. 7	1.20	75	July 18	[a] 1.11	23.6			

[a] Stage-discharge relation affected by temporary dam.

Daily discharge, in second-feet, of Rahway River at Rahway, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	12	85	72	22	60	35	95	32	16	11	12
2	5	8	26	32	22	58	42	48	30	12	12	12
3	4	8	15	301	20	55	71	34	27	12	12	40
4	10	6	10	233	21	60	126	32	26	10	14	26
5	6	5	60	76	38	144	118	25	25	8	10	27
6	3	6	222	40	222	144	92	26	22	10	19	36
7	3	10	88	26	79	135	835	23	63	9	31	23
8	8	8	31	21	42	69	426	51	27	61	32	22
9	4	7	19	17	31	48	118	533	55	730	26	48
10	3	6	17	16	26	63	90	375	23	313	38	135
11	4	10	19	84	23	153	76	153	54	82	23	42
12	6	5	13	144	26	290	57	452	25	14	135	22
13	8	5	11	58	21	126	51	478	30	23	69	18
14	3	5	16	43	21	78	45	182	32	20	19	19
15	3	5	13	27	19	58	36	111	20	17	12	13
16	6	5	11	25	20	40	31	86	14	16	11	14
17	5	5	10	400	13	36	28	74	17	16	11	14
18	5	6	8	182	21	32	36	61	18	17	11	13
19	4	5	8	74	16	35	478	78	22	13	11	13
20	21	4	8	60	86	31	182	52	21	18	15	12
21	5	4	8	46	192	31	126	58	27	19	12	13
22	4	4	10	28	97	30	101	76	26	12	13	13
23	7	6	162	25	63	27	107	48	17	26	12	39
24	222	104	81	19	38	26	60	40	16	14	23	28
25	85	23	36	162	27	23	57	116	25	11	13	15
26	35	11	21	192	26	38	39	55	202	12	192	13
27	12	10	19	86	31	72	38	40	38	11	88	13
28	6	35	60	28	39	78	36	57	34	11	42	13
29	5	3	46	23	54	55	34	48	38	9	21	13
30	6	30	26	22	-------	72	39	68	38	13	15	153
31	16	-------	63	23	-------	43	-------	39	-------	14	12	-------

Monthly discharge of Rahway River at Rahway, N. J., for the year ending September 30, 1924

[Drainage area, 41 square miles]

Month	Discharge in second-feet					Run-off in inches
	Observed			Corrected for diversion		
	Maximum	Minimum	Mean	Mean	Per square mile	
October	222	3	16.7	34.4	0.839	0.97
November	104	3	12.0	28.2	.688	.77
December	222	8	39.4	56.1	1.37	1.58
January	400	16	83.4	100	2.44	2.81
February	222	13	46.8	64.0	1.56	1.68
March	290	23	71.3	88.6	2.16	2.49
April	835	28	120	137	3.34	3.73
May	533	23	117	133	3.24	3.74
June	202	14	34.8	51.8	1.26	1.41
July	730	8	50.6	67.2	1.64	1.89
August	192	10	31.1	48.0	1.17	1.35
September	153	12	29.1	45.2	1.10	1.23
The year	835	3	54.4	71.3	1.74	23.65

ROBINSONS BRANCH OF RAHWAY RIVER AT GOODMANS, N. J.

LOCATION.—At Lehigh Valley Railroad station in Goodmans, Union County, 2¾ miles above dam and pumping station of the Middlesex Water Co. near Rahway and 4½ miles above mouth of stream.

DRAINAGE AREA.—12.7 square miles (measured on State topographic map).

RECORDS AVAILABLE.—October 27, 1921, to September 30, 1924 (fragmentary).

GAGE.—Vertical staff attached to tree on right bank 100 feet below highway bridge at Goodmans station; read by A. N. Roblee and Joseph Spinella.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel fine gravel. Banks high. Control is riffle of rocks, probably artificial, 50 feet below gage and is drowned out by backwater from reservoir at medium and high stages when reservoir is full.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.40 feet at 8 a. m. April 7 (discharge not determined); minimum stage, 0.24 foot November 22 and 23 (discharge, 2.0 second-feet).

1921–1924: Maximum stage recorded, 5.40 feet at 8 a. m. April 7, 1924 (discharge not determined); minimum stage, 0.12 foot August 21, 1923 (discharge, 0.9 second-foot).

REGULATION.—Swamp just above station gives natural storage.

ACCURACY.—Stage-discharge relation affected by backwater from reservoir at medium and high stages. Rating curve well defined to 10 second-feet. Daily discharge ascertained by applying mean daily effective gage height to rating table. Daily discharge record considered too uncertain to publish. Monthly records probably fair.

Discharge measurements of Robinsons Branch of Rahway River at Goodmans, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 26	0.48	9.2	May 27	0.53	9.8	Aug. 22	0.20	1.5
Nov. 30	1.14	35.5	June 23	.26	3.2	Sept. 19	.22	2.2
Feb. 7	1.54	50	July 18	.27	3.2			

Monthly discharge of Robinsons Branch of Rahway River at Goodmans, N. J., for the year ending September 30, 1924

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	60	2.4	6.49	0.511	0.59
November	36	2.0	5.19	.409	.46
December	40	3.3	13.2	1.04	1.20
January	90	2.9	19.3	1.52	1.75
February	60	2.9	13.5	1.06	1.14
March	100	3.1	19.4	1.53	1.76
April		3.3	44.0	3.46	3.86
May		4.0	37.7	2.97	3.42
June	30	2.2	11.2	.882	.98
July	26	2.2	10.3	.811	.94
August	15	2	4.65	.366	.42
September	61	2	6.85	.539	.60
The year		2.0	16.0	1.26	17.12

RARITAN RIVER BASIN

SOUTH BRANCH OF RARITAN RIVER NEAR HIGH BRIDGE, N. J.

LOCATION.—1 mile above High Bridge, Hunterdon County, and 4 miles above mouth of Spruce Run.

DRAINAGE AREA.—65 square miles (measured on State topographic map).

RECORDS AVAILABLE.—February 24, 1919, to September 30, 1924.

GAGE.—Water-stage recorder installed September 30, 1921, on left bank just above large pine tree 1 mile above High Bridge; inspected by an engineer of Taylor-Wharton Iron & Steel Co.

DISCHARGE MEASUREMENTS.—Made by wading near gage or from highway bridge one-third mile upstream.

CHANNEL AND CONTROL.—Channel very rough with many boulders. Control is well-defined riffle of rock and boulders 100 feet below gage; probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.91 feet at midnight April 6 (discharge, about 2,500 second-feet); minimum stage, 4.90 feet at 8 p. m. August 30 (discharge, about 19 second-feet).

1919–1924: Maximum stage recorded, 10.97 feet at 10.30 a. m. February 2, 1922 (discharge, about 3,600 second-feet); minimum stage, 4.80 feet 6.30 a. m. October 31, 1921 (discharge, 9 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

REGULATION.—Daily distribution of flow affected by small water powers at points upstream.

ACCURACY.—Stage-discharge relation probably permanent, except as affected by ice. Rating curve well defined between 30 and 2,500 second-feet. Operation of water-stage recorder satisfactory except for two short periods. Daily discharge ascertained by use of discharge integrator except for periods of high water. Records good.

The following discharge measurements were made:

July 16, 1924: Gage height, 5.37 feet; discharge, 48.5 second-feet.

August 6, 1924: Gage height, 5.55 feet; discharge, 75 second-feet.

Daily discharge, in second-feet, of South Branch of Raritan River near High Bridge, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	61	209	144	134	77	112	336	135	73	45	29
2	34	49	106	107	125	83	106	185	129	66	40	30
3	31	44	78	371	122	90	129	156	118	68	37	36
4	30	38	63	219	124	132	202	153	134	63	40	32
5	29	40	115	154	236	283	221	141	127	58	40	33
6	28	41	367	102	265	522	698	132	124	60	64	33
7	26	102	169	}	175	322	1,400	124	126	58	47	32
8	25	76	117	} 110	126	188	510	155	114	74	46	31
9	31	52	106	}	101	176	375	520	120	126	37	36
10	29	45	100		108	170	339	301	105	80	38	42
11	28	41	94	244	106	267	285	240	95	64	35	36
12	28	46	84	205	104	212	248	637	107	54	136	36
13	30	40	76	126	96	164	231	529	128	68	82	33
14	26	44	94	115	90	143	210	347	167	70	58	35
15	26	39	71	94	90	123	185	393	120	58	44	33
16	31	36	68	356	100	101	170	288	95	55	39	34
17	30	36	71	725	115	100	165	256	84	57	42	33
18	29	34	65	252	120	116	297	250	82	49	42	34
19	28	37	60	214	102	125	593	295	86	50	45	33
20	33	38	57	}	125	114	272	229	80	46	41	30
21	29	38	67	} 120	187	116	265	250	74	49	40	34
22	29	37	103	}	149	110	252	230	73	48	38	38
23	39	39	336	}	120	114	231	188	67	58	38	62
24	228	96	223	}	95	119	186	177	66	49	32	44
25	112	61	132	600	80	105	172	218	192	44	38	37
26	59	48	116	232	75	117	161	174	204	47	38	38
27	44	51	105	143	75	127	154	}	106	37	40	33
28	41	48	132	140	75	181	147	} 160	101	41	35	32
29	40	38	138	140	82	177	158	}	100	47	35	41
30	41	240	105	160	-------	147	184	}	89	41	35	531
31	92	-------	119	149	------	131	-------	143	-------	39	32	-------

NOTE.—Stage-discharge relation affected by ice Jan. 7–10, 20–24, 28, 29, Feb. 14, 15, 23–27, discharge estimated from study of hydrograph, weather records, and comparison with hydrograph of flow at Stanton. Discharge, for periods of no gage height record, May 27–30, June 15 and 16, estimated from study of comparison with hydrograph of record for South Branch at Stanton. Braced figures show estimated mean discharge for periods indicated.

Monthly discharge of South Branch of Raritan River near High Bridge, N. J., for the year ending September 30, 1924

[Drainage area, 65 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	228	25	43.1	0.663	0.76
November	240	34	54.5	.838	.94
December	367	57	121	1.86	2.14
January	725	----------	195	3.00	3.46
February	265	75	121	1.86	2.01
March	522	77	160	2.46	2.84
April	1,400	106	289	4.45	4.96
May	637	124	248	3.82	4.40
June	204	66	112	1.72	1.92
July	126	37	58.0	.892	1.03
August	136	32	45.1	.694	.80
September	531	29	52.0	.800	.89
The year	1,400	25	125	1.92	26.15

SOUTH BRANCH OF RARITAN RIVER AT STANTON, N. J.

LOCATION.—At highway bridge near Lehigh Valley Railroad station in Stanton, Hunterdon County, half a mile above mouth of Prescott Brook and 5 miles below mouth of Cakepoulin Creek.

DRAINAGE AREA.—147 square miles (measured on topographic map).

RECORDS AVAILABLE.—July 2, 1903, to December 31, 1906; July 1, 1919, to September 30, 1924.

GAGE.—Chain gage on downstream side of bridge near left end; read by E. H. Smith.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed and banks, gravel. Banks are overflowed at high stages. Control is slight riffle 100 feet below bridge.

EXTREMES OF DISCHARGE.—Maximum stage during year estimated from hydrograph, 10.00 feet at 1 a. m. April 7 (discharge, about 5,200 second-feet); minimum stage recorded, 1.88 feet at 8 a. m. October 16 and 17 (discharge, 26 second-feet).

1903–1906; 1919–1924: Maximum stage recorded, 10.5 feet October 9, 1903 (discharge not determined); minimum stage, 1.85 feet at 5 p. m. September 16, 1921 (discharge, about 24 second-feet).

ICE.—Stage-discharge relation affected by ice during winter.

REGULATION.—Distribution of flow affected by small water-power plants upstream.

ACCURACY.—Stage-discharge relation permanent, except as affected by ice. Rating curve well defined between 35 and 1,200 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except for periods of ice effect. Records fair.

The following discharge measurements were made:

July 15, 1924: Gage height, 2.47 feet; discharge, 116 second-feet.

August 6, 1924: Gage height, 2.09 feet; discharge, 42.4 second-feet.

Daily discharge, in second-feet, of South Branch of Raritan River at Stanton, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		148	445	376	333	177	227	695	260	124	45	53
2		96	231	292	231	160	220	398	247	126	40	89
3		93	224	1,210	220	235	333	354	243	111	50	70
4	46	80	201	645	259	722	470	312	255	93	52	47
5		89	376	445	231	750	495	312	247	75	61	54
6		89	915	312	695	1,560	970	292	224	85	48	53
7	55	174	445	360	398	645	2,890	292	312	121	78	61
8	51	163	398	320	271	422	1,150	292	280	124	116	68
9	52	100	312	280	205	422	860	1,770	247	312	55	52
10	55	96	255	263	220	398	722	670	205	201	53	58
11	47	90	271	645	231	470	595	545	191	121	62	46
12	43	83	422	545	201	570	495	1,630	212	118	292	48
13	38	60	470	376	184	376	470	1,210	292	120	271	36
14	40	78	235	312	180	333	422	860	333	143	89	35
15	40	85	198	263	180	255	376	915	280	126	78	53
16	38	80	180	271	187	231	354	695	231	106	80	47
17	39	68	157	1,560	209	243	333	595	154	104	53	47
18	30	60	174	620	184	220	915	495	148	89	54	45
19	38	73	134	440	259	231	970	645	167	102	71	45
20	51	83	143	360	595	247	645	495	201	93	55	41
21	34	83	140	320	495	216	545	545	174	76	78	37
22	45	62	267	300	376	205	545	545	174	87	54	58
23	53	126	1,490	280	263	191	495	398	134	111	39	146
24	750	312	695	320	220	224	398	376	111	100	68	75
25	354	201	376	1,210	224	198	354	360	98	83	51	43
26	151	121	333	645	194	212	333	354	422	60	53	55
27	102	128	292	360	251	227	320	312	271	53	47	36
28	91	116	495	300	259	333	312	376	247	67	54	40
29	87	93	376	300	220	354	354	354	247	54	34	75
30	104	445	292	376	-------	292	422	376	194	67	46	1,630
31	170	-------	376	422	-------	259	-------	292	-------	70	50	-------

NOTE.—Discharge for ice-affected periods Jan. 7–9, 19–24, 27–29, and Feb. 14–15, and for days of no gage height Oct. 1–6, 14, Nov. 11, Dec. 16, Mar. 2, Apr. 27, May 25, June 8, 15, July 6, 13, and Sept. 28, estimated by study of gage-height graph, weather records, and comparison with record of South Branch of Raritan River near High Bridge. Braced figure shows estimated mean discharge for period indicated.

Monthly discharge of South Branch of Raritan River at Stanton, N. J., for the year ending September 30, 1924

[Drainage area, 147 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	750	30	91.4	0.622	0.72
November	445	60	119	.810	.90
December	1,490	134	365	2.48	2.86
January	1,560	263	475	3.23	3.72
February	695	180	275	1.87	2.02
March	1,560	160	367	2.50	2.88
April	2,890	220	600	4.08	4.55
May	1,770	292	573	3.90	4.50
June	422	98	227	1.54	1.72
July	312	53	107	.728	.84
August	292	34	73.5	.500	.58
September	1,630	35	108	.735	.82
The year	2,890	30	282	1.92	26.11

RARITAN RIVER AT MANVILLE, N. J.

LOCATION.—At highway bridge between Manville and Finderne, Somerset County, 1¼ miles above mouth of Millstone River, and 4½ miles below confluence of North and South Branches of Raritan River.

DRAINAGE AREA.—490 square miles (measured on topographic map).

RECORDS AVAILABLE.—June 27, 1903, to March 31, 1907; August 10, 1908, to April 30, 1915; August 19, 1921, to September 30, 1924.

GAGE.—Water-stage recorder on left bank installed August 15, 1923; inspected by William B. Patten and E. McBride.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Red sandstone on left side, sand and gravel on right side; fairly permanent; affected by vegetal growth during summer. Banks are overflowed at very high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 15.00 feet at 7 a. m. April 7 (discharge, about 20,000 second-feet); minimum stage, 3.21 feet at 7 p. m. October 5 (discharge, about 38 second-feet).

1903–1907; 1921–1924: Maximum stage recorded, 15.9 feet October 10, 1903 (discharge, about 25,000 second-feet); minimum stage, 3.24 feet at 9 p. m. September 19, 1923 (discharge, about 36 second-feet).

ICE.—Stage-discharge relation affected by ice during severe winters.

DIVERSIONS.—The Johns-Manville Co. diverts about 2 second-feet from the Raritan at a point about one-fourth mile above gage.

REGULATION.—Daily distribution of flow affected by water powers at Somerville and other points upstream.

ACCURACY.—Stage-discharge relation permanent, except as affected by grass in channel during summer. Normal rating curve fairly well defined between 300 and 10,000 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying mean daily gage height to rating table. Variable correction applied to mean daily gage height because of grass in channel. Records fair.

Discharge measurements of Raritan River at Manville, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 28	a 3.96	288	June 24	4.03	379	Aug. 21	a 3.72	181
Feb. 4	4.30	629	July 17	a 3.99	309	Sept. 18	a 3.61	122
May 26	4.63	842						

a Grass on control.

Daily discharge, in second-feet, of Raritan River at Manville, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91	333	1,800	1,730	860	860	681	2,250	746	489	199	129
2	80	250	1,080	1,180	746	1,020	650	1,240	692	440	170	134
3	82	213	800	4,730	640	960	860	1,020	630	394	139	264
4	86	189	590	3,470	610	2,070	1,930	960	590	359	137	173
5	71	185	640	1,860	2,370	2,740	2,000	860	570	333	164	119
6	78	185	1,600	793	2,860	4,310	2,870	756	524	327	139	137
7	84	229	1,480	900	1,300	2,650	15,100	703	910	315	173	134
8	73	310	1,130	850	800	1,420	4,560	756	590	910	203	112
9	64	233	960	800	640	960	2,730	3,790	640	1,920	203	155
10	64	217	910	750	610	1,130	2,250	2,740	498	725	170	229
11	69	210	860	2,000	570	2,810	1,800	2,120	432	489	127	164
12	101	196	767	2,120	524	3,140	1,540	6,010	432	380	800	137
13	95	179	650	1,180		1,690	1,300	5,330	551	440	650	142
14	93	170	736	1,020		1,130	1,180	2,810	1,020	481	274	122
15	89	176	660	800		910	1,020	2,720	1,240	346	210	114
16	91	170	610	1,710		714	910	2,120	910	284	182	117
17	84	179	610	7,710		630	860	1,600	570	289	176	124
18	78	179	524	2,410		610	1,930	1,400	402	279	155	109
19	86	176	432	1,730		610	5,690	1,300	1,130	245	155	99
20	119	173	416	1,600	700	570	2,460	1,200	1,300	229	127	99
21	127	164	424	960		570	2,250	1,200	860	229	144	105
22	99	161	456			542	1,800	1,100	524	225	153	114
23	129	182	700			489	1,730	1,000	416	245	132	264
24	1,920	778	1,200			498	1,300	950	373	241	142	196
25	1,080	498	1,300			498	1,130	950	910	217	132	150
26	424	327	1,180	2,200		570	1,020	960	2,250	196	217	112
27	289	294	960			910	910	860	114	182	176	117
28	237	274	1,620		610	1,240	800	1,020	910	185	147	127
29	217	254	1,690		778	1,080	860	960	860	185	129	103
30	206	1,020	1,080		-------	1,080	1,020	1,080	725	176	137	1,800
31	279	-------	2,020		-------	860	-------	860	-------	241	137	-------

NOTE.—Effect of ice on stage-discharge relation probably negligible. Discharge corrected, based on four discharge measurements, for aquatic growth on control Oct. 1 to Dec. 9 and July 9 to Sept. 30. Discharge estimated because of no gage-heights Dec. 5–7, 23–24, Jan. 7–10, 22–31, Feb. 13–27, and May 17–25, from study of comparison with record of flow on North Branch of Raritan River at Milltown. Braced figures show estimated mean discharge for periods indicated.

Monthly discharge of Raritan River at Manville, N. J., for the year ending September 30, 1924

[Drainage area, 490 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,920	64	216	0.441	0.51
November	1,020	161	270	.551	.62
December	2,020	416	964	1.97	2.27
January	----------	----------	2,010	4.10	4.73
February	----------	----------	842	1.72	1.86
March	4,310	489	1,270	2.59	2.99
April	15,100	650	2,170	4.43	4.94
May	6,010	703	1,700	3.47	4.00
June	2,250	373	764	1.56	1.74
July	1,920	176	387	.790	.91
August	800	127	200	.408	.47
September	1,800	99	197	.402	.45
The year	15,100	64	916	1.87	25.49

NORTH BRANCH OF RARITAN RIVER NEAR FAR HILLS, N. J.

LOCATION.—At dam of Somerset Lake & Game Club, 2 miles north of Far Hills, Somerset County, and 2 miles above mouth of Peapack Brook.

DRAINAGE AREA.—26 square miles (measured on State topographic map).

RECORDS AVAILABLE.—February 15, 1922, to September 30, 1924.

GAGE.—Hook gage in stilling box at left end of dam; read by C. H. Meyers and John Robinson.

DISCHARGE MEASUREMENTS.—Made by wading 200 feet below dam.

CONTROL.—Masonry dam with flat crest having low-water notch 26 feet long with crest at elevation of gage height 1.696 feet. Remainder of spillway 137 feet long with crest at elevation of gage height 2.204 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.22 feet at 6 p. m. September 30 (discharge, 556 second-feet); minimum stage, 1.83 feet several times in October (discharge, 5.8 second-feet).

1922–1924: Maximum stage estimated from hydrograph, 5.1 feet at midnight March 7, 1922 (discharge not determined); minimum stage recorded, 1.79 feet at 9.30 a. m. August 27, 1923 (discharge, 4 second-feet).

ICE.—Stage-discharge relation seldom affected by ice.

DIVERSIONS.—Small turbine takes water from the pond above dam for operation of a pump. This turbine is operating continuously and uses about 2 second-feet. The diversion is included in the following tables of daily and monthly discharge.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 150 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:

August 13, 1924: Gage height, 2.149 feet; discharge, 23.5 second-feet; tailrace discharge, 1.5 second-feet.

Daily discharge, in second-feet, of North Branch of Raritan River near Far Hills, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	18	49	55	49	40	62	126	49	24	15	15
2	6.7	13	30	34	45	49	71	78	47	24	15	20
3	6.3	14	25	224	45	41	59	68	45	22	15	19
4	6.3	11	21	75	45	75	106	65	45	22	15	15
5	6.3	12	43	59	122	106	93	55	45	21	15	15
6	6.3	11	131	27	85	208	106	55	41	21	19	15
7	5.8	19	45	40	65	75	436	52	45	20	16	15
8	6.3	18	38	38	55	62	208	65	45	34	16	15
9	6.3	14	38	38	45	62	177	269	45	59	15	29
10	6.3	12	36	38	49	55	149	122	38	30	15	28
11	6.7	11	34	131	49	167	126	114	38	25	15	16
12	7.1	11	27	65	47	75	106	299	41	22	17	15
13	7.6	11	26	49	49	62	97	203	41	27	19	15
14	7.6	11	28	45	38	52	85	158	49	24	15	15
15	8.0	11	23	38	41	45	81	167	40	20	15	15
16	8.0	11	23	75	45	52	81	126	34	18	15	15
17	8.0	11	24	154	38	47	75	110	30	18	15	15
18	8.5	10	22	93	43	47	158	97	30	18	15	15
19	8.9	10	20	81	36	45	198	118	30	16	15	15
20	12	8.9	21	78	102	43	140	97	29	16	15	15
21	9.5	10	22	68	97	49	131	114	28	16	15	15
22	10	10	24	62	49	41	140	89	28	16	15	15
23	11	13	136	62	41	45	131	81	25	19	15	41
24	122	34	55	59	36	43	97	81	25	16	15	16
25	38	21	41	167	34	43	81	81	47	16	15	15
26	23	15	38	75	38	78	71	68	41	16	16	15
27	18	14	36	62	38	49	68	65	38	15	15	15
28	16	14	41	52	45	71	62	89	34	15	15	15
29	16	13	47	62	45	71	68	75	36	15	15	15
30	15	38	38	62	-------	62	75	75	28	15	15	330
31	22	-------	38	62	-------	59	-------	55	-------	15	15	-------

Monthly discharge of North Branch of Raritan River near Far Hills, N. J., for the year ending September 30, 1924

[Drainage area, 26 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	122	5.8	14.4	0.554	0.64
November	38	8.9	14.3	.550	.61
December	136	20	39.4	1.52	1.75
January	224	27	71.9	2.77	3.19
February	122	34	52.3	2.01	2.17
March	208	41	65.1	2.50	2.88
April	436	59	118	4.54	5.06
May	299	52	107	4.12	4.75
June	49	25	37.9	1.46	1.63
July	59	15	21.1	.812	.94
August	19	15	15.4	.592	.68
September	330	15	27.6	1.06	1.18
The year	436	5.8	48.7	1.87	25.48

NORTH BRANCH OF RARITAN RIVER AT MILLTOWN, N. J.

LOCATION.—At Milltown, Somerset County, 1½ miles above junction of North and South Branches of Raritan River.

DRAINAGE AREA.—190 square miles (measured on State topographic map).

RECORDS AVAILABLE.—June 14, 1923, to September 30, 1924.

GAGE.—Inclined staff gage on right bank 300 feet above highway bridge; read by Joseph Van Fleet.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel, clay and fine gravel. Control is remains of foundation of an old dam.

EXTREMES OF DISCHARGE.—Maximum stage during year, 9.5 feet (from floodmarks) at 1 a. m. April 7 (discharge not determined); minimum stage recorded, 2.00 feet at 5.40 a. m. October 13 (discharge, 26 second-feet).

1922–1924: Maximum stage, 9.5 feet (from floodmarks) at 1 a. m. April 7, 1924 (discharge not determined); minimum stage recorded, 1.98 feet several times in August and September, 1923 (discharge, 25 second-feet).

REGULATION.—Slight diurnal fluctuation due to small water-power plants upstream.

ICE.—Stage-discharge relation affected by ice.

ACCURACY.—Stage-discharge relation permanent, except as affected by ice. Rating curve well defined between 30 and 1,600 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of North Branch of Raritan River at Milltown, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 8	3.95	1,240	Apr. 11	3.38	714
Apr. 9	3.71	973	July 17	2.39	93

Daily discharge, in second-feet, of North Branch of Raritan River at Milltown, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	145	845	445	323	237	249	845	278	175	60	43
2	52	115	515	255	255	356	272	445	272	166	58	47
3	42	90	226	3,580	226	278	249	376	255	145	50	115
4	44	85	200	710	220	670	845	362	297	136	56	52
5	50	77	755	550	480	670	515	316	226	132	50	47
6	43	77	1,290	515	670	1,140	890	297	185	132	58	65
7	36	132	590	349	310	515	5,570	278	410	115	61	52
8	42	121	329	278	220	336	1,290	284	272	200	98	47
9	37	102	266	266	200	266	1,040	2,280	284	410	79	58
10	44	82	284	255	200	291	845	755	237	190	82	105
11	40	77	266	845	220	1,290	630	755	278	153	79	69
12	42	77	249	755	220	890	550	3,580	304	128	410	52
13	36	63	232	376	200	445	515	1,290	291	162	166	60
14	44	61	237	304	200	255	445	940	383	132	102	47
15	46	58	243	278	160	237	403	1,040	284	112	82	50
16	47	58	210	266	140	249	369	710	243	105	77	46
17	52	65	166	1,400	130	266	356	670	190	102	69	44
18	46	61	149	990	118	243	940	550	175	90	72	49
19	50	60	136	590	115	255	1,510	670	170	82	60	44
20	85	58	125	550	220	200	845	515	170	77	56	43
21	61	60	141	316	710	190	800	515	166	79	56	42
22	58	61	261	300	291	170	710	515	145	77	56	46
23	58	56	2,280	280	162	180	590	410	125	95	43	323
24	1,090	69	670	630	125	205	480	369	118	82	58	90
25	323	136	480	2,000	115	162	445	480	396	74	60	67
26	195	115	356	550	136	255	410	369	445	69	82	60
27	145	115	304	340	145	342	369	342	297	67	72	56
28	128	121	710	280	180	362	342	515	297	58	49	58
29	125	121	410	280	215	329	356	369	376	58	44	56
30	102	755	237	340	-------	316	356	403	237	56	47	1,190
31	329	-------	396	380	-------	261	-------	310	-------	63	46	-------

NOTE.—Stage-discharge relation affected by ice Jan. 22, 23, 27–31, and Feb. 8–17; discharge estimated by study of gage-height graph, observer's notes, weather records, and by comparison with record at Far Hills.

Monthly discharge of North Branch of Raritan River at Milltown, N. J., for the year ending September 30, 1924

[Drainage area, 190 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,090	36	114	0.600	0.69
November	755	56	109	.574	.64
December	2,280	125	437	2.30	2.65
January	3,580	255	621	3.27	3.77
February	710	115	238	1.25	1.35
March	1,290	162	383	2.02	2.33
April	5,570	249	773	4.07	4.54
May	3,580	278	695	3.66	4.22
June	445	118	260	1.37	1.53
July	410	56	120	.632	.73
August	410	43	78.6	.414	.48
September	1,190	42	104	.547	.61
The year	5,570	36	328	1.73	23.54

BLACK RIVER NEAR POTTERSVILLE, N. J.

LOCATION.—1 mile above highway bridge and former gaging station at Pottersville, Somerset County, and 8 miles above mouth of Rockaway Creek.

DRAINAGE AREA.—33 square miles (measured on State topographic map).

RECORDS AVAILABLE.—June 27, 1922, to September 30, 1924; November 8, 1921, to June 30, 1922, at Pottersville, 1 mile downstream.

GAGE.—Water-stage recorder on right bank installed June 27, 1922; inspected by Theodore Bush.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—Gravel and boulders very rough. Control is riffle of boulders just below gage; probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.54 feet at 6 p. m. April 6 (discharge, about 740 second-feet); minimum stage, 0.79 foot at 6 p. m. August 4 (discharge, 4 second-feet).

1921–1924: Maximum stage recorded, 3.76 feet at noon July 1, 1922 (discharge, about 880 second-feet); minimum stage, 0.79 foot at 6 a. m. August 4, 1924 (discharge, 4 second-feet).

ICE.—Stage-discharge relation occasionally affected by ice.

REGULATION.—Daily fluctuations occasionally caused by operations at small mills upstream.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined below 200 second-feet. Daily discharge ascertained by applying mean daily gage height to rating table. Operations of water-stage recorder satisfactory except as indicated in footnote to daily discharge table. Records good.

The following discharge measurement was made:

August 13, 1924: Gage height, 1.41 feet; discharge, 37 second-feet.

Daily discharge, in second-feet, of Black River near Pottersville, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	29	78	54	44	44	61	116	69	32	13	10
2	12	28	64	50	40	43	50	98	66	28	12	10
3	12	22	60	110	40	43	58	93	61	24	12	11
4	12	18	54	80	54	72	72	88	57	24	11	10
5	11	16	66	66	88	102	78	81	53	22	11	11

Daily discharge, in second-feet, of Black River near Pottersville, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
6	10	18	118	61	110	158	251	75	51	22	16	10
7	9.0	28	85	73	81	136	325	69	58	22	20	10
8	9.3	31	70	55	69	98	270	69	54	30	17	9.6
9	9.3	28	67	44	63	98	224	147	55	41	15	11
10	9.3	24	63	44	60	104	183	126	50	36	13	13
11	9.3	20	51	170	50	120	147	126	46	36	12	12
12	9.3	18	43	95	50	114	126	210	49	36	44	12
13	10	17	38	81	50	97	110	196	57	35	35	12
14	10	16	38	78	69	85	102	183	60	28	33	12
15	10	17	35	73	58	76	90	170	54	26	32	11
16	12	17	32	140	50	64	85	147	50	23	30	11
17	13	17	31	240	57	55	78	136	44	21	24	10
18	12	17	30	160	45	54	150	136	39	20	18	10
19	15	15	27	126	42	54	196	136	36	17	15	10
20	16	15	26	124	54	51	170	120	35	16	14	9.6
21	21	15	27	97	58	50	158	116	31	16	14	9.6
22	17	14	43	91	46	48	147	112	30	16	14	15
23	23	18	100	88	50	48	136	102	29	18	13	23
24	80	38	90	64	60	49	106	91	28	17	13	20
25	53	35	76	140	46	49	98	95	44	17	12	20
26	53	30	72	97	35	50	88	86	51	16	14	16
27	55	24	66	97	34	55	81	85	44	15	13	15
28	60	22	64	170	39	69	75	97	36	14	13	14
29	46	20	55	122	40	73	73	88	38	14	12	27
30	30	77	51	66	-------	72	88	85	38	13	12	161
31	30	-------	50	50	-------	67	-------	75	-------	13	11	-------

NOTE.—Discharge Jan. 3, 4, 10, 11, 17, 18, 31, Feb. 1–4, June 28 to July 5, and Aug. 12; estimated by study of gage-height graph, weather records, and comparison with hydrograph of record on North Branch of Raritan River near Far Hills; no gage-height record.

Monthly discharge of Black River near Pottersville, N. J., for the year ending September 30, 1924

[Drainage area, 33 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	80	9.0	22.3	0.719	0.83
November	77	14	23.5	.712	.79
December	118	26	57.1	1.73	1.99
January	240	44	97.0	2.94	3.39
February	110	34	54.6	1.65	1.84
March	158	43	74.1	2.25	2.59
April	325	50	129	3.91	4.36
May	210	69	115	3.48	4.01
June	69	28	47.1	1.43	1.60
July	41	13	22.8	.691	.80
August	44	11	17.4	.527	.61
September	161	9.6	17.9	.542	.60
The year	325	9	56.5	1.71	23.41

MILLSTONE RIVER AT BLACKWELLS MILLS, N. J.

LOCATION.—At highway bridge in Blackwells Mills, Somerset County, a quarter of a mile below mouth of Middlebrush Brook, 1¾ miles above Millstone, and 5 miles above mouth of Millstone River.

DRAINAGE AREA.—258 square miles (measured on State topographic map).

RECORDS AVAILABLE.—August 4, 1921, to September 30, 1924. A station was maintained at Millstone 1¾ miles downstream June 28, 1903, to December 31, 1904; June 7, 1912, to April 30, 1915.

GAGE.—Vertical staff in two sections on downstream side of left bridge abutment; read by Alex Barna.

DISCHARGE MEASUREMENTS.—Made by wading near gage or from highway bridge at Millstone.

CHANNEL AND CONTROL.—Channel clay. Banks are overflowed at high stages. Control is foundation of old stone and timber dam 100 feet below gage; gradually disintegrating.

EXTREMES OF DISCHARGE.—Maximum stage during year, estimated from hydrograph, 11.0 feet at 9 a. m. April 7 (discharge, about 6,200 second-feet); minimum stage recorded, 0.83 foot at 8 p. m. October 14 (discharge, 62 second-feet).

1921–1924: Maximum stage, estimated from hydrograph, 11.00 feet at 9 a. m. April 7, 1924 (discharge, about 6,200 second-feet); minimum stage recorded, 0.0 all day September 16, 1923 (discharge, about 5 second-feet).

ICE.—Stage-discharge relation affected by ice occasionally for short periods.

DIVERSIONS.—The Delaware & Raritan Canal takes water from Delaware River and flows northeastward to Raritan River. It passes along right bank of Millstone River for 15 miles above gaging station and for 5 miles below. Canal is above river at all points and loses water to river by leakage, seepage, and by discharge from spillways.

REGULATIONS.—Carnegie Lake and several small mills above gage slightly affect distribution of flow.

ACCURACY.—Stage-discharge relation not permanent. Base rating table fairly well defined, variable correction for shifting control determined from periodic discharge measurements. Daily discharge ascertained by applying corrected mean daily gage height to base rating. Records fairly good.

Discharge measurements of Millstone River at Blackwells Mills, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 28	1.46	141	May 26	2.83	798	Aug. 21	1.19	121
Feb. 1	1.76	285	June 24	2.02	409	Sept. 18	1.25	144
Apr. 9	4.05	1,350	July 17	1.56	216			

Daily discharge, in second-feet, of Millstone River at Blackwells Mills, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	105	196	662	955	279	524	442	470	389	442	114	139
2	98	172	320	524	279	772	470	416	365	365	98	132
3	100	150	243	2,090	260	772	662	416	320	320	100	130
4	96	141	196	2,150	260	1,240	1,170	341	298	260	102	126
5	109	134	552	717	662	1,330	1,480	298	279	260	98	118
6	88	137	1,330	389	1,530	1,630	1,430	279	243	226	93	113
7	78	137	772	260	1,050	1,240	5,400	279	634	193	103	111
8	102	137	497	226	772	910	3,070	260	341	279	90	109
9	91	120	365	211	662	662	1,530	1,200	298	2,330	82	196
10	102	120	298	211	389	607	955	1,580	260	1,100	98	1,050
11	98	113	298	1,280	341	1,280	717	1,000	226	442	103	365
12	91	103	279	2,570	320	2,690	607	2,150	243	320	820	243
13	86	109	243	910	497	2,570	552	2,870	243	320	772	196
14	66	109	260	662	341	1,480	470	1,240	772	341	320	159
15	102	93	260	416	260	1,000	416	910	772	260	243	145
16	96	96	243	470	416	662	365	1,170	442	211	196	137
17	90	88	243	2,690	298	552	298	820	341	193	155	132
18	109	91	226	1,330	226	497	865	470	279	177	141	134
19	102	105	193	955	188	470	2,750	416	772	159	130	132
20	113	95	180	717	865	442	1,680	365	1,140	141	128	132

Daily discharge, in second-feet, of Millstone River at Blackwells Mills, N, J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	100	88	180	524	2,330	389	1,240	389	1,630	143	122	122
22	120	102	185	416	2,450	416	910	470	865	139	111	130
23	105	105	1,330	341	2,030	365	820	389	552	145	113	162
24	717	416	1,100	279	910	341	634	341	416	141	109	162
25	497	260	820	1,430	607	320	524	1,730	341	134	116	147
26	243	185	442	1,330	320	365	470	865	497	128	226	145
27	226	169	365	772	279	607	389	634	389	118	260	128
28	177	145	910	580	341	772	341	634	772	116	226	126
29	145	132	1,000	442	497	607	320	524	717	113	243	139
30	137	497	524	341	-------	802	389	634	607	109	226	1,050
31	226	-------	910	320	-------	634	-------	497	-------	109	172	-------

NOTE.—Stage-discharge relation affected by ice Jan. 5–8 and 26–29, discharge determined by study of hydrograph and weather records. Discharge Oct. 26 to Jan. 17 corrected for backwater effect on basis of one discharge measurement, study of hydrograph, and comparison with monthly records for near-by streams.

Monthly discharge of Millstone River at Blackwells Mills, N. J., for the year ending September 30, 1924

[Drainage area, 258 square miles]

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	717	66	149	May	2,870	260	776
November	497	88	152	June	1,630	226	515
December	1,330	180	497	July	2,330	109	314
January	2,690	211	855	August	820	82	191
February	2,450	188	678	September	1,050	109	210
March	2,690	320	869				
April	5,400	298	1,050	The year	5,400	66	521

NOTE.—Because of the leakage, seepage, and waste water from the Delaware & Raritan Canal above record does not represent the natural flow of the basin.

GREEN BROOK AT BOUND BROOK, N. J.

LOCATION.—Near State highway bridge at Bound Brook, Middlesex County, half a mile above mouth.

DRAINAGE AREA.—49 square miles (measured on State topographic map).

RECORDS AVAILABLE.—June 12, 1923, to September 30, 1924.

GAGE.—Vertical staff fastened to willow tree on left bank 300 feet below bridge; read by Edward DeNoyes.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge.

CHANNEL AND CONTROL.—Channel, sand and fine gravel. Control is riffle of gravel 200 feet below gage; not permanent; affected by growth of grass during summer.

DIVERSIONS.—Green Brook receives the sewage of Plainfield about 3 miles upstream. A well field of the Elizabethtown Water Co. Consolidated, is located along stream just above station; a well field of Middlesex Water Co., and a second field of the Elizabethtown Water Co. Consolidated, are also situated in the drainage area above station.

REGULATION.—Daily distribution of flow slightly affected by water power above gage.

ACCURACY.—Stage-discharge relation not permanent. Base rating curve for indirect determination of discharge not well defined. Gage read to hundredths twice daily. Daily-discharge ascertained by applying effective mean daily gage height to rating table, corrections for obtaining effective gage heights determined by comparing periodic discharge measurement with base rating. Daily discharge too uncertain to publish; monthly records probably fair.

Discharge measurements of Green Brook at Bound Brook, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 30	[a] 1.02	28.4	June 24	[b] 1.22	30.8	Aug. 21	[a] 1.01	19.6
Feb. 4	1.39	67	July 17	[a] 1.22	43.7	Sept. 18	[a] 1.13	25.4
May 26	1.87	108						

[a] Stage-discharge relation affected by aquatic growth on riffle.
[b] Some brush on stump below control.

Monthly discharge of Green Brook at Bound Brook, N. J., for the year ending September 30, 1924

[Drainage area, 49 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	150	10	24.0	0.490	0.56
November	48	15	23.1	.471	.53
December	281	32	76.0	1.55	1.79
January	350	48	129	2.63	3.03
February	206	42	70.9	1.45	1.56
March	395	38	123	2.51	2.89
April	800	45	172	3.51	3.92
May	455	56	137	2.80	3.23
June	101	38	67.5	1.38	1.54
July	242	24	65.5	1.34	1.54
August	75	18	33.6	.686	.79
September	150	18	34.0	.694	.77
The year	800	10	79.7	1.63	22.15

NOTE.—No correction made for Plainfield sewage or for water diverted through the various well fields in the basin.

LAWRENCE BROOK AT PATRICKS CORNER, N. J.

LOCATION.—Near highway bridge at Patricks Corner, Middlesex County, 3 miles southwest of Milltown, seven-eighths of a mile above Beaver Brook dam, and 6¼ miles above mouth of Lawrence Brook.

DRAINAGE AREA.—29 square miles (measured on State topographic map).

RECORDS AVAILABLE.—June 21, 1922, to September 30, 1924.

GAGE.—Water-stage recorder on right bank 150 feet above highway bridge; inspected by Henry Patrick.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Banks high and channel fairly straight. Control is sill of old wooden dam.

EXTREMES OF DISCHARGE.—Maximum stage during year from high-water mark, 8.70 feet at 3 a. m. April 7 (discharge uncertain, stage-discharge relation affected by brush jam below gage); minimum stage from water-stage recorder, 1.14 feet several times in October (discharge, 0.4 second-foot, stage-discharge relation affected by grass in channel).

1922–1924: Maximum stage from watermark, 8.70 feet at 3 a. m. April 7, 1924 (discharge, uncertain, stage-discharge relation affected by brush jam below gage); minimum discharge, 0.4 second-foot at 8 a. m. August 27, 1923 (stage, 1.10 feet) and several times in October, 1923 (stage-discharge relation affected by grass on control).

ICE.—Stage-discharge relation occasionally affected by ice.

REGULATION.—Distribution of flow affected by water power above station.

ACCURACY.—Stage-discharge relation permanent except when affected by grass and brush in channel. Rating curve well defined. Operation of recorder satisfactory. Daily discharge ascertained by use of discharge integrator on recorder charts. Records probably fair.

Discharge measurements of Lawrence Brook at Patricks Corner, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 18	1.21	1.0	Apr. 11	[a]2.81	69	Aug. 9	[b]1.36	3.6
Feb. 4	1.60	17.1	July 11	[a]2.12	29.4	Do	1.32	3.8

[a] Stage-discharge relation affected by brush.
[b] Stage-discharge relation affected by aquatic growth in channel.

Daily discharge, in second-feet, of Lawrence Brook at Patricks Corner, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	14	37	59	18	48	26	54	11	26	7	13
2	1	8	8	26	15	49	38	42	20	20	5	22
3	5	6	8	217	25	61	66	34	29	20	3	7
4	3	2	12	102	25	81	114	29	26	18	4	6
5	3	8	53	55	93	112	63	19	19	13	4	8
6	1	4	94	42	176	123	124	18	9	11	5	8
7	1	8	35	16	63	97	394	25	39	12	7	3
8	1	11	15	19	46	59	119	29	36	21	4	4
9	1	6	23	17	41	45	103	186	30	79	3	52
10	7	6	16	10	21	49	56	88	12	48	3	169
11	5	2	13	172	24	171	56	63	8	34	3	44
13	6	6	17	133	25	260	46	354	20	14	123	17
12	2	4	17	67	17	136	36	101	25	14	112	8
14	1	2	19	41	19	76	37	68	36	17	44	6
15	2	4	13	19	20	63	26	54	3	20	10	6
16	2	3	13	107	23	44	32	42	33	19	18	7
17	2	8	17	188	6	22	33	37	25	5	5	14
18	4	1	8	72	10	42	119	26	24	4	9	6
19	5	9	12	52	19	30	231	22	24	5	25	6
20	3	4	17	43	105	25	85	40	22	5	6	6
21	1	6	14	31	134	43	83	28	33	5	5	6
22	4	7	23	27	157	21	78	31	14	6	7	12
23	8	9	108	19	93	8	78	16	22	5	5	18
24	47	9	57	23	64	27	50	45	16	5	3	13
25	18	5	31	160	44	29	42	77	18	6	5	8
26	11	9	22	145	27	34	36	57	23	5	74	8
27	15	8	15	61	26	68	30	38	32	4	63	8
28	2	7	82	30	39	68	29	46	45	4	34	6
29	8	2	44	18	45	52	29	28	29	5	8	13
30	6	30	29	16	-------	80	34	36	58	6	21	102
31	22	-------	75	26	-------	43	-------	48	-------	6	7	-------

NOTE.—Stage-discharge relation affected by grass and brush in channel Oct. 1 to Nov. 29 and Apr. 2 to Sept. 30; discharge estimated by study of hydrograph, discharge measurements, and comparison with record of Assunpink Creek at Trenton.

Monthly discharge of Lawrence Brook at Patricks Corner, N. J., for the year ending September 30, 1924

[Drainage area, 29 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	47	1	6.42	0.221	0.25
November	30	1	6.93	.239	.27
December	108	8	30.5	1.05	1.21
January	217	16	64.9	2.24	2.58
February	176	6	49.0	1.69	1.82
March	260	8	66.6	2.30	2.65
April	394	26	76.4	2.63	2.93
May	354	16	57.5	1.98	2.28
June	58	8	25.7	.886	.99
July	48	4	14.9	.514	.59
August	123	3	20.4	.703	.81
September	169	3	20.2	.697	.78
The year	394	1	36.6	1.26	17.16

NAVESINK RIVER BASIN

SWIMMING RIVER NEAR RED BANK, N. J.

LOCATION.—At dam of Tintern Manor Water Co., 3 miles above Red Bank, Monmouth County, and mouth of river.

DRAINAGE AREA.—48 square miles (measured on State topographic map).

RECORDS AVAILABLE.—July 28, 1922, to September 30, 1924.

GAGE.—Water-stage recorder on right bank 100 feet above end of dam; inspected by J. A. Stewart.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CONTROL.—Dam of stone and concrete, with spillway 148 feet long. In cross section the spillway has a flat top 7 feet wide with downstream edge 1 foot higher than upstream. Sometimes sand bags are placed on the spillway during the summer. There are two 36-inch "blow-off" sluice gates at dam and one 18-inch "blow-off" sluice gate at pumping station.

DETERMINATION OF DISCHARGE.—Discharge over spillway and through all sluice gates determined from rating curves based on current-meter measurements. Diversion measured by piston-displacement method.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.05 feet at 9.30 p. m. February 20 (discharge, about 2,000 second-feet).

1922–1924: Maximum stage recorded, 3.05 feet at 9.30 p. m. February 20, 1924 (discharge, about 2,000 second-feet).

DIVERSION.—Water diverted from dam to Newman Springs pumping station of Tintern Manor Water Co.

REGULATION.—The flow is slightly affected by storage in reservoir. Monthly table corrected for storage by use of an approximate capacity curve.

ACCURACY.—Spillway rating permanent except for periods when spillway was obstructed by sandbags. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table. Storage correction is so small that possible errors in capacity curve will not affect total results. Records good.

COOPERATION.—Station maintained in cooperation with Tintern Manor Water Co.

Measurements of discharge over spillway on Swimming River near Red Bank, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 6	1.77	495	July 7	1.108	54	Aug. 8	[a] 1.212	26.5
Do	1.65	410	July 11	1.105	56			

[a] Sand bangs on dam, 50.7 feet of right end unobstructed.

Daily discharge, in second-feet, of Swimming River near Red Bank, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	52	92	123	75	107	93	145	93	67	31	33
2	25	41	59	80	75	112	108	113	103	67	31	31
3	25	41	55	234	71	107	129	103	98	59	25	30
4	22	41	52	204	75	112	162	98	93	59	22	30
5	22	41	83	103	144	133	145	93	89	55	22	30
6	22	41	206	44	486	149	129	89	84	55	25	31
7	19	48	140	69	162	133	535	89	93	55	13	30
8	19	45	80	61	113	107	229	98	80	52	24	26
9	19	38	67	65	93	97	151	350	103	89	24	31
10	19	34	67	65	89	93	145	284	84	59	22	60
11	22	34	71	117	89	168	129	168	75	52	22	41
12	22	34	67	186	89	388	118	582	80	45	38	31
13	25	38	59	98	83	230	113	328	89	52	84	28
14	25	38	63	84	71	145	108	187	98	55	47	33
15	25	38	63	71	84	123	103	157	123	45	34	31
16	25	38	59	87	71	108	103	145	84	41	31	30
17	22	38	59	330	67	103	98	140	75	38	28	35
18	22	38	55	140	71	98	136	129	71	38	28	53
19	28	38	52	103	67	98	428	121	128	34	27	41
20	38	34	52	93	571	93	193	90	98	34	25	35
21	28	34	55	68	704	93	162	98	84	34	25	33
22	22	34	59	42	206	93	151	147	75	31	24	33
23	52	47	117	65	127	89	187	118	59	45	21	58
24	447	131	113	69	107	89	134	109	55	34	24	47
25	180	67	75	256	107	84	123	248	59	34	25	35
26	71	52	71	161	102	109	113	145	98	34	184	33
27	59	48	67	59	97	145	108	118	71	31	228	31
28	48	45	103	75	97	134	103	123	108	28	70	33
29	48	45	93	82	117	108	108	113	103	25	55	31
30	45	61	71	84	-------	113	151	140	93	22	45	43
31	55	-------	113	80	-------	93	-------	108	-------	25	37	-------

NOTE.—Discharge includes flow over spillway and through all sluice-gates. Sluice gates at dam open May 19–24, and sluice-gate at Newman Springs pumping station partly opened Jan. 6–11, 21–29, Feb. 13 to Mar. 12. Dam was obstructed by sand bags Aug. 7 to Sept. 30. New rating tables to cover these conditions were computed.

Monthly discharge of Swimming River near Red Bank, N. J., during the year ending September 30, 1924

[Drainage area, 48 square miles]

Month	Discharge in second-feet					Run-off in inches
	In river			Total yield		
	Maximum	Minimum	Mean	Mean	Per square mile	
October	447	19	49.2	55.9	1.16	1.34
November	131	34	45.1	47.5	.990	1.10
December	206	52	78.6	78.8	1.64	1.89
January	330	42	110	110	2.29	2.64
February	704	67	149	149	3.10	3.34
March	388	84	124	124	2.58	2.97
April	535	93	156	156	3.25	3.63
May	582	89	161	162	3.37	3.88
June	123	55	88.2	95.8	2.00	2.23
July	89	22	45.0	53.6	1.12	1.29
August	228	13	43.3	53.4	1.11	1.28
September	60	26	35.6	44.1	.919	1.03
The year	704	13	90.2	94.0	1.96	26.62

NOTE.—The first three columns indicate actual quantity of water flowing in river; the three remaining columns include diversion and storage. Water diverted to Newmans Springs pumping station during October, November, January, and May to September inclusive.

ABSECON CREEK BASIN

ABSECON CREEK AT ABSECON, N. J.

LOCATION.—At dam of Atlantic City Water Department, 1 mile west of Absecon, Atlantic County, and 3 miles above mouth.

DRAINAGE AREA.—16.6 square miles (measured on State topographic map).

RECORDS AVAILABLE.—December 1, 1923, to September 30, 1924.

DETERMINATION OF DISCHARGE.—Discharge is computed by adding the flow over spillway and through the sluice gates of the reservoir, the flow through a 42-inch wood-stave pipe line 9,930 feet long through which water flows by gravity from reservoir to pumping station, and an estimated flow that is diverted to a duck farm on left bank of creek just below weir. Correction for gain or loss in storage in the reservoir is made to monthly discharge in order to derive natural flow.

The discharge over the spillway and through the sluice gates and leakage is determined from the record made by a water-stage recorder at right end of a weir 48.5 feet long and 2.5 feet high with a 2-inch plank crest and located in channel of the creek 30 feet below spillway. The weir is submerged for a few hours each day by high tide, but the periods of submergence are easily recognized from the appearance of the gage-height graph.

Discharge through the 42-inch pipe line is determined from the loss of head at a 24-inch gate in the pipe line 100 feet below the intake in the reservoir. The head above the gate is indicated by the elevation of the water surface in the reservoir which is measured by a hook gage in a stilling box near the intake. The head below the 24-inch gate is determined by a water-stage recorder in the caretaker's shelter 100 feet below gate. This water-stage recorder is over a 12-inch float tank which is connected with the pipe line by ¾-inch pipe. The two gages are set at the same datum.

Corrections for gain or loss in storage are based upon readings of hook gage in reservoir.

Gages read and recorders inspected by F. J. Trumbore and J. E. Reilly, employees of Atlantic City Water Department.

DISCHARGE MEASUREMENTS.—Measurements for rating the weir are made from highway bridge 10 feet below weir or by wading. Discharge measurements for rating pipe line are made with a Pitot tube 150 feet below 24-inch gate.

REGULATION.—Flow is regulated by storage in the reservoir.
ACCURACY.—Records fair.
COOPERATION.—Station installed and maintained in cooperation with Atlantic City Water Department, Mr. L. Van Gilder, chief engineer.

Measurements of discharge over weir on Absecon Creek at Absecon, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 25	2.34	28.2	Apr. 25	0.30	22.6	May 12	2.38	33.4
Do	2.49	56	Apr. 26	2.22	12.0	May 13	2.47	52
Do	2.64	93	Do	2.20	9.2	May 14	[a] 2.58	73

[a] One-half foot of weir obstructed.

Measurements of discharge through 30-inch waste gate [a] on Absecon Creek at Absecon, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 7	10.94	91	Nov. 10	9.75	92	Nov. 12	8.71	78
Do	10.89	94	Do	9.58	92	Nov. 13	8.37	82
Nov. 8	10.3	93	Nov. 12	8.92	78	Nov. 14	8.00	72
Do	10.25	93	Do	8.84	78	Nov. 16	7.86	73
Nov. 10	9.82	85						

[a] Right gate wide open.

Daily discharge, in second-feet, of Absecon Creek at Absecon, N. J., for the year ending September 30, 1924

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	17	46	32	34	59	43	41	28	27
2	29	23	44	32	47	49	49	41	29	25
3	22	47	41	41	46	41	49	41	28	25
4	25	37	41	40	36	43	53	39	28	24
5	35	36	23	36	30	38	42	39	27	23
6	38	18	22	37	41	43	43	38	26	26
7	31	16	16	35	63	41	44	38	26	23
8	36	16	17	34	66	42	43	36	25	22
9	31	17	15	31	59	58	53	36	23	20
10	31	29	18	31	51	70	51	35	24	27
11	30	30	18	40	46	69	47	33	23	24
12	21	43	25	47	46	62	49	31	29	23
13	22	33	35	55	45	35	59	34	31	24
14	18	21	35	54	47	50	66	36	31	27
15	15	13	23	49	26	55	62	30	28	27
16	26	13	18	44	14	34	57	34	26	26
17	24	16	17	46	12	23	51	40	24	33
18	18	17	18	36	14	24	49	36	28	39
10	12	17	33	41	15	65	43	32	24	32
20	13	43	41	39	19	63	32	30	24	27
21	13	41	54	42	19	55	29	28	24	25
22	25	17	56	45	20	70	34	29	24	26
23	32	16	55	39	39	57	33	36	25	38
24	36	33	53	45	46	41	38	31	24	30
25	32	57	51	39	51	59	41	30	24	41
26	28	35	49	43	37	41	37	31	42	65
27	22	18	48	45	40	26	37	29	48	62
28	32	47	48	38	40	41	40	28	36	54
29	21	26	38	46	43	53	41	29	30	58
30	15	17	------	43	38	55	42	29	28	50
31	16	29	------	43	------	40	------	29	25	------

NOTE.—Above table indicates flow down the stream, through pipe line and that diverted to duck farm. Discharge through pipe line Jan. 15, 26–29, Feb. 14, Apr. 18, 25–30, May 1–4, 11, Aug. 2–9 when one or the other of the gage records are missing, was estimated by studying the hydrograph and also the record of head at the lower end of the pipe line derived from a water-stage recorder set over a 12-inch float tank connected with ¾-inch pipe to the pipe line 200 feet from the outlet end. Discharge of flow down the stream from Dec. 1 to Feb. 18, while weir was being constructed, was computed by studying the openings of 30-inch waste gate and reservoir gage heights.

Monthly discharge of Absecon Creek at Absecon, N. J., for the year ending September 30, 1924

[Drainage area, 16.6 square miles]

Month	Discharge in second-feet					Run-off in inches
	Actual flow			Natural flow		
	Maximum	Minimum	Mean	Mean	Per square mile	
December	38	12	25.0	25.6	1.54	1.78
January	57	13	27.0	28.3	1.70	1.96
February	56	15	34.4	32.1	1.93	2.08
March	55	31	40.9	39.7	2.39	2.76
April	66	12	37.7	50.2	3.02	3.37
May	70	23	48.5	48.1	2.90	3.34
June	66	29	45.2	45.2	2.72	3.04
July	41	28	33.8	33.5	2.02	2.33
August	48	23	27.8	27.6	1.66	1.91
September	65	20	32.4	26.4	1.59	1.77
The period	70	12	35.3	35.7	2.15	24.34

NOTE.—"Actual flow" is flow over weir, through pipe line and to duck farm. "Natural flow" is "actual flow" corrected for gain or loss in storage.

DELAWARE RIVER BASIN

EAST BRANCH OF DELAWARE RIVER AT FISHS EDDY, N. Y.

LOCATION.—At railroad bridge at Fishs Eddy, Delaware County, 4 miles below mouth of Beaver Kill and 5½ miles above confluence of East and West Branches.

DRAINAGE AREA.—785 square miles (measured on topographic maps).

RECORDS AVAILABLE.—November 19, 1912, to September 30, 1924.

GAGE.—Staff in two sections at downstream end of left pier of bridge; read by F. J. McMorris.

DISCHARGE MEASUREMENTS.—Made from upstream side of highway bridge 200 feet above gage or by wading.

CHANNEL AND CONTROL.—Coarse gravel; occasionally shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, about 19.0 feet during night of September 30, determined from floodmarks (discharge, approximately 45,000 second-feet); minimum stage, 2.07 feet at 9 a. m. September 2 (discharge, 189 second-feet).

1912–1924: Maximum stage recorded, that of current year; minimum stage, 1.64 feet at 5 p. m. October 12, 14, and 15, 1914 (discharge, 97 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

ACCURACY.—Stage-discharge relation at medium and low stages changed presumably at time of high water April 7; affected by ice. Rating curves fairly well defined between 150 and 20,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except for days of great range in stage, when discharge is averaged for intervals of day. Records good, except during periods of ice effect, for which they are fair.

Discharge measurements of East Branch of Delaware River at Fishs Eddy, N.Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 4	2.78	399	Apr. 10	7.48	6,090	July 25	2.49	346
Feb. 28	*4.06	305	July 25	2.48	342			

* Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of East Branch of Delaware River at Fishs Eddy, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	495	1,140	9,350	1,540	850	300	2,610	2,810	1,200	528	335	205
2	470	970	5,390	1,140	800	280	2,110	2,690	1,110	528	326	195
3	420	890	3,890	1,650	750	300	1,870	2,570	980	500	277	205
4	395	820	3,030	2,750	700	300	1,760	4,690	980	475	242	205
5	370	785	2,890	1,900	650	500	2,750	3,750	1,020	475	231	211
6	370	750	5,030	1,500	750	1,400	5,210	3,190	900	400	231	305
7	348	855	5,210	1,300	650	1,600	18,900	2,690	2,000	376	245	352
8	325	1,330	3,890	1,200	600	1,000	10,400	2,450	1,480	500	262	262
9	305	1,100	3,450	1,200	550	700	6,150	2,450	1,380	1,380	238	330
10	285	930	2,890	1,200	500	650	5,950	2,930	1,160	725	221	1,400
11	285	930	3,170	9,600	440	600	5,750	2,450	1,020	610	211	860
12	285	890	2,610	11,400	420	550	4,850	4,530	940	500	281	638
13	277	820	2,230	5,750	380	420	4,530	7,550	940	900	352	528
14	269	785	2,350	4,210	360	400	5,210	5,570	900	900	309	500
15	257	750	1,870	3,030	340	400	6,350	9,850	790	665	249	450
16	253	720	1,650	2,610	340	360	4,850	6,550	695	555	218	400
17	245	720	1,540	8,150	340	340	4,050	5,030	638	500	242	352
18	242	690	1,430	4,530	320	340	3,750	3,890	582	528	249	326
19	245	660	1,230	3,310	320	380	8,350	4,210	555	475	242	305
20	277	630	1,180	3,030	320	420	5,030	3,330	528	425	214	293
21	273	575	1,140	2,110	320	650	5,210	2,810	665	376	211	285
22	245	575	1,230	970	300	800	5,030	2,450	638	352	238	277
23	231	575	2,110	900	300	2,800	7,350	2,110	500	348	211	425
24	1,870	785	2,610	900	300	2,400	5,030	1,890	500	335	205	425
25	3,890	855	1,990	850	300	1,990	4,210	2,000	610	339	211	335
26	2,230	720	1,760	850	300	1,760	3,610	1,680	695	352	376	297
27	1,650	930	1,650	800	300	1,230	2,810	1,480	555	318	352	277
28	1,430	1,050	1,650	750	300	1,430	2,570	1,780	528	285	318	253
29	1,140	890	1,540	1,200	300	2,610	2,450	1,680	790	269	293	536
30	970	1,100	1,330	1,200	-------	3,730	2,330	1,480	665	253	245	23,000
31	1,430	-------	1,230	1,100	-------	4,370	-------	1,340	-------	253	231	-------

NOTE.—Discharge Jan. 5–10 and Jan. 23 to Mar. 24, determined from gage heights corrected for ice effect by means of one discharge measurement, study of gage height graph and weather records, and comparison with records of stations in same drainage basin.

Monthly discharge of East Branch of Delaware River at Fishs Eddy, N. Y., for the year ending September 30, 1924

[Drainage area, 785 square miles

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,890	231	702	0.894	1.03
November	1,330	575	841	1.07	1.19
December	9,350	1,140	2,660	3.39	3.91
January	11,400	750	2,670	3.40	3.92
February	850	300	452	.576	.62
March	4,370	280	1,130	1.44	1.66
April	18,900	1,760	5,030	6.41	7.15
May	9,850	1,340	3,350	4.27	4.92
June	2,000	500	865	1.10	1.23
July	1,380	253	498	.634	.73
August	376	205	260	.331	.38
September	23,000	195	1,150	1.46	1.63
The year	23,000	195	1,640	2.09	28.37

DELAWARE RIVER AT PORT JERVIS, N. Y.

LOCATION.—At steel highway bridge at Port Jervis, Orange County, 1½ miles above mouth of Neversink River and 6 miles below mouth of Mongaup River.

DRAINAGE AREA.—3,070 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 12, 1904, to September 30, 1924.

GAGE.—Chain gage on downstream side of left span of highway bridge, and staff in two sections; the upper section, vertical and attached to downstream end of left abutment, and the lower section inclined 30 feet downstream. Gages read by John Bisland.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Gravel; occasionally shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.42 feet at 5 p. m. April 7 (discharge, 62,500 second-feet); minimum stage, 1.50 feet at 5 p. m. August 2 and 8 a. m. and 5 p. m. August 7 (discharge, 685 second-feet).

1904–1924:[8] Maximum open-water stage recorded, 16.0 feet at 8 a. m. March 28, 1914 (discharge, 92,700 second-feet); minimum stage, 0.60 foot at 8 a. m. September 22 and 23, 1908 (discharge, 175 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

ACCURACY.—Stage-discharge relation changed presumably at time of high water January 12; affected by ice. Rating curve used before change fairly well defined between 500 and 15,000 second-feet; that used after change, fairly well defined between 600 and 30,000 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except for days of great range in stage, when discharge is averaged for intervals of day. Records good, except during periods of ice effect and estimate, for which they are fair.

Discharge measurements of Delaware River at Port Jervis, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	2.15	1,590	Apr. 9	8.35	29,600
Jan. 29	2.79	2,630	July 26	1.72	896

Daily discharge, in second-feet, of Delaware River at Port Jervis, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,120	3,330		5,010	3,400	1,100	10,700	6,350	4,460	1,720	732	2,470
2	1,840	3,090		4,710	3,200	1,100	10,300	5,680	4,180	1,720	685	1,890
3	1,670	3,090	13,000	5,310	3,000	1,100	8,200	7,430	3,910	1,720	780	1,110
4	1,510	2,850		6,990	3,000	1,000	7,430	7,060	3,650	1,720	990	780
5	1,360	2,850		9,750	2,800	1,600	10,700	6,700	3,400	1,550	780	780
6	1,360	2,630	9,330	7,730	2,600	2,400	16,200	6,010	3,400	1,800	732	935
7	1,220	2,740	16,200	6,290	2,800	5,500	59,900	5,050	3,650	1,550	685	880
8	1,220	3,090	15,600	5,950	3,200	6,500	53,400	4,460	5,360	1,390	780	880
9	1,090	2,850	11,100	5,310	2,600	4,750	29,700	6,700	4,750	2,070	880	1,240
10	1,090	2,630	9,330	5,010	2,400	4,180	23,200	7,810	4,180	4,750	830	1,640
11	970	2,410	8,910	12,000	1,900	3,400	20,500	8,600	3,910	3,400	780	4,180
12	970	2,210	8,510	49,100	1,700	2,690	17,400	10,300	3,650	2,360	935	2,260
13	970	2,850	8,110	35,000	1,600	2,470	14,600	23,200	3,160	1,980	2,360	1,890
14	860	2,630	7,730	16,800	1,600	2,070	13,600	23,900	2,920	2,800	1,110	1,550
15	860	2,630	6,990	14,100	1,500	1,890	12,600	24,600	2,920	3,040	990	1,550

[8] During the flood of Oct. 10–11, 1903, a crest stage of 23.3 feet gage height was observed by Mr. Righter, city engineer of Port Jervis. This gage height corresponds to approximately 155,000 second-feet.

Daily discharge, in second-feet, of Delaware River at Port Jervis, N. Y., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	860	2,410	6,290	12,100	1,400	1,720	12,100	25,300	2,920	2,580	990	1,390
17	760	2,410	5,630	23,200	1,400	1,890	11,600	17,400	2,690	1,980	880	1,240
18	760	2,410	4,410	21,800	1,200	2,070	12,100	13,600	2,470	1,720	780	1,240
19	860	2,210	3,850	12,600	1,200	2,070	19,200	13,500	2,260	1,550	780	1,110
20	970	2,210	3,590	11,600	1,200	1,890	23,900	12,600	1,890	1,550	880	1,110
21	970	2,210	3,330	9,010	1,100	2,800	19,800	10,300	1,890	1,390	1,050	990
22	860	2,210	3,330	7,430	1,100	3,400	16,800	9,840	1,890	1,320	880	880
23	860	2,020	5,010	4,180	1,100	4,460	18,600	8,600	1,720	1,110	830	880
24	1,590	2,210	7,350	4,180	1,100	8,200	17,400	7,430	1,720	1,110	780	1,050
25	6,990	2,210	8,510	5,050	1,100	11,200	17,400	7,060	1,550	990	780	990
26	5,950	2,210	7,350	4,180	1,100	10,300	12,600	6,700	1,390	880	880	990
27	5,010	2,630	6,990	3,650	1,100	9,840	9,840	6,010	1,720	880	1,110	880
28	4,410	2,850	6,290	2,800	1,100	9,010	8,200	5,680	1,890	880	2,360	830
29	4,130	3,090	5,010	2,690	1,100	7,810	7,060	5,360	2,070	780	1,890	830
30	3,850	3,590	3,850	3,160	-------	13,100	6,700	6,010	1,890	830	2,070	11,900
31	3,330	-------	3,850	3,650	-------	11,600	--------	5,050	-------	830	2,260	-------

NOTE.—Discharge Dec. 1–5 and 25 estimated by comparison with records of stations in same drainage area; gage readings doubtful. Discharge Feb. 2 to Mar. 8 determined from gage heights corrected for ice effect from study of gage-height graph and weather records, and comparison with records of stations in same drainage area.

Monthly discharge of Delaware River at Port Jervis, N. Y., for the year ending September 30, 1924

[Drainage area, 3,070 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	6,990	760	1,980	0.645	0.74
November	3,590	2,020	2,630	.857	.96
December	16,200	3,330	8,110	2.64	3.04
January	49,100	2,690	10,300	3.36	3.87
February	3,400	1,100	1,850	.603	.65
March	13,100	1,000	4,620	1.50	1.73
April	59,900	6,700	17,400	5.67	6.33
May	25,300	4,460	10,100	3.29	3.79
June	5,360	1,390	2,920	.951	1.06
July	4,750	780	1,740	.567	.65
August	2,360	685	1,070	.349	.40
September	11,900	780	1,680	.547	.61
The year	59,900	685	5,380	1.75	23.83

DELAWARE RIVER AT BELVIDERE, N. J.

LOCATION.—At Belvidere, Warren County, just below mouth of Pequest River.

DRAINAGE AREA.—4,540 square miles.

RECORDS AVAILABLE.—October 27, 1922, to September 30, 1924.

GAGE.—Inclined staff gage on left bank bolted to downstream side of storm sewer outlet at foot of Second Street, Belvidere; read by Alexander Rush.

DISCHARGE MEASUREMENTS.—Made from boat 1,000 feet below gage for low water and from highway bridge half a mile upstream during high water. Pequest River measured separately when highway bridge is used.

CHANNEL AND CONTROL.—Channel is heavy gravel and boulders. Control is ledge and boulders three-quarters mile below gage known as Little Foul Rift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 18.02 feet at 6 p. m. April 7 (discharge, about 102,000 second-feet); minimum stage, 2.60 feet September 5 (discharge, 1,010 second-feet).

1922–1924: Maximum stage recorded, 18.02 feet at 6 p. m. April 7, 1924 (discharge, about 102,000 second-feet); minimum stage, 2.45 feet in July and August, 1923 (discharge, 895 second-feet).

ICE.—Stage-discharge relation affected by ice only during extremely cold periods.
ACCURACY.—Stage-discharge relation permanent. Rating curve well defined between 900 and 60,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

The following discharge measurement was made:
September 26, 1924: Gage height, 3.16 feet; discharge, 1,690 second-feet.

Daily discharge, in second-feet, of Delaware River at Belvidere, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,360	4,070	15,900	6,940	6,620	2,740	21,000	9,810	6,940	3,600	1,370	1,430
2	2,180	4,580	26,200	6,620	6,300	2,740	15,900	10,600	6,940	3,150	1,310	1,310
3	2,010	4,070	17,900	7,960	6,300	2,550	12,800	11,400	6,300	2,740	1,200	1,150
4	1,850	4,070	13,700	8,680	5,690	2,740	12,300	10,200	6,300	2,550	1,200	1,100
5	1,700	3,370	11,400	10,600	5,990	3,150	15,000	10,600	5,690	2,550	1,310	1,010
6	1,560	3,150	12,800	8,320	6,300	4,580	21,600	12,300	5,400	2,270	1,310	1,100
7	1,560	3,150	19,900	6,940	5,400	5,990	75,000	10,200	5,400	2,010	1,260	1,150
8	1,560	3,370	18,900	6,620	5,120	7,270	89,000	9,430	5,690	2,270	1,150	1,310
9	1,430	4,070	15,000	6,940	5,120	7,960	46,800	10,600	6,940	3,150	1,100	1,430
10	1,430	4,320	12,800	7,270	4,070	7,270	32,800	12,800	5,990	5,400	1,100	1,850
11	1,370	4,070	11,900	13,200	3,600	6,620	28,100	13,200	5,400	4,850	1,200	2,100
12	1,310	3,600	11,400	53,400	3,600	6,620	24,400	15,900	5,120	3,830	1,630	4,070
13	1,310	3,370	11,000	33,500	3,150	5,990	19,900	32,200	4,580	3,150	1,850	3,150
14	1,310	3,370	9,810	24,400	3,150	5,690	17,900	32,200	4,580	2,550	1,700	2,460
15	1,260	3,150	9,050	17,900	3,150	5,400	17,900	30,100	4,580	3,370	1,700	2,100
16	1,260	2,940	8,320	14,100	3,150	4,580	17,900	33,500	4,070	3,600	1,560	1,930
17	1,200	2,740	7,270	25,600	3,150	4,070	15,000	25,600	3,830	3,150	1,430	1,850
18	1,150	2,740	6,940	33,500	3,370	4,320	14,600	21,000	3,600	2,740	1,430	1,700
19	1,100	2,740	6,300	22,100	3,150	4,580	22,100	18,900	3,370	2,270	1,200	1,560
20	1,200	2,740	5,690	16,900	2,360	4,850	28,100	17,900	3,150	2,180	1,100	1,430
21	1,200	2,740	5,690	14,600	1,850	5,400	23,800	15,500	3,150	2,010	1,150	1,370
22	1,150	2,550	5,690	11,000	3,150	5,690	20,500	14,100	3,150	1,930	1,260	1,370
23	1,310	2,550	7,270	6,300	3,150	6,300	23,300	12,800	2,740	1,780	1,430	1,430
24	2,740	3,150	10,600	6,940	3,150	8,680	22,100	11,000	2,940	1,700	1,370	1,430
25	5,400	3,370	12,300	8,320	2,940	13,200	17,900	11,400	2,940	1,560	1,260	1,500
26	11,400	3,830	10,600	9,810	2,740	13,200	15,500	10,600	2,740	1,430	1,100	1,630
27	8,320	3,600	8,680	7,610	2,740	11,900	13,200	9,430	2,740	1,370	1,260	1,630
28	6,300	3,370	8,320	5,990	2,740	11,000	11,900	8,680	3,150	1,500	2,460	1,310
29	5,120	3,370	8,320	5,690	2,740	11,000	10,600	8,320	3,150	1,430	2,180	1,430
30	4,580	5,120	7,960	5,690	-------	16,400	9,810	9,430	2,940	1,370	2,010	14,100
31	4,070	-------	7,270	6,300	-------	21,000	-------	7,610	-------	1,370	1,780	-------

Monthly discharge of Delaware River at Belvidere, N. J., for the year ending September 30, 1924

[Drainage area, 4,540 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	11,400	1,100	2,640	0.581	0.67
November	5,120	2,550	3,440	.758	.85
December	26,200	5,690	11,100	2.44	2.81
January	53,400	5,690	13,500	2.97	3.42
February	6,620	1,850	3,930	.866	.93
March	21,000	2,550	7,210	1.59	1.83
April	89,000	9,810	23,900	5.26	5.87
May	33,500	7,610	15,100	3.33	3.84
June	6,940	2,740	4,450	.980	1.09
July	5,400	1,370	2,540	.559	.64
August	2,460	1,100	1,430	.315	.36
September	14,100	1,010	2,080	.458	.51
The year	89,000	1,010	7,620	1.68	22.82

DELAWARE RIVER AT RIEGELSVILLE, N. J.

LOCATION.—At suspension bridge between Riegelsville, Warren County, N. J., and Riegelsville, Bucks County, Pa., 600 feet above mouth of Musconetcong River and 9 miles below Lehigh River.

DRAINAGE AREA.—6,190 square miles, revised.

RECORDS AVAILABLE.—July 3, 1906, to September 30, 1924.

GAGE.—Water-stage recorder installed February 28, 1924, on left bank (New Jersey side) 20 feet above bridge; inclined staff and chain gages used prior to installation of water-stage recorder. Gage read and recorder inspected by J. H. Brotzman.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Rock outcrop and large boulders; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 23.1 feet at 4 a. m. April 8 (discharge, 122,000 second-feet); minimum stage, 2.05 feet several times in October (discharge, 1,360 second-feet).

1906–1924: Maximum stage recorded, 25 feet March 28, 1913 (discharge, 144,000 second-feet); minimum stage, 1.55 feet at 8 a. m. September 20, 1908 (discharge, 870 second-feet).

The flood of October 10–11, 1903, reached a stage of 35.9 feet determined by levels from three good floodmarks. Maximum discharge during this flood has been estimated 275,000 second-feet at Riegelsville from observations made at Lambertville.

ICE.—Stage-discharge relation affected by ice during severe winters only.

DIVERSIONS.—The Delaware division of the Pennsylvania Canal diverts about 230 second-feet from Lehigh River near its mouth from about the last of March to the middle of December each year.

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve well defined. Staff gage read to half-tenths twice daily until February 28, 1924, after which date water-stage recorder was operated. Daily discharge ascertained by applying to rating table mean daily gage height. Records good.

The following measurements were made during the year:

August 15, 1924: Gage height, 2.89 feet; discharge, 3,170 second-feet.

August 15, 1924: Pennsylvania Canal; discharge, 232 second-feet.

Daily discharge, in second-feet, of Delaware River at Riegelsville, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,960	5,490	15,700	10,400	9,410	4,660	26,400	12,900	10,800	5,780	2,060	2,160
2	2,960	5,490	34,500	10,000	9,100	4,930	22,200	13,300	9,720	5,780	1,960	1,960
3	2,600	5,490	23,600	10,400	8,790	5,210	18,100	14,100	9,100	5,210	1,860	1,770
4	2,370	4,930	17,300	14,100	8,480	5,490	16,900	13,300	8,480	4,930	1,860	1,680
5	2,160	4,390	14,100	14,100	8,170	7,860	19,400	12,200	8,170	4,660	1,960	1,680
6	1,960	4,390	15,700		12,500	10,800	25,300	14,500	7,560	4,390	1,960	1,770
7	1,770	4,120	24,500	9,500	9,720	12,900	81,300	12,900	7,860	4,120	1,960	1,960
8	1,770	4,120	25,400		7,860	11,800	109,000	11,400	7,560	4,930	1,960	1,960
9	1,770	4,930	19,000		7,260	11,100	67,300	13,700	8,790	9,100	1,770	2,060
10	1,680	5,490	16,500	9,100	6,360	12,500	45,100	17,300	8,170	9,720	1,680	2,840
11	1,590	4,930	14,900	11,100	5,780	9,410	39,500	17,300	7,560	9,100	1,860	2,960
12	1,590	4,930	14,100	54,800	6,070	11,100	33,000	23,200	6,950	6,950	2,720	4,390
13	1,590	4,390	13,700	49,900	5,490	9,720	27,400	40,100	6,950	6,360	4,120	4,390
14	1,430	4,120	12,200	33,500	4,930	8,480	24,500	42,700	6,950	5,780	3,200	3,330
15	1,510	4,120	11,400	24,000	5,210	7,860	23,100	39,500	6,950	5,490	3,080	3,080

Daily discharge, in second-feet, of Delaware River at Riegelsville, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	1,590	3,850	11,100	20,400	4,660	7,260	23,100	42,200	6,950	5,490	2,480	2,600
17	1,430	3,850		40,100	4,930	6,360	20,400	34,500		4,930	2,260	2,370
18	1,360	3,590		42,200	4,660	6,650	19,000	28,400		4,390	2,600	2,260
19	1,430	3,330	8,500	32,400	4,390	6,650	26,400	25,400	6,000	3,850	2,480	2,060
20	1,590	3,330		26,900		6,650	35,100	24,000		3,590	2,160	1,960
21	1,430	3,200	6,950	22,600		6,650	30,400	21,200	5,210	3,590	2,160	1,770
22	1,590	3,200	7,860			7,260	26,900	19,900	4,660	3,330	2,160	1,860
23	1,590	3,080	11,100	14,000		7,860	27,900	17,300	4,390	3,590	2,160	2,060
24	4,120	3,590	16,900		6,000	9,720	28,400	15,700	4,660	3,590	2,160	2,060
25	10,400	4,120	18,100	13,700		14,900	23,600	16,100	4,930	2,960	2,060	2,060
26	13,700	4,930	15,700	14,900		16,500	20,400	14,900	6,650	2,720	2,060	2,160
27	11,100	4,930	13,300	11,000		15,700	17,700	13,300	5,210	2,480	2,060	2,160
28	8,790	4,930	12,200	7,860	4,390	14,100	15,300	12,500	5,780	2,370	2,720	1,960
29	6,650	4,390	12,500	9,100	4,390	14,500	14,500	11,800	6,360	2,370	3,200	2,060
30	6,070	5,210	11,100	9,100	--------	19,000	13,300	12,500	6,360	2,370	2,840	26,200
31	5,780	-------	10,400	9,410	--------	25,400	--------	12,200	-------	2,370	2,370	-------

NOTE.—This table indicates river discharge only and does not include the diversion by the Pennsylvania Canal which was in operation Oct. 1 to Dec. 8 and Mar. 7 to Sept. 30. Discharge estimated Dec. 17–20, Jan. 6–9, 22-24, 27, Feb. 20–27, and June 17–20, by comparison with graphs of discharge at Trenton and at Belvidere.

Monthly discharge of Delaware River at Riegelsville, N. J., for the year ending September 30, 1924

[Drainage area, 6,190 square miles]

Month	Discharge in second-feet					Run-off in inches
	Observed			Corrected for diversion		
	Maximum	Minimum	Mean	Mean	Per square mile	
October	13,700	1,360	3,490	3,720	0.601	0.69
November	5,490	3,080	4,360	4,590	.742	.83
December	34,500	6,950	14,600	14,700	2.37	2.73
January	54,800	7,860	18,700	18,700	3.02	3.48
February	12,500	----------	6,570	6,570	1.06	1.14
March	25,400	4,660	10,300	10,500	1.70	1.96
April	109,000	13,300	30,700	30,900	4.99	5.57
May	42,700	11,400	20,000	20,200	3.26	3.76
June	10,800	4,390	6,890	7,120	1.15	1.28
July	9,720	2,370	4,720	4,950	.800	.92
August	4,120	1,680	2,320	2,550	.412	.48
September	26,200	1,680	3,120	3,350	.541	.60
The year	109,000	1,360	10,500	10,700	1.73	23.44

NOTE.—The column headed "Observed" gives the flow in the river only. Under the headings "Corrected for diversion" and "Run-off in inches" there has been added the estimated 230 second-feet diverted down the Pennsylvania Canal. The canal was closed Dec. 9 to Mar. 6.

DELAWARE RIVER AT TRENTON, N. J.

LOCATION.—At Calhoun Street Bridge, Trenton, Mercer County, 1 mile above Pennsylvania Railroad bridge and half a mile above mouth of Assunpink Creek.

DRAINAGE AREA.—6,800 square miles.

RECORDS AVAILABLE.—February 24, 1913, to September 30, 1924.

GAGE.—Chain gage on downstream side of bridge 100 feet from left abutment.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Rocky and permanent at the rapids a few hundred feet below bridge.

EXTREMES OF DISCHARGE.—Maximum stage during year estimated from hydrograph, 11.8 feet at 9.30 a. m. April 8 (discharge, 132,000 second-feet); minimum stage recorded, −0.20 foot on October 17–19 (discharge, 1,560 second-feet).

1913–1924: Maximum stage recorded, 13.3 feet during night of March 28–29, 1913 (discharge, 160,000 second-feet); minimum stage, −0.40 foot several times in October and November, 1914 (discharge, 1,240 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Delaware division of the Pennsylvania Canal diverts 53 second-feet by gaging station from about March 31 to December 15 each year. The Delaware & Raritan feeder canal diverts about 160 second-feet from March 1 to December 31 each year. The Trenton power canal diverts about 210 second-feet around the gage daily.

ACCURACY.—Stage-discharge relation considered permanent, except during ice-affected periods. Rating curve well defined between 1,700 and 90,000 second-feet. Gage read to tenths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

COOPERATION.—Gage readings furnished by United States Weather Bureau.

No discharge measurement of the river made during year.

Discharge measurements of canals which divert water around gaging station on Delaware River at Trenton, N. J., during the year ending September 30, 1924

Date	Pennsylvania Canal	Trenton power canal	Delaware and Raritan feeder
	Sec.-ft.	*Sec.-ft.*	*Sec.-ft.*
June 25	69	284	171
Aug. 14	59	169	133
Sept. 13	-------	162	143
Sept. 15	69	-------	-------

Daily discharge, in second-feet, of Delaware River at Trenton, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,700	6,000	11,100	12,500		4,490	27,400	16,400	11,800	6,400	2,300	2,430
2	3,000	5,600	33,400	11,100	10,000	4,850	24,700	13,200	9,800	6,000	2,300	2,080
3	2,840	5,600	27,400	14,800		5,220	18,800	14,000	9,200	5,600	2,080	2,190
4	2,560	4,850	19,600	18,000	9,200	4,850	18,000	14,000	8,650	5,220	1,900	1,900
5	2,300	4,490	16,400	14,800	7,650	9,200	20,400	11,800	8,650	4,850	1,990	1,720
6	2,080	4,140	18,000	13,000	18,000	11,800	26,500	14,000	7,650	4,490	2,080	1,810
7	2,080	4,140	21,200	9,800	11,100	18,800	76,200	14,000	7,650	4,140	2,080	1,990
8	1,900	4,140	26,500		8,150	13,200	121,000	11,800	7,650	3,800	2,080	2,080
9	1,900	4,140	23,800		6,800	11,100	77,600	15,600	6,800	6,800	2,080	2,080
10	1,900	5,220	18,000	9,900	7,650	11,800	50,600	18,000	8,650	9,800	1,990	2,190
11	1,900	5,600	16,400		7,200	11,100	39,800	18,000	7,650	10,400	1,810	2,700
12	1,810	4,850	14,800	43,300	5,600	14,800	33,400	25,600	7,200	8,150	2,560	2,840
13	1,810	4,490	14,800	58,400	6,000	12,500	28,400	34,400	6,800	6,800	3,800	5,220
14	1,720	4,140	13,200	37,600	5,220	9,800	24,700	45,700	7,200	6,800	4,140	4,850
15	1,720	4,140	11,800	28,400	4,850	8,650	22,900	39,800	7,200	5,220	3,150	3,150
16	1,720	3,800	11,100	19,600	5,600	7,650	22,900	43,300	6,400	5,600	2,840	2,840
17	1,560	3,800	10,400	31,400	5,220	6,800	22,000	38,700	5,600	5,220	2,190	2,560
18	1,560	3,800	9,200	48,100	4,850	6,400	18,800	30,400	5,600	4,490	2,190	2,300
19	1,560	3,470	8,150	37,600	5,600	6,800	26,500	26,500	5,600	4,140	2,560	2,300
20	1,640	3,470	7,650	28,400	5,600	6,800	35,400	24,700	5,600	3,800	2,430	2,080
21	1,640	3,150	7,200	23,800	9,800	6,800	34,400	22,900	6,000	3,470	2,300	1,990
22	1,720	3,150	7,200	18,000	18,800	7,200	28,400	21,200	5,220	3,470	2,080	1,900
23	1,640	3,000	13,200		8,650	7,200	26,500	18,800	4,490	3,470	2,190	2,080
24	2,560	3,470	18,000		6,800	7,650	30,400	16,400	4,490	3,470	2,300	2,190
25	9,200	3,470	19,600		5,600	11,800	25,600	16,400	4,850	3,150	2,300	2,300
26	10,400	4,140	18,000	13,300	4,850	16,400	21,200	16,400	6,400	3,000	2,560	2,080
27	13,200	4,850	14,800		4,490	17,200	18,800	14,000	6,000	2,700	2,190	2,190
28	9,800	4,850	14,000		4,490	16,400	16,400	13,200	5,600	2,560	2,190	2,080
29	7,650	4,140	14,000		4,490	14,800	14,800	12,500	6,400	2,560	2,840	2,080
30	6,800	4,140	12,500		-------	30,400	14,000	11,800	7,200	2,560	3,150	2,700
31	6,400	-------	10,400		-------	25,600	-------	13,200	-------	2,560	2,700	-------

NOTE.—This table indicates flow in river only. Diversion by canals included in monthly table. Stage-discharge relation affected by ice Jan. 6, 8–11, 23–31, and Feb. 1–3; daily discharge determined by study of weather records and comparison with other stations on Delaware River.

Monthly discharge of Delaware River at Trenton, N. J., for the year ending September 30, 1924

[Drainage area, 6,800 square miles]

Month	Discharge in second-feet					Run-off in inches
	Observed			Corrected for diversion		
	Maximum	Minimum	Mean	Mean	Per square mile	
October	13,200	1,560	3,590	4,010	0.590	0.63
November	6,000	3,000	4,270	4,700	.691	.77
December	33,400	7,200	15,500	15,900	2.34	2.70
January	58,400	9,800	20,300	20,500	3.01	3.47
February	18,800	4,490	7,660	7,870	1.16	1.25
March	30,400	4,490	11,200	11,600	1.71	1.97
April	121,000	14,000	32,200	32,600	4.79	5.34
May	45,700	11,800	20,900	21,300	3.13	3.61
June	11,800	4,490	6,930	7,360	1.08	1.20
July	10,400	2,560	4,860	5,280	.776	.89
August	4,140	1,810	2,430	2,850	.419	.48
September	5,220	1,720	2,430	2,850	.419	.47
The year	121,000	1,560	11,000	11,400	1.68	22.83

NOTE.—The first three columns indicate actual flow in river. The last three include diversions as follows: Pennsylvania Canal, 53 second-feet Oct. 1 to Dec. 8 and Mar. 7 to Sept. 30; Trenton power canal, 210 second-feet all year; Delaware and Raritan Canal, 160 second-feet Oct. 1 to Dec. 31 and Mar. 1 to Sept. 30.

BEAVER KILL AT COOKS FALLS, N. Y.

LOCATION.—At covered highway bridge in Cooks Falls, Delaware County, 5½ miles below mouth of Willowemoc Creek and 10 miles above mouth.

DRAINAGE AREA.—241 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 25, 1913, to September 30, 1924.

GAGE.—Vertical staff in three sections, bolted to rock on left bank under bridge; read by H. B. Couch.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Coarse gravel, boulders, and solid ledge; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, about 15.0 feet during night of September 30, determined from floodmarks (discharge, approximately 13,400 second-feet); minimum stage, 0.91 foot several times August 23 to September 2 (discharge, 61 second-feet).

1913–1924: Maximum stage recorded, that of current year; minimum discharge, 30 second-feet from 7 a. m. October 12 to 7 a. m. October 13, 1916.

ICE.—Stage-discharge relation somewhat affected by ice.

ACCURACY.—Stage-discharge relation practically permanent, except as affected by ice. Rating curve fairly well defined between 80 and 3,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except for days of great range in stage, when discharge is averaged for intervals of day. Records fair.

Discharge measurements of Beaver Kill at Cooks Falls, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	1.65	166	Feb. 27	[a] 1.79	115	July 25	1.42	131
Jan. 30	[a] 2.68	424	Apr. 9	5.17	1,840			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Beaver Kill at Cooks Falls, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	191	422	2,040	440	280	110	790	1,340	480	214	107	61
2	180	422	4,080	335	280	100	655	990	460	262	100	70
3	160	388	2,190	790	260	100	700	790	440	202	100	107
4	150	370	1,040	890	240	150	655	1,760	422	160	93	100
5	141	388	1,480	565	240	240	790	1,340	405	141	93	100
6	141	370	2,670	440	240	440	1,900	1,040	370	123	100	123
7	132	440	2,670	440	220	422	7,420	890	335	123	100	115
8	123	542	1,830	422	170	335	2,830	790	335	170	93	107
9	123	460		388	170	305	2,350	940	335	700	100	214
10	123	370		370	170	225	2,040	890	305	320	107	565
11	123	352	1,400	4,280	150	214	1,690	940	275	275	93	352
12	123	335		2,830	150	170	1,410	2,430	262	250	100	290
13	123	305		1,690	140	123	1,340	2,110	250	238	100	225
14	115	305		1,040	120	115	1,340	1,620	238	250	100	202
15	107	275		890	120	115	1,620	3,180	225	225	93	150
16	107	262	790	990	120	123	1,550	2,190	202	214	93	123
17	107	250	565	2,830	120	123	1,160	1,550	191	191	93	107
18	107	238	480	1,620	120	123	990	1,100	170	191	87	93
19	107	225	405	990	110	123	1,340	990	160	170	87	93
20	115	214	370	800	110	150	3,720	940	141	160	81	87
21	107	202	440	600	110	170	2,040	1,040	202	160	87	93
22	107	191	990	500	110	225	2,040	890	202	150	81	115
23	107	225	890	480	100	480	2,430	790	202	141	66	180
24	1,760	480	655	420	100	655	1,970	745	191	132	61	160
25	1,100	460	565	380	100	460	1,340	700	170	132	61	123
26	790	440	460	360	110	520	890	745	160	123	191	107
27	745	480	422	320	110	480	790	700	160	123	150	93
28	655	405	250	300	110	520	745	745	180	123	123	93
29	542	370	262	440	110	700	700	700	180	115	87	761
30	500	352	290	380	-------	1,340	745	610	214	107	81	10,300
31	440	-------	500	320	-------	990	-------	520	-------	107	66	-------

NOTE.—Discharge Dec. 9–15 estimated from hydrograph comparison with record of East Branch of Delaware River at Fishs Eddy; gage readings doubtful. Discharge Jan. 20 to Mar. 6 determined from gage heights corrected for ice effect by means of two discharge measurements and study of gage-height graph and weather records.

Monthly discharge of Beaver Kill at Cooks Falls, N. Y., for the year ending September 30, 1924

[Drainage area, 241 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,760	107	305	1.27	1.46
November	542	191	351	1.46	1.63
December	4,080	250	1,170	4.85	5.59
January	4,280	300	888	3.68	4.24
February	280	100	155	.643	.69
March	1,340	100	334	1.39	1.60
April	7,420	655	1,670	6.93	7.73
May	3,180	520	1,160	4.81	5.54
June	480	141	262	1.09	1.22
July	700	107	193	.801	.92
August	191	61	95.9	.398	.46
September	10,300	61	510	2.12	2.36
The year	10,300	61	592	2.46	33.44

LITTLE BEAVER KILL NEAR LIVINGSTON MANOR, N. Y.

LOCATION.—On farm of Emory Keene, 2½ miles southeast of Livingston Manor, Sullivan County, 2½ miles below Parksville, and 3½ miles above Cattail Brook.

DRAINAGE AREA.—19.8 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 26 to September 30, 1924.

GAGE.—Vertical staff on right bank fastened to upstream side of dismantled farm bridge; read by Emory Keene.

DISCHARGE MEASUREMENTS.—Made from farm bridge or by wading.

CHANNEL AND CONTROL.—One channel except at extreme stages; straight for 60 feet above and below station. Banks high but may be overflowed during extremely high water. Control gravel; probably shifting.

EXTREMES OF DISCHARGE.—Maximum discharge during period not recorded; minimum stage, 0.68 foot several times August 11 to September 5 (discharge, 2.7 second-feet).

ICE.—Stage-discharge relation probably affected by ice during most winters.

ACCURACY.—Stage-discharge relation permanent during period. Rating curve well defined below 100 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for estimate made September 30 which may be fair.

The following discharge measurement was made:

July 26, 1924: Gage height, 0.74 foot; discharge, 3.72 feet.

Daily discharge, in second-feet, of Little Beaver Kill near Livingston Manor, N. Y., for the year ending September 30, 1924

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1		4.9	2.8	11		2.8	8.9	21		3.3	2.9
2		3.5	2.7	12		8.6	5.9	22		2.9	4.5
3		3.1	2.7	13		5.4	5.2	23		2.9	22
4		2.9	2.7	14		4.3	5.2	24		2.9	8.6
5		2.9	6.5	15		3.5	4.3	25		3.9	6.2
6		4.3	6.7	16		2.9	3.9	26	3.5	9.6	4.7
7		3.7	4.3	17		2.9	3.7	27	3.5	4.5	4.3
8		3.1	3.5	18		2.9	3.3	28	3.1	3.9	4.1
9		2.9	53	19		2.8	3.1	29	3.1	3.3	42
10		2.9	21	20		2.9	2.9	30	2.9	3.1	1,400
								31	5.9	3.1	

Monthly discharge of Little Beaver Kill near Livingston Manor, N. Y., for the year ending September 30, 1924

[Drainage area, 19.8 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
July 26–31	5.9	2.9	3.67	0.185	0.04
August	9.6	2.8	3.76	.190	.22
September	[a] 1,400	2.7	55.1	2.78	3.10

[a] Estimated.

WEST BRANCH OF DELAWARE RIVER AT HALE EDDY, N. Y.

LOCATION.—At highway bridge in Hale Eddy, Delaware County, 8 miles below Deposit and 8½ miles above confluence with East Branch.

DRAINAGE AREA.—603 square miles (measured on topographic maps).

RECORDS AVAILABLE.—November 15, 1912, to September 30, 1924.

GAGE.—Vertical staff in four sections, attached to rocks near the right abutment of the bridge and to the abutment; read by W. J. Shanly.

DISCHARGE MEASUREMENTS.—Made from cable 400 feet below gage, from highway bridge, or by wading.

CHANNEL AND CONTROL.—Coarse gravel and boulders; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, about 15.8 feet during night of September 30, determined from graph of plotted gage readings (discharge, approximately 26,500 second-feet); minimum stage, 1.5 feet several times October 16-18 (discharge, 68 second-feet).

1912–1924: Maximum stage[9] recorded, that of current year; minimum stage, 1.0 foot at 6 p. m. September 21, 1913 (discharge, 34 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

ACCURACY.—Stage-discharge relation practically permanent except as affected by ice. Rating curve fairly well defined between 50 and 24,000 second-feet. Gage read to tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except for days of great range in stage, when discharge is averaged for intervals of day. Records fairly good, except during periods of ice effect and estimate, for which they are fair.

Discharge measurements of West Branch of Delaware River at Hale Eddy, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 4	2.19	257	Nov. 23	2.60	421	Apr. 10	6.98	4,430
Oct. 5	2.00	205	Jan. 31	a 7.05	935	July 24	2.05	208
Oct. 5	1.94	192	Feb. 29	a 3.67	170			

a Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of West Branch of Delaware River at Hale Eddy, N.Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	238	780	4,940	1,100	650	160	2,070	1,520	750	478	120	238
2	175	675	4,210	1,000	600	160	1,520	1,790	675	410	133	272
3	175	625	2,570	1,500	550	160	1,790	1,520	550	390	133	238
4	220	525	2,270	2,800	500	160	2,470	2,670	500	370	133	205
5	205	525	2,670	2,370	500	360	2,470	2,570	478	330	120	205
6	220	500	3,440	1,790	550	1,100	4,640	1,970	500	290	120	432
7	238	625	2,670	1,360	550	900	13,500	1,700	1,880	255	120	330
8	220	625	2,470	1,070	440	600	6,270	1,360	1,520	455	133	272
9	190	650	2,170	1,070	440	400	4,940	1,360	1,210	575	108	575
10	205	810	1,880	1,070	320	340	4,350	1,360	1,070	455	190	1,520
11	175	780	1,700	6,270	280	300	4,080	1,210	840	390	160	1,070
12	160	700	1,610	5,580	240	260	3,560	2,070	675	350	205	725
13	133	675	1,520	3,690	220	220	3,560	4,080	625	432	190	700
14	120	625	1,440	2,470	200	220	3,560	3,200	478	478	146	625
15	97	600	1,360	1,970	200	200	2,870	5,420	625	410	120	550
16	77	525	1,210	2,470	190	190	2,470	3,820	575	390	146	432
17	77	478	1,070	3,320	190	190	2,470	2,870	525	432	133	410
18	86	455	1,070	2,070	190	200	2,770	2,470	478	390	120	390
19	86	410	930	1,700	180	220	3,090	2,070	432	350	108	330
20	146	390	840	1,520	170	240	3,090	1,880	370	290	146	310
21	146	350	810	1,070	160	280	2,770	1,700	390	272	133	310
22	120	350	1,000	675	160	280	2,870	1,700	390	255	146	272
23	160	390	1,520	625	160	1,200	2,770	1,440	350	238	160	238
24	625	370	1,700	600		1,900	2,470	1,210	350	220	146	272
25	1,700	390	1,500	600		1,880	2,270	1,070	525	238	290	238
26	1,210	330	1,300	550	170	1,520	1,970	930	500	238	725	205
27	930	310	1,100	550		1,210	1,700	930	478	190	390	255
28	810	350	1,000	550		1,210	1,360	1,000	478	160	550	238
29	575	390	950	900	170	2,470	1,070	1,070	455	175	350	1,790
30	575	1,520	900	900	-------	3,200	1,210	930	525	146	272	15,400
31	810	-------	950	850	-------	2,770	-------	930	-------	146	272	-------

NOTE.—Discharge, Feb. 24–29, estimated by comparison with records of stations in the same basin; gage not read. Discharge, Dec. 24 to Jan. 4, and Jan. 24 to Mar. 24, determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with records of stations in same drainage area.

[9] The observer states that on October 10, 1903 (previously published as October 10, 1893), water rose to an elevation indicated by a nail in a tree near gage. This nail is at gage height 20.3 feet, corresponding to a discharge of approximately 46,000 second-feet.

Monthly discharge of West Branch of Delaware River at Hale Eddy, N. Y., for the year ending September 30, 1924

[Drainage area, 603 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,700	77	352	0.584	0.67
November	1,520	310	558	.925	1.03
December	4,940	810	1,770	2.94	3.39
January	6,270	550	1,740	2.89	3.33
February	650	160	299	.496	.54
March	3,200	160	790	1.31	1.51
April	13,500	1,070	3,200	5.31	5.92
May	5,420	930	1,930	3.20	3.69
June	1,880	350	640	1.06	1.18
July	575	146	329	.546	.63
August	725	108	201	.333	.38
September	15,400	205	968	1.61	1.80
The year	15,400	77	1,070	1.77	24.07

FLAT BROOK NEAR FLATBROOKVILLE, N. J.

LOCATION.—1 mile above Flatbrookville, Sussex County, and 1½ miles above mouth.

DRAINAGE AREA.—65 square miles (measured on topographic map).

RECORDS AVAILABLE.—July 8, 1923, to September 30, 1924.

GAGE.—Inclined staff gage on right bank; read by E. S. Aker.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Channel, fine to coarse gravel. Control is bar of heavy gravel 50 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during period, July 8, 1923, to September 30, 1924, from high-water mark, 7.1 feet at 6 a. m. April 7, 1924 (discharge, about 2,350 second-feet); minimum stage recorded, 1.35 feet at 7 a. m. September 6 and 7, 1923 (discharge, 4 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Daily distribution of flow affected by water power 3 miles above gage.

ACCURACY.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 600 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying to rating table mean daily gage height corrected for ice effect during winter. Records good.

The following discharge measurements were made:

October 1, 1923: Gage height, 1.60 feet; discharge, 16.2 second-feet.
March 26, 1924: Gage height, 2.55 feet; discharge, 208 second-feet.
March 26, 1924: Gage height, 2.55 feet; discharge, 206 second-feet.

Daily discharge, in second-feet, of Flat Brook near Flatbrookville, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	30	620	89	102	50	200	146	116	38	20	14
2	11	29	185	63	91	44	185	125	106	36	18	13
3	11	24	118	95	91	40	151	111	102	33	16	13
4	21	23	118	200	89	44	151	102	97	30	16	13
5	8	23	97	118	85	63	304	93	93	26	23	13
6	6	21	232	100	79	118	531	89	83	28	16	20
7	11	23	249	90	75	116	1,780	93	89	30	15	16
8	11	44	170	85	75	118	800	89	81	36	15	15
9	12	34	120	80	71	93	487	285	77	68	14	18
10	8	30	113	75	75	116	364	344	70	44	13	18

Daily discharge, in second-feet, of Flat Brook near Flatbrookville, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	19	36	111	249	71	113	285	267	64	39	12	16
12	16	33	106	620	47	116	249	620	63	32	25	15
13	6	28	93	620	48	116	185	755	73	43	30	12
14	19	28	93	216	46	68	173	383	73	44	26	12
15	12	26	79	151	44	81	162	466	70	35	19	13
16	8	24	75	170	42	60	151	323	56	32	21	16
17	11	22	71	444	42	63	140	267	50	28	18	14
18	11	34	63	249	42	77	176	216	46	26	17	11
19	11	23	58	216	44	81	403	249	42	25	21	10
20	9	22	60	185	50	85	249	216	42	24	17	9
21	12	21	58	120	65	102	249	232	44	23	16	7
22	12	20	66	135	65	102	232	216	34	21	15	11
23	18	26	143	267	60	118	249	159	36	22	15	8
24	130	75	200	179	55	200	200	151	40	19	23	9
25	111	43	143	156	50	216	179	179	42	19	32	8
26	66	44	113	140	50	200	162	146	40	18	18	8
27	42	46	97	130	55	216	140	138	49	18	14	11
28	28	42	102	120	55	249	130	156	53	17	15	12
29	26	39	111	125	55	249	118	146	47	17	15	23
30	25	162	106	125	-------	249	125	151	44	18	14	43
31	31	-------	99	106	-------	249	-------	143	-------	17	13	-------

NOTE.—Stage-discharge relation affected by ice Jan. 6–9, 26–28, and Feb. 13 to Mar. 2; discharge estimated from study of gage-height graph, weather record, and hydrographic comparison with record for Pequest River at Pequest.

Monthly discharge of Flat Brook near Flatbrookville, N. J., for the year ending September 30, 1924

[Drainage area, 65 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	130	6	23.7	0.365	0.42
November	162	20	35.8	.551	.61
December	620	58	131	2.02	2.33
January	620	63	184	2.83	3.26
February	102	42	62.7	.965	1.04
March	249	40	123	1.89	2.18
April	1,780	118	297	4.57	5.10
May	755	89	228	3.51	4.05
June	116	34	64.1	.986	1.10
July	68	17	29.2	.449	.52
August	32	12	18.1	.278	.32
September	43	7	14.0	.215	.24
The year	1,780	6	101	1.55	21.17

PAULINS KILL AT BLAIRSTOWN, N. J.

LOCATION.—At highway bridge in Blairstown, Warren County, 200 feet above mouth of Blairs Creek and 9 miles above mouth of Paulins Kill.

DRAINAGE AREA.—128 square miles (measured on topographic map).

RECORDS AVAILABLE.—October 19, 1921, to September 30, 1924.

GAGE.—Water-stage recorder on right bank just above highway bridge; inspected by Mrs. G. W. Croupe.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel of sand and gravel. Control riffle of small boulders at downstream side of bridge.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 6.83 feet at 11 a. m. April 7 (discharge, about 1,680 second-feet); minimum stage, 1.38 feet 7 to 10 a. m. October 11 (discharge, 6 second-feet).

1921–1924: Maximum stage recorded, 7.0 feet at 4 p. m. March 8, 1922 (discharge, about 1,800 second-feet); minimum stage, 1.34 feet at 3 p. m. November 1, 1922 (discharge, about 2.8 second-feet).

ICE.—Stage-discharge relation affected by ice during winter.

REGULATION.—Distribution of flow affected by storage in Swartswood Lake and by water power above station.

ACCURACY.—Stage-discharge relation probably permanent, except for ice-affected periods. Rating curve well defined below 1,500 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height corrected for ice effect, or on days of considerable fluctuation by use of discharge integrator. Records fairly good.

The following discharge measurements were made:

February 27, 1924: Gage height, 1.63 feet;[10] discharge, 19.5 second-feet.

March 27, 1924: Gage height, 2.86 feet;[10] discharge, 231 second-feet.

Daily discharge, in second-feet, of Paulins Kill at Blairstown, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	89	499	228	206	87	250	229	184	69	39	33
2	39	73	321	217	184	83	195	219	159	68	40	32
3	38	64	234	286	174	87	228	189	156	68	31	30
4	40	59	192	410	174	88	286	171	159	61	35	30
5	32	62	190	359	239	158	436	153	149	63	40	33
6	30	59	315	217	384	420	1,190	142	144	55	33	33
7	29	55	327	228	250	580	1,570	133	136	57	38	32
8	31	99	256	195	206	410	1,280	137	128	61	40	34
9	31	96	226	184	151	361	935	282	135	188	40	36
10	32	78	204	184	153	436	676	384	118	175	38	41
11	32	72	203	384	151	360	550	334	105	112	37	38
12	31	62	189	676	164	392	436	698	105	78	59	37
13	32	57	174	436	141	359	384	935	111	79	91	40
14	31	56	181	228	140		346	676	110	97	73	31
15	37	62	166	220	160		298	676	109	79	51	34
16	30	57		220	140		274	550	108	64	50	33
17	30	48		643	120		250	436	92	63	39	42
18	31	55		520	109		302	384	77	59	43	41
19	34	50	140	436	72		550	410	83	54	43	43
20	43	55		372	58	220	436	359	81	50	50	46
21	41	55		274	70		410	346	78	45	45	43
22	46	46	141	228	116		372	334	73	49	44	47
23	55	49	273	250	109		384	286	69	47	42	52
24	120	92	343	239	95		310	262	72	46	41	51
25	195	120	260	262	90		274	322	76	49	42	47
26	126	89	220	346	88		239	274	77	47	41	50
27	91	82	200	286	89	228	228	239	74	45	38	42
28	80	81	228	228	95	250	206	250	75	42	25	37
29	57	81	251	195	84	250	178	239	75	43	37	43
30	60	176	220	206	-------	322	194	274	80	40	33	283
31	72	-------	217	228	-------	310	-------	228	-------	45	29	-------

NOTE.—Daily discharge estimated because of no gage-height record Dec. 16–21, 25–27, 30, and Mar. 14–26, and because of ice effect Jan. 15–16, Feb. 14–17, 24, and 25, by study of hydrograph, weather record, and comparison with hydrograph of Pequest River at Pequest. Discharge computed from chain gage readings Dec. 31 to Feb. 27; recorder not operating properly.

[10] Stage-discharge relation affected by ice.

Monthly discharge of Paulins Kill at Blairstown, N. J., for the year ending September 30, 1924

[Drainage area, 128 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	195	29	52.2	0.408	0.47
November	176	46	72.6	.567	.63
December	499	----------	222	1.73	1.99
January	676	184	303	2.37	2.73
February	384	58	145	1.13	1.22
March	580	83	259	2.02	2.33
April	1,570	178	456	3.56	3.97
May	935	133	340	2.66	3.07
June	184	69	107	.836	.93
July	188	40	67.7	.529	.61
August	91	25	42.8	.334	.39
September	283	30	47.1	.368	41
The year	1,570	25	176	1.38	18.75

PEQUEST RIVER AT PEQUEST, N. J.

LOCATION.—At Pequest station, Warren County, on Lehigh & Hudson River Railroad, 100 feet above railroad bridge, 300 feet below mouth of Furnace Brook, and 6¾ miles above mouth of Pequest River.

DRAINAGE AREA.—108 square miles (measured on topographic map).

RECORDS AVAILABLE.—November 7, 1921, to September 30, 1924.

GAGE.—Vertical staff attached to face of former bridge abutment on right bank 100 feet above railroad bridge; read by Marcus Beers.

DISCHARGE MEASUREMENTS.—Made by wading or from footbridge at gage.

CHANNEL AND CONTROL.—Channel fine gravel; control riffle of large stones probably remains of old diversion dam 50 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.67 feet at 5 p. m. April 7 (discharge, 593 second-feet); minimum stage, 0.31 foot at 7.30 a. m. September 20 and 21 (discharge, 17 second-feet).

1921–1924: Maximum stage recorded, 2.91 feet at 5 p. m. March 19, 1923 (discharge, 694 second-feet); minimum stage, 0.31 foot at 7.30 a. m. on September 20 and 21, 1924 (discharge, 17 second-feet).

ICE.—Stage-discharge relation not seriously affected by ice.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined above 20 second-feet. Gage read to even hundredths twice daily. Daily discharge ascertained by applying to rating table mean daily gage height. Records good.

The following discharge measurements were made:

September 25, 1924: Gage height, 0.63 foot; discharge, 41.0 second-feet.

September 25, 1924: Gage height, 0.59 foot; discharge, 37.6 second-feet.

Daily discharge, in second-feet, of Pequest River at Pequest, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	66	220	134	145	83	156	193	156	72	33	25
2	22	50	145	105	145	88	124	180	145	63	34	25
3	24	41	105	220	134	86	168	168	134	66	33	25
4	23	41	96	248	134	114	220	156	134	62	33	28
5	21	38	96	180	168	234	293	134	124	60	32	26
6	21	38	180	86	326	343	378	134	124	62	31	26
7	22	53	168	114	220	360	565	124	124	52	34	25
8	26	58	124	105	168	309	565	134	114	58	34	24
9	21	50	105	124	124	234	527	248	124	78	30	28
10	21	44	96	114	145	220	565	262	114	105	31	27

Daily discharge, in second-feet, of Pequest River at Pequest, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	24	41	96	180	124	220	565	234	105	78	29	28
12	23	39	105	248	124	277	489	360	105	66	47	22
13	23	38	88	220	88	277	451	396	114	105	64	28
14	20	38	96	180	86	220	396	396	114	72	53	21
15	25	34	96	156	124	180	309	393	105	63	43	28
16	22	34	86	134	83	156	248	378	105	57	42	24
17	23	36	85	360	75	145	220	326	86	49	36	28
18	23	34	82	326	105	145	262	277	83	46	37	26
19	28	34	75	309	78	156	378	277	88	56	28	24
20	26	32	69	277	75	156	343	248	77	44	32	22
21	27	34	77	206	105	145	309	248	80	40	33	21
22	26	31	88	85	96	145	277	248	78	43	40	28
23	25	34	206	134	88	145	277	220	66	49	33	33
24	105	53	220	156	78	145	248	206	66	41	31	26
25	124	63	156	248	75	145	206	248	75	41	33	27
26	88	45	124	220	85	145	193	220	85	36	28	22
27	57	51	114	145	78	168	168	193	75	38	30	22
28	45	49	124	145	85	180	168	206	69	35	30	20
29	40	45	145	156	78	168	168	193	72	36	31	30
30	43	88	124	145	-------	206	168	193	70	35	30	145
31	63	-------	124	156	-------	193	-------	168	-------	33	26	-------

Monthly discharge of Pequest River at Pequest, N. J., for the year ending September 30, 1924

[Drainage area, 108 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	124	20	35.6	0.330	0.38
November	88	31	44.4	.411	.46
December	220	69	120	1.11	1.28
January	360	85	181	1.68	1.94
February	326	75	119	1.10	1.19
March	360	83	187	1.73	1.99
April	565	124	313	2.90	3.24
May	396	124	238	2.20	2.54
June	156	66	100	.926	1.03
July	105	33	56.2	.520	.60
August	64	26	34.9	.323	.37
September	145	20	29.5	.273	.30
The year	565	20	122	1.13	15.32

BEAVER BROOK NEAR BELVIDERE, N. J.

LOCATION.—500 feet above mouth of brook in Pequest River and 2 miles east of Belvidere, Warren County.

DRAINAGE AREA.—36 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 24, 1922, to September 30, 1924.

GAGE.—Water-stage recorder on right bank; inspected by M. F. Hildebrant.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge one-fourth mile above gage.

CHANNEL AND CONTROL.—Gravel and ledge. Control is solid rock outcrop 25 feet below gage, improved by having rough cavities filled with concrete; permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.56 feet at 3 a. m. April 7 (discharge, 579 second-feet); minimum stage, 1.21 feet at 2 p. m. October 18 (discharge, 3.1 second-feet).

1922–1924: Maximum stage recorded, 3.83 feet at noon March 17, 1923 (discharge, 760 second-feet); minimum stage, 1.21 feet September 4, 5, and October 18, 1923 (discharge, 3.1 second-feet).

ICE.—Stage-discharge relation generally affected by ice.

REGULATION.—Daily distribution of flow often irregular because of operation of small gristmills some distance upstream.

ACCURACY.—Stage-discharge relation permanent, except when affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory except as indicated in footnote to table of daily discharge. Daily discharge ascertained by applying mean daily gage height to rating table and by use of discharge integrator. Records good.

The following discharge measurements were made:

December 28, 1923: Gage height, 2.26 feet; discharge, 79 second-feet.

September 25, 1924: Gage height, 1.31 feet; discharge, 4.21 second-feet.

September 25, 1924: Gage height, 1.31 feet; discharge, 4.18 second-feet.

Daily discharge, in second-feet, of Beaver Brook near Belvidere, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.1	24	85	69	61	27	62	68	52	18	5.3	3.5
2	4.4	18	102	60	57	27	62	59	48	16	5.3	3.9
3	4.1	15	59	101	55	30	70	54	46	16	5.1	3.9
4	4.1	13	60	115	55	41	89	49	48	14	4.8	3.8
5	5.3	13	55	85	93	79	112	45	44	14	4.8	3.8
6	4.3	12	75	75	177	152	280	42	42	13	6.1	4.1
7	4.0	14	108	70	102	168	481	41	42	12	6.0	3.9
8	3.5	16	64	65	75	130	344	43	39	18	5.4	3.6
9	4.6	13	68	61	60	112	261	80	41	21	4.7	3.8
10	3.9	11	64	59	56	132	211	100	37	17	4.2	5.4
11	3.8	10	61	106	54	119	166	82	31	13	4.1	5.6
12	3.8	9.0	57	137	53	134	137	170	35	12	15	4.1
13	3.6	9.0	52	100	50	123	119	180	37	20	16	4.2
14	3.8	8.0	52	82	59	104	100	180	37	19	12	3.8
15	3.5	8.0	49	69	43	91	89	180	33	15	8.9	3.5
16	3.8	8.0	44	95	41	64	80	160	29	12	7.0	3.6
17	3.6	7.0	42	171	43	65	80	120	27	9.7	6.4	3.5
18	3.4	7.0	39	144	38	62	134	110	24	8.6	6.4	3.9
19	3.6	7.5	36	125	33	56	137	95	24	7.8	6.0	3.4
20	3.9	8.9	35	110	29	56	117	90	22	7.5	6.0	3.6
21	5.1	7.0	35	95	42	53	106	85	22	7.2	5.7	4.2
22	4.1	8.6	44	75	40	53	106	80	20	7.5	5.8	5.0
23	7.2	7.2	83	70	34	53	91	75	19	9.7	6.4	5.0
24	43	15	93	60	32	53	81	70	18	8.2	4.4	5.0
25	47	23	76	111	30	50	74	90	18	7.2	4.9	4.6
26	26	16	72	90	28	56	68	72	26	7.0	4.8	4.2
27	16	15	66	65	27	60	62	66	22	7.5	4.4	4.8
28	12	17	72	55	26	59	59	68	22	6.0	5.5	4.1
29	12	14	82	55	26	56	61	65	24	5.7	5.6	9.1
30	14	17	70	59	-------	82	62	65	22	6.0	4.6	130
31	28	-------	68	62	-------	74	-------	57	-------	5.5	4.1	-------

NOTE.—Stage-discharge relation affected by ice Jan. 5–8, 20–24, 26–29, Feb. 9, and 21–25, discharge estimated by studying gage-height graph, weather records, and by comparison of record on Pequest River at Pequest. Discharge estimated, bacause gage was not operating properly, Oct. 7, Nov. 11–18, Feb. 3, Mar. 17, 23, Apr. 6, May 12–25, and Sept. 22–24, by study of hydrograph and comparison with hydrograph of record on Pequest River at Pequest.

Monthly discharge of Beaver Brook near Belvidere, N. J., for the year ending September 30, 1924

[Drainage area, 36 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	47	3.4	9.47	0.263	0.30
November	24	7	12.4	.344	.38
December	108	35	63.5	1.76	2.03
January	171	55	87.0	2.42	2.79
February	177	26	52.4	1.46	1.58
March	168	27	78.1	2.17	2.50
April	481	59	130	3.61	4.03
May	180	41	88.4	2.46	2.84
June	52	18	3.17	.881	.98
July	21	5.5	11.6	.322	.37
August	16	4.1	6.31	.175	.20
September	130	3.4	8.50	.236	.26
The year	481	3.4	48.3	1.34	18.26

MUSCONETCONG RIVER NEAR HACKETTSTOWN, N. J.

LOCATION.—500 feet above Delaware, Lackawanna & Western Railroad bridge, half a mile below Saxton Falls Dam of Morris Canal, and 3 miles above Hackettstown, Warren County.

DRAINAGE AREA.—70 square miles (measured on topographic map).

RECORDS AVAILABLE.—September 24, 1921, to September 30, 1924.

GAGE.—Water-stage recorder on left bank, installed August 21, 1923; inspected by Clifford Strand.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Coarse gravel, probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.34 feet at 10 a. m. April 7 (discharge, 750 second-feet); minimum stage, 1.16 feet at 11.30 a. m. November 23 (discharge, 6 second-feet).

1921–1924: Maximum stage recorded, 4.34 feet at 10 a. m. April 7, 1924 (discharge, 750 second-feet); minimum stage, 1.05 feet at 5.30 p. m. May 1, 1922 (discharge, about 3 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Lake Hopatcong, about 9 miles above this station, is the source of supply for the Morris Canal. There is a complex interchange of water between the canal and the river from the lake down to Saxton Falls Dam, where the canal finally leaves river and extends westward to Delaware River at Phillipsburg. The canal also extends eastward to Wharton and thence down Passaic Valley to Newark. The record at this station represents the amount of water left in Musconetcong River by the Morris Canal. Navigation was abandoned in the canal by act of the State legislature March 13, 1924, after which date there was no diversion.

REGULATION.—Distribution of flow is affected by operation of Morris Canal. See "Diversions."

ACCURACY.—Stage-discharge relation permanent, except as affected by ice. Rating curve well defined between 10 and 450 second-feet. Operation of water-stage recorder satisfactory, except as indicated in footnote to daily-

discharge table. Daily discharge ascertained by applying to rating table mean daily gage height. Records good.

The following discharge measurement was made:
August 14, 1924: Gage height, 1.87 feet; discharge, 65 second-feet.

Daily discharge, in second-feet, of Musconetcong River near Hackettstown, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	35	100	78	92		107	175	132	47	48	77
2	24	37	85	78	78		100	155	141	45	45	70
3	26	35	73	115	76	65	100	141	132	43	44	92
4	26	30	68	150	78		115	100	107	41	43	202
5	27	26	64	123	100	100	141	123	100	45	45	276
6	26	32	92	78	115	123	225	115	92	50	47	290
7	26	64	100	107	100	150	537	110	85	48	45	263
8	27	58	92	85	78	132	499	140	78	45	45	250
9	28	42	77	78	85	107	428	200	78	100	45	250
10	30	43	66	77	73	115	395	200	72	100	43	238
11	36	42	55	123	70	123	363	276	66	92	37	107
12	24	37	59	150	68	115	318	379	64	57	72	72
13	28	37	62	123	66	115	276	499	68	71	85	55
14	29	39	71	100	62	107	276	463	78	72	58	57
15	33	35	71	85	65	100	290	463	107	60	56	56
16	30	37	68	100	64	85	263	428	100	53	71	55
17	28	31	67	304	60	85	202	428	100	63	170	55
18	31	24	63	238	71	92	250	428	67	48	191	55
19	37	33	58	202	63	92	363	412	60	44	191	55
20	43	40	57	170		92	333	348	56	43	191	57
21	24	38	58	150		92	290	348	55	42	202	55
22	35	24	66	90		92	263	348	51	41	191	62
23	49	14	100	90		100	263	304	48	41	191	76
24	92	50	107	107		100	250	304	47	39	202	66
25	78	55	92	170	65	100	238	250	52	39	202	66
26	50	47	85	123		100	225	225	55	26	202	64
27	30	48	85	115		100	225	225	57	36	202	63
28	29	47	85	78		100	214	214	62	36	202	62
29	27	46	92	107		107	150	214	59	40	191	58
30	34	73	85	100	-------	115	141	214	53	43	85	160
31	42	-------	78	100	-------	115	-------	191	-------	46	73	-------

NOTE.—This table does not include water diverted by the Morris Canal. Stage-discharge relation affected by ice Jan. 22, 23, and Feb. 20–24, discharge for these periods based on a study of gage-height graph, weather records, and comparison with hydrograph of records at Bloomsbury and Pequest. Discharge estimated, because of no gage-height record Feb. 25 to Mar. 4, May 1, 2, and 7–10, by a study of the gage-height graph and comparison with hydrograph of record near Bloomsbury.

Monthly discharge of Musconetcong River near Hackettstown, N. J., for the year ending September 30, 1924

[Drainage area, 70 square miles]

Month	Discharge in second-feet		
	Maximum	Minimum	Mean
October	92	24	34.7
November	73	14	40.0
December	107	55	76.8
January	304	77	122
February	115	----------	72.9
March	150	----------	100
April	537	100	261
May	499	100	272
June	141	47	77.4
July	100	26	51.5
August	202	37	113
September	290	55	112
The year	537	14	111

NOTE.—This table does not include the diversion through the Morris Canal.

MUSCONETCONG RIVER NEAR BLOOMSBURY, N. J.

LOCATION.—At highway bridge 1½ miles above Bloomsbury, Hunterdon County, and 9 miles above mouth.

DRAINAGE AREA.—143 square miles (measured on topographic map).

RECORDS AVAILABLE.—July 4, 1903, to March 31, 1907; July 26, 1921, to September 30, 1924.

GAGE.—Water-stage recorder on right bank just below bridge; inspected by Howard Person.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel of gravel. Banks are overflowed at high stages. Control is gravel riffle 150 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.34 feet at 1.30 a. m. April 7 (discharge, 1,300 second-feet); minimum stage, 0.67 foot at 5 a. m. October 7 (discharge, 25 second-feet). 1903–1907; 1921–1924: Maximum stage recorded, 8.0 feet October 10 or 11, 1903 (discharge not determined); minimum discharge, 21 second-feet November 19, 1921.

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—Lake Hopatcong at head of Musconetcong River is source of supply for Morris Canal. Through this canal water passes westward to Delaware River at Phillipsburg and eastward down Passaic Valley to Newark. Water left in the Musconetcong by canal is measured by gaging station near Hackettstown. Navigation in the canal was abandoned by act of the State legislature March 13, 1924, when diversion was discontinued.

REGULATION.—Distribution of flow affected by several small water powers above station.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve fairly well defined between 50 and 1,000 second-feet. Operation of water-stage recorder satisfactory. Discharge ascertained by use of discharge integrator. Records good.

No discharge measurement made during year.

Daily discharge, in second-feet, of Musconetcong River near Bloomsbury, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	82	241	178	216	172	199	350	270	135	103	129
2	61	73	158	164	193	190	194	306	219	136	97	129
3	58	78	130	314	181	186	199	268	235	125	96	135
4	66	68	120	308	184	402	233	226	221	117	108	161
5	67	78	120	257	321	439	273	233	198	120	102	290
6	65	75	228	188	362	589	505	228	198	125	117	324
7	46	93	206	224	251	368	1,170	220	202	134	105	307
8	65	123	184	185	209	283	1,020	246	184	159	107	302
9	66	89	147	175	171	231	737	483	188	200	100	300
10	58	86	157	169	175	234	657	478	175	197	112	298
11	63	71	122	256	171	283	607	425	168	187	98	233
12	70	97	128	278	166	288	542	661	172	152	175	141
13	56	78	126	231	158	248	473	770	180	167	192	106
14	49	75	130	212	152	224	433	693	189	160	149	96
15	67	83	130	177	156	200	443	693	188	150	114	115
16	69	88	130	245	136	181	430	626	196	133	107	97
17	73	70	143	586	129	180	379	588	187	126	162	99
18	62	60	112	469	144	184	431	561	180	118	240	112
19	73	70	118	375	142	191	585	580	158	114	242	106
20	82	80	111	335	130	186	522	496	159	105	245	93

Daily discharge, in second-feet, of Musconetcong River near Bloomsbury, N. J., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	68	74	118	272	178	188	459	488	148	124	252	94
22	69	78	139	207	174	177	421	472	137	105	246	111
23	88	78	271	249	158	180	406	418	131	125	244	137
24	232	86	269	223	145	187	376	402	132	106	246	120
25	178	94	192	652	145	184	358	387	266	102	254	109
26	113	95	191	387	141	195	346	340	205	89	253	113
27	76	90	172	324	140	198	334	323	160	83	249	93
28	67	89	197	302	142	211	325	334	174	100	246	98
29	78	82	201	257	140	210	318	315	160	90	237	131
30	64	186	162	230	-------	200	280	316	156	98	198	604
31	125	-------	179	227	-------	206	-------	292	-------	103	128	-------

NOTE.—Discharge estimated Dec. 3-5, 15, and 16.

Monthly discharge of Musconetcong River near Bloomsbury, N. J., for the year ending September 30, 1924

[Drainage area, 143 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	232	46	78.7	0.550	0.63
November	186	60	85.6	.599	.67
December	271	111	162	1.13	1.30
January	652	164	279	1.95	2.25
February	362	129	176	1.23	1.33
March	589	172	239	1.67	1.92
April	1,170	194	455	3.18	3.55
May	770	220	426	2.98	3.44
June	270	131	185	1.29	1.44
July	200	83	129	.902	1.04
August	254	96	172	1.20	1.38
September	604	93	173	1.21	1.35
The year	1,170	46	213	1.49	20.30

NOTE.—No allowance made for diversion by Morris Canal from headwaters of river.

ASSUNPINK CREEK AT TRENTON, N. J.

LOCATION.—At Chambers Street Bridge in Trenton, Mercer County, 1½ miles above mouth.

DRAINAGE AREA.—89 square miles (measured on topographic map).

RECORDS AVAILABLE.—July 20, 1923, to September 30, 1924.

GAGE.—Water-stage recorder on left bank 50 feet above Chambers Street Bridge; inspected by engineers of United States Geological Survey.

DISCHARGE MEASUREMENTS.—Made by wading or from Monmouth Street Bridge 400 feet below gage.

CHANNEL AND CONTROL.—Channel, sand and gravel. Control is bar of gravel and large stone placed 40 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 7.85 feet at 4 a. m. April 7 (discharge, 2,400 second-feet); minimum stage, 1.72 feet at 8.30 a. m. October 17 (discharge, 13 second-feet).

1923-24: Maximum stage recorded, 7.85 feet at 4 a. m. April 7, 1924 (discharge, 2,400 second-feet); minimum stage, 1.62 feet at 12.30 a. m. July 22, 1923 (discharge, 10 second-feet).

ICE.—Stage-discharge relation not affected by ice because water is used for condensing at steam power plant just above gage.

REGULATION.—Large fluctuations in flow at low stages due to water powers upstream.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 2,200 second-feet. Operation of water-stage recorder satisfactory except as indicated in footnote to daily discharge table. Daily discharge ascertained by use of discharge integrator. Records good.

Discharge measurements of Assunpink Creek at Trenton, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 21	3.77	530	Mar. 19	2.73	169	Apr. 7	6.18	1,600
Do	4.03	602	Apr. 5	3.01	259	Do	6.05	1,540
Mar. 6	3.30	364	Do	2.97	250	June 9	2.34	74
Mar. 12	4.23	681	Apr. 7	6.75	1,870	Do	2.40	85
Do	4.68	894	Do	6.45	1,690	Do	2.10	37
Mar. 19	2.58	133						

Daily discharge, in second-feet, of Assunpink Creek at Trenton, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	47	86	194	98	210	120	185	129	246	47	63
2	25	47	59	157	91	240	137	161	125	212	42	52
3	24	21	65	463	91	286	188	147	112	180	42	52
4	23	39	54	417	88	290	290	130	99	128	41	48
5	22	48	114	303	271	302	290	115	96	85	41	47
6	22	24	219	173	431	319	506	102	86	83	39	45
7	21	53	160	138	374	285	1,810	92	82	80	39	43
8	24	42	131	90	278	243	1,000	105	77	159	39	42
9	26	37	113	86	155	210	480	329	75	591	37	173
10	25	21	95	73	124	190	319	335	69	255	37	356
11	21	32	87	316	120	400	250	371	71	181	40	148
12	24	32	81	418	104	784	208	637	78	119	545	95
13	21	45	64	291	89	702	180	596	95	131	362	79
14	15	32	73	222	77	450	150	418	189	162	175	66
15	25	30	65	164	79	272	139	311	193	99	134	63
16	26	32	65	217	84	217	131	220	131	100	102	60
17	27	18	69	603	73	168	129	171	121	82	91	61
18	23	32	65	378	77	125	371	146	122	77	67	60
19	34	37	55	271	71	126	737	140	117	64	55	60
20	23	32	52	233	320	115	538	118	243	63	50	38
21	16	29	49	141	607	109	369	142	395	68	48	49
22	33	25	49	78	614	126	303	147	486	58	46	73
23	39	44	165	83	623	89	256	125	307	65	43	100
24	86	69	199	77	329	98	211	212	213	44	43	83
25	97	56	145	392	235	92	189	439	176	53	54	75
26	66	50	131	287	191	109	156	232	199	52	117	90
27	64	48	114	183	158	168	135	214	198	49	123	48
28	73	49	176	133	145	156	125	226	243	51	117	52
29	70	28	144	128	185	170	136	193	356	44	111	70
30	55	73	121	121	-------	170	148	193	293	45	122	234
31	46	-------	217	93	-------	137	-------	148	-------	43	112	-------

NOTE.—Discharge Mar. 9–11, Sept. 18 and 19, estimated by studying hydrograph and comparison with hydrograph of record on Millstone River at Blackwells Mills.

Monthly discharge of Assunpink Creek at Trenton, N. J., for the year ending September 30, 1924

[Drainage area, 89 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	97	15	36.2	0.407	0.47
November	73	18	39.1	.439	.49
December	219	49	106	1.19	1.37
January	603	73	223	2.51	2.89
February	623	71	213	2.39	2.58
March	784	89	237	2.66	3.07
April	1,810	120	333	3.74	4.17
May	637	92	229	2.57	2.96
June	486	69	173	1.94	2.16
July	591	43	118	1.33	1.53
August	545	37	95.5	1.07	1.23
September	356	42	84.2	.946	1.06
The year	1,810	15	157	1.76	23.98

NORTH BRANCH OF RANCOCAS CREEK AT PEMBERTON, N. J.

LOCATION.—Near highway bridge at Pemberton, Burlington County, 11 miles above confluence with South Branch.

DRAINAGE AREA.—111 square miles (measured on topographic map).

RECORDS AVAILABLE.—September 15, 1921, to September 30, 1924.

GAGE.—Water-stage recorder on left bank 800 feet below highway bridge; installed June 9, 1923; inspected by William Jones.

DISCHARGE MEASUREMENTS.—Made from highway bridge, from boat near gage, or by wading.

CHANNEL AND CONTROL.—Channel of sand; shifting. Banks are overflowed at high stages. This station has a channel control.

REGULATION.—Distribution of flow greatly affected by operation of gristmill at Pemberton and regulation of its pond.

ACCURACY.—Stage-discharge relation not permanent. Standard curve poorly defined. Daily discharge ascertained by applying variable correction to mean daily gage height and then applying corrected gage height to base rating. Records fair.

Discharge measurements of North Branch of Rancocas Creek at Pemberton, N. J., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 5	3.82	277	June 27	3.00	216	Sept. 12	0.84	[a] 72
June 26	2.66	177	Do	2.25	[a] 144	Do	.76	61
Do	3.32	261	Aug. 7	1.12	[a] 78			

[a] Corrected for changing stage.

Daily discharge, in second-feet, of North Branch of Rancocas Creek at Pemberton, N. J., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	77	120	136	172	163	259	259	224	247	182	102	98
2	61	112	136	145	154	202	259	224	202	163	105	94
3	61	112	120	259	163	163	271	213	259	172	94	98
4	58	112	102	235	192	172	336	192	247	154	91	97
5	61	105	154	235	182	172	310	235	202	145	84	88
6	58	98	192	259	380	182	310	284	182	163	67	80
7	56	102	136	172	380	192		213	182	145	67	64
8	56	102	202	163	310	192	900	213	163	145	77	70
9	56	94	172	154	284	202		284	172	145	77	74
10	50	88	154	145	310	172	455	284	172	145	88	91
11	50	88	136	154	259	247	455	310	192	145	94	112
12	61	91	136	136	202	455	365	455	224	128	128	80
13	77	84	136	182	192	590	336	610	259	202	154	88
14	91	88	145	145	182	590	323	610	284	259	128	91
15	61	84	136	145	163	600	284	425	310	271	77	102
16	46	84	136	145	163	380	259	395	297	235	70	94
17	58	91	128	224	145	323	235	297	284	182	61	102
18	53	91	120	247	145	323	323	336	259	154	91	120
19	67	88	110	284	136	259	530	323	235	136	67	120
20	67	84	110	247	600	259	515	284	271	120	70	112
21	77	77	100	235	570	284	515	259	425	128	75	120
22	64	84	100	163	600	213	455	247	470	120	84	112
23	80	94	150	154	570	259	485	259	365	136	67	145
24	154	112	180	136	515	224	455	247	259	136	56	112
25	163	120	150	271	380	247	336	323	235	128	70	105
26	145	105	140	259	350	224	259	323	213	120	172	102
27	136	102	130	336	336	259	235	284	224	98	182	105
28	136	102	160	259	323	271	213	259	224	112	202	112
29	128	102	140	224	259	235	213	297	235	105	163	105
30	120	112	136	192	-------	235	202	323	192	102	128	213
31	120	-------	154	182	-------	247	-------	310	-------	105	120	-------

NOTE.—No gage-height record Sept. 11, Nov. 15, Dec. 19–29, Feb. 20, 22, Mar. 15, Apr. 7–9, and Aug. 21, discharge estimated by study of gage-height graph and comparison with record on Assunpink Creek.

Monthly discharge of North Branch of Rancocas Creek at Pemberton, N. J., for the year ending September 30, 1924

[Drainage area, 111 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	163	46	82.2	0.741	0.85
November	120	77	97.6	.879	.98
December	202	100	142	1.28	1.48
January	336	136	202	1.82	2.10
February	600	136	297	2.68	2.89
March	600	163	278	2.50	2.88
April	----------	202	396	3.57	3.98
May	610	192	308	2.77	3.19
June	470	163	250	2.25	2.51
July	271	98	151	1.36	1.57
August	202	56	100	.901	1.04
September	213	64	103	.928	1.04
The year	----------	46	200	1.80	24.51

SUSQUEHANNA RIVER BASIN

SUSQUEHANNA RIVER AT COLLIERSVILLE, N. Y.

LOCATION.—A quarter of a mile below dam of New York State Gas & Electric Corporation, half a mile north of Colliersville, Otsego County, and 1 mile above mouth of Schenevus Creek.

DRAINAGE AREA.—353 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 22 to September 30, 1924.

GAGE.—Gurley 7-day water-stage recorder on right bank, installed July 22, 1924; inspected by operators at power house of New York State Gas & Electric Corporation.

DISCHARGE MEASUREMENTS.—Made from cable near gage or by wading.

CHANNEL AND CONTROL.—Bed of coarse gravel. Control of multiple type approaching conditions of channel control; shifts occasionally.

REGULATION.—During large portions of year the daily flow is completely regulated by power-plant operation. On account of small storage this regulation can extend only over very short periods.

ICE.—Stage-discharge relation probably not affected by ice.

ACCURACY.—Stage-discharge relation affected by backwater July 22 to September 29. Normal rating curve fairly well defined. Daily discharge ascertained by discharge integration except for days of slight change in stage when mean daily gage heights are determined from inspection of gage-height graph and mean discharge obtained by direct application to rating table. Records good.

The following discharge measurements were made:

July 22, 1924: Gage height, 1.84 feet;[11] discharge, 98.1 second-feet.

July 24, 1924: Gage height, 1.82 feet,[11] discharge, 94.8 second-feet.

September 7, 1924: Gage height, 2.01 feet;[11] discharge, 172 second-feet.

Daily discharge, in second-feet, of Susquehanna River at Colliersville, N. Y., for the year ending September 30, 1924

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1		140	100	11		91	381	21		130	129
2		121	103	12		100	180	22	100	133	224
3		103	108	13		97	210	23	103	117	158
4		89	103	14		91	198	24	97	103	121
5		103	108	15		83	306	25	97	124	162
6		94	241	16		86	241	26	94	187	50
7		94	194	17		111	156	27	94	154	62
8		100	110	18		105	161	28	89	140	50
9		97	100	19		91	162	29	89	121	73
10		94	349	20		94	192	30	97	108	1,400
								31	124	103	

NOTE.—Gage-height record either faulty or missing Sept. 12, 13, and 26; discharge estimated from records of power operation.

[11] Stage-discharge relation affected by backwater.

Monthly discharge of Susquehanna River at Colliersville, N. Y., for the year ending September 30, 1924

[Drainage area, 353 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
July 22–31	124	89	98.4	0.279	0.10
August	187	83	110	.312	.36
September	1,400	50	204	.578	.64

SUSQUEHANNA RIVER AT CONKLIN, N. Y.

LOCATION.—At steel highway bridge just below Conklin, Broome County, 5 miles below Big Snake Creek and 9 miles above mouth of Chenango River.

DRAINAGE AREA.—2,350 square miles.

RECORDS AVAILABLE.—November 13, 1912, to September 30, 1924.

GAGE.—Gurley printing water-stage recorder on left bank just below highway bridge, installed April 26. From October 1 to April 26 a Stevens continuous water-stage recorder was in operation. Gages inspected by George W. Marvin from October 1 to August 31 and by Mrs. Helena M. Smith from September 1–30.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Coarse gravel and boulders; shifting occasionally.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 16.86 feet at 11.30 p. m. September 30 (discharge, 44,000 second-feet); minimum stage, 2.30 feet from 2 to 4 p. m. October 18; minimum discharge, 411 second-feet from 6 to 10 a. m. July 30 (corresponding to gage height 2.41 feet).

1912–1924: Maximum stage recorded, 18.3 feet on morning of March 28, 1913 (discharge, 52,000 second-feet); minimum stage, 1.32 feet at 8.20 a. m. and 4 p. m. September 16, 1913 (discharge, 106 second-feet).

ICE.—Stage-discharge relation affected by ice.

ACCURACY.—Stage-discharge relation at low stages changed presumably at time of high water March 7. Stage-discharge relation affected by ice from January to March. Rating curve used before change fairly well defined between 250 and 55,000 second-feet; that used after change well defined between 400 and 55,000 second-feet. Operation of water-stage recorders satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph or by averaging hourly gage heights; or for days of considerable fluctuation by averaging discharge for intervals of day or by averaging hourly discharge. Records good, except during periods of ice effect and estimate, for which they are fair.

Discharge measurements of Susquehanna River at Conklin, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	2.77	690	Mar. 2	[a] 3.80	796	July 24	2.76	631
Nov. 24	3.42	1,280	Apr. 10	9.48	14,200	Sept. 8	3.26	1,120
Feb. 2	[a] 4.96	2,660	July 23	2.89	730			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Susquehanna River at Conklin, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,010	1,750	5,780	4,040	3,000	800	10,800	5,720	2,360	1,300	423	930
2	997	1,810	8,040	4,740	2,400	750	7,330	7,560	2,140	1,150	491	832
3	850	1,520	6,170	5,040	1,800	850	5,940	6,860	1,690	1,020	691	789
4	768	1,320	4,950	8,180	1,400	900	6,360	7,560	1,630	958	668	806
5	740	1,310	4,740	7,560	1,200	2,000	9,240	10,000	1,750	940	600	814
6	726	1,200	6,630	5,380	2,400	8,000	16,800	8,520	2,280	823	558	903
7	684	1,350	8,280	3,600	4,200	15,000	29,300	7,100	3,080	755	530	996
8	628	2,070	7,800	3,400	2,800	7,330	30,200	6,400	2,670	876	630	1,080
9	635	2,750	6,170	3,200	2,400	4,740	22,600	6,170	2,210	1,260	600	1,060
10	607	2,590	5,720	3,200	1,800	3,160	14,900	6,860	2,140	1,170	544	1,910
11	600	2,070	6,170	11,000	1,400	2,360	13,400	6,630	1,940	1,010	593	2,670
12	579	1,940	6,170	21,100	1,400	2,140	12,300	9,080	1,690	867	600	2,210
13	558	2,000	5,380	18,000	1,300	2,440	10,800	11,000	1,450	968	608	1,750
14	551	1,750	5,500	11,200	1,300	2,260	10,800	10,800	1,400	1,310	660	1,510
15	530	1,630	5,170	7,800	1,200	1,940	11,500	11,000	1,450	1,060	630	1,570
16	500	1,570	4,330	6,740	1,200	1,750	10,800	11,800	1,400	1,060	572	1,450
17	458	1,570	3,770	10,200	1,200	1,630	8,760	9,500	1,400	949	551	1,340
18	422	1,460	3,590	8,760	1,000	1,580	7,800	7,800	1,450	1,080	537	1,180
19	458	1,460	3,160	6,400	950	1,690	10,200	7,800	1,280	1,230	510	1,040
20	482	1,350	2,750	5,280	1,000	1,710	15,800	7,560	949	1,160	558	949
21	464	1,310	2,670	3,820	1,000	1,750	14,300	5,940	912	940	615	867
22	440	1,240	3,080	2,000	950	2,240	12,800	5,280	1,080	798	579	858
23	446	1,200	4,530	1,940	900	4,490	15,500	4,740	1,140	755	530	823
24	4,240	1,230	5,940	2,590	900	8,280	14,000	4,040	1,150	652	524	958
25	4,530	1,310	5,500	2,750	900	9,000	11,300	3,860	1,450	715	777	987
26	3,590	1,350	4,430	2,600	850	8,280	8,760	3,770	1,880	622	4,380	840
27	2,590	1,400	3,860	2,400	850	6,630	7,330	3,420	1,450	544	2,850	772
28	1,880	1,570	3,680	2,200	800	5,500	6,170	3,240	1,230	465	2,070	660
29	1,570	1,750	3,680	2,000	800	7,100	5,500	3,500	1,620	453	1,810	909
30	1,400	2,480	3,420	1,900	-------	11,500	4,840	3,330	1,750	411	1,400	25,900
31	1,570	-------	3,080	1,800	-------	12,800	--------	2,750	-------	429	1,100	-------

NOTE.—Discharge Oct. 6 and Mar. 5–13 estimated as indicated in above table from fragmentary automatic record; water-stage recorder not operating satisfactorily. Discharge Apr. 6–25 determined by applying to rating table mean daily gage height obtained by averaging daily chain gage readings. Discharge Jan. 7–11 and Jan. 26 to Mar. 5 determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with records of stations in same drainage area.

Monthly discharge of Susquehanna River at Conklin, N. Y., for the year ending September 30, 1924

[Drainage area, 2,350 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,530	422	1,150	0.489	0.56
November	2,750	1,200	1,640	.698	.78
December	8,280	2,670	4,970	2.11	2.43
January	21,100	1,800	5,830	2.48	2.86
February	4,200	800	1,450	.634	.68
March	15,000	750	4,540	1.93	2.22
April	30,200	4,840	12,200	5.19	5.79
May	11,800	2,750	6,760	2.88	3.32
June	3,080	912	1,670	.711	.79
July	1,310	411	895	.381	.44
August	4,380	423	909	.387	.45
September	25,900	660	1,980	.843	.94
The year	30,200	411	3,670	1.56	21.26

SUSQUEHANNA RIVER AT HARRISBURG, PA.

LOCATION.—At fifteen-span highway bridge at Walnut Street, Harrisburg, Dauphin County.

DRAINAGE AREA.—24,100 square miles.

RECORDS AVAILABLE.—January 1, 1891, to September 30, 1924. Records for January 1, 1914, to September 30, 1918, and October 1, 1921, to September 30, 1923, are contained in annual reports of Water Supply Commission of Pennsylvania. Revision of all previous records for this station has been made by Stone & Webster (Inc.), for the Philadelphia Electric Co. under the direction of Dr. W. C. L. Eglin, vice president and chief engineer, and with the cooperation of the United States Geological Survey and the Pennsylvania Department of Forests and Waters. The revision was made in connection with the power project at Conowingo, Md., a project under the jurisdiction of the Federal Power Commission. A complete set of the revised records is on file at the United States Geological Survey, Washington, D. C., and also at the Department of Forests and Waters; Water Resources Service, Harrisburg, Pa.

GAGE.—Chain attached to upstream side of bridge; read by employees of State department of forests and waters. Elevation of gage zero 289.4 feet (United States Geological Survey datum).

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge.

CHANNEL AND CONTROL.—Banks high and not subject to overflow. Bed is composed of gravel and boulders. A low dam, 4,200 feet below gage, built in 1916, is control for all except high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year (estimated from hydrograph) 17.00 feet at 7 a. m. April 8 (discharge, 324,000 second-feet); minimum stage recorded, 3.11 feet at 7.15 a. m. October 23 (discharge, 3,380 second-feet).

1891–1924; Maximum stage during period determined from high-water mark, by level, 25.7 feet May 22, 1894 (discharge, about 613,000 second-feet); minimum stage recorded, −0.04 foot September 28 and 29, 1900 (discharge, about 2,300 second-feet, including flow in "Pennsylvania Canal" of about 360 second-feet).

ICE.—Stage-discharge relation usually affected by ice.

ACCURACY.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 4,000 and 330,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying to rating table mean daily gage height, corrected for ice effect when necessary. Records very good.

COOPERATION.—Records furnished by the Department of Forests and Waters, State of Pennsylvania.

The following discharge measurements were made:
April 8, 1924: Gage height, 16.79 feet; discharge, 326,000 second-feet;
July 29, 1924: Gage height, 3.74 feet; discharge, 10,500 second-feet.

Daily discharge, in second-feet, of Susquehanna River at Harrisburg, Pa., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,800	10,600	12,900	52,700	22,500	17,900	157,400	38,500	34,000	92,600	9,000	10,600
2	6,700	9,900	27,900	63,300	25,800	18,600	118,400	43,600	31,500	71,200	8,400	9,100
3	5,900	9,400	40,500	80,500	28,400	19,400	90,800	47,600	28,800	49,900	7,900	8,200
4	5,900	8,500	39,100	90,100	27,500	20,200	75,800	49,300	26,800	37,500	7,700	7,200
5	5,400	8,400	34,100	95,000	27,500	25,800	73,400	50,800	25,000	33,400	7,400	6,700
6	5,000	8,500	33,200	78,900	38,900	47,200	100,400	50,800	23,600	34,000	6,800	6,600
7	4,800	8,500	42,600	61,100	44,000	63,100	241,500	48,700	23,600	28,800	6,700	6,700
8	4,600	8,400	58,200	51,200	36,900	72,100	314,000	48,700	23,300	34,300	6,700	6,800
9	4,500	8,900	65,900	43,200	30,200	54,600	253,000	53,500	22,200	53,900	6,800	6,700
10	4,100	9,900	56,900	36,300	27,500	51,200	177,800	92,100	21,900	67,000	6,500	6,600

Daily discharge, in second-feet, of Susquehanna River at Harrisburg, Pa., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	4,300	10,200	49,300	38,900	26,600	46,600	134,200	119,000	23,100	55,000	6,000	6,100
12	4,100	10,900	49,100	77,600	25,000	48,900	104,600	140,400	21,400	43,000	9,100	6,500
13	4,100	10,900	49,300	121,200	22,500	47,600	85,100	224,000	20,800	37,100	13,600	7,000
14	4,000	10,600	45,500	121,400	20,900	39,100	72,300	234,000	27,200	34,700	13,300	7,300
15	3,900	10,100	42,000	93,200	19,400	34,100	63,100	174,000	28,800	42,000	11,800	7,300
16	3,900	9,500	37,700	73,200	16,400	28,400	56,700	131,200	28,400	39,300	10,400	8,500
17	3,800	9,100	32,600	125,400	14,300	25,500	54,300	107,400	25,600	30,600	8,500	7,800
18	3,600	8,600	29,700	154,600	13,600	24,100	51,600	89,300	25,100	26,000	8,300	7,100
19	3,800	8,400	26,600	132,800	12,900	23,500	56,300	76,300	21,700	22,300	8,900	7,000
20	3,700	7,900	24,400	97,400	13,600	23,900	83,500	69,200	20,200	19,600	8,600	6,700
21	3,700	7,400	22,300	69,900	15,000	26,800	106,400	63,300	19,600	16,800	8,800	6,500
22	3,500	7,600	21,500	50,400	15,000	31,300	93,400	60,200	20,900	15,400	9,500	6,400
23	3,500	7,300	30,700	39,300	13,600	38,100	83,300	55,200	18,200	15,700	8,200	6,100
24	5,600	7,000	60,200	35,900	9,600	43,000	78,500	49,500	16,600	17,800	7,700	6,000
25	9,000	6,700	81,600	32,400	9,600	54,100	73,400	44,900	16,600	16,600	7,200	5,900
26	9,100	7,600	76,500	27,700	12,200	72,800	64,200	40,700	18,200	13,000	7,600	5,800
27	9,100	7,600	64,000	19,400	15,000	79,600	55,200	38,100	22,300	11,700	7,400	5,600
28	19,700	7,700	52,400	15,000	16,400	73,900	48,700	36,100	24,300	10,900	10,400	5,800
29	17,300	7,800	52,200	15,700	16,400	71,900	43,800	34,300	37,300	10,400	17,300	7,000
30	14,000	8,900	52,200	17,900	-------	112,400	39,500	33,200	79,100	9,500	14,700	50,400
31	11,900	-------	53,300	19,400	-------	165,400	-------	34,000	-------	9,100	12,500	-------

NOTE.—Stage-discharge relation affected by ice Jan. 27 to Mar. 7; discharge estimated from study of weather records, gage-height graph, and comparison with discharge of Susquehanna River at Holtwood.

Monthly discharge of Susquehanna River at Harrisburg, Pa., for the year ending September 30, 1924

[Drainage area, 24,100 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	19,700	3,500	6,400	0.266	0.31
November	10,900	6,700	8,800	.365	.41
December	81,600	12,900	44,000	1.83	2.11
January	154,600	15,000	65,500	2.72	3.14
February	44,000	9,600	21,300	.884	.95
March	165,400	17,900	48,400	2.01	2.32
April	314,000	39,500	101,700	4.22	4.71
May	234,000	33,200	76,700	3.18	3.67
June	79,100	16,600	25,900	1.07	1.19
July	92,600	9,100	32,200	1.34	1.54
August	17,300	6,000	9,200	.382	.44
September	50,400	5,600	8,400	.349	.39
The year	314,000	3,500	37,500	1.56	21.18

UNADILLA RIVER NEAR NEW BERLIN, N. Y.

LOCATION.—At steel highway bridge, 1½ miles north of New Berlin, Chenango County, a quarter of a mile below mouth of Shawler Brook, and 2 miles above mouth of Wharton Creek.

DRAINAGE AREA.—192 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 1 to September 30, 1924.

GAGE.—Staff in two sections on right bank; read by John T. Gaffney.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed of small boulders and cobblestones. One channel for all stages. During summer there is considerable growth of weeds in channel causing backwater at gage. Control of gravel; probably shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 7.5 feet at 6 p. m. September 30 (discharge, 3,620 second-feet); minimum discharge, 18 second-feet September 1 (stage-discharge relation affected by weeds).

ICE.—Stage-discharge relation affected by ice.

ACCURACY.—Stage-discharge relation affected by backwater from weeds July 4 to September 29. Normal rating curve fairly well defined between 50 and 3,000 second-feet. Gage read to hundredths twice daily during period. Daily discharge ascertained by applying mean daily gage height to rating table. Records fair.

The following discharge measurements were made:

July 3, 1924: Gage height, 1.48 feet; discharge, 57.5 second-feet.

July 22, 1924: Gage height, 1.63 feet; [12] discharge, 67.6 second-feet.

September 7, 1924: Gage height, 1.91 feet;[12] discharge, 86.5 second-feet.

Daily discharge, in second-feet, of Unadilla River near New Berlin, N. Y., for the year ending September 30, 1924

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	72	120	18	11	75	50	130	21	80	40	55
2	64	75	30	12	60	42	95	22	60	44	55
3	67	55	55	13	50	46	80	23	60	44	65
4	65	40	36	14	190	26	110	24	42	32	55
5	60	46	40	15	120	22	120	25	55	42	42
6	48	42	80	16	75	24	90	26	44	75	36
7	60	65	80	17	120	24	70	27	50	60	36
8	80	70	95	18	190	24	60	28	38	50	44
9	65	65	85	19	120	20	55	29	34	50	60
10	95	38	110	20	85	28	55	30	28	60	2,400
								31	60	26	

NOTE.—Discharge July 4 to Sept. 29 determined from gage heights corrected for backwater effect from weeds, by means of two discharge measurements.

Monthly discharge of Unadilla River near New Berlin, N. Y., for the year ending September 30, 1924

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
July	190	28	74.6	0.389	0.45
August	120	20	46.6	.243	.28
September	2,400	18	145	.755	.84

CHENANGO RIVER NEAR CHENANGO FORKS, N. Y.

LOCATION.—1½ miles below Chenango Forks, Broome County, and mouth of Tioughnioga River and 11½ miles above Binghamton and mouth of river.

DRAINAGE AREA.—1,490 square miles (revised measurement on topographic maps). See "Diversions."

RECORDS AVAILABLE.—November 11, 1912, to September 30, 1924.

GAGE.—Gurley printing water-stage recorder on left bank, installed December 15. From October 1 to December 13, a Stevens continuous water-stage recorder was in operation. Recorders inspected by Erastus Ingraham.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet above gage or by wading.

[12] Stage-discharge relation affected by weeds.

CHANNEL AND CONTROL.—Sand, gravel, and small cobblestones; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 12.45 feet at midnight September 30 (discharge, 29,400 second-feet); minimum stage, 2.29 feet at 7 a. m. October 23 (discharge, 116 second-feet).

1912–1924: Maximum stage recorded, 13.7 feet on afternoon of March 27, 1913 (discharge, 35,500 second-feet); minimum stage, 2.20 feet several times in August and September, 1913 (discharge, 92 second-feet).

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—The run-off from 14 square miles at head of Chenango River and from 16 square miles at head of Tioughnioga River is stored in reservoirs and except for discharge over the spillways is diverted out of the drainage area to the Barge Canal. Formerly, the run-off from 87 square miles at head of Chenango River was diverted to a greater or lesser extent for canal purposes but the proportion of total run-off which was used is uncertain. Since this present diversion from 30 square miles is not complete, this area has been included in the drainage area above the station. The figure of 1,490 square miles corresponds to an area of 1,380 square miles (excluding diversion) which was used during 1917 and 1918.

ACCURACY.—Stage-discharge relation at low stages changed presumably at time of high water March 7; affected by ice from January 22 to March 7. Rating curves well defined between 150 and 15,000 second-feet; operation of water-stage recorders satisfactory, except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height, determined by inspection of gage-height graph or by averaging the hourly gage heights; or for days of considerable fluctuation, by averaging discharge for intervals of day, or by averaging hourly discharge. Records good, except during periods of ice effect and estimate, for which they are fair.

Discharge measurements of Chenango River near Chenango Forks, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	2.42	186	Feb. 1	a 5.79	1,710	Apr. 11	6.50	7,420
Nov. 24	2.90	524	Mar. 1	a 3.80	564	July 23	2.87	470

a Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Chenango River near Chenango Forks, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	254	758	5,500	2,770	1,600	550	5,450	3,170	1,570	676	737	423
2	242	681	3,720	2,900	1,100	500	4,150	3,820	1,400	610	695	430
3	237	600	2,720	3,620	1,000	500	3,500	3,000	1,270	573	564	494
4	220	516	2,180	6,360	900	500	4,650	3,500	1,270	537	478	600
5	210	464	3,010	4,600	1,000	1,000	7,870	3,500	1,790	528	446	564
6	200	456	4,490	3,500	3,600	7,000	13,900	2,810	1,660	494	600	600
7	180	507	4,380	3,000	2,400	11,000	27,400	2,720	1,820	454	582	666
8	170	714	3,300	2,720	2,200	4,030	19,400	2,440	1,500	546	666	706
9	165	758	2,810	2,620	2,000	2,620	11,200	2,350	1,580	934	706	657
10	170	670	2,810	2,440	1,500	2,000	9,040	3,100	1,480	779	638	811

Daily discharge, in second-feet, of Chenango River near Chenango Forks, N. Y., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	175	600	3,500	11,300	1,100	1,790	7,310	2,900	1,200	648	546	934
12	175	670	2,810	19,700	1,100	1,900	5,960	4,010	1,070	555	573	822
13	165	650	2,530	10,900	1,000	2,260	5,320	6,360	1,010	519	555	748
14	160	630	2,800	6,490	900	2,000	5,830	4,960	994	546	510	946
15	160	610	2,620	4,260	900	1,660	5,700	5,580	946	648	470	1,010
16	156	600	2,180	3,930	900	1,320	4,490	4,720	844	564	423	822
17	152	570	2,000	8,160	800	1,160	3,720	3,820	768	619	438	737
18	147	570	1,810	5,580	750	1,360	4,790	3,300	726	790	438	676
19	147	525	1,450	3,820	750	1,190	11,500	4,150	676	888	430	628
20	142	520	1,440	3,400	700	1,080	8,740	3,400	648	676	416	573
21	138	490	1,710	2,390	700	1,450	7,310	2,810	1,390	582	438	528
22	134	456	2,000	1,400	700	2,260	7,030	2,720	1,270	510	510	502
23	134	448	3,170	1,600	700	5,370	7,310	2,350	994	478	519	502
24		498	3,930	1,900	650	8,160	5,700	2,090	855	438	470	510
25		670	2,810	1,800	650	7,450	4,720	2,260	910	423	517	519
26	1,500		2,350	1,500	650	5,960	3,930	2,000	946	416	946	462
27			2,090	1,300	650	4,490	3,300	1,760	822	388	790	430
28	670	1,300	2,000	1,200	600	4,720	2,900	2,440	716	374	748	409
29	552		2,000	1,300	600	7,450	2,530	2,810	811	360	648	619
30	507		1,810	1,300	-------	9,340	2,350	2,180	768	360	537	19,800
31	692	-------	1,760	2,200	-------	8,740	--------	1,810	-------	395	478	-------

NOTE.—Discharge for Oct. 24–27 and Nov. 26–30, estimated from fragmentary automatic record and determined Oct. 28, Nov. 2–4, 10–15, 20–22, Dec. 1, 4, 7–10, and 12–14 from estimated mean daily gage heights; water-stage recorder not operating satisfactorily. Discharge Jan. 22 to Mar. 7 determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with records of stations in same drainage area.

Monthly discharge of Chenango River near Chenango Forks, N. Y., for the year ending September 30, 1924

[Drainage area, 1,490 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	----------	134	402	0.270	0.31
November	----------	448	704	.472	.53
December	5,500	1,440	2,700	1.81	2.09
January	19,700	1,200	4,190	2.81	3.24
February	3,600	600	1,110	.745	.80
March	11,000	500	3,570	2.40	2.77
April	27,400	2,350	7,230	4.85	5.41
May	6,360	1,760	3,190	2.14	2.47
June	1,820	648	1,120	.752	.84
July	934	360	558	.374	.43
August	946	416	565	.379	.44
September	19,800	409	1,270	.852	.95
The year	27,400	134	2,220	1.49	20.28

TIOGA RIVER NEAR ERWINS, N. Y.

LOCATION.—At highway bridge a quarter of a mile below mouth of Canisteo River near Erwins, Steuben County, and 3 miles above confluence of Tioga and Cohocton Rivers, which form Chemung River at Painted Post.

DRAINAGE AREA.—1,320 square miles (furnished by Mr. Robert O. Hayt).

RECORDS AVAILABLE.—July 12, 1918, to September 30, 1924.

GAGE.—Chain gage on downstream side of bridge near left abutment; read by Miss Jane Sexton.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of well-compacted gravel; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.0 feet at 6 a. m. April 7 (discharge, about 39,300 second-feet); minimum stage, 0.70 foot at noon October 21 (discharge, 41 second-feet).

1918–1924: Maximum stage recorded, 16.4 feet at 4 p. m. May 22, 1919 (discharge, about 46,700 second-feet); minimum stage,[13] 0.62 foot at 5.40 p. m. August 22, 1923 (discharge, 31 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Storage not sufficient to affect seasonal flow.

ACCURACY.—Stage-discharge relation practically permanent, except as affected by ice. Rating curve fairly well defined between 50 and 15,000 second-feet; extended beyond these limits. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Open-water records good, except during low-water season, when daily discharge, determined from mean of two gage readings a day, may be considerably in error due to fluctuations in stage caused by power operations upstream. Records for period of ice effect and estimates, fair.

Discharge measurements of Tioga River near Erwins, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	0.82	55.6	Mar. 4	[a] 1.48	224	June 15	2.08	669
Feb. 4	[a] 1.71	306	Apr. 14	3.58	2,180	Sept. 9	1.20	150

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Tioga River near Erwins, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	119	139	900	9,870	550	170	2,920	1,330	700	900	130	110
2	92	157	740	2,770	400	170	2,080	1,520	625	660	130	130
3	71	161	520	1,960	320	220	1,730	1,150	590	555	119	160
4	71	136	420	2,210	300	240	3,920	1,730	583	513	113	275
5	66	128	390	1,240	550	4,200	11,000	1,420	1,060	478	113	198
6	65	113	740	650	3,200	4,810	21,200	1,280	740	576	119	172
7	61	235	2,620	600	2,400	2,080	26,100	1,150	660	444	142	150
8	58	207	1,380	650	1,400	2,080	7,910	1,060	590	1,060	119	146
9	61	202	1,020	700	750	1,060	4,630	2,340	576	2,210	119	172
10	55	172	1,420	750	600	940	3,920	5,370	555	1,100	142	330
11	58	142	1,330	9,870	460	780	3,080	3,580	450	820	119	330
12	58	136	1,060	6,580	400	625	2,340	14,400	444	590	119	255
13	58	150	900	2,770	340	576	2,080	13,800	513	576	130	198
14	48	146	940	1,960	300	506	2,210	7,450	555	820	136	225
15	58	130	820	1,280	260	555	2,080	7,010	660	555	128	270
16	52	125	590	1,520	240	485	1,620	4,270	478	438	113	216
17	54	139	583	12,000	200	450	1,420	3,240	402	390	100	176
18	54	113	513	3,240	190	555	7,450	2,800	354	390	100	161
19	52	130	464	2,080	170	900	10,700	4,450	302	336	90	142
20	57	125	414	1,730	140	980	4,990	2,480	1,620	275	102	128

[13] Previously published as "several times August 24 to September 2, 1921 (discharge, 30 second-feet)."

Daily discharge, in second-feet, of Tioga River near Erwins, N. Y., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	41	128	402	500	140	1,100	4,630	2,080	1,730	245	102	119
22	54	102	464	650	130	1,330	4,990	1,840	1,060	225	95	119
23	55	102	1,520	1,000	110	1,960	3,920	1,520	700	216	90	113
24	142	111	2,770	800	130	3,920	2,480	1,330	576	200	160	108
25	820	108	1,620	650	130	3,240	2,080	1,730	800	184	800	102
26	478	139	1,240	550	130	2,920	1,620	1,330	1,100	172	1,060	102
27	280	136	1,020	480	150	1,960	1,330	1,100	800	161	700	95
28	275	142	1,020	460	160	2,770	1,200	1,060	590	161	235	95
29	165	150	1,060	460	160	8,620	1,060	1,060	3,410	142	180	128
30	384	184	860	460	-------	10,400	1,020	980	1,380	128	130	21,600
31	142	-------	980	600	-------	4,990	--------	850	-------	119	120	-------

NOTE.—Discharge for following days estimated as indicated in above table from estimated mean daily gage heights or by comparison with records of stations in the same basin: Oct. 7, Dec. 2, Jan. 21, Feb. 17, Mar. 19, 21, 25, May 18, 31, June 25–27, July 24, Aug. 1, 13, 17–18, 24, 30–31, and Sept. 1–3; gage heights missing or doubtful. Discharge Jan. 6–10 and Jan. 22 to Mar. 5 determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with records of stations in same drainage area.

Monthly discharge of Tioga River near Erwins, N. Y., for the year ending September 30, 1924

[Drainage area, 1,320 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	820	41	132	0.100	0.12
November	235	102	143	.108	.12
December	2,770	390	991	.751	.87
January	12,000	460	2,290	1.73	1.99
February	3,200	110	497	.377	.41
March	10,400	170	2,120	1.61	1.86
April	26,100	1,020	4,920	3.73	4.16
May	14,400	850	3,120	2.36	2.72
June	3,410	302	820	.621	.69
July	2,210	119	504	.382	.44
August	1,060	90	195	.148	.17
September	21,600	95	884	.670	.75
The year	26,100	41	1,390	1.05	14.30

CHEMUNG RIVER AT CHEMUNG, N. Y.

LOCATION.—At steel highway bridge midway between Chemung, Chemung County, N. Y., and Willawana, Pa., half a mile upstream from State line and 10 miles above mouth.

DRAINAGE AREA.—2,440 square miles.

RECORDS AVAILABLE.—September 7, 1903, to September 30, 1924.

GAGE.—Tape gage on the upstream side of right span of bridge; read by D. L. Orcutt.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Sand and gravel; occasionally shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.55 feet at 1 p. m. April 7 (discharge, 49,700 second-feet); minimum stage, 1.49 feet several times October 21-23 (discharge, 98 second-feet).

1903–1924: Maximum stage recorded, 17.96 feet at 7 a. m. March 15, 1918 (discharge, about 67,000 second-feet); minimum discharge, 49 second-feet at 7 a. m. August 14, 1911.

ICE.—Stage-discharge relation affected by ice.

ACCURACY.—Stage-discharge relation at low stages changed presumably at time of high water April 7; Rating curves fairly well defined below 45,000 second-feet. Stage-discharge relation affected by ice during periods from January to March. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except for days of great range in stage, when discharge is averaged for intervals of day. Records good, except during periods of ice effect, for which they are fair.

Discharge measurements of Chemung River at Chemung, N. Y., during the year ending September 30,1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	1.59	127	Feb. 3	a 2.87	864	Apr. 11	6.07	6,380
Nov. 25	1.90	276	Mar. 3	a 2.44	410	Sept. 8	1.91	274

a Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Chemung River at Chemung, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	206	322	1,360	8,140	1,300	360	6,490	2,440	1,420	1,540	312	229
2	211	285	1,730	6,240	1,000	360	4,040	3,280	1,250	1,100	317	220
3	179	295	1,200	3,840	850	400	3,650	2,600	1,200	915	312	265
4	156	275	905	4,440	800	460	5,300	2,760	1,100	830	296	346
5	136	255	1,100	2,930	750	2,800	13,800	3,650	1,360	790	286	436
6	136	280	2,140	1,250	6,500	13,100	18,500	2,600	1,540	750	281	346
7	129	290	4,650	1,200	3,100	5,080	44,800	2,290	1,300	790	286	291
8	117	475	3,280	1,300	1,600	3,280	20,600	2,000	1,300	915	296	265
9	117	410	2,290	1,300	950	2,000	11,000	3,280	1,200	3,840	296	265
10	112	442	2,290	1,400	860	1,730	8,750	10,400	1,150	2,000	296	275
11	114	410	2,760	3,600	815	1,540	6,750	9,060	1,050	1,360	275	436
12	117	350	2,290	18,000	815	1,250	5,300	16,200	960	1,000	296	468
13	117	380	1,860	6,000	615	1,100	4,440	30,000	960	915	270	405
14	117	350	1,730	4,040	550	950	4,240	15,700	960	1,300	275	374
15	123	322	1,730	2,760	500	905	4,240	13,800	1,150	960	265	405
16	114	322	1,250	2,440	500	770	3,460	10,000	1,000	750	252	436
17	117	322	1,200	17,600	440	1,000	2,930	7,280	830	710	247	346
18	112	322	1,050	7,850	420	905	5,080	5,530	790	635	229	307
19	109	290	905	4,440	400	1,600	26,100	7,560	710	635	208	286
20	103	290	815	3,460	380	2,000	13,100	5,530	710	565	212	265
21	100	285	770	1,600	360	2,290	10,700	4,440	2,440	500	212	238
22	100	255	770	690	340	2,600	8,750	4,040	1,930	468	204	229
23	100	228	1,860	1,250	300	3,840	9,060	3,280	1,250	532	204	220
24	615	285	4,440	1,860	320	7,280	5,760	2,760	960	468	187	208
25	950	245	3,280	1,600	320	6,240	4,860	2,760	870	468	296	208
26	1,000	245	2,290	1,300	320	5,760	3,840	2,760	1,480	436	1,050	204
27	652	322	2,000	1,200	340	4,240	3,100	2,290	1,480	495	915	195
28	475	295	1,730	1,100	340	4,650	2,600	2,000	1,050	374	468	187
29	380	285	1,730	1,000	360	10,400	2,290	2,000	1,480	346	374	229
30	350	615	1,600	950	-------	19,200	2,000	1,860	2,930	346	317	18,500
31	350	-------	1,480	950	-------	11,700	--------	1,600	-------	317	265	-------

NOTE.—Discharge Jan. 21, estimated as indicated in above table; no gage-height record. Discharge Jan. 7–11, Jan. 26 to Feb. 6, and Feb. 14 to Mar. 5 determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with records of stations in same drainage area.

Monthly discharge of Chemung River at Chemung, N. Y., for the year ending September 30, 1924

[Drainage area, 2,440 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,000	100	249	0.102	0.12
November	615	228	325	.133	.15
December	4,650	770	1,890	.775	.89
January	18,000	690	3,730	1.53	1.76
February	6,500	300	902	.370	.40
March	19,200	360	3,860	1.58	1.82
April	44,800	2,000	8,850	3.63	4.05
May	30,000	1,600	5,990	2.45	2.82
June	2,930	710	1,260	.516	.58
July	3,840	317	870	.357	.41
August	1,050	187	323	.132	.15
September	18,500	187	903	.370	.41
The year	44,800	100	2,430	.996	13.56

COHOCTON RIVER NEAR CAMPBELL, N. Y.

LOCATION.—At steel highway bridge 2 miles upstream from Campbell, Steuben County, and 11 miles above confluence of Cohocton and Tioga Rivers, which unite at Painted Post to form Chemung River.

DRAINAGE AREA.—480 square miles (furnished by Mr. Robert O. Hayt).

RECORDS AVAILABLE.—July 11, 1918, to September 30, 1924.

GAGE.—Chain gage on downstream side of bridge near left abutment; read by Miss Dora Wood.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of well-compacted gravel; fairly permanent. Stage-discharge relation affected by aquatic growth during summer.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.72 feet at 7.15 a. m. April 7 (discharge, 7,240 second-feet); minimum stage, 0.70 foot from 7 a. m. to 5 p. m. November 22; minimum discharge, 34 second-feet several times October 13–20.

1918–1924: Maximum discharge recorded, 11,300 second-feet at noon March 12, 1920; minimum stage recorded, 0.68 foot at 5 p. m. October 7, 1921 (backwater correction of 0.33 foot due to aquatic growth; discharge, about 13 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Seasonal distribution of flow is probably not affected by small reservoirs above.

ACCURACY.—Stage-discharge relation practically permanent, except as affected by aquatic growth and by ice. Rating-curve fairly well defined between 200 and 4,000 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying to rating table mean daily gage height corrected for weed or ice effect when necessary. Records fair during period when stage-discharge relation was not affected by weeds or ice; for other periods, poor.

Discharge measurements of Cohocton River near Campbell, N. Y., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 9	[a] 0.79	32.8	Mar. 4	[b] 1.59	149	June 15	1.25	272
Nov. 25	[a] .79	72.4	Apr. 14	2.33	949	Sept. 9	[a] .96	74.1
Feb. 4	[b] 1.60	209						

[a] Stage-discharge relation affected by aquatic growth.
[b] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Cohocton River near Campbell, N. Y., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	60	240	2,000	340	140	875	758	326	160	120	38
2	36	55	190	1,080	300	120	875	645	317	140	110	60
3	38	60	140	955	260	120	795	575	294	130	100	130
4	38	70	140	875	220	150	1,120	795	395	120	80	90
5	38	65	140	795	220	1,100	1,690	645	450	130	80	70
6	42	60	340	420	600	2,600	4,360	575	350	150	85	65
7	44	55	700	400	380	1,690	6,240	510	480	140	85	65
8	40	70	480	500	300	1,590	3,450	510	450	130	80	65
9	34	65	440	550	240	1,120	2,130	915	422	130	85	75
10	38	65	460	600	220	758	1,690	1,790	375		90	120
11	38	60	380	1,900	200	682	1,300	1,500	326		75	100
12	36	60	340	1,500	180	575	1,040	2,390	326		80	95
13	34	50	320	1,220	180	575	915	3,600	307		75	95
14	34	60	320	835	170	480	955	2,760	340		80	160
15	42	55	300	1,040	160	365	875	2,500	307		75	100
16	40	55	320	1,900	140	340	720	1,790	272		70	110
17	40	55	260	835	140	395	575	1,500	246	130	80	100
18	38	60	240	1,120	140	395	2,500	1,300	229		65	70
19	38	55	220	915	130	480	3,450	1,400	213		60	65
20	34	60	190	750	110	395	2,500	1,040	220		55	70
21	36	55	180	240	110	480	2,010	915	240		50	65
22	36	50	220	440	110	510	2,010	720	220		44	65
23	38	60	300	700	100	875	1,080	645	200		50	60
24	95	60	340	600	110	1,220	1,300	610	190		55	55
25	200	70	280	500	120	1,120	1,220	575	220		44	55
26	150	65	260	460	120	1,220	915	510	190	95	50	60
27	100	75	240	400	120	998	758	450	190	100	44	65
28	65	85	260	360	130	998	682	450	190	80	55	60
29	60	80	320	340	140	1,400	510	375	340	80	50	120
30	60	110	260	380	-------	2,130	575	375	190	80	48	4,300
31	55	-------	260	420	-------	1,400	-------	340	-------	95	40	-------

NOTE.—Discharge July 10–25 estimated by comparison with records of stations in same basin; gage not read. Discharge Oct. 1 to Jan. 1 and June 20 to Sept. 30, determined from gage heights corrected for aquatic growth by means of three discharge measurements and comparison with records in same drainage area. Discharge Jan. 6–11 and Jan. 20 to Mar. 6, determined from gage heights corrected for ice effect by means of two discharge measurements, study of gage-height graph and weather records, and comparison with records of flow at near-by stations.

Monthly discharge of Cohocton River near Campbell, N. Y., for the year ending September 30, 1924

[Drainage area, 480 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	200	34	53.5	0.111	0.13
November	110	50	63.5	.132	.15
December	700	140	293	.610	.70
January	2,000	240	807	1.68	1.94
February	600	100	196	.408	.44
March	2,600	120	852	1.78	2.05
April	6,240	510	1,640	3.42	3.82
May	3,600	340	1,100	2.29	2.64
June	480	190	294	.612	.68
July	160	80	124	.258	.30
August	120	40	69.7	.145	.17
September	4,300	38	222	.462	.52
The year	6,240	34	476	.992	13.54

JUNIATA RIVER AT NEWPORT, PA.

LOCATION.—At four-span steel highway bridge at Newport, Perry County.

DRAINAGE AREA.—3,380 square miles.

RECORDS AVAILABLE.—March 21, 1899, to July 14, 1906; January 7, 1907, to September 30, 1924. Records for January 1, 1914, to September 30, 1918, and October 1, 1921, to September 30, 1923, are contained in annual reports of the Water Supply Commission of Pennsylvania.

GAGE.—Chain gage attached to downstream side of bridge; read by A. R. Bortel. Elevation of gage zero, 363.32 feet (United States Geological Survey datum).

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading at same section.

CHANNEL AND CONTROL.—Banks are high and not subject to overflow. Bed is composed of hard material. Low-water control is a riffle 400 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year, estimated from hydrograph, 18.97 feet at 2 p. m. May 13 (discharge, 66,600 second-feet); minimum stage recorded, 2.90 feet several times in October and November (discharge, 470 second-feet),

CE.—Stage-discharge relation usually affected by ice.

ACCURACY.—Stage-discharge relation permanent, except when affected by ice. Rating curve fairly well defined below 10,000 second-feet and well defined from 10,000 to 70,000 second-feet. Gage read twice daily to hundredths below 3.30 feet and half-tenths above, during high stages more frequently. Daily discharge ascertained by applying to rating table mean daily gage height, when necessary corrected for ice effect. Records good.

COOPERATION.—Records furnished by the Department of Forests and Waters, State of Pennsylvania.

Discharge measurements of Juniata River at Newport, Pa., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	2.93	509	May 13	18.72	66,600	May 20	6.27	9,890
Do	2.97	549	Do	18.84	68,000			

Daily discharge, in second-feet, of Juniata River at Newport, Pa., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	936	788	1,900	12,100	6,170	2,880	29,700	5,550	4,930	24,200	1,680	1,010
2	804	642	4,320	11,000	5,240	3,020	18,300	4,320	4,620	13,200	1,680	1,160
3	972	470	3,580	11,000	4,620	3,430	13,500	3,580	4,320	9,360	1,470	900
4	918	574	2,880	17,200	4,620	3,430	13,200	6,170	4,320	7,440	1,790	972
5	884	600	2,620	18,000	5,240	5,550	13,900	5,860	4,320	8,080	1,390	1,040
6	670	574	4,620	12,100	7,440	10,700	21,800	5,240	4,020	9,690	1,350	1,100
7	820	670	8,080	8,080	8,720	14,300	47,000	4,930	4,620	7,760	1,120	1,080
8	884	1,040	9,360	6,480	6,800	12,800	35,800	5,240	4,930	11,800	1,350	1,080
9	628	1,120	7,120	6,800	5,860	9,040	24,200	4,930	4,320	18,300	1,230	1,120
10	868	954	5,550	6,170	4,320	7,440	18,000	36,700	3,870	12,100	726	936
11	852	1,270	5,550	9,040	3,720	7,440	13,900	29,200	3,870	9,040	836	936
12	852	836	5,240	15,400	3,580	8,400	11,000	36,700	3,720	7,120	2,130	918
13	836	788	4,930	14,300	3,150	8,720	9,690	62,700	4,620	7,440	2,500	868
14	884	726	4,620	10,000	2,880	7,760	8,080	45,500	8,400	8,400	2,880	836
15	820	740	4,020	7,440	2,880	6,170	7,440	25,900	9,360	8,400	3,290	804
16	684	918	3,150	8,400	2,620	5,240	6,480	18,700	8,080	6,480	2,620	1,040
17	470	684	3,290	30,100	2,620	4,620	5,860	13,900	6,480	4,930	2,130	1,010
18	600	712	2,620	34,000	2,130	4,320	5,860	11,400	6,800	4,320	2,250	954
19	670	614	2,620	18,300	2,130	4,930	7,760	10,400	5,550	3,870	1,900	900
20	522	798	2,130	12,800	1,270	6,170	8,400	9,690	5,240	3,290	2,250	1,080
21	535	561	1,900	8,720	1,100	7,440	7,760	8,720	4,930	3,150	2,370	1,080
22	522	656	2,620	7,440	1,100	9,360	7,120	9,040	4,320	2,880	1,010	954
23	600	628	9,360	6,480	1,400	11,400	6,800	8,720	3,580	2,880	2,130	918
24	918	600	17,200	5,550	1,900	13,900	6,170	7,760	3,150	2,750	2,020	1,180
25	1,060	712	15,000	4,930	2,000	18,000	5,860	6,800	3,430	2,500	2,020	1,180
26	712	836	10,700	4,930	1,700	16,500	5,550	6,480	3,580	2,250	1,680	1,030
27	756	788	8,080	3,720	1,800	15,000	4,930	5,860	4,020	2,250	1,900	852
28	756	884	8,720	2,370	2,400	14,300	4,620	5,240	5,550	2,250	2,020	918
29	798	788	13,200	2,620	2,600	18,300	4,620	5,240	13,500	2,130	1,790	1,210
30	642	936	12,800	3,020	-------	41,200	4,930	5,550	38,900	2,020	1,680	15,400
31	656	-------	11,000	4,020	-------	43,100	--------	5,860	--------	1,790	1,430	-------

NOTE.—Stage-discharge relation affected by ice Feb. 21-29; discharge based on study of weather records, gage-height graph, and comparison with similar studies for other stations in same drainage basin.

Monthly discharge of Juniata River at Newport, Pa., for the year ending September 30, 1924

[Drainage area, 3,380 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,060	470	759	0.225	0.26
November	1,270	470	764	.226	.25
December	17,200	1,900	6,410	1.90	2.19
January	34,000	2,370	10,400	3.08	3.55
February	8,720	1,100	3,520	1.04	1.12
March	43,100	2,880	11,100	3.28	3.78
April	47,000	4,620	12,600	3.73	4.16
May	62,700	3,580	13,600	4.02	4.64
June	38,900	3,150	6,380	1.89	2.11
July	24,200	1,790	6,840	2.02	2.33
August	3,290	726	1,830	.541	.62
September	15,400	804	1,480	.438	.49
The year	62,700	470	6,340	1.88	25.50

PATUXENT RIVER BASIN

PATUXENT RIVER NEAR BURTONSVILLE, MD.

LOCATION.—At Columbia Turnpike bridge, 1½ miles northeast of Burtonsville, Montgomery County, and 4 miles northwest of Laurel.

DRAINAGE AREA.—127 square miles.

RECORDS AVAILABLE.—July 21, 1911, to June 15, 1912 (records furnished by United States Engineer Office); July 21, 1913, to September 30, 1924.

GAGE.—Au water-stage recorder on left bank 80 feet below highway bridge; installed August 8, 1922; inspected by Arthur Beall.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Banks lined with trees and brush; overflowed at stage of about 10 feet. Control poorly defined. Point of zero flow determined as gage height 1.23 feet January 31, 1924, and 1.30 feet September 26, 1924.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 12.90 feet at 7 p. m. on September 30 (discharge, 3,390 second-feet); minimum stage, 2.12 feet at 2 a. m. on October 17 (discharge, 36 second-feet).

1911–1924: Maximum stage recorded, 14.6 feet about 9 a. m. January 12, 1915 (discharge, about 4,000 second-feet, revised); minimum stage, 0.18 foot August 25, 1911 (discharge, 6 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Fluctuation at low stages has been noticed and is probably caused by operation of a power plant above gage.

ACCURACY.—Stage-discharge relation shifted several times during year. Rating curves fairly well defined. Operation of water-stage recorder satisfactory except as indicated in footnote to daily-discharge table. Daily discharge ascertained by applying mean daily gage height determined from recorder graph to rating table or by applying bi-hourly gage heights to rating table. Records fair.

Discharge measurements of Patuxent River near Burtonsville, Md., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 17	4.29	426	Feb. 20	7.03	1,300	Aug. 29	2.74	88.0
Jan. 31	2.89	130	Apr. 9	3.94	370	Sept. 26	2.63	70.4
Jan. 31	2.88	135	June 30	2.98	172	Sept. 30	11.22	2,760
Feb. 20	6.49	1,160						

Daily discharge, in second-feet, of Patuxent River near Burtonsville, Md., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67		158	195	133	195	318	275	214	149	75	84
2	62		106	141	133	254	318	195	234	149	71	488
3	61		97	536	125	214	387	185	214	141	619	219
4	61		91	292	125	234	340	176	204	141	152	104
5	59		257	176	391	214	254	176	185	141	104	92
6	57	87	254	133	318	214	1,190	176	185	149	104	96
7	57		167		185	176	927	176	195	231	182	88
8	59		133	145	149	149	485	426	185	195	178	84
9	56		125		141	141	363	617	556	167	104	93
10	56		125		141	149	340	296	234	141	221	104

Daily discharge, in second-feet, of Patuxent River near Burtonsville, Md., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	57		125	279	141	296	318	420	195	125	197	81
12	55		109	204	141	512	275	1,170	411	117	590	77
13	55		109	149	133	485	254	411	254	117	187	75
14	56		133	133	125	318	244	318	224	117	152	73
15	57		104	125	125	234	234	363	195	117	127	73
16	57		98	444	117	195	224	275	176	117	111	73
17	54		102	660	117	176	214	254	167	106	104	73
18	56		97	224	117	176	556	234	185	98	111	74
19	60		94	185	117	176	495	224	176	96	104	71
20	74	87	94	176	777	158	296	224	149	94	104	73
21	62		96		587	195	254	340	141	94	96	82
22	60		104	115		318	254	275	141	91	96	96
23	67		149			539	234	224	141	109	92	111
24	125		176		170	624	214	254	133	88	90	78
25	90		125	973		411	214	275	176	84	793	71
26	72		125	264		411	214	224	176	83	152	71
27	65		117		158	318	195	291	376	81	104	71
28	62		141	170	167	244	195	521	234	76	94	73
29	63	72	149		195	1,450	204	318	377	73	87	620
30	90	141	133	141	-------	595	234	340	176	71	82	2,720
31			252	141	-------	363	-------	234	-------	68	81	-------

NOTE.—Discharge estimated Oct. 30 to Nov. 28 from study of recorder graph, records of flow of Monocacy River, and weather records; Jan. 7–10, 21–24, and Feb. 22–26 because of ice; and Jan. 27–29 because recorder was not working properly by study of weather records and recorder graph. Braced figures show mean daily discharge for period indicated.

Monthly discharge of Patuxent River near Burtonsville, Md., for the year ending September 30, 1924

[Drainage area, 127 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	125	54	65.2	0.513	0.59
November	-------	-------	88.3	.695	.78
December	257	91	134	1.06	1.22
January	973	-------	230	1.81	2.09
February	777	-------	197	1.55	1.67
March	1,450	141	327	2.57	2.96
April	1,190	195	341	2.69	3.00
May	1,170	176	319	2.51	2.89
June	556	133	220	1.73	1.93
July	231	68	117	.921	1.06
August	793	71	173	1.36	1.57
September	2,720	71	206	1.62	1.81
The year	2,720	54	201	1.58	21.57

POTOMAC RIVER BASIN

POTOMAC RIVER AT POINT OF ROCKS, MD.

LOCATION.—At steel highway bridge at Point of Rocks, Frederick County, one-third mile below Catoctin Creek and 6 miles above Monocacy River.

DRAINAGE AREA.—9,650 square miles.

RECORDS AVAILABLE.—February 17, 1895, to September 30, 1924.

GAGE.—Chain gage attached to downstream side of left span of bridge; read by W. W. Compher. Datum constant since September 2, 1902; prior to this date datum was 0.45 foot higher than at present, Sea-level elevation of gage datum, 200.54 feet.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Practically permanent. Control is a rock ledge a few hundred feet below station, the ledge extending completely across river except for one small channel.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 32.2 feet 3 to 6 p. m. May 13 (discharge about 258,000 second-feet); minimum stage, 0.52 foot at 2 p. m. October 16 (discharge, 676 second-feet).

1895–1924: Maximum stage recorded, 32.2 feet, May 13, 1924 (discharge about 258,000 second-feet); minimum stage, 0.38 foot September 10, 1914 (discharge, 540 second-feet).

Crest of flood of June 2, 1889, as determined by the United States Engineer Corps from high-water marks, reached a stage of 40.2 feet (discharge, about 325,000 second-feet).

ICE.—Stage-discharge relation seldom affected by ice.

DIVERSIONS.—The Chesapeake & Ohio Canal parallels the Potomac on the Maryland side. Average discharge of canal is 75 to 100 second-feet. Discharge of canal is not included in records for this station.

REGULATION.—Fluctuation at extreme low stages has been noted and is probably caused by operation of power plants or storage reservoirs on the upper Potomac and its tributaries.

ACCURACY.—Stage-discharge relation practically permanent except when affected by ice. Gage read to hundredths once daily; during high water read oftener. Rating curve fairly well defined between 1,000 and 150,000 second-feet; extended beyond these limits. Daily discharge ascertained by applying gage height to rating table. Records fair.

Discharge measurements of Potomac River at Point of Rocks, Md., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 8	4.21	14,400	Mar. 13	6.04	23,600	Apr. 1	12.39	67,500
Feb. 14	2.60	7,250	Mar. 25	8.05	35,700	Apr. 11	6.26	25,700
Feb. 21	2.37	6,420	Mar. 30	19.90	132,500	July 9	4.96	17,500

Daily discharge, in second-feet, of Potomac River at Point of Rocks, Md., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,930	1,320	3,080	14,500	11,200	6,130	76,500	8,550	13,500	19,600	3,580	3,080
2	1,640	1,320	3,250	15,000	11,200	7,300	42,100	8,980	14,000	13,100	3,580	3,080
3	1,370	1,370	5,000	16,500	10,700	10,700	32,300	8,550	13,100	10,700	3,250	3,250
4	1,340	1,270	8,980	22,800	9,410	23,400	30,600	8,550	12,600	9,850	3,080	2,920
5	1,270	1,170	10,700	30,000	10,300	21,400	28,800	8,550	12,100	8,980	3,250	2,760
6	1,130	780	10,300	23,900	10,700	31,700	31,700	8,130	12,100	8,130	3,080	2,760
7	1,270	916	9,850	12,100	11,200	38,700	50,700	8,550	10,300	8,980	3,080	2,440
8	1,370	1,130	8,980	10,700	14,500	29,400	32,300	8,980	9,850	14,500	3,080	2,140
9	1,370	1,590	8,980	10,300	12,600	23,900	28,300	72,200	11,200	18,600	2,920	2,760
10	1,130	1,820	8,980	11,200	9,850	17,600	19,100	117,000	13,500	18,600	2,920	2,290
11	814	2,290	8,550	13,500	9,410	16,500	14,000	64,000	21,200	17,000	2,920	1,760
12	916	2,920	7,710	18,600	8,550	20,700	11,200	110,000	23,400	12,600	2,760	1,700
13	814	2,600	7,300	18,600	8,130	24,400	18,600	237,000		11,600	2,600	1,640
14	754	2,290	6,900	18,100	7,300	23,900	16,500	192,000		10,300	3,920	1,590
15	754	1,930	6,510	14,000	6,900	20,700	14,500	78,700		11,200	3,250	1,420
16	676	1,820	3,920	13,500	6,510	18,600	12,600	42,100	19,700	9,410	3,250	1,820
17	728	1,820	4,270	49,200	6,130	16,500	12,600	33,600		8,130	4,090	1,990
18	754	2,290	4,270	68,300	5,370	17,000	12,600	28,800		7,300	3,580	1,990
19	754	2,600	3,920	40,700	5,370	19,100	14,500	23,900		6,510	3,580	2,290
20	754	2,600	3,580	23,900	5,000	23,900	15,500	21,200	18,600	5,000	3,080	1,640

Daily discharge, in second-feet, of Potomac River at Point of Rocks, Md., for the year ending September 30, 1924—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	754	2,600	3,250	18,600	6,510	27,700	16,000	20,200	13,100	5,370	2,920	1,700
22	814	2,920	2,920	14,000	6,900	26,600	14,500	26,100	10,700	5,000	2,760	1,820
23	848	2,600	3,250	11,600		32,300	14,000	28,300	10,700	5,000	2,760	2,140
24	814	2,290	5,000	10,700		38,700	13,100	22,800	8,550	4,630	1,590	1,990
25	754	2,290	8,980	14,500		36,100	11,600	21,200	7,710	4,450	2,920	1,870
26	754	1,930	9,410	13,500	6,190	34,200	10,700	18,600	7,300	4,090	2,920	1,870
27	754	2,290	8,550	12,100		42,800	9,850	16,000	7,300	4,090	3,080	1,870
28	916	2,600	6,510	11,600		49,200	8,980	15,500	8,130	3,920	4,270	1,990
29	1,040	2,600	7,300	8,980		59,600	8,550	15,000	11,200	3,750	3,080	4,270
30	1,640	2,920	8,980	8,550		129,000	8,130	14,500	24,400	3,750	2,760	15,500
31	1,530		14,000	9,410		156,000		13,500		3,580	2,920	

NOTE.—Discharge estimated, because of ice, from climatic data and observer's notes Feb. 23-29. Discharge estimated May 9-15, by averaging discharges for intervals of day from graph of plotted gage heights. Discharge estimated June 13-19, because of missing gage readings, by comparison with gage-height graph of Potomac River at Brunswick.

Monthly discharge of Potomac River at Point of Rocks, Md., for the year ending September 30, 1924

[Drainage area, 9,650 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,930	676	1,040	0.103	0.12
November	2,920	780	2,030	.210	.23
December	14,000	2,920	6,880	.713	.82
January	68,300	8,550	18,700	1.94	2.24
February	14,500	5,000	8,170	.847	.97
March	156,000	6,130	33,800	3.50	4.04
April	76,500	8,130	21,000	2.18	2.43
May	237,000	8,130	42,000	4.35	5.02
June	24,400	7,300	14,400	1.49	1.66
July	19,600	3,580	8,960	.928	1.07
August	4,270	1,590	3,120	.323	.37
September	15,500	1,420	2,680	.278	.31
The year	237,000	676	13,600	1.41	19.22

CACAPON RIVER NEAR GREAT CACAPON, W. VA.

LOCATION.—At Rock Ford, 6½ miles above Great Cacapon, Morgan County and mouth of river.

DRAINAGE AREA.—670 square miles.

RECORDS AVAILABLE.—December 12, 1922, to September 30, 1924.

GAGE.—Vertical staff nailed to tree on left bank 150 feet above suspension footbridge; read by L. G. Youngblood and G. N. Unger.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Bed composed of bedrock and boulders; banks subject to overflow; control at low stages is rock ledge 100 feet below footbridge.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 19.32 feet at 6 p. m. May 12 (discharge, by extension of rating curve, 34,000 second-feet); minimum stage, 0.44 foot at 3.30 p. m. October 18 (discharge, 44 second-feet).

1922–1924: Maximum stage recorded, 19.32 feet at 6 p. m. May 12, 1924 (discharge, by extension of rating curve, 34,000 second-feet); minimum stage, 0.38 foot at 3.30 p. m. July 28, 1923 (discharge, 38 second-feet).

ICE.—Stage-discharge relation affected by ice during severe winters.

ACCURACY.—Stage-discharge relation practically permanent, except for ice effect. Rating curve fairly well defined below 30,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Cacapon River near Great Cacapon, W. Va., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 12	2.84	837	Mar. 30	14.14	19,400	Apr 1	5.84	3,340
Do	2.86	820	Do	11.69	13,300	Apr. 2	5.15	2,610
Mar. 28	7.41	5,310	Mar. 31	7.12	4,880	July 8	2.57	607

Daily discharge, in second-feet, of Cacapon River near Great Cacapon, W. Va., for year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	59	119	960	609	170	3,260	457	906	231	95	67
2	68	56	113	803	499		2,520	457	906	217	99	70
3	63	54	167	704	478	1,020	2,240	417	753	217	102	64
4	58	52	167	1,890	437	1,650	2,060	359	704	204	104	204
5	54	61	191	1,570	478	2,820	1,890	341	609	204	102	179
6	51	70	341	753	564	2,930	1,730	324	564	204	95	117
7	49	78	437	417	704	2,330	2,060	307	542	307	95	93
8	49	87	478	437	564	1,650	2,060	1,430	520	704	87	82
9	48	95	359	417	359	1,140	1,730	19,800	656	609	76	79
10	48	93	359	397	457	960	1,490	8,070	1,080	437	73	79
11	48	85	245	520	217		1,280	4,740	906	378	67	78
12	48	79	204	1,420	359	910	1,020	25,600	803	307	66	68
13	48	84	179	1,140	324		906	14,500	753	231	67	74
14	48	167	167	803	324		803	5,150	704	204	89	73
15	48	204	155	609	275	1,350	753	3,740	1,140	204	99	67
16	48	204	144	499	179	1,140	656	2,620	803	204	99	68
17	47	167	131	3,740	155	1,020	609	2,150	704	179	81	64
18	44	133	123	2,060		1,280	609	1,730	609	167	84	64
19	54	117	121	1,280		3,620	960	1,420	704	155	79	67
20	50	108	113	1,020		3,860	1,080	1,280	564	155	79	67
21	51	106	109	564		2,620	906	1,020	417	144	79	66
22	49	90	102	457		2,620	854	3,040	341	133	79	78
23	51	95	155	542	170	2,720	753	2,240	307	133	79	81
24	56	104	231	753		3,860	704	1,650	291	133	76	79
25	56	92	245	960		4,220	609	1,280	275	129	70	79
26	59	109	231	564		4,350	542	1,080	245	123	79	76
27	78	109	204			7,120	499	906	245	115	85	70
28	79	113	204	463		5,430	457	1,020	260	115	104	73
29	73	113	245			11,100	437	1,020	260	111	85	106
30	67	113	324			9,000	437	1,280	245	95	73	13,000
31	61	-------	307	397	-------	5,610	-------	1,080	-------	95	67	-------

NOTE.—Discharge Jan. 27–30 and Feb. 18 to Mar. 2, estimated because of ice from study of weather records and observer's notes. Gage readings Mar. 11–14 appear in error, discharge interpolated with aid of correct gage reading Mar. 12. Discharge Mar. 29–31, May 8–10, 12, 13, and Sept. 30, obtained by averaging discharge for intervals of day. Braced figures show mean discharge for periods indicated.

Monthly discharge of Cacapon River near Great Cacapon, W. Va., for the year ending September 30, 1924

[Drainage area, 670 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	79	44	55.6	0.083	0.10
November	204	52	103	.154	.17
December	478	102	215	.321	.37
January	3,740	397	888	1.33	1.53
February	704	----------	311	.464	.50
March	11,100	----------	2,880	4.30	4.96
April	3,260	437	1,200	1.79	2.00
May	25,600	307	3,560	5.32	6.13
June	1,140	245	594	.886	.99
July	704	95	221	.330	.38
August	104	66	84.3	.126	.14
September	13,000	64	514	.768	.86
The year	25,600	44	892	1.33	18.13

MONOCACY RIVER NEAR FREDERICK, MD.

LOCATION.—At Ceresville bridge, 3 miles northeast of Frederick, Frederick County, on road from Frederick to Mount Pleasant. Tuscarora Creek enters 300 feet above station.

DRAINAGE AREA.—665 square miles.

RECORDS AVAILABLE.—August 4, 1896, to September 30, 1924.

GAGE.—Chain attached to downstream handrail of right span of bridge; read by Edward D. Shriner, jr.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed of gravel and boulders; shifting during very high floods. Banks lined with trees and brush; subject to overflow at high stages. Control not well defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 22.4 feet at 8 a. m. January 17 (discharge, 14,600 second-feet); minimum stage, 3.98 feet October 17 (discharge, 64 second-feet).

1896–1924: Maximum stage recorded, 27.2 feet at 11 a. m. January 13, 1915 (discharge, 19,000 second-feet); minimum stage, 3.54 feet several days in October, 1910 (discharge, 15 second-feet).

ICE.—Stage-discharge relation affected by ice during severe winters only.

ACCURACY.—Stage-discharge relation probably permanent during year. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

The following discharge measurements were made:

November 8, 1923: Gage height, 4.33 feet; discharge, 126 second-feet.

November 8, 1923: Gage height, 4.33 feet; discharge, 132 second-feet.

Daily discharge, in second-feet, of Monocacy River near Frederick, Md., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	144	615	505	705	1,050	2,840	660	1,110	2,920	212	106
2	144	144	485	1,050	750	1,610	2,990	615	1,050	2,030	212	105
3	132	120	465	3,750	615	2,540	3,220	525	1,050	1,230	212	129
4	112	132	318	5,500	615	3,220	5,840	485	750	950	240	129
5	76	132	370	2,920	800	5,750	2,540	445	660	615	302	129
6	101	151	2,390	1,230	2,540	6,830	9,390	445	660	1,350	570	117
7	97	132	1,420	1,170	1,680	4,640	11,400	425	660	1,350	405	127
8	90	127	950	750	1,170	11,400	4,560	1,170	660	1,420	318	127
9	86	146	750	485	705	1,350	2,760	3,290	1,890	1,480	212	127
10	86	122	660	302	615	1,050	3,060	2,100	900	900	198	127
11	86	122	548	750	570	2,030	2,390	2,470	660	615	198	127
12	86	212	485	1,350	750	4,560	2,100	12,300	850	302	2,170	115
13	86	158	485	1,540	705	7,370	1,420	5,930	1,170	212	1,170	115
14	86	153	465	1,420	660	6,020	1,290	1,480	3,670	302	525	115
15	82	146	445	750	525	2,100	1,110	1,350	1,110	465	286	115
16	76	146	335	3,140	405	1,480	900	1,820	900	445	270	115
17	64	134	370	14,600	405	1,110	950	1,610	900	425	255	127
18	66	122	525	3,590	425	1,290	1,230	900	900	370	179	127
19	97	122	660	2,240	465	1,170	4,310	1,000	850	318	141	127
20	97	122	660	1,750	570	1,110	1,350	1,000	660	302	129	127
21	76	134	660	1,050	4,820	1,290	1,170	1,890	570	286	129	127
22	76	158	525	335	2,610	1,820	950	1,610	405	286	117	139
23	198	226	405	134	1,170	4,900	800	1,350	1,000	286	106	212
24	255	212	2,390	134	750	7,190	800	1,230	850	286	106	151
25	240	226	1,350	900	660	4,390	800	1,000	1,110	318	112	127
26	198	226	705	4,230	615	4,480	750	850	1,110	302	106	127
27	198	171	660	1,610	660	4,230	660	750	1,110	270	106	115
28	108	158	660	1,680	750	2,690	660	1,540	2,320	212	117	127
29	108	158	615	1,610	1,230	7,820	615	1,230	11,000	198	106	176
30	198	226	660	1,680	------	11,600	615	1,230	5,410	179	117	5,750
31	156	------	525	1,540	------	4,310	------	1,170	------	179	117	------

NOTE.—Discharge Feb. 26 and 27 estimated because of ice, from study of observer's notes and weather records. Gage not read Mar. 31; discharge interpolated.

Monthly discharge of Monocacy River near Frederick, Md., for the year ending September 30, 1924

[Drainage area, 665 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	255	64	120	0.180	0.21
November	226	120	156	.235	.26
December	2,390	318	728	1.09	1.26
January	14,600	134	2,060	3.10	3.58
February	4,820	405	998	1.50	1.62
March	11,600	1,050	3,950	5.94	6.85
April	11,400	615	2,450	3.68	4.11
May	12,300	425	1,740	2.62	3.02
June	11,000	405	1,530	2.30	2.57
July	2,920	179	671	1.01	1.16
August	2,170	106	305	.459	.53
September	5,750	106	316	.475	.53
The year	14,600	64	1,250	1.88	25.70

NORTHWEST BRANCH OF ANACOSTIA RIVER NEAR COLESVILLE, MD.

LOCATION.—At highway bridge at site of old Northwest Mills, 1½ miles southwest of Colesville, Montgomery County, and 3 miles above Burnt Mills.

DRAINAGE AREA.—21.3 square miles (measured on topographic maps).

RECORDS AVAILABLE.—February 27 to September 30, 1924.

GAGE.—Vertical staff gage on tree 600 feet above bridge; installed April 7. Staff gage bolted to right abutment of bridge until April 6. Datum of present gage 1.97 feet higher than original gage. Gages read by F. E. Valdenar.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—One channel at all stages, curves above and below bridge. Bed of sand and coarse gravel. Banks clean; subject to overflow at extreme high stages, Control is rock section; probably permanent. Point of zero flow 0.77 foot gage height July 17 and 0.97 foot September 20.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 7.87 feet at 1.30 p. m. April 6 (discharge, by extension of rating curve, 1,300 second-feet); minimum discharge, 9.5 second-feet (from discharge measurement September 20).

ICE.—No ice effect during period of record.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined below 400 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Northwest Branch of Anacostia River near Colesville, Md., during the year ending September 30, 1924

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 24	1.70	22.8	June 2	1.87	38.9	Aug. 25	2.86	232
Do	1.71	22.0	June 9	2.10	63.3	Do	2.59	192
Mar. 24	2.06	66.0	July 17	1.56	13.6	Sept. 20	1.57	9.5
Apr. 3	2.52	159	Do	1.56	13.2	Sept. 30	5.64	756

Daily discharge, in second-feet, of Northwest Branch of Anacostia River near Colesville, Md., for the year ending September 30, 1924

Day	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		22	33	35	36	25	16	10
2		24	68	30	38	25	12	119
3		22	102	29	29	25	112	29
4		22	40	29	28	23	14	12
5		24	32	29	27	23	12	10
6		24	430	28	27	23	12	10
7		21	103	28	27	38	15	10
8		20	78	81	26	40	14	10
9		18	46	81	74	24	12	10
10		20	43	40	32	22	16	10
11		87	36	107	27	21	16	10
12		236	34	152	188	21	226	10
13		148	34	52	43	20	34	10
14		42	34	38	34	18	14	10
15		32	32	51	27	16	12	10
16		28	32	40	25	15	12	10
17		25	29	34	25	15	12	10
18		25	235	33	25	15	12	10
19		23	72	29	25	13	12	10
20		21	37	34	23	12	12	10
21		28	34	74	23	12	12	10
22		108	38	43	22	12	12	10
23		212	34	34	21	19	12	28
24		184	32	176	19	12	12	10
25		56	31	43	27	12	285	10
26		85	29	38	23	12	21	10
27	24	40	29	130	27	12	14	10
28	22	32	29	56	30	12	12	10
29	22	304	28	152	36	12	10	364
30		55	86	48	27	12	10	640
31		32		34		16	10	

Monthly discharge of Northwest Branch of Anacostia River near Colesville, Md., for the year ending September 30, 1924

[Drainage area, 21.3 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
February 27-29	24	22	22.7	1.07	0.12
March	304	18	65.2	3.06	3.53
April	430	28	64.0	3.00	3.35
May	176	28	58.3	2.74	3.16
June	188	19	34.7	1.63	1.82
July	40	12	18.6	.873	1.01
August	285	10	32.5	1.53	1.76
September	640	10	47.7	2.24	2.50

RAPPAHANNOCK RIVER BASIN

RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA.

LOCATION.—At rear of McWhirt farm, 1½ miles above dam of Spottsylvania Power Co. and 3½ miles above Fredericksburg, Spottsylvania County.

DRAINAGE AREA.—1,590 square miles.

RECORDS AVAILABLE.—September 19, 1907, to September 30, 1924.

GAGE.—Water-stage recorder installed January 6, 1922; inspected by Charles Perry.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed of boulders, somewhat rough. One channel for all stages. Banks wooded; water overflows right bank at stage about 15 feet and left bank at about 12 feet. Current sluggish at extremely low water. Control is rocky section a few hundred feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.50 feet at 1 a. m. May 13 (discharge estimated, 66,000 second-feet); minimum stage, 1.13 feet at 4 p. m. August 11 (discharge, 420 second-feet).

1907–1924: Maximum stage recorded, that of May 13, 1924; minimum stage, 0.30 foot at 3 p. m. August 21, 1914 (discharge, 72 second-feet).

ICE.—Ice forms near gage but seldom in sufficient quantity at control to affect stage-discharge relation.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined between 100 and 27,000 second-feet; extended beyond these limits. Mean daily gage heights determined by inspecting recorder graph. Discharge determined by applying mean daily gage height to rating table, by four-hour periods and bi-hourly method, except for periods May 12–16, May 24 to June 6, and September 30, when recorder failed to operate. Discharge estimated for these periods from daily gage readings, weather records, and examination of recorder graph. Operation of water-stage recorder satisfactory. Records good.

The following discharge measurements were made:

April 26, 1924: Gage height, 2.30 feet; discharge, 1,670 second-feet.

May 22, 1924: Gage height, 3.68 feet; discharge, 4,300 second-feet.

Daily discharge, in second-feet, of Rappahannock River near Fredericksburg, Va., for the year ending September 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	837	476	2,400	1,040	2,080	2,400	4,370	2,400		1,560	560	666
2	725	467	1,770	1,100	1,920	2,570	4,370	2,080		1,420	569	676
3	670	456	1,350	2,350	1,770	2,740	4,370	1,620		1,350	534	805
4	642	441	1,160	3,490	1,700	2,570	3,490	1,560	3,800	1,560	486	698
5	613	486	3,720	2,240	2,600	2,570	3,100	1,480		1,350	518	636
6	569	860	6,480	1,480	5,630	2,740	6,900	1,420		1,280	494	542
7	540	1,040	3,920	1,160	3,290	2,400	14,500	1,350	4,480	2,860	463	502
8	522	745	2,570	1,480	2,400	2,080	7,070	8,170	2,320	4,170	463	478
9	517	610	2,080	1,350	2,080	1,840	4,850	19,600	4,560	5,280	542	486
10	517	510	1,770	1,220	1,840	1,770	3,920	12,500	5,250	2,740	494	748
11	508	464	1,560	1,620	1,770	2,570	3,490	13,500	3,140	2,080	427	448
12	508	473	1,420	2,920	1,700	10,900	3,100		4,840	1,770	4,460	434
13	510	516	1,280	2,080	1,620	13,400	2,740	51,000	4,000	1,620	4,850	441
14	503	728	1,220	1,620	1,480	7,380	2,570		7,230	1,480	1,620	470
15	478	752	1,350	1,420	1,420	4,850	2,240		4,160	1,350	1,100	441
16	485	640	1,220	2,000	1,350	3,700	2,080	18,800	3,490	1,280	805	434
17	486	588	1,160	21,900	1,220	3,290	2,000	5,910	3,100	1,220	729	441
18	487	574	1,100	10,400	1,280	3,100	2,570	4,370	2,570	1,100	666	448
19	532	569	1,100	4,370	1,350	3,100	6,720	3,700	4,280	1,040	598	456
20	550	534	1,040	3,290	1,790	2,920	3,290	3,290	2,850	975	534	463
21	602	526	975	2,740	5,250	3,100	2,570	3,700	2,240	918	526	518
22	545	526	975	2,000	3,700	5,950	2,240	4,610	3,730	918	534	666
23	530	534	975	1,770	2,570	9,860	2,240	3,290	2,570	975	550	1,040
24	587	805	975	2,000	2,240	5,910	2,000		1,920	1,040	588	918
25	826	1,350	975	3,600	2,000	4,370	1,840		1,920	860	1,040	708
26	857	1,100	975	7,980	2,080	3,920	1,840		1,770	805	4,740	578
27	656	860	918	3,490	2,080	3,700	1,770	4,300	1,560	700	2,000	526
28	548	750	860	2,570	2,080	3,490	1,620		1,620	666	1,280	518
29	510	698	918	2,400	2,570	5,030	1,700		1,780	645	975	2,160
30	502	806	860	2,240	-------	7,380	1,700		2,030	607	860	36,800
31	504	-------	860	2,080	-------	5,630	-------		-------	578	750	-------

Monthly discharge of Rappahannock River near Fredericksburg, Va., for the year ending September 30, 1924

[Drainage area, 1,590 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	857	478	576	0.362	0.42
November	1,350	441	663	.417	.47
December	6,480	860	1,610	1.01	1.16
January	21,900	1,040	3,270	2.06	2.38
February	5,630	1,220	2,240	1.41	1.52
March	13,400	1,770	4,430	2.79	3.22
April	14,500	1,620	3,580	2.25	2.51
May	----------	1,350	10,300	6.48	7.47
June	7,230	1,620	3,340	2.10	2.34
July	5,280	578	1,490	.937	1.08
August	4,850	427	1,120	.704	.81
September	----------	434	1,830	1.15	1.28
The year	----------	427	2,880	1.81	24.66

MISCELLANEOUS DISCHARGE MEASUREMENTS

In addition to the records of flow obtained at the gaging stations and reported in the preceding pages, measurements were made at other points, as shown by the following table:

Miscellaneous discharge measurements in north Atlantic slope drainage basins during the year ending September 30, 1924

Date	Stream	Tributary to—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
June 27	Piscataquis River	Penobscot River	Medford, Me	3.02	802
July 14	do	do	do	2.42	391
Aug. 12	do	do	do	2.73	557
29	do	do	do	2.16	275
Sept. 21	Sebec River	Piscataquis River	Sebec, Me	2.24	203
21	do	do	do	2.24	200
21	do	do	do	1.83	85
21	do	do	do	1.83	85
21	do	do	do	1.83	83
Aug. 31	North Branch of Contoocook River.	Contoocook River	Antrim, N. H	.55	8.0
31	do	do	do	.55	7.8
Sept. 3	do	do	do	.67	13.3
3	do	do	do	.67	12.8
Dec 14	Waits River	Connecticut River	Bradford, Vt	2.69	486
Jan. 30	do	do	do	[a] 2.18	196
Apr. 24	do	do	do	3.00	769
24	do	do	do	2.98	780
July 28	do	do	do	1.29	43.5
28	do	do	do	1.29	42.0
Dec. 16	Ferry Brook	Ashuelot River	Keene, N. H		4.2
Feb. 16	do	do	do		14.1
May 1	do	do	do		12.2
17	do	do	do		4.6
Oct. 30	Diversion canal	Packard Pond	Athol, Mass		14.1
May 19	do	do	do		13.9
Sept. 22	do	do	do		.3
Nov. 8	Airmount Brook	Ramapo River	Mahwah, N. J		.22
Dec. 26	do	do	do		.77
Feb. 8	do	do	do		.80
May 28	do	do	do		1.65
June 23	do	do	do		.20
July 19	do	do	do		.05
Aug. 16	do	do	do		.04
Sept. 20	do	do	do		.05
Oct. 27	Morris Canal	Passaic River	Warton, N. J		1.2
27	do	do	Paterson, N. J		7.8
Nov. 19	Deep Run	South River	Spring Valley, N. J		3.3
Feb. 27	do	do	do		9.1
Mar. 3	do	do	do		16.8
June 27	do	do	do		11.6
Aug. 13	do	do	do		10.0
25	do	do	do		2.5
Nov. 19	do	do	Browntown, N. J		5.5
Feb. 27	do	do	do		19.1
June 27	do	do	do		12.9
Aug. 13	do	do	do		19.7
25	do	do	do		2.8
Nov. 19	do	do	Old Bridge, N. J		7.1
Feb. 27	do	do	do		24.8
June 27	do	do	do		14.0
Aug. 13	do	do	do		28.8
25	do	do	do		3.5
Nov. 20	Tennant Brook	do	Runyon, N. J		.34
Dec. 8	do	do	do		3.9
Jan. 17	do	do	do		26.2
18	do	do	do		8.3
Mar. 3	do	do	do		7.3
June 27	do	do	do		2.6
Aug. 13	do	do	do		8.20
25	do	do	do		.17
25	Pumpage into Tennant Brook Pond.	do	do		9.7
Nov. 19	Flow from large pond into small pond on Tennant Brook.	do	do		.87
Aug. 25	do	do	do		1.01
Nov. 16	Absecon Creek	Atlantic Ocean	Pamona, N. J		.89

[a] Stage-discharge relation affected by ice.

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