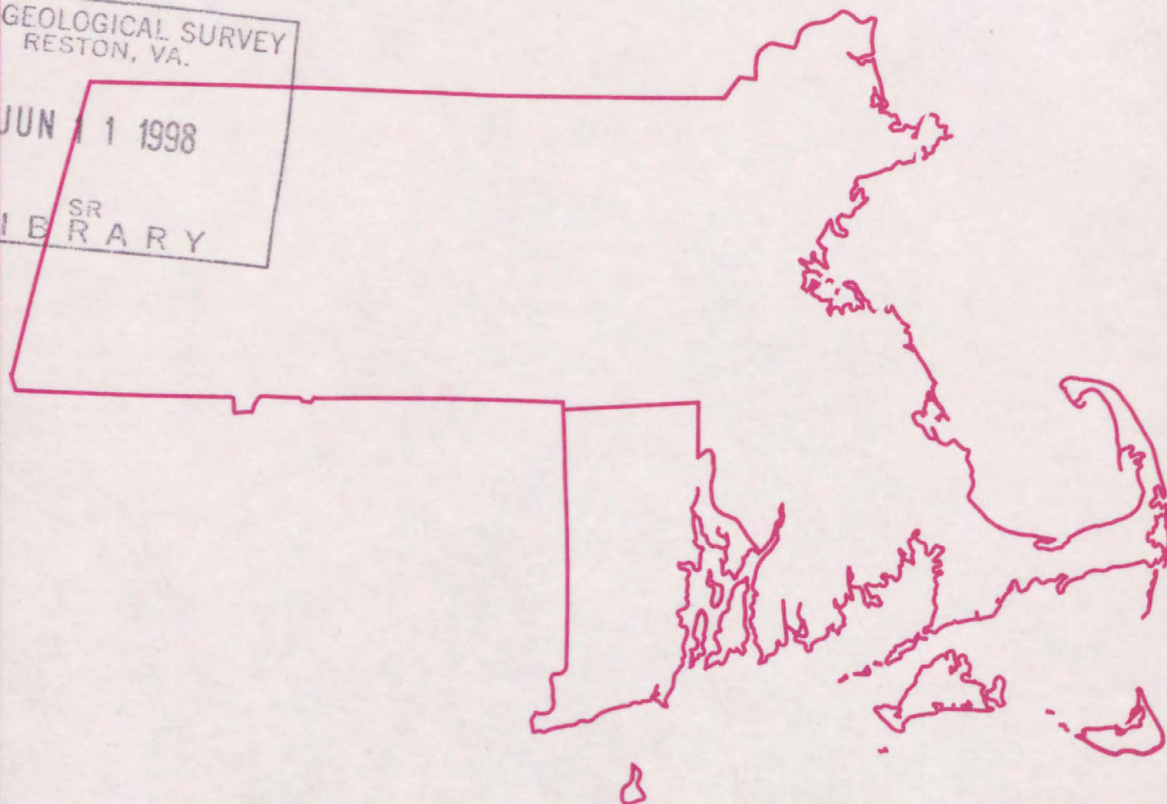
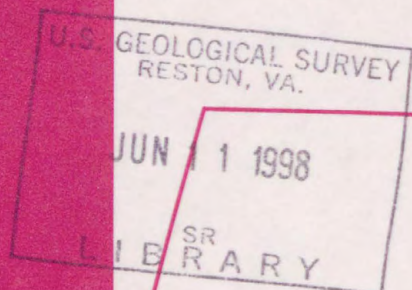


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1997



Water Resources Data Massachusetts and Rhode Island Water Year 1997



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT
MA-RI-97-1

Prepared in cooperation with the States of Massachusetts
and Rhode Island and with other agencies



CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.



Water Resources Data Massachusetts and Rhode Island Water Year 1997

By R.S. Socolow, C.R. Leighton, J.L. Zanca, and L.R. Ramsbey



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MA-RI-97-1
Prepared in cooperation with the States of Massachusetts and
Rhode Island and with other agencies

U.S. DEPARTMENT OF THE INTERIOR
BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Gordon P. Eaton, Director

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U.S. Geological Survey
Water Resources Division
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Marlborough, MA 01752

PREFACE

This volume of the annual hydrologic data report of Massachusetts and Rhode Island is one of a series of annual reports that document hydrologic data gathered from the U.S Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Massachusetts and Rhode Island are contained in one volume. This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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Linda Y. Comeau
Charles R. Leighton
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Britt O. Stock
Joan S. Whitley
Joseph L. Zanca

Anne M. Weaver was responsible for the word processing and publishing phases of the report and Mark V. Bonito and Luis E. Menoyo prepared the illustrations. Bruce S. Davies, III, and Timothy C. Sargent, Hartford, CT, reviewed portions of the report.

This report was prepared in cooperation with the States of Massachusetts and Rhode Island and with other agencies under the general supervision of Wayne H. Sonntag, Massachusetts-Rhode Island District Chief, and James B. Campbell, Subdistrict Chief, Rhode Island Office.

SPECIAL ACKNOWLEDGMENT

On December 31, 1997, Russell Gadoury, chief of the Massachusetts-Rhode Island Streamflow-Gaging Network for the past 20 years, retired after 43 years of highly dedicated service to the United States Government. His vast knowledge and experience in the field of streamflow hydrology, coupled with his efforts to train and educate staff, cooperators, and the general public, have endowed the States of Massachusetts and Rhode Island with an exceptional streamflow hydrology program. His continuing interests in streamflow data have motivated him to provide one day per week of volunteer service. The staff of the USGS offices in Massachusetts and Rhode Island wish him well in his retirement.

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(Letters after station name designate type of data: (d) discharge; (l) lake; (c) chemical; (b) biological; (m) microbiological;
(p) precipitation; (s) sediment; (t) water temperature)

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The following continuous-record surface-water discharge stations (gaging stations) in Massachusetts and Rhode Island have been discontinued. Daily streamflow records were collected and published for the period of record, expressed in water years, shown for each station.

Discontinued surface-water discharge stations

Station Name	Station Number	Drainage Area (mi ²)	Period of Record (water years)
MERRIMACK RIVER BASIN			
Rocky Brook near Sterling, Mass.	01095000	1.95	1947-67
Boulder Brook near East Bolton, Mass.	01096906	1.32	1975-78
Boulder Brook at East Bolton, Mass.	01096910	1.60	1972-81
Sudbury River at Ashland, Mass.	01097480	35.1	1994-95
Beaverdam Brook at Natick, Mass.	01098320	7.27	1978-79
Course Brook at Natick, Mass.	01098340	3.44	1978-79
Pegan Brook at Natick, Mass.	01098360	.54	1978-79
Snake Brook at Wayland, Mass.	01098450	2.10	1978-79
Lake Cochituate outlet at Framingham, Mass.	01098500	21.1	1978-79
Hager Pond outlet at Marlborough, Mass.	01098710	1.80	1978-80
East Meadow River near Haverhill, Mass.	01100700	5.47	1963-74
IPSWICH RIVER BASIN			
Maple Meadow Brook at Wilmington, Mass.	01101300	4.04	1963-74
CHARLES RIVER BASIN			
Charles River at Millis, Mass.	01103305	84.0	1974-80
NEPONSET RIVER BASIN			
Mine Brook at Walpole, Mass.	01104850	6.00	1967-68
BLACKS CREEK BASIN			
Furnace Brook at Quincy, Mass.	01105557	3.81	1973-80
WEYMOUTH FORE RIVER BASIN			
Town Brook at Quincy, Mass.	01105585	4.22	1972-86
BOUND BROOK BASIN			
Bound Brook near Cohasset, Mass.	01105660	4.86	1970-71
NORTH RIVER BASIN			
Indian Head Brook near Hanson, Mass.	01105700	4.30	1958-60
Pudding Brook at East Pembroke, Mass.	01105800	1.38	1958-62
EEL RIVER BASIN			
Eel River near Plymouth, Mass.	01105876	14.7	1970-71

Discontinued surface-water discharge stations--Continued.

Station Name	Station Number	Drainage Area (mi ²)	Period of Record (water years)
HERRING RIVER BASIN			
Herring River at North Harwich, Mass.	01105880	9.4	1966-88
RED BROOK BASIN			
Red Brook below Route 25 near Wareham, Mass.	01105885	9.14	1981-86
WEWEANTIC RIVER BASIN			
Weweantic River at South Wareham, Mass.	01105895	56.1	1970-71
WEST BRANCH WESTPORT RIVER BASIN			
Adamsville Brook at Adamsville, R.I.	01106000	8.01	1941-78, 1987
TAUNTON RIVER BASIN			
Matfield River at Elmwood, Mass.	01106500	40.5	1958-60
Poor Meadow Brook at South Hanson, Mass.	01106900	14.6	1958-60
Dorchester Brook near Brockton, Mass.	01107000	4.67	1963-74
Taunton River at Titicut near Brockton, Mass.	01107200	182	1920-25
Fall Brook near Middleborough, Mass.	01107400	9.32	1967
Wading River at West Mansfield, Mass.	01108500	19.5	1954-86
PALMER RIVER BASIN			
West Branch Palmer River near Rehoboth, Mass.	01109200	4.35	1962-74
BLACKSTONE RIVER BASIN			
Kettle Brook at Worcester, Mass.	01109500	31.6	1923-78
Mumford River at East Douglas, Mass.	01111000	29.1	1939-51
West River below West Hill Dam near Uxbridge, Mass.	01111200	27.9	1962-90
Chepachet River at Chepachet, R.I.	01111400	17.4	1965-73
Chepachet River at Gazzaville, R.I.	01111410	19.2	1973-75
Blackstone River tributary at Woonsocket, R.I.	01112700	2.31	1965-74
PAWTUXET RIVER BASIN			
Mosquitohawk Brook near North Scituate, R.I.	01115100	3.06	1965-74
Pawtuxet River at Fiskeville, R.I.	01115500	102	1915-25
Nooseneck River at Nooseneck, R.I.	01115630	8.23	1964-81
Carr River near Nooseneck, R.I.	01115770	6.73	1964-80
Flat River near Coventry, R.I.	01115900	9.13	1961-64
Furnace Hill Brook at Cranston, R.I.	01116300	4.19	1965-74
ANNAQUATUCKET RIVER BASIN			
Annaquatucket River at Belleville, R.I.	01117100	6.4	1961-64

Discontinued surface-water discharge stations--Continued.

Station Name	Station Number	Drainage Area (mi ²)	Period of Record (water years)
PAWCATUCK RIVER BASIN			
Beaver River at Kenyon, R.I.	01117472	11.7	1975-79
Meadow Brook near Carolina, R.I.	01117600	5.53	1965-74
THAMES RIVER BASIN			
Quinebaug River below East Brimfield Dam near Fiskdale, Mass.	01123360	67.4	1973-90
Quinebaug River at Westville, Mass.	01123500	93.6	1940-62
Quinebaug River below Westville Dam near Southbridge, Mass.	01123600	99.0	1963-90
French River below Hodges Village Dam at Hodges Village, Mass.	01124350	31.2	1962-90
Little River near Oxford, Mass.	01124500	26.0	1939-90
Browns Brook near Webster, Mass.	01124750	.49	1963-77
French River at Webster, Mass.	01125000	84.0	1949-81
Bucks Horn Brook at Greene, R.I.	01126200	5.52	1965-74
CONNECTICUT RIVER BASIN			
Tarbell Brook near Winchendon, Mass.	01161500	17.8	1916-82
Otter River near Gardner, Mass.	01163000	20.0	1916-17
Millers River at South Royalston, Mass.	01164000	189	1939-90
East Branch Tully River near Athol, Mass.	01165000	50.5	1916-90
Lake Rohunta Outlet near Athol, Mass.	01165300	20.3	1965-85
Moss Brook at Wendell Depot, Mass.	01165500	12.1	1909-10, 1916-82
Whetstone Brook at Depot Road at Wendell Depot, Mass.	01166105	5.22	1985-91
Unnamed Channel to Wilder Brook at Buckland, Mass.	01168639	0.01	1993-95
Wilder Brook at Buckland, Mass.	01168640	0.07	1993-95
Fort River near Amherst, Mass.	01171300	36.3	1966-96
Bassett Brook near Northampton, Mass.	01171800	5.56	1963-74
Natty Pond Brook Templeton Rd (DS) near Hubbardston, Mass.	01172680	1.63	1985-88
Natty Pond Brook near Hubbardston, Mass.	01172800	5.48	1985-88
Moose Brook near Barre, Mass.	01173260	4.63	1963-74
Hop Brook near New Salem, Mass.	01174000	3.39	1947-82
East Branch Fever Brook near Petersham, Mass.	01174050	4.85	1984-85
West Branch Swift River near Shutesbury, Mass.	01174565	12.6	1984-85
Dickey Brook near Cooleyville, Mass.	01174570	1.19	1985-89
Dickey Brook tributary near Cooleyville, Mass.	01174575	1.06	1985-89
Cadwell Creek near Pelham, Mass.	01174500	0.60	1962-94
Mill River at Springfield, Mass.	01178000	33.2	1939-51
Westfield River at West Chesterfield, Mass.	01178500	110	1946-51
Sykes Brook at Knightville, Mass.	01180000	1.73	1945-74
Middle Branch Westfield River at Goss Heights, Mass.	01180500	52.7	1910-90
Walker Brook near Becket Center, Mass.	01180800	2.94	1963-77
Great Brook near Westfield, Mass.	01183450	22.6	1973-82
Fall River below Otis Reservoir near Otis, Mass.	01185100	16.5	1969-82
HOUSATONIC RIVER BASIN			
Town Brook at Bridge Street at Lanesborough, Mass.	01197015	10.6	1980-83
Marsh Brook at Lenox, Mass.	01197300	2.12	1963-74
Green River near Great Barrington, Mass.	01198000	51.0	1951-71, 1994-96
Schenob Brook near Sheffield, Mass.	01198030	23.3	1971-72
Willard Brook near Sheffield, Mass.	01198070	3.20	1971-72
Hubbard Brook at Sheffield, Mass.	01198075	25.8	1971-72

Discontinued surface-water discharge stations--Continued.

Station Name	Station Number	Drainage Area (mi ²)	Period of Record (water years)
HOUSATONIC RIVER BASIN--Continued			
Ironworks Brook, East Road, at Sheffield, Mass.	01198122	11.2	1994-96
Housatonic River near Ashley Falls, Mass.	01198125	465	1994-96
Konkapot River at Ashley Falls, Mass.	01198200	61.1	1994-96
HUDSON RIVER BASIN			
Dry Brook at Adams, Mass.	01331400	7.67	1963-74
North Branch Hoosic River at North Adams, Mass.	01332000	40.9	1931-90

The following continuous-record surface-water-quality stations have been discontinued. Daily records of temperature (temp.), specific conductance (S.C.), pH (pH), dissolved oxygen (D.O.) or sediment (sed.) were collected and published for the period of record, expressed in water years, shown for each station. Those stations currently being operated as water-quality partial-record stations (sampled quarterly or more frequently) are shown with an asterisk (*) beside the station number.

Discontinued continuous-record surface-water-quality stations

Station Name	Station Number	Drainage Area (mi ²)	Type of record	Period of record (water years)
MERRIMACK RIVER BASIN				
North Nashua River near Lancaster, Mass.	01094700	128	Temp., S.C., pH, D.O.	1969-74
Merrimack River above Concord River at Lowell, Mass.	01096570	3956	Temp., S.C., pH, D.O.	1968-72
Boulder Brook near East Bolton, Mass.	01096906	1.32	Temp., S.C.	1971-78
Boulder Brook at East Bolton, Mass.	01096910	1.60	Temp., S.C.	1971-78
Nashoba Brook near Acton, Mass.	01097300	12.8	Temp., S.C.	1972-74, 1976-78
Merrimack River at West Newbury, Mass.	01100750	--	Temp., S.C., pH, D.O.	1969-76
CHARLES RIVER BASIN				
Charles River at Dover, Mass.	01103500	183	Temp., S.C.	1975-81
NORTH RIVER BASIN				
Indian Head River at Hanover, Mass.	01105730	30.3	Temp., S.C.	1970-71
JONES RIVER BASIN				
Jones River at Kingston, Mass.	01105870	15.7	Temp., S.C.	1970-71
EEL RIVER BASIN				
Eel River near Plymouth, Mass.	01105876	14.7	Temp. S.C.	1970-71 1971
WEWEANTIC RIVER BASIN				
Weweantic River at South Wareham, Mass.	01105895	56.1	Temp., S.C.	1970-71

Discontinued continuous-record surface-water-quality stations--Continued

Station Name	Station Number	Drainage Area (mi ²)	Type of record	Period of record (water years)
WEST BRANCH WESTPORT RIVER BASIN				
Adamsville Brook at Adamsville, Mass.	01106000	8.01	Temp., S.C.	1973-74
PALMER RIVER BASIN				
West Branch Palmer River near Rehoboth, Mass.	01109200	4.35	Temp., S.C.	1973-74
BLACKSTONE RIVER BASIN				
Blackstone River at Millville, Mass.	*01111230	263	Temp., S.C., pH, D.O.	1969-81
Blackstone River at Woonsocket, R.I.	01112500	416	Temp.	1962-67
PAWTUXET RIVER BASIN				
Pawtuxet River at Cranston, R.I.	*01116500	200	Temp., S.C.	1962-81
POTOWOMUT RIVER BASIN				
Hunt River near Davisville, R.I.	01116910	17.3	Temp.	1962-65
Hunt River near East Greenwich, R.I.	01117000	23.0	Temp., S.C.	1977-81
PAWCATUCK RIVER BASIN				
Chipuxet River at West Kingston, R.I.	01117350	9.99	Temp., S.C.	1974-83
Usquepaug River near Usquepaug, R.I.	01117420	36.1	Temp., S.C.	1975-83
Beaver River near Usquepaug, R.I.	01117468	8.87	Temp.	1979-83
			S.C.	1979-80, 1982-83
Beaver River at Kenyon, R.I.	01117472	11.7	Temp., S.C.	1976-79
THAMES RIVER BASIN				
Quinebaug River near Dudley, Mass.	01123990	156	Temp., S.C., pH, D.O.	1969-81
Browns Brook near Webster, Mass.	01124750	.49	Temp., S.C.	1972-77
CONNECTICUT RIVER BASIN				
Millers River at South Royalston, Mass.	01164000	189	Temp.	1966
Deerfield River near West Deerfield, Mass.	01170000	557	Temp., S.C.	1969-70
Moose Brook near Barre, Mass.	01173260	4.63	Temp., S.C.	1972-73
Hop Brook near New Salem, Mass.	01174000	3.39	Temp., S.C.	1972-73
Chicopee River at Chicopee Falls, Mass.	01177100	711	Temp., S.C., pH	1973-81
			D.O.	1973-76, 1978-81
Connecticut River at West Springfield, Mass.	01177200	9623	Temp., S.C., pH, D.O.	1972-75, 1977, 1979-81
Walker Brook near Becket Center, Mass.	01180800	2.94	Temp., S.C.	1972-77
Westfield River at West Springfield, Mass.	01183600	513	Temp., S.C., pH, D.O.	1972-76
Connecticut River at Agawam, Mass.	01183750	--	Temp., S.C., D.O.	1969-81
			pH	1969-76, 1979-81
HOUSATONIC RIVER BASIN				
Housatonic River near Great Barrington, Mass.	01197500	282	Sed.	1979-80, 1994-96

Water Resources Data for Massachusetts and Rhode Island, 1997

By R.S. Socolow, C.R. Leighton, J.L. Zanca, and L.R. Ramsbey

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Massachusetts and Rhode Island each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the States. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data-Massachusetts and Rhode Island."

Hydrologic data are also available through the Massachusetts-Rhode Island District Home Page on the world-wide web (<http://mass1.er.usgs.gov/hydro.html>). Historical data and real-time data (for sites equipped with satellite gage-height telemeter) are also available. The home page also contains a link to the U.S. Geological Survey National Home Page where streamflow data from locations throughout the United States can be retrieved.

This report series includes records of stage, discharge, and water quality of streams; contents of lakes and reservoirs; and water levels of ground-water wells. This volume contains discharge records at 86 gaging stations; monthend contents of 4 lakes and reservoirs; water quality at 18 gaging stations; and water levels for 142 observation wells. Locations of these sites are shown in figures 1 and 2. Miscellaneous hydrologic data were collected at various sites that were not involved in the systematic data-collection program and are published as miscellaneous discharge measurements. The data in this report represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Massachusetts and Rhode Island.

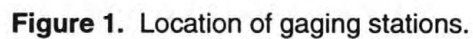
This series of annual reports for Massachusetts and Rhode Island began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Massachusetts and Rhode Island were published in U.S.

Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 1A and 1B." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1939 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Branch of Information Services, Box 25286, Denver Federal Center, Box 25425, Denver, CO 80225-0286.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report MA-RI-97-1." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Beginning with the 1990 water year, all water-data reports are also available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc.

Additional information, including current prices, for ordering specific reports may be obtained from the District Office at the address given on the back of the title page or by telephone (508) 490-5000. A limited number of CD-ROM discs will be available for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Denver Federal Center, Box 25425, Denver, CO 80225-0286.



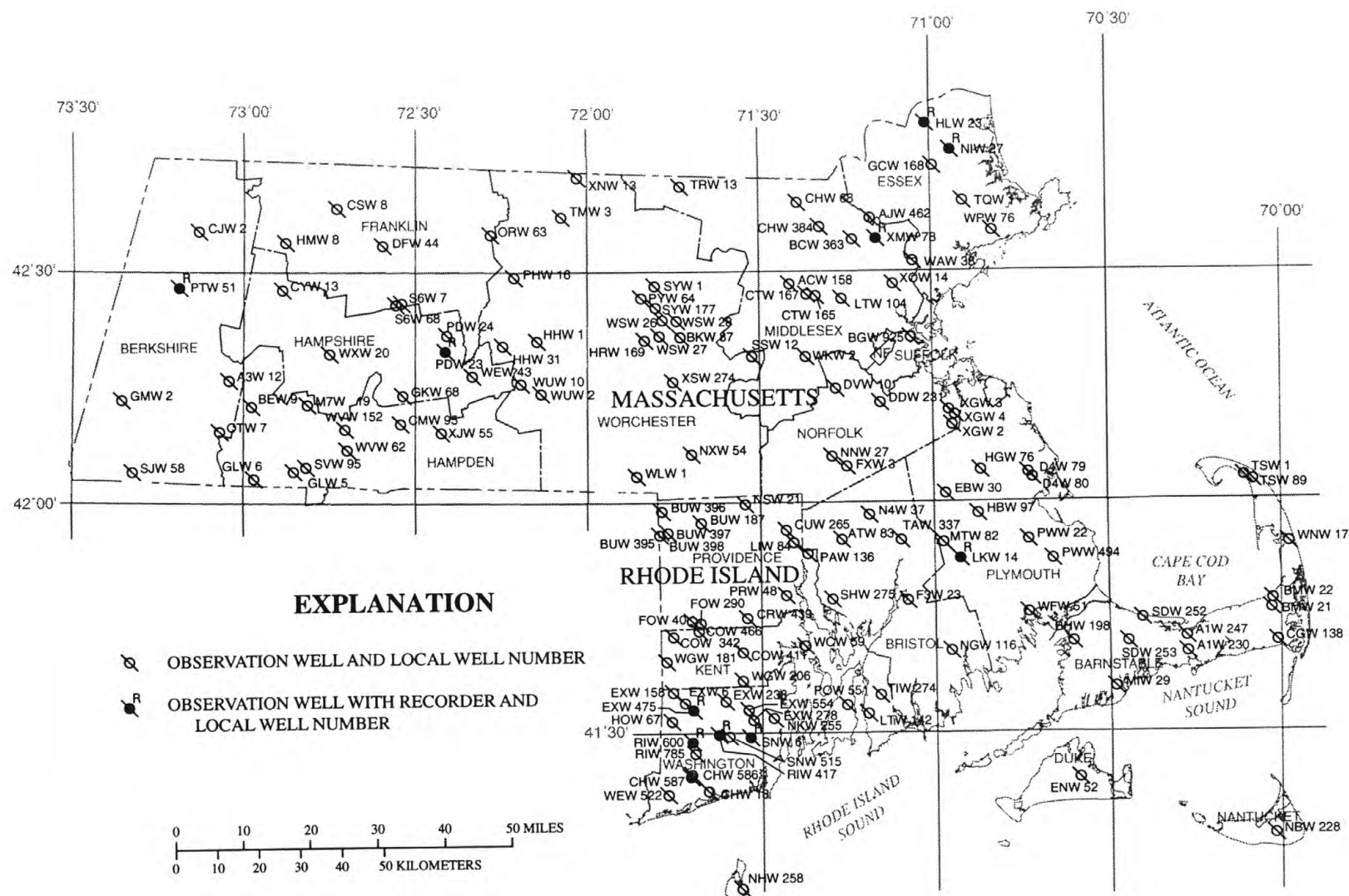


Figure 2. Location of observation wells.

COOPERATION

The U.S. Geological Survey and agencies of the States of Massachusetts and Rhode Island have had cooperative agreements for the collection of streamflow records since 1909 and 1941, respectively, and for water-quality records since 1954. Organizations that assisted in collecting the data in this report through cooperative agreement with the Survey are:

Massachusetts:

Department of Environmental Management,
P. Webber, Commissioner
Division of Resource Conservation,
M. Gildesgame, Director;
Department of Environmental Protection,
D.B. Struhs, Commissioner
Office of Watershed Management,
A. Gottlieb, Director
Metropolitan District Commission,
D.B. Balfour, Jr., Commissioner
Division of Watershed Management,
J.M. McGinn, Director
Parks Engineering and Construction Division,
F.D. Faucher, Director
Town of Dartmouth,
M. Branco, Water Superintendent

Rhode Island:

State Water Resources Board,
D.W. Varin, Chairman
Department of Environmental Management,
A.H. McLeod, Director,
E.S. Szymanski, Associate Director
Providence Water Supply Board,
R.O. Rafanovic, General Manager and Chief Engineer
A. Parillo, Chairman

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for three gaging stations published in the report. Assistance in the form of services was given by the Cape Cod Commission, Barnstable County, Nantucket Land Council, Nantucket County, and Cooperative Extension, Martha's Vineyard, Dukes County, Massachusetts, in measuring observation wells on Cape Cod, Nantucket Island, and Martha's Vineyard Island, Massachusetts.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

Runoff for the 1997 water year was in the normal range in Rhode Island and western Massachusetts and was above normal (highest 25 percent of record) throughout central and eastern Massachusetts. During the year new maximum monthly mean discharges were recorded at 17 of 86 stations in October and 39 of 86 stations in December. Two of the 39 stations with new maximum monthly mean discharges in December have 85 years of continuous record; many of the remaining stations have at least 40 years of continuous record. No stations recorded new minimum monthly mean discharges during the year. Monthly and yearly discharges and median monthly and yearly discharges for the reference

period 1961–90 for three index gaging stations are compared in figure 3. Maps showing monthly surface-water conditions during the 1997 water year in Massachusetts and Rhode Island are shown in figure 4. The maps show areas of normal, above-normal (within the highest 25 percent of record), or below-normal (within the lowest 25 percent of record) runoff for each month and are based on records for many of the streamflow-gaging stations contained in this report. Additional statistics for each gaging station contained in this report are provided with the tables of daily mean discharge. Hydrographs plotted at the end of each streamflow discharge table contained in this report provide additional information on runoff trends.

Floods and Droughts

On October 20, 1996, a steady and intense rain began to fall primarily in northeastern Massachusetts and southeastern New Hampshire and Maine. The event lasted until late morning on October 21. During the period October 20–21, 10.19 inches of rain were recorded at the USGS gage located at the Shawsheen River at Hanscom Field near Bedford, MA. Peak discharges recorded October 20–24 at gaging stations in northeastern Massachusetts had recurrence intervals of 10 to greater than 100 years (peaks having a 1 in 10 to 1 in 100 chance of occurring in any given year). A new peak discharge for period of record was recorded at Parker River at Byfield, MA (October 1945–). Stations with recurrence intervals of 10 or more years are listed below:

Station No.	Stream name	Peak discharge (ft ³ /s)	Recurrence interval (years)
01101000	Parker River at Byfield, MA	883	>100
01100600	Shawsheen River near Wilmington, MA	1,850	70
01102000	Ipswich River near Ipswich, MA	3,120	50
01102500	Aberjona River at Winchester, MA	1,150	50
01101500	Ipswich River at South Middleton, MA	896	30
01097300	Nashoba Brook near Acton, MA	665	30
01105730	Indian Head River at Hanover, MA	1,290	25
01096000	Squannacook River near West Groton, MA	3,330	20
01104500	Charles River at Waltham, MA	2,990	20
01105000	Neponset River at Norwood, MA	760	10

Peak discharges with recurrence intervals of generally 1 to 3 years occurred during three other events on or about December 2, 8, and 20 at most gaging stations in Rhode Island and central and western Massachusetts. Streamflow data are also available on the Massachusetts–Rhode Island web pages at: <http://mass1.er.usgs.gov/water.htm>

Reservoir Storage

Monthend storage of Quabbin Reservoir in central Massachusetts ranged from 91 percent of usable capacity at the end of September to 101 percent of usable capacity at the end of December. The monthend storage of Scituate Reservoir in central Rhode Island ranged from 75 percent of usable capacity at the end of September to 106 percent of usable capacity at the end of December and January.

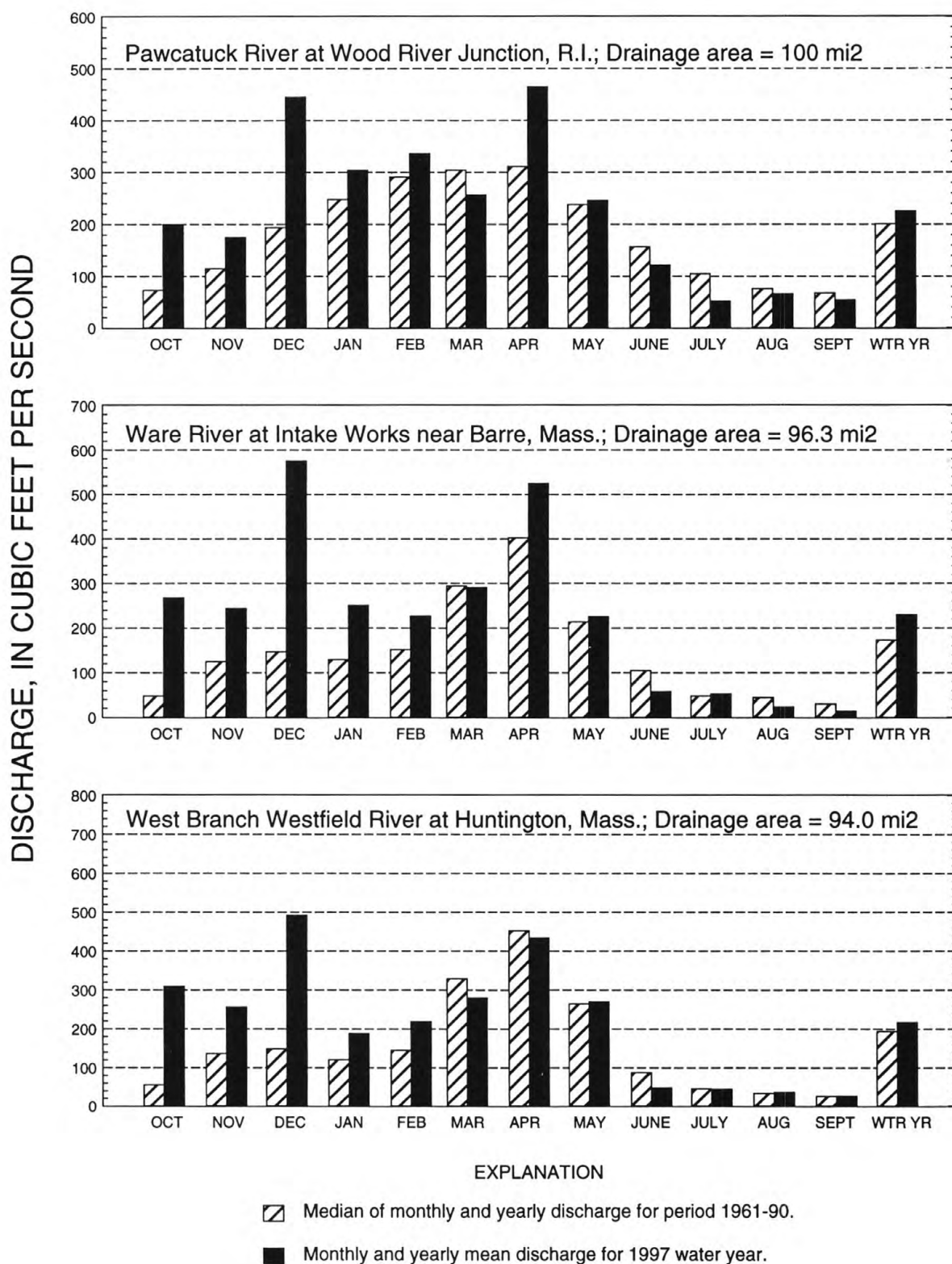


Figure 3. Comparison of discharge at three long-term index stations during the 1997 water year with median discharge for 1961–90.

WATER RESOURCES DATA FOR MASSACHUSETTS AND RHODE ISLAND, 1997

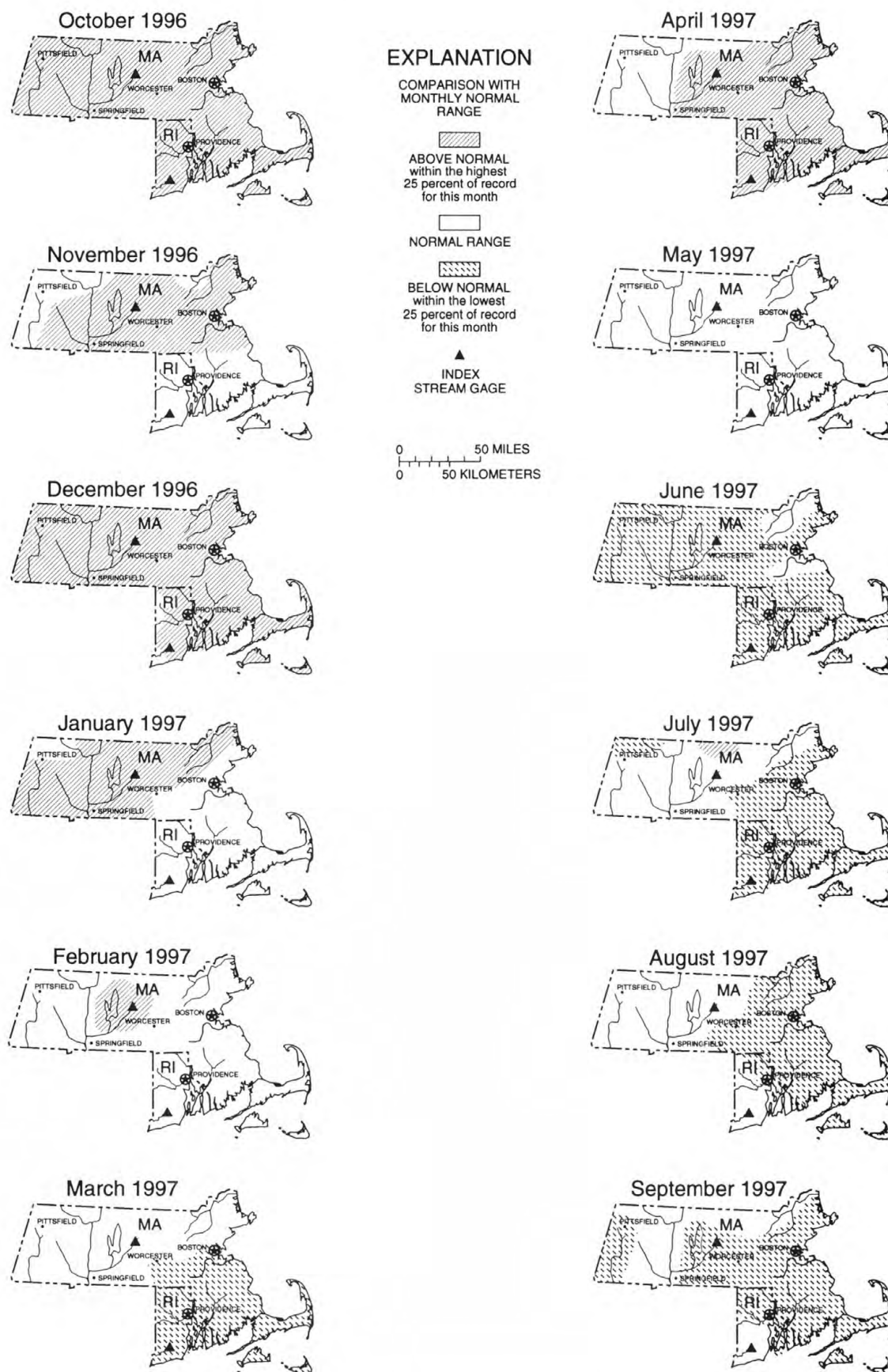


Figure 4. Monthly surface-water conditions during the 1997 water year in Massachusetts and Rhode Island.

Water Quality

Selected water-quality characteristics—dissolved-oxygen concentration, specific conductance, pH, and water temperature—measured at long-term surface-water sites in Massachusetts and Rhode Island indicated that all values were within the previously measured period-of-record extremes. All readings of specific conductance and water temperature at the continuous recording monitoring station Wood River at Hope Valley, RI, were within the previous extreme values for the period of daily record.

Ground-Water Levels

New high ground-water levels, in feet below land surface, for periods of record were measured at the following 11 wells in Massachusetts having 5 or more years of record (no new high water levels for periods of record were measured at wells in Rhode Island):

Well name and number (start of well record)	Month of new extreme high water level
Wakefield 38 (1965–)	October
Newbury 27 (1965–)	October
Wilbraham 55 (1965–)	December
Northbridge 54 (1984–)	December
Westfield 152 (1986–)	February
Sheffield 58 (1987–)	April
Ware 43 (1965–)	April
Chelmsford 384 (1987–)	April
Barnstable 247 (1962)	April
Plymouth 494 (1985–)	June
Nantucket 228 (1976–)	July

During October through March, 183 new monthly high water levels and 10 new monthly low water levels were measured at wells in Massachusetts and Rhode Island. Of those, 64 occurred in October, the result of extremely high precipitation that occurred during October 19 and 20. During April through September, 30 new monthly high water levels and 12 new monthly low water levels were measured at wells in Massachusetts and Rhode Island. Wells with water level records starting prior to 1993 in Massachusetts and Rhode Island are included in this summary.

Monthly water levels and median, maximum, and minimum monthly water levels for periods of record for three index observation wells in Massachusetts and Rhode Island are compared in figure 5. Maps showing monthly ground-water conditions during the 1997 water year in Massachusetts and Rhode Island are shown in figure 6. The maps show areas of normal, above-normal, and below-normal ground-water levels for each month and are based on records of wells having 5 or more years of record. Hydrographs plotted below each ground-water table contained in this report provide additional information on water-level trends. Ground-water-level data are also available on the Massachusetts-Rhode Island web pages at:

http://mass1.er.usgs.gov/current_cond/current_cond.html.

SPECIAL NETWORKS AND PROGRAMS

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 53 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies.

Additional information about the NAWQA Program is available through the world wide web at:
http://www.rvares.er.usgs.gov/nawqa/nawqa_home.html

Radiochemical programs is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1997 water year that began October 1, 1996, and ended September 30, 1997. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface water, and ground-water-level data.

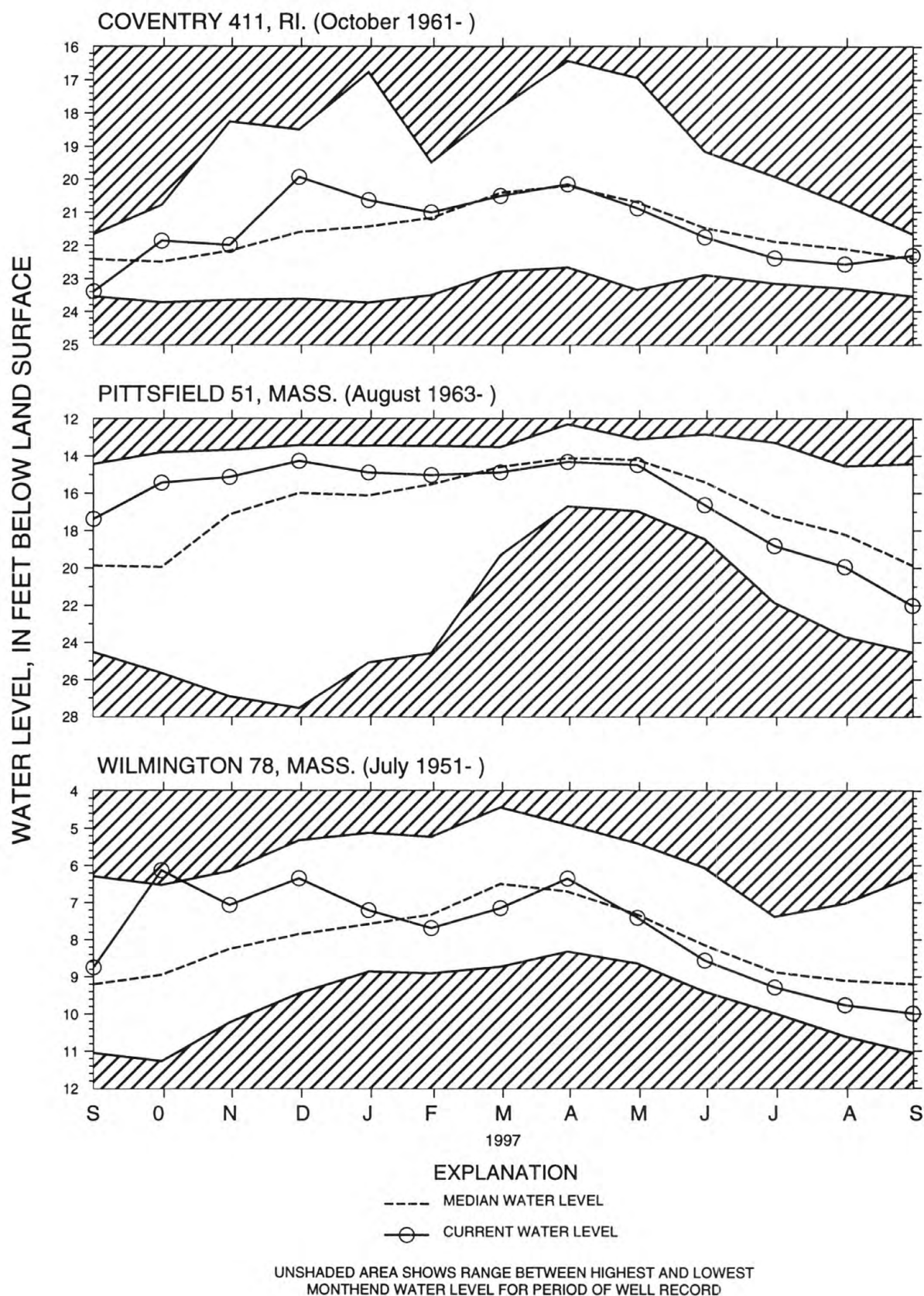


Figure 5. Comparison of monthly water levels in selected observation wells during the 1997 water year with average, maximum, and minimum monthly water levels for periods of record.

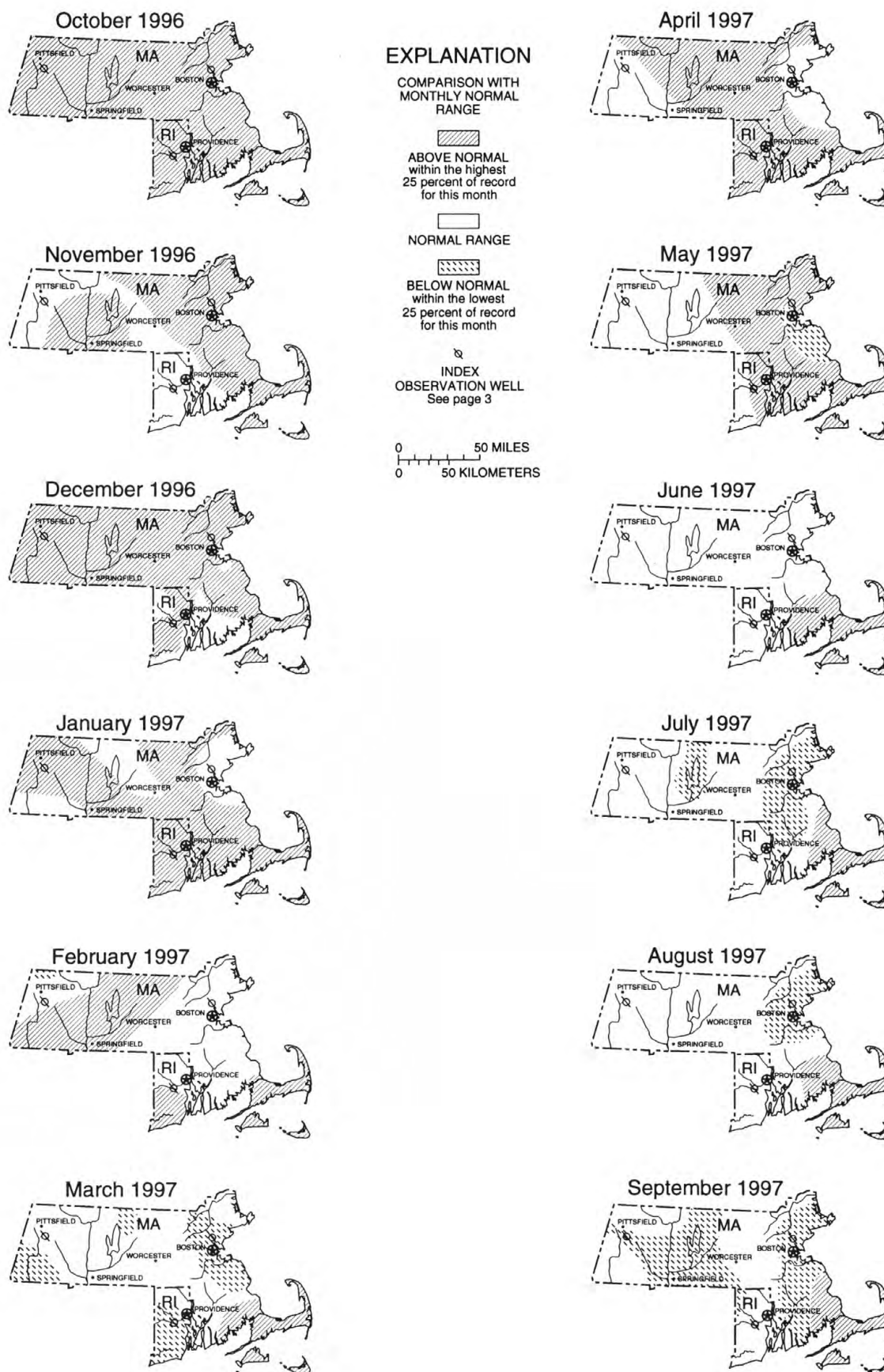


Figure 6. Monthly ground-water conditions during the 1997 water year in Massachusetts and Rhode Island.

The locations of the stations and wells where the data were collected are shown in figures 1, 2, and 3. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station-Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for groundwater well sites differ, but both are based on geographic location. The "downstream order" system is used for surface-water stations and the "latitude-longitude" system is used for wells.

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of identification shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between continuous-record stations and other types of stations; therefore, the station number for a continuous-record station indicates downstream-order position in a list made up of all types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete station number (usually eight digits, but sometimes nine or more if needed) appears just to the left of the station name. The first two digits indicate the Part number (formerly used in Water-Supply Papers to designate major river systems) and the last six or more digits indicate the downstream order within the Part. For example, in the station number 01094400, "01" is the Part number for "North Atlantic Slope Basins" and "094400" is the downstream order number.

Latitude-Longitude System

The identification numbers for wells are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude is found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure 7.)

Numbering System for Wells

A local well numbering system is also used in this report. The local well number consists of a 2-letter code for the town in which the well is located followed by a "W" signifying that it is a well, and a sequential number. The local number is used to identify the location of observation wells in figure 3.

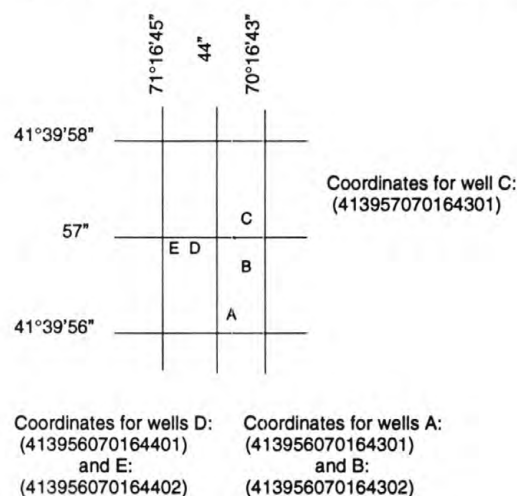


Figure 7.--System for numbering wells (latitude and longitude)

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily

mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report. There were no crest-stage stations this year. Location of all complete-record stations for which data are given in this report are shown in figure 1; location of all partial-record stations for which data are given in this report are shown in figure 2.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with electronic recorders that log data at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks; in U.S. Geological Survey *Techniques of Water-Resources Investigations*, Book 3, Chapter A6; and in U.S. Geological Survey *Water-Supply Paper 2175, "Measurement and Computation of Stream-flow: Volume 1--Measurement of Stage and Discharge (p. 1-284); Volume 2--Computation of Discharge (p. 285-631)"* by S.E. Rantz and others (1982).

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements

of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharge is computed by applying the daily mean stage (gage height) to the stage-discharge rating table or by applying each recorded stage in the day to the rating table and computing the mean from the sum of the individual discharges. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may obscure the stage-discharge relations. This requires daily mean discharges to be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations, the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded

range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

The records published for each continuous-record surface-water discharge station (gaging station) consist of five parts: the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and a hydrograph of daily mean discharges for the current water year that includes the 10, 50, and 90 percent flow durations (PERCENT EXCEEDS) for the period of continuous gage record.

Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to sea level (see glossary), and a condensed history of the types, locations and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily discharge will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were ever revised after the station was discontinued. Of course, if the data for a discontinued station were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the EXTREMES FOR CURRENT YEAR paragraph, is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph, as appropriate. No changes have been made to the data presentations of lake contents.

Data table of daily mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"); or in inches (line headed "IN."); or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS _ - _, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS _ - _," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (See line headings below.), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration

curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicates the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) The stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true values; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. Discharges listed for partial-record stations and miscellaneous sites are generally shown to three significant figures.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables is on file in the District Office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the Massachusetts-Rhode Island District Office at the address given on the back of the title page or by telephone (508) 490-5000.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records," as used in this report, and "continuous recordings," which refers to a continuous graph or a series of discrete values recorded at short intervals on a digital or electronic data logger. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 1.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence.

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ

water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory.

Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER- RESOURCES INVESTIGATIONS" which appears at the end of the introductory text. Detailed information on collecting, treating, and shipping samples may be obtained from the Massachusetts-Rhode Island District Office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record.

Water Temperature

Water temperatures are measured at most of the water-quality stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have

a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, maximum, minimum, and mean temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long- term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Sediment samples, samples for biochemical oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1.

Methods used by the Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are

made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates. The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

Printed Output	Remark
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range; non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant
V	Analyte was detected in both the environmental sample and the associated blanks.

Water Quality-Control Data

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this district are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These

procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collect in this district are:

Field blank—a blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—a blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—a blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are: Sequential samples—a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

Records of Ground-Water Levels

Only water-level data from a national network of observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in Massachusetts and Rhode Island are shown in figure 2.

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the upper left corner of the table.

The secondary identification number is the local well number, an alphanumeric number, derived from a two-letter town code followed by the letter W to specify a well. Water-level records are obtained from direct measurements with a chalked steel tape, electric tape, or from digital water-stage

recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported daily or for every fifth day and the end of each month (eom). Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given to a tenth of a foot or a larger unit.

Data Presentation

Each well record consists of three parts, the station description, the data table of water levels observed during the water year, and the hydrograph showing water-level fluctuations during the most recent five-year period. Hydrographs are based on end-of-month measurements, including those wells for which 5-day or more frequent water levels are published. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); a landline location designation; the hydrologic-unit number; the distance and direction from a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION.--This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of

casing, plug in pump base, and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) sea level; it is reported with a precision depending on the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence. A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum. For most wells all taped measurements of water level are published. For wells equipped with digital recorders, tables of daily mean water levels and the means, highs, and lows for each month are published. Abbreviated tables are published for wells.

ACCESS TO WATSTORE DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

<http://www.water.usgs.gov>

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address on the back of the title page.)

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 ft³ or about 326,000 gallons or 1,233 m³.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, non-spore-forming, rod-shaped bacteria which ferment

lactose with gas formation within 48 hours at 35°. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35° plus or minus 1.0° on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5° plus or minus 0.2° on M-F° medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35° plus or minus 1.0° on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500° for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter, and periphyton and benthic organisms in grams per square mile.

Dry mass refers to the mass of residue present after drying in an oven at 105° for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See "Bed material."

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters or liters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic foot per second (ft³/s) is the rate of discharge representing a volume of 1 ft³ passing a given point during 1 second and is equivalent to 7.48 gal/s or 448.8 gal/min or 0.02832 m³/s.

Cubic feet per second per square mile [(ft³/s)/mi²] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Dissolved refers to that material in a representative water sample which passes through a 0.45-mm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Fig-

ures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

Hydrologic Bench-Mark Network, is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most

insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram ($\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter ($\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD of 1929), is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN), is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quan-

tity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust-particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program.

The National Water Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, diverse and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe and explain the major natural and human factors that affect these observed conditions and trends.

Assessment activities have begun in more than one-third of the study units and ultimately will be conducted in 60 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter or liter. Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the Survey's computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and (or) water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters, of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with the recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024-0.004	Sedimentation
Silt	0.004-0.062	Sedimentation
Sand	0.062-2.0	Sedimentation or sieve
Gravel	2.0-64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area per unit time [$\text{mg C}/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and milligrams of carbon per volume per unit time [$\text{mg C}/(\text{m}^3 \cdot \text{time})$] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area per unit time [$\text{mg O}_2/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and milligrams of oxygen per volume per unit time [$\text{mg O}_2/(\text{m}^3 \cdot \text{time})$] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories

performing such analyses because different digestion procedures are likely to produce different analytical results.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

Runoff in inches (IN., in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sea Level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Mean concentration (sediment), is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow (7Q10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water, per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest Survey topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-mm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by

difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45-mm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata*, is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexagenia
Species	limbata

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-ft of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion

procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1994, is called the "1994 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviation for "Water-Supply Paper" in reference to previously published reports.

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.
- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W. E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurement at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 34 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

- 3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F. A. Kilpatrick, R. E. Rathbun, Nobuhiro Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. *Levels at streamflow gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A20. 1993. 38 pages.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS--TWRI Book 3, Chapter A21. 1995. 56 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by R. L. Cooley and R. L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow - Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R. L. Cooley: USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E. J. Wexler: USGS--TWRI Book 3, Chapter B7. 1992. 190 pages.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. J. Fishman and L. C. Friedman, editors: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

- 5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.
- 6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S. A. Leake and D. E. Prudic: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.
- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L. J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages.
- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R. L. Cooley: USGS--TWRI Book 6, Chapter A4. 1992. 108 pages.
- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L. J. Torak: USGS--TWRI Book 6, Chapter A5. 1993. 243 pages.
- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler. 1995. 125 pages.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D. N. Myers and F. D. Wilde: USGS--TWRI Book 9, Chapter A7. 1997. 49 pages.

Remarks Codes

The following remark codes may appear with the water-quality data in this section:

PRINT OUTPUT	REMARK
E	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.
V	Analyte was detected in both the environmental sample and the associated blanks.

Dissolved Trace-Element Concentrations

NOTE.-- Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ($\mu\text{g/L}$) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the $\mu\text{g/L}$ level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Change in National Trends Network Procedures

NOTE.-- Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

MERRIMACK RIVER BASIN

01094400 NORTH NASHUA RIVER AT FITCHBURG, MA

LOCATION.--Lat 42°34'34", long 71°47'19", Worcester County, Hydrologic Unit 01070004, on right bank 400 ft upstream from Fifth Street Bridge at Fitchburg and 1.8 mi upstream from Baker Brook.

DRAINAGE AREA.--63.4 mi².

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by mills and reservoirs upstream. Flow affected by diversions for municipal use. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--25 years, 123 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,510 ft³/s, Apr. 5, 1987, gage height, 7.78 ft; maximum gage height, 9.25 ft, Apr. 5, 1987, backwater from landslide; minimum discharge, 1.5 ft³/s, Sept. 11, 12, 1995; minimum daily, 2.7 ft³/s, Sept. 5, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	0045	*2,160	*6.91	Apr. 19	1045	1,050	5.61
Dec. 2	1145	1,070	5.63				

Minimum discharge, 6.0 ft³/s, June 24; minimum daily, 8.4 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	112	152	190	104	142	398	186	73	13	9.7	23
2	51	104	725	175	99	155	326	175	73	12	8.6	23
3	47	98	509	174	98	155	291	193	67	47	44	22
4	36	108	320	167	93	134	380	281	64	53	22	17
5	31	87	241	172	199	124	473	217	58	32	35	15
6	29	77	215	184	204	221	501	194	54	22	22	12
7	27	76	202	159	154	192	614	189	50	37	16	11
8	40	94	236	140	124	153	518	160	49	38	11	13
9	247	361	208	e120	108	135	359	152	45	62	11	14
10	183	297	175	134	96	135	279	153	42	141	10	12
11	150	198	159	124	88	130	237	143	36	82	19	14
12	110	158	193	e105	83	119	227	128	32	52	30	46
13	88	132	248	e100	79	110	398	117	30	38	45	25
14	75	115	241	94	79	111	315	115	34	31	50	18
15	64	102	280	90	91	154	251	110	31	26	27	16
16	71	93	267	231	80	123	218	107	26	25	20	15
17	61	89	513	230	76	107	205	97	23	29	16	13
18	78	90	800	169	77	101	315	91	35	27	20	12
19	97	88	749	131	130	98	870	100	103	19	16	11
20	1110	85	710	e105	181	100	594	350	55	16	13	16
21	1610	81	401	e87	155	102	387	239	41	14	114	15
22	641	77	291	84	305	143	303	175	33	17	120	12
23	371	75	243	100	247	134	255	142	26	14	66	12
24	302	70	276	e87	178	113	226	121	20	11	45	11
25	246	70	736	193	134	106	204	119	24	11	35	10
26	207	247	406	179	122	612	184	115	23	11	28	10
27	185	259	295	e120	158	435	167	99	22	10	23	9.7
28	181	178	247	196	170	343	259	89	18	9.5	32	8.4
29	164	143	240	170	---	352	278	82	15	10	36	24
30	131	123	264	124	---	382	218	75	14	9.8	33	28
31	122	---	220	107	---	401	---	71	---	10	27	---
TOTAL	6819	3887	10762	4441	3712	5822	10250	4585	1216	929.3	1004.3	488.1
MEAN	220	130	347	143	133	188	342	148	40.5	30.0	32.4	16.3
MAX	1610	361	800	231	305	612	870	350	103	141	120	46
MIN	27	70	152	84	76	98	167	71	14	9.5	8.6	8.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1997, BY WATER YEAR (WY)

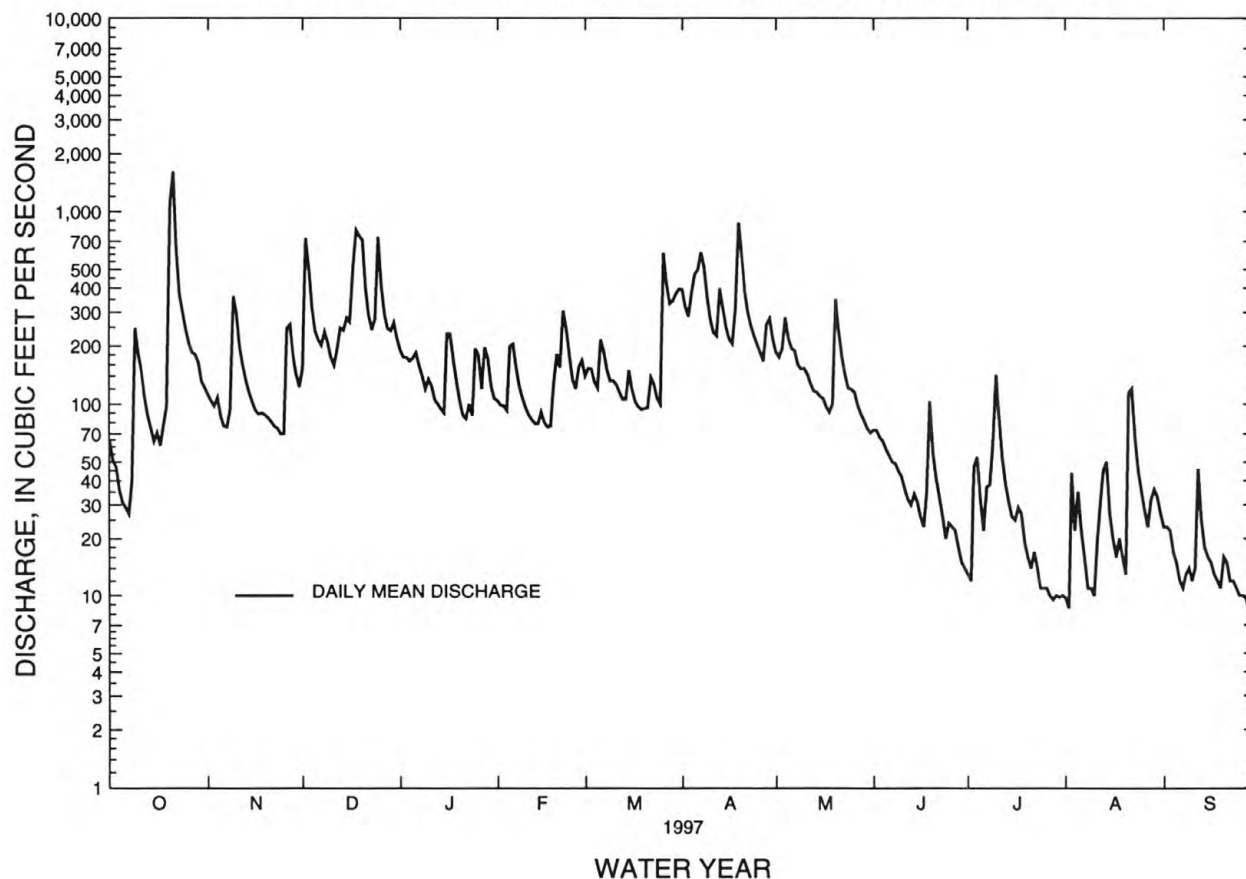
	MEAN	83.6	122	147	139	140	230	249	146	87.8	46.2	49.0	42.7
MAX	220	243	347	304	294	528	600	277	368	90.3	137	121	
(WY)	1997	1996	1997	1996	1984	1983	1987	1984	1982	1996	1991	1991	
MIN	24.7	31.3	43.6	24.6	34.6	84.1	84.1	63.2	30.4	13.9	11.0	8.33	
(WY)	1981	1979	1981	1981	1980	1989	1985	1985	1993	1993	1995	1995	

01094400 NORTH NASHUA RIVER AT FITCHBURG, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1973 - 1997	
ANNUAL TOTAL	66653.3		53915.7		123	
ANNUAL MEAN	182		148		169	
HIGHEST ANNUAL MEAN					59.5	
LOWEST ANNUAL MEAN					1973	
HIGHEST DAILY MEAN	1610	Oct 21	1610	Oct 21	2830	Apr 5 1987
LOWEST DAILY MEAN	8.8	Sep 2	8.4	Sep 28	2.7	Sep 5 1995
ANNUAL SEVEN-DAY MINIMUM	10	Aug 31	9.7	Jul 27	4.3	Aug 31 1995
INSTANTANEOUS PEAK FLOW			2160	Oct 21	3510	Apr 5 1987
INSTANTANEOUS PEAK STAGE			6.91	Oct 21	9.25	Apr 5 1987
INSTANTANEOUS LOW FLOW			6.0	Jun 24	1.5	Sep 11 1995
10 PERCENT EXCEEDS	373		309		261	
50 PERCENT EXCEEDS	118		104		80	
90 PERCENT EXCEEDS	18		15		23	

e Estimated

NORTH NASHUA RIVER AT FITCHBURG, MA 01094400



EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	unknown	*3,700	--	Mar. 26	1215	1,450	4.07
Dec. 2	unknown	1,800	--	Apr. 7	1630	1,190	3.67
Dec. 20	unknown	1,700	--	Apr. 19	1345	1,860	4.63
Dec. 25	unknown	1,600	--				

Minimum discharge, 26 ft³/s, Aug. 3, Sept. 28; minimum daily, 31 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	e220	e290	e370	e200	281	843	356	124	42	33	48
2	119	e210	e1400	e340	e190	300	677	330	126	40	32	48
3	120	195	e980	e330	e185	305	615	365	114	105	69	50
4	98	185	e630	e320	e180	261	842	553	105	114	65	46
5	90	174	e470	e330	e380	242	1050	412	97	60	67	42
6	85	157	e420	e350	e390	471	1070	359	92	48	48	39
7	84	146	e400	e310	e310	405	1140	351	88	54	41	38
8	106	e180	e450	e270	e240	313	987	293	84	65	37	39
9	483	e700	e400	e230	e210	275	699	275	80	90	36	40
10	304	e580	e340	e250	e195	275	546	279	78	274	34	39
11	253	e400	e310	e240	176	265	455	264	72	141	35	38
12	198	e310	e400	e210	165	240	425	236	65	90	72	88
13	171	260	e500	e200	156	215	818	214	61	66	99	54
14	154	226	e560	e190	155	212	629	209	65	58	88	49
15	136	202	e640	e180	200	333	482	195	61	54	54	44
16	135	181	e580	e450	163	255	410	192	57	52	47	41
17	128	169	e1000	e500	150	212	380	177	55	50	42	39
18	133	166	e1500	e350	155	203	651	164	67	63	49	38
19	157	166	e1450	e250	274	196	1610	184	252	45	42	37
20	e2300	161	e1400	e200	388	201	1210	656	102	40	38	41
21	e3100	153	e800	e170	310	210	793	432	77	41	202	43
22	e1300	146	e580	e160	610	292	593	303	64	43	190	35
23	e700	138	e470	e190	517	281	497	240	57	42	101	36
24	e580	134	e520	e170	359	235	433	203	55	39	74	34
25	e470	129	e1400	e370	269	217	389	199	51	38	62	33
26	e400	e500	e800	e340	241	1120	345	193	53	38	57	33
27	e360	e510	e580	e240	310	906	307	166	52	37	50	32
28	e350	e350	e480	e370	329	685	520	150	48	35	65	31
29	e310	e280	e460	e330	---	661	572	138	44	35	64	51
30	e260	e250	e500	e240	---	744	425	129	43	34	60	53
31	e240	---	e430	e210	---	804	---	122	---	34	52	---
TOTAL	13457	7578	21140	8660	7407	11615	20413	8339	2389	1967	2005	1279
MEAN	434	253	682	279	265	375	680	269	79.6	63.5	64.7	42.6
MAX	3100	700	1500	500	610	1120	1610	656	252	274	202	88
MIN	84	129	290	160	150	196	307	122	43	34	32	33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1997, BY WATER YEAR (WY)

MEAN	117	176	211	213	225	377	424	244	158	89.7	81.4	87.5
MAX	606	485	682	466	534	1289	1126	503	642	392	286	595
(WY)	1956	1956	1997	1996	1970	1936	1987	1984	1982	1938	1938	1938
MIN	39.4	44.4	58.6	50.3	63.7	140	133	85.4	64.3	36.5	35.8	32.6
(WY)	1942	1950	1966	1981	1980	1965	1985	1965	1964	1993	1995	1995

01094500 NORTH NASHUA RIVER NEAR LEOMINSTER, MA--Continued

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

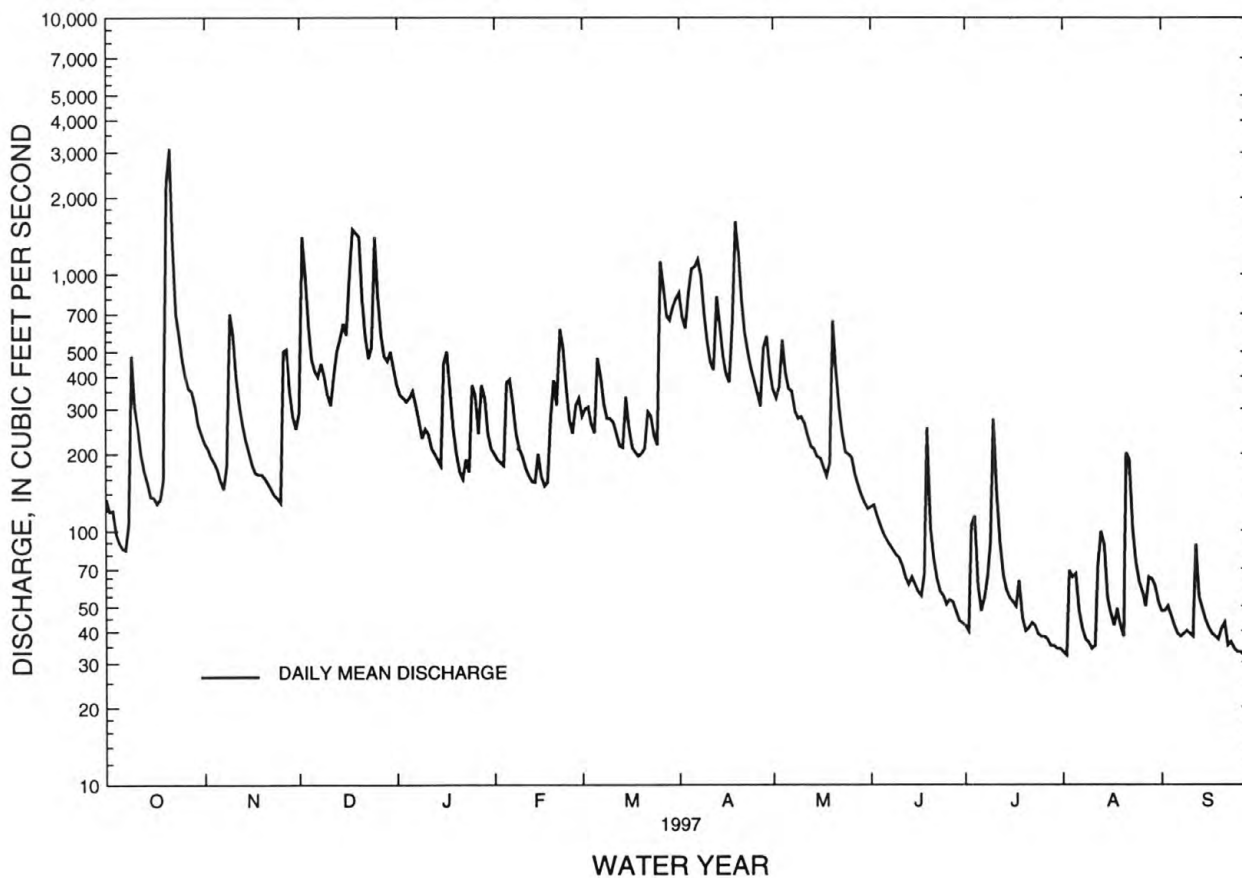
FOR 1997 WATER YEAR

WATER YEARS 1935 - 1997

ANNUAL TOTAL	127506		106249		200	
ANNUAL MEAN	348		291		307	1956
HIGHEST ANNUAL MEAN					81.2	1965
LOWEST ANNUAL MEAN					7530	Mar 18 1936
HIGHEST DAILY MEAN	3770	Apr 17	3100	Oct 21	22	Sep 27 1936
LOWEST DAILY MEAN	37	Sep 2	31	Sep 28	24	Aug 28 1993
ANNUAL SEVEN-DAY MINIMUM	39	Aug 31	33	Sep 22	16300	Mar 18 1936
INSTANTANEOUS PEAK FLOW			3700	Oct 21	20.53	Mar 18 1936
INSTANTANEOUS PEAK STAGE					11	Aug 29 1948
INSTANTANEOUS LOW FLOW			26	Aug 3	418	
10 PERCENT EXCEEDS	722		629		126	
50 PERCENT EXCEEDS	222		200		49	
90 PERCENT EXCEEDS	56		41			

e Estimated

NORTH NASHUA RIVER NEAR LEOMINSTER, MA 01094500



MERRIMACK RIVER BASIN

01095220 STILLWATER RIVER NEAR STERLING, MA

LOCATION.--Lat 42°24'39", long 71°47'30", Worcester County, Hydrologic Unit 01070004, on left bank at downstream side of bridge on Muddy Pond Road, 1.5 mi upstream of mouth and 2.5 mi southwest of Sterling.

DRAINAGE AREA.--31.6 mi².

PERIOD OF RECORD.--Low-flow partial-record measurements in water years 1971-73, 1991-93. April 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 400 ft above sea level, from topographic map.

REMARKS.--Records fair except those for estimated daily discharge, which are poor.

AVERAGE DISCHARGE.--3 years, 61.2 ft³/s, 26.32 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 890 ft³/s, Jan. 28, 1996, gage height, 8.50 ft from rating curve extended above 340 ft³/s; minimum, 0.14 ft³/s, Sept. 11, 12, 13, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	0200	a*665	*7.90	Mar. 26	2100	333	6.55
Dec. 2	2030	393	6.82	Apr. 7	1645	317	6.47
Dec. 20	0645	416	6.92	Apr. 19	1730	469	7.15
Dec. 25	1330	361	6.68				

a From rating curve extended above 340 ft³/s.

Minimum discharge, 0.61 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	54	67	e91	57	76	196	85	27	4.4	2.4	8.4
2	14	49	232	93	56	74	175	75	30	4.1	2.0	7.7
3	13	47	283	95	53	79	152	73	27	17	1.8	7.0
4	12	44	159	95	51	68	178	123	24	162	1.8	5.8
5	10	42	115	95	83	62	281	101	22	74	5.8	4.8
6	9.0	40	99	100	123	102	302	82	21	34	5.7	4.2
7	8.2	40	97	88	90	114	307	79	19	22	4.0	3.8
8	7.8	44	98	68	69	87	265	69	19	17	3.2	3.0
9	96	105	111	68	59	68	174	61	17	15	4.3	3.0
10	111	175	93	72	53	65	132	63	16	57	7.0	2.7
11	69	115	83	70	49	65	109	61	14	36	4.6	2.6
12	55	84	91	58	46	59	99	54	11	22	4.0	5.4
13	34	68	127	55	43	52	179	49	11	16	6.9	4.6
14	28	59	128	52	39	47	170	48	13	12	17	3.5
15	26	53	155	49	50	65	123	44	11	9.8	9.8	2.6
16	23	48	156	81	46	61	101	43	9.4	11	7.2	2.1
17	20	47	198	e125	41	50	98	43	8.7	8.4	5.2	1.8
18	20	47	360	e80	41	49	143	40	10	11	5.0	1.5
19	21	46	344	e59	65	48	386	44	26	9.8	4.3	1.2
20	275	45	384	52	107	49	362	100	24	7.7	3.8	1.1
21	577	43	243	48	83	51	248	92	18	6.7	19	1.2
22	318	40	168	48	134	67	166	65	14	7.0	55	1.1
23	180	37	137	61	140	72	125	52	11	6.2	30	.92
24	135	36	130	48	92	58	106	43	9.4	5.4	17	.95
25	106	35	305	88	65	52	94	41	9.5	5.4	12	.88
26	85	102	246	116	61	e200	84	44	9.0	5.2	9.2	.85
27	72	176	171	67	76	235	75	37	8.4	4.5	7.1	.83
28	68	107	136	88	94	145	94	32	7.2	4.0	9.3	.77
29	67	77	124	113	---	116	139	36	6.3	3.5	16	1.5
30	61	63	133	73	---	138	106	32	5.2	3.1	13	1.5
31	59	---	116	60	---	140	---	28	---	2.8	10	---
TOTAL	2599.0	1968	5289	2356	1966	2614	5169	1839	458.1	604.0	303.4	87.30
MEAN	83.8	65.6	171	76.0	70.2	84.3	172	59.3	15.3	19.5	9.79	2.91
MAX	577	176	384	125	140	235	386	123	30	162	55	8.4
MIN	7.8	35	67	48	39	47	75	28	5.2	2.8	1.8	.77
CFSM	2.65	2.08	5.40	2.41	2.22	2.67	5.45	1.88	.48	.62	.31	.09
IN.	3.06	2.32	6.23	2.77	2.31	3.08	6.09	2.16	.54	.71	.36	.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1997, BY WATER YEAR (WY)

	1994	1995	1996	1997	1994	1995	1996	1997	1994	1995	1996	1997
MEAN	46.1	65.9	105	110	78.8	92.6	126	63.7	18.0	17.6	12.2	11.6
MAX	83.8	106	171	157	120	105	172	85.0	22.1	34.4	29.1	22.5
(WY)	1997	1996	1997	1996	1996	1997	1997	1996	1996	1996	1994	1996
MIN	13.0	25.9	43.8	76.0	44.8	84.3	46.1	34.8	15.3	2.92	2.72	.92
(WY)	1995	1995	1996	1997	1995	1997	1995	1995	1997	1995	1995	1995

MERRIMACK RIVER BASIN

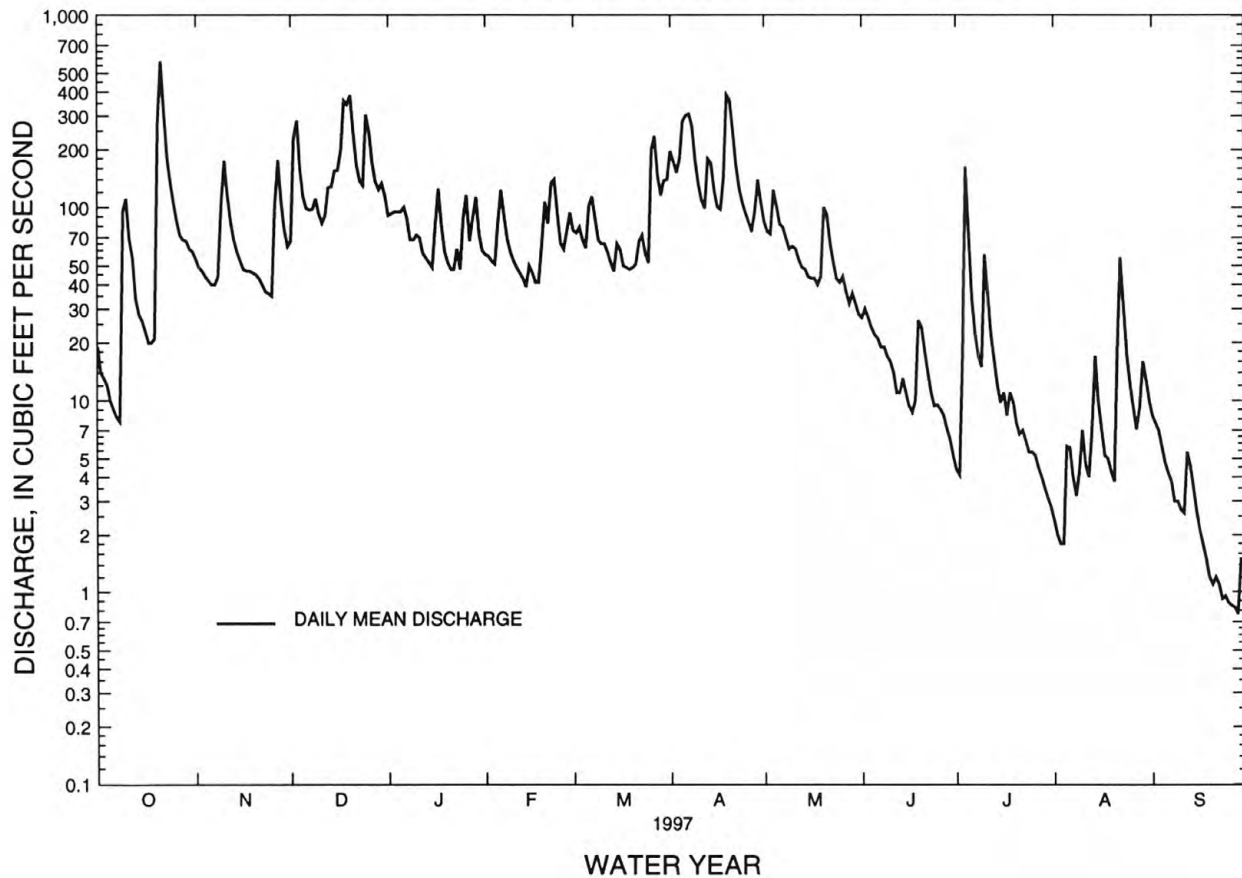
37

01095220 STILLWATER RIVER NEAR STERLING, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1994 - 1997	
ANNUAL TOTAL	31450.5		25252.80		61.2	
ANNUAL MEAN	85.9		69.2		74.9	
HIGHEST ANNUAL MEAN					39.5	
LOWEST ANNUAL MEAN					742	
HIGHEST DAILY MEAN	742	Jan 28	577	Oct 21	742	Jan 28 1996
LOWEST DAILY MEAN	1.2	Sep 6	.77	Sep 28	.24	Sep 12 1995
ANNUAL SEVEN-DAY MINIMUM	1.7	Sep 1	.90	Sep 22	.29	Sep 10 1995
INSTANTANEOUS PEAK FLOW			665	Oct 21	890	Jan 28 1996
INSTANTANEOUS PEAK STAGE			7.90	Oct 21	8.50	Jan 28 1996
INSTANTANEOUS LOW FLOW			.61	Sep 28	.14	Sep 11 1995
ANNUAL RUNOFF (CFSM)	2.72		2.19		1.94	
ANNUAL RUNOFF (INCHES)	37.02		29.73		26.32	
10 PERCENT EXCEEDS	177		155		128	
50 PERCENT EXCEEDS	59		51		38	
90 PERCENT EXCEEDS	5.5		4.3		3.1	

e Estimated

STILLWATER RIVER NEAR STERLING, MA 01095220



MERRIMACK RIVER BASIN

01095375 QUINAPOXET RIVER AT CANADA MILLS NEAR HOLDEN, MA

LOCATION.--Lat 42°22'22", long 71°49'43", Worcester County, Hydrologic Unit 01070004, on left bank, 300 ft upstream from bridge on Harris Street at Canada Mills, 2.1 mi north of Holden, MA, and about 3.5 mi upstream from mouth at Wachusett Reservoir.

DRAINAGE AREA.--44.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1996 to September 1997.

GAGE.--Water stage recorder. Elevation of gage is 560 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Quinapoxet Reservoir. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD NOVEMBER 1996 TO SEPTEMBER 1997.--Maximum discharge, 556 ft³/s, Apr. 19, gage height, 10.65 ft; minimum, 2.2 ft³/s, Sept. 20.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 21, 1996, reached a discharge of 890 ft³/s, gage height, 12.45 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
MEAN VALUES

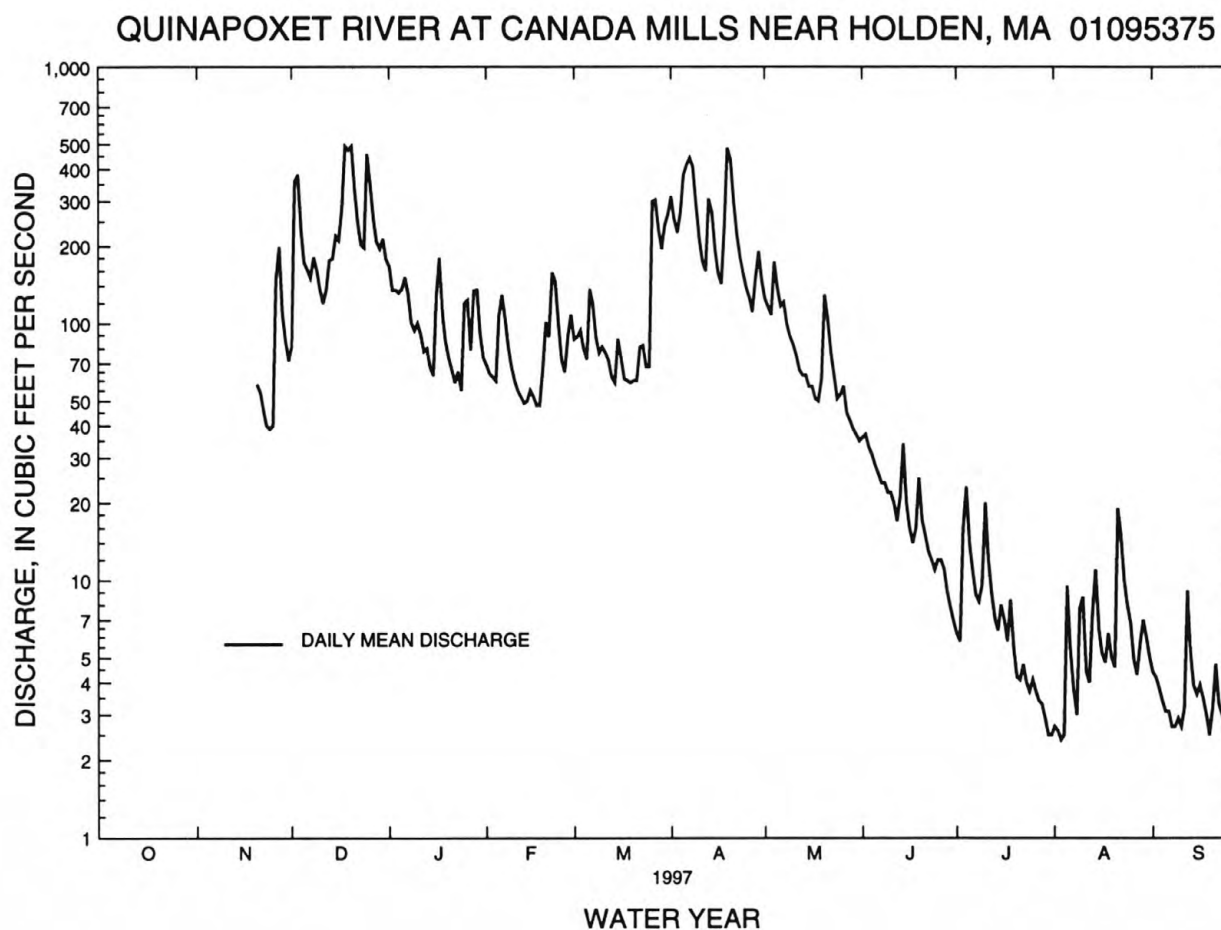
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	81	167	69	87	313	125	36	6.2	2.7	4.4
2	---	---	357	135	64	89	255	116	37	5.8	2.6	4.2
3	---	---	380	135	62	94	227	108	33	16	2.4	3.8
4	---	---	233	132	60	80	273	174	31	23	2.5	3.4
5	---	---	173	136	107	73	380	137	28	14	9.5	3.1
6	---	---	162	151	129	136	418	117	26	11	5.4	3.1
7	---	---	151	130	104	120	443	121	24	8.8	3.8	2.7
8	---	---	181	101	81	88	410	99	24	8.3	3.0	2.7
9	---	---	161	94	68	77	290	89	22	9.6	7.8	2.9
10	---	---	136	100	60	81	216	83	22	20	8.6	2.7
11	---	---	120	91	55	77	175	75	20	12	4.4	3.2
12	---	---	135	78	52	72	161	66	17	9.0	4.0	9.1
13	---	---	176	80	49	62	307	63	21	7.1	7.4	5.3
14	---	---	179	68	50	59	272	63	34	6.4	11	3.9
15	---	---	219	63	55	87	196	57	20	8.0	6.5	3.6
16	---	---	211	128	52	74	157	57	16	7.0	e5.2	3.9
17	---	---	287	e180	48	61	143	51	14	5.8	e4.8	3.5
18	---	---	492	e110	48	60	240	50	16	8.4	e6.2	3.0
19	---	---	476	e85	67	59	484	61	25	5.4	e5.0	2.5
20	---	e58	493	e74	101	60	439	129	17	4.2	e4.6	3.2
21	---	54	337	66	89	60	299	105	15	4.1	e19	4.7
22	---	46	250	59	158	81	223	77	13	4.7	e15	3.3
23	---	40	203	65	146	82	182	63	12	4.0	e10	3.0
24	---	39	198	55	99	68	158	51	11	3.7	e8.0	2.6
25	---	40	458	120	72	68	139	53	12	4.1	e6.8	2.5
26	---	148	347	123	65	300	126	57	12	3.7	4.9	e2.8
27	---	199	255	79	90	304	111	45	11	3.4	4.3	e2.6
28	---	110	208	134	108	231	149	42	9.0	3.3	5.7	e2.5
29	---	86	196	135	---	196	191	39	7.8	2.9	7.0	e2.9
30	---	72	213	91	---	243	147	37	6.9	2.5	6.0	e3.4
31	---	---	178	74	---	268	---	35	---	2.5	5.0	---
TOTAL	---	---	7646	3239	2208	3497	7524	2445	592.7	234.9	199.1	104.5
MEAN	---	---	247	104	78.9	113	251	78.9	19.8	7.58	6.42	3.48
MAX	---	---	493	180	158	304	484	174	37	23	19	9.1
MIN	---	---	81	55	48	59	111	35	6.9	2.5	2.4	2.5
CFSM	---	---	5.56	2.35	1.78	2.54	5.65	1.78	.44	.17	.14	.08
IN.	---	---	6.41	2.71	1.85	2.93	6.30	2.05	.50	.20	.17	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1997, BY WATER YEAR (WY)

MEAN	---	---	247	104	78.9	113	251	78.9	19.8	7.58	6.42	3.48
MAX	---	---	247	104	78.9	113	251	78.9	19.8	7.58	6.42	3.48
(WY)	---	---	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
MIN	---	---	247	104	78.9	113	251	78.9	19.8	7.58	6.42	3.48
(WY)	---	---	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997

e Estimated

01095375 QUINAPOXET RIVER AT CANADA MILLS NEAR HOLDEN, MA--Continued



MERRIMACK RIVER BASIN

01095375 QUINAPOXET RIVER AT CANADA MILLS NEAR HOLDEN, MA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--April to September 1997.

INSTRUMENTATION.--Specific Conductance and Temperature water-quality monitor.

REMARKS.--Interruptions in the record are due to malfunctions of the instrument. Extremes for period of daily record and current year are for those values reported.

EXTREMES FOR PERIOD OF DAILY RECORD, APRIL TO SEPTEMBER 1997.--

SPECIFIC CONDUCTANCE: Maximum recorded, 361 us/cm, Aug. 15; minimum, 79 us/cm, Apr. 19.

WATER TEMPERATURE: Maximum recorded, 24.1°C, Aug. 12; minimum, 4.0°C, Apr. 11.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	116	112	114
2	---	---	---	---	---	---	---	---	---	125	113	117
3	---	---	---	---	---	---	---	---	---	125	111	118
4	---	---	---	---	---	---	---	---	---	113	105	110
5	---	---	---	---	---	---	---	---	---	119	108	112
6	---	---	---	---	---	---	106	99	102	116	111	113
7	---	---	---	---	---	---	106	97	100	123	110	114
8	---	---	---	---	---	---	108	98	102	123	112	116
9	---	---	---	---	---	---	113	105	108	124	121	123
10	---	---	---	---	---	---	113	107	110	126	122	124
11	---	---	---	---	---	---	118	109	112	125	119	122
12	---	---	---	---	---	---	116	110	114	128	125	126
13	---	---	---	---	---	---	113	96	103	135	127	130
14	---	---	---	---	---	---	112	97	105	134	126	130
15	---	---	---	---	---	---	116	104	109	132	129	131
16	---	---	---	---	---	---	123	105	112	133	127	130
17	---	---	---	---	---	---	114	111	113	135	130	133
18	---	---	---	---	---	---	114	97	107	135	129	132
19	---	---	---	---	---	---	97	79	85	138	126	132
20	---	---	---	---	---	---	101	80	89	126	108	114
21	---	---	---	---	---	---	106	97	100	125	112	117
22	---	---	---	---	---	---	119	102	110	126	115	121
23	---	---	---	---	---	---	120	102	107	131	120	125
24	---	---	---	---	---	---	121	109	112	136	129	132
25	---	---	---	---	---	---	112	109	110	136	127	131
26	---	---	---	---	---	---	120	109	113	129	121	125
27	---	---	---	---	---	---	123	115	119	138	125	135
28	---	---	---	---	---	---	119	106	112	137	133	135
29	---	---	---	---	---	---	113	104	109	141	133	137
30	---	---	---	---	---	---	116	108	112	146	138	143
31	---	---	---	---	---	---	---	---	---	145	139	142
MONTH	---	---	---	---	---	---	---	---	---	146	105	125

MERRIMACK RIVER BASIN

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01095375 QUINAPOXET RIVER AT CANADA MILLS NEAR HOLDEN, MA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	142	138	140	128	105	109	---	---	---	256	246	251
2	144	134	138	261	110	181	---	---	---	287	246	265
3	145	142	144	232	187	206	---	---	---	265	253	261
4	149	144	146	201	187	194	---	---	---	275	263	269
5	151	145	148	217	201	208	---	---	---	278	232	265
6	154	149	152	220	214	217	351	302	330	240	222	231
7	157	154	155	225	220	222	303	289	296	248	235	243
8	157	154	156	229	222	225	301	287	296	256	247	251
9	161	154	157	229	203	224	313	292	304	256	243	253
10	161	152	157	203	173	183	318	301	309	261	250	257
11	163	153	159	219	189	202	312	296	303	272	256	266
12	174	160	167	215	207	210	326	311	318	257	238	244
13	184	148	177	279	213	231	334	324	329	292	255	282
14	162	148	158	---	---	---	351	333	342	286	258	273
15	180	162	173	---	---	---	361	330	349	258	247	254
16	186	179	183	---	---	---	---	---	---	264	253	258
17	191	186	188	---	---	---	---	---	---	271	258	266
18	193	171	188	---	---	---	---	---	---	281	267	276
19	178	161	171	---	---	---	---	---	---	280	254	272
20	188	178	183	---	---	---	---	---	---	273	248	262
21	193	187	189	---	---	---	---	---	---	266	235	254
22	199	192	195	---	---	---	---	---	---	244	232	240
23	205	199	202	---	---	---	---	---	---	250	232	241
24	210	205	207	---	---	---	---	---	---	237	220	231
25	212	201	206	---	---	---	---	---	---	230	222	227
26	207	202	205	---	---	---	279	262	269	---	---	---
27	212	206	209	---	---	---	266	253	258	---	---	---
28	217	207	212	---	---	---	255	252	254	---	---	---
29	219	210	216	---	---	---	257	251	254	---	---	---
30	217	109	173	---	---	---	255	249	253	---	---	---
31	---	---	---	---	---	---	258	253	256	---	---	---
MONTH	219	109	175	---	---	---	---	---	---	---	---	---

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	13.6	10.4	12.0
2	---	---	---	---	---	---	---	---	---	14.4	10.6	12.3
3	---	---	---	---	---	---	---	---	---	11.6	10.3	10.9
4	---	---	---	---	---	---	---	---	---	14.0	10.9	12.0
5	---	---	---	---	---	---	---	---	---	14.7	9.6	11.9
6	---	---	---	---	---	---	6.2	5.5	5.8	12.1	10.5	11.4
7	---	---	---	---	---	---	9.6	5.9	7.4	12.7	9.5	10.8
8	---	---	---	---	---	---	8.5	6.3	7.2	14.2	8.7	11.2
9	---	---	---	---	---	---	7.5	5.1	6.1	11.3	9.9	10.3
10	---	---	---	---	---	---	7.4	4.1	5.4	11.2	9.8	10.4
11	---	---	---	---	---	---	8.1	4.0	5.8	13.2	9.2	10.9
12	---	---	---	---	---	---	7.8	5.4	6.3	16.1	9.8	12.6
13	---	---	---	---	---	---	7.6	6.0	6.7	13.6	11.4	12.5
14	---	---	---	---	---	---	9.1	6.1	7.3	15.8	11.2	13.3
15	---	---	---	---	---	---	9.8	5.7	7.5	15.8	11.6	13.6
16	---	---	---	---	---	---	10.6	6.1	8.2	14.0	11.4	13.0
17	---	---	---	---	---	---	9.1	7.9	8.5	13.8	10.2	11.9
18	---	---	---	---	---	---	8.6	7.6	8.2	15.9	10.1	12.8
19	---	---	---	---	---	---	7.6	6.5	6.7	13.2	11.8	12.2
20	---	---	---	---	---	---	9.4	6.1	7.7	15.6	11.4	13.1
21	---	---	---	---	---	---	10.3	7.9	9.0	14.8	11.8	13.2
22	---	---	---	---	---	---	11.1	8.2	9.6	14.7	11.2	12.8
23	---	---	---	---	---	---	11.6	8.6	10.1	15.7	10.9	13.0
24	---	---	---	---	---	---	10.1	8.5	9.2	15.6	11.1	13.4
25	---	---	---	---	---	---	9.8	7.9	8.7	14.1	13.2	13.6
26	---	---	---	---	---	---	11.9	7.2	9.3	17.2	13.0	14.7
27	---	---	---	---	---	---	13.5	7.6	10.3	16.1	11.7	13.8
28	---	---	---	---	---	---	10.8	9.0	9.4	17.8	11.9	14.8
29	---	---	---	---	---	---	12.8	8.5	10.2	18.8	14.0	16.3
30	---	---	---	---	---	---	14.6	8.7	11.4	16.5	13.9	15.2
31	---	---	---	---	---	---	---	---	---	17.8	14.4	16.1
MONTH	---	---	---	---	---	---	---	---	---	18.8	8.7	12.8

MERRIMACK RIVER BASIN

01095375 QUINAPOXET RIVER AT CANADA MILLS NEAR HOLDEN, MA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

[illegible]



Hydrologic Technician measures ground-water level in an observation well on Cape Cod.

MERRIMACK RIVER BASIN

01096000 SQUANNACOOK RIVER NEAR WEST GROTON, MA

LOCATION.--Lat 42°38'03", long 71°39'30", Middlesex County, Hydrologic Unit 01070004, on left bank 0.7 mi downstream from Trout Brook and 2.7 mi northwest of West Groton.

DRAINAGE AREA.--63.7 mi², excludes 2.16 mi², above outlet of Ashby Reservoir.

PERIOD OF RECORD.--Discharge: October 1949 to current year.
Water-quality records: Water year 1957.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 244.27 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional regulation at low flow by mill upstream; regulation greater prior to 1961. Entire flow from 2.16 mi² upstream from outlet of Ashby Reservoir diverted for municipal supply of Fitchburg except for occasional periods of spill. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--48 years, 113 ft³/s, 24.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,220 ft³/s, Apr. 6, 1987, gage height, 8.16 ft; minimum daily, 2.0 ft³/s, Sept. 7, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	1830	*3,330	*7.62	Mar. 27	0445	704	4.82
Dec. 3	0400	771	4.98	Apr. 20	0400	1,120	5.58
Dec. 18	1400	853	5.14				

Minimum discharge, 10 ft³/s, Aug. 11, Sept. 24, 25, 26, 28, 29; minimum daily, 10 ft³/s, Sept. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	e135	131	211	112	170	504	229	77	19	13	21
2	29	122	335	198	108	161	432	200	76	19	12	21
3	27	115	656	200	104	189	388	182	73	26	11	20
4	23	107	364	196	102	169	413	263	69	32	11	20
5	21	103	246	188	132	149	570	270	61	28	13	19
6	20	96	206	215	229	213	606	210	57	25	12	17
7	19	91	197	204	201	304	584	198	55	23	11	17
8	19	99	191	160	151	225	539	181	53	23	11	16
9	85	140	225	161	126	173	412	160	50	27	11	16
10	143	342	193	156	115	166	318	163	46	61	11	16
11	99	235	171	166	108	161	264	163	42	57	11	15
12	73	163	177	141	101	148	236	148	35	40	13	16
13	57	135	270	128	96	124	311	134	35	30	15	16
14	47	119	292	122	88	128	377	127	34	27	20	16
15	39	110	321	116	97	135	283	121	33	25	17	16
16	35	101	349	149	96	149	236	115	32	23	15	15
17	32	97	382	254	88	127	209	107	29	21	15	15
18	30	97	736	226	86	120	253	101	29	21	16	14
19	28	99	680	162	105	115	665	100	55	20	15	14
20	195	96	747	114	213	116	951	266	53	18	14	13
21	2410	95	558	108	212	122	556	403	43	18	20	12
22	1610	89	381	105	355	145	387	235	35	18	64	11
23	637	85	291	125	459	171	308	169	30	17	59	11
24	411	80	271	117	282	147	259	140	28	16	39	10
25	311	76	469	138	175	132	220	127	28	16	30	10
26	229	134	545	230	168	327	206	127	27	15	27	11
27	191	324	351	194	163	641	185	116	25	15	25	11
28	173	222	281	142	186	459	203	103	24	15	23	11
29	160	157	253	164	---	402	371	95	22	14	23	12
30	148	131	276	146	---	474	308	86	21	13	23	13
31	e140	---	269	117	---	470	---	81	---	13	22	---
TOTAL	7474	3995	10814	5053	4458	6732	11554	5120	1277	735	622	445
MEAN	241	133	349	163	159	217	385	165	42.6	23.7	20.1	14.8
MAX	2410	342	747	254	459	641	951	403	77	61	64	21
MIN	19	76	131	105	86	115	185	81	21	13	11	10
CFSM	3.78	2.09	5.48	2.56	2.50	3.41	6.05	2.59	.67	.37	.31	.23
IN.	4.36	2.33	6.32	2.95	2.60	3.93	6.75	2.99	.75	.43	.36	.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1997, BY WATER YEAR (WY)

MEAN	55.8	102	126	123	131	224	278	148	78.2	36.7	29.3	31.2
MAX	296	304	349	323	328	554	654	343	315	84.7	98.8	245
(WY)	1956	1956	1997	1956	1970	1983	1987	1954	1982	1951	1986	1954
MIN	9.41	12.6	22.7	20.1	33.6	81.5	75.8	51.9	21.0	8.26	6.21	6.80
(WY)	1965	1965	1966	1981	1980	1989	1985	1965	1965	1965	1966	1965

MERRIMACK RIVER BASIN

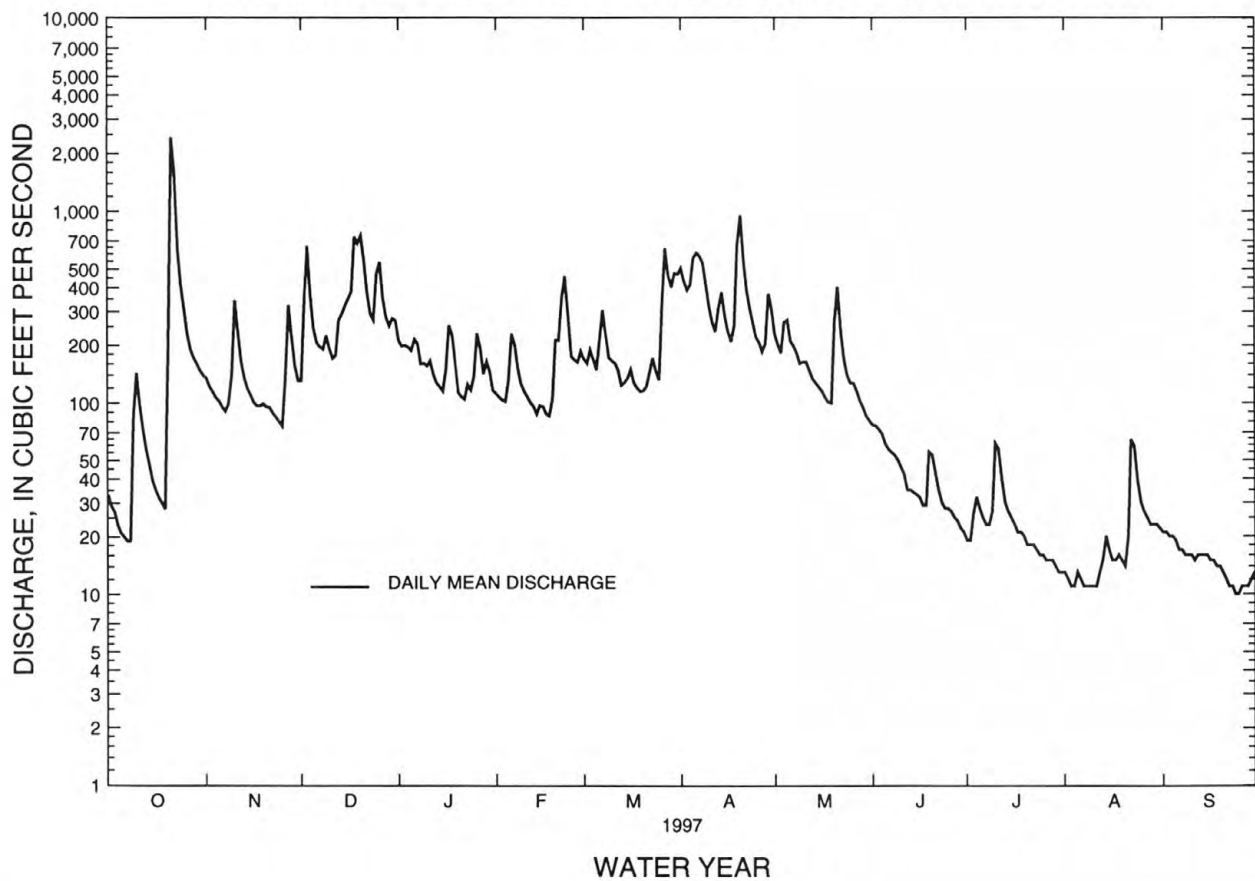
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01096000 SQUANNACOOK RIVER NEAR WEST GROTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1950 - 1997	
ANNUAL TOTAL	68279		58279		113	
ANNUAL MEAN	187		160		174	
HIGHEST ANNUAL MEAN					35.9	
LOWEST ANNUAL MEAN					1956	
HIGHEST DAILY MEAN	2410	Oct 21	2410	Oct 21	3420	Apr 6 1987
LOWEST DAILY MEAN	10	Sep 5	10	Sep 24	2.0	Sep 7 1965
ANNUAL SEVEN-DAY MINIMUM	11	Aug 30	11	Sep 22	4.3	Aug 28 1966
INSTANTANEOUS PEAK FLOW			3330	Oct 21	4220	Apr 6 1987
INSTANTANEOUS PEAK STAGE			7.62	Oct 21	8.16	Apr 6 1987
INSTANTANEOUS LOW FLOW			10	Aug 11		
ANNUAL RUNOFF (CFSM)	2.93		2.51		1.78	
ANNUAL RUNOFF (INCHES)	39.87		34.03		24.17	
10 PERCENT EXCEEDS	392		359		257	
50 PERCENT EXCEEDS	114		115		69	
90 PERCENT EXCEEDS	17		15		15	

e Estimated

SQUANNACOOK RIVER NEAR WEST GROTON, MA 01096000



MERRIMACK RIVER BASIN

01096500 NASHUA RIVER AT EAST PEPPERELL, MA

LOCATION.--Lat 42°40'03", long 71°34'32", Middlesex County, Hydrologic Unit 01070004, on right bank 200 ft downstream from powerplant of James River-Pepperell Co. at East Pepperell and 0.8 mi upstream from Nissitissit River.

DRAINAGE AREA.--Total above gage, 435 mi², net above gage, 316 mi², excludes 119 mi² for use of Boston metropolitan district and city of Worcester.

PERIOD OF RECORD.--Discharge: October 1935 to current year.
Water-quality records: Water years 1952-53, 1973-74.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 169.04 ft above sea level.

REMARKS.--Records good. Extremes and daily discharge include water released while diverting flow of Nashua River for use of Boston metropolitan district and water diverted into basin from Ware River basin since 1955 for municipal use of Fitchburg. Prior to October 1981, water diverted around station through plant of James River-Pepperell Co. was added to daily figures. Flow regulated by powerplant immediately upstream. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--62 years, 584 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,900 ft³/s, Mar. 20, 1936, gage height, 19.1 ft, from floodmarks, from rating curve extended above 12,000 ft³/s on basis of velocity-area studies; minimum daily, 1.1 ft³/s, Aug. 13, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,790 ft³/s, Oct. 22, gage height, 10.16 ft; minimum daily, 21 ft³/s, Aug. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	516	802	781	1340	756	907	1950	1400	414	150	111	93
2	313	740	986	1210	747	877	2020	1220	409	150	143	110
3	226	713	1850	1150	630	888	1920	1120	406	117	89	68
4	248	662	2030	1130	539	891	1840	1180	404	68	110	74
5	247	625	1510	1100	551	839	2070	1320	397	245	197	78
6	244	539	1120	1090	1040	882	2350	1210	391	232	97	83
7	199	551	921	1080	1130	1130	2440	1110	252	446	21	87
8	160	537	963	986	925	1120	2370	1030	203	342	38	91
9	271	558	1150	910	811	973	2230	881	204	201	136	148
10	748	987	1120	871	688	894	1930	934	226	205	204	189
11	771	1090	1010	913	655	870	1640	874	233	323	154	184
12	712	904	972	906	651	844	1450	830	238	378	152	170
13	584	771	1100	883	600	818	1520	790	240	240	156	165
14	483	694	1270	840	579	811	1760	780	247	213	174	165
15	389	596	1370	783	533	805	1770	768	248	214	188	163
16	285	599	1510	712	571	813	1530	572	218	201	175	160
17	174	587	1620	1070	572	816	1350	505	203	131	130	124
18	58	457	2040	1010	514	808	1410	509	170	47	57	137
19	60	456	2600	891	492	797	2130	511	159	230	122	162
20	782	476	2770	805	645	664	3140	681	268	128	149	102
21	3690	492	2760	656	1020	537	3460	1220	306	181	87	64
22	5660	499	2470	641	912	608	2950	1140	301	143	121	128
23	4870	485	1990	641	1370	845	2370	913	258	92	319	156
24	3090	463	1670	641	1380	903	1970	717	246	167	346	118
25	1950	522	1700	721	1060	715	1720	659	241	125	364	60
26	1380	531	2090	1050	878	1010	1570	648	240	48	301	63
27	1160	1020	2200	1020	825	1770	1430	645	197	51	229	65
28	1060	1190	1890	874	879	2100	1310	635	157	133	194	67
29	987	983	1650	989	---	1780	1480	510	153	166	155	127
30	901	840	1510	921	---	1660	1610	437	149	128	60	125
31	849	---	1470	793	---	1760	---	419	---	47	79	---
TOTAL	33067	20369	50093	28627	21953	31135	58690	26168	7778	5542	4858	3526
MEAN	1067	679	1616	923	784	1004	1956	844	259	179	157	118
MAX	5660	1190	2770	1340	1380	2100	3460	1400	414	446	364	189
MIN	58	456	781	641	492	537	1310	419	149	47	21	60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1997, BY WATER YEAR (WY)

	321	489	612	616	674	1130	1270	729	476	252	216	234
MEAN	321	489	612	616	674	1130	1270	729	476	252	216	234
MAX	1356	1781	1616	1417	1544	3930	3676	1382	1976	1366	966	1671
(WY)	1956	1956	1997	1979	1970	1936	1987	1953	1982	1938	1938	1938
MIN	91.1	108	134	116	186	386	369	236	154	90.0	71.3	76.4
(WY)	1942	1965	1966	1981	1980	1989	1985	1965	1941	1966	1966	1995

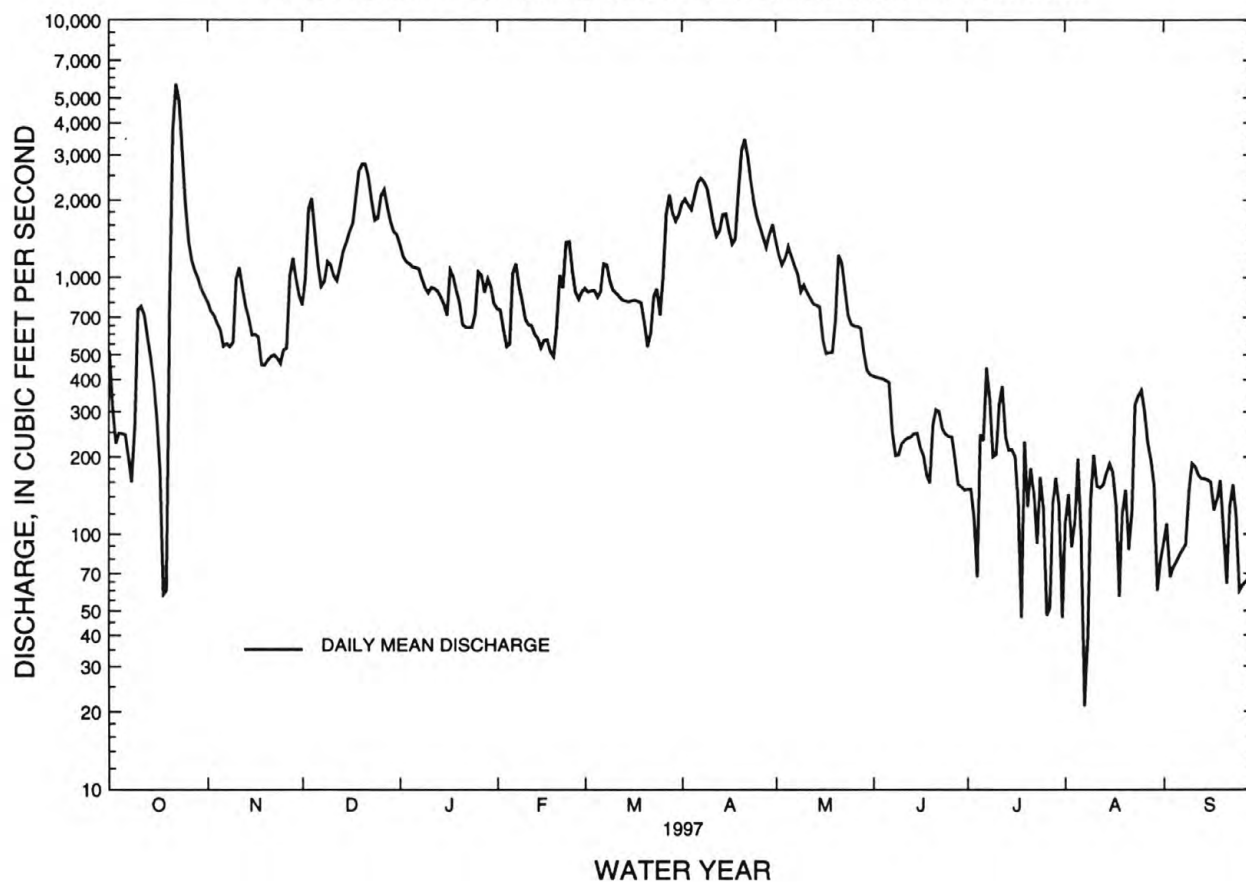
MERRIMACK RIVER BASIN

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01096500 NASHUA RIVER AT EAST PEPPERELL, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1936 - 1997	
ANNUAL TOTAL	364315		291806		584	
ANNUAL MEAN	995		799		969	1956
HIGHEST ANNUAL MEAN					214	1965
LOWEST ANNUAL MEAN					19400	Mar 20 1936
HIGHEST DAILY MEAN	5890	Apr 18	5660	Oct 22	1.1	Aug 13 1939
LOWEST DAILY MEAN	58	Oct 18	21	Aug 7	14	Aug 1 1965
ANNUAL SEVEN-DAY MINIMUM	101	Aug 28	80	Aug 30	20900	Mar 20 1936
INSTANTANEOUS PEAK FLOW			5790	Oct 22	19.10	Mar 20 1936
INSTANTANEOUS PEAK STAGE			10.16	Oct 22		
INSTANTANEOUS LOW FLOW			17	Aug 7		
10 PERCENT EXCEEDS	2110		1760		1260	
50 PERCENT EXCEEDS	753		655		369	
90 PERCENT EXCEEDS	150		123		98	

NASHUA RIVER AT EAST PEPPERELL, MA 01096500



MERRIMACK RIVER BASIN

01097000 ASSABET RIVER AT MAYNARD, MA

LOCATION.--Lat 42°25'55", long 71°27'01", Middlesex County, Hydrologic Unit 01070005, on right bank at Maynard, 150 ft upstream from bridge on State Highway 27, 1.7 mi downstream from Assabet Brook, and 7.1 mi upstream from confluence with Sudbury River.

DRAINAGE AREA.--116 mi².

PERIOD OF RECORD.--Discharge: July 1941 to current year.
Water-quality records: Water years 1954, 1967-74.

REVISED RECORDS.--WSP 1231: 1945-46.

GAGE.--Water-stage recorder. Datum of gage is 142.12 ft above sea level.

REMARKS.--Records good. Occasional diurnal fluctuation at low flow by mills upstream; greater regulation prior to 1969. Since 1962, high flow affected by retarding reservoirs and, since 1970, occasional release at low flow by these reservoirs.

AVERAGE DISCHARGE.--56 years, 190 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,250 ft³/s, Aug. 20, 1955, gage height, 8.94 ft; maximum gage height, 8.96 ft, Aug. 20, 1955 (backwater from debris); minimum daily, 0.20 ft³/s, Feb. 7, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1886, that of Aug. 20, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,590 ft³/s, Oct. 21, gage height, 5.52 ft; maximum gage height, 5.54 ft, Oct. 22; minimum daily discharge, 20 ft³/s, Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	262	247	364	243	237	542	421	124	33	23	26
2	137	235	311	333	225	232	575	375	124	32	22	25
3	103	213	465	331	221	230	628	341	120	45	22	25
4	77	193	525	330	225	229	685	332	108	94	22	25
5	70	181	445	335	286	220	817	326	99	91	22	24
6	65	172	384	337	412	272	922	305	94	68	22	23
7	65	166	363	320	425	325	908	282	89	52	21	21
8	66	170	382	277	363	312	827	263	86	43	21	21
9	203	190	400	254	300	268	717	247	82	39	32	21
10	279	209	406	241	253	252	623	246	77	58	54	21
11	286	205	378	247	226	258	549	248	71	57	30	22
12	239	183	370	234	211	260	495	230	66	49	23	34
13	193	161	399	212	200	242	567	209	69	41	25	33
14	158	143	440	202	195	225	643	210	108	38	37	27
15	146	130	487	190	222	279	597	205	102	33	31	24
16	132	123	528	227	248	338	504	200	81	32	26	25
17	118	119	574	320	232	326	446	189	68	33	22	23
18	123	119	765	280	213	285	510	183	64	37	25	23
19	111	123	935	243	219	263	848	186	86	31	25	23
20	405	124	1070	201	250	256	1140	283	100	28	20	25
21	1400	121	1020	177	262	257	1030	334	87	27	30	34
22	1480	116	852	173	274	275	829	298	72	27	73	26
23	1210	111	718	199	303	297	697	240	60	26	78	24
24	942	106	654	202	290	283	611	200	55	26	70	23
25	725	104	662	277	246	252	545	179	51	26	49	27
26	589	192	672	391	219	298	488	176	51	25	36	23
27	500	371	613	361	221	398	435	169	48	25	29	23
28	429	437	538	353	239	415	424	153	44	26	26	22
29	377	362	485	380	---	364	470	142	39	24	28	33
30	338	280	455	341	---	375	478	132	34	24	31	31
31	301	---	423	284	---	423	---	126	---	23	28	---
TOTAL	11426	5621	16966	8616	7223	8946	19550	7430	2359	1213	1003	757
MEAN	369	187	547	278	258	289	652	240	78.6	39.1	32.4	25.2
MAX	1480	437	1070	391	425	423	1140	421	124	94	78	34
MIN	65	104	247	173	195	220	424	126	34	23	20	21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1997, BY WATER YEAR (WY)

	MEAN	192.6	153	199	220	246	402	388	236	148	71.8	61.7	63.8
MAX	375	542	547	670	696	776	1053	443	788	254	561	542	
(WY)	1956	1956	1997	1979	1970	1983	1987	1954	1982	1959	1955	1954	
MIN	9.92	22.1	35.6	37.6	72.5	143	127	114	39.0	11.6	5.18	5.00	
(WY)	1958	1950	1950	1966	1965	1989	1966	1986	1949	1966	1966	1957	

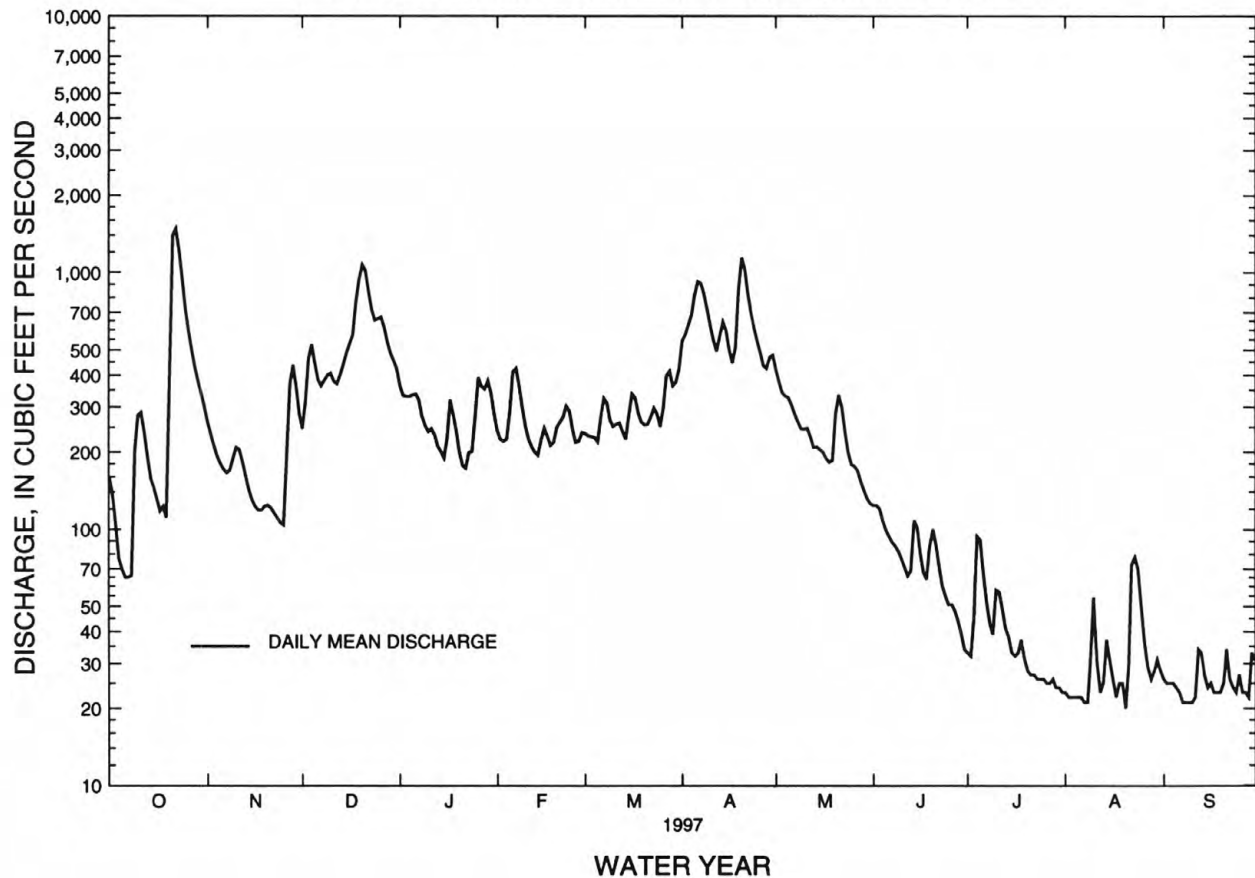
MERRIMACK RIVER BASIN

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01097000 ASSABET RIVER AT MAYNARD, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1941 - 1997	
ANNUAL TOTAL	121294		91110		190	
ANNUAL MEAN	331		250		296	
HIGHEST ANNUAL MEAN					73.3	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	1550	Jan 29	1480	Oct 22	3650	Aug 20 1955
LOWEST DAILY MEAN	29	Sep 10	20	Aug 20	.20	Feb 7 1965
ANNUAL SEVEN-DAY MINIMUM	37	Sep 4	22	Aug 2	1.0	Feb 2 1965
INSTANTANEOUS PEAK FLOW			1590	Oct 21	4250	Aug 20 1955
INSTANTANEOUS PEAK STAGE			5.54	Oct 22	8.96	Aug 20 1955
INSTANTANEOUS LOW FLOW			19	Aug 20		
10 PERCENT EXCEEDS	707		547		422	
50 PERCENT EXCEEDS	254		209		128	
90 PERCENT EXCEEDS	68		25		25	

ASSABET RIVER AT MAYNARD, MA 01097000



MERRIMACK RIVER BASIN

01097300 NASHOBA BROOK NEAR ACTON, MA

LOCATION.--Lat 42°30'45" (revised), long 71°24'17" (revised), Middlesex County, Hydrologic Unit 01070005, on right bank 500 ft downstream from dam at North Acton, 2.2 mi northeast of Acton, and 5 mi upstream from mouth. Prior to Jan. 8, 1997, lat. 42°30'39", long 71°24'25", on right bank 1,500 ft downstream from dam at North Acton.

DRAINAGE AREA.--12.8 mi².

PERIOD OF RECORD.--Discharge: Occasional low-flow measurements, water years 1962-63. July 1963 to current year. Water quality records: Water years 1972-74, 1976-78.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 155 ft above sea level, from topographic map. Prior to Jan. 8, 1997, at site 1,000 ft downstream, at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Backwater from beaver dam, Oct. 1 to Jan. 8. Occasional regulation since 1967 by pond upstream.

AVERAGE DISCHARGE.--34 years, 20.7 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 679 ft³/s, Jan. 26, 1979, gage height, 5.57 ft, at former site; maximum gage height, 5.96 ft, Apr. 19, 1997; maximum gage height at new location, 5.96 ft, Apr. 19, 1997; minimum discharge, 0.01 ft³/s, Sept. 4, 7, 8, 12, 13, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 665 ft³/s, Oct. 21; gage height, 5.55 ft; maximum gage height, 5.96 ft, Apr. 19; minimum discharge, 0.29 ft³/s, Aug. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e15	32	27	28	17	25	41	33	9.0	1.0	.39	.73
2	e9.0	29	38	26	17	23	63	29	8.9	.94	.33	.68
3	e6.4	27	58	27	18	24	69	26	8.4	1.3	.32	.63
4	e5.5	25	45	29	19	22	75	30	7.6	8.2	.51	.63
5	e4.8	23	35	30	23	21	99	29	7.0	11	.68	.63
6	e4.5	22	32	32	47	30	93	24	6.7	5.0	.87	.59
7	e4.2	21	34	30	38	39	79	24	6.0	3.1	.90	.58
8	e4.5	20	34	23	28	30	63	22	5.6	2.4	.82	.57
9	e20	23	46	21	23	24	49	22	5.2	2.1	.75	.55
10	e35	28	49	21	20	22	41	22	4.8	3.8	.71	.52
11	e30	25	41	22	19	25	37	21	4.2	4.7	.64	.52
12	e23	21	39	20	17	24	34	19	3.8	3.2	.60	.63
13	e16	19	45	18	16	21	48	17	3.4	2.1	.66	.62
14	e11	16	47	17	15	20	56	21	3.4	1.7	1.3	.57
15	e8.0	14	52	16	20	25	41	19	3.1	1.4	1.7	.53
16	e7.0	13	55	20	23	32	34	17	2.6	1.4	1.4	.51
17	e6.4	13	61	32	19	28	32	16	2.3	1.4	1.0	.49
18	e6.2	13	89	24	18	25	43	16	4.3	1.4	.94	.48
19	e6.0	14	84	16	21	23	121	18	9.2	1.3	.90	.47
20	e35	14	93	13	29	23	135	29	7.2	1.1	.80	.46
21	e510	13	74	13	27	25	82	34	4.6	1.0	1.0	.50
22	516	12	56	13	32	30	56	23	3.2	.96	2.5	.52
23	236	10	48	18	38	34	46	18	2.5	.84	3.1	.54
24	115	9.8	45	17	31	28	41	15	2.1	.76	2.0	.51
25	80	9.5	56	24	23	24	36	15	2.0	.72	1.4	.45
26	62	25	56	41	20	40	33	15	1.8	.64	1.1	.43
27	51	64	46	28	22	66	30	14	1.6	.62	.95	.42
28	45	52	39	24	28	47	31	12	1.5	.56	.84	.38
29	41	36	36	35	---	38	45	11	1.3	.53	.80	.46
30	37	29	37	27	---	38	39	10	1.1	.49	.77	.52
31	35	---	33	20	---	40	---	9.5	---	.43	.76	---
TOTAL	1985.5	672.3	1530	725	668	916	1692	630.5	134.4	66.09	31.44	16.12
MEAN	64.0	22.4	49.4	23.4	23.9	29.5	56.4	20.3	4.48	2.13	1.01	.54
MAX	516	64	93	41	47	66	135	34	9.2	11	3.1	.73
MIN	4.2	9.5	27	13	15	20	30	9.5	1.1	.43	.32	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1997, BY WATER YEAR (WY)

	MEAN	10.3	18.1	23.7	26.1	29.2	45.8	42.5	24.6	14.2	5.86	4.37	4.24
MAX	64.0	47.3	55.2	101	88.7	96.9	93.6	57.0	72.5	19.2	19.2	15.7	
(WY)	1997	1976	1987	1979	1976	1977	1987	1978	1982	1982	1991	1991	
MIN	.63	1.20	2.34	2.58	6.30	15.1	12.7	8.59	2.96	.68	.17	.27	
(WY)	1969	1966	1966	1966	1980	1989	1966	1965	1964	1966	1966	1965	

MERRIMACK RIVER BASIN

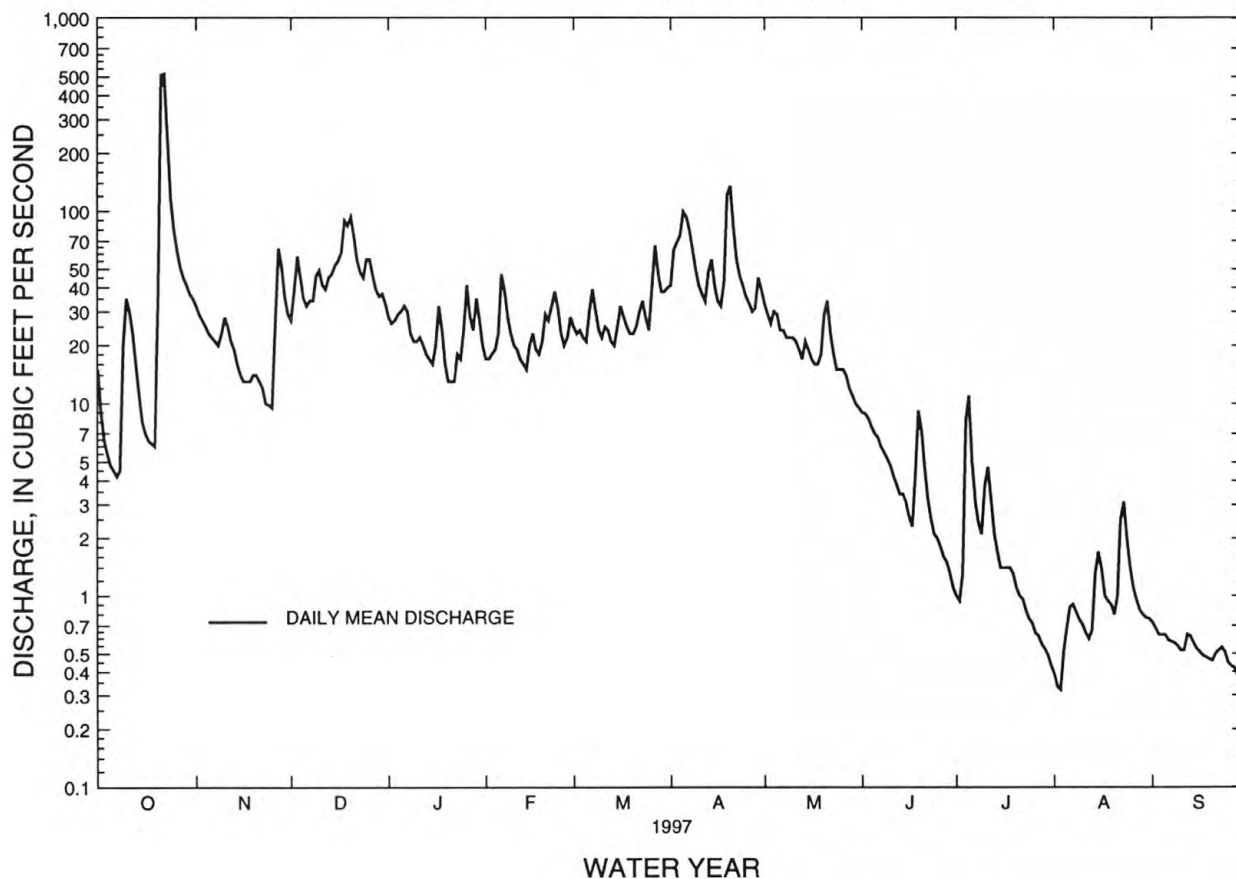
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01097300 NASHOBA BROOK NEAR ACTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1963 - 1997	
ANNUAL TOTAL	11759.2		9067.35		20.7	
ANNUAL MEAN	32.1		24.8		36.1	
HIGHEST ANNUAL MEAN					7.09	
LOWEST ANNUAL MEAN					1978	
HIGHEST DAILY MEAN	516	Oct 22	516	Oct 22	560	Jan 26 1979
LOWEST DAILY MEAN	2.5	Jul 8	.32	Aug 3	.01	Sep 8 1995
ANNUAL SEVEN-DAY MINIMUM	3.0	Aug 17	.43	Jul 29	.02	Sep 3 1995
INSTANTANEOUS PEAK FLOW			665	Oct 21	679	Jan 26 1979
INSTANTANEOUS PEAK STAGE			5.96	Apr 19	5.96	Apr 19 1997
INSTANTANEOUS LOW FLOW			.26	Aug 3	.01	Sep 4 1995
10 PERCENT EXCEEDS	63		48		50	
50 PERCENT EXCEEDS	23		19		12	
90 PERCENT EXCEEDS	4.0		.63		1.3	

e Estimated

NASHOBA BROOK NEAR ACTON, MA 01097300



MERRIMACK RIVER BASIN

01098530 SUDBURY RIVER AT SAXONVILLE, MA

LOCATION.--Lat 42°19'31", long 71°23'53", Middlesex County, Hydrologic Unit 01070005, on left bank at downstream side of new Danforth Street Bridge, at Saxonville, 600 ft east of Elm Street, 700 ft downstream from confluence with Lake Cochituate Outlet, and 0.7 mi downstream from Saxonville Dam.

DRAINAGE AREA.--106 mi².

PERIOD OF RECORD.--November 1979 to current year.

Water-quality records: Water years 1994-95.

GAGE.--Water-stage recorder. Datum of gage is 110.55 ft above sea level (Massachusetts Department of Public Works benchmark).

REMARKS.--Records good except those above 500 ft³/s, which are fair. Flow regulated by reservoirs upstream and affected by diversions and spill. Flow diverted as needed for use of Boston metropolitan district. Part of flow from Wachusett Reservoir on Nashua River is diverted into Sudbury Reservoir en route to Boston metropolitan district.

AVERAGE DISCHARGE.--17 years (water years 1981-97), 199 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft³/s, June 7, 1982, gage height, 13.30 ft; maximum gage height, 13.47 ft, Apr. 8, 1987; minimum daily, 6.0 ft³/s, June 26, 1993, Aug. 3, 1997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,020 ft³/s, Oct. 21, gage height, 11.08 ft; minimum daily, 6.0 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	521	290	293	322	190	584	458	130	75	6.7	13
2	62	394	437	268	303	201	592	487	120	25	6.5	16
3	69	359	486	258	297	192	646	470	83	19	6.0	20
4	41	323	459	252	289	189	678	461	74	29	6.5	12
5	37	279	432	250	397	188	704	404	68	17	8.0	9.1
6	36	252	448	252	420	265	694	307	62	13	7.6	8.2
7	35	197	464	239	387	242	669	282	45	12	7.0	7.9
8	57	194	592	239	361	228	641	227	43	13	6.7	7.7
9	286	222	576	247	332	218	606	220	40	14	34	7.6
10	241	221	548	264	307	225	549	223	38	22	42	7.7
11	239	207	528	294	288	227	454	214	34	49	17	8.0
12	233	194	553	274	273	221	440	209	32	59	11	35
13	211	179	566	265	261	207	515	207	51	58	29	15
14	194	165	572	253	279	200	499	213	72	55	31	11
15	172	156	587	223	300	287	463	153	45	23	16	9.9
16	160	149	581	240	287	260	438	157	37	15	12	9.2
17	153	145	651	299	274	231	421	141	33	14	11	7.9
18	155	134	729	301	263	212	496	128	37	12	22	7.3
19	158	89	771	280	264	196	679	163	61	9.9	14	7.2
20	574	86	833	249	252	204	705	305	53	8.8	10	9.3
21	977	82	775	234	231	247	664	270	111	8.3	36	12
22	931	81	716	226	248	260	607	243	116	9.6	38	7.3
23	930	76	665	246	244	251	559	209	109	9.3	23	7.3
24	882	73	634	237	232	237	520	187	105	11	17	8.3
25	819	72	658	429	204	244	489	178	106	8.3	13	9.7
26	758	264	617	420	187	323	463	171	108	8.1	12	12
27	701	344	587	367	190	318	438	146	117	7.6	11	10
28	666	356	561	436	192	317	452	112	103	7.3	10	8.2
29	635	328	541	421	---	348	489	101	91	7.0	11	15
30	600	305	494	373	---	373	467	93	89	6.7	17	11
31	573	---	393	345	---	408	---	121	---	6.7	14	---
TOTAL	11659	6447	17744	8974	7884	7709	16621	7260	2213	632.6	506.0	329.8
MEAN	376	215	572	289	282	249	554	234	73.8	20.4	16.3	11.0
MAX	977	521	833	436	420	408	705	487	130	75	42	35
MIN	35	72	290	223	187	188	421	93	32	6.7	6.0	7.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1997, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	122	185	266	224	256	330	384	211	161	70.1	86.6	66.0						
MAX	376	385	572	471	480	757	920	340	739	148	192	147						
(WY)	1997	1990	1997	1982	1990	1983	1987	1990	1982	1996	1989	1989						
MIN	41.5	72.2	93.1	59.5	67.6	121	98.7	75.2	31.3	10.9	16.3	11.0						
(WY)	1987	1985	1983	1981	1980	1985	1985	1986	1993	1993	1997	1997						

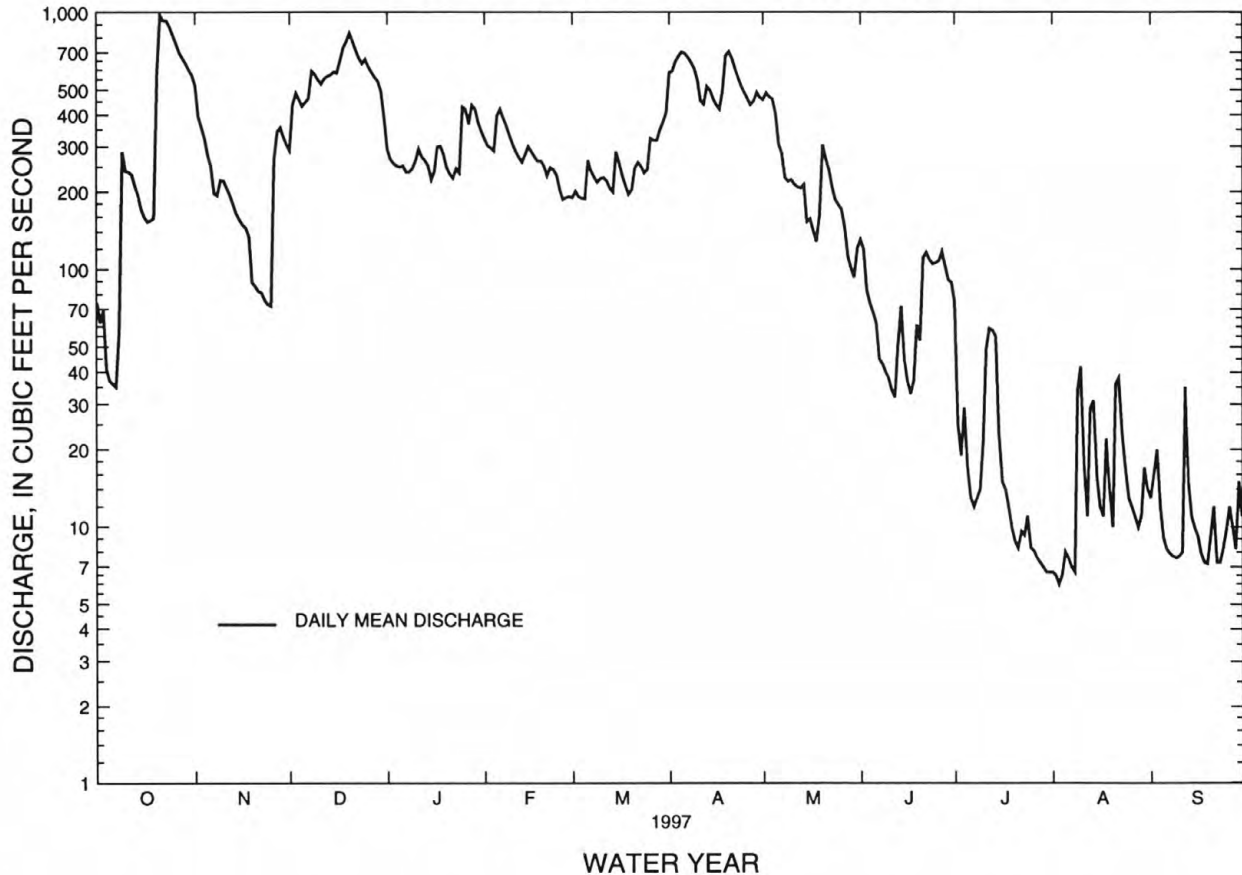
MERRIMACK RIVER BASIN

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01098530 SUDBURY RIVER AT SAXONVILLE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1980 - 1997	
ANNUAL TOTAL	103759		87979.4		199	
ANNUAL MEAN	283		241		253	1984
HIGHEST ANNUAL MEAN					96.6	1985
LOWEST ANNUAL MEAN					2250	Jun 7 1982
HIGHEST DAILY MEAN	977	Oct 21	977	Oct 21	6.0	Jun 26 1993
LOWEST DAILY MEAN	15	Sep 6	6.0	Aug 3	6.6	Jul 29 1997
ANNUAL SEVEN-DAY MINIMUM	17	Sep 1	6.6	Jul 29	2420	Jun 7 1982
INSTANTANEOUS PEAK FLOW			1020	Oct 21	13.47	Apr 8 1987
INSTANTANEOUS PEAK STAGE			11.08	Oct 21		
INSTANTANEOUS LOW FLOW			5.5	Sep 17		
10 PERCENT EXCEEDS	587		582		429	
50 PERCENT EXCEEDS	229		211		140	
90 PERCENT EXCEEDS	38		9.8		32	

SUDBURY RIVER AT SAXONVILLE, MA 01098530



MERRIMACK RIVER BASIN

01099500 CONCORD RIVER BELOW RIVER MEADOW BROOK AT LOWELL, MA

LOCATION.--Lat 42°38'12", long 71°18'09", Middlesex County, Hydrologic Unit 01070005, on right bank 300 ft downstream from Rogers Street Bridge at Lowell, 0.3 mi downstream from River Meadow Brook, and 0.8 mi upstream from mouth.

DRAINAGE AREA.--Total above gage, 400 mi²; net above gage, 307 mi² - diversion as needed from 92.6 mi² for use by Boston metropolitan district.

PERIOD OF RECORD.--Discharge: October 1936 to current year. October, November 1936 monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1953, 1967-74.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 67.41 ft above sea level.

REMARKS.--Records good. Low flow regulated by mills upstream. Daily discharge includes undiverted water from 92.6 mi² in basins of Sudbury River and Lake Cochituate. Prior to December 1961, diversion upstream for use of city of Lowell. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--61 years, 649 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,410 ft³/s, Jan. 28, 1979, gage height, 9.60 ft; maximum gage height of 9.60 ft also occurred Apr. 10, 1987; minimum daily, 4.0 ft³/s, Sept. 29, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,290 ft³/s, Oct. 24; gage height, 8.18 ft; minimum daily, 26 ft³/s, Aug. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	556	2000	1100	1750	1100	887	1370	1700	542	147	48	89
2	526	1870	1250	1640	1060	892	1470	1640	547	174	44	86
3	460	1740	1310	1540	1030	860	1600	1570	517	193	44	79
4	440	1580	1350	1450	1010	844	1780	1530	470	222	45	77
5	333	1460	1400	1380	1100	838	1990	1460	469	215	47	77
6	314	1340	1430	1330	1160	903	2130	1400	408	206	47	75
7	290	1250	1460	1280	1200	916	2260	1330	407	189	46	62
8	246	1190	1550	1190	1200	933	2340	1250	379	149	45	61
9	423	1160	1590	1120	1180	943	2340	1180	323	167	49	58
10	553	1100	1600	1090	1130	939	2290	1110	324	135	70	56
11	648	1040	1600	1050	1070	940	2210	1070	282	144	101	56
12	670	986	1610	992	1020	919	2150	1020	255	144	111	79
13	695	934	1630	951	964	897	2140	953	243	146	118	88
14	660	877	1670	939	939	882	2060	867	238	143	107	91
15	617	825	1710	902	954	950	2000	752	271	144	101	88
16	584	781	1740	924	943	974	1950	768	279	114	99	80
17	552	723	1850	930	922	992	1880	753	260	163	95	72
18	506	740	2000	921	923	987	1930	735	234	168	90	67
19	497	678	2150	952	919	974	2170	724	269	99	85	62
20	963	646	2400	877	920	964	2330	824	264	140	82	59
21	2430	615	2520	838	940	945	2480	832	261	75	99	62
22	2900	593	2550	804	979	955	2540	864	261	56	160	67
23	3130	561	2510	832	986	961	2490	859	256	66	115	64
24	3240	537	2450	804	977	956	2340	846	252	64	163	60
25	3180	519	2430	943	949	952	2210	826	232	62	120	60
26	3020	674	2310	1020	926	1060	2070	794	230	66	129	57
27	2840	870	2230	1060	913	1090	1930	759	223	68	108	57
28	2680	966	2150	1150	900	1100	1870	726	209	65	101	58
29	2500	1040	2070	1180	---	1130	1810	688	205	59	137	67
30	2320	1080	1970	1180	---	1170	1740	646	195	56	76	69
31	2150	---	1850	1150	---	1220	---	606	---	51	60	---
TOTAL	40923	30375	57440	34169	28314	29973	61870	31082	9305	3890	2742	2083
MEAN	1320	1013	1853	1102	1011	967	2062	1003	310	125	88.5	69.4
MAX	3240	2000	2550	1750	1200	1220	2540	1700	547	222	163	91
MIN	246	519	1100	804	900	838	1370	606	195	51	44	56

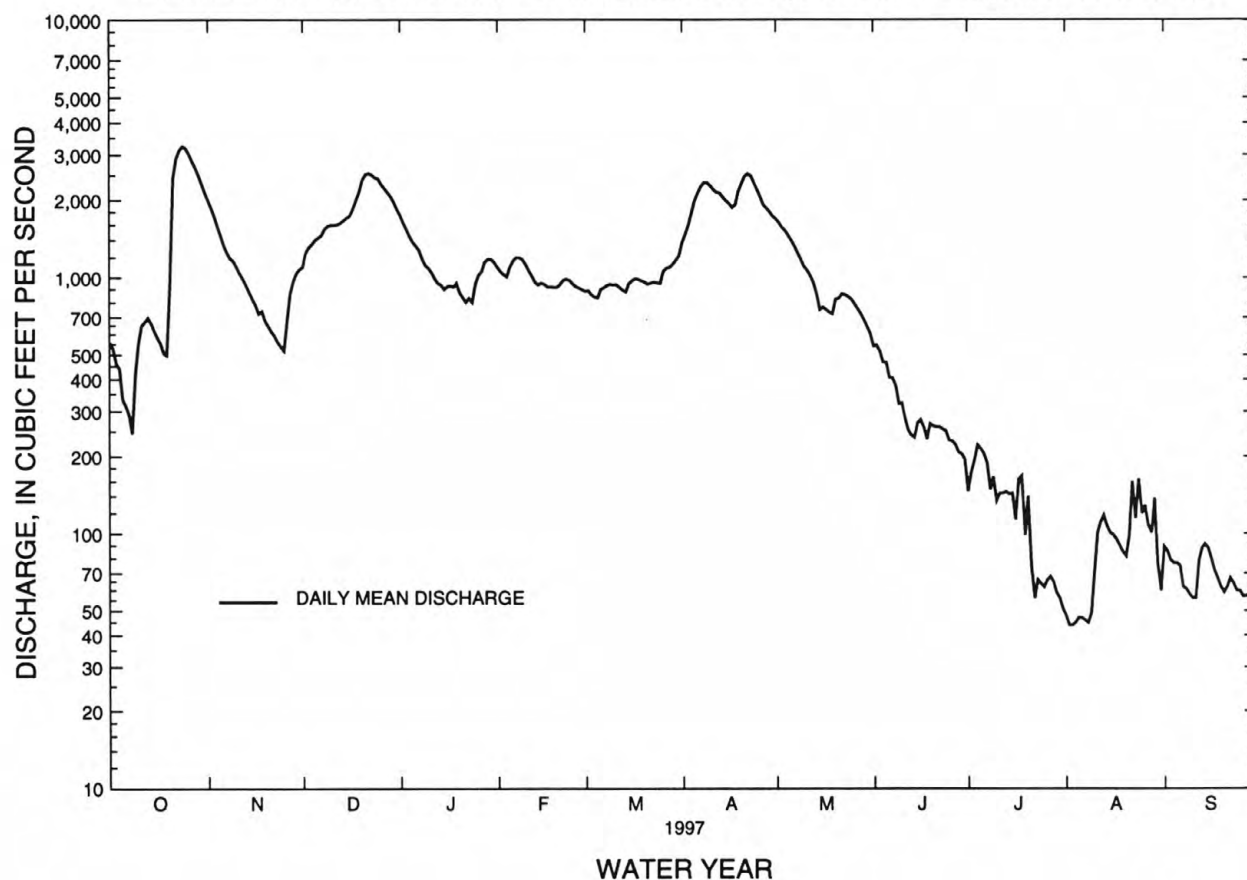
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1997, BY WATER YEAR (WY)

	331	537	725	735	860	1254	1314	810	506	261	236	235
MEAN	331	537	725	735	860	1254	1314	810	506	261	236	235
MAX	1320	1866	1853	1996	1856	2510	3149	1599	2502	1512	1403	1694
(WY)	1997	1956	1997	1979	1970	1983	1987	1954	1982	1938	1955	1954
MIN	38.3	86.9	133	150	230	479	377	283	116	50.0	33.1	25.4
(WY)	1942	1966	1966	1981	1980	1989	1966	1941	1964	1949	1966	1957

01099500 CONCORD RIVER BELOW RIVER MEADOW BROOK AT LOWELL, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1937 - 1997	
ANNUAL TOTAL	389177		332166		649	
ANNUAL MEAN	1063		910		1112	
HIGHEST ANNUAL MEAN					242	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	3240	Oct 24	3240	Oct 24	5340	Jan 28 1979
LOWEST DAILY MEAN	94	Sep 5	44	Aug 2	4.0	Sep 29 1957
ANNUAL SEVEN-DAY MINIMUM	101	Sep 5	45	Aug 2	16	Sep 26 1957
INSTANTANEOUS PEAK FLOW			3290	Oct 24	5410	Jan 28 1979
INSTANTANEOUS PEAK STAGE			8.18	Oct 24	9.60	Jan 28 1979
INSTANTANEOUS LOW FLOW			26	Jul 21		
10 PERCENT EXCEEDS	2150		2090		1390	
50 PERCENT EXCEEDS	970		887		490	
90 PERCENT EXCEEDS	185		68		100	

CONCORD RIVER BL RIVER MEADOW BR, AT LOWELL, MA 01099500



LOCATION.--Lat 42°38'45", long 71°17'56", Middlesex County, Hydrologic Unit 01070002, on right bank at Lowell, 1,100 ft downstream from Concord River.

DRAINAGE AREA.--Total above gage, 4,635 mi²; net above gage, 4,425 mi²—excludes 210 mi² for use of Boston metropolitan district and city of Worcester.

PERIOD OF RECORD.--Discharge: June 1923 to current year.

Water-quality records: Water years 1954, 1966-74.

GAGE.--Water-stage recorder. Datum of gage is 5.18 ft above sea level. Prior to Mar. 7, 1934, at Boott Mills, 1,800 ft upstream and 700 ft above mouth of Concord River, in same gage pool and at same datum; gage-height record (provided by Proprietors of the Locks and Canals on Merrimack River) was indicative of flow including that of Concord River.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Daily discharge includes water released from 210 mi² in basins of Sudbury and Nashua Rivers and Lake Cochituate. Flow regulated by powerplants, by Franklin Falls Reservoir since 1942, and by Squam, Newfound, Winnepesaukee, Winnisquam, and other lakes and reservoirs upstream. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--74 years, 7,702 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 173,000 ft³/s, Mar. 20, 1936, gage height, 68.4 ft, from floodmarks; minimum daily, 199 ft³/s, Sept. 23, 1923.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1735, that of Mar. 20, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48,600 ft³/s, Oct. 22; gage height, 53.10 ft; minimum daily, 768 ft³/s, Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2390	13400	9850	16700	7600	13200	24400	22200	6470	1960	1950	2680
2	2860	12100	11400	14600	7850	14400	22700	20000	6760	1790	2150	2290
3	2840	11500	26900	14700	7710	14000	21400	19700	6770	1990	1750	2250
4	2760	9830	34200	14500	7670	13200	21300	20000	6580	2790	1670	1950
5	2590	8670	29600	14100	7720	12900	22500	19100	6200	4480	2150	2230
6	2550	8130	22600	14000	8770	13100	24100	17600	5680	4780	1840	1890
7	2210	7820	18500	13800	9420	14000	26300	16100	5580	2560	1100	2090
8	2370	7910	16500	12700	7990	13600	29100	16000	4720	2840	768	1510
9	3220	9040	16500	11100	7870	11800	31000	15200	4100	2800	791	1550
10	4490	11900	16000	11600	6780	11000	28200	16300	4410	3760	813	1750
11	4430	21800	14800	11300	6910	10800	23000	14600	4190	4670	812	2020
12	4120	21000	13200	10700	7170	10200	19500	13200	3730	4960	858	2820
13	4130	16200	14000	10000	6820	9510	18500	12500	4130	3750	1890	2120
14	3710	13400	15000	9500	6500	9120	19100	11900	4030	3390	1920	2590
15	3430	12600	15400	8740	6350	8560	19000	11400	3720	3470	1590	1780
16	2920	10000	16000	8860	6930	9090	18300	10900	3600	5450	1570	1830
17	2710	8540	16900	9450	6880	9200	17300	10900	3330	8320	1960	2160
18	2720	8280	22000	8810	6420	9140	19000	10900	3040	6060	1560	1570
19	2510	7750	26800	9030	6840	9570	28100	10900	3510	3970	1400	1680
20	6140	7760	29800	9830	7630	6530	42600	11700	3660	4850	1380	1770
21	20900	7340	29200	8630	8620	7960	41700	13200	5020	4920	1660	1300
22	44100	7450	25100	8390	10800	8280	38600	13500	4270	4090	2110	1320
23	44400	7300	21300	8660	15500	8300	36800	12300	3510	3650	2380	1690
24	35400	7320	18900	8260	16400	8430	31900	10400	3320	3270	2900	1540
25	29800	6440	20000	7840	15700	8130	28300	9760	3220	3140	2590	1320
26	24400	7610	25800	9480	13600	9740	25900	9350	2770	2990	2310	1360
27	21800	9500	26000	9640	12300	12900	22300	9260	2850	2700	1690	1180
28	20400	10700	22400	9210	12100	15700	20100	7630	2200	2600	2290	1120
29	19300	11000	19800	8890	---	16200	22400	7830	1700	2400	2350	1460
30	17800	9170	18900	8550	---	17900	24500	6270	1670	4250	3650	1450
31	14900	---	18500	8420	---	21500	---	4720	---	3190	3200	---
TOTAL	358300	311460	631850	329990	252850	357960	767900	405320	124740	115840	57052	54270
MEAN	11560	10380	20380	10640	9030	11550	25600	13070	4158	3737	1840	1809
MAX	44400	21800	34200	16700	16400	21500	42600	22200	6770	8320	3650	2820
MIN	2210	6440	9850	7840	6350	6530	17300	4720	1670	1790	768	1120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1997, BY WATER YEAR (WY)

MEAN	4182	6641	7722	7124	7487	12820	19440	11720	6182	3366	2823	2953
MAX	12730	17690	20380	18530	18400	45780	37440	24770	23660	14520	11110	19650
(WY)	1978	1928	1997	1978	1970	1936	1987	1954	1984	1973	1990	1938
MIN	1036	1843	2127	1621	2105	4132	6979	4093	1825	1161	901	895
(WY)	1965	1965	1930	1925	1931	1940	1995	1941	1964	1965	1965	1957

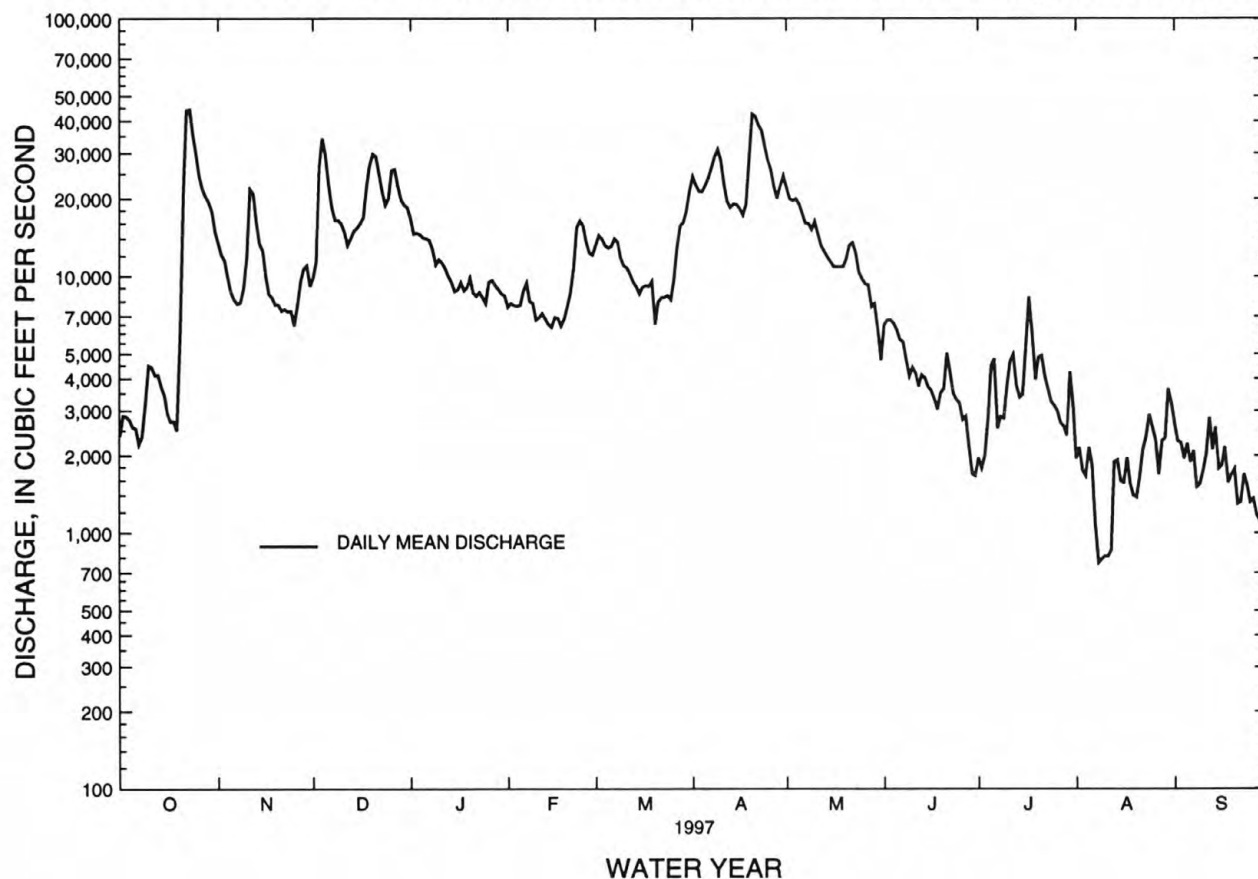
MERRIMACK RIVER BASIN

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01100000 MERRIMACK RIVER BELOW CONCORD RIVER AT LOWELL, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1923 - 1997	
ANNUAL TOTAL	4593530		3767532		7702	
ANNUAL MEAN	12550		10320		12490	
HIGHEST ANNUAL MEAN					3068	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	52600	Apr 18	44400	Oct 23	161000	Mar 20 1936
LOWEST DAILY MEAN	1150	Sep 2	768	Aug 8	199	Sep 23 1923
ANNUAL SEVEN-DAY MINIMUM	1270	Sep 9	997	Aug 6	581	Sep 12 1995
INSTANTANEOUS PEAK FLOW			48600	Oct 22	173000	Mar 20 1936
INSTANTANEOUS PEAK STAGE			53.10	Oct 22	68.40	Mar 20 1936
INSTANTANEOUS LOW FLOW			709	Sep 12		
10 PERCENT EXCEEDS	28200		22200		17100	
50 PERCENT EXCEEDS	9840		8320		5160	
90 PERCENT EXCEEDS	2450		1840		1640	

MERRIMACK RIVER BELOW CONCORD RIVER AT LOWELL, MA 01100000



MERRIMACK RIVER BASIN

01100568 SHAWSHOEN RIVER AT HANSCOM FIELD NEAR BEDFORD, MA

LOCATION.--Lat 42°28'01", long 71°16'22", Middlesex County, Hydrologic Unit 01070002, on left bank 300 ft downstream from FAA hangar, on Hanscom Field (revised), and 1.6 mi south of Bedford.

DRAINAGE AREA.--2.09 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge: October 1995 to current year.

Precipitation: March 1996 to current year.

GAGE.--Water-stage recorder and tipping bucket rain gage. Elevation of gage is 115 ft above sea level, from topographic map. Telephone gage-height and rainfall telemeter at station.

REMARKS.--Records fair except those above 100 ft³/s, which are poor.

AVERAGE DISCHARGE.--2 years, 5.05 ft³/s, 32.81 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 373 ft³/s, Oct. 20, 1996, gage height, 6.68 ft, from rating curve extended above 170 ft³/s; minimum, 0.76 ft³/s, Oct. 3, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	1605	a*373	*6.68	Jan. 25	0710	190	4.51

a From rating curve extended above 170 ft³/s.

Minimum discharge, 0.90 ft³/s, part of each day June 30 to July 3, Sept. 9, 16, 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	4.9	4.8	4.2	3.2	3.0	6.1	6.2	2.5	.94	1.4	1.3
2	4.0	4.7	21	4.3	2.7	3.6	7.4	4.8	2.0	.95	1.4	1.4
3	3.6	4.6	6.3	4.7	3.3	3.1	8.5	4.8	2.0	7.3	4.9	1.9
4	3.5	4.5	5.1	4.1	2.6	3.0	16	4.4	1.9	2.8	1.3	1.1
5	3.5	4.4	4.5	4.6	17	3.6	13	4.0	1.9	1.1	1.5	1.1
6	3.3	4.2	5.9	4.2	4.9	7.6	11	4.5	1.8	1.1	1.1	1.0
7	3.0	4.3	6.1	3.9	4.0	3.5	9.9	4.0	1.8	1.1	1.0	.99
8	9.6	4.2	23	3.7	3.3	3.6	7.4	3.9	1.8	1.1	1.1	1.0
9	13	6.5	8.3	3.7	3.1	3.1	6.5	4.1	1.7	6.0	14	.98
10	4.3	3.7	6.3	5.2	2.9	4.1	5.8	4.1	1.7	1.7	1.8	1.0
11	3.8	3.4	5.7	3.8	2.7	4.1	5.4	3.7	1.7	1.2	1.7	2.5
12	3.6	3.3	9.2	3.4	2.6	3.5	7.4	3.6	1.7	1.2	1.6	8.1
13	3.6	3.2	8.3	3.3	2.5	3.2	10	4.7	5.2	1.2	6.6	1.2
14	3.6	3.2	8.0	3.2	7.2	3.8	5.9	4.5	2.0	1.2	1.6	1.1
15	3.6	3.0	7.1	3.2	5.0	10	5.1	3.8	1.7	1.2	1.4	1.0
16	3.5	3.0	6.3	9.0	3.3	4.4	4.7	4.9	1.5	1.2	1.3	1.0
17	3.5	3.0	16	4.0	3.0	4.0	6.2	3.2	1.5	1.9	1.2	.99
18	3.5	3.1	8.2	3.6	2.9	3.7	13	3.0	4.2	2.3	3.3	1.1
19	3.6	3.1	17	3.2	3.0	3.5	28	6.8	2.0	1.2	1.2	1.1
20	199	3.0	10	3.1	2.9	3.7	9.9	11	1.2	1.1	1.2	8.3
21	209	2.9	7.1	3.1	2.9	3.6	7.5	3.6	1.1	1.3	7.8	1.4
22	52	2.9	6.3	3.3	3.3	4.6	6.2	3.0	1.1	1.2	2.8	.99
23	12	2.8	6.0	3.8	3.0	3.5	5.7	2.8	1.1	1.2	1.6	1.0
24	e8.5	2.7	7.7	3.1	2.8	3.2	5.3	2.6	1.1	1.2	1.4	.99
25	e7.2	3.0	7.6	29	2.8	3.2	5.0	3.5	1.1	1.3	1.4	.97
26	e6.6	31	5.6	e4.6	2.8	8.1	4.8	2.5	1.1	1.2	1.3	.97
27	e6.3	8.6	5.2	e3.5	4.8	4.0	4.5	2.3	1.0	1.3	1.3	.93
28	7.1	6.0	5.0	13	3.1	3.8	9.2	2.2	1.0	1.3	1.5	.93
29	5.6	4.8	5.6	3.9	---	5.0	5.6	2.1	1.0	1.3	1.4	1.7
30	5.6	4.4	4.8	3.1	---	3.8	4.6	2.1	.98	1.3	1.3	.99
31	5.2	---	4.4	2.9	---	7.6	---	2.0	---	1.4	1.2	---
TOTAL	607.7	146.4	252.4	155.7	107.6	132.5	245.6	122.7	52.38	51.79	73.6	49.03
MEAN	19.6	4.88	8.14	5.02	3.84	4.27	8.19	3.96	1.75	1.67	2.37	1.63
MAX	209	31	23	29	17	10	28	11	5.2	7.3	14	8.3
MIN	3.0	2.7	4.4	2.9	2.5	3.0	4.5	2.0	.98	.94	1.0	.93
CFSM	9.38	2.33	3.90	2.40	1.84	2.05	3.92	1.89	.84	.80	1.14	.78
IN.	10.82	2.61	4.49	2.77	1.92	2.36	4.37	2.18	.93	.92	1.31	.87

MERRIMACK RIVER BASIN

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01100568 SHAWSHOEN RIVER AT HANSCOM FIELD NEAR BEDFORD, MA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1997, BY WATER YEAR (WY)

MEAN	11.7	4.81	5.16	5.91	4.78	4.86	7.47	3.96	1.99	4.14	2.13	3.51
MAX	19.6	4.88	8.14	6.81	5.68	5.44	8.19	3.96	2.24	6.62	2.37	5.39
(WY)	1997	1997	1997	1996	1996	1996	1997	1996	1996	1996	1997	1996
MIN	3.87	4.73	2.19	5.02	3.84	4.27	6.75	3.96	1.75	1.67	1.89	1.63
(WY)	1996	1996	1996	1997	1997	1997	1996	1997	1997	1997	1996	1997

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1995 - 1997

ANNUAL TOTAL	2368.8		1997.40			
ANNUAL MEAN	6.47		5.47		5.05	
HIGHEST ANNUAL MEAN					5.47	
LOWEST ANNUAL MEAN					4.62	
HIGHEST DAILY MEAN	209	Oct 21	209	Oct 21	209	Oct 21 1996
LOWEST DAILY MEAN	1.4	Jul 6	.93	Sep 27	.84	Oct 3 1995
ANNUAL SEVEN-DAY MINIMUM	1.5	Aug 16	.97	Sep 22	.97	Sep 22 1997
INSTANTANEOUS PEAK FLOW			373	Oct 20	373	Oct 20 1996
INSTANTANEOUS PEAK STAGE			6.68	Oct 20	6.68	Oct 20 1996
INSTANTANEOUS LOW FLOW			.90	Jun 30	.76	Oct 3 1995
ANNUAL RUNOFF (CFSM)	3.10		2.62		2.41	
ANNUAL RUNOFF (INCHES)	42.16		35.55		32.81	
10 PERCENT EXCEEDS	8.4		8.1		7.7	
50 PERCENT EXCEEDS	3.7		3.5		3.2	
90 PERCENT EXCEEDS	1.7		1.1		1.3	

e Estimated

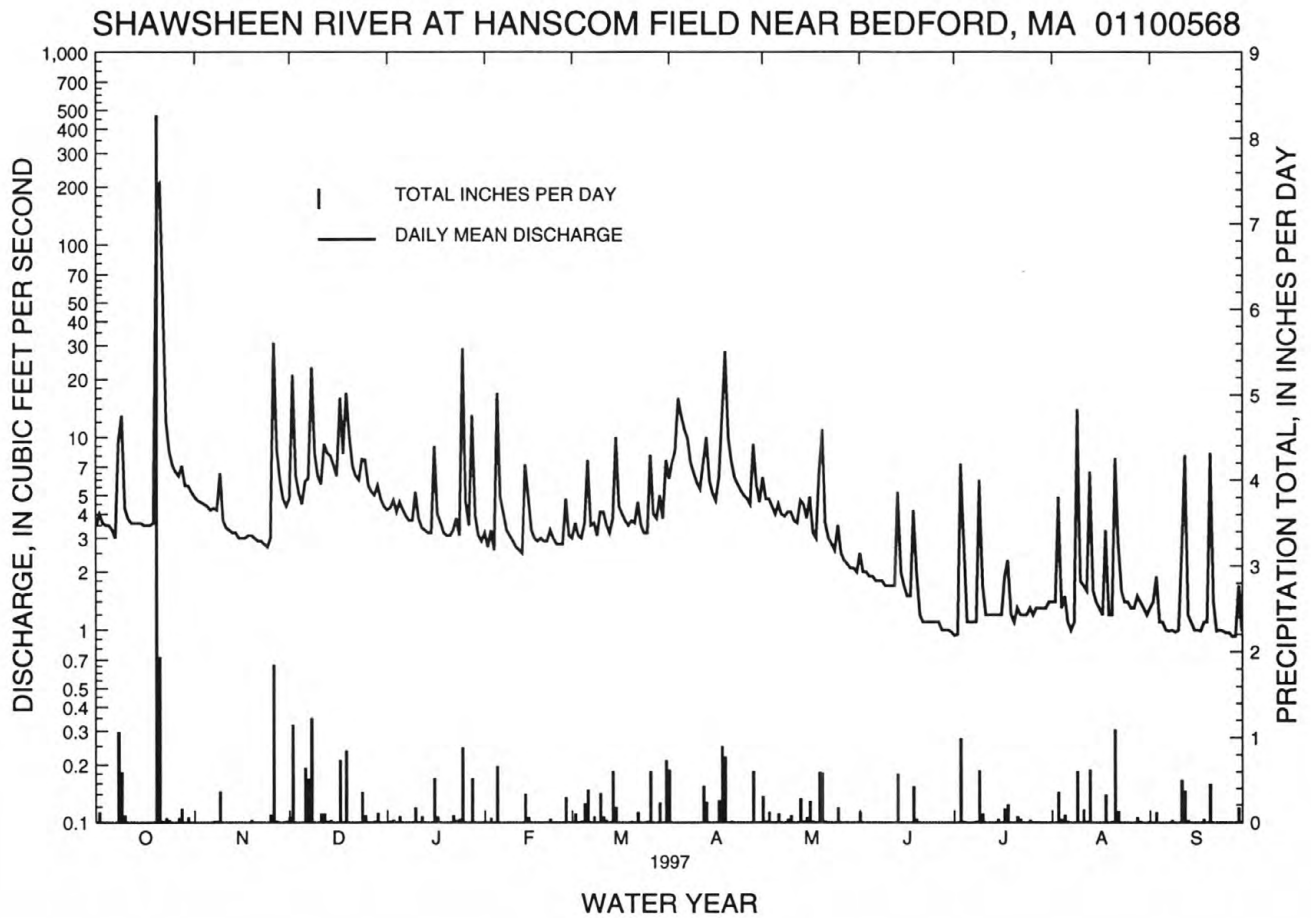
PRECIPITATION, TOTAL, INCHES, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.05	.00	.01	.00	.62	.30	.11	.00	.00	.01
2	.11	.00	1.14	.01	.00	.09	.00	.01	.00	.00	.00	.00
3	.00	.00	.00	.02	.04	.00	.00	.11	.00	.98	.35	.11
4	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.03	.00
5	.00	.00	.00	.06	.66	.21	.00	.00	.00	.00	.08	.00
6	.00	.00	.64	.00	.00	.38	.00	.09	.00	.00	.01	.00
7	.00	.01	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	1.06	.01	1.22	.00	.00	.06	.00	.00	.00	.01	.00	.02
9	.59	.36	.00	.00	.00	.00	.00	.03	.00	.61	.60	.00
10	.07	.00	.00	.16	.00	.34	.00	.07	.00	.09	.00	.00
11	.00	.00	.09	.00	.00	.06	.00	.00	.00	.00	.14	.50
12	.00	.00	.09	.06	.00	.02	.43	.00	.00	.00	.01	.37
13	.00	.00	.01	.00	.00	.00	.23	.27	.57	.00	.62	.02
14	.00	.00	.02	.00	.33	.60	.00	.01	.00	.00	.00	.00
15	.00	.00	.00	.00	.05	.17	.00	.05	.00	.03	.00	.00
16	.00	.00	.00	.52	.00	.00	.00	.24	.00	.00	.00	.00
17	.00	.00	.73	.06	.00	.00	.25	.01	.00	.15	.00	.00
18	.00	.00	.00	.00	.00	.00	.89	.00	.42	.20	.32	.03
19	.00	.02	.84	.00	.00	.00	.77	.59	.03	.00	.00	.00
20	8.26	.00	.00	.00	.00	.01	.00	.58	.00	.00	.01	.45
21	1.93	.00	.00	.00	.00	.00	.01	.01	.00	.06	1.09	.00
22	.01	.00	.00	.07	.03	.11	.00	.00	.00	.03	.12	.00
23	.04	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
24	e.01	.00	.35	.03	.00	.00	.00	.00	.00	.00	.00	.00
25	e.00	.08	.07	.88	.00	.01	.00	.16	.00	.02	.00	.00
26	e.00	1.84	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00
27	e.00	.01	.00	.00	.29	.00	.00	.00	.00	.00	.00	.00
28	.15	.00	.01	.52	.00	.00	.60	.00	.00	.00	.05	.00
29	.00	.00	.10	.00	---	.22	.00	.00	.00	.00	.01	.16
30	.05	.01	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.73	---	.00	---	.00	.00	---
TOTAL	12.28	2.34	5.87	2.41	1.41	3.62	3.80	2.53	1.13	2.19	3.44	1.67

WTR YR 1997 TOTAL 42.69

e Estimated

01100568 SHAWSHEEN RIVER AT HANSCOM FIELD NEAR BEDFORD, MA--Continued



MERRIMACK RIVER BASIN

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01100568 SHAWSHEEN RIVER AT HANSKOM FIELD NEAR BEDFORD, MA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1995 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS. / 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
JUN											
27...	0915	1.1	486	6.6	22.0	15.0	760	7.6	76	310	300
JUL											
11...	0945	1.2	475	6.7	26.0	16.0	761	8.0	81	540	290
29...	0945	1.3	480	6.5	26.5	17.0	742	7.3	78	280	190
AUG											
28...	0930	1.2	480	6.4	19.5	17.0	755	8.3	86	100	80
DATE	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	HY- DROXIDE WATER DIS IT FIELD MG/L AS OH (71834)	
JUN											
27...	84	26	4.8	57	58	3	4.3	49	0	0	
JUL											
11...	79	24	4.5	54	58	3	4.4	47	0	0	
29...	83	26	4.7	55	57	3	4.6	48	0	0	
AUG											
28...	84	26	4.7	56	57	3	4.7	50	0	0	
DATE	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	
JUN											
27...	40	28	98	0.10	13	299	260	0.018	0.985	0.149	
JUL											
11...	38	28	97	<.10	13	284	253	.013	.923	.076	
29...	40	27	99	<.10	14	291	258	.017	.981	.064	
AUG											
28...	41	28	95	<.10	14	283	258	.022	1.21	.103	
DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	
JUN											
27...	0.19	0.15	0.30	0.25	1.3	<0.010	<0.010	<0.010	140	369	
JUL											
11...	.10	.15	.23	<.20	1.2	.022	<.010	<.010	250	294	
29...	.08	--	<.20	.28	--	<.010	<.010	<.010	170	202	
AUG											
28...	.13	.19	.29	<.20	1.5	<.010	<.010	<.010	110	240	

LOCATION.--Lat 42°34'05", long 71°12'55", Middlesex County, Hydrologic Unit 01070002, on right bank at downstream side of bridge on State Highway 129, 1 mi upstream from Content Brook, and 2.5 mi northwest of Wilmington.

Water-quality records: Water year 1973.

GAGE.--Water-stage recorder. Datum of gage is 80.44 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diversion upstream at times each year since 1973 for municipal supply of Burlington; see table below for figures of diversion. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--33 years (water years 1965-97), 59.1 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft³/s, Oct. 22, 1996, gage height, 10.49 ft, minimum, 0.70 ft³/s, Aug. 19, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 22	0030	*1,850	*10.49	Apr. 20	0445	378	5.87
Dec. 9	1545	306	5.41				

Minimum discharge, 1.1 ft³/s, Sept. 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	94	83	84	74	64	107	100	24	7.7	5.6	7.2
2	23	87	93	82	60	59	146	88	28	7.2	5.3	7.0
3	18	80	173	77	57	54	155	79	30	11	5.9	6.9
4	15	74	178	78	59	50	178	77	29	27	18	7.8
5	13	69	128	82	76	46	247	70	28	22	7.5	6.5
6	12	66	100	86	147	59	259	65	27	12	4.4	5.8
7	13	62	93	84	162	78	217	63	25	9.5	3.5	5.3
8	12	61	138	81	117	89	180	52	24	10	2.9	5.5
9	50	63	272	72	92	76	144	47	22	10	6.4	5.6
10	95	69	242	64	70	61	118	49	17	21	14	5.4
11	113	75	180	66	58	59	101	56	16	13	12	5.6
12	88	72	143	71	50	62	91	53	13	5.1	8.9	19
13	61	64	150	66	43	59	100	50	11	3.5	10	22
14	38	57	171	57	43	52	141	56	19	5.8	20	13
15	23	51	168	51	66	66	130	60	17	10	11	8.0
16	20	48	155	55	80	93	104	62	14	10	6.2	6.7
17	19	46	153	e70	76	109	87	64	11	9.1	8.4	8.3
18	18	46	209	e59	62	89	93	58	13	10	9.1	7.4
19	17	47	229	e51	55	71	232	51	31	11	12	6.6
20	107	48	252	e46	57	61	353	77	24	9.5	8.0	6.4
21	1360	47	229	43	60	59	234	116	17	8.2	12	15
22	1610	45	185	42	61	64	160	112	16	8.0	29	13
23	966	43	144	51	64	68	129	81	16	7.7	24	9.3
24	490	41	125	55	66	68	110	50	14	7.1	15	3.0
25	300	40	133	76	53	59	99	40	9.8	8.9	11	2.2
26	204	65	147	168	44	67	91	41	9.6	9.1	11	2.0
27	152	181	135	185	50	88	84	38	8.6	8.0	9.6	1.3
28	128	218	115	135	61	99	83	32	8.0	7.3	8.7	1.6
29	119	150	103	147	---	85	98	28	9.3	6.8	8.8	3.6
30	110	102	99	e120	---	75	115	26	8.4	6.0	8.2	7.2
31	101	---	96	e91	---	78	---	24	---	5.7	7.4	---
TOTAL	6329	2211	4821	2495	1963	2167	4386	1865	539.7	307.2	323.8	224.2
MEAN	204	73.7	156	80.5	70.1	69.9	146	60.2	18.0	9.91	10.4	7.47
MAX	1610	218	272	185	162	109	353	116	31	27	29	22
MIN	12	40	83	42	43	46	83	24	8.0	3.5	2.9	1.3
(t)	4.36	0	0	0	3.75	7.36	4.32	3.99	.28	2.05	2.37	7.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

MEAN	34.9	55.3	69.4	73.4	81.4	116	103	63.0	44.8	24.6	22.3	21.3
MAX	204	128	156	289	208	279	269	130	251	72.4	56.9	56.4
(WY)	1997	1976	1997	1979	1984	1983	1987	1967	1982	1973	1976	1991
MIN	6.22	7.82	13.6	9.70	12.4	41.8	38.3	29.5	13.0	3.81	1.74	4.46
(WY)	1969	1966	1966	1981	1980	1989	1966	1985	1964	1965	1966	1965

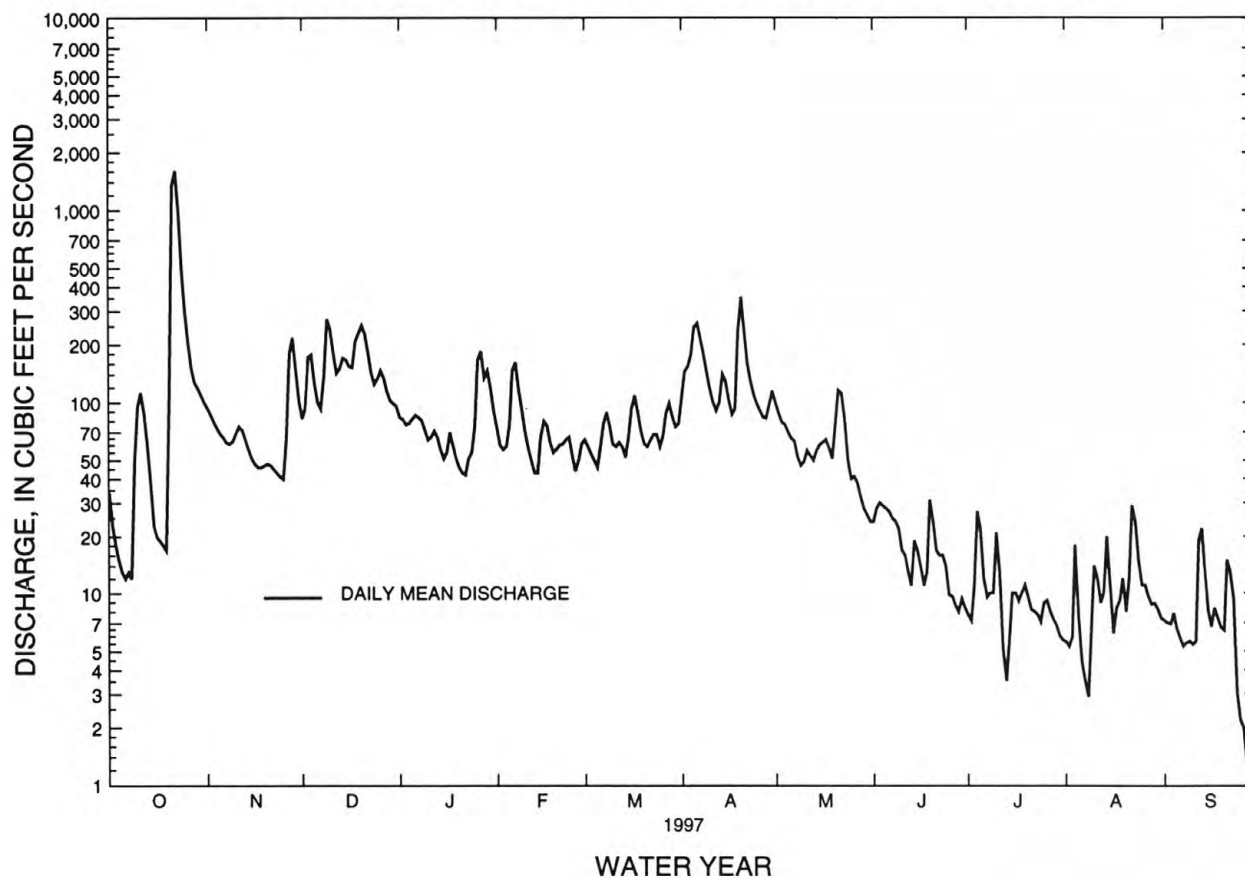
01100600 SHAWSHEEN RIVER NEAR WILMINGTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	32536.2		27631.9		59.1	
ANNUAL MEAN	88.9		75.7		107	
HIGHEST ANNUAL MEAN					28.2	
LOWEST ANNUAL MEAN					1610	
HIGHEST DAILY MEAN	1610	Oct 22	1610	Oct 22	1610	Oct 22 1996
LOWEST DAILY MEAN	6.6	Jul 7	1.3	Sep 27	.80	Jul 3 1993
ANNUAL SEVEN-DAY MINIMUM	8.7	Aug 27	3.0	Sep 24	1.0	Sep 2 1995
INSTANTANEOUS PEAK FLOW			1850	Oct 22	1850	Oct 22 1996
INSTANTANEOUS PEAK STAGE			10.49	Oct 22	10.49	Oct 22 1996
INSTANTANEOUS LOW FLOW			1.1	Sep 28	.70	Aug 19 1983
10 PERCENT EXCEEDS	179		151		127	
50 PERCENT EXCEEDS	64		56		38	
90 PERCENT EXCEEDS	14		7.3		7.7	

e Estimated

† Diversion, in cubic feet per second, for municipal supply of Burlington; records furnished by town of Burlington.

SHAWSHEEN RIVER NEAR WILMINGTON, MA 01100600



LOCATION.--Lat 42°45'10", long 70°56'46", Essex County, Hydrologic Unit 01090001, on left bank 1,400 ft downstream from dam, 0.5 mi south of Byfield, 0.7 mi upstream from Wheeler Brook, and 5.5 mi southwest of Newburyport.

PERIOD OF RECORD.--October 1945 to current year. October 1945 monthly discharge only, published in WSP 1301.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 23.46 ft above sea level (levels by Massachusetts Department of Public Works).

AVERAGE DISCHARGE.--52 years, 37.2 ft³/s, 23.72 in/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 883 ft³/s, Oct. 22, gage height, 7.82 ft; minimum daily, 0.07 ft³/s, Aug. 12, Sept. 7, 27, 28.

MEAN	16.6	30.4	42.8	43.1	50.7	84.6	84.4	49.4	26.3	8.52	5.54	6.41
MAX	186	87.3	117	116	122	226	249	151	138	39.6	18.0	65.8
(WY)	1997	1973	1997	1958	1976	1983	1987	1983	1982	1972	1982	1954
MIN	.18	.92	1.74	2.98	5.25	33.6	25.2	19.2	4.25	.59	.13	.11
(WY)	1958	1966	1966	1966	1980	1989	1985	1985	1964	1995	1995	1997

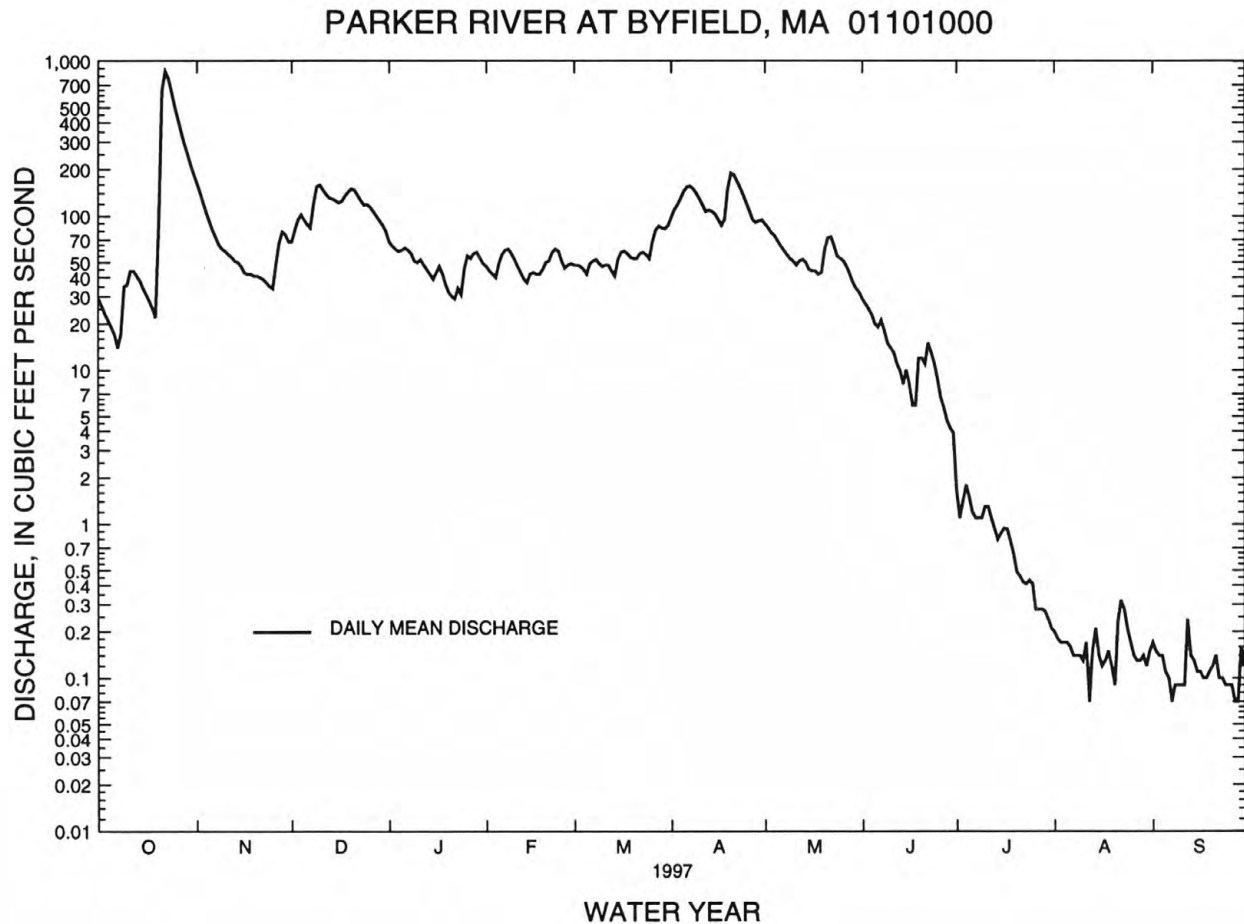
PARKER RIVER BASIN

65

01101000 PARKER RIVER AT BYFIELD, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1946 - 1997
ANNUAL TOTAL	23943.00	21847.97	
ANNUAL MEAN	65.4	59.9	37.2
HIGHEST ANNUAL MEAN			64.8
LOWEST ANNUAL MEAN			13.2
HIGHEST DAILY MEAN	858 Oct 22	858 Oct 22	858 Oct 22 1996
LOWEST DAILY MEAN	.77 Sep 1	.07 Aug 12	.04 Sep 3 1995
ANNUAL SEVEN-DAY MINIMUM	.93 Aug 27	.09 Sep 22	.04 Sep 2 1995
INSTANTANEOUS PEAK FLOW		883 Oct 22	883 Oct 22 1996
INSTANTANEOUS PEAK STAGE		7.82 Oct 22	7.82 Oct 22 1996
INSTANTANEOUS LOW FLOW		.07 Aug 11	
ANNUAL RUNOFF (CFSM)	3.07	2.81	1.75
ANNUAL RUNOFF (INCHES)	41.82	38.16	23.72
10 PERCENT EXCEEDS	126	129	88
50 PERCENT EXCEEDS	49	45	24
90 PERCENT EXCEEDS	3.2	.14	1.5

e Estimated



IPSWICH RIVER BASIN

01101500 IPSWICH RIVER AT SOUTH MIDDLETON, MA

LOCATION.--Lat 42°34'10", long 71°01'39", Essex County, Hydrologic Unit 01090001, on right bank in Peabody, 700 ft downstream from Boston Street Bridge at South Middleton, 1.3 mi downstream from Wills Brook, and 2 mi south of Middleton.

DRAINAGE AREA.--44.5 mi².

PERIOD OF RECORD.--Discharge: June 1938 to current year.
Water-quality records: Water years 1957, 1959.

REVISED RECORDS.--WSP 1301: 1942(M). WSP 1621: 1938-58 (monthly runoff). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 44.97 ft above sea level (Massachusetts Geodetic Survey benchmark.)

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversions upstream for municipal supply of Reading, Lynn, and Peabody. Occasional regulation by mill upstream.

AVERAGE DISCHARGE.--59 years, 63.7 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,010 ft³/s, Apr. 7, 1987, maximum gage height, 7.88 ft Oct. 21, 1997; minimum, 0.05 ft³/s, Sept. 6, 7, 8, 9, 11, 1997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 896 ft³/s, Oct. 21, gage height, 7.88 ft; minimum, 0.05 ft³/s, Sept. 6, 7, 8, 9, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

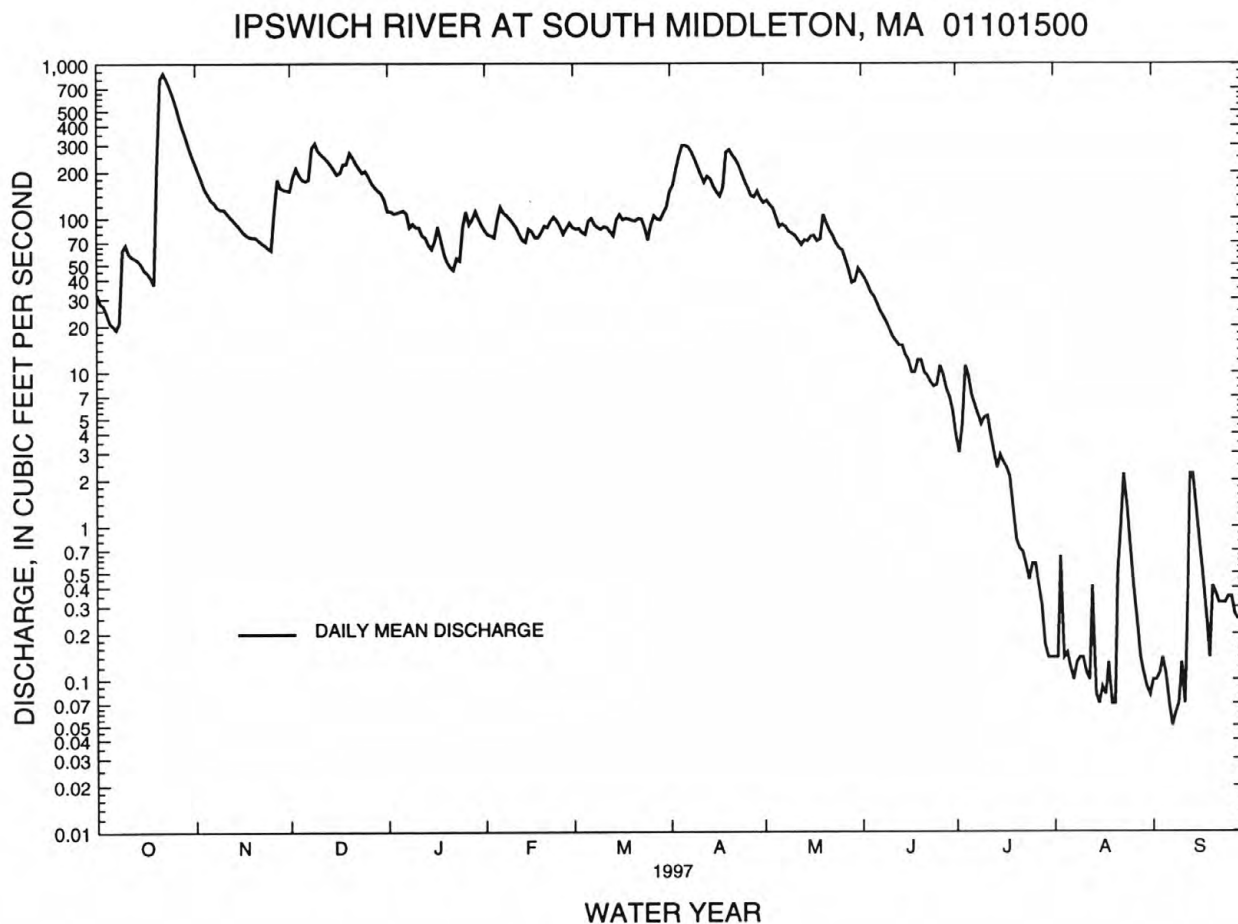
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	225	150	111	83	87	150	126	44	3.9	.14	.10
2	28	199	184	111	78	85	163	130	41	3.0	.14	.10
3	27	177	211	107	77	86	209	122	37	4.5	.64	.11
4	24	154	190	108	75	81	253	116	33	11	.14	.14
5	21	143	178	110	98	79	297	101	31	9.5	.15	.11
6	20	131	174	112	118	96	297	88	28	7.1	.12	.07
7	19	126	178	107	108	100	290	91	25	6.1	.10	.05
8	21	117	287	87	104	91	270	88	23	5.3	.13	.06
9	62	114	307	92	99	87	242	82	21	4.6	.14	.07
10	67	114	274	87	93	85	215	80	19	5.1	.14	.13
11	59	108	260	87	87	88	191	77	17	5.2	.11	.07
12	56	102	249	77	79	87	171	72	16	3.9	.10	.31
13	55	97	237	75	72	82	187	67	15	3.0	.41	2.2
14	53	92	222	67	70	77	179	72	15	2.4	.08	2.2
15	50	87	207	63	85	98	160	71	13	2.9	.07	1.3
16	46	82	192	71	82	106	148	76	12	2.6	.09	.78
17	44	78	198	88	75	98	139	77	10	2.4	.08	.48
18	41	76	225	72	75	100	159	71	10	2.1	.13	.27
19	37	75	225	59	81	99	268	73	12	1.3	.07	.14
20	225	75	266	52	89	97	279	105	12	.82	.07	.41
21	804	72	248	48	87	96	257	93	10	.72	.50	.37
22	875	69	227	46	96	100	242	83	9.5	.68	.97	.32
23	796	67	211	55	102	99	221	77	8.6	.56	2.2	.32
24	709	64	197	53	96	87	198	69	8.1	.45	1.4	.32
25	627	62	203	87	88	72	175	64	8.3	.57	.73	.35
26	539	108	186	110	79	91	157	62	11	.57	.40	.35
27	453	178	169	91	86	104	140	54	9.7	.42	.25	.27
28	389	157	159	98	93	99	137	46	7.8	.31	.14	.25
29	338	153	151	111	---	98	149	38	6.9	.17	.11	.25
30	292	152	145	99	---	108	134	39	5.6	.14	.09	.21
31	255	---	132	90	---	119	---	47	---	.14	.08	---
TOTAL	7064	3454	6442	2631	2455	2882	6077	2457	519.5	91.45	9.92	12.11
MEAN	228	115	208	84.9	87.7	93.0	203	79.3	17.3	2.95	.32	.40
MAX	875	225	307	112	118	119	297	130	44	11	2.2	2.2
MIN	19	62	132	46	70	72	134	38	5.6	.14	.07	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1997, BY WATER YEAR (WY)

	MEAN	30.3	52.3	71.0	70.6	84.4	150	142	81.1	44.3	18.4	12.7	14.9
MAX	240	199	217	215	212	351	389	298	262	195	95.5	164	
(WY)	1963	1956	1987	1979	1984	1983	1987	1954	1982	1938	1938	1954	
MIN	.55	1.28	1.05	1.07	9.66	36.3	29.6	18.5	7.36	.74	.32	.26	
(WY)	1958	1966	1966	1966	1980	1989	1985	1965	1966	1966	1997	1957	

01101500 IPSWICH RIVER AT SOUTH MIDDLETON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1938 - 1997
ANNUAL TOTAL	39517.7	34094.98	
ANNUAL MEAN	108	93.4	63.7
HIGHEST ANNUAL MEAN			121
LOWEST ANNUAL MEAN			18.6
HIGHEST DAILY MEAN	875	875	995
LOWEST DAILY MEAN	1.6	.05	.05
ANNUAL SEVEN-DAY MINIMUM	2.3	.08	.08
INSTANTANEOUS PEAK FLOW		896	1010
INSTANTANEOUS PEAK STAGE		7.88	7.88
INSTANTANEOUS LOW FLOW		.05	.05
10 PERCENT EXCEEDS	225	217	155
50 PERCENT EXCEEDS	87	77	38
90 PERCENT EXCEEDS	8.1	.16	2.2



IPSWICH RIVER BASIN

01102000 IPSWICH RIVER NEAR IPSWICH, MA

LOCATION.--Lat 42°39'35", long 70°53'39", Essex County, Hydrologic Unit 01090001, on left bank 200 ft downstream from Willowdale Dam, 1.5 mi downstream from Howlett Brook, and 4 mi upstream from Ipswich.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--Discharge: June 1930 to current year.

Water-quality records: Water years 1954, 1976-79.

REVISED RECORDS.--WSP 1621: 1930-58 (monthly runoff). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 20.63 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diversions upstream for municipal supply of Reading, Lynn, Peabody, Danvers, Salem, and Beverly. Some regulation by reservoirs upstream. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--67 years, 189 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,550 ft³/s, Apr. 8, 1987, gage height, 9.43 ft; minimum, 0.34 ft³/s, Sept. 20, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1886, that of Apr. 8, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,120 ft³/s, Oct. 23, gage height, 8.98 ft; minimum, 2.5 ft³/s, Aug. 13, Sept. 6, 7; minimum daily, 2.8 ft³/s, Aug. 12, 13, Sept. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	802	390	406	253	262	417	405	144	19	5.3	4.5
2	104	697	421	367	244	262	451	397	133	17	4.9	4.4
3	98	608	459	351	238	262	546	382	124	18	4.6	4.4
4	91	541	491	343	230	257	640	370	117	20	4.4	4.3
5	84	489	512	338	245	250	779	356	111	22	4.4	5.5
6	74	446	508	337	273	259	932	338	106	25	4.2	3.6
7	66	403	496	332	293	266	1000	317	101	24	4.1	2.8
8	61	362	616	371	306	273	950	296	95	21	3.9	3.8
9	94	333	779	347	301	278	834	278	89	18	3.9	5.0
10	114	311	829	289	284	277	729	264	81	17	3.6	e4.8
11	132	293	833	277	265	276	641	253	71	16	3.4	e4.5
12	148	277	787	272	244	269	570	243	63	14	2.8	e4.0
13	160	262	729	251	230	259	550	233	59	13	2.8	e5.0
14	160	246	692	227	217	251	541	225	46	13	3.8	e6.0
15	149	230	682	213	230	269	530	216	47	12	3.9	e7.0
16	138	215	651	212	243	282	506	212	47	13	4.1	e6.0
17	127	203	651	215	237	294	466	211	44	12	3.9	e5.2
18	117	193	715	197	246	302	460	209	42	11	4.5	4.7
19	108	184	716	190	256	302	608	210	45	9.8	4.4	4.0
20	236	179	853	174	266	295	810	229	47	8.4	3.2	3.7
21	1150	173	779	162	267	290	918	242	45	7.8	3.1	3.8
22	2430	166	722	155	280	293	857	254	41	7.7	8.1	3.6
23	3070	157	674	162	285	294	746	261	35	7.6	15	3.4
24	2930	152	627	150	285	293	649	257	30	7.0	14	3.4
25	2560	147	607	188	277	287	583	245	28	6.6	12	3.3
26	2130	174	576	212	266	304	525	231	27	6.4	9.9	3.3
27	1750	220	550	219	266	327	472	215	28	6.1	7.8	3.1
28	1490	277	523	248	265	343	443	200	28	6.0	6.5	3.0
29	1320	349	495	269	---	355	434	186	26	5.9	5.8	3.1
30	1100	392	465	272	---	374	420	174	21	5.8	5.3	3.5
31	929	---	434	264	---	382	---	159	---	5.6	4.7	---
TOTAL	23231	9481	19262	8010	7292	8987	19007	8068	1921	395.7	172.3	126.7
MEAN	749	316	621	258	260	290	634	260	64.0	12.8	5.56	4.22
MAX	3070	802	853	406	306	382	1000	405	144	25	15	7.0
MIN	61	147	390	150	217	250	417	159	21	5.6	2.8	2.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1997, BY WATER YEAR (WY)

	MEAN	80.4	137	196	210	240	449	439	240	140	55.5	36.4	41.9
MAX	749	525	621	566	627	1158	1233	833	821	518	356	390	
(WY)	1997	1933	1997	1958	1984	1983	1987	1954	1982	1938	1938	1954	
MIN	4.80	6.87	11.5	14.4	16.4	75.0	97.1	87.0	25.6	5.75	2.13	1.76	
(WY)	1966	1966	1966	1966	1980	1989	1985	1985	1976	1957	1965	1965	

IPSWICH RIVER BASIN

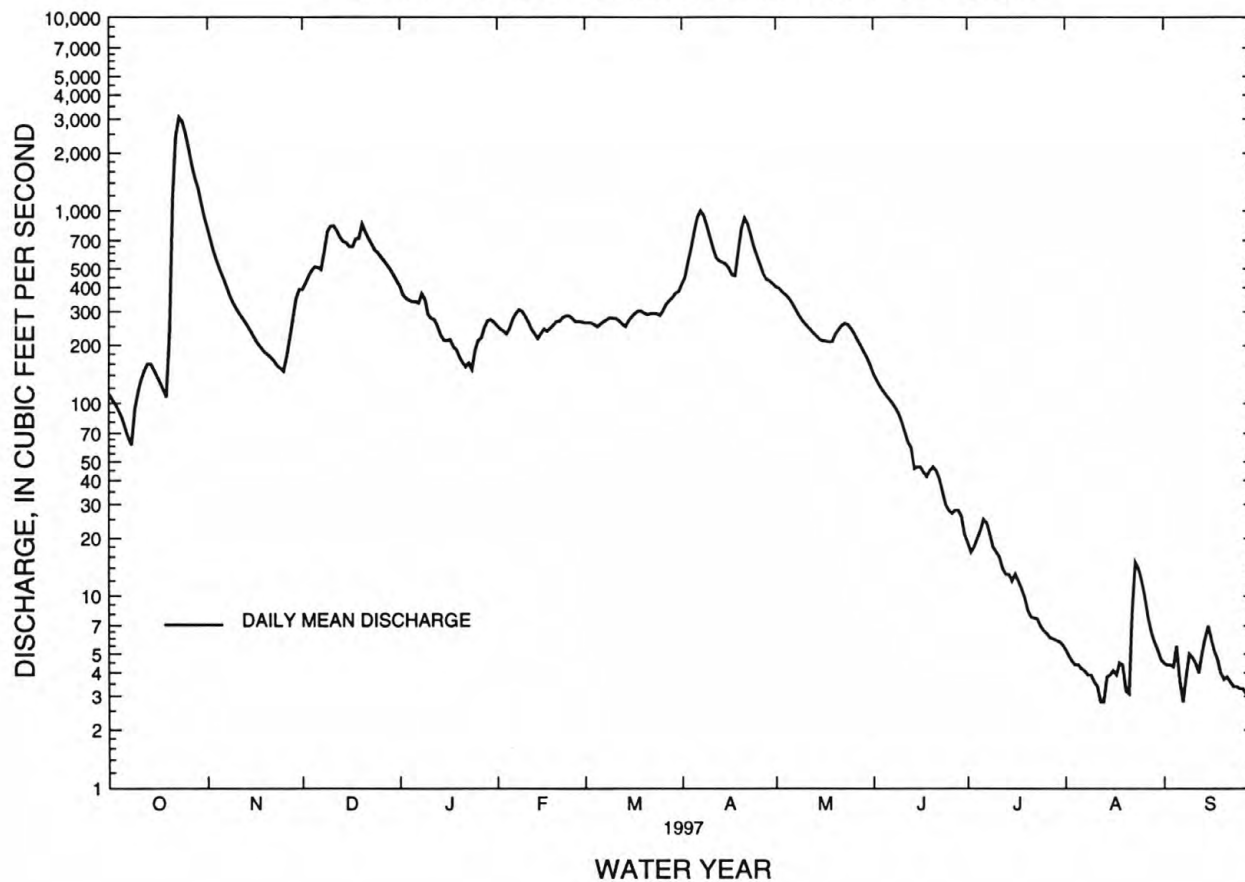
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01102000 IPSWICH RIVER NEAR IPSWICH, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1930 - 1997	
ANNUAL TOTAL	116343.5		105953.7		189	
ANNUAL MEAN	318		290		351	1984
HIGHEST ANNUAL MEAN					57.7	1966
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	3070	Oct 23	3070	Oct 23	3520	Apr 8 1987
LOWEST DAILY MEAN	9.5	Sep 1	2.8	Aug 12	.59	Sep 21 1978
ANNUAL SEVEN-DAY MINIMUM	11	Aug 27	3.2	Sep 23	.94	Aug 21 1965
INSTANTANEOUS PEAK FLOW			3120	Oct 23	3550	Apr 8 1987
INSTANTANEOUS PEAK STAGE			8.98	Oct 23	9.43	Apr 8 1987
INSTANTANEOUS LOW FLOW			2.5	Aug 13		
10 PERCENT EXCEEDS	694		660		448	
50 PERCENT EXCEEDS	230		230		114	
90 PERCENT EXCEEDS	24		4.5		12	

e Estimated

IPSWICH RIVER NEAR IPSWICH, MA 01102000



SAUGUS RIVER BASIN

01102345 SAUGUS RIVER AT SAUGUS IRONWORKS AT SAUGUS, MA

LOCATION.--Lat 42°28'05", long 71°00'27", Essex County, Hydrologic Unit 01090001, on left bank 20 ft upstream from Bridge Street opposite Saugus Ironworks National Historic Site, at Saugus.

DRAINAGE AREA.--23.3 mi².

PERIOD OF RECORD.--March 1994 to current year.

GAGE.--Water stage recorder. Elevation of gage is 15 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There is evidence of seasonal regulation by ponds upstream. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--3 years, 30.9 ft³/s, 18.00 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 942 ft³/s, Oct. 21, 1996, gage height, 6.58 ft; minimum, about 0.60 ft³/s, Sept. 5, 6, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	1015	*942	*6.58	Apr. 6	1800	151	3.76
Dec. 8	1400	216	4.20	Apr. 19	1045	186	4.01
Dec. 20	0515	165	3.86				

Minimum discharge, 0.96 ft³/s, Aug. 2, 3, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	104	71	e52	49	29	82	52	7.8	2.3	1.1	1.6
2	15	76	105	53	45	31	121	58	7.9	2.4	1.0	1.6
3	10	67	106	51	37	30	116	51	7.6	2.7	1.3	2.2
4	9.3	61	87	56	35	28	120	49	7.2	3.7	2.3	2.0
5	8.1	49	79	58	65	28	135	45	6.9	3.2	1.9	1.6
6	7.5	49	79	59	63	49	146	44	6.6	2.4	1.5	1.4
7	7.0	50	81	56	47	40	145	42	6.2	2.1	1.3	1.3
8	12	47	200	e48	35	33	127	33	6.0	2.0	1.1	1.2
9	48	46	175	41	26	32	111	25	5.6	2.1	1.7	1.3
10	47	45	158	52	39	33	89	20	5.4	2.4	1.3	1.2
11	48	40	141	49	44	37	82	18	4.9	2.3	1.1	1.2
12	39	35	130	e41	43	34	78	16	4.5	1.9	1.2	4.7
13	31	32	117	e38	40	31	104	14	11	1.7	6.3	6.4
14	24	31	111	36	33	30	88	17	14	1.6	6.4	2.9
15	13	30	111	35	50	64	77	27	7.0	2.9	3.1	2.1
16	12	29	100	49	42	51	71	27	5.2	3.0	1.9	1.7
17	16	29	111	e57	38	40	65	19	4.9	2.4	1.5	1.4
18	18	29	124	e44	37	37	91	15	6.3	3.5	4.2	1.3
19	19	29	129	e34	31	35	169	19	8.9	4.0	2.9	1.2
20	279	29	154	e28	28	34	129	46	5.8	2.6	1.9	4.1
21	812	28	127	e24	26	34	111	51	4.4	2.0	8.1	5.4
22	480	28	114	23	32	38	101	46	3.8	2.1	15	3.1
23	314	28	99	29	32	34	93	23	3.4	1.8	10	1.9
24	245	27	94	e27	29	30	85	16	3.2	1.7	4.9	1.5
25	216	27	99	63	27	29	65	17	3.2	1.8	2.9	1.3
26	198	77	86	57	26	45	55	17	3.8	1.7	2.3	1.2
27	190	108	78	e39	34	41	51	13	3.7	1.6	2.0	1.2
28	183	83	71	61	33	34	61	11	3.0	1.5	1.9	1.1
29	174	85	73	68	---	38	66	10	2.7	1.4	1.9	2.3
30	158	77	71	63	---	52	54	8.9	2.4	1.2	1.8	1.9
31	142	---	60	53	---	54	---	8.2	---	1.2	1.7	---
TOTAL	3793.9	1475	3341	1444	1066	1155	2888	858.1	173.3	69.2	97.5	63.3
MEAN	122	49.2	108	46.6	38.1	37.3	96.3	27.7	5.78	2.23	3.15	2.11
MAX	812	108	200	68	65	64	169	58	14	4.0	15	6.4
MIN	7.0	27	60	23	26	28	51	8.2	2.4	1.2	1.0	1.1
CFSM	5.25	2.11	4.63	2.00	1.63	1.60	4.13	1.19	.25	.10	.13	.09
IN.	6.06	2.35	5.33	2.31	1.70	1.84	4.61	1.37	.28	.11	.16	.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1997, BY WATER YEAR (WY)

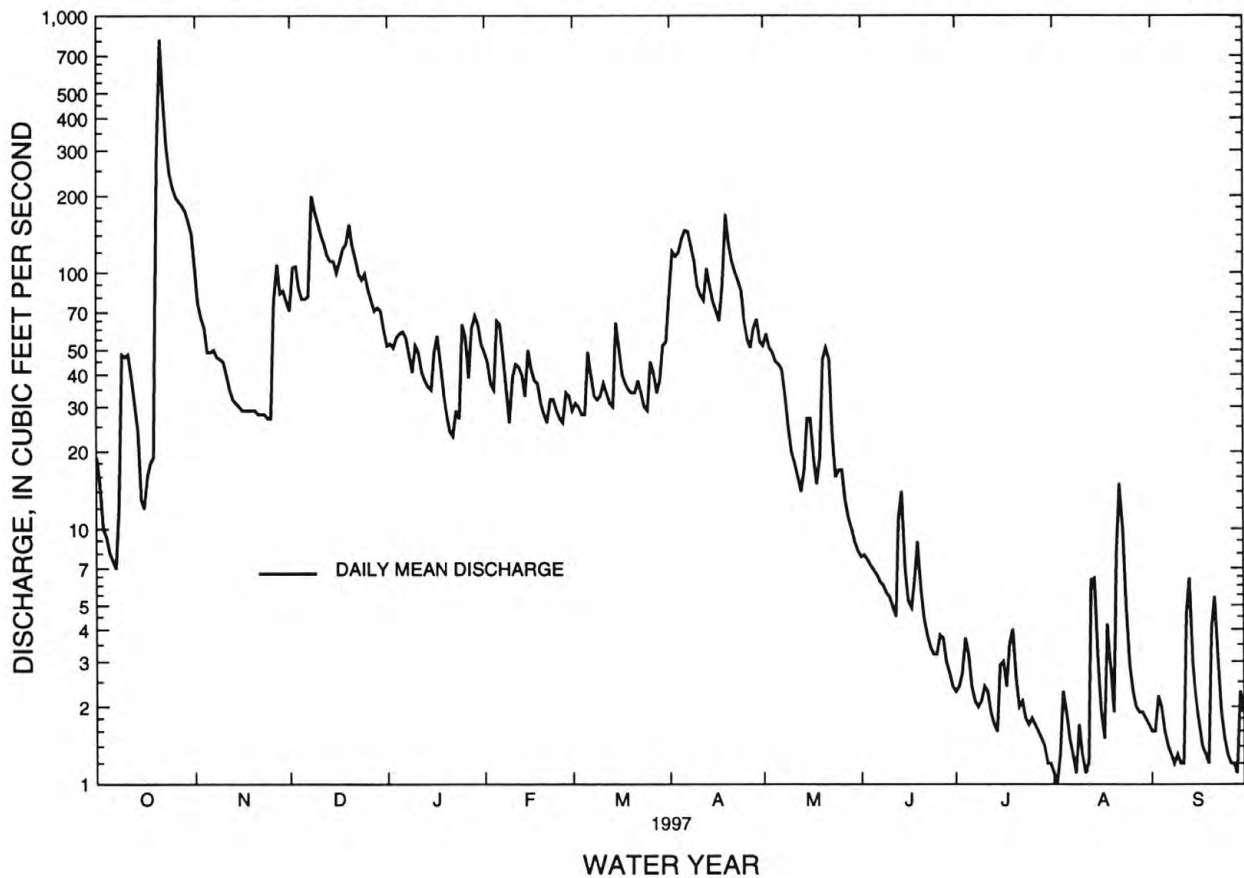
	1993	1994	1995	1996	1997
MEAN	48.0	37.2	56.3	49.2	37.6
MAX	122	49.2	108	62.3	55.4
(WY)	1997	1997	1997	1996	1994
MIN	6.22	17.5	21.1	38.9	18.8
(WY)	1995	1995	1996	1995	1995

01102345 SAUGUS RIVER AT SAUGUS IRONWORKS AT SAUGUS, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1993 - 1997	
ANNUAL TOTAL	17869.0		16424.3		30.9	
ANNUAL MEAN	48.8		45.0		45.0	
HIGHEST ANNUAL MEAN					15.5	
LOWEST ANNUAL MEAN					15.5	
HIGHEST DAILY MEAN	812	Oct 21	812	Oct 21	812	Oct 21 1996
LOWEST DAILY MEAN	2.7	Sep 1	1.0	Aug 2	.60	Sep 5 1995
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 26	1.2	Jul 28	.62	Sep 2 1995
INSTANTANEOUS PEAK FLOW			942	Oct 21	942	Oct 21 1996
INSTANTANEOUS PEAK STAGE			6.58	Oct 21	6.58	Oct 21 1996
INSTANTANEOUS LOW FLOW			.96	Aug 2	.06	Sep 5 1995
ANNUAL RUNOFF (CFSM)	2.10		1.93		1.32	
ANNUAL RUNOFF (INCHES)	28.53		26.22		18.00	
10 PERCENT EXCEEDS	109		111		78	
50 PERCENT EXCEEDS	31		30		15	
90 PERCENT EXCEEDS	4.3		1.7		2.1	

e Estimated

SAUGUS RIVER AT SAUGUS IRONWORKS AT SAUGUS, MA 01102345



MYSTIC RIVER BASIN

01102500 ABERJONA RIVER AT WINCHESTER, MA

LOCATION.--Lat 42°26'50", long 71°08'22", Middlesex County, Hydrologic Unit 01090001, on left bank at Winchester, 0.5 mi upstream from head of Mystic Lakes.

DRAINAGE AREA.--24.1 mi², excludes 0.6 mi² drained by Winchester North Reservoir.

PERIOD OF RECORD.--Discharge: April 1939 to current year.

Water-quality records: Water year 1958-59, 1973.

REVISED RECORDS.--WDR MA-RI-79-1: 1955. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is sea level.

REMARKS.--Records good. Flow affected by diversions for industrial use and for municipal supply of Woburn and Winchester, and by wastage and leakage from Winchester North Reservoir. Some regulation by Winchester at dam 1,800 ft upstream.

AVERAGE DISCHARGE.--58 years, 29.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft³/s, Jan. 25, 1979, gage height, 15.46 ft, from rating curve extended above 400 ft³/s on basis of slope-area measurement of peak flow; no flow for part of Oct. 10, 12, 1950, caused by pumpage from gage pool; minimum daily discharge, 0.25 ft³/s, Oct. 10, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1886, that of Jan. 25, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft³/s, Oct. 21, gage height, 16.78 ft; minimum, 1.2 ft³/s, June 9; minimum daily, 2.2 ft³/s, July 31, Aug. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	56	47	39	34	27	96	45	15	4.5	2.2	3.3
2	11	52	112	39	31	26	89	55	14	4.4	2.2	3.4
3	12	48	96	39	30	26	89	44	14	6.9	11	4.5
4	9.1	46	73	39	30	27	110	42	13	18	22	3.9
5	8.2	43	55	40	79	24	131	38	12	9.3	8.0	3.3
6	7.9	40	44	41	72	54	119	36	11	6.2	5.3	3.0
7	7.5	38	53	32	52	42	112	35	11	5.0	4.1	2.9
8	20	43	227	33	40	34	98	32	11	4.5	3.3	2.7
9	93	61	167	31	35	31	84	31	14	4.4	3.2	2.7
10	46	57	126	36	31	33	73	32	6.2	6.7	3.5	2.6
11	31	48	118	33	29	37	65	31	9.4	5.2	2.9	2.9
12	22	42	124	30	27	28	60	26	8.7	4.3	4.0	48
13	18	18	122	27	25	29	72	21	23	3.9	17	19
14	16	21	113	25	37	30	75	32	17	3.6	19	8.6
15	13	21	97	23	48	77	63	27	9.7	6.1	7.2	6.0
16	12	21	84	47	40	56	55	34	8.3	7.0	5.4	4.4
17	11	22	118	46	32	43	51	28	7.8	6.2	3.8	3.8
18	10	22	120	33	29	38	82	22	11	9.7	12	3.5
19	9.6	23	129	26	28	35	139	30	13	9.0	5.8	3.3
20	384	23	146	23	27	34	130	75	9.4	4.2	4.1	11
21	1070	22	109	22	26	33	96	48	8.0	3.7	28	15
22	786	21	89	21	27	39	81	33	7.3	4.3	41	5.2
23	373	20	79	25	27	35	70	27	6.4	3.4	25	4.1
24	222	20	69	22	26	31	62	24	5.9	3.3	10	3.4
25	155	20	71	92	24	29	57	26	6.5	3.3	7.0	3.0
26	123	130	62	71	23	56	52	25	7.1	3.4	5.5	2.9
27	98	120	56	44	29	47	49	20	6.2	3.3	4.6	2.6
28	81	79	53	74	31	39	53	18	5.5	3.1	4.2	2.5
29	77	54	53	68	---	44	62	17	5.0	2.7	4.1	7.1
30	70	45	52	45	---	50	56	16	4.7	2.3	3.8	5.4
31	65	---	43	36	---	71	---	15	---	2.2	3.5	---
TOTAL	3874.3	1276	2907	1202	969	1205	2431	985	301.1	164.1	282.7	194.0
MEAN	125	42.5	93.8	38.8	34.6	38.9	81.0	31.8	10.0	5.29	9.12	6.47
MAX	1070	130	227	92	79	77	139	75	23	18	41	48
MIN	7.5	18	43	21	23	24	49	15	4.7	2.2	2.2	2.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1997, BY WATER YEAR (WY)

	MEAN	14.6	23.9	32.4	37.0	40.8	63.9	54.3	33.2	21.1	9.77	9.86	9.90
MAX	125	103	95.7	169	104	167	175	134	159	40.4	79.4	78.2	
(WY)	1997	1956	1970	1979	1984	1983	1987	1954	1982	1959	1955	1954	
MIN	.48	.59	.63	2.34	4.39	19.2	12.4	11.3	3.02	.69	.62	.49	
(WY)	1942	1942	1942	1966	1980	1989	1966	1965	1957	1950	1957	1957	

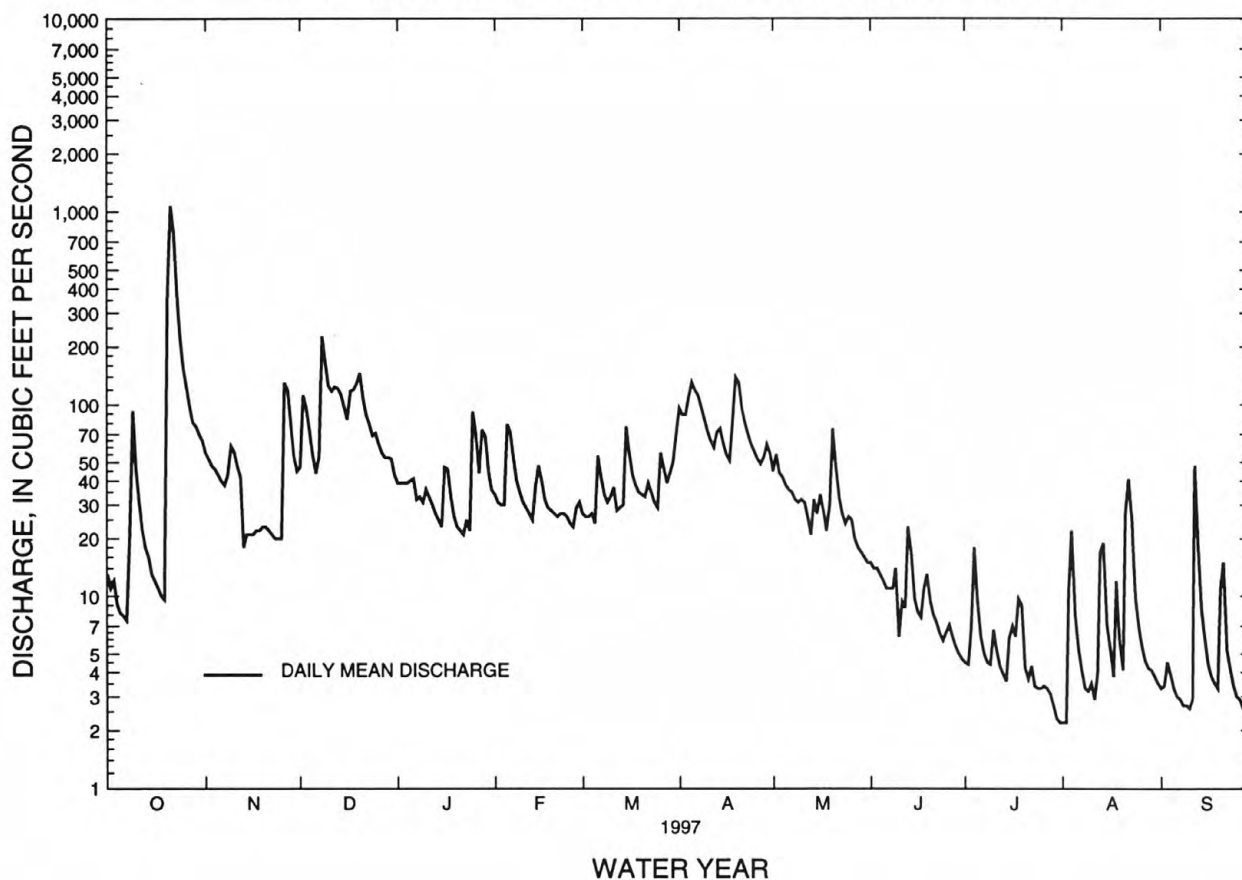
MYSTIC RIVER BASIN

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01102500 ABERJONA RIVER AT WINCHESTER, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1939 - 1997	
ANNUAL TOTAL	18076.4		15791.2		29.2	
ANNUAL MEAN	49.4		43.3		58.3	
HIGHEST ANNUAL MEAN					8.23	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	1070	Oct 21	1070	Oct 21	1070	Oct 21 1996
LOWEST DAILY MEAN	3.4	Aug 31	2.2	Jul 31	.25	Oct 10 1950
ANNUAL SEVEN-DAY MINIMUM	4.5	Aug 17	2.6	Jul 27	.31	Dec 6 1941
INSTANTANEOUS PEAK FLOW			1150	Oct 21	1330	Jan 25 1979
INSTANTANEOUS PEAK STAGE			16.78	Oct 21	16.78	Oct 21 1996
INSTANTANEOUS LOW FLOW			1.2	Jun 9	.00	Oct 10 1950
10 PERCENT EXCEEDS	109		90		68	
50 PERCENT EXCEEDS	32		27		17	
90 PERCENT EXCEEDS	6.8		3.8		1.3	

ABERJONA RIVER AT WINCHESTER, MA 01102500



CHARLES RIVER BASIN

01103500 CHARLES RIVER AT DOVER, MA

LOCATION.--Lat 42°15'22", long 71°15'38", Norfolk County, Hydrologic Unit 01090001, on right bank 0.3 mi downstream from highway bridge, 0.8 mi downstream from Noanet Brook, and 1.3 mi northeast of intersection of Centre and Walpole Streets in Dover.

DRAINAGE AREA.--183 mi².

PERIOD OF RECORD.--Discharge: October 1937 to current year. Prior to October 1977, published as "at Charles River Village."

Water-quality records: Water years 1975-95 (National stream-quality accounting network station).

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 89.76 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow affected by diversions to and from basin for municipal supplies. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--60 years, 305 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,220 ft³/s, Aug. 23, 1955, gage height, 9.24 ft and Mar. 22, 1968, gage height, 8.72 ft; minimum, 0.5 ft³/s, Oct. 24, 1952 (caused by unusual regulation); minimum daily, 0.9 ft³/s, Oct. 24, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since flood in 1886, that of August 1955 and March 1968. Flood in March 1936 reached a discharge of 3,170 ft³/s, by computation of flow over dam at site 0.2 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,370 ft³/s, Oct. 24; gage height, 5.13 ft; minimum 8.8 ft³/s, Aug. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	601	510	625	543	313	536	593	194	39	11	24
2	166	553	578	583	515	309	544	578	182	37	9.6	24
3	149	506	584	551	488	296	605	541	174	36	9.3	28
4	128	459	601	529	458	292	728	522	165	35	9.1	24
5	112	419	634	519	499	289	871	497	158	32	11	21
6	99	385	655	512	523	319	977	483	150	30	11	19
7	89	356	676	496	547	324	1090	461	139	27	11	17
8	97	335	891	468	560	337	1140	433	130	27	9.8	17
9	249	331	922	443	552	335	1150	412	124	30	14	16
10	294	331	952	426	525	331	1100	391	116	32	21	17
11	305	335	965	406	488	329	1040	366	103	32	18	18
12	322	336	974	e360	454	327	962	344	94	29	18	40
13	325	328	954	e350	417	319	962	317	96	26	26	29
14	307	313	925	351	398	313	902	306	94	24	29	29
15	271	292	909	330	397	389	853	288	87	22	25	30
16	233	269	891	353	395	424	817	290	82	22	26	28
17	191	248	915	e370	393	455	779	286	77	20	26	28
18	158	233	956	e320	393	473	783	279	78	18	36	25
19	137	230	1000	e340	394	482	906	291	83	16	31	22
20	539	232	1110	e350	396	475	940	376	81	14	29	22
21	1220	231	1120	327	400	455	975	405	79	13	36	24
22	1230	228	1130	308	407	436	1010	434	79	14	39	20
23	1330	222	1100	330	398	414	998	438	75	14	39	18
24	1360	213	1050	328	389	396	951	428	71	14	41	16
25	1300	207	1020	431	369	379	887	406	66	16	39	17
26	1180	305	938	478	351	387	819	373	63	17	34	16
27	1030	402	881	493	336	375	748	335	57	16	29	15
28	916	453	826	566	320	374	710	302	51	17	26	14
29	814	495	779	565	---	381	670	271	46	14	24	17
30	723	512	730	584	---	398	617	241	42	13	24	17
31	655	---	679	571	---	433	---	215	---	13	23	---
TOTAL	16108	10360	26855	13663	12305	11559	26070	11902	3036	709	734.8	652
MEAN	520	345	866	441	439	373	869	384	101	22.9	23.7	21.7
MAX	1360	601	1130	625	560	482	1150	593	194	39	41	40
MIN	89	207	510	308	320	289	536	215	42	13	9.1	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1997, BY WATER YEAR (WY)

MEAN	143	253	350	369	428	614	590	358	228	123	115	99.8
MAX	600	892	866	1180	998	1172	1474	746	1129	1060	956	640
(WY)	1956	1956	1997	1979	1970	1983	1987	1954	1982	1938	1955	1954
MIN	13.4	33.1	54.6	45.3	86.7	227	169	138	67.2	19.5	9.01	7.78
(WY)	1958	1966	1966	1981	1980	1985	1966	1986	1957	1957	1957	1957

CHARLES RIVER BASIN

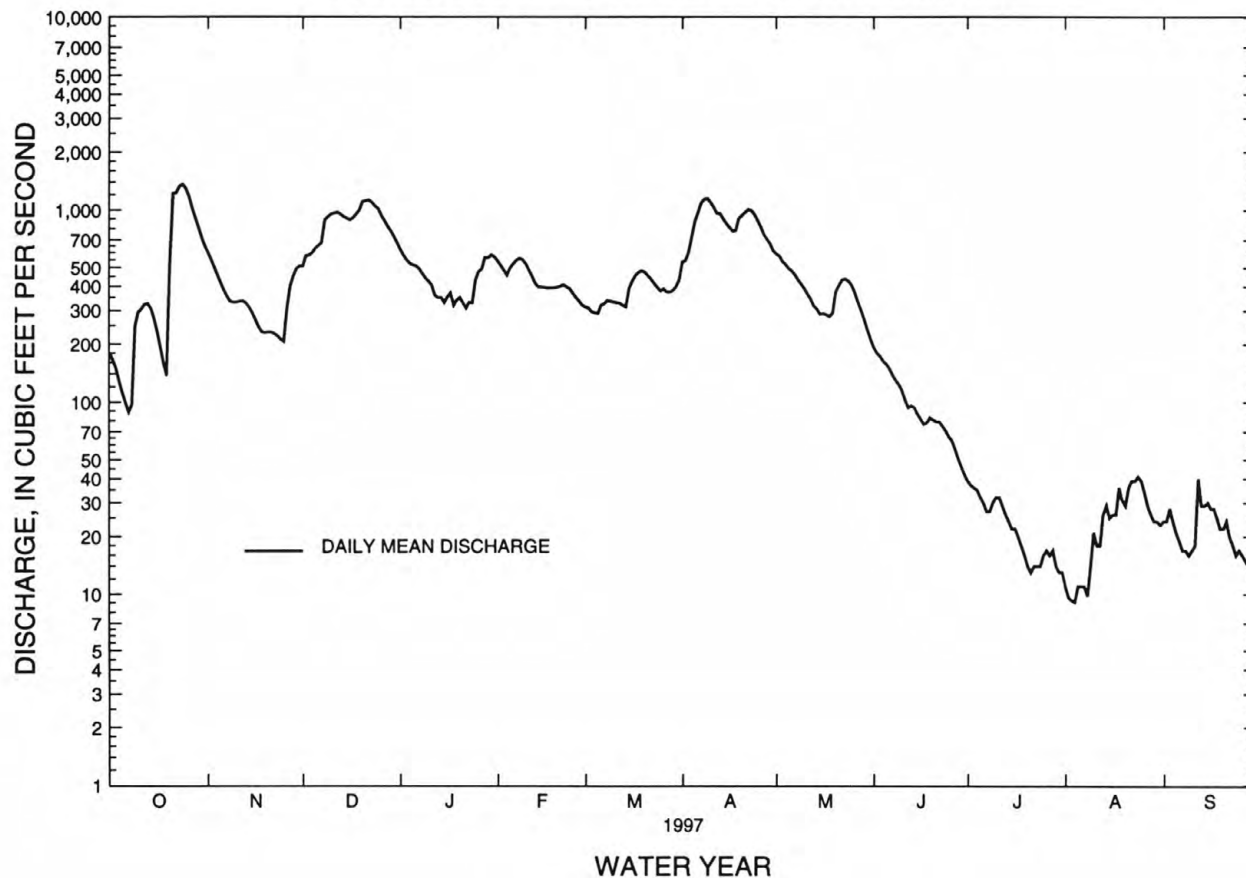
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01103500 CHARLES RIVER AT DOVER, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1938 - 1997	
ANNUAL TOTAL	157802		133953.8		305	
ANNUAL MEAN	431		367		496	1984
HIGHEST ANNUAL MEAN					117	1966
LOWEST ANNUAL MEAN					3190	Mar 22 1968
HIGHEST DAILY MEAN	1360	Oct 24	1360	Oct 24		
LOWEST DAILY MEAN	47	Sep 7	9.1	Aug 4		
ANNUAL SEVEN-DAY MINIMUM	51	Sep 4	10	Aug 2	4.3	Sep 10 1995
INSTANTANEOUS PEAK FLOW			1370	Oct 24	3220	Aug 23 1955
INSTANTANEOUS PEAK STAGE			5.13	Oct 24	9.24	Aug 23 1955
INSTANTANEOUS LOW FLOW			8.8	Aug 3		
10 PERCENT EXCEEDS	954		915		686	
50 PERCENT EXCEEDS	374		330		211	
90 PERCENT EXCEEDS	79		18		42	

e Estimated

CHARLES RIVER AT DOVER, MA 01103500



CHARLES RIVER BASIN

01104000 MOTHER BROOK AT DEDHAM, MA

LOCATION.--Lat 42°15'18", long 71°09'53", Norfolk County, Hydrologic Unit 01090001, on right bank 100 ft upstream from Washington Street Bridge at Dedham and 0.4 mi downstream from point of diversion from Charles River.

PERIOD OF RECORD.--Discharge: October 1931 to current year.
Water-quality records: Water years 1959, 1969-70.

REVISED RECORDS.--WSP 1301: 1932(M).

GAGE.--Water-stage recorder. Concrete control since June 10, 1960. Datum of gage is 0.03 ft below sea level. Dec. 9, 1931, to June 9, 1960, nonrecording gage at site 200 ft upstream at same datum.

REMARKS.--Records good. Mother Brook is a diversion from Charles River to Neponset River through Dedham and Hyde Park.

AVERAGE DISCHARGE.--66 years, 76.7 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,040 ft³/s, Mar. 21, 1968, gage height, 87.18 ft; maximum gage height, 92.90 ft, Aug. 24, 1955, from graph based on gage readings; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 605 ft³/s, Oct. 21, gage height, 85.15 ft; minimum, 0.34 ft³/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	136	46	145	147	126	301	163	29	3.3	1.3	.56
2	15	114	84	126	131	127	273	161	27	3.4	1.1	.61
3	27	96	94	113	117	126	273	139	36	3.5	.91	1.0
4	22	75	84	104	106	129	305	135	35	2.9	.88	.60
5	15	57	88	98	130	131	345	101	33	2.2	.96	.59
6	10	44	100	123	145	174	368	68	28	1.8	.82	.48
7	8.0	33	114	128	139	169	387	60	22	1.6	.80	.48
8	17	22	219	128	143	162	401	44	18	1.8	.73	.48
9	95	22	230	105	141	161	400	32	16	1.9	1.3	.48
10	96	24	216	107	131	173	392	27	20	2.4	.60	.45
11	90	22	214	96	118	215	374	22	16	2.2	.56	.53
12	83	20	237	79	102	219	354	19	12	1.9	.55	1.9
13	77	18	238	73	92	216	355	27	9.7	1.5	2.0	.67
14	70	14	229	76	84	206	341	36	10	1.8	.65	.60
15	63	11	223	70	87	274	316	59	5.9	1.8	.56	.69
16	61	6.7	211	78	82	269	299	70	4.5	2.0	.56	.89
17	48	3.9	243	100	81	264	286	74	7.6	1.9	.56	.95
18	36	2.3	272	68	76	269	293	66	8.1	1.8	1.8	1.3
19	25	2.5	298	91	79	267	345	69	11	1.7	.57	1.1
20	236	2.5	345	81	83	261	344	106	9.3	1.5	.56	1.7
21	577	2.0	338	71	77	252	336	101	7.0	1.3	1.8	.65
22	542	1.7	334	63	84	242	337	106	6.5	1.4	.96	.57
23	473	1.7	327	68	83	229	336	105	6.2	1.2	.66	.51
24	447	1.7	315	72	78	212	330	94	8.3	1.2	.57	.83
25	422	1.4	316	113	72	194	312	82	7.7	1.4	.56	1.1
26	387	15	282	129	62	206	293	72	8.0	1.2	.56	1.5
27	334	37	252	131	76	196	269	51	6.9	1.2	.58	1.4
28	281	36	225	157	131	184	258	37	4.6	1.2	.69	1.6
29	239	43	205	169	---	185	253	34	3.3	1.2	.80	1.1
30	193	47	191	159	---	202	219	46	2.7	1.2	.56	.56
31	163	---	168	161	---	211	---	38	---	1.2	.56	---
TOTAL	5167.0	912.4	6738	3282	2877	6251	9695	2244	419.3	56.6	26.07	25.88
MEAN	167	30.4	217	106	103	202	323	72.4	14.0	1.83	.84	.86
MAX	577	136	345	169	147	274	401	163	36	3.5	2.0	1.9
MIN	8.0	1.4	46	63	62	126	219	19	2.7	1.2	.55	.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1997, BY WATER YEAR (WY)

	MEAN	27.8	56.9	87.0	97.4	113	176	161	88.3	52.4	21.6	21.7	20.1
MAX	182	308	285	287	360	490	437	253	328	339	306	189	
(WY)	1956	1956	1973	1976	1970	1936	1987	1954	1982	1938	1955	1954	
MIN	.000	.61	.43	.14	.14	.54	26.5	.000	.000	.061	.000	.097	
(WY)	1942	1959	1959	1959	1959	1959	1966	1960	1955	1957	1949	1943	

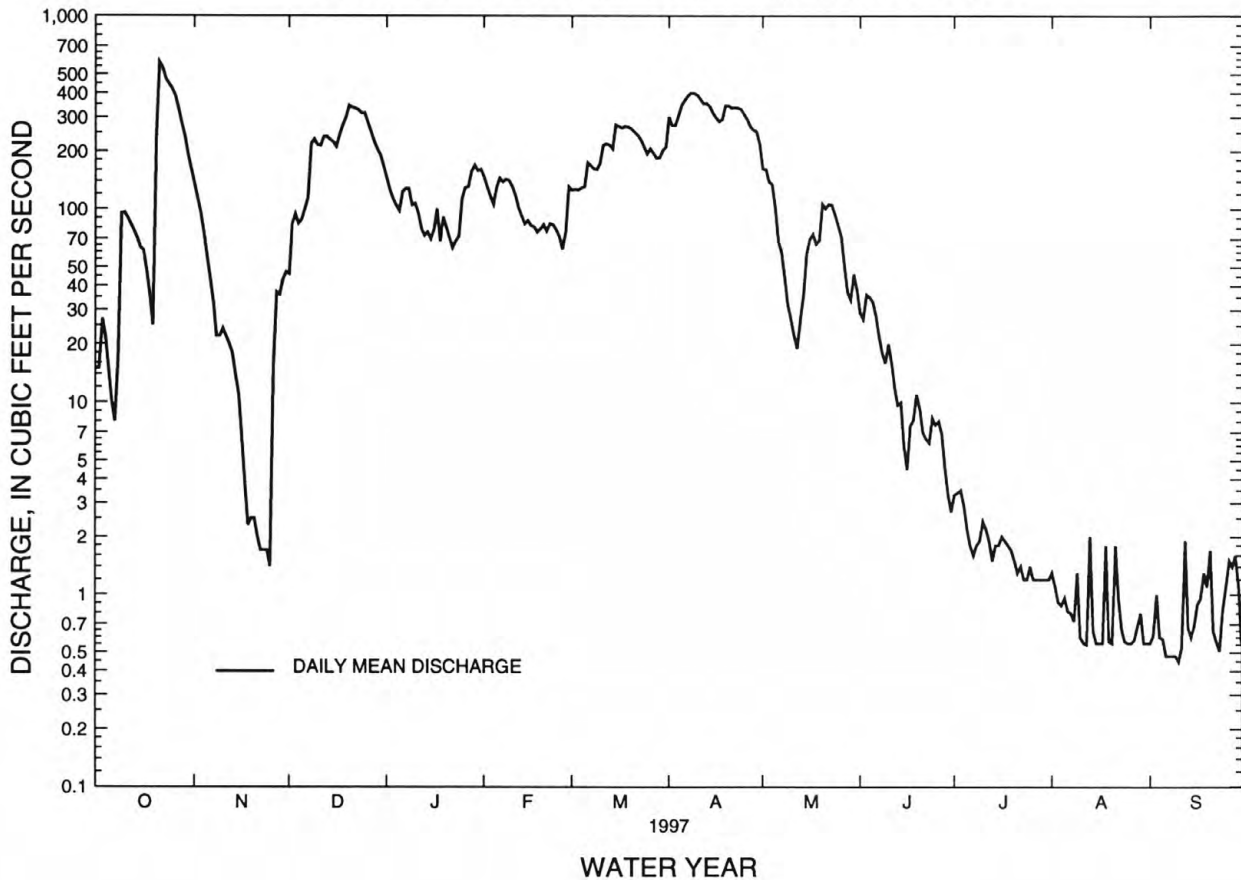
CHARLES RIVER BASIN

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01104000 MOTHER BROOK AT DEDHAM, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1932 - 1997	
ANNUAL TOTAL	33703.9		37694.25		76.7	
ANNUAL MEAN	92.1		103		149	
HIGHEST ANNUAL MEAN					20.6	
LOWEST ANNUAL MEAN					1010	
HIGHEST DAILY MEAN	577	Oct 21	577	Oct 21	1010	Mar 21 1968
LOWEST DAILY MEAN	1.4	Nov 25	.45	Sep 10	.00	Sep 12 1941
ANNUAL SEVEN-DAY MINIMUM	1.9	Nov 19	.50	Sep 5	.00	Sep 12 1941
INSTANTANEOUS PEAK FLOW			605	Oct 21	1040	Mar 21 1968
INSTANTANEOUS PEAK STAGE			85.15	Oct 21	92.90	Aug 24 1955
INSTANTANEOUS LOW FLOW			.34	Sep 11	.00	Sep 12 1941
10 PERCENT EXCEEDS	275		293		203	
50 PERCENT EXCEEDS	48		69		39	
90 PERCENT EXCEEDS	3.2		.80		1.5	

MOTHER BROOK AT DEDHAM, MA 01104000



LOCATION.--Lat 42°18'59", long 71°13'42", Norfolk County, Hydrologic Unit 01090001, on left bank at east limits of Wellesley, 30 ft upstream from a horseshoe-shaped dam and 50 ft upstream from bridge on State Highway 9.

PERIOD OF RECORD.--Discharge: August 1959 to current year.
Water-quality records: Water year 1968.

REMARKS.--Records good. Flow affected by diversion to Mother Brook (station 01104000), and by diversions to and from basin for municipal supplies. Occasional regulation at dam 0.2 mi upstream and by other ponds upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,410 ft³/s, Mar. 21, 1968, gage height, 6.20 ft; no flow Sept. 15, Oct. 6, 1959 (caused by closing of gates at dam at gage); minimum daily, 1.0 ft³/s, Aug. 24, 31, Sept. 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,440 ft³/s, Oct. 21, gage height, 5.16 ft; minimum, 12 ft³/s, July 7, 21-25, Aug. 18, Sept. 2, 12, 15, 22; minimum daily, 12 ft³/s, July 22-24.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	185	615	543	601	503	235	386	484	206	32	18	31
2	137	575	645	569	487	232	398	501	160	33	15	22
3	128	534	658	547	470	212	448	496	156	38	15	23
4	126	498	630	530	447	208	534	470	147	38	15	31
5	117	453	642	517	511	190	656	463	144	38	15	31
6	107	415	671	494	526	208	721	477	143	38	15	29
7	80	392	709	454	516	214	775	471	137	25	15	26
8	90	379	956	420	520	224	802	459	132	24	15	23
9	269	376	949	394	517	228	809	447	104	27	15	22
10	282	368	916	404	500	180	798	433	99	29	17	21
11	278	363	909	381	473	162	770	410	100	34	20	22
12	282	361	909	339	447	156	728	350	98	34	21	30
13	290	358	882	334	412	151	735	340	104	34	30	22
14	282	346	864	333	407	162	683	266	107	23	46	31
15	228	328	854	319	411	244	642	265	95	21	41	22
16	210	308	835	350	395	248	610	256	66	22	36	22
17	183	287	851	346	387	266	587	264	64	23	34	30
18	156	271	852	315	387	274	598	265	68	24	28	31
19	140	262	878	318	388	286	716	291	81	22	27	30
20	609	262	927	345	392	288	730	384	82	21	32	29
21	1380	263	922	325	395	280	715	388	80	16	46	33
22	1310	258	917	305	404	269	720	396	80	12	52	22
23	1180	253	905	324	398	252	723	403	63	12	50	17
24	1130	242	889	310	380	241	703	406	60	12	46	20
25	1100	233	870	445	369	241	676	401	60	13	46	22
26	1040	369	827	466	352	248	629	381	59	16	42	22
27	959	478	781	448	240	245	587	355	57	20	38	23
28	879	487	746	533	231	244	565	330	55	20	34	23
29	800	513	714	536	---	254	536	244	50	20	32	26
30	730	532	673	506	---	278	503	229	36	20	32	26
31	661	---	637	519	---	310	---	223	---	19	31	---
TOTAL	15348	11379	24961	13027	11865	7230	19483	11548	2893	760	919	762
MEAN	495	379	805	420	424	233	649	373	96.4	24.5	29.6	25.4
MAX	1380	615	956	601	526	310	809	501	206	38	52	33
MIN	80	233	543	305	231	151	386	223	36	12	15	17

MEAN	153	246	339	341	395	542	550	335	222	108	102	90.9
MAX	495	561	805	1018	766	1048	1223	575	951	280	430	253
(WY)	1997	1990	1997	1979	1970	1983	1987	1972	1982	1972	1990	1961
MIN	23.2	34.0	52.6	43.8	95.7	211	154	124	67.3	24.5	13.0	14.9
(WY)	1966	1966	1966	1981	1980	1985	1985	1986	1964	1997	1965	1965

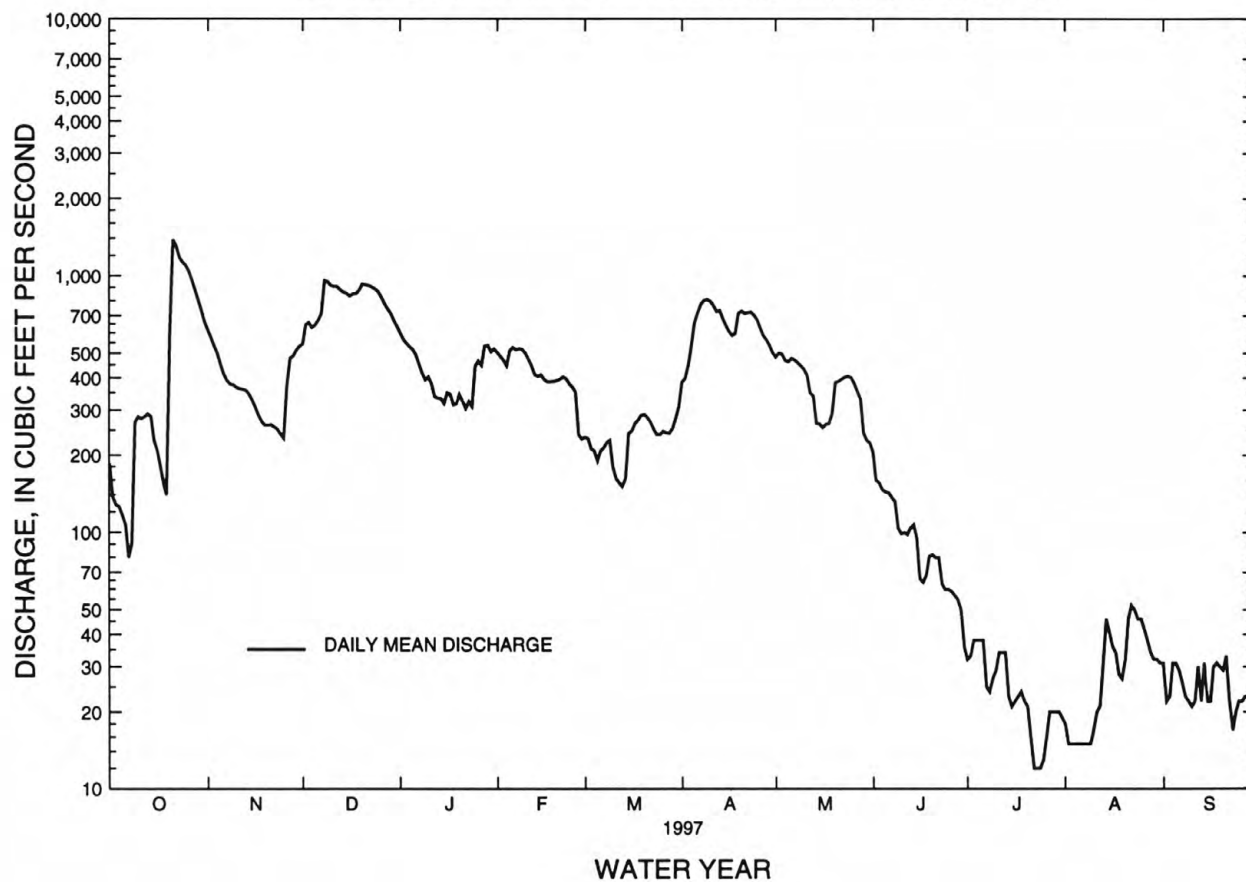
CHARLES RIVER BASIN

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01104200 CHARLES RIVER AT WELLESLEY, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1959 - 1997	
ANNUAL TOTAL	151358		120175		285	
ANNUAL MEAN	414		329		458	
HIGHEST ANNUAL MEAN					108	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	1380	Oct 21	1380	Oct 21	2330	Mar 22 1968
LOWEST DAILY MEAN	37	Aug 27	12	Jul 22	1.0	Aug 24 1965
ANNUAL SEVEN-DAY MINIMUM	44	Aug 22	14	Jul 21	4.1	Aug 20 1965
INSTANTANEOUS PEAK FLOW			1440	Oct 21	2410	Mar 21 1968
INSTANTANEOUS PEAK STAGE			5.16	Oct 21	6.20	Mar 21 1968
INSTANTANEOUS LOW FLOW			12	Jul 7	.00	Sep 15 1959
10 PERCENT EXCEEDS	866		732		620	
50 PERCENT EXCEEDS	391		280		209	
90 PERCENT EXCEEDS	76		22		44	

CHARLES RIVER AT WELLESLEY, MA 01104200



CHARLES RIVER BASIN

01104390 STONY BROOK AT KENDAL GREEN, MA

LOCATION.--Lat 42°22'36", Long 71°16'55", Middlesex County, Hydrologic Unit 01090001, at bridge on road to Weston Recycling Center, 20 ft upstream from Hobbs Brook, and 0.2 mi south of Kendal Green.

DRAINAGE AREA.--10.4 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR									
07...	0915	30	143	6.4	2.0	3.0	--	10	--
20...	1435	27	143	7.3	--	4.5	754	11	--
APR									
09...	1532	57	135	7.0	--	8.5	--	10	2.0
MAY									
02...	1052	36	154	7.1	12.0	13.0	755	11	--
15...	1051	21	168	7.1	20.0	13.5	768	13	--
28...	1410	14	176	6.6	25.0	15.5	776	12	--
JUN									
10...	0830	5.0	216	6.5	20.5	14.0	--	15	--
JUL									
17...	0830	1.6	244	6.8	25.5	18.5	755	18	--
AUG									
06...	0815	.79	250	6.7	15.5	17.0	759	17	--
SEP									
03...	0830	2.1	200	6.6	21.0	20.0	754	16	3.4
DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
MAR									
07...	12	--	--	--	20	--	--	--	--
20...	14	--	--	--	24	--	--	--	--
APR									
09...	13	1.4	19	11	20	<0.10	6.1	89	<0.010
MAY									
02...	13	--	--	--	24	--	--	--	--
15...	15	--	--	--	26	--	--	--	--
28...	15	--	--	--	25	--	--	--	--
JUN									
10...	19	--	--	--	36	--	--	--	--
JUL									
17...	21	--	--	--	38	--	--	--	--
AUG									
06...	22	--	--	--	42	--	--	--	--
SEP									
03...	15	1.8	41	7.9	27	<.10	14	138	<.010

CHARLES RIVER BASIN

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01104390 STONY BROOK AT KENDAL GREEN, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR									
07...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
APR									
09...	0.350	<0.015	0.30	0.30	<0.010	<0.010	<0.010	100	33
MAY									
02...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
JUN									
10...	--	--	--	--	--	--	--	--	--
JUL									
17...	--	--	--	--	--	--	--	--	--
AUG									
06...	--	--	--	--	--	--	--	--	--
SEP									
03...	.526	<.015	.42	.37	.015	<.010	.013	460	308

CHARLES RIVER BASIN

01104405 HOBBS BROOK AT MILL STREET NEAR LINCOLN, MA

LOCATION.--Lat 42°26'11", Long 71°16'12", Middlesex County, Hydrologic Unit 01090001, 100 ft upstream of bridge on Mill Street, 120 ft upstream from Cambridge Reservoir, and 1.9 mi northeast of Lincoln.

DRAINAGE AREA.--2.16 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR									
05...	1145	4.2	210	7.9	10.5	5.0	--	10	--
19...	1145	4.2	234	6.9	--	2.0	765	11	--
APR									
07...	1030	14	183	6.5	--	9.0	760	8.2	1.5
24...	1354	5.8	189	6.3	7.0	8.0	--	8.9	--
MAY									
14...	1000	4.1	201	6.3	17.0	11.5	--	9.8	--
30...	1212	1.8	203	6.7	23.0	14.0	758	11	--
JUN									
09...	1000	1.0	219	6.8	20.0	11.0	--	13	--
JUL									
14...	1000	.00	233	6.9	28.5	19.5	752	19	--
AUG									
05...	1000	.03	231	7.1	20.0	17.0	752	17	--
SEP									
04...	1015	.02	227	7.2	14.5	14.0	754	14	2.9

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
MAR									
05...	25	--	--	--	43	--	--	--	--
19...	29	--	--	--	51	--	--	--	--
APR									
07...	27	1.2	11	9.1	43	<0.10	6.8	120	<0.010
24...	22	--	--	--	40	--	--	--	--
MAY									
14...	26	--	--	--	41	--	--	--	--
30...	24	--	--	--	41	--	--	--	--
JUN									
09...	23	--	--	--	40	--	--	--	--
JUL									
14...	18	--	--	--	42	--	--	--	--
AUG									
05...	20	--	--	--	40	--	--	--	--
SEP									
04...	21	1.4	26	10	41	<.10	10	144	<.010

CHARLES RIVER BASIN

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01104405 HOBBS BROOK AT MILL STREET NEAR LINCOLN, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR									
05...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
APR									
07...	0.140	0.030	0.50	0.50	<0.010	<0.010	<0.010	250	24
24...	--	--	--	--	--	--	--	--	--
MAY									
14...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
JUN									
09...	--	--	--	--	--	--	--	--	--
JUL									
14...	--	--	--	--	--	--	--	--	--
AUG									
05...	--	--	--	--	--	--	--	--	--
SEP									
04...	.311	<.015	.35	<.20	.029	<.010	<.010	170	44

CHARLES RIVER BASIN

01104410 UNNAMED TRIBUTARY #1 NEAR LEXINGTON, MA

LOCATION.--Lat 42°26'15", Long 71°15'53", Middlesex County, Hydrologic Unit 01090001, on dirt road, 300 ft east of power lines, 500 ft upstream from Cambridge Reservoir, and 2.1 mi southwest of Lexington.

DRAINAGE AREA.--0.35 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR									
05...	1400	0.53	942	6.4	11.5	8.5	--	31	--
19...	1040	.63	725	6.6	--	3.5	774	27	--
APR									
07...	1315	2.5	452	6.4	--	12.5	760	17	2.5
24...	1200	1.2	600	5.5	4.5	8.0	751	24	--
MAY									
14...	0815	.99	798	6.0	11.5	10.5	--	27	--
30...	1100	.29	860	6.6	20.0	13.0	--	33	--
JUN									
09...	0845	.25	957	6.2	14.5	12.0	--	38	--
JUL									
14...	0900	.02	1010	6.8	25.0	20.0	752	42	--
AUG									
05...	0830	.01	805	7.1	15.0	16.0	752	36	--
SEP									
04...	0900	.01	1790	6.2	11.0	12.5	754	62	9.8

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
MAR									
05...	140	--	--	--	260	--	--	--	--
19...	100	--	--	--	200	--	--	--	--
APR									
07...	71	1.5	20	9.8	120	<0.10	7.6	272	<0.010
24...	85	--	--	--	160	--	--	--	--
MAY									
14...	114	--	--	--	210	--	--	--	--
30...	117	--	--	--	220	--	--	--	--
JUN									
09...	127	--	--	--	250	--	--	--	--
JUL									
14...	132	--	--	--	270	--	--	--	--
AUG									
05...	106	--	--	--	220	--	--	--	--
SEP									
04...	251	3.2	46	12	490	<.10	12	1070	.014

CHARLES RIVER BASIN

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01104410 UNNAMED TRIBUTARY #1 NEAR LEXINGTON, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR									
05...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
APR									
07...	0.140	0.050	0.30	0.30	<0.010	<0.010	<0.010	330	222
24...	--	--	--	--	--	--	--	--	--
MAY									
14...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
JUN									
09...	--	--	--	--	--	--	--	--	--
JUL									
14...	--	--	--	--	--	--	--	--	--
AUG									
05...	--	--	--	--	--	--	--	--	--
SEP									
04...	.288	.190	.52	.30	.022	<.010	<.010	110	765

CHARLES RIVER BASIN

01104415 UNNAMED TRIBUTARY #2 NEAR LEXINGTON, MA

LOCATION.--Lat 42°26'09", Long 71°15'38", Middlesex County, Hydrologic Unit 01090001, 250 ft upstream of Lincoln Street, 270 ft upstream from Cambridge Reservoir, and 1.9 mi southwest of Lexington.

DRAINAGE AREA.--0.41 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
MAR										
06...	0950	2.2	531	6.2	4.0	5.5	--	16	--	
19...	1325	.68	1290	6.9	--	5.5	--	38	--	
APR										
07...	1445	2.8	914	6.4	--	12.0	760	27	3.2	
24...	1515	1.0	1310	6.2	--	8.0	--	39	--	
MAY										
14...	1130	.42	1020	6.2	18.0	13.5	--	30	--	
30...	1355	.23	1540	6.7	20.0	14.0	752	45	--	
JUN										
09...	1145	.11	1670	6.5	22.0	12.0	--	49	--	
JUL										
15...	0815	.02	1600	6.7	24.0	18.0	752	48	--	
AUG										
05...	1145	.02	1550	6.5	19.0	17.5	752	49	--	
SEP										
04...	1100	.01	1950	6.9	15.5	15.0	754	55	7.5	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
MAR										
06...	76	--	--	--	130	--	--	--	--	--
19...	190	--	--	--	350	--	--	--	--	--
APR										
07...	156	3.0	27	17	260	<0.10	8.6	521	<0.010	--
24...	205	--	--	--	360	--	--	--	--	--
MAY										
14...	155	--	--	--	270	--	--	--	--	--
30...	243	--	--	--	420	--	--	--	--	--
JUN										
09...	252	--	--	--	460	--	--	--	--	--
JUL										
15...	242	--	--	--	440	--	--	--	--	--
AUG										
05...	228	--	--	--	410	--	--	--	--	--
SEP										
04...	296	5.0	43	18	540	<.10	10	1170	.014	--

CHARLES RIVER BASIN

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01104415 UNNAMED TRIBUTARY #2 NEAR LEXINGTON, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR									
06...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
APR									
07...	1.30	0.020	0.30	0.20	<0.010	<0.010	<0.010	160	96
24...	--	--	--	--	--	--	--	--	--
MAY									
14...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
JUN									
09...	--	--	--	--	--	--	--	--	--
JUL									
15...	--	--	--	--	--	--	--	--	--
AUG									
05...	--	--	--	--	--	--	--	--	--
SEP									
04...	1.07	.120	.30	.26	<.010	<.010	<.010	9.2	312

CHARLES RIVER BASIN

01104420 UNNAMED TRIBUTARY #3 NEAR LEXINGTON, MA

LOCATION.--Lat 42°25'11", Long 71°15'29", Middlesex County, Hydrologic Unit 01090001, 20 ft downstream of culvert on State Highway 128, 1,700 ft upstream from Cambridge Reservoir, and 2.5 mi southwest of Lexington.

DRAINAGE AREA.--0.73 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
APR									
09...	1218	3.6	716	7.0	--	6.0	--	25	4.6
15...	1136	2.4	657	7.0	--	8.0	764	24	--
22...	1430	2.4	639	6.4	14.5	16.0	752	25	--
MAY									
15...	1245	1.6	583	6.9	21.0	16.0	762	24	--
30...	1535	.65	665	6.5	23.0	16.0	750	24	--
JUN									
09...	1300	.43	686	6.6	25.5	14.0	--	26	--
JUL									
15...	0945	.10	460	6.7	25.0	21.0	752	19	--
AUG									
07...	0845	.28	362	6.7	20.5	16.5	760	15	--
SEP									
04...	1230	.12	398	7.2	20.0	15.0	754	16	3.0

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
APR									
09...	106	3.2	30	17	180	0.20	7.4	392	<0.010
15...	93	--	--	--	160	--	--	--	--
22...	90	--	--	--	170	--	--	--	--
MAY									
15...	81	--	--	--	140	--	--	--	--
30...	90	--	--	--	160	--	--	--	--
JUN									
09...	94	--	--	--	170	--	--	--	--
JUL									
15...	63	--	--	--	99	--	--	--	--
AUG									
07...	49	--	--	--	76	--	--	--	--
SEP									
04...	52	1.9	43	8.2	82	.57	7.1	219	.013

CHARLES RIVER BASIN

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01104420 UNNAMED TRIBUTARY #3 NEAR LEXINGTON, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
APR									
09...	0.630	0.040	0.30	0.20	<0.010	<0.010	<0.010	190	104
15...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
MAY									
15...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
JUN									
09...	--	--	--	--	--	--	--	--	--
JUL									
15...	--	--	--	--	--	--	--	--	--
AUG									
07...	--	--	--	--	--	--	--	--	--
SEP									
04...	.359	.058	.39	.29	.028	<.010	<.010	360	132

CHARLES RIVER BASIN

01104430 HOBBS BROOK BELOW CAMBRIDGE RESERVOIR NEAR KENDAL GREEN, MA

LOCATION.--Lat 42°23'53", Long 71°16'26", Middlesex County, Hydrologic Unit 01090001, 50 ft downstream of culvert on Winter Street, 300 ft downstream of gate house outlet from Cambridge Reservoir, and 1.3 mi north of Kendal Green.

DRAINAGE AREA.--6.86 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR									
06...	1200	13	427	7.1	1.0	5.0	--	17	--
20...	1049	14	430	7.3	--	3.0	755	16	--
APR									
09...	1009	32	436	7.2	--	7.0	--	16	2.9
22...	1300	36	440	5.9	19.5	11.5	754	18	--
MAY									
16...	0815	13	450	6.0	11.5	14.0	--	17	--
28...	1100	9.4	458	5.8	21.0	16.5	774	16	--
JUN									
10...	1115	4.8	458	6.5	29.0	18.0	--	17	--
JUL									
14...	1145	26	459	6.9	31.0	20.0	750	17	--
AUG									
07...	0930	23	472	6.8	24.0	22.5	760	18	--
SEP									
03...	1045	23	476	7.1	16.0	22.5	753	18	3.2

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
MAR									
06...	57	--	--	--	110	--	--	--	--
20...	58	--	--	--	110	--	--	--	--
APR									
09...	62	2.0	18	13	110	<0.10	4.1	249	<0.010
22...	61	--	--	--	110	--	--	--	--
MAY									
16...	63	--	--	--	110	--	--	--	--
28...	63	--	--	--	110	--	--	--	--
JUN									
10...	61	--	--	--	110	--	--	--	--
JUL									
14...	62	--	--	--	110	--	--	--	--
AUG									
07...	65	--	--	--	120	--	--	--	--
SEP									
03...	66	1.8	23	11	120	<.10	1.2	272	<.010

CHARLES RIVER BASIN

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01104430 HOBBS BROOK BELOW CAMBRIDGE RESERVOIR NEAR KENDAL GREEN, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR									
06...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
APR									
09...	0.270	<0.015	0.20	0.20	<0.010	<0.010	<0.010	45	4.0
22...	--	--	--	--	--	--	--	--	--
MAY									
16...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
JUN									
10...	--	--	--	--	--	--	--	--	--
JUL									
14...	--	--	--	--	--	--	--	--	--
AUG									
07...	--	--	--	--	--	--	--	--	--
SEP									
03...	<.050	<.015	.40	<.20	<.010	<.010	<.010	3.6	1.7

CHARLES RIVER BASIN

01104440 HOBBS BROOK AT KENDAL GREEN, MA

LOCATION.--Lat 42°22'39", Long 71°16'52", Middlesex County, Hydrologic Unit 01090001, 10 ft upstream of railroad bridge, 400 ft upstream from mouth, and 0.2 mi south of Kendal Green.

DRAINAGE AREA.--8.47 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR									
07...	1040	16	407	6.8	1.0	4.5	--	16	--
20...	1412	17	427	7.3	--	4.5	754	17	--
APR									
09...	1410	42	411	7.3	--	8.0	758	17	2.9
MAY									
02...	1222	30	417	7.3	15.5	13.0	755	17	--
15...	0930	16	427	7.3	14.5	14.0	--	17	--
28...	1300	12	446	6.4	22.0	18.5	776	17	--
JUN									
10...	0945	5.1	444	6.6	30.5	18.5	--	16	--
JUL									
17...	0930	25	459	6.8	28.0	22.0	755	17	--
AUG									
06...	0930	24	465	6.8	18.0	22.0	759	17	--
SEP									
03...	0930	22	453	7.1	14.5	21.0	754	17	3.0
DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
MAR									
07...	53	--	--	--	100	--	--	--	--
20...	57	--	--	--	100	--	--	--	--
APR									
09...	58	2.1	19	13	100	<0.10	4.7	230	<0.010
MAY									
02...	56	--	--	--	100	--	--	--	--
15...	59	--	--	--	110	--	--	--	--
28...	60	--	--	--	110	--	--	--	--
JUN									
10...	59	--	--	--	110	--	--	--	--
JUL									
17...	62	--	--	--	110	--	--	--	--
AUG									
06...	65	--	--	--	120	--	--	--	--
SEP									
03...	64	1.9	22	11	110	<.10	1.6	264	<.010

CHARLES RIVER BASIN

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01104440 HOBBS BROOK AT KENDAL GREEN, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR									
07...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
APR									
09...	0.310	<0.015	0.30	0.30	<0.010	<0.010	<0.010	50	40
MAY									
02...	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
JUN									
10...	--	--	--	--	--	--	--	--	--
JUL									
17...	--	--	--	--	--	--	--	--	--
AUG									
06...	--	--	--	--	--	--	--	--	--
SEP									
03...	.094	.033	.36	.28	.057	<.010	<.010	20	66

CHARLES RIVER BASIN

01104460 STONY BROOK AT RT. 20 AT WALTHAM, MA

LOCATION.--Lat 42°22'08", Long 71°16'16", Middlesex County, Hydrologic Unit 01090001, 200 ft downstream of State Highway 20, 1,000 ft upstream from Stony Brook Reservoir, and 0.9 mi west of Waltham.

DRAINAGE AREA.--22.0 mi²

PERIOD OF RECORD.--March to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR									
07...	1215	52	266	6.8	3.0	4.0	--	13	--
20...	1233	46	297	7.1	--	4.5	745	15	--
APR									
15...	1316	92	273	7.1	--	9.5	765	13	2.5
MAY									
02...	1400	75	289	7.3	18.0	14.5	756	15	--
16...	0930	43	306	6.7	14.5	14.5	--	16	--
JUN									
04...	1345	20	301	6.7	19.5	16.0	755	16	--
12...	1015	11	353	7.0	31.0	19.0	764	18	--
JUL									
15...	1100	29	448	6.6	24.0	22.0	757	17	--
AUG									
06...	1115	26	450	6.7	24.5	21.5	759	18	--
SEP									
03...	1245	28	444	7.0	17.5	21.0	755	17	3.3
DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
MAR									
07...	30	--	--	--	55	--	--	--	--
20...	36	--	--	--	65	--	--	--	--
APR									
15...	35	1.6	21	13	60	<0.10	5.1	159	<0.010
MAY									
02...	35	--	--	--	63	--	--	--	--
16...	38	--	--	--	64	--	--	--	--
JUN									
04...	39	--	--	--	70	--	--	--	--
12...	40	--	--	--	74	--	--	--	--
JUL									
15...	59	--	--	--	110	--	--	--	--
AUG									
06...	63	--	--	--	110	--	--	--	--
SEP									
03...	58	1.9	26	11	110	<.10	2.9	257	<.010

CHARLES RIVER BASIN

95

01104460 STONY BROOK AT RT. 20 AT WALTHAM, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAR									
07...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
APR									
15...	0.430	<0.015	0.30	<0.20	0.030	<0.010	<0.010	91	44
MAY									
02...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
JUN									
04...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
JUL									
15...	--	--	--	--	--	--	--	--	--
AUG									
06...	--	--	--	--	--	--	--	--	--
SEP									
03...	.127	<.015	.29	.24	<.010	<.010	<.010	60	117

CHARLES RIVER BASIN

01104500 CHARLES RIVER AT WALTHAM, MA

LOCATION.--Lat 42°22'20", long 71°14'03", Middlesex County, Hydrologic Unit 01090001, on right bank 800 ft downstream from Moody Street Bridge in Waltham and 0.3 mi upstream from Beaver Brook.

DRAINAGE AREA.--227 mi², excludes 23.6 mi² drained by Stony Brook, from which flow is diverted for municipal supply of Cambridge.

PERIOD OF RECORD.--Discharge: October 1903 to October 1909 (figures of average weekly discharge, equivalent to records of unadjusted discharge at present site), August 1931 to current year.
Water-quality records: Water years 1953, 1959, 1968-70.

REVISED RECORDS.--WSP 781: 1933(M). WSP 851: Drainage area. WSP 971: 1942.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 20.02 ft above sea level. Prior to July 10, 1904, at dam 700 ft upstream and July 10, 1904, to Oct. 2, 1909, at dam 0.7 mi downstream at different datums; discharge computed from flow over dam and through wheels and gates of Boston Manufacturing Co. and Waltham Bleachery, respectively.

REMARKS.--Records good. Flow affected by diversion to Mother Brook (station 01104000), diversions to and from basin for municipal supplies, and at times by water released from Stony Brook Reservoir. Prior to 1960, some regulation by mills upstream. Low flow completely regulated by Boston Edison Co. powerplant prior to 1954. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--66 years (water years 1932-97), 307 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,150 ft³/s, Feb. 3, 1976, gage height, 6.54 ft, caused by release of water stored behind ice jam upstream; minimum, 0.1 ft³/s, Oct. 1, 12, 1943; minimum daily, 0.2 ft³/s, Oct. 4, 1943.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1886, that of Feb. 3, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,990 ft³/s, Oct. 21, gage height, 6.05 ft; minimum, 19 ft³/s, July 31, Aug. 3, 4, 6-9, 10; minimum daily, 19 ft³/s, Aug. 7, 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	251	788	626	709	545	298	500	602	264	52	20	43
2	224	725	782	674	524	300	488	618	234	51	20	43
3	175	673	803	648	512	278	535	610	194	54	20	41
4	175	629	757	632	492	265	673	585	195	61	20	39
5	168	581	743	618	584	258	848	565	185	54	20	38
6	158	539	810	597	604	295	933	570	183	51	20	37
7	138	504	853	551	575	287	1010	557	171	49	19	37
8	132	483	1230	498	570	295	1020	497	163	42	19	31
9	379	486	1210	430	565	299	994	515	150	40	20	23
10	371	470	1140	453	545	285	966	503	127	38	20	25
11	353	455	1100	426	518	230	925	479	127	37	20	31
12	345	450	1110	379	491	228	858	387	120	37	20	85
13	350	445	1090	373	459	214	906	384	154	39	24	45
14	347	434	1070	376	463	225	836	358	171	39	25	37
15	307	417	1040	363	474	343	771	301	128	36	27	42
16	291	399	1030	408	449	343	720	318	106	33	29	33
17	250	377	1090	392	437	345	684	299	77	31	31	31
18	211	358	1090	365	434	351	739	303	86	29	35	35
19	188	348	1120	349	443	359	960	342	103	28	35	38
20	1070	347	1200	383	449	363	970	458	103	27	35	42
21	2620	347	1170	371	461	355	911	441	103	27	46	51
22	2390	367	1130	349	470	357	881	441	101	25	72	47
23	1910	365	1100	364	462	340	876	461	97	24	74	35
24	1630	317	1080	348	453	326	851	464	78	23	63	29
25	1500	302	1080	530	434	320	813	463	82	22	59	28
26	1370	492	1010	523	424	346	764	445	79	22	58	28
27	1240	633	947	484	361	332	717	418	78	22	55	28
28	1140	621	894	594	283	324	706	385	79	22	50	28
29	1050	616	854	602	---	336	668	336	78	21	49	36
30	943	618	803	556	---	370	628	276	68	21	47	36
31	850	---	761	562	---	407	---	281	---	20	45	---
TOTAL	22526	14586	30723	14907	13481	9674	24151	13662	3884	1077	1097	1122
MEAN	727	486	991	481	481	312	805	441	129	34.7	35.4	37.4
MAX	2620	788	1230	709	604	407	1020	618	264	61	74	85
MIN	132	302	626	348	283	214	488	276	68	20	19	23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1997, BY WATER YEAR (WY)

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942
MEAN	154	255	343	366	405	618	610	359	230	126	117	113
MAX	727	1031	991	1173	946	1398	1446	798	1346	915	873	616
(WY)	1997	1956	1997	1979	1970	1983	1987	1954	1982	1938	1955	1954
MIN	24.5	38.7	62.7	58.4	111	236	181	135	56.5	26.7	14.6	19.6
(WY)	1942	1932	1966	1981	1980	1985	1985	1932	1932	1949	1949	1957

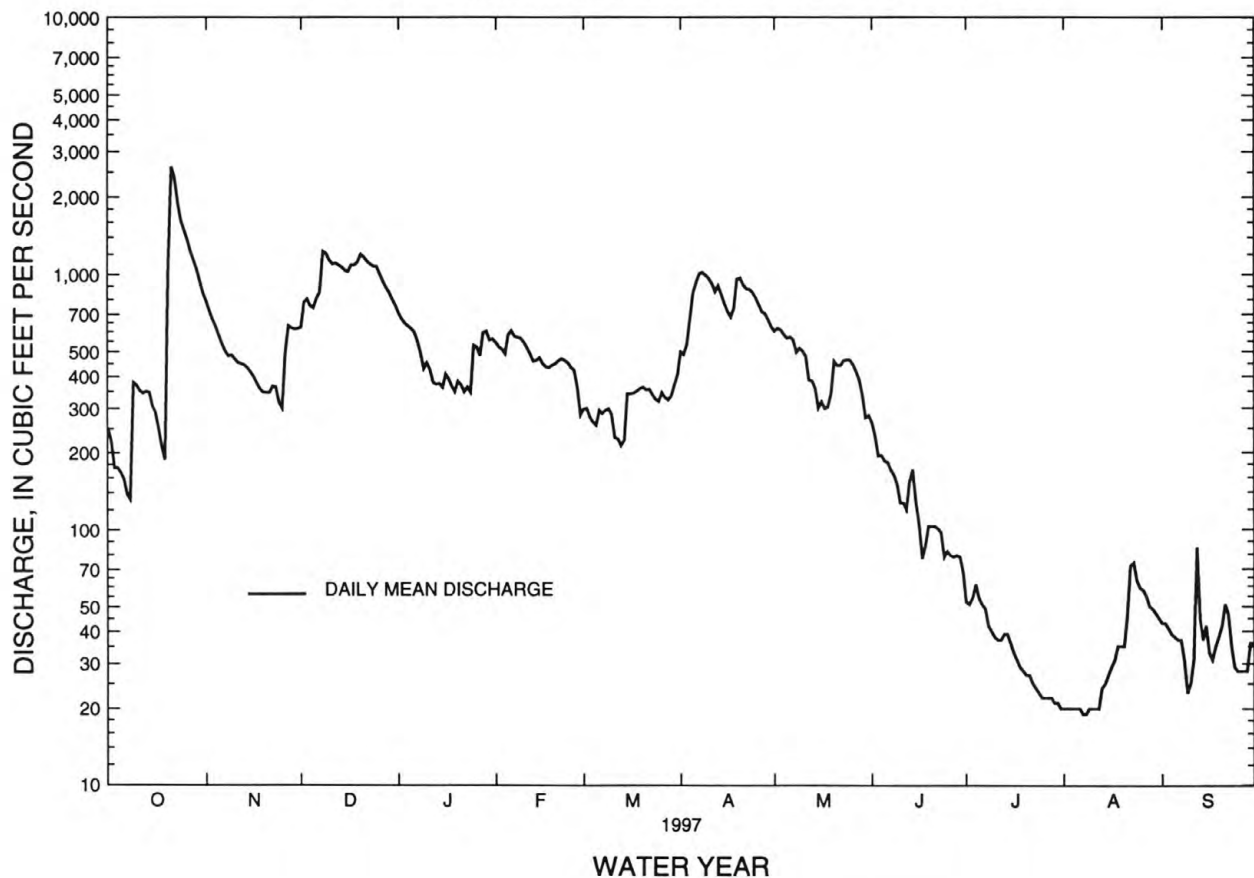
CHARLES RIVER BASIN

97

01104500 CHARLES RIVER AT WALTHAM, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1931 - 1997	
ANNUAL TOTAL	184095		150890		307	
ANNUAL MEAN	503		413		558	
HIGHEST ANNUAL MEAN					129	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	2620	Oct 21	2620	Oct 21	2940	Jan 26 1979
LOWEST DAILY MEAN	73	Sep 7	19	Aug 7	.20	Oct 4 1943
ANNUAL SEVEN-DAY MINIMUM	84	Sep 4	20	Aug 2	1.6	Sep 30 1943
INSTANTANEOUS PEAK FLOW			2990	Oct 21	4150	Feb 3 1976
INSTANTANEOUS PEAK STAGE			6.05	Oct 21	6.54	Feb 3 1976
INSTANTANEOUS LOW FLOW			19	Jul 31	.10	Oct 1 1943
10 PERCENT EXCEEDS	1050		945		672	
50 PERCENT EXCEEDS	462		357		219	
90 PERCENT EXCEEDS	118		29		44	

CHARLES RIVER AT WALTHAM, MA 01104500



NEPONSET RIVER BASIN

01105000 NEPONSET RIVER AT NORWOOD, MA

LOCATION.--Lat 42°10'39", long 71°12'05", Norfolk County, Hydrologic Unit 01090001, on left bank 200 ft upstream from Pleasant Street Bridge, 200 ft downstream from railroad bridge, 0.45 mi downstream from Hawes Brook, and 0.5 mi south of Norwood.

DRAINAGE AREA.--34.7 mi².

PERIOD OF RECORD.--Discharge: October 1939 to current year. October 1939 monthly discharge only, published in WSP 1301. Water-quality records: Water years 1958-59, 1966-68.

REVISED RECORDS.--WDR MA-RI-78-1: 1976(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 44.04 ft above sea level. Since Oct. 1, 1960, recording orifice at upstream side of railroad bridge, at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by mills and reservoirs upstream. Flow affected by several diversions upstream for municipal and industrial use. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--58 years, 55.4 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,490 ft³/s, Aug. 19, 1955, gage height, 14.65 ft, from floodmarks; minimum daily, 1.4 ft³/s, Oct. 20, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1886, that of Aug. 19, 1955. Flood of July 24, 1938, reached a stage of 11.05 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 760 ft³/s, Oct. 21, gage height, 9.45 ft, minimum daily, 2.5 ft³/s, Aug. 15, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	106	87	94	90	61	167	99	37	6.3	2.9	9.2
2	33	98	173	90	85	64	168	101	36	6.2	2.7	8.5
3	29	95	194	96	92	62	188	91	35	6.4	2.7	8.1
4	27	89	155	96	88	59	222	91	32	6.4	2.8	6.9
5	27	83	124	96	141	58	258	81	29	5.5	3.3	5.9
6	26	79	132	94	154	77	262	77	28	5.2	2.9	4.9
7	24	76	148	86	132	73	259	76	27	9.0	2.8	4.3
8	43	77	219	76	113	66	242	65	25	16	2.9	4.2
9	103	95	187	69	96	62	202	65	23	13	6.8	4.2
10	101	94	182	71	85	64	181	67	21	7.1	3.7	4.2
11	81	87	198	73	81	66	164	67	19	5.1	17	5.5
12	69	78	197	68	77	64	154	61	19	5.7	4.1	18
13	53	71	189	64	72	59	186	57	18	5.0	6.1	14
14	52	64	188	61	78	60	179	57	16	4.7	4.3	9.7
15	45	63	195	58	92	160	159	58	15	4.6	2.5	6.9
16	40	58	188	93	92	153	136	68	14	4.4	3.1	5.7
17	36	56	197	113	84	119	131	61	13	4.1	4.1	4.8
18	35	60	205	91	77	96	155	54	13	3.5	9.8	4.0
19	42	60	229	71	78	89	248	70	16	3.4	6.7	3.5
20	334	59	210	58	80	82	247	127	14	3.3	5.1	4.9
21	699	57	172	56	80	78	203	108	13	3.4	8.7	5.3
22	496	53	176	56	81	81	178	86	15	4.6	9.2	4.0
23	360	50	172	69	79	78	158	72	19	3.5	14	4.1
24	276	48	164	66	73	72	142	62	16	4.9	12	3.6
25	217	47	175	148	66	67	131	64	14	6.0	11	3.4
26	182	124	158	156	61	78	119	68	13	3.5	9.3	3.2
27	161	161	140	118	65	78	108	60	10	4.1	8.4	2.5
28	153	135	132	144	64	71	117	51	8.9	4.1	7.4	3.3
29	143	104	126	148	---	73	120	46	7.9	3.4	12	4.7
30	133	83	120	122	---	90	110	42	7.2	3.2	12	4.1
31	119	---	111	100	---	119	---	39	---	3.1	11	---
TOTAL	4179	2410	5243	2801	2456	2479	5294	2191	574.0	168.7	211.3	175.6
MEAN	135	80.3	169	90.4	87.7	80.0	176	70.7	19.1	5.44	6.82	5.85
MAX	699	161	229	156	154	160	262	127	37	16	17	18
MIN	24	47	87	56	61	58	108	39	7.2	3.1	2.5	2.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

	MEAN	28.7	47.6	64.1	69.9	77.3	111	102	62.5	38.9	20.3	23.5	21.3
MAX	135	188	187	224	188	236	284	146	213	79.3	226	87.7	
(WY)	1997	1956	1987	1979	1970	1983	1987	1954	1982	1959	1955	1954	
MIN	6.01	5.88	7.78	5.35	13.4	45.3	31.8	21.2	8.71	5.44	4.30	5.85	
(WY)	1958	1966	1966	1981	1980	1985	1966	1986	1981	1997	1981	1997	

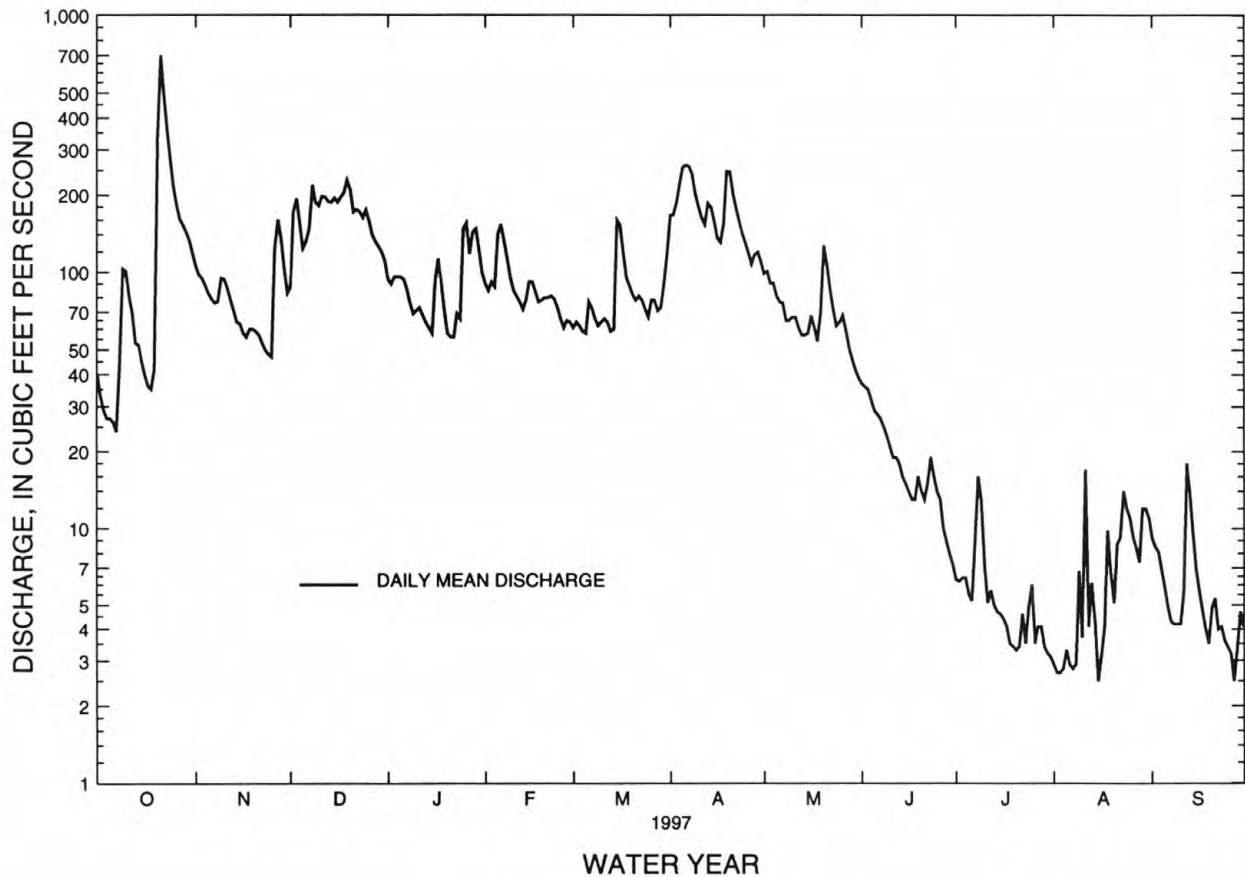
NEPONSET RIVER BASIN

99

01105000 NEPONSET RIVER AT NORWOOD, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1940 - 1997
ANNUAL TOTAL	32584.3	28182.6	
ANNUAL MEAN	89.0	77.2	55.4
HIGHEST ANNUAL MEAN			106 1984
LOWEST ANNUAL MEAN			21.7 1966
HIGHEST DAILY MEAN	699 Oct 21	699 Oct 21	1260 Aug 20 1955
LOWEST DAILY MEAN	6.9 Sep 5	2.5 Aug 15	1.4 Oct 20 1963
ANNUAL SEVEN-DAY MINIMUM	10 Aug 17	2.9 Aug 1	2.9 Jul 18 1995
INSTANTANEOUS PEAK FLOW		760 Oct 21	1490 Aug 19 1955
INSTANTANEOUS PEAK STAGE		9.45 Oct 21	14.65 Aug 19 1955
INSTANTANEOUS LOW FLOW		2.2 Sep 26	
10 PERCENT EXCEEDS	181	175	124
50 PERCENT EXCEEDS	77	65	37
90 PERCENT EXCEEDS	17	4.2	8.8

NEPONSET RIVER AT NORWOOD, MA 01105000



NEPONSET RIVER BASIN

01105500 EAST BRANCH NEPONSET RIVER AT CANTON, MA

LOCATION.--Lat 42°09'16", long 71°08'47", Norfolk County, Hydrologic Unit 01090001, on right bank 100 ft downstream from Washington Street Bridge at Canton, 200 ft downstream from Forge Pond Dam, and 900 ft downstream from Massapoag Brook.

DRAINAGE AREA.--27.2 mi².

PERIOD OF RECORD.--Discharge: October 1952 to current year.
Water-quality records: Water years 1959, 1967-68.

REVISED RECORDS.--WSP 1901: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 80.18 ft above sea level (Massachusetts Department of Public Works benchmark).

REMARKS.--Records good except those for June to September, which are fair. Flow regulated by Forge, Bolivar, Massapoag, and Reservoir Ponds, and other ponds upstream. Flow affected by diversions for municipal supply of Canton and Stoughton.

AVERAGE DISCHARGE.--45 years, 51.0 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,790 ft³/s, Aug. 19, 1955, gage height, 8.18 ft, from rating curve extended above 690 ft³/s; minimum daily, 0.60 ft³/s, July 7, Sept. 1, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 818 ft³/s, Oct. 20, gage height, 5.11 ft; minimum daily, 3.3 ft³/s, Sept. 25, 26, 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	108	65	71	82	47	142	75	34	8.9	6.8	6.7
2	31	97	146	70	80	50	146	78	34	8.0	8.4	5.8
3	27	84	163	75	78	51	162	73	33	7.9	7.3	5.4
4	23	78	113	79	74	48	191	78	31	8.2	6.4	4.9
5	21	73	98	77	114	47	233	69	28	7.9	6.7	4.6
6	20	69	111	75	142	75	220	64	26	7.4	6.3	4.4
7	20	67	135	69	126	73	214	62	23	9.6	5.4	4.2
8	27	67	330	61	139	62	207	56	23	19	4.8	3.9
9	120	77	250	59	118	59	195	53	23	13	8.1	3.6
10	89	83	197	62	103	60	177	42	28	9.1	8.4	3.5
11	51	73	193	63	92	67	163	40	29	8.1	6.1	3.5
12	41	66	190	56	84	62	153	37	22	7.5	5.0	4.8
13	37	60	182	55	70	54	195	35	20	7.3	5.4	8.8
14	35	52	173	53	59	52	178	37	27	6.8	11	6.9
15	36	48	178	50	82	147	147	36	22	6.7	8.7	5.6
16	34	45	166	76	71	127	127	45	19	6.3	5.6	4.9
17	32	44	161	108	58	91	113	46	18	4.9	4.9	4.2
18	31	44	185	73	55	81	139	40	18	4.6	6.1	3.9
19	29	43	189	56	61	77	235	55	22	5.4	8.7	3.9
20	304	43	235	52	65	73	209	96	21	5.2	5.9	3.9
21	688	40	182	51	59	69	166	78	17	4.6	6.7	3.7
22	406	37	156	51	56	73	149	62	20	5.6	11	3.6
23	283	36	145	68	54	71	139	53	37	6.6	9.0	3.5
24	251	35	139	65	50	62	128	46	25	7.6	6.8	3.4
25	223	34	163	127	48	56	119	44	19	12	5.4	3.3
26	207	98	143	137	46	68	109	55	16	9.0	4.8	3.3
27	193	136	118	94	51	67	97	41	15	8.0	4.5	3.4
28	185	92	86	119	51	54	99	39	12	7.1	4.1	3.3
29	178	72	84	132	---	54	108	36	11	7.2	4.6	3.3
30	155	64	84	98	---	87	87	34	9.7	7.3	9.4	3.5
31	132	---	79	85	---	100	---	32	---	6.1	8.7	---
TOTAL	3950	1965	4839	2367	2168	2164	4747	1637	682.7	242.9	211.0	131.7
MEAN	127	65.5	156	76.4	77.4	69.8	158	52.8	22.8	7.84	6.81	4.39
MAX	688	136	330	137	142	147	235	96	37	19	11	8.8
MIN	20	34	65	50	46	47	87	32	9.7	4.6	4.1	3.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1997, BY WATER YEAR (WY)

	MEAN	30.7	48.6	66.1	68.4	71.6	92.9	87.8	52.9	33.7	17.6	21.8	20.9
MAX	127	161	159	177	132	177	210	142	154	55.8	203	76.2	
(WY)	1997	1956	1993	1979	1970	1968	1987	1954	1982	1973	1955	1954	
MIN	6.42	8.35	9.78	10.6	20.1	40.8	20.7	20.2	8.62	4.46	3.64	4.39	
(WY)	1966	1966	1966	1966	1980	1985	1966	1965	1964	1965	1957	1997	

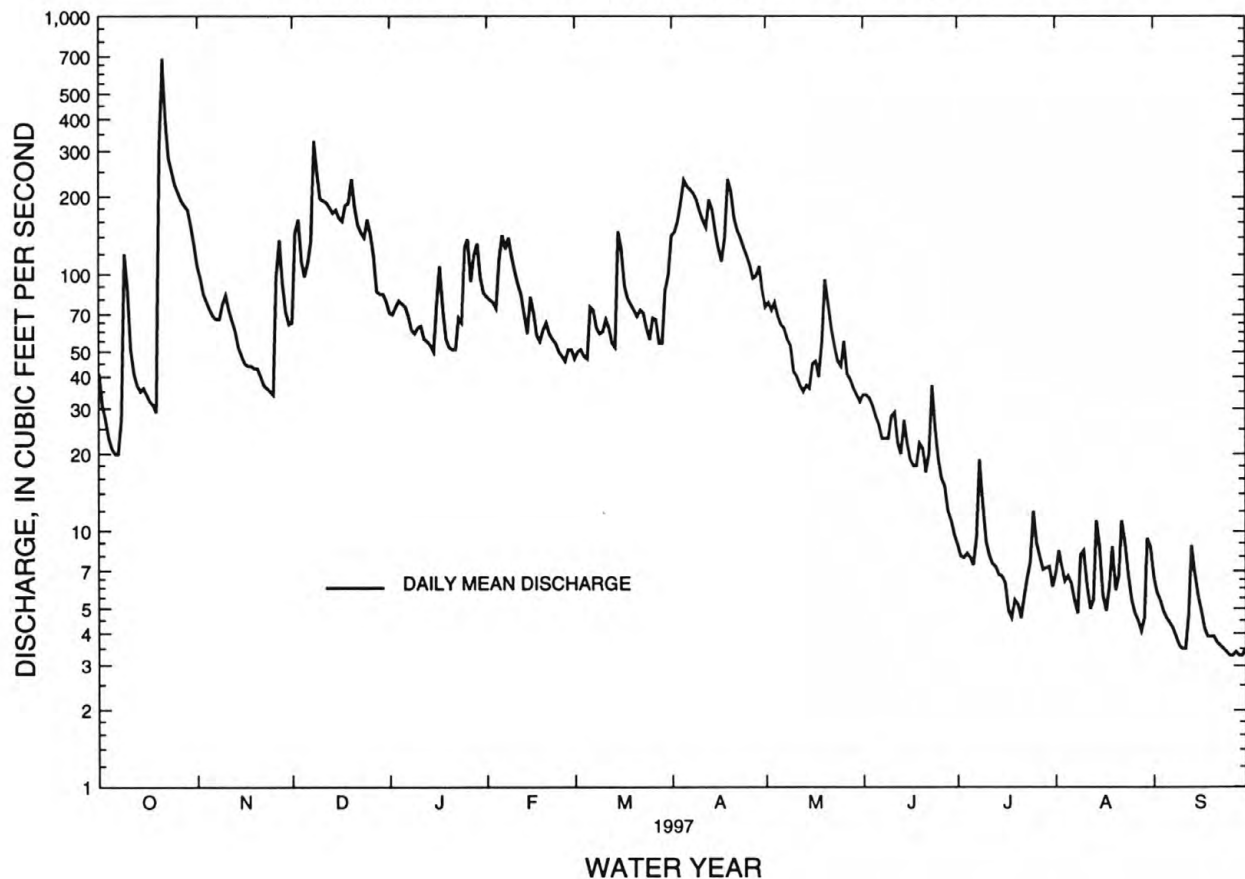
NEPONSET RIVER BASIN

101

01105500 EAST BRANCH NEPONSET RIVER AT CANTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1953 - 1997	
ANNUAL TOTAL	28710.9		25105.3		51.0	
ANNUAL MEAN	78.4		68.8		78.9	1984
HIGHEST ANNUAL MEAN					18.6	1966
LOWEST ANNUAL MEAN					1360	Aug 19 1955
HIGHEST DAILY MEAN	688	Oct 21	688	Oct 21	.60	Jul 7 1957
LOWEST DAILY MEAN	9.9	Jul 12	3.3	Sep 25	2.5	Sep 7 1993
ANNUAL SEVEN-DAY MINIMUM	13	Aug 30	3.4	Sep 23	1790	Aug 19 1955
INSTANTANEOUS PEAK FLOW			818	Oct 20	8.18	Aug 19 1955
INSTANTANEOUS PEAK STAGE			5.11	Oct 20		
INSTANTANEOUS LOW FLOW			3.1	Jul 17		
10 PERCENT EXCEEDS	170		163		110	
50 PERCENT EXCEEDS	63		53		37	
90 PERCENT EXCEEDS	18		5.4		8.0	

EAST BRANCH NEPONSET RIVER AT CANTON, MA 01105500



NEPONSET RIVER BASIN

011055566 NEPONSET RIVER AT MILTON VILLAGE, MA

LOCATION.--Lat 42°16'15", long 71°04'08", Norfolk County, Hydrologic Unit 01090001, 100 ft upstream from bridge on Adams Street, at Milton Village.

DRAINAGE AREA.--101 mi².

PERIOD OF RECORD.--November 1996 to September 1997.

GAGE.--Water stage recorder. Elevation of gage is 20 ft below sea level, from topographic map.

REMARKS.--Records good except those below 40 ft³/s, which are fair, and those for estimated daily discharges, which are poor. Record on most days is adjusted for tidal backwater, which lasts as much as 4 hours during times of high tide. Flow regulated by mills and reservoirs upstream. Flow affected by diversion from Charles River basin to Neponset River basin by Mother Brook (station 01104000) through Dedham and Hyde Park and by diversions to and from basin for municipal supplies. Telephone gage-height telemeter at station.

EXTREMES FOR PERIOD NOVEMBER 1996 TO SEPTEMBER 1997.--Maximum discharge, 1,390 ft³/s, Apr. 8, gage height, 35.04 ft; maximum gage height, 35.81 ft, Jan. 10, backwater from tide; minimum discharge, 6.6 ft³/s, Sept. 30, minimum daily, 11 ft³/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

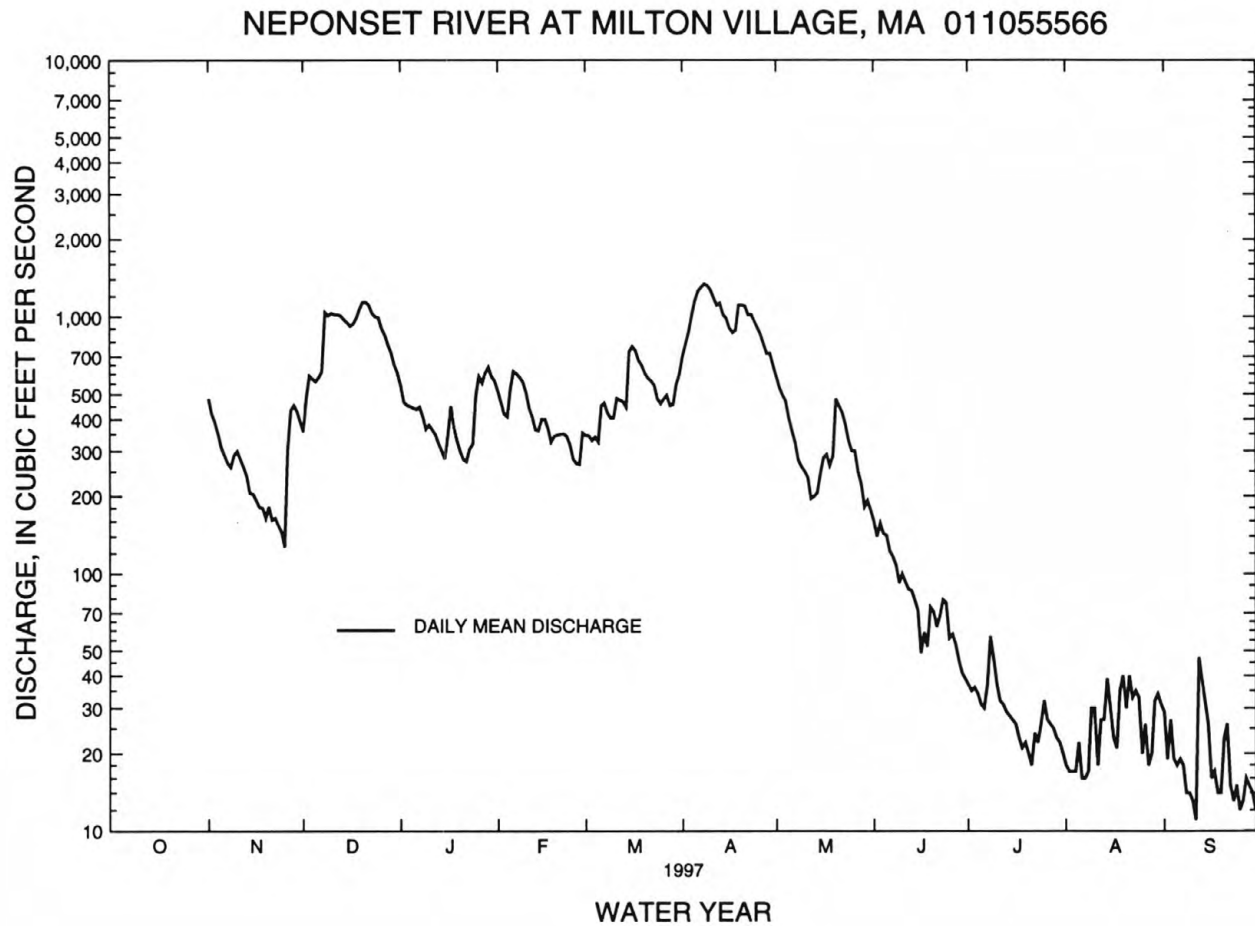
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	e480	359	541	515	346	699	590	160	e37	e18	29
2	---	e420	e478	468	467	345	782	531	140	e35	e17	19
3	---	e390	590	454	420	331	871	497	157	e36	e17	27
4	---	e350	575	449	409	341	1010	471	144	e34	e17	19
5	---	e310	561	443	523	327	1150	402	141	e31	e22	18
6	---	e290	582	437	614	451	1260	360	123	e30	16	19
7	---	e270	613	447	601	463	1300	325	117	e37	16	18
8	---	e260	1040	412	583	424	1340	276	108	57	17	14
9	---	e290	1010	366	559	405	1320	261	92	47	30	14
10	---	e300	e1030	e380	509	405	1270	251	100	e37	30	13
11	---	e280	e1020	365	442	482	1190	237	93	e32	18	11
12	---	e260	e1020	349	410	475	1110	196	87	e31	27	47
13	---	e240	1010	323	363	469	1130	200	86	e29	27	39
14	---	e206	977	302	361	445	1020	206	79	e28	39	32
15	---	204	952	281	400	732	988	244	72	e27	30	26
16	---	193	922	347	400	768	909	283	e49	e26	23	16
17	---	182	941	e450	369	740	869	291	59	e23	21	17
18	---	180	988	e370	326	677	887	264	e52	e21	35	14
19	---	165	1070	e330	343	649	1110	287	74	e22	40	14
20	---	182	1140	e300	347	603	1110	480	71	e20	30	23
21	---	162	1140	279	349	578	1100	451	62	e18	40	26
22	---	165	1110	274	351	563	1020	424	68	e24	33	15
23	---	155	1030	306	343	541	1020	382	79	e22	35	13
24	---	146	1000	320	317	481	963	330	77	e26	33	15
25	---	128	993	495	280	460	912	301	e56	e32	20	12
26	---	301	900	586	269	480	853	301	58	e27	26	13
27	---	434	851	553	267	496	786	250	53	e26	18	16
28	---	453	785	604	354	452	721	222	46	e25	20	15
29	---	430	725	638	---	457	723	182	41	e23	32	14
30	---	390	650	587	---	545	649	192	e39	e22	34	12
31	---	---	606	564	---	597	---	176	---	e20	31	---
TOTAL	---	8216	26668	13020	11491	15528	30072	9863	2583	905	812	580
MEAN	---	274	860	420	410	501	1002	318	86.1	29.2	26.2	19.3
MAX	---	480	1140	638	614	768	1340	590	160	57	40	47
MIN	---	128	359	274	267	327	649	176	39	18	16	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1997, BY WATER YEAR (WY)

MEAN	---	274	860	420	410	501	1002	318	86.1	29.2	26.2	19.3
MAX	---	274	860	420	410	501	1002	318	86.1	29.2	26.2	19.3
(WY)	---	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
MIN	---	274	860	420	410	501	1002	318	86.1	29.2	26.2	19.3
(WY)	---	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997

e Estimated

011055566 NEPONSET RIVER AT MILTON VILLAGE, MA--Continued



LOCATION.--Lat 42°11'25", long 70°56'43", Norfolk County, Hydrologic Unit 01090001, on left bank between divided lanes of State Highways 3 and 128, 50 ft (revised) downstream from unnamed tributary entering from left, 0.4 mi upstream from Whitmans Pond, and 1.2 mi north of South Weymouth.

PERIOD OF RECORD.--Discharge: May 1966 to current year.
Water-quality records: Water years 1967-68.

GAGE.--Water-stage recorder. Elevation of gage is 70 ft above sea level, from topographic map. Prior to Aug. 3, 1996, at site 50 ft downstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--31 years, 9.11 ft³/s, 27.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 590 ft³/s, May 31, 1984, gage height, 5.02 ft; maximum gage height, 5.35 ft, Feb. 15, 1971 (ice jam); minimum discharge, 0.05 ft³/s, Sept. 10-13, 15, 16, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 90 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	0945	a*303	*5.30	Dec. 8	1315	146	4.46

a From rating curve extended above 140 ft³/s.

Minimum discharge, $0.28 \text{ ft}^3/\text{s}$, July 20, 21, 31, Aug. 1, 2, 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	8.9	8.7	e5.0	5.4	3.3	41	6.2	3.1	.87	.34	1.0
2	3.7	8.1	35	4.5	5.4	4.8	37	7.4	3.4	1.0	.35	.98
3	3.8	7.1	35	5.7	5.3	4.0	36	6.4	3.2	.97	.33	.89
4	3.1	6.8	16	6.9	5.1	3.5	46	8.7	3.0	.92	.36	.76
5	3.0	6.4	e11	6.9	19	3.5	57	6.6	2.8	.75	.92	.70
6	2.9	6.2	e30	6.3	20	11	47	5.7	2.6	.67	.49	.64
7	2.9	6.3	e35	5.1	9.6	7.4	45	5.4	2.5	2.2	.41	.62
8	8.6	6.4	e118	4.2	6.8	4.8	33	4.9	2.6	2.5	.36	.62
9	57	11	48	3.6	5.5	4.2	19	4.8	2.4	1.2	1.9	.64
10	31	11	22	4.5	4.7	4.7	13	5.3	2.3	.95	.58	.63
11	14	8.5	15	4.4	4.3	5.3	11	4.9	2.0	.80	.44	.66
12	9.3	7.0	13	e3.9	4.0	4.9	9.6	4.3	1.9	.66	.40	1.6
13	7.4	5.9	12	e3.7	3.7	3.7	27	4.6	1.9	.59	1.8	.75
14	6.2	5.4	13	e3.5	7.6	4.3	18	5.5	1.9	.54	1.2	.64
15	5.4	5.1	20	e3.3	11	26	10	4.5	1.6	.53	.60	.59
16	4.9	4.8	16	15	7.3	16	8.1	9.5	1.6	.62	.53	.55
17	4.8	4.7	19	24	5.2	7.6	8.2	6.3	1.5	.59	.47	.53
18	4.5	4.6	24	e14	5.5	5.8	18	4.6	2.1	.50	1.7	.53
19	4.3	5.3	27	e8.3	7.9	4.9	59	11	3.0	.45	.74	.53
20	111	6.3	41	e3.9	7.5	4.4	37	18	1.9	.40	.58	.52
21	258	5.4	20	3.9	5.4	4.2	17	9.6	1.6	.33	3.3	.65
22	102	4.7	12	2.8	5.7	5.3	11	6.2	5.2	.56	15	.53
23	38	4.2	11	6.3	4.7	4.3	9.2	4.9	6.0	.43	22	.54
24	25	3.9	11	4.1	3.8	3.4	8.2	4.3	2.8	.41	5.3	.55
25	18	4.0	16	26	3.3	3.1	7.5	8.3	2.0	1.7	2.7	.47
26	14	31	11	23	3.1	6.9	6.6	10	1.7	.91	1.8	.47
27	12	44	8.8	e7.9	4.1	5.5	5.7	6.1	1.5	.57	1.5	.46
28	13	18	7.8	16	3.8	4.0	9.7	4.7	1.2	.49	1.5	.45
29	12	10	7.5	16	---	---	11	3.8	1.1	.43	2.3	.59
30	11	8.1	6.7	e7.6	---	---	24	6.9	3.4	.94	3.7	1.0
31	10	---	5.7	5.3	---	---	22	3.2	---	.35	1.1	---
TOTAL	804.9	269.1	676.2	255.6	184.7	227.8	671.7	199.1	71.34	24.26	72.50	20.09
MEAN	26.0	8.97	21.8	8.25	6.60	7.35	22.4	6.42	2.38	.78	2.34	.67
MAX	258	44	118	26	20	26	59	18	6.0	2.5	22	1.6
MIN	2.9	3.9	5.7	2.8	3.1	3.1	5.7	3.2	.94	.33	.33	.45
CFSM	5.77	1.99	4.85	1.83	1.47	1.63	4.98	1.43	.53	.17	.52	.15
IN.	6.65	2.22	5.59	2.11	1.53	1.88	5.55	1.65	.59	.20	.60	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

MEAN	5.10	9.98	13.2	12.2	12.6	17.2	14.0	9.42	6.81	2.60	3.05	3.31
MAX	26.0	24.7	30.9	30.8	26.0	51.5	38.7	21.6	46.2	7.78	8.99	12.9
(WY)	1997	1992	1970	1979	1984	1983	1987	1967	1982	1988	1990	1996
MIN	1.20	2.80	2.77	2.16	2.86	6.25	4.95	4.11	1.17	.54	.50	.18
(WY)	1969	1985	1981	1981	1980	1981	1985	1986	1976	1991	1971	1980

WEYMOUTH BACK RIVER BASIN

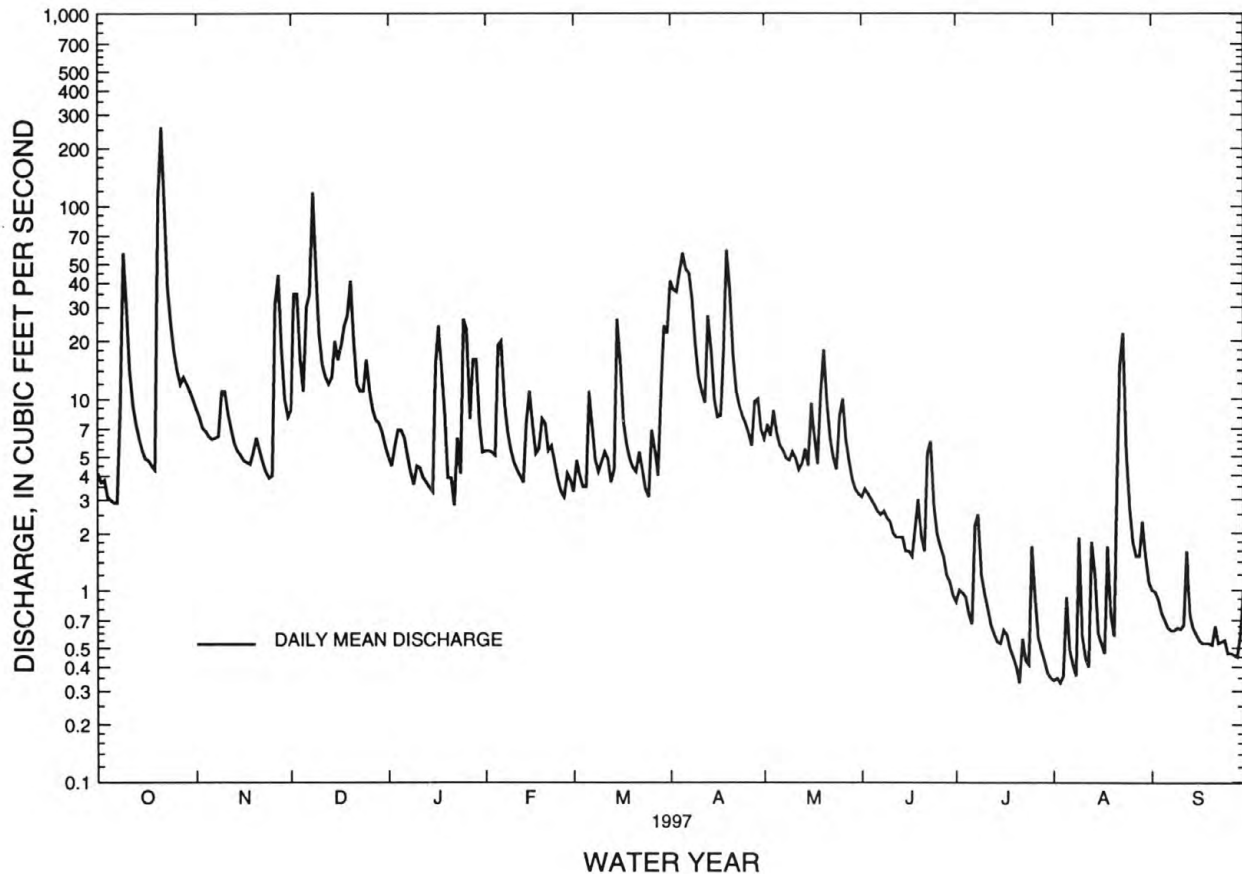
105

01105600 OLD SWAMP RIVER NEAR SOUTH WEYMOUTH, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1966 - 1997
ANNUAL TOTAL	4902.58	3477.29	
ANNUAL MEAN	13.4	9.53	9.11
HIGHEST ANNUAL MEAN			14.4 1984
LOWEST ANNUAL MEAN			3.91 1985
HIGHEST DAILY MEAN	258 Oct 21	258 Oct 21	361 Mar 18 1968
LOWEST DAILY MEAN	.45 Jul 31	.33 Jul 21	.05 Sep 11 1995
ANNUAL SEVEN-DAY MINIMUM	.67 Aug 17	.36 Jul 29	.06 Sep 6 1995
INSTANTANEOUS PEAK FLOW		303 Oct 21	590 May 31 1984
INSTANTANEOUS PEAK STAGE		5.30 Oct 21	5.35 Feb 15 1971
INSTANTANEOUS LOW FLOW		.28 Jul 20	.05 Sep 10 1995
ANNUAL RUNOFF (CFSM)	2.98	2.12	2.03
ANNUAL RUNOFF (INCHES)	40.53	28.75	27.52
10 PERCENT EXCEEDS	31	22	19
50 PERCENT EXCEEDS	7.0	4.8	5.4
90 PERCENT EXCEEDS	1.6	.57	.81

e Estimated

OLD SWAMP RIVER NEAR SOUTH WEYMOUTH, MA 01105600



LOCATION.--Lat 42°06'02", long 70°49'23", Plymouth County, Hydrologic Unit 01090002, on right bank at downstream side of Elm Street Bridge, 0.3 mi upstream from Iron Mine Brook, and 1 mi southwest of Hanover.

PERIOD OF RECORD.--Discharge: July 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3.16 ft above sea level.

REMARKS.--Records good. Some regulation by mills and by Wampatuck, Indian Head, Maquan, and other ponds upstream.

AVERAGE DISCHARGE.--31 years, 62.2 ft³/s, 27.89 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft³/s, Mar. 18, 1968, gage height, 7.13 ft; minimum, 0.14 ft³/s, Sept. 26, 27, 1980; minimum daily, 0.18 ft³/s, Sept. 27, 29, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 310 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 10	0145	313	3.91	Apr. 5	1845	402	4.30
Oct. 21	1930	*1,290	*6.76	Apr. 20	0215	410	4.33
Dec. 9	0030	611	5.03				

Minimum discharge, 2.9 ft³/s, Sept. 25; minimum daily, 3.6 ft³/s, Aug. 1.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	105	92	70	76	53	246	76	36	6.1	3.6	7.3
2	42	96	157	69	77	81	247	87	35	11	4.9	7.9
3	38	84	233	76	73	79	275	75	33	11	5.1	7.7
4	33	77	170	84	74	66	321	84	31	16	6.4	6.0
5	31	75	129	85	126	64	389	72	29	11	11	7.3
6	31	71	148	83	175	96	369	65	28	8.1	7.3	9.9
7	31	69	225	73	127	93	350	62	27	9.6	5.2	4.3
8	44	68	534	62	98	72	305	56	26	15	4.4	4.9
9	250	75	505	55	83	65	224	55	25	13	5.3	5.2
10	272	92	295	59	72	63	171	56	23	9.3	5.7	4.2
11	176	79	205	61	67	73	136	54	25	6.9	5.5	3.7
12	120	68	168	56	64	69	122	49	21	5.6	4.5	7.8
13	88	61	148	52	60	60	190	47	19	6.7	5.2	5.6
14	73	58	142	52	65	56	195	49	18	6.3	7.2	5.6
15	61	55	155	49	112	167	145	47	16	6.0	5.9	5.7
16	57	52	153	85	96	159	117	68	15	5.8	6.0	5.0
17	49	51	153	150	79	105	112	65	12	5.2	6.4	5.1
18	46	51	186	89	73	86	146	50	13	4.7	13	4.7
19	40	51	209	59	88	75	332	67	15	4.6	9.6	4.8
20	356	58	277	49	93	68	355	110	14	4.0	8.0	4.8
21	1150	55	225	47	80	64	232	87	13	3.7	12	5.8
22	1050	50	168	47	78	71	169	63	18	5.2	21	4.9
23	614	47	141	74	72	68	134	52	39	4.7	23	5.0
24	365	45	127	67	63	58	114	46	30	4.6	22	4.6
25	252	45	157	136	55	53	100	69	22	9.7	13	3.7
26	183	148	140	192	52	74	91	111	18	9.3	8.3	4.9
27	150	264	116	118	59	78	82	68	15	7.1	7.3	4.2
28	137	186	103	126	58	63	85	51	12	5.9	6.7	4.4
29	136	129	95	154	---	64	106	43	9.6	5.3	7.0	6.0
30	124	100	90	104	---	125	86	38	5.5	4.4	7.5	5.1
31	116	---	81	82	---	145	---	36	---	3.8	7.1	---
TOTAL	6162	2465	5727	2565	2295	2513	5946	1958	643.1	229.6	265.1	166.1
MEAN	199	82.2	185	82.7	82.0	81.1	198	63.2	21.4	7.41	8.55	5.54
MAX	1150	264	534	192	175	167	389	111	39	16	23	9.9
MIN	31	45	81	47	52	53	82	36	5.5	3.7	3.6	3.7
CFSM	6.56	2.71	6.10	2.73	2.71	2.68	6.54	2.08	.71	.24	.28	.18
IN.	7.57	3.03	7.03	3.15	2.82	3.09	7.30	2.40	.79	.28	.33	.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

MEAN	35.0	64.2	87.5	83.8	89.0	117	100	64.4	42.2	20.2	21.8	21.8
MAX	199	143	185	218	172	276	230	155	203	70.4	93.0	90.1
(WY)	1997	1973	1997	1979	1984	1983	1987	1967	1982	1973	1990	1996
MIN	7.36	18.0	16.4	11.4	19.4	54.9	34.1	26.1	11.4	5.68	2.02	1.13
(WY)	1972	1981	1981	1981	1980	1985	1985	1981	1976	1971	1966	1980

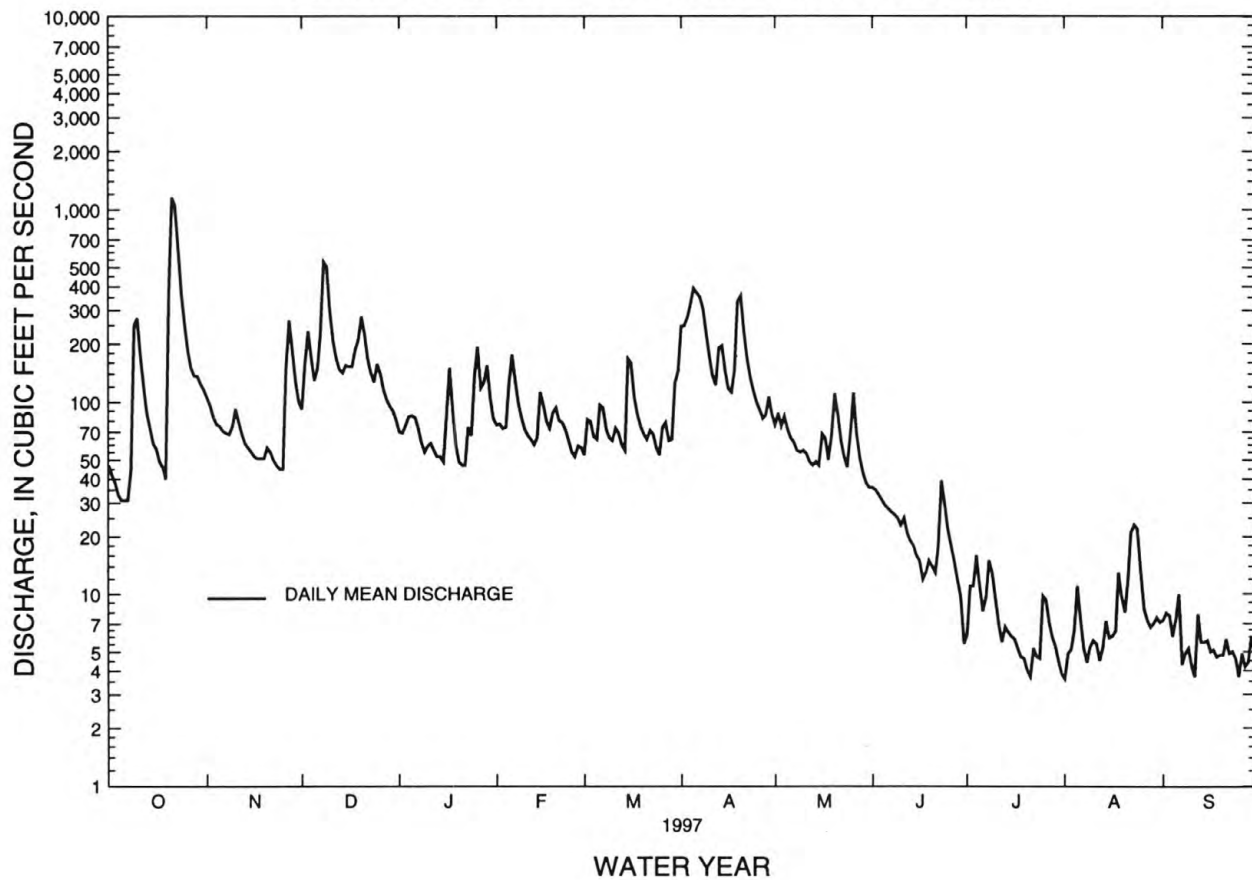
NORTH RIVER BASIN

107

01105730 INDIAN HEAD RIVER AT HANOVER, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1966 - 1997	
ANNUAL TOTAL	36475.4		30934.9		62.2	
ANNUAL MEAN	99.7		84.8		88.9	
HIGHEST ANNUAL MEAN					27.6	
LOWEST ANNUAL MEAN					1260	
HIGHEST DAILY MEAN	1150	Oct 21	1150	Oct 21	1260	Mar 19 1968
LOWEST DAILY MEAN	7.0	Jul 12	3.6	Aug 1	.18	Sep 27 1980
ANNUAL SEVEN-DAY MINIMUM	11	Aug 17	4.5	Jul 18	.38	Sep 26 1980
INSTANTANEOUS PEAK FLOW			1290	Oct 21	1390	Mar 18 1968
INSTANTANEOUS PEAK STAGE			6.76	Oct 21	7.13	Mar 18 1968
INSTANTANEOUS LOW FLOW			2.9	Sep 25	.14	Sep 26 1980
ANNUAL RUNOFF (CFSM)	3.29		2.80		2.05	
ANNUAL RUNOFF (INCHES)	44.78		37.98		27.89	
10 PERCENT EXCEEDS	214		179		137	
50 PERCENT EXCEEDS	70		61		41	
90 PERCENT EXCEEDS	15		5.3		7.0	

INDIAN HEAD RIVER AT HANOVER, MA 01105730



JONES RIVER BASIN

01105870 JONES RIVER AT KINGSTON, MA

LOCATION.--Lat 41°59'27", long 70°44'03", Plymouth County, Hydrologic Unit 01090002, on left bank 100 ft downstream from Elm Street Bridge at Kingston and 2.8 mi upstream from mouth.

DRAINAGE AREA.--15.7 mi², excludes 4.09 mi² above outlet of Silver Lake, from which flow is diverted for municipal supply of Brockton, Whitman, and Hanson.

PERIOD OF RECORD.--Discharge: August 1966 to current year.

Water-quality records: Water years 1970-71.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 4.76 ft above sea level (levels by Massachusetts Department of Public Works).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by pond upstream. Flow affected at times by wastage from Silver Lake. Surface flow may be affected by ground water that enters from or moves into adjacent basins.

AVERAGE DISCHARGE.--31 years, 32.0 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 575 ft³/s, Mar. 19, 1968, gage height, 4.50 ft; maximum gage height, 5.88 ft, Feb. 7, 1978, from peak-stage indicator (backwater from tide); minimum daily, 0.59 ft³/s, Aug. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 343 ft³/s, Oct. 21, gage height, 5.18 ft; minimum daily, 7.6 ft³/s, Sept. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	85	43	48	44	33	e140	68	46	14	18	20
2	34	77	57	48	44	36	178	77	46	14	18	18
3	30	70	74	54	47	38	184	79	42	15	18	20
4	26	63	64	53	55	55	169	78	36	18	15	18
5	22	57	55	51	61	44	168	72	32	20	18	17
6	23	54	61	49	84	48	161	64	29	18	17	17
7	22	49	96	43	75	44	151	59	30	17	16	17
8	21	44	203	39	63	41	137	51	29	16	15	17
9	89	43	186	33	59	38	114	47	25	16	17	17
10	101	45	136	e30	46	40	94	47	24	17	16	16
11	81	43	111	e27	43	41	87	44	22	17	15	15
12	57	39	98	31	40	41	80	42	19	16	15	22
13	49	36	93	30	40	39	107	39	23	15	16	18
14	47	33	94	30	40	37	110	42	25	16	18	19
15	38	31	100	28	54	56	96	40	22	16	17	19
16	31	30	96	45	51	57	88	50	20	16	15	16
17	37	28	98	47	49	50	82	56	19	15	14	15
18	34	27	108	44	44	45	97	49	18	16	17	13
19	31	28	108	38	44	40	139	55	17	18	17	13
20	96	29	114	39	50	37	146	72	17	17	17	13
21	308	32	94	44	43	35	118	65	17	15	19	14
22	286	33	84	36	37	36	98	56	17	19	25	14
23	203	33	76	65	42	35	85	48	22	19	29	12
24	166	32	68	66	41	33	76	42	21	18	23	8.3
25	140	30	70	65	32	31	70	46	16	23	20	8.4
26	119	44	65	72	29	36	64	63	15	23	18	7.6
27	100	74	60	57	33	39	58	62	16	19	16	8.0
28	93	69	51	50	34	36	60	55	17	18	15	13
29	94	58	57	54	---	39	65	52	16	18	21	14
30	91	48	57	46	---	64	65	50	14	17	23	8.8
31	88	---	54	40	---	81	---	48	---	18	21	---
TOTAL	2593	1364	2731	1402	1324	1325	3287	1718	712	534	559	448.1
MEAN	83.6	45.5	88.1	45.2	47.3	42.7	110	55.4	23.7	17.2	18.0	14.9
MAX	308	85	203	72	84	81	184	79	46	23	29	22
MIN	21	27	43	27	29	31	58	39	14	14	14	7.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

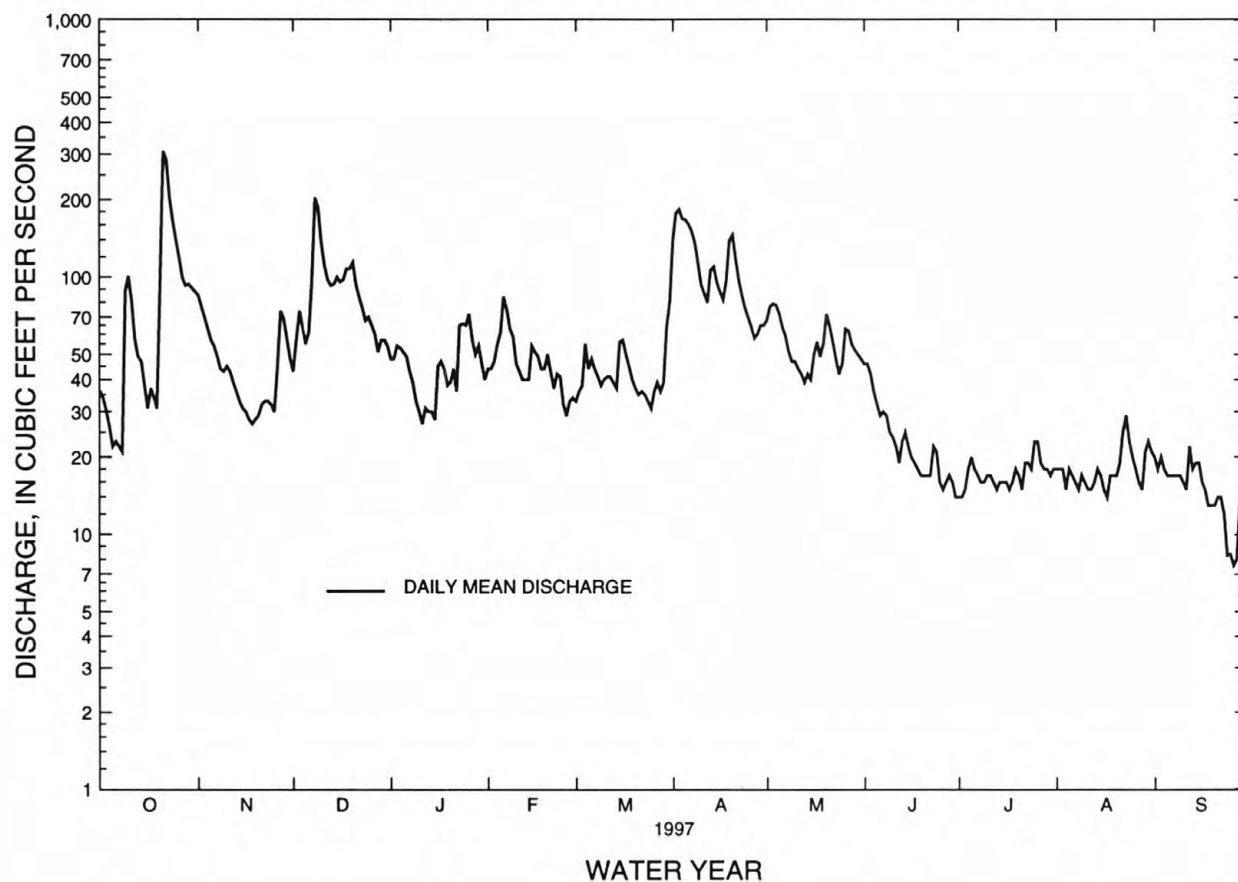
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
MEAN	19.1	29.9	35.5	36.8	43.6	56.1	50.5	37.6	25.3	16.9	16.3	17.2
MAX	83.6	66.0	88.1	78.2	83.3	135	115	67.7	69.4	38.6	42.9	55.8
(WY)	1967	1973	1997	1979	1984	1983	1984	1967	1984	1984	1979	1996
MIN	7.95	5.71	10.8	9.00	20.1	25.8	17.3	14.9	9.56	6.34	4.79	5.02
(WY)	1981	1975	1981	1981	1980	1985	1985	1981	1981	1981	1981	1995

01105870 JONES RIVER AT KINGSTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1966 - 1997	
ANNUAL TOTAL	17316		17997.1		32.0	
ANNUAL MEAN	47.3		49.3		54.6	
HIGHEST ANNUAL MEAN					14.9	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	308	Oct 21	308	Oct 21	527	Mar 19 1968
LOWEST DAILY MEAN	10	Jul 22	7.6	Sep 26	.59	Aug 11 1966
ANNUAL SEVEN-DAY MINIMUM	12	Jul 20	9.7	Sep 24	1.1	Aug 6 1966
INSTANTANEOUS PEAK FLOW			343	Oct 21	575	Mar 19 1968
INSTANTANEOUS PEAK STAGE			5.18	Oct 21	5.88	Feb 7 1978
INSTANTANEOUS LOW FLOW			6.5	Sep 30		
10 PERCENT EXCEEDS	94		96		62	
50 PERCENT EXCEEDS	37		40		24	
90 PERCENT EXCEEDS	15		16		9.0	

e Estimated

JONES RIVER AT KINGSTON, MA 01105870



QUASHNET RIVER BASIN

011058837 QUASHNET RIVER AT WAQUOIT VILLAGE, MA

LOCATION.--Lat 41°35'32", long 70°30'30", Barnstable County, Hydrologic Unit 01090002, on right bank 15 ft upstream from bridge on Martins Road, 0.5 mi northeast of Waquoit Village, and 1.4 mi upstream from mouth.

DRAINAGE AREA.--Surface drainage, from topography, about 2.58 mi², excludes area drained by Johns Pond. This stream drains from a ground-water basin which is larger than, and not coincident with, the surface-water basin.

PERIOD OF RECORD.--October 1988 to current year.

REVISED RECORDS.--WDR MA-RI-92-1: 1990 (M), 1991.

GAGE.--Water-stage recorder. Elevation of gage is 0.86 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow at times includes overflow and leakage from Johns Pond. Occasional regulation by cranberry bog upstream. Occasional backwater from tidal surge.

AVERAGE DISCHARGE.--9 years, 15.5 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41 ft³/s, Jan. 28, 1989, gage height, 2.87 ft; minimum, 5.7 ft³/s, Oct. 24, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39 ft³/s, Oct. 20, gage height, 3.06 ft; minimum, 14 ft³/s, Oct. 15, Dec. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	23	21	18	17	17	30	31	27	22	20	21
2	21	23	23	19	16	17	30	32	28	26	20	21
3	21	23	22	19	16	17	29	31	26	25	20	22
4	21	23	21	19	16	17	29	30	25	24	20	21
5	21	23	21	18	22	17	29	29	25	21	21	21
6	20	23	23	18	25	18	28	28	25	20	21	21
7	20	23	24	18	24	17	28	28	24	20	23	20
8	22	23	28	17	21	17	27	28	24	19	21	20
9	30	24	25	16	19	17	27	28	24	19	20	20
10	26	24	23	e17	18	18	24	28	24	20	22	20
11	23	24	22	17	17	18	19	28	23	20	20	20
12	22	23	22	17	17	18	25	27	23	19	20	20
13	19	23	21	17	17	17	31	27	23	19	21	20
14	16	23	21	17	17	17	30	27	23	19	22	19
15	14	23	21	16	18	20	28	26	22	19	21	19
16	20	23	21	18	17	19	27	27	22	19	21	19
17	26	23	21	18	17	18	27	27	22	18	20	19
18	30	23	21	17	17	18	28	26	22	19	22	19
19	27	23	22	16	17	18	30	26	22	19	21	19
20	33	23	23	16	18	17	30	27	22	18	20	19
21	36	23	19	16	17	17	29	27	22	18	25	18
22	31	22	16	16	17	18	29	27	22	22	27	18
23	27	22	16	18	16	18	29	26	22	22	24	19
24	29	22	16	17	17	18	29	26	21	22	21	19
25	26	22	16	18	17	18	29	27	21	26	20	19
26	24	24	14	17	17	19	30	28	21	29	20	18
27	23	24	16	16	17	19	29	27	21	24	19	18
28	23	22	17	18	17	18	31	26	21	22	20	18
29	23	22	18	18	---	20	32	25	20	21	21	20
30	24	21	17	17	---	23	31	25	19	21	21	19
31	23	---	17	17	---	24	---	25	---	20	21	---
TOTAL	742	687	628	536	501	564	854	850	686	652	655	586
MEAN	23.9	22.9	20.3	17.3	17.9	18.2	28.5	27.4	22.9	21.0	21.1	19.5
MAX	36	24	28	19	25	24	32	32	28	29	27	22
MIN	14	21	14	16	16	17	19	25	19	18	19	18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	13.3	14.6	13.5	14.2	13.9	15.9	19.8	19.3	17.1
MAX	23.9	22.9	20.3	18.5	18.0	20.5	29.9	27.4	22.9
(WY)	1997	1997	1997	1993	1993	1993	1997	1997	1997
MIN	10.2	12.3	9.56	11.1	10.2	11.4	12.9	11.7	12.2
(WY)	1996	1994	1996	1991	1995	1989	1992	1995	1995

011058837 QUASHNET RIVER AT WAQUOIT VILLAGE, MA--Continued

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

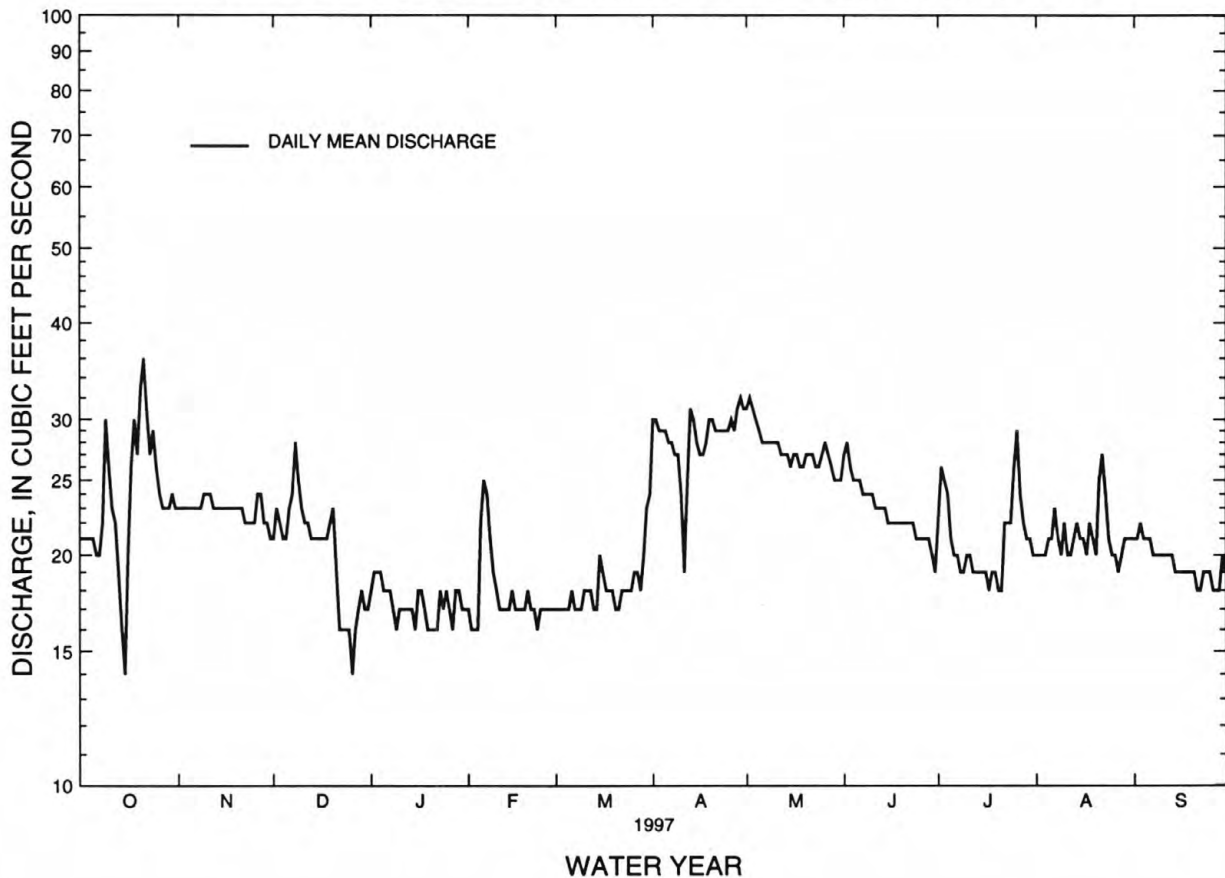
FOR 1997 WATER YEAR

WATER YEARS 1989 - 1997

ANNUAL TOTAL	6916.1	7941		
ANNUAL MEAN	18.9	21.8	15.5	
HIGHEST ANNUAL MEAN			21.8	1997
LOWEST ANNUAL MEAN			12.4	1995
HIGHEST DAILY MEAN	36	Oct 21	38	Jan 28 1989
LOWEST DAILY MEAN	7.6	Jan 26	5.9	Oct 24 1995
ANNUAL SEVEN-DAY MINIMUM	8.5	Jan 21	7.2	Oct 18 1995
INSTANTANEOUS PEAK FLOW		39	Oct 20	41
INSTANTANEOUS PEAK STAGE		3.06	Oct 20	4.55
INSTANTANEOUS LOW FLOW		14	Oct 15	
10 PERCENT EXCEEDS	24	28	23	
50 PERCENT EXCEEDS	19	21	14	
90 PERCENT EXCEEDS	14	17	11	

e Estimated

QUASHNET RIVER AT WAQUOIT VILLAGE, MA 011058837



SLOCUMS RIVER BASIN

01105933 PASKAMANSET RIVER NEAR SOUTH DARTMOUTH, MA

LOCATION.--Lat 41°35'07", long 70°59'27", Bristol County, Hydrologic Unit 01090002, at bridge on Russells Mills Road, 3.0 mi west of South Dartmouth.

DRAINAGE AREA.--26.2 mi².

PERIOD OF RECORD.--Discharge measurements made in water years 1972-74, 1991-92. October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 10 ft above sea level, from topographic map. Telephone gage-height telemeter at station.

REMARKS.--Records good.

AVERAGE DISCHARGE.--2 years, 54.9 ft³/s, 28.47 in/yr.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 24	2030	288	12.19	Apr. 1	1745	482	13.10
Dec. 9	0245	*515	*13.18				

Minimum discharge, 0.70 ft³/s, July 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	70	41	55	74	36	441	63	44	4.9	1.4	13
2	33	62	54	49	65	36	456	57	46	5.6	1.2	12
3	31	55	78	51	60	34	406	54	39	5.2	1.1	11
4	28	48	81	57	55	34	352	51	32	8.8	1.6	10
5	26	43	75	57	62	35	291	46	28	8.1	2.1	8.5
6	24	40	76	55	93	43	226	42	25	5.1	4.6	7.1
7	23	39	120	51	94	45	172	41	23	3.8	14	6.4
8	26	40	368	45	83	39	133	38	21	3.1	6.8	5.8
9	94	44	501	40	71	35	105	36	19	2.8	4.5	5.5
10	148	57	443	44	61	37	83	38	18	2.7	3.6	5.1
11	134	57	362	46	54	48	68	39	16	2.4	2.5	4.7
12	108	51	279	43	48	47	60	35	14	2.1	2.0	9.0
13	86	44	202	39	44	41	76	33	14	1.9	1.8	10
14	73	39	146	35	44	36	104	38	14	1.8	7.0	7.9
15	61	36	110	34	67	69	94	35	12	1.5	4.3	6.1
16	50	34	88	41	76	92	78	43	10	1.4	2.7	5.1
17	40	33	82	64	72	83	67	51	9.2	1.3	2.1	4.5
18	35	32	97	63	65	70	69	42	9.0	1.1	19	4.0
19	32	32	114	46	60	59	94	44	12	.97	21	3.8
20	63	33	177	33	57	53	130	54	8.6	.81	12	3.7
21	213	32	180	31	53	46	123	50	6.9	.78	24	4.0
22	268	30	155	31	51	48	101	41	7.2	8.2	61	3.5
23	264	29	129	58	49	51	82	36	37	5.8	60	3.3
24	276	29	106	60	44	46	68	33	28	3.1	37	3.2
25	273	28	104	65	39	40	59	35	17	9.6	20	3.0
26	227	37	103	88	36	48	53	55	13	18	16	2.7
27	177	61	91	88	39	64	48	51	12	9.4	14	2.5
28	136	60	82	88	39	62	49	39	9.0	5.2	13	2.4
29	110	52	73	120	---	62	70	33	7.1	3.2	15	3.7
30	92	43	68	125	---	186	71	30	5.8	2.1	20	4.6
31	80	---	63	97	---	241	---	28	---	1.7	15	---
TOTAL	3267	1290	4648	1799	1655	1866	4229	1311	556.8	132.46	410.3	176.1
MEAN	105	43.0	150	58.0	59.1	60.2	141	42.3	18.6	4.27	13.2	5.87
MAX	276	70	501	125	94	241	456	63	46	18	61	13
MIN	23	28	41	31	36	34	48	28	5.8	.78	1.1	2.4
CFSM	4.02	1.64	5.72	2.21	2.26	2.30	5.38	1.61	.71	.16	.51	.22
IN.	4.64	1.83	6.60	2.55	2.35	2.65	6.00	1.86	.79	.19	.58	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1997, BY WATER YEAR (WY)

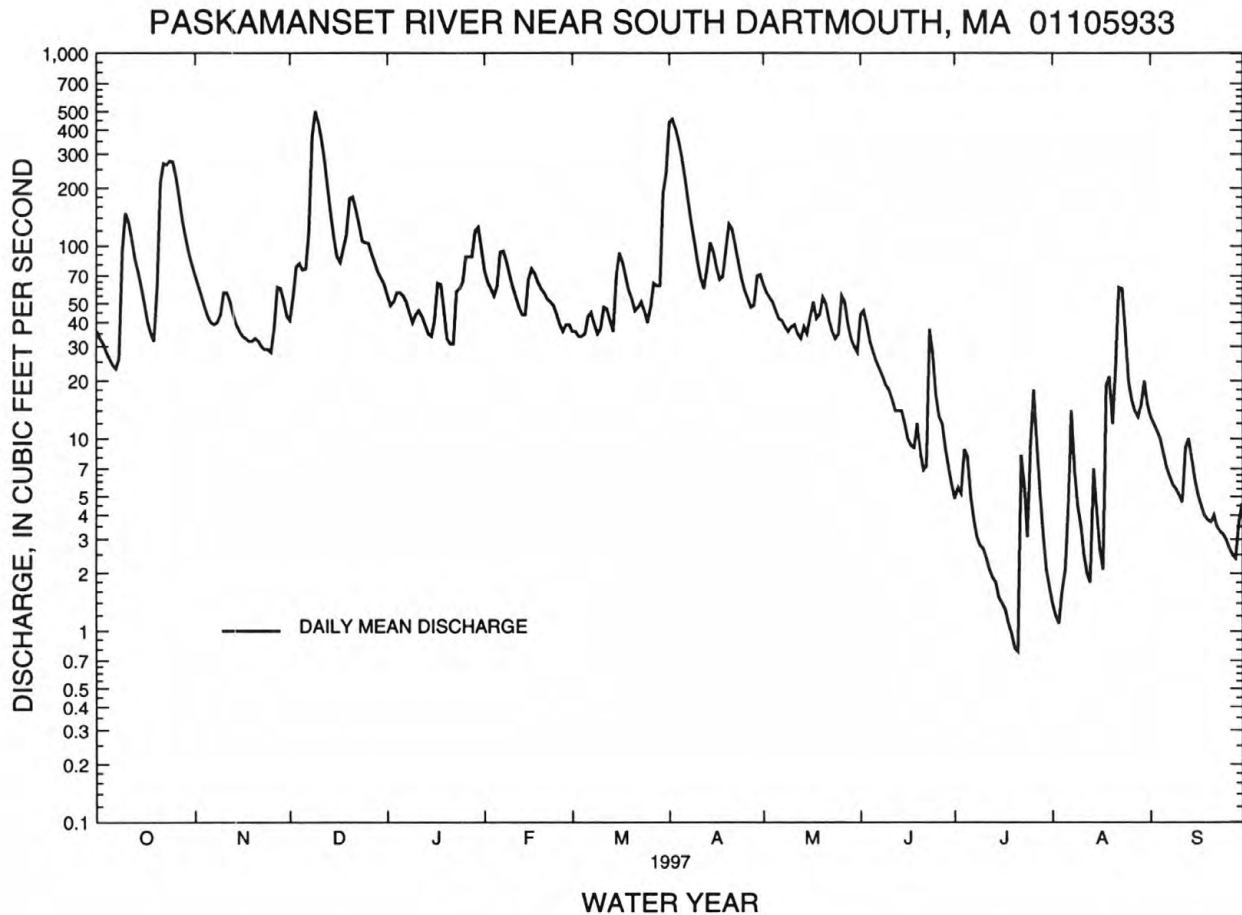
	1995	1996	1997	1995	1996	1997	1995	1996	1997	1995	1996	1997
MEAN	60.9	56.1	92.2	74.1	71.3	70.1	113	45.1	17.4	5.58	11.5	43.2
MAX	105	69.2	150	90.2	83.0	80.1	141	48.0	18.6	6.89	13.2	80.6
(WY)	1997	1996	1997	1996	1996	1997	1997	1996	1997	1996	1997	1996
MIN	16.5	43.0	34.5	58.0	59.1	60.2	84.6	42.3	16.3	4.27	9.74	5.87
(WY)	1996	1997	1996	1997	1997	1997	1996	1997	1996	1997	1996	1997

SLOCUMS RIVER BASIN

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01105933 PASKAMANSET RIVER NEAR SOUTH DARTMOUTH, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1995 - 1997	
ANNUAL TOTAL	24337.7		21340.66		54.9	
ANNUAL MEAN	66.5		58.5		58.5	
HIGHEST ANNUAL MEAN					51.3	
LOWEST ANNUAL MEAN					501	
HIGHEST DAILY MEAN	501	Dec 9	501	Dec 9	501	Dec 9 1996
LOWEST DAILY MEAN	1.8	Jul 23	.78	Jul 21	.78	Jul 21 1997
ANNUAL SEVEN-DAY MINIMUM	2.7	Jul 21	1.1	Jul 15	1.1	Jul 15 1997
INSTANTANEOUS PEAK FLOW			515	Dec 9	515	Dec 9 1996
INSTANTANEOUS PEAK STAGE			13.18	Dec 9	13.18	Dec 9 1996
INSTANTANEOUS LOW FLOW			.70	Jul 21	.62	Oct 3 1995
ANNUAL RUNOFF (CFSM)	2.54		2.23		2.10	
ANNUAL RUNOFF (INCHES)	34.56		30.30		28.47	
10 PERCENT EXCEEDS	151		116		121	
50 PERCENT EXCEEDS	49		41		39	
90 PERCENT EXCEEDS	4.8		3.7		4.0	



LOCATION.--Lat 41°56'02", long 70°57'25", Plymouth County, Hydrologic Unit 01090004, on right bank at bridge on Titicut Road, 1 mi upstream from Sawmill Brook, 3.5 mi northwest of Middleboro, and 4.0 mi southeast of Bridgewater.

WATER DISCHARGE RECORDS

GAGE.--Water stage recorder. Datum of gage is 9.61 ft above sea level. Prior to October 1966, at sites 40 ft apart about 600 ft upstream: October 1929 to Sept. 30, 1931, inverted nonrecording gage with zero of gage at 10.02 ft; Oct. 1, 1931, to June 8, 1934, nonrecording gage, and June 9, 1934, to April 1976, April 1985 to May 1988, water-stage recorders, at present datum.

AVERAGE DISCHARGE.--49 years (water years 1930-75, 1986-87, 1997), 470 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,980 ft³/s, Mar. 20, 1968, gage height, 14.48 ft; minimum, 8.0 ft³/s, Sept. 10, 1944; minimum daily, 9.0 ft³/s, Sept. 9-12, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,710 ft³/s, Oct. 23, gage height, 12.02 ft; minimum, 49 ft³/s, Sept. 25.

MEAN	230	413	576	620	698	940	859	528	312	178	152	177
MAX	1214	1309	1614	1346	1314	1714	1895	1378	987	1021	1049	840
(WY)	1997	1956	1946	1976	1970	1968	1987	1954	1948	1938	1955	1933
MIN	36.9	56.6	82.7	122	204	495	192	196	93.8	36.4	28.0	32.9
(WY)	1942	1966	1966	1966	1944	1944	1966	1965	1965	1957	1934	1957

01108000 TAUNTON RIVER NEAR BRIDGEWATER, MA--Continued

SUMMARY STATISTICS

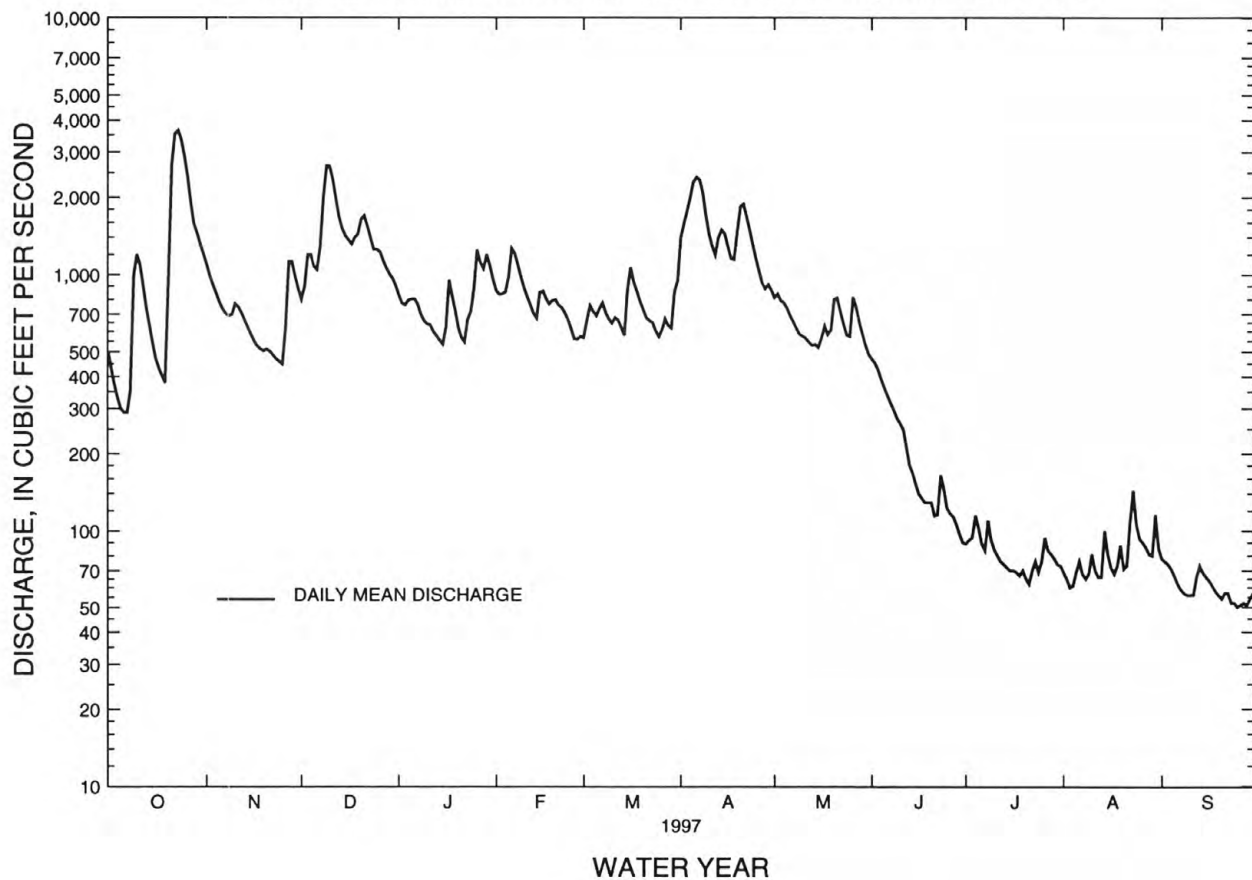
FOR 1997 WATER YEAR

WATER YEARS 1930 - 1997

ANNUAL TOTAL	251084			470	
ANNUAL MEAN	688			741	1973
HIGHEST ANNUAL MEAN				171	1966
LOWEST ANNUAL MEAN				4930	Mar 20 1968
HIGHEST DAILY MEAN	3650	Oct 23		9.0	Sep 9 1944
LOWEST DAILY MEAN	50	Sep 25		11	Sep 6 1944
ANNUAL SEVEN-DAY MINIMUM	52	Sep 23		4980	Mar 20 1968
INSTANTANEOUS PEAK FLOW	3710	Oct 23		14.48	Mar 20 1968
INSTANTANEOUS PEAK STAGE	12.02	Oct 23		8.0	Sep 10 1944
INSTANTANEOUS LOW FLOW	49	Sep 25			
10 PERCENT EXCEEDS	1430			1050	
50 PERCENT EXCEEDS	626			347	
90 PERCENT EXCEEDS	69			68	

e Estimated

TAUNTON RIVER NEAR BRIDGEWATER, MA 01108000



TAUNTON RIVER BASIN

01108000 TAUNTON RIVER NEAR BRIDGEWATER, MA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953, 1967-74, 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH WATER WHOLECOLOR FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	(PLAT- INUM- COBALT UNITS) (00080)	TUR- BID- ITY (NTU) (00076)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)		
NOV													
18...	1300	519	173	6.4	14.0	4.0	--	--	762	12.2	93	--	
MAR													
24...	1230	606	184	6.3	6.0	5.0	54	2.1	769	11.4	88	20	
JUN													
16...	1230	143	250	6.6	21.5	20.5	100	3.1	760	4.6	51	26	
AUG													
11...	1130	71	332	6.7	27.0	22.5	32	--	764	7.9	94	16	
DATE		OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	
NOV													
18...	1.0	--	760	--	--	--	--	--	--	--	10	0	
MAR													
24...	1.0	170	42	25	6.7	2.0	24	66	2	1.6	14	0	
JUN													
16...	2.0	53	41	--	--	--	--	--	--	--	25	0	
AUG													
11...	1.0	--	240	61	18	4.0	36	54	2	5.3	46	0	
DATE		HY- DROXIDE WATER DIS IT FIELD MG/L AS OH (71834)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
NOV													
18...	0	8	--	--	--	--	--	--	0.040	0.520	0.530	0.68	
MAR													
24...	0	11	11	36	<0.10	91	<1	112	<.010	.530	.420	.54	
JUN													
16...	0	20	--	--	--	--	5	184	.080	1.91	.184	.24	
AUG													
11...	0	37	18	55	.11	173	<1	207	.012	3.09	.018	.02	

TAUNTON RIVER BASIN

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01108000 TAUNTON RIVER NEAR BRIDGEWATER, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
NOV												
18...	0.57	1.1	1.6	0.100	0.060	130	91	<1.0	<1	<1	12	<1.0
MAR												
24...	.38	.80	1.3	.080	.040	80	69	<1.0	--	<1	13	<1.0
JUN												
16...	.64	.82	2.7	.172	.070	120	45	<1.0	<1	<1	14	<1.0
AUG												
11...	.51	.52	3.6	.174	.137	80	12	<1.0	<1	<1	12	<1.0
DATE	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
NOV												
18...	<1.0	<1.0	<1.0	2.0	920	<1.0	80	72	<0.10	<1.0	2.0	<1
MAR												
24...	<.1	<1.0	<1.0	1.0	440	<.5	60	58	<.10	<1.0	<1.0	<1
JUN												
16...	<.1	1.1	<1.0	2.3	1700	.86	280	264	<.10	<1.0	1.6	<1
AUG												
11...	<.1	<1.0	<1.0	2.4	630	.64	89	25	<.10	1.4	1.5	<1
DATE	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (32730)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	P,P'- DDD, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39351)	P,P'- DDE, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39363)	P,P'- DDT, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39368)	P,P'- DDT, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39373)
NOV												
18...	<1.0	10	<1.0	11	--	--	--	--	--	--	--	--
MAR												
24...	<1.0	9.0	<1.0	3.0	8	--	--	--	--	--	--	--
JUN												
16...	<1.0	7.5	<1.0	11	2	--	--	--	--	--	--	--
AUG												
11...	<1.0	7.4	<1.0	--	<1	24.0	<1.00	<0.100	6.30	6.20	4.70	2.10
DATE	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN I TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39758)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (81886)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	SEDI- MENT, SUS- PENDE THAN (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV												
18...	--	--	--	--	--	--	--	--	--	--	8	56
MAR												
24...	--	--	--	--	--	--	--	--	--	--	6	79
JUN												
16...	--	--	--	--	--	--	--	--	--	--	11	49
AUG												
11...	16.0	<0.100	<0.300	<0.100	<0.100	<0.100	<0.800	<0.200	<1.10	<10.0	18	69

TAUNTON RIVER BASIN

01109000 WADING RIVER NEAR NORTON, MA

LOCATION.--Lat 41°56'51", long 71°10'38", Bristol County, Hydrologic Unit 01090004, on left bank 200 ft downstream from bridge on State Highway 140, 0.9 mi upstream from confluence with Rumford River, and 1.5 mi southeast of Norton.

DRAINAGE AREA.--43.3 mi².

PERIOD OF RECORD.--Discharge: June 1925 to current year.
Water-quality records: Water year 1967-68.

REVISED RECORDS.--WSP 871: 1938. WSP 1301: 1929-33(M). WSP 1621: 1925-58 (monthly runoff). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 55.14 ft above sea level. Prior to Oct. 1, 1930, nonrecording gage at same site at datum 0.62 ft higher and Oct. 1, 1930, to May 5, 1933, at same site at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated to some extent by Lake Mirimichi and other lakes and reservoirs upstream. Diversion upstream for municipal supply of Attleboro and small diversions to and from basin for other municipal supplies. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--72 years, 73.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,460 ft³/s, Mar. 19, 1968, gage height, 11.47 ft; minimum, 0.3 ft³/s, Sept. 10, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	1615	410	8.45	Apr. 5	1745	444	8.74
Dec. 9	0145	*504	*8.91	Apr. 14	0215	301	8.14
Dec. 20	1515	309	7.88	Apr. 20	0545	436	8.71

Minimum discharge, 2.5 ft³/s Aug. 2-5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	115	113	125	136	74	214	101	38	6.2	3.0	5.1
2	34	104	158	119	128	87	256	105	36	5.5	2.7	5.3
3	29	94	230	119	122	95	332	94	33	5.6	2.5	5.3
4	25	89	195	124	116	90	351	92	30	6.5	2.5	4.8
5	23	83	167	123	139	88	430	85	28	5.8	3.2	4.3
6	22	79	167	120	183	96	419	76	26	5.8	3.9	3.8
7	22	78	194	113	167	99	382	72	24	5.3	4.5	3.7
8	25	80	391	97	149	90	344	65	23	5.1	4.3	3.9
9	73	83	444	92	136	83	291	61	21	4.7	5.0	4.6
10	109	94	330	90	124	82	247	59	20	4.5	7.1	5.2
11	89	93	278	91	116	88	218	56	18	4.4	7.1	5.3
12	72	86	251	e89	108	89	197	53	17	4.1	5.8	7.1
13	60	79	234	86	101	81	258	49	15	3.8	6.1	12
14	53	74	220	81	100	75	287	51	15	3.6	8.2	11
15	46	69	207	77	118	142	233	48	13	3.3	9.2	8.3
16	42	63	199	93	122	179	194	51	12	3.2	7.6	6.7
17	37	60	198	140	115	153	167	51	11	3.1	5.9	5.5
18	33	58	222	e125	106	135	196	46	10	3.0	6.3	4.7
19	30	57	232	e100	106	125	334	53	11	3.0	6.7	4.3
20	115	59	296	88	106	119	413	79	11	2.7	5.9	3.9
21	359	58	266	81	102	111	328	83	11	2.7	6.1	3.9
22	344	55	224	81	100	107	266	72	11	4.3	9.2	3.9
23	268	53	203	100	96	104	227	62	13	4.8	10	4.4
24	232	51	192	98	92	94	199	54	11	4.6	7.9	5.2
25	203	49	208	137	85	89	173	60	9.7	5.1	6.4	4.8
26	178	89	201	193	80	99	147	90	8.5	5.3	5.3	4.5
27	155	169	179	156	78	110	124	77	8.0	4.8	4.7	4.3
28	141	161	167	163	77	102	121	62	7.3	4.1	4.3	4.0
29	134	136	159	191	---	98	144	52	7.0	3.6	5.0	4.4
30	130	118	154	169	---	123	124	43	6.7	3.2	5.3	4.8
31	124	---	143	151	---	131	---	41	---	3.2	5.7	---
TOTAL	3245	2536	6822	3612	3208	3238	7616	2043	505.2	134.9	177.4	159.0
MEAN	105	84.5	220	117	115	104	254	65.9	16.8	4.35	5.72	5.30
MAX	359	169	444	193	183	179	430	105	38	6.5	10	12
MIN	22	49	113	77	77	74	121	41	6.7	2.7	2.5	3.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1997, BY WATER YEAR (WY)

MEAN	30.8	61.3	93.1	100	106	154	136	82.1	50.4	23.8	21.8	20.9
MAX	143	210	257	353	232	354	323	227	222	225	175	106
(WY)	1956	1956	1946	1979	1970	1936	1987	1954	1984	1938	1955	1954
MIN	3.11	5.21	10.4	13.7	26.1	65.6	35.1	28.6	9.79	3.57	1.91	1.76
(WY)	1958	1958	1966	1981	1980	1985	1985	1965	1957	1957	1993	1930

TAUNTON RIVER BASIN

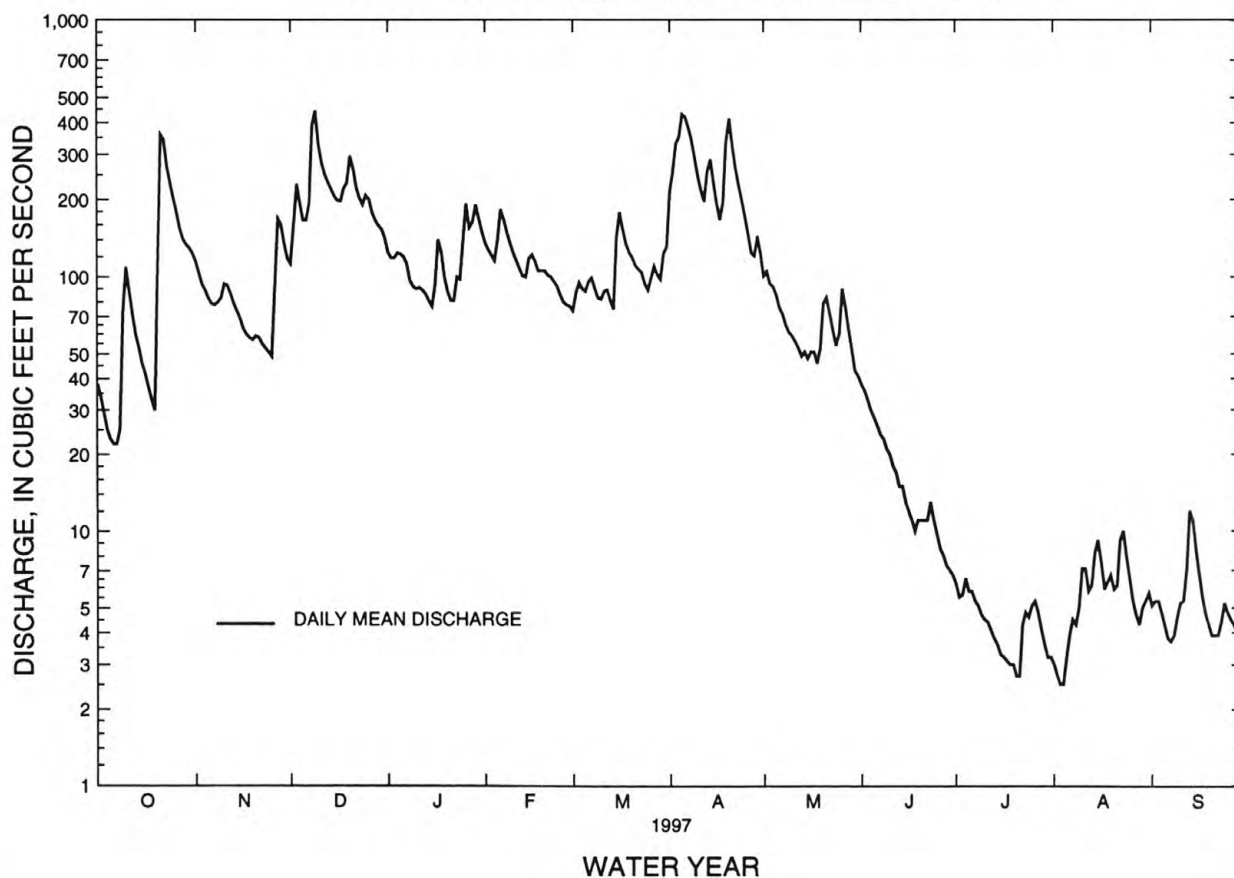
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01109000 WADING RIVER NEAR NORTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1925 - 1997	
ANNUAL TOTAL	37319.3		33296.5		73.2	
ANNUAL MEAN	102		91.2		123	1984
HIGHEST ANNUAL MEAN					28.8	1966
LOWEST ANNUAL MEAN					1280	Mar 19 1968
HIGHEST DAILY MEAN	444	Dec 9	444	Dec 9	.30	Sep 10 1926
LOWEST DAILY MEAN	6.3	Jul 12	2.5	Aug 3	.62	Aug 30 1993
ANNUAL SEVEN-DAY MINIMUM	10	Sep 1	2.9	Jul 30	1460	Mar 19 1968
INSTANTANEOUS PEAK FLOW			504	Dec 9	11.47	Mar 19 1968
INSTANTANEOUS PEAK STAGE			8.91	Dec 9	.30	Sep 10 1926
INSTANTANEOUS LOW FLOW			2.5	Aug 2		
10 PERCENT EXCEEDS	214		210		168	
50 PERCENT EXCEEDS	89		79		51	
90 PERCENT EXCEEDS	17		4.5		6.8	

e Estimated

WADING RIVER NEAR NORTON, MA 01109000



LOCATION.--Lat 41°51'58", long 71°07'24", Bristol County, Hydrologic Unit 01090004, on right bank 800 ft downstream from Warner Boulevard at North Dighton and 1.4 mi upstream from mouth.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

PERIOD OF RECORD.--Discharge: July 1966 to current year.
Water-quality records: Water years 1967-68.

GAGE.--Water-stage recorder. Datum of gage is 11.38 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Lake Mirimichi and other lakes and reservoirs upstream. Diversions to and from basin upstream for municipal supplies may be compensating.

AVERAGE DISCHARGE.--31 years, 167 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,490 ft³/s, Mar. 19, 1968, gage height, 8.30 ft; minimum, 1.9 ft³/s, Sept. 12, 1995, but was less during period of unusual regulation on Aug. 4, 5, 1997 (gage height below minimum recordable at this station).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	1945	*1,010	*5.66	Apr. 6	1215	794	5.18
Dec. 21	0400	668	4.89	Apr. 20	2200	755	5.09

Minimum discharge, not determined, gage height below minimum recordable at this station; minimum daily, 1.3 ft³/s, Aug. 5.

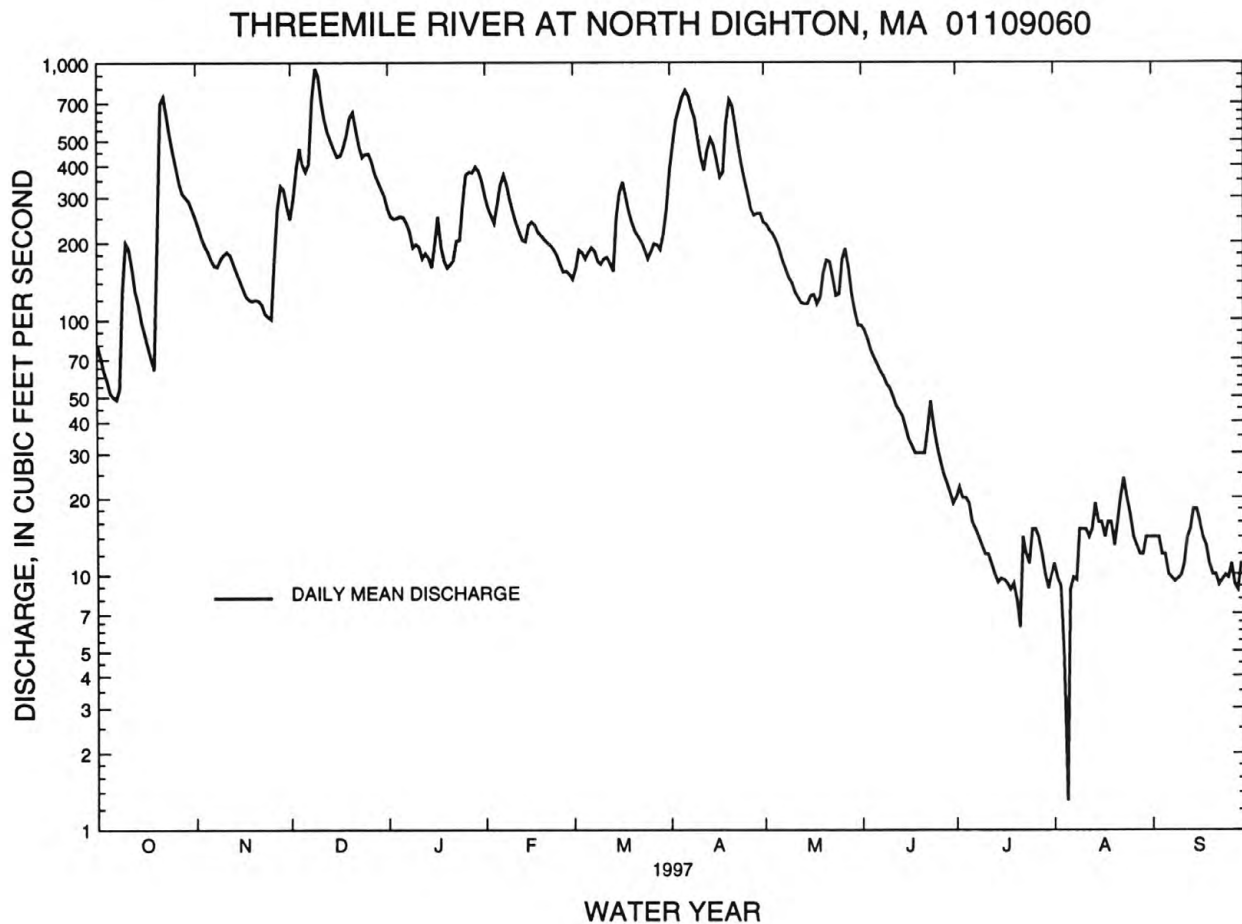
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e80	e250	247	272	304	144	382	240	95	20	11	14
2	e72	e230	296	253	275	160	479	235	91	22	9.6	14
3	e63	e210	391	248	256	187	e600	223	84	20	9.0	14
4	e58	e195	466	250	239	183	664	216	76	20	e4.8	12
5	e52	e185	403	253	282	173	735	203	71	19	e1.3	12
6	e50	172	378	251	335	183	782	189	67	16	8.7	10
7	e49	163	405	239	367	191	745	171	63	15	9.7	9.7
8	e54	162	722	222	335	185	e670	158	60	14	9.5	9.4
9	e130	173	952	192	295	169	e610	146	56	13	15	9.6
10	e200	180	890	197	263	165	e510	140	54	12	15	9.9
11	e190	184	707	193	239	173	428	128	50	12	15	11
12	e160	179	600	174	221	175	382	122	46	11	14	14
13	e130	166	538	182	205	166	457	116	44	10	15	15
14	e115	154	497	175	202	155	509	115	42	9.3	19	18
15	e98	143	463	161	234	250	e480	115	38	9.6	16	18
16	e88	133	433	197	241	313	e420	124	34	9.5	16	16
17	e78	124	437	253	235	344	e360	125	32	9.2	14	14
18	e70	120	471	193	220	302	375	115	30	8.7	16	13
19	e64	119	525	e170	213	264	e580	122	30	9.2	16	11
20	e200	120	618	e160	206	239	e720	152	30	7.9	13	10
21	e700	119	645	e165	200	221	e680	170	30	6.2	16	10
22	e740	115	554	171	195	211	e570	168	37	14	20	9.1
23	e620	106	476	203	188	201	e470	146	48	12	24	9.5
24	e520	103	431	205	178	188	398	124	38	11	20	9.9
25	e450	101	443	283	165	173	347	126	32	15	17	9.7
26	e390	171	445	367	154	184	306	172	28	15	14	11
27	e340	270	414	377	155	198	269	189	25	14	13	9.1
28	e310	332	371	374	151	196	255	159	23	12	12	8.7
29	e300	322	346	395	---	188	259	126	21	10	12	11
30	e290	276	324	380	---	216	259	108	19	8.8	14	11
31	e270	---	304	349	---	271	---	95	---	10	14	---
TOTAL	6931	5277	15192	7504	6553	6368	14701	4738	1394	395.4	423.6	353.6
MEAN	224	176	490	242	234	205	490	153	46.5	12.8	13.7	11.8
MAX	740	332	952	395	367	344	782	240	95	22	24	18
MIN	49	101	247	160	151	144	255	95	19	6.2	1.3	8.7

MEAN	79.7	144	227	229	242	317	303	185	125	50.4	54.6	47.9
MAX	298	407	534	683	466	580	701	408	466	137	170	128
(WY)	1990	1990	1973	1979	1970	1983	1987	1967	1984	1973	1986	1989
MIN	16.1	32.7	40.1	29.8	55.7	136	84.5	83.4	25.6	12.1	9.47	10.9
(WY)	1994	1994	1981	1981	1980	1985	1985	1981	1991	1991	1993	1993

01109060 THREEMILE RIVER AT NORTH DIGHTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1966 - 1997	
ANNUAL TOTAL	79983		69830.6		167	
ANNUAL MEAN	219		191		255	
HIGHEST ANNUAL MEAN					64.4	
LOWEST ANNUAL MEAN					2310	
HIGHEST DAILY MEAN	952	Dec 9	952	Dec 9	1.3	Mar 19 1968
LOWEST DAILY MEAN	22	Sep 6	1.3	Aug 5	2.9	Aug 5 1997
ANNUAL SEVEN-DAY MINIMUM	28	Sep 1	7.5	Aug 2	2.9	Sep 7 1995
INSTANTANEOUS PEAK FLOW			1010	Dec 9	2490	Mar 19 1968
INSTANTANEOUS PEAK STAGE			5.66	Dec 9	8.30	Mar 19 1968
10 PERCENT EXCEEDS	470		453		378	
50 PERCENT EXCEEDS	181		165		115	
90 PERCENT EXCEEDS	43		11		22	

e Estimated

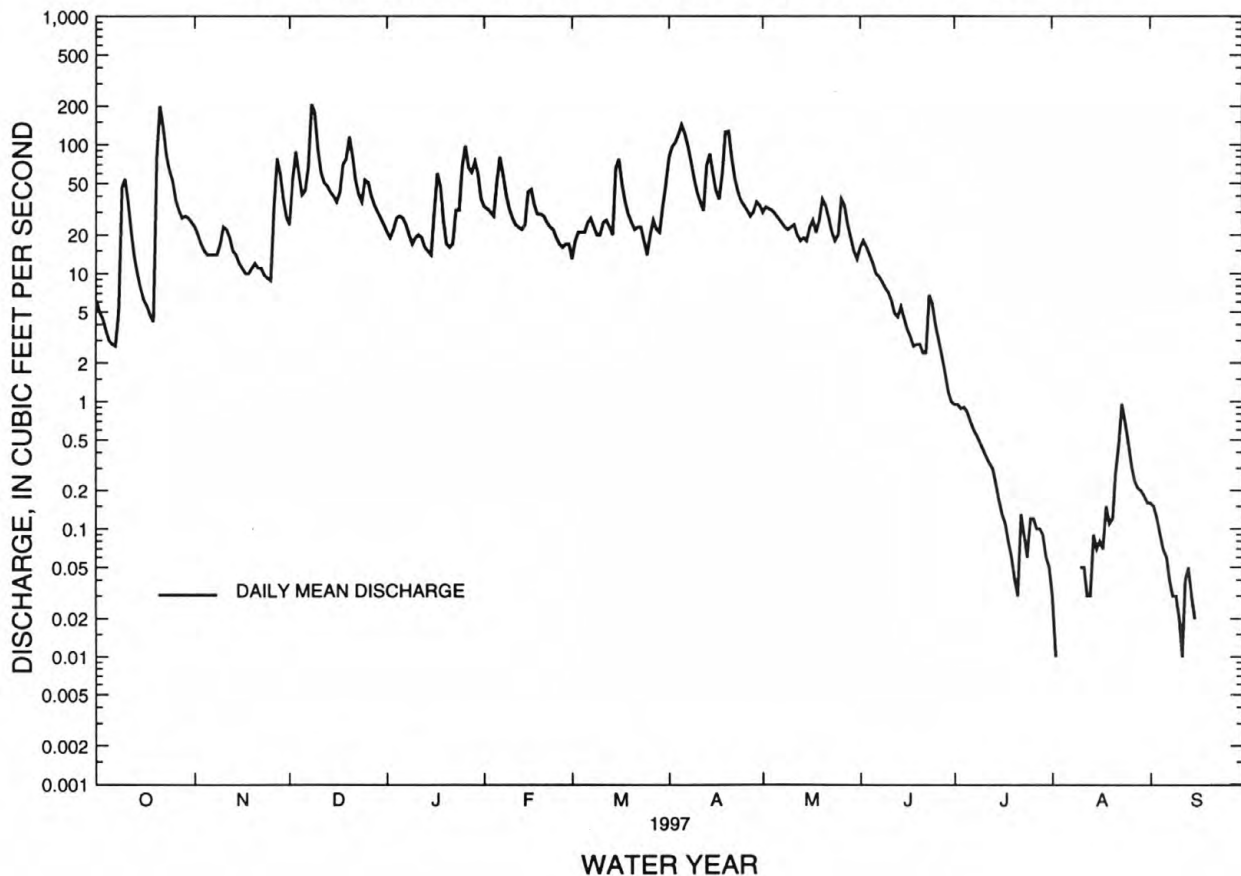


MEAN	9.36	21.9	33.3	33.9	34.4	44.9	37.9	23.3	13.9	4.82	4.99	5.34
MAX	42.7	58.4	74.7	110	63.2	91.4	106	61.7	64.3	24.9	35.3	21.5
(WY)	1978	1973	1987	1979	1970	1994	1987	1967	1984	1973	1976	1972
MIN	.38	4.69	3.70	3.34	7.23	20.2	9.55	7.87	1.51	.089	.015	.018
(WY)	1989	1981	1981	1981	1980	1981	1985	1981	1981	1993	1993	1980

01109070 SEGREGANSET RIVER NEAR DIGHTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1966 - 1997
ANNUAL TOTAL	9675.89	9305.17	
ANNUAL MEAN	26.4	25.5	22.3
HIGHEST ANNUAL MEAN			33.0
LOWEST ANNUAL MEAN			7.68
HIGHEST DAILY MEAN	292 Jan 20	207 Dec 8	670 Mar 18 1968
LOWEST DAILY MEAN	.32 Jul 12	.00 Aug 3	.00 Aug 13 1966
ANNUAL SEVEN-DAY MINIMUM	.68 Jul 6	.00 Aug 3	.00 Aug 13 1966
INSTANTANEOUS PEAK FLOW		250 Dec 8	867 Mar 18 1968
INSTANTANEOUS PEAK STAGE		4.82 Dec 8	7.51 Mar 18 1968
INSTANTANEOUS LOW FLOW		.00 Aug 2	.00 Aug 13 1966
ANNUAL RUNOFF (CFSM)	2.49	2.41	2.10
ANNUAL RUNOFF (INCHES)	33.96	32.66	28.52
10 PERCENT EXCEEDS	63	61	51
50 PERCENT EXCEEDS	16	19	13
90 PERCENT EXCEEDS	1.6	.05	.50

SEGREGANSET RIVER NEAR DIGHTON, MA 01109070



TEN MILE RIVER BASIN

01109403 TEN MILE RIVER AT PAWTUCKET AVENUE AT EAST PROVIDENCE, RI

LOCATION.--Lat 41°49'51", long 71°21'06", Providence County, Hydrologic Unit 01090004, on right bank on upstream side of bridge on State Highways 1A and 114, 0.3 mi south of junction with State Highway 114A, and 0.7 mi upstream from mouth.

DRAINAGE AREA.--53.1 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow affected by regulation and diversions from reservoirs upstream.

AVERAGE DISCHARGE.--11 years, 105 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft³/s, Apr. 6, 1987, gage height, 7.78 ft; minimum, 5.0 ft³/s, Apr. 19, 1991; minimum daily, 6.6 ft³/s, Apr. 19, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 687 ft³/s, Dec. 9, gage height, 6.53 ft; minimum, 14 ft³/s, July 20, 21; minimum daily, 15 ft³/s, July 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	107	114	139	156	86	277	156	77	26	17	38
2	50	101	213	133	146	109	289	162	72	28	16	53
3	50	93	286	136	139	116	323	142	68	29	16	34
4	40	87	219	144	131	107	380	150	66	34	18	24
5	38	87	169	144	186	100	456	137	61	29	21	22
6	36	93	216	139	248	116	464	130	59	24	21	22
7	38	106	269	127	220	112	439	124	57	22	19	22
8	57	108	520	115	178	104	394	114	54	23	18	24
9	e236	122	639	106	152	92	332	109	51	23	43	23
10	e196	127	465	108	137	99	281	110	53	26	58	23
11	129	107	380	114	129	107	247	104	51	22	43	25
12	105	96	335	105	120	103	227	95	48	20	35	39
13	93	89	299	98	114	92	296	99	48	19	35	47
14	87	84	277	94	124	93	312	106	49	19	46	41
15	78	79	264	90	155	228	258	97	42	21	33	33
16	72	73	247	126	146	273	216	114	40	18	29	29
17	69	71	265	204	131	204	197	105	40	19	24	25
18	63	69	325	169	115	170	245	93	41	18	37	26
19	60	72	349	122	115	147	358	111	48	17	33	24
20	e220	75	403	101	115	135	426	134	45	15	26	23
21	e410	72	373	92	109	126	352	131	40	15	40	22
22	e385	70	294	90	112	127	287	113	49	34	54	18
23	e255	66	255	115	105	118	252	99	68	30	42	19
24	216	65	233	116	99	108	228	88	49	23	32	20
25	173	64	266	215	92	99	198	103	43	33	27	18
26	147	164	247	298	87	120	183	155	42	21	24	19
27	125	262	219	227	91	119	163	125	39	21	22	18
28	121	195	194	218	91	109	177	103	31	24	24	18
29	122	143	183	253	---	112	195	90	30	22	33	24
30	110	120	172	215	---	146	172	81	28	17	38	23
31	110	---	158	174	---	184	---	75	---	17	32	---
TOTAL	3943	3067	8848	4527	3743	3961	8624	3555	1489	709	956	796
MEAN	127	102	285	146	134	128	287	115	49.6	22.9	30.8	26.5
MAX	410	262	639	298	248	273	464	162	77	34	58	53
MIN	36	64	114	90	87	86	163	75	28	15	16	18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1997, BY WATER YEAR (WY)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	67.6	103	153	136	137	167	193	109	56.8	38.2	49.8
MAX	171	223	304	201	261	348	407	188	103	71.4	119
(WY)	1990	1990	1993	1987	1988	1994	1987	1989	1989	1996	1989
MIN	23.1	44.8	51.8	41.4	60.5	90.2	78.0	60.4	32.1	21.3	16.6
(WY)	1994	1994	1989	1989	1989	1989	1995	1992	1991	1991	1993

01109403 TEN MILE RIVER AT PAWTUCKET AVENUE AT EAST PROVIDENCE, RI--Continued

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

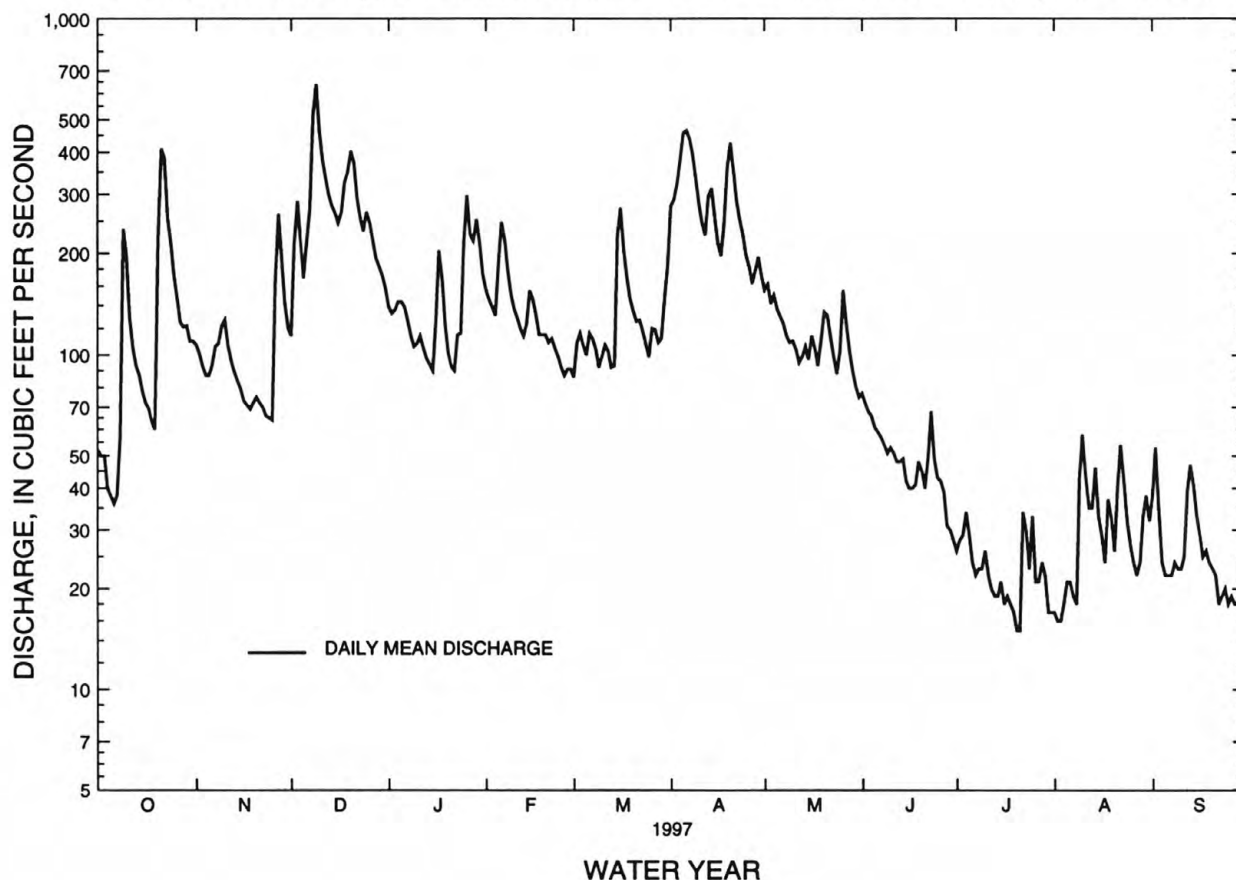
FOR 1997 WATER YEAR

WATER YEARS 1987 - 1997

ANNUAL TOTAL	49113		44218		105	
ANNUAL MEAN	134		121		140	1987
HIGHEST ANNUAL MEAN					67.5	1995
LOWEST ANNUAL MEAN					1040	Apr 6 1987
HIGHEST DAILY MEAN	639	Dec 9	639	Dec 9	6.6	Apr 19 1991
LOWEST DAILY MEAN	26	Jul 12	15	Jul 20	12	Aug 31 1993
ANNUAL SEVEN-DAY MINIMUM	31	Jul 6	17	Jul 30	1090	Apr 6 1987
INSTANTANEOUS PEAK FLOW			687	Dec 9	7.78	Apr 6 1987
INSTANTANEOUS PEAK STAGE			6.53	Dec 9	5.0	Apr 19 1991
INSTANTANEOUS LOW FLOW			14	Jul 20	215	
10 PERCENT EXCEEDS	272		264		79	
50 PERCENT EXCEEDS	105		101		24	
90 PERCENT EXCEEDS	39		22			

e Estimated

TEN MILE RIVER, PAWTUCKET AVE. AT EAST PROVIDENCE, RI 01109403



BLACKSTONE RIVER BASIN

01110000 QUINSIGAMOND RIVER AT NORTH GRAFTON, MA

LOCATION.--Lat 42°13'49", long 71°42'41", Worcester County, Hydrologic Unit 01090003, on right bank 800 ft downstream from dam at outlet of Hovey Pond at North Grafton and 0.3 mi upstream from Bummett Brook.

DRAINAGE AREA.--25.6 mi².

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 335 ft above sea level, from topographic map. Prior to Dec. 7, 1939, staff gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by Lake Quinsigamond 2.3 mi upstream and by ponds upstream.

AVERAGE DISCHARGE.--58 years, 41.4 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 820 ft³/s, Aug. 20, 1955, gage height, 5.15 ft; no flow Aug. 6-9, 22, 1966 (caused by unusual regulation), Sept. 13-17, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 237 ft³/s, Oct. 21, gage height, 2.89 ft; minimum daily, 0.06 ft³/s, Aug. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	47	49	75	65	38	119	72	27	6.4	.20	3.6
2	28	44	96	71	60	42	115	75	26	5.8	.16	3.4
3	27	42	114	70	56	42	106	65	25	7.6	.10	3.8
4	23	37	98	69	54	40	114	74	23	18	.06	3.0
5	20	35	83	67	75	39	133	66	22	18	.07	2.0
6	18	34	81	68	95	58	139	60	21	15	.11	1.4
7	17	33	82	66	84	57	143	64	20	13	.13	1.1
8	18	32	92	51	73	48	137	56	19	11	.09	.99
9	55	41	84	55	64	47	121	52	18	9.4	.08	.38
10	55	48	76	55	57	47	106	53	17	18	.21	.72
11	52	45	69	55	51	49	91	53	16	16	.26	.78
12	43	41	73	51	47	50	85	46	15	14	.33	3.7
13	37	36	78	48	45	45	115	45	16	12	1.0	4.4
14	34	33	84	45	44	42	117	46	24	10	3.6	4.1
15	30	31	101	42	51	66	101	42	22	8.7	3.0	3.6
16	25	29	103	59	53	67	88	45	18	7.4	2.7	2.3
17	23	27	128	78	49	57	81	41	16	6.8	2.6	2.0
18	22	27	177	67	46	53	102	39	17	6.2	3.5	1.9
19	20	27	186	e55	47	49	164	44	30	5.3	3.3	1.8
20	118	28	205	e48	50	47	177	69	28	3.6	2.4	1.5
21	230	27	176	e42	46	47	156	67	24	2.5	7.1	1.7
22	195	26	153	42	49	50	135	59	22	3.1	14	.86
23	155	24	133	46	51	52	117	50	19	2.7	13	.44
24	126	24	120	43	47	47	104	43	15	2.1	11	.35
25	100	23	144	81	43	41	93	41	14	2.1	8.3	.18
26	82	59	125	96	38	62	85	41	13	1.7	7.1	.14
27	70	87	112	78	40	70	77	37	12	1.4	6.0	.10
28	66	73	100	97	41	63	80	34	9.6	1.3	5.4	.08
29	63	63	92	109	---	62	92	31	8.4	1.0	5.3	.71
30	55	54	92	86	---	71	81	28	7.3	.62	4.8	1.2
31	53	---	81	73	---	77	---	27	---	.38	4.0	---
TOTAL	1892	1177	3387	1988	1521	1625	3374	1565	564.3	231.10	109.90	52.23
MEAN	61.0	39.2	109	64.1	54.3	52.4	112	50.5	18.8	7.45	3.55	1.74
MAX	230	87	205	109	95	77	177	75	30	18	14	4.4
MIN	17	23	49	42	38	38	77	27	7.3	.38	.06	.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

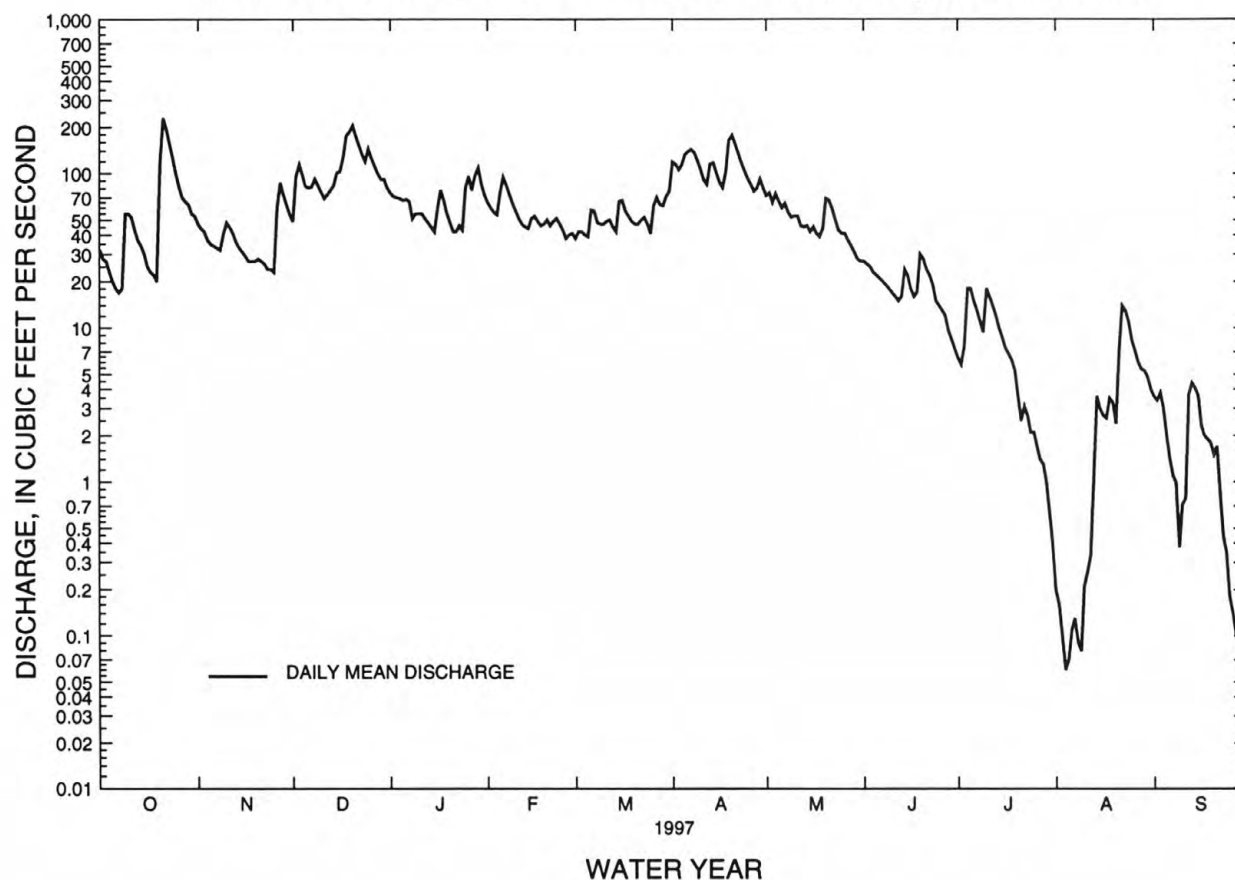
	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
MEAN	21.0	33.3	44.8	48.1	53.8	77.2	77.8	52.2	37.3	19.7	17.6	15.5
MAX	94.3	149	109	159	141	154	202	92.3	143	64.2	169	130
(WY)	1956	1956	1997	1979	1970	1972	1987	1954	1982	1959	1955	1954
MIN	1.22	1.80	3.07	7.85	11.0	29.4	22.5	19.2	11.5	2.67	1.05	.70
(WY)	1943	1942	1942	1981	1977	1989	1966	1965	1995	1965	1965	1995

01110000 QUINSIGAMOND RIVER AT NORTH GRAFTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1940 - 1997
ANNUAL TOTAL	22435.2	17486.53	
ANNUAL MEAN	61.3	47.9	41.4
HIGHEST ANNUAL MEAN			68.4 1956
LOWEST ANNUAL MEAN			16.5 1966
HIGHEST DAILY MEAN	280 Jan 28	230 Oct 21	790 Aug 20 1955
LOWEST DAILY MEAN	6.0 Sep 6	.06 Aug 4	.00 Aug 6 1966
ANNUAL SEVEN-DAY MINIMUM	7.4 Sep 1	.09 Aug 3	.01 Sep 11 1980
INSTANTANEOUS PEAK FLOW		237 Oct 21	820 Aug 20 1955
INSTANTANEOUS PEAK STAGE		2.89 Oct 21	5.15 Aug 20 1955
INSTANTANEOUS LOW FLOW		.05 Aug 4	
10 PERCENT EXCEEDS	125	103	87
50 PERCENT EXCEEDS	49	43	31
90 PERCENT EXCEEDS	15	1.8	5.7

e Estimated

QUINSIGAMOND RIVER AT NORTH GRAFTON, MA 01110000



LOCATION.--Lat 42°01'22", long 71°34'22", Worcester County, Hydrologic Unit 01090003, on left bank at Northbridge, 100 ft downstream from Sutton Street Bridge, and 3.0 mi downstream from Quinsigamond River.

PERIOD OF RECORD.--Discharge: October 1939 to September 1977. October 1995 to September 1996. October and November 1939 monthly discharge only, published in WSP 1301.

Water-quality records: Water years, 1955, 1958, 1971.

GAGE.--Water-stage recorder. Altitude of gage is 260 ft, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by mills and reservoirs upstream. Daily discharge includes flow diverted from Nashua River Basin and, at times, from Quabbin Reservoir to Blackstone River Basin for municipal supply of Worcester.

AVERAGE DISCHARGE.--40 years (water years 1940-77, 1996, 1997), 271 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s, Aug. 20, 1955, gage height, 16.74 ft, from rating curve extended above 3,800 ft³/s on basis of computation of flow over dam at gage height 13.7 ft and slope-area measurement at gage height 16.74 ft; maximum gage height, 17.53 ft, Aug. 20, 1955, backwater from debris; minimum daily, 2 ft³/s, Aug. 29, 1941, Sept. 5, 1942, Aug. 28, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stage and discharge of flood of Aug. 20, 1955 are the greatest since at least 1900. Flood of Mar. 19, 1936, reached a stage of 13.7 ft from floodmarks, discharge, 7,510 ft³/s by computation of flow over dam 800 ft upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,630 ft³/s, Oct. 21, gage height, 8.34 ft; minimum daily, 51 ft³/s, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	200	302	347	472	427	271	1010	510	172	80	56	77
2	182	320	1100	445	407	301	891	495	171	77	55	83
3	175	305	1110	468	386	304	858	471	164	119	53	83
4	158	290	752	462	370	299	1060	563	159	200	52	78
5	147	264	591	450	742	278	1280	492	153	124	69	76
6	146	239	553	458	809	458	1260	448	148	107	76	73
7	146	234	542	417	613	438	1180	418	141	93	57	66
8	150	241	636	370	490	378	1050	379	134	90	55	62
9	522	368	622	338	415	345	864	359	132	84	76	61
10	374	439	560	361	373	329	737	388	127	165	106	60
11	308	355	498	340	343	353	663	337	122	109	60	60
12	245	294	525	301	320	328	609	315	117	99	59	129
13	211	261	651	278	296	297	1010	293	135	85	80	72
14	198	235	689	263	310	280	891	312	161	80	142	66
15	185	219	870	248	417	583	745	325	130	77	74	63
16	175	212	826	541	397	549	645	393	116	74	72	61
17	166	199	1240	649	345	426	622	375	109	71	64	60
18	159	193	1810	433	324	363	856	361	110	72	94	61
19	184	190	1570	318	345	340	1550	402	263	64	71	61
20	1410	230	1660	269	390	325	1410	597	168	59	65	60
21	2160	208	1160	246	375	328	1070	462	149	59	165	57
22	1250	172	903	238	375	392	870	369	128	77	191	56
23	830	164	789	343	384	395	753	306	122	65	121	55
24	684	163	735	292	351	363	666	269	119	60	105	55
25	566	165	1100	931	300	321	608	267	131	62	100	54
26	450	681	885	858	264	621	551	266	120	60	96	54
27	395	815	725	583	284	696	503	259	105	58	88	51
28	399	547	634	917	284	563	590	210	93	58	93	52
29	383	412	595	850	---	555	650	198	86	60	90	58
30	350	350	602	593	---	690	575	186	81	55	87	67
31	325	---	541	472	---	729	---	179	---	55	80	---
TOTAL	13233	9067	25821	14204	11136	12898	26027	11204	4065	2598	2652	1971
MEAN	427	302	833	458	398	416	868	361	136	83.8	85.5	65.7
MAX	2160	815	1810	931	809	729	1550	597	263	200	191	129
MIN	146	163	347	238	264	271	503	179	81	55	52	55

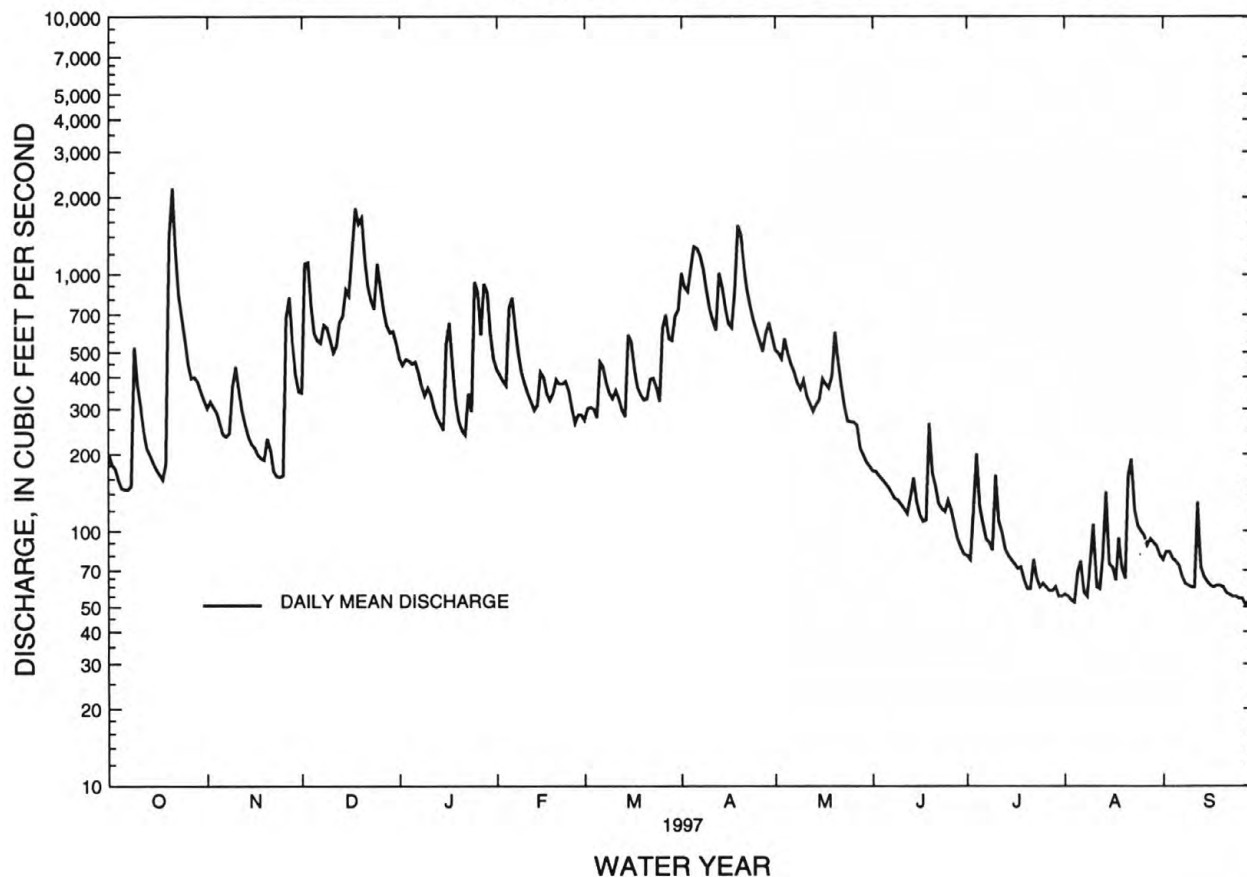
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

MEAN	167	231	280	295	332	510	488	305	223	143	143	145
MAX	717	766	833	624	832	1072	923	608	661	428	1195	805
(WY)	1956	1956	1997	1996	1970	1972	1956	1972	1972	1959	1955	1954
MIN	53.5	67.7	86.9	93.8	153	250	192	123	98.4	58.4	51.2	56.8
(WY)	1942	1942	1942	1944	1944	1941	1966	1941	1957	1957	1965	1943

01110500 BLACKSTONE RIVER AT NORTHBRIDGE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1997	
ANNUAL TOTAL	149372		134877		271	
ANNUAL MEAN	408		370		408	
HIGHEST ANNUAL MEAN					132	
LOWEST ANNUAL MEAN					1955	
HIGHEST DAILY MEAN	2840	Jan 28	2160	Oct 21	8850	Aug 20 1955
LOWEST DAILY MEAN	74	Sep 7	51	Sep 27		
ANNUAL SEVEN-DAY MINIMUM	77	Sep 10	54	Sep 22	29	Aug 4 1965
INSTANTANEOUS PEAK FLOW			2630	Oct 21	16900	Aug 20 1955
INSTANTANEOUS PEAK STAGE			8.34	Oct 21	16.74	Aug 20 1955
INSTANTANEOUS LOW FLOW			51	Aug 4		
10 PERCENT EXCEEDS	803		819		566	
50 PERCENT EXCEEDS	303		300		190	
90 PERCENT EXCEEDS	134		63		77	

BLACKSTONE RIVER AT NORTHBRIDGE, MA 01110500



BLACKSTONE RIVER BASIN

01111230 BLACKSTONE RIVER AT MILLVILLE, MA

LOCATION.--Lat 42°01'22", long 71°34'22", Worcester County, Hydrologic Unit 01090003, on railroad bridge, 0.6 mi southeast of Millville, and 1.6 mi upstream from Branch River. Prior to December 1980, at site 0.2 mi downstream.

DRAINAGE AREA.--277 mi².

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1969 to December 1980.

pH: July 1969 to December 1980.

WATER TEMPERATURE: July 1969 to December 1980.

DISSOLVED OXYGEN: July 1969 to December 1980.

REMARKS.--Discharge computed by discharge measurements on the day of sampling. Instantaneous records are representative of the cross section while continuous records are based on point samples.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,000 µS/cm, May 30, June 3, 5, 1975; minimum, 49 µS/cm, June 30, 1973.

pH: Maximum recorded, 9.3 units, Sept. 10, 1976; minimum, 4.3 units, Sept. 6, 1973.

WATER TEMPERATURE: Maximum recorded, 29.0°C, July 29, 1970, July 21, 1977, July 23, 1978; minimum, 0.0°C on many days during winter periods.

DISSOLVED OXYGEN: Maximum recorded, 14.9 mg/L, Feb. 25, 1971; minimum, 0.0 mg/L, July 12, 15-20, 26-30, Aug. 2, 3, 1971.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	
NOV 19...	0900	391	271	6.8	5.5	6.0	--	--	753	12.0	98	--
MAR 25...	0930	545	313	6.5	4.5	4.5	17	1.7	769	12.1	93	11
JUN 17...	0845	176	352	6.5	19.0	20.0	27	2.6	752	6.4	71	16
AUG 12...	0845	80	406	6.7	21.0	24.0	14	--	759	5.9	70	16
DATE		OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL /100 ML) (31633)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION PERCENT RATIO (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	
NOV 19...	1.0	K2000	960	--	--	--	--	--	--	--	16	
MAR 25...	2.0	150	120	38	12	1.9	41	69	3	2.6	24	
JUN 17...	2.0	85	53	--	--	--	--	--	--	--	34	
AUG 12...	2.0	69	68	56	18	2.8	52	64	3	6.2	41	
DATE		CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	HY-DROXIDE DIS IT FIELD (MG/L AS OH) (71834)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 19...	0	0	13	--	--	--	--	--	--	--	0.070	0.970
MAR 25...	0	0	20	14	66	0.16	153	3	171	.020	.720	
JUN 17...	0	0	28	--	--	--	--	3	223	.117	1.71	
AUG 12...	0	0	33	26	72	.37	209	<1	236	.025	2.21	

01111230 BLACKSTONE RIVER AT MILLVILLE, MA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV 19...	0.920	1.2	0.48	1.4	2.4	0.100	0.060	70	54	<1.0	<1
MAR 25...	.640	.82	.36	1.0	1.7	.040	<.010	50	27	<1.0	--
JUN 17...	.127	.16	.53	.66	2.4	.192	.100	80	17	<1.0	2
AUG 12...	.088	.11	.62	.70	2.9	.279	.198	70	8.4	<1.0	4

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
NOV 19...	1	15	<1.0	0.30	<1.0	<1.0	2.0	470	0.60	70	94
MAR 25...	<1	14	<1.0	.30	<1.0	<1.0	3.0	330	<0.50	70	62
JUN 17...	2	15	<1.0	.30	<1.0	<1.0	7.4	850	1.5	170	141
AUG 12...	3	15	<1.0	.50	1.5	<1.0	8.6	460	1.3	92	63

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHENOLS TOTAL (UG/L) (32730)	SEDI- MENT, SUS- PENDEED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 19...	<0.10	<1.0	3.0	<1	<1.0	12	<1.0	4.7	--	7	49
MAR 25...	<.10	<1.0	3.0	<1	<1.0	14	<1.0	3.7	6	5	78
JUN 17...	<.10	3.0	7.3	<1	<1.0	15	<1.0	6.1	2	--	--
AUG 12...	<.10	5.4	9.6	<1	<1.0	15	<1.0	5.9	10	--	--

MEAN	14.4	26.9	41.1	42.8	43.5	61.6	58.5	35.8	21.3	7.71	8.16	6.03
MAX	59.9	81.5	113	176	92.7	124	156	69.0	109	29.8	49.5	23.7
(WY)	1990	1973	1997	1979	1970	1983	1987	1967	1982	1984	1990	1989
MIN	1.85	3.32	7.45	7.13	7.93	30.5	19.3	12.6	4.13	.91	.90	.36
(WY)	1965	1966	1966	1981	1980	1989	1966	1986	1964	1997	1964	1983

01111300 NIPMUC RIVER NEAR HARRISVILLE, RI--Continued

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

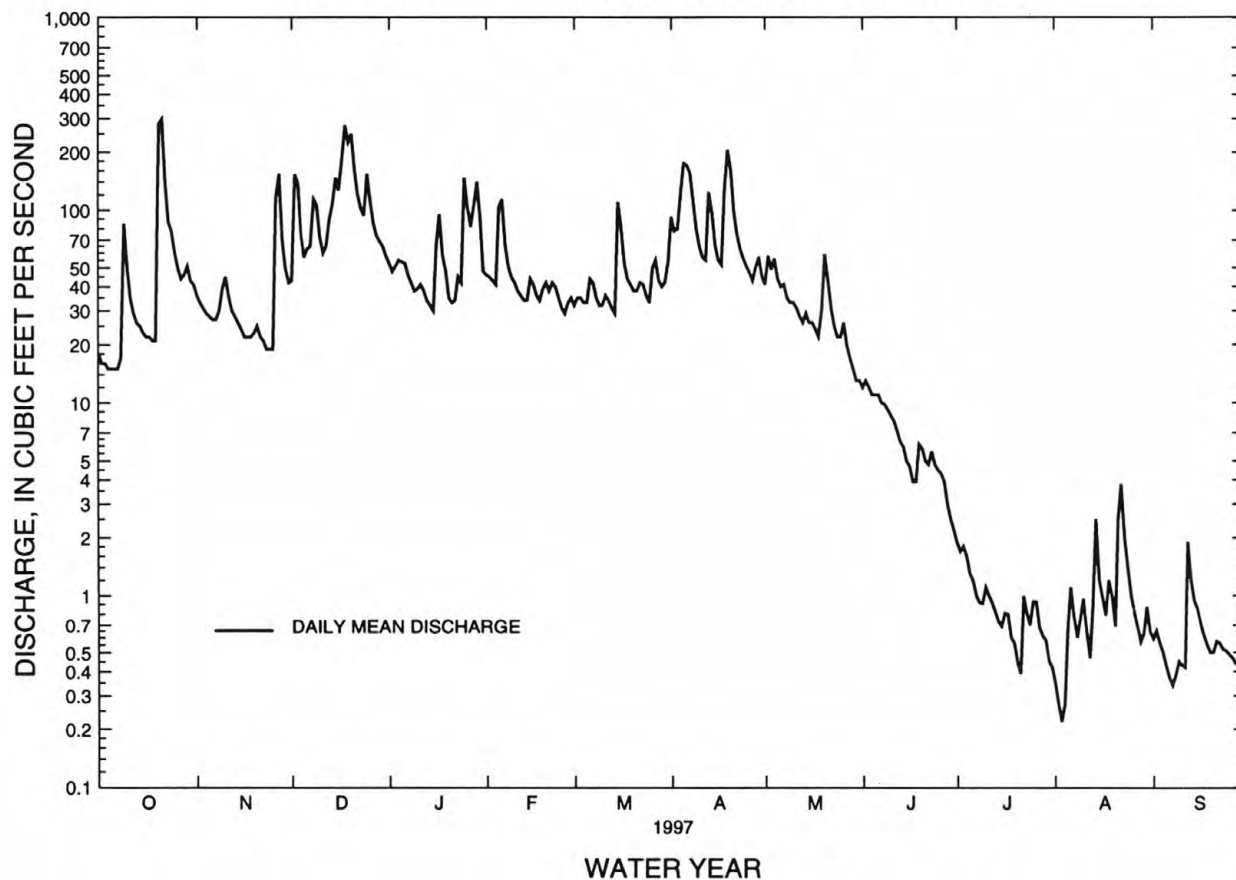
FOR 1997 WATER YEAR

WATER YEARS 1964 - 1997

ANNUAL TOTAL	16227.9	14735.56	30.7	
ANNUAL MEAN	44.3	40.4	44.9	1984
HIGHEST ANNUAL MEAN			13.5	1966
LOWEST ANNUAL MEAN			937	Jan 25 1979
HIGHEST DAILY MEAN	442 Jan 20	298 Oct 21	.02	Sep 7 1995
LOWEST DAILY MEAN	1.2 Sep 1	.22 Aug 3	.04	Sep 2 1995
ANNUAL SEVEN-DAY MINIMUM	1.3 Aug 31	.37 Jul 29	1840	Jan 25 1979
INSTANTANEOUS PEAK FLOW		458 Oct 20	8.53	Jan 25 1979
INSTANTANEOUS PEAK STAGE		6.59 Oct 20	.02	Sep 6 1995
INSTANTANEOUS LOW FLOW		.17 Aug 3	1.92	
ANNUAL RUNOFF (CFSM)	2.77	2.52	26.08	
ANNUAL RUNOFF (INCHES)	37.73	34.26	68	
10 PERCENT EXCEEDS	98	103	19	
50 PERCENT EXCEEDS	30	32	1.7	
90 PERCENT EXCEEDS	4.8	.62		

e Estimated

NIPMUC RIVER NEAR HARRISVILLE, RI 01111300



LOCATION.--Lat 41°59'47", long 71°33'47", Providence County, Hydrologic Unit 01090003, on left bank 20 ft upstream from abandoned bridge site, 400 ft downstream from milldam at Forestdale, 1 mi east of Slatersville, and 1.6 mi upstream from mouth.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 2101: Drainage area.

REMARKS.--Records good. Occasional regulation by pond upstream. Prior to 1957, greater regulation by mills and reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,470 ft³/s, Jan. 25, 1979, gage height, 11.80 ft; maximum gage height, 11.90 ft, Mar. 18, 1968; minimum daily, 5.2 ft³/s, Oct. 7, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1886, about 5,800 ft³/s, Mar. 19, 1936, by computation of flow over dam 1 mi upstream.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	0300	*2,410	*8.14	Apr. 19	2315	1,140	5.70
Dec. 20	0730	1,300	5.99				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

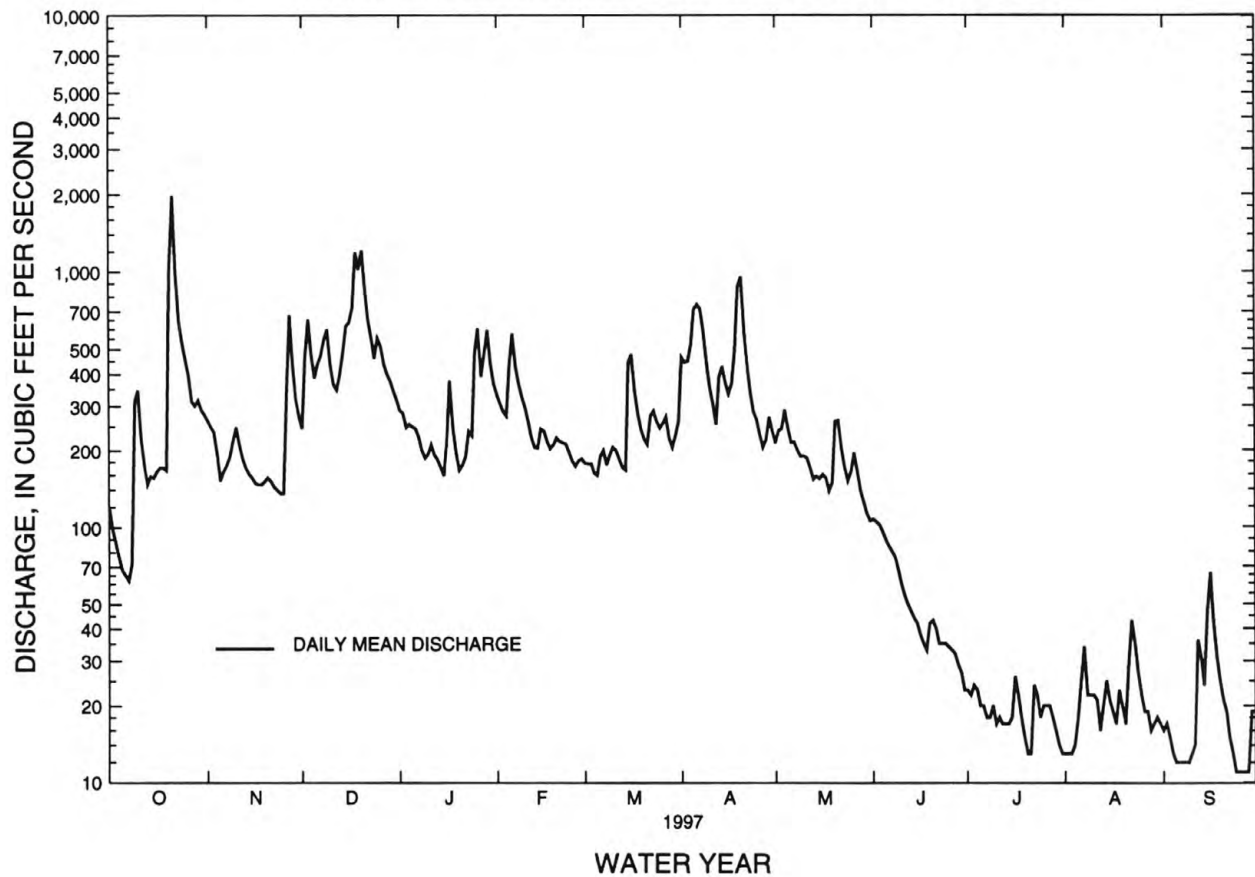
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

MEAN	100	160	219	228	241	338	318	201	126	57.1	60.5	63.2
MAX	479	472	565	810	581	723	877	399	710	156	372	397
(WY)	1956	1956	1973	1979	1970	1972	1987	1967	1982	1959	1955	1954
MIN	15.5	30.4	37.9	40.2	60.5	163	89.4	77.3	37.7	18.1	17.7	19.1
(WY)	1958	1966	1966	1981	1980	1989	1966	1965	1964	1965	1970	1995

01111500 BRANCH RIVER AT FORESTDALE, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1997	
ANNUAL TOTAL	95924		79947		175	
ANNUAL MEAN	262		219		261	1984
HIGHEST ANNUAL MEAN					76.5	1966
LOWEST ANNUAL MEAN					4020	Jun 6 1982
HIGHEST DAILY MEAN	1980	Oct 21	1980	Oct 21	5.2	Oct 7 1948
LOWEST DAILY MEAN	23	Sep 5	11	Sep 24	7.7	Oct 26 1957
ANNUAL SEVEN-DAY MINIMUM	25	Sep 1	12	Sep 22	5470	Jan 25 1979
INSTANTANEOUS PEAK FLOW			2410	Oct 21	11.90	Mar 18 1968
INSTANTANEOUS PEAK STAGE			8.14	Oct 21		
INSTANTANEOUS LOW FLOW			11	Sep 26		
ANNUAL RUNOFF (CFSM)	2.87		2.40		1.92	
ANNUAL RUNOFF (INCHES)	39.13		32.61		26.12	
10 PERCENT EXCEEDS	563		475		379	
50 PERCENT EXCEEDS	182		178		123	
90 PERCENT EXCEEDS	45		17		26	

BRANCH RIVER AT FORESTDALE, RI 01111500



BLACKSTONE RIVER BASIN

01111500 BRANCH RIVER AT FORESTDALE, RI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954, 1968, 1979 to current year.

REMARKS.--Discharge computed by discharge measurements on the day of sampling. Instantaneous records are representative of the cross section while continuous records are based on point samples.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	
NOV 19...	1300	148	96	6.6	6.0	5.0	--	--	751	12.9	102	--
MAR 25...	1300	244	90	6.2	10.0	6.0	21	1.2	767	13.0	103	<10
JUN 17...	1330	35	114	6.2	28.0	23.0	24	3.1	752	8.0	94	10
AUG 12...	1245	16	146	6.3	25.5	26.0	20	--	760	8.0	99	14

DATE	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	
NOV 19...	<1.0	25	24	--	--	--	--	--	--	6	
MAR 25...	<1.0	K2	K1	11	3.4	0.70	12	68	2	0.81	5
JUN 17...	<1.0	45	39	--	--	--	--	--	--	9	
AUG 12...	1.0	60	22	19	5.6	1.3	19	65	2	1.8	14

DATE	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	HY-DROXIDE WATER DIS IT FIELD (MG/L AS OH) (71834)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
NOV 19...	0	0	5	--	--	--	--	--	--	0.010	0.210
MAR 25...	0	0	4	7.4	17	0.13	45	<1	57	<.010	.200
JUN 17...	0	0	7	--	--	--	--	<1	80	<.010	.257
AUG 12...	0	0	11	6.2	29	.15	70	<1	84	<.010	.151

BLACKSTONE RIVER BASIN

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01111500 BRANCH RIVER AT FORESTDALE, RI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- ORTHOPHOS- PHORUS DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV											
19...	0.120	0.15	0.18	0.30	0.51	<0.010	<0.010	150	109	<1.0	<1
MAR											
25...	.050	.06	.25	.30	.50	.010	<.010	120	84	<1.0	--
JUN											
17...	.029	.04	.29	.32	.58	.024	<.010	40	37	<1.0	<1
AUG											
12...	.102	.13	.28	.38	.54	.011	<.010	30	10	<1.0	<1

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
NOV											
19...	<1	15	<1.0	<0.10	<1.0	<1.0	<1.0	450	0.50	40	39
MAR											
25...	<1	13	<1.0	<.10	<1.0	<1.0	<1.0	160	<.50	40	34
JUN											
17...	<1	15	<1.0	<.10	<1.0	<1.0	2.1	390	<.50	65	60
AUG											
12...	<1	10	<1.0	<.10	<1.0	<1.0	1.7	560	<.50	97	45

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHENOLS TOTAL (UG/L) (32730)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV											
19...	<0.10	<1.0	<1.0	<1	<1.0	6.0	<1.0	4.3	--	4	36
MAR											
25...	<.10	<1.0	<1.0	<1	<1.0	5.0	<1.0	3.2	6	4	67
JUN											
17...	<.10	<1.0	<1.0	<1	<1.0	2.7	<1.0	4.2	<1	3	44
AUG											
12...	<.10	<1.0	<1.0	<1	<1.0	1.3	<1.0	4.2	1	4	57

BLACKSTONE RIVER BASIN

01112500 BLACKSTONE RIVER AT WOONSOCKET, RI

LOCATION.--Lat 42°00'22", long 71°30'13", Providence County, Hydrologic Unit 01090003, on right bank 50 ft upstream from Peters River pressure conduit at Woonsocket. Records include flow of Peters River.

DRAINAGE AREA.--416 mi².

PERIOD OF RECORD.--Discharge: February 1929 to current year.

Water-quality records: Water years 1952-53, 1957-58, 1962-67.

REVISED RECORDS.--WSP 756: Drainage area. WSP 781: 1931(M). WSP 871: 1938. WSP 1051: 1931.

GAGE.--Water-stage recorder. Datum of gage is 107.42 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants, by West Hill Reservoir since May 1961, and by other reservoirs upstream. Extremes and figures of daily discharge include flow diverted from Nashua River basin and, at times since January 1966, from Quabbin Reservoir for supply of Worcester, MA, and, prior to July 1964, flow diverted around station in Hamlet Trench. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--68 years, 778 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft³/s, Aug. 19, 1955, gage height, 11.8 ft, from floodmarks, from rating curve extended above 15,000 ft³/s on basis of slope-area measurement of peak flow (affected by failure of Horseshoe Dam on Mill River); minimum daily, 21 ft³/s, Aug. 11, 1934 (flow diverted around station in Hamlet Trench not included).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1645, that of Aug. 19, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,220 ft³/s, Oct. 21, gage height, 9.47 ft; minimum daily, 74 ft³/s, Aug. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	612	1230	1150	1440	1320	796	1920	1250	496	133	75	118
2	503	1170	1860	1370	1260	804	2120	1320	478	143	75	115
3	477	1070	2970	1350	1170	830	2180	1260	464	140	76	111
4	430	949	2340	1370	1140	779	2420	1370	443	227	74	104
5	396	851	1880	1330	1580	767	3060	1260	413	203	88	98
6	376	817	1810	1300	2350	928	3100	1130	390	169	127	95
7	371	799	1920	1240	1860	1060	2990	1100	373	144	118	94
8	436	816	2240	1110	1550	956	2690	995	361	143	93	86
9	1240	959	2360	1020	1350	878	2280	922	331	139	100	81
10	1500	1130	1980	1040	1200	890	1960	908	331	178	143	81
11	1160	1120	1750	1110	1100	922	1770	909	293	176	107	97
12	903	936	1720	1010	1000	880	1600	838	269	149	91	168
13	766	826	1940	937	920	811	1990	765	261	134	105	171
14	709	761	2170	881	913	786	2200	781	281	120	185	116
15	666	699	2440	835	1120	1580	1860	755	256	106	128	121
16	633	669	2510	1060	1160	1820	1640	748	222	120	111	147
17	621	650	2680	1770	1030	1430	1560	725	215	112	106	116
18	597	626	4130	1350	954	1190	1910	677	198	110	118	107
19	575	632	4080	1090	969	1040	3140	771	340	102	126	98
20	2460	626	4470	916	1050	980	3780	1380	322	94	101	96
21	6190	648	3620	844	1040	946	2910	1420	272	86	160	98
22	4080	602	2860	828	1030	1050	2270	1170	258	114	301	82
23	2900	570	2440	1000	1030	1110	1890	954	242	115	203	77
24	2450	542	2190	1000	964	1030	1660	787	218	98	168	77
25	2130	544	2460	1760	865	942	1530	791	223	107	138	84
26	1780	1180	2440	2550	787	1100	1410	839	221	102	132	92
27	1500	2540	2120	1780	807	1480	1270	724	203	104	122	88
28	1410	1920	1920	1830	835	1310	1300	707	196	95	114	84
29	1440	1480	1780	2450	---	1130	1520	584	194	89	130	105
30	1360	1270	1680	1840	---	1230	1410	537	96	83	124	100
31	1310	---	1580	1490	---	1340	---	501	---	77	120	---
TOTAL	41981	28632	73490	40901	32354	32795	63340	28878	8860	3912	3859	3107
MEAN	1354	954	2371	1319	1156	1058	2111	932	295	126	124	104
MAX	6190	2540	4470	2550	2350	1820	3780	1420	496	227	301	171
MIN	371	542	1150	828	787	767	1270	501	96	77	74	77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1997, BY WATER YEAR (WY)

	MEAN	433	673	888	967	1002	1499	1440	885	599	330	314	330
MAX	2007	2233	2371	3167	2493	4063	3643	1779	2826	2453	2704	1980	
(WY)	1956	1956	1997	1979	1970	1936	1987	1972	1982	1938	1955	1954	
MIN	128	127	186	183	262	653	479	303	181	125	101	104	
(WY)	1932	1932	1966	1981	1980	1989	1966	1930	1930	1957	1993	1997	

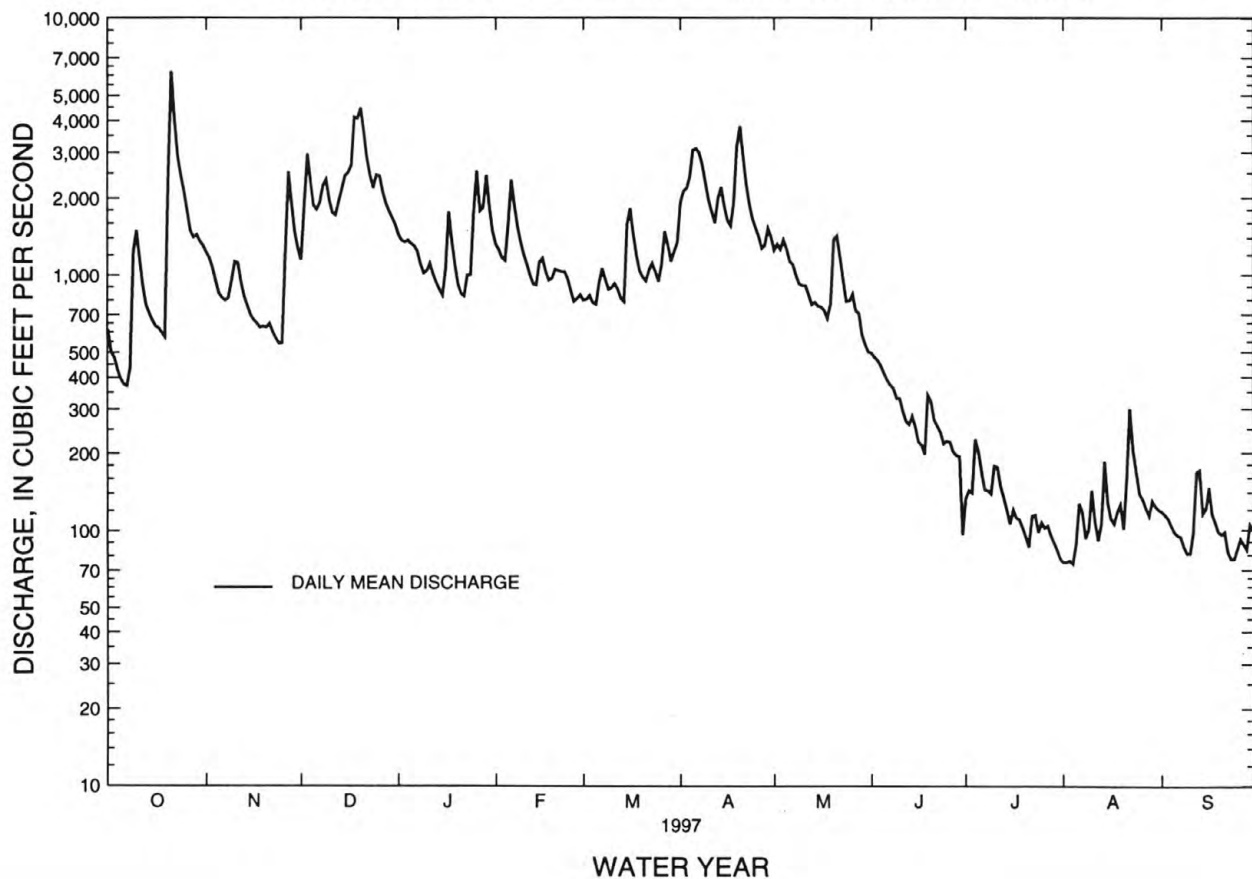
BLACKSTONE RIVER BASIN

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01112500 BLACKSTONE RIVER AT WOONSOCKET, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1929 - 1997	
ANNUAL TOTAL	438688		362109		778	
ANNUAL MEAN	1199		992		1162	1984
HIGHEST ANNUAL MEAN					345	1966
LOWEST ANNUAL MEAN					25900	Aug 20 1955
HIGHEST DAILY MEAN	6190	Oct 21	6190	Oct 21	21	Aug 11 1934
LOWEST DAILY MEAN	158	Aug 23	74	Aug 4	64	Sep 6 1995
ANNUAL SEVEN-DAY MINIMUM	185	Aug 17	78	Jul 30	32900	Aug 19 1955
INSTANTANEOUS PEAK FLOW			7220	Oct 21	21.80	Aug 19 1955
INSTANTANEOUS PEAK STAGE			9.47	Oct 21		
INSTANTANEOUS LOW FLOW			69	Aug 4		
10 PERCENT EXCEEDS	2440		2180		1670	
50 PERCENT EXCEEDS	943		851		540	
90 PERCENT EXCEEDS	271		102		164	

BLACKSTONE RIVER AT WOONSOCKET, RI 01112500



BLACKSTONE RIVER BASIN

01112900 BLACKSTONE RIVER AT MANVILLE, RI

LOCATION.--Lat 41°58'18", long 71°28'14", Providence County, Hydrologic Unit 01090003, at Manville Road Bridge, 400 ft downstream from milldam at Manville, and 2.5 mi downstream from Woonsocket Sewage Treatment Plant.

PERIOD OF RECORD.--Water years 1970, 1979 to current year.

REMARKS.--Discharge obtained from gage at Woonsocket and inflow from Woonsocket Treatment Plant on the day of sampling. Instantaneous records are representative of the cross section while continuous records are based on point samples.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST.	SPE- CIFIC CON- DUCT-	PH WATER WHOLE FIELD (STAND-	TEMPER- ATURE AIR (DEG C)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR-	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL)	
		CUBIC FEET PER SECOND (00061)	ANCE (US/CM) (00095)	(STAND- ARD UNITS) (00400)							ATION) (00301)	(MG/L) (00340)
NOV												
21...	1000	748	244	6.8	1.5	5.0	--	--	754	12.4	98	--
MAR												
27...	0945	1540	288	6.3	5.0	7.0	21	3.0	755	14.1	117	18
JUN												
19...	0900	260	493	6.4	21.0	22.5	60	2.7	753	7.8	91	21
AUG												
14...	0930	180	623	6.6	25.5	24.0	100	--	755	5.6	67	31

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL 5 DAY (MG/L) (00310)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	HARD- NESS TOTAL AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)
NOV											
21...	2.0	120	79	--	--	--	--	--	--	26	0
MAR											
27...	3.0	440	290	34	11	1.7	39	70	3	2.5	0
JUN											
19...	4.0	130	99	--	--	--	--	--	--	38	0
AUG											
14...	5.0	540	450	53	16	2.9	91	76	5	6.7	0

DATE	HY- DROXIDE WATER DIS IT FIELD MG/L AS OH (71834)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
NOV												
21...	0	22	--	--	--	--	--	--	0.060	0.790	0.820	1.1
MAR												
27...	0	21	16	57	0.19	144	9	110	.020	.700	.870	1.1
JUN												
19...	0	31	--	--	--	--	5	302	.100	1.32	1.56	2.0
AUG												
14...	0	44	59	110	.51	327	<1	362	.087	1.91	2.50	3.2

BLACKSTONE RIVER BASIN

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01112900 BLACKSTONE RIVER AT MANVILLE, RI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHOPHOSPHATE TOTAL (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOVERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
NOV												
21...	0.48	1.3	2.1	0.190	0.140	110	49	<1.0	<1	<1	16	<1.0
MAR												
27...	.53	1.4	2.1	.160	.090	110	34	<1.0	--	<1	15	<1.0
JUN												
19...	.71	2.3	3.6	.971	.903	90	20	<1.0	2	2	15	<1.0
AUG												
14...	2.5	5.0	6.9	1.73	1.36	60	9.2	1.5	3	2	14	<1.0
DATE	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
NOV												
21...	0.20	1.0	<1.0	3.0	490	0.60	60	57	<0.10	<1.0	3.0	<1
MAR												
27...	.30	<1.0	<1.0	4.0	470	.60	80	65	<1.0	<1.0	3.0	<1
JUN												
19...	.30	<1.0	<1.0	5.8	650	.93	190	177	<1.0	2.7	5.7	<1
AUG												
14...	.42	1.3	<1.0	8.2	390	.53	180	151	<1.0	5.5	6.5	<1
DATE	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (32730)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	P, P'- DDD, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39351)	P, P'- DDE, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39363)	P, P'- DDT, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39368)	P, P'- DDT, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39373)
NOV												
21...	<1.0	16	<1.0	5.9	--	--	--	--	--	--	--	--
MAR												
27...	<1.0	14	<1.0	4.6	7	--	--	--	--	--	--	--
JUN												
19...	<1.0	11	<1.0	8.6	4	--	--	--	--	--	--	--
AUG												
14...	<1.0	12	<1.0	11	4	61.0	<1.00	<0.100	11.0	5.30	3.80	4.10
DATE	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN I TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39481)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39758)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (81886)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV												
21...	--	--	--	--	--	--	--	--	--	--	10	32
MAR												
27...	--	--	--	--	--	--	--	--	--	--	11	74
JUN												
19...	--	--	--	--	--	--	--	--	--	--	12	44
AUG												
14...	2.00	<0.200	<0.200	<0.100	<0.100	<0.100	<0.800	<0.200	<1.00	<10.0	13	74

01114000 MOSHASSUCK RIVER AT PROVIDENCE, RI

LOCATION.--Lat 41°50'02", long 71°24'42", Providence County, Hydrologic Unit 01090004, on left bank 800 ft upstream from bridge on U.S. Highway 44 at Providence and 0.5 mi above mouth.

DRAINAGE AREA.--23.1 mi².

PERIOD OF RECORD.--Discharge: June 1963 to current year.
Water-quality records: Water year 1971.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.19 ft above sea level. Prior to Nov. 7, 1973, at datum 0.88 ft lower. Mar. 10, 1972, to Nov. 7, 1973, stage record obtained at site 200 ft upstream. Gage heights of published extremes are for site and datum then in use.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional regulation at low flow.

AVERAGE DISCHARGE.--34 years, 40.4 ft³/s, 23.76 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,390 ft³/s, Mar. 18, 1968, gage height, 3.46 ft, present datum, from rating curve extended above 460 ft³/s; maximum gage height, 5.81 ft, July 30, 1976; minimum discharge, 1.3 ft³/s, Aug. 23, 1970; minimum daily, 1.7 ft³/s, Aug. 10, 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	0600	648	4.19	Dec. 8	0115	734	4.37
Nov. 26	1100	*852	4.60	Jan. 25	0700	749	4.40
Dec. 2	0800	667	4.23	Jan. 22	1645	754	4.41

Minimum discharge, 4.9 ft³/s, Sept. 27, 28; minimum daily, 6.1 ft³/s, Aug. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	31	40	46	45	29	125	55	21	9.0	6.1	30
2	16	28	194	49	43	56	107	59	21	12	6.1	18
3	15	26	89	50	41	38	108	57	19	12	7.3	10
4	12	25	57	50	38	35	160	60	18	12	8.0	8.6
5	8.8	25	53	47	122	33	169	52	17	8.8	16	10
6	9.5	24	90	44	81	49	141	50	19	8.4	16	7.3
7	12	27	125	40	56	35	121	48	19	8.5	11	6.8
8	94	32	362	37	49	31	97	45	15	8.9	7.1	8.7
9	134	65	164	33	45	30	76	46	20	9.0	45	7.0
10	45	49	99	43	42	43	67	49	17	9.0	9.0	6.8
11	29	35	81	40	40	38	61	47	13	8.8	7.1	8.5
12	23	30	81	35	39	34	67	45	16	8.8	6.4	23
13	20	28	82	34	36	31	150	46	16	8.7	30	31
14	19	27	89	32	60	62	83	46	12	8.1	14	14
15	17	26	81	30	53	216	63	43	11	8.9	7.6	8.5
16	14	26	70	114	43	80	56	59	13	8.1	7.3	7.3
17	11	28	121	72	38	53	56	43	13	8.9	7.3	6.9
18	12	28	112	41	35	48	115	40	10	12	28	6.6
19	13	31	183	e32	36	46	207	64	21	7.3	8.0	6.7
20	380	30	177	30	37	43	122	60	15	6.7	7.1	7.9
21	215	28	93	30	34	41	81	43	10	6.5	47	8.2
22	96	26	72	33	34	44	71	34	88	28	22	7.0
23	61	25	65	49	31	40	65	31	29	7.6	15	9.9
24	61	24	74	36	29	35	60	29	17	7.0	11	6.9
25	44	24	95	221	28	34	57	72	12	12	12	8.2
26	37	243	63	92	27	58	55	48	12	10	10	6.8
27	32	112	57	51	30	43	51	31	13	8.0	6.7	6.3
28	46	55	52	120	28	38	77	27	13	11	6.5	6.2
29	40	45	50	80	---	50	66	24	9.5	7.3	65	25
30	38	39	49	52	---	47	54	22	9.3	6.5	19	7.9
31	39	---	51	47	---	113	---	22	---	6.3	13	---
TOTAL	1607.3	1242	3071	1710	1220	1573	2788	1397	538.8	294.1	481.6	326.0
MEAN	51.8	41.4	99.1	55.2	43.6	50.7	92.9	45.1	18.0	9.49	15.5	10.9
MAX	380	243	362	221	122	216	207	72	88	28	65	31
MIN	8.8	24	40	30	27	29	51	22	9.3	6.3	6.1	6.2
CFSM	2.24	1.79	4.29	2.39	1.89	2.20	4.02	1.95	.78	.41	.67	.47
IN.	2.59	2.00	4.95	2.75	1.96	2.53	4.49	2.25	.87	.47	.78	.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1997, BY WATER YEAR (WY)

MEAN	23.2	37.7	51.6	52.8	52.0	68.2	65.8	44.7	31.5	18.6	20.1	19.2
MAX	69.0	118	143	174	93.8	141	160	104	125	35.5	53.8	50.1
(WY)	1978	1973	1973	1979	1984	1968	1983	1967	1982	1967	1986	1972
MIN	6.36	10.6	10.6	12.9	18.3	29.0	22.9	24.2	13.1	8.09	7.27	5.09
(WY)	1995	1966	1966	1981	1980	1985	1966	1965	1991	1995	1970	1970

MOSHASSUCK RIVER BASIN

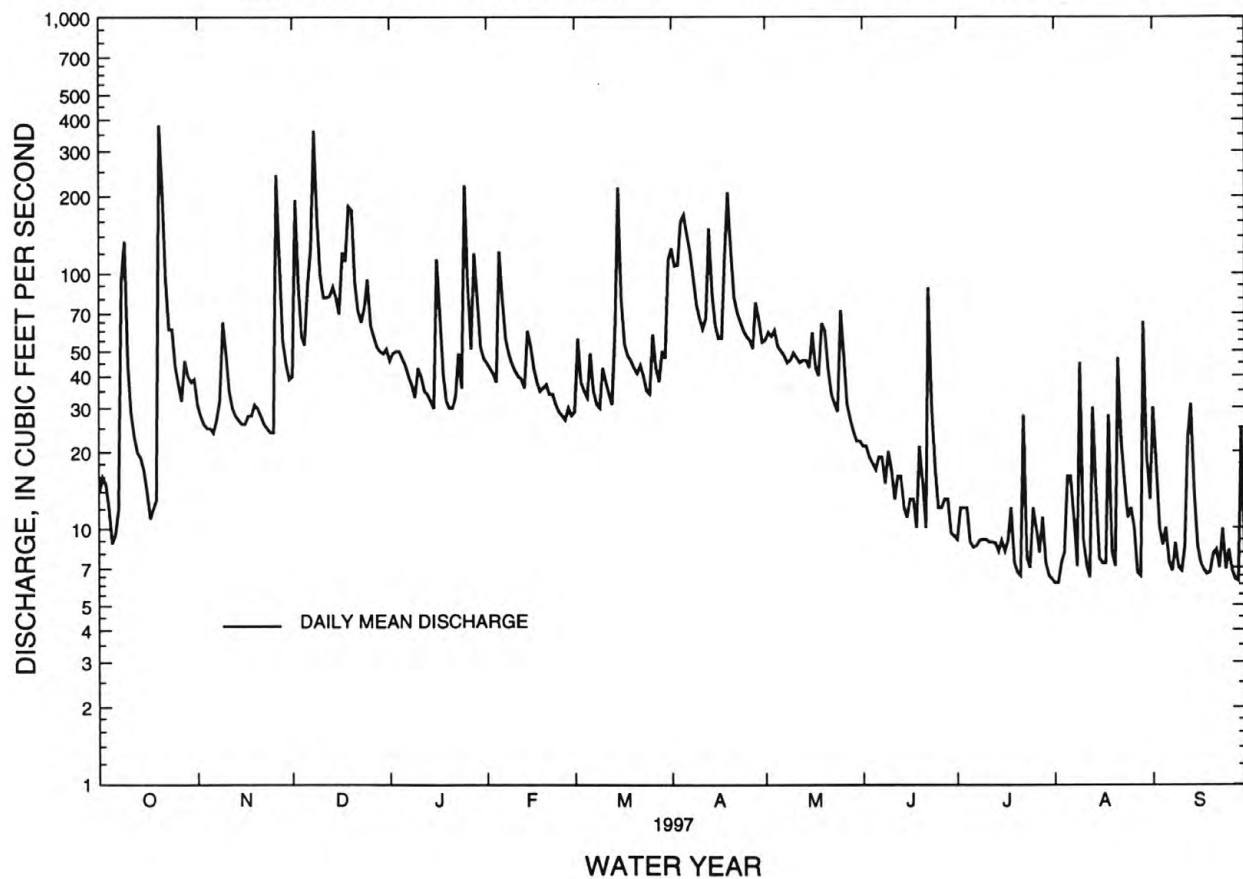
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01114000 MOSHASSUCK RIVER AT PROVIDENCE, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1963 - 1997	
ANNUAL TOTAL	18922.1		16248.8		40.4	
ANNUAL MEAN	51.7		44.5		62.5	1973
HIGHEST ANNUAL MEAN					20.2	1981
LOWEST ANNUAL MEAN					1750	Mar 18 1968
HIGHEST DAILY MEAN	380	Oct 20	380	Oct 20	1.7	Aug 10 1970
LOWEST DAILY MEAN	6.2	Sep 6	6.1	Aug 1	2.6	Aug 4 1970
ANNUAL SEVEN-DAY MINIMUM	7.8	Aug 17	6.8	Jul 29	2390	Mar 18 1968
INSTANTANEOUS PEAK FLOW			852	Nov 26	5.81	Jul 30 1976
INSTANTANEOUS PEAK STAGE			4.60	Nov 26	1.3	Aug 23 1970
INSTANTANEOUS LOW FLOW			4.9	Sep 27	1.75	
ANNUAL RUNOFF (CFSM)	2.24		1.93		23.76	
ANNUAL RUNOFF (INCHES)	30.47		26.17		80	
10 PERCENT EXCEEDS	107		92		28	
50 PERCENT EXCEEDS	36		34		8.4	
90 PERCENT EXCEEDS	11		8.0			

e Estimated

MOSHASSUCK RIVER AT PROVIDENCE, RI 01114000



WOONASQUATUCKET RIVER BASIN

01114500 WOONASQUATUCKET RIVER AT CENTERDALE, RI

LOCATION.--Lat 41°51'32", long 71°29'16", Providence County, Hydrologic Unit 01090004, on right bank 75 ft downstream from bridge on U.S. Highway 44 at Centerdale and 6.5 mi upstream from mouth.

DRAINAGE AREA.--38.3 mi².

PERIOD OF RECORD.--Discharge: July 1941 to current year.

Water-quality records: Water years 1955-56.

GAGE.--Water-stage recorder. Elevation of gage is 95 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by reservoirs upstream; regulation greater prior to 1956. Discharge figures prior to 1966 included leakage around station through bypass canal; leakage negligible subsequently.

AVERAGE DISCHARGE.--56 years, 73.3 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s, Mar. 18, 1968, gage height, 7.75 ft, from floodmarks; minimum daily, 2.1 ft³/s, Aug. 26, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge during March 1936, 1,000 ft³/s, by computation of flow over dam 0.7 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 528 ft³/s, Oct. 20, gage height, 4.65 ft; minimum daily, 8.0 ft³/s, June 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	108	115	132	91	74	132	79	44	15	12	16
2	50	101	230	130	90	80	150	85	43	15	12	17
3	49	95	199	129	89	75	215	82	42	e16	12	15
4	46	91	172	128	88	69	233	93	41	e15	13	13
5	47	89	153	125	117	69	288	85	40	e14	17	13
6	47	86	176	122	109	73	310	81	39	e14	20	13
7	47	83	201	118	93	63	291	77	39	e12	26	13
8	65	85	389	114	91	39	249	72	39	e12	14	13
9	148	110	309	110	94	32	212	69	36	e14	23	13
10	80	104	249	109	102	36	210	69	28	e12	15	13
11	72	93	215	106	110	44	204	68	25	e13	13	15
12	69	87	209	74	109	43	187	64	30	e12	12	31
13	66	84	215	28	103	41	202	64	36	e12	16	22
14	62	82	228	28	107	47	185	68	28	e12	16	16
15	56	78	228	36	108	77	164	63	9.2	e12	13	15
16	55	76	208	94	106	66	139	65	8.0	e12	13	14
17	55	76	245	102	105	96	152	59	11	13	12	13
18	54	75	283	84	110	98	158	57	15	12	18	13
19	54	77	321	79	115	95	208	67	18	12	13	13
20	373	77	391	78	112	91	212	79	15	11	12	14
21	310	73	311	78	109	87	180	71	15	11	37	14
22	270	71	269	78	107	85	34	68	31	18	33	13
23	233	71	241	89	103	81	111	62	23	14	17	13
24	216	90	217	81	98	74	129	58	17	13	15	13
25	178	92	242	178	93	69	120	66	17	15	13	13
26	146	155	211	114	86	61	101	67	17	15	12	13
27	127	139	193	94	80	54	83	59	16	14	12	13
28	127	121	179	135	75	62	91	54	15	17	12	13
29	137	119	168	116	---	75	91	51	15	15	31	18
30	126	116	154	98	---	76	81	48	14	13	26	14
31	118	---	138	93	---	88	---	46	---	13	17	---
TOTAL	3535	2804	7059	3080	2800	2120	5122	2096	766.2	418	527	442
MEAN	114	93.5	228	99.4	100	68.4	171	67.6	25.5	13.5	17.0	14.7
MAX	373	155	391	178	117	98	310	93	44	18	37	31
MIN	46	71	115	28	75	32	34	46	8.0	11	12	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1997, BY WATER YEAR (WY)

	MEAN	39.6	58.9	87.0	93.0	103	140	131	85.7	54.5	30.8	29.0	30.0
MAX	200	208	239	281	254	357	365	191	214	72.2	83.6	116	
(WY)	1956	1956	1973	1979	1970	1983	1983	1967	1982	1959	1955	1954	
MIN	10.3	9.90	17.9	20.6	31.2	54.1	44.9	34.1	23.2	12.8	9.21	6.99	
(WY)	1958	1958	1966	1966	1944	1944	1966	1986	1965	1993	1963	1980	

WOONASQUATUCKET RIVER BASIN

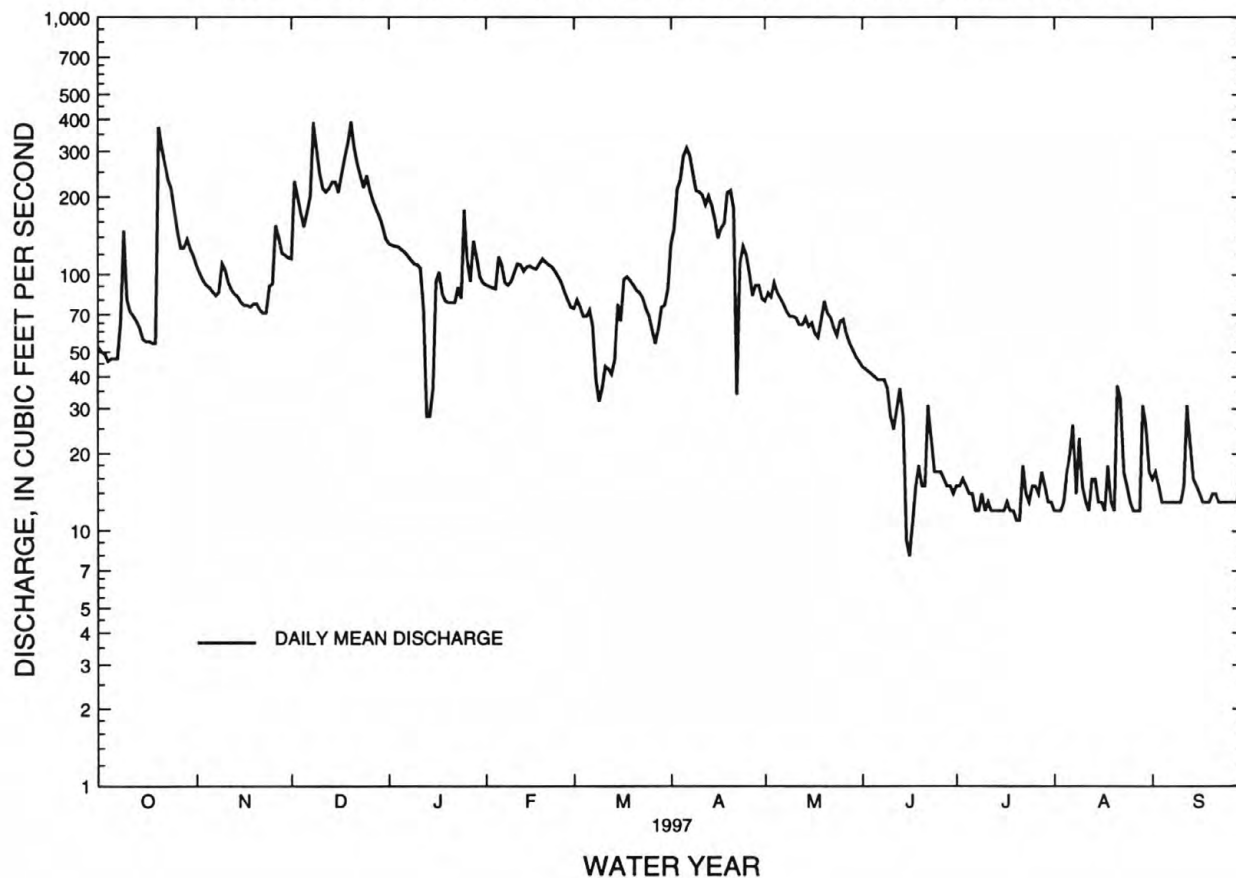
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01114500 WOONASQUATUCKET RIVER AT CENTERDALE, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1941 - 1997	
ANNUAL TOTAL	38189		30769.2		73.3	
ANNUAL MEAN	104		84.3		119	
HIGHEST ANNUAL MEAN					31.5	
LOWEST ANNUAL MEAN					1250	
HIGHEST DAILY MEAN	438	Apr 17	391	Dec 20	Mar 18 1968	
LOWEST DAILY MEAN	15	Jul 9	8.0	Jun 16	Aug 26 1963	
ANNUAL SEVEN-DAY MINIMUM	15	Aug 31	12	Jul 15	Aug 21 1963	
INSTANTANEOUS PEAK FLOW			500	Oct 20	Mar 18 1968	
INSTANTANEOUS PEAK STAGE			4.55	Oct 20	Mar 18 1968	
INSTANTANEOUS LOW FLOW			7.4	Jun 16		
10 PERCENT EXCEEDS	220		203		151	
50 PERCENT EXCEEDS	95		72		51	
90 PERCENT EXCEEDS	18		13		17	

e Estimated

WOONASQUATUCKET RIVER AT CENTERDALE, RI 01114500



PAWTUXET RIVER BASIN

01115098 PEEPTOAD BROOK AT ELMDALE ROAD NEAR NORTH SCITUATE, RI

LOCATION.--Lat 41°51'08", long 71°23'35", Providence County, Hydrologic Unit 01090004, on left bank 5 ft downstream from bridge on Elmdale Road, 0.5 mi upstream from regulating reservoir and 1.7 mi northwest of North Scituate.

DRAINAGE AREA.--4.96 mi².

PERIOD OF RECORD.--June 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 315 ft above sea level, from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--3 years, 10.7 ft³/s, 29.31 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180 ft³/s, Oct. 20, 1996, gage height, 2.40 ft; no flow Sept. 13, 16, 17, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	2315	*180	*2.40	Mar. 15	1130	82	2.08
Dec. 18	0245	82	2.08	Apr. 19	1945	70	2.03
Dec. 20	0600	94	2.13				

Minimum discharge, 0.17 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	11	13	14	17	9.6	40	14	5.2	1.0	.25	.57
2	2.5	9.7	39	14	17	12	31	15	5.5	.98	.21	.47
3	2.4	9.0	45	15	16	13	31	14	5.2	.99	.18	.42
4	2.1	8.2	25	16	15	12	44	17	4.6	1.1	.19	.37
5	1.9	7.8	19	15	33	11	63	15	4.2	.95	.27	.35
6	1.9	7.6	22	15	41	14	58	12	3.9	.83	1.2	.34
7	1.9	7.8	27	13	25	13	53	12	3.6	.75	1.6	.34
8	2.7	9.4	50	11	19	11	41	11	3.5	.73	.66	.34
9	18	14	46	9.8	17	10	31	10	3.2	.69	.65	.33
10	16	17	31	11	15	11	24	11	2.9	.67	.64	.32
11	9.2	13	23	12	14	12	21	10	2.6	.64	.49	.33
12	6.2	10	24	11	13	12	19	9.3	2.4	.60	.39	.89
13	4.9	8.5	29	9.4	12	9.9	37	8.6	2.2	.55	.41	.75
14	4.4	7.7	37	8.7	13	9.7	32	8.6	2.3	.52	.59	.57
15	4.0	7.3	42	8.4	17	67	22	8.1	2.0	.48	.49	.47
16	3.7	6.7	37	16	16	42	18	9.3	1.8	.47	.44	.41
17	3.5	6.6	44	27	13	24	17	9.0	1.7	.48	.38	.37
18	3.5	6.7	67	16	12	20	24	8.2	1.6	.43	.47	.36
19	4.2	7.0	55	10	12	17	54	9.8	1.9	.39	.48	.35
20	93	7.7	78	8.4	13	16	51	15	1.9	.37	.41	.34
21	108	7.2	44	8.2	13	15	32	13	1.7	.35	.81	.35
22	41	6.5	31	8.8	13	16	25	10	2.7	.52	1.6	.35
23	26	6.0	27	15	12	15	21	8.3	4.2	.53	1.1	.36
24	24	5.8	24	13	11	12	19	7.1	2.4	.49	.82	.36
25	19	5.8	37	42	9.7	11	17	8.0	2.0	.60	.66	.36
26	15	26	30	41	9.3	16	16	11	1.8	.60	.56	.37
27	13	42	23	22	10	17	14	8.7	1.6	.55	.49	.37
28	13	22	20	32	10	14	16	7.0	1.4	.57	.44	.37
29	14	15	19	38	---	13	19	6.0	1.2	.51	.73	.46
30	12	13	18	23	---	17	16	5.4	1.1	.39	1.2	.48
31	13	---	16	19	---	22	---	5.0	---	.30	.81	---
TOTAL	487.1	332.0	1042	522.7	438.0	514.2	906	316.4	82.3	19.03	19.62	12.52
MEAN	15.7	11.1	33.6	16.9	15.6	16.6	30.2	10.2	2.74	.61	.63	.42
MAX	108	42	78	42	41	67	63	17	5.5	1.1	1.6	.89
MIN	1.9	5.8	13	8.2	9.3	9.6	14	5.0	1.1	.30	.18	.32
CFSM	3.17	2.23	6.78	3.40	3.15	3.34	6.09	2.06	.55	.12	.13	.08
IN.	3.65	2.49	7.82	3.92	3.29	3.86	6.80	2.37	.62	.14	.15	.09

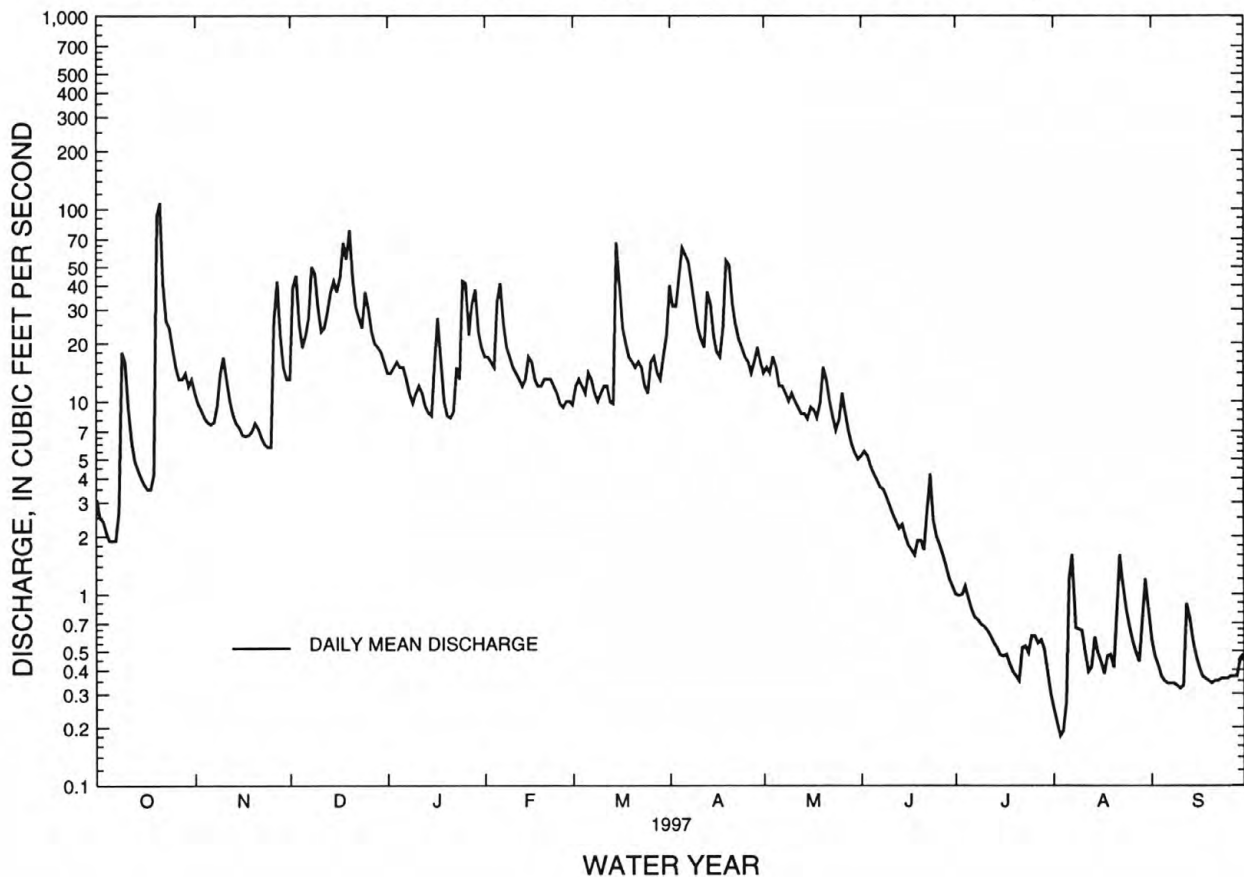
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1997, BY WATER YEAR (WY)

	1994	1995	1996	1997
MEAN	6.65	10.0	17.5	18.2
MAX	15.7	14.4	33.6	23.9
(WY)	1997	1996	1997	1996
MIN	.94	4.59	6.03	13.8
(WY)	1995	1995	1996	1995
MEAN	6.65	10.0	17.5	18.2
MAX	15.7	14.4	33.6	23.9
(WY)	1997	1996	1997	1996
MIN	.94	4.59	6.03	13.8
(WY)	1995	1995	1996	1995

01115098 PEEPTOAD BROOK AT ELMDALE ROAD NEAR NORTH SCITUATE, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1994 - 1997
ANNUAL TOTAL	5558.41	4691.87	10.7
ANNUAL MEAN	15.2	12.9	12.9
HIGHEST ANNUAL MEAN			7.17
LOWEST ANNUAL MEAN			1997
HIGHEST DAILY MEAN	117 Jan 20	108 Oct 21	117 Jan 20 1996
LOWEST DAILY MEAN	.47 Sep 1	.18 Aug 3	.00 Sep 16 1995
ANNUAL SEVEN-DAY MINIMUM	.53 Aug 31	.26 Jul 30	.01 Sep 10 1995
INSTANTANEOUS PEAK FLOW		180 Oct 20	180 Oct 20 1996
INSTANTANEOUS PEAK STAGE		2.40 Oct 20	2.49 Jan 20 1996
INSTANTANEOUS LOW FLOW		.17 Aug 3	.00 Sep 13 1995
ANNUAL RUNOFF (CFSM)	3.06	2.59	2.16
ANNUAL RUNOFF (INCHES)	41.69	35.19	29.31
10 PERCENT EXCEEDS	36	31	23
50 PERCENT EXCEEDS	10	9.7	6.6
90 PERCENT EXCEEDS	1.2	.43	.48

PEEPTOAD BROOK, ELMDALE RD, NEAR NORTH SCITUATE, RI 01115098



PAWTUXET RIVER BASIN

01115187 PONAGANSET RIVER NEAR SOUTH FOSTER, RI

LOCATION.--Lat 41°49'08", long 71°32'40", Providence County, Hydrologic Unit 01090004, on left bank 5 ft downstream from bridge on Rams Tail Road, 0.3 mi south of South Foster and 0.4 mi upstream from Barden Reservoir.

DRAINAGE AREA.--13.7 mi².

PERIOD OF RECORD.--March 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 355 ft above sea level, from topographic map.

REMARKS.--Records good except those below 10 ft³/s and above 150 ft³/s, which are fair, and those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--3 years, 28.2 ft³/s, 27.92 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 594 ft³/s, Jan. 19, 1996, gage height, 5.91 ft; no flow part of each day, Sept. 8-13, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	1500	*510	*5.53	Dec. 20	0145	330	4.40
Dec. 2	1515	284	4.08	Mar. 15	0745	277	4.03
Dec. 17	2230	382	4.76				

Minimum discharge, 0.28 ft³/s, Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	33	34	e38	44	23	109	30	10	2.1	.39	.76
2	9.4	29	169	35	43	33	84	35	11	2.0	.29	.79
3	8.5	26	131	38	40	39	90	32	10	2.1	.29	.80
4	7.9	24	70	43	37	32	138	49	9.2	2.1	.37	.78
5	7.6	23	52	39	110	31	177	36	8.5	1.8	.54	.67
6	7.2	21	55	38	119	44	160	31	7.8	1.5	.97	.67
7	6.9	22	60	33	66	42	139	31	7.3	1.3	1.4	.52
8	8.8	28	120	e29	49	32	95	26	6.9	1.1	1.1	.55
9	78	40	113	e27	41	29	66	24	5.8	.98	1.4	.56
10	46	50	74	30	36	29	53	25	5.3	.97	1.2	.57
11	27	37	57	33	33	33	45	24	4.6	.89	.95	.55
12	19	29	62	e30	31	32	44	21	4.0	.79	.76	.95
13	16	25	93	e27	28	28	114	19	3.9	.76	.76	.98
14	14	22	125	e25	30	27	85	19	3.9	.70	.93	.93
15	13	20	155	e24	43	203	56	18	3.4	.61	.79	.93
16	12	19	123	63	38	111	45	21	3.1	.60	.81	.81
17	11	18	208	e76	31	62	41	20	2.9	.61	.76	.81
18	11	18	249	e43	29	49	84	18	2.9	.60	1.2	.70
19	11	18	192	e27	32	41	169	23	3.4	.49	1.1	.63
20	344	20	240	e23	33	37	130	39	4.4	.40	.84	.54
21	235	18	126	e23	30	35	78	31	3.7	.43	2.4	.48
22	113	17	86	26	31	39	59	22	5.5	.64	7.8	.43
23	76	16	70	45	30	37	49	18	11	.71	5.3	.37
24	66	16	65	e37	25	30	43	16	6.0	.65	2.7	.48
25	52	15	129	145	23	27	39	17	4.7	.74	2.3	.60
26	43	115	87	e110	22	43	35	24	4.0	.67	1.6	.59
27	37	128	65	e62	24	48	30	18	3.6	.65	1.1	.57
28	39	59	55	108	26	36	38	14	3.1	.62	.95	.48
29	46	41	51	e105	---	32	47	12	2.6	.48	1.0	.53
30	39	34	49	e62	---	48	35	11	2.3	.41	1.1	.54
31	38	---	42	46	---	67	---	9.9	---	.45	.93	---
TOTAL	1454.3	981	3207	1490	1124	1399	2377	733.9	164.8	28.85	44.03	19.57
MEAN	46.9	32.7	103	48.1	40.1	45.1	79.2	23.7	5.49	.93	1.42	.65
MAX	344	128	249	145	119	203	177	49	11	2.1	7.8	.98
MIN	6.9	15	34	23	22	23	30	9.9	2.3	.40	.29	.37
CFSM	3.42	2.39	7.55	3.51	2.93	3.29	5.78	1.73	.40	.07	.10	.05
IN.	3.95	2.66	8.71	4.05	3.05	3.80	6.45	1.99	.45	.08	.12	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1997, BY WATER YEAR (WY)

	1994	1995	1996	1997
MEAN	20.3	27.2	53.2	52.8
MAX	46.9	32.7	103	69.5
(WY)	1997	1997	1996	1996
MIN	3.35	17.3	15.6	40.8
(WY)	1995	1995	1996	1995

PAWTUXET RIVER BASIN

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01115187 PONAGANSET RIVER NEAR SOUTH FOSTER, RI--Continued

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

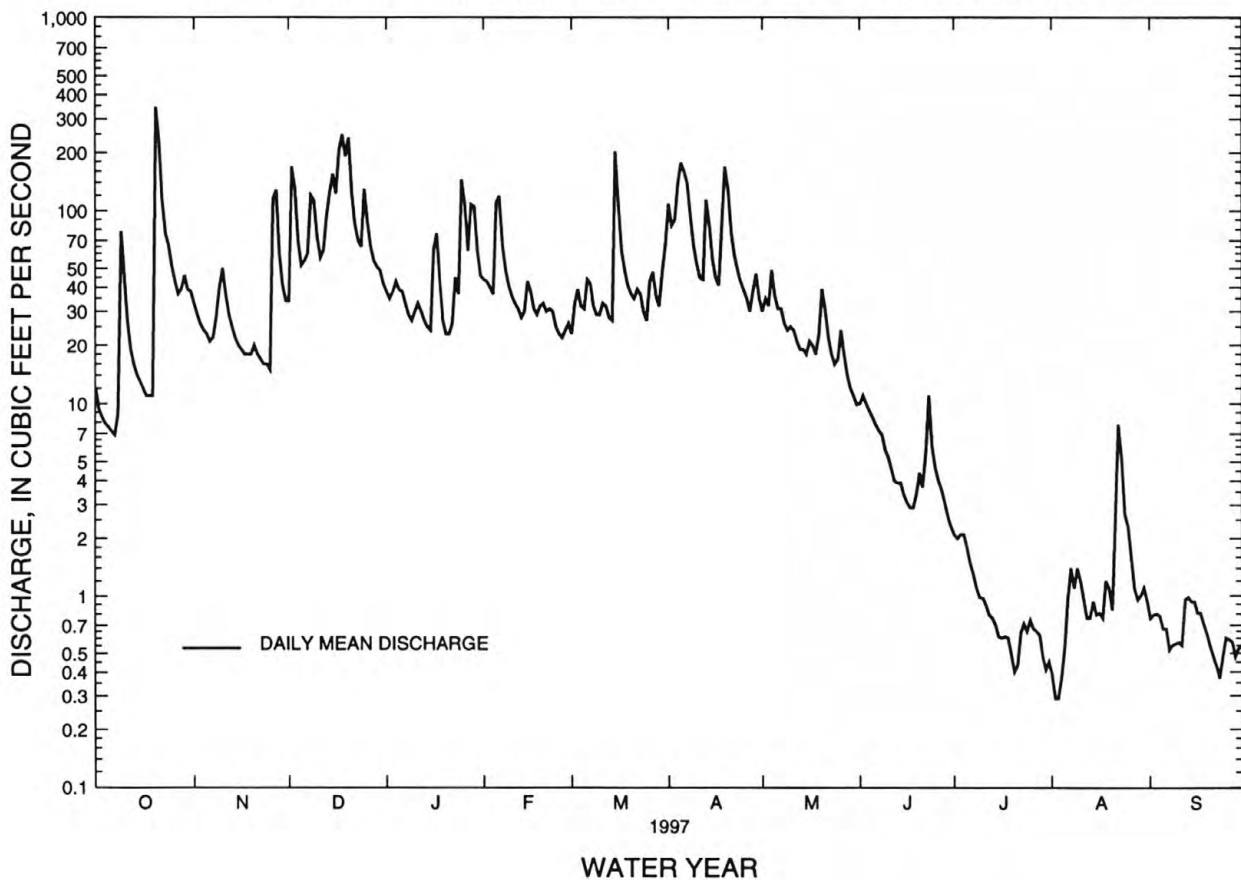
FOR 1997 WATER YEAR

WATER YEARS 1994 - 1997

ANNUAL TOTAL	14670.90	13023.45	28.2	
ANNUAL MEAN	40.1	35.7	35.7	1997
HIGHEST ANNUAL MEAN			19.3	1995
LOWEST ANNUAL MEAN			344	Oct 20 1996
HIGHEST DAILY MEAN	344 Oct 20	344 Oct 20	.04	Sep 12 1995
LOWEST DAILY MEAN	.64 Sep 6	.29 Aug 2	.08	Sep 8 1995
ANNUAL SEVEN-DAY MINIMUM	.76 Aug 31	.38 Jul 29	594	Jan 19 1996
INSTANTANEOUS PEAK FLOW		510 Oct 20	5.91	Jan 19 1996
INSTANTANEOUS PEAK STAGE		5.53 Oct 20	.00	Sep 3 1995
INSTANTANEOUS LOW FLOW		.21 Aug 2	2.05	
ANNUAL RUNOFF (CFSM)	2.93	2.60	27.92	
ANNUAL RUNOFF (INCHES)	39.84	35.36	63	
10 PERCENT EXCEEDS	98	91	17	
50 PERCENT EXCEEDS	25	25	.84	
90 PERCENT EXCEEDS	2.2	.66		

e Estimated

PONAGANSET RIVER NEAR SOUTH FOSTER, RI 01115187



PAWTUXET RIVER BASIN

01116000 SOUTH BRANCH PAWTUXET RIVER AT WASHINGTON, RI

LOCATION.--Lat 41°41'24", long 71°33'59", Kent County, Hydrologic Unit 01090004, on right bank 150 ft downstream from highway bridge at Washington and 0.9 mi upstream from outlet of Tiogue Lake.

DRAINAGE AREA.--63.8 mi².

PERIOD OF RECORD.--Discharge: October 1940 to current year.
Water-quality records: Water years 1955-1956, 1963.

GAGE.--Water-stage recorder. Datum of gage is 217.76 ft above sea level.

REMARKS.--Records good. Flow regulated by Flat River Reservoir 2 mi upstream, usable capacity, 250,000,000 ft³, and smaller reservoirs. Prior to May 1972, diversion from Carr Pond for municipal supply of Coventry, Warwick, and West Warwick.

AVERAGE DISCHARGE.--57 years, 130 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft³/s, June 6, 1982, gage height, 5.30 ft; minimum daily, 2.8 ft³/s, Aug. 27, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a discharge of 1,810 ft³/s, by computation of flow over dam just upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 585 ft³/s, Dec. 20, gage height, 2.99 ft; minimum daily, 29 ft³/s, July 19-21, Aug. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	149	168	348	280	144	e133	e180	84	52	29	39
2	44	147	194	341	276	147	e130	174	86	53	29	39
3	41	147	190	335	274	123	e130	160	87	53	30	39
4	42	147	183	329	270	87	e200	167	84	55	32	39
5	56	147	179	323	296	88	e320	155	79	53	38	39
6	53	145	189	314	295	89	e330	148	75	53	38	39
7	53	149	194	285	284	85	e295	147	72	53	38	39
8	62	172	233	185	276	86	e255	136	70	51	33	e37
9	112	182	250	180	275	85	e220	120	61	34	39	e37
10	121	182	266	181	269	89	e200	128	59	31	35	35
11	115	177	270	180	263	89	e185	130	57	30	34	37
12	98	175	268	179	257	88	e175	123	56	30	33	43
13	86	173	299	179	252	88	e210	117	55	30	38	37
14	79	170	340	177	258	e90	e310	121	56	30	38	35
15	75	169	358	176	258	e113	e290	115	54	31	34	34
16	73	167	353	193	253	e101	e250	124	54	31	36	34
17	73	166	369	195	244	e97	e210	120	55	30	34	33
18	73	164	468	187	240	e108	e230	111	55	30	51	33
19	73	167	479	182	237	e128	e290	118	56	29	42	33
20	166	166	566	179	217	e129	e370	132	54	29	37	32
21	472	163	525	176	149	e128	e330	130	54	29	38	32
22	420	161	434	176	147	e132	e280	118	63	36	39	31
23	301	160	390	183	147	e130	e230	107	65	31	39	31
24	250	159	383	178	145	e129	e200	99	57	31	39	31
25	214	160	396	218	144	e127	e190	105	57	35	39	31
26	182	183	385	213	144	e138	e180	128	56	33	38	31
27	160	182	378	206	146	e134	e170	123	56	32	38	31
28	169	174	372	237	145	e101	e160	111	54	31	37	31
29	160	170	366	237	---	e95	e190	101	54	31	38	34
30	151	168	361	259	---	e96.0	e190	90	53	30	39	32
31	150	---	356	283	---	e114	---	83	---	30	39	---
TOTAL	4172	4941	10162	7014	6441	3378.0	6853	3921	1878	1137	1141	1048
MEAN	135	165	328	226	230	109	228	126	62.6	36.7	36.8	34.9
MAX	472	183	566	348	296	147	370	180	87	55	51	43
MIN	41	145	168	176	144	85	130	83	53	29	29	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1997, BY WATER YEAR (WY)

	MEAN	72.9	103	161	170	179	224	213	148	107	63.3	62.2	63.7
MAX	216	354	422	489	327	434	595	294	444	130	168	240	
(WY)	1956	1956	1987	1979	1970	1983	1983	1948	1982	1959	1979	1954	
MIN	28.5	28.7	34.5	35.9	45.7	106	68.2	55.6	39.2	26.8	23.6	25.5	
(WY)	1942	1966	1966	1966	1966	1944	1966	1992	1957	1995	1974	1995	

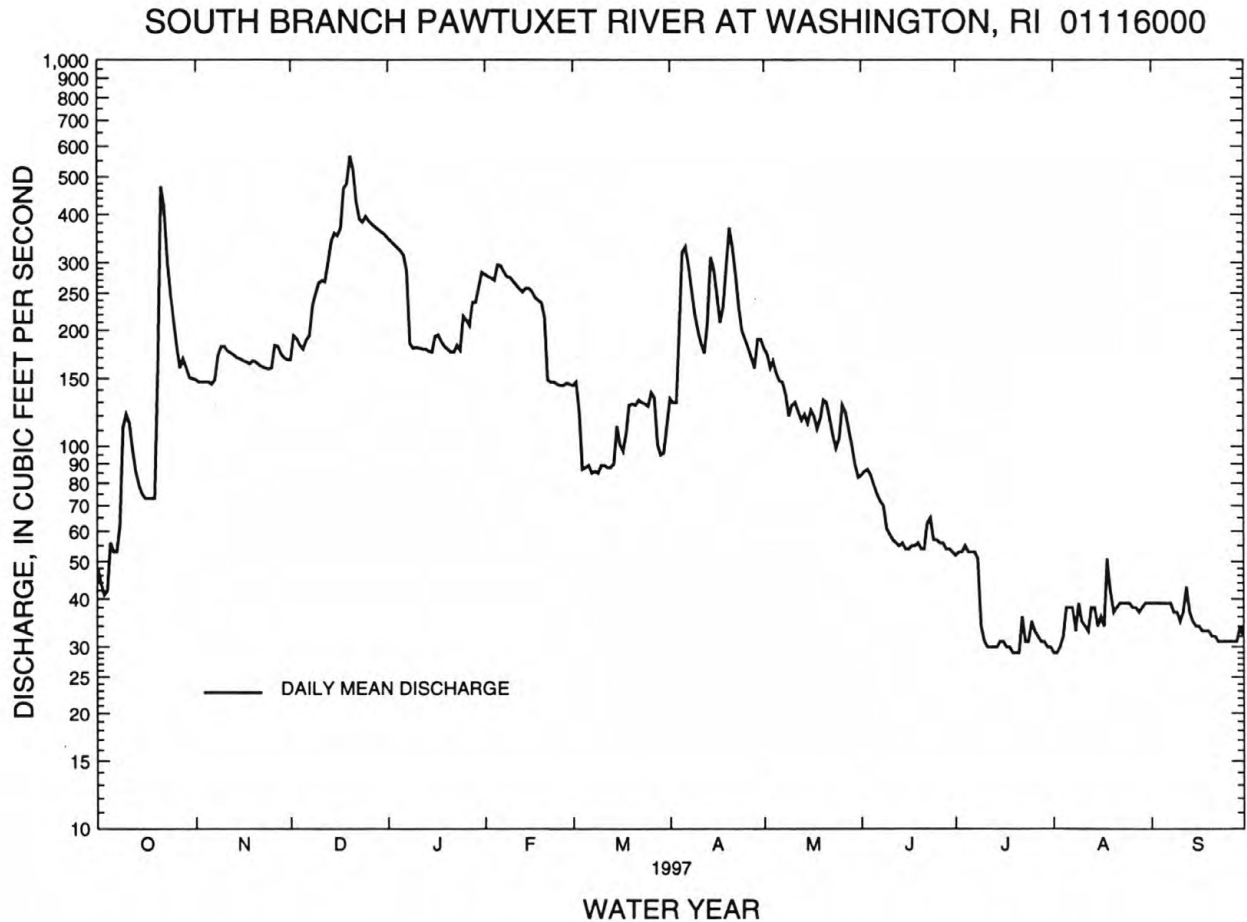
PAWTUXET RIVER BASIN

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01116000 SOUTH BRANCH PAWTUXET RIVER AT WASHINGTON, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1941 - 1997	
ANNUAL TOTAL	58504		52086.0		130	
ANNUAL MEAN	160		143		202	
HIGHEST ANNUAL MEAN					56.9	
LOWEST ANNUAL MEAN					1973	
HIGHEST DAILY MEAN	691	Apr 17	566	Dec 20	1680	Jun 7 1982
LOWEST DAILY MEAN	20	Sep 6	29	Jul 19	2.8	Aug 27 1944
ANNUAL SEVEN-DAY MINIMUM	22	Aug 31	30	Jul 15	9.3	Jun 23 1980
INSTANTANEOUS PEAK FLOW			585	Dec 20	1980	Jun 6 1982
INSTANTANEOUS PEAK STAGE			2.99	Dec 20	5.30	Jun 6 1982
INSTANTANEOUS LOW FLOW			29	Jul 18		
10 PERCENT EXCEEDS	300		292		261	
50 PERCENT EXCEEDS	151		128		100	
90 PERCENT EXCEEDS	38		33		28	

e Estimated



PAWTUXET RIVER BASIN

01116500 PAWTUXET RIVER AT CRANSTON, RI

LOCATION.--Lat 41°45'03", long 71°26'44", Providence County, Hydrologic Unit 01090004, on left bank at Cranston, and 0.7 mi upstream from Pocasset River.

DRAINAGE AREA.--200 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1939 to current year.

REVISED RECORDS.--WSP 971: 1940-42. WSP 1381: 1940-41(M). WDR-MA-NH-RI-VT-73-1: 1972 (adjusted monthly and yearly figures only).

GAGE.--Water-stage recorder. Datum of gage is 8.00 ft above sea level.

REMARKS.--Records good. Flow regulated by powerplants and by Scituate Reservoir 13 mi upstream, Flat River Reservoir, and other reservoirs, combined usable capacity, about 6,000,000,000 ft³. Diversion from Scituate Reservoir for municipal supply of Providence, East Providence, North Providence, Cranston, Greenville, Johnston, East Smithfield, Smithfield, Warwick, West Warwick, Coventry, East Greenwich, and West Greenwich. See table below for figures of diversion and monthend contents in Scituate Reservoir and five smaller reservoirs.

AVERAGE DISCHARGE.--57 years (water years 1941-97), 349 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,440 ft³/s, June 7, 1982, gage height, 14.5 ft, from floodmark; minimum daily, 22 ft³/s, Sept. 4, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,060 ft³/s, Dec. 20, gage height, 9.13 ft, minimum daily, 42 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	413	405	957	924	332	1090	466	245	97	69	140
2	105	384	863	891	855	347	1070	509	239	129	53	123
3	105	373	754	876	827	342	1120	443	238	136	42	131
4	104	364	575	830	770	392	1190	458	226	135	129	122
5	71	322	494	800	1010	356	1240	433	217	117	119	119
6	101	331	543	790	1120	396	1330	389	207	114	124	107
7	105	334	535	751	1070	361	1300	385	198	115	111	97
8	230	393	1360	588	939	324	1200	364	191	119	87	109
9	953	562	950	476	846	316	1020	319	179	112	174	107
10	408	565	762	498	770	329	838	320	173	95	106	129
11	286	421	693	473	705	330	704	322	168	91	78	75
12	213	404	688	453	650	315	616	303	156	90	69	150
13	173	384	752	437	622	294	980	283	154	90	170	119
14	154	391	829	418	668	301	1080	291	152	90	171	104
15	141	350	838	400	712	627	988	279	142	89	120	144
16	142	361	791	670	645	644	824	315	142	92	94	110
17	187	340	894	756	652	651	716	288	139	89	97	69
18	192	377	1090	581	590	597	832	270	137	84	227	91
19	189	383	1270	541	585	559	1080	317	151	80	142	81
20	1470	380	1970	476	558	515	1270	316	139	75	105	94
21	1500	388	1960	446	431	471	1210	306	134	77	392	90
22	1210	362	1620	431	404	474	1030	285	214	186	363	87
23	924	342	1370	563	392	438	851	271	250	97	184	85
24	808	325	1250	460	374	393	711	253	157	85	131	90
25	673	325	1420	1060	365	366	613	295	149	134	96	100
26	655	762	1320	1120	346	466	529	319	143	117	93	75
27	525	750	1240	1020	349	428	456	289	137	95	82	79
28	545	514	1150	1140	343	376	531	285	142	129	73	77
29	510	428	1080	1230	---	355	616	258	123	88	363	159
30	466	394	1070	1110	---	397	538	242	119	72	438	92
31	448	---	1050	1030	---	582	---	233	---	73	197	---
TOTAL	13705	12422	31586	22272	18522	13074	27573	10106	5161	3192	4699	3155
MEAN	442	414	1019	718	662	422	919	326	172	103	152	105
MAX	1500	762	1970	1230	1120	651	1330	509	250	186	438	159
MIN	71	322	405	400	343	294	456	233	119	72	42	69
(†)	4402	4371	5177	5177	5109	5088	5158	5100	4694	4235	3944	3648
(††)	---	---	---	---	---	---	---	---	---	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

	193	283	411	459	484	588	599	386	268	169	177	178
MEAN	193	283	411	459	484	588	599	386	268	169	177	178
MAX	667	1024	1344	1238	1085	1291	1788	803	1237	360	438	698
(WY)	1956	1956	1973	1979	1970	1983	1983	1948	1982	1972	1955	1954
MIN	70.5	82.6	94.0	100	158	239	140	160	93.0	74.9	82.4	83.2
(WY)	1958	1966	1966	1966	1966	1981	1966	1965	1957	1957	1966	1981

PAWTUXET RIVER BASIN

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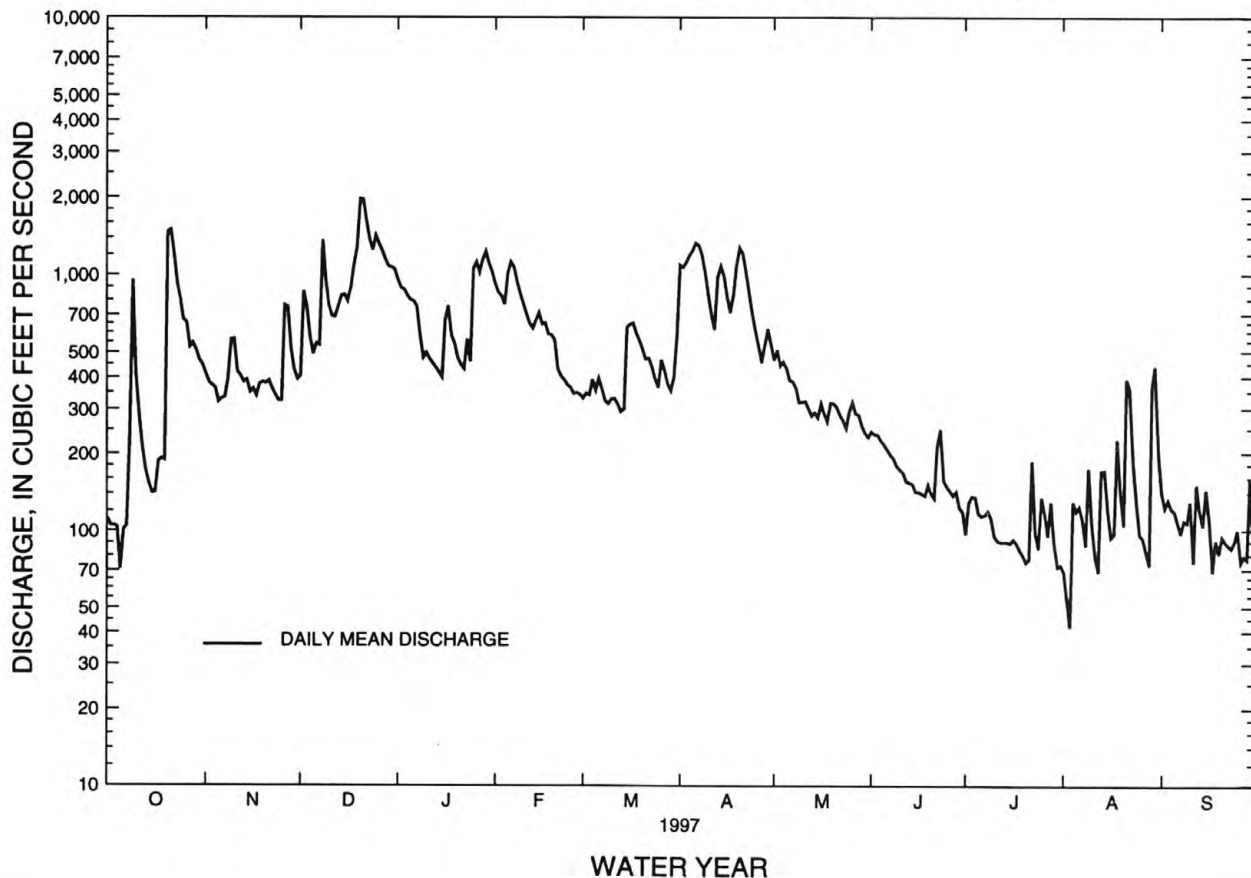
01116500 PAWTUXET RIVER AT CRANSTON, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1997	
ANNUAL TOTAL	166031		165467			
ANNUAL MEAN	454		453		349	
HIGHEST ANNUAL MEAN					595	
LOWEST ANNUAL MEAN					126	
HIGHEST DAILY MEAN	2500	Apr 17	1970	Dec 20	5170	Jun 7 1982
LOWEST DAILY MEAN	57	Sep 6	42	Aug 3	22	Sep 4 1944
ANNUAL SEVEN-DAY MINIMUM	86	Aug 31	75	Jul 28	48	Aug 12 1985
INSTANTANEOUS PEAK FLOW			2060	Dec 20	5440	Jun 7 1982
INSTANTANEOUS PEAK STAGE			9.13	Dec 20	14.50	Jun 7 1982
INSTANTANEOUS LOW FLOW			37	Aug 3		
10 PERCENT EXCEEDS	936		1050		740	
50 PERCENT EXCEEDS	384		361		243	
90 PERCENT EXCEEDS	110		93		101	

(†) Monthend contents, in millions of cubic feet (mcf), of Scituate Reservoir and five smaller reservoirs.
 Monthend contents on September 30, 1996, 4610 mcf.

(††) Diversions, in cubic feet per second, for municipal supplies unavailable at time of publication. Figures of diversions and monthend contents provided by Providence Water Supply Board.

PAWTUXET RIVER AT CRANSTON, RI 01116500



PAWTUXET RIVER BASIN

01116500 PAWTUXET RIVER AT CRANSTON, RI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1961 to current year.

REMARKS.--Discharge computed by discharge measurements on the day of sampling. Instantaneous records are representative of the cross section while continuous records are based on point samples.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1969 to September 1981.

WATER TEMPERATURE: November 1961 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 693 μ S/cm, Mar. 11, 1980; minimum, 60 μ S/cm, Jan. 25, 1979.

WATER TEMPERATURE: Maximum recorded, 30.0°C, July 1, 1964, Aug. 14, 1973; minimum, 0.0°C on many days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	TUR- BID- ITY (NTU) (00076)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
NOV											
20...	0900	412	215	6.5	5.0	7.0	--	--	755	11.6	96
MAR											
26...	0830	485	190	6.3	10.5	7.0	21	2.1	752	11.6	97
JUN											
18...	0845	134	357	6.2	22.0	21.0	25	2.1	759	6.0	67
AUG											
13...	0845	95	317	6.3	19.0	22.5	22	--	762	2.5	29

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
NOV										
20...	<1.0	59	43	--	--	--	--	--	--	16
MAR										
26...	1.0	41	44	21	6.6	1.2	23	68	2	14
JUN										
18...	3.0	93	100	--	--	--	--	--	--	26
AUG										
13...	2.0	94	60	37	12	1.7	42	68	3	29

DATE	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	HY- DROXIDE WATER DIS IT FIELD MG/L AS OH (71834)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
NOV											
20...	0	0	13	--	--	--	--	--	--	0.030	0.450
MAR											
26...	0	0	11	14	36	0.21	92	5	162	<.010	.480
JUN											
18...	0	0	21	--	--	--	--	<1	215	.082	.767
AUG											
13...	0	0	24	26	56	.28	168	<1	185	.149	2.30

PAWTUXET RIVER BASIN

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01116500 PAWTUXET RIVER AT CRANSTON, RI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)
NOV											
20...	0.430	0.55	0.27	0.70	1.1	0.090	0.060	120	64	<1.0	<1
MAR											
26...	.560	.72	.34	.90	1.4	.130	.090	130	53	<1.0	--
JUN											
18...	.667	.86	.30	.97	1.7	.291	.239	60	33	<1.0	<1
AUG											
13...	.298	.38	.57	.86	3.2	.374	.313	20	13	<1.0	<1
DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
NOV											
20...	<1	14	<1.0	<1.0	<1.0	<1.0	1.0	440	<1.0	90	77
MAR											
26...	<1	13	<1.0	.20	<1.0	<1.0	2.0	100	<.50	90	77
JUN											
18...	<1	17	<1.0	.15	<1.0	<1.0	3.2	610	.53	150	146
AUG											
13...	<1	15	<1.0	.20	<1.0	<1.0	3.3	370	.85	110	101
DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHENOLS TOTAL (UG/L) (32730)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV											
20...	<0.10	<1.0	2.0	<1	<1.0	10	<1.0	5.4	--	4	55
MAR											
26...	<.10	1.0	2.0	<1	<1.0	16	<1.0	3.6	5	14	82
JUN											
18...	<.10	1.8	3.2	<1	<1.0	14	<1.0	4.4	1	3	56
AUG											
13...	<.10	<1.0	4.0	<1	<1.0	11	<1.0	4.8	<1	5	65

PAWTUXET RIVER BASIN

01116617 PAWTUXET RIVER AT PAWTUXET, RI

WATER-QUALITY RECORDS

LOCATION.--Lat 41°46'03", long 71°24'21", Providence County, Hydrologic Unit 01090004, at Warwick Ave. Road Bridge at Pawtuxet, and 3.2 mi downstream from Cranston Sewage Treatment Plant.

PERIOD OF RECORD.--Water years 1979 to current year.

REMARKS.--Discharge computed by discharge measurements on the day of sampling. Instantaneous records are representative of the cross section while continuous records are based on point samples.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	TUR- BID- ITY (NTU) (00076)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
------	------	---	--	--	---	---	---	---	---	---	--

NOV	20...	1230	405	233	6.7	8.0	7.0	--	--	755	11.8	98	--
MAR	26...	1245	529	218	6.4	9.5	7.5	22	2.2	752	11.3	95	14
JUN	18...	1215	158	385	6.1	26.0	21.0	27	1.6	760	4.1	46	14
AUG	13...	1315	79	378	6.7	21.5	23.0	16	--	760	2.1	25	16

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION (MG/L AS K) (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD CO3 (00452)
------	---	---	--	--	---	---	---	---	--	---	--

NOV	20...	1.0	5	6	--	--	--	--	--	18	0		
MAR	26...	1.0	85	62	27	8.4	1.4	28	67	2	2.1	20	0
JUN	18...	4.0	100	87	--	--	--	--	--	--	34	0	
AUG	13...	1.0	74	44	46	15	2.3	47	65	3	6.0	34	0

DATE	HY- DROXIDE WATER DIS IT FIELD OH (71834)	ALKA- LINITY WAT DIS TOT IT FIELD CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)
------	---	---	--	--	---	--	--	---	--	--	--	--

NOV	20...	0	15	--	--	--	--	--	0.050	0.590	0.520	0.67	
MAR	26...	0	16	15	40	0.27	110	7	121	.010	.560	1.10	1.4
JUN	18...	0	28	--	--	--	--	2	224	.407	1.50	1.89	2.4
AUG	13...	0	28	28	64	.42	197	<1	222	.093	2.93	2.04	2.6

PAWTUXET RIVER BASIN

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01116617 PAWTUXET RIVER AT PAWTUXET, RI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	
	NOV 20...	0.28	0.80	1.4	0.120	0.120	60	30	<1.0	<1	<1	15	<1.0
	MAR 26...	.40	1.5	2.1	.190	.130	150	44	<1.0	--	<1	14	<1.0
JUN 18...	.31	2.2	3.7	.532	.426	40	19	<1.0	<1	<1	16	<1.0	
AUG 13...	1.2	3.2	6.2	.969	.841	20	6.6	<1.0	<1	<1	13	<1.0	
DATE	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	
	NOV 20...	0.30	<1.0	<1.0	5.0	270	0.50	100	54	<0.10	<1.0	5.0	<1
	MAR 26...	.20	<1.0	<1.0	3.0	510	.70	110	98	<.10	2.0	4.0	<1
JUN 18...	.12	<1.0	<1.0	4.3	530	<.50	160	150	<.10	3.1	4.2	<1	
AUG 13...	.16	<1.0	<1.0	3.4	280	<.50	120	112	<.10	1.7	6.3	<1	
DATE	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (32730)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	P, P'- DDD, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39363)	P, P'- DDE, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39368)	P, P'- DDT, RECOVER IN BOT- TOM MA- TERIAL (UG/KG) (39373)		
	NOV 20...	<1.0	19	<1.0	5.3	--	--	--	--	--	--	--	
	MAR 26...	<1.0	17	<1.0	5.1	9	--	--	--	--	--	--	
JUN 18...	<1.0	13	<1.0	5.6	3	--	--	--	--	--	--		
AUG 13...	<1.0	14	<1.0	5.6	<1	66.0	<1.00	<0.100	150	9.70	9.70	6.50	
DATE	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN I TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOT. IN BOT- TOM MA- TERIAL (UG/KG) (39481)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39758)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG) (81886)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	
	NOV 20...	--	--	--	--	--	--	--	--	--	23	20	
	MAR 26...	--	--	--	--	--	--	--	--	--	--	8	81
JUN 18...	--	--	--	--	--	--	--	--	--	--	10	43	
AUG 13...	8.00	<0.300	<1.60	0.200	0.600	<0.100	E78.0	<0.200	<1.00	<10.0	8	50	

LOCATION.--Lat 41°38'28", long 71°26'45", Washington County, Hydrologic Unit 01090004, on right bank 45 ft upstream from Old Forge Dam in North Kingstown, 1.5 mi south of East Greenwich, and 2.5 mi upstream from mouth.

PERIOD OF RECORD.--Discharge: August 1940 to current year. Prior to October 1977, published as "Potowomut River."
Water-quality records: Water years 1977-81.

GAGE.--Water-stage recorder. Datum of gage is 5.42 ft above sea level.

AVERAGE DISCHARGE.--57 years, 46.6 ft³/s.

EXTREMES FOR PERIOD OF RECORD:--Maximum discharge, 1,020 ft³/s, June 6, 1982, gage height, 3.73 ft, from rating curve extended above 440 ft²/s; maximum gage height of 6.78 ft, Aug. 31, 1954 (backwater from hurricane tidal wave); no flow at times in water years 1948, 1960, 1971, 1975-77, 1983, 1986-87, caused by closing of gate at Old Forge Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1915, about 8.5 ft Sept. 21, 1938 (backwater from hurricane tidal wave).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 230 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 8	0930	287	2.30	Apr. 1	0300	234	2.14
Dec. 20	unknown	*310	--				

Minimum discharge, 2.6 ft³/s, Aug. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	43	e43	e75	e130	53	215	75	41	9.4	4.8	14
2	17	41	e109	e70	e90	55	177	85	47	10	4.4	11
3	16	39	e121	e75	e85	53	155	76	46	11	4.5	9.1
4	14	37	e86	e75	e80	54	146	78	40	13	4.7	8.4
5	14	36	e66	e70	e80	54	136	68	35	11	4.0	7.7
6	14	35	e73	e65	e160	62	119	63	32	10	6.8	7.5
7	14	36	e96	e60	e130	58	108	64	31	8.8	12	7.7
8	23	39	e243	e55	e120	54	97	60	30	8.4	8.2	7.5
9	156	52	e196	e55	e110	51	86	58	27	8.6	11	7.4
10	98	65	e132	e65	e100	e54	82	62	25	8.6	10	7.2
11	63	54	e104	e60	e80	e56	78	59	24	8.0	8.0	6.9
12	47	46	e98	e55	e75	e58	78	54	22	6.7	6.6	8.0
13	37	41	e99	e55	e65	50	151	52	21	6.6	8.5	7.9
14	32	38	e99	e50	106	50	147	55	22	6.5	14	7.6
15	27	36	e103	e45	114	110	112	52	21	5.9	10	6.9
16	25	34	e90	e75	91	93	94	60	18	5.6	8.7	6.1
17	24	34	e100	e120	78	72	89	57	17	5.6	8.6	6.0
18	23	33	e115	e74	74	61	115	51	17	5.1	28	5.7
19	22	32	e130	e52	71	56	147	66	18	4.6	21	5.5
20	125	e33	e270	e49	68	52	140	67	18	4.3	13	5.3
21	158	e31	e210	e45	64	51	112	57	17	4.3	25	5.6
22	111	e30	e160	e45	64	59	94	50	20	11	37	5.5
23	78	e29	e120	e60	60	58	86	46	31	9.6	24	5.3
24	76	e28	e90	e80	57	52	80	44	23	7.6	16	5.7
25	64	e27	e150	e120	54	47	78	51	20	8.7	11	5.0
26	55	e66	e140	e130	54	73	75	67	19	9.9	9.0	5.1
27	50	e93	e130	e100	55	75	71	53	19	8.5	7.9	5.4
28	49	e67	e110	e130	55	62	85	45	14	7.8	7.4	5.5
29	50	e51	e100	e190	---	63	105	40	13	6.5	21	7.8
30	47	e44	e85	e190	---	97	85	38	11	5.4	42	9.2
31	46	---	e80	e170	---	109	---	37	---	5.0	21	---
TOTAL	1595	1270	3748	2560	2370	1952	3343	1790	739	242.0	418.1	213.5
MEAN	51.5	42.3	121	82.6	84.6	63.0	111	57.7	24.6	7.81	13.5	7.12
MAX	158	93	270	190	160	110	215	85	47	13	42	14
MIN	14	27	43	45	54	47	71	37	11	4.3	4.0	5.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

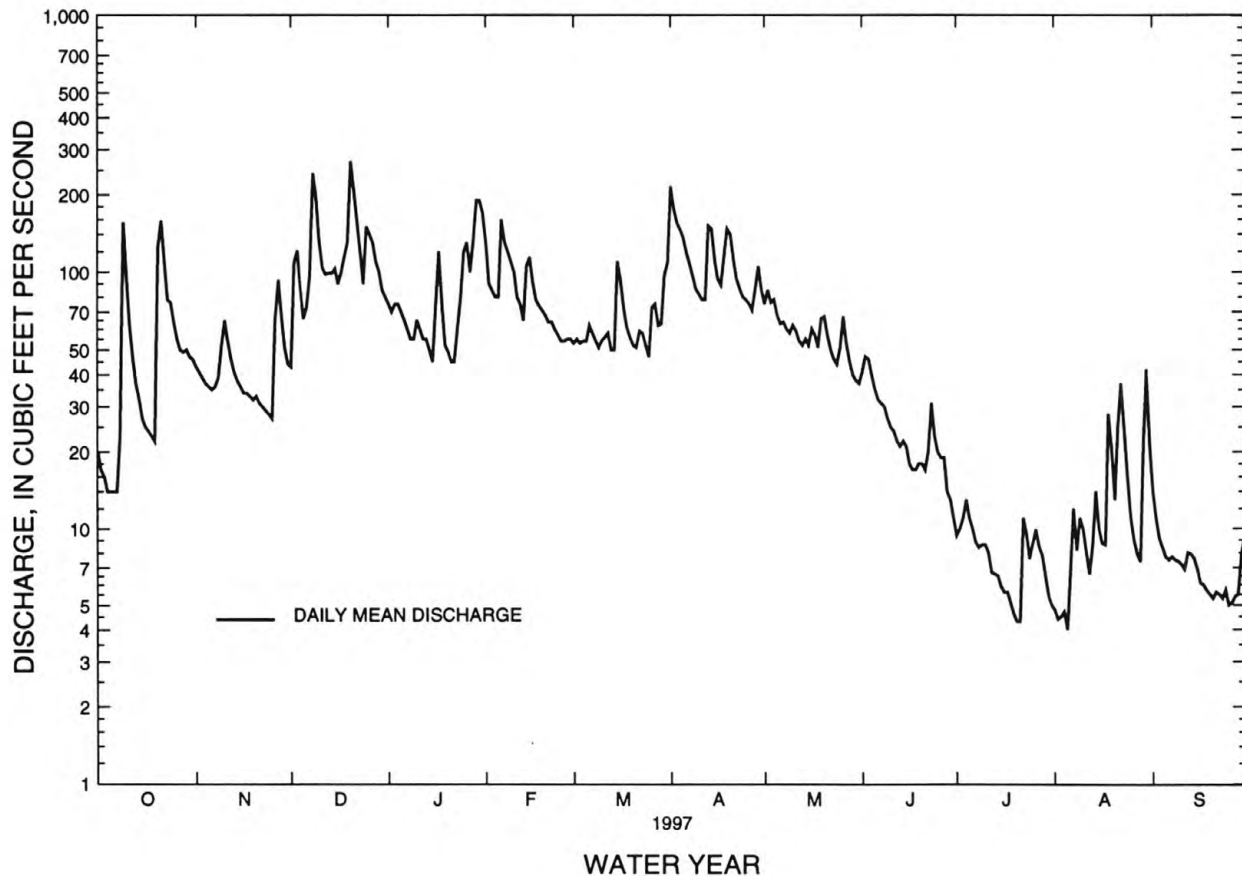
MEAN	19.0	37.2	54.8	63.4	70.4	87.6	83.4	60.6	36.6	17.9	15.6	13.9
MAX	70.1	108	151	186	122	169	230	114	182	56.3	65.1	73.6
(WY)	1956	1956	1987	1979	1970	1983	1983	1989	1982	1984	1946	1954
MIN	1.76	8.05	5.53	7.19	17.5	30.0	25.2	23.8	10.8	5.23	3.06	1.59
(WY)	1969	1950	1966	1966	1944	1981	1966	1992	1957	1994	1965	1968

01117000 HUNT RIVER NEAR EAST GREENWICH, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1997	
ANNUAL TOTAL	22222.3		20240.6		46.6	
ANNUAL MEAN	60.7		55.5		81.6	
HIGHEST ANNUAL MEAN					17.7	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	292	Jan 20	270	Dec 20	861	Jun 6 1982
LOWEST DAILY MEAN	8.3	Sep 6	4.0	Aug 5	.00	Oct 25 1947
ANNUAL SEVEN-DAY MINIMUM	11	Aug 31	4.7	Jul 30	.10	Sep 13 1943
INSTANTANEOUS PEAK FLOW			310	Dec 20	1020	Jun 6 1982
INSTANTANEOUS PEAK STAGE					6.78	Aug 31 1954
INSTANTANEOUS LOW FLOW			2.6	Aug 6	.00	Oct 24 1947
10 PERCENT EXCEEDS	118		117		100	
50 PERCENT EXCEEDS	51		51		34	
90 PERCENT EXCEEDS	14		7.3		6.1	

e Estimated

HUNT RIVER NEAR EAST GREENWICH, RI 01117000



PAWCATUCK RIVER BASIN

01117350 CHIPUXET RIVER AT WEST KINGSTON, RI

LOCATION.--Lat 41°28'56", long 71°33'06", Washington County, Hydrologic Unit 01090005, on right bank at West Kingston, at downstream side of bridge on State Highway 138, 1.5 mi west of Kingston, and 3.1 mi upstream from Worden Pond.

DRAINAGE AREA.--9.99 mi².

PERIOD OF RECORD.--Discharge: February 1958 to July 1960 in Rhode Island Water Resources Board Geologic Bulletin 13. September 1973 to current year.

Water-quality records: Water years 1974-83.

GAGE.--Water-stage recorder. Datum of gage is 89.80 ft above sea level (Rhode Island State Board of Public Roads benchmark).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diversion upstream for supply of University of Rhode Island.

AVERAGE DISCHARGE.--25 years (water years 1959, 1974-97), 21.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD SINCE 1973.--Maximum discharge, about 250 ft³/s, June 6, 1982; minimum, 0.47 ft³/s, Nov. 6, 7, 1994. Instantaneous maximum and minimum discharges not available prior to Sept. 14, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 88 ft³/s, Apr. 1, gage height, 6.92 ft; minimum, 0.86 ft³/s, July 21, 31, Aug. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	25	23	33	38	26	82	40	24	8.6	.95	19
2	e12	24	26	33	35	26	85	39	25	8.4	.95	16
3	e11	24	30	33	34	26	74	37	26	8.2	1.1	14
4	e10	23	32	33	32	26	65	37	25	7.8	1.3	12
5	e9.7	23	30	33	36	25	58	35	24	7.8	1.4	10
6	e9.4	22	31	33	43	26	52	33	22	7.8	1.4	9.4
7	e9.6	23	33	31	44	27	48	33	21	7.3	1.2	9.4
8	e15	23	49	30	40	26	44	32	20	6.8	1.2	11
9	e22	25	66	29	37	26	41	31	19	7.4	3.0	11
10	33	26	62	29	34	27	39	30	18	8.3	4.3	11
11	32	26	53	29	33	28	37	29	17	7.7	3.9	10
12	28	e24	47	28	31	28	36	29	17	7.3	2.8	9.5
13	24	e22	43	27	30	28	44	28	16	7.3	2.2	8.5
14	21	e21	41	25	31	28	51	28	16	6.1	2.5	7.9
15	18	e19	40	25	35	34	49	28	15	3.7	2.0	7.3
16	16	e18	39	26	38	38	45	29	14	3.3	2.0	5.2
17	14	e18	40	30	37	37	42	28	14	2.1	7.1	3.1
18	12	e18	43	31	34	36	43	28	14	1.7	17	1.8
19	13	e18	49	29	33	33	47	29	14	1.4	16	1.4
20	23	e18	55	27	32	32	50	29	14	1.5	15	1.4
21	32	e18	55	26	30	31	48	29	14	.97	19	1.4
22	36	e17	50	25	30	31	44	28	13	2.5	24	1.3
23	34	e17	45	28	29	31	41	27	12	2.2	23	1.4
24	33	e16	42	29	28	31	39	26	11	2.0	19	1.3
25	31	e16	43	33	26	30	38	26	11	3.3	15	1.3
26	29	e21	42	42	26	32	36	28	11	4.2	13	1.4
27	28	30	41	42	26	33	35	28	11	4.8	11	1.4
28	27	31	39	41	26	34	37	27	9.6	2.9	10	2.8
29	26	31	38	45	---	35	40	26	9.2	1.2	13	5.9
30	26	29	37	45	---	44	42	25	9.1	1.0	20	5.1
31	26	---	35	41	---	56	---	24	---	.99	21	---
TOTAL	673.7	666	1299	991	928	971	1432	926	485.9	146.56	275.30	202.2
MEAN	21.7	22.2	41.9	32.0	33.1	31.3	47.7	29.9	16.2	4.73	8.88	6.74
MAX	36	31	66	45	44	56	85	40	26	8.6	24	19
MIN	9.4	16	23	25	26	25	35	24	9.1	.97	.95	1.3

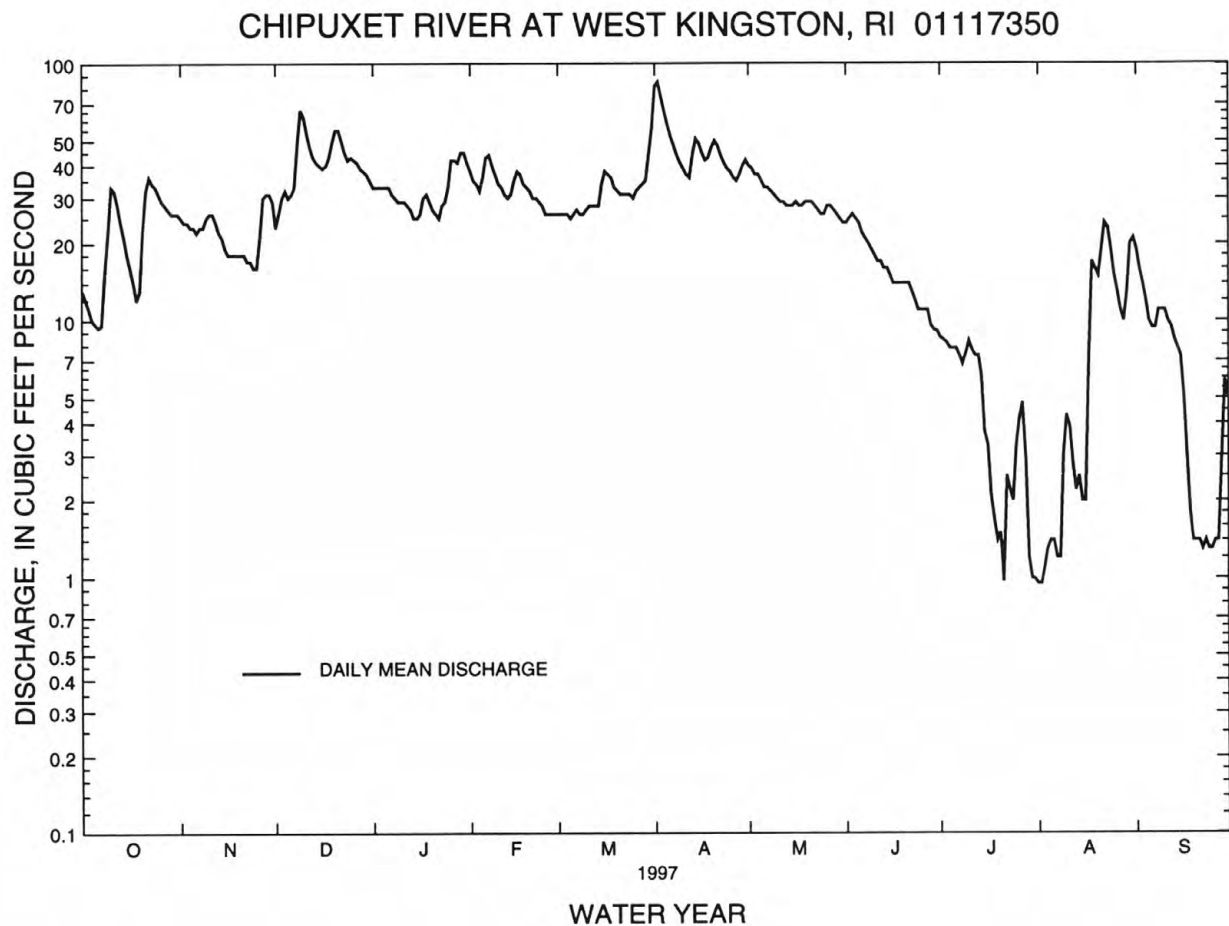
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1997, BY WATER YEAR (WY)

	9.94	15.3	23.3	28.3	29.0	35.3	35.0	27.0	20.4	13.1	10.8	9.33
MEAN												
MAX	29.1	43.4	59.4	64.2	43.7	64.0	85.4	44.7	70.4	35.3	24.5	32.4
(WY)	1990	1990	1987	1979	1984	1983	1983	1983	1982	1982	1982	1985
MIN	3.57	4.32	5.11	3.54	10.4	9.14	12.7	11.5	7.89	3.94	1.65	1.50
(WY)	1981	1995	1981	1981	1981	1981	1985	1981	1976	1976	1993	1993

01117350 CHIPUXET RIVER AT WEST KINGSTON, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1958 - 1997
ANNUAL TOTAL	9324.0	8996.66	
ANNUAL MEAN	25.5	24.6	21.2
HIGHEST ANNUAL MEAN			32.8
LOWEST ANNUAL MEAN			6.89
HIGHEST DAILY MEAN	66 Dec 9	85 Apr 2	235 Jun 6 1982
LOWEST DAILY MEAN	7.0 Sep 5	.95 Aug 1	.51 Nov 6 1994
ANNUAL SEVEN-DAY MINIMUM	7.3 Aug 31	1.1 Jul 29	.57 Nov 3 1994
INSTANTANEOUS PEAK FLOW		88 Apr 1	250 Jun 6 1982
INSTANTANEOUS PEAK STAGE		6.92 Apr 1	6.92 Apr 1 1997
INSTANTANEOUS LOW FLOW		.86 Jul 21	.47 Nov 6 1994
10 PERCENT EXCEEDS	42	42	42
50 PERCENT EXCEEDS	24	26	17
90 PERCENT EXCEEDS	11	3.0	5.6

e Estimated



PAWCATUCK RIVER BASIN

01117420 USQUEPAUG RIVER NEAR USQUEPAUG, RI

LOCATION.--Lat 41°28'36", long 71°36'19", Washington County, Hydrologic Unit 01090005, on left bank at upstream side of Heaton Orchard Bridge on State Highway 2 in South Kingstown, 1.2 mi upstream from Chickasheen Brook, 1.8 mi south of Usquepaug, and 2.6 mi west of West Kingston.

DRAINAGE AREA.--36.1 mi².

PERIOD OF RECORD.--Discharge: February 1958 to July 1960 in Rhode Island Water Resources Board Geologic Bulletin 13. December 1974 to current year.

Water-quality records: Water years 1975-83.

GAGE.--Water-stage recorder. Datum of gage is 81.28 ft above sea level (State of Rhode Island benchmark).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow affected at times by irrigation upstream.

AVERAGE DISCHARGE.--23 years (water years 1959, 1976-97), 76.2 ft³/s, 28.68 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,060 ft³/s, June 6, 1982, gage height, 9.23 ft; no flow part of Sept. 13, 1995. Instantaneous maximum and minimum discharges not available prior to Dec. 5, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 317 ft³/s, Apr. 2, gage height, 5.98 ft; minimum, 5.4 ft³/s, Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	74	e82	147	163	80	276	143	58	22	11	33
2	39	e74	e110	138	155	80	308	139	68	24	11	27
3	39	e71	e150	138	145	81	272	139	76	25	12	24
4	37	e68	e120	145	137	81	247	132	64	25	14	22
5	36	e65	e110	146	159	83	232	123	56	23	15	19
6	36	e65	e125	138	233	93	218	112	52	21	16	17
7	36	e62	e150	126	217	90	202	112	49	19	18	15
8	40	e66	e300	114	180	77	185	103	47	18	16	14
9	96	e69	e270	112	155	73	168	99	45	18	24	14
10	117	e78	e230	115	138	76	154	101	43	19	26	13
11	100	e74	e220	124	129	89	144	99	41	18	21	12
12	67	e68	e195	118	121	86	138	90	38	16	19	14
13	57	e63	166	103	114	77	190	86	38	16	19	14
14	54	e59	164	94	116	74	250	89	39	15	31	13
15	51	e56	165	87	163	133	221	85	37	15	25	11
16	48	e54	161	101	179	162	183	91	35	15	21	9.7
17	47	e54	159	153	154	131	161	93	33	15	21	8.4
18	46	e54	197	176	132	103	167	81	33	14	47	8.1
19	45	e54	224	131	121	89	207	85	34	14	53	7.3
20	103	e54	284	96	115	82	241	98	33	13	34	7.6
21	220	e54	290	86	108	79	216	90	31	12	45	7.8
22	206	e50	246	85	105	87	184	77	30	23	74	6.7
23	153	e48	215	118	100	92	162	70	29	24	51	6.7
24	125	e48	200	125	93	80	149	66	28	20	35	6.6
25	114	e46	210	151	87	72	143	70	29	23	28	6.3
26	102	e70	222	239	83	90	139	103	30	24	24	6.5
27	87	e130	206	214	88	116	132	88	34	20	21	6.2
28	81	e110	191	193	87	102	134	70	29	19	19	6.0
29	83	e91	182	243	---	93	170	63	26	17	22	8.2
30	81	e76	172	223	---	138	167	59	23	13	55	9.2
31	78	---	163	182	---	157	---	57	---	12	47	---
TOTAL	2466	2005	5879	4361	3777	2946	5760	2913	1208	572	875	373.3
MEAN	79.5	66.8	190	141	135	95.0	192	94.0	40.3	18.5	28.2	12.4
MAX	220	130	300	243	233	162	308	143	76	25	74	33
MIN	36	46	82	85	83	72	132	57	23	12	11	6.0
CFSM	2.20	1.85	5.25	3.90	3.74	2.63	5.32	2.60	1.12	.51	.78	.34
IN.	2.54	2.07	6.06	4.49	3.89	3.04	5.94	3.00	1.24	.59	.90	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1997, BY WATER YEAR (WY)

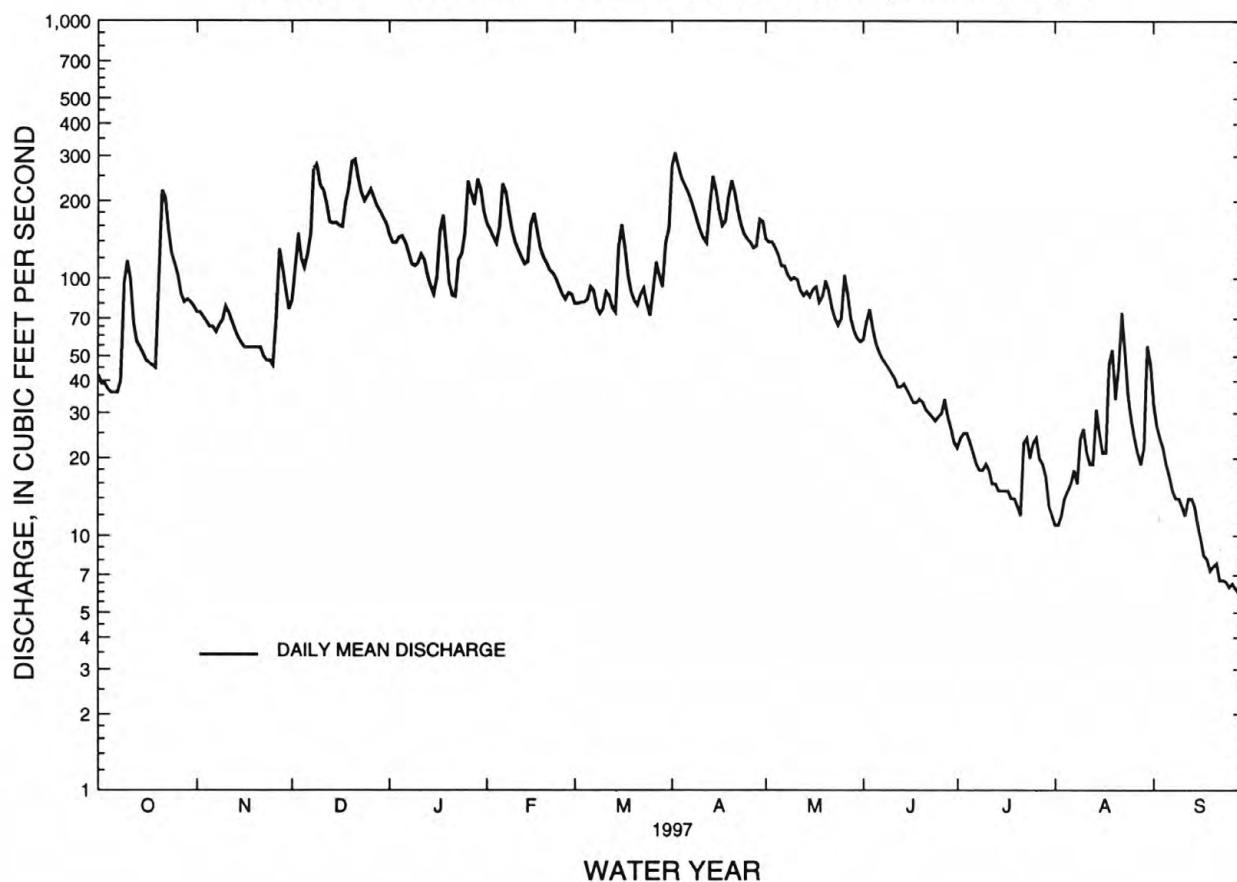
	MEAN	37.2	62.1	91.1	106	107	128	134	93.4	67.9	34.8	30.4	26.2
MAX	85.7	150	212	266	180	240	335	179	276	71.9	56.1	75.7	
(WY)	1990	1990	1987	1979	1982	1983	1983	1978	1982	1984	1979	1985	
MIN	12.1	20.8	21.1	16.9	39.1	56.2	46.3	45.5	30.4	13.3	11.6	7.40	
(WY)	1995	1981	1981	1981	1980	1981	1985	1981	1994	1994	1981	1980	

01117420 USQUEPAUG RIVER NEAR USQUEPAUG, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1958 - 1997	
ANNUAL TOTAL	33058		33135.3		76.2	
ANNUAL MEAN	90.3		90.8		110	
HIGHEST ANNUAL MEAN					30.6	
LOWEST ANNUAL MEAN					1020	
HIGHEST DAILY MEAN	300	Dec 8	308	Apr 2	1.1	Jun 7 1982
LOWEST DAILY MEAN	14	Aug 23	6.0	Sep 28	3.8	Sep 14 1993
ANNUAL SEVEN-DAY MINIMUM	17	Aug 18	6.4	Sep 22	1060	Sep 6 1995
INSTANTANEOUS PEAK FLOW			317	Apr 2	9.23	Jun 6 1982
INSTANTANEOUS PEAK STAGE			5.98	Apr 2	.00	Jun 6 1982
INSTANTANEOUS LOW FLOW			5.4	Sep 24	2.11	Sep 13 1995
ANNUAL RUNOFF (CFSM)	2.50		2.51		28.68	
ANNUAL RUNOFF (INCHES)	34.07		34.14		157	
10 PERCENT EXCEEDS	182		192		59	
50 PERCENT EXCEEDS	76		80		17	
90 PERCENT EXCEEDS	26		15			

e Estimated

USQUEPAUG RIVER NEAR USQUEPAUG, RI 01117420



LOCATION.--Lat 41°29'33", long 71°37'43", Washington County, Hydrologic Unit 01090005, on right bank 10 ft downstream from Beaver River Bridge on State Highway 138 in Richmond, 1.2 mi southwest of Usquepaug, 3.3 mi north of Kenyon, and 3.6 mi upstream from mouth.

Water-quality records: Water years 1979-83.

REMARKS.--Records good.

AVERAGE DISCHARGE.--22 years (water years 1976-97), 21.2 ft³/s, 32.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 370 ft³/s, June 6, 1982, gage height, 3.83 ft; minimum, 1.1 ft³/s, Sept. 7, 1993.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	2300	78	2.55	Apr. 1	1630	80	2.42
Dec. 8	1130	*96	*2.62	Apr. 13	1330	73	2.32
Dec. 20	0715	85	2.53				

Minimum discharge, 2.5 ft³/s, Sept. 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	23	21	33	37	23	70	34	18	6.9	3.2	7.6
2	6.2	22	41	33	36	24	60	40	21	7.2	3.0	6.7
3	5.9	21	43	34	34	23	55	35	21	7.2	3.0	6.3
4	5.5	20	34	35	33	23	52	35	18	6.9	3.9	5.4
5	5.3	19	30	33	49	23	49	31	16	6.3	4.1	4.9
6	5.0	19	37	31	54	27	45	30	16	6.0	4.2	4.6
7	5.1	19	46	28	43	24	43	31	15	5.8	3.9	4.4
8	7.9	21	83	27	37	21	41	28	15	5.6	3.5	4.4
9	26	26	69	26	34	20	38	28	14	5.5	6.6	4.3
10	19	28	54	27	32	23	36	29	13	5.4	5.3	4.1
11	13	24	47	27	31	25	35	28	12	5.1	4.2	4.3
12	9.8	21	47	25	31	23	35	26	12	4.8	3.7	6.1
13	8.7	19	47	23	30	20	67	25	12	4.6	5.3	6.3
14	8.3	18	46	22	35	21	57	26	12	4.4	6.7	5.1
15	7.8	17	47	21	46	45	44	25	11	4.3	4.8	4.5
16	7.5	16	43	30	38	36	38	29	10	4.4	4.0	4.1
17	7.3	16	47	38	33	28	37	26	10	4.3	5.8	3.9
18	7.0	16	60	28	31	26	45	23	10	4.0	15	3.6
19	6.4	16	60	26	31	25	56	27	10	3.8	11	3.2
20	56	16	75	22	29	24	53	29	10	3.6	6.6	3.1
21	62	16	60	21	28	23	44	25	9.4	3.6	15	3.2
22	43	15	51	22	28	27	39	22	8.9	6.7	17	3.0
23	32	14	49	32	26	26	37	21	8.9	5.1	10	3.0
24	32	14	47	26	25	22	36	20	8.6	4.7	7.8	3.0
25	29	13	56	45	24	21	37	24	8.9	6.1	6.5	2.8
26	27	26	50	47	23	31	36	30	9.2	5.7	5.8	2.7
27	25	35	45	35	25	30	34	23	9.8	4.7	5.3	2.7
28	26	27	41	45	24	25	43	20	8.5	4.4	5.0	2.7
29	26	22	40	50	---	27	48	19	7.6	3.9	7.8	3.7
30	25	19	39	40	---	35	38	18	7.2	3.5	15	3.5
31	24	---	36	37	---	40	---	18	---	3.4	11	---
TOTAL	575.5	598	1491	969	927	811	1348	825	363.0	157.9	214.0	127.2
MEAN	18.6	19.9	48.1	31.3	33.1	26.2	44.9	26.6	12.1	5.09	6.90	4.24
MAX	62	35	83	50	54	45	70	40	21	7.2	17	7.6
MIN	5.0	13	21	21	23	20	34	18	7.2	3.4	3.0	2.7
CFSM	2.09	2.25	5.42	3.52	3.73	2.95	5.07	3.00	1.36	.57	.78	.48
IN.	2.41	2.51	6.25	4.06	3.89	3.40	5.65	3.46	1.52	.66	.90	.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1997, BY WATER YEAR (WY)

MEAN	9.23	17.2	26.1	29.0	28.2	35.3	37.4	27.4	20.3	9.83	8.17	6.81
MAX	25.5	43.5	60.8	74.0	46.2	62.9	102	48.3	82.1	22.7	16.4	25.2
(WY)	1990	1990	1987	1979	1982	1983	1983	1979	1982	1982	1989	1985
MIN	3.01	4.59	4.43	3.17	11.5	18.9	13.9	13.7	9.02	3.70	2.21	1.90
(WY)	1995	1981	1981	1981	1985	1981	1985	1981	1994	1994	1993	1980

PAWCATUCK RIVER BASIN

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01117468 BEAVER RIVER NEAR USQUEPAUG, RI--Continued

SUMMARY STATISTICS

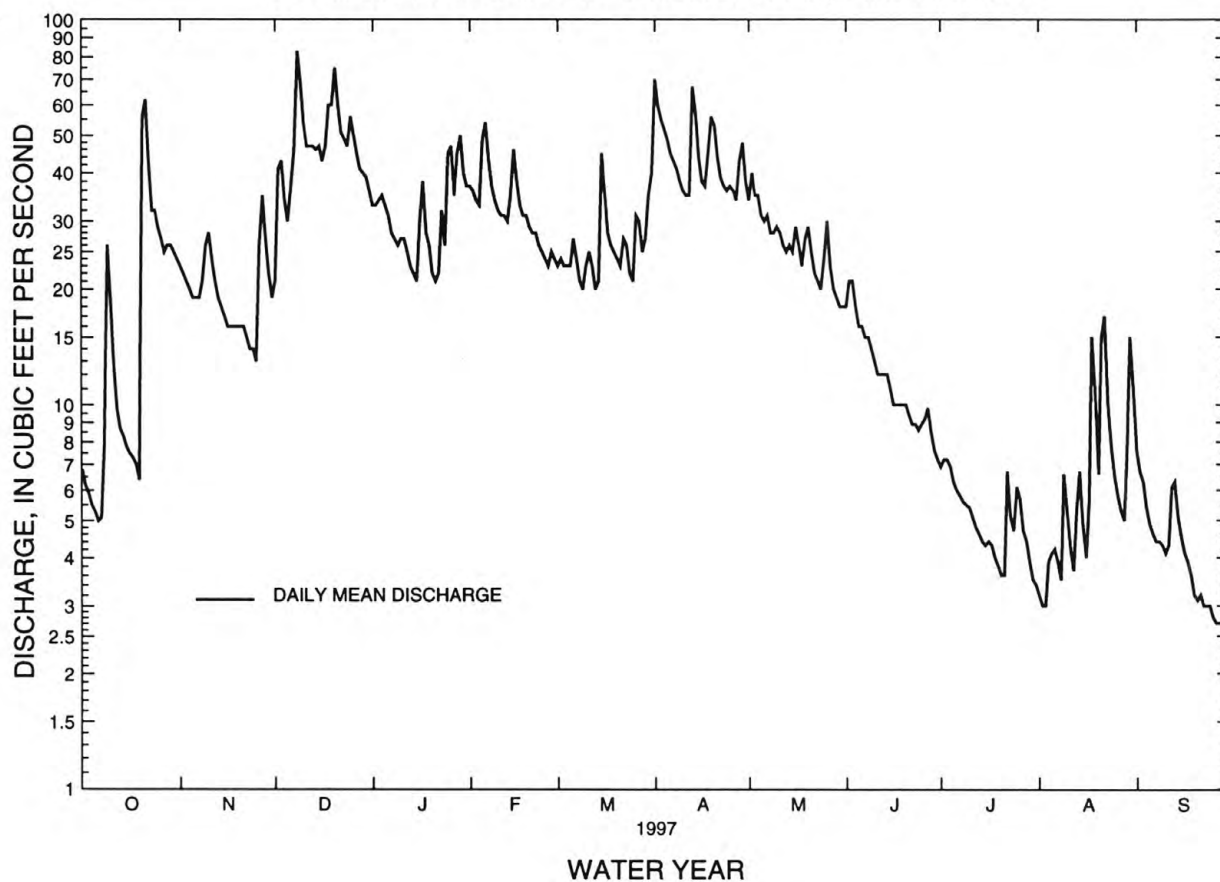
FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1975 - 1997

ANNUAL TOTAL	9227.7	8406.6	21.2	
ANNUAL MEAN	25.2	23.0	30.4	1983
HIGHEST ANNUAL MEAN			8.67	1981
LOWEST ANNUAL MEAN			324	Jun 6 1982
HIGHEST DAILY MEAN	94 Apr 17	83 Dec 8	1.2	Sep 7 1993
LOWEST DAILY MEAN	4.0 Sep 6	2.7 Sep 26	1.3	Sep 1 1993
ANNUAL SEVEN-DAY MINIMUM	4.4 Aug 31	2.8 Sep 22	370	Jun 6 1982
INSTANTANEOUS PEAK FLOW		96 Dec 8	3.83	Jun 6 1982
INSTANTANEOUS PEAK STAGE		2.62 Dec 8	1.1	Sep 7 1993
INSTANTANEOUS LOW FLOW		2.5 Sep 27	2.39	
ANNUAL RUNOFF (CFSM)	2.84	2.60	32.53	
ANNUAL RUNOFF (INCHES)	38.70	35.26	43	
10 PERCENT EXCEEDS	47	45	17	
50 PERCENT EXCEEDS	22	23	4.2	
90 PERCENT EXCEEDS	7.0	4.3		

BEAVER RIVER NEAR USQUEPAUG, RI 01117468



PAWCATUCK RIVER BASIN

01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI

LOCATION.--Lat 41°26'42", long 71°40'53", Washington County, Hydrologic Unit 01090005, on right bank 10 ft downstream from bridge on Alton-Carolina road, 0.8 mi northeast of Wood River Junction, 1.5 mi southwest of Carolina, and 2.9 mi upstream from Wood River.

DRAINAGE AREA.--100 mi².

PERIOD OF RECORD.--October 1940 to current year. October and November 1940, monthly discharge only, published in WSP 1301. Prior to October 1943, published as Charles River at Wood River Junction.

REVISED RECORDS.--WSP 1051: Drainage area. WSP 1201: 1948.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 43.86 ft above sea level. Prior to June 19, 1984, at site 10 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional regulation by fish hatchery on White Brook. Prior to 1972, occasional regulation at low flow by powerplant and mills upstream; regulation greater prior to 1969. Annual mean discharge for period of record shown in summary statistics does not include the 1941 water year.

AVERAGE DISCHARGE.--57 years, 195 ft³/s, 26.50 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,860 ft³/s, June 7, 1982, gage height, 8.75 ft; minimum, 7.4 ft³/s, Oct. 10, 1947; minimum daily, 15 ft³/s, Oct. 11, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 750 ft³/s, Apr. 2, gage height, 4.77 ft; minimum, 31 ft³/s, Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e98	208	180	337	400	229	621	360	174	67	34	98
2	e97	198	225	313	382	224	730	347	184	68	32	81
3	e93	190	281	318	362	220	741	329	200	70	33	74
4	e89	181	304	327	344	223	694	324	194	71	38	69
5	e88	176	291	325	391	224	626	302	178	65	39	65
6	e88	171	299	322	463	237	567	287	166	62	40	64
7	e88	170	345	303	483	233	521	278	157	58	40	60
8	e100	173	518	278	448	224	478	263	149	55	39	58
9	e177	185	638	256	401	214	432	254	142	53	48	56
10	e198	203	655	263	361	218	396	252	135	54	50	54
11	e205	211	599	260	336	236	369	249	129	51	46	55
12	e187	203	528	252	317	236	352	239	120	50	42	57
13	e154	187	474	246	299	223	432	229	117	50	42	57
14	e143	174	444	233	305	217	488	229	119	48	51	55
15	e133	165	430	221	360	308	499	227	125	43	51	53
16	e132	158	412	e222	379	351	458	233	110	44	45	52
17	e132	154	414	e271	375	343	411	231	104	43	46	49
18	e130	152	454	264	344	309	408	223	101	41	86	48
19	e126	151	505	245	319	274	439	221	102	40	101	48
20	e293	151	606	229	302	252	474	235	98	39	82	47
21	e429	149	622	219	288	238	482	235	92	38	113	45
22	e454	146	585	218	279	242	447	219	90	52	157	43
23	429	143	521	279	266	246	403	203	84	56	139	43
24	375	141	469	287	254	237	371	192	80	52	100	42
25	319	138	469	351	240	223	349	198	85	56	76	41
26	283	158	461	e421	230	236	334	236	85	57	67	41
27	255	196	457	e414	233	262	317	242	94	52	61	40
28	239	217	431	e424	235	268	336	220	85	47	57	39
29	230	210	404	e451	---	268	381	199	79	44	68	45
30	223	188	390	458	---	353	381	185	74	39	108	44
31	218	---	370	431	---	411	---	178	---	36	115	---
TOTAL	6205	5247	13781	9438	9396	7979	13937	7619	3652	1601	2046	1623
MEAN	200	175	445	304	336	257	465	246	122	51.6	66.0	54.1
MAX	454	217	655	458	483	411	741	360	200	71	157	98
MIN	88	138	180	218	230	214	317	178	74	36	32	39
CFSM	2.00	1.75	4.45	3.04	3.36	2.57	4.65	2.46	1.22	.52	.66	.54
IN.	2.31	1.95	5.13	3.51	3.50	2.97	5.18	2.83	1.36	.60	.76	.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1997, BY WATER YEAR (WY)

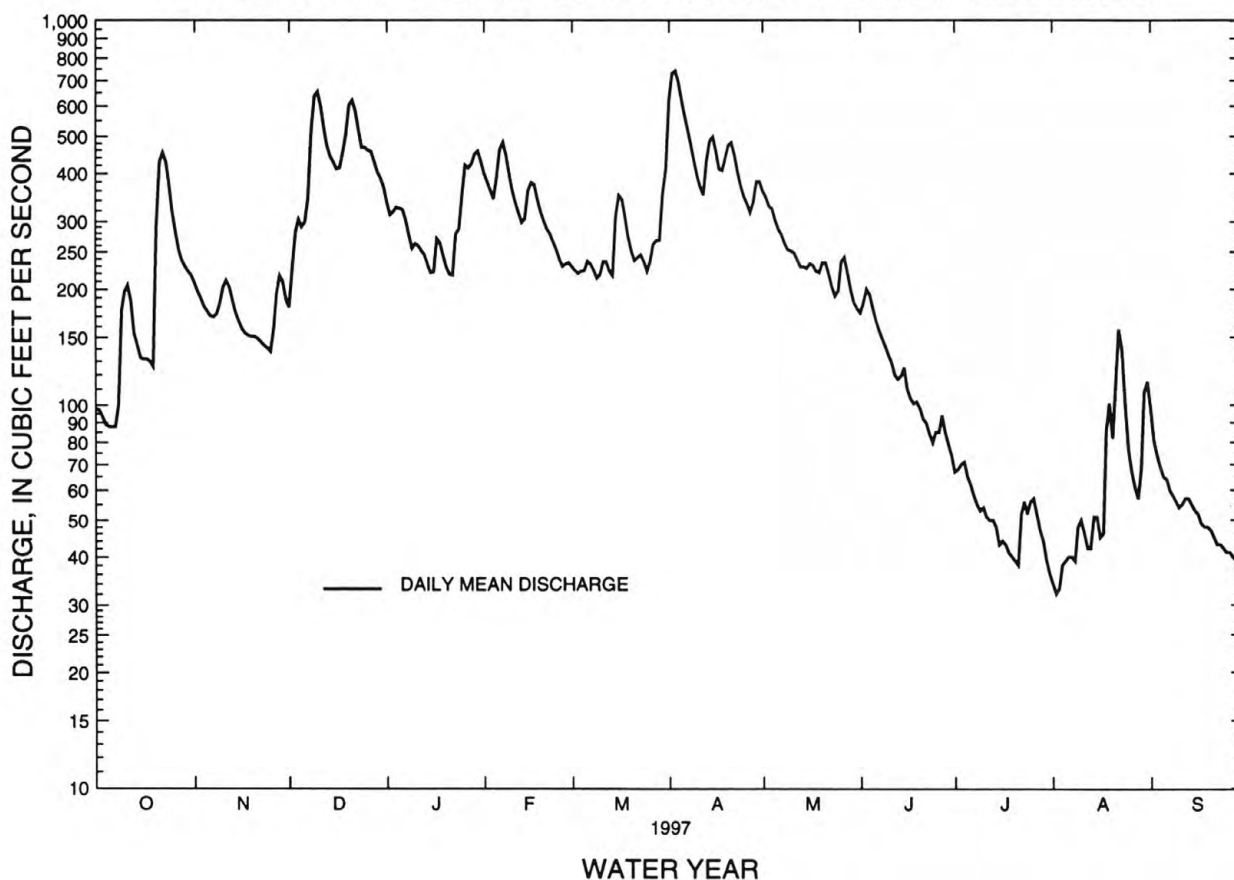
	MEAN	89.4	146	214	247	271	343	334	251	179	98.7	85.5	78.9
MAX	332	471	543	655	453	598	908	464	718	249	275	374	
(WY)	1956	1956	1987	1979	1970	1953	1983	1983	1982	1984	1946	1954	
MIN	31.1	42.2	49.8	51.8	104	145	124	130	82.3	38.2	31.1	29.5	
(WY)	1950	1966	1966	1981	1944	1981	1985	1981	1957	1957	1993	1980	

01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1941 - 1997	
ANNUAL TOTAL	86099		82524		195	
ANNUAL MEAN	235		226		311	
HIGHEST ANNUAL MEAN					84.4	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	655	Dec 10	741	Apr 3	1830	Jun 7 1982
LOWEST DAILY MEAN	52	Sep 5	32	Aug 2	15	Oct 11 1947
ANNUAL SEVEN-DAY MINIMUM	55	Aug 31	36	Jul 30	20	Sep 1 1995
INSTANTANEOUS PEAK FLOW			750	Apr 2	1860	Jun 7 1982
INSTANTANEOUS PEAK STAGE			4.77	Apr 2	8.75	Jun 7 1982
INSTANTANEOUS LOW FLOW			31	Aug 2	7.4	Oct 10 1947
ANNUAL RUNOFF (CFSM)	2.35		2.26		1.95	
ANNUAL RUNOFF (INCHES)	32.03		30.70		26.50	
10 PERCENT EXCEEDS	444		445		393	
50 PERCENT EXCEEDS	197		218		156	
90 PERCENT EXCEEDS	88		48		50	

e Estimated

PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI 01117500



PAWCATUCK RIVER BASIN

01117800 WOOD RIVER NEAR ARCADIA, RI

LOCATION.--Lat 41°34'26", long 71°43'16", Washington County, Hydrologic Unit 01090005, on left bank at upstream side of bridge on Ten Rod Road, 1.8 mi northwest of Arcadia, and 4.5 mi north of Hope Valley.

DRAINAGE AREA.--35.2 mi².

PERIOD OF RECORD.--Discharge: January 1964 to September 1981, October 1982 to current year.
Water-quality records: Water years 1967-74.

GAGE.--Water-stage recorder. Datum of gage is 118.20 ft above sea level (Rhode Island State Board of Public Roads benchmark). Prior to Oct. 1, 1985, datum erroneously published as 137.97 ft above sea level.

REMARKS.--Records good.

AVERAGE DISCHARGE.--32 years (water years 1965-81, 1983-97), 76.3 ft³/s, 29.46 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 896 ft³/s, Mar. 18, 1968, gage height, 8.64 ft; minimum, 4.1 ft³/s, Sept. 1, 1995.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 6, 1982, reached a discharge of 1,010 ft³/s, gage height, 8.97 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	2015	321	5.49	Dec. 20	0645	*327	*5.51
Dec. 8	1600	286	5.18				

Minimum discharge, 8.1 ft³/s, Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	65	93	127	134	81	200	97	46	17	9.1	35
2	27	61	183	121	126	84	175	98	46	17	8.6	29
3	25	62	216	122	120	83	174	92	51	17	11	23
4	27	59	179	126	114	83	183	94	46	18	15	19
5	29	54	147	123	168	83	174	86	50	16	17	17
6	25	53	159	120	187	91	156	84	47	14	21	15
7	23	55	170	111	161	86	142	82	42	13	16	14
8	29	59	270	101	141	81	129	77	39	13	13	13
9	86	74	263	97	127	79	124	76	38	12	20	12
10	75	88	216	99	118	83	113	80	37	12	18	12
11	57	81	184	98	111	86	105	81	34	12	17	16
12	49	73	175	93	106	82	103	76	32	11	14	26
13	42	67	177	91	101	77	166	79	32	11	16	23
14	37	63	188	87	111	76	170	73	31	10	23	20
15	37	60	203	82	136	134	145	68	28	11	19	23
16	31	57	191	110	125	132	129	71	26	13	16	17
17	28	56	208	136	118	119	119	67	25	12	15	15
18	28	56	253	111	110	107	130	62	25	11	41	13
19	30	56	260	93	107	97	166	67	30	9.7	36	12
20	222	56	314	86	104	90	166	73	29	8.8	23	12
21	301	55	264	80	99	85	148	71	26	8.7	32	11
22	259	53	214	79	99	90	131	65	28	19	41	11
23	181	52	189	104	96	87	120	60	25	14	32	10
24	145	51	177	94	92	81	113	56	23	13	25	10
25	117	51	211	170	86	77	109	60	25	16	20	9.9
26	96	91	199	196	83	95	106	72	23	16	18	10
27	83	133	187	155	85	98	100	64	23	17	16	10
28	78	121	168	193	84	89	107	60	21	13	16	10
29	76	106	158	206	---	85	114	55	19	12	20	18
30	71	93	155	165	---	90	104	52	18	10	28	16
31	71	---	142	143	---	117	---	49	---	9.5	36	---
TOTAL	2413	2061	6113	3719	3249	2828	4121	2247	965	406.7	652.7	481.9
MEAN	77.8	68.7	197	120	116	91.2	137	72.5	32.2	13.1	21.1	16.1
MAX	301	133	314	206	187	134	200	98	51	19	41	35
MIN	23	51	93	79	83	76	100	49	18	8.7	8.6	9.9
CFSM	2.21	1.95	5.60	3.41	3.30	2.59	3.90	2.06	.91	.37	.60	.46
IN.	2.55	2.18	6.46	3.93	3.43	2.99	4.36	2.37	1.02	.43	.69	.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

	MEAN	37.1	66.9	102	103	108	134	132	91.1	57.4	31.7	29.6	23.4
MAX	112	163	229	310	187	256	320	153	165	81.4	90.0	55.1	
(WY)	1990	1973	1973	1979	1970	1972	1983	1979	1984	1972	1979	1979	
MIN	12.4	11.2	15.5	19.0	43.6	76.3	44.2	48.7	26.9	12.7	8.86	7.05	
(WY)	1994	1966	1966	1966	1980	1985	1966	1986	1964	1991	1995	1980	

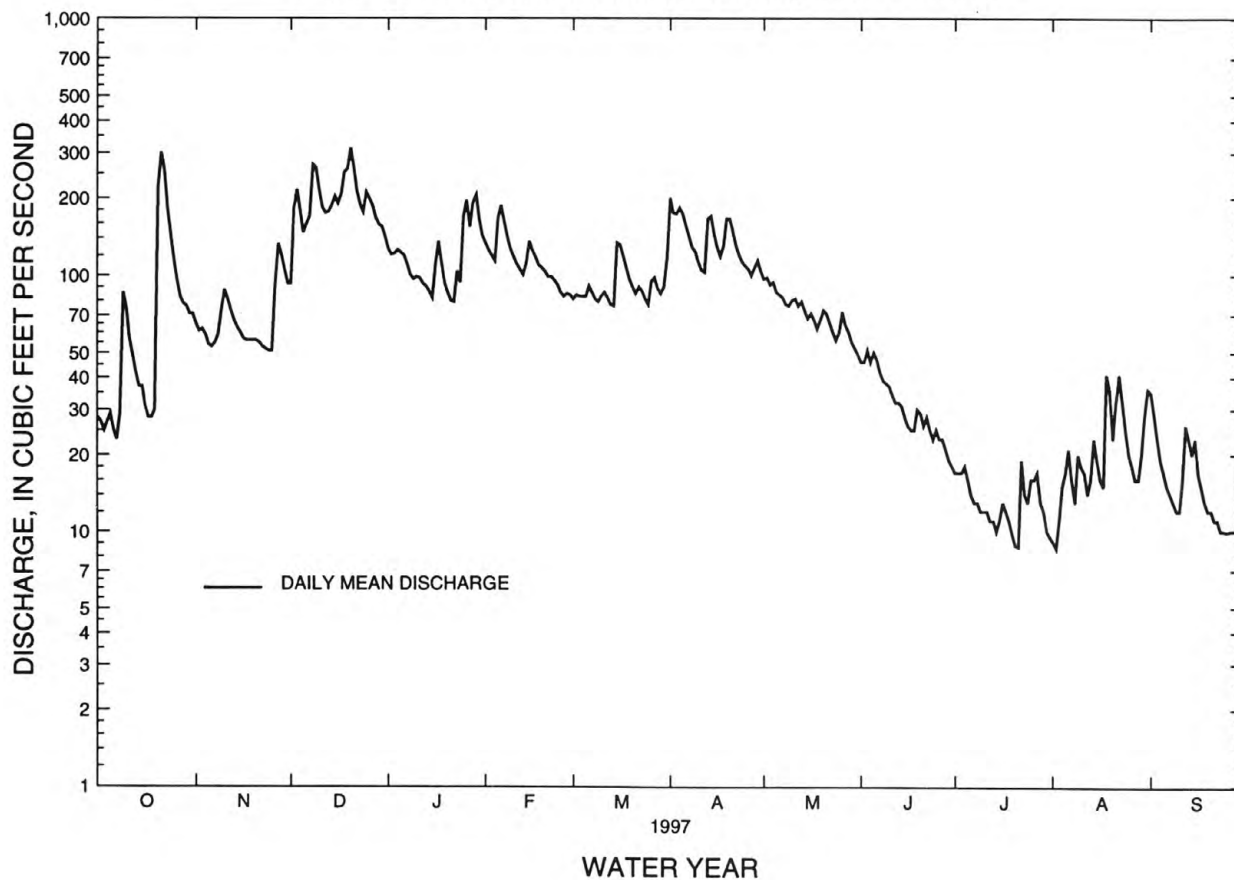
PAWCATUCK RIVER BASIN

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01117800 WOOD RIVER NEAR ARCADIA, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	32566		29257.3		76.3	
ANNUAL MEAN	89.0		80.2		114	
HIGHEST ANNUAL MEAN					33.3	
LOWEST ANNUAL MEAN					826	
HIGHEST DAILY MEAN	381	Apr 17	314	Dec 20	826	Jan 27 1978
LOWEST DAILY MEAN	12	Aug 11	8.6	Aug 2	4.2	Sep 1 1995
ANNUAL SEVEN-DAY MINIMUM	14	Aug 6	10	Sep 22	4.2	Aug 31 1995
INSTANTANEOUS PEAK FLOW			327	Dec 20	896	Mar 18 1968
INSTANTANEOUS PEAK STAGE			5.51	Dec 20	8.64	Mar 18 1968
INSTANTANEOUS LOW FLOW			8.1	Aug 2	4.1	Sep 1 1995
ANNUAL RUNOFF (CFSM)	2.53		2.28		2.17	
ANNUAL RUNOFF (INCHES)	34.42		30.92		29.46	
10 PERCENT EXCEEDS	185		172		156	
50 PERCENT EXCEEDS	69		75		59	
90 PERCENT EXCEEDS	20		13		15	

WOOD RIVER NEAR ARCADIA, RI 01117800



PAWCATUCK RIVER BASIN

01118000 WOOD RIVER AT HOPE VALLEY, RI

LOCATION.--Lat 41°29'53", long 71°43'01", Washington County, Hydrologic Unit 01090005, on right bank 0.2 mi downstream from highway bridge at Hope Valley and 6.6 mi upstream from mouth.

DRAINAGE AREA.--72.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge: August to December 1909 (gage heights only), March 1941 to current year. Records of daily discharge for August to December 1909, published in WSP 261, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1201: 1948(P). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 61.11 ft above sea level. August to December 1909, nonrecording gage at site 1,000 ft upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some seasonal regulation by Locustville Pond on Brushy Brook since 1968. Some regulation at low flow by mills and ponds upstream until 1952; regulation greater prior to 1948.

AVERAGE DISCHARGE.--56 years, 155 ft³/s, 29.14 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,390 ft³/s, June 6, 1982, gage height, 10.26 ft; minimum, 4.0 ft³/s, Sept. 9, 1987; minimum daily, 10 ft³/s, Oct. 13, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1711, at least 12.4 ft in February 1886. Flood in November 1927 reached a stage of 11.7 ft, and flood in March 1936 reached a discharge of 1,540 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 580 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	0400	*763	*5.22	Dec. 20	1300	739	5.12
Dec. 8	1800	712	5.01	Jan. 29	0330	626	4.62

Minimum discharge, 20 ft³/s, Aug. 3; minimum daily, 21 ft³/s, Aug. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	145	166	252	306	180	504	210	96	40	22	60
2	46	141	337	242	287	178	431	218	99	40	21	55
3	45	136	476	240	269	177	402	201	129	39	21	47
4	41	130	358	248	255	176	398	209	119	39	27	41
5	52	124	283	246	392	174	367	199	116	37	30	36
6	52	116	313	241	505	184	323	187	114	35	35	34
7	36	119	387	226	383	173	293	187	92	33	35	36
8	41	122	638	208	317	174	269	178	77	32	31	37
9	132	140	633	197	278	166	248	165	76	31	36	30
10	159	150	495	199	258	174	232	172	77	31	37	28
11	112	150	396	207	243	188	217	177	72	29	34	35
12	91	143	360	194	231	183	213	164	68	28	31	66
13	77	131	358	189	220	171	390	160	67	27	33	60
14	73	124	366	182	236	170	419	159	73	26	41	47
15	60	117	388	162	321	319	317	151	61	26	38	44
16	67	104	364	208	282	312	270	156	67	28	34	40
17	51	107	392	329	254	258	253	152	63	28	37	35
18	49	86	573	246	237	234	271	141	63	27	73	31
19	65	102	569	205	228	212	351	153	54	25	82	29
20	448	110	715	189	221	200	371	165	57	23	59	27
21	688	99	601	182	211	191	306	156	54	22	83	27
22	544	98	469	176	208	198	270	148	53	32	105	25
23	393	92	399	226	199	201	246	137	52	35	85	24
24	317	88	359	225	196	186	236	108	48	32	56	24
25	253	89	453	360	189	171	229	129	51	34	48	23
26	216	149	426	502	181	208	215	172	53	34	43	23
27	201	268	375	346	180	230	207	152	55	33	39	22
28	194	219	335	435	168	203	227	138	49	32	36	22
29	196	190	307	566	---	192	259	129	45	28	38	27
30	166	167	304	407	---	200	230	120	43	25	56	31
31	155	---	280	333	---	243	---	114	---	23	62	---
TOTAL	5069	3956	12875	8168	7255	6226	8964	5007	2143	954	1408	1066
MEAN	164	132	415	263	259	201	299	162	71.4	30.8	45.4	35.5
MAX	688	268	715	566	505	319	504	218	129	40	105	66
MIN	36	86	166	162	168	166	207	108	43	22	21	22
CF5M	2.26	1.82	5.74	3.64	3.58	2.77	4.13	2.23	.99	.43	.63	.49
IN.	2.60	2.03	6.62	4.20	3.73	3.20	4.61	2.57	1.10	.49	.72	.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1997, BY WATER YEAR (WY)

	MEAN	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
MEAN	76.9	131	190	202	217	275	263	190	127	68.9	62.5	59.0
MAX	341	386	477	666	398	465	664	365	540	168	183	311
(WY)	1956	1956	1987	1979	1970	1972	1983	1979	1982	1972	1979	1954
MIN	22.6	24.9	35.1	36.8	87.6	147	89.4	91.9	48.3	27.7	20.5	17.4
(WY)	1958	1966	1966	1981	1980	1981	1966	1986	1957	1957	1957	1957

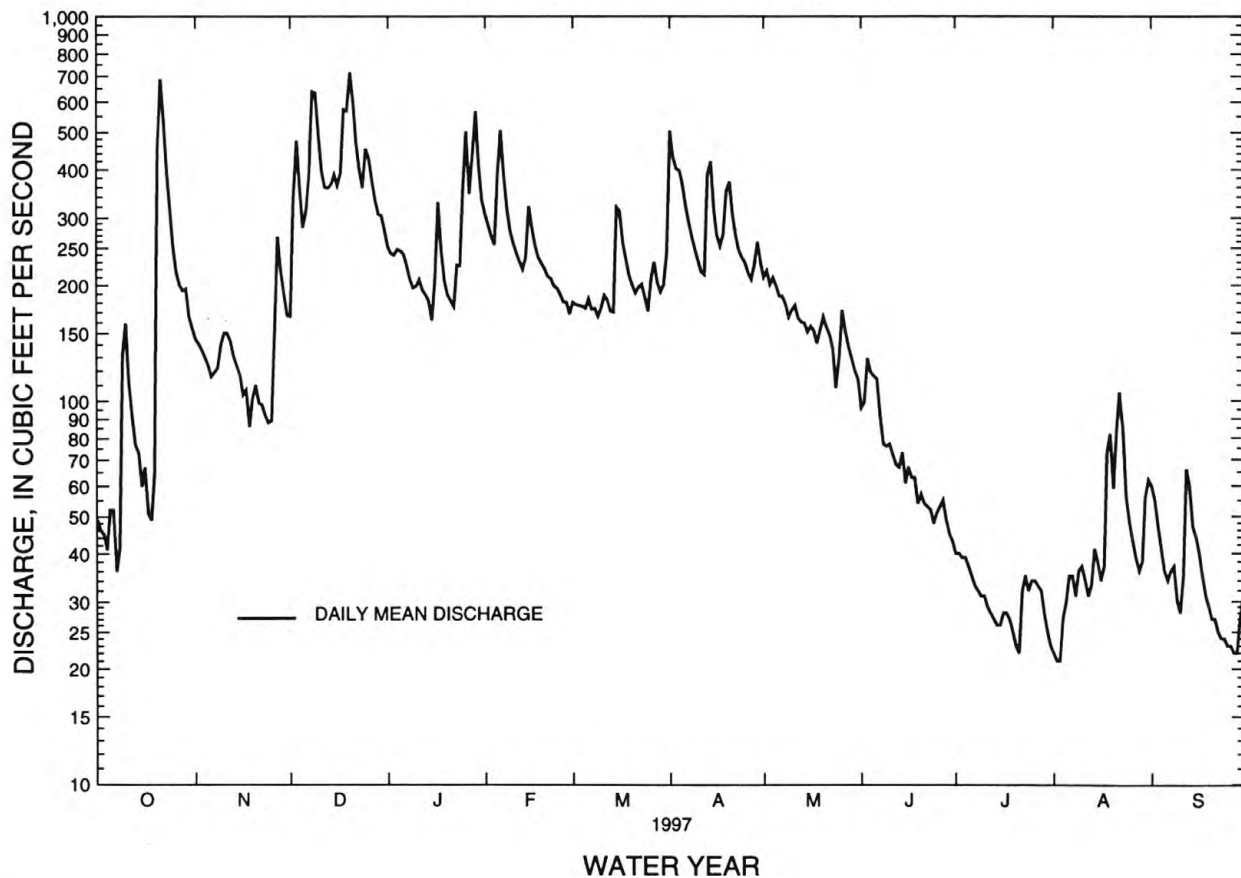
PAWCATUCK RIVER BASIN

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01118000 WOOD RIVER AT HOPE VALLEY, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1941 - 1997	
ANNUAL TOTAL	68837		63091		155	
ANNUAL MEAN	188		173		235	
HIGHEST ANNUAL MEAN					71.2	1973
LOWEST ANNUAL MEAN					2200	1966
HIGHEST DAILY MEAN	891	Apr 17	715	Dec 20	10	Jun 6 1982
LOWEST DAILY MEAN	23	Sep 6	21	Aug 2	14	Oct 13 1941
ANNUAL SEVEN-DAY MINIMUM	28	Aug 31	23	Sep 22	2390	Sep 5 1995
INSTANTANEOUS PEAK FLOW			763	Oct 21	10.26	Jun 6 1982
INSTANTANEOUS PEAK STAGE			5.22	Oct 21	4.0	Jun 6 1982
INSTANTANEOUS LOW FLOW			20	Aug 3	2.15	Sep 9 1987
ANNUAL RUNOFF (CFSM)	2.60		2.39		29.14	
ANNUAL RUNOFF (INCHES)	35.37		32.42		313	
10 PERCENT EXCEEDS	392		366		120	
50 PERCENT EXCEEDS	143		159		35	
90 PERCENT EXCEEDS	43		31			

WOOD RIVER AT HOPE VALLEY, RI 01118000



PAWCATUCK RIVER BASIN

01118000 WOOD RIVER AT HOPE VALLEY, RI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to current year.

WATER TEMPERATURE: October 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1977.

REMARKS.--Records good. Interruptions in the record are due to malfunctions of the instrument. Extremes for period of daily record and current year are for those values reported.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 298 $\mu\text{S}/\text{cm}$, Feb. 12, 1988; minimum, 21 $\mu\text{S}/\text{cm}$, Jan. 23, 1979.

WATER TEMPERATURE: Maximum recorded, 29.5°C, July 24, 1987, July 26, 27, 28, 1989; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 146 $\mu\text{S}/\text{cm}$, Sept. 19-21; minimum, 81 $\mu\text{S}/\text{cm}$, Oct. 23, Apr. 21, 22.

WATER TEMPERATURE: Maximum recorded, 26.0°C, July 17-19; minimum, 1.5°C, Jan. 13, 17-20, 30.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	112	106	107	109	99	102	99	94	96	94	90	91
2	112	105	106	100	98	99	101	93	96	97	92	95
3	112	105	106	99	97	98	96	84	89	97	96	97
4	111	105	106	102	98	99	84	83	83	97	96	96
5	106	103	105	105	99	100	86	83	85	97	96	96
6	104	101	102	106	100	101	95	86	89	101	95	96
7	110	102	103	108	102	103	94	88	90	97	95	96
8	107	104	106	105	103	104	96	88	94	98	96	97
9	111	105	107	112	105	107	95	92	93	98	97	98
10	106	98	101	109	107	108	96	84	92	105	97	102
11	105	99	100	109	105	108	85	82	83	103	100	102
12	104	98	100	105	102	103	86	85	85	103	101	102
13	105	99	100	102	100	101	86	85	86	103	101	103
14	106	99	100	101	100	101	90	86	86	104	103	103
15	106	100	102	101	99	99	86	85	85	104	103	103
16	109	103	104	99	98	99	87	85	86	109	103	105
17	109	101	103	105	99	100	90	86	87	110	99	102
18	109	102	103	102	99	100	95	87	91	102	99	101
19	109	102	104	104	102	103	97	91	93	104	102	103
20	103	93	98	104	103	103	96	86	89	106	104	105
21	102	94	97	103	102	103	88	83	85	106	105	105
22	94	82	90	104	102	103	90	84	86	110	104	105
23	91	81	87	103	101	102	86	84	85	110	105	107
24	95	88	91	103	101	102	91	85	87	110	104	105
25	100	92	96	103	101	102	90	87	88	110	102	106
26	103	96	99	110	102	105	88	85	86	105	96	100
27	104	98	100	109	94	99	90	84	86	98	92	94
28	111	100	104	94	92	93	88	86	87	98	92	95
29	115	106	109	93	92	93	94	87	89	98	93	95
30	113	107	108	94	93	93	91	89	90	94	92	93
31	111	103	107	---	---	---	92	90	91	93	92	92
MONTH	115	81	102	112	92	101	101	82	88	110	90	100

PAWCATUCK RIVER BASIN

01118000 WOOD RIVER AT HOPE VALLEY, RI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.5	15.0	15.5	11.5	10.0	10.5	4.5	3.5	4.0	3.5	2.0	2.5
2	16.5	15.0	15.5	10.0	9.0	9.5	7.0	4.5	6.0	2.5	2.0	2.0
3	16.0	16.0	16.0	9.0	8.0	8.5	7.0	6.0	6.5	3.0	2.5	2.5
4	16.0	14.5	15.0	8.0	7.5	8.0	6.0	5.0	5.5	4.0	3.0	3.5
5	14.5	13.5	14.0	8.5	7.5	8.0	5.0	5.0	5.0	5.0	4.0	4.5
6	14.0	13.0	13.5	9.0	8.0	8.5	5.0	4.0	4.5	5.0	5.0	5.0
7	13.0	12.0	12.5	10.0	9.0	9.0	4.0	3.5	3.5	5.0	3.5	4.5
8	13.0	12.0	12.0	11.5	9.5	10.5	3.5	3.0	3.5	3.5	2.5	3.0
9	13.0	12.5	12.5	13.5	11.5	12.5	3.5	3.0	3.0	2.5	2.0	2.0
10	13.5	13.0	13.5	13.0	11.5	12.0	3.0	3.0	3.0	3.0	2.0	2.5
11	14.0	13.0	13.5	11.5	9.5	10.5	3.5	3.0	3.0	3.0	2.5	2.5
12	14.0	12.0	12.5	9.5	8.0	9.0	4.0	3.5	4.0	2.5	2.0	2.0
13	12.5	12.0	12.0	8.0	7.0	7.5	5.0	4.0	4.5	2.0	1.5	2.0
14	13.0	12.0	12.5	7.0	6.0	6.5	5.5	5.0	5.0	2.5	2.0	2.0
15	13.0	11.5	12.0	6.0	5.0	5.5	5.0	5.0	5.0	2.5	2.0	2.0
16	13.0	11.5	12.0	5.0	4.5	4.5	5.5	5.0	5.0	3.0	2.0	2.5
17	13.5	11.5	12.0	5.0	4.0	4.5	6.5	5.5	6.0	3.0	1.5	2.0
18	13.0	12.0	12.0	5.0	4.0	4.5	7.5	6.5	7.0	2.0	1.5	1.5
19	13.0	12.0	12.0	5.5	5.0	5.0	8.5	7.5	8.0	2.0	1.5	1.5
20	12.5	12.5	12.5	5.5	5.0	5.0	8.0	6.0	7.0	2.0	1.5	1.5
21	13.0	12.5	12.5	5.0	5.0	5.0	6.0	4.0	4.5	2.0	2.0	2.0
22	13.0	12.0	12.5	5.0	4.5	5.0	4.0	3.5	3.5	2.5	2.0	2.0
23	13.0	12.0	13.0	5.0	4.5	4.5	4.0	3.5	3.5	3.5	2.5	3.0
24	13.5	12.5	13.0	5.0	4.5	5.0	5.0	4.0	4.5	3.5	3.0	3.0
25	14.0	13.0	13.5	5.5	5.0	5.0	5.5	5.0	5.5	4.0	2.5	3.5
26	13.5	12.5	13.0	7.0	5.5	6.0	5.0	3.5	4.0	4.0	2.5	3.0
27	13.0	12.0	12.5	7.0	5.5	6.0	4.5	3.5	4.0	2.5	2.0	2.0
28	13.5	12.0	12.5	5.5	4.0	4.5	4.0	4.0	4.0	3.0	2.0	2.5
29	13.0	11.5	12.0	4.0	3.0	3.5	5.5	4.0	5.0	3.0	2.0	2.5
30	12.0	11.0	11.0	3.5	3.0	3.0	6.0	5.5	5.5	2.0	1.5	2.0
31	11.5	10.5	11.0	---	---	---	5.5	3.5	4.5	2.5	2.0	2.0
MONTH	16.5	10.5	13.0	13.5	3.0	7.0	8.5	3.0	4.5	5.0	1.5	2.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.0	2.5	3.0	6.5	6.0	6.5	7.5	4.5	5.0	11.5	10.5	11.0
2	4.0	3.0	3.5	7.0	6.0	6.5	5.0	3.5	4.5	12.5	11.0	11.5
3	4.0	3.5	3.5	6.5	5.5	6.0	6.5	5.0	5.5	13.0	12.0	12.5
4	4.0	3.5	3.5	5.5	5.0	5.5	8.0	6.0	7.0	13.0	12.0	12.5
5	4.5	3.5	4.0	5.5	5.0	5.5	9.0	7.5	8.5	13.5	11.5	12.5
6	4.5	4.0	4.0	7.0	5.5	6.0	8.5	8.0	8.5	12.5	11.0	11.5
7	4.0	3.5	3.5	6.0	4.5	5.5	10.5	8.0	9.0	12.0	10.5	11.0
8	3.5	3.0	3.5	5.0	4.0	4.5	11.0	9.5	10.0	12.0	10.5	11.5
9	3.5	3.0	3.0	4.5	3.5	4.0	10.0	8.0	9.0	11.5	10.5	11.0
10	3.5	3.0	3.0	5.0	3.5	4.0	8.5	7.0	7.5	11.5	11.0	11.5
11	3.5	3.0	3.0	4.5	3.5	4.0	8.5	6.5	7.0	13.0	8.5	11.0
12	3.5	3.5	3.5	4.5	3.5	4.0	8.5	7.0	7.5	9.5	7.0	8.0e
13	3.5	3.0	3.5	4.5	3.5	4.0	9.5	8.0	8.5	7.5	7.0	7.0
14	3.5	3.0	3.5	3.5	3.0	3.5	10.0	8.5	9.5	10.5	7.0	9.0
15	4.0	3.5	4.0	5.0	3.5	4.0	10.0	8.5	9.0	11.0	9.5	10.0
16	4.0	3.5	4.0	4.5	3.5	4.0	10.0	8.5	9.0	10.5	9.5	10.0
17	4.0	3.5	3.5	3.5	3.0	3.5	9.5	9.0	9.0	12.5	9.5	11.5
18	4.5	3.5	3.5	4.5	3.5	4.0	9.0	8.5	9.0	13.0	11.0	12.0
19	5.5	4.0	4.5	5.0	4.0	4.5	8.5	7.5	8.0	12.5	11.5	12.0
20	6.5	5.5	5.5	4.5	4.0	4.5	9.0	7.0	8.0	13.0	11.5	12.0
21	6.0	5.5	5.5	5.5	4.0	4.5	10.0	9.0	9.0	13.0	12.0	12.5
22	7.5	5.5	6.5	6.0	5.0	5.5	11.0	9.5	10.0	12.5	11.5	12.0
23	7.5	6.5	6.5	6.0	5.0	5.5	11.5	10.0	10.5	13.0	11.5	12.0
24	6.5	5.5	6.0	5.5	4.0	5.0	11.0	9.0	9.5	13.5	11.5	12.5
25	5.5	4.0	4.5	5.5	4.0	4.5	9.0	8.0	8.5	12.5	12.0	12.0
26	4.5	3.5	4.0	6.5	5.0	5.5	10.0	8.0	9.0	13.5	12.0	12.5
27	6.0	4.5	5.0	7.5	6.0	6.5	10.5	9.0	9.5	15.5	13.0	14.0
28	7.0	6.0	6.5	8.5	6.5	7.5	10.5	9.5	10.0	15.0	12.5	14.0
29	---	---	---	9.0	8.5	8.5	11.0	9.0	10.0	16.5	13.0	15.0
30	---	---	---	10.5	8.5	9.0	12.0	9.5	11.0	17.0	15.5	16.0
31	---	---	---	10.0	7.5	9.0	---	---	---	17.5	16.0	16.5
MONTH	7.5	2.5	4.0	10.5	3.0	5.5	12.0	3.5	8.5	17.5	7.0	12.0

PAWCATUCK RIVER BASIN

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01118000 WOOD RIVER AT HOPE VALLEY, RI--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.5	17.0	17.0	24.5	22.5	23.5	23.0	22.0	22.5	20.5	20.0	20.0
2	17.5	16.5	17.0	24.5	23.5	24.0	23.5	22.5	23.0	21.0	20.0	20.5
3	16.5	15.5	16.0	24.0	23.5	24.0	23.5	23.0	23.0	21.0	20.5	20.5
4	16.0	15.0	15.5	24.5	23.5	24.0	23.5	22.5	23.0	20.5	19.5	20.0
5	17.0	15.0	15.5	24.5	23.0	23.5	23.0	22.0	22.5	19.5	18.5	19.0
6	17.0	15.5	16.0	24.0	22.5	23.5	22.5	21.5	22.0	19.5	18.0	19.0
7	16.5	15.5	16.0	24.0	22.5	23.5	22.0	21.0	21.5	19.0	18.5	18.5
8	16.5	15.0	15.5	24.0	23.0	23.5	22.0	20.5	21.0	19.5	19.0	19.0
9	17.0	15.0	15.5	24.5	23.5	24.0	21.5	20.5	20.5	19.0	18.5	19.0
10	19.5	15.5	17.0	24.5	23.5	24.0	22.0	20.5	21.0	18.5	18.5	18.5
11	21.0	18.5	19.5	24.5	23.5	24.0	22.5	21.0	22.0	19.0	18.0	19.0
12	22.0	20.0	20.5	24.5	23.5	24.0	22.5	21.5	22.0	19.0	18.0	18.5
13	21.5	20.5	21.0	24.5	23.5	24.0	22.5	21.5	22.0	19.5	18.5	19.0
14	22.5	20.5	21.0	25.0	24.0	24.5	22.5	21.5	22.0	20.0	19.0	19.5
15	22.0	20.0	21.0	25.5	24.5	25.0	22.5	21.5	22.0	20.0	19.5	19.5
16	21.5	19.5	20.5	25.5	24.5	25.0	23.0	21.5	22.0	20.0	19.0	20.0
17	21.5	20.0	21.0	26.0	25.0	25.5	23.5	22.5	23.0	20.0	19.0	19.5
18	21.5	20.0	21.0	26.0	25.0	25.5	23.5	22.0	22.5	20.0	19.0	19.5
19	21.5	20.0	20.5	26.0	25.0	25.5	22.5	21.5	22.0	19.5	19.0	19.5
20	22.0	20.5	21.5	25.5	23.5	24.0	22.0	20.5	21.0	19.5	18.5	19.0
21	23.0	21.0	22.0	24.0	23.5	23.5	21.0	20.0	20.5	19.0	18.0	18.5
22	24.0	22.0	23.0	24.0	23.0	23.5	20.5	19.5	20.0	18.0	15.0	17.5e
23	24.0	22.5	23.5	24.0	23.0	23.0	20.5	19.5	20.0	13.5	10.5	11.5e
24	24.0	23.0	23.5	23.5	21.5	22.5	20.5	19.5	20.0	10.5	9.5	10.0
25	24.0	22.5	23.0	21.5	20.5	21.0	20.5	19.5	20.0	10.0	8.0	9.0e
26	24.0	23.0	23.5	21.5	20.0	20.5	21.0	19.5	20.0	---	---	---
27	24.0	23.0	23.5	22.0	20.5	21.5	21.0	20.0	20.5	15.5	14.5	15.0
28	24.0	22.5	23.5	23.0	21.5	22.0	21.0	20.0	20.0	15.0	14.5	15.0
29	24.5	22.5	23.5	23.5	22.0	23.0	20.0	19.5	20.0	16.0	15.0	15.5
30	24.5	22.5	23.5	23.0	22.0	22.5	20.0	19.5	19.5	16.0	15.5	15.5
31	---	---	---	23.0	21.5	22.0	20.5	19.5	20.0	---	---	---
MONTH	24.5	15.0	20.0	26.0	20.0	23.5	23.5	19.5	21.5	21.0	9.5	18.5
YEAR	26.0	1.5	11.5									

e = estimated

PAWCATUCK RIVER BASIN

01118500 PAWCATUCK RIVER AT WESTERLY, RI

LOCATION.--Lat 41°23'01", long 71°50'01", Washington County, Hydrologic Unit 01090005, on left bank at Westerly, 2.1 mi downstream from Shunock River.

DRAINAGE AREA.--295 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1940 to current year.

REVISED RECORDS.--WSP 1051: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.76 ft below sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diurnal fluctuation at low flow prior to 1962 by mills upstream; regulation much greater prior to 1958. Diversion upstream for municipal supply of Westerly.

AVERAGE DISCHARGE.--56 years (water years 1942-97), 576 ft³/s, 26.52 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,070 ft³/s, June 6, 1982, gage height, 12.86 ft; minimum daily, 25 ft³/s, Aug. 17, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1936 reached a discharge of 3,150 ft³/s, by computation of flow over dam 1.5 mi upstream. Maximum discharge since 1886 occurred in November 1927 and was possibly more than twice that in March 1936. Maximum stage since at least 1635, 15.0 ft Sept. 21, 1938, due to hurricane tidal wave.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,010 ft³/s, Dec. 9, gage height, 6.84 ft; maximum gage height, 7.30 ft, Dec. 9, backwater from tide; minimum daily, 88 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	252	701	648	1040	1230	688	1490	951	439	163	93	186
2	242	656	944	980	1150	683	1670	937	438	163	92	171
3	234	612	1260	944	1080	676	1700	892	477	163	93	155
4	223	582	1230	959	1020	673	1620	846	488	160	89	140
5	210	559	1110	966	1180	687	1510	809	455	154	94	130
6	220	539	1110	959	1460	722	1410	779	417	150	101	125
7	218	527	1300	915	1440	733	1320	775	396	142	107	123
8	216	540	1870	845	1340	687	1210	715	362	133	106	123
9	433	594	1990	787	1210	665	1130	701	332	127	117	123
10	573	687	1880	765	1090	673	1040	680	315	126	125	117
11	548	687	1680	779	1000	743	966	673	302	121	117	114
12	449	651	1550	756	959	743	926	653	284	117	110	161
13	385	605	1450	722	903	708	1170	617	277	113	108	184
14	345	560	1360	687	900	680	1350	615	281	112	118	154
15	322	523	1320	667	1090	989	1320	620	277	106	120	138
16	295	482	1280	708	1130	1190	1230	632	259	102	111	128
17	284	477	1320	935	1080	1100	1140	608	242	101	108	128
18	276	460	1450	e935	1010	998	1090	600	234	101	148	116
19	264	449	1620	e830	959	912	1170	596	242	98	219	113
20	e600	449	1950	e740	908	836	1260	634	223	94	193	103
21	e1700	438	1910	694	873	783	1230	622	216	94	223	101
22	e1550	433	1750	670	839	765	1160	587	209	111	350	100
23	e1450	422	1560	810	810	795	1080	540	199	118	321	95
24	e1300	419	1420	885	769	756	1000	506	190	116	246	94
25	e1200	406	1430	989	732	708	959	494	193	120	183	93
26	e1100	482	1420	1290	703	732	892	629	205	128	154	91
27	e1000	818	1380	1300	712	833	855	659	223	120	140	89
28	e950	862	1320	1310	713	832	892	595	205	113	132	88
29	e880	771	1250	1470	---	799	1020	522	187	109	128	96
30	e800	685	1180	1430	---	885	1030	482	175	102	166	101
31	736	---	1130	1310	---	1030	---	455	---	95	187	---
TOTAL	19255	17076	44072	29077	28290	24704	35840	20424	8742	3772	4599	3680
MEAN	621	569	1422	938	1010	797	1195	659	291	122	148	123
MAX	1700	862	1990	1470	1460	1190	1700	951	488	163	350	186
MIN	210	406	648	667	703	665	855	455	175	94	89	88
CFSM	2.11	1.93	4.82	3.18	3.42	2.70	4.05	2.23	.99	.41	.50	.42
IN.	2.43	2.15	5.56	3.67	3.57	3.12	4.52	2.58	1.10	.48	.58	.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1997, BY WATER YEAR (WY)

	MEAN	263	457	674	755	814	1033	981	711	488	262	235	219
MAX	1186	1450	1789	2151	1377	1775	2603	1274	2246	642	763	1233	
(WY)	1956	1956	1987	1979	1982	1994	1983	1948	1982	1959	1946	1954	
MIN	87.2	93.2	115	131	325	495	371	325	210	98.5	81.7	65.7	
(WY)	1950	1966	1966	1981	1980	1981	1966	1986	1942	1957	1964	1964	

PAWCATUCK RIVER BASIN

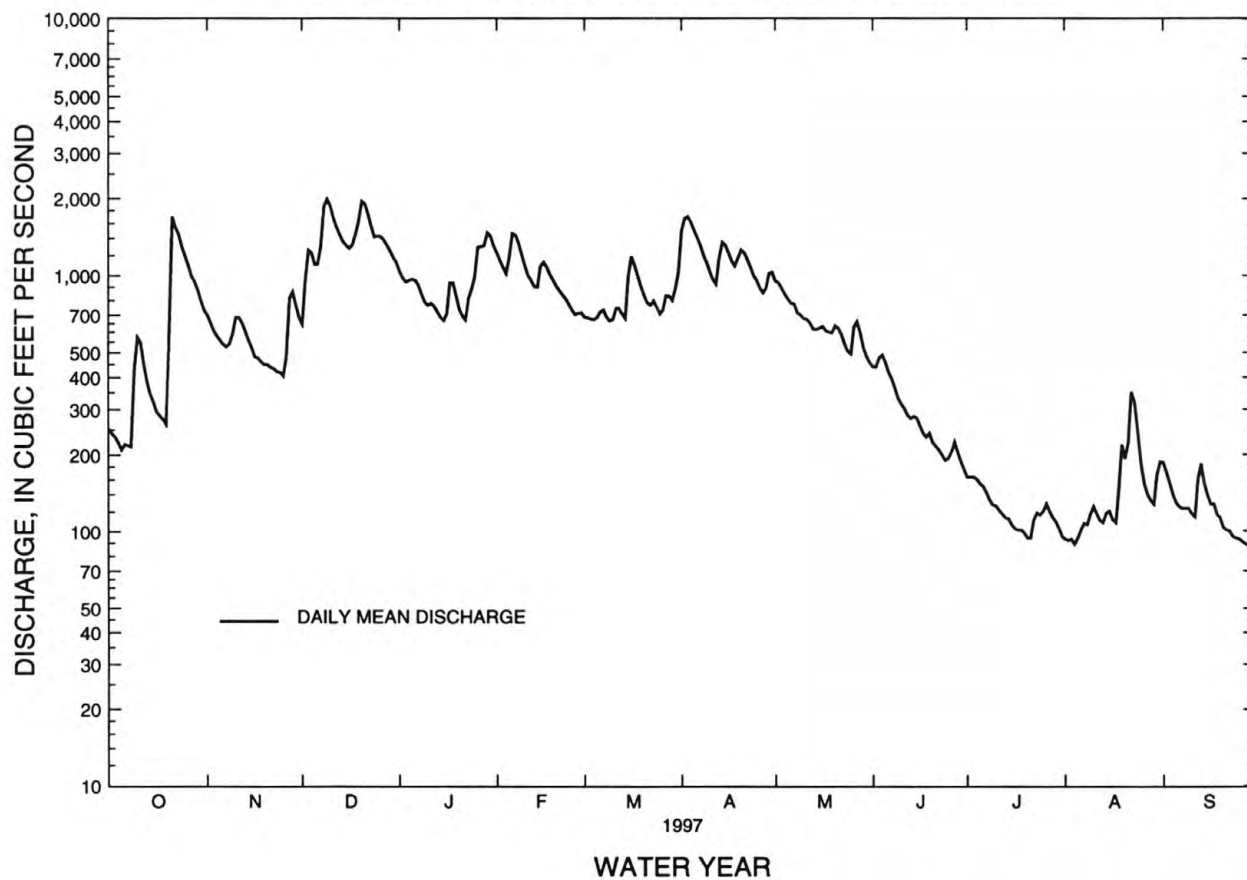
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01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1941 - 1997	
ANNUAL TOTAL	257230		239531		576	
ANNUAL MEAN	703		656		871	
HIGHEST ANNUAL MEAN					251	
LOWEST ANNUAL MEAN					1973	
HIGHEST DAILY MEAN	1990	Dec 9	1990	Dec 9	6220	Jun 6 1982
LOWEST DAILY MEAN	148	Sep 6	88	Sep 28	25	Aug 17 1941
ANNUAL SEVEN-DAY MINIMUM	154	Aug 31	92	Sep 23	47	Sep 2 1995
INSTANTANEOUS PEAK FLOW			2010	Dec 9	7070	Jun 6 1982
INSTANTANEOUS PEAK STAGE			6.84	Dec 9	12.86	Jun 6 1982
INSTANTANEOUS LOW FLOW			88	Sep 28		
ANNUAL RUNOFF (CFSM)	2.38		2.22		1.95	
ANNUAL RUNOFF (INCHES)	32.44		30.21		26.52	
10 PERCENT EXCEEDS	1370		1320		1190	
50 PERCENT EXCEEDS	604		651		450	
90 PERCENT EXCEEDS	214		113		127	

e Estimated

PAWCATUCK RIVER AT WESTERLY, RI 01118500



PAWCATUCK RIVER BASIN

01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953, 1963, 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1978 to September 1992.

WATER TEMPERATURE: June 1978 to September 1992.

INSTRUMENTATION.--Water-quality monitor, June 1978 to September 1992.

REMARKS.--Instantaneous records are representative of the cross section while continuous records are based on point samples.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 354 μ S/cm, June 25, 1985; minimum, 27 μ S/cm, June 7, 1982.

WATER TEMPERATURE: Maximum recorded, 30.0°C Aug. 9, 1980, Aug. 17, 18, 1987; minimum, 0.0°C on many days during the winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
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DEC											
11...	1125	1780	72	6.0	8.5	2.5	86	1.1	13.5	98	19
JAN											
21...	1115	694	117	6.6	4.5	.0	--	1.4	15.7	105	--
MAR											
13...	1045	708	112	6.8	4.0	4.0	--	1.7	13.3	100	14
JUN											
18...	1230	238	151	7.3	20.0	20.5	--	2.5	9.0	100	--
AUG											
27...	1015	130	155	7.2	26.5	20.5	65	1.3	9.7	108	--

DATE	COLI- FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	ENTERO- COCCI ME,MF WATER TOTAL (COL / 100 ML) (31649)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CAR- BONATE WATER DIS IT FIELD CO3 (00452)	BICAR- BONATE WATER DIS IT FIELD HCO3 (00453)	ALKA- LINITY WAT DIS TOT IT FIELD CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
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DEC											
11...	55	49	11	2.9	0.99	8.9	0.90	0	3	32	7.7
JAN											
21...	K15	K2	16	4.3	1.3	13	1.0	0	9	7	12
MAR											
13...	K2	K6	16	4.3	1.2	14	1.1	0	6	5	12
JUN											
18...	79	37	20	5.2	1.6	20	1.3	0	15	12	20
AUG											
27...	31	21	23	6.3	1.8	19	1.2	0	11	9	25

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
------	--	---	--	---	---	---	--	--	--	---	---

DEC											
11...	13	<0.10	6.9	59	2	64	0.020	0.190	0.030	0.27	0.30
JAN											
21...	18	.10	9.0	72	--	84	<.010	.370	.030	.17	.20
MAR											
13...	17	.20	6.7	87	4	76	<.010	.360	.050	.15	.20
JUN											
18...	19	.13	6.6	100	<1	122	<.010	.499	<.015	--	<.20
AUG											
27...	18	.13	9.1	113	--	--	<.010	.345	.021	.35	.37

PAWCATUCK RIVER BASIN

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01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
DEC										
11...	0.20	0.49	<0.010	<0.010	0.010	170	149	<1.0	9.0	<1.0
JAN										
21...	<.20	.57	<.010	<.010	<.010	120	98	<1.0	13	<1.0
MAR										
13...	<.20	.56	<.010	<.010	<.010	--	--	--	--	--
JUN										
18...	.24	--	<.010	<.010	<.010	140	92	<1.0	13	<1.0
AUG										
27...	.30	.72	.028	.021	.014	120	114	<1.0	16	<1.0

DATE	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)
DEC										
11...	<1.0	<1.0	<1.0	<1.0	300	210	<1.0	50	43	--
JAN										
21...	<1.0	<1.0	<1.0	<1.0	280	200	<1.0	40	40	<0.10
MAR										
13...	--	--	--	--	--	160	--	--	30	--
JUN										
18...	<.10	<1.0	<1.0	1.2	720	430	<.50	49	38	<.10
AUG										
27...	<.10	<1.0	<1.0	1.6	590	380	<.50	45	38	<.10

DATE	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHENOLS TOTAL (UG/L) (32730)
DEC							
11...	<1.0	<1.0	<1.0	10	<1.0	7.8	<1
JAN							
21...	<1.0	<1.0	<1.0	4.0	<1.0	5.3	--
MAR							
13...	--	--	--	--	--	4.9	<1
JUN							
18...	<1.0	<1.0	<1.0	2.5	<1.0	7.2	--
AUG							
27...	<1.0	<1.0	<1.0	5.2	<1.0	8.1	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDIMENT, SUS- PENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
DEC					
11...	1125	1780	55	264	36
JAN					
21...	1115	694	24	45	60
MAR					
13...	1045	708	31	59	61
JUN					
18...	1230	238	3	1.9	82
AUG					
27...	1015	130	3	1.1	84

LOCATION.--Lat 42°41'03", long 72°05'02", Worcester County, Hydrologic Unit 01080202, on right bank 10 ft downstream from Nolan Bridge, 0.3 mi downstream from Tarbell Brook, 2 mi west of Winchendon, and at mile 32.8.

PERIOD OF RECORD.--Discharge: June 1916 to current year. March to May 1917, monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1957, 1965-66, 1994-95.

GAGE.--Water-stage recorder. Concrete control since Oct. 6, 1933. Datum of gage is 826.66 ft above sea level. Prior to July 27, 1916, nonrecording gage at bridge at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by powerplant and by Lake Monomonac and other reservoirs upstream.

AVERAGE DISCHARGE.--81 years, 145 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,500 ft³/s, Sept. 22, 1938, gage height, 21.55 ft, from floodmarks, from rating curve extended above 2,000 ft³/s, on basis of computation of peak flow over dam; practically no flow because of regulation Sept. 20, 1918, Jan. 14, 1925.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft³/s, Oct. 22; minimum daily, 11 ft³/s, June 30, Aug. 3, 7-11.

MEAN	94.8	120	143	141	136	260	381	183	110	61.1	52.4	65.9
MAX	520	416	500	385	400	931	789	412	515	261	249	752
(WY)	1956	1956	1997	1996	1976	1936	1960	1967	1984	1938	1928	1938
MIN	11.6	15.7	30.7	13.3	24.4	39.0	93.7	55.0	14.1	8.17	8.24	5.75
(WY)	1948	1979	1979	1981	1980	1965	1985	1965	1964	1965	1965	1964

CONNECTICUT RIVER BASIN

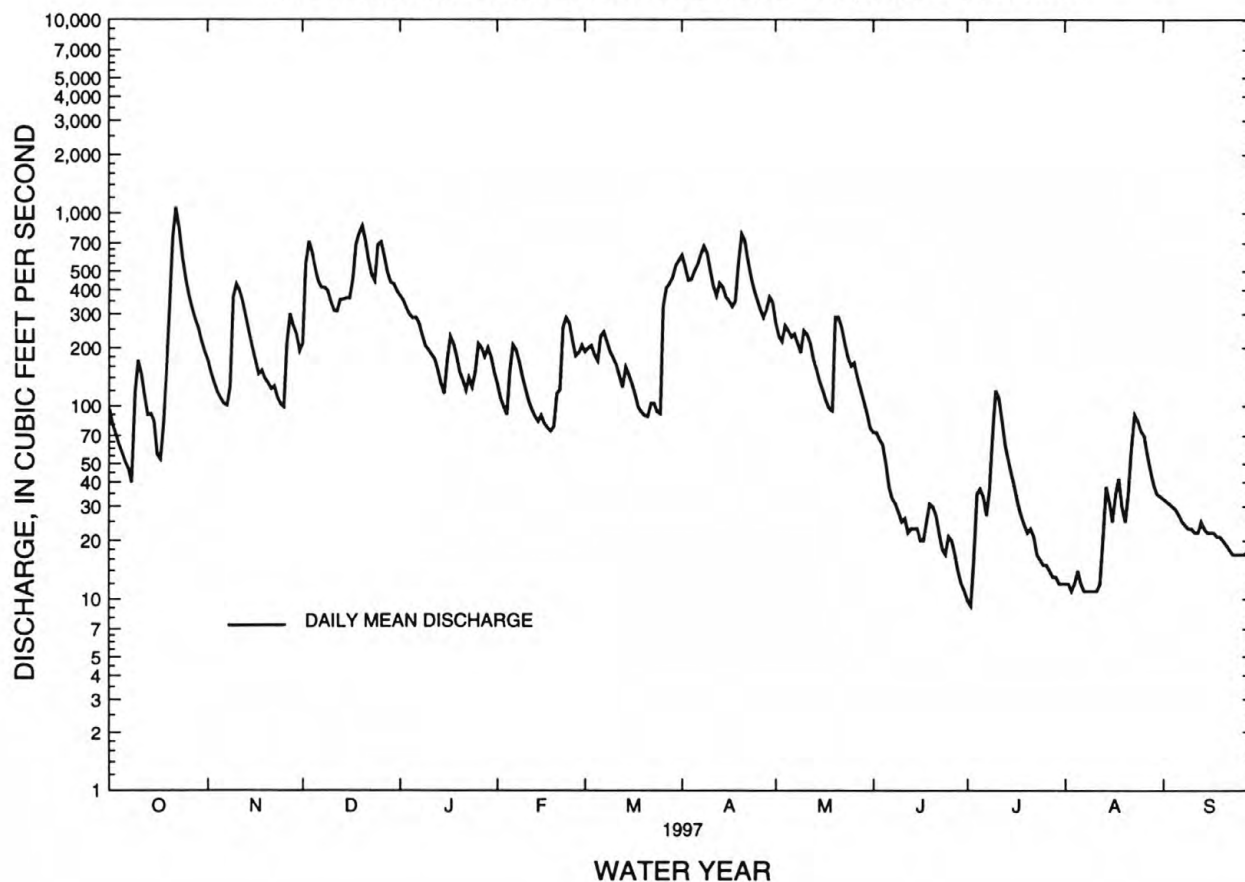
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01162000 MILLERS RIVER NEAR WINCHENDON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1916 - 1997	
ANNUAL TOTAL	95412		68911.0		145	
ANNUAL MEAN	261		189		238	
HIGHEST ANNUAL MEAN					38.5	
LOWEST ANNUAL MEAN					6130	
HIGHEST DAILY MEAN	3230	Apr 18	1070	Oct 22	3.1	Sep 22 1938
LOWEST DAILY MEAN	13	Aug 15	9.2	Jul 2	4.5	Oct 4 1930
ANNUAL SEVEN-DAY MINIMUM	13	Aug 13	11	Aug 6	8500	Sep 24 1939
INSTANTANEOUS PEAK FLOW			1170	Oct 22	21.55	Sep 22 1938
INSTANTANEOUS PEAK STAGE			8.66	Oct 22	.00	Sep 22 1938
INSTANTANEOUS LOW FLOW			11	Jun 30		Sep 20 1918
10 PERCENT EXCEEDS	530		454		337	
50 PERCENT EXCEEDS	158		126		89	
90 PERCENT EXCEEDS	20		18		19	

e Estimated

MILLERS RIVER NEAR WINCHENDON, MA 01162000



LOCATION.--Lat 42°40'57", long 72°06'56", Worcester County, Hydrologic Unit 01080202, on right bank 100 ft downstream from highway bridge, 3 mi upstream from mouth, and 3.5 mi west of Winchendon.

PERIOD OF RECORD.--Discharge: May 1916 to current year. Monthly discharge only October 1917 to July 1918 (published in WSP 1301) and September 1935 to September 1936.
Water-quality records: August 1994.

REVISED RECORDS.--WSP 451: 1916. WSP 871: Drainage area. WSP 1051: 1919, 1922-24. WSP 1301: 1917(M), 1919-24(M), 1926-27(M), 1929(M), 1931-35(M).

GAGE.--Water-stage recorder. Concrete control since September 1936. Datum of gage is 849.67 ft above sea level. Prior to Sept. 11, 1936, nonrecording gage on left bank at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Prior to 1962, occasional diurnal fluctuation at low flow by mill upstream; prior to 1953, regulation at low flow by mill and ponds. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--81 years, 33.0 ft³/s, 23.14 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft³/s, Sept. 21, 1938, gage height, 9.90 ft, from rating curve extended above 620 ft³/s on basis of contracted-opening measurements at gage heights 8.4 ft and 9.90 ft; minimum, 0.08 ft³/s, several times in September 1929.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 190 ft³/s, and maximum (*):

e Estimated

Minimum discharge, 1.2 ft³/s, Aug. 4, 9, 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	20	49	e75	24	57	140	72	15	2.0	1.5	5.3
2	9.8	18	e169	68	23	53	151	65	13	1.8	1.4	4.5
3	8.1	17	233	64	22	55	114	60	12	4.3	1.4	3.9
4	6.3	15	187	60	21	49	102	80	10	11	1.3	3.4
5	5.4	14	137	58	30	45	122	85	9.3	13	2.2	2.8
6	5.2	14	104	61	45	60	142	78	8.2	11	2.0	2.7
7	4.8	13	86	60	46	69	164	80	7.4	8.1	1.7	2.8
8	4.4	17	72	e49	38	e53	174	74	6.3	10	1.5	3.0
9	21	89	77	44	32	e45	142	63	5.7	22	1.4	2.8
10	30	198	66	40	27	41	110	58	4.8	107	1.4	2.6
11	25	171	58	37	24	38	88	54	4.4	119	1.3	2.6
12	20	124	56	33	22	e33	74	48	4.0	72	2.9	3.5
13	16	89	80	30	20	e28	91	42	3.5	45	4.6	2.9
14	13	68	84	27	19	26	103	37	3.7	27	9.4	2.6
15	11	54	84	26	19	30	89	35	3.5	19	7.0	2.5
16	8.9	45	84	32	19	29	77	33	3.2	15	5.8	2.2
17	7.9	39	100	49	18	26	69	29	2.5	13	11	1.9
18	7.5	35	187	41	17	25	71	26	2.6	13	11	2.0
19	6.9	33	196	32	19	23	121	24	4.6	11	8.4	2.0
20	18	31	215	26	28	20	179	68	5.9	8.7	6.4	2.1
21	69	29	171	23	30	20	156	77	4.8	6.9	7.5	2.5
22	94	27	129	21	67	23	126	61	3.9	6.2	9.5	2.0
23	90	25	102	23	e97	e24	102	49	3.0	5.3	16	1.9
24	76	23	90	20	e81	e21	84	40	2.6	4.5	15	2.0
25	62	21	175	27	e62	20	73	35	4.1	3.9	12	1.9
26	47	43	181	39	48	59	63	36	4.1	3.2	10	1.9
27	36	84	143	32	49	91	53	32	3.5	3.0	7.7	2.0
28	30	e70	112	31	60	99	55	27	2.7	7.0	6.8	2.2
29	26	e55	100	35	---	119	84	23	2.4	2.5	6.4	2.9
30	23	e49	103	29	---	157	82	20	2.1	1.9	6.2	3.3
31	22	---	93	26	---	175	---	17	---	1.7	5.5	---
TOTAL	817.2	1530	3723	1218	1007	1613	3201	1528	162.8	579.0	186.2	80.7
MEAN	26.4	51.0	120	39.3	36.0	52.0	107	49.3	5.43	18.7	6.01	2.69
MAX	94	198	233	75	97	175	179	85	15	119	16	5.3
MIN	4.4	13	49	20	17	20	53	17	2.1	1.7	1.3	1.9
CFSM	1.36	2.63	6.19	2.03	1.85	2.68	5.50	2.54	.28	.96	.31	.14
IN.	1.57	2.93	7.14	2.34	1.93	3.09	6.14	2.93	.31	1.11	.36	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1997, BY WATER YEAR (WY)

MEAN	16.2	29.4	34.9	30.6	27.8	63.1	93.6	43.4	24.3	12.3	9.99	12.1
MAX	69.2	124	120	90.3	102	162	225	93.9	125	62.5	68.8	178
(WY)	1976	1928	1997	1996	1984	1979	1940	1989	1922	1922	1928	1938
MIN	.55	1.38	4.67	1.23	5.28	13.6	21.8	12.8	2.53	1.04	.47	.29
(WY)	1965	1965	1930	1925	1980	1940	1985	1965	1964	1965	1964	1964

CONNECTICUT RIVER BASIN

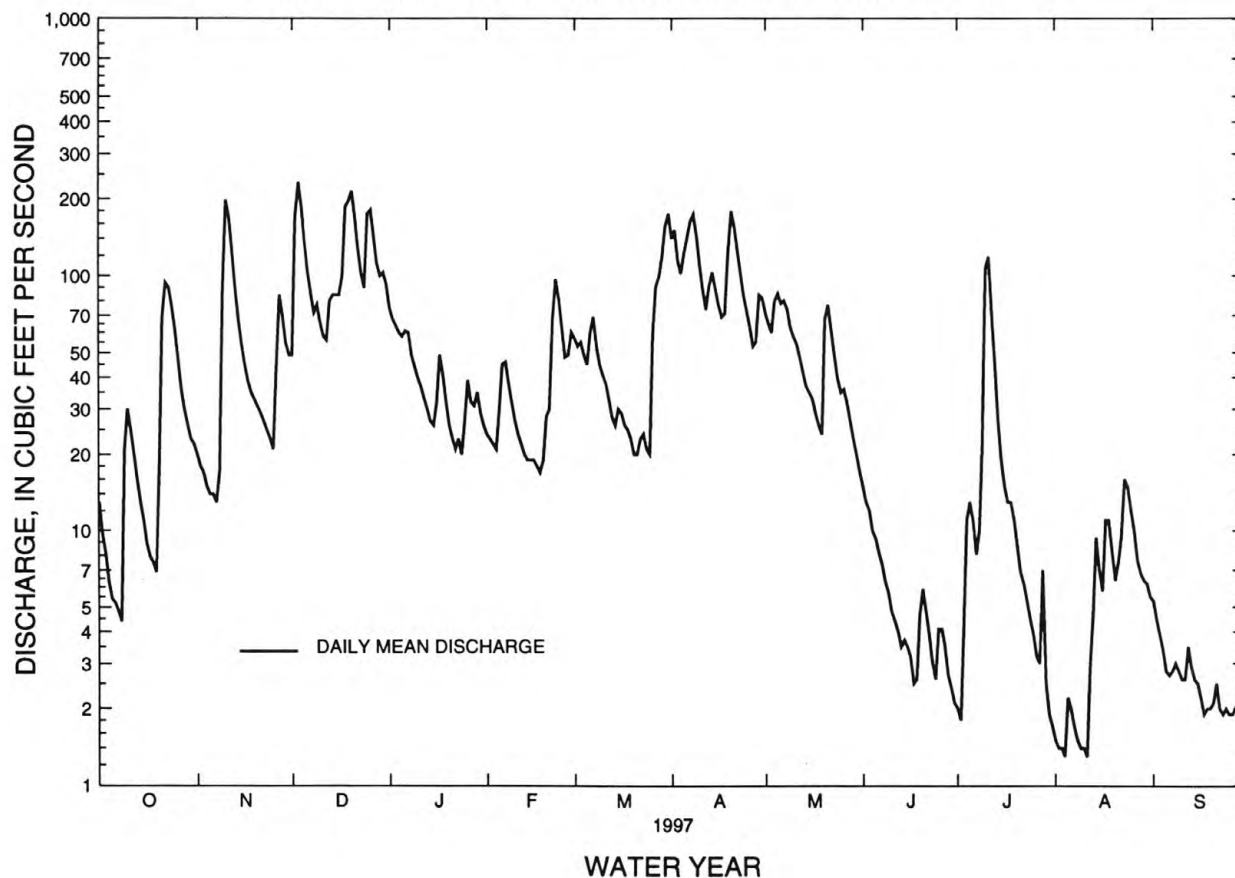
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01162500 PRIEST BROOK NEAR WINCHENDON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1916 - 1997
ANNUAL TOTAL	20481.66	15645.9	
ANNUAL MEAN	56.0	42.9	33.0
HIGHEST ANNUAL MEAN			55.0 1928
LOWEST ANNUAL MEAN			8.19 1965
HIGHEST DAILY MEAN	539 Apr 17	233 Dec 3	2280 Sep 21 1938
LOWEST DAILY MEAN	.62 Sep 11	1.3 Aug 4	.10 Sep 4 1929
ANNUAL SEVEN-DAY MINIMUM	.67 Sep 6	1.6 Jul 30	.19 Sep 2 1929
INSTANTANEOUS PEAK FLOW		241 Dec 2	3000 Sep 21 1938
INSTANTANEOUS PEAK STAGE		4.33 Dec 2	9.90 Sep 21 1938
INSTANTANEOUS LOW FLOW		1.2 Aug 4	.08 Sep 18 1929
ANNUAL RUNOFF (CFSM)	2.88	2.21	1.70
ANNUAL RUNOFF (INCHES)	39.27	30.00	23.14
10 PERCENT EXCEEDS	139	103	81
50 PERCENT EXCEEDS	32	26	17
90 PERCENT EXCEEDS	3.2	2.6	2.4

e Estimated

PRIEST BROOK NEAR WINCHENDON, MA 01162500



CONNECTICUT RIVER BASIN

01163200 OTTER RIVER AT OTTER RIVER, MA

LOCATION.--Lat 42°35'18", long 72°02'29", Worcester County, Hydrologic Unit 01080202, on right bank at upstream side of Turner Street Bridge, 0.2 mi upstream from Bailey Brook, 0.8 mi southeast of Otter River, and 2 mi northwest of Gardner.

DRAINAGE AREA.--34.1 mi².

PERIOD OF RECORD.--Discharge: December 1964 to current year.
Water-quality records: Water year 1965-69, 1994.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 900 ft above sea level from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--32 years (water years 1966-97), 63.1 ft³/s, 25.14 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 948 ft³/s, Mar. 7, 1979, gage height, 5.02 ft; minimum, 2.0 ft³/s, Sept. 5, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 414 ft³/s, Oct. 21, gage height, 3.38 ft; minimum, 2.9 ft³/s, Aug. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	63	84	144	62	95	192	114	40	9.3	8.1	16
2	49	61	227	116	60	91	170	98	38	8.6	8.2	15
3	41	58	341	107	58	97	165	94	35	16	7.1	13
4	33	53	269	106	56	85	177	135	33	32	7.1	13
5	27	52	195	106	92	75	219	138	29	27	11	26
6	24	51	148	113	125	100	243	121	27	20	8.4	27
7	21	51	127	106	106	112	260	119	29	18	6.9	17
8	21	70	119	e92	83	96	266	102	24	27	6.0	12
9	93	167	122	81	68	79	229	88	21	29	7.3	11
10	145	255	112	78	61	73	181	86	20	82	8.3	19
11	136	205	101	77	55	71	143	82	18	81	5.3	17
12	102	148	103	e71	51	66	122	75	17	59	13	13
13	73	110	127	e65	49	61	169	67	16	40	15	12
14	56	89	136	e61	48	58	189	60	19	28	23	11
15	46	76	141	58	51	67	165	58	17	22	20	7.5
16	44	70	146	91	49	67	137	55	14	18	18	9.4
17	45	64	181	e113	46	59	119	54	15	18	17	8.8
18	39	59	343	e81	45	54	135	51	15	17	15	7.9
19	34	57	375	e67	55	53	230	53	30	16	16	8.3
20	114	57	369	e59	90	53	295	175	30	15	23	7.8
21	359	55	305	e54	89	54	248	184	25	13	27	8.6
22	378	52	236	e52	149	68	199	131	21	12	40	7.0
23	279	50	189	60	167	73	160	92	16	11	37	6.6
24	204	48	168	e55	127	65	134	74	15	10	25	6.9
25	157	47	287	87	86	59	119	67	15	10	18	6.4
26	121	87	309	115	69	179	105	65	15	10	14	6.4
27	94	145	250	e86	84	262	92	57	13	10	13	7.1
28	83	128	199	92	107	226	103	52	13	7.6	14	7.5
29	79	95	169	119	---	194	137	48	11	8.2	23	6.5
30	73	75	165	95	---	200	134	43	8.3	8.4	22	9.7
31	68	---	153	67	---	196	---	40	---	7.8	20	---
TOTAL	3107	2598	6196	2674	2188	3088	5237	2678	639.3	690.9	496.7	344.4
MEAN	100	86.6	200	86.3	78.1	99.6	175	86.4	21.3	22.3	16.0	11.5
MAX	378	255	375	144	167	262	295	184	40	82	40	27
MIN	21	47	84	52	45	53	92	40	8.3	7.6	5.3	6.4
CFSM	2.94	2.54	5.86	2.53	2.29	2.92	5.12	2.53	.62	.65	.47	.34
IN.	3.39	2.83	6.76	2.92	2.39	3.37	5.71	2.92	.70	.75	.54	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1997, BY WATER YEAR (WY)

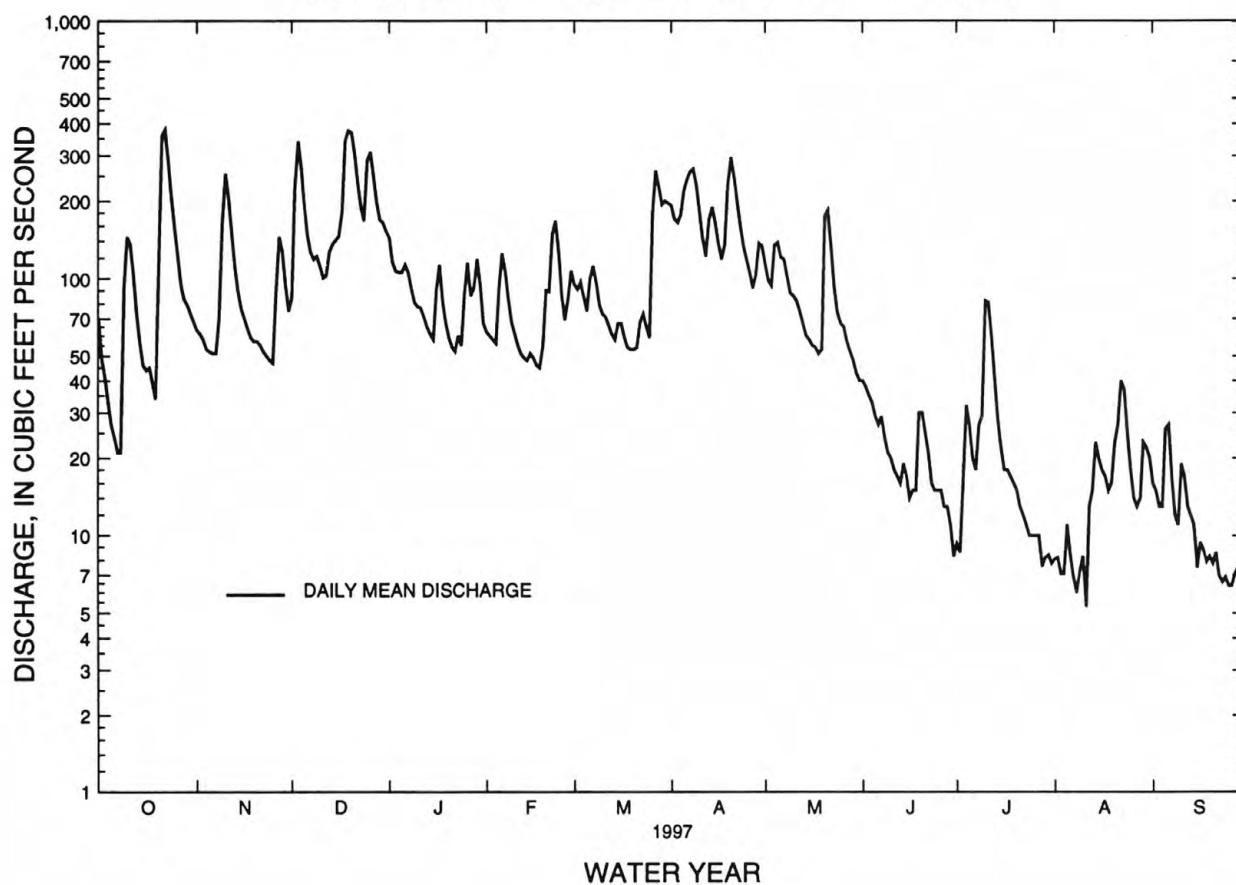
	MEAN	42.8	60.1	70.9	63.5	66.6	108	129	75.5	49.9	27.1	26.3	25.0
MAX	117	123	200	149	153	223	279	139	148	58.2	87.5	85.5	
(WY)	1980	1996	1997	1979	1976	1979	1987	1984	1982	1967	1991	1991	
MIN	8.27	14.7	18.1	9.64	17.3	38.4	45.0	27.6	18.2	8.20	4.44	5.48	
(WY)	1969	1979	1965	1981	1977	1965	1985	1965	1965	1966	1966	1995	

01163200 OTTER RIVER AT OTTER RIVER, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1965 - 1997	
ANNUAL TOTAL	36250.3		29937.3		63.1	
ANNUAL MEAN	99.0		82.0		90.0	
HIGHEST ANNUAL MEAN					30.2	
LOWEST ANNUAL MEAN					883	
HIGHEST DAILY MEAN	602	Apr 17	378	Oct 22	2.4	Mar 7 1979
LOWEST DAILY MEAN	4.2	Sep 5	5.3	Aug 11	2.6	Sep 12 1995
ANNUAL SEVEN-DAY MINIMUM	5.6	Sep 1	6.8	Sep 23	948	Sep 7 1995
INSTANTANEOUS PEAK FLOW			414	Oct 21	5.02	Mar 7 1979
INSTANTANEOUS PEAK STAGE			3.38	Oct 21	2.0	Sep 5 1995
INSTANTANEOUS LOW FLOW			2.9	Aug 11	1.85	
ANNUAL RUNOFF (CFSM)	2.90		2.41		25.14	
ANNUAL RUNOFF (INCHES)	39.55		32.66		138	
10 PERCENT EXCEEDS	221		186		41	
50 PERCENT EXCEEDS	70		61		11	
90 PERCENT EXCEEDS	16		10			

e Estimated

OTTER RIVER AT OTTER RIVER, MA 01163200



CONNECTICUT RIVER BASIN

01166500 MILLERS RIVER AT ERVING, MA

LOCATION.--Lat 42°35'51", long 72°26'19", Franklin County, Hydrologic Unit 01080202, on right bank 75 ft downstream from bridge at Farley, 0.6 mi upstream from Mormon Hollow Brook, 2.4 mi downstream from Erving, and 5.5 mi upstream from mouth.

DRAINAGE AREA.--372 mi².

PERIOD OF RECORD.--Discharge: August 1914 to June 1915 (twice-daily gage heights and corresponding discharge), July 1915 to current year.

Water-quality records: Water years 1953, 1965-66, 1994.

REVISED RECORDS.--WSP 641: 1920(M). WSP 781: 1928(M), 1933(M). WSP 1301: 1915(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 380 ft above sea level, from topographic map. Prior to June 30, 1915, nonrecording gage, June 30, 1915, to Sept. 20, 1938, water-stage recorder, and Sept. 21 to Dec. 31, 1938, nonrecording gage, at site 2.2 mi upstream at different datum. Jan. 1 to Mar. 29, 1939, nonrecording gage, and Mar. 30, 1939, to Sept. 12, 1941, water-stage recorder, at site 0.4 mi downstream at different datum.

REMARKS.--Records good. Flow regulated by powerplants and by Lake Monomac and other reservoirs; high flow regulated by Birch Hill Reservoir 22 mi upstream since 1941 and Tully Lake since 1948. Greater regulation by powerplants prior to 1966.

AVERAGE DISCHARGE.--83 years, 640 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s, Sept. 22, 1938, gage height, 13.37 ft, from flood-marks, site and datum then in use, mean of two slope-area measurements; practically no flow at times during 1915 and 1916 because of regulations; minimum daily, 8 ft³/s, Sept. 6, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,200 ft³/s, Dec. 2, gage height, 6.15 ft; minimum daily, 63 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	508	481	1050	1380	747	1030	2060	1310	431	106	70	157
2	442	498	3080	1360	577	1000	1940	1220	397	88	88	147
3	344	455	2950	1340	557	1030	2030	1140	374	143	69	151
4	269	443	3260	1200	586	969	2030	1540	346	214	89	136
5	237	413	3010	1160	731	890	2410	1360	327	196	100	121
6	221	390	2490	1190	995	1010	2500	1360	280	175	104	130
7	203	387	1860	1160	1060	1140	2320	1320	253	162	85	124
8	204	478	1740	962	923	1040	2750	1210	249	160	80	127
9	570	1920	1520	1080	834	936	2610	1090	232	237	88	129
10	784	2100	1440	955	742	889	2410	1020	221	750	76	115
11	932	2140	1270	841	636	839	1830	1020	189	906	64	97
12	751	2160	1250	726	558	764	1580	953	180	843	159	120
13	592	2020	1580	736	528	679	1980	889	179	616	138	121
14	499	1490	1580	745	503	605	1780	764	181	391	170	101
15	430	1130	1620	696	527	649	1690	705	162	246	155	98
16	335	849	1630	789	493	689	1540	648	162	209	155	98
17	301	745	2000	870	453	603	1490	587	142	199	174	81
18	307	695	3030	877	433	586	1640	561	136	224	131	97
19	313	701	3550	798	466	546	2200	545	189	220	146	82
20	536	655	3930	684	677	538	2720	1210	199	185	155	82
21	933	636	3520	656	724	515	2580	1370	186	145	179	80
22	2090	600	3060	618	1140	592	3050	1420	172	147	225	76
23	2270	550	2720	572	1370	637	2910	1210	160	132	289	73
24	1920	510	2220	563	1190	587	2050	928	146	117	264	75
25	1540	506	2610	734	1110	548	1500	786	138	117	226	66
26	1250	833	2620	892	989	1130	1280	746	148	120	205	67
27	1020	1160	3190	901	1000	1640	1150	685	139	100	179	76
28	849	1180	2370	908	1100	1750	1230	608	134	99	154	63
29	717	1150	1970	995	---	1920	1510	536	130	103	154	89
30	624	1060	1930	998	---	2070	1400	475	110	104	138	93
31	545	---	2000	954	---	2130	---	455	---	100	154	---
TOTAL	22536	28335	72050	28340	21649	29951	60170	29671	6292	7554	4463	3072
MEAN	727	945	2324	914	773	966	2006	957	210	244	144	102
MAX	2270	2160	3930	1380	1370	2130	3050	1540	431	906	289	157
MIN	203	387	1050	563	433	515	1150	455	110	88	64	63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1997, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1916	351	1622	1976	74.0	1940
1917	533	1617	1928	79.7	1965
1918	661	2324	1997	143	1931
1919	620	1444	1978	69.5	1981
1920	610	1894	1984	132	1931
1921	1162	3989	1936	362	1989
1922	1602	3584	1940	443	1985
1923	846	1687	1996	288	1965
1924	517	1932	1984	92.5	1964
1925	288	1118	1938	61.7	1966
1926	232	1052	1928	52.6	1964
1927	265	3031	1938	43.2	1964

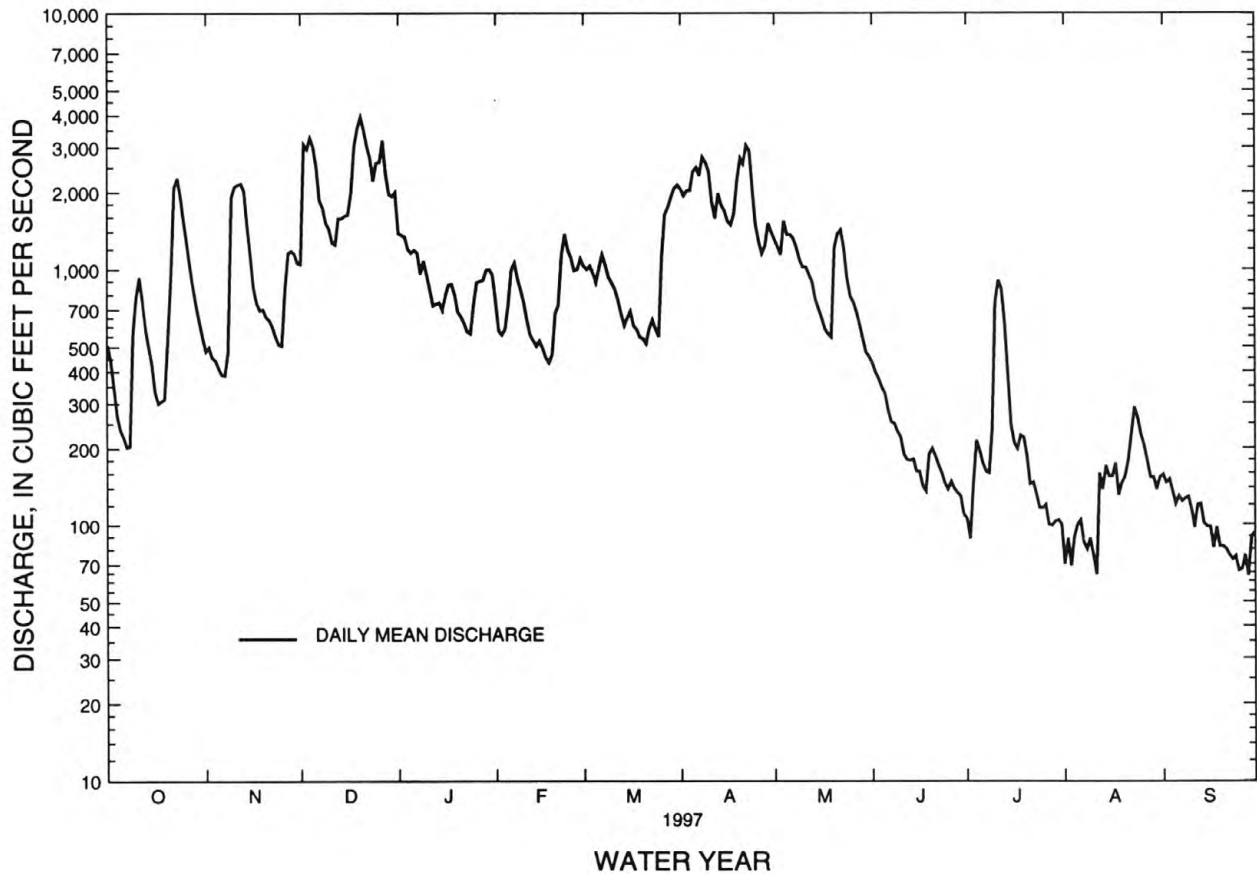
CONNECTICUT RIVER BASIN

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01166500 MILLERS RIVER AT ERVING, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1916 - 1997	
ANNUAL TOTAL	401826		314083		640	
ANNUAL MEAN	1098		861		1044	
HIGHEST ANNUAL MEAN					196	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	4040	Apr 17	3930	Dec 20	22000	Sep 22 1938
LOWEST DAILY MEAN	71	Sep 6	63	Sep 28	8.0	Sep 6 1926
ANNUAL SEVEN-DAY MINIMUM	72	Sep 3	71	Sep 22	31	Aug 25 1995
INSTANTANEOUS PEAK FLOW			4200	Dec 2	29000	Sep 22 1938
INSTANTANEOUS PEAK STAGE			6.15	Dec 2	13.37	Sep 22 1938
INSTANTANEOUS LOW FLOW			58	Sep 24		
10 PERCENT EXCEEDS	2720		2040		1500	
50 PERCENT EXCEEDS	787		637		400	
90 PERCENT EXCEEDS	165		108		105	

MILLERS RIVER AT ERVING, MA 01166500



CONNECTICUT RIVER BASIN

01168151 DEERFIELD RIVER NEAR ROWE, MA

LOCATION.--Lat 42°40'57", long 72°58'37", Franklin County, Hydrologic Unit 01080203, on left bank 400 ft downstream from Fife Brook, 600 ft downstream from Fife Brook Dam, 1.2 mi northeast of Hoosac Tunnel, and 4 mi west of Rowe.

DRAINAGE AREA.--254 mi².

PERIOD OF RECORD.--May 1974 to September 1997 (discontinued).

REVISED RECORDS.--WDR MA-RI-78: 1977.

GAGE.--Water-stage recorder. Datum of gage is 745.00 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Somerset and Harriman Reservoirs and by several powerplants upstream.

AVERAGE DISCHARGE.--23 years, 739 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,900 ft³/s, May 29, 1984, gage height, 14.73 ft, from flood-mark in stilling well, from rating curve extended above 8,300 ft³/s, on basis of slope-area measurement of peak flow and conveyance-slope study; maximum gage height, 14.79 ft, Aug. 10, 1976; minimum daily discharge, 28 ft³/s, Nov. 14, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,570 ft³/s, Dec. 25, gage height, 7.81 ft; minimum daily, 72 ft³/s, June 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	355	662	1140	1140	1040	1150	1240	1090	183	292	171	100
2	322	1130	3280	1130	1130	1140	1340	1560	172	311	296	492
3	645	1080	2480	1120	1090	1160	857	2250	83	287	286	465
4	727	1030	1950	1190	1040	1190	1230	2700	84	259	181	591
5	500	947	1790	1150	1060	1390	1510	2070	83	170	141	499
6	222	490	1560	834	1070	1450	1460	2050	117	163	286	496
7	242	543	1300	1150	1120	1400	1560	2320	84	107	286	580
8	543	817	1450	1080	1140	1320	1620	1900	80	121	281	537
9	316	1800	1210	1150	1070	1310	1360	1530	79	410	292	446
10	253	1290	1150	1170	1080	1380	1370	1200	80	341	247	287
11	383	1110	1140	1120	1110	1410	1150	1280	138	220	273	267
12	462	1180	1090	1140	1080	1330	602	1270	139	187	291	217
13	380	1140	1080	1120	993	1430	1190	1010	136	434	330	178
14	305	1080	1170	1090	1060	1360	1260	588	136	526	401	213
15	217	1100	1040	1150	1090	1320	1170	679	137	238	405	228
16	227	1150	1050	1130	1080	1320	1170	739	76	364	355	142
17	302	1040	1160	1100	1080	1370	1210	662	78	342	351	144
18	624	1040	1570	1160	1100	1390	1420	654	213	549	395	259
19	725	1030	1730	1120	1090	1310	1380	618	72	236	341	256
20	1360	1030	1280	980	980	1290	1480	1060	84	341	513	174
21	1910	1050	1130	1140	1070	1100	1440	1370	143	191	554	177
22	1720	1150	1150	1060	1270	1080	1490	658	137	190	648	178
23	1190	456	1130	1100	1230	1100	1430	705	206	194	542	175
24	1210	413	1250	1150	1140	1070	1430	1060	255	174	587	257
25	1200	595	2530	1060	1050	958	1490	541	352	244	334	363
26	820	1100	1310	1070	967	1230	1390	232	267	177	144	169
27	612	660	1150	1050	1040	1260	1370	157	189	272	101	149
28	281	851	1180	1150	1230	1430	1710	330	187	345	235	270
29	310	795	1190	1130	---	1500	1410	261	140	143	248	103
30	525	940	1190	1150	---	1580	1310	182	156	232	387	100
31	639	---	1220	1060	---	1550	---	278	---	290	180	---
TOTAL	19527	28699	44050	34344	30500	40278	40049	33004	4286	8350	10082	8512
MEAN	630	957	1421	1108	1089	1299	1335	1065	143	269	325	284
MAX	1910	1800	3280	1190	1270	1580	1710	2700	352	549	648	591
MIN	217	413	1040	834	967	958	602	157	72	107	101	100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1997, BY WATER YEAR (WY)

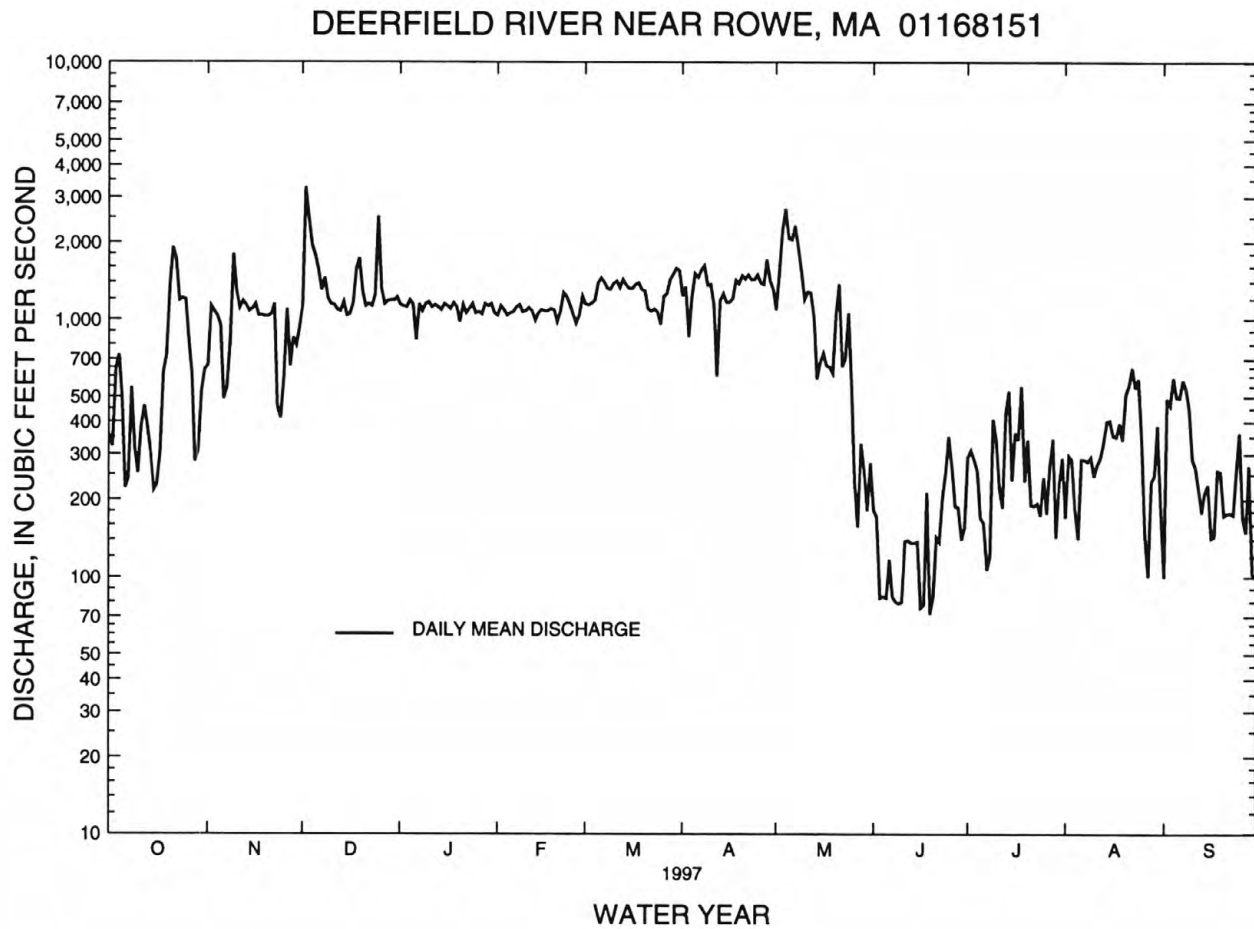
	MEAN	MAX	(WY)	MIN	(WY)
1974	641	1238	1978	127	1983
1975	745	1352	1996	215	1981
1976	873	1421	1997	466	1977
1977	925	1502	1978	472	1977
1978	904	1694	1981	495	1992
1979	1032	1993	1990	659	1980
1980	1162	2198	1993	337	1995
1981	867	1934	1984	137	1995
1982	477	1290	1989	143	1995
1983	386	741	1996	132	1995
1984	460	1630	1976	195	1995
1985	429	957	1974	161	1995

CONNECTICUT RIVER BASIN

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01168151 DEERFIELD RIVER NEAR ROWE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1974 - 1997	
ANNUAL TOTAL	358230		301681		739	
ANNUAL MEAN	979		827		1001	
HIGHEST ANNUAL MEAN					471	
LOWEST ANNUAL MEAN					12000	
HIGHEST DAILY MEAN	6800	May 12	3280	Dec 2	28	May 30 1984
LOWEST DAILY MEAN	78	Sep 19	72	Jun 19	86	Nov 14 1981
ANNUAL SEVEN-DAY MINIMUM	90	Sep 16	87	Jun 4	20900	Oct 14 1982
INSTANTANEOUS PEAK FLOW			3570	Dec 25	14.79	May 29 1984
INSTANTANEOUS PEAK STAGE			7.81	Dec 25		Aug 10 1976
INSTANTANEOUS LOW FLOW			57	Jun 5		
10 PERCENT EXCEEDS	1820		1430		1300	
50 PERCENT EXCEEDS	887		1010		645	
90 PERCENT EXCEEDS	167		170		144	



CONNECTICUT RIVER BASIN

01168500 DEERFIELD RIVER AT CHARLEMONT, MA

LOCATION.--Lat 42°37'33", long 72°51'20", Franklin County, Hydrologic Unit 01080203, on left bank 0.8 mi east of Charlemont, 2.5 mi downstream from Chickley River, and at mile 24.5.

DRAINAGE AREA.--361 mi².

PERIOD OF RECORD.--Discharge: June 1913 to current year.

Water-quality records: Water years 1954-55, 1958, 1967-69, 1995.

REVISED RECORDS.--WSP 781: 1915(M). WSP 1301: 1918(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 517.36 ft above sea level.

REMARKS.--Records good except those below 1,000 ft³/s, which are fair, and those for estimated daily discharges, which are poor. Flow regulated by Somerset Reservoir, since 1924 by Harriman Reservoir, and by several powerplants upstream. Telephone gage-height telemeter at station. Measurements of water temperature and air temperature were made during the year.

AVERAGE DISCHARGE.--84 years, 901 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,300 ft³/s, Sept. 21, 1938, gage height, 20.17 ft, from flood-marks, from rating curve extended above 31,000 ft³/s on basis of slope-area and contracted-opening measurements at gage heights 17.75 ft and 20.17 ft; minimum daily, 5 ft³/s, June 17, 1921.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,880 ft³/s, Dec. 2, gage height, 7.42 ft; minimum daily, 116 ft³/s, June 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	398	764	1360	1370	1050	1430	1900	1440	343	297	191	e160
2	401	1110	5170	1370	1100	1490	1810	1900	321	316	292	e470
3	537	1080	3040	1370	1100	1500	1310	2840	206	436	279	e500
4	718	1050	2220	1410	1000	1390	1930	3660	194	509	203	e430
5	608	989	1960	1400	1150	1540	2340	2490	185	254	189	e520
6	338	615	1810	1110	1120	1730	2450	2530	210	219	314	e470
7	265	607	1510	1310	1140	1560	2910	2850	192	136	300	e540
8	551	898	1640	1210	1140	1460	2550	2260	165	200	284	e580
9	655	2970	1410	1240	1080	1420	1890	1840	157	439	300	e400
10	576	1870	1310	1270	1070	1490	1740	1590	151	659	264	e288
11	698	1410	1290	1190	1100	1480	1540	1580	220	301	279	281
12	589	1370	1350	1190	1090	1380	1040	1540	214	245	307	368
13	559	1290	1560	1160	989	1450	2210	1250	209	336	343	238
14	404	1200	1500	1130	1050	1390	1880	908	207	632	615	242
15	326	1160	1430	1170	1070	1360	1660	926	201	291	458	204
16	345	1200	1390	1210	1060	1350	1610	913	126	358	369	218
17	416	1120	1590	1160	1060	1370	1650	890	116	363	365	170
18	538	1110	2100	e1200	1080	1390	2050	821	265	496	401	275
19	738	1160	2340	e1100	1140	1300	2160	829	169	301	354	267
20	4590	1140	1810	e960	1150	1300	2100	1880	145	339	395	204
21	3930	1140	1480	e1000	1220	1150	2010	1750	198	214	579	203
22	2230	1190	1450	1080	2200	1150	1970	1000	189	212	765	199
23	1510	716	1380	1130	1750	1150	1880	918	225	221	472	195
24	1550	532	1760	1150	1410	1120	1800	1290	293	204	590	261
25	1380	638	3480	1120	1200	1020	1790	779	369	254	e280	248
26	1150	1350	1850	1120	1150	1650	1650	530	297	201	e190	297
27	648	999	1540	1090	1430	1570	1570	386	253	249	e160	123
28	623	1000	1480	1150	1720	1860	2300	427	226	377	e270	271
29	535	945	1560	1150	---	2060	1910	544	180	185	e300	209
30	618	1010	1720	1160	---	2440	1660	351	177	233	e400	158
31	688	---	1560	1080	---	2340	---	420	---	285	e340	---
TOTAL	29112	33633	57050	36760	33819	46290	57270	43332	6403	9762	10848	8989
MEAN	939	1121	1840	1186	1208	1493	1909	1398	213	315	350	300
MAX	4590	2970	5170	1410	2200	2440	2910	3660	369	659	765	580
MIN	265	532	1290	960	989	1020	1040	351	116	136	160	123

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1997, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1913	610	2766	1956	90.8	1915
1914	842	2123	1956	177	1915
1915	996	2026	1928	133	1915
1916	988	2092	1978	363	1914
1917	984	2450	1981	268	1919
1918	1373	3642	1921	429	1931
1919	1870	4106	1914	529	1995
1920	1141	2889	1943	280	1995
1921	638	1686	1972	188	1941
1922	443	1611	1915	78.1	1962
1923	453	1886	1976	131	1964
1924	482	2404	1938	74.0	1953

CONNECTICUT RIVER BASIN

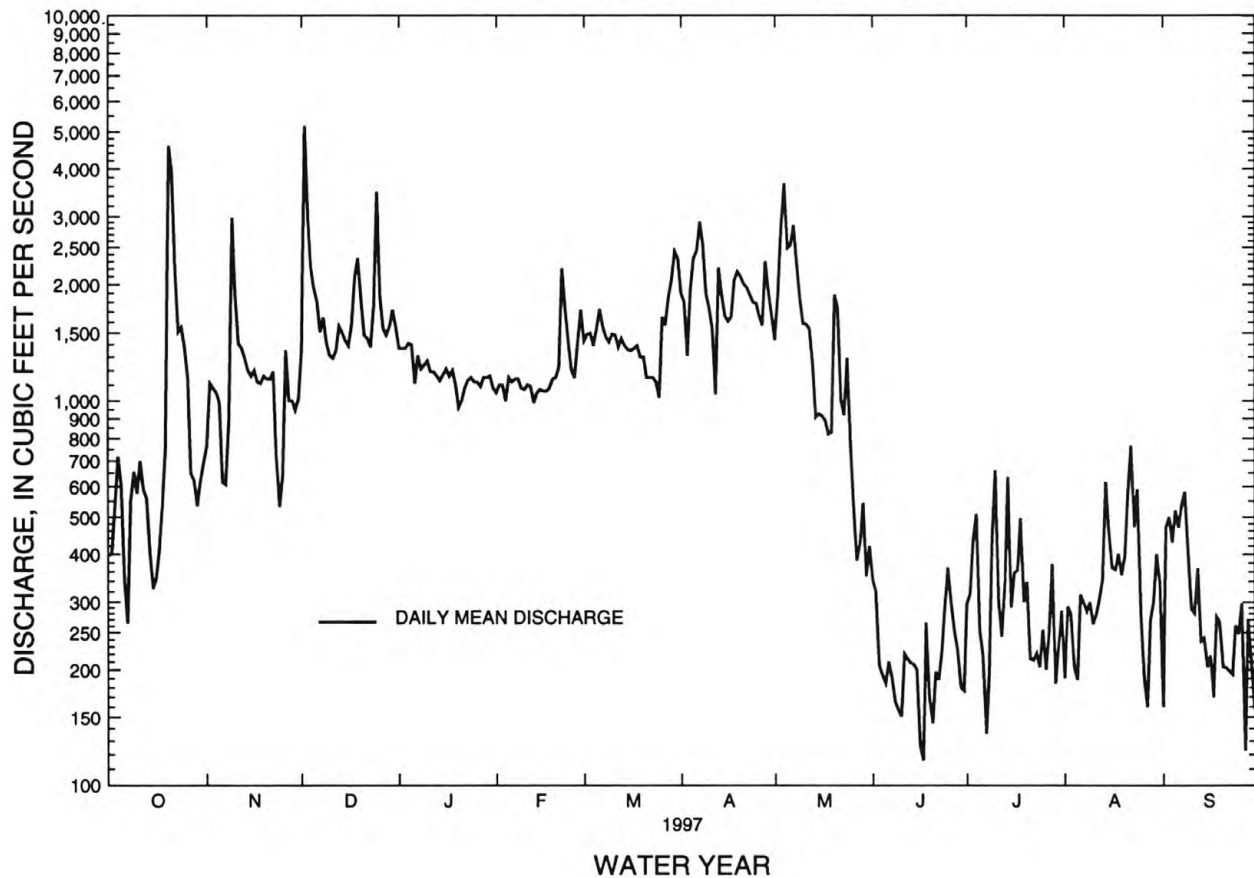
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01168500 DEERFIELD RIVER AT CHARLEMONT, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1913 - 1997	
ANNUAL TOTAL	461695		373268		901	
ANNUAL MEAN	1261		1023		1364	1928
HIGHEST ANNUAL MEAN					455	1965
LOWEST ANNUAL MEAN					31100	Dec 31 1948
HIGHEST DAILY MEAN	8350	May 12	5170	Dec 2	5.0	Jun 17 1921
LOWEST DAILY MEAN	123	Sep 3	116	Jun 17	34	Sep 19 1953
ANNUAL SEVEN-DAY MINIMUM	177	Sep 2	173	Jun 16	56300	Sep 21 1938
INSTANTANEOUS PEAK FLOW			7880	Dec 2	20.17	Sep 21 1938
INSTANTANEOUS PEAK STAGE			7.42	Dec 2		
INSTANTANEOUS LOW FLOW			98	Jun 30		
10 PERCENT EXCEEDS	2660		1890		1690	
50 PERCENT EXCEEDS	949		1060		680	
90 PERCENT EXCEEDS	245		208		184	

e Estimated

DEERFIELD RIVER AT CHARLEMONT, MA 01168500



CONNECTICUT RIVER BASIN

01169000 NORTH RIVER AT SHATTUCKVILLE, MA

LOCATION.--Lat 42°38'18", long 72°43'32", Franklin County, Hydrologic Unit 01080203, on right bank in Shattuckville, 1.2 mi south of Griswoldville, and 1.3 mi upstream from mouth.

DRAINAGE AREA.--89.0 mi².

PERIOD OF RECORD.--Discharge: October 1939 to current year. October and November 1939 monthly discharge only, published in WSP 1301.

Water-quality records: Water years 1957, 1967-69, 1994-95.

REVISED RECORDS.--WSP 1111: 1945(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 458.36 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuation at times caused by mill upstream; because storage capacity is small, daily flows are not affected appreciably. Prior to 1950, greater regulation by mill. Telephone and satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--58 years, 187 ft³/s, 28.56 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s, Apr. 5, 1987, gage height, 11.19 ft, from rating curve extended above 2,900 ft³/s on basis of slope-area measurements at gage heights 9.55 ft and 11.19 ft; minimum daily, 5.1 ft³/s, Oct. 3, 1948.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	1300	2,890	6.49	Dec. 2	0815	*3,740	*7.09
Nov. 9	0945	3,540	6.96				

Minimum discharge, 8.0 ft³/s, July 26; minimum daily, 14 ft³/s, Aug. 2, 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	117	353	211	e84	294	517	382	104	22	15	24
2	52	102	1930	251	e80	323	421	479	105	22	14	25
3	47	103	675	268	e77	329	392	670	93	86	14	23
4	42	98	460	274	e74	239	596	884	84	163	14	21
5	39	97	366	273	e120	228	702	481	79	57	22	19
6	38	94	341	305	e150	373	799	526	74	41	27	20
7	38	98	312	235	e115	244	1100	540	70	33	22	19
8	39	237	309	178	e100	e190	852	385	66	32	18	51
9	312	1940	267	e160	e92	e190	535	336	62	71	16	37
10	250	669	243	e165	e86	e175	419	367	57	188	16	27
11	206	426	233	e150	e82	e160	371	300	54	68	15	39
12	119	322	343	e140	e76	e140	386	254	49	47	18	382
13	96	267	562	e135	e73	e120	963	230	47	36	56	102
14	82	230	435	e130	e70	e100	649	221	45	31	80	62
15	72	188	408	e125	e76	e150	515	218	42	30	34	48
16	67	174	406	e140	e72	e160	485	212	39	45	26	40
17	64	175	496	e125	e70	e135	510	182	36	34	35	35
18	62	172	628	e105	e84	e125	703	168	38	40	31	37
19	59	186	638	e94	122	e120	926	179	54	30	25	34
20	1150	193	506	e90	218	e115	665	553	45	25	21	31
21	721	163	370	e94	176	e115	553	291	39	23	158	32
22	378	148	315	e100	e650	e145	495	235	35	23	178	30
23	254	137	290	e120	505	e140	456	201	31	21	78	27
24	312	130	448	e100	283	e120	420	180	31	20	48	27
25	222	127	851	e130	188	e110	357	173	33	20	36	26
26	177	370	420	e150	206	407	320	163	33	15	32	25
27	154	328	340	e110	342	365	300	141	31	17	28	24
28	144	e190	296	e120	472	459	867	128	28	19	27	24
29	131	e175	340	e105	---	585	679	117	26	19	30	109
30	124	165	474	e94	---	904	449	109	24	17	33	86
31	132	---	299	e88	---	739	---	108	---	16	27	---
TOTAL	5644	7821	14354	4765	4743	7999	17402	9413	1554	1311	1194	1486
MEAN	182	261	463	154	169	258	580	304	51.8	42.3	38.5	49.5
MAX	1150	1940	1930	305	650	904	1100	884	105	188	178	382
MIN	38	94	233	88	70	100	300	108	24	15	14	19
CFSM	2.05	2.93	5.20	1.73	1.90	2.90	6.52	3.41	.58	.48	.43	.56
IN.	2.36	3.27	6.00	1.99	1.98	3.34	7.27	3.93	.65	.55	.50	.62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

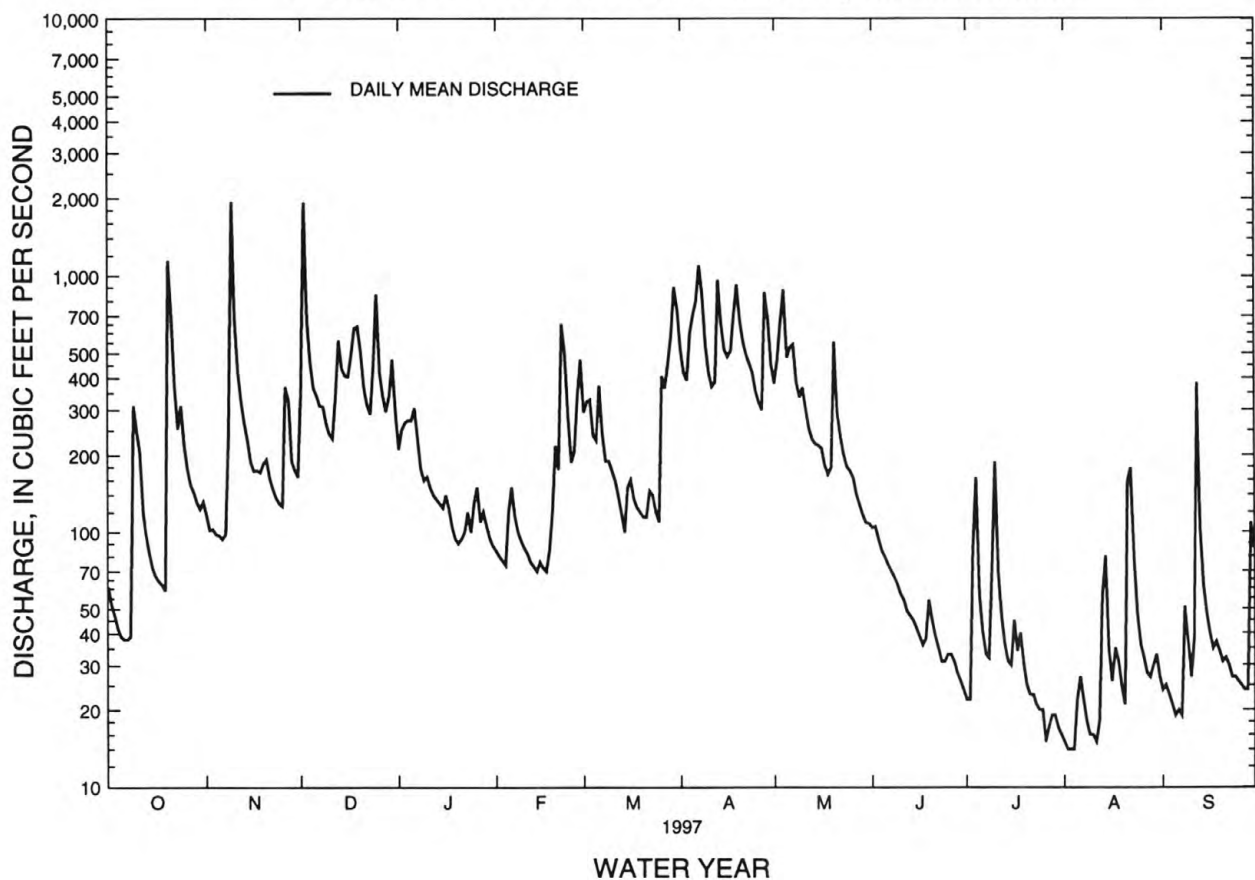
	MEAN	102	174	183	147	159	332	572	276	134	65.9	49.4	54.6
MAX	832	468	522	398	801	866	1076	772	417	214	228	306	
(WY)	1956	1956	1974	1978	1981	1953	1969	1984	1973	1972	1955	1960	
MIN	11.8	25.4	49.5	24.2	23.7	46.2	169	85.3	28.4	17.5	12.5	9.00	
(WY)	1965	1965	1962	1981	1940	1940	1981	1986	1965	1962	1956	1953	

01169000 NORTH RIVER AT SHATTUCKVILLE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1997	
ANNUAL TOTAL	97630		77686		187	
ANNUAL MEAN	267		213		299	
HIGHEST ANNUAL MEAN					79.9	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	2180	Apr 16	1940	Nov 9	8740	Oct 15 1955
LOWEST DAILY MEAN	16	Sep 5	14	Aug 2	5.1	Oct 3 1948
ANNUAL SEVEN-DAY MINIMUM	17	Sep 1	16	Jul 29	6.3	Sep 1 1953
INSTANTANEOUS PEAK FLOW			3740	Dec 2	14200	Apr 5 1987
INSTANTANEOUS PEAK STAGE			7.09	Dec 2	11.19	Apr 5 1987
INSTANTANEOUS LOW FLOW			8.0	Jul 26		
ANNUAL RUNOFF (CFSM)	3.00		2.39		2.10	
ANNUAL RUNOFF (INCHES)	40.81		32.47		28.56	
10 PERCENT EXCEEDS	607		508		430	
50 PERCENT EXCEEDS	171		125		92	
90 PERCENT EXCEEDS	35		25		21	

e Estimated

NORTH RIVER AT SHATTUCKVILLE, MA 01169000



CONNECTICUT RIVER BASIN

01169900 SOUTH RIVER NEAR CONWAY, MA

LOCATION.--Lat 42°32'31", long 72°41'39", Franklin County, Hydrologic Unit 01080203, on left bank at upstream side of Reeds Bridge just off Bardwell Road, 2.2 mi north of Conway, and 2.6 mi upstream from mouth.

DRAINAGE AREA.--24.1 mi².

PERIOD OF RECORD.--Discharge: June 1966 to current year.
Water-quality records: Water years 1967-69, 1994-95.

REVISED RECORDS.--WDR MA-NH-RI-VT-73-1: 1968-70(P), 1971(M), 1972(P). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 460 ft above sea level, from topographic map. Prior to Oct. 7, 1970, at downstream side of bridge at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuation by small power-plant upstream since April 1982.

AVERAGE DISCHARGE.--31 years, 52.7 ft³/s, 29.68 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft³/s, Apr. 4, 1987, gage height, 10.16 ft, minimum, 2.1 ft³/s (revised), Sept. 13, 1995, but may have been lower earlier in the month.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	0845	*1,300	*6.14	Dec. 2	0800	1,180	5.95
Nov. 9	0815	1,220	6.02				

Minimum discharge, 3.1 ft³/s, Aug. 2, 3, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	44	91	e70	e31	67	124	74	33	7.9	3.8	6.9
2	26	42	462	e76	e30	102	106	81	33	7.5	3.4	6.8
3	24	39	144	e78	e30	78	111	146	30	21	3.3	6.4
4	21	38	107	79	e30	61	201	164	27	57	4.9	5.7
5	20	36	92	89	e70	64	205	92	26	16	7.6	5.2
6	20	35	93	88	e60	162	224	110	24	12	8.5	4.8
7	20	37	89	69	e42	76	246	103	23	10	5.4	4.9
8	21	89	94	e54	e35	62	174	79	22	11	4.4	4.8
9	208	676	80	e58	e31	59	126	76	20	37	4.1	5.1
10	100	182	74	e55	e30	60	98	83	19	48	3.7	5.3
11	65	117	71	e49	e28	55	90	70	17	17	3.6	8.7
12	47	96	150	e45	e27	51	99	63	16	13	5.2	123
13	42	84	206	e42	e25	46	254	59	16	11	8.8	19
14	37	76	144	e39	e24	41	129	57	15	9.2	21	13
15	33	68	148	e39	e27	66	102	52	14	8.9	7.3	11
16	31	63	142	e45	e25	51	92	49	13	8.8	5.7	9.5
17	29	61	214	e43	e24	50	90	46	12	8.1	5.0	8.4
18	27	61	208	e32	e24	42	175	41	13	8.4	5.7	9.3
19	27	64	231	e29	e35	42	205	48	17	7.0	5.0	8.4
20	502	61	170	e27	e60	40	124	269	14	6.3	4.1	7.7
21	277	54	120	e29	e50	40	101	83	12	6.0	63	7.2
22	113	50	102	e31	e200	64	89	66	11	7.0	42	6.8
23	85	47	94	e37	94	50	81	58	9.9	6.0	23	6.6
24	97	45	185	e34	61	42	75	e54	10	5.6	14	6.4
25	74	45	244	e50	46	40	70	e53	16	5.8	11	6.2
26	65	148	117	e48	58	155	65	51	13	5.4	10	6.3
27	59	87	101	e33	122	113	60	44	12	5.2	8.9	6.0
28	57	61	91	e40	102	143	170	41	9.9	5.8	8.3	5.7
29	53	56	117	e38	---	139	117	37	9.1	5.2	8.2	43
30	50	51	134	e35	---	170	80	35	8.4	5.0	8.5	22
31	48	---	89	e33	---	181	---	34	---	4.3	6.9	---
TOTAL	2307	2613	4404	1514	1421	2412	3883	2318	515.3	386.4	324.3	390.1
MEAN	74.4	87.1	142	48.8	50.8	77.8	129	74.8	17.2	12.5	10.5	13.0
MAX	502	676	462	89	200	181	254	269	33	57	63	123
MIN	20	35	71	27	24	40	60	34	8.4	4.3	3.3	4.8
CFSM	3.09	3.61	5.89	2.03	2.11	3.23	5.37	3.10	.71	.52	.43	.54
IN.	3.56	4.03	6.80	2.34	2.19	3.72	5.99	3.58	.80	.60	.50	.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)						
30.0	50.5	55.4	47.8	52.4	92.8	132	72.5	44.0	21.1	17.3	16.4
85.5	142	142	135	163	179	253	171	144	60.0	57.0	65.1
1976	1996	1974	1996	1981	1979	1993	1984	1982	1972	1975	1975
6.22	11.0	13.9	7.27	14.1	32.3	32.6	23.5	12.6	5.92	4.86	4.17
1983	1983	1983	1981	1980	1967	1985	1995	1985	1991	1981	1995

CONNECTICUT RIVER BASIN

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01169900 SOUTH RIVER NEAR CONWAY, MA--Continued

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

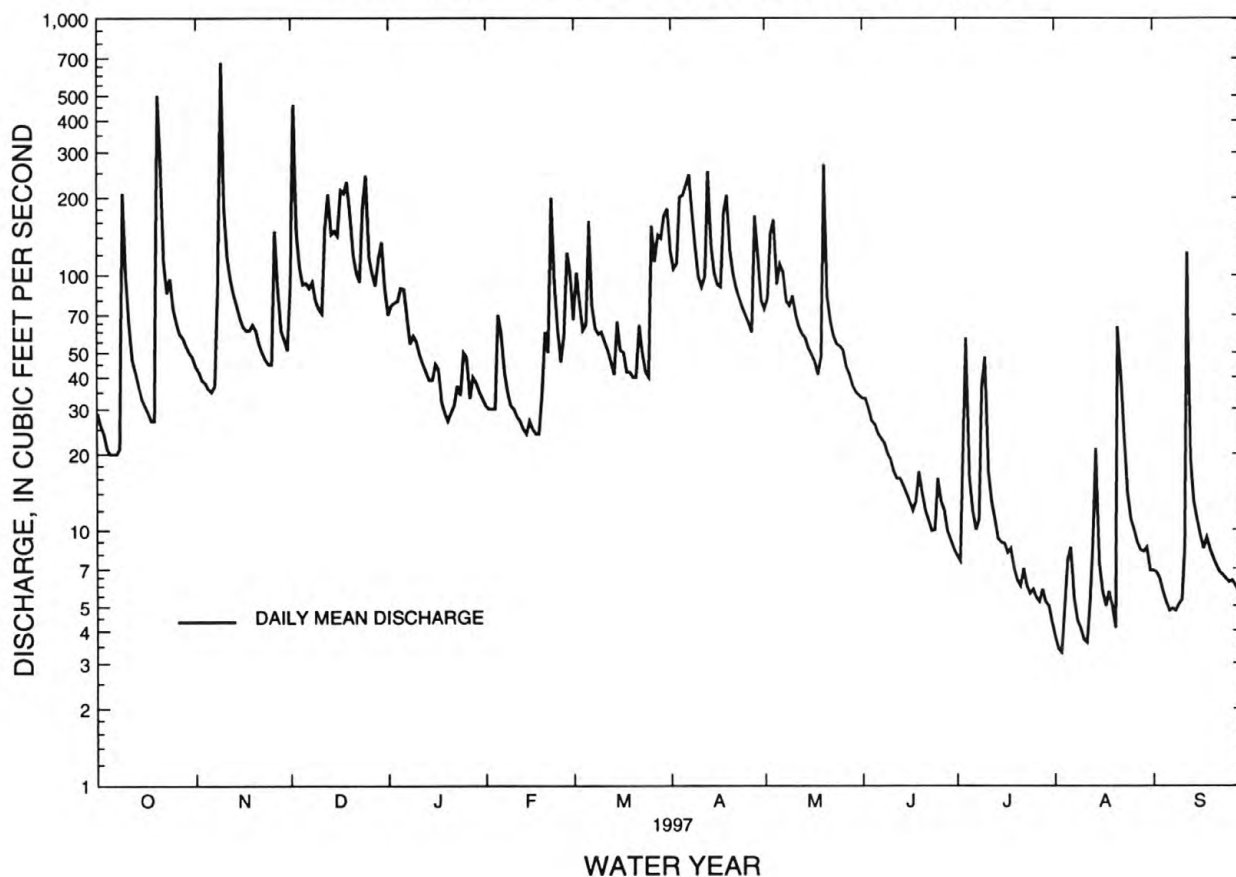
FOR 1997 WATER YEAR

WATER YEARS 1966 - 1997

ANNUAL TOTAL	31542.4	22488.1	52.7	
ANNUAL MEAN	86.2	61.6	82.6	1996
HIGHEST ANNUAL MEAN			21.5	1985
LOWEST ANNUAL MEAN			1570	Jun 6 1982
HIGHEST DAILY MEAN	799 Jan 27	676 Nov 9	2.4	Sep 7 1995
LOWEST DAILY MEAN	6.4 Sep 4	3.3 Aug 3	2.6	Sep 3 1995
ANNUAL SEVEN-DAY MINIMUM	7.2 Aug 30	4.3 Jul 29	5750	Apr 4 1987
INSTANTANEOUS PEAK FLOW		1300 Oct 20	10.16	Apr 4 1987
INSTANTANEOUS PEAK STAGE		6.14 Oct 20		
INSTANTANEOUS LOW FLOW		3.1 Aug 2		
ANNUAL RUNOFF (CFSM)	3.58	2.56	2.18	
ANNUAL RUNOFF (INCHES)	48.69	34.71	29.68	
10 PERCENT EXCEEDS	185	142	112	
50 PERCENT EXCEEDS	59	43	30	
90 PERCENT EXCEEDS	14	6.3	7.2	

e Estimated

SOUTH RIVER NEAR CONWAY, MA 01169900



CONNECTICUT RIVER BASIN

01170000 DEERFIELD RIVER NEAR WEST DEERFIELD, MA

LOCATION.--Lat 42°32'09", long 72°39'14", Franklin County, Hydrologic Unit 01080203, on right bank 0.4 mi downstream from South River, 1.2 mi west of West Deerfield, 2.5 mi west of Deerfield, and 9.2 mi upstream from mouth.

DRAINAGE AREA.--557 mi².

PERIOD OF RECORD.--Discharge: March to November 1904, January 1905, March to December 1905, October 1940 to current year, published as "at Deerfield" 1904-5.

Water-quality records: June 1994.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area. WDR MA-RI-92-1: 1991.

GAGE.--Water-stage recorder. Elevation of gage is 155 ft above sea level, from topographic map. Prior to Dec. 16, 1905, nonrecording gage at site 1.5 mi downstream at different datum.

REMARKS.--Records good except those for winter period and those for estimated daily discharges, which are poor. Flow regulated since 1913 by Somerset Reservoir, since 1924 by Harriman Reservoir, and by several powerplants upstream.

AVERAGE DISCHARGE.--57 years (water years 1941-97), 1,314 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,700 ft³/s, Apr. 5, 1987, gage height, 17.71 ft; minimum daily, 28 ft³/s, July 29, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,100 ft³/s, Dec. 2, gage height, 7.45 ft; minimum daily, 273 ft³/s, June 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462	1080	2060	e2200	e1500	2430	3400	2290	715	275	317	285
2	586	1380	8680	e2100	1550	2340	3070	3030	553	346	303	381
3	524	1400	4960	2230	1540	2610	2430	3510	562	531	326	502
4	760	1320	3600	2320	1290	2200	3510	5760	351	1180	316	515
5	718	1260	3110	2280	1860	2240	4190	3880	412	439	284	546
6	549	849	3040	2050	1850	3060	4500	3640	349	342	282	543
7	295	848	2520	2080	1750	2490	5070	4400	391	293	343	553
8	615	1320	2490	1840	1590	2220	4800	3420	346	283	352	732
9	1570	6220	2500	2060	1560	2130	3390	2930	323	573	379	539
10	1210	3890	2110	2130	1470	2210	2820	2680	302	1440	299	497
11	1140	2710	2070	1930	1490	2160	2730	2390	316	512	315	364
12	912	2320	2370	1600	1490	2100	1990	2410	319	455	348	1500
13	791	2200	3340	1840	1390	1880	4110	2000	323	331	419	508
14	631	2050	2780	1860	1330	2030	3460	1610	318	809	854	361
15	555	1810	2820	1830	1480	2010	2940	1510	328	397	614	351
16	475	1830	2680	1850	1420	1950	2770	1410	301	391	432	317
17	494	1870	3130	1740	1370	1930	2820	1390	285	498	468	289
18	651	1640	3810	e1600	1450	1920	3600	1250	288	592	432	291
19	978	1780	4360	e1550	1640	1910	4190	1330	300	495	462	292
20	3990	1810	3470	e1600	1820	1860	3660	3430	293	391	396	344
21	5390	1770	2660	e1700	1900	1730	3290	2840	287	388	1070	288
22	3510	1700	2470	1800	3950	1760	3140	1870	285	282	1290	297
23	2310	1170	2310	1720	3290	1690	2880	1380	280	280	662	305
24	2320	858	2540	1890	2360	1600	2930	1910	281	280	786	300
25	1960	1060	5480	1810	1830	1540	2660	1390	512	276	552	297
26	1820	2330	3300	1690	1820	2680	2510	1050	402	284	423	307
27	926	2140	2620	e1700	2240	2750	2450	743	385	281	290	303
28	1050	1590	2400	e1700	3090	3220	3610	771	292	352	281	298
29	874	1510	2480	e1800	---	3650	3730	859	292	366	285	443
30	847	1560	3080	e1600	---	4480	2810	648	273	280	418	340
31	994	---	2590	e1700	---	4560	---	657	---	276	385	---
TOTAL	39907	55275	97830	57800	51320	73340	99460	68388	10664	13918	14383	12888
MEAN	1287	1843	3156	1865	1833	2366	3315	2206	355	449	464	430
MAX	5390	6220	8680	2320	3950	4560	5070	5760	715	1440	1290	1500
MIN	295	848	2060	1550	1290	1540	1990	648	273	275	281	285

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1997, BY WATER YEAR (WY)

	MEAN	850	1221	1457	1399	1434	2110	2956	1728	925	562	556	606
MAX	4632	3302	3156	2801	3890	4771	5320	4094	2600	1658	2142	2112	
(WY)	1956	1956	1997	1978	1981	1953	1993	1984	1989	1973	1976	1905	
MIN	228	244	385	622	693	1083	928	484	307	119	167	94.5	
(WY)	1983	1965	1965	1965	1944	1962	1995	1995	1964	1962	1964	1953	

CONNECTICUT RIVER BASIN

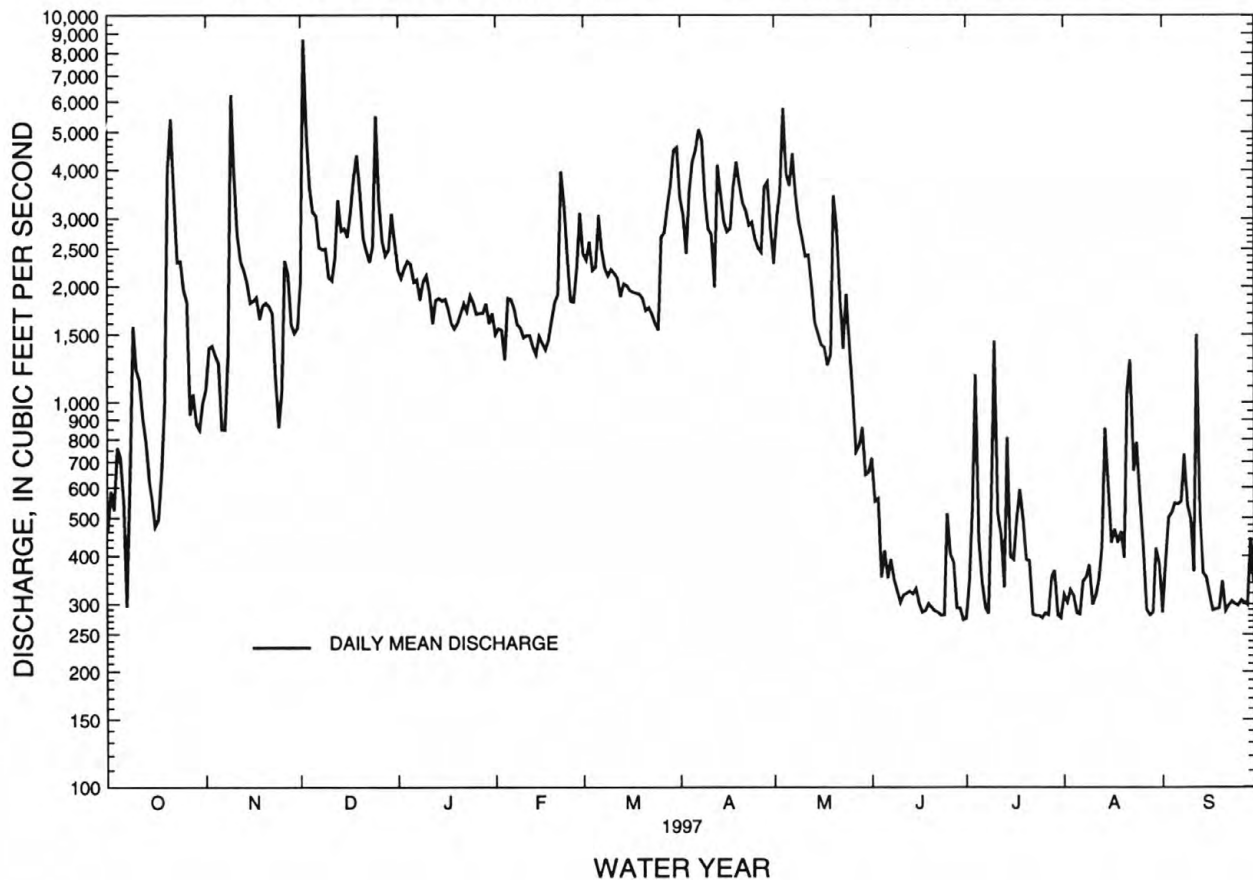
197

01170000 DEERFIELD RIVER NEAR WEST DEERFIELD, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1904 - 1997	
ANNUAL TOTAL	682840		595173		1314	
ANNUAL MEAN	1866		1631		1840	1996
HIGHEST ANNUAL MEAN					629	1965
LOWEST ANNUAL MEAN					38300	Dec 31 1948
HIGHEST DAILY MEAN	9860	Apr 17	8680	Dec 2	28	Jul 29 1962
LOWEST DAILY MEAN	157	Sep 4	273	Jun 30	39	Jul 27 1962
ANNUAL SEVEN-DAY MINIMUM	189	Aug 31	288	Jun 18	61700	Apr 5 1987
INSTANTANEOUS PEAK FLOW			12100	Dec 2	17.71	Apr 5 1987
INSTANTANEOUS PEAK STAGE			7.45	Dec 2		
INSTANTANEOUS LOW FLOW			88	Oct 7		
10 PERCENT EXCEEDS	4050		3390		2670	
50 PERCENT EXCEEDS	1470		1540		963	
90 PERCENT EXCEEDS	369		300		264	

e Estimated

DEERFIELD RIVER NEAR WEST DEERFIELD, MA 01170000



CONNECTICUT RIVER BASIN

01170100 GREEN RIVER NEAR COLRAIN, MA

LOCATION.--Lat 42°42'12", long 72°40'16", Franklin County, Hydrologic Unit 01080203, on right bank 0.5 mi upstream from bridge on West Leyden Road and 2.5 mi northeast of Colrain.

DRAINAGE AREA.--41.4 mi².

PERIOD OF RECORD.--Discharge: October 1967 to current year.
Water-quality records: Water years 1968-69, 1993-95.

REVISED RECORDS.--WDR MA-NH-RI-VT-71-1: 1968(M), 1969.

GAGE.--Water-stage recorder. Elevation of gage is 435 ft above sea level, from topographic map.

REMARKS.---Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--30 years, 90.4 ft³/s, 29.66 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,560 ft³/s, Dec. 21, 1973, gage height, 8.2 ft, from floodmarks, from rating curve extended above 1,500 ft³/s on basis of slope area measurement of peak flow and conveyance-slope study; maximum gage height, 12.71 ft, Feb. 23, 1997 (ice jam); minimum discharge, 1.9 ft³/s, Aug. 1, 1968, caused by unusual regulation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	1230	1,210	4.87	Dec. 2	0745	a*3,280	6.07
Nov. 9	1045	a2,790	6.20	Feb. 23	0800	ice jam	*12.71

a From rating curve extended above 1,100 ft³/s.

Minimum discharge, 4.6 ft³/s, Aug. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	52	195	97	e38	111	249	195	46	9.4	5.6	14
2	24	48	1300	141	e35	125	190	231	47	9.0	5.6	13
3	22	45	400	128	e34	128	179	346	41	30	5.1	12
4	19	42	251	118	e33	94	288	459	38	48	5.3	11
5	18	41	187	117	e54	91	359	248	35	21	9.8	10
6	17	39	175	129	e66	147	426	278	32	16	14	9.6
7	17	42	153	103	54	98	589	279	31	14	8.3	9.9
8	19	98	146	81	44	e80	445	194	30	13	6.9	17
9	194	1230	125	e72	40	e78	269	173	26	19	6.1	16
10	136	364	114	e75	40	e72	204	181	25	65	5.4	13
11	108	203	109	e70	38	e66	181	149	23	23	5.4	18
12	62	149	163	e66	36	e60	193	127	21	17	6.0	212
13	49	123	260	e62	34	e56	490	114	20	14	18	50
14	43	108	199	e60	e32	e45	346	108	20	12	23	30
15	38	94	194	e60	e36	e62	268	113	18	11	11	24
16	34	87	185	e65	32	e66	254	109	17	13	9.1	20
17	32	85	247	e58	31	e58	271	94	16	13	17	18
18	29	82	317	e48	30	e51	428	84	18	21	11	18
19	27	86	315	e44	e40	e49	533	88	23	14	8.5	16
20	469	86	227	e42	e80	47	390	234	19	10	7.1	15
21	350	73	170	e43	e60	50	329	129	17	9.5	90	15
22	186	66	148	e47	e300	55	292	105	15	9.6	99	14
23	126	62	130	e56	e180	53	262	90	13	8.5	35	13
24	148	58	248	e47	104	49	229	81	14	8.0	23	13
25	106	57	412	e60	69	48	189	77	15	7.8	18	13
26	83	161	195	e66	87	162	172	72	15	7.2	16	12
27	72	133	151	e54	110	134	163	62	14	7.1	14	11
28	67	87	133	e50	169	177	476	57	12	7.6	14	11
29	58	84	151	e44	---	249	376	52	11	7.4	17	60
30	57	74	198	e41	---	411	230	48	10	6.5	20	47
31	60	---	131	e39	---	374	---	46	---	5.9	16	---
TOTAL	2701	3959	7329	2183	1906	3346	9270	4623	682	477.5	550.2	755.5
MEAN	87.1	132	236	70.4	68.1	108	309	149	22.7	15.4	17.7	25.2
MAX	469	1230	1300	141	300	411	589	459	47	65	99	212
MIN	17	39	109	39	30	45	163	46	10	5.9	5.1	9.6
CFSM	2.10	3.19	5.71	1.70	1.64	2.61	7.46	3.60	.55	.37	.43	.61
IN.	2.43	3.56	6.59	1.96	1.71	3.01	8.33	4.15	.61	.43	.49	.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997, BY WATER YEAR (WY)

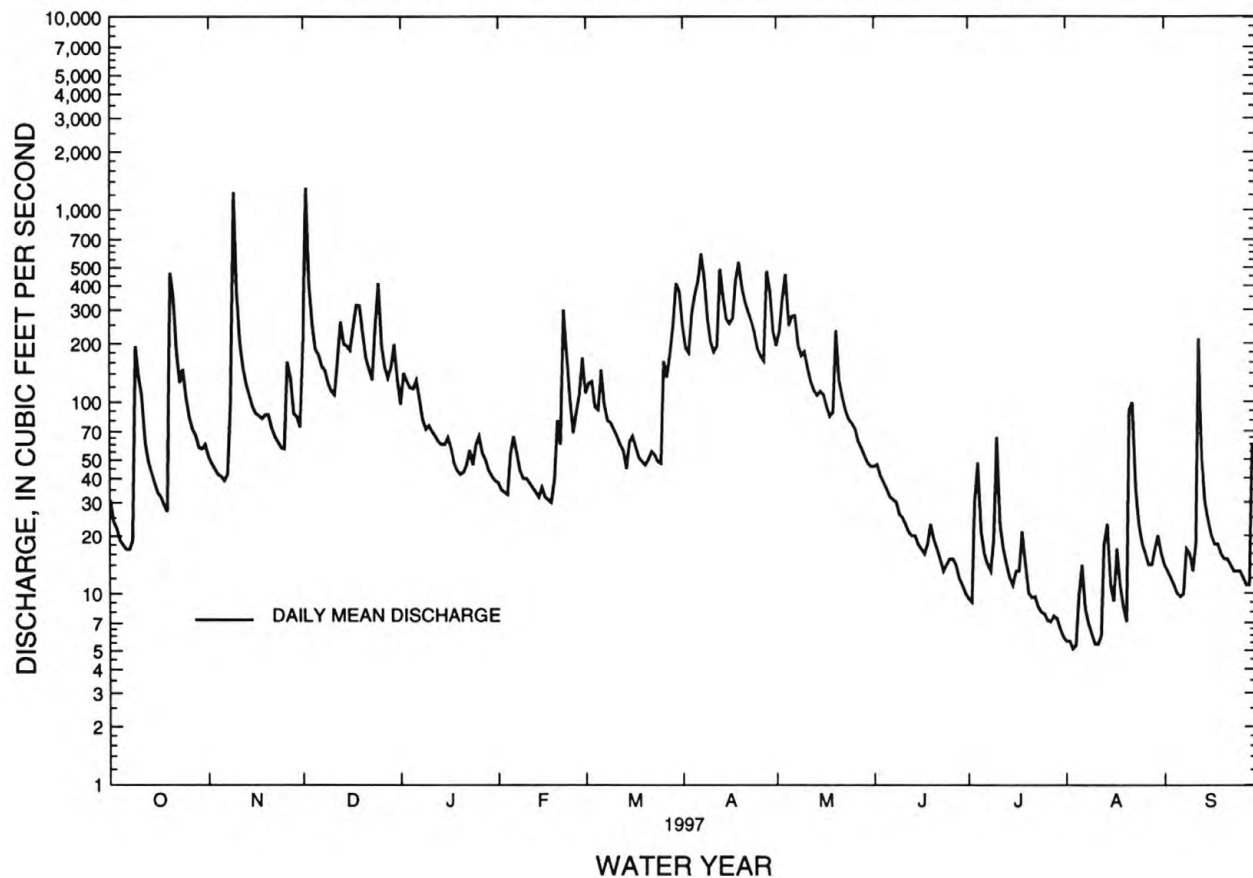
	MEAN	51.0	86.4	91.7	73.7	81.6	158	257	132	68.6	35.6	25.9	23.9
MAX	190	214	236	178	277	355	442	287	188	105	80.4	92.2	
(WY)	1976	1996	1997	1996	1981	1979	1969	1984	1973	1973	1969	1975	
MIN	11.4	17.8	27.9	11.6	18.1	53.2	77.6	42.1	22.7	10.6	9.62	6.55	
(WY)	1983	1979	1983	1981	1980	1971	1995	1986	1997	1995	1968	1983	

01170100 GREEN RIVER NEAR COLRAIN, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1968 - 1997	
ANNUAL TOTAL	47451.9		37782.2		90.4	
ANNUAL MEAN	130		104		136	
HIGHEST ANNUAL MEAN					44.4	
LOWEST ANNUAL MEAN					2420	
HIGHEST DAILY MEAN	1300	Dec 2	1300	Dec 2	3.3	Mar 31 1987
LOWEST DAILY MEAN	6.8	Sep 7	5.1	Aug 3	3.6	Sep 16 1983
ANNUAL SEVEN-DAY MINIMUM	7.3	Sep 1	5.9	Jul 29	4560	Sep 11 1983
INSTANTANEOUS PEAK FLOW			3280	Dec 2	8.87	Dec 21 1973
INSTANTANEOUS PEAK STAGE			6.20	Nov 9	1.9	Jan 27 1976
INSTANTANEOUS LOW FLOW			4.6	Aug 10	2.18	Aug 1 1968
ANNUAL RUNOFF (CFSM)	3.13		2.50		29.66	
ANNUAL RUNOFF (INCHES)	42.64		33.95		208	
10 PERCENT EXCEEDS	287		252		49	
50 PERCENT EXCEEDS	82		57		12	
90 PERCENT EXCEEDS	15		11			

e Estimated

GREEN RIVER NEAR COLRAIN, MA 01170100



CONNECTICUT RIVER BASIN

01170500 CONNECTICUT RIVER AT MONTAGUE CITY, MA

LOCATION.--Lat 42°34'43" (revised), long 72°34'30", Franklin County, Hydrologic Unit 01080201, on left bank 75 ft downstream from railroad bridge at Montague City, 1,000 ft downstream from Deerfield River, and at mile 119.0.

DRAINAGE AREA.--7,860 mi².

PERIOD OF RECORD.--Discharge: March 1904 to current year. Prior to October 1929, published as "at Sunderland." Records published for both sites October 1929 to September 1932.
Water-quality records: Water years 1994-95.

REVISED RECORDS.--WSP 471: 1904-17. WSP 741: 1930-32. WSP 781: 1928(M). WSP 1051: 1905, 1909-10, 1912-14, 1920, 1922-23, 1925-26, 1928, drainage area at Sunderland. WSP 1301: 1905(M), 1914-19(M), 1930-31(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 99.87 ft above sea level. Prior to Oct. 1, 1917, nonrecording gage; Oct. 1, 1917, to Oct. 8, 1921, water-stage recorder used for low stages, nonrecording gage otherwise; and Oct. 9, 1921, to Sept. 30, 1932, water-stage recorder; all at site 9 mi downstream at datum 1.00 ft lower. Since Oct. 1, 1929, water-stage recorder at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants and by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs, and other reservoirs, combined usable capacity, about 43,400,000,000 ft³. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--93 years, 13,940 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 236,000 ft³/s, Mar. 19, 1936, gage height, 49.2 ft, from floodmarks; minimum daily, 215 ft³/s, Aug. 31, Sept. 1, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70,000 ft³/s, Dec. 3, gage height, 26.22 ft; minimum daily, 1,870 ft³/s, July 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5560	10800	13000	e18000	11200	28400	40900	37300	9340	4950	2660	6620
2	5310	10300	37400	18400	8710	25600	36700	36600	12300	5490	4780	8720
3	4830	9820	67300	18200	9740	25000	33500	39700	13300	5270	3360	6900
4	4990	10300	59300	24400	10200	28200	32100	49400	12100	6560	2060	6280
5	3820	9150	47400	18700	12300	25900	38200	49600	10200	6880	3080	7550
6	3000	9810	40400	18300	10300	25100	41800	39200	8940	4220	2170	3650
7	2960	10100	25700	21800	11500	25400	54500	36500	5050	4640	2190	3350
8	6130	12900	23200	17100	10700	21700	66100	35700	5310	6440	2260	6360
9	10000	26800	23600	17400	7400	18500	64800	32100	7140	8160	3110	5270
10	7760	38000	21100	16100	8460	17100	51300	28500	6090	9620	2810	5220
11	9100	39000	18900	14100	8810	20700	38200	25000	6290	10900	3010	5010
12	8290	31300	19200	15500	9770	16700	27600	27200	6030	6530	2790	8260
13	6470	22700	23200	15400	9130	18600	32600	24400	5230	7630	3260	4770
14	5620	18800	21300	14100	8790	16600	36600	23100	3420	8270	8480	4620
15	6230	17800	20700	12700	8270	11800	31300	23500	3460	8830	10500	4110
16	6780	14400	21100	14100	8280	11000	30000	21200	6620	13600	8100	7660
17	5520	7350	23100	15500	8260	13300	29400	18900	6460	21500	4570	4370
18	6070	11900	26200	e11000	7630	12300	36900	21500	6560	13700	5480	4810
19	6360	8220	37500	e11200	7880	12500	52900	23200	7050	11200	5450	2790
20	14500	13800	35800	e10500	9910	13100	63300	28600	10700	8160	5590	2520
21	20800	12900	29800	e12500	11700	13700	59700	26700	11400	7700	8970	2360
22	48100	11300	24900	11900	20300	11500	58700	21600	7090	7490	11200	3860
23	43500	9950	22400	13200	29400	10900	49300	19900	9580	5210	12100	4630
24	29900	10300	19800	13900	26300	9300	40800	18800	9860	3630	9310	4070
25	24300	10800	40300	12700	20600	7810	37000	15800	12300	3600	11000	4700
26	19500	13300	40300	11300	18400	13400	33500	18600	10900	2430	8430	4590
27	17500	12400	36000	12300	18900	18200	32900	16300	8840	2440	6220	3130
28	15500	13600	26700	12800	24500	23600	37200	15800	4070	1870	7200	2880
29	13000	12700	26700	11600	---	24800	51000	15800	4320	3640	8140	4650
30	9710	9060	28000	10900	---	31500	47000	12000	5490	6260	9780	4170
31	10100	---	29000	10400	---	40100	---	10500	---	3090	9220	---
TOTAL	381210	449560	929300	456000	357340	592310	1285800	813000	235440	219910	187280	147880
MEAN	12300	14990	29980	14710	12760	19110	42860	26230	7848	7094	6041	4929
MAX	48100	39000	67300	24400	29400	40100	66100	49600	13300	21500	12100	8720
MIN	2960	7350	13000	10400	7400	7810	27600	10500	3420	1870	2060	2360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1997, BY WATER YEAR (WY)

	MEAN	8569	12400	12570	10950	10460	20640	38940	23500	11270	6636	5589	5885
MAX	25750	42270	31710	23890	33650	71920	66290	47000	30730	25680	18550	32660	
(WY)	1978	1928	1984	1978	1981	1936	1960	1940	1984	1973	1990	1938	
MIN	1829	2053	2810	2732	2086	4316	11390	8080	4270	2250	2412	1834	
(WY)	1909	1909	1911	1905	1905	1940	1995	1941	1964	1911	1965	1908	

CONNECTICUT RIVER BASIN

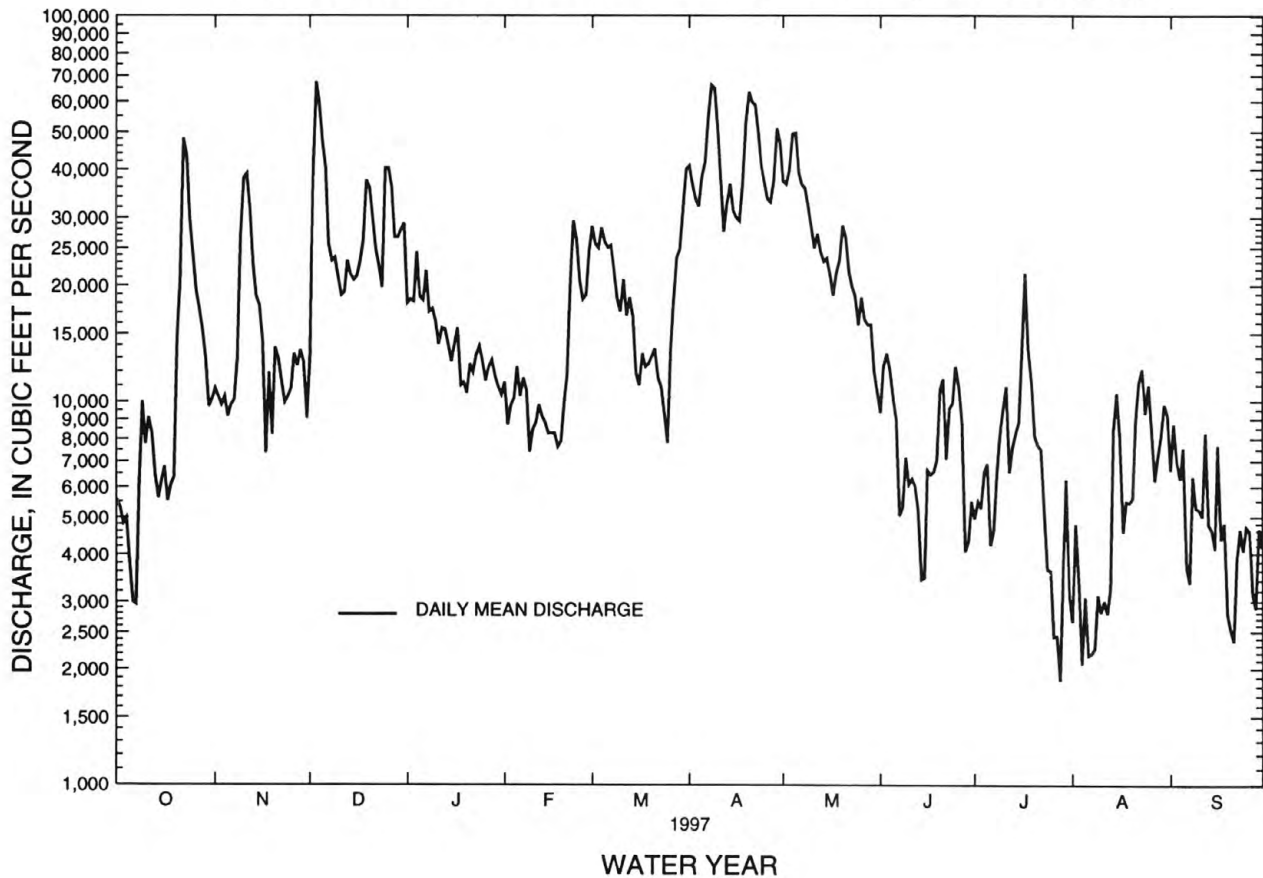
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01170500 CONNECTICUT RIVER AT MONTAGUE CITY, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1904 - 1997	
ANNUAL TOTAL	7700680		6055030		13940	
ANNUAL MEAN	21040		16590		20680	
HIGHEST ANNUAL MEAN					6768	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	89500	Apr 17	67300	Dec 3	233000	Mar 19 1936
LOWEST DAILY MEAN	1690	Sep 22	1870	Jul 28	215	Aug 31 1958
ANNUAL SEVEN-DAY MINIMUM	2550	Sep 6	2530	Aug 4	1300	Jul 29 1965
INSTANTANEOUS PEAK FLOW			70000	Dec 3	236000	Mar 19 1936
INSTANTANEOUS PEAK STAGE			26.22	Dec 3	49.20	Mar 19 1936
INSTANTANEOUS LOW FLOW			950	Jul 28		
10 PERCENT EXCEEDS	48100		36900		31900	
50 PERCENT EXCEEDS	15400		11800		8960	
90 PERCENT EXCEEDS	4640		4200		3020	

e Estimated

CONNECTICUT RIVER AT MONTAGUE CITY, MA 01170500



CONNECTICUT RIVER BASIN

01171500 MILL RIVER AT NORTHAMPTON, MA

LOCATION.--Lat 42°19'05", long 72°39'21", Hampshire County, Hydrologic Unit 01080201, on right bank at Northampton 3.5 mi upstream from mouth.

DRAINAGE AREA.--54.0 mi².

PERIOD OF RECORD.--Discharge: October 1938 to current year. October 1938 monthly discharge only, published in WSP 1301. Water-quality records: Water years 1957-59, 1971, 1973, 1994.

REVISED RECORDS.--WSP 921: 1940. WSP 1231: 1940-42(M), 1944-45(M), 1948(M), 1949.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 140 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by mill upstream.

AVERAGE DISCHARGE.--58 years, 98.2 ft³/s, 24.71 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,300 ft³/s, Aug. 19, 1955, gage height, 11.78 ft, from rating curve extended above 3,700 ft³/s on basis of computation of peak flow over dam; minimum, 2.2 ft³/s, Oct. 1, 1950; minimum daily, 4.2 ft³/s, Aug. 21, 23, 24, 1957.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 9	1130	*2,470	*6.91	Dec. 2	0945	2,130	6.35

Minimum discharge, 16 ft³/s, July 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	79	175	e130	e82	157	346	129	59	16	9.5	18
2	60	75	1020	e135	79	200	302	145	61	22	9.5	17
3	62	71	410	147	77	184	319	231	56	65	9.1	17
4	42	69	279	143	77	135	478	333	51	148	15	15
5	38	79	229	157	209	130	490	177	47	47	59	14
6	37	67	232	167	210	343	469	196	43	30	39	12
7	37	68	230	130	e125	188	460	234	41	25	22	12
8	42	171	241	e98	102	135	350	158	39	23	16	14
9	397	1360	215	e100	e94	123	244	141	36	38	13	15
10	221	441	184	107	e89	125	200	161	34	108	12	13
11	163	259	170	98	e83	121	177	127	31	47	11	13
12	96	206	295	e94	81	109	176	109	29	31	13	254
13	80	174	458	e96	78	98	463	101	28	26	18	63
14	73	154	329	e89	84	90	261	98	27	22	42	36
15	80	144	362	81	87	133	196	89	24	20	25	28
16	62	140	320	161	77	103	172	87	23	e20	18	23
17	57	131	444	e100	72	97	163	79	22	20	14	20
18	53	128	462	e80	73	92	286	77	26	23	15	19
19	52	129	482	e60	91	91	401	98	47	19	15	18
20	637	127	411	e66	149	92	255	523	31	16	11	15
21	467	111	257	e68	133	91	195	183	25	14	86	15
22	219	101	211	e70	370	145	169	125	22	16	220	14
23	169	96	196	e80	227	125	149	111	20	15	71	14
24	181	92	240	e75	138	94	134	104	19	13	41	14
25	137	91	471	e120	107	88	126	101	38	13	29	38
26	112	347	238	e100	110	318	116	103	33	13	24	32
27	105	251	199	e92	248	217	105	84	28	12	22	30
28	107	142	179	e110	233	234	266	76	23	15	20	29
29	101	122	185	e105	---	245	247	69	20	14	28	60
30	85	112	230	e92	---	303	152	64	18	12	24	50
31	86	---	170	e86	---	381	---	62	---	10	20	---
TOTAL	4131	5537	9524	3237	3585	4987	7867	4375	1001	913	971.1	932
MEAN	133	185	307	104	128	161	262	141	33.4	29.5	31.3	31.1
MAX	637	1360	1020	167	370	381	490	523	61	148	220	254
MIN	37	67	170	60	72	88	105	62	18	10	9.1	12
CFSM	2.47	3.42	5.69	1.93	2.37	2.98	4.86	2.61	.62	.55	.58	.58
IN.	2.85	3.81	6.56	2.23	2.47	3.44	5.42	3.01	.69	.63	.67	.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1997, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
MEAN	55.3	88.7	101	91.2	103
MAX	456	334	307	287	338
(WY)	1956	1956	1997	1978	1981
MIN	8.52	13.2	23.9	15.5	24.1
(WY)	1965	1965	1947	1981	1940

CONNECTICUT RIVER BASIN

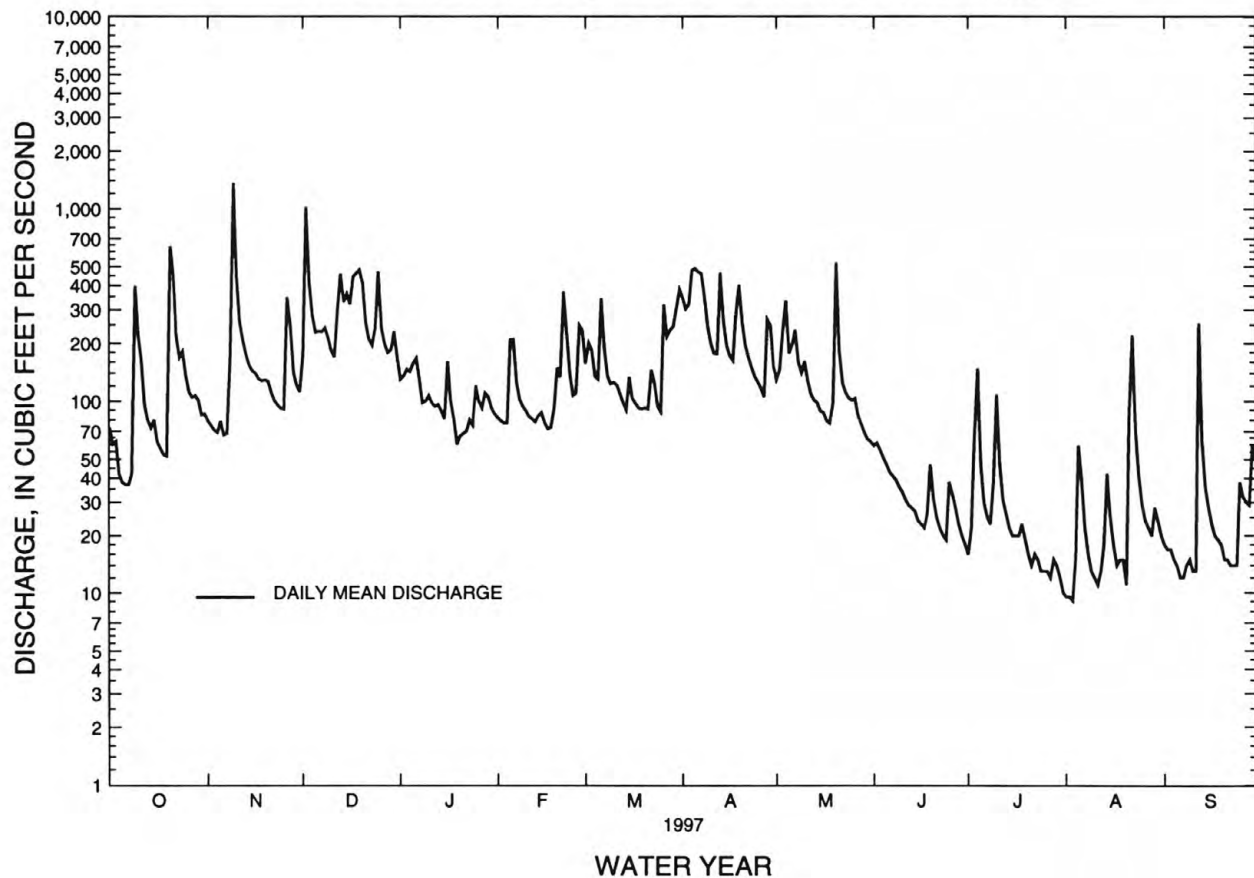
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01171500 MILL RIVER AT NORTHAMPTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1939 - 1997	
ANNUAL TOTAL	63336		47060.1		98.2	
ANNUAL MEAN	173		129		157	1996
HIGHEST ANNUAL MEAN					39.1	1965
LOWEST ANNUAL MEAN					3870	Aug 19 1955
HIGHEST DAILY MEAN	1360	Nov 9	1360	Nov 9	4.2	Aug 21 1957
LOWEST DAILY MEAN	14	Aug 23	9.1	Aug 3	4.3	Aug 18 1957
ANNUAL SEVEN-DAY MINIMUM	15	Aug 17	11	Jul 28	6300	Aug 19 1955
INSTANTANEOUS PEAK FLOW			2470	Nov 9	11.78	Aug 19 1955
INSTANTANEOUS PEAK STAGE			6.91	Nov 9	2.2	Oct 1 1950
INSTANTANEOUS LOW FLOW			16	Jul 1	1.82	
ANNUAL RUNOFF (CFSM)	3.20		2.39		24.71	
ANNUAL RUNOFF (INCHES)	43.63		32.42		219	
10 PERCENT EXCEEDS	363		282		56	
50 PERCENT EXCEEDS	126		92		14	
90 PERCENT EXCEEDS	27		16			

e Estimated

MILL RIVER AT NORTHAMPTON, MA 01171500



CONNECTICUT RIVER BASIN

01172003 CONNECTICUT RIVER BELOW HOLYOKE DAM AT HOLYOKE, MA

LOCATION.--Lat 42°12'36", long 72°35'44", Hampden County, Hydrologic Unit 01080201, on right bank, 2,200 ft downstream from dam of Holyoke Water Power Co. in Holyoke, MA. and at mile 86.

DRAINAGE AREA.--8,309 mi².

PERIOD OF RECORD.--December 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 43.276 ft above sea level.

REMARKS.--Records good except those for periods of estimated record, which are fair. Several measurements of water temperature were made during the year. Flow regulated by powerplants, by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs, and other reservoirs, combined usable capacity, about 47 billion ft³. Records do not include water diverted around gage by Holyoke Water Power Company for industrial use. Telephone gage-height telemeter at this station.

AVERAGE DISCHARGE.--12 years (water years 1985-96), 11,990 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153,000 ft³/s, June 1, 1984, gage height, 25.62 ft; minimum daily, 519 ft³/s, Sept. 30, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1854, 244,000 ft³/s, Mar. 20, 1936, gage height, 35.0 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 75,100 ft³/s, Oct. 23, gage height, 16.28 ft; minimum daily, 1,820 ft³/s, Aug. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6980	8440	9420	20800	8790	23500	40200	37200	8760	5570	2390	5770
2	4860	10400	21700	15100	8710	22900	37900	32200	9860	4450	2720	6240
3	5130	9510	61000	13800	8590	20300	33000	35100	11600	6140	5360	7680
4	5500	8530	63600	17900	9120	22200	29300	43400	11700	5620	2200	4630
5	3810	9040	50700	17000	10600	23600	34500	47300	9370	8460	2110	5690
6	2790	8200	41200	14700	11600	20500	38900	39700	8490	3600	1860	5300
7	3400	8600	30200	15200	9760	20800	46600	34800	6720	5560	1850	2590
8	4070	9160	23500	15700	10300	19800	62400	32700	5070	4560	1820	4140
9	5810	15400	19700	12200	7900	15900	64900	29100	6210	7090	2090	4890
10	5860	35200	18700	13300	7240	12600	54300	26000	7150	9700	2560	4190
11	5470	39500	15900	10100	7740	15200	40500	20900	6690	9050	2860	5230
12	6810	32300	15600	11600	9500	14400	27200	21800	6410	7090	2710	5660
13	7150	22600	17800	12800	8320	13000	27100	20000	5260	7930	2600	5490
14	5610	15900	19900	11500	8410	13600	32200	18600	3640	6590	5990	3980
15	6760	14300	18600	9640	8110	10400	31000	18300	3670	6990	8280	4160
16	6140	13000	17100	9530	8030	8140	25500	18200	5410	6890	6640	4580
17	6260	7570	19600	11400	7650	10600	24900	15700	6010	11800	5370	5370
18	7630	8920	22400	11000	7440	10000	30900	15000	6780	12500	4000	3660
19	9200	10900	31800	9530	6660	10000	43900	17700	6760	7510	4940	3300
20	8560	11100	37900	8520	9360	10200	60100	22200	8550	6800	4410	2380
21	12000	9930	30300	8580	10100	9720	59100	23600	9440	6070	7830	2230
22	52500	8530	23600	10100	12400	10100	56900	19300	6830	7300	9100	2440
23	54100	8280	19900	10500	25300	10200	51000	15500	7430	4210	8430	3360
24	30400	7990	17300	12100	22600	7610	40100	14100	7710	4980	6090	3980
25	20900	8170	28500	12200	19500	9210	35100	12400	10200	3190	6930	3880
26	17200	9700	41100	11000	14400	9120	30300	13700	9200	2920	7450	4020
27	14600	12000	33700	11300	14400	13400	28800	14100	8740	2740	5730	2880
28	12700	11300	28500	8980	17000	18400	30100	11400	5960	2110	5280	2520
29	11400	11300	22000	9410	---	20200	44300	11900	3830	2320	6520	3360
30	9650	7440	23900	9390	---	24900	46000	10200	4900	4730	6690	4010
31	7510	---	24600	7920	---	33200	---	7610	---	4510	7620	---
TOTAL	360760	393210	849720	372800	309530	483700	1207000	699710	218350	188980	150430	127610
MEAN	11640	13110	27410	12030	11050	15600	40230	22570	7278	6096	4853	4254
MAX	54100	39500	63600	20800	25300	33200	64900	47300	11700	12500	9100	7680
MIN	2790	7440	9420	7920	6660	7610	24900	7610	3640	2110	1820	2230

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1997, BY WATER YEAR (WY)

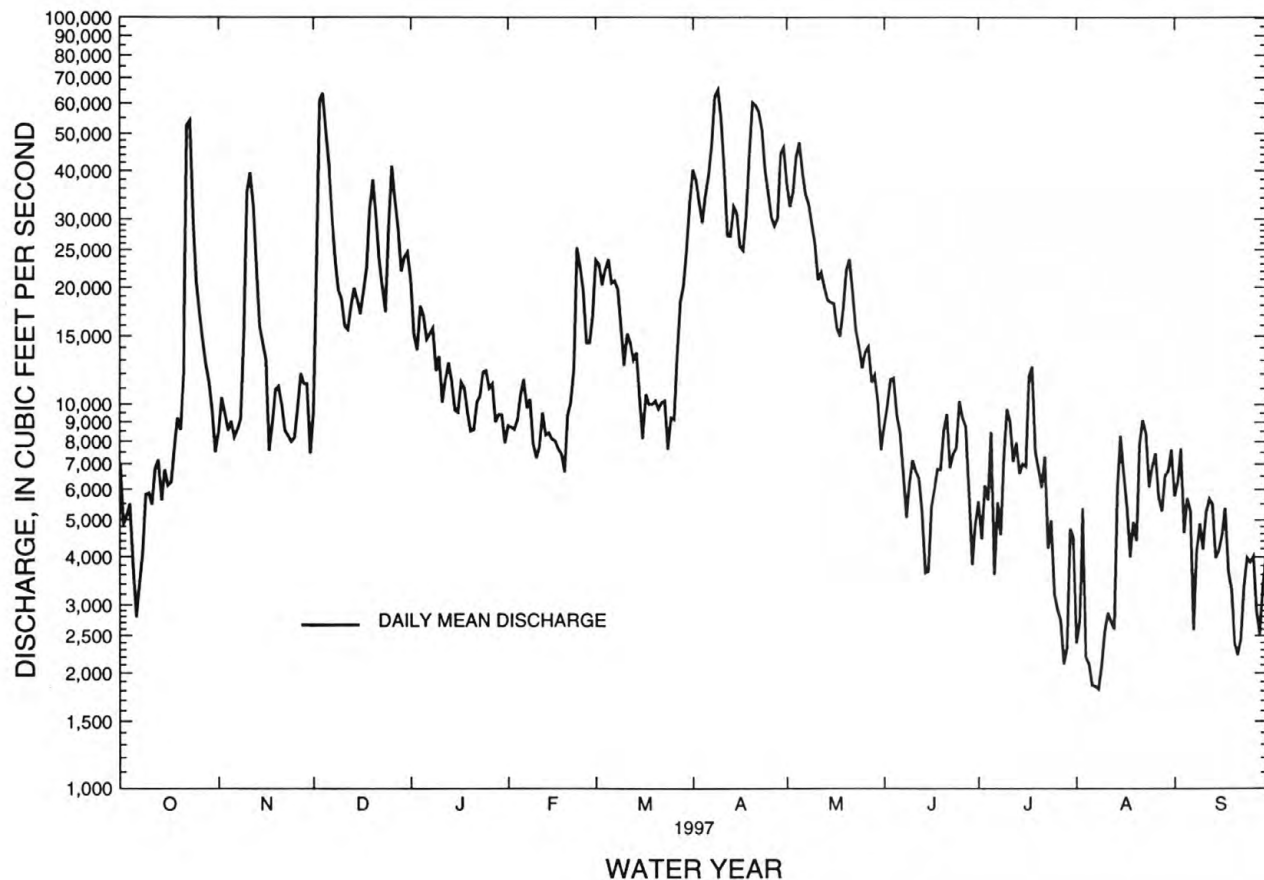
	MEAN	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	9750	12510	11810	9894	9864	17300	34150	18120	9893	6198	5735	4618		
MAX	16340	25800	27410	23660	21890	34660	58300	40670	31100	16930	14780	8601		
(WY)	1991	1996	1997	1996	1984	1990	1993	1996	1984	1996	1990	1987		
MIN	1512	3540	5787	4760	4250	9579	10270	7366	4088	2578	2718	1378		
(WY)	1985	1985	1985	1989	1987	1989	1995	1987	1988	1991	1985	1984		

01172003 CONNECTICUT RIVER BELOW HOLYOKE DAM AT HOLYOKE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1984 - 1997
ANNUAL TOTAL	7102250	5361800	
ANNUAL MEAN	19410	14690	12220
HIGHEST ANNUAL MEAN			19030
LOWEST ANNUAL MEAN			6580
HIGHEST DAILY MEAN	86500	64900	145000
LOWEST DAILY MEAN	1860	1820	519
ANNUAL SEVEN-DAY MINIMUM	2520	2070	707
INSTANTANEOUS PEAK FLOW		75100	153000
INSTANTANEOUS PEAK STAGE		16.28	25.62
INSTANTANEOUS LOW FLOW		924	a200
10 PERCENT EXCEEDS	49600	33100	27400
50 PERCENT EXCEEDS	12400	9700	8060
90 PERCENT EXCEEDS	4960	3980	3020

a Occurred when Hadley 1 generator shutdown. Discharge was derived from extending the rating below 2.5 feet.

CONNECTICUT RIVER BL HOLYOKE DAM AT HOLYOKE, MA 01172003



CONNECTICUT RIVER BASIN

01172500 WARE RIVER NEAR BARRE, MA

LOCATION.--Lat 42°25'30", long 72°01'30" Worcester County, Hydrologic Unit 01080204, on left bank 700 ft downstream from Barre Falls Reservoir, 1.6 mi upstream from Burnshirt River, 4 mi east of Barre, and at mile 33.3.

DRAINAGE AREA.--55.1 mi².

PERIOD OF RECORD.--Discharge: July 1946 to current year.

Water-quality records: Water years 1957, 1994.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area. WDR MA-RI-89-1: 1984-88.

GAGE.--Water-stage recorder. Elevation of gage is 745 ft above sea level, from topographic map.

REMARKS.--Records good except those above 200 ft³/s, which are poor, and those for estimated daily discharges, which are fair. Prior to August 1955, slight regulation at low flow at times by Long Pond. Flow regulated by Barre Falls Reservoir (see table below for monthend contents) since 1958. Diversion at times since 1955 from 6.5 mi² upstream of station for municipal supply of Fitchburg. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--51 years, 95.8 ft³/s, 23.61 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,890 ft³/s, Oct. 16, 1955, gage height, 6.31 ft; no flow part of each day Sept. 3-8, 13, 1996; minimum daily discharge, 0.1 ft³/s, Sept. 8, 11, 1995. Maximum discharge since construction of Barre Falls Reservoir in 1958, 1,630 ft³/s, Apr. 13, 1987, gage height, 5.56 ft; maximum gage height, 5.62 ft, Mar. 14, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft³/s, Oct. 22, gage height, 5.06 ft; minimum daily, 1.6 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	111	148	230	89	172	263	242	54	5.3	4.2	18
2	44	99	94	226	92	169	335	173	53	4.3	3.5	18
3	38	90	192	183	92	167	472	99	50	21	2.6	28
4	32	82	460	164	91	142	499	45	46	110	2.5	19
5	12	77	568	164	91	130	475	165	42	92	6.6	13
6	30	73	472	164	122	130	468	175	38	62	6.3	9.6
7	26	73	334	181	134	146	505	176	35	41	5.2	8.0
8	21	79	157	131	132	153	583	265	41	29	3.7	7.2
9	87	93	161	105	129	152	541	280	36	28	5.4	6.5
10	192	174	171	93	112	149	334	127	32	70	7.6	5.8
11	180	294	176	86	91	129	256	116	27	66	6.0	5.7
12	133	268	176	86	85	108	216	104	23	51	6.7	9.7
13	99	149	179	86	73	88	297	93	18	36	9.1	9.0
14	77	122	180	97	66	84	347	88	18	27	20	6.8
15	61	107	183	119	68	85	277	82	17	21	16	5.7
16	51	97	241	131	70	86	209	79	16	19	20	4.5
17	49	87	283	120	70	87	190	76	14	28	24	3.8
18	47	84	86	114	69	117	214	74	13	32	25	3.8
19	40	84	194	114	70	127	361	78	26	23	28	3.2
20	27	82	387	114	101	98	515	136	27	16	31	4.2
21	327	80	651	106	103	77	566	162	25	12	14	4.2
22	902	75	699	87	99	74	485	127	21	11	31	3.3
23	943	72	755	81	102	76	279	105	18	20	35	2.8
24	574	70	500	71	177	88	218	88	16	18	26	2.7
25	301	68	378	66	215	93	192	81	15	11	20	2.4
26	229	86	597	67	159	95	173	81	14	9.8	15	2.1
27	181	144	444	150	137	255	148	75	13	9.8	11	1.8
28	155	175	256	193	162	342	94	68	9.9	9.3	11	1.6
29	148	159	256	179	---	317	137	64	7.9	8.0	14	2.6
30	134	150	423	163	---	317	215	59	6.1	6.5	21	2.9
31	121	---	328	107	---	303	---	56	---	5.6	20	---
TOTAL	5315	3404	10129	3978	3001	4556	9864	3639	771.9	902.6	451.4	215.9
MEAN	171	113	327	128	107	147	329	117	25.7	29.1	14.6	7.20
MAX	943	294	755	230	215	342	583	280	54	110	35	28
MIN	12	68	86	66	66	74	94	45	6.1	4.3	2.5	1.6
(†)	3.9	30.1	44.6	29.2	40.4	61.9	31.9	3.1	2.0	1.8	2.4	1.8
MEAN††	172	124	332	123	112	155	317	107	25.3	29.0	14.8	6.97
CFSM††	3.12	2.25	6.03	2.23	2.03	2.81	5.75	1.94	.46	.53	.27	.13
IN. ††	3.59	2.50	6.95	2.57	2.11	3.24	6.43	2.23	.51	.61	.31	.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1997, BY WATER YEAR (WY)

MEAN	55.0	84.6	106	103	110	176	234	123	73.0	31.2	30.0	26.6
MAX	275	233	327	285	274	365	559	257	368	91.0	169	205
(WY)	1956	1956	1997	1979	1996	1983	1987	1989	1984	1959	1955	1954
MIN	4.17	6.78	13.1	8.14	18.0	69.3	77.4	41.8	14.1	4.49	1.97	2.00
(WY)	1965	1965	1966	1981	1977	1967	1985	1965	1964	1965	1965	1953

CONNECTICUT RIVER BASIN

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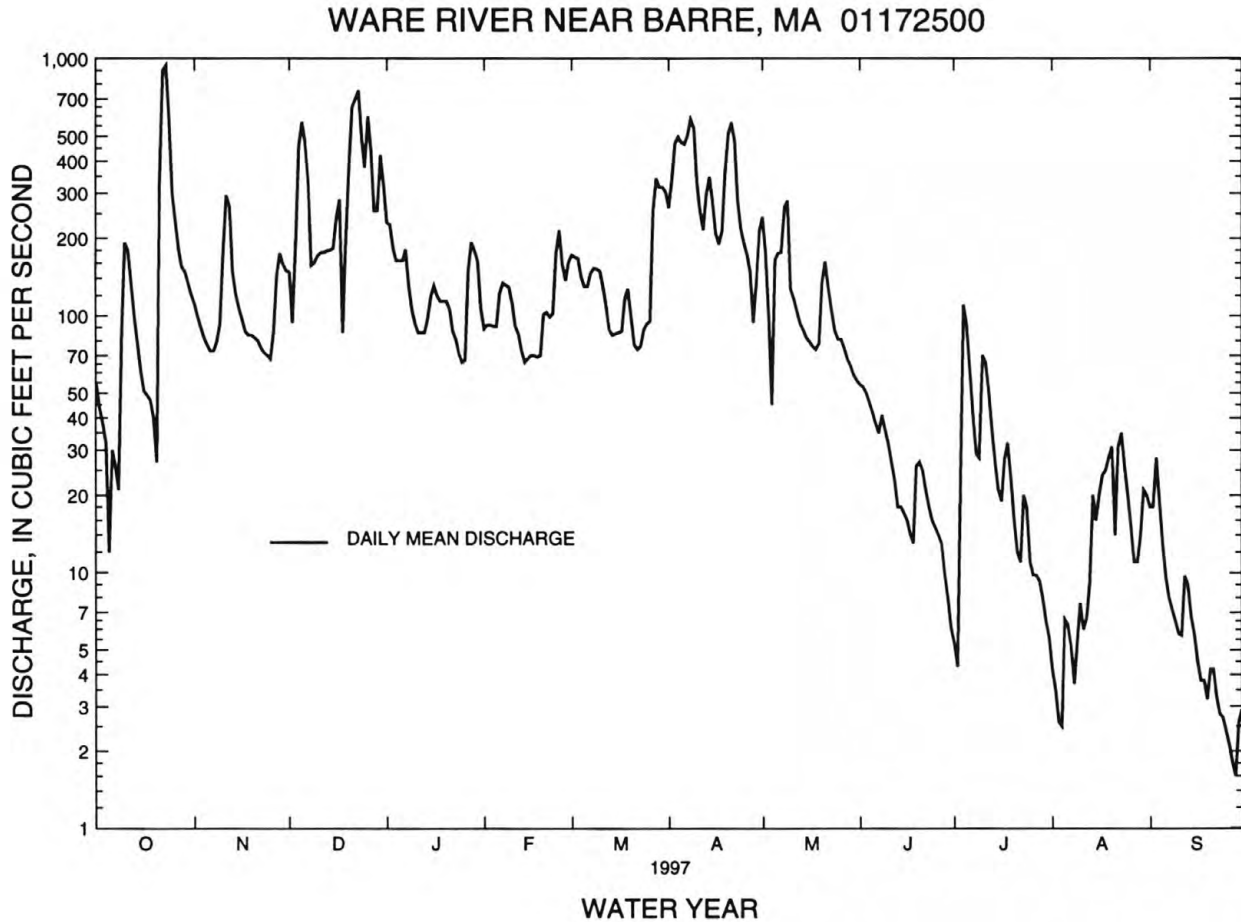
01172500 WARE RIVER NEAR BARRE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1946 - 1997	
ANNUAL TOTAL	57720.0		46227.8		95.8	
ANNUAL MEAN	158		127		95.8	
ANNUAL MEAN††	159		127		157	
HIGHEST ANNUAL MEAN					29.5	
LOWEST ANNUAL MEAN					1520	
HIGHEST DAILY MEAN	1240	Jan 31	943	Oct 23		1984
LOWEST DAILY MEAN	1.5	Sep 7	1.6	Sep 28		1965
ANNUAL SEVEN-DAY MINIMUM	2.0	Sep 3	2.3	Sep 23	.10	Oct 16 1955
INSTANTANEOUS PEAK FLOW			1040	Oct 22	.11	Sep 8 1995
INSTANTANEOUS PEAK STAGE			5.06	Oct 22	6.31	Sep 6 1995
INSTANTANEOUS LOW FLOW			1.4	Sep 28		Oct 16 1955
ANNUAL RUNOFF (CFSM)††	2.88		2.30		1.74	
ANNUAL RUNOFF (INCHES)††	39.06		31.20		23.61	
10 PERCENT EXCEEDS	368		302		220	
50 PERCENT EXCEEDS	92		86		61	
90 PERCENT EXCEEDS	12		7.0		7.5	

† Monthend contents, in millions of cubic feet (mcf), in Barre Falls Reservoir. Records furnished by U.S. Army Corps of Engineers. Monthend contents on Sept. 30, 1996, 3.4 mcf.

†† Adjusted for change in contents in Barre Falls Reservoir.

Note.--Except as footnoted, all statistics are based on unadjusted daily and monthly mean discharges.



CONNECTICUT RIVER BASIN

01173000 WARE RIVER AT INTAKE WORKS NEAR BARRE, MA

LOCATION.--Lat 42°23'26", long 72°03'39", Worcester County, Hydrologic Unit 01080204, on right bank above diversion dam at Ware River intake works, 2.7 mi downstream from Burnshirt River, 3 mi southeast of Barre, and at mile 29.1.

DRAINAGE AREA.--96.3 mi².

PERIOD OF RECORD.--January 1928 to current year. Prior to October 1977, published as Ware River at Coldbrook.

REVISED RECORDS.--WSP 1031: 1944. WDR MA-RI-84-1: Drainage area.

GAGE.--Venturi meters and water-stage recorder. Datum of gage is 5.65 ft below sea level. Prior to Feb. 1, 1936, water-stage recorder at site 0.2 mi downstream at datum 631.91 ft above sea level.

REMARKS.--Records good. Figures of discharge include diversion as needed for Boston metropolitan district during period Oct. 15 to June 14 of each year and at other times for emergency flood-control purposes as authorized by U.S. Army Corps of Engineers; diversion began in March 1931. Flow regulated by Barre Falls Reservoir 4.3 mi upstream (see table with station 01172500) since 1958. Diversion at times since 1955 from 6.5 mi² upstream for municipal supply of Fitchburg.

COOPERATION.--Computations of daily discharge made in cooperation with Water Division, Metropolitan District Commission, which collected gage-height and venturi-meter records.

AVERAGE DISCHARGE.--69 years, 169 ft³/s, 23.83 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s, Sept. 21, 1938, gage height, 664.28 ft, by computation of flow over dam; minimum daily, 0.46 ft³/s, Sept. 15, 1987, caused by unusual regulation. Maximum daily discharge since construction of Barre Falls Reservoir in 1958, 1,590 ft³/s, Apr. 14, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,070 ft³/s, Oct. 22; minimum daily, 7.3 ft³/s, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	196	296	400	185	301	496	374	126	22	15	26
2	91	178	578	393	191	309	540	297	114	20	14	26
3	79	166	583	336	189	303	627	258	106	67	13	33
4	67	159	694	312	187	260	677	238	100	174	16	26
5	43	151	716	319	248	252	698	340	94	160	26	21
6	64	146	617	328	294	304	728	307	75	93	20	18
7	52	146	474	312	275	301	796	346	69	61	16	17
8	73	171	354	259	252	285	842	400	73	46	14	15
9	254	416	333	231	240	277	740	392	68	58	14	14
10	320	461	324	215	216	269	539	266	60	119	16	13
11	293	494	321	193	186	232	440	241	54	94	15	14
12	217	408	339	190	177	206	405	217	48	70	15	18
13	169	286	356	189	153	177	558	203	44	54	21	16
14	137	245	359	199	142	174	561	191	43	44	24	14
15	115	215	376	221	143	192	473	179	40	43	25	12
16	101	196	437	307	144	181	400	173	35	50	25	11
17	97	186	610	282	144	177	360	165	36	50	25	9.7
18	89	182	592	274	141	210	454	164	41	52	17	10
19	90	182	682	251	146	217	739	195	73	45	17	9.1
20	402	180	801	229	227	181	799	309	67	33	17	9.9
21	697	171	907	202	231	162	780	302	56	28	19	9.9
22	1070	162	894	180	309	178	639	253	45	26	51	8.7
23	1030	154	912	179	277	177	477	215	38	28	46	8.7
24	657	146	723	154	323	183	400	185	35	30	37	8.5
25	421	147	809	199	336	189	361	177	41	24	30	8.0
26	343	286	900	209	263	387	326	174	37	22	24	7.7
27	293	331	658	261	294	517	296	155	34	22	21	7.3
28	249	317	478	340	310	558	250	153	30	22	24	7.3
29	239	278	464	314	---	540	328	156	27	20	24	12
30	232	259	606	280	---	546	369	142	24	18	29	11
31	211	---	467	204	---	538	---	142	---	17	27	---
TOTAL	8302	7015	17660	7962	6223	8783	16098	7309	1733	1612	697	421.8
MEAN	268	234	570	257	222	283	537	236	57.8	52.0	22.5	14.1
MAX	1070	494	912	400	336	558	842	400	126	174	51	33
MIN	43	146	296	154	141	162	250	142	24	17	13	7.3
MEAN++	268	244	575	251	227	291	525	225	57.3	51.9	22.7	13.8
CFSM++	2.78	2.53	5.97	2.61	2.36	3.02	5.45	2.34	0.60	0.54	0.24	0.14
INCHES++	3.21	2.83	6.89	3.01	2.45	3.49	6.08	2.69	0.66	0.62	0.27	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1997, BY WATER YEAR (WY)

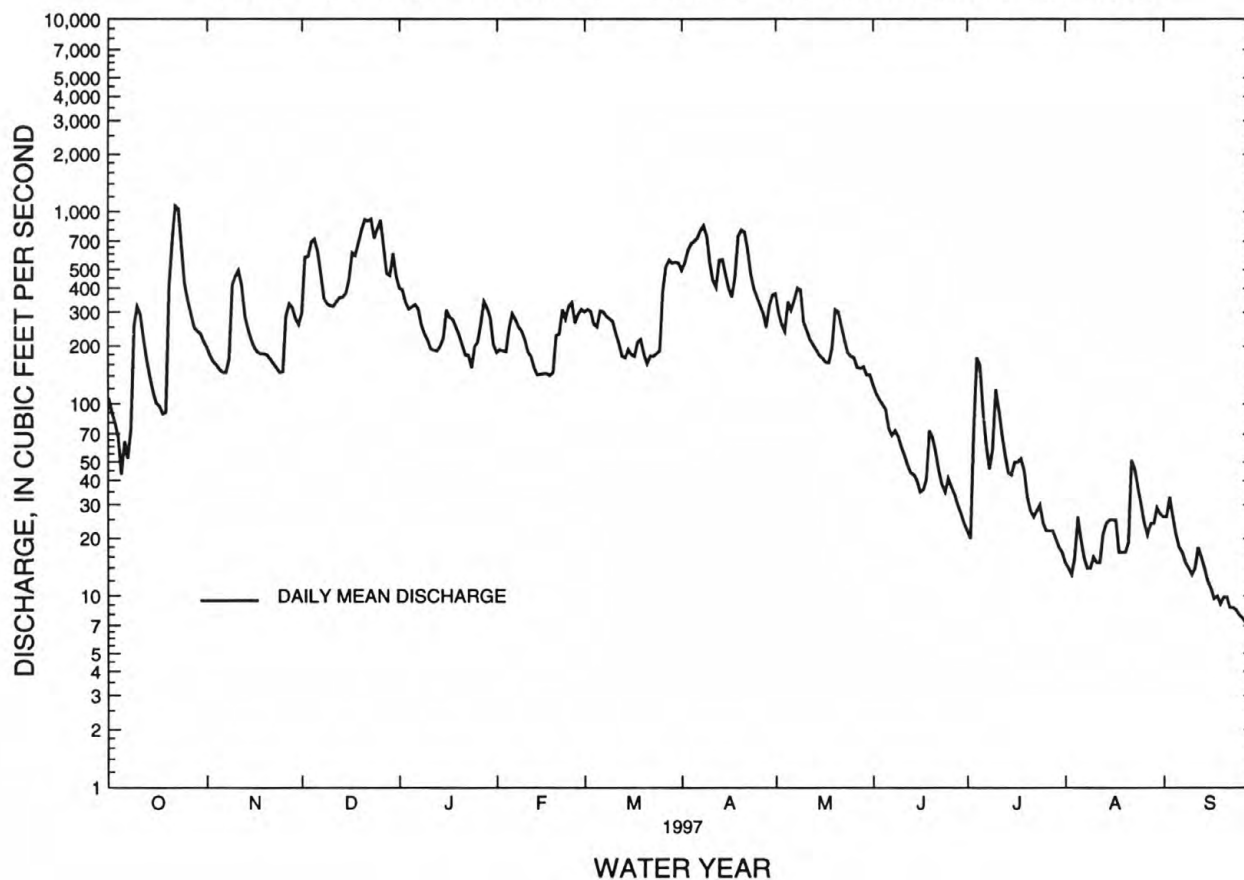
	MEAN	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
MEAN	90.0	139	175	178	178	323	411	220	137	68.0	55.1	65.5
MAX	465	445	570	499	488	1066	963	438	503	337	319	893
(WY)	1956	1956	1957	1957	1957	1956	1956	1956	1956	1956	1955	1958
MIN	7.86	13.9	29.1	17.2	37.5	118	129	83.6	31.2	11.0	5.93	6.12
(WY)	1965	1965	1966	1981	1980	1940	1985	1965	1964	1965	1966	1995

01173000 WARE RIVER AT INTAKE WORKS NEAR BARRE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1928 - 1997	
ANNUAL TOTAL	102105		83815.8			
ANNUAL MEAN	279		230		169	
ANNUAL MEAN†	279		230		169	
HIGHEST ANNUAL MEAN					277	
LOWEST ANNUAL MEAN					56.4	
HIGHEST DAILY MEAN	1310	Jan 30	1070	Oct 22	8740	Sep 21 1938
LOWEST DAILY MEAN	12	Sep 16	7.3	Sep 27	3.46	Sep 15 1987
ANNUAL SEVEN-DAY MINIMUM	14	Sep 11	8.0	Sep 22	3.4	Sep 3 1963
INSTANTANEOUS PEAK FLOW					14000	Sep 21 1938
INSTANTANEOUS PEAK STAGE					664.28	Sep 21 1938
ANNUAL RUNOFF (CFSM)††	2.90		2.39		1.75	
ANNUAL RUNOFF (INCHES)††	39.49		32.37		23.83	
10 PERCENT EXCEEDS	623		542		385	
50 PERCENT EXCEEDS	215		183		111	
90 PERCENT EXCEEDS	43		17		20	

†† Adjusted for change in contents in Barre Falls Reservoir (see station 01172500 for monthend contents).
 Note.--Except as footnoted, all statistics are based on unadjusted daily and monthly mean data.

WARE RIVER AT INTAKE WORKS NEAR BARRE, MA 01173000



CONNECTICUT RIVER BASIN

01173500 WARE RIVER AT GIBBS CROSSING, MA

LOCATION.--Lat 42°14'10", long 72°16'23", Hampshire County, Hydrologic Unit 01080204, on right bank 0.5 mi upstream from Gibbs Crossing, 1.8 mi upstream from Beaver Brook, 2.5 mi southwest of Ware, and 8.8 mi upstream from mouth.

DRAINAGE AREA.--197 mi².

PERIOD OF RECORD.--Discharge: August 1912 to current year.

Water-quality records: Water years 1953-54.

REVISED RECORDS.--WSP 1031: 1944.

WSP 1301: 1914(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 379.79 ft above sea level. Prior to Mar. 1, 1930, at site 0.5 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversion at times: Since March 1931 from 96.3 mi² for supply of Boston metropolitan district and since 1955 from 6.5 mi² for municipal supply of Fitchburg. Flow regulated by mills upstream and by Barre Falls Reservoir (see station 01172500) since 1958. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--18 years (water years 1913-30), 313 ft³/s, 21.36 in/yr; 67 years (water years 1931-97), affected by diversion and storage, 292 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,700 ft³/s, Sept. 21, 1938, gage height, 18.2 ft, from floodmarks, from rating curve extended above 4,600 ft³/s on basis of contracted-opening measurement at gage height 12.83 ft and slope-area measurement at gage height 18.2 ft; minimum, 4.2 ft³/s, Aug. 24, 1995; minimum daily, 6.0 ft³/s, Oct. 4, 1914. Maximum discharge since construction of Barre Falls Reservoir in 1958, 5,050 ft³/s, Mar. 6, 1979, gage height, 7.94 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,670 ft³/s, Dec. 18, gage height, 5.82 ft; minimum daily, 13 ft³/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	349	506	814	366	570	1210	654	236	48	43	64
2	206	326	1560	741	356	570	1030	656	205	46	41	52
3	186	270	1880	724	364	613	1110	552	210	82	40	67
4	151	244	1290	672	345	530	1360	766	164	386	41	57
5	124	243	1270	688	539	470	1650	627	169	361	83	61
6	108	239	1220	706	702	633	1680	696	147	265	108	58
7	97	249	1040	687	638	689	1620	708	128	199	62	58
8	114	287	909	619	460	561	1560	675	140	78	49	e52
9	537	974	765	550	441	499	1430	699	125	119	51	e45
10	708	1420	679	490	397	507	1140	666	123	291	48	38
11	692	979	637	e430	360	490	886	505	112	260	43	13
12	497	875	680	e410	315	443	785	462	87	175	46	27
13	394	678	845	e390	304	360	1110	406	147	121	57	37
14	316	544	869	e370	269	346	1190	383	185	106	66	39
15	265	388	947	381	319	463	1000	367	105	97	53	35
16	199	395	957	593	299	435	845	338	93	79	52	32
17	186	372	1430	e820	260	376	739	307	86	78	52	29
18	185	351	2460	e600	277	376	825	317	102	85	61	27
19	146	331	2070	e430	314	388	1370	355	127	80	54	26
20	607	350	2110	e380	506	409	1710	594	119	77	33	26
21	1340	321	1770	e370	492	355	1480	656	116	70	68	26
22	1330	310	1670	366	658	426	1370	536	108	68	68	24
23	1590	298	1520	392	786	487	1110	435	97	56	78	24
24	1450	254	1550	475	564	393	848	375	62	46	77	23
25	889	293	2030	491	550	381	729	347	76	60	62	23
26	656	523	1760	572	529	887	647	338	78	56	57	24
27	495	858	1620	e490	513	1160	588	321	68	52	46	23
28	467	677	1130	e520	646	1060	592	271	70	51	55	23
29	440	578	935	e550	---	1010	647	258	65	54	83	27
30	409	500	971	e490	---	1100	658	256	58	50	60	27
31	374	---	1050	e410	---	1130	---	235	---	45	49	---
TOTAL	15448	14476	40130	16621	12569	18117	32919	14761	3608	3641	1786	1087
MEAN	498	483	1295	536	449	584	1097	476	120	117	57.6	36.2
MAX	1590	1420	2460	820	786	1160	1710	766	236	386	108	67
MIN	97	239	506	366	260	346	588	235	58	45	33	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1997, BY WATER YEAR (WY)

MEAN	171	257	309	326	321	509	596	377	246	140	123	138
MAX	750	922	1295	794	802	1838	1394	830	746	714	890	1707
(WY)	1956	1956	1997	1996	1976	1936	1956	1996	1984	1938	1955	1938
MIN	29.0	39.0	68.5	29.6	77.7	210	231	167	69.5	36.5	25.8	14.5
(WY)	1965	1965	1966	1981	1980	1989	1966	1965	1964	1965	1964	1953

CONNECTICUT RIVER BASIN

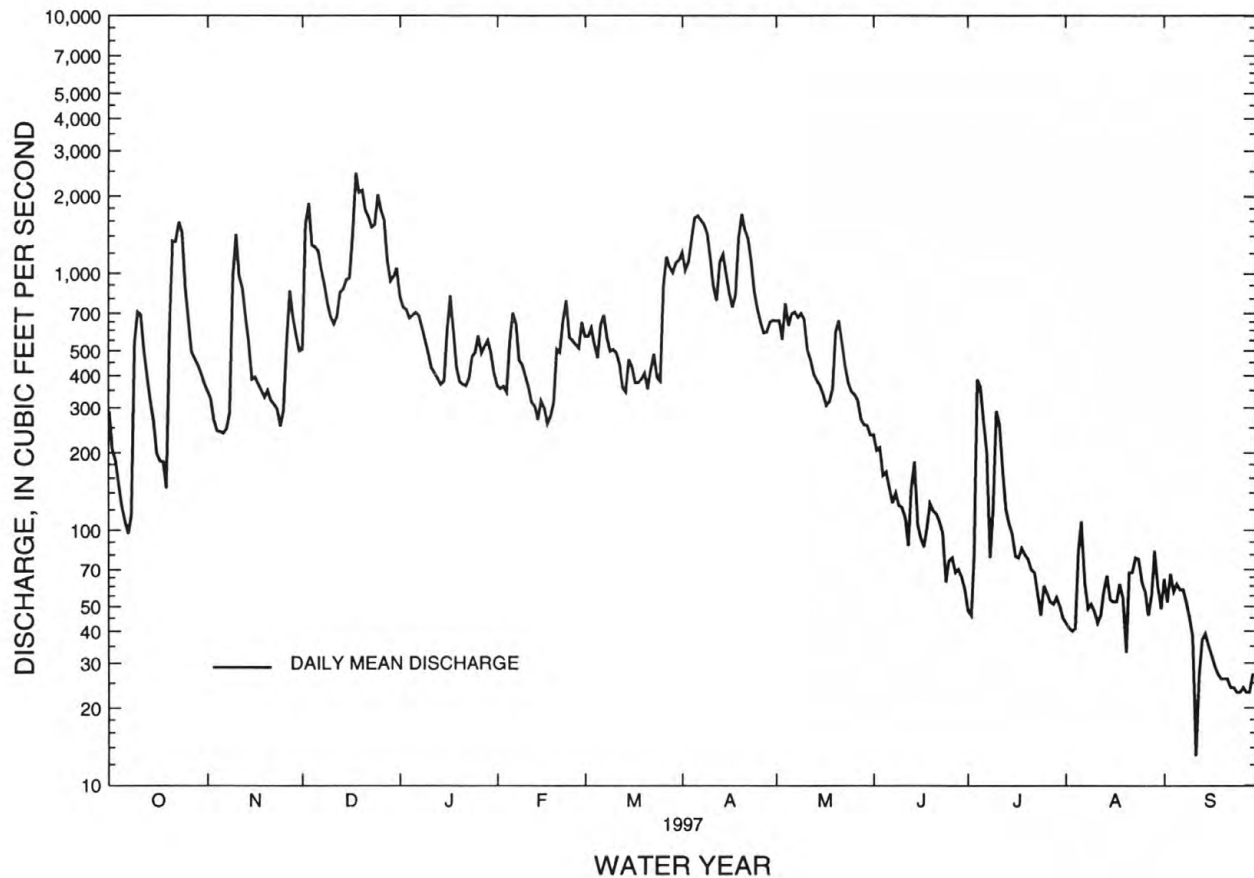
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01173500 WARE RIVER AT GIBBS CROSSING, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1931 - 1997	
ANNUAL TOTAL	225259		175163		292	
ANNUAL MEAN	615		480		581	
HIGHEST ANNUAL MEAN					107	
LOWEST ANNUAL MEAN					1938	
HIGHEST DAILY MEAN	3990	Apr 17	2460	Dec 18	16700	Sep 21 1938
LOWEST DAILY MEAN	49	Sep 16	13	Sep 11	7.0	Sep 12 1953
ANNUAL SEVEN-DAY MINIMUM	51	Sep 11	23	Sep 22	9.4	Sep 8 1953
INSTANTANEOUS PEAK FLOW			2670	Dec 18	22700	Sep 21 1938
INSTANTANEOUS PEAK STAGE			5.82	Dec 18	18.20	Sep 21 1938
INSTANTANEOUS LOW FLOW			13	Sep 11	4.2	Aug 24 1995
10 PERCENT EXCEEDS	1350		1130		609	
50 PERCENT EXCEEDS	437		372		215	
90 PERCENT EXCEEDS	96		49		49	

e Estimated

WARE RIVER AT GIBBS CROSSING, MA 01173500



EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 10	0045	538	20.50	Mar. 27	0245	424	20.33
Dec. 2	1930	*691	*20.72	Apr. 1	0230	363	20.26
Dec. 18	1030	630	20.65	Apr. 7	1500	389	20.30
Dec. 25	1345	440	20.39	Apr. 20	0230	432	20.37

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	69	115	128	89	144	312	135	74	11	4.0	16
2	70	65	453	128	83	139	240	125	70	10	3.2	14
3	58	60	529	128	79	147	222	124	64	30	2.9	14
4	45	58	320	125	77	130	238	196	59	114	3.3	10
5	37	58	231	126	113	119	318	189	53	92	17	8.1
6	33	57	203	141	163	153	363	163	50	59	19	7.2
7	31	56	183	139	145	174	378	174	47	38	16	6.6
8	34	70	194	121	117	152	339	154	43	30	14	6.5
9	164	292	171	107	99	126	265	135	39	30	12	6.0
10	229	463	147	105	86	123	205	124	37	75	11	6.0
11	180	293	133	98	80	117	172	118	35	72	9.5	5.9
12	130	191	144	88	76	109	159	107	32	47	12	7.2
13	100	145	183	82	70	100	240	101	29	32	14	7.6
14	83	120	202	80	70	101	253	92	28	25	23	7.3
15	70	105	210	77	75	119	204	87	24	20	23	6.8
16	61	93	207	113	76	115	167	83	21	17	21	6.0
17	56	86	282	168	72	104	151	79	19	15	19	5.1
18	52	85	597	128	70	100	174	79	20	15	19	5.2
19	51	84	522	94	74	94	328	83	34	13	16	4.9
20	138	84	487	78	110	93	392	157	38	10	13	4.7
21	305	80	341	75	120	91	282	189	35	9.5	22	4.8
22	239	77	243	77	192	107	214	147	31	9.3	26	3.4
23	172	72	201	84	233	120	177	115	26	8.5	25	2.7
24	144	69	190	80	170	112	156	99	22	7.4	22	2.2
25	124	69	392	109	128	108	141	99	22	6.6	19	1.7
26	104	121	353	147	111	250	133	97	22	6.0	17	1.5
27	90	200	248	116	130	384	118	86	20	6.5	15	1.2
28	84	163	195	122	162	307	138	79	16	7.2	16	.94
29	80	128	172	134	---	271	182	77	14	7.0	19	1.6
30	75	107	165	111	---	294	157	76	13	5.6	19	1.7
31	72	---	162	93	---	302	---	74	---	4.7	17	---
TOTAL	3203	3620	8175	3402	3070	4805	6818	3643	1037	833.3	488.9	176.84
MEAN	103	121	264	110	110	155	227	118	34.6	26.9	15.8	5.89
MAX	305	463	597	168	233	384	392	196	74	114	26	16
MIN	31	56	115	75	70	91	118	74	13	4.7	2.9	.94
CFSM	2.36	2.76	6.03	2.51	2.51	3.55	5.20	2.69	.79	.62	.36	.13
IN.	2.73	3.08	6.96	2.90	2.61	4.09	5.80	3.10	.88	.71	.42	.15

MEAN	39.0	64.2	78.1	79.2	79.2	134	163	93.1	58.3	29.5	23.3	26.2
MAX	155	177	264	192	207	266	420	189	175	179	127	390
(WY)	1980	1956	1997	1979	1984	1979	1940	1984	1984	1938	1955	1938
MIN	2.55	6.93	19.9	5.30	18.5	48.2	34.8	30.5	9.03	3.23	.80	.000
(WY)	1965	1965	1981	1981	1940	1965	1985	1985	1964	1949	1953	1995

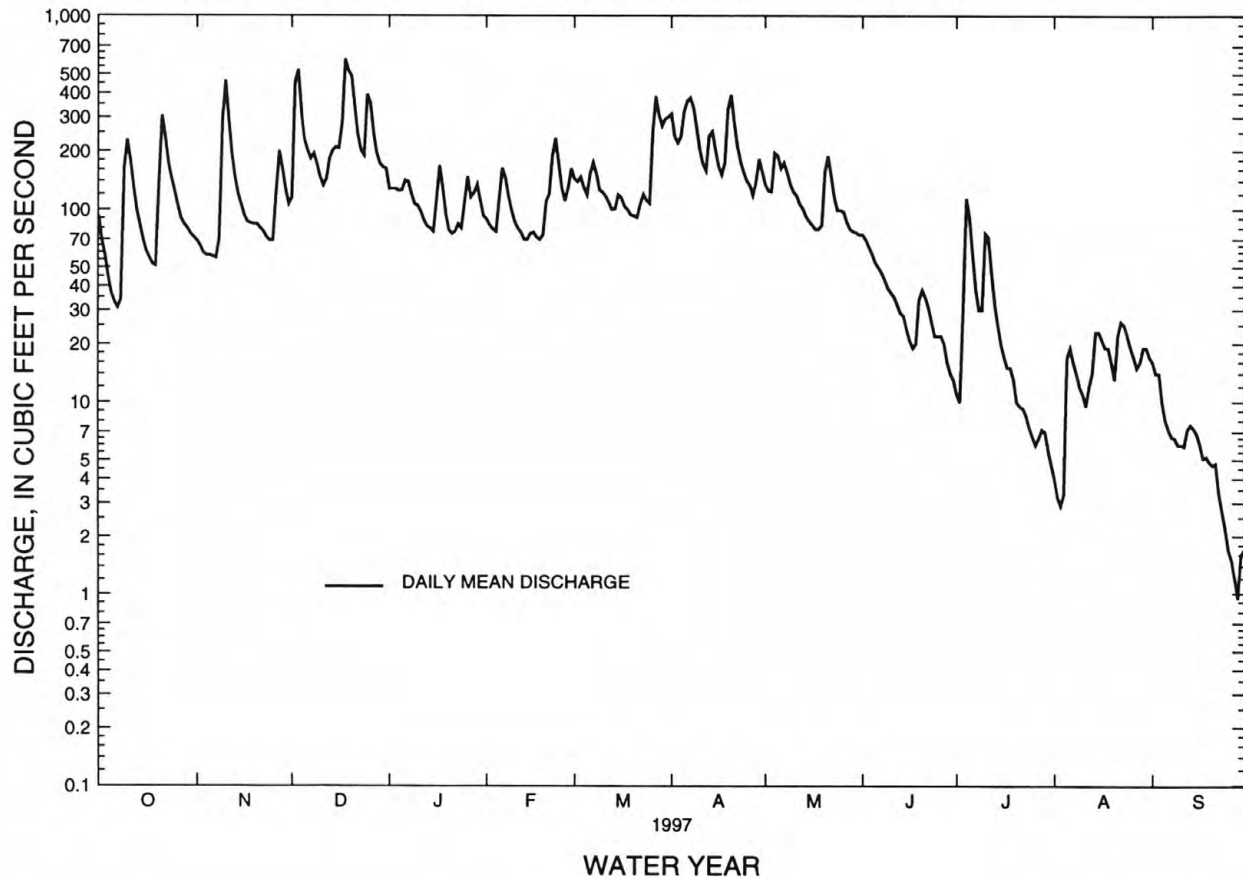
CONNECTICUT RIVER BASIN

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01174500 EAST BRANCH SWIFT RIVER NEAR HARDWICK, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1937 - 1997
ANNUAL TOTAL	49296.8	39272.04	
ANNUAL MEAN	135	108	71.9
HIGHEST ANNUAL MEAN			123
LOWEST ANNUAL MEAN			22.8
HIGHEST DAILY MEAN	985	597	4690
LOWEST DAILY MEAN	9.8	.94	.00
ANNUAL SEVEN-DAY MINIMUM	10	1.5	.00
INSTANTANEOUS PEAK FLOW		691	6780
INSTANTANEOUS PEAK STAGE		20.72	22.49
INSTANTANEOUS LOW FLOW		.55	.00
ANNUAL RUNOFF (CFSM)	3.08	2.46	1.65
ANNUAL RUNOFF (INCHES)	41.96	33.43	22.36
10 PERCENT EXCEEDS	268	235	162
50 PERCENT EXCEEDS	101	86	45
90 PERCENT EXCEEDS	30	7.5	7.2

EAST BRANCH SWIFT RIVER NEAR HARDWICK, MA 01174500



CONNECTICUT RIVER BASIN

01174565 WEST BRANCH SWIFT RIVER NEAR SHUTESBURY, MA

LOCATION.--Lat 42°27'18", long 72°22'56", Franklin County, Hydrologic Unit 01080204, on left bank 800 ft downstream from State Highway 202 and 1.4 mi east of Shutesbury.

DRAINAGE AREA.--12.6 mi².

PERIOD OF RECORD.--November 1983 to September 1985, April 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 540 ft above sea level, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--3 years (water years, 1985, 1996-97) 23.3 ft³/s, 25.17 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,450 ft³/s, June 14, 1996, gage height, 5.87 ft, from rating curve extended above 310 ft³/s on basis of slope-area measurement at gage height 4.28 ft; minimum, about 0.35 ft³/s, mid-September 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 320 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 9	1230	472	3.79	Dec. 2	1030	*550	*3.97

Minimum discharge, 0.91 ft³/s, about Aug. 3 (or) not determined; minimum daily, 0.94 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	41	e40	23	34	90	e33	e12	e1.0	e1.0	2.5
2	9.2	11	257	e36	19	e32	67	e29	e12	e.96	e.94	2.9
3	7.6	11	103	e34	e17	e30	57	e47	e9.0	e7.0	1.1	3.1
4	5.9	11	62	32	16	e28	58	e42	e8.6	e100	2.0	2.3
5	5.4	11	47	35	41	27	43	e39	e8.0	e20	11	2.0
6	5.3	11	44	38	46	52	37	e45	e7.2	e10	4.2	1.9
7	5.1	11	40	33	35	46	36	e40	e6.8	e6.4	2.5	2.0
8	6.0	27	47	27	25	32	35	e36	e6.8	e5.8	1.9	2.1
9	63	258	41	25	22	29	38	e32	e6.8	e9.2	1.8	2.0
10	45	97	35	25	20	25	e34	e30	e7.0	e76	1.7	1.8
11	33	57	33	23	17	24	e31	e26	e5.4	e10	2.0	1.9
12	22	44	50	20	16	22	e58	e23	e4.6	e6.6	7.4	5.4
13	18	37	77	20	15	20	e50	e21	e4.1	e4.1	6.9	4.5
14	15	33	61	19	15	19	e40	e20	e3.5	e2.8	13	3.4
15	12	29	63	18	16	24	e35	e19	e2.8	e2.5	5.5	2.8
16	11	27	60	37	14	20	e30	e18	e2.5	e2.9	4.1	2.2
17	11	27	119	e32	13	24	e33	e16	e2.3	e3.0	3.1	1.9
18	9.6	26	152	e26	12	17	e40	e15	e2.9	e6.0	3.1	3.1
19	9.2	26	137	e23	13	15	e56	e17	e8.4	e3.0	2.2	2.6
20	53	25	120	e20	e16	15	e43	e35	e5.0	e2.4	1.9	2.3
21	48	23	73	e18	22	14	e35	e25	e3.4	e2.0	9.0	2.2
22	29	22	58	e19	63	20	e32	e21	e2.4	e2.8	11	1.9
23	23	21	49	e20	70	22	e29	e18	e2.1	e1.9	14	2.0
24	24	20	64	e19	40	19	e26	e18	e1.9	e1.8	8.3	2.0
25	20	20	161	e42	33	16	e25	e19	e2.6	e1.8	5.4	1.8
26	18	54	77	e35	24	71	e23	e17	e2.1	e1.6	4.1	1.9
27	16	56	57	e29	39	82	e26	e14	e1.6	e1.4	3.5	1.8
28	16	36	48	e35	47	75	e42	e12	e1.4	e1.8	3.7	1.7
29	15	30	50	e31	---	79	e35	e11	e1.2	e1.4	3.4	3.5
30	13	27	61	e28	---	95	e30	e9.0	e1.1	e1.1	3.0	3.1
31	13	---	46	27	---	90	---	e9.6	---	e1.3	2.5	---
TOTAL	593.3	1100	2333	866	749	1118	1214	756.6	145.5	298.56	145.24	74.6
MEAN	19.1	36.7	75.3	27.9	26.8	36.1	40.5	24.4	4.85	9.63	4.69	2.49
MAX	63	258	257	42	70	95	90	47	12	100	14	5.4
MIN	5.1	11	33	18	12	14	23	9.0	1.1	.96	.94	1.7
CFSM	1.52	2.91	5.97	2.22	2.12	2.86	3.21	1.94	.38	.76	.37	.20
IN.	1.75	3.25	6.89	2.56	2.21	3.30	3.58	2.23	.43	.88	.43	.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1997, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	15.2	28.7	40.6	27.8	38.3	35.2	45.0	33.7	19.7	11.4	4.37	4.45		
MAX	23.9	39.2	75.3	51.0	70.6	37.2	83.0	78.1	42.0	24.3	7.71	9.59		
(WY)	1996	1996	1997	1996	1984	1996	1984	1984	1996	1996	1985	1985		
MIN	2.58	10.3	14.9	11.1	13.6	30.5	15.3	10.5	4.85	2.31	2.03	1.05		
(WY)	1985	1985	1985	1985	1985	1985	1985	1985	1997	1995	1995	1995		

CONNECTICUT RIVER BASIN

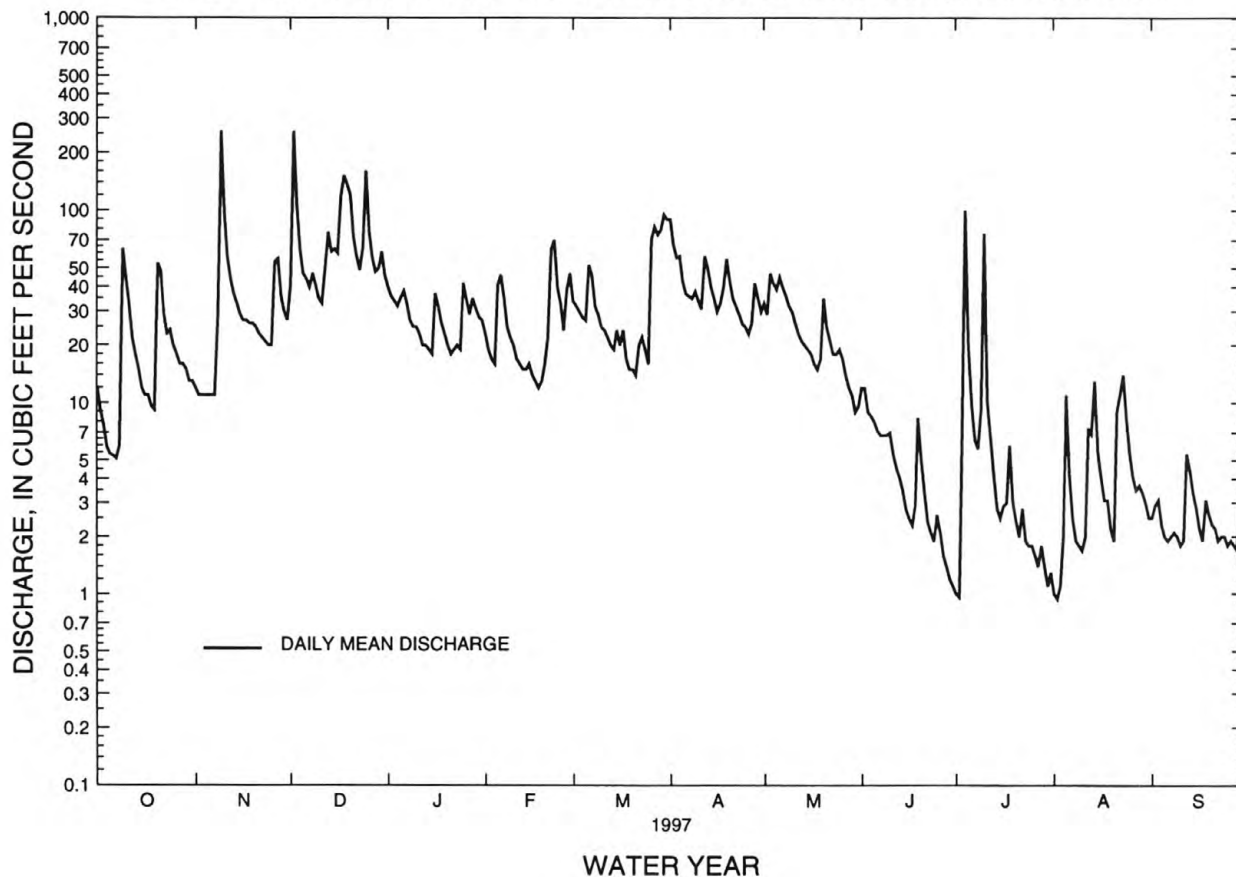
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01174565 WEST BRANCH SWIFT RIVER NEAR SHUTESBURY, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1984 - 1997
ANNUAL TOTAL	13712.0	9393.80	23.3
ANNUAL MEAN	37.5	25.7	33.0
HIGHEST ANNUAL MEAN			11.3
LOWEST ANNUAL MEAN			612
HIGHEST DAILY MEAN	377 Jun 14	258 Nov 9	1996
LOWEST DAILY MEAN	1.2 Sep 3	.94 Aug 2	1985
ANNUAL SEVEN-DAY MINIMUM	1.3 Sep 1	1.2 Jul 28	May 30 1984
INSTANTANEOUS PEAK FLOW		550 Dec 2	.35 Sep 7 1995
INSTANTANEOUS PEAK STAGE		3.97 Dec 2	.38 Sep 7 1995
INSTANTANEOUS LOW FLOW		.91 Aug 3	1450 Jun 14 1996
ANNUAL RUNOFF (CFSM)	2.97	2.04	5.87 Jun 14 1996
ANNUAL RUNOFF (INCHES)	40.48	27.73	.35 Sep 7 1995
10 PERCENT EXCEEDS	72	57	1.85
50 PERCENT EXCEEDS	27	19	25.17
90 PERCENT EXCEEDS	4.2	2.0	54
			14
			1.8

e Estimated

WEST BRANCH SWIFT RIVER NEAR SHUTESBURY, MA 01174565



LOCATION.--Lat 42°20'08", long 72°22'12", Hampshire County, Hydrologic Unit 01080204, on left bank 200 ft upstream from mouth, 2 mi southeast of Knights Corner, and 4.5 mi north of Belchertown.

PERIOD OF RECORD.--July 1961 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 540 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--36 years, 5.18 ft³/s, 27.60 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 283 ft³/s, Oct. 20, 1989, gage height, 7.39 ft, from rating curve extended above 92 ft³/s; maximum gage height, 7.42 ft, Mar. 6, 1979; minimum discharge, 0.06 ft³/s, Sept. 3, 4, 5, 6, 7, 8, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 75 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 9	0815	119	6.71	Dec. 2	0815	*121	*6.72

Minimum discharge, 0.18 ft³/s, Sept. 25-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	3.6	11	7.6	e5.2	8.1	13	7.6	3.3	.23	.24	.78
2	2.0	3.4	57	7.5	e5.0	9.6	13	6.7	3.3	.22	.22	.74
3	1.7	3.2	23	7.4	e4.8	8.7	17	22	2.8	9.6	.35	.76
4	1.3	3.1	14	7.7	e4.8	7.5	30	12	2.4	24	.69	.58
5	1.2	3.0	11	8.8	e12	7.5	26	9.2	2.1	4.9	4.9	.47
6	1.1	2.9	10	9.0	e9.0	17	19	13	1.9	2.3	1.6	.39
7	1.1	2.9	9.4	7.2	e7.0	11	14	e11	1.7	1.5	.89	.37
8	1.5	9.2	9.6	6.1	e5.8	8.2	11	8.9	1.6	1.3	.55	.37
9	18	71	8.6	5.6	e5.2	7.3	9.4	8.0	1.4	7.4	.47	.36
10	10	25	7.8	5.6	e4.9	7.1	8.5	8.4	1.2	18	.36	.31
11	7.9	14	7.4	5.0	e4.7	6.7	7.8	7.3	1.0	5.8	.31	.32
12	5.2	10	11	4.6	e4.5	6.0	18	6.4	.87	2.9	.42	.39
13	4.1	8.3	15	4.4	e4.4	5.6	15	5.9	.83	1.7	1.3	.31
14	3.5	7.3	14	4.1	4.6	5.1	10	5.5	.81	1.2	1.8	.29
15	2.9	6.5	16	4.0	4.7	7.7	8.7	5.1	.66	.94	.82	.27
16	2.6	5.9	15	11	4.7	6.7	7.9	5.0	.59	.88	.59	.24
17	2.4	5.7	37	8.5	4.6	6.5	8.7	4.7	.55	.81	.42	.21
18	2.1	5.5	43	e6.5	4.6	5.1	16	4.5	.72	1.8	.67	.22
19	2.0	5.5	33	e4.8	6.0	5.2	17	6.6	3.1	.89	.48	.21
20	23	5.3	26	e4.1	8.7	5.0	11	16	1.4	.62	.35	.20
21	12	4.9	15	e3.9	8.9	5.2	9.2	9.0	.87	.54	4.0	.23
22	7.8	4.7	12	e3.9	25	8.5	8.1	6.9	.63	.74	3.3	.21
23	6.2	4.4	10	e4.4	14	7.9	7.2	5.9	.50	.54	2.1	.20
24	6.6	4.2	14	e4.1	8.7	7.0	6.8	5.2	.45	.47	1.2	.20
25	5.4	4.2	27	e9.0	7.2	6.2	6.3	5.7	.65	.48	.81	.19
26	4.6	16	14	e7.0	6.7	31	5.8	5.6	.56	.41	.62	.18
27	4.2	12	11	e6.0	12	20	6.8	4.6	.50	.36	.51	.18
28	4.5	8.2	9.7	e7.5	10	15	13	4.1	.36	.36	.81	.18
29	4.4	6.7	10	e6.6	---	15	8.6	3.6	.30	.33	2.0	.49
30	4.0	6.0	11	e5.8	---	15	7.1	3.3	.25	.27	2.0	.44
31	3.9	---	8.5	e5.5	---	19	---	3.1	---	.25	1.1	---
TOTAL	159.9	272.6	521.0	193.2	207.7	301.4	359.9	230.8	37.30	91.74	35.88	10.29
MEAN	5.16	9.09	16.8	6.23	7.42	9.72	12.0	7.45	1.24	2.96	1.16	.34
MAX	23	71	57	11	25	31	30	22	3.3	24	4.9	.78
MIN	1.1	2.9	7.4	3.9	4.4	5.0	5.8	3.1	.25	.22	.22	.18
CFSM	2.02	3.56	6.59	2.44	2.91	3.81	4.70	2.92	.49	1.16	.45	.13
IN.	2.33	3.98	7.60	2.82	3.03	4.40	5.25	3.37	.54	1.34	.52	.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997, BY WATER YEAR (WY)

MEAN	3.40	4.97	6.19	5.86	6.03	10.7	10.1	6.54	3.49	1.73	1.63	1.57
MAX	15.0	10.3	16.8	14.7	13.9	20.3	18.5	18.1	13.6	9.40	6.68	9.20
(WY)	1990	1976	1997	1996	1976	1977	1967	1984	1982	1996	1994	1975
MIN	.25	.48	1.29	.43	1.28	3.81	3.42	2.14	.50	.24	.13	.11
(WY)	1965	1965	1981	1981	1980	1989	1966	1986	1964	1993	1993	1964

CONNECTICUT RIVER BASIN

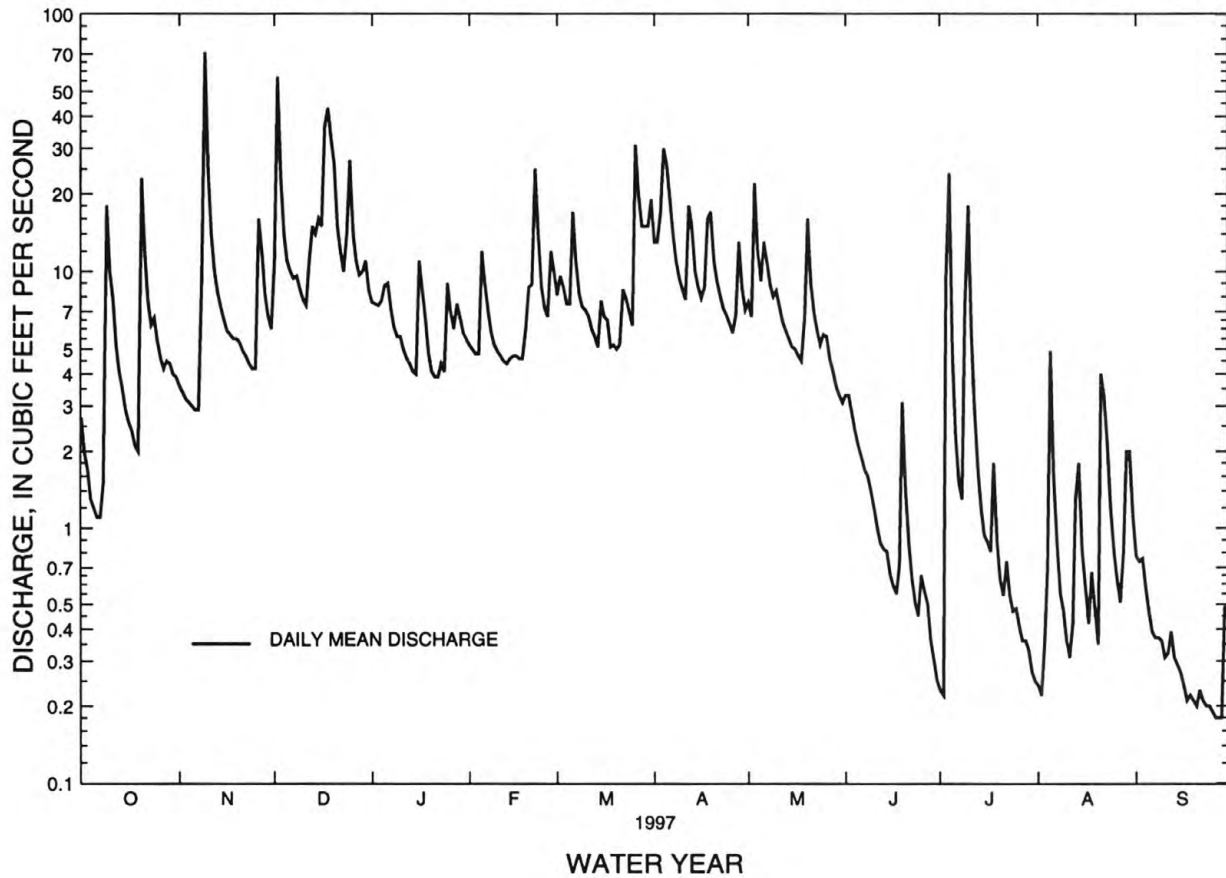
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01174900 CADWELL CREEK NEAR BELCHERTOWN, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1961 - 1997
ANNUAL TOTAL	3242.51	2421.71	
ANNUAL MEAN	8.86	6.63	5.18
HIGHEST ANNUAL MEAN			8.07
LOWEST ANNUAL MEAN			1.85
HIGHEST DAILY MEAN	80 Jul 13	71 Nov 9	181 Mar 6 1979
LOWEST DAILY MEAN	.21 Sep 5	.18 Sep 26	.07 Jul 16 1965
ANNUAL SEVEN-DAY MINIMUM	.24 Sep 1	.19 Sep 22	.08 Sep 2 1995
INSTANTANEOUS PEAK FLOW		121 Dec 2	283 Oct 20 1989
INSTANTANEOUS PEAK STAGE		6.72 Dec 2	7.42 Mar 6 1979
INSTANTANEOUS LOW FLOW		.18 Sep 25	.06 Sep 3 1995
ANNUAL RUNOFF (CFSM)	3.47	2.60	2.03
ANNUAL RUNOFF (INCHES)	47.30	35.33	27.60
10 PERCENT EXCEEDS	16	14	11
50 PERCENT EXCEEDS	5.9	5.1	3.0
90 PERCENT EXCEEDS	.86	.37	.35

e Estimated

CADWELL CREEK NEAR BELCHERTOWN, MA 01174900



CONNECTICUT RIVER BASIN

01175500 SWIFT RIVER AT WEST WARE, MA

LOCATION.--Lat 42°16'04", long 72°19'59", Hampshire County, Hydrologic Unit 01080204, on left bank at West Ware, 1.4 mi downstream from Quabbin Reservoir, 3.5 mi east of Belchertown, and 8.0 mi upstream from mouth.

DRAINAGE AREA.--189 mi², includes 1.6 mi² drained by Beaver Brook, flow of which is diverted from Ware River basin. Prior to January 1937, 186 mi².

PERIOD OF RECORD.--Discharge: July 1910 to September 1912 (twice-daily gage heights and corresponding discharge), October 1912 to current year.
Water-quality records: Water years 1952-54.

REVISED RECORDS.--WSP 451: 1916. WSP 871: 1919. WSP 1031: 1944 (changes in reservoir contents and adjusted figures only). WSP 1301: 1925(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 365.18 ft above sea level. Prior to Aug. 25, 1912, nonrecording gage at site 400 ft upstream at same datum.

REMARKS.--Records good, except those greater than 200 ft³/s, and those for August and September, which are fair. Flow regulated since August 1939 by Quabbin Reservoir, usable capacity, 53.8 billion ft³, (See table below for monthend contents). Diversion from Ware River to Quabbin Reservoir since 1940, from Quabbin Reservoir to Wachusett Reservoir since 1941, from Quabbin Reservoir to Chicopee Valley aqueduct since 1950, and from Quabbin Reservoir to city of Worcester at times since 1966.

AVERAGE DISCHARGE.--27 years (water years 1913-39) prior to completion of Quabbin Reservoir, 314 ft³/s, 22.56 in/yr; 58 years (water years 1940-97), affected by storage and diversions, 98.6 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,590 ft³/s, Mar. 19, 1936, gage height, 15.00 ft; minimum daily, 9.1 ft³/s, Dec. 15, 1968. Maximum discharge since construction of Quabbin Reservoir in 1939, 3,070 ft³/s, June 1, 1984, gage height, 11.58 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,250 ft³/s, Apr. 1, gage height, 6.80 ft; minimum daily, 23 ft³/s, Nov. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	33	154	888	491	503	1130	591	459	145	119	122
2	29	33	203	832	491	505	1040	656	455	139	119	125
3	30	33	224	803	442	492	949	735	430	149	120	75
4	29	33	236	774	439	486	950	832	419	163	121	56
5	29	33	242	753	487	476	966	800	410	155	128	58
6	29	33	261	734	501	510	995	783	392	148	122	48
7	79	32	272	694	497	518	1040	819	381	146	123	46
8	114	32	346	663	497	514	1050	778	373	96	122	90
9	120	34	421	625	479	522	1010	761	359	93	122	74
10	74	26	477	611	460	519	940	765	341	100	122	37
11	32	25	476	590	452	527	870	738	327	65	124	43
12	32	25	490	546	427	526	850	690	312	64	125	57
13	32	25	500	532	421	508	965	678	306	62	126	75
14	31	24	505	511	426	497	956	660	286	63	126	75
15	31	24	516	487	424	531	905	633	269	61	73	94
16	32	24	511	520	422	507	860	628	251	59	34	92
17	32	23	580	550	424	484	831	601	241	54	34	51
18	31	26	732	524	423	477	907	596	235	53	35	86
19	28	31	899	505	441	469	1020	596	239	49	35	125
20	34	31	998	485	462	453	1030	649	230	42	36	127
21	31	32	1000	475	468	450	1030	670	217	39	38	128
22	28	32	970	454	482	461	1010	662	209	38	38	128
23	29	32	959	459	502	460	962	645	204	36	38	127
24	32	32	927	442	509	447	936	620	196	73	38	125
25	33	35	1150	438	511	439	865	603	189	109	38	125
26	35	107	1130	442	496	476	825	602	182	111	39	125
27	34	152	1110	438	498	522	738	563	178	112	40	125
28	34	149	1050	480	504	557	758	526	168	112	40	125
29	33	149	1000	487	---	600	722	513	159	112	88	127
30	33	149	1010	492	---	650	621	484	152	115	128	127
31	33	---	996	484	---	763	---	474	---	119	121	---
TOTAL	1231	1449	20345	17718	13076	15849	27731	20351	8569	2882	2612	2818
MEAN	39.7	48.3	656	572	467	511	924	656	286	93.0	84.3	93.9
MAX	120	152	1150	888	511	763	1130	832	459	163	128	128
MIN	28	23	154	438	421	439	621	474	152	36	34	37
(†)	53433	54270	55596	55210	55153	55596	55436	55077	53721	52564	51504	49839

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

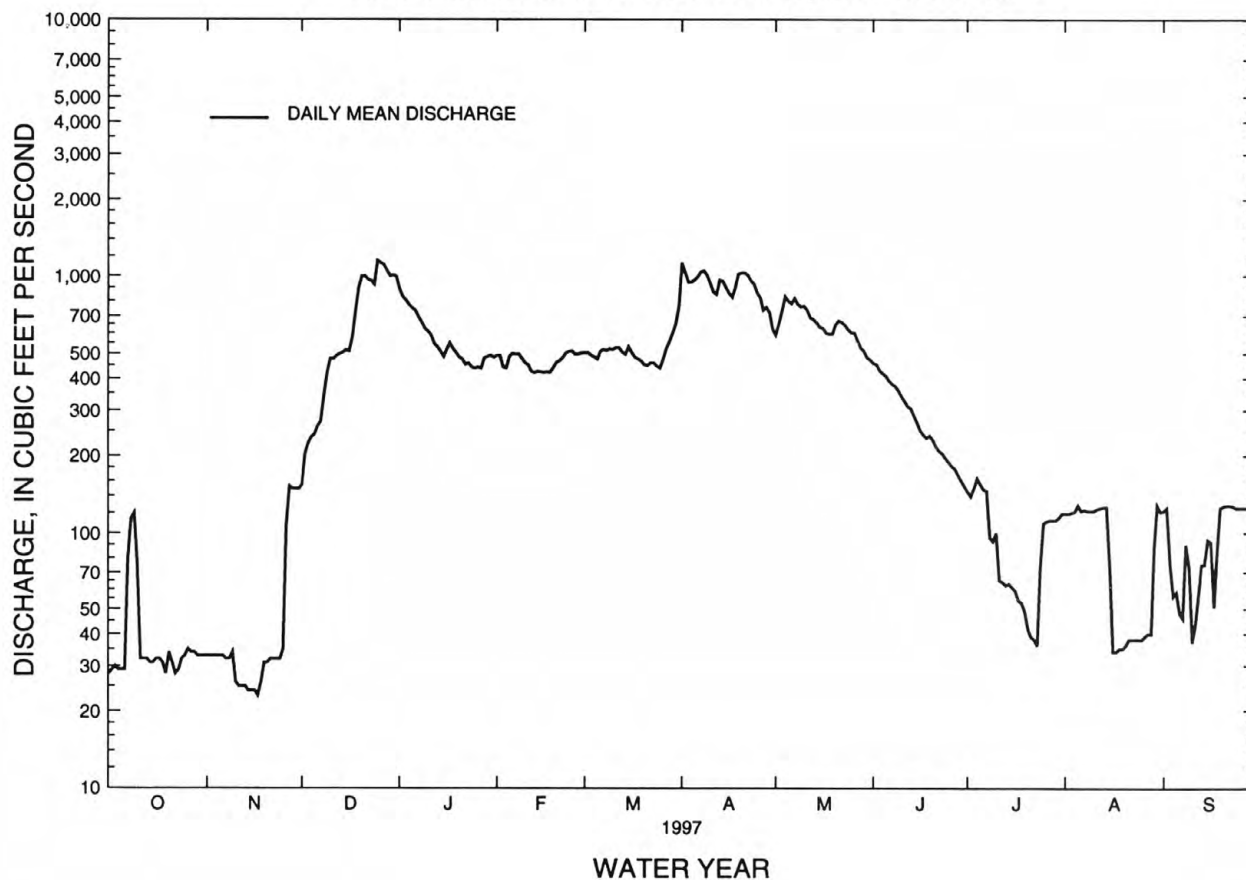
	MEAN	72.5	79.2	75.6	75.1	80.9	87.3	179	170	130	76.4	78.8	79.3
MAX	222	858	656	572	467	511	1099	775	1192	301	149	139	
(WY)	1956	1956	1997	1997	1997	1997	1997	1953	1953	1984	1948	1961	1963
MIN	30.3	31.3	28.0	27.5	27.6	27.7	26.2	27.4	28.6	31.2	30.7	30.3	
(WY)	1945	1945	1995	1995	1995	1995	1995	1995	1945	1944	1944	1990	

01175500 SWIFT RIVER AT WEST WARE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1997	
ANNUAL TOTAL	59805		134631		98.6	
ANNUAL MEAN	163		369		369	
HIGHEST ANNUAL MEAN					30.7	
LOWEST ANNUAL MEAN					1945	
HIGHEST DAILY MEAN	1150	Dec 25	1150	Dec 25	3040	Jun 1 1984
LOWEST DAILY MEAN	23	Nov 17	23	Nov 17	9.1	Dec 15 1968
ANNUAL SEVEN-DAY MINIMUM	24	Nov 11	24	Nov 11	24	Nov 11 1996
INSTANTANEOUS PEAK FLOW			1250	Apr 1	3070	Jun 1 1984
INSTANTANEOUS PEAK STAGE			6.80	Apr 1	11.58	Jun 1 1984
INSTANTANEOUS LOW FLOW			23	Nov 17		
10 PERCENT EXCEEDS	491		862		152	
50 PERCENT EXCEEDS	57		359		46	
90 PERCENT EXCEEDS	33		33		32	

† Monthend contents, in millions of cubic feet (mcf) in Quabbin Reservoir. Records furnished by Watershed Management Division of Metropolitan District Commission. Monthend contents on Sept. 30, 1996, 53,165 mcf.

SWIFT RIVER AT WEST WARE, MA 01175500



LOCATION.--Lat 42°15'54", long 72°00'19", Worcester County, Hydrologic Unit 01080204, on right bank 40 ft upstream from bridge on Cooney Road and 1.5 mi north of Spencer.

PERIOD OF RECORD.--Occasional low-flow measurements, water year 1960. October 1960 to current year. October and November 1960 monthly discharge only, published in WSP 1901.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 630 ft above sea level, from topographic map. Prior to Sept. 25, 1984, at datum 8.83 ft higher.

AVERAGE DISCHARGE.--37 years, 15.2 ft³/s, 23.75 in/yr.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	0445	*183	*11.63	Mar. 26	1145	96	10.89
Nov. 26	1530	71	10.66	Apr. 1	0830	63	10.57
Dec. 2	1030	141	11.30	Apr. 5	2100	83	10.78
Dec. 17	2030	143	11.32	Apr. 13	0615	61	10.55
Dec. 19	2300	132	11.23	Apr. 19	1130	92	10.87
Dec. 25	0515	103	10.97	May 19	0600	62	10.56
Jan. 28	1415	70	10.65				

Minimum discharge, 0.02 ft³/s, Sept. 22; minimum daily, 0.09 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	20	24	e31	17	18	58	19	6.0	2.3	.20	2.2
2	7.3	19	84	28	16	21	49	18	6.1	1.7	.20	2.6
3	7.1	16	69	29	16	21	46	21	5.7	4.8	.09	.58
4	6.4	14	51	28	15	19	55	30	5.6	11	.17	.32
5	5.6	14	42	30	35	17	72	24	5.6	4.6	1.1	.35
6	5.4	13	42	32	34	30	76	21	5.4	3.6	.61	1.2
7	4.4	13	39	29	e25	26	78	21	5.1	2.8	.46	.56
8	5.9	16	48	e22	21	22	66	18	4.5	2.3	.41	.57
9	42	44	39	e20	e17	e20	53	17	3.9	2.4	.48	.54
10	34	45	e32	21	e15	19	44	19	4.2	7.1	.41	.35
11	26	33	29	e19	14	19	38	18	3.4	4.0	.27	.36
12	18	25	33	e17	13	18	38	15	8.4	3.7	.25	.34
13	14	20	39	e15	12	15	56	13	17	3.1	.62	.21
14	11	18	41	e14	12	15	46	12	12	2.5	.73	.32
15	9.8	16	51	e14	14	26	37	11	9.1	3.0	2.1	.55
16	9.3	15	50	30	13	21	31	11	5.1	4.0	3.1	.17
17	9.5	15	87	e33	12	17	29	11	3.8	2.9	.67	.21
18	9.1	13	109	e25	12	16	47	10	3.6	2.3	1.6	.27
19	9.2	14	105	e19	16	15	78	24	4.8	1.8	.54	.19
20	105	13	104	e16	23	15	64	25	3.6	1.2	.34	.27
21	e140	e12	73	e14	21	16	49	21	3.7	.98	1.7	.12
22	88	12	60	13	29	23	41	15	3.2	.83	.99	.20
23	62	13	53	16	27	22	35	12	2.2	.60	1.5	.28
24	54	12	54	e15	21	e18	31	10	1.6	.54	2.6	.32
25	43	11	90	38	e17	16	27	9.5	1.5	.48	3.2	.41
26	37	45	67	e28	15	65	24	10	1.6	.40	1.1	.36
27	30	48	55	e20	18	57	21	8.0	1.5	.51	.18	.35
28	26	33	47	42	20	43	26	7.1	1.3	.31	.37	.12
29	27	25	45	e37	---	40	27	6.2	1.4	.51	.67	.50
30	26	21	44	e24	---	43	23	5.9	1.9	.47	.77	.72
31	23	---	e36	18	---	50	---	5.6	---	.43	.91	---
TOTAL	904.1	628	1742	737	520	783	1365	468.3	142.8	77.16	28.34	15.54
MEAN	29.2	20.9	56.2	23.8	18.6	25.3	45.5	15.1	4.76	2.49	.91	.52
MAX	140	48	109	42	35	65	78	30	17	11	3.2	2.6
MIN	4.4	11	24	13	12	15	21	5.6	1.3	.31	.09	.12
CFSM	3.36	2.41	6.47	2.74	2.14	2.91	5.24	1.74	.55	.29	.11	.06
IN.	3.87	2.69	7.47	3.16	2.23	3.36	5.85	2.01	.61	.33	.12	.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997, BY WATER YEAR (WY)

MEAN	8.35	12.8	18.5	18.1	18.4	30.3	32.3	18.4	11.8	5.03	4.30	3.95
MAX	29.2	28.0	56.2	56.5	44.8	66.2	69.5	40.5	46.5	20.3	14.4	15.7
(WY)	1997	1976	1997	1979	1970	1983	1987	1967	1982	1996	1979	1975
MIN	.79	1.41	3.56	2.75	3.87	12.9	11.2	6.00	2.78	.80	.39	.32
(WY)	1964	1965	1966	1981	1977	1967	1985	1982	1964	1965	1966	1964

CONNECTICUT RIVER BASIN

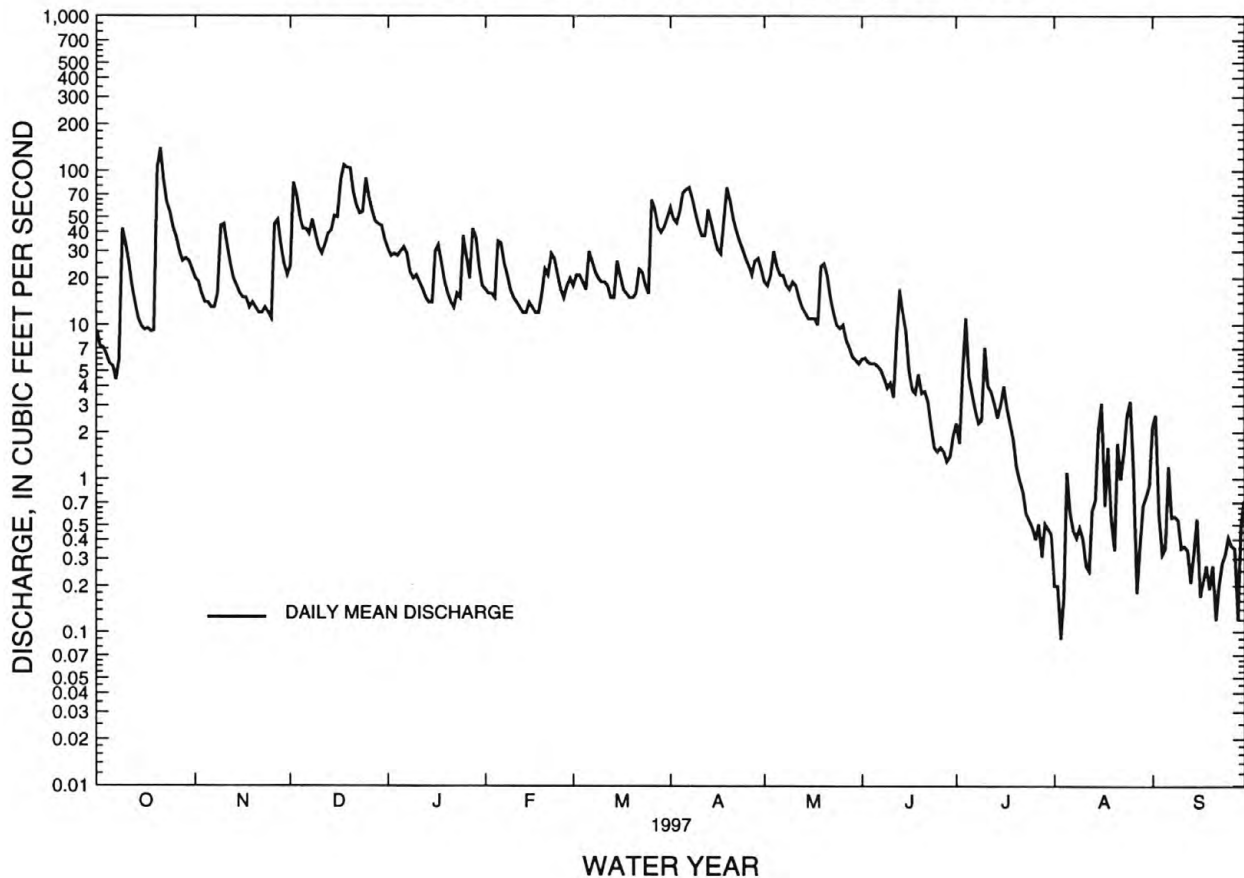
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01175670 SEVENMILE RIVER NEAR SPENCER, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1961 - 1997	
ANNUAL TOTAL	9885.7		7411.24		15.2	
ANNUAL MEAN	27.0		20.3		22.3	1996
HIGHEST ANNUAL MEAN					5.40	1965
LOWEST ANNUAL MEAN					284	Mar 19 1968
HIGHEST DAILY MEAN	192	Jan 28	140	Oct 21	.09	Aug 3 1997
LOWEST DAILY MEAN	1.2	Aug 20	.09	Aug 3	.16	Sep 3 1995
ANNUAL SEVEN-DAY MINIMUM	1.8	Sep 10	.20	Sep 16	412	Mar 18 1968
INSTANTANEOUS PEAK FLOW			183	Oct 21	13.39	Jan 25 1992
INSTANTANEOUS PEAK STAGE			11.63	Oct 21	.02	Sep 22 1997
INSTANTANEOUS LOW FLOW			.02	Sep 22	1.75	
ANNUAL RUNOFF (CFSM)	3.11		2.34		23.75	
ANNUAL RUNOFF (INCHES)	42.37		31.76		35	
10 PERCENT EXCEEDS	56		48		9.6	
50 PERCENT EXCEEDS	18		15		1.1	
90 PERCENT EXCEEDS	5.6		.48			

e Estimated

SEVENMILE RIVER NEAR SPENCER, MA 01175670



CONNECTICUT RIVER BASIN

01176000 QUABOAG RIVER AT WEST BRIMFIELD, MA

LOCATION.--Lat 42°10'56", long 72°15'51", Hampden County, Hydrologic Unit 01080204, on right bank 10 ft upstream from abandoned highway bridge site at West Brimfield, 0.9 mi upstream from Blodgett Mill Brook, 3.5 mi northeast of Palmer, and 9.9 mi upstream from mouth.

DRAINAGE AREA.--150 mi².

PERIOD OF RECORD.--Discharge: August 1909 to July 1912 (twice-daily gage heights and corresponding discharges), August 1912 to current year.

Water-quality records: Water years 1953, 1967, 1969-70, 1972-74.

REVISED RECORDS.--WSP 451: 1916. WSP 1301: 1918(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 390 ft above sea level, from topographic map. Prior to Aug. 19, 1912, nonrecording gage, and Aug. 19, 1912, to Oct. 31, 1955, water-stage recorder, at several sites 0.5 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation at low flow caused by mill upstream prior to 1956; regulation much greater prior to 1938. High flow slightly affected by retarding reservoirs since 1965. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--85 years (water years 1913-97), 249 ft³/s, 22.53 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft³/s, Aug. 19, 1955, gage height, 15.36 ft, from floodmarks, present site and datum, from rating curve extended above 2,700 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 6.6 ft³/s, Sept. 28, 29, 1957.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 840 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	0900	1,110	5.66	Apr. 7	0630	1,020	5.49
Dec. 20	0015	*1,320	*6.06				

Minimum discharge, 15 ft³/s, Sept. 25, 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	224	422	473	e740	e380	361	757	536	157	40	30	40
2	211	408	816	e680	e360	361	771	477	152	39	28	39
3	195	378	801	e640	e340	360	807	497	143	58	27	39
4	180	364	807	e600	e320	367	879	525	136	89	28	33
5	170	348	773	e580	e370	354	960	497	125	75	49	31
6	159	331	764	e560	e440	402	999	508	117	71	42	29
7	149	316	738	e470	e470	405	1020	485	110	70	37	29
8	149	340	768	e400	e440	440	998	461	104	67	33	28
9	310	654	758	e470	e390	439	973	452	97	76	32	28
10	267	601	723	e450	e360	434	924	434	89	130	30	27
11	276	584	693	e420	e320	422	873	398	80	121	28	27
12	270	565	703	e350	e300	379	827	372	76	134	27	35
13	260	534	733	e370	e270	345	884	346	76	95	30	29
14	243	500	742	e370	e260	352	835	317	84	88	34	27
15	221	462	787	e320	e255	404	817	298	84	84	31	26
16	218	432	803	e370	e250	392	779	268	79	78	33	24
17	215	402	966	e360	e255	401	733	250	74	72	30	22
18	201	378	1130	e400	261	377	765	243	71	67	33	23
19	196	357	1220	e390	275	364	885	285	79	60	31	21
20	452	336	1250	e380	307	349	929	389	78	52	29	22
21	508	320	1220	e330	338	335	940	374	74	50	40	22
22	636	304	1170	e290	406	362	906	345	68	54	42	18
23	706	288	1110	e270	423	352	850	325	62	51	41	19
24	704	275	1070	e260	429	346	791	309	58	47	39	17
25	667	266	1200	e320	391	345	728	290	59	45	39	16
26	628	440	1160	e370	377	475	669	267	57	43	38	17
27	586	470	1110	e350	372	546	621	246	53	40	36	16
28	548	490	1050	e430	363	591	619	224	48	38	41	16
29	503	483	979	e450	---	610	588	200	45	35	44	22
30	479	462	900	e470	---	616	563	172	42	32	44	22
31	440	---	e820	e420	---	683	---	162	---	31	40	---
TOTAL	10971	12510	28237	13280	9722	12969	24690	10952	2577	2032	1086	764
MEAN	354	417	911	428	347	418	823	353	85.9	65.5	35.0	25.5
MAX	706	654	1250	740	470	683	1020	536	157	134	49	40
MIN	149	266	473	260	250	335	563	162	42	31	27	16
CFM	2.36	2.78	6.07	2.86	2.31	2.79	5.49	2.36	.57	.44	.23	.17
IN.	2.72	3.10	7.00	3.29	2.41	3.22	6.12	2.72	.64	.50	.27	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1997, BY WATER YEAR (WY)

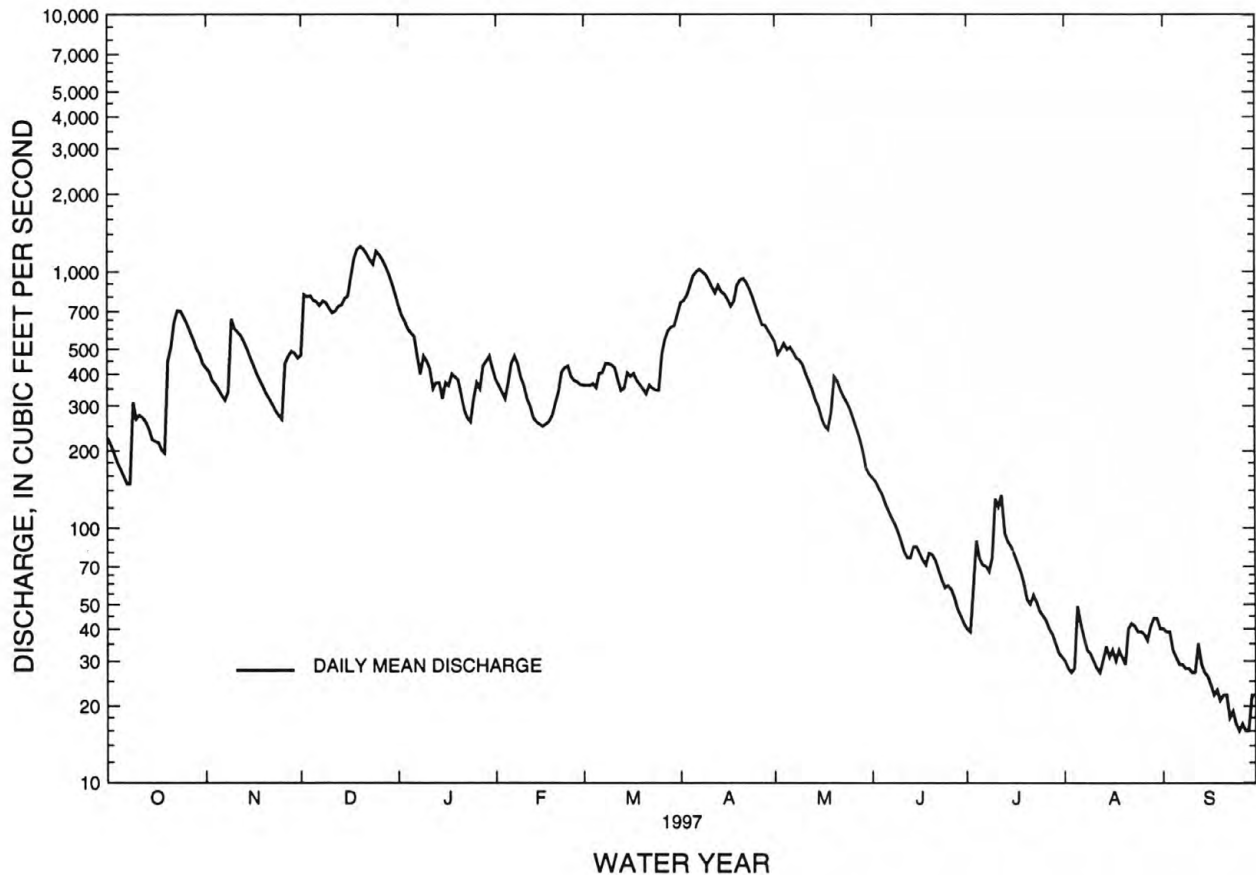
	130	191	256	275	281	483	549	318	189	104	107	106
MEAN	130	191	256	275	281	483	549	318	189	104	107	106
MAX	607	693	911	821	748	1399	1352	573	789	524	1440	1369
(WY)	1956	1956	1997	1979	1970	1936	1940	1943	1984	1938	1955	1938
MIN	11.9	26.9	48.5	46.6	65.3	169	173	108	46.6	17.6	12.8	12.0
(WY)	1958	1950	1931	1981	1977	1989	1915	1930	1964	1965	1957	1957

01176000 QUABOAG RIVER AT WEST BRIMFIELD, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1912 - 1997	
ANNUAL TOTAL	165041		129790		249	
ANNUAL MEAN	451		356		430	
HIGHEST ANNUAL MEAN					104	
LOWEST ANNUAL MEAN					1938	
HIGHEST DAILY MEAN	1720	Jan 28	1250	Dec 20	7800	Sep 21 1938
LOWEST DAILY MEAN	48	Sep 15	16	Sep 25	6.6	Sep 28 1957
ANNUAL SEVEN-DAY MINIMUM	50	Sep 10	17	Sep 22	7.0	Sep 25 1957
INSTANTANEOUS PEAK FLOW			1320	Dec 20	12800	Aug 19 1955
INSTANTANEOUS PEAK STAGE			6.06	Dec 20	15.36	Aug 19 1955
INSTANTANEOUS LOW FLOW			15	Sep 25		
ANNUAL RUNOFF (CFSM)	3.01		2.37		1.66	
ANNUAL RUNOFF (INCHES)	40.93		32.19		22.53	
10 PERCENT EXCEEDS	925		802		552	
50 PERCENT EXCEEDS	381		338		169	
90 PERCENT EXCEEDS	97		31		41	

e Estimated

QUABOAG RIVER AT WEST BRIMFIELD, MA 01176000



CONNECTICUT RIVER BASIN

01177000 CHICOPEE RIVER AT INDIAN ORCHARD, MA

LOCATION.--Lat 42°09'38", long 72°30'52", Hampden County, Hydrologic Unit 01080204, on left bank 1,000 ft downstream from West Street Bridge at Indian Orchard, 1.1 mi upstream from Fuller Brook, and 7.2 mi upstream from mouth.

DRAINAGE AREA.--689 mi².

PERIOD OF RECORD.--Discharge: August 1928 to current year. Published as "at Bircham Bend" prior to November 1938. Water-quality records: Water years 1953, 1957, 1994.

REVISED RECORDS.--WSP 1231: 1934. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 125 ft above sea level, from topographic map. Prior to Nov. 1, 1938, water-stage recorder at site 1.8 mi downstream at different datum.

REMARKS.--Records good. Diversion since 1941 from 186 mi² in Swift River basin and at times since 1931 from 97 mi² in Ware River basin for Boston metropolitan district; since 1950, for Chicopee; since 1952, for South Hadley; at times since 1966 for Worcester; at times since 1955 from 6.5 mi² in Ware River basin for Fitchburg. Diversion from Ludlow Reservoir for Springfield and, prior to 1952, for Chicopee. Flow regulated by powerplants upstream, by Quabbin Reservoir 21 mi upstream on Swift River since 1939, by Barre Falls Reservoir on Ware River since 1958, by Conant Brook Reservoir since 1966, and by smaller reservoirs. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--69 years, 916 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,200 ft³/s, Sept. 21, 1938, by computation of flow over dam; minimum daily, 16 ft³/s, several times in 1929-31.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,030 ft³/s, Dec. 20, gage height, 9.10 ft; minimum daily, 156 ft³/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	803	1010	1390	2760	1690	1710	3390	2030	938	336	316	307
2	737	969	2970	2560	1570	1690	3150	1970	983	316	313	395
3	638	885	3830	2540	1500	1810	3120	2010	892	544	319	287
4	577	893	2980	2440	1530	1720	3370	2470	880	684	359	293
5	461	852	2630	2450	1840	1610	3840	2300	808	916	441	262
6	544	859	2620	2410	2310	1830	3860	2150	786	756	431	177
7	456	826	2570	2320	2090	1980	3790	2360	787	675	427	205
8	564	853	2390	2050	1890	1850	3640	2150	697	493	372	222
9	1370	2120	2380	1970	1730	1760	3450	2110	689	387	355	254
10	1710	2930	2220	1960	1600	1710	3190	2100	694	927	342	168
11	1450	2210	2100	1920	1510	1750	2830	1920	602	778	290	164
12	1180	1900	2160	1650	1460	1650	2620	1740	672	678	176	157
13	1000	1500	2420	1620	1300	1520	3080	1620	601	506	307	156
14	833	1650	2510	1550	1290	1460	3210	1570	644	403	365	163
15	857	1390	2670	1500	1350	1680	2940	1430	704	411	448	193
16	770	1110	2700	1800	1380	1780	2670	1410	577	377	231	245
17	614	1050	3150	2320	1300	1560	2460	1270	558	340	209	241
18	611	968	4710	1860	1270	1490	2590	1280	601	354	267	170
19	612	1130	4640	1690	1280	1470	3260	1360	666	309	194	234
20	1270	1060	4820	1510	1480	1470	3730	1880	643	311	276	161
21	2510	948	4290	1450	1670	1460	3530	1960	657	284	282	197
22	2330	853	3930	1430	1760	1460	3270	1790	451	300	347	354
23	2430	869	3710	1450	2070	1630	3040	1620	644	354	256	163
24	2400	860	3620	1440	1870	1500	2690	1500	462	327	298	225
25	2040	798	4550	1710	1680	1440	2460	1410	512	311	303	211
26	1490	1320	4430	1980	1640	1790	2290	1380	485	311	229	162
27	1290	2120	3950	1630	1600	2620	2120	1360	483	334	226	197
28	1340	1800	3630	1980	1720	2440	2130	1260	419	298	253	190
29	1250	1590	3200	2320	---	2440	2260	1040	469	328	313	253
30	1160	1470	3160	1960	---	2520	2060	1140	362	320	397	208
31	1190	---	3080	1810	---	2750	---	1060	---	320	351	---
TOTAL	36487	38793	99410	60040	45380	55550	90040	52650	19366	13988	9693	6614
MEAN	1177	1293	3207	1937	1621	1792	3001	1698	646	451	313	220
MAX	2510	2930	4820	2760	2310	2750	3860	2470	983	927	448	395
MIN	456	798	1390	1430	1270	1440	2060	1040	362	284	176	156

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1997, BY WATER YEAR (WY)

	MEAN	538	743	915	982	1005	1579	1834	1199	808	480	452	486
MAX	1953	3022	3207	2447	2374	5993	4117	2680	3519	2458	3719	5474	
(WY)	1956	1956	1997	1937	1976	1936	1933	1953	1984	1938	1955	1938	
MIN	131	154	241	191	332	634	636	471	229	159	176	160	
(WY)	1942	1966	1966	1981	1931	1989	1966	1965	1964	1966	1949	1953	

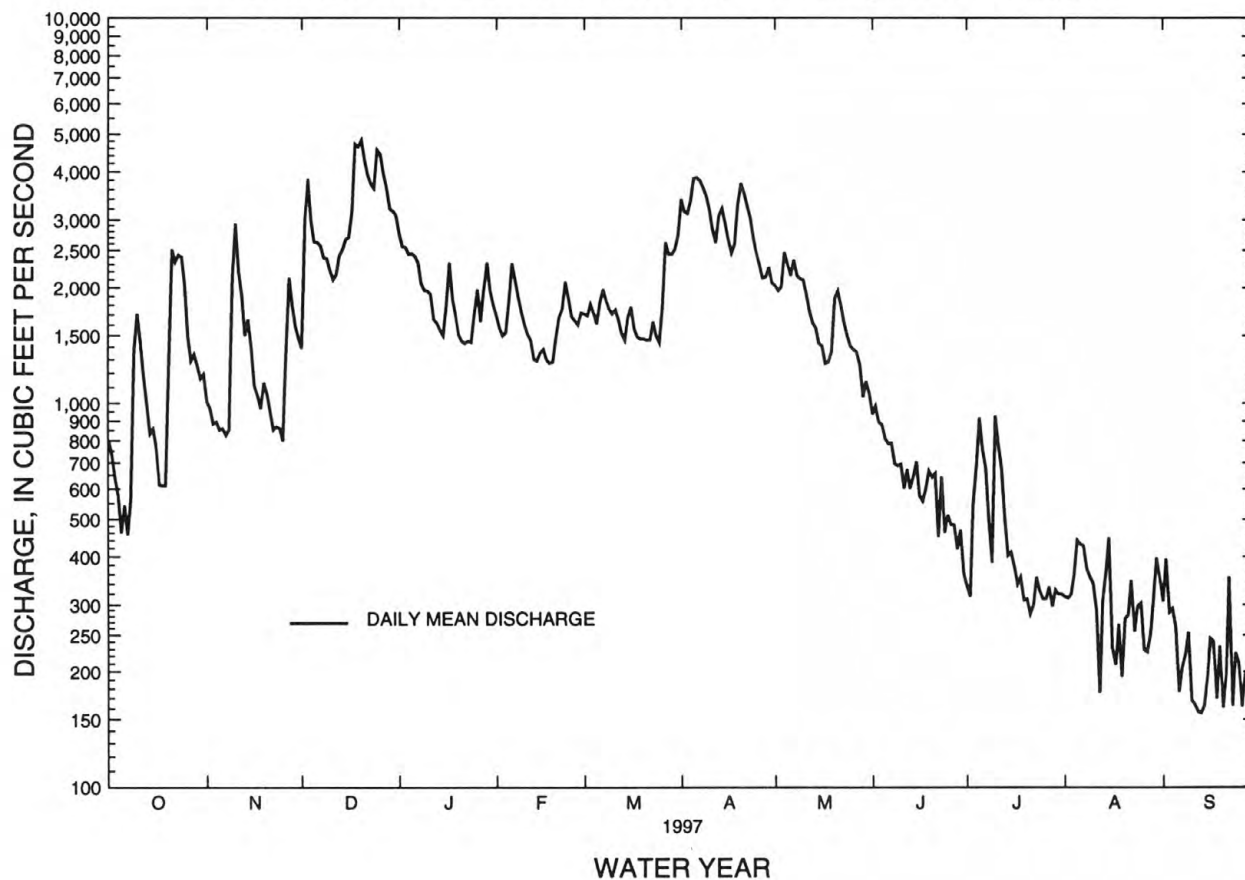
CONNECTICUT RIVER BASIN

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01177000 CHICOPEE RIVER AT INDIAN ORCHARD, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1928 - 1997	
ANNUAL TOTAL	576744		528011		916	
ANNUAL MEAN	1576		1447		1952	
HIGHEST ANNUAL MEAN					376	
LOWEST ANNUAL MEAN					1938	
HIGHEST DAILY MEAN	7150	Apr 17	4820	Dec 20	37000	Sep 21 1938
LOWEST DAILY MEAN	241	Aug 23	156	Sep 13	16	Sep 1 1929
ANNUAL SEVEN-DAY MINIMUM	346	Sep 5	178	Sep 10	96	Oct 31 1965
INSTANTANEOUS PEAK FLOW			5030	Dec 20	45200	Sep 21 1938
INSTANTANEOUS PEAK STAGE			9.10	Dec 20		
INSTANTANEOUS LOW FLOW			29	Jul 28		
10 PERCENT EXCEEDS	2970		2930		1870	
50 PERCENT EXCEEDS	1290		1410		662	
90 PERCENT EXCEEDS	477		283		220	

CHICOPEE RIVER AT INDIAN ORCHARD, MA 01177000



CONNECTICUT RIVER BASIN

01179500 WESTFIELD RIVER AT KNIGHTVILLE, MA

LOCATION.--Lat 42°17'16", long 72°51'53", Hampshire County, Hydrologic Unit 01080206, on left bank at Knightville, 0.2 mi downstream from Knightville Dam, 0.2 mi upstream from Sykes Brook, 2.4 mi upstream from Middle branch, 3.5 mi north of Huntington, and at mile 29.7.

DRAINAGE AREA.--161 mi².

PERIOD OF RECORD.--Discharge: August 1909 to September 1990, October 1995 to current year.
Water-quality records: Water year 1953.

REVISED RECORDS.--WSP 415: 1909-12. WSP 1001: 1941-43. WSP 1231: 1910, 1912, 1913(M), 1914-15, 1916-19(M), 1921-23(M), 1925-27(M), 1929-33(M), 1935(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Dec. 20, 1940. Datum of gage is 461.25 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Jan. 11, 1936, nonrecording gage at site 0.5 mi upstream at different datum. Jan. 11, 1935, to May 20, 1940, water-stage recorder at site 700 ft upstream at datum 10.57 ft higher. May 21 to Dec. 19, 1940, nonrecording gage at site 700 ft upstream at datum 18.75 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Flow regulated by Knightville reservoir since 1941. Telephone and satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--83 years (water years 1910-90, 1996-97), 332 ft³/s, 28.00 in/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,900 ft³/s, Sept. 21, 1938, gage height, 29.58 ft, from flood-marks, site and datum then in use, from rating curve extended above 3,800 ft³/s on basis of slope-area measurements at gage heights 24.07 ft and 29.58 ft; minimum, 0.1 ft³/s, Apr. 3, 1965; minimum daily, 1.1 ft³/s, Apr. 2, 1965. Maximum discharge since construction of Knightville Reservoir in 1941, 6,660 ft³/s, Mar. 21, 1945, gage height, 7.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,330 ft³/s, Oct. 21, gage height, 7.19 ft; minimum, 38 ft³/s, Aug. 4; minimum daily, 39 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	235	272	398	607	235	1000	1280	463	189	91	42	52
2	183	258	631	573	227	780	996	547	195	92	40	50
3	165	240	1980	552	170	810	737	585	178	92	39	49
4	148	228	2590	545	156	507	858	1320	163	92	42	46
5	137	217	636	539	165	380	1040	1030	153	428	e68	44
6	132	208	375	548	457	571	1110	636	143	600	e68	42
7	131	209	431	542	503	611	1450	961	136	252	e62	41
8	132	257	444	431	362	553	2430	599	130	90	e50	43
9	1070	176	490	257	331	441	1820	492	125	e86	e47	42
10	777	1580	596	226	205	277	707	568	113	e82	e43	42
11	658	2820	554	240	175	280	607	494	106	e80	e41	e43
12	393	1840	463	243	179	295	595	408	99	e76	44	e290
13	300	490	728	243	181	284	676	359	94	e73	46	148
14	253	417	1000	243	180	268	1040	340	93	e70	184	93
15	218	356	758	243	181	265	1010	306	88	63	e105	73
16	199	314	777	246	182	271	701	285	84	67	72	63
17	187	317	e830	258	181	212	586	267	81	61	60	57
18	177	314	e2600	257	180	201	599	260	e81	62	58	53
19	170	335	1200	248	181	206	898	278	e90	60	56	52
20	160	374	935	237	197	209	990	1650	e91	54	50	50
21	1780	313	719	231	309	212	1560	825	e91	50	125	48
22	3150	279	649	199	392	218	1650	506	91	51	279	46
23	2820	259	540	180	442	238	640	454	92	50	152	45
24	2410	245	485	186	1120	240	593	378	92	49	111	44
25	676	238	644	191	1320	240	519	342	92	52	85	44
26	492	627	1340	204	800	388	458	342	91	47	76	43
27	420	836	1110	368	502	488	410	281	92	46	e70	42
28	385	402	703	530	802	1020	576	249	91	62	65	41
29	355	334	679	335	---	1260	1020	223	92	60	60	84
30	313	300	868	253	---	1250	568	202	92	49	59	142
31	302	---	796	243	---	1260	---	197	---	44	56	---
TOTAL	18928	15055	26949	10198	10315	15235	28124	15847	3348	3131	2355	1952
MEAN	611	502	869	329	368	491	937	511	112	101	76.0	65.1
MAX	3150	2820	2600	607	1320	1260	2430	1650	195	600	279	290
MIN	131	176	375	180	156	201	410	197	81	44	39	41
(†)	.6	.7	57.9	15.5	61.3	93.7	1.3	.6	.1	.2	.1	.3
MEAN††	611	502	891	313	387	504	902	511	111	101	75.9	65.1
CFSM††	3.80	3.12	5.53	1.94	2.40	3.13	5.60	3.17	.69	.63	.47	.40
IN.††	4.37	3.48	6.38	2.24	2.51	3.61	6.25	3.66	.77	.72	.54	.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 1997, BY WATER YEAR (WY)

	182	307	310	297	288	613	947	444	247	128	106	123
MEAN	182	307	310	297	288	613	947	444	247	128	106	123
MAX	1394	1155	989	1305	1001	2050	1853	912	1158	494	745	986
(WY)	1956	1956	1974	1949	1984	1936	1987	1972	1984	1972	1955	1938
MIN	18.3	36.4	68.5	44.7	65.0	158	283	143	41.1	20.7	15.7	14.8
(WY)	1965	1965	1915	1981	1920	1940	1985	1986	1964	1913	1913	1953

CONNECTICUT RIVER BASIN

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01179500 WESTFIELD RIVER AT KNIGHTVILLE, MA

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1909 - 1997	
ANNUAL TOTAL	200890		151437		332	
ANNUAL MEAN	549		415		332	
ANNUAL MEAN††	550		415		538	
HIGHEST ANNUAL MEAN					137	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	3430	Apr 22	3150	Oct 22	13400	Mar 18 1936
LOWEST DAILY MEAN	22	Jan 28	39	Aug 3	1.1	Apr 2 1965
ANNUAL SEVEN-DAY MINIMUM	31	Sep 1	42	Sep 5	8.9	Aug 29 1953
INSTANTANEOUS PEAK FLOW			3330	Oct 21	37900	Sep 21 1938
INSTANTANEOUS PEAK STAGE			7.19	Oct 21	29.58	Sep 21 1938
INSTANTANEOUS LOW FLOW			38	Aug 4		
10 PERCENT EXCEEDS	1330		998		810	
ANNUAL RUNOFF (CFSM)††	3.42		2.58		2.06	
ANNUAL RUNOFF (INCHES)††	46.51		34.99		28.00	
50 PERCENT EXCEEDS	304		248		165	
90 PERCENT EXCEEDS	68		50		35	

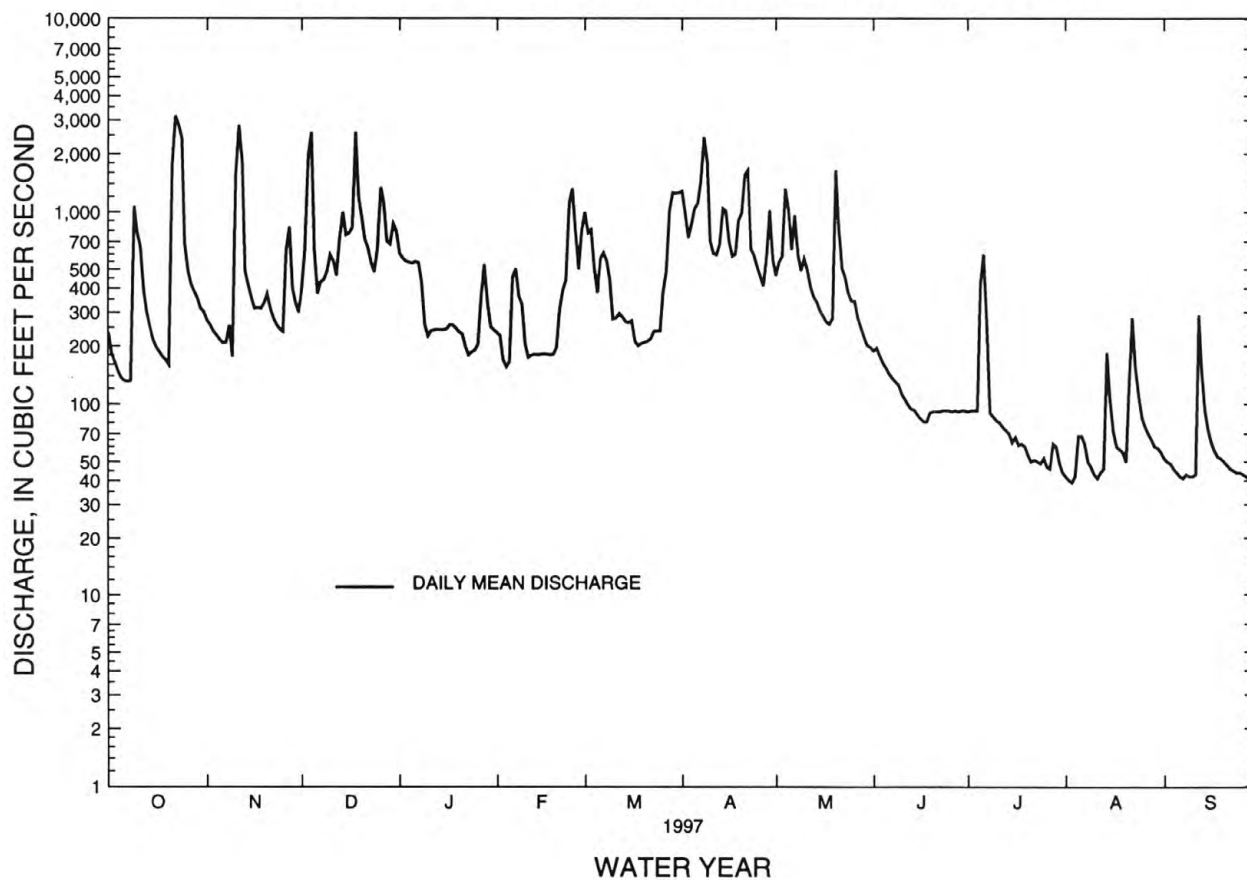
e Estimated

† Monthend contents, in millions of cubic feet (mcf), in Knightville Reservoir; records furnished by U.S. Army Corps of Engineers. Monthend contents on Sept. 30, 1996, 0.7 mcf, revised.

†† Adjusted for change in contents in Knightville Reservoir.

Note.--Except as footnoted, all statistics are based on unadjusted daily and monthly mean discharges.

WESTFIELD RIVER AT KNIGHTVILLE, MA 01179500



LOCATION.--Lat 42°14'14", long 72°53'46", Hampshire County, Hydrologic Unit 01080206, on left bank at Huntington, 0.4 mi downstream from Roaring Brook, and 1.5 mi upstream from mouth.

PERIOD OF RECORD.--Discharge: September 1935 to current year.
Water-quality records: Water years 1957, 1967-74.

GAGE.--Water-stage recorder. Datum of gage is 383.60 ft above sea level. Prior to Oct. 1, 1989, at datum 5.00 ft higher.

AVERAGE DISCHARGE.--62 years, 192 ft³/s, 27.78 in/yr.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Minimum discharge, 16 ft³/s, Sept. 27, 28.

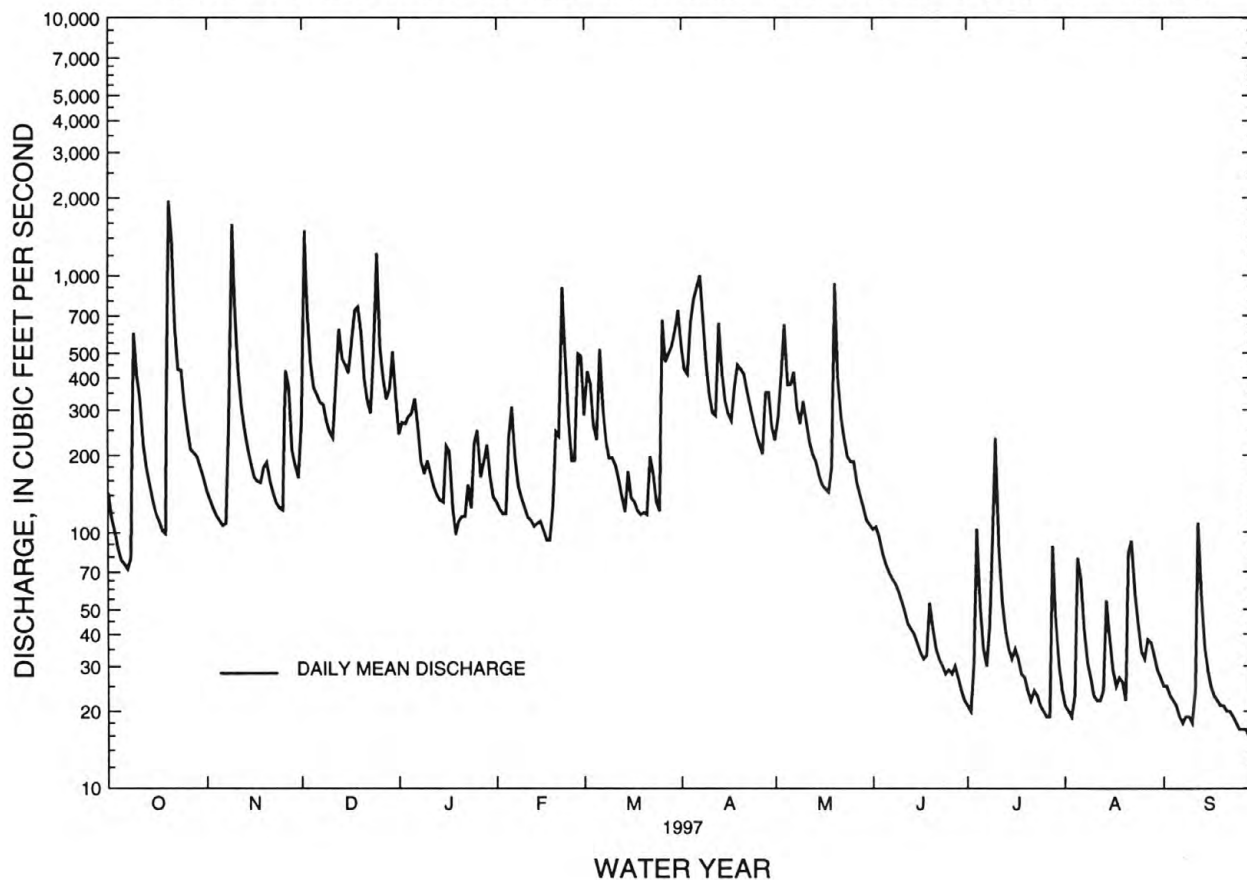
MEAN	108	181	203	181	186	368	503	257	134	66.4	58.5	63.0
MAX	1041	544	664	537	712	1098	1176	761	684	307	632	579
(WY)	1956	1956	1974	1996	1981	1936	1993	1984	1972	1972	1955	1938
MIN	13.4	24.7	39.8	24.3	35.3	112	116	75.6	27.1	8.85	8.46	8.93
(WY)	1958	1965	1947	1981	1980	1941	1985	1986	1964	1991	1957	1953

01181000 WEST BRANCH WESTFIELD RIVER AT HUNTINGTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1935 - 1997	
ANNUAL TOTAL	116036		79333		192	
ANNUAL MEAN	317		217		302	1996
HIGHEST ANNUAL MEAN					73.6	1965
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	2500	Apr 16	1950	Oct 20	10500	Aug 19 1955
LOWEST DAILY MEAN	21	Sep 6	16	Sep 28	3.3	Aug 9 1955
ANNUAL SEVEN-DAY MINIMUM	23	Sep 1	18	Sep 22	3.8	Aug 4 1955
INSTANTANEOUS PEAK FLOW			2850	Oct 20	26100	Aug 19 1955
INSTANTANEOUS PEAK STAGE			7.76	Oct 20	15.27	Aug 19 1955
INSTANTANEOUS LOW FLOW			16	Sep 27	3.3	Aug 9 1955
ANNUAL RUNOFF (CFSM)	3.37		2.31		2.04	
ANNUAL RUNOFF (INCHES)	45.92		31.40		27.78	
10 PERCENT EXCEEDS	706		480		440	
50 PERCENT EXCEEDS	184		143		96	
90 PERCENT EXCEEDS	49		23		18	

e Estimated

WEST BRANCH WESTFIELD RIVER AT HUNTINGTON, MA 01181000



CONNECTICUT RIVER BASIN

01183500 WESTFIELD RIVER NEAR WESTFIELD, MA

LOCATION.--Lat 42°06'24", long 72°41'58", Hampden County, Hydrologic Unit 01080206, on left bank 0.7 mi downstream from Great Brook, 3 mi east of Westfield, and 8.1 mi upstream from mouth.

DRAINAGE AREA.--497 mi².

PERIOD OF RECORD.--Discharge: June 1914 to current year.

Water Quality: Water years 1952-53, 1957, 1967-74, 1994.

REVISED RECORDS.--WSP 601: 1924(M). WSP 756: Drainage area. WSP 1051: 1919-21(M), 1925(M). WSP 1231: 1915-16(M), 1920.

GAGE.--Water-stage recorder. Datum of gage is 98.25 ft above sea level. Prior to Nov. 3, 1933, on right bank at same datum.

REMARKS.--Records good. Flow regulated by Borden Brook Reservoir, Cobble Mountain Reservoir since 1931, Knightville Reservoir since 1941, and Littleville Lake since 1965. High flow slightly affected by retarding reservoirs since 1963. Diversion from Little River for municipal supply of Springfield. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--83 years, 933 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,300 ft³/s, Aug. 19, 1955, gage height, 34.2 ft, from floodmarks, from rating curve extended above 18,000 ft³/s on basis of computations of flow over dam at gage heights 27.20 ft, 29.40 ft, and 34.2 ft; minimum, 9 ft³/s, Oct. 2, 1921; minimum daily, 40 ft³/s, Dec. 28, 29, 1914.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,260 ft³/s, Dec. 2, gage height, 11.19 ft; minimum, 72 ft³/s, July 26; minimum daily, 76 ft³/s, July 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	1020	1280	1730	928	2260	2980	1380	587	136	106	158
2	808	958	4960	1600	903	2010	2630	1470	593	140	101	150
3	733	788	3820	1580	748	2220	2490	1700	566	250	102	146
4	685	758	4880	1590	789	1630	2990	3180	514	565	104	134
5	627	849	2980	1600	1190	1300	3710	2570	474	476	319	122
6	535	810	1910	1600	1580	2060	3770	1910	435	298	299	117
7	523	795	1860	1670	1620	1960	3980	2330	413	240	217	112
8	603	1050	1800	1330	1190	1640	4460	1830	397	291	178	112
9	2490	3950	1750	1160	1090	1380	4110	1530	373	358	150	111
10	2390	3420	1600	1110	846	1230	2080	1650	354	1060	145	107
11	2090	4780	1640	1110	842	1050	1710	1430	327	623	133	109
12	1420	3790	1730	973	833	1110	1560	1320	291	377	114	541
13	1050	1740	2670	837	799	1000	2320	1120	281	283	143	488
14	940	1460	2890	940	881	1080	2230	1080	261	248	259	295
15	854	1310	2740	931	815	1100	2130	969	245	198	370	218
16	844	1250	2390	1310	785	908	1770	900	235	201	212	176
17	770	1150	2840	1300	778	959	1630	858	222	194	166	152
18	739	1030	4080	e950	685	793	2070	809	210	181	178	142
19	711	1150	4030	e850	863	880	2810	881	311	225	148	133
20	3860	1210	3390	e800	1180	913	2730	3150	282	178	132	132
21	5480	1110	2540	774	1200	910	2670	2510	243	144	314	126
22	5830	1040	2070	843	2410	836	3140	1540	224	165	691	114
23	4940	1040	1870	866	2430	905	1890	1280	210	155	451	110
24	4400	922	1760	808	2000	780	1630	1110	184	139	335	107
25	2590	890	3660	1260	2340	762	1490	992	185	91	257	102
26	1710	1530	2890	1280	1840	1800	1270	1030	213	76	213	100
27	1300	2460	2750	964	1640	1940	1150	868	222	124	208	99
28	1230	1590	2180	1350	2290	2290	1590	767	169	194	231	94
29	1250	1270	1930	1350	---	2450	2440	698	166	227	202	176
30	1160	1150	2220	1060	---	2620	1730	641	164	145	186	316
31	1100	---	2200	1060	---	2950	---	603	---	127	172	---
TOTAL	54732	46270	81310	36586	35495	45726	73160	44106	9351	8109	6836	4999
MEAN	1766	1542	2623	1180	1268	1475	2439	1423	312	262	221	167
MAX	5830	4780	4960	1730	2430	2950	4460	3180	593	1060	691	541
MIN	523	758	1280	774	685	762	1150	603	164	76	101	94

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1997, BY WATER YEAR (WY)

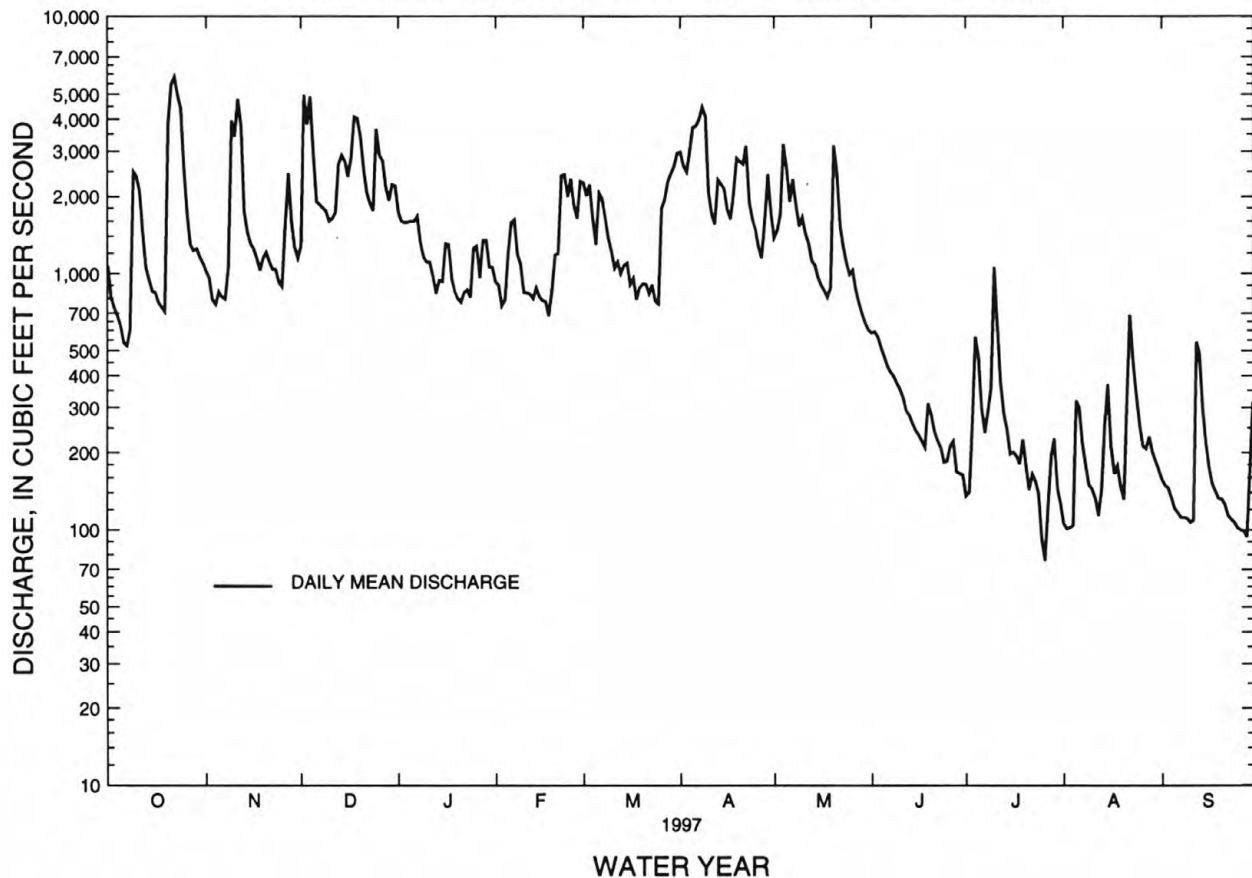
	MEAN	531	835	919	883	893	1672	2334	1226	722	402	387	396
MAX	4587	3344	2623	2635	2663	5064	5225	2630	2792	1738	3237	2938	
(WY)	1956	1928	1997	1949	1984	1936	1993	1989	1982	1972	1955	1938	
MIN	96.7	140	206	155	215	597	586	408	186	118	91.2	85.0	
(WY)	1965	1965	1915	1981	1920	1941	1985	1985	1964	1962	1957	1995	

01183500 WESTFIELD RIVER NEAR WESTFIELD, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1914 - 1997	
ANNUAL TOTAL	586744		446680		933	
ANNUAL MEAN	1603		1224		1594	
HIGHEST ANNUAL MEAN					368	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	6100	Jan 28	5830	Oct 22	37400	Aug 19 1955
LOWEST DAILY MEAN	171	Sep 2	76	Jul 26	40	Dec 28 1914
ANNUAL SEVEN-DAY MINIMUM	197	Aug 31	104	Sep 22	50	Sep 3 1995
INSTANTANEOUS PEAK FLOW			8260	Dec 2	70300	Aug 19 1955
INSTANTANEOUS PEAK STAGE			11.19	Dec 2	34.20	Aug 19 1955
INSTANTANEOUS LOW FLOW					9.0	Oct 2 1921
10 PERCENT EXCEEDS	3970		2670		2140	
50 PERCENT EXCEEDS	1150		950		541	
90 PERCENT EXCEEDS	293		145		160	

e Estimated

WESTFIELD RIVER NEAR WESTFIELD, MA 01183500



CONNECTICUT RIVER BASIN

01185500 WEST BRANCH FARMINGTON RIVER NEAR NEW BOSTON, MA

LOCATION.--Lat 42°04'45", long 73°04'24", Berkshire County, Hydrologic Unit 01080207, on left bank 5 ft downstream from highway bridge, 0.3 mi downstream from Clam River, 1 mi south of New Boston, and at mile 65.0.

DRAINAGE AREA.--91.7 mi².

PERIOD OF RECORD.--May 1913 to current year. Prior to October 1948, published as Farmington River near New Boston.

REVISED RECORDS.--WSP 641: 1924(M). WSP 781: 1928(M). WSP 1231: 1914. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 758.21 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Otis Reservoir 7.0 mi upstream on Fall River. High flow slightly affected by retarding reservoirs since 1966. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--84 years, 184 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,300 ft³/s, Aug. 19, 1955, gage height, 14.06 ft, from rating curve extended above 9,600 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 2.4 ft³/s, Aug. 20, 21, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,380 ft³/s, Nov. 9, gage height, 6.78 ft; minimum daily, 4.8 ft³/s, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	210	330	294	368	e130	262	580	339	84	21	5.4	32
2	167	316	1300	361	117	308	450	277	78	20	5.2	31
3	140	304	844	352	119	303	395	418	65	34	4.8	30
4	117	298	587	328	133	249	501	591	58	35	7.0	28
5	105	294	499	293	260	227	656	432	51	29	13	24
6	91	288	457	e320	276	400	748	417	47	27	24	22
7	82	287	437	e260	202	299	850	428	40	27	13	21
8	88	453	425	215	164	241	678	346	37	186	9.3	21
9	498	1720	385	199	132	206	464	307	34	118	7.8	21
10	544	998	373	194	101	203	343	362	33	382	6.7	19
11	517	680	355	182	98	189	283	316	32	232	5.9	20
12	354	544	437	e160	85	162	270	272	29	136	5.4	71
13	232	466	608	e145	79	138	473	245	28	98	5.8	41
14	193	419	573	e140	88	133	385	233	40	72	13	32
15	161	380	550	e135	81	173	303	201	31	58	17	30
16	137	353	481	e200	73	131	262	170	27	49	16	30
17	132	341	513	e190	69	110	237	159	26	33	14	30
18	159	335	714	e130	72	103	283	153	24	27	20	30
19	298	349	788	e100	100	92	335	197	43	22	20	25
20	1810	353	696	e115	166	83	377	480	32	16	19	24
21	1640	334	518	e120	165	80	372	346	26	13	37	24
22	982	317	429	e120	521	104	327	250	26	18	41	22
23	687	305	381	e130	395	101	287	206	25	16	36	21
24	585	297	511	e130	254	87	250	176	23	13	32	19
25	491	244	1080	e250	170	78	222	166	24	11	29	19
26	429	381	686	e240	142	635	202	167	25	10	26	18
27	389	396	535	e170	235	485	184	142	27	9.8	28	19
28	385	297	453	e190	324	428	293	128	25	9.8	30	19
29	375	254	476	e200	---	442	322	194	25	9.6	30	27
30	357	229	593	e170	---	520	302	187	23	8.5	31	30
31	349	---	490	e150	---	662	---	86	---	7.2	29	---
TOTAL	12704	12562	17468	6257	4751	7634	11634	8391	1088	1747.9	581.3	800
MEAN	410	419	563	202	170	246	388	271	36.3	56.4	18.8	26.7
MAX	1810	1720	1300	368	521	662	850	591	84	382	41	71
MIN	82	229	294	100	69	78	184	86	23	7.2	4.8	18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1997, BY WATER YEAR (WY)

	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
MEAN	143	209	199	180	165	300	412	217	127	79.7	88.0	90.3
MAX	774	817	563	529	608	947	934	627	479	290	1002	644
(WY)	1956	1928	1997	1996	1981	1936	1993	1984	1982	1945	1955	1938
MIN	19.9	27.0	31.1	20.1	34.7	88.5	96.1	61.6	23.9	9.26	5.68	8.81
(WY)	1915	1915	1918	1981	1980	1965	1985	1941	1964	1962	1957	1995

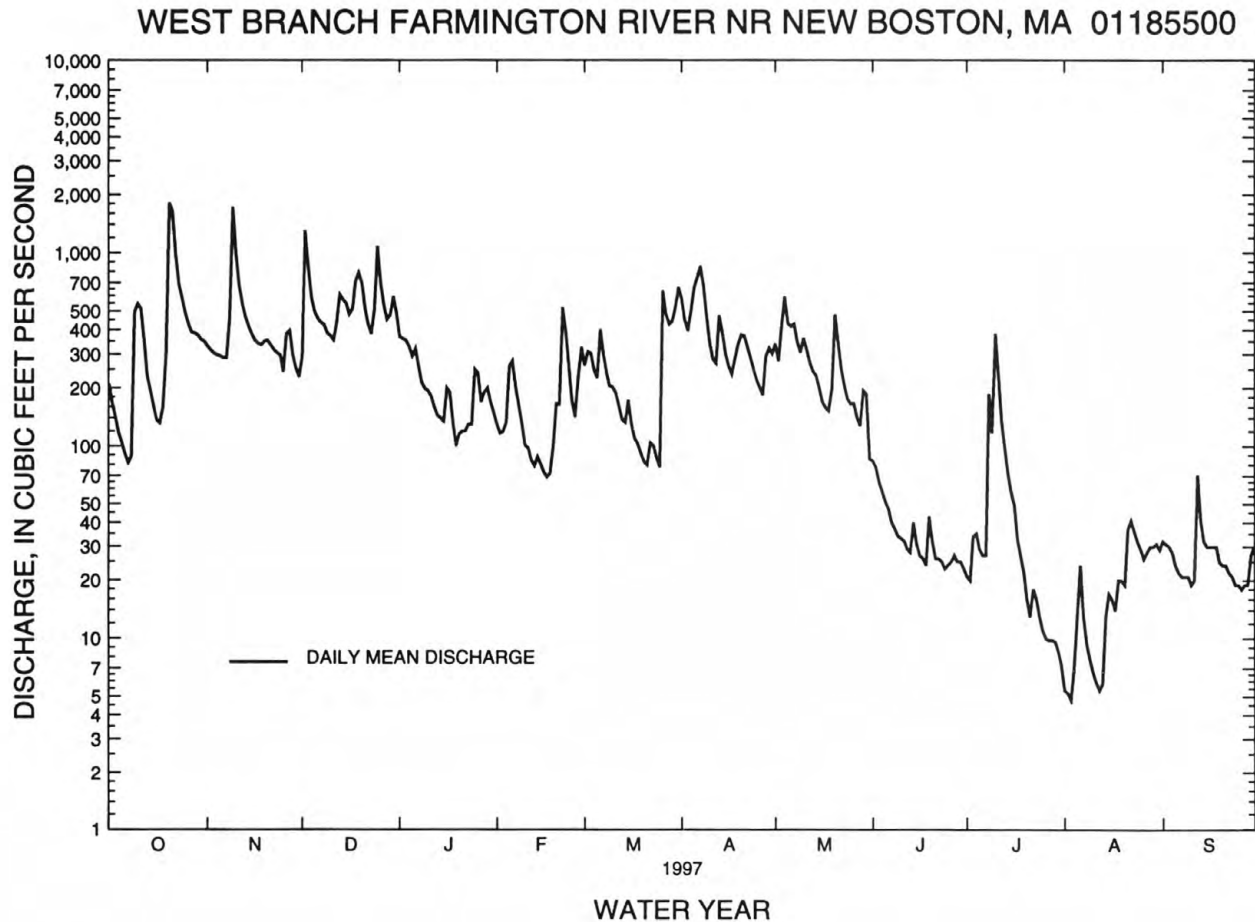
CONNECTICUT RIVER BASIN

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01185500 WEST BRANCH FARMINGTON RIVER NEAR NEW BOSTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1913 - 1997	
ANNUAL TOTAL	120906		85618.2		184	
ANNUAL MEAN	330		235		341	1928
HIGHEST ANNUAL MEAN					66.1	1965
LOWEST ANNUAL MEAN					16100	Aug 19 1955
HIGHEST DAILY MEAN	2070	Jan 28	1810	Oct 20	2.4	Aug 20 1957
LOWEST DAILY MEAN	15	Sep 3	4.8	Aug 3	3.1	Sep 9 1957
ANNUAL SEVEN-DAY MINIMUM	16	Aug 31	6.8	Jul 29	34300	Aug 19 1955
INSTANTANEOUS PEAK FLOW			2380	Nov 9	14.06	Aug 19 1955
INSTANTANEOUS PEAK STAGE			6.78	Nov 9		
INSTANTANEOUS LOW FLOW			4.1	Aug 3		
10 PERCENT EXCEEDS	682		512		401	
50 PERCENT EXCEEDS	281		170		114	
90 PERCENT EXCEEDS	39		20		27	

e Estimated



HOUSATONIC RIVER BASIN

01197000 EAST BRANCH HOUSATONIC RIVER AT COLTSVILLE, MA

LOCATION.--Lat 42°28'10", long 73°11'49", Berkshire County, Hydrologic Unit 01100005, on right bank 250 ft downstream from Hubbard Avenue Bridge at Coltsville, 1.2 mi upstream from Unkamet Brook, and 2 mi northeast of Pittsfield. Prior to Nov. 8, 1994, at site 200 ft upstream.

DRAINAGE AREA.--57.6 mi².

PERIOD OF RECORD.--Discharge: March 1936 to current year. Prior to October 1945, published as Housatonic River at Coltsville.

Water-quality records: Water years 1963-65.

REVISED RECORDS.--WSP 851: 1936(M). WDR MA-RI-82-1: 1976-77, 1979-80. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 993.49 ft above sea level. Prior to Nov. 8, 1994, at site 200 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharge, which are fair. Flow regulated by powerplants upstream and, since 1949, by Cleveland Brook Reservoir, usable capacity, 214,000,000 ft³, 5.4 mi upstream; regulation greater prior to 1955. Diversion upstream from Cleveland Brook Reservoir for municipal supply of Pittsfield since May 1950. Telephone gage-height telemeter at station.

AVERAGE DISCHARGE.--61 years, 107 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,400 ft³/s, Sept. 21, 1938, gage height, 10.80 ft, from rating curve extended above 2,300 ft³/s on basis of computation of peak flow over dam; minimum daily, 4.4 ft³/s, Aug. 15, 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1755, that of Sept. 21, 1938.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	1145	*1,250	*3.57	No other peak greater than base discharge.			
Minimum daily, 16 ft ³ /s, Sept. 6, 21.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	74	131	165	69	209	271	104	58	21	26	20
2	80	69	888	139	64	238	266	140	57	20	25	21
3	75	61	525	145	63	270	232	214	57	42	30	22
4	69	57	273	164	62	175	288	495	55	172	26	20
5	65	57	207	165	104	149	390	258	51	70	35	18
6	63	57	184	184	128	247	461	232	49	36	57	16
7	58	53	169	141	116	185	593	318	45	31	35	17
8	52	77	165	104	93	135	485	215	44	57	27	18
9	209	453	156	83	73	117	283	181	42	62	24	18
10	239	374	150	84	64	121	214	237	39	99	20	18
11	231	205	141	79	59	116	185	198	38	65	19	19
12	138	160	174	70	59	107	163	164	36	36	19	36
13	107	137	263	75	55	96	341	127	35	29	51	30
14	95	115	225	73	55	76	267	110	31	26	118	23
15	84	102	184	72	58	94	195	102	27	25	51	21
16	80	94	171	94	53	78	170	93	26	31	33	19
17	78	95	199	97	50	72	162	88	25	43	26	18
18	76	100	339	75	53	70	190	85	27	55	26	20
19	73	110	317	56	71	69	204	99	41	36	26	18
20	588	124	259	53	118	70	211	552	33	25	25	18
21	737	100	178	57	152	67	233	299	28	23	34	16
22	312	78	163	64	509	113	209	192	25	22	39	17
23	174	69	154	83	338	102	173	172	24	22	39	17
24	159	65	235	71	185	77	151	146	23	20	34	17
25	140	64	700	88	117	69	121	124	28	19	27	24
26	127	166	314	102	109	291	99	118	28	18	31	24
27	131	223	207	80	303	279	91	96	27	25	23	34
28	129	117	169	74	389	279	137	81	23	100	22	25
29	128	88	179	80	---	326	187	68	21	65	25	31
30	122	77	258	74	---	361	125	63	21	33	23	32
31	106	---	189	69	---	357	---	61	---	28	22	---
TOTAL	4820	3621	7866	2960	3569	5015	7097	5432	1064	1356	1018	647
MEAN	155	121	254	95.5	127	162	237	175	35.5	43.7	32.8	21.6
MAX	737	453	888	184	509	361	593	552	58	172	118	36
MIN	52	53	131	53	50	67	91	61	21	18	19	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1997, BY WATER YEAR (WY)

	70.8	97.4	103	95.7	96.3	173	266	141	80.5	53.3	47.2	53.7
MEAN	318	279	321	252	274	417	582	366	326	220	188	326
MAX	1956	1956	1974	1949	1984	1979	1993	1984	1972	1945	1990	1938
(WY)	1956	1956	1974	1949	1984	1979	1993	1984	1972	1945	1990	1938
MIN	19.9	19.1	31.2	15.5	16.0	50.4	66.3	37.8	25.4	12.9	14.9	14.3
(WY)	1965	1965	1981	1981	1980	1965	1985	1985	1964	1962	1980	1983

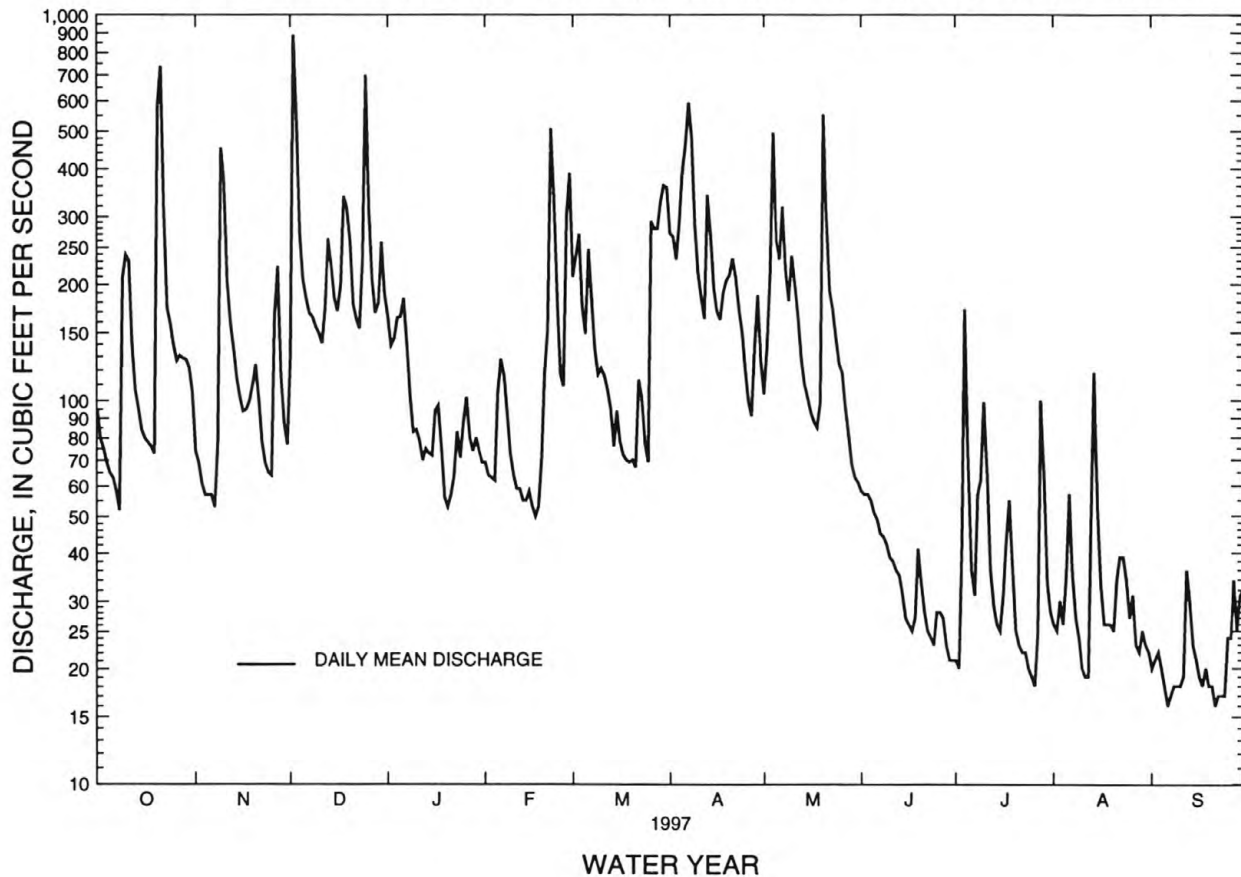
HOUSATONIC RIVER BASIN

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01197000 EAST BRANCH HOUSATONIC RIVER AT COLTSVILLE, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1936 - 1997	
ANNUAL TOTAL	64245		44465		107	
ANNUAL MEAN	176		122		163	
HIGHEST ANNUAL MEAN					42.6	
LOWEST ANNUAL MEAN					1996	
HIGHEST DAILY MEAN	1100	Apr 17	888	Dec 2	4460	Mar 18 1936
LOWEST DAILY MEAN	20	Sep 1	16	Sep 6	4.4	Aug 15 1936
ANNUAL SEVEN-DAY MINIMUM	21	Sep 1	18	Sep 18	9.5	Sep 11 1983
INSTANTANEOUS PEAK FLOW			1250	Dec 2	6400	Sep 21 1938
INSTANTANEOUS PEAK STAGE			3.57	Dec 2	10.80	Sep 21 1938
INSTANTANEOUS LOW FLOW			10	Sep 6		
10 PERCENT EXCEEDS	395		266		233	
50 PERCENT EXCEEDS	123		80		60	
90 PERCENT EXCEEDS	36		23		23	

EAST BRANCH HOUSATONIC RIVER AT COLTSVILLE, MA 01197000



LOCATION.--Lat 42°13'55", long 73°21'19", Berkshire County, Hydrologic Unit 01100005, on left bank at upstream side of highway bridge at Van Deusenville, 0.5 mi upstream from Williams River, and 2 mi north of Great Barrington.

PERIOD OF RECORD.--Discharge: May 1913 to current year.

Water-quality records: Water years 1957-59, 1964, 1971, and 1980.

Suspended sediment records: Water years 1980, 1994-96.

REVISED RECORDS.--WSP 415: 1913-14. WSP 781: 1928(M). WSP 1051: 1928, 1933. WSP 1301: 1914-15(M), 1917-27(M), 1929-31(M). WDR MA-RI-83-1: 1980(P), 1982(P). WDR MA-RI-84-1: Drainage Area.

GAGE.--Water-stage recorder. Datum of gage is 683.04 ft above sea level. Prior to Oct. 1, 1931, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Regulation at low flow by powerplants upstream. High flow slightly affected by retarding reservoir since 1973. Telephone and satellite gage-height telemeters at station.

AVERAGE DISCHARGE.--84 years, 528 ft³/s, 25.44 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s, Jan. 1, 1949, gage height, 12.08 ft, from rating curve extended above 6,400 ft³/s on basis of computations of flow over dams at gage heights 11.72 ft and 12.08 ft; minimum daily, 1.0 ft³/s, Oct. 18, 1914.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1545	*2.790	*5.88	No other peak greater than base discharge.			

Minimum daily, 98 ft³/s, Sept. 11.

REVISIONS.--Water-quality and daily sediment records were discontinued after April 1996.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	621	576	594	822	415	1180	1710	667	436	123	128	147
2	491	545	1850	841	400	1020	1590	702	415	122	117	130
3	423	506	2720	828	388	1130	1450	786	385	143	134	134
4	372	481	2350	837	373	1020	1470	1390	354	308	155	123
5	334	448	1630	880	525	842	1760	1470	330	365	217	115
6	310	422	1270	913	759	1020	1970	1200	337	232	245	109
7	293	410	1110	840	646	1110	2130	1280	359	180	210	103
8	283	441	1060	e670	543	882	2080	1220	329	271	173	104
9	570	867	984	e610	465	736	1780	993	253	378	146	105
10	880	1380	901	623	400	719	1340	1080	231	699	132	100
11	1090	1170	861	595	375	721	1080	1070	221	537	116	98
12	888	841	960	e550	360	652	925	911	208	314	120	126
13	686	712	1340	538	342	569	1110	789	197	228	141	135
14	579	648	1410	523	331	559	1240	704	195	183	335	128
15	541	590	1300	514	342	607	1050	649	187	148	365	121
16	473	540	1180	560	330	595	848	618	175	164	241	111
17	440	528	1140	e620	318	526	758	584	163	156	186	107
18	441	510	1350	e510	308	509	787	566	167	160	172	106
19	431	587	1560	e450	343	483	958	578	198	163	151	109
20	1020	627	1550	e420	598	485	1020	1570	196	140	138	116
21	2030	572	1270	e380	636	485	1000	1880	186	125	160	110
22	2000	509	1040	420	1160	542	1010	1450	179	127	174	100
23	1410	464	940	e460	1460	597	960	1040	169	117	174	100
24	1020	432	974	e410	1160	519	858	846	156	117	167	103
25	892	412	1940	489	768	472	778	746	157	112	145	100
26	772	580	2130	e620	657	845	702	728	165	106	140	101
27	702	889	1630	e450	815	1260	646	653	172	109	186	100
28	702	758	1210	e460	1280	1100	670	584	157	314	153	110
29	705	610	1070	e490	---	1120	792	533	141	305	143	119
30	658	534	1110	e450	---	1220	759	496	124	202	181	132
31	634	---	1080	420	---	1430	---	475	---	151	179	---
TOTAL	22691	18589	41514	18193	16497	24955	35231	28258	6942	6799	5424	3403
MEAN	732	620	1339	587	589	805	1174	912	231	219	175	113
MAX	2030	1380	2720	913	1460	1430	2130	1880	436	699	365	147
MIN	283	410	594	380	308	472	646	475	124	106	116	98
CFSM	2.60	2.20	4.75	2.08	2.09	2.85	4.16	3.23	.82	.78	.62	.40
IN.	2.99	2.45	5.48	2.40	2.18	3.29	4.65	3.73	.92</			

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1997, BY WATER YEAR (WY)

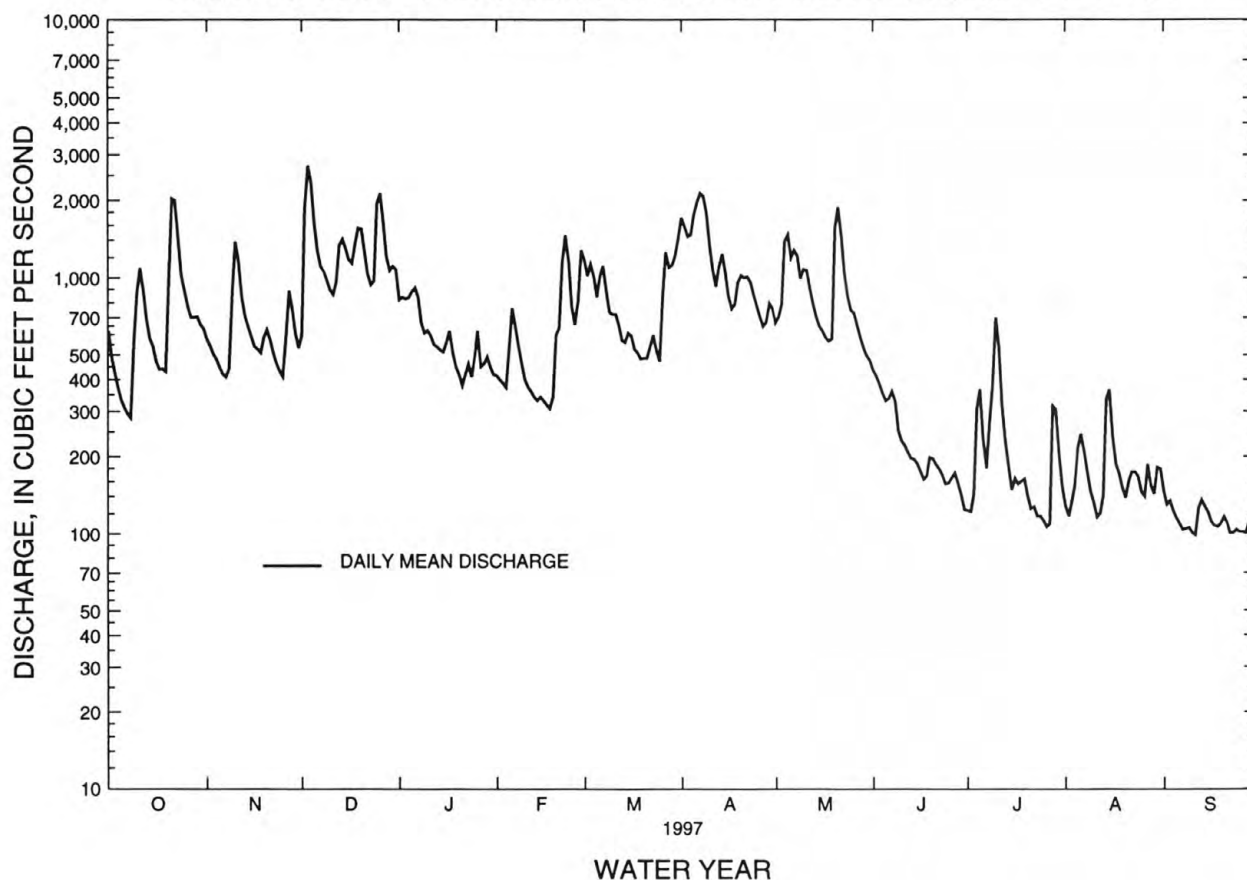
MEAN	309	469	529	511	495	903	1244	694	408	277	240	256
MAX	1170	2041	1588	1744	1319	2528	2646	1502	1312	1140	937	1601
(WY)	1978	1928	1974	1949	1984	1936	1920	1984	1972	1945	1928	1938
MIN	80.9	85.5	112	83.5	128	291	338	241	134	93.4	86.8	75.1
(WY)	1915	1965	1915	1931	1931	1941	1985	1985	1921	1962	1913	1913

01197500 HOUSATONIC RIVER NEAR GREAT BARRINGTON, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1913 - 1997	
ANNUAL TOTAL	313919		228496		528	
ANNUAL MEAN	858		626		962	
HIGHEST ANNUAL MEAN					211	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	4090	Jan 21	2720	Dec 3	11100	Jan 1 1949
LOWEST DAILY MEAN	121	Sep 5	98	Sep 11	1.0	Oct 18 1914
ANNUAL SEVEN-DAY MINIMUM	132	Sep 3	102	Sep 21	40	Aug 10 1913
INSTANTANEOUS PEAK FLOW			2790	Dec 3	12200	Jan 1 1949
INSTANTANEOUS PEAK STAGE			5.88	Dec 3	12.08	Jan 1 1949
INSTANTANEOUS LOW FLOW			81	Sep 21		
ANNUAL RUNOFF (CFSM)	3.04		2.22		1.87	
ANNUAL RUNOFF (INCHES)	41.41		30.14		25.44	
10 PERCENT EXCEEDS	1840		1270		1160	
50 PERCENT EXCEEDS	648		528		335	
90 PERCENT EXCEEDS	203		127		126	

e Estimated

HOUSATONIC RIVER NEAR GREAT BARRINGTON, MA 01197500



HUDSON RIVER BASIN

01331500 HOOSIC RIVER AT ADAMS, MA

LOCATION.--Lat 42°36'40", long 73°07'28", Berkshire County, Hydrologic Unit 02020003, on left bank at Adams, 500 ft downstream from Dry Brook, and 0.4 mi upstream from Pecks Brook.

DRAINAGE AREA.--46.7 mi².

PERIOD OF RECORD.--Discharge: October 1931 to current year.

Water-quality records: Water years 1967-69.

REVISED RECORDS.--WDR MA-NH-RI-VT-73-1: 1971-72. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 828.01 ft above sea level. Prior to Oct. 1, 1964, datum was 9.00 ft higher and Oct. 1, 1964, to May 29, 1974, 8.00 ft higher, at site 500 ft upstream.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversion upstream for municipal supply of Adams. Some diurnal fluctuation by mill upstream prior to 1961. Flow regulated by Cheshire Reservoir 5.1 mi upstream.

AVERAGE DISCHARGE.--66 years, 90.2 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft³/s, Sept. 21, 1938, gage height, 9.25 ft, site and datum then in use, from rating curve extended above 1,100 ft³/s on basis of computation of peak flow over dam; minimum daily, 8.0 ft³/s, Aug. 31, Sept. 1, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	0900	*724	*7.61	No other peak greater than base discharge.			
Minimum discharge, 15 ft ³ /s, Sept. 26, 27, 28; minimum daily, 16 ft ³ /s, Sept. 24-28.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	74	154	122	61	155	246	135	69	23	21	23
2	50	71	557	135	60	192	205	166	67	24	21	22
3	48	65	287	147	59	183	198	233	63	66	25	21
4	45	62	210	149	57	142	268	344	59	142	28	20
5	43	60	148	156	90	132	293	218	56	52	37	19
6	41	57	132	196	92	198	330	253	51	42	34	18
7	40	57	128	144	68	144	417	259	42	37	28	19
8	39	89	134	89	61	122	337	203	41	70	25	21
9	142	303	124	87	58	118	245	160	40	65	24	18
10	154	196	116	95	56	119	205	174	41	95	23	17
11	158	101	113	91	54	113	188	167	34	49	21	18
12	99	80	137	84	53	103	186	134	31	41	23	26
13	83	72	183	81	52	92	327	150	34	36	95	21
14	75	66	155	78	52	88	229	156	38	35	121	19
15	66	60	156	76	53	104	202	131	37	32	51	18
16	62	57	177	91	51	84	152	94	39	35	47	17
17	60	60	224	80	50	81	160	93	40	32	42	17
18	55	62	273	65	50	80	204	89	45	32	41	18
19	52	83	244	60	58	77	191	99	50	29	35	17
20	373	88	200	61	101	75	194	312	42	25	30	18
21	308	74	125	61	148	74	199	172	41	25	39	18
22	187	68	112	60	350	122	193	145	39	27	40	17
23	145	65	113	74	192	95	189	141	36	25	42	17
24	148	62	217	62	132	81	201	131	31	25	34	16
25	125	61	366	82	98	78	183	125	33	24	31	16
26	108	153	196	78	104	345	150	119	32	23	29	16
27	98	140	167	62	235	241	113	102	30	22	27	16
28	95	92	152	70	226	246	165	95	28	22	28	16
29	89	89	185	71	---	267	161	82	26	23	26	22
30	85	84	219	62	---	325	132	76	24	21	25	24
31	82	---	154	60	---	295	---	74	---	21	24	---
TOTAL	3213	2651	5858	2829	2721	4571	6463	4832	1239	1220	1117	565
MEAN	104	88.4	189	91.3	97.2	147	215	156	41.3	39.4	36.0	18.8
MAX	373	303	557	196	350	345	417	344	69	142	121	26
MIN	39	57	112	60	50	74	113	74	24	21	21	16

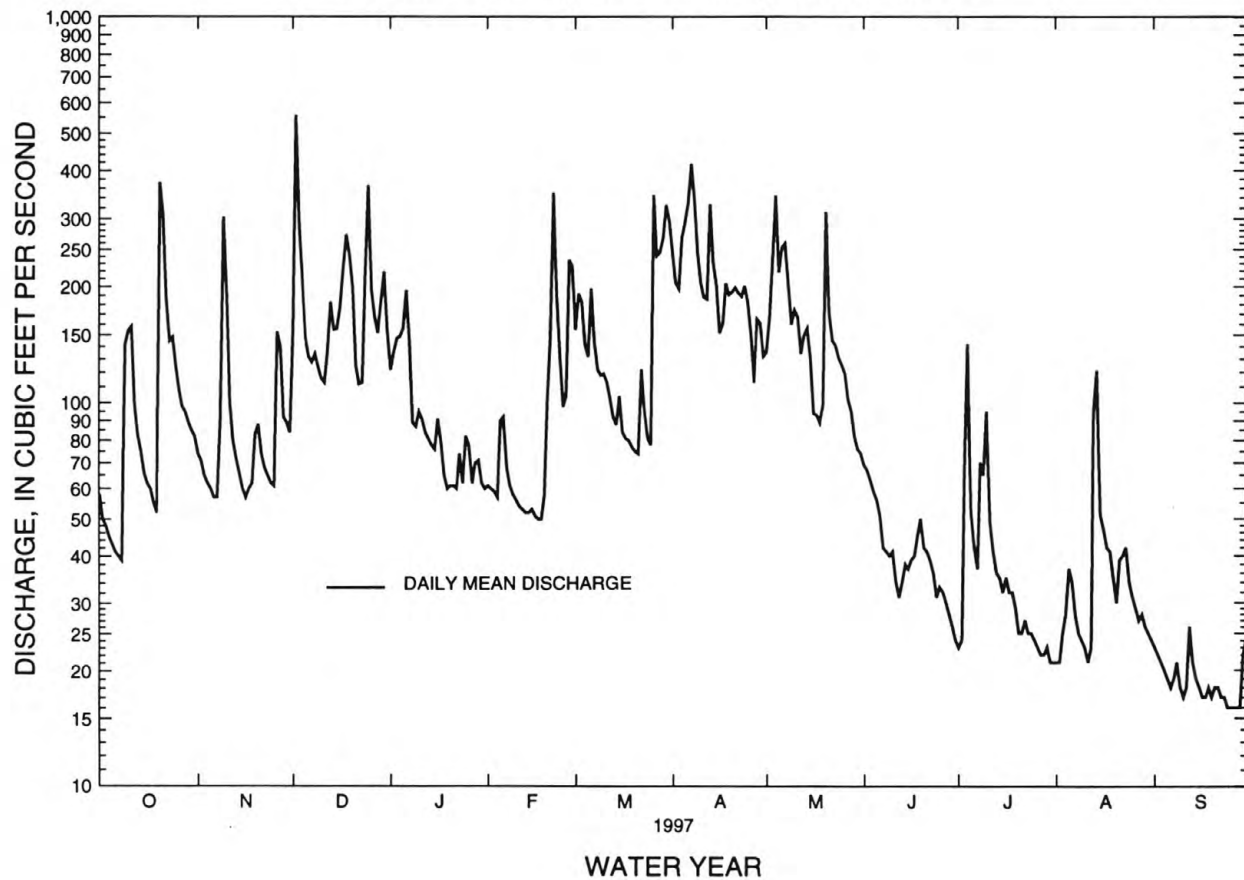
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1997, BY WATER YEAR (WY)

	MEAN	53.3	79.2	87.5	86.5	84.3	150	219	120	68.9	49.1	40.9	45.2
MAX	217	213	190	211	263	474	523	268	203	212	126	286	
(WY)	1956	1956	1974	1979	1981	1936	1940	1940	1972	1938	1975	1938	
MIN	14.1	13.3	35.4	18.7	23.5	50.6	85.8	47.3	22.6	19.8	16.0	10.6	
(WY)	1965	1965	1965	1981	1940	1965	1946	1985	1965	1991	1956	1980	

01331500 HOOSIC RIVER AT ADAMS, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1932 - 1997	
ANNUAL TOTAL	47239		37279		90.2	
ANNUAL MEAN	129		102		130	
HIGHEST ANNUAL MEAN					41.2	
LOWEST ANNUAL MEAN					1938	
HIGHEST DAILY MEAN	578	Jan 19	557	Dec 2	2410	Mar 18 1936
LOWEST DAILY MEAN	20	Sep 13	16	Sep 24	8.0	Aug 31 1968
ANNUAL SEVEN-DAY MINIMUM	22	Sep 2	16	Sep 22	8.8	Sep 7 1980
INSTANTANEOUS PEAK FLOW			724	Dec 2	5080	Sep 21 1938
INSTANTANEOUS PEAK STAGE			7.61	Dec 2	9.25	Sep 21 1938
INSTANTANEOUS LOW FLOW			15	Sep 26		
10 PERCENT EXCEEDS	288		207		192	
50 PERCENT EXCEEDS	94		76		56	
90 PERCENT EXCEEDS	34		23		22	

HOOSIC RIVER AT ADAMS, MA 01331500



HUDSON RIVER BASIN

01332500 HOOSIC RIVER NEAR WILLIAMSTOWN, MA

LOCATION.--Lat 42°42'01", long 73°09'34", Berkshire County, Hydrologic Unit 02020003, on left bank 0.3 mi downstream from Sherman Brook and 2.7 mi east of junction of U.S. Highway 7 and State Highway 2 in Williamstown.

DRAINAGE AREA.--126 mi².

PERIOD OF RECORD.--Discharge: July 1940 to current year.

Water-quality records: Water years 1953-54, 1957-58, 1967-69.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 616.11 ft above sea level, (U.S. Army Corps of Engineers benchmark). Prior to June 6, 1979, at site 1.2 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Prior to 1966, slight diurnal fluctuation at low flow caused by mills upstream. Some regulation by Cheshire Reservoir 16 mi upstream. Satellite gage-height telemeter at station.

AVERAGE DISCHARGE.--57 years, 273 ft³/s, 29.48 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s, Dec. 31, 1948, gage height, 14.85 ft, former site and datum, from rating curve extended above 4,300 ft³/s on basis of contracted-opening measurement of peak flow; minimum, 5.8 ft³/s, Aug. 30, 31, Oct. 26, 1940; minimum daily, 24 ft³/s, Sept. 9, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	0700	*4,080	*9.25	No other peak greater than base discharge.			
Minimum discharge, 45 ft ³ /s, Aug. 2, 3; minimum daily, 47 ft ³ /s, Aug. 2.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	183	653	303	151	472	785	439	183	64	50	62
2	128	173	2710	346	147	581	612	622	176	61	47	59
3	119	164	1030	379	143	575	576	767	167	123	48	61
4	109	155	634	383	139	412	818	1140	155	264	69	60
5	103	148	464	370	241	367	932	651	144	115	96	54
6	100	143	397	491	247	571	1090	811	136	92	97	51
7	99	144	361	368	180	388	1500	839	116	85	66	51
8	100	196	357	259	157	310	1100	572	113	102	59	60
9	310	958	316	238	146	284	686	471	106	221	55	57
10	361	573	291	255	141	291	521	521	104	247	52	51
11	405	344	281	233	137	271	459	514	95	117	51	54
12	251	265	366	207	135	245	461	408	89	93	56	83
13	202	231	507	207	130	218	997	386	88	83	208	67
14	181	208	421	197	129	205	693	375	92	76	261	59
15	163	185	386	193	133	270	554	342	85	74	102	58
16	153	170	396	239	126	220	492	280	82	82	86	55
17	145	175	533	195	123	206	503	262	83	72	92	54
18	136	176	783	161	127	203	665	248	91	72	83	68
19	126	219	706	e155	160	197	582	263	106	65	74	57
20	1430	234	539	e150	276	196	561	919	87	60	66	61
21	1300	200	386	e160	345	192	601	465	79	60	95	68
22	592	183	330	e170	1060	274	602	396	74	61	111	61
23	404	173	316	e180	637	230	584	369	71	59	100	56
24	390	166	601	158	390	197	560	317	70	55	82	55
25	312	165	1220	202	275	189	489	299	81	56	75	56
26	267	455	564	213	280	971	437	278	89	54	73	54
27	233	404	447	160	701	597	372	247	92	54	68	53
28	229	259	389	179	786	680	675	229	79	56	76	52
29	218	242	481	168	---	836	607	212	70	54	78	80
30	203	224	626	153	---	1130	442	200	66	51	74	93
31	200	---	400	148	---	1100	---	196	---	50	66	---
TOTAL	9117	7515	17891	7220	7642	12878	19956	14038	3069	2778	2616	1810
MEAN	294	251	577	233	273	415	665	453	102	89.6	84.4	60.3
MAX	1430	958	2710	491	1060	1130	1500	1140	183	264	261	93
MIN	99	143	281	148	123	189	372	196	66	50	47	51
CFSM	2.33	1.99	4.58	1.85	2.17	3.30	5.28	3.59	.81	.71	.67	.48
IN.	2.69	2.22	5.28	2.13	2.26	3.80	5.89	4.14	.91	.82	.77	.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1997, BY WATER YEAR (WY)

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
MEAN	175	260	276	245	243	444	683	376	211	133	116	121
MAX	618	544	714	591	765	1038	1178	872	636	393	416	454
(WY)	1978	1956	1974	1949	1981	1979	1969	1943	1972	1945	1976	1960
MIN	41.0	46.5	118	60.8	75.3	139	253	144	81.0	60.4	48.2	34.5
(WY)	1965	1965	1962	1981	1980	1965	1995	1987	1965	1962	1980	1980

HUDSON RIVER BASIN

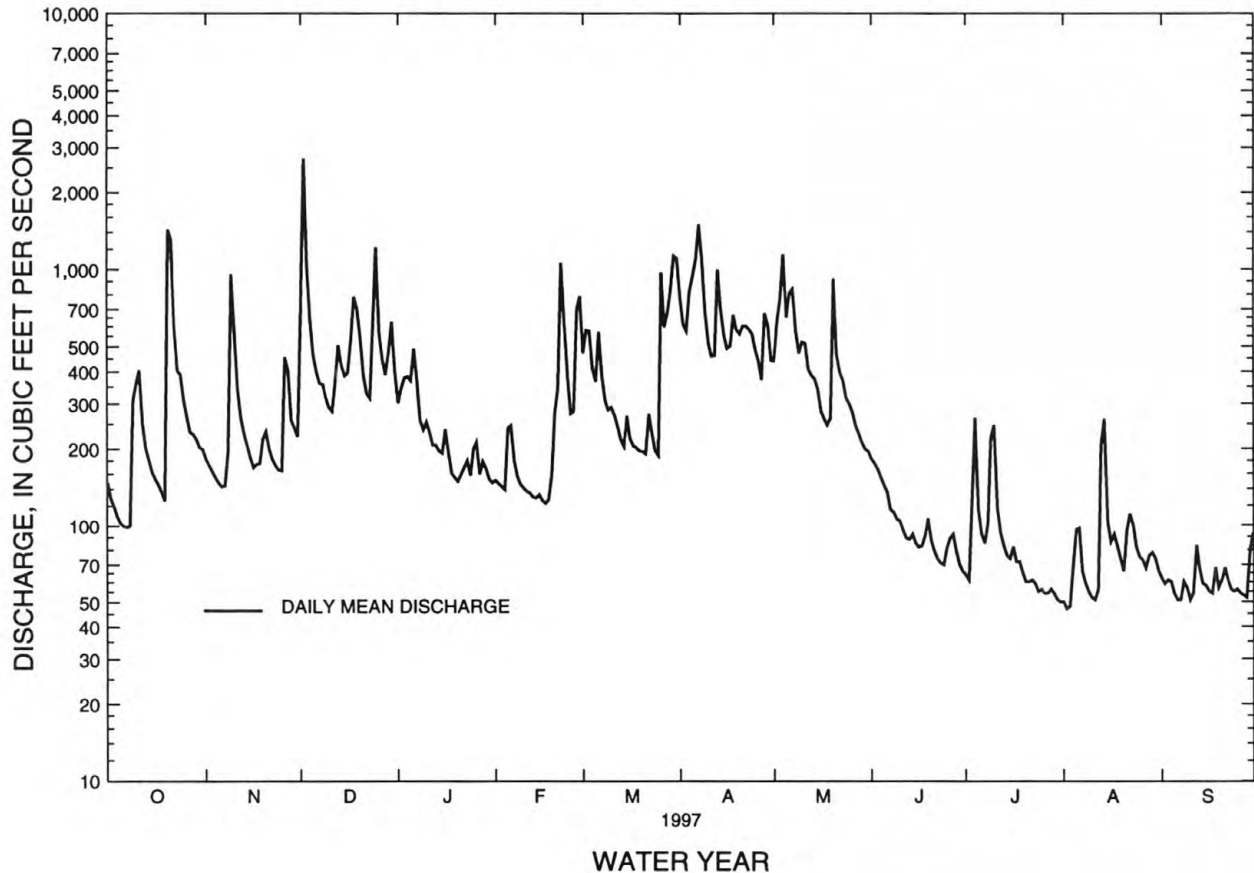
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01332500 HOOSIC RIVER NEAR WILLIAMSTOWN, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1940 - 1997	
ANNUAL TOTAL	141052		106530		273	
ANNUAL MEAN	385		292		368	1975
HIGHEST ANNUAL MEAN					135	1965
LOWEST ANNUAL MEAN					24	Dec 31 1948
HIGHEST DAILY MEAN	2710	Dec 2	2710	Dec 2	10400	Dec 31 1948
LOWEST DAILY MEAN	55	Sep 7	47	Aug 2	25	Sep 9 1980
ANNUAL SEVEN-DAY MINIMUM	58	Sep 2	51	Jul 28	25	Sep 9 1980
INSTANTANEOUS PEAK FLOW			4080	Dec 2	13000	Dec 31 1948
INSTANTANEOUS PEAK STAGE			9.25	Dec 2	14.85	Dec 31 1948
INSTANTANEOUS LOW FLOW			45	Aug 2	5.8	Aug 30 1940
ANNUAL RUNOFF (CFSM)	3.06		2.32		2.17	
ANNUAL RUNOFF (INCHES)	41.64		31.45		29.48	
10 PERCENT EXCEEDS	925		629		583	
50 PERCENT EXCEEDS	231		197		165	
90 PERCENT EXCEEDS	93		60		67	

e Estimated

HOOSIC RIVER NEAR WILLIAMSTOWN, MA 01332500



HUDSON RIVER BASIN

01333000 GREEN RIVER AT WILLIAMSTOWN, MA

LOCATION.--Lat 42°42'32", long 73°11'50", Berkshire County, Hydrologic Unit 02020003, on left bank 0.1 mi upstream from bridge on State Highway 2 at Williamstown and 0.8 mi upstream from mouth.

DRAINAGE AREA.--42.6 mi².

PERIOD OF RECORD.--Discharge: September 1949 to current year.
Water-quality records: Water years 1967-69.

REVISED RECORDS.--WDR MA-RI-84-1: 1977-78(P), 1979, 1980-83(P).

GAGE.--Water-stage recorder. Elevation of gage is 615 ft above sea level, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation at times caused by mill upstream.

AVERAGE DISCHARGE.--48 years, 82.7 ft³/s, 26.37 in/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,060 ft³/s, Dec. 21, 1973, gage height, 5.68 ft in gage well, from rating curve extended above 750 ft³/s on basis of slope-area measurement at gage height 4.94 ft; maximum gage height, 6.35 ft, Mar. 13, 1977, from floodmarks, gage height in well unknown; minimum discharge, 3.1 ft³/s, Sept. 20, 22, 24, 25, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 31, 1948, reached a stage of about 7.5 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 850 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	0700	*1,530	*4.46	Mar. 26	0630	867	3.68

Minimum discharge, 6.8 ft³/s, Sept. 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	57	168	135	e50	164	304	167	60	14	8.3	11
2	44	53	812	159	47	212	255	205	57	13	8.0	10
3	40	50	384	149	45	187	257	251	51	42	8.5	12
4	35	48	278	141	42	154	317	302	48	43	22	10
5	33	45	223	139	e84	140	308	229	44	20	24	9.3
6	31	43	199	141	e70	232	324	287	41	17	15	8.9
7	29	43	175	121	57	158	337	258	39	16	12	9.0
8	29	49	165	102	52	132	264	212	37	15	11	8.9
9	88	266	138	103	e49	119	213	195	34	53	10	8.6
10	91	165	125	108	e45	121	180	190	32	49	9.2	8.2
11	107	129	120	89	e44	111	155	166	29	25	8.9	8.3
12	81	112	186	81	e42	97	151	146	28	20	8.9	12
13	70	99	211	80	e41	84	200	132	27	17	57	9.4
14	62	87	187	74	e39	79	154	124	27	16	52	8.7
15	53	78	167	70	e37	97	134	118	24	15	20	8.3
16	50	70	151	94	e36	74	124	107	23	21	17	8.0
17	47	67	182	61	e34	73	126	99	22	16	15	7.6
18	44	66	235	48	e35	69	157	89	24	15	15	11
19	41	84	228	e45	105	67	152	90	25	14	13	8.3
20	275	78	192	e52	122	66	162	292	22	13	12	9.8
21	204	68	160	e60	157	63	174	173	21	12	19	12
22	154	63	141	e62	319	115	189	154	19	13	17	9.0
23	126	59	127	e58	218	77	209	138	17	12	16	8.4
24	118	56	261	e54	158	68	205	124	18	11	14	8.2
25	101	56	362	e73	114	65	184	118	19	11	13	7.7
26	86	157	235	e64	117	411	166	106	18	10	14	7.6
27	79	127	205	e56	233	220	149	93	17	10	13	7.4
28	77	108	183	e60	212	242	208	83	16	10	13	7.0
29	70	100	207	e56	---	312	180	76	15	9.7	13	16
30	66	92	205	e54	---	344	154	70	14	8.8	13	15
31	61	---	161	e52	---	385	---	65	---	8.6	11	---
TOTAL	2444	2575	6773	2641	2604	4738	6092	4859	868	570.1	502.8	285.6
MEAN	78.8	85.8	218	85.2	93.0	153	203	157	28.9	18.4	16.2	9.52
MAX	275	266	812	159	319	411	337	302	60	53	57	16
MIN	29	43	120	45	34	63	124	65	14	8.6	8.0	7.0
CFSM	1.85	2.01	5.13	2.00	2.18	3.59	4.77	3.68	.68	.43	.38	.22
IN.	2.13	2.25	5.91	2.31	2.27	4.14	5.32	4.24	.76	.50	.44	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1997, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
46.2	78.4	94.8	80.2	81.8	144
222	171	259	219	239	376
1978	1956	1974	1979	1984	1979
5.33	6.71	24.8	11.0	14.6	33.6
1965	1965	1965	1981	1980	1965
208	113	251	390	251	1984
60.7	31.8	26.6	27.9	158	1960
256	124	147	1964	1964	1964
1972	1996	1975	1964	1964	1964
18.2	8.30	5.61	4.09	1965	1993
32.4	1965	1993	1964	1964	1964

HUDSON RIVER BASIN

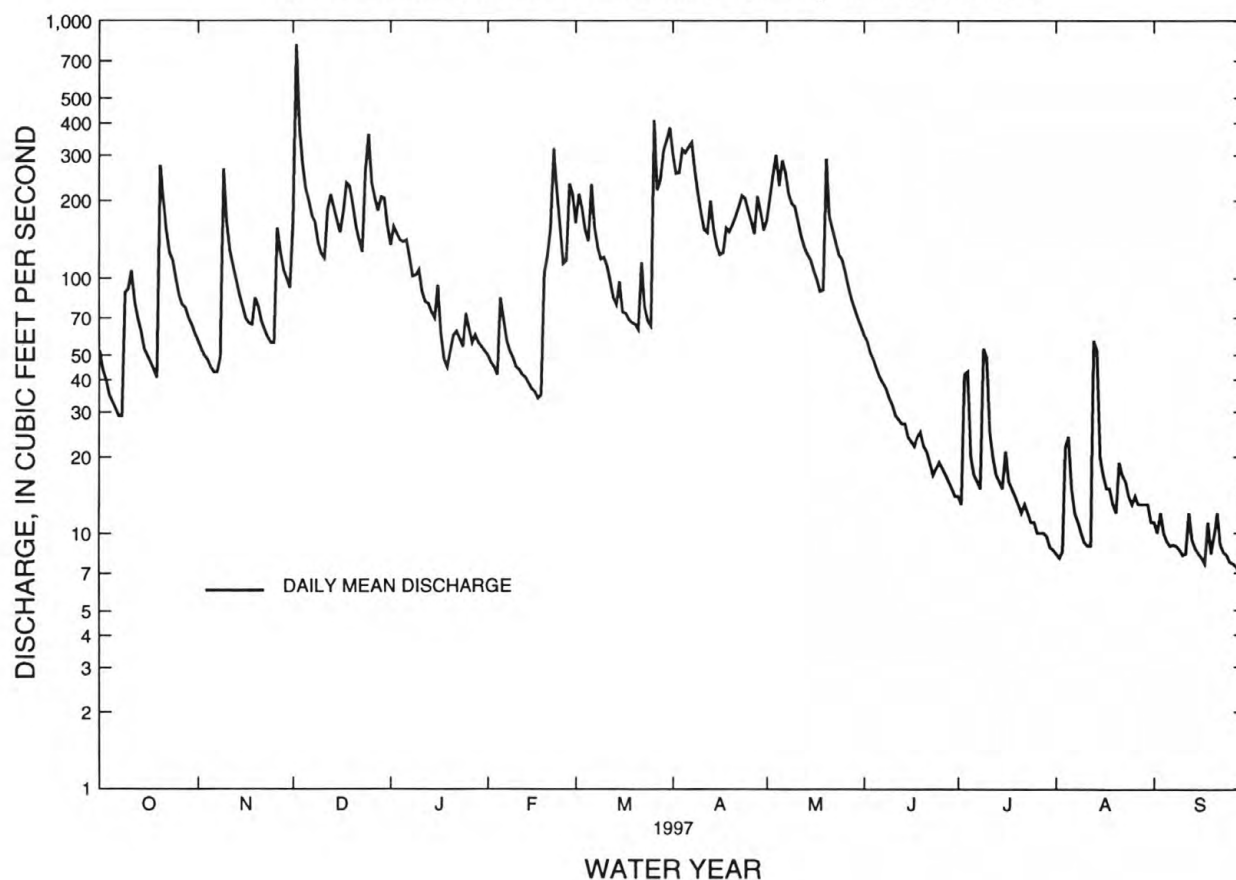
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01333000 GREEN RIVER AT WILLIAMSTOWN, MA--Continued

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1949 - 1997	
ANNUAL TOTAL	46434		34952.5		82.7	
ANNUAL MEAN	127		95.8		126	
HIGHEST ANNUAL MEAN					31.7	
LOWEST ANNUAL MEAN					1975	
HIGHEST DAILY MEAN	812	Dec 2	812	Dec 2	2200	Dec 21 1973
LOWEST DAILY MEAN	11	Sep 13	7.0	Sep 28	3.2	Sep 20 1964
ANNUAL SEVEN-DAY MINIMUM	12	Sep 1	7.9	Sep 22	3.4	Sep 19 1964
INSTANTANEOUS PEAK FLOW			1530	Dec 2	4060	Dec 21 1973
INSTANTANEOUS PEAK STAGE			4.46	Dec 2	6.35	Mar 13 1977
INSTANTANEOUS LOW FLOW			6.8	Sep 28	3.1	Sep 20 1964
ANNUAL RUNOFF (CFSM)	2.98		2.25		1.94	
ANNUAL RUNOFF (INCHES)	40.55		30.52		26.37	
10 PERCENT EXCEEDS	301		212		186	
50 PERCENT EXCEEDS	81		66		48	
90 PERCENT EXCEEDS	24		11		11	

e Estimated

GREEN RIVER AT WILLIAMSTOWN, MA 01333000



DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in a table of discharge measurements at low-flow partial-record stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a second table.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*).

Discharge measurements made at miscellaneous sites October 1996 through October 1997

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
NORTH COASTAL BASIN						
01102038 Sawmill Brook	Manchester Harbor	Lat 42°34'40", long 70°46'14", Essex County, at bridge on School Street, at Manchester, MA.	--	--	6-30-97 7-29-97 9- 9-97 10-21-97	0.58 .41 .41 .05
01102054 Crane River	Danvers River	Lat 42°33'27", long 71°11'38", Essex County, at bridge on Ash Street, near Danvers, MA.	--	--	6-30-97 7-29-97 9- 9-97 10-21-97	1.76 .85 .98 .64
01102057 Porter River	do.	Lat 42°34'07", long 71°08'30", Essex County, 150 ft upstream from State Highway 62, near Danvers, MA.	--	--	6-30-97 7-29-97 9- 9-97 10-21-97	.62 .37 .64 .17
01102058 Waters River	do.	Lat 42°32'47", long 71°12'32", Essex County, off Endicott Street, 0.25 mi upstream of State Highway 128, near Tapleyville, MA.	--	--	6-30-97 7-29-97 9- 9-97 10-21-97	.61 .52 .52 .98
01102065 North River	do.	Lat 42°31'28", long 71°05'45", Essex County, at bridge on Hawley Street, 0.95 mi upstream from mough, near Peabody, MA.	--	--	6-30-97 7-29-97 9- 9-97 10-21-97	2.05 .53 .75 .44
01102152 Forest River	Salem Harbor	Lat 42°29'32", long 70°54'09", Essex County, 0.4 mi upstream from State Highway 1A, near Salem, MA.	--	--	6-30-97	.09
01102343 Saugus River	Saugus River	Lat 42°28'57", long 71°01'14", Essex County, at bridge on State Highway 1, 1.25 mi upstream from mough, near Saugus, MA.	--	--	7-29-97 9- 9-97 10-21-97	1.19 .89 .63
MATTAPOISETT RIVER BASIN						
01105914 Mattapoisett River	Mattapoisett River	Lat 41°41'06", long 70°50'28", Bristol County, at bridge on Tinkham Lane, 2.0 mi northeast of Mattapoisett, MA.	18.20	1972-74, 1982	10-19-94 9- 6-96 9-27-96	2.98 19.7 35.0
WESTPORT RIVER BASIN						
01105937 Shingle Island River	Westport River	Lat 41°40'53", long 71°26'44", Bristol County, downstream of Old Fall River Road 3 mi northwest of North Dartmouth, MA.	8.59	1957, 1972-74, 1991-93	10-19-94 9- 6-96 9-25-96	0.63 6.56 20.9
01105947 Bread and Cheese Brook	do.	Lat 41°38'00", long 71°03'46", Bristol County, at culvert on State Highway 177, 1.0 mi north of Head of Westport, MA.	7.77	1972-74, 1992, 1994-96	9-11-96 9-24-96	10.6 19.4

See footnotes at end of table

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at miscellaneous sites October 1996 through October 1997--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previ- ously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
COLE RIVER BASIN						
01109135 Cole River	Mount Hope Bay	Lat 41°46'30", long 71°11'57", Bristol County, at bridge on Hortonville Road, 0.1 mi southeast of Hortonville, MA.	7.77	1986-87, 1974-76,	9-11-96 9-24-96	6.57 16.4
PALMER RIVER BASIN						
01109205 West Branch Palmer River	Palmer River	Lat 41°51'41", long 71°15'31", Bristol County, north of Route 44 and west of Route 118, downstream of bridge on Per- ryville Road at Perryville, MA.	6.75	--	10-19-94 7-18-96 9-25-96 6-11-97 6-24-97	0.56 5.42 5.55 2.78 2.27
01109223 Rocky Run	do.	Lat 41°47'53", long 71°14'21", Bristol County, upstream of bridge on Martin Street at Rehoboth, MA.	5.72	--	10-19-94 7-18-96 9-25-96 6-11-97 6-24-97	.43 4.25 8.85 2.48 1.90
PAWTUXET RIVER BASIN						
01115110 Huntinghouse Brook	Regulating Reservoir	Lat 41°50'48", long 71°36'44", Providence County, at Elmdale Road, 1.6 mi north- west of North Scituate, RI.	6.31	1993-96	10-22-96 1- 6-97 4- 4-97 5-13-97 7- 9-97	43.6 13.6 53.7 7.66 .04
01115120 Unnamed Tributary	Scituate Reservoir	Lat 41°49'53", long 71°36'34", Providence County, at State Highway 6, 1.2 mi west of North Scituate, RI.	.42	1994-95	10-22-96 1- 6-97 3-24-97 4- 4-97 5-12-97	1.01 .57 .38 3.69 .32
01115180 Brandy Brook	do.	Lat 41°49'10", long 71°35'11", Providence County, at State Highway 116, 0.9 mi south of North Scituate, RI.	1.59	1993-96	10-22-96 1- 6-97 4- 4-97 5-14-97 7-10-97 9- 9-97	7.69 5.25 9.08 3.13 .29 .58
01115183 Quonapaug Brook	do.	Lat 41°47'51", long 71°24'53", Providence County, at State Highway 116, 2.4 mi south of North Scituate, RI.	1.96	1994-96	10-22-96 1- 8-97 3-26-97 5-13-97 9- 9-97	16.1 4.58 6.36 2.58 .15
01115184 Spruce Brook	do.	Lat 41°47'19", long 71°37'14", Providence County, 0.2 mi south of State Highway 14, 3.5 mi southwest of North Scituate, RI.	.30	1994-96	10-23-96 1- 7-97 3-24-97 5-14-97 7-10-97	4.38 3.67 2.67 2.46 .16
01115190 Dolly Cole Brook	Barden Reservoir	Lat 41°49'20", long 71°42'03", Providence County, at Old Danielson Pike, at South Foster, RI.	5.07	1993-96	10-22-96 1- 6-97 3-24-97 5-13-97 7- 9-97 9- 9-97	39.2 11.7 8.92 5.59 .46 .16
01115265 Hemlock Brook	do.	Lat 41°47'26", long 71°41'57", Providence County, at King Road, 1.2 mi northeast Foster Center, RI.	--	1996	10-23-96 1- 8-97 3-26-97 5-13-97 7- 9-97	59.6 22.4 20.5 10.3 .50

See footnotes at end of table

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites October 1996 through October 1997--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previ- ously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PAWTUXET RIVER BASIN--Continued						
01115280 Cork Brook	Scituate Reservoir	Lat 41°48'14", long 71°39'01", Providence County, at Rockland Scituate Road, 0.8 mi northeast of Crazy Corners, RI.	1.91	1993-96	10-23-96 1- 8-97 3-24-97 5-14-97 7- 9-97	5.80 3.54 2.78 2.45 .03
01115297 Wilbur Hollow Brook	Barden Reservoir	Lat 41°45'53", long 71°38'10", Providence County, at Old Plainfield Pike, 2.2 mi southeast of Rockland, RI.	4.45	1992-96	10-23-96 1- 7-97 3-24-97 5-14-97 7- 9-97 9-10-97	14.9 10.2 8.17 7.07 .18 .35
01115500 Pawtuxet River	Narragansett Bay	Lat 41°43'58", long 71°33'01", Providence County, near Fairground Way, at Fiskeville, RI.	102	1915-25 ^b , 1986-87 ^h , 1996	8-11-86 12- 4-86 4- 1-87 4- 7-87 10-22-96 1- 7-97 3-26-97 5-12-97 7- 3-97 9-10-97	38.8 124 334 1,390 86.0 187 188 86.9 37.2 23.6
01115630 Nooseneck River	Big River	Lat 41°37'36", long 71°37'59", Kent County, at State Highway 3 at Nooseneck, and 5.5 mi southwest of Washington, RI.	8.23	1961-63, 1964-81 ^b , 1994-96	10-16-96 11-21-96 12-30-96 1-23-97 2-20-97 3-17-97 4-14-97 5-20-97 6-17-97 7-15-97 8-27-97 9-17-97	7.00 11.0 33.1 29.5 22.8 21.7 42.8 17.8 5.62 2.21 5.42 3.96
01115670 Congdon River	do.	Lat 41°36'44", long 71°37'24", Kent County, at Congdon Mill Road, 1.3 mi southeast of Nooseneck, RI.	4.46	1961-63, 1995-96	10-16-96 11-21-96 12-30-96 1-23-97 2-20-97 3-17-97 4-14-97 5-20-97 6-17-97 7-15-97 8-27-97 9-17-97	4.29 6.43 15.4 13.4 11.5 11.4 21.8 10.4 3.58 .72 1.87 2.47
01115700 Unnamed Tributary	Congdon River	Lat 41°36'46", long 71°37'06", Kent County, at Sweet Sawmill Road, 1.3 mi southeast of Nooseneck, RI.	.48	1961-63, 1995-96	10-16-96 11-21-96 12-30-96 1-23-97 2-20-97 3-17-97 4-14-97 5-20-97 6-17-97 7-15-97 8-27-97 9-17-97	.41 .72 1.79 1.57 1.48 1.28 2.35 1.31 .70 .46 .43 .37

See footnotes at end of table

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Discharge measurements made at miscellaneous sites October 1996 through October 1997--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previ- ously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PAWTUXET RIVER BASIN--Continued						
01115730 Carr River	Capwell Mill Pond	Lat 41°38'01", long 71°34'52", Kent County, at New London Turnpike, 4 mi south of Washington, RI.	2.88	1961-63, 1995-96	1-24-97	8.37
					2-21-97	8.79
					3-18-97	6.72
					4-14-97	16.5
					5-20-97	8.20
					6-17-97	2.23
					7-15-97	.24
					8-27-97	.49
					9-17-97	.78
01115770 Carr River	Big River	Lat 41°38'35", long 71°36'30", Kent County, at Burnt Sawmill Road, 1.5 mi northeast of Nooseneck, RI, and 4 mi southwest of Washington, RI.	7.33	1964-80 ^b , 1995-96	10-16-96	4.47
					11-21-96	8.09
					12-30-96	20.4
					1-23-97	19.4
					2-20-97	16.0
					3-18-97	14.7
					4-14-97	29.6
					5-20-97	13.3
					6-17-97	.41
					7-15-97	.94
					8-27-97	3.19
					9-17-97	1.80
01115800 Big River	Pawtuxet River	Lat 41°38'41", long 71°36'48", Kent County, at State Highway 3, 0.6 mi east of Kitts Corner, RI.	23.1	1992-96	10-16-96	17.9
					11-21-96	30.9
					12-30-96	79.6
					1-23-97	71.5
					2-20-97	59.0
					3-17-97	59.0
					4-15-97	102.0
					5-21-97	43.8
					6-18-97	15.4
					7-16-97	7.82
					8-28-97	10.6
					9-18-97	9.45
01115830 Bear Brook	do.	Lat 41°39'37", long 71°37'42", Kent County, at Fish Hill Road, 3 mi south of Coventry, RI.	3.98	1961-63, 1996	10-17-96	1.65
					11-22-96	5.12
					12-31-96	13.1
					1-24-97	10.1
					2-21-97	9.46
					3-18-97	8.93
					4-15-97	13.6
					5-21-97	7.60
					6-18-97	1.67
					7-16-97	1.29
					8-27-97	.62
					9-18-97	1.05
01115963 Old Hickory Brook	do.	Lat 41°39'23", long 71°36'00", Kent County, at Mishnock Road, 1.5 mi north- east of Kitts Corner, RI.	--	1996	10-17-96	.09
					11-22-97	.25
					12-31-96	.46
					1-24-97	.33
					2-21-97	.42
					3-18-97	.30
					4-15-97	.51
					5-21-97	.27
					6-18-97	.06
					7-16-97	.05
					8-27-97	.03
					9-18-97	.05

See footnotes at end of table

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites October 1996 through October 1997--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PAWTUXET RIVER BASIN--Continued						
01115965 Outflow of Lake Mishnock	Pawtuxet River	Lat 41°39'20", long 71°35'28", Kent County, at Mishnock Road, 1.9 mi north-east of Kitts Corner, RI.	--	1996	10-17-96	2.62
					11-22-96	3.36
					12-31-96	3.70
					1-24-97	4.81
					2-21-97	3.78
					3-18-97	3.78
					4-15-97	4.64
					5-21-97	3.95
					6-18-97	3.36
					7-16-97	3.16
					8-27-97	3.06
					9-18-97	2.73
01115970 Mishnock River	do.	Lat 41°40'44", long 71°34'52", Kent County, at State Highway 3, 1 mi south-west of Washington, RI.	3.32	1961-63, 1996	10-17-96	4.27
					11-22-96	5.33
					12-31-96	9.49
					1-24-97	9.59
					2-21-97	8.85
					3-18-97	8.95
					4-15-97	12.9
					5-21-97	7.57
					6-18-97	3.48
					7-16-97	3.15
					8-28-97	3.28
					9-18-97	3.15
HUNT RIVER BASIN						
01116800 Scrabbletown Brook	Hunt River	Lat 41°35'39", long 71°29'56", Washington County, at State Highway 2, 1.8 mi southwest of Davisville, RI.	1.32	1961-63, 1995-96	10- 8-96	0.54
					11-20-96	2.17
01116820 Hunt River Tributary	do.	Lat 41°36'15", long 71°29'44", Kent County, at State Highway 2, 1.2 mi southwest of Davisville, RI.	1.26	1961-63, 1995-96	10- 8-96	.98
					11-20-96	2.40
01116830 ^f Hunt River	Narragansett Bay	Lat 41°36'20", long 71°29'32", Kent County, near South Road, 1.1 mi south-west of Davisville, RI.	4.03	1995-96	10- 8-96	3.07
01116850 ^f Hunt River	do.	Lat 41°37'25", long 71°28'57", Kent County, at Davisville Road, 0.8 mi northwest of Davisville, RI.	5.78	1961-63, 1991, 1995-96	10- 8-96	4.81
01116875 Frenchtown Brook	Hunt River	Lat 41°37'29", long 71°29'34", Kent County, at State Highway 2, 1.2 mi north of Briggs Corner, RI.	6.74	1995-96	10- 8-96	2.78
					11-20-96	9.97
01116880 ^f Frenchtown Brook	do.	Lat 41°37'33", long 71°29'03", Kent County, at Davisville Road, 1 mi north-east of Davisville, RI.	6.93	1961-63, 1991, 1995-96	10- 8-96	2.95
01116890 ^f Hunt River	Narragansett Bay	Lat 41°37'43", long 71°28'49", Kent County, at Frenchtown Road, 0.7 mi east of Frenchtown, RI.	13.1	1995-96	10- 8-96	10.2
01116895 Fry Brook	Hunt River	Lat 41°37'56", long 71°29'14", Kent County, at State Highway 4, 0.4 mi northeast of Frenchtown, RI.	3.11	1995-96	10- 8-96	1.28
					11-20-96	2.31
01116910 ^f Hunt River	Narragansett Bay	Lat 41°38'03", long 71°28'05", Washington County, at State Highway 1, 1.9 mi southwest of East Greenwich, RI.	17.2	1962-63, 1991, 1995-96	10- 8-96	7.13
01116915 ^f Hunt River	do.	Lat 41°38'18", long 71°27'46", Washington County, at Conrail railroad, 1.5 mi southwest of East Greenwich, RI.	18.3	1995-96	10- 8-96	7.71

See footnotes at end of table

Discharge measurements made at miscellaneous sites October 1996 through October 1997--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previ- ously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
HUNT RIVER BASIN--Continued						
01116930 ^f Hunt River	Narragansett Bay	Lat 41°37'47", long 71°27'13", Washington County, at Potowomut Road, 2 mi south of East Greenwich, RI.	18.7	1995-96	10- 8-96	10.6
01116940 Sandhill Brook	Hunt River	Lat 41°35'28", long 71°29'01", Washington County, at Stony Lane, 0.9 mi northeast of Wickford Junction, RI.	--	1996	10- 8-96	.18
01116950 Sandhill Brook	do.	Lat 41°36'34", long 71°28'15", Washington County, at Devil's Foot Road, 0.5 mi southeast of Davisville, RI.	1.68	1961-63, 1995-96	10- 8-96	.90
01116960 Sandhill Brook	do.	Lat 41°37'09", long 71°27'24", Washington County, at Chadsey Road, 1.2 mi north- east of Davisville, RI.	2.60	1995-96	10- 8-96	1.82
01116980 Sandhill Brook	do.	Lat 41°37'45", long 71°26'51", Washington County, at North Quidnesset Road, 2 mi south of East Greenwich, RI.	3.53	1961-64, 1995-96	10- 8-96	2.15
COCUMCOSSUC BROOK BASIN						
01117050 Cocumcossuc Brook	Narragansett Bay	Lat 41°35'01", long 71°27'55", Washington County, at State Highway 1, 1.2 mi northwest of Wickford, RI.	1.52	1995-96	10- 8-96 11-20-96	1.14 2.44
ANNAQUATUCKET RIVER BASIN						
01117060 ^g Annaquatucket River	Narragansett Bay	Lat 41°34'04", long 71°23'13", Kent County, at State Fish Hatchery, near Hatchery road, and 1.9 mi southeast of Exeter, RI.	0.21	1996	10- 8-96	1.95
01117070 ^g Annaquatucket River	do.	Lat 41°34'24", long 71°29'18", Kent County, at Hatchery Road, 0.5 mi south- east of Wickford Junction, RI.	2.92	1961-63, 1996	10- 8-96	1.36
01117100 ^g Annaquatucket River	do.	Lat 41°33'25", long 71°27'55", Washington County, at State Highway 1, 1 mile southwest of Wickford, RI, and 1.5 mi upstream from mouth.	6.44	1961-62, 1986-87, 1995-96	10- 8-96 11-20-96	11.7
PETTAQUAMSCUTT RIVER BASIN						
01117170 Mattatuxet River	Pettaquamscutt River	Lat 41°32'16", long 71°28'09", Washington County, at State Highway 1, 0.4 mi south of Allenton, RI.	1.78	1961-64, 1995-96	10- 8-96	2.39
01117200 Mattatuxet River	do.	Lat 41°31'10", long 71°26'44", Washington County, at Gilbert Stuart Road, 1.5 mi northwest of Saunderstown, RI.	4.81	1961-64, 1995-96	10- 8-96 11-20-96	4.00 6.95
QUEEN RIVER BASIN						
01117365 Queen's Fort Brook	Narragansett Bay	Lat 41°32'53", long 71°32'01", Kent County, at Slocumville Road, 1.5 mi northwest of Slocum, RI.	3.22	1988-91, 1996	10- 8-96 11-20-96	0 0
PAWCATUCK RIVER BASIN						
01117471 Beaver River	Pawcatuck River	Lat 41°27'51", long 71°37'42", Washington County, at bridge on Shannock Hill Road, 1.2 mi northeast of Shannock and 1.2 mi north of Kenyon, RI.	11.2	1966-68, 1974-76, 1991	7-23-97	8.48

See footnotes at end of table

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites October 1996 through October 1997--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
CONNECTICUT RIVER BASIN						
01164100 Boyce Brook	East Branch Tully River	Lat 42°40'50", long 72°12'45", Worcester County, upstream of bridge on Falls Road, 1.9 mi northwest of Royalston, MA.	4.72	--	9-14-96 12- 3-96 1-29-97 5- 1-97 6- 3-97 6-18-97	0.07 38.9 8.25 11.6 3.78 .50
01164400 Lawrence Brook	do.	Lat 42°39'01", long 72°12'02", Worcester County, upstream of bridge at the junctions of Doane's Hill Road and Athol Road, 2.0 mi south of Royalston, MA.	13.20	--	10-18-94 9-19-96 4-24-97 4-30-97 6-18-97 6-19-97	5.48 33.7 100 108 2.97 7.34
01165080 West Branch Tully River	Millers River	Lat 42°39'00", long 72°16'09", Franklin County, upstream of culvert on Flagg Road at Blissville, 2.5 mi north of North Orange, MA.	5.98	--	10-18-94 9-13-96 4-24-97 5- 1-97 6-20-97 6-25-97	.69 .20 12.1 11.4 3.96 3.41
01166100 Whetstone Brook	do.	Lat 42°35'22", long 72°21'31", Franklin County, 0.5 mi above mouth and 0.6 mi south of Wendell Depot, MA.	4.90	1965-66, 1978-81, 1983	9-19-96 12- 4-96	7.96 23.1
01166600 Mormom Hollow Brook	do.	Lat 42°34'16", long 72°25'55", Franklin County, 1.4 mi above mouth, 2.0 mi southeast of Farley 2.5 mi northwest of Wendell, MA.	3.96	--	9-19-96 4- 3-97 4-24-97 6-12-97 6-25-97	28.9 10.5 9.87 1.86 1.52
01173900 Middle Branch Swift River	Quabbin Reservoir	Lat 42°32'45", long 72°19'10", Franklin County, at culvert on Elm St., at North New Salem, MA.	4.76	1980-82	10-18-94 9-12-96 5-30-97	1.40 .42 4.39
01174350 East Branch Swift River	do.	Lat 42°28'16", long 72°09'46", Worcester County, 200 ft above confluence with Moccasin Brook, 400 ft above Quaker Road, Petersham, MA.	4.72	--	10-18-94 9-12-96 4- 8-97 4-10-97 5-30-97 6- 3-97 6-18-97	6.21 1.08 75.2 39.9 4.13 3.55 .63
01174400 Moccasin Brook	East Branch Swift River	Lat 42°28'17", long 72°09'44", Worcester County, 100 ft above confluence with East Branch Swift River, 300 ft above Quaker Road, Petersham, MA.	--	--	9-12-96 4- 8-97 4-10-97 5-30-97 6- 3-97	.59 54.5 26.4 12.2 7.97
01174560 West Branch Swift River	Quabbin Reservoir	Lat 42°27'50", long 72°22'59", Franklin County, 200 ft upstream of Cooleyville Road, at Cooleyville, MA.	6.84	1980-82	10-18-94 9-14-96 12- 3-96	2.18 .50 59.8
01174563 West Branch Swift River Tributary	West Branch Swift River	Lat 42°27'52", long 72°22'56", Franklin County, 1300 ft upstream of bridge on Cooleyville Road, at Cooleyville, MA.	3.85	1981-82	9-14-96 12- 3-96 12-11-96 6-12-97 6-25-97	.47 26.7 11.1 2.23 1.45
01168700 Clark Brook	Deerfield River	Lat 42°36'48", long 72°46'05", Franklin County, at culvert on State Highway 112 0.5 mi above mouth and 1.7 miles northwest of Shelburne Falls, MA.	2.82	1967-69	10-17-94 9-17-96 6- 2-97	.45 2.56 1.76
01168795 Foundry Brook	East Branch North River	Lat 42°40'47", long 72°43'21", Franklin County, 0.5 mi above mouth, near Foundry Village, MA.	1.99	--	10-17-94 9-17-96 12-10-96 4-22-97 6-17-97 6-19-97	.43 .90 4.76 7.85 .47 .66

See footnotes at end of table

Discharge measurements made at miscellaneous sites October 1996 through October 1997--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previ- ously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
CONNECTICUT RIVER BASIN--Continued						
01168921 Tissdell Brook	West Branch North River	Lat 42°41'41", long 72°45'34", Franklin County, 1,000 ft above mouth, near Adamsville, MA.	1.64	--	9-17-96 12-10-96 4-22-97 6-17-97 6-19-97	1.40 4.92 7.30 1.17 1.28
01169506 Bear River	Deerfield River	Lat 42°32'23", long 72°43'43", Franklin County, 100 ft upstream of confluence with Drakes Brook at Pine Hill Road near Conway, MA.	5.57	--	10-17-94 9-20-96 12- 9-96 1-28-97 4-23-97 5-29-97	1.80 5.88 18.1 5.48 19.1 7.41
01169507 Drakes Brook	Bear River	Lat 42°32'29", long 72°43'40", Franklin County, 100 ft above confluence with Bear River, near Conway, MA.	4.46	--	9-18-96 12-10-96 1-28-97 4-23-97 5 29-97	55.3 8.86 6.58 9.70 3.70
01170057 Roaring Brook	Green River	Lat 42°44'26", long 72°40'29", Windham County, 100 ft above confluence with the Green River, near Green River, VT.	2.66	--	9-17-96 1-27-97 4-22-97 4-30-97 5-29-97 6-17-97	1.0 5.41 14.7 13.3 4.46 1.45
01170905 Roaring Brook	Mill River	Lat 42°28'19", long 72°40'21', Franklin County, upstream of culvert on Roaring Brook Road, 2.9 mi southeast of Conway, MA.	3.09	1971-73	10-17-94 9-18-97 6- 2-97	1.37 49.4 3.97

- ^a Operated as a continuous-record gaging station 1972-86; since 1986 an unpublished continuous stage record has been collected.
- ^b Operated as a continuous-record gaging station.
- ^c Operated as a continuous-record gaging station prior to 1991; since 1991 an unpublished continuous stage record has been collected.
- ^d Peak flow.
- ^f Flow affected by public-supply wells for supply of East Greenwich, North Kingstown, Warwick, and Quonset Point (formerly U.S. Naval establishments).
- ^g Flow affected by ground-water pumpage of about 2.0 ft³/s from operation of State fish hatchery.
- ^h Data not published in 1986-87 annual data report.

BARNSTABLE COUNTY

413956070164301. Barnstable well A1W 230.

LOCATION.--Lat 41°39'56", long 70°16'43", Barnstable County, Hydrologic Unit 01090002, 50 ft west of Mary Dunn Road at Hyannis Airport and 0.3 mi north of intersection of Willow Street and State Highway 28 in Barnstable.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 35.8 ft, screened 32.8 to 35.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 43.23 ft above sea level. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--January 1958 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.51 ft below land-surface datum, May 20, 1987; lowest measured, 26.59 ft below land-surface datum, Oct. 21, 1991.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	20.92	DEC 20	21.44	FEB 20	21.92	APR 22	20.75	JUN 25	21.89	AUG 22	23.20
NOV 21	21.16	JAN 20	21.63	MAR 20	22.03	MAY 22	21.36	JUL 22	22.77	SEP 23	23.76

414154070165001. Barnstable well A1W 247.

LOCATION.--Lat 41°41'54", long 70°16'50", Barnstable County, Hydrologic Unit 01090002, 30 ft east of Mary Dunn Road and 0.2 mi south of State Highway 6A in Barnstable.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 52 ft, screened 49 to 52 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 44.52 ft above sea level. Measuring point: Top of casing, 2.0 ft above land-surface datum.

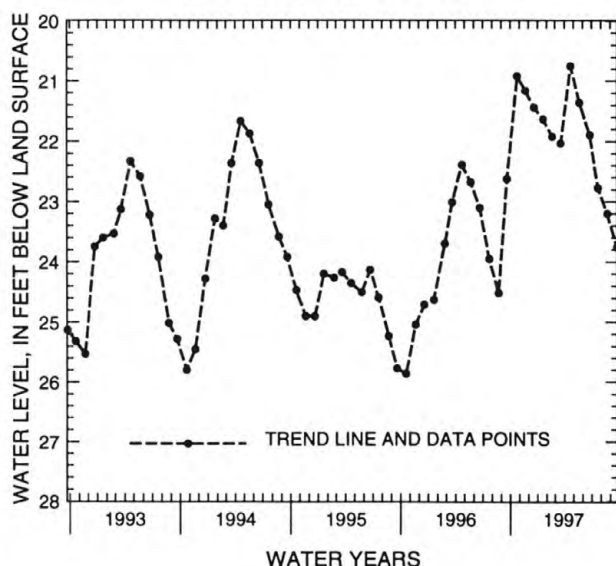
PERIOD OF RECORD.--November 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.52 ft below land-surface datum, Apr. 22, 1997; lowest measured, 28.64 ft below land-surface datum, Oct. 25, 1966.

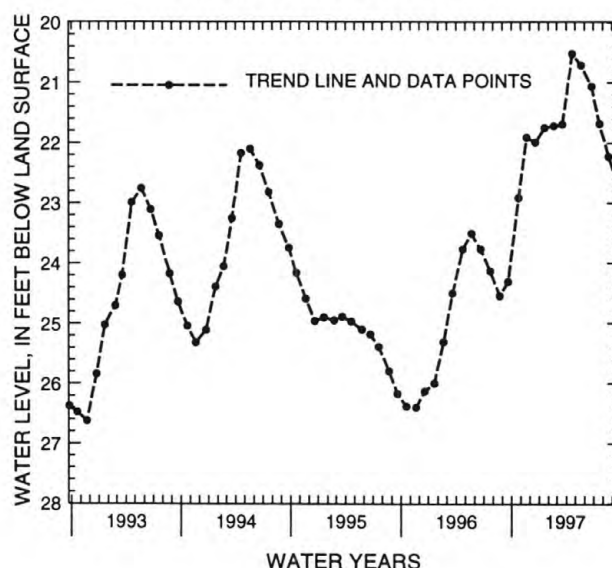
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	22.92	DEC 20	21.99	FEB 20	21.72	APR 22	20.52	JUN 25	21.06	AUG 22	22.23
NOV 21	21.91	JAN 20	21.75	MAR 20	21.69	MAY 22	20.71	JUL 22	21.68	SEP 23	22.74

BARNSTABLE 230 WELL



BARNSTABLE 247 WELL



BARNSTABLE COUNTY--Continued

414129070361401. Bourne well BHW 198.

LOCATION.--Lat 41°41'29", long 70°36'14", Barnstable County, Hydrologic Unit 01090002, 50 ft west of County Road and 0.3 mi south of Pocasset Road in Bourne.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 50 ft, screened 47 to 50 ft; new well drilled at same location August 1990, diameter 2.0 in., depth 50 ft, screened 40-50 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 55.56 ft above sea level. Measuring point: Top of casing, 1.65 ft above land-surface datum; prior to August 1990, 2.47 ft above land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.88 ft below land-surface datum, Apr. 22, 1987; lowest measured, 36.17 ft below land-surface datum, Oct. 25, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	32.56	DEC 23	31.76	FEB 20	30.98	APR 29	30.63	JUN 20	31.80	AUG 20	33.06
NOV 21	31.44	JAN 22	31.75	MAR 20	32.19	MAY 21	31.01	JUL 21	32.57	SEP 24	33.26

414518070020301. Brewster well BMW 21.

LOCATION.--Lat 41°45'18", long 70°02'03", Barnstable County, Hydrologic Unit 01090002, about 50 ft north of Nook Road, 0.1 mi south of Cliff Pond, 0.3 mi east of Silas Road, and at Nickerson State Park in Brewster.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.5 in., depth 25 ft, screened 22 to 25 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 36.97 ft above sea level. Measuring point: Top of casing, 2.40 ft above land-surface datum.

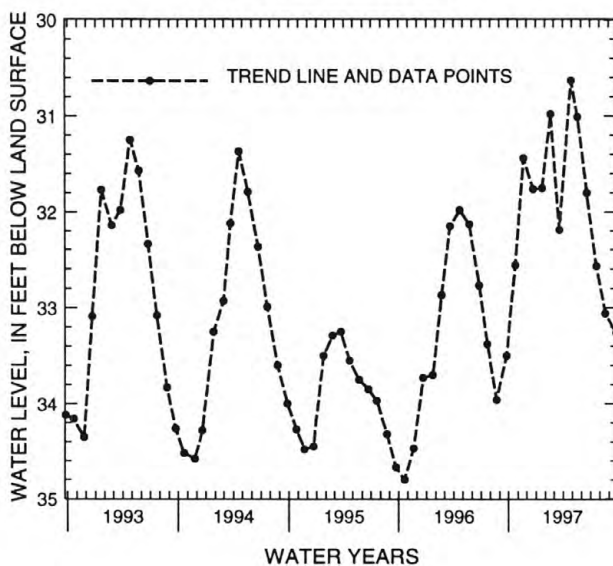
PERIOD OF RECORD.--October 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.90 ft below land-surface datum, Apr. 25, 1974; lowest measured, 13.34 ft below land-surface datum, Oct. 25, 1966.

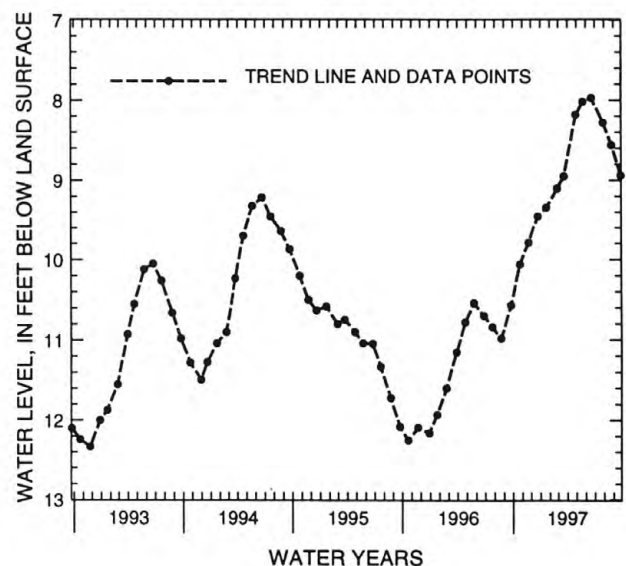
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	10.06	DEC 23	9.45	FEB 26	9.10	APR 29	8.18	JUN 20	7.97	AUG 26	8.56
NOV 21	9.79	JAN 21	9.34	MAR 20	8.95	MAY 23	8.02	JUL 29	8.28	SEP 25	8.94

BOURNE 198 WELL



BREWSTER 21 WELL



BARNSTABLE COUNTY--Continued

414630070014901. Brewster well BMW 22.

LOCATION.--Lat 41°46'30", long 70°01'49", Barnstable County, Hydrologic Unit 01090002, 50 ft east of entrance to Nickerson State Park and 50 ft south of State Highway 6A in Brewster.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 52 ft, screened 49 to 52 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 50.45 ft above sea level. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.13 ft below land-surface datum, May 26, 1983; lowest measured, 33.60 ft below land-surface datum, Jan. 31, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	30.90	DEC 23	29.90	FEB 22	29.98	APR 29	28.62	JUN 20	28.88	AUG 26	29.88
NOV 21	29.79	JAN 21	30.07	MAR 20	29.94	MAY 23	28.62	JUL 29	29.48	SEP 25	30.34

414100070011101. Chatham well CGW 138.

LOCATION.--Lat 41°41'00", long 70°01'11", Barnstable County, Hydrologic Unit 01090002, 50 ft east of State Highway 137 and 300 ft north of State Highway 28 in Chatham.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 44 ft, screened 41 to 44 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 35.28 ft above sea level. Measuring point: Top of casing, 4.77 ft above land-surface datum; prior to June 1980, 3.80 ft above land-surface datum.

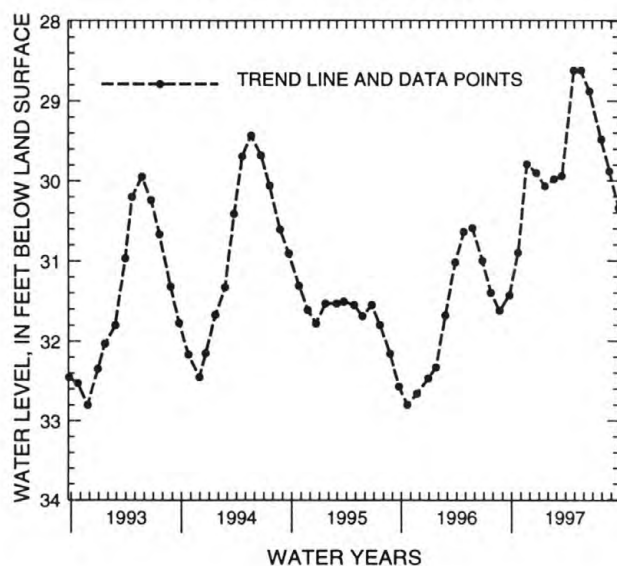
PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.94 ft below land-surface datum, Apr. 25, 1983; lowest measured, 26.38 ft below land-surface datum, Sept. 25, 1980.

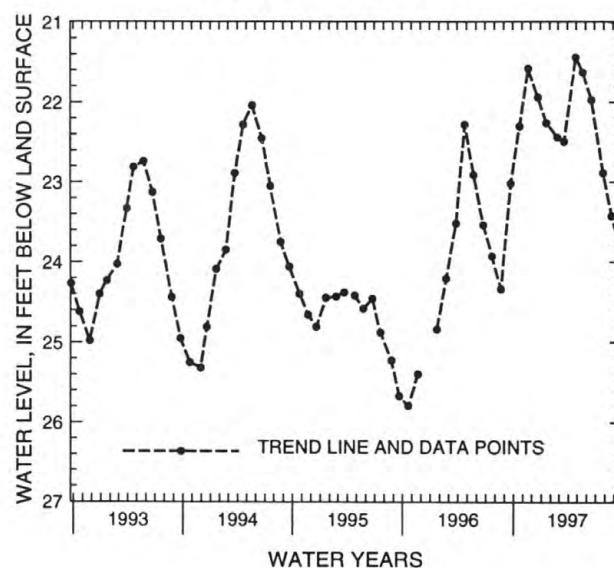
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	22.30	DEC 23	21.94	FEB 26	22.44	APR 29	21.44	JUN 20	21.97	AUG 26	23.43
NOV 21	21.58	JAN 21	22.26	MAR 20	22.49	MAY 23	21.63	JUL 29	22.89	SEP 25	23.88

BREWSTER 22 WELL



CHATHAM 138 WELL



BARNSTABLE COUNTY--Continued

413525070291904. Mashpee well MIW 29.

LOCATION.--Lat 41°35'25", long 70°29'19", Barnstable County, Hydrologic Unit 01090002, 20 ft west of dirt road, 0.8 mi north of intersection of Great Hay Road and dirt road which is 0.12 mi northeast of intersection of Red Brook Road and Great Hay Road in Mashpee.

Owner: Town of Mashpee.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Hydraulic-rotary drilled observation water-table well, diameter 2.0 in., depth 40.0 ft, screened 37.0 to 40.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 15.78 above sea level. Measuring point: Top of steel coupling, 1.36 ft above land-surface datum.

PERIOD OF RECORD.--February 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.62 ft below land-surface datum, Apr. 22 1987; lowest measured, 10.03 ft below land-surface datum, Oct. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	6.57	DEC 20	6.67	FEB 20	7.26	APR 22	6.43	JUN 20	7.33	AUG 20	8.48
NOV 21	6.60	JAN 22	7.15	MAR 20	7.45	MAY 21	6.78	JUL 21	8.06	SEP 24	8.93

414418070241601. Sandwich well SDW 252.

LOCATION.--Lat 41°44'18", long 70°24'16", Barnstable County, Hydrologic Unit 01090002, 0.5 mi north of State Highway 6A and 15 ft east of Private Road in Sandwich.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 57 ft, screened 55 to 57 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 53.47 ft above sea level. Measuring point: Top of casing, 1.0 ft above land-surface datum.

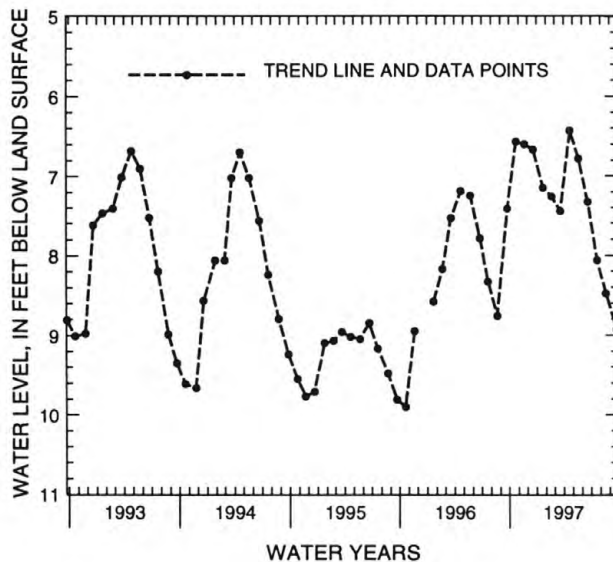
PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.88 ft below land-surface datum, Apr. 25, 1983; lowest measured, 48.23 ft below land-surface datum, Oct. 25, 1966.

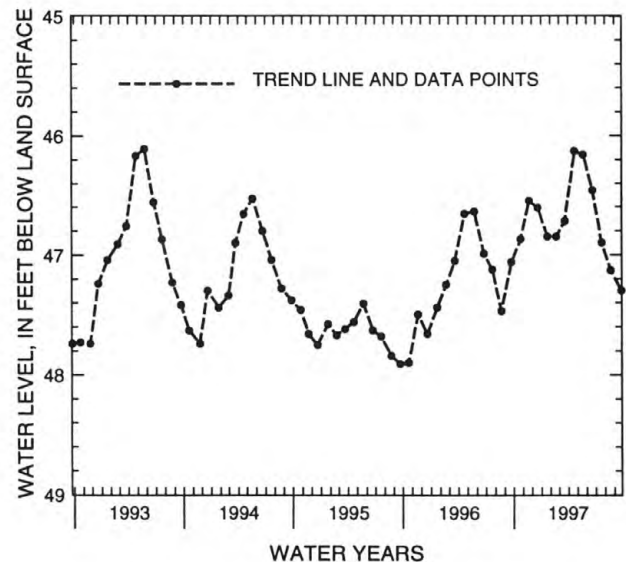
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	46.87	DEC 20	46.61	FEB 20	46.85	APR 22	46.13	JUN 20	46.46	AUG 20	47.13
NOV 21	46.55	JAN 22	46.85	MAR 20	46.72	MAY 21	46.16	JUL 21	46.90	SEP 24	47.30

MASHPEE 29 WELL



SANDWICH 252 WELL



BARNSTABLE COUNTY--Continued

414124070265901. Sandwich well SDW 253.

LOCATION.--Lat 41°41'24", long 70°26'59", Barnstable County, Hydrologic Unit 01090002, 800 ft west of Stowe Road and 50 ft south of Farmersville Road in Sandwich.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 70 ft, screened 67 to 70 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 111.20 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.78 ft below land-surface datum, July 30, 1973; lowest measured, 55.05 ft below land-surface datum, Feb. 28, 1967.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	50.30	DEC 20	49.47	FEB 20	49.14	APR 22	48.05	JUN 20	47.76	AUG 20	48.41
NOV 21	49.72	JAN 22	49.29	MAR 20	49.02	MAY 21	47.79	JUL 21	48.20	SEP 24	48.88

420239070062001. Truro well TSW 1.

LOCATION.--Lat 42°02'39", long 70°06'20", Barnstable County, Hydrologic Unit 01090002, near old pumping station about 200 ft north of State Highway 6A and 1.2 mi northwest of North Truro.

Owner: Town of Provincetown.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in., depth 68 ft, cased to 68 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 16.80 ft above sea level. Measuring point: Top of casing, 3.50 ft above land-surface datum.

REMARKS.--Water levels affected by pumping, barometric pressure, and tide.

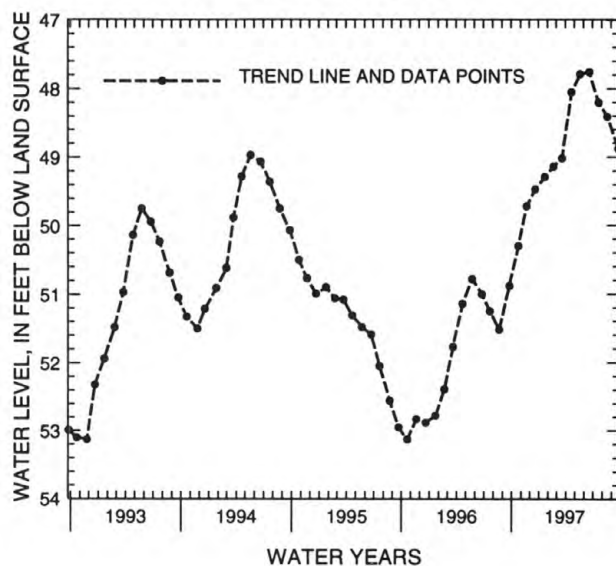
PERIOD OF RECORD.--August 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.28 ft below land-surface datum, Mar. 23, 1983; lowest measured, 12.10 ft below land-surface datum, Sept. 11, 1954.

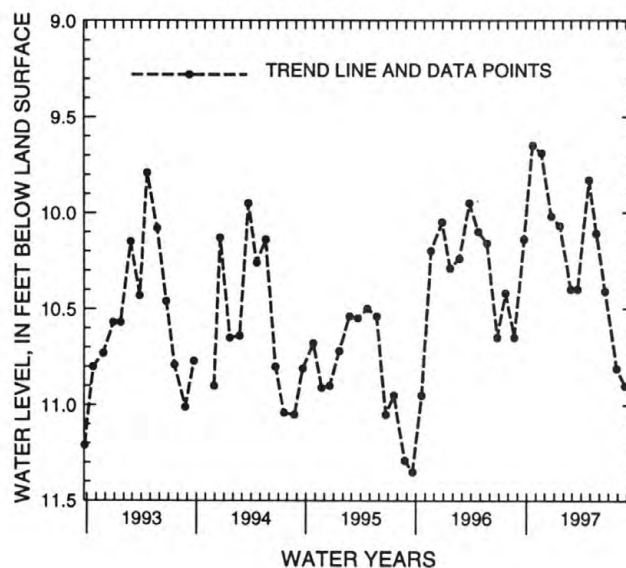
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	9.65	DEC 23	10.02	FEB 26	10.40	APR 29	9.83	JUN 20	10.41	AUG 26	10.90
NOV 21	9.69	JAN 21	10.07	MAR 20	10.40	MAY 23	10.11	JUL 29	10.81	SEP 25	10.85

SANDWICH 253 WELL



TRURO 1 WELL



BARNSTABLE COUNTY--Continued

420206070045901. Truro well TSW 89.

LOCATION.--Lat 42°02'06", long 70°04'59", Barnstable County, Hydrologic Unit 01090002, 300 ft west of U.S. Highway 6 and 50 ft north of Highland Road in Truro.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 27.7 ft, screened 24.7 to 27.7 ft; new well drilled at same location November 1989, diameter 2.0 in., depth 21.7 ft, screened 16.7 to 21.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 16.60 ft above sea level. Measuring point: Top of casing, at land-surface datum; prior to November 1989, 0.22 ft above land-surface datum.

PERIOD OF RECORD.--September 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.20 ft below land-surface datum, Apr. 25, 1983; lowest measured, 12.96 ft below land-surface datum, Sept. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	11.32	DEC 23	10.98	FEB 26	11.48	APR 29	10.83	JUN 20	11.42	AUG 26	12.18
NOV 21	10.93	JAN 21	11.12	MAR 20	11.58	MAY 23	11.06	JUL 29	11.93	SEP 25	12.29

415353069585401. Wellfleet well WNW 17.

LOCATION.--Lat 41°53'53", long 69°58'54", Barnstable County, Hydrologic Unit 01090002, about 150 ft east of old pumping station and 45 ft west of road to the public beach at Cape Cod National Seashore in Wellfleet.

Owner: Cape Cod National Seashore.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in., depth 42 ft, screen information not available.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 19.10 ft above sea level. Measuring point: Top of casing, 1.24 ft above land-surface datum, 1.13 ft prior to June 1992.

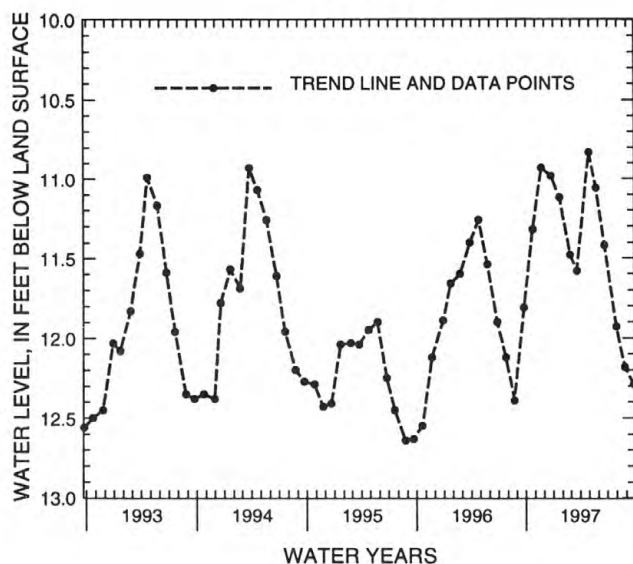
PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.27 ft below land-surface datum, June 27, 1967; lowest measured, 12.75 ft below land-surface datum, Jan. 31, 1967.

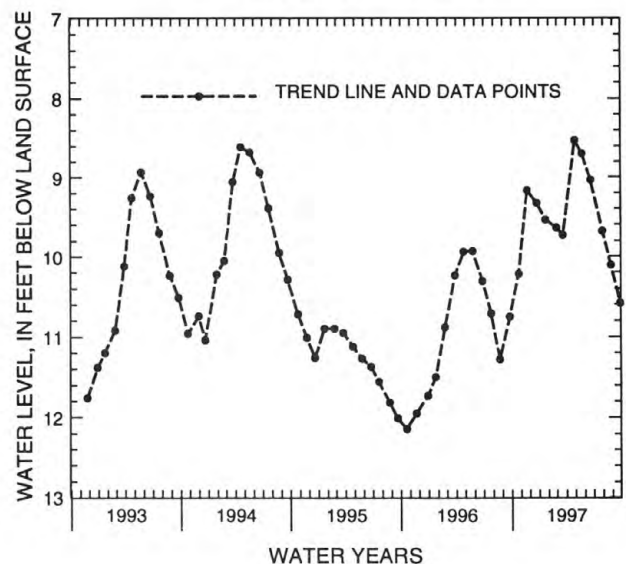
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	10.22	DEC 23	9.33	FEB 26	9.64	APR 29	8.53	JUN 20	9.04	AUG 26	10.11
NOV 21	9.17	JAN 21	9.54	MAR 20	9.73	MAY 23	8.70	JUL 29	9.68	SEP 25	10.58

TRURO 89 WELL



WELLFLEET 17 WELL



BERKSHIRE COUNTY

421550073025101. Becket well A3W 12.

LOCATION.--Lat 42°15'50", long 73°02'51", Berkshire County, Hydrologic Unit 01080206, at edge of Bonny Rigg Restaurant parking lot, 30 ft north of Route 20 and 0.2 mi east of Route 8.

Owner: Private owner.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 35 ft, screened 25 to 35 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1285 ft above sea level. Measuring point: Top of casing, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.36 ft below land-surface datum, Apr. 24, 1996; lowest measured, 4.62 ft below land-surface datum, Aug. 23, 1988, July 24, 1991.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	3.16	DEC 31	2.96	FEB 19	3.40	APR 30	3.21	JUN 25	3.95	AUG 26	3.84
NOV 26	3.07	JAN 23	3.27	MAR 25	3.39	MAY 28	3.50	JUL 22	3.96	SEP 23	4.05

423503073075401. Cheshire well CJW 2.

LOCATION.--Lat 42°35'03", long 73°07'54", Berkshire County, Hydrologic Unit 02020003, at intersection of Wells and Jenks Roads 2.3 mi northeast of Cheshire.

Owner: Private owner.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 22 ft, cased with stone to 22 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,210 ft, above sea level. Measuring point: Inside rim of concrete well top, 1.0 ft above land-surface datum.

REMARKS.--Water level may be affected by nearby pumping during summer period.

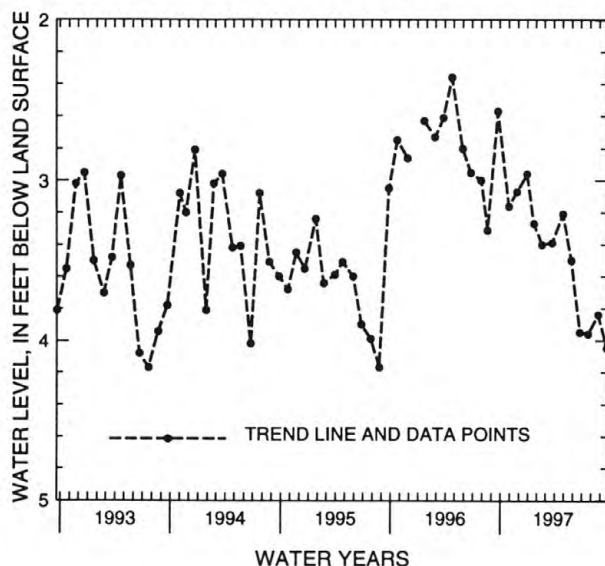
PERIOD OF RECORD.--October 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.09 ft below land-surface datum, Jan. 19, 1952; lowest measured, 19.83 ft below land-surface datum, Aug. 24, 1995.

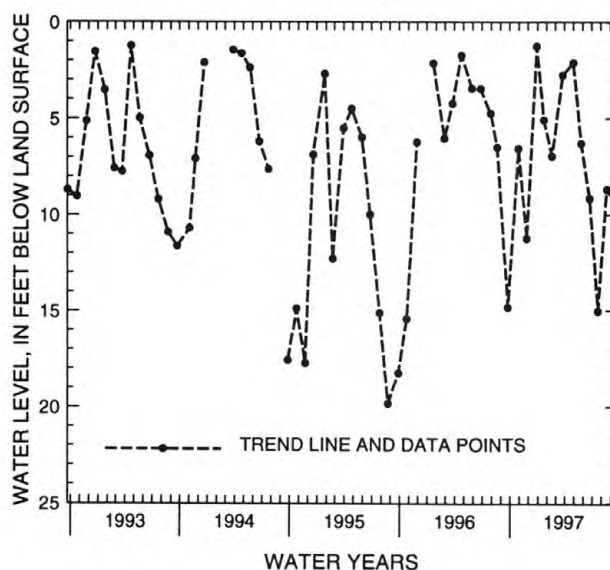
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	6.56	DEC 30	1.24	FEB 18	6.95	MAY 01	2.11	JUN 24	9.15	AUG 20	8.67
NOV 26	11.25	JAN 22	5.08	MAR 26	2.76	MAY 27	6.30	JUL 21	15.02	SEP 23	9.39

BECKET 12 WELL



CHESHIRE 2 WELL



BERKSHIRE COUNTY--Continued

421316073212801. Great Barrington well GMW 2.

LOCATION.--Lat 42°13'16", long 73°21'28", Berkshire County, Hydrologic Unit 01100005, 30 ft west of State Highway 41 and 1.5 mi north of intersection of State Highway 41 and U.S. Highway 7 in Great Barrington.
 Owner: Private owner.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in., depth 15 ft, cased with stone to 15 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 732 ft above sea level. Measuring point: Top of stone curbing, east side of well, 1.12 ft above land-surface datum. Prior to July 25, 1978, measured at land-surface datum.

REMARKS.--Water level affected by stream.

PERIOD OF RECORD.--June 1951 to current year. Continuous graphic recorder January 1968 to August 1982.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.99 ft below land-surface datum, Apr. 21, 1983; lowest measured, 14.97 ft below land-surface datum, Nov. 20, 1964.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	9.49	DEC 31	7.83	FEB 19	9.60	APR 30	8.93	JUN 25	11.32	AUG 26	12.14
NOV 26	9.70	JAN 23	9.68	MAR 26	8.94	MAY 29	9.44	JUL 22	10.59	SEP 24	12.30

420912073043001. Otis well OTW 7.

LOCATION.--Lat 42°09'12", long 73°04'30", Berkshire County, Hydrologic Unit 01080207, about 400 ft south of Hawley Road and 15 ft west of State Highway 8 in Otis.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 17.5 ft, screened 15.5 to 17.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,145 ft above sea level. Measuring point: Top of casing, 4.12 ft above land-surface datum.

REMARKS.--Water levels affected by Minor Brook and Farmington River.

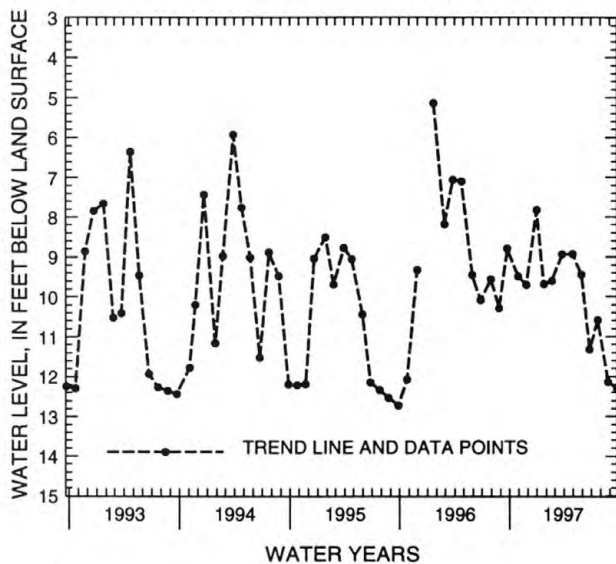
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.55 ft below land-surface datum, Apr. 21, 1983; lowest measured, 10.16 ft below land-surface datum, Sept. 21, 1983.

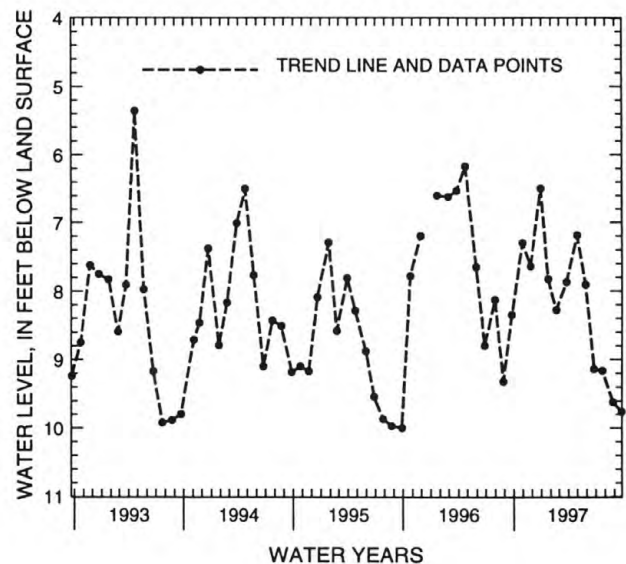
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	7.30	DEC 30	6.50	FEB 19	8.28	APR 30	7.19	JUN 25	9.14	AUG 27	9.62
NOV 26	7.64	JAN 23	7.83	MAR 25	7.87	MAY 28	7.91	JUL 22	9.16	SEP 24	9.76

GREAT BARRINGTON 2 WELL



OTIS 7 WELL



BERKSHIRE COUNTY--Continued

422745073112001. Pittsfield well PTW 51.

LOCATION.--Lat 42°27'45", long 73°11'20", Berkshire County, Hydrologic Unit 01100005, 30 ft east of Hubbard Ave. and about 100 ft north of Barton Brook in Pittsfield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 ft, depth 31.5 ft, screened 26.5 to 31.5 ft.

Prior to July 1986, augered observation water-table well, diameter 1.25 in., depth 31.5 ft, screened 29.5 to 31.5 ft.

INSTRUMENTATION.--Monthly measurement with electric tape by observer. Digital recorder (60-min punch) July 1986 to current year.

DATUM.--Elevation of land-surface datum is 1,050 ft above sea level. Measuring point: Top of casing in base of aluminum shelter, 1.83 ft above land-surface datum; prior to July 1986, top of casing, 2.50 ft above land-surface datum.

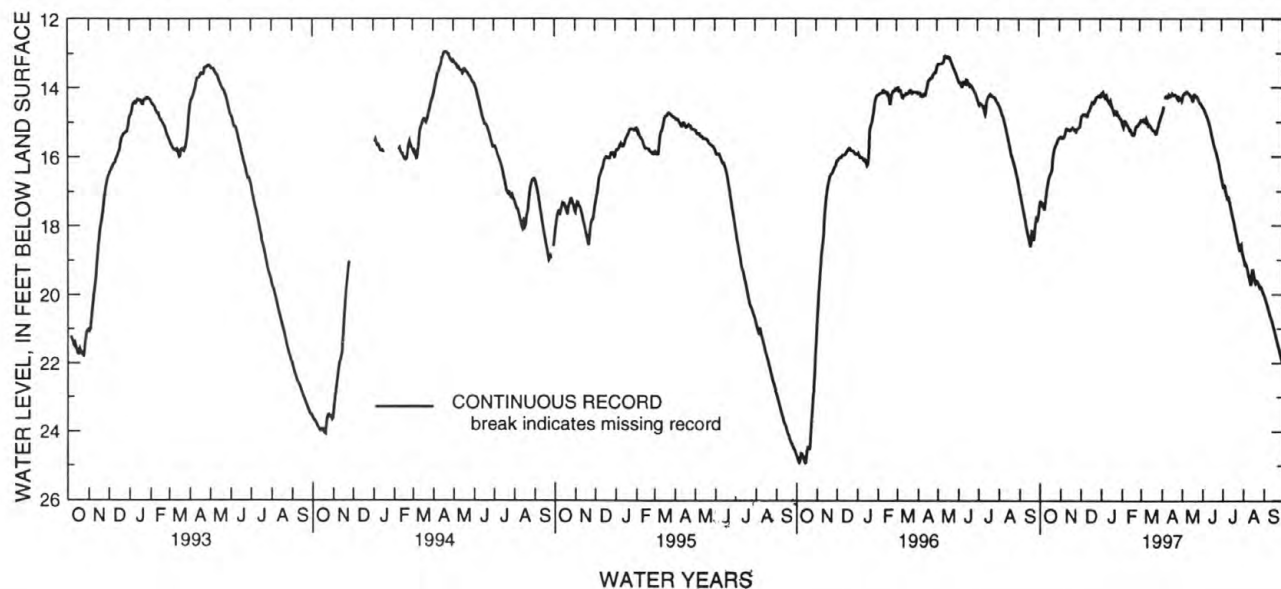
PERIOD OF RECORD.--August 1963 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.30 ft below land-surface datum, Apr. 25, 1969; lowest measured, 27.57 ft below land-surface datum, Dec. 11, 1964

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.38	15.43	15.11	14.27	14.95	14.99	14.82	14.33	14.52	16.73	18.90	19.99
2	17.29	15.42	14.96	14.19	15.04	14.94	14.78	14.38	14.56	16.84	18.99	20.04
3	17.29	15.44	14.84	14.17	15.10	14.95	14.72	14.33	14.59	16.91	19.08	20.10
4	17.34	15.46	14.81	14.20	15.15	14.95	14.64	14.21	14.62	16.80	19.18	20.16
5	17.39	15.45	14.80	14.15	15.05	14.97	14.54	14.20	14.66	16.87	19.11	20.23
6	17.43	15.45	14.77	14.19	14.96	14.89	14.41	14.17	14.72	17.00	19.14	20.29
7	17.48	15.42	14.78	14.23	14.97	14.96	14.31	14.15	14.76	17.10	19.24	20.36
8	17.54	15.37	14.77	14.29	15.02	14.96	14.27	14.17	14.80	17.16	19.33	20.43
9	17.41	15.28	14.80	14.27	15.05	14.99	14.25	14.15	14.86	17.24	19.42	20.51
10	17.21	15.19	14.82	14.24	15.08	14.90	14.28	14.13	14.91	17.14	19.50	20.57
11	17.08	15.18	14.83	14.32	15.13	14.94	14.29	14.15	14.98	17.22	19.59	20.64
12	16.94	15.20	14.83	14.37	15.16	15.02	14.27	14.16	15.05	17.33	19.68	20.68
13	16.82	15.21	14.73	14.41	15.23	15.09	14.21	14.18	15.13	17.42	19.73	20.74
14	16.70	15.22	14.69	14.44	15.22	15.06	14.25	14.22	15.23	17.51	19.50	20.82
15	16.63	15.25	14.66	14.47	15.27	15.07	14.26	14.23	15.34	17.61	19.30	20.90
16	16.55	15.24	14.61	14.41	15.32	15.12	14.24	14.27	15.42	17.71	19.30	20.98
17	16.51	15.21	14.55	14.49	15.36	15.13	14.22	14.32	15.51	17.80	19.42	21.05
18	16.47	15.19	14.49	14.55	15.38	15.19	14.18	14.38	15.60	17.88	19.52	21.13
19	16.42	15.18	14.43	14.62	15.38	15.22	14.21	14.38	15.66	17.98	19.61	21.21
20	16.30	15.16	14.45	14.67	15.35	15.22	14.22	14.24	15.74	18.08	19.68	21.28
21	16.04	15.18	14.46	14.74	15.27	15.25	14.20	14.20	15.81	18.18	19.65	21.36
22	15.90	15.21	14.40	14.69	15.14	15.25	14.20	14.21	15.87	18.28	19.61	21.43
23	15.81	15.24	14.41	14.70	15.12	15.30	14.22	14.25	15.95	18.38	19.63	21.51
24	15.73	15.27	14.38	14.73	15.10	15.34	14.24	14.27	16.03	18.48	19.68	21.59
25	15.68	15.28	14.29	14.66	15.11	15.33	14.30	14.26	16.11	18.57	19.74	21.66
26	15.65	15.20	14.28	14.76	15.08	15.22	14.33	14.30	16.20	18.67	19.79	21.75
27	15.60	15.19	14.26	14.80	15.03	15.17	14.35	14.37	16.31	18.75	19.76	21.84
28	15.53	15.17	14.25	14.80	15.03	15.11	14.28	14.41	16.42	18.59	19.78	21.90
29	15.50	15.15	14.24	14.87	---	15.00	14.30	14.44	16.52	18.56	19.83	21.96
30	15.46	15.14	14.25	14.89	---	14.96	14.33	14.46	16.63	18.72	19.89	22.02
31	15.45	---	14.27	14.90	---	14.88	---	14.48	---	18.82	19.94	---
MEAN	16.53	15.27	14.59	14.50	15.14	15.08	14.34	14.27	15.42	17.75	19.50	20.97
LOW	17.54	15.46	15.11	14.90	15.38	15.34	14.82	14.48	16.63	18.82	19.94	22.02
HIGH	15.45	15.14	14.24	14.15	14.95	14.88	14.18	14.13	14.52	16.73	18.90	19.99
WTR YR 1996	HIGH 14.12	MAY 10	LOW 22.06	SEP 30								

PITTSFIELD 51 WELL



BERKSHIRE COUNTY--Continued

420351073193602. Sheffield well SJW 58.

LOCATION.--Lat 42°03'51", long 73°19'36", Berkshire County, Hydrologic Unit 01100005, about 100 ft east of U.S. Highway 7 and 30 ft north of Hewins Road in Sheffield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well with sand point, diameter 2.0 in., depth 32 ft, screened 27 to 32 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 680 ft above sea level. Measuring point: Top of casing, 1.6 ft above land-surface datum.

PERIOD OF RECORD.--October 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.02 ft below land-surface datum, June 23, 1990; lowest measured, 16.03 ft below land-surface datum, Oct. 19, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	11.04	DEC 31	10.14	FEB 19	10.33	APR 30	9.82	JUN 25	10.71	AUG 26	12.33
NOV 26	11.24	JAN 23	10.32	MAR 26	10.62	MAY 28	10.08	JUL 22	11.43	SEP 24	12.99

BRISTOL COUNTY

415447071155301. Attleboro well ATW 83.

LOCATION.--Lat 41°54'47", long 71°15'53", Bristol County, Hydrologic Unit 01090004, about 150 ft north of parking lot and 200 ft west of dirt road at Bristol County Nursing Home in Attleboro.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 20.6 ft, screened 18.6 to 20.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 145 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

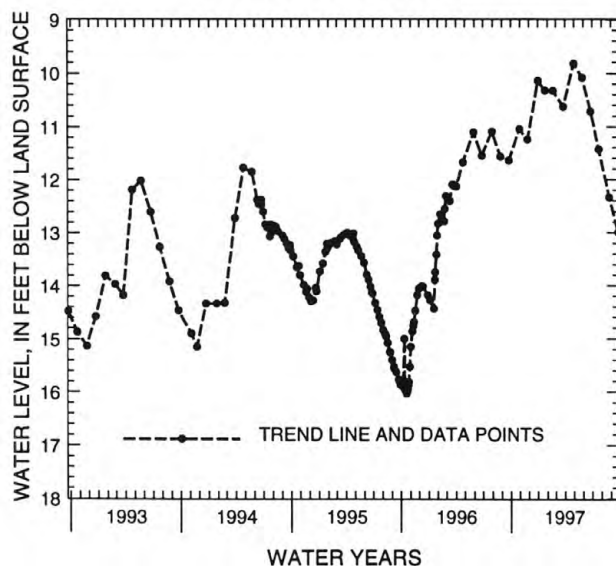
PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.98 ft below land-surface datum, Jan. 27, 1978; lowest measured, 5.23 ft below land-surface datum, Aug. 26, 1964.

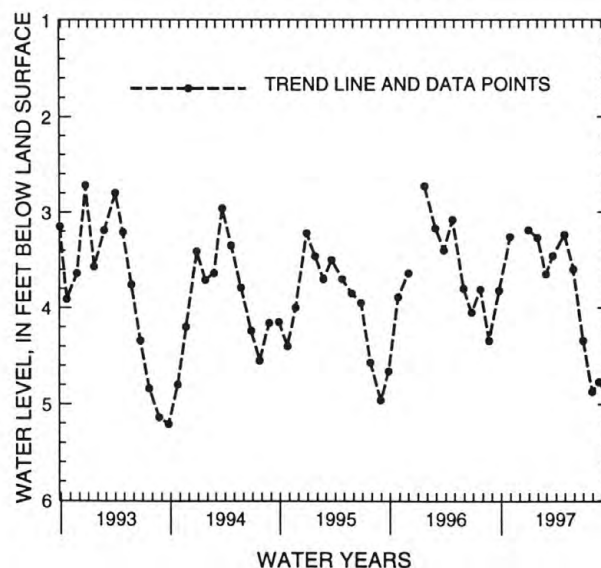
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	3.26	JAN 29	3.27	MAR 21	3.46	MAY 28	3.60	JUL 30	4.87	SEP 24	4.92
DEC 30	3.19	FEB 26	3.65	APR 29	3.24	JUN 30	4.34	AUG 21	4.77		

SHEFFIELD 58 WELL



ATTLEBORO 83 WELL



BRISTOL COUNTY--Continued

414705071045301. Freetown well F3W 23.

LOCATION.--Lat 41°47'05", long 71°04'53", Bristol County, Hydrologic Unit 01090004, about 300 ft west of State Highway 24 and 200 ft north of State Highway 79 in Freetown.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 42 ft, screened 40 to 42 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 38 ft above sea level. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Water level affected by tide.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.72 ft below land-surface datum, Apr. 22, 1983; lowest measured, 15.70 ft below land-surface datum, Jan. 29, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	12.84	DEC 30	12.33	FEB 26	12.74	APR 29	11.39	JUN 30	13.09	AUG 20	14.24
NOV 26	13.39	JAN 29	12.67	MAR 21	12.98	MAY 28	12.30	JUL 30	13.38	SEP 23	14.68

414025070572801. New Bedford well NGW 116.

LOCATION.--Lat 41°40'25", long 70°57'28", Bristol County, Hydrologic Unit 01090002, New Bedford Municipal Airport, 30 ft east of control tower building in New Bedford.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 27.3 ft, screened 25.3 to 27.3 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 65 ft above sea level. Measuring point: Top of casing, 1.0 ft above land-surface datum.

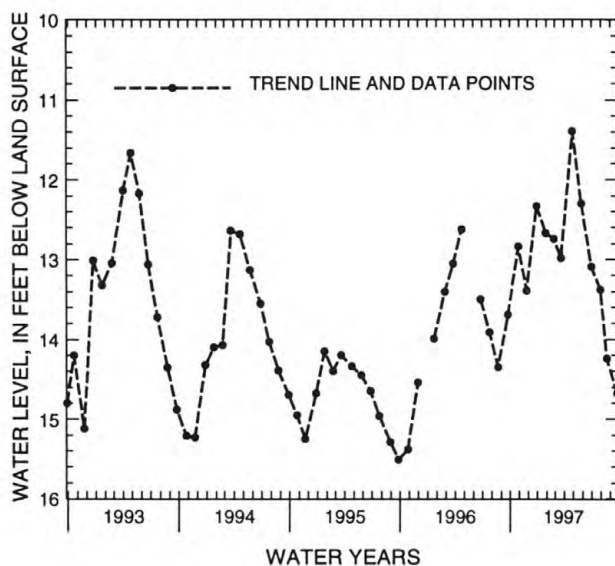
PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.31 ft below land-surface datum, Mar. 26, 1969; lowest measured, 5.20 ft below land-surface datum, July 24, 1964.

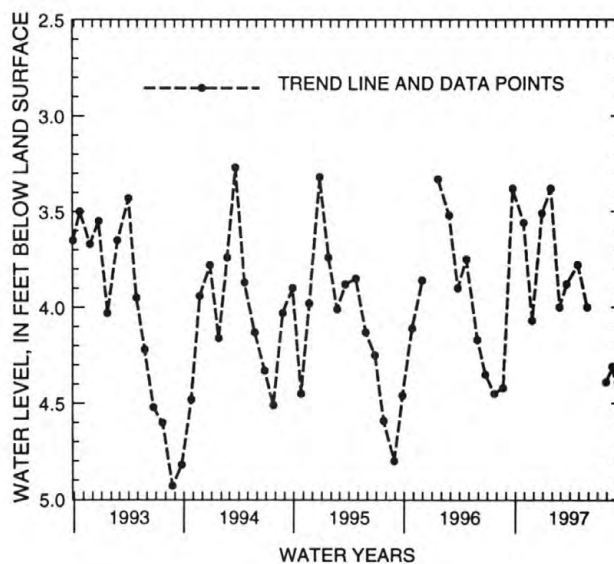
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	3.56	DEC 30	3.51	FEB 26	4.00	APR 28	3.78	JUL 30	4.39	SEP 23	4.59
NOV 26	4.07	JAN 29	3.38	MAR 21	3.88	MAY 28	4.00	AUG 20	4.31		

FREETOWN 23 WELL



NEW BEDFORD 116 WELL



BRISTOL COUNTY--Continued

415812071111101. Norton well N4W 37.

LOCATION.--Lat 41°58'12", long 71°11'11", Bristol County, Hydrologic Unit 01090004, at Wheaton College, 250 ft northeast of observatory in Norton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 19.4 ft, screened 17.4 to 19.4 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 105 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.35 ft below land-surface datum, Dec. 29, 1969; lowest measured, 11.39 ft below land-surface datum, Sept. 24, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	4.87	DEC 30	5.00	FEB 26	6.48	APR 29	5.30	JUN 30	8.82	AUG 22	10.03
NOV 26	6.98	JAN 29	5.76	MAR 21	5.90	MAY 28	6.69	JUL 30	10.00	SEP 24	10.44

414714071175901. Seekonk well SHW 275.

LOCATION.--Lat 41°47'14", long 71°17'59", Bristol County, Hydrologic Unit 01090004, middle of median strip of Interstate Highway 195 and 1.1 mi west of Palmer River in Seekonk.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 14.4 ft, screened 12.4 to 14.4 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 21 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

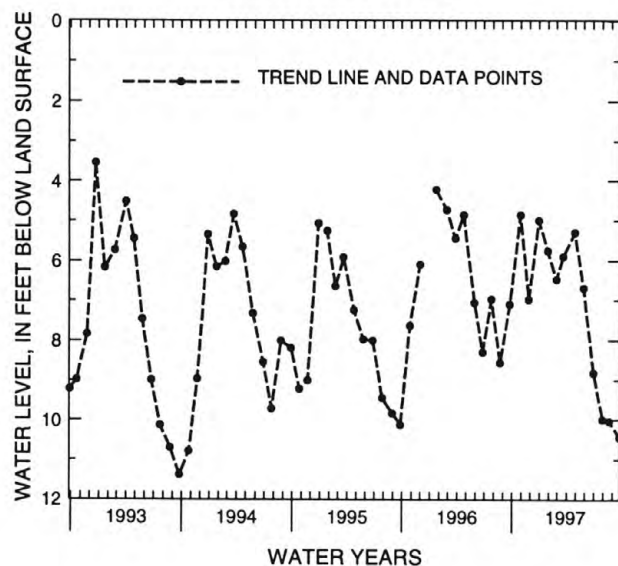
PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.02 ft below land-surface datum, Dec. 20, 1986; lowest measured, 8.02 ft below land-surface datum, Sept. 26, 1980.

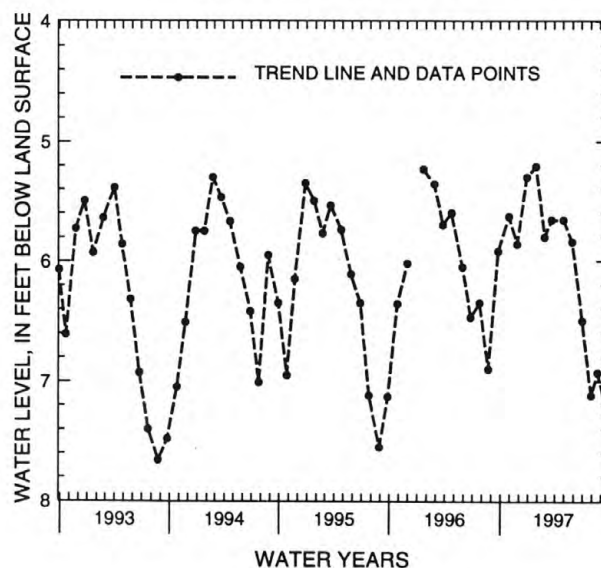
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	5.63	DEC 30	5.30	FEB 26	5.80	APR 29	5.66	JUN 30	6.50	AUG 21	6.93
NOV 26	5.86	JAN 29	5.21	MAR 21	5.66	MAY 28	5.84	JUL 30	7.12	SEP 23	7.27

NORTON 37 WELL



SEEKONK 275 WELL



BRISTOL COUNTY--Continued

415457071060101. Taunton well TAW 337.

LOCATION.--Lat 41°54'57", long 71°06'01", Bristol County, Hydrologic Unit 01090004, Taunton State Hospital, about 200 ft west of Mill River and about 300 ft east of Danforth Street in Taunton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 20 ft, screened 18 to 20 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 50 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

REMARKS.--Water levels affected by Mill River.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.96 ft below land-surface datum, Dec. 29, 1969; lowest measured, 12.43 ft below land-surface datum, Oct. 22, 1988.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	7.52	DEC 30	7.46	FEB 26	8.25	APR 28	7.45	JUN 30	9.43	AUG 20	9.99
NOV 26	8.66	JAN 29	7.74	MAR 21	8.07	MAY 28	8.28	JUL 30	9.86	SEP 23	10.20

DUKES COUNTY

412346070353403. Edgartown well ENW 52.

LOCATION.--Lat 41°23'46", long 70°35'34", Dukes County, Hydrologic Unit 01090002, 0.5 mi west of Airport Road and 0.6 mi north of West Tisbury Road in Edgartown.

Owner: Martha's Vineyard State Forest.

AQUIFER.--Glacial sand, gravel and cobbles of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 64 ft, screened 61 to 64 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 34 ft above sea level. Measuring point: Top of casing, 0.02 ft below land-surface datum.

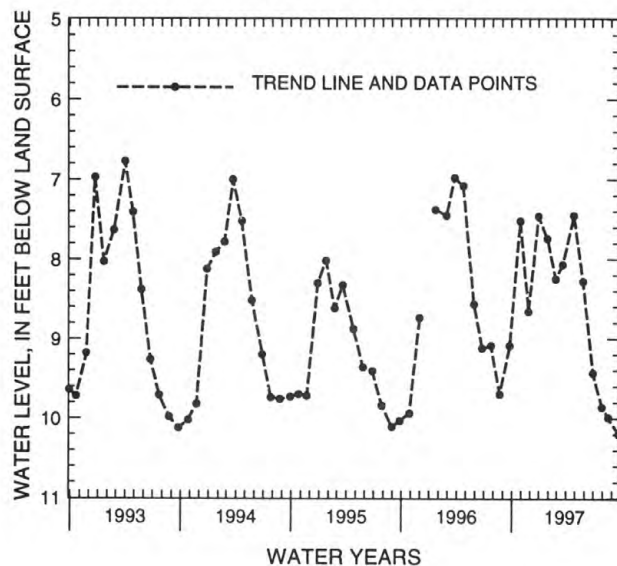
PERIOD OF RECORD.--December 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.93 ft below land-surface datum, May 24 and June 27, 1987; lowest measured, 20.51 ft below land-surface datum, Feb. 26, 1981.

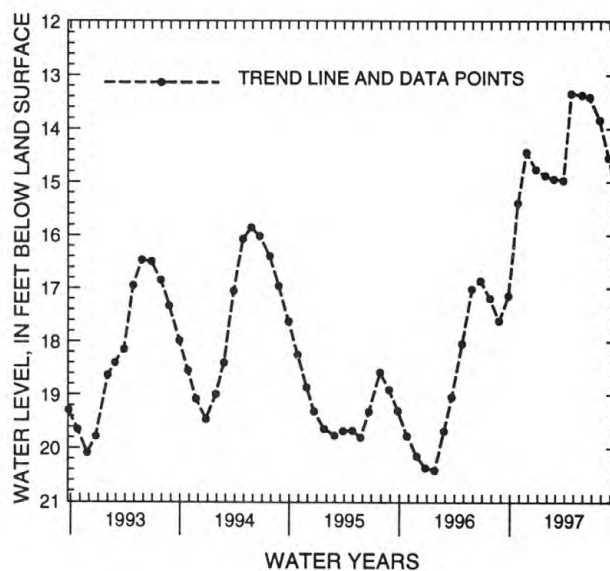
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	15.40	DEC 27	14.77	FEB 24	14.95	APR 25	13.35	JUN 25	13.42	AUG 27	14.55
NOV 25	14.44	JAN 27	14.88	MAR 28	14.97	MAY 30	13.37	JUL 28	13.84	SEP 26	15.29

TAUNTON 337 WELL



EDGARTOWN 52 WELL



ESSEX COUNTY

423641071102501. Andover well AJW 462.

LOCATION.--Lat 42°36'41", long 71°10'25", Essex County, Hydrologic Unit 01070002, about 1,200 ft south of Shawsheen River, and 30 ft west of Interstate Highway 93 in Andover.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 32.5 ft, screened 30.5 to 32.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 110 ft above sea level. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Water level affected by nearby construction starting about January 1993.

PERIOD OF RECORD.--November 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.72 ft below land-surface datum, June 20, 1984; lowest measured, 22.56 ft below land-surface datum, July 28, 1994.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	13.63	DEC 30	13.92	FEB 28	14.86	APR 29	13.87	JUN 27	15.09	AUG 22	15.88
NOV 26	14.55	JAN 24	14.49	MAR 25	14.90	MAY 23	14.37	JUL 30	15.61	SEP 24	16.18

424322070592401. Georgetown well GCW 168.

LOCATION.--Lat 42°43'22", long 70°59'24", Essex County, Hydrologic Unit 01090001, 18 ft south of State Highway 133 and 25 ft east of Winter Street at Murca Park in Georgetown.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 21 ft, screened 19 to 21 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 80 ft above sea level. Measuring point: Top of casing, 2.0 ft above land-surface datum.

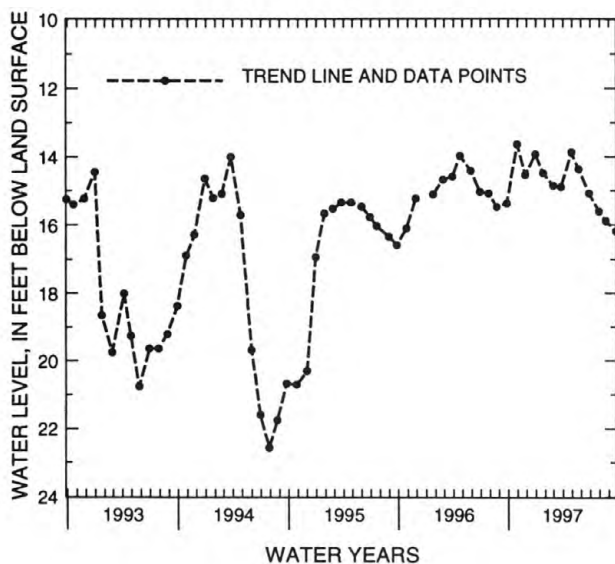
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.42 ft below land-surface datum, Mar. 27, 1969; lowest measured, 6.65 ft below land-surface datum, Sept. 22, 1965.

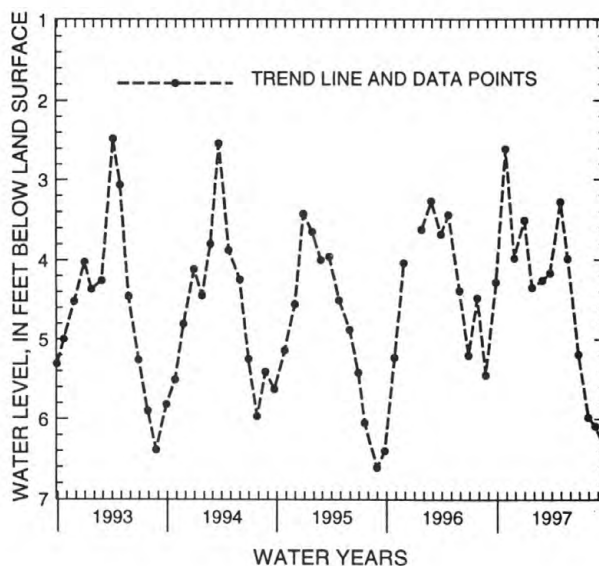
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	2.61	DEC 30	3.51	FEB 28	4.26	APR 29	3.28	JUN 27	5.19	AUG 22	6.09
NOV 26	3.98	JAN 24	4.35	MAR 25	4.17	MAY 23	3.99	JUL 30	5.98	SEP 25	6.38

ANDOVER 462 WELL



GEORGETOWN 168 WELL



ESSEX COUNTY--Continued

424841071004101. Haverhill well HLW 23.

LOCATION.--Lat 42°48'41", long 71°00'41", Essex County, Hydrologic Unit 01070002, about 50 ft north of Amesbury Line Road and 0.9 mi south of State Highway 110 in Haverhill.

Owner: Private owner.

AQUIFER.--Glacial sand of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 12 in., depth 15.1 ft, cased with tile to 15.1 ft, open end.

INSTRUMENTATION.--Monthly measurement with electric tape by observer. Continuous graphic recorder October 1960 to September 1982, digital recorder (60-minute punch) October 1984 to current year.

DATUM.--Elevation of land-surface datum is 105 ft above sea level. Measuring point: Top edge of hole in base of steel recorder shelter, 1.71 ft above land-surface datum, 1.65 ft prior to June 8, 1995.

PERIOD OF RECORD.--October 1960 to current year.

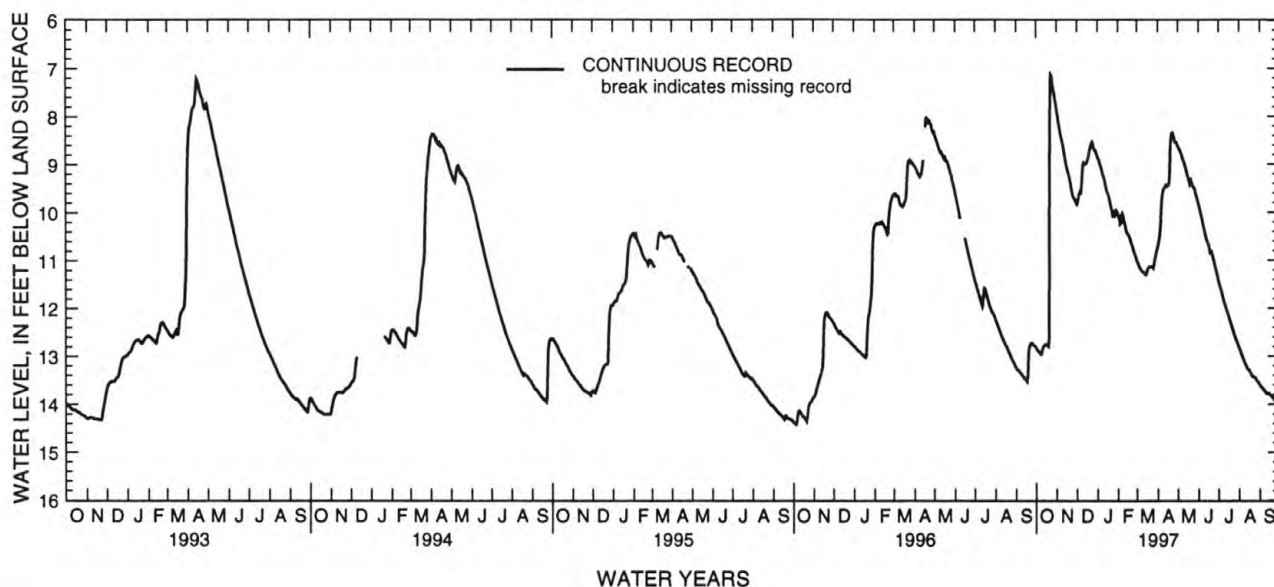
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.96 ft below land-surface datum, Apr. 7, 8, 1987; lowest, 15.02 ft below land-surface datum, Feb. 2, 1966.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.83	7.91	9.83	8.86	10.06	11.02	10.70	8.62	9.84	11.45	12.83	13.60
2	12.86	7.99	9.80	8.88	10.12	11.05	10.65	8.65	9.89	11.51	12.87	13.62
3	12.88	8.08	9.74	8.91	10.16	11.09	10.56	8.69	9.95	11.55	12.90	13.64
4	12.90	8.18	9.64	8.99	10.24	11.13	10.46	8.70	10.01	11.59	12.95	13.65
5	12.91	8.26	9.59	9.02	10.22	11.16	10.27	8.75	10.08	11.65	12.99	13.67
6	12.93	8.35	9.56	9.06	10.06	11.17	9.99	8.78	10.13	11.70	13.03	13.69
7	12.95	8.42	9.58	9.12	10.02	11.20	9.75	8.82	10.21	11.75	13.06	13.70
8	12.96	8.47	9.46	9.18	10.05	11.22	9.62	8.88	10.27	11.81	13.09	13.72
9	12.94	8.54	9.19	9.24	10.12	11.24	9.54	8.91	10.33	11.86	13.13	13.74
10	12.85	8.61	9.02	9.26	10.19	11.24	9.50	8.94	10.39	11.91	13.16	13.75
11	12.81	8.69	8.97	9.32	10.26	11.25	9.49	9.00	10.46	11.95	13.19	13.77
12	12.79	8.77	8.99	9.39	10.32	11.27	9.47	9.05	10.52	12.00	13.22	13.78
13	12.77	8.86	9.00	9.45	10.39	11.29	9.43	9.10	10.58	12.04	13.26	13.77
14	12.76	8.93	9.00	9.51	10.44	11.30	9.43	9.16	10.60	12.08	13.27	13.77
15	12.75	9.02	8.99	9.57	10.44	11.28	9.46	9.22	10.64	12.12	13.28	13.78
16	12.75	9.08	8.96	9.60	10.46	11.22	9.45	9.26	10.68	12.18	13.30	13.80
17	12.76	9.14	8.92	9.63	10.49	11.17	9.43	9.31	10.76	12.22	13.33	13.81
18	12.78	9.19	8.86	9.68	10.53	11.15	9.40	9.37	10.83	12.26	13.36	13.82
19	12.79	9.25	8.80	9.74	10.57	11.14	9.14	9.42	10.82	12.31	13.38	13.84
20	12.61	9.31	8.71	9.80	10.63	11.13	8.63	9.39	10.81	12.35	13.41	13.86
21	9.46	9.39	8.64	9.87	10.67	11.13	8.41	9.35	10.86	12.39	13.43	13.87
22	7.30	9.46	8.58	9.92	10.70	11.13	8.35	9.40	10.91	12.44	13.43	13.89
23	7.13	9.53	8.56	9.98	10.76	11.13	8.34	9.44	10.97	12.48	13.43	13.91
24	7.16	9.61	8.54	10.06	10.80	11.14	8.37	9.47	11.03	12.54	13.44	13.93
25	7.28	9.68	8.58	10.04	10.85	11.16	8.43	9.49	11.09	12.58	13.45	13.95
26	7.39	9.70	8.66	10.01	10.88	11.11	8.49	9.51	11.15	12.61	13.47	13.97
27	7.47	9.71	8.68	10.07	10.92	11.02	8.54	9.58	11.21	12.65	13.50	13.98
28	7.53	9.75	8.72	10.05	10.98	10.95	8.54	9.63	11.28	12.69	13.52	13.99
29	7.64	9.78	8.72	9.96	---	10.88	8.54	9.68	11.32	12.73	13.54	14.01
30	7.72	9.82	8.77	9.97	---	10.81	8.60	9.73	11.39	12.76	13.56	14.02
31	7.81	---	8.82	10.00	---	10.76	---	9.78	---	12.80	13.57	---
MEAN	10.98	8.98	9.03	9.55	10.44	11.13	9.30	9.20	10.63	12.16	13.27	13.81
LOW	12.96	9.82	9.83	10.07	10.98	11.30	10.70	9.78	11.39	12.80	13.57	14.02
HIGH	7.13	7.91	8.54	8.86	10.02	10.76	8.34	8.62	9.84	11.45	12.83	13.60

WTR YR 1997 HIGH 7.11 OCT 24 LOW 14.03 SEP 30

HAVERHILL 23 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

267

ESSEX COUNTY--Continued

424520070562401. Newbury well NIW 27.

LOCATION.--Lat 42°45'20", long 70°56'24", Essex County, Hydrologic Unit 01090001, about 300 ft east of Interstate Highway 95 and 100 ft north of Central Street in Newbury.

Owner: Private owner.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 31 in., depth 19.8 ft, cased with tile to 19.8 ft, open end.

INSTRUMENTATION.--Monthly measurement with electric tape by observer. Continuous graphic recorder January 1967 to September 1982, digital recorder (60-minute punch) October 1984 to current year.

DATUM.--Elevation of land-surface datum is 55 ft above sea level. Measuring point: Top edge of hole in base of steel recorder shelter, 2.15 ft above land-surface datum. Prior to October 1978, 2.0 ft above land-surface datum; October 1978 to Sept. 18, 1990, 1.95 ft above land-surface datum.

PERIOD OF RECORD.--February 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

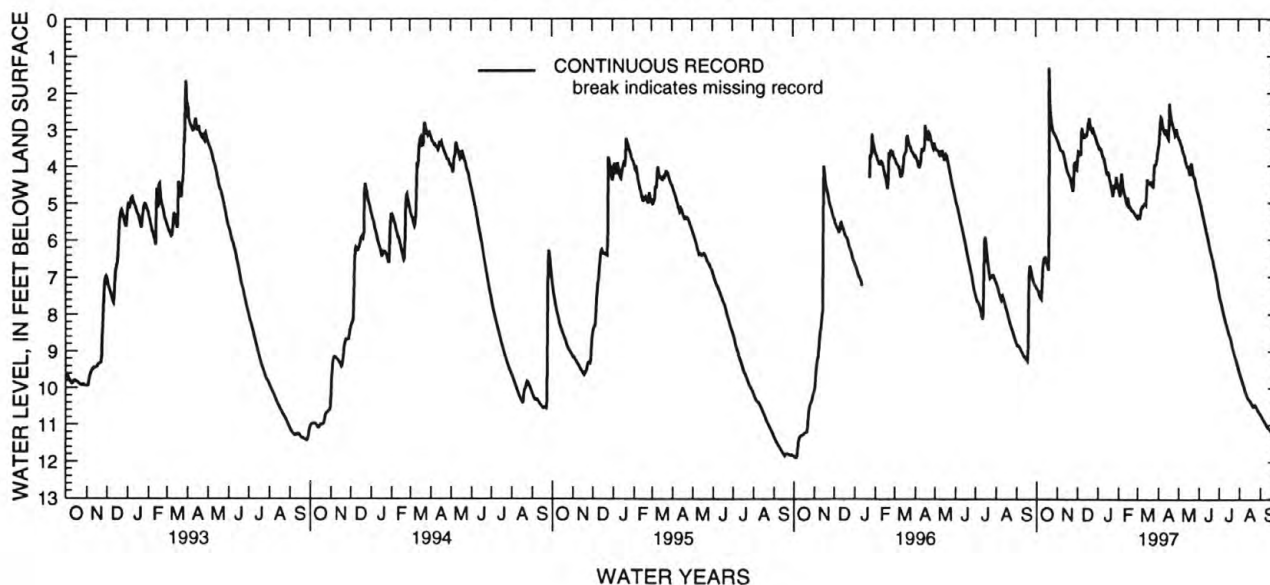
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.94 ft below land-surface datum, Oct. 21, 1996; lowest, 12.68 ft below land-surface datum, Nov. 24, 1965.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.31	3.27	4.10	3.40	4.59	5.41	3.59	3.19	4.83	7.45	9.59	10.71
2	7.34	3.31	3.85	3.42	4.71	5.36	3.53	3.23	4.92	7.55	9.65	10.75
3	7.36	3.37	3.62	3.47	4.78	5.39	3.38	3.29	4.99	7.62	9.71	10.77
4	7.43	3.43	3.64	3.53	4.82	5.40	3.12	3.30	5.07	7.68	9.77	10.80
5	7.50	3.49	3.69	3.52	4.45	5.41	2.78	3.39	5.16	7.76	9.83	10.84
6	7.54	3.55	3.69	3.53	4.20	5.31	2.67	3.44	5.25	7.85	9.89	10.87
7	7.56	3.58	3.68	3.59	4.39	5.16	2.69	3.48	5.33	7.93	9.94	10.90
8	7.59	3.59	3.07	3.67	4.54	5.11	2.81	3.57	5.40	8.02	10.00	10.92
9	7.33	3.60	2.97	3.75	4.64	5.12	2.93	3.64	5.50	8.08	10.06	10.90
10	6.84	3.62	3.09	3.77	4.73	5.08	3.03	3.68	5.58	8.15	10.11	11.00
11	6.61	3.68	3.16	3.82	4.83	5.04	3.10	3.74	5.67	8.22	10.16	11.03
12	6.53	3.76	3.23	3.91	4.91	5.02	3.16	3.83	5.76	8.29	10.21	11.06
13	6.49	3.85	3.23	4.01	5.00	5.02	3.00	3.92	5.85	8.35	10.27	11.08
14	6.48	3.94	3.19	4.11	5.04	5.05	3.06	3.97	5.92	8.43	10.29	11.09
15	6.54	4.03	3.16	4.21	4.84	4.78	3.18	4.03	6.01	8.50	10.31	11.11
16	6.60	4.11	3.17	4.22	4.96	4.39	3.23	4.04	6.11	8.55	10.33	11.14
17	6.67	4.16	3.09	4.15	5.07	4.39	3.26	4.08	6.20	8.60	10.36	11.16
18	6.76	4.21	2.86	4.24	5.13	4.44	3.03	4.18	6.29	8.66	10.40	11.19
19	6.83	4.26	2.87	4.35	5.12	4.48	2.28	4.25	6.35	8.73	10.43	11.21
20	5.63	4.30	2.69	4.43	5.17	4.49	2.52	4.01	6.42	8.82	10.47	11.24
21	1.31	4.36	2.84	4.55	5.21	4.50	2.66	3.92	6.49	8.90	10.50	11.28
22	2.22	4.45	2.94	4.64	5.21	4.44	2.76	4.00	6.57	8.96	10.48	11.31
23	2.60	4.53	3.02	4.71	5.22	4.44	2.84	4.13	6.67	9.03	10.45	11.34
24	2.79	4.62	3.05	4.82	5.25	4.53	2.91	4.26	6.77	9.09	10.45	11.37
25	2.93	4.69	2.95	4.89	5.29	4.59	3.00	4.31	6.84	9.15	10.48	11.40
26	3.03	4.50	3.04	4.50	5.32	4.28	3.08	4.32	6.92	9.20	10.52	11.42
27	3.10	3.93	3.10	4.61	5.35	3.98	3.16	4.43	7.02	9.26	10.56	11.45
28	3.11	3.91	3.16	4.49	5.38	3.98	3.11	4.53	7.13	9.33	10.59	11.48
29	3.16	4.00	3.20	4.29	---	3.97	2.99	4.62	7.23	9.40	10.63	11.50
30	3.19	4.08	3.27	4.42	---	3.87	3.11	4.69	7.34	9.47	10.66	11.51
31	3.22	---	3.34	4.51	---	3.79	---	4.76	---	9.53	10.68	---
MEAN	5.47	3.94	3.22	4.11	4.93	4.72	3.00	3.94	6.05	8.53	10.25	11.13
LOW	7.59	4.69	4.10	4.82	5.38	5.41	3.59	4.76	7.34	9.53	10.68	11.51
HIGH	1.31	3.27	2.69	3.40	4.20	3.79	2.28	3.19	4.83	7.45	9.59	10.71

WTR YR 1997 HIGH 0.94 OCT 21 LOW 11.52 SEP 30

NEWBURY 27 WELL



ESSEX COUNTY--Continued

423845070542501. Topsfield well TQW 1.

LOCATION.--Lat 42°38'45", long 70°54'25", Essex County, Hydrologic Unit 01090001, 0.7 mi south of Ipswich Road and 120 ft west of Hamilton Road in Topsfield.

Owner: Private owner.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 22.0 ft, cased with stone to 22.0 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 130 ft above sea level. Measuring point: Top edge of steel rim in concrete cover, 0.6 ft above land-surface datum.

PERIOD OF RECORD.--February 1936 to October 1947, April 1957 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.22 ft below land-surface datum, Mar. 23, 1983; lowest measured, 17.52 ft below land-surface datum, Jan. 27, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	8.31	DEC 30	8.11	FEB 28	10.15	APR 29	8.63	JUN 27	12.26	AUG 22	14.88
NOV 26	11.18	JAN 24	10.70	MAR 25	9.38	MAY 23	10.79	JUL 30	14.05	SEP 25	15.72

423505070491702. Wenham well WPW 76.

LOCATION.--Lat 42°35'05", long 70°49'17", Essex County, Hydrologic Unit 01090001, 45 ft west of State Highway 128 and 120 ft of Grapevine Road in Wenham.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 22.0 ft, screened 20.0 to 22.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 60 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

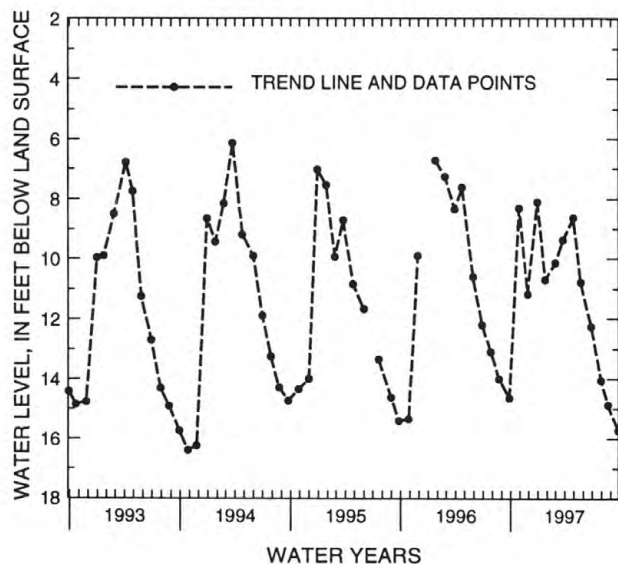
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.39 ft below land-surface datum, Jan. 26, 1978; lowest measured, 4.65 ft below land-surface datum, Aug. 30, 1995.

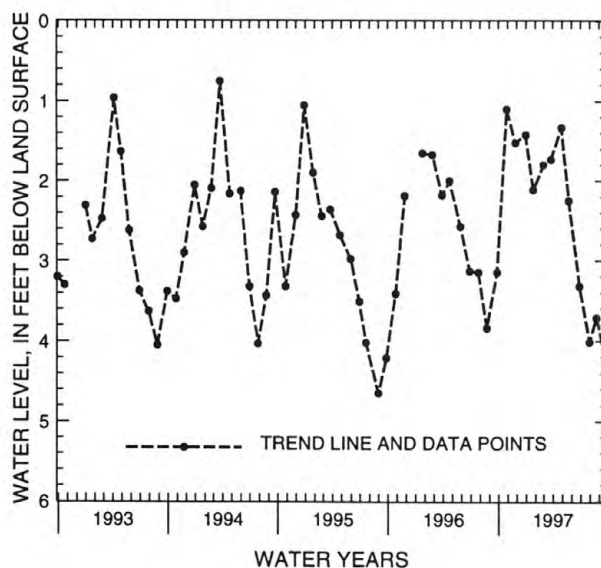
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	1.10	DEC 30	1.42	FEB 28	1.80	APR 29	1.33	JUN 27	3.32	AUG 22	3.71
NOV 26	1.52	JAN 24	2.11	MAR 25	1.73	MAY 23	2.25	JUL 30	4.01	SEP 25	4.28

TOPSFIELD 1 WELL



WENHAM 76 WELL



FRANKLIN COUNTY

423809072435601. Colrain well CSW 8.

LOCATION.--Lat 42°38'09", long 72°43'56", Franklin County, Hydrologic Unit 01080203, 15 ft east of State Highway 112 and 100 ft north of North River Bridge in Colrain.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 32.3 ft, screened 30.3 to 32.3 ft.
 INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 460 ft above sea level. Measuring point: Top of casing, 1.97 ft above land-surface datum, 1.66 ft prior to October 1995.

REMARKS.--Water levels affected by North River.

PERIOD OF RECORD.--December 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.68 ft below land-surface datum, Apr. 21, 1983 (revised); lowest measured, 23.48 ft below land-surface datum, Jan. 31, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	20.59	DEC 30	16.12	FEB 20	18.22	APR 30	16.01	JUN 24	18.61	AUG 26	20.81
NOV 25	19.65	JAN 29	17.65	MAR 25	17.96	MAY 27	17.05	JUL 21	19.85	SEP 23	21.39

423310072355801. Deerfield well DFW 44.

LOCATION.--Lat 42°33'10", long 72°35'58", Franklin County, Hydrologic Unit 01080203, 1.2 mi south of Deerfield River Bridge and 15 ft east of U.S. Highway 5 in Deerfield.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 27.6 ft, screened 25.6 to 27.6 ft.
 INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 140 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

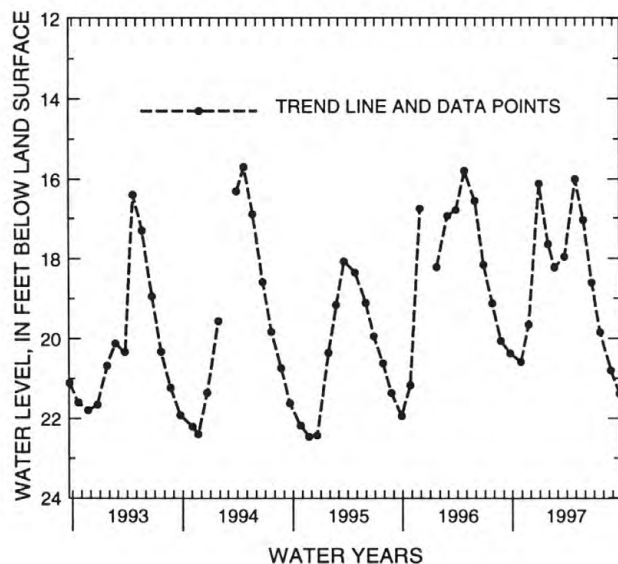
PERIOD OF RECORD.--December 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.42 ft below land-surface datum, May 29, 1979; lowest measured, 6.16 ft below land-surface datum, Sept. 25, 1980.

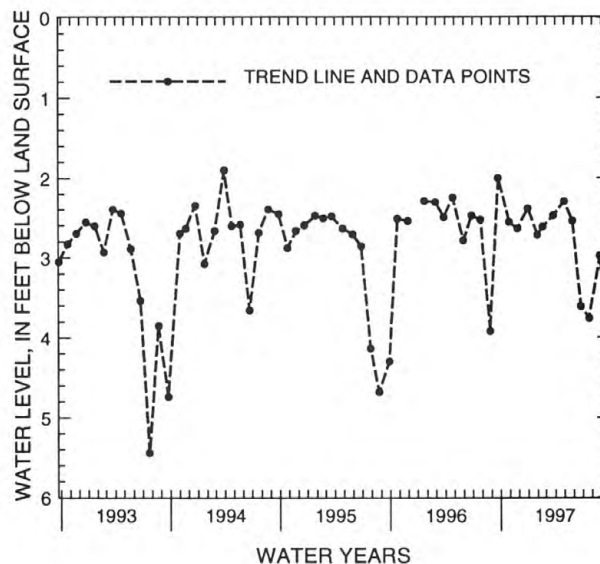
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	2.56	DEC 30	2.39	FEB 18	2.62	APR 30	2.30	JUN 24	3.61	AUG 26	2.98
NOV 25	2.64	JAN 30	2.72	MAR 25	2.48	MAY 27	2.55	JUL 21	3.76	SEP 23	3.98

COLRAIN 8 WELL



DEERFIELD 44 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

FRANKLIN COUNTY--Continued

423339072524101. Hawley well HMW 8.

LOCATION.--Lat 42°33'39", long 72°52'41", Franklin County, Hydrologic Unit 01080206, in state forest parking area on west side of Plainfield Road opposite East Cemetery.
 Owner: State Forest.

AQUIFER.--Glacial till and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 17 ft, screened 7 to 17 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1700 ft above sea level. Measuring point: Top of casing, 4.18 ft above land-surface datum.

PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.48 ft below land-surface datum, Apr. 25, 1996; lowest measured, 6.92 ft below land-surface datum, Sept. 27, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	3.12	DEC 30	2.56	FEB 20	3.41	APR 30	2.61	JUN 24	4.23	AUG 26	4.46
NOV 25	3.27	JAN 28	3.34	MAR 25	3.66	MAY 27	3.08	JUL 21	4.36	SEP 23	4.88

423441072170701. Orange well ORW 63.

LOCATION.--Lat 42°34'41", long 72°17'07", Franklin County, Hydrologic Unit 01080202, at Orange Airport, 100 ft along and 50 ft northwest of main entrance road to airport, off East River Street in Orange.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 20.6 ft, screened 18.6 to 20.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 530 ft above sea level. Measuring point: Top of casing, 3.75 ft above land-surface datum, 3.45 ft prior to May 1992.

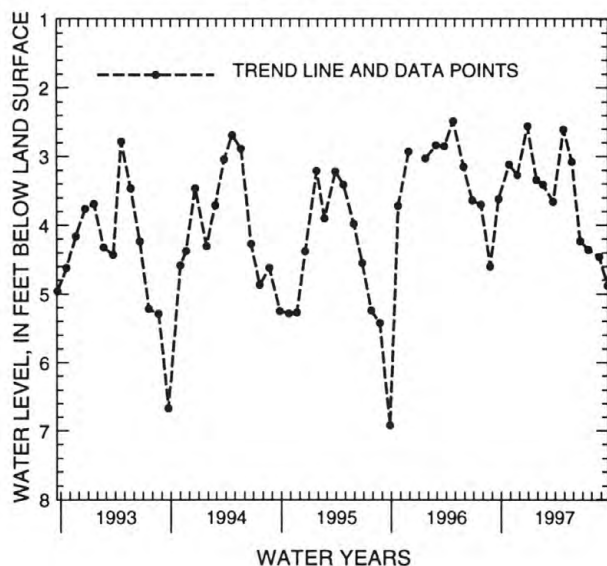
PERIOD OF RECORD.--January 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.81 ft below land-surface datum, Apr. 25, 1996; lowest measured, 8.57 ft below land-surface datum, Sept. 28, 1995.

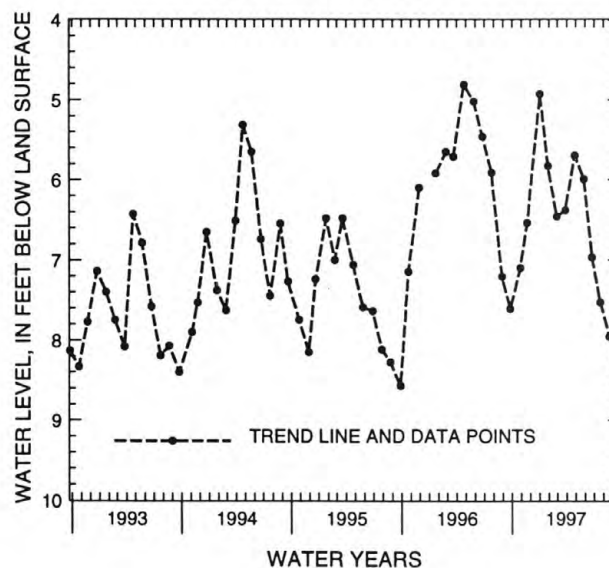
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	7.10	JAN 02	4.93	FEB 26	6.46	APR 28	5.70	JUN 24	6.97	AUG 20	7.96
NOV 20	6.54	JAN 28	5.83	MAR 27	6.38	MAY 28	5.99	JUL 21	7.53	SEP 23	8.29

HAWLEY 8 WELL



ORANGE 63 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

271

FRANKLIN COUNTY--Continued

422607072324401. Sunderland well S6W 7.

LOCATION.--Lat 42°26'07", long 72°32'44", Franklin County, Hydrologic Unit 01080201, about 100 ft east of State Highway 116 and 30 ft north of Russellville Brook in Sunderland.

Owner: Sunderland Water Department.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in., depth 54 ft, cased to 54 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 210 ft above sea level. Measuring point: Top of casing, at land-surface datum.

REMARKS.--Water level affected by pumping and nearby Russellville Brook.

PERIOD OF RECORD.--November 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.25 ft below land-surface datum, Apr. 24, 1984; lowest measured, 23.26 ft below land-surface datum, Feb. 24, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	15.43	JAN 02	7.13	FEB 26	7.15	APR 28	7.83	JUN 24	11.04	AUG 28	13.68
NOV 26	13.22	28	8.36	MAR 27	7.54	MAY 27	8.84	JUL 21	12.93	SEP 23	15.48

422559072332402. Sunderland well S6W 68.

LOCATION.--Lat 42°25'59", long 72°33'24", Franklin County, Hydrologic Unit 01080201, about 175 ft east of North Plain Road and 500 ft north of Plum Tree Road in Sunderland.

Owner: Private owner.

AQUIFER.--Glacial lacustrine deposits of late Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in., depth 28 ft, screened 25 to 28 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 160 ft above sea level. Measuring point: Top of casing, 2.0 ft above land-surface datum.

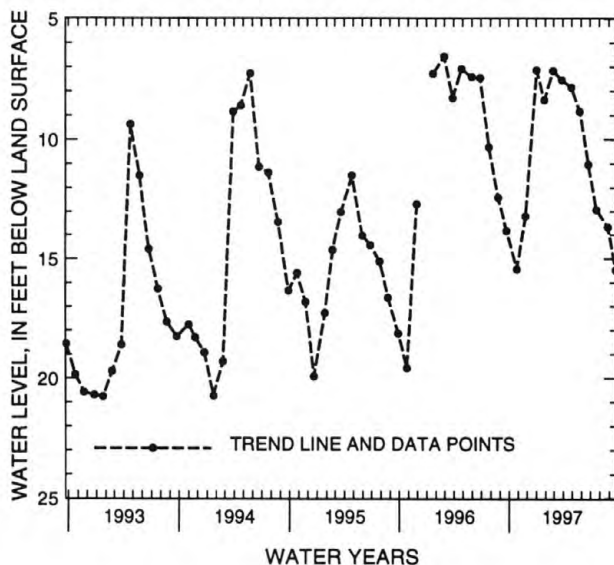
PERIOD OF RECORD.--October 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.09 ft below land-surface datum, Oct. 22, 1989, May 21, 1990; lowest measured, 5.00 ft below land-surface datum, Aug. 23, Sept. 22, 1985.

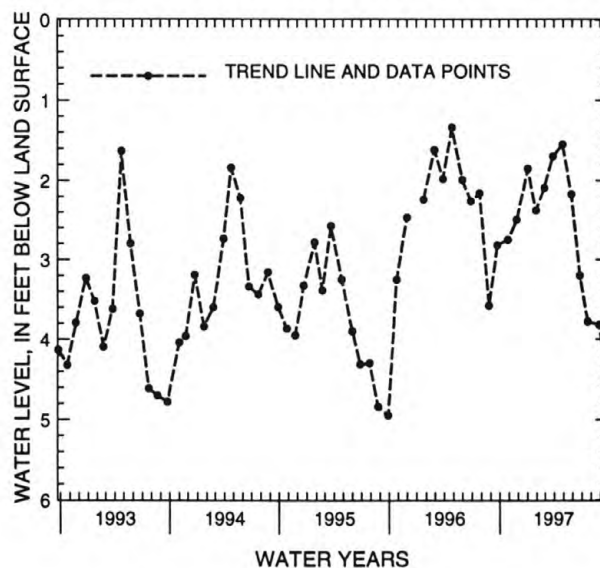
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	2.75	JAN 02	1.85	FEB 26	2.09	APR 28	1.55	JUN 24	3.20	AUG 28	3.82
NOV 26	2.50	28	2.38	MAR 27	1.70	MAY 27	2.17	JUL 21	3.78	SEP 23	4.51

SUNDERLAND 7 WELL



SUNDERLAND 68 WELL



HAMPDEN COUNTY

421228072585301. Blandford well BEW 9.

LOCATION.--Lat 42°12'28", long 72°58'53", Hampden County, Hydrologic Unit 01080206, 10 ft west of Blair Road and 0.25 mi south of intersection with North Blandford Road.

Owner: Springfield Water Department.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 15 ft, screened 5 to 15 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1140 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.85 ft below land-surface datum, Nov. 22, 1992; lowest measured, 4.60 ft below land-surface datum, Aug. 24, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	1.75	DEC 30	1.91	FEB 19	2.25	APR 30	2.56	JUN 25	2.82	AUG 27	2.71
NOV 26	2.13	JAN 23	2.18	MAR 25	2.16	MAY 28	2.53	JUL 22	2.84	SEP 24	2.73

421012072324501. Chicopee well CMW 95.

LOCATION.--Lat 42°10'12", long 72°32'45", Hampden County, Hydrologic Unit 01080204, in Chicopee Memorial State Park, 100 ft east of check-in house on north side of road in Chicopee.

Owner: Commonwealth of Massachusetts.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0-inch PVC, depth 34.0 ft, screened 30.0 to 34.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 200 ft above sea level. Measuring point: Top of casing, 3.48 ft above land-surface datum, 3.0 ft prior to October 1995.

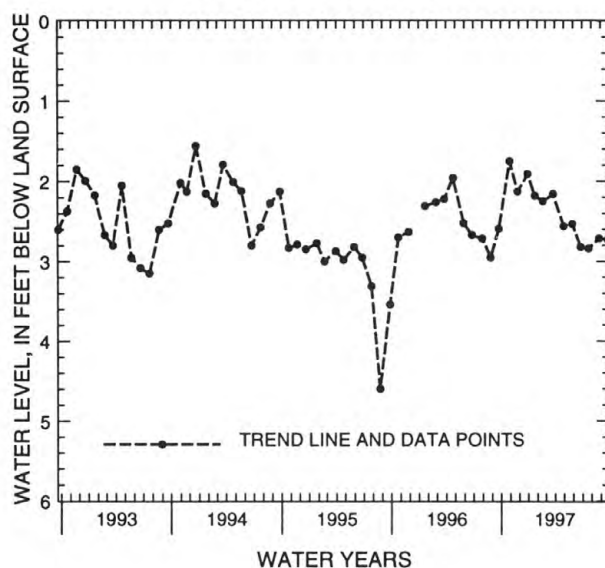
PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.40 ft below land-surface datum, Aug. 21, 1984; lowest measured, 23.62 ft below land-surface datum, Mar. 22, 1989.

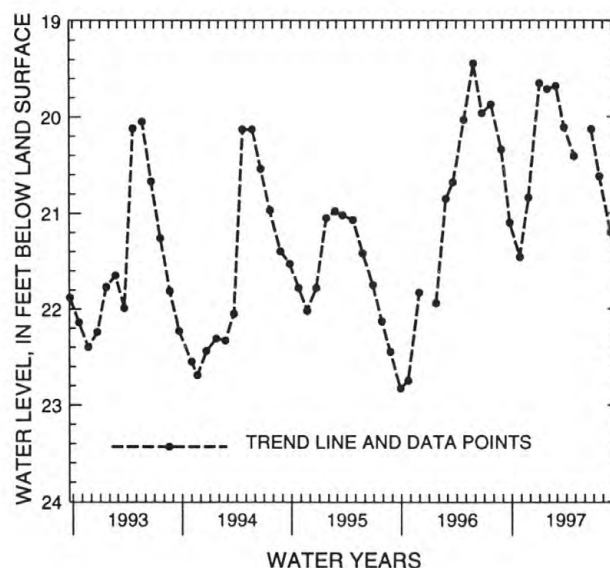
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	21.46	JAN 02	19.65	FEB 26	19.68	APR 28	20.41	JUL 21	20.62	SEP 23	21.50
NOV 26	20.84	28	19.71	MAR 26	20.11	JUN 24	20.13	AUG 27	21.20		

BLANDFORD 9 WELL



CHICOPEE 95 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

273

HAMPDEN COUNTY--Continued

420357072511601. Granville well GLW 5.

LOCATION.--Lat 42°03'57", long 72°51'16", Hampden County, Hydrologic Unit 01080206, near Granville Public School, 275 ft south of State Highway 57 and 0.2 mi west of Sodom Street in Granville.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 67.7 ft, screened 65.7 to 67.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 675 ft above sea level. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.06 ft below land-surface datum, June 21, 1983; lowest, 37.20 ft below land-surface datum, Jan. 24, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	32.26	DEC 30	29.97	FEB 19	30.63	MAY 01	30.76	JUN 25	31.59	AUG 27	33.09
NOV 26	31.93	JAN 23	30.45	MAR 25	31.18	MAY 29	31.03	JUL 22	32.19	SEP 24	33.68

420259072581701. Granville well GLW 6.

LOCATION.--Lat 42°02'59", long 72°58'17", Hampden County, Hydrologic Unit 01080207, at Granville State Forest, 20 ft west of West Hartland Road and 0.9 mi north of state boundary in Granville.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 20.8 ft, screened 18.8 to 20.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,160 ft above sea level. Measuring point: Top of casing, 2.78 ft above land-surface datum, 2.5 ft prior to October 1995.

REMARKS.--Water levels affected by Halfway Brook.

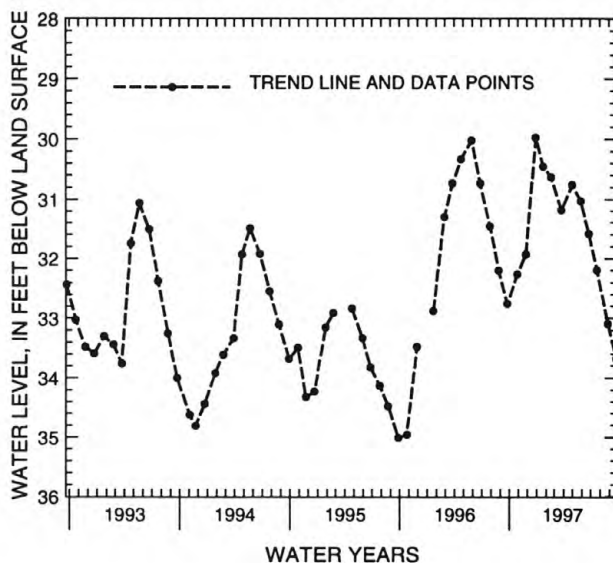
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.49 ft below land-surface datum, Apr. 26, 1972; lowest measured, 8.50 ft below land-surface datum, Aug. 23, 1993.

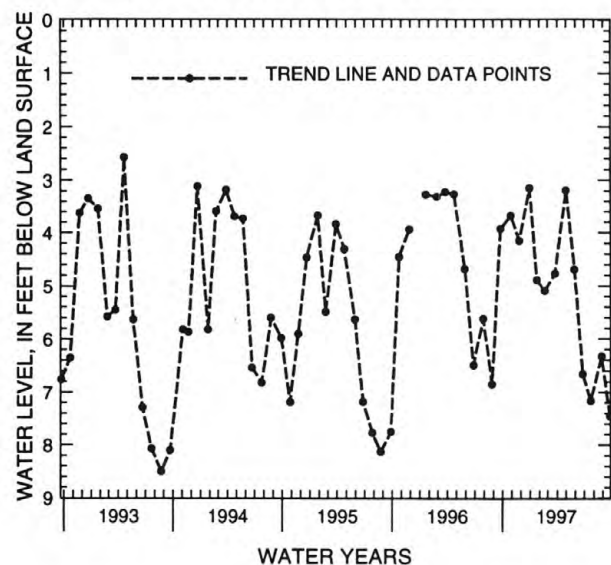
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	3.68	DEC 30	3.15	FEB 19	5.09	MAY 01	3.19	JUN 25	6.66	AUG 27	6.33
NOV 26	4.15	JAN 23	4.89	MAR 25	4.77	MAY 29	4.69	JUL 22	7.16	SEP 24	7.46

GRANVILLE 5 WELL



GRANVILLE 6 WELL



HAMPDEN COUNTY--Continued

421240072490201. Montgomery well M7W 19.

LOCATION.--Lat 42°12'40", long 72°49'02", Hampden County, Hydrologic Unit 01080206, at corner of Russell Road and road to cemetery, about 500 ft south of intersection of Main Road and Russell Road.

Owner: Westfield Water Department.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 18 ft, screened 8 to 18 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1060 ft above sea level. Measuring point: Top of casing, 1.0 ft above land-surface datum.

PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.07 ft below land-surface datum, Apr. 21, 1993; lowest measured, 4.31 ft below land-surface datum, Sept. 21, 1993

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	.66	DEC 30	.14	FEB 20	1.02	APR 30	.58	JUN 25	1.84	SEP 23	2.96
NOV 25	.67	JAN 23	.83	MAR 25	1.17	MAY 28	1.06	JUL 22	2.46		

420430072491201. Southwick well SVW 95.

LOCATION.--Lat 42°04'30", long 72°49'12", Hampden County, Hydrologic Unit 01080206, in garden 100 ft north of Route 57 and about 600 ft west of intersection with Loomis Street.

Owner: Private owner.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 37 ft, screened 27 to 37 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 270 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum, 3.0 ft prior to October 1995.

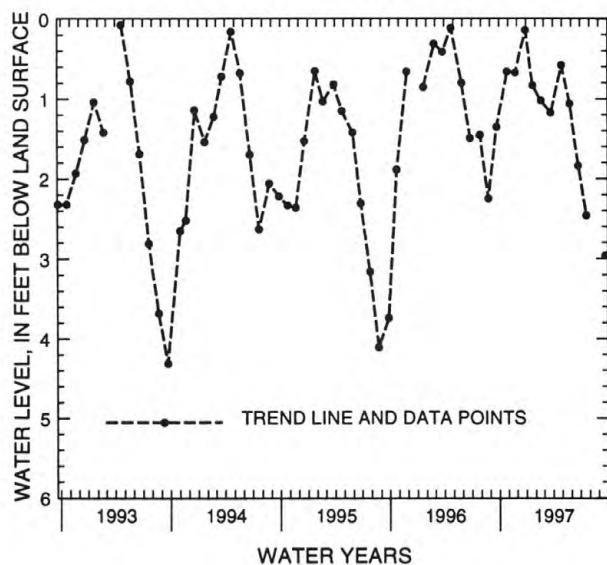
PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.66 ft below land-surface datum, July 24, 1989; lowest measured, 5.82 ft below land-surface datum, Sept. 27, 1995.

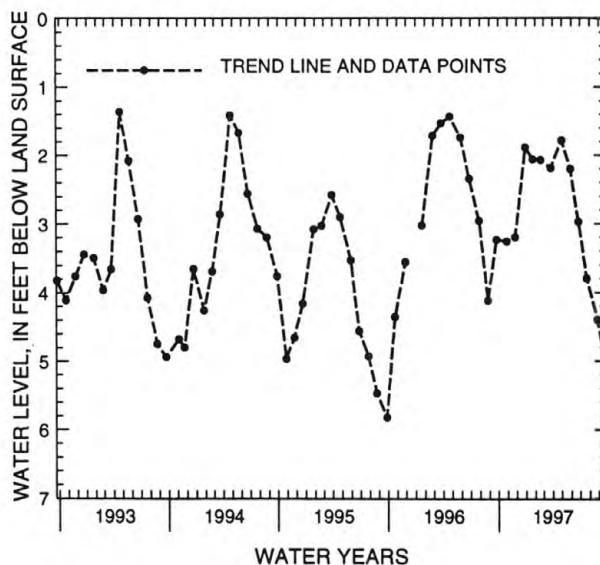
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	3.26	DEC 30	1.89	FEB 19	2.07	APR 30	1.78	JUN 25	2.97	AUG 27	4.40
NOV 26	3.20	JAN 23	2.06	MAR 25	2.19	MAY 29	2.20	JUL 22	3.79	SEP 24	5.07

MONTGOMERY 19 WELL



SOUTHWICK 95 WELL



HAMPDEN COUNTY--Continued

420646072420101. Westfield well WWV 62.

LOCATION.--Lat 42°06'46", long 72°42'01", Hampden County, Hydrologic Unit 01080206, at Western Massachusetts Hospital about 200 ft east of East Mountain Road and 0.4 mi north of U.S. Highway 20 in Westfield.

Owner: Commonwealth of Massachusetts.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in., depth 22 ft, casing information not available.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 210 ft above sea level. Measuring point: Top of casing, 3.5 ft above land-surface datum.

REMARKS.--Water level affected by pumping.

PERIOD OF RECORD.--August 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.70 ft below land-surface datum, Oct. 29, 1975; lowest measured, well dry, Sept. 22, 1983, Nov. 21, 1983.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	6.16	DEC 30	5.01	FEB 20	6.64	APR 30	5.96	JUN 25	7.42	AUG 27	8.92
NOV 25	6.59	JAN 23	6.06	MAR 25	6.66	MAY 29	6.62	JUL 22	8.45	SEP 24	9.52

420924072422602. Westfield well WWV 152.

LOCATION.--Lat 42°09'24", long 72°42'26", Hampden County, Hydrologic Unit 01080206, about 100 ft south of Owen District Road, 0.4 mi west of intersection of Owen District Road and Mountain Road at East Mountain Country Club, 0.4 mi east of Barnes Municipal Airport.

Owner: City of Westfield.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.0 in., depth 16 ft, screened 6 to 16 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 215.69 ft above sea level. Measuring point: Top of casing, 2.0 ft above land-surface datum.

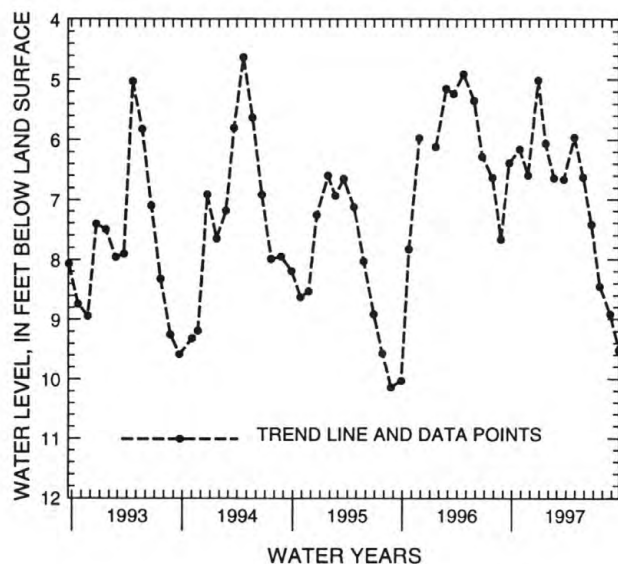
PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.43 ft below land-surface datum, Feb. 20, 1997; lowest measured, 4.72 ft below land-surface datum, Dec. 21, 1986, Jan. 24, 1987.

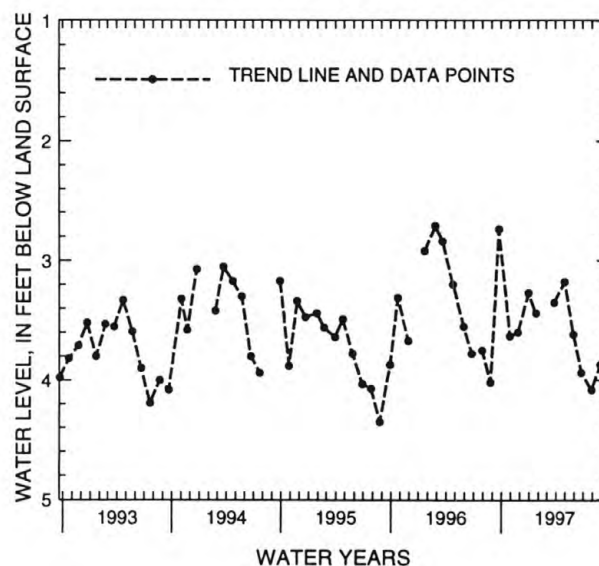
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	3.63	DEC 30	3.27	MAR 25	3.35	MAY 29	3.62	JUL 28	4.08	SEP 24	4.09
NOV 25	3.60	JAN 23	3.44	APR 30	3.18	JUN 25	3.94	AUG 27	3.87		

WESTFIELD 62 WELL



WESTFIELD 152 WELL



HAMPDEN COUNTY--Continued

420905072254001. Wilbraham well XJW 55.

LOCATION.--Lat 42°09'05", long 72°25'40", Hampden County, Hydrologic Unit 01080204, 45 ft south of U.S. Highway 20 and 0.1 mi west of North Main Street in Wilbraham.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 62.5 ft, screened 60.5 to 62.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 255 ft above sea level. Measuring point: Top of casing, 1.07 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.15 ft below land-surface datum, Jan. 2, 1997; lowest measured, 45.44 ft below land-surface datum, Jan. 24, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	39.89	JAN 02	30.15	MAR 26	36.78	MAY 27	36.49	JUL 21	40.59	SEP 23	42.96
NOV 26	38.70	FEB 26	35.69	APR 28	34.52	JUN 24	38.89	AUG 28	42.23		

HAMPSHIRE COUNTY

422733072532601. Cummington well CYW 13.

LOCATION.--Lat 42°27'33", long 72°53'26", Hampshire County, Hydrologic Unit 01080206, at end of dirt road between lumber yard and elementary school in Cummington center.
 Owner: Town of Cummington.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 39 ft, screened 29 to 39 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 988 ft above sea level. Measuring point: Top of casing, 3.59 ft above land-surface datum, 3.0 ft prior to October 1995.

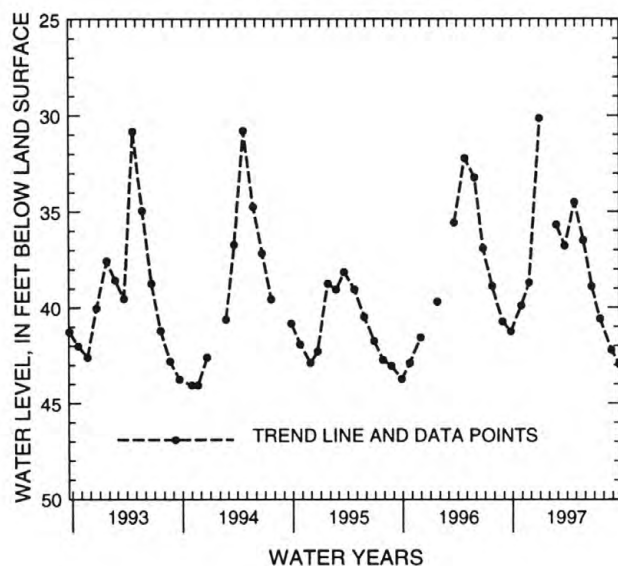
PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.10 ft below land-surface datum, Apr. 21, 1993; lowest measured, 6.52 ft below land-surface datum, Sept. 23, 1993.

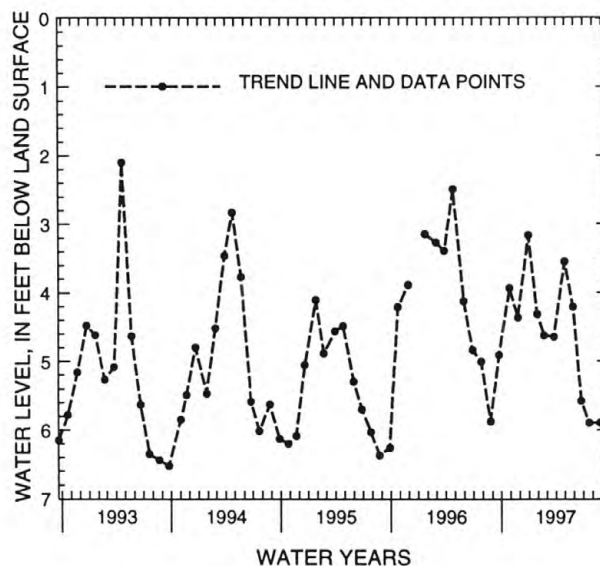
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	3.94	DEC 30	3.17	FEB 20	4.63	APR 30	3.55	JUN 24	5.58	AUG 26	5.90
NOV 25	4.37	JAN 28	4.32	MAR 25	4.65	MAY 28	4.21	JUL 21	5.90	SEP 23	6.21

WILBRAHAM 55 WELL



CUMMINGTON 13 WELL



HAMPSHIRE COUNTY--Continued

421355072322001. Granby well GWK 68.

LOCATION.--Lat 42°13'55", long 72°32'20", Hampshire County, Hydrologic Unit 01080201, about 15 ft east of Morgan Street, 0.3 mi south of East Street, and 2.0 mi southwest of Granby.
 Owner: Holyoke Water Power Co.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in., depth 18 ft, screened 16 to 18 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 239.17 ft above sea level. Measuring point: Top of casing, at land-surface datum.

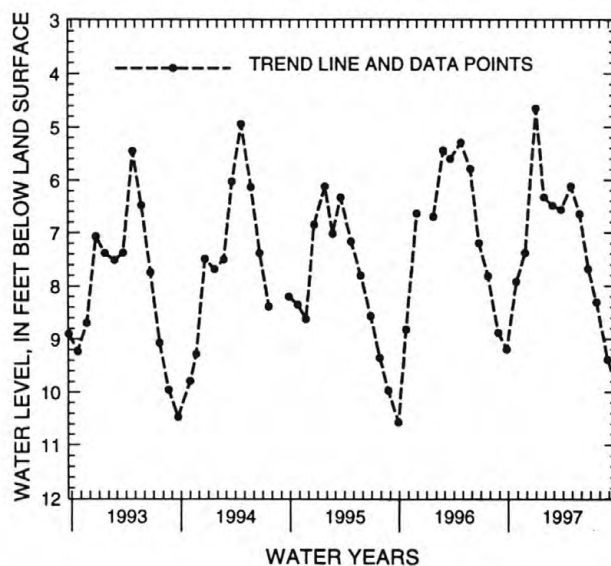
PERIOD OF RECORD.--April 1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.25 ft below land-surface datum, Apr. 21, 1983; lowest measured, 11.17 ft below land-surface datum, Nov. 25, 1964.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	7.92	JAN 02	4.65	FEB 26	6.49	APR 28	6.12	JUN 24	7.68	AUG 27	9.39
NOV 26	7.38	28	6.33	MAR 26	6.57	MAY 27	6.65	JUL 21	8.31	SEP 23	9.85

GRANBY 68 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

HAMPSHIRE COUNTY--Continued

422103072241102. Pelham well PDW 23.

LOCATION.--Lat 42°21'03", long 72°24'11", Hampshire County, Hydrologic Unit 01080204, at Knight's Corner, 50 ft east of U.S. Highway 202 and 75 ft south of small pond in Pelham.

Owner: Massachusetts Department of Public Works.

AQUIFER.--Bedrock.

WELL CHARACTERISTICS.--Air-percussion observation water-table well, diameter 6.0 in., depth 740 ft, cased to 740 ft, open end.

INSTRUMENTATION.--Monthly measurement with electric tape by observer. Continuous graphic recorder October 1981 to December 1983, April 1986 to October 1991; digital recorder (60-minute punch) October 1991 to current year.

DATUM.--Elevation of land-surface datum is 939 ft above sea level. Measuring point: Top of hole in base of aluminum recorder shelter, 1.53 ft above land-surface datum, 1.60 ft prior to November 1995.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--October 1981 to October 1991; digital recorder (60-minute punch) October 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.44 ft below land-surface datum, Apr. 7, 1982; lowest, 17.75 ft below land-surface datum, Sept. 13, 1995.

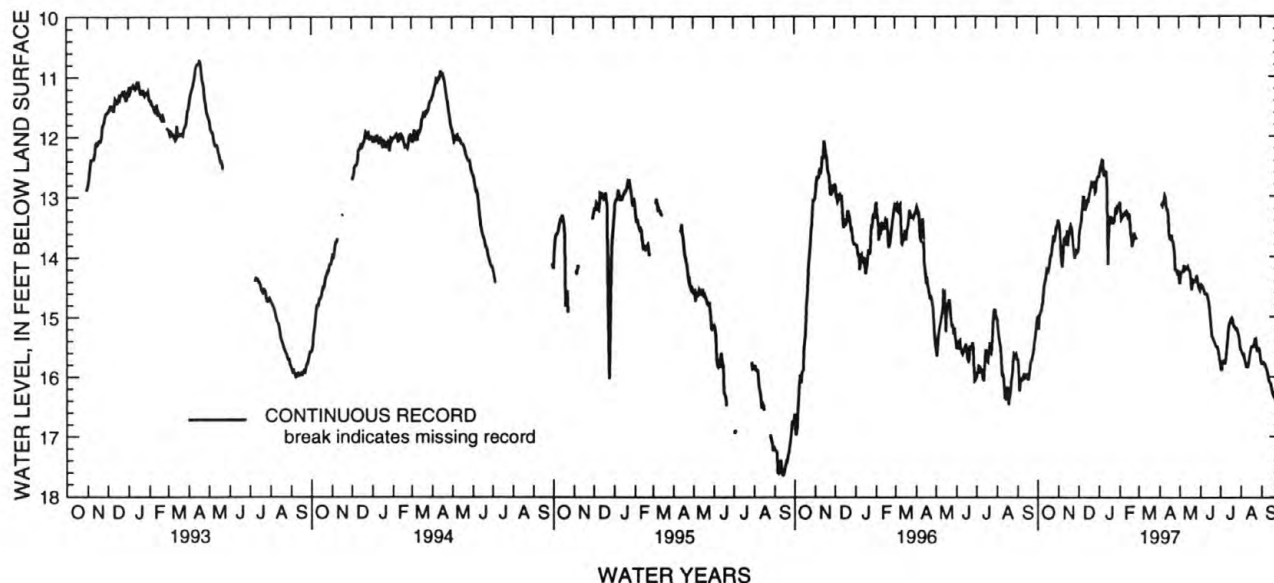
DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.00	13.43	13.84	12.69	13.09	---	---	14.45	14.48	15.81	15.57	15.79
2	15.21	13.47	13.61	12.60	13.27	---	---	14.35	14.46	15.88	15.59	15.79
3	14.99	13.59	13.54	12.51	13.38	---	---	14.28	14.48	15.88	15.63	15.77
4	14.95	13.98	13.47	12.51	13.36	---	m13.12	14.25	14.49	15.75	15.65	15.79
5	14.92	14.07	13.41	12.44	13.28	---	13.15	14.24	14.51	15.74	15.60	15.78
6	14.89	14.17	13.27	12.40	13.33	---	13.10	14.21	14.55	15.76	15.68	15.79
7	14.80	14.09	13.13	12.41	13.32	---	13.10	14.14	14.59	15.78	15.75	15.83
8	14.77	13.93	13.01	12.63	13.28	---	13.05	14.23	14.62	15.78	15.80	15.86
9	14.62	13.69	13.01	12.67	13.26	---	12.99	14.21	14.62	15.73	15.83	15.90
10	14.48	13.68	13.12	12.61	13.28	---	13.02	14.18	14.61	15.58	15.83	15.94
11	14.43	13.81	13.23	12.59	13.25	---	13.17	14.19	14.62	15.47	15.84	16.00
12	14.39	13.72	13.17	12.60	13.27	---	13.22	14.20	14.67	15.35	15.83	16.07
13	14.31	13.61	13.17	12.86	13.34	---	13.22	14.17	14.73	15.22	15.77	16.09
14	14.23	13.56	13.11	14.13	13.32	---	13.33	14.20	14.80	15.13	15.65	16.10
15	14.26	13.82	13.06	13.78	13.28	---	13.61	14.22	14.92	15.10	15.60	16.12
16	14.26	13.69	13.07	13.50	13.46	---	13.70	14.23	15.05	15.06	15.53	16.20
17	14.18	13.57	12.98	13.40	13.63	---	13.70	14.36	15.20	15.04	15.50	16.25
18	14.14	13.52	12.92	13.34	13.69	---	13.71	14.47	15.32	15.02	15.49	16.30
19	14.03	13.48	12.86	13.34	13.83	---	13.64	14.55	15.33	15.04	15.50	16.32
20	13.98	13.50	12.80	13.39	13.77	---	13.73	14.45	15.38	15.11	15.50	16.29
21	13.98	13.56	12.83	13.45	13.73	---	13.75	14.40	15.40	15.16	15.44	16.32
22	13.86	13.69	12.84	13.45	13.60	---	13.82	14.42	15.42	15.16	15.38	16.38
23	13.79	13.82	12.84	13.36	13.65	---	13.95	14.42	15.45	15.19	15.37	16.37
24	13.66	13.95	12.75	13.43	13.67	---	14.21	14.41	15.49	15.21	15.42	16.39
25	13.66	14.03	12.78	13.23	13.69	---	14.21	14.37	15.50	15.20	15.57	16.41
26	13.70	13.95	12.94	13.18	m13.71	m13.49	14.24	14.31	15.50	15.22	15.57	16.42
27	13.65	13.91	12.92	13.30	---	---	14.27	14.35	15.53	15.27	15.53	16.51
28	13.51	13.94	12.81	13.16	---	---	14.25	14.41	15.60	15.31	15.53	16.56
29	13.49	13.93	12.71	13.16	---	---	14.22	14.50	15.66	15.38	15.57	16.47
30	13.48	13.91	12.68	13.19	---	---	14.39	14.52	15.75	15.49	15.67	16.42
31	13.39	---	12.67	13.13	---	---	---	14.55	---	15.54	15.74	---
MEAN	14.23	13.77	13.05	13.05	---	---	---	14.33	15.02	15.40	15.61	16.14
LOW	15.21	14.17	13.84	14.13	---	---	---	14.55	15.75	15.88	15.84	16.56
HIGH	13.39	13.43	12.67	12.40	---	---	---	14.14	14.46	15.02	15.37	15.77

m Measured

WTR YR 1997 HIGH 12.39 JAN 5 LOW 16.58 SEP 28

PELHAM 23 WELL



HAMPSHIRE COUNTY--Continued

422103072241103. Pelham well PDW 24.

LOCATION.--Lat 42°21'03", long 72°24'11", Hampshire County, Hydrologic Unit 01080204, at Knight's Corner, 50 ft east of U.S. Highway 202 and 75 ft south of small pond in Pelham.

Owner: Massachusetts Department of Public Works.

AQUIFER.--Glacial sand and till of the Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., PVC, depth 25.0 ft, screened 21.0 to 25.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 940 ft above sea level. Measuring point: Top of casing, 3.86 ft above land-surface datum, 3.0 ft prior to October 1995.

PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.24 ft below land-surface datum, Mar. 21, 1996; lowest water level measured, 7.59 ft below land-surface datum, Sept. 28, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	4.59	JAN 02	2.79	FEB 26	3.22	APR 28	2.91	JUN 24	5.22	AUG 29	5.32
NOV 20	3.54	28	3.47	MAR 26	2.47	MAY 27	3.66	JUL 21	4.77	SEP 23	6.46

421627072201701. Ware well WEW 43.

LOCATION.--Lat 42°16'27", long 72°20'17", Hampshire County, Hydrologic Unit 01080204, 30 ft north of State Highway 9 and 200 ft east of Swift River in Ware.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 27.2 ft, screened 25.2 to 27.2 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 380 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

REMARKS.--Water levels affected by Swift River.

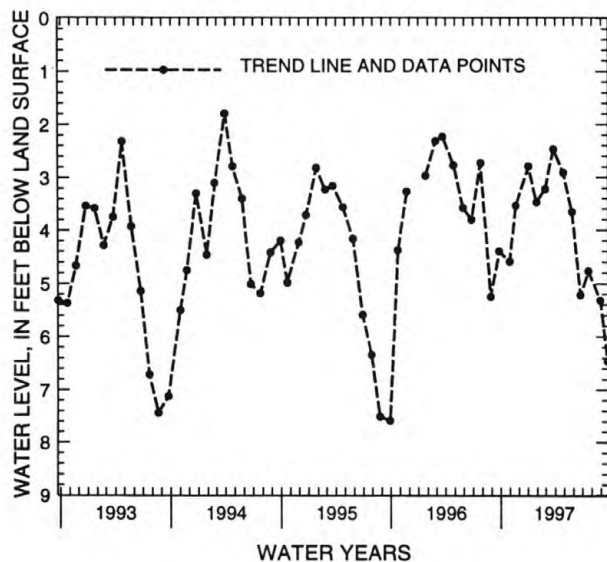
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1975, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.08 ft below land-surface datum, Apr. 28, 1997; lowest measured, 10.34 ft below land-surface datum, Jan. 26, 1971.

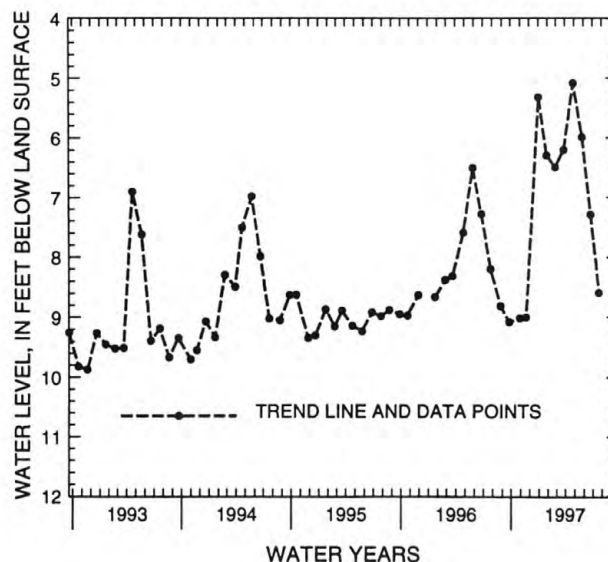
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	9.01	JAN 02	5.32	FEB 26	6.49	APR 28	5.08	JUN 24	7.29	SEP 23	8.78
NOV 20	9.00	28	6.29	MAR 27	6.20	MAY 27	5.99	JUL 21	8.59		

PELHAM 24 WELL



WARE 43 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

HAMPSHIRE COUNTY--Continued

421923072451001. Westhampton well WXW 20.

LOCATION.--Lat 42°20'28", long 72°48'24", Hampshire County, Hydrologic Unit 01080206, 20 ft north of Northwest Road and 0.75 mi west of intersection of Kings Road and Northwest Road, 4 mi northwest of Westhampton.

Owner: Private owner.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 42 ft, screened 32 to 42 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1175 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--July 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.17 ft below land-surface datum, May 29, 1996; lowest measured, 17.59 ft below land-surface datum, Nov. 21, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	12.01	DEC 30	6.14	FEB 20	9.63	APR 30	7.71	JUN 25	9.87	AUG 26	14.36
NOV 25	8.42	JAN 23	7.30	MAR 25	10.76	MAY 28	7.44	JUL 22	12.23	SEP 24	15.27

MIDDLESEX COUNTY

422812071244401. Acton well ACW 158.

LOCATION.--Lat 42°28'12", long 71°24'44", Middlesex County, Hydrologic Unit 01070005, 30 ft north of State Highway 2 and 150 ft east of Wetherbee Street in Acton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 33.8 ft, screened 31.8 to 33.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 153 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

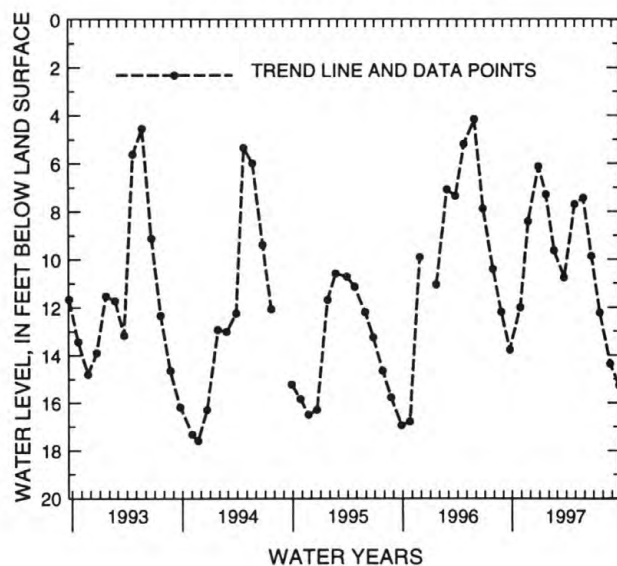
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.98 ft below land-surface datum, Apr. 23, 1987; lowest measured, 21.86 ft below land-surface datum, Jan. 26, 1966.

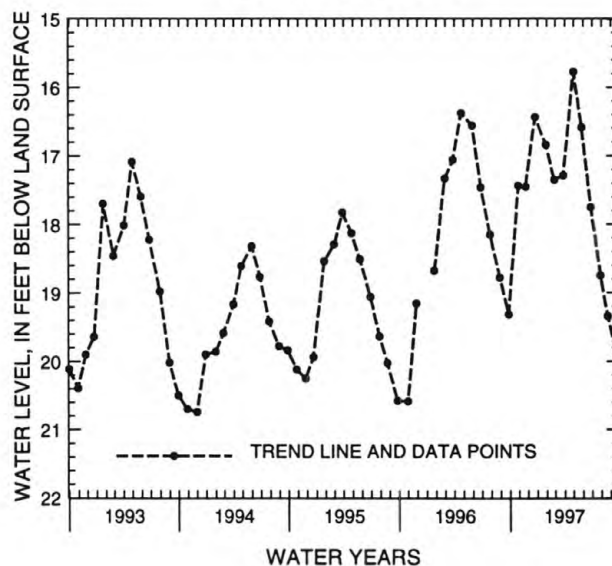
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	17.44	DEC 23	16.44	FEB 25	17.35	APR 30	15.77	JUN 26	17.75	AUG 21	19.34
NOV 21	17.45	JAN 29	16.84	MAR 27	17.29	MAY 27	16.59	JUL 28	18.75	SEP 24	19.98

WESTHAMPTON 20 WELL



ACTON 158 WELL



MIDDLESEX COUNTY--Continued

423349071134101. Billerica well BCW 363.

LOCATION.--Lat 42°33'49", long 71°13'41", Middlesex County, Hydrologic Unit 01070002, 20 ft south of Baldwin Road and 50 ft west of Westminster Road in Billerica.

Owner: Private owner.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 15.5 ft, cased with stone to 15.5 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 166 ft above sea level. Measuring point: Top of pipe on wooden cover, 2.50 ft above land-surface datum.

PERIOD OF RECORD.--June 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.73 ft below land-surface datum, Apr. 1, 1993; lowest measured, dry Aug. 24, Sept. 22, Oct. 25, 1983.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	6.79	FEB 25	9.36	APR 30	8.15	JUN 26	10.16	AUG 21	12.23	SEP 24	dry
DEC 23	7.29	MAR 27	10.89	MAY 27	9.21	JUL 28	11.50				

423845071231401. Chelmsford well CHW 68.

LOCATION.--Lat 42°38'45", long 71°23'14", Middlesex County, Hydrologic Unit 01070002, 1,300 ft north of intersection of Wharton Lane and the B and M Railroad, 400 ft east of Middlesex Street, and 0.5 mi north of Vinal Square in North Chelmsford.

Owner: Wellman Realty Company.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in., depth 50 ft, cased to 50 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 100.83 ft above sea level. Measuring point: Top of hole in cap on casing, 1.40 ft below land-surface datum.

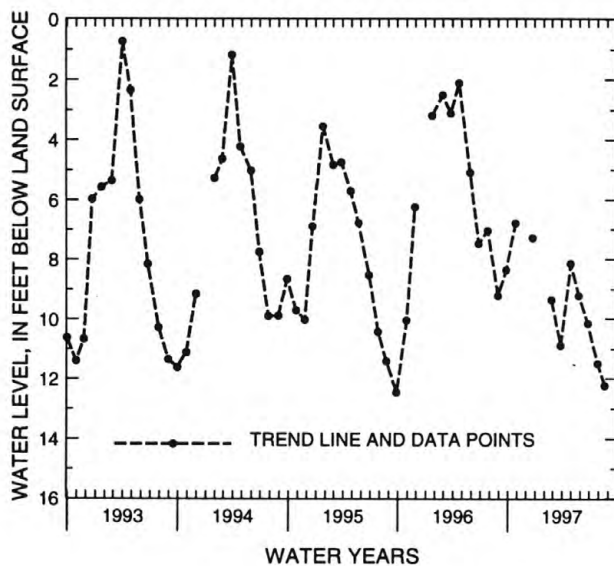
PERIOD OF RECORD.--August 1939 to April 1997 (well destroyed).

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.83 ft below land-surface datum, Apr. 23, 1987; lowest measured, 12.24 ft below land-surface datum, Sept. 28, 1957.

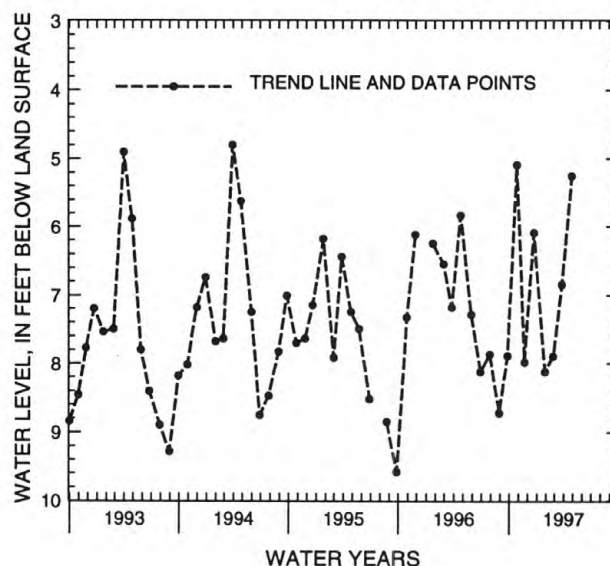
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	5.09	DEC 23	6.09	JAN 29	8.12	FEB 25	7.90	MAR 27	6.85	APR 30	5.25
NOV 21	7.98										

BILLERICA 363 WELL



CHELMSFORD 68 WELL



MIDDLESEX COUNTY--Continued

423546071190701.--Chelmsford well CHW 384.

LOCATION.--Lat 42° 35' 46", long 71° 19' 07", Middlesex County, Hydrologic Unit 0107000, 25 ft east of U.S. Highway 3 and 0.4 mi north of State Highway 129 in Chelmsford.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 42.0 ft, screened 40.0 to 42.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 125 ft above sea level. Measuring point: Top of casing, 2.2 ft above land-surface datum.

PERIOD OF RECORD.--May 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.24 ft below land-surface datum, Apr. 30, 1997; lowest measured, 17.31 ft below land-surface datum, Sept. 26, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	14.52	DEC 23	14.40	FEB 25	15.21	APR 30	14.24	JUN 26	15.62	AUG 21	16.54
NOV 21	15.11	JAN 29	14.83	MAR 27	14.99	MAY 27	14.76	JUL 28	16.25	SEP 24	16.86

422637071202701. Concord well CTW 165.

LOCATION.--Lat 42°26'37", long 71°20'27", Middlesex County, Hydrologic Unit 01070005, 30 ft south of State Highway 2 and 0.1 mi west of State Highway 126 in Concord.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 66.7 ft, screened 64.7 to 66.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 201.12 ft above sea level. Measuring point: Top of casing, 0.5 ft above land-surface datum, 2.0 ft prior to October 1991.

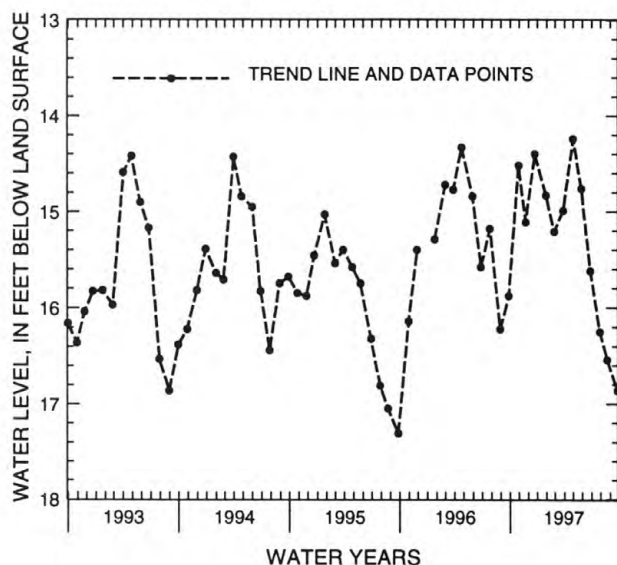
PERIOD OF RECORD.--February 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.50 ft below land-surface datum, July 20, 1984; lowest measured, 47.10 ft below land-surface datum, Feb. 28, 1967.

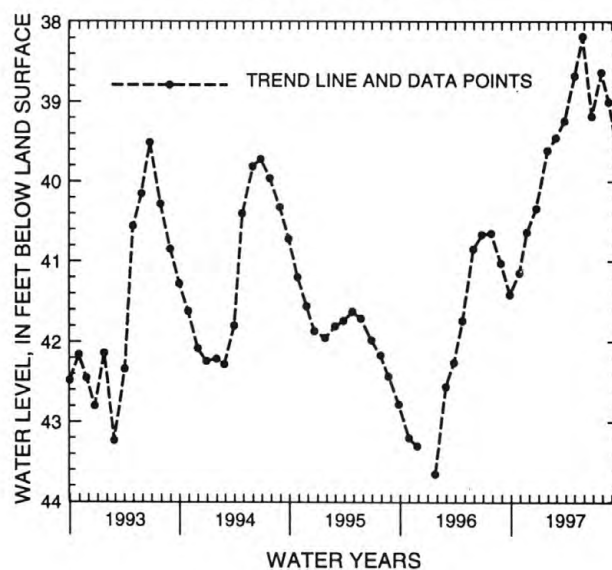
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	41.15	DEC 23	40.34	FEB 25	39.45	APR 30	38.67	JUN 26	39.18	AUG 21	39.00
NOV 21	40.64	JAN 29	39.61	MAR 27	39.24	MAY 27	38.18	JUL 28	38.63	SEP 24	39.70

CHELMSFORD 384 WELL



CONCORD 165 WELL



MIDDLESEX COUNTY--Continued

422650071214402. Concord well CTW 167.

LOCATION.--Lat 42°26'50", long 71°21'44", Middlesex County, Hydrologic Unit 01070005, 10 ft south of State Highway 2 and 10 ft west of Sudbury Road in Concord.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 24.8 ft, screened 21.8 to 24.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 135 ft above sea level. Measuring point: Top of casing, 3.3 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.47 ft below land-surface datum, Apr. 21, 1984; lowest measured, 10.59 ft below land-surface datum, Sept. 27, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	5.33	DEC 23	4.90	FEB 25	6.29	APR 30	5.18	JUN 26	7.29	AUG 21	8.34
NOV 21	6.15	JAN 29	5.92	MAR 27	5.58	MAY 27	6.11	JUL 28	8.25	SEP 24	8.70

422627071154002. Lexington well LTW 104.

LOCATION.--Lat 42°26'27", long 71°15'40", Middlesex County, Hydrologic Unit 01090001, at The Commonwealth of Massachusetts Department of Public Works maintenance depot, 0.2 mi west of State Highway 128 and 500 ft south of State Highway 2A in Lexington.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 20.7 ft, screened 18.7 to 20.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 180 ft above sea level. Measuring point: Top of casing, 4.5 ft above land-surface datum.

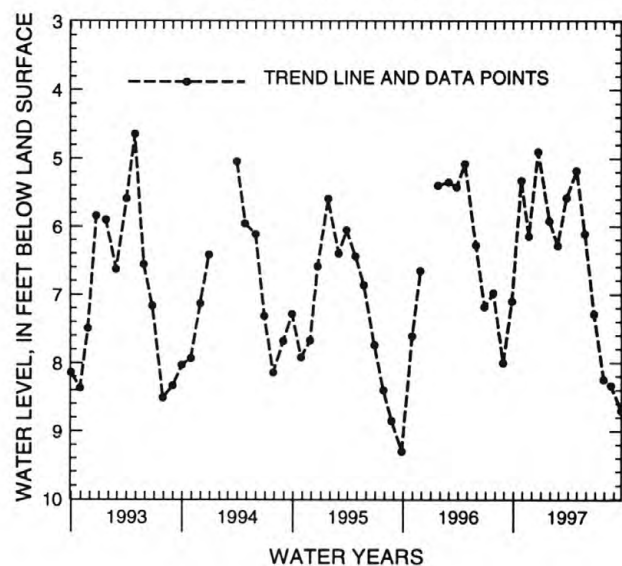
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.72 ft below land-surface datum, Apr. 1, 1993; lowest measured, 4.35 ft below land-surface datum, Aug. 26, 1975.

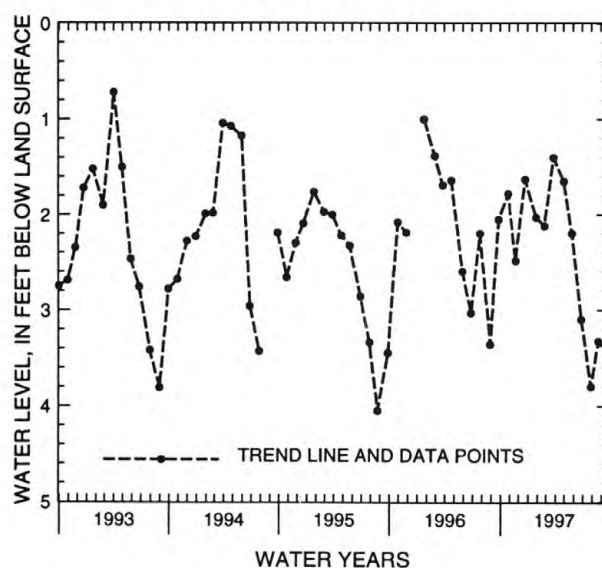
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	1.78	DEC 23	1.63	FEB 25	2.12	APR 30	1.65	JUN 26	3.10	AUG 21	3.33
NOV 21	2.49	JAN 29	2.03	MAR 27	1.40	MAY 27	2.20	JUL 28	3.80	SEP 24	3.45

CONCORD 167 WELL



LEXINGTON 104 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

MIDDLESEX COUNTY--Continued

421851071312601. Southborough well SSW 12.

LOCATION.--Lat 42°18'51", long 71°31'26", Middlesex County, Hydrologic Unit 01070005, 50 ft north of Overlook Drive circle, approximately .75 mile northeast of Southborough center.

Owner: Town of Southborough.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Drive-washed observation water-table well, diameter 1.25 in., depth 20 ft, screened 18 to 20 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 450 ft above sea level. Measuring point: Top of casing, 0.5 ft above land-surface datum.

PERIOD OF RECORD.--July 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.84 ft below land-surface datum, Apr. 1, 1993; lowest measured, 15.74 ft below land-surface datum, Sept. 29, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	2.71	DEC 23	2.09	FEB 25	4.63	APR 30	2.75	JUN 26	9.09	AUG 20	13.46
NOV 21	5.45	JAN 29	3.66	MAR 27	2.75	MAY 27	5.97	JUL 28	11.64	SEP 23	14.11

424055071435301. Townsend well TRW 13.

LOCATION.--Lat 42°40'55", long 71°43'43", Middlesex County, Hydrologic Unit 01070004, 15 ft south of Dudley Road and 15 ft north of Turnpike Road in Townsend.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 32.9 ft, screened 30.9 to 32.9 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 313 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

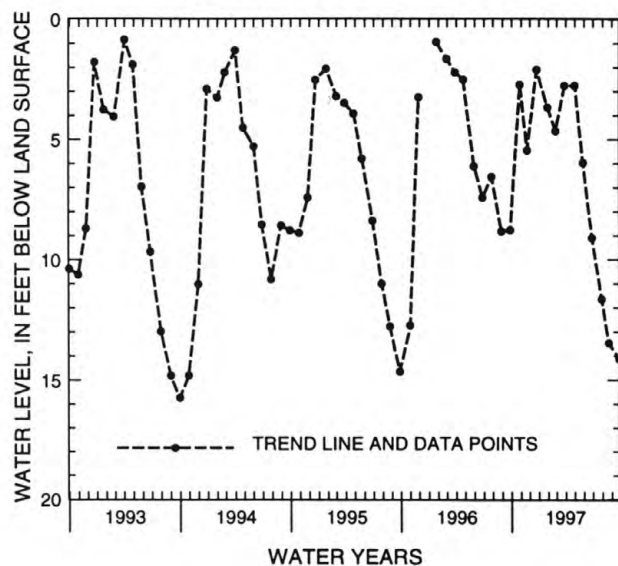
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.55 ft below land-surface datum, Apr. 24, 1987; lowest measured, 17.41 ft below land-surface datum, Jan. 26, 1966.

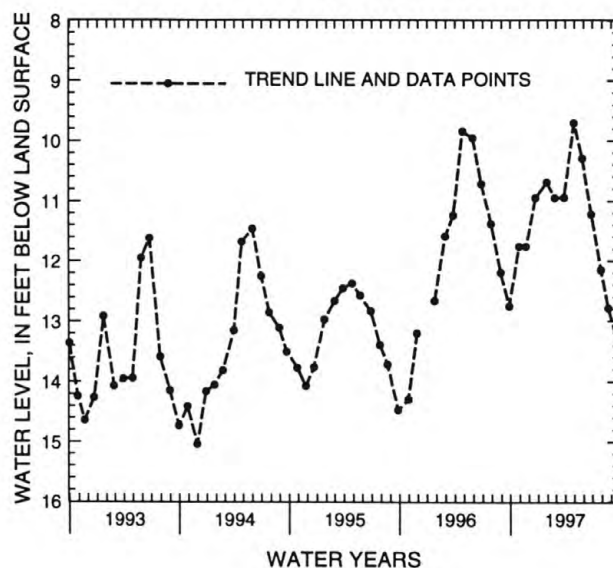
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	11.76	DEC 23	10.95	FEB 25	10.95	APR 30	9.70	JUN 26	11.22	AUG 21	12.78
NOV 21	11.76	JAN 29	10.69	MAR 27	10.94	MAY 27	10.29	JUL 28	12.15	SEP 25	13.40

SOUTHBOROUGH 12 WELL



TOWNSEND 13 WELL



MIDDLESEX COUNTY--Continued

423115071032001. Wakefield well WAW 38.

LOCATION.--Lat 42°31'15", long 71°03'20", Middlesex County, Hydrologic Unit 01090001, 75 ft north of State Highway 128 and 0.4 mi southeast of Saugus River in Wakefield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 25.5 ft, screened 23.5 to 25.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 80 ft above sea level. Measuring point: Top of casing, 3.45 ft above land-surface datum, 3.0 ft prior to June 1994.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.92 ft below land-surface datum, Oct. 29, 1996; lowest measured, 9.99 ft below land-surface datum, Sept. 22, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	2.92	DEC 30	5.30	FEB 28	6.06	APR 29	5.11	JUN 27	7.12	AUG 21	9.00
NOV 26	5.75	JAN 24	6.13	MAR 25	5.95	MAY 23	5.85	JUL 30	8.10	SEP 24	9.25

421852071220501. Wayland well WKW 2.

LOCATION.--Lat 42°18'52", long 71°22'05", Middlesex County, Hydrologic Unit 01070005, 0.25 mi west of State Highway 27 and 100 ft south of State Highway 30, at Cochituate State Park in Wayland.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 33.0 ft, screened 31.0 to 33.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 157.75 ft above sea level. Measuring point: Top of casing, 2.76 ft above land-surface datum, 4.0 ft prior to April 1993.

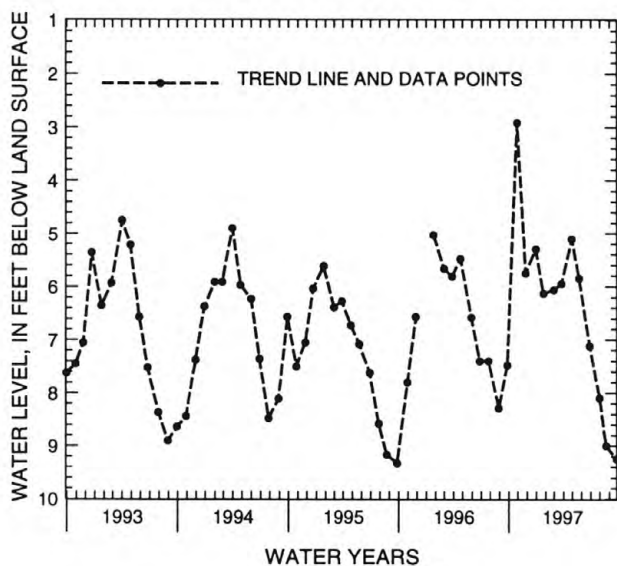
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.96 ft below land-surface datum, Mar. 27, 1972; lowest measured, 18.10 below land-surface datum, Sept. 26, 1995.

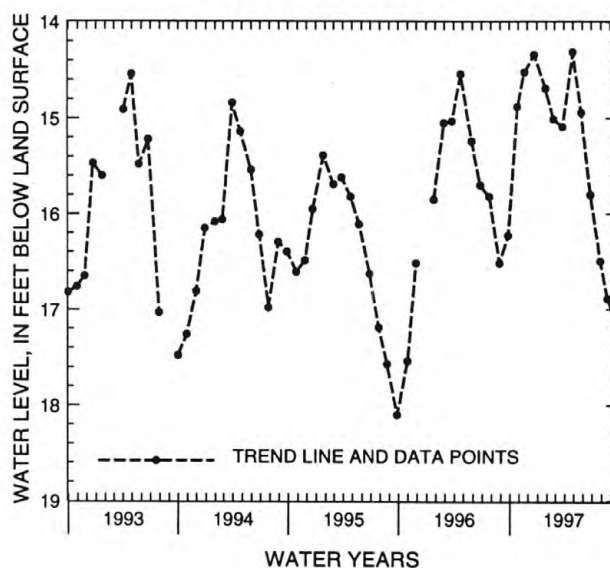
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	14.88	DEC 23	14.34	FEB 25	15.01	APR 30	14.31	JUN 26	15.80	AUG 20	16.89
NOV 21	14.52	JAN 29	14.69	MAR 27	15.09	MAY 27	14.94	JUL 28	16.50	SEP 23	17.17

WAKEFIELD 38 WELL



WAYLAND 2 WELL



423401071093801. Wilmington well XMW 78.

LOCATION.--Lat 42°34'01", long 71°09'38", Middlesex County, Hydrologic Unit 01090001, at building formerly known as Whitefield Public School in Wilmington, about 30 ft west of State Highway 62, and 0.3 mi north of Concord Street.

Owner: Town of Wilmington.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 42 in., depth 12 ft, cased with stone to 12 ft, open end.

INSTRUMENTATION.--Monthly measurement with electric tape by observer. Continuous graphic recorder March 1958 to September 1982, digital recorder (60-minute punch) October 1984 to current year.

DATUM.--Elevation of land-surface datum is 95 ft above sea level. Measuring point: Top edge of hole in base of steel recorder shelter, 0.27 ft above land-surface datum, 0.42 ft prior to May 1991.

PERIOD OF RECORD.--July 1951 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

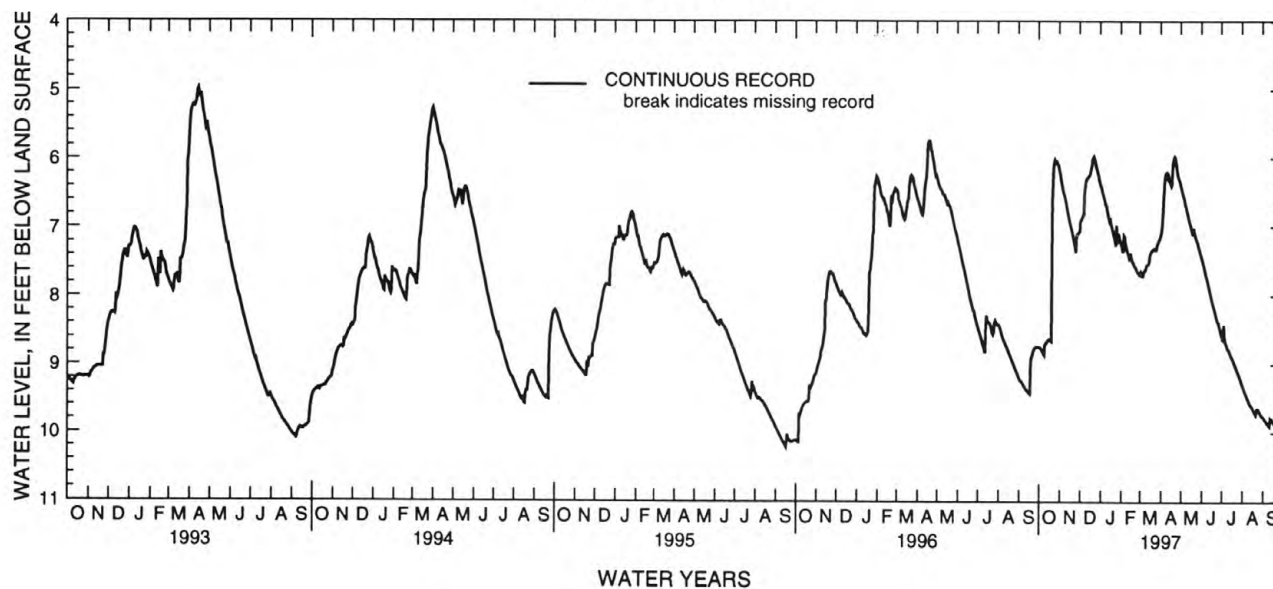
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.19 ft below land-surface datum, Apr. 19, 20, 1987; lowest measured, 11.27 ft below land-surface datum, Oct. 30, 1957.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.75	6.18	7.06	6.38	7.25	7.69	7.11	6.38	7.44	8.59	9.31	9.77
2	8.75	6.22	6.91	6.40	7.31	7.66	7.07	6.43	7.48	8.63	9.33	9.78
3	8.76	6.30	6.90	6.43	7.34	7.70	6.98	6.47	7.53	8.64	9.36	9.80
4	8.78	6.36	6.87	6.49	7.36	7.71	6.86	6.50	7.56	8.42	9.39	9.81
5	8.80	6.41	6.85	6.51	7.12	7.71	6.66	6.55	7.60	8.60	9.41	9.82
6	8.82	6.47	6.82	6.55	7.13	7.65	6.49	6.58	7.65	8.66	9.44	9.84
7	8.83	6.51	6.82	6.59	7.21	7.65	6.34	6.63	7.69	8.69	9.46	9.85
8	8.85	6.53	6.54	6.63	7.27	7.62	6.25	6.68	7.72	8.72	9.49	9.87
9	8.72	6.58	6.42	6.67	7.30	7.62	6.21	6.71	7.76	8.75	9.51	9.88
10	8.69	6.63	6.34	6.68	7.35	7.57	6.20	6.75	7.80	8.77	9.53	9.89
11	8.69	6.67	6.30	6.74	7.39	7.55	6.24	6.80	7.85	8.78	9.56	9.90
12	8.67	6.73	6.30	6.78	7.41	7.54	6.28	6.84	7.89	8.80	9.58	9.79
13	8.66	6.79	6.28	6.84	7.45	7.54	6.25	6.89	7.93	8.83	9.60	9.80
14	8.64	6.84	6.26	6.88	7.43	7.52	6.30	6.93	7.97	8.85	9.61	9.80
15	8.64	6.89	6.25	6.92	7.37	7.45	6.35	6.96	8.02	8.88	9.62	9.82
16	8.63	6.94	6.24	6.90	7.44	7.40	6.37	7.00	8.06	8.89	9.64	9.83
17	8.64	6.98	6.21	6.95	7.49	7.37	6.39	7.04	8.10	8.92	9.66	9.85
18	8.65	7.01	6.15	7.00	7.51	7.35	6.37	7.08	8.14	8.94	9.68	9.87
19	8.66	7.06	6.12	7.04	7.52	7.34	6.11	7.11	8.16	8.96	9.70	9.88
20	7.48	7.11	6.02	7.08	7.56	7.32	6.04	7.01	8.20	8.99	9.71	9.90
21	6.67	7.16	5.99	7.14	7.57	7.32	5.99	7.07	8.24	9.01	9.73	9.91
22	6.34	7.21	5.97	7.17	7.58	7.31	5.97	7.11	8.28	9.04	9.67	9.92
23	6.14	7.26	6.00	7.22	7.61	7.32	5.99	7.15	8.32	9.06	9.65	9.93
24	6.05	7.31	6.01	7.27	7.63	7.33	6.04	7.18	8.36	9.09	9.65	9.94
25	6.02	7.36	6.07	6.97	7.65	7.33	6.13	7.20	8.38	9.11	9.66	9.94
26	6.04	7.14	6.13	7.12	7.66	7.28	6.20	7.23	8.39	9.14	9.68	9.95
27	6.04	7.10	6.15	7.23	7.66	7.24	6.26	7.28	8.44	9.16	9.70	9.96
28	6.04	7.10	6.21	7.09	7.69	7.22	6.28	7.31	8.48	9.19	9.72	9.97
29	6.08	7.08	6.23	7.12	---	7.19	6.31	7.34	8.52	9.22	9.74	9.98
30	6.09	7.07	6.30	7.20	---	7.18	6.35	7.38	8.56	9.25	9.75	9.99
31	6.13	---	6.34	7.21	---	7.15	---	7.41	---	9.28	9.76	---
MEAN	7.77	6.83	6.36	6.88	7.44	7.45	6.35	6.94	8.02	8.90	9.59	9.87
LOW	8.85	7.36	7.06	7.27	7.69	7.71	7.11	7.41	8.56	9.28	9.76	9.99
HIGH	6.02	6.18	5.97	6.38	7.12	7.15	5.97	6.38	7.44	8.42	9.31	9.77

WTR YR 1997 HIGH 5.97 DEC 22, APR 19, 22, 23 LOW 9.99 SEP 29, 30

WILMINGTON 78 WELL



MIDDLESEX COUNTY--Continued

422819071065701. Winchester well XOW 14.

LOCATION.--Lat 42°28'19", long 71°06'57", Middlesex County, Hydrologic Unit 01090001, at 220 Forest Street and 100 ft north of Forest Street in Winchester.

Owner: Private owner.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in., depth 17.0 ft, cased with stone to 17.0 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 116.29 ft above sea level. Measuring point: Top edge of angle iron, at land-surface datum.

PERIOD OF RECORD.--July 1940 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.03 ft below land-surface datum, Mar. 26, 1969; lowest measured, 15.60 ft below land-surface datum, Oct. 31, 1957.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	6.40	DEC 30	7.80	FEB 28	10.10	APR 29	8.34	JUN 27	12.18	AUG 21	14.34
NOV 26	10.18	JAN 24	10.11	MAR 25	8.79	MAY 23	9.68	JUL 24	13.69	SEP 24	14.80

NANTUCKET COUNTY

411555070021901. Nantucket well NBW 228.

LOCATION.--Lat 41°15'55", long 70°02'19", Nantucket County, Hydrologic Unit 01090002, 165 ft south of Milestone Road and 300 ft east of Madequecham Valley Brook in Nantucket.

Owner: Nantucket Conservation Foundation.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 35.6 ft, screened 32.6 to 35.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 39 ft above sea level. Measuring point: Top of casing, 2.34 ft above land-surface datum, 0.7 ft prior to November 1994.

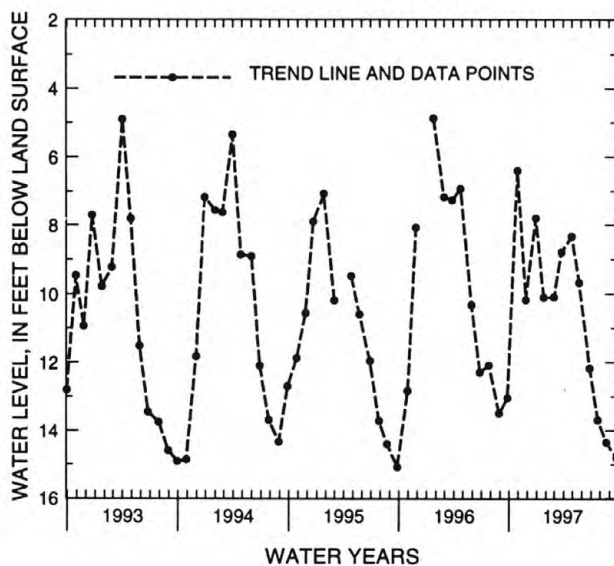
PERIOD OF RECORD.--March 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.51 ft below land-surface datum, July 28, 1997; lowest measured, 27.90 ft below land-surface datum, Feb. 23, 1981.

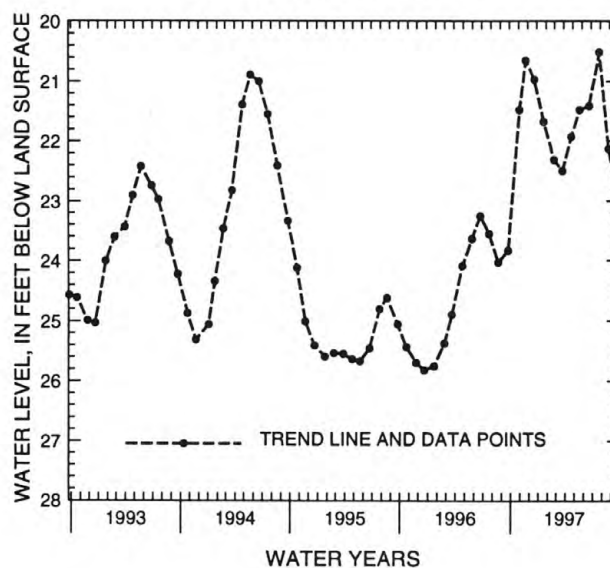
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 03	21.48	DEC 23	20.97	FEB 26	22.31	APR 25	21.93	JUN 23	21.41	AUG 26	22.13
24	20.65	JAN 23	21.68	MAR 25	22.50	MAY 22	21.48	JUL 28	20.51	SEP 26	22.91

WINCHESTER 14 WELL



NANTUCKET 228 WELL



NORFOLK COUNTY

421250071090901. Dedham well DDW 231.

LOCATION.--Lat 42°12'50", long 71°09'09", Norfolk County, Hydrologic Unit 01090001, 50 ft south of State Highway 128 and 0.3 mi west of University Avenue in Dedham.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 21.9 ft, screened 19.9 to 21.9 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 65 ft above sea level. Measuring point: Top of casing, 2.3 ft above land-surface datum. Prior to July 17, 1978, 1.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.45 ft below land-surface datum, Mar. 28, 1978; lowest measured, 14.96 ft below land-surface datum, Sept. 23, 1997.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	4.27	DEC 26	4.09	FEB 25	5.23	APR 28	5.92	JUN 27	6.03	AUG 20	13.58
26	6.24	JAN 21	5.76	MAR 26	6.83	MAY 27	8.06	JUL 28	7.35	SEP 23	14.96

421435071165701. Dover well DVW 10.

LOCATION.--Lat 42°14'35", long 71°16'57", Norfolk County, Hydrologic Unit 01090001, at Dover Public School about 400 ft southwest of and about 400 ft west of Center Street in Dover.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 54 ft, screened 52 to 54 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 160 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

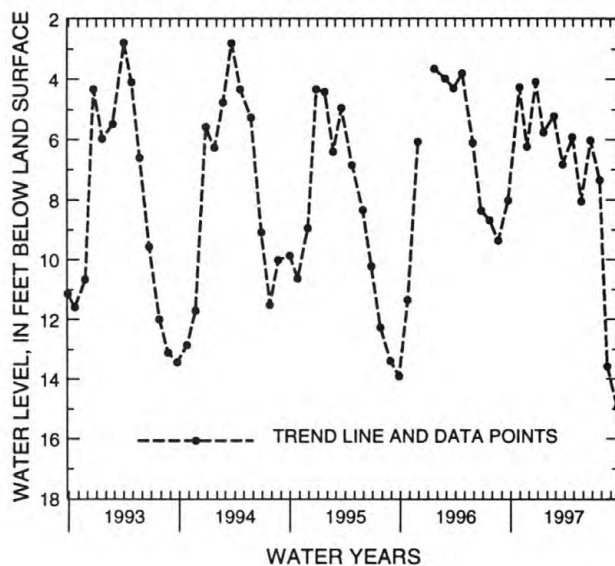
PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.95 ft below land-surface datum, Apr. 20, 1987; lowest measured, 36.87 ft below land-surface datum, Jan. 21, 1966.

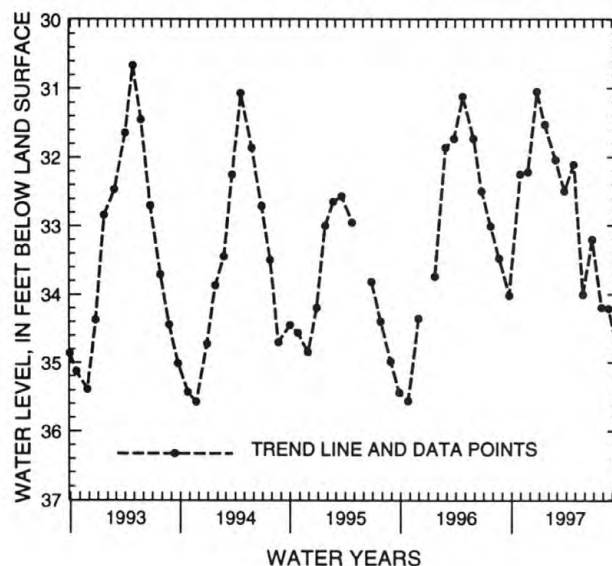
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	32.25	DEC 26	31.05	FEB 25	32.04	APR 28	32.11	JUN 27	33.21	AUG 20	34.21
26	32.22	JAN 21	31.53	MAR 26	32.50	MAY 27	34.01	JUL 28	34.20	SEP 23	34.93

DEDHAM 231 WELL



DOVER 10 WELL



NORFOLK COUNTY--Continued

420432071151201. Foxborough well FXW 3.

LOCATION.--Lat 42°04'32", long 71°15'12", Norfolk County, Hydrologic Unit 01090004, at Foxborough State Hospital, near railroad tracks, 100 ft east of driveway, and 250 ft north of Chestnut Street in Foxborough.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 32 ft, screened 30 to 32 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 290 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.24 ft below land-surface datum, Mar. 25, 1968; lowest measured, 21.42 ft below land-surface datum, Dec. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	17.77	DEC 30	17.17	FEB 26	18.07	APR 29	17.07	JUN 30	19.05	AUG 21	20.37
NOV 26	18.71	JAN 29	17.75	MAR 21	17.95	MAY 28	17.97	JUL 30	19.98	SEP 24	20.77

420545071174001. Norfolk well NNW 27.

LOCATION.--Lat 42°05'45", long 71°17'40", Norfolk County, Hydrologic Unit 01090001, 15 ft northwest of State Highway 1A and 0.1 mi northeast of Valley Street in Norfolk.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 18.4 ft, screened 16.4 to 18.4 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 160 ft above sea level. Measuring point: Top of casing, 1.7 ft above land-surface datum.

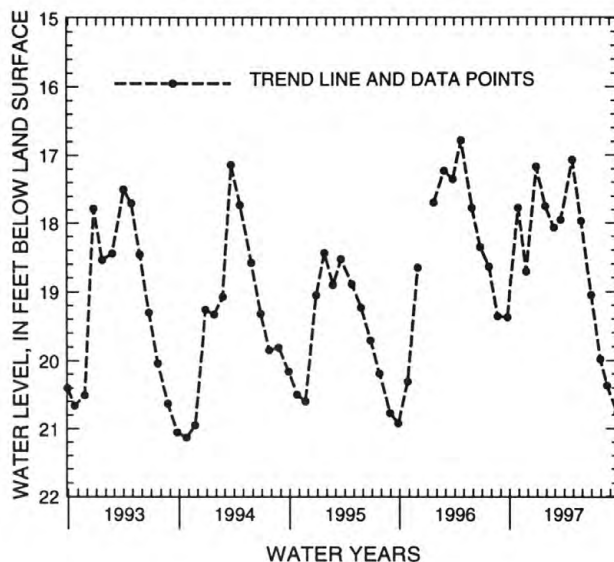
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.20 ft below land-surface datum, Dec. 20, 1986, and Apr. 20, 1987; lowest measured, 7.99 ft below land-surface datum, July 30, 1997.

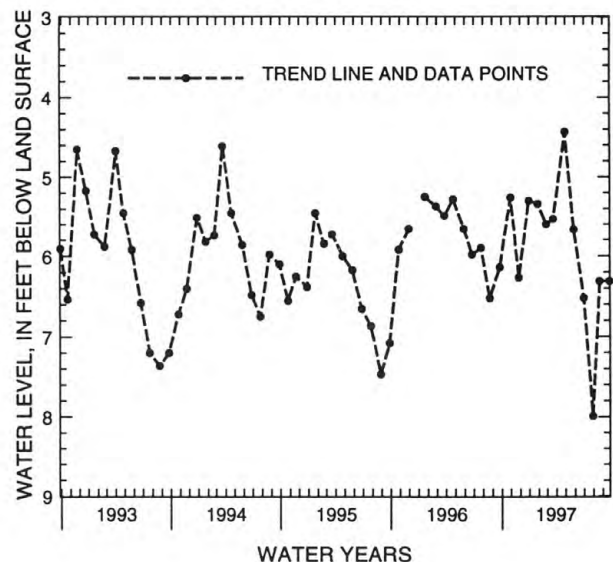
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	5.26	DEC 30	5.30	FEB 26	5.60	APR 29	4.43	JUN 30	6.52	AUG 22	6.31
NOV 26	6.27	JAN 29	5.34	MAR 21	5.53	MAY 28	5.67	JUL 30	7.99	SEP 23	6.31

FOXBOROUGH 3 WELL



NORFOLK 27 WELL



NORFOLK COUNTY--Continued

420954070564501. Weymouth well XGW 2.

LOCATION.--Lat 42°09'54", long 70°56'45", Norfolk County, Hydrologic Unit 01090001, 40 ft south of main gate guard house at U.S. Naval Air Station at Weymouth.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 30 ft, screened 28 to 30 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 180 ft above sea level. Measuring point: Top of casing, 0.45 ft above land-surface datum, 3.0 ft prior to November 1989.

PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.57 ft below land-surface datum, Apr. 2, 1993; lowest measured, 22.63 ft below land-surface datum, Nov. 21, 1980.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	6.52	DEC 26	5.70	FEB 25	7.53	APR 28	7.60	JUN 24	7.65	AUG 20	17.61
26	8.50	JAN 22	7.23	MAR 26	7.36	MAY 27	11.40	JUL 28	9.43	SEP 23	19.74

421147070571901. Weymouth well XGW 3.

LOCATION.--Lat 42°11'47", long 70°57'19", Norfolk County, Hydrologic Unit 01090001, about 100 ft east of State Highway 18 and about 600 ft off State Highway 3 in Weymouth.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 22.3 ft, screened 20.3 to 22.3 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 90 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

REMARKS.--Water level affected by pumping.

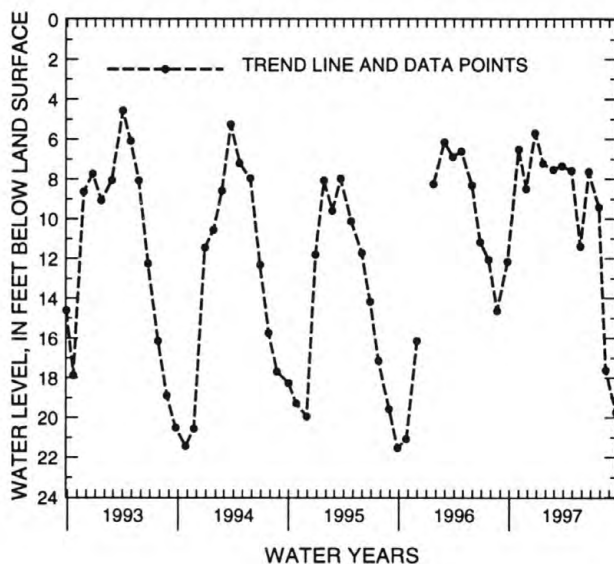
PERIOD OF RECORD.--January 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.91 ft below land-surface datum, Jan. 27, 1978; lowest measured, 18.10 ft below land-surface datum, Sept. 27, 1965.

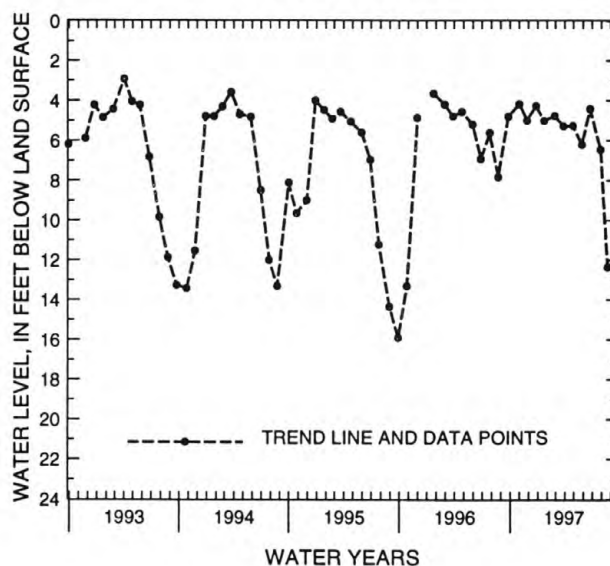
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	4.17	DEC 26	4.26	FEB 25	4.77	APR 28	5.26	JUN 24	4.41	AUG 20	12.35
26	4.98	JAN 21	5.01	MAR 26	5.27	MAY 27	6.20	JUL 28	6.46	SEP 23	12.88

WEYMOUTH 2 WELL



WEYMOUTH 3 WELL



NORFOLK COUNTY--Continued

421120070562801. Weymouth well XGW 4.

LOCATION.--Lat 42°11'20", long 70°56'28", Norfolk County, Hydrologic Unit 01090001, at median strip of State Highway 3 and 0.8 mi south of State Highway 18 in Weymouth.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 22.6 ft, screened 20.6 to 22.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 90 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water-level measured, 4.39 ft below land-surface datum, Apr. 2, 1993; lowest measured, 10.45 ft below land-surface datum, Sept. 27, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	5.67	DEC 26	5.41	FEB 25	6.38	APR 28	6.44	JUN 24	6.55	AUG 20	8.52
26	6.42	JAN 21	6.37	MAR 26	6.61	MAY 27	7.80	JUL 28	7.70	SEP 23	8.61

PLYMOUTH COUNTY

420321070433502. Duxbury well D4W 79.

LOCATION.--Lat 42°03'21", long 70°43'35", Plymouth County, Hydrologic Unit 01090002, 30 ft west of State Highway 3 and about 300 ft north of State Highway 14 in Duxbury.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and silty clay of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 23.5 ft, screened 21.5 to 23.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 55 ft above sea level. Measuring point: Top of casing, 1.5 ft above land-surface datum.

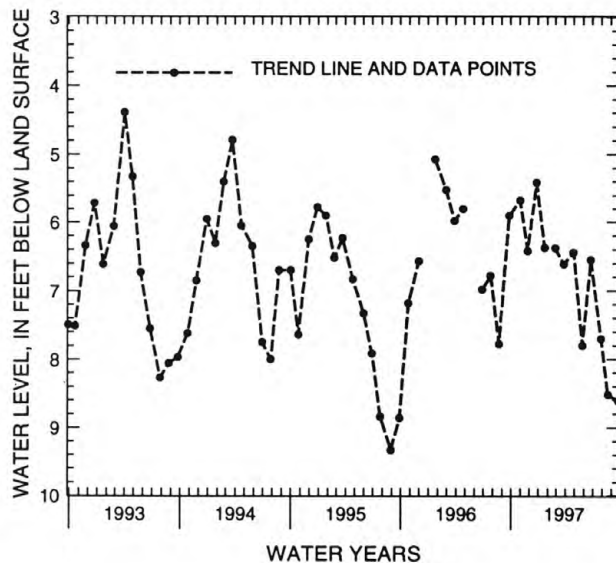
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.10 ft below land-surface datum, Jan. 26, 1978; lowest measured, 10.68 ft below land-surface datum, Sept. 28, 1965.

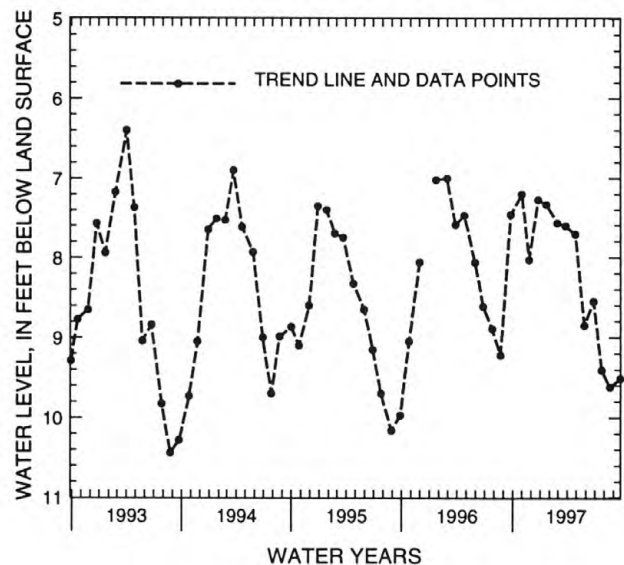
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	7.20	DEC 26	7.27	FEB 27	7.57	APR 28	7.71	JUN 27	8.55	AUG 20	9.62
25	8.03	JAN 22	7.33	MAR 26	7.61	MAY 27	8.85	JUL 24	9.41	SEP 23	9.51

WEYMOUTH 4 WELL



DUXBURY 79 WELL



PLYMOUTH COUNTY--Continued

420317070432901. Duxbury well D4W 80.

LOCATION.--Lat 42°03'17", long 70°43'29", Plymouth County, Hydrologic Unit 01090002, 78 ft south of State Highway 14 and 250 ft east of State Highway 3 in Duxbury.

Owner: The Commonwealth of Massachusetts Department of Public Works.

AQUIFER.--Bedrock.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6.0 in., depth 181 ft, cased to 59 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 65 ft above sea level. Measuring point: Top of hole in concrete cover, at land-surface datum.

PERIOD OF RECORD.--April 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.53 ft below land-surface datum, Jan. 26, 1978; lowest measured, 24.02 ft below land-surface datum, Sept. 28, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	20.68	DEC 26	20.67	FEB 27	20.90	APR 28	21.13	JUN 27	22.07	AUG 20	23.13
25	21.58	JAN 22	20.47	MAR 26	21.60	MAY 27	22.55	JUL 24	22.75	SEP 23	22.95

420056070575701. East Bridgewater well EEW 30.

LOCATION.--Lat 42°00'56", long 70°57'57", Plymouth County, Hydrologic Unit 01090004, about 100 ft north of State Highway 106 and 800 ft west of State Highway 18 in East Bridgewater.

Owner: East Bridgewater Medical Center.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in., depth 24 ft, cased with stone to 24 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 85 ft above sea level. Measuring point: Top of stone casing curb, 2.6 ft above land-surface datum.

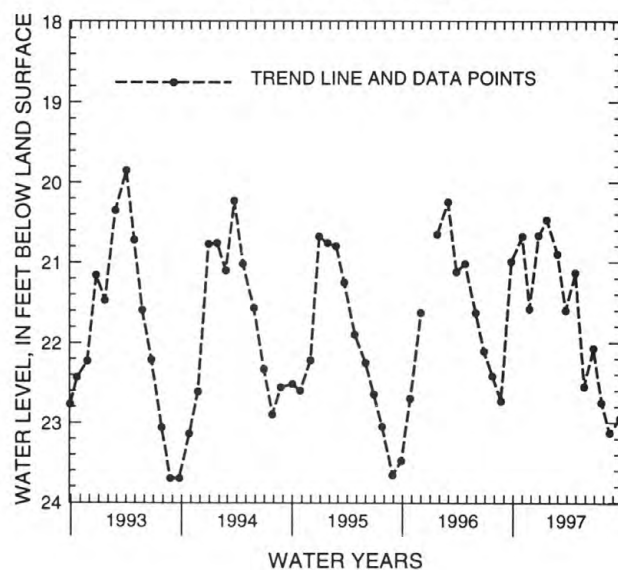
PERIOD OF RECORD.--July 1958 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.26 ft below land-surface datum, Apr. 2, 1993; lowest measured, 17.83 ft below land-surface datum, Dec. 28, 1965.

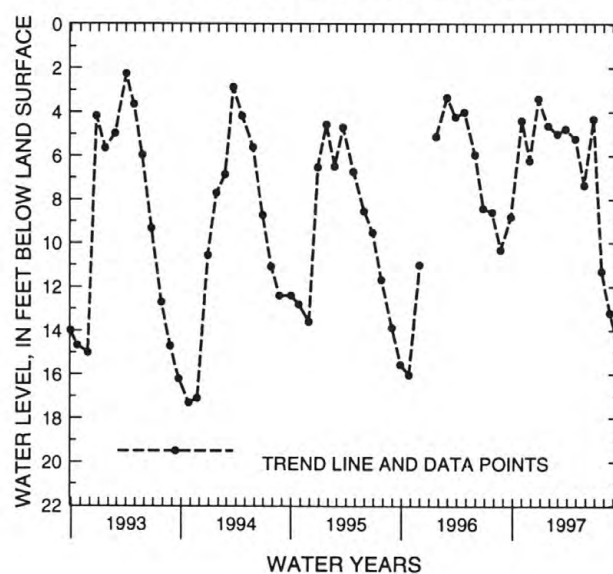
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	4.39	DEC 26	3.41	FEB 27	5.00	APR 28	5.22	JUN 27	4.32	AUG 20	13.20
26	6.21	JAN 27	4.64	MAR 26	4.78	MAY 27	7.35	JUL 24	11.31	SEP 23	14.94

DUXBURY 80 WELL



EAST BRIDGEWATER 30 WELL



PLYMOUTH COUNTY--Continued

415820070522801. Halifax well HBW 97.

LOCATION.--Lat 41°58'20", long 70°52'28", Plymouth County, Hydrologic Unit 01090004, 1,950 ft west of South Street and 130 ft south of River Street in Halifax.

Owner: Private owner.

AQUIFER.--Sandstone interbedded with shale and conglomerate of Carboniferous age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 3.0 in., depth 945 ft, cased to 90 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 35 ft above sea level. Measuring point: Top of casing, 0.5 ft above land-surface datum.

PERIOD OF RECORD.--April 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.30 ft below land-surface datum, Jan. 26, 1978; lowest measured, 6.28 ft below land-surface datum, Sept. 23, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	3.58	DEC 26	3.25	FEB 27	3.72	APR 28	3.73	JUN 27	3.95	AUG 20	5.64
26	3.71	JAN 27	3.47	MAR 26	3.72	MAY 27	4.23	JUL 24	5.23	SEP 23	5.99

420353070520301. Hanson well HGW 76.

LOCATION.--Lat 42°03'53", long 70°52'03", Plymouth County, Hydrologic Unit 01090002, 100 ft south of State Highway 14 and 150 ft west of town hall in Hanson.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 26.6 ft, screened 24.6 to 26.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 71 ft above sea level. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Water level affected by Wampatuck Pond.

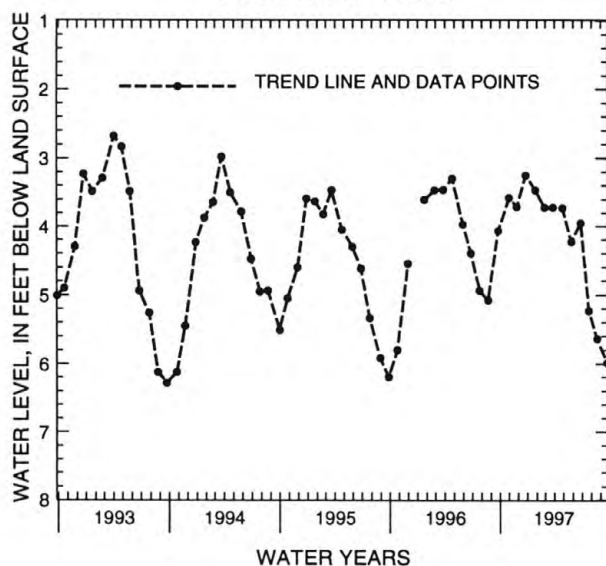
PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.50 ft below land-surface datum, Mar. 26, 1969; lowest measured, 6.53 ft below land-surface datum, Sept. 25, 1980.

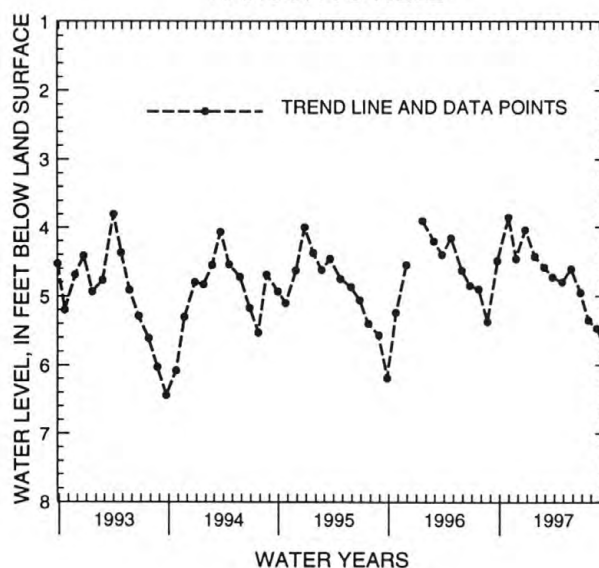
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	3.85	DEC 26	4.04	FEB 27	4.58	APR 28	4.80	JUN 27	4.95	AUG 20	5.47
25	4.46	JAN 27	4.43	MAR 26	4.73	MAY 27	4.61	JUL 24	5.35	SEP 23	5.78

HALIFAX 97 WELL



HANSON 76 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

PLYMOUTH COUNTY--Continued

415228070554601. Lakeville well LKW 14.

LOCATION.--Lat 41°52'28", long 70°55'46", Plymouth County, Hydrologic Unit 01090004, 30 ft west of parking lot at Lakeville State Hospital in Lakeville.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 41 ft, screened 39 to 41 ft.

INSTRUMENTATION.--Monthly measurement with electric tape by observer. Digital recorder (60-min punch) July 1986 to current year.

DATUM.--Elevation of land-surface datum is 105 ft above sea level. Measuring point: Top edge of hole in base of aluminum recorder shelter, 1.5 ft above land-surface datum.

PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

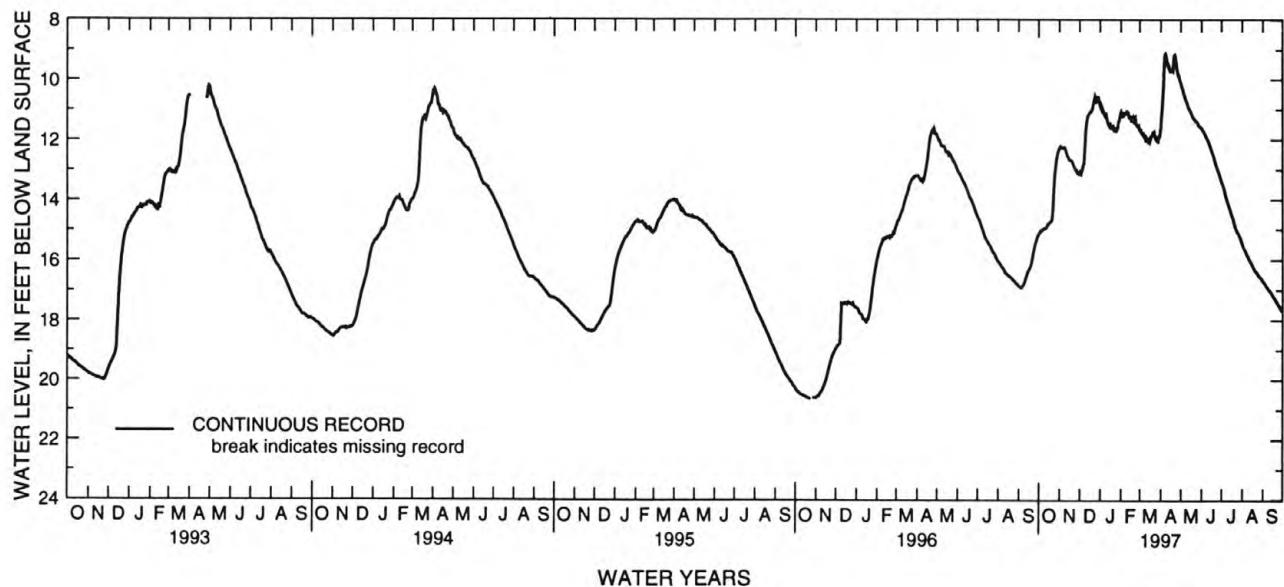
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.08 ft below land-surface datum, Apr. 8, 1997; lowest measured, 23.59 ft below land-surface datum, Oct. 26, 1966.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.12	12.26	13.10	10.86	11.05	11.68	11.56	10.10	11.60	13.40	15.48	16.70
2	15.07	12.22	13.05	10.80	11.12	11.62	11.25	10.21	11.64	13.47	15.54	16.72
3	15.03	12.24	13.11	10.88	11.16	11.76	10.95	10.27	11.68	13.52	15.60	16.74
4	15.04	12.25	13.03	11.03	11.24	11.79	10.62	10.32	11.71	13.59	15.65	16.78
5	15.03	12.25	12.97	11.00	11.13	11.82	10.13	10.46	11.76	13.67	15.67	16.82
6	15.00	12.27	12.84	11.07	11.15	11.74	9.56	10.49	11.81	13.79	15.72	16.86
7	14.97	12.26	12.80	11.15	11.13	11.90	9.16	10.57	11.85	13.89	15.77	16.90
8	14.96	12.25	12.49	11.20	11.09	11.91	9.12	10.65	11.90	13.95	15.82	16.92
9	14.96	12.28	12.02	11.24	11.04	11.97	9.17	10.70	11.95	14.02	15.86	16.96
10	14.95	12.36	11.66	11.19	11.04	11.90	9.31	10.74	11.99	14.09	15.89	16.99
11	14.94	12.42	11.42	11.32	11.07	11.94	9.46	10.83	12.03	14.16	15.94	17.00
12	14.91	12.50	11.30	11.41	11.12	12.00	9.54	10.90	12.10	14.23	16.00	17.03
13	14.87	12.56	11.20	11.47	11.25	12.05	9.51	10.96	12.15	14.29	16.04	17.07
14	14.81	12.59	11.14	11.52	11.25	12.02	9.65	10.99	12.21	14.37	16.08	17.10
15	14.81	12.65	11.12	11.56	11.24	11.97	9.71	11.03	12.30	14.45	16.12	17.14
16	14.77	12.67	11.09	11.50	11.36	12.04	9.70	11.07	12.36	14.52	16.16	17.18
17	14.75	12.67	11.05	11.60	11.36	11.95	9.70	11.14	12.42	14.57	16.21	17.22
18	14.74	12.67	11.05	11.60	11.31	11.87	9.68	11.20	12.49	14.64	16.26	17.24
19	14.71	12.70	11.00	11.61	11.25	11.83	9.70	11.23	12.54	14.73	16.30	17.28
20	14.68	12.74	10.95	11.56	11.36	11.75	9.38	11.26	12.63	14.82	16.34	17.31
21	14.50	12.80	10.84	11.64	11.32	11.74	9.18	11.30	12.71	14.89	16.37	17.36
22	14.13	12.86	10.69	11.61	11.27	11.72	9.16	11.32	12.78	14.95	16.39	17.40
23	13.69	12.91	10.61	11.61	11.46	11.85	9.27	11.37	12.86	15.01	16.41	17.43
24	13.30	12.97	10.53	11.73	11.49	11.95	9.39	11.38	12.94	15.06	16.45	17.47
25	13.04	13.01	10.59	11.59	11.53	11.99	9.61	11.39	12.99	15.09	16.49	17.51
26	12.85	13.00	10.66	11.65	11.52	11.88	9.73	11.43	13.05	15.13	16.51	17.54
27	12.67	13.09	10.58	11.60	11.51	11.96	9.85	11.50	13.12	15.18	16.55	17.59
28	12.51	13.12	10.60	11.37	11.64	12.01	9.84	11.52	13.19	15.23	16.57	17.64
29	12.44	13.13	10.58	11.35	---	11.93	9.96	11.54	13.26	15.28	16.59	17.65
30	12.35	13.14	10.69	11.24	---	11.89	10.06	11.56	13.34	15.36	16.62	17.69
31	12.29	---	10.79	11.10	---	11.78	---	11.57	---	15.42	16.66	---
MEAN	14.25	12.63	11.47	11.36	11.27	11.88	9.76	11.00	12.38	14.48	16.13	17.17
LOW	15.12	13.14	13.11	11.73	11.64	12.05	11.56	11.57	13.34	15.42	16.66	17.69
HIGH	12.29	12.22	10.53	10.80	11.04	11.62	9.12	10.10	11.60	13.40	15.48	16.70

WTR YR 1997 HIGH 9.08 APR 8 LOW 17.72 SEP 30

LAKEVILLE 14 WELL



PLYMOUTH COUNTY--Continued

415433070583302. Middleborough well MTW 82.

LOCATION.--Lat 41°54'33", long 70°58'33", Plymouth County, Hydrologic Unit 01090004, 15 ft southeast of southbound side of Interstate 495 and 435 ft southeast of Puddingshear Brook in Middleborough.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 26.5 ft, screened 24.5 to 26.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 45 ft above sea level. Measuring point: Top of casing, 3.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.50 ft below land-surface datum, Mar. 24, 1983; lowest measured, 17.58 ft below land-surface datum, Oct. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	3.04	DEC 30	3.78	FEB 27	5.54	APR 28	3.58	JUN 30	10.68	AUG 20	15.50
NOV 26	6.51	JAN 29	5.43	MAR 21	6.66	MAY 28	6.75	JUL 30	14.09	SEP 23	16.54

415453070434901. Plymouth well PWW 22.

LOCATION.--Lat 41°54'53", long 70°43'49", Plymouth County, Hydrologic Unit 01090004, 10 ft from northeast corner of main building at Plymouth Airport.
 Owner: U.S. Geological Survey.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in., depth 42 ft, screened 40 to 42 ft; new well drilled at same location August 1990, diameter 2.0 in., depth 40 ft, screened 30-40 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 145 ft above sea level. Measuring point: Top of casing, at land-surface datum.

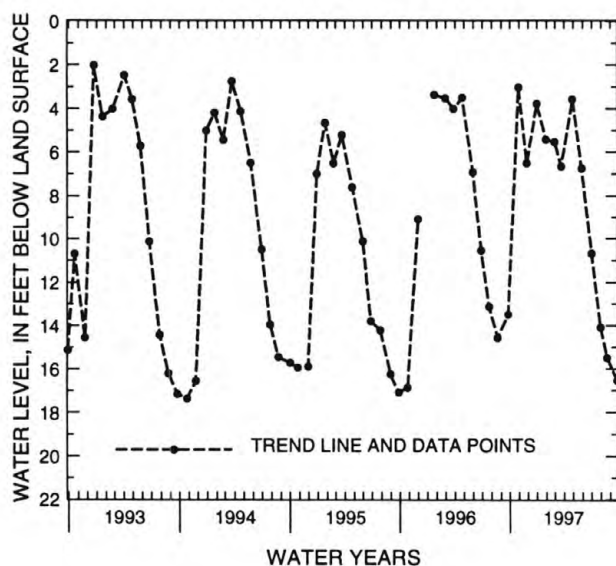
PERIOD OF RECORD.--November 1956 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.82 ft below land-surface datum, May 26, 1958; lowest measured, 28.99 ft below land-surface datum, Jan. 28, 1966.

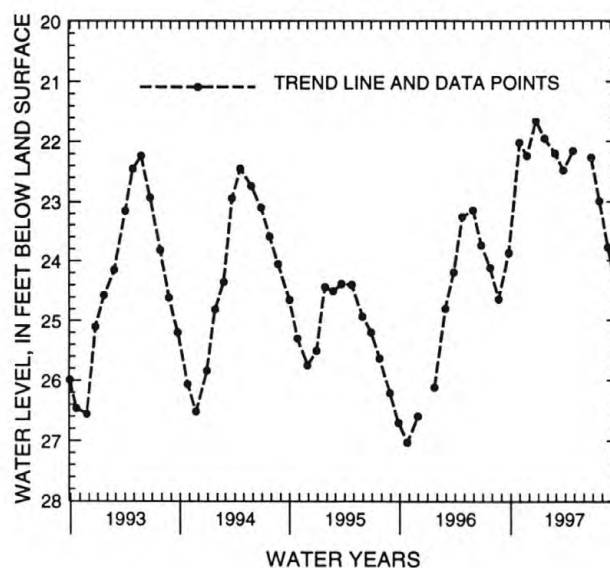
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	22.02	DEC 26	21.65	FEB 27	22.20	APR 28	22.16	JUL 24	23.00	SEP 23	24.59
25	22.24	JAN 23	21.95	MAR 26	22.48	JUN 27	22.27	AUG 20	23.78		

MIDDLEBOROUGH 82 WELL



PLYMOUTH 22 WELL



PLYMOUTH COUNTY--Continued

415217070393102. Plymouth well PW 494.

LOCATION.--Lat 41°52'17", long 70°39'31", Plymouth County, Hydrologic Unit 01090002, in Myles Standish State Forest, in gravel pit 50 ft southeast of intersection of Lower College Pond Road and Crawford Road, approximately five miles northeast of South Carver.

Owner: Massachusetts Department of Environmental Management.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.5 in., depth 47 ft, screened 42 to 47 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 129 ft above sea level. Measuring point: Top of casing, 1.17 ft above land-surface datum.

PERIOD OF RECORD.--August 1985 to current year. Prior to April 1989, three random measurements.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.08 ft below land-surface datum, June 27, 1997; lowest measured, 33.23 ft below land-surface datum, Nov. 24, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 01	28.58	DEC 26	27.89	FEB 27	27.36	APR 28	27.84	JUL 24	26.43	SEP 23	27.28
25	28.56	JAN 23	27.68	MAR 26	27.88	JUN 27	26.08	AUG 20	26.77		

414518070435701. Wareham well WFW 51.

LOCATION.--Lat 41°45'18", long 70°43'57", Plymouth County, Hydrologic Unit 01090002, 50 ft east of U.S. Highway 6 and 100 ft north of Exxon service station in Wareham.

Owner: Private owner.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 9.65 ft, cased with tile to 9.65 ft, open end. Prior to September 1980, well depth was 12.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 21 ft above sea level. Measuring point: Top edge of tile casing, 2.3 ft above land-surface datum.

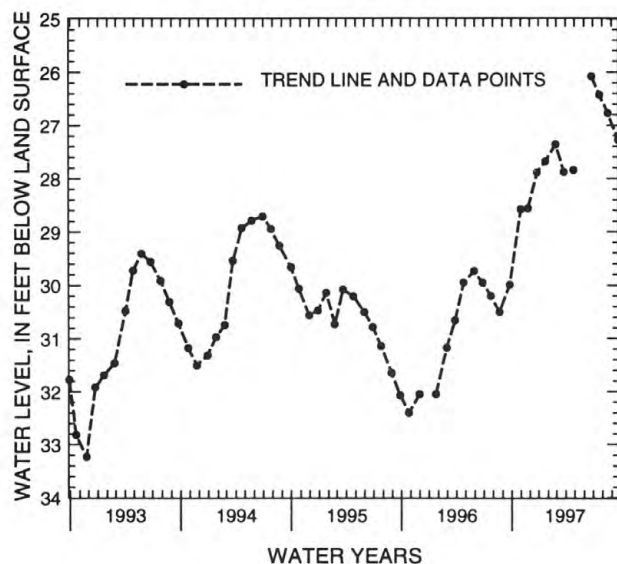
PERIOD OF RECORD.--July 1959 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft below land-surface datum, Jan. 26, 1978; lowest measured, dry, several months in water years 1980-84.

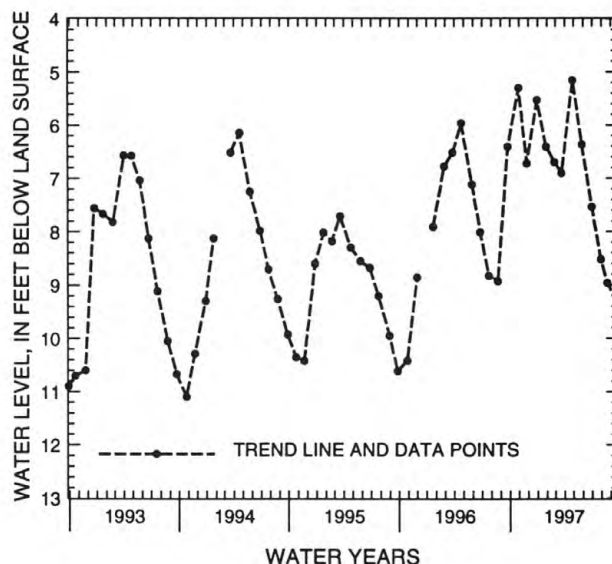
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	5.30	DEC 30	5.53	FEB 26	6.70	APR 28	5.16	JUN 30	7.54	AUG 20	8.96
NOV 26	6.72	JAN 29	6.41	MAR 21	6.90	MAY 28	6.37	JUL 30	8.52	SEP 23	9.31

PLYMOUTH 494 WELL



WAREHAM 51 WELL



SUFFOLK COUNTY

422133071033801. Boston well BGW 925.

LOCATION.--Lat 42°21'33", long 71°03'38", Suffolk County, Hydrologic Unit 01090001, in basement room at Scollay Building, intersection of Court and Tremont Streets in Boston.
Owner: United States Trust.

AQUIFER.--Cambridge slate of Carboniferous age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8.0 in., depth 624 ft, cased to 90 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 35 ft above sea level. Measuring point: Top of casing, 15 ft below land-surface datum.

REMARKS.--Water levels affected by tide and barometric pressure.

PERIOD OF RECORD.--February 1960 to September 1997 (discontinued). Water-level recorder October 1977 to September 1982. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water-level measured, 17.49 ft below measuring point, Jan. 22, 1985; lowest measured, 26.20 ft below measuring point, Oct. 7, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	22.42	JAN 03	22.17	FEB 25	22.61	APR 28	22.59	JUN 26	23.00	AUG 28	23.89
NOV 26	22.11	31	22.35	MAR 27	22.76	MAY 30	22.85	JUL 24	23.23	SEP 29	25.09

WORCESTER COUNTY

422125071440101. Boylston well BKW 87.

LOCATION.--Lat 42°21'25", long 71°44'01", Worcester County, Hydrologic Unit 01070004, about 200 ft south of French Road and 30 ft west of State Route 70 in Boylston, MA.

Owner: Metropolitan District Commission.

AQUIFER.--Glacial till of pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 12.2 ft, screened 2.2 to 12.2 ft.

INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 475 ft above sea level. Measuring point: Top of casing, 2.2 ft above land-surface datum.

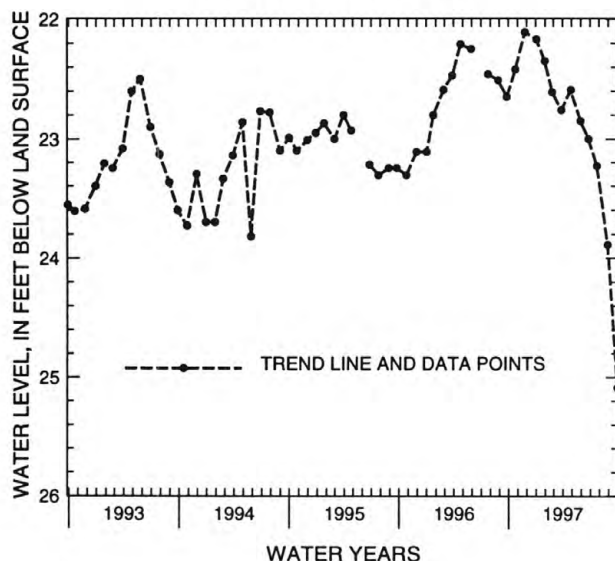
PERIOD OF RECORD.--June 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.84 ft below land-surface datum, Jan. 29, 1996; lowest measured, 9.18 ft below land-surface datum, Aug. 29, 1996

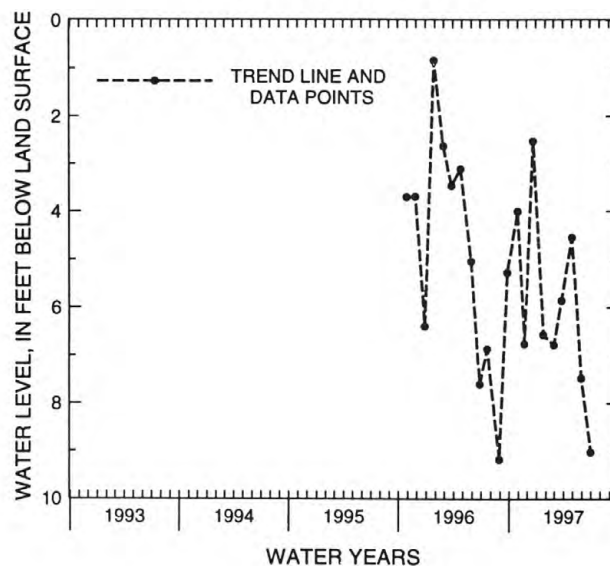
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	4.01	DEC 23	2.53	FEB 28	6.78	APR 30	4.55	JUN 30	9.03	AUG 26	dry
NOV 22	6.76	JAN 24	6.57	MAR 25	5.86	MAY 30	7.48	JUL 31	dry	SEP 30	dry

BOSTON 925 WELL



BOYLSTON 87 WELL



WORCESTER COUNTY--Continued

422058072085501. Hardwick well HHW 1.

LOCATION.--Lat 42°20'58", long 72°08'55", Worcester County, Hydrologic Unit 01080204, 30 ft southeast of State Highway 32 and 0.6 mi southwest of Hardwick Road in Hardwick.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 33.2 ft, screened 31.2 to 33.2 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 580 ft above sea level. Measuring point: Top of casing, 3.5 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.21 ft below land-surface datum, Apr. 21, 1983; lowest measured, 17.77 ft below land-surface datum, Nov. 22, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	14.86	NOV 25	13.98	DEC 24	9.97	JAN 24	12.82	FEB 25	12.83	MAR 24	12.84
APR 25	10.61	MAY 23	12.89	JUN 25	14.62	AUG 30	16.03	SEP 26	16.45		

422020072145901. Hardwick well HHW 31.

LOCATION.--Lat 42°20'20", long 72°14'59", Worcester County, Hydrologic Unit 01080204, 5 ft north of Patrill Hollow Road and approximately 250 ft west of Muddy Brook in Hardwick.

Owner: Town of Hardwick.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 71.0 ft, screened 67.0 ft to 71.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 490 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

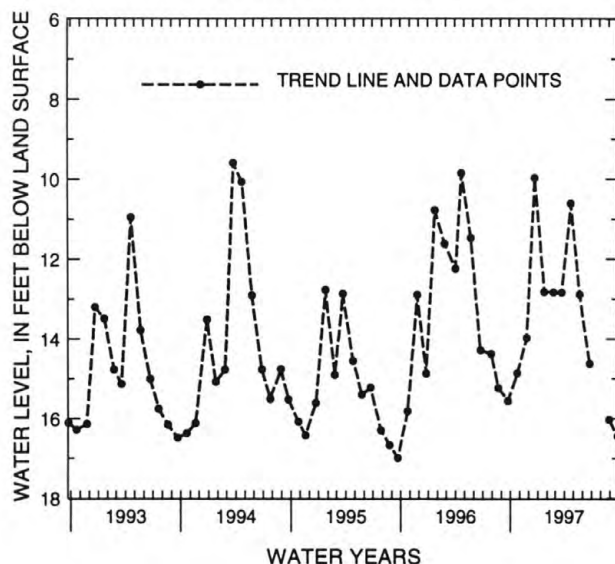
PERIOD OF RECORD.--November 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.08 ft below land-surface datum, Apr. 22, 1994; lowest measured, 12.00 ft below land-surface datum, Nov. 25, 1984.

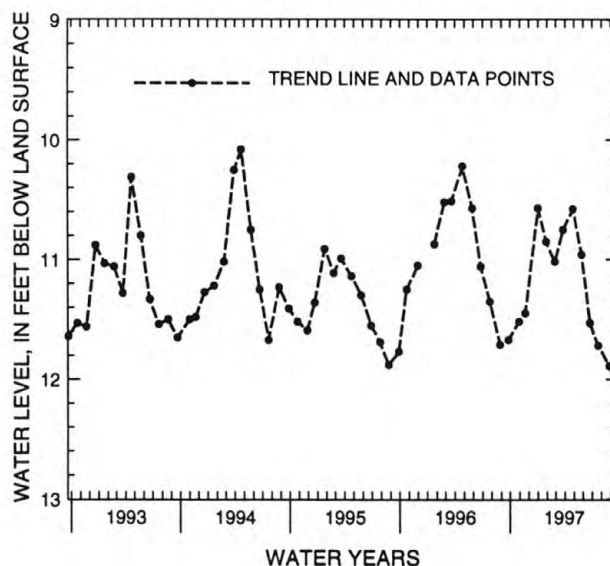
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	11.52	JAN 02	10.57	FEB 26	11.02	APR 28	10.58	JUN 24	11.53	AUG 28	11.89
NOV 20	11.45	28	10.85	MAR 26	10.75	MAY 27	10.96	JUL 21	11.72	SEP 23	12.08

HARDWICK 1 WELL



HARDWICK 31 WELL



WORCESTER COUNTY--Continued

422102071501401. Holden well HRW 169.

LOCATION.--Lat 42°21'02", long 71°50'14", Worcester County, Hydrologic Unit 01070004, about 50 ft west of intersection of Union and Malden Streets in Holden, MA.

Owner: Metropolitan District Commission.

AQUIFER.--Glacial till of pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well with well pipe inserted, diameter 2.0 in., depth 10.5 ft, screened 0.5 to 10.5 ft.

INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 670 ft above sea level. Measuring point: Top of casing, 0.5 ft above land-surface datum.

PERIOD OF RECORD.--June 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.33 ft below land-surface datum, Dec. 23, 1996; lowest measured, 7.97 ft below land-surface datum, Sept. 22, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	1.83	DEC 23	.33	FEB 28	1.23	APR 30	.66	JUN 30	3.07	AUG 26	5.88
NOV 22	2.00	JAN 24	1.25	MAR 25	1.23	MAY 30	1.42	JUL 21	4.74	SEP 30	7.30

420610071421402. Northbridge well NXW 54.

LOCATION.--Lat 42°06'10", long 71°42'14", Worcester County, Hydrologic Unit 01090003, about 100 ft northeast of the intersection of State Highway 146 and Main Street in Northbridge.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2 in., depth 12 ft, screened 10 to 12 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 370 ft above sea level. Measuring point: Top of casing, 2.87 ft above land-surface datum, 2.0 ft prior to September 1992.

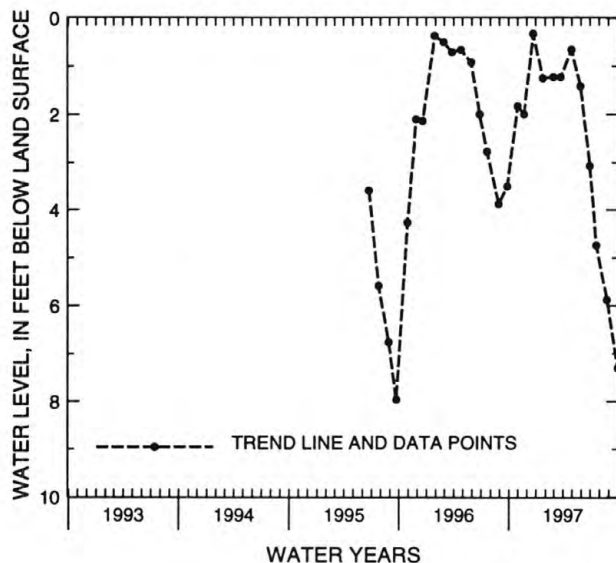
PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.09 ft below land-surface datum, Dec. 24, 1996; lowest measured, 5.14 ft below land-surface datum, Oct. 22, 1986.

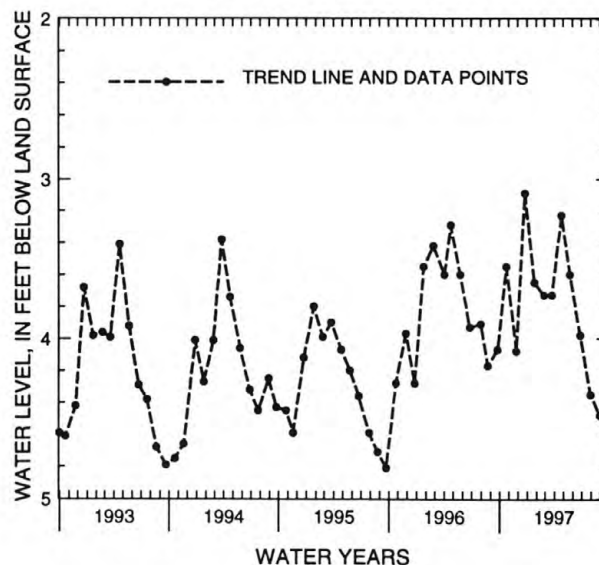
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	3.55	DEC 24	3.09	FEB 25	3.73	APR 25	3.23	JUN 25	3.98	AUG 30	4.48
NOV 25	4.08	JAN 24	3.65	MAR 24	3.73	MAY 23	3.60	JUL 30	4.35	SEP 26	4.62

HOLDEN 169 WELL



NORTHBRIDGE 54 WELL



WORCESTER COUNTY--Continued

422906072124301. Petersham well PHW 16.

LOCATION.--Lat 42°29'06", long 72°12'43", Worcester County, Hydrologic Unit 01080204, 0.6 mi east of West Street Cemetery, 500 ft south of West Street, and 100 ft west of access road in Petersham.
 Owner: Private owner.

AQUIFER.--Glacial sand and gravel of the Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0-inch PVC, depth 39.0 ft, screened 29.0 to 39.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 790 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.71 ft below land-surface datum, June 5, 1984; lowest measured, 16.53 ft below land-surface datum, Oct. 24, 1984.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	13.23	JAN 02	8.71	FEB 26	13.66	APR 28	10.74	JUN 24	14.52	AUG 28	15.62
NOV 20	12.17	28	13.35	MAR 26	13.37	MAY 27	13.44	JUL 21	15.11	SEP 23	15.86

422636071503601. Princeton well PYW 64.

LOCATION.--Lat 42°26'36", long 71°50'36", Worcester County, Hydrologic Unit 01070004, on north side of State Rt 62 and about 100 ft east of Thomas Prince School in Princeton, MA.

Owner: Metropolitan District Commission.

AQUIFER.--Glacial sand and gravel of pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 21.9 ft, screened 11.9 to 21.9 ft.

INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 695 ft above sea level. Measuring point: Top of casing, 2.2 ft above land-surface datum.

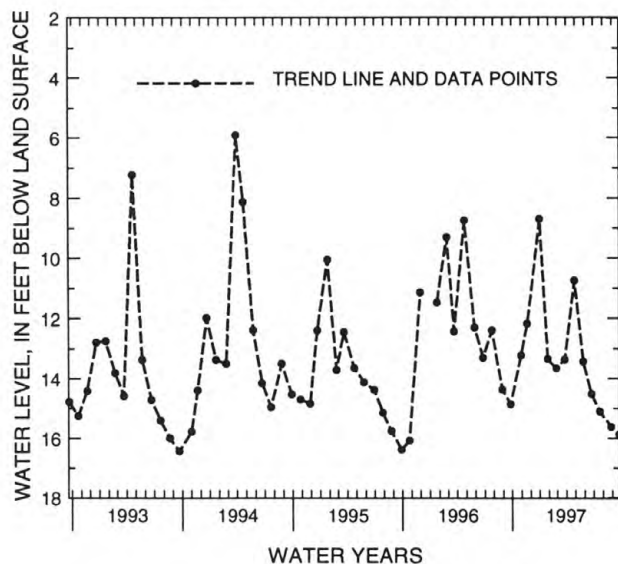
PERIOD OF RECORD.--June 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.95 ft below land-surface datum, Jan. 29, 1996; lowest measured, 18.22 ft below land-surface datum, Sept. 26, 1996.

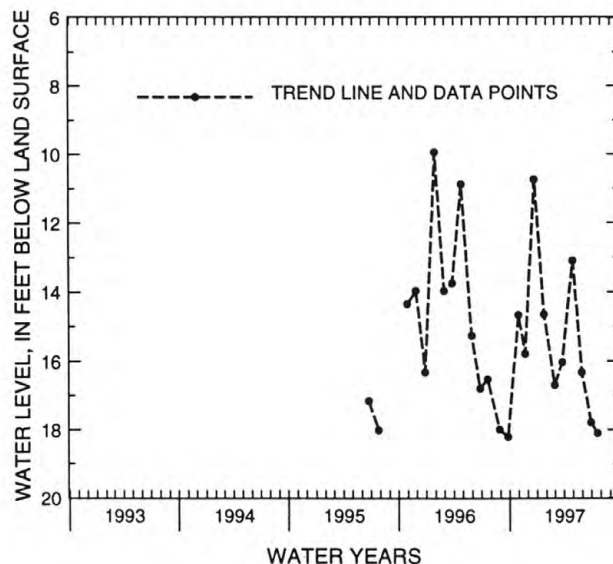
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	14.68	DEC 23	10.74	FEB 28	16.70	APR 30	13.10	JUN 30	17.80	AUG 26	dry
NOV 22	15.80	JAN 24	14.66	MAR 25	16.04	MAY 30	16.33	JUL 21	18.11	SEP 30	dry

PETERSHAM 16 WELL



PRINCETON 64 WELL



WORCESTER COUNTY--Continued

422805071480801. Sterling well SYW 1.

LOCATION.--Lat 42°28'05", long 71°48'08", Worcester County, Hydrologic Unit 01070004, 45 ft northeast of Justice Hill Road and 0.8 mi west of South Nelson Road in Sterling.

Owner: Private owner.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in., depth 15 ft, cased with stone to 15 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 710 ft above sea level. Measuring point: Top edge of angle iron, at land-surface datum.

PERIOD OF RECORD.--May 1947 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.66 ft below land-surface datum, Mar. 26, 1969; dry, Nov. 28, 1964.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	2.89	DEC 24	2.76	FEB 25	2.22	APR 25	2.68	JUN 25	5.69	SEP 26	10.17
NOV 25	3.23	JAN 24	3.10	MAR 24	2.55	MAY 23	2.90	AUG 30	8.06		

422520071483001. Sterling well SYW 177.

LOCATION.--Lat 42°25'20", long 71°48'30", Worcester County, Hydrologic Unit 01070004, 20 ft east of State Route 140 and 200 ft northwest of Fox Run Road in Sterling, MA.

Owner: Metropolitan District Commission.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 24.4 ft, screened 14.4 to 24.4 ft.

INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 505 ft above sea level. Measuring point: Top of casing, 2.2 ft above land-surface datum.

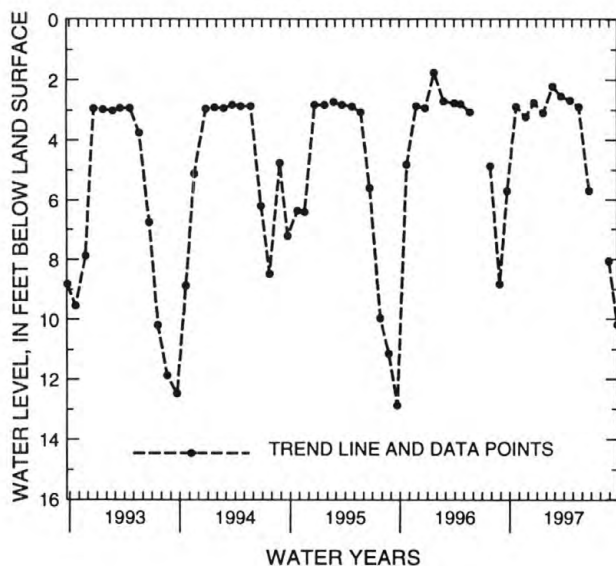
PERIOD OF RECORD.--June 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.40 ft below land-surface datum, Jan. 29, 1996; lowest measured, 15.79 ft below land-surface datum, Sept. 22, 1995.

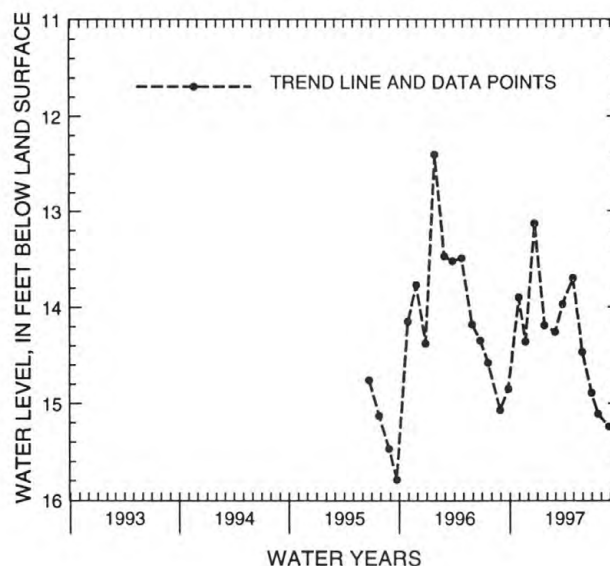
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	13.90	DEC 23	13.13	FEB 28	14.26	APR 30	13.70	JUN 30	14.89	AUG 26	15.24
NOV 22	14.36	JAN 24	14.19	MAR 25	13.97	MAY 30	14.47	JUL 21	15.11	SEP 30	15.35

STERLING 1 WELL



STERLING 177 WELL



WORCESTER COUNTY--Continued

23717072043101. Templeton well TMW 3.

LOCATION.--Lat 42°37'17", long 72°04'31", Worcester County, Hydrologic Unit 01080202, 60 ft east of U.S. Highway 202 and 0.2 mi south of Winchendon town line in Templeton.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.25 in., depth 14 ft, screened 12 to 14 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 900 ft above sea level. Measuring point: Top of casing, 4.2 ft above land-surface datum.

PERIOD OF RECORD.--December 1957 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.99 ft below land-surface datum, Jan. 25, 1996; lowest measured, 5.10 ft below land-surface datum, Sept. 29, 1964.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	3.08	DEC 24	2.80	FEB 25	3.36	APR 25	3.07	JUN 25	4.16	AUG 30	4.05
NOV 25	3.60	JAN 24	3.55	MAR 24	3.56	MAY 23	3.35	JUL 29	4.38	SEP 26	4.34

420314071514001. Webster well WLW 1.

LOCATION.--Lat 42°03'14", long 71°51'40", Worcester County, Hydrologic Unit 01100001, 100 ft east of State Highway 52 and 100 ft south of Memorial Beach Drive in Webster.

Owner: Town of Webster.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in., depth 27.0 ft, cased to 27.0 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 500 ft above sea level. Measuring point: Top of casing, 3.4 ft above land-surface datum.

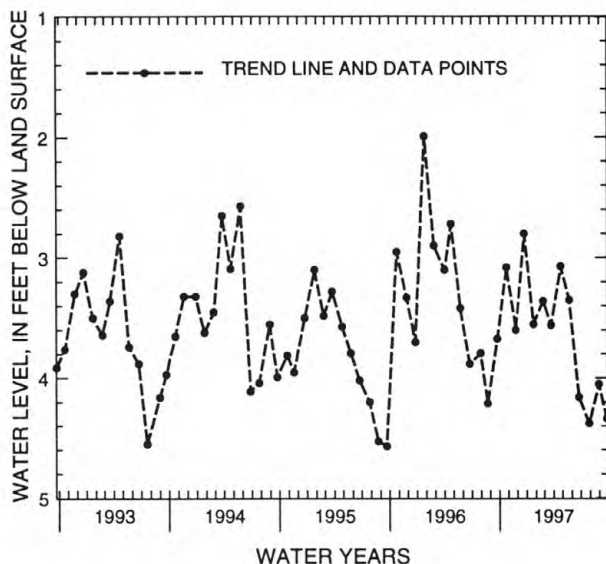
PERIOD OF RECORD.--September 1958 to November 1979, October 1981 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.28 ft below land-surface datum, Mar. 25, 1968; lowest measured, 17.90 ft below land-surface datum, Dec. 20, 1965

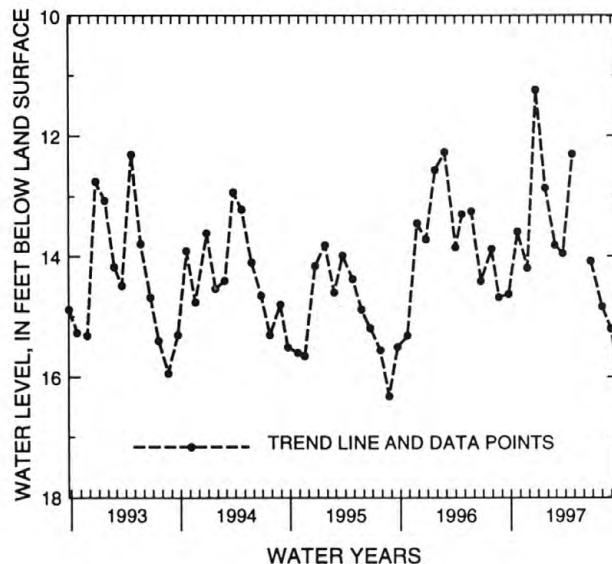
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	13.59	DEC 24	11.24	FEB 25	13.81	APR 25	12.30	AUG 01	14.83	SEP 26	15.92
NOV 25	14.19	JAN 24	12.86	MAR 24	13.95	JUN 25	14.08	30	15.20		

TEMPLETON 3 WELL



WEBSTER 1 WELL



WORCESTER COUNTY--Continued

422341071464901. West Boylston well WSW 26.

LOCATION.--Lat 42°23'41", long 71°46'49", Worcester County, Hydrologic Unit 01070004, 50 ft west of Prescott Street and about 0.2 mi south of Pleasant Street in West Boylston, MA.

Owner: Metropolitan District Commission.

AQUIFER.--Glacial sand and gravel of pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 16.8 ft, screened 6.8 to 16.8 ft. INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 485 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--June 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.30 ft below land-surface datum, Jan. 29, 1996; lowest measured, 10.68 ft below land-surface datum, Sept. 30, 1997.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	3.62	DEC 23	2.17	FEB 28	5.29	APR 30	3.35	JUN 30	7.10	AUG 26	9.31
NOV 22	4.88	JAN 24	4.71	MAR 25	4.92	MAY 30	5.58	JUL 21	8.38	SEP 30	10.68

422130071473601. West Boylston well WSW 27.

LOCATION.--Lat 42°21'30", long 71°47'36", Worcester County, Hydrologic Unit 01070004, 200 ft east of Prospect Street and about 500 ft south of Wachusett Country Club building in West Boylston, MA.

Owner: Metropolitan District Commission.

AQUIFER.--Glacial till of pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 25.0 ft, screened 15.0 to 25.0 ft.

INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 680 ft above sea level. Measuring point: Top of casing, 3.6 ft above land-surface datum.

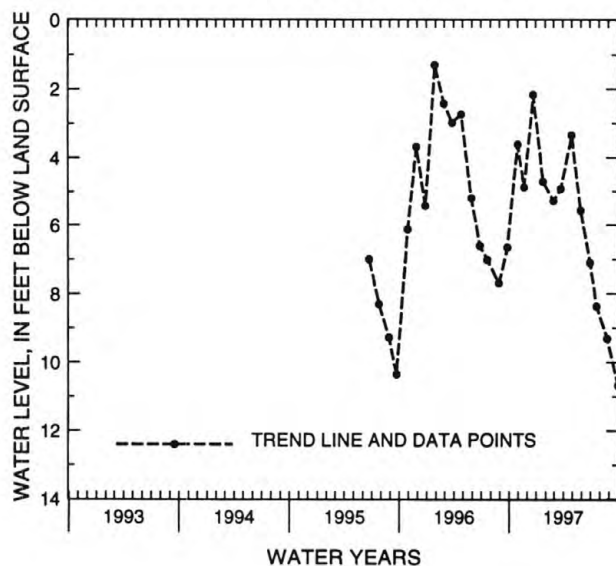
PERIOD OF RECORD.--June 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.50 ft below land-surface datum, Jan. 29, 1996; lowest measured, 22.53 ft below land-surface datum, Sept. 22, 1995.

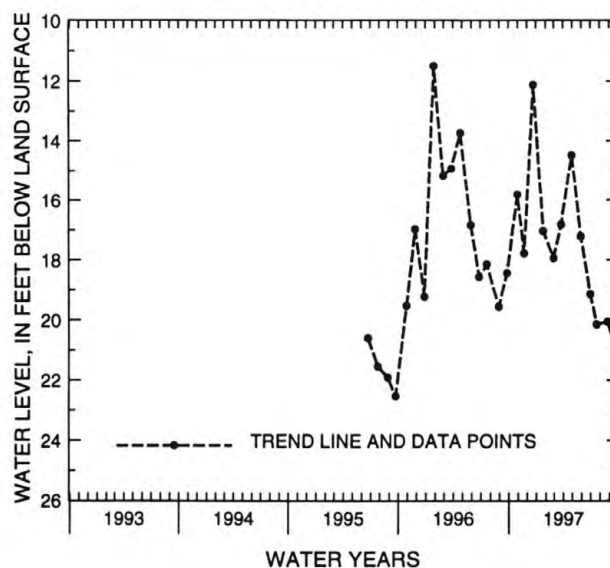
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	15.82	DEC 23	12.13	FEB 28	17.94	APR 30	14.48	JUN 30	19.15	AUG 26	20.06
NOV 22	17.78	JAN 24	17.04	MAR 25	16.82	MAY 30	17.21	JUL 21	20.15	SEP 30	21.06

WEST BOYLSTON 26 WELL



WEST BOYLSTON 27 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

WORCESTER COUNTY--Continued

422334071444201. West Boylston well WSW 28.

LOCATION.--Lat 42°23'34", long 71°44'42", Worcester County, Hydrologic Unit 01070004, 15 ft southeast of State Route 110 and 1.9 mi northeast of intersection of State Routes 110 and 12 in West Boylston, MA.

Owner: Metropolitan District Commission.

AQUIFER.--Glacial sand and clay of pleistocene age.

WELL CHARACTERISTICS.--Augured observation water-table well, diameter 2.0 in., depth 29.4 ft, screened 19.4 to 29.4 ft.

INSTRUMENTATION.--Monthly or more frequent measurements with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 525 ft above sea level. Measuring point: Top of casing, 2.6 ft above land-surface datum.

PERIOD OF RECORD.--June 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.50 ft below land-surface datum, June 30, 1997; lowest measured, 21.16 ft below land-surface datum, Sept. 30, 1997.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 31	11.65	DEC 23	10.35	FEB 28	11.78	APR 30	11.27	JUN 30	7.50	AUG 26	19.79
NOV 22	13.01	JAN 24	12.75	MAR 25	12.39	MAY 30	11.87	JUL 21	18.80	SEP 30	21.16

421410072081301. West Brookfield well WUW 2.

LOCATION.--Lat 42°14'10", long 72°08'13", Worcester County, Hydrologic Unit 01080204, about 50 ft north of State Highway 9 and about 500 ft south of State Highway 67 in West Brookfield.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augured observation water-table well, diameter 1.25 in., depth 43.0 ft, screened 40 to 43 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 630 ft above sea level. Measuring point: Top of casing, 0.3 ft above land-surface datum.

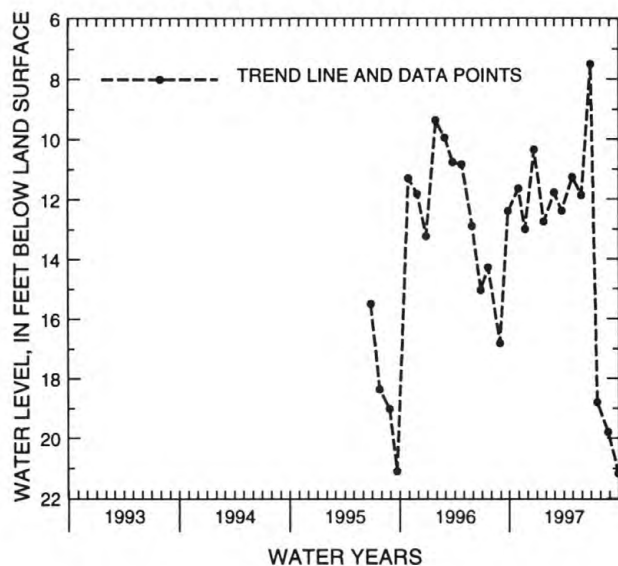
PERIOD OF RECORD.--October 1959 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.79 ft below land-surface datum, May 22, 1983; lowest measured, 23.63 ft below land-surface datum, Feb. 21, 1966.

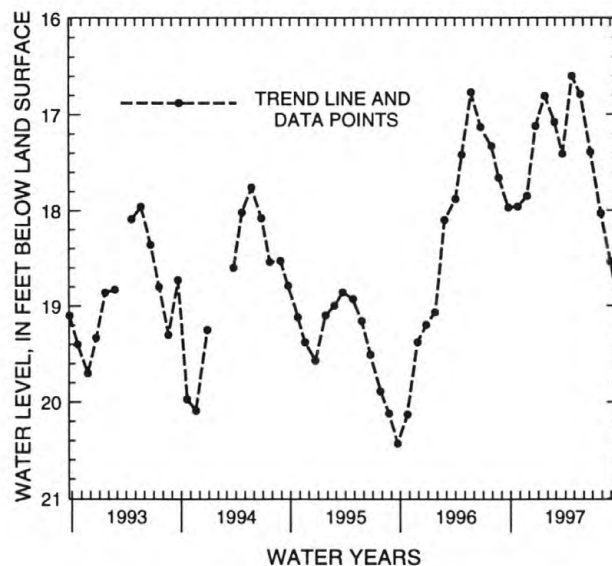
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	17.96	DEC 24	17.12	FEB 25	17.08	APR 25	16.60	JUN 25	17.39	AUG 30	18.54
NOV 25	17.85	JAN 24	16.81	MAR 24	17.41	MAY 23	16.79	JUL 29	18.03	SEP 26	19.03

WEST BOYLSTON 28 WELL



WEST BROOKFIELD 2 WELL



WORCESTER COUNTY--Continued

421522072113401. West Brookfield well WUW 10.

LOCATION.--Lat 42°15'22", long 72°11'34", Worcester County, Hydrologic Unit 01080204, 15 ft east of Coy Hill Road and 1,850 ft south of State Highway 9 in West Brookfield.

Owner: The Commonwealth of Massachusetts Department of Public Works.

AQUIFER.--Brimfield schist.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.5 in., depth 64.5 ft, cased to 40 ft, open hole.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 833.23 ft above sea level. Measuring point: Top of casing, 2.85 ft above land-surface datum.

PERIOD OF RECORD.--October 1970 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.32 ft below land-surface datum, Mar. 25, 1994; lowest measured, 12.36 ft below land-surface datum, Nov. 20, 1985.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	5.28	DEC 24	1.64	FEB 25	3.50	APR 25	2.22	JUN 25	7.15	AUG 30	10.80
NOV 25	5.43	JAN 24	4.00	MAR 24	3.62	MAY 23	3.28	JUL 31	9.49	SEP 26	11.65

424204072015201. Winchendon well XNW 13.

LOCATION.--Lat 42°42'04", long 72°01'52", Worcester County, Hydrologic Unit 01080202, about 50 ft east of Forristall Road, 0.2 mi north of Elmwood Road, and 1.6 mi northeast of Winchendon.

Owner: Private owner.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in., depth 12 ft, cased with stone to 12 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 1,209.36 ft above sea level. Measuring point: Top of extension pipe, 3.8 ft above land-surface datum.

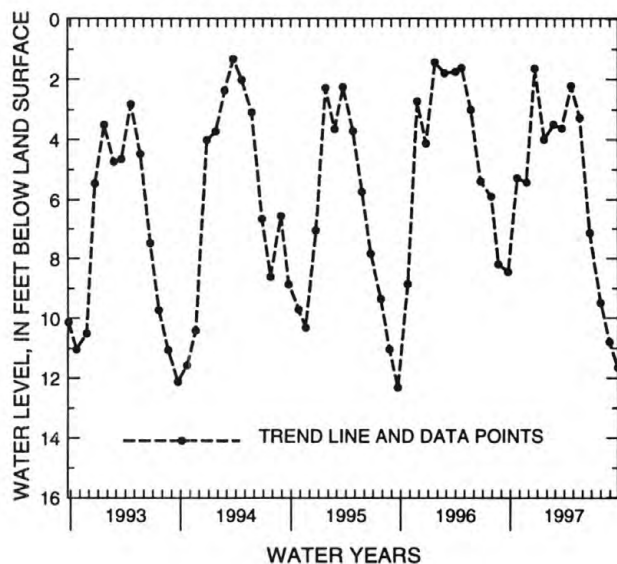
PERIOD OF RECORD.--October 1939 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.86 ft below land-surface datum, Mar. 20, 1948; lowest measured, 13.50 ft below land-surface datum, Nov. 19, 1993.

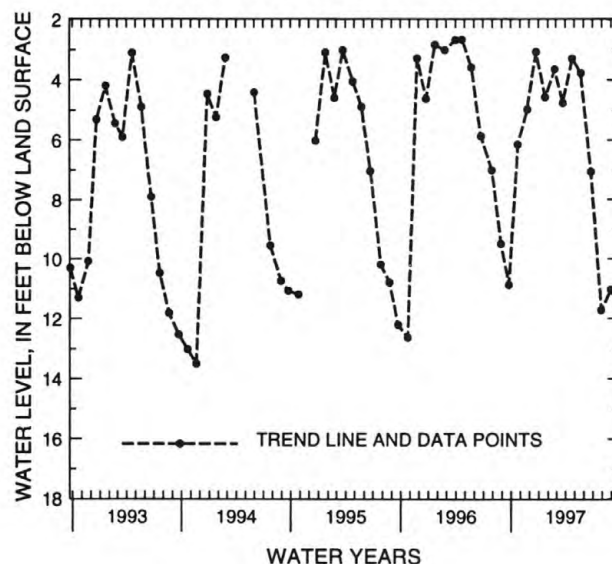
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	6.15	DEC 24	3.07	FEB 25	3.64	APR 25	3.29	JUN 25	7.05	AUG 30	11.03
NOV 25	4.97	JAN 24	4.57	MAR 24	4.76	MAY 23	3.77	JUL 29	11.73	SEP 26	11.62

WEST BROOKFIELD 10 WELL



WINCHENDON 13 WELL



GROUND-WATER LEVELS IN MASSACHUSETTS

WORCESTER COUNTY--Continued

421538071451301. Worcester well XSW 274.

LOCATION.--Lat 42°15'38", long 71°45'13", Worcester County, Hydrologic Unit 01090003, about 300 ft north of Hamilton Street and about 300 ft east of North Lake Avenue in Worcester.

Owner: U.S. Geological Survey.

AQUIFER.--Glacial sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in., depth 54.6 ft, screened 52.6 to 54.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 400 ft above sea level. Measuring point: Top of casing, 3.0 ft above land-surface datum.

REMARKS.--Water levels affected by Lake Quinsigamond.

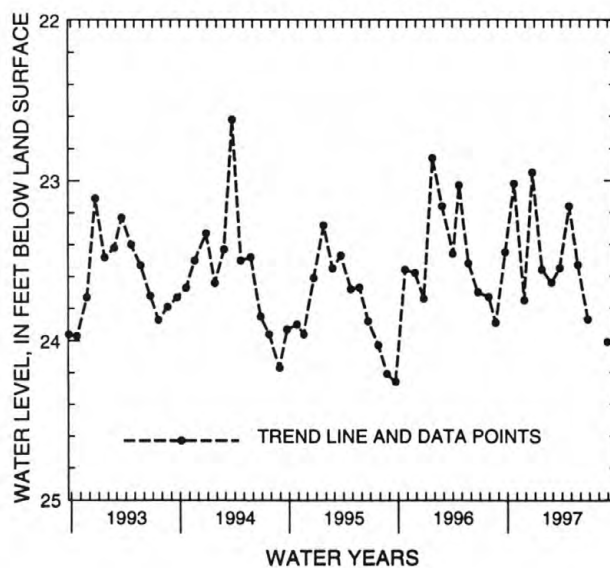
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.23 ft below land-surface datum, Mar. 27, 1972; lowest measured, 24.70 ft below land-surface datum, Oct. 26, 1983.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	23.02	DEC 24	22.95	FEB 25	23.64	APR 25	23.16	JUN 25	23.87	SEP 26	24.00
NOV 25	23.75	JAN 24	23.56	MAR 24	23.55	MAY 23	23.53	AUG 30	24.01		

WORCESTER 274 WELL



KENT COUNTY

414223071453701. Coventry well COW 342.

LOCATION.--Lat 41°42'23", long 71°45'37", Kent County, Hydrologic Unit 01090004, town of Coventry, Plainfield Pike.
(Rt. 14) 1/4 mile from intersection with Rt. 117.

Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 13.1 ft, cased with stone to 13.1 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 380 ft. Measuring point: Spray painted arrow on rock, 1.89 ft above land-surface datum.

PERIOD OF RECORD.--October 1953 to December 1961, December 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.20 ft below land-surface datum, Dec. 22, 1992; lowest measured, 11.90 ft below land-surface datum, Sep. 26, 1957.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	8.10	DEC 26	6.25	FEB 27	8.08	APR 28	7.33	JUN 23	10.05	AUG 25	10.83
NOV 26	8.59	JAN 30	7.27	MAR 21	7.82	MAY 20	8.73	JUL 24	11.17	SEP 25	11.43

414022071332801. Coventry well COW 411.

LOCATION.--Lat 41°40'22", long 71°33'28", Kent County, Hydrologic Unit 01090004, town of Coventry, about 75 ft west of house on Powhattan Avenue, 1.3 mi southeast of Washington.

Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in., depth 26 ft, cased with concrete to 26 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 260 ft. Measuring point: Hole in top of concrete cover, 1.24 ft above land-surface datum.

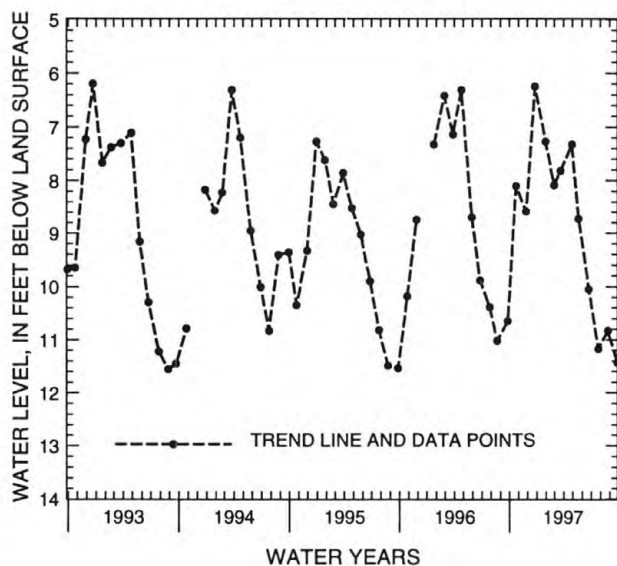
PERIOD OF RECORD.--October 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.43 ft below land-surface datum, Apr. 23, 1983; dry on Oct. 25, 1986.

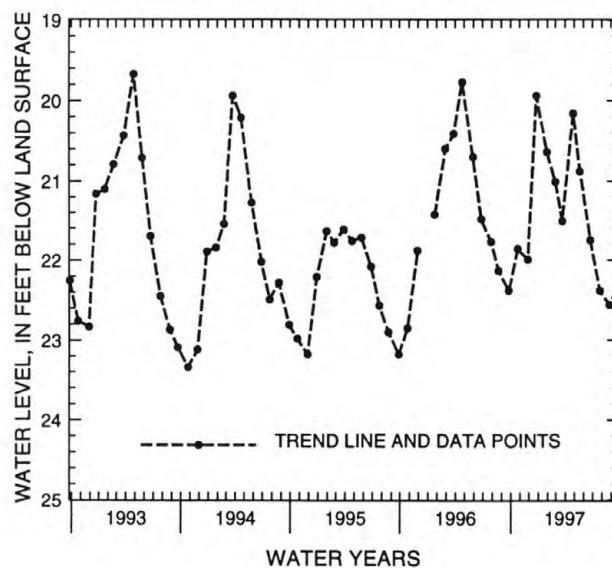
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	21.86	DEC 26	19.94	FEB 27	21.01	APR 28	20.16	JUN 23	21.75	AUG 26	22.56
NOV 26	21.99	JAN 30	20.64	MAR 21	21.51	MAY 20	20.88	JUL 24	22.38	SEP 25	22.30

COVENTRY 342 WELL



COVENTRY 411 WELL



KENT COUNTY--Continued

414315071410701. Coventry well COW 466.

LOCATION.--Lat 41°43'15", long 71°41'07", Kent County, Hydrologic Unit 01090004, town of Coventry, Audubon Society, Parker Woodland. Maple Valley Road at Flat River.

Owner: Audubon Society.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 17.8 ft, cased to 7.6 ft, screened from 7.6 ft to 17.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 345 ft. Measuring point: Notch in PVC casing, 0.8 ft above land-surface datum.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.91 ft below land-surface datum, Nov. 20, 1995; lowest measured, 5.19 ft below land-surface datum, Aug. 28, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	2.53	DEC 23	2.55	FEB 24	2.77	APR 22	2.58	JUN 25	3.38	AUG 22	3.37
NOV 27	2.53	JAN 21	2.83	MAR 25	2.61	MAY 22	2.83	JUL 23	4.99	SEP 24	4.61

414106071223901. Warwick well WCW 59.

LOCATION.--Lat 41°41'06", long 71°22'39", Kent County, Hydrologic Unit 01090004, town of Warwick, Warwick Neck, Our Lady of Providence Seminary. Former Senator Aldrich mansion. Next to Rocky Point Amusement Park.

Owner: Our Lady of Providence Seminary.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 27.0 ft, cased with stone to 27.0 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 125 ft. Measuring point: Spray painted arrow on rock, 3.00 ft above land-surface datum.

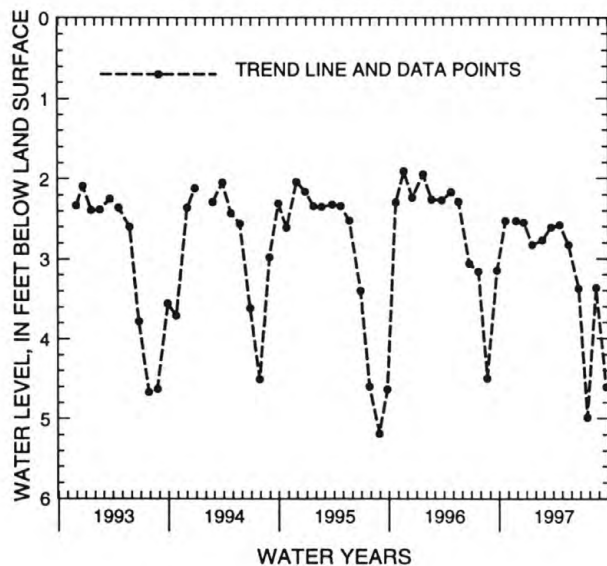
PERIOD OF RECORD.--April 1949 to December 1955, November 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.46 ft below land-surface datum, Feb. 20, 1993; lowest measured, 24.77 ft below land-surface datum, Oct. 31, 1949.

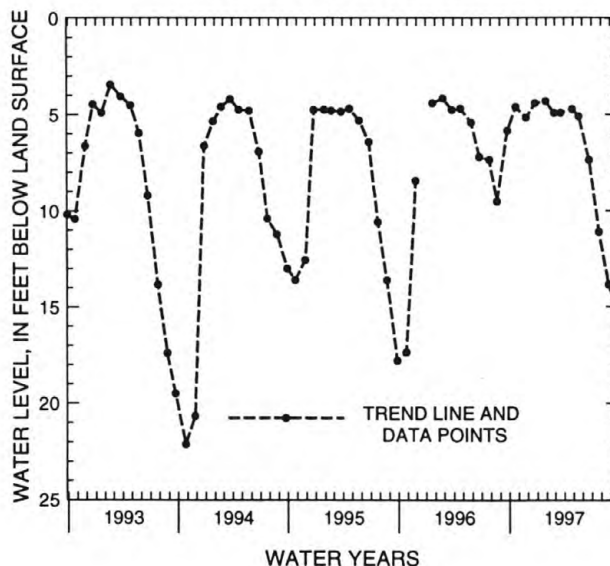
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	4.62	DEC 26	4.43	FEB 26	4.93	APR 29	4.74	JUN 23	7.37	AUG 26	13.85
NOV 26	5.18	JAN 30	4.33	MAR 21	4.92	MAY 20	5.10	JUL 25	11.10	SEP 24	15.23

COVENTRY 466 WELL



WARWICK 59 WELL



KENT COUNTY--Continued

413907071465001. West Greenwich well GWG 181.

LOCATION.--Lat 41°39'07", long 71°46'50", Kent County, Hydrologic Unit 01090005, town of West Greenwich, about 50 ft from southeast corner of a house 1.3 mi north of intersection of Hazard and Muddy Brook Roads, and 1.8 mi northwest of West Greenwich Center.
 Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 18.5 ft, lined with stone to 18.5 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 380 ft. Measuring point: Hole in top of concrete cover, 0.54 ft above land-surface datum.

PERIOD OF RECORD.--January 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.15 ft below land-surface datum, Jan. 27, 1979; lowest measured, 17.78 ft below land-surface datum, Dec. 22, 1984.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	13.91	DEC 26	13.56	FEB 27	15.20	APR 28	14.76	JUN 23	16.22	AUG 25	16.34
NOV 26	15.57	JAN 30	14.20	MAR 21	14.81	MAY 20	15.71	JUL 24	16.59	SEP 25	16.45

413645071332901. West Greenwich well GWG 206.

LOCATION.--Lat 41°36'45", long 71°33'29", Kent County, Hydrologic Unit 01090004, town of West Greenwich, Hopkins Hill Road.

Owner: Private owner.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in., depth 9.6 ft, cased with stone to 9.6 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 374.26 ft. Measuring point: Spray painted arrow on rock, 3.05 ft above land-surface datum.

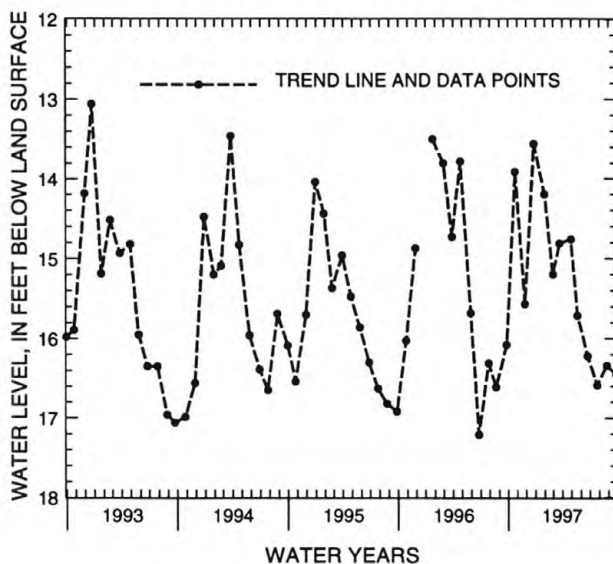
PERIOD OF RECORD.--October 1955 to June 1960, January 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.85 ft below land-surface datum, Oct. 17, 1955; lowest measured, dry, Aug. 26, Sept. 22, Oct. 25, 1993, Sept. 27, 1995.

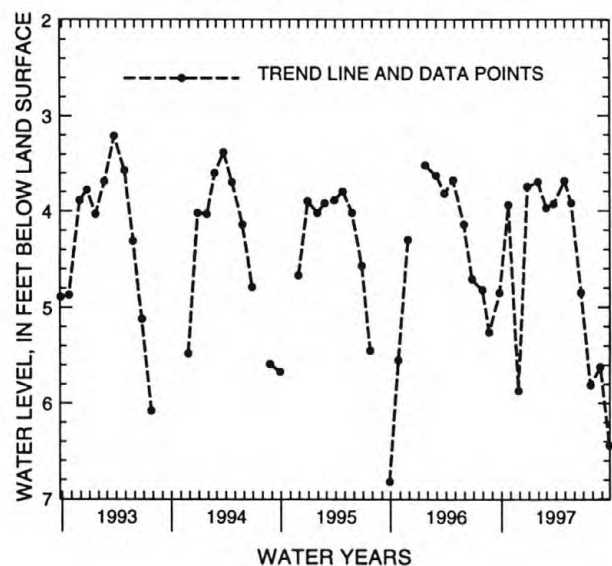
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	3.94	DEC 26	3.75	FEB 27	3.97	APR 29	3.69	JUN 23	4.85	AUG 26	5.62
NOV 26	5.87	JAN 30	3.70	MAR 24	3.93	MAY 21	3.92	JUL 24	5.81	SEP 25	6.44

WEST GREENWICH 181 WELL



WEST GREENWICH 206 WELL



NEWPORT COUNTY

413220071115501. Little Compton well LTW 142.

LOCATION.--Lat 41°32'20", long 71°11'55", Newport County, Hydrologic Unit 01090004, town of Little Compton, East of Rt. 77 at intersection with Old Main Road.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 23.1 ft, cased to 12.9 ft, screened from 12.9 ft to 22.3 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 100 ft. Measuring point: Notch in PVC casing, 1.4 ft above land-surface datum.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.23 ft below land-surface datum, Jan. 22, 1996; lowest measured, dry, Aug. 25, Sept. 29, Oct. 26, Dec. 2, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	7.63	DEC 24	7.34	FEB 24	11.52	APR 22	9.52	JUN 24	16.22	AUG 22	18.76
NOV 22	13.72	JAN 21	12.40	MAR 24	11.86	MAY 22	14.67	JUL 22	18.13	SEP 24	14.47

413325071152401. Portsmouth well POW 551.

LOCATION.--Lat 41°33'25", long 71°15'24", Newport County, Hydrologic Unit 01090004, town of Portsmouth, State police barracks, Portsmouth Terrace on East Main St. (Rt. 138); just south of Union St.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 51.9 ft, cased to 41.7 ft, screened from 41.7 ft to 51.1 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 245 ft. Measuring point: Notch in PVC casing, 2.50 ft above land-surface datum.

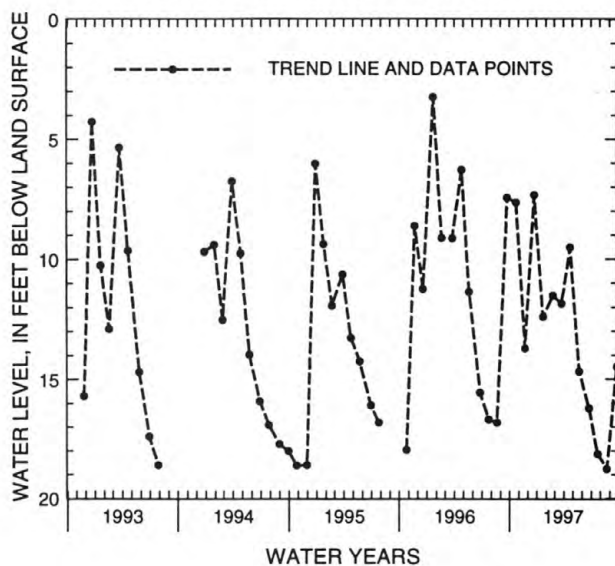
PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.66 ft below land-surface datum, Jan. 22, 1996; lowest measured, dry, Sept. 29, Oct. 26, 1993.

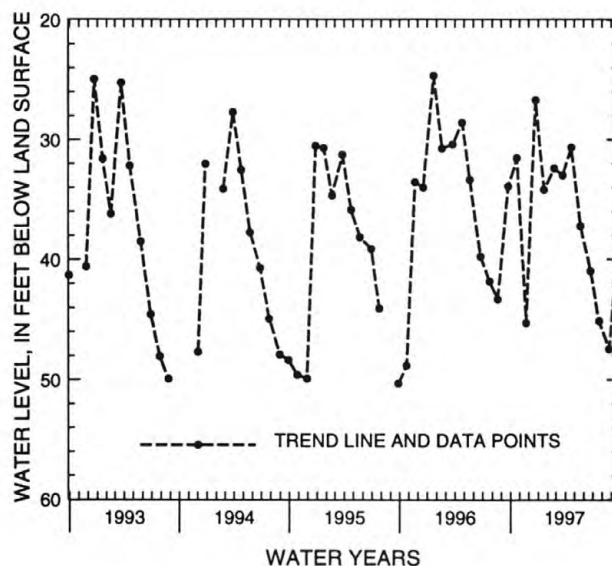
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	31.55	DEC 23	26.68	FEB 24	32.39	APR 22	30.65	JUN 24	40.99	AUG 25	47.48
NOV 22	45.30	JAN 21	34.19	MAR 24	32.98	MAY 22	37.22	JUL 22	45.15	SEP 24	39.13

LITTLE COMPTON 142 WELL



PORTSMOUTH 551 WELL



NEWPORT COUNTY--Continued

413442071093801. Tiverton well TIW 274.

LOCATION.--Lat 41°34'42", long 71°09'38", Newport County, Hydrologic Unit 01090004, town of Tiverton, 305 Lake Road.
Owner: Private owner.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in., depth 13.18 ft, cased with concrete to 13.18 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 160 ft. Measuring point: Spray painted arrow on cross beam, 1.90 ft above land-surface datum.

PERIOD OF RECORD.--December 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.44 ft below land-surface datum, Feb. 24, 1994; lowest measured, 12.77 ft below land-surface datum, Oct. 26, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	.61	DEC 24	1.13	FEB 24	1.63	APR 22	1.21	JUN 24	5.06	AUG 22	7.36
NOV 22	2.16	JAN 21	2.25	MAR 24	1.55	MAY 22	1.60	JUL 22	8.52	SEP 24	8.66

PROVIDENCE COUNTY

415710071402201. Burrillville well BUW 187.

LOCATION.--Lat 41°57'10", long 71°40'22", Providence County, Hydrologic Unit 01090003, town of Burrillville, 25 ft east of road and 75 ft southwest of a house 0.6 mi north of intersection of Harrisville and Lapham Farm Roads, and 0.9 mi south of Harrisville.

Owner: Brothers of the Sacred Heart.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in., depth 19.8 ft, lined with stone to 19.8 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 462 ft. Measuring point: Hole in top of concrete cover, 0.58 ft above land-surface datum.

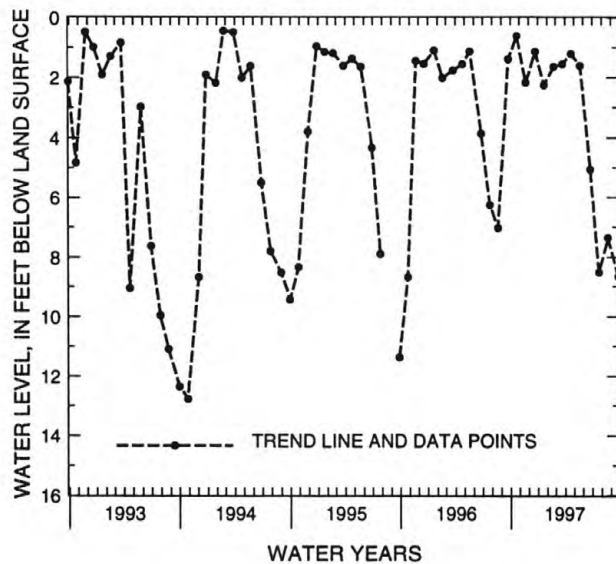
PERIOD OF RECORD.--January 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.74 ft below land-surface datum, Apr. 23, 1983; lowest measured, 18.83 ft below land-surface datum, Nov. 3, 1970.

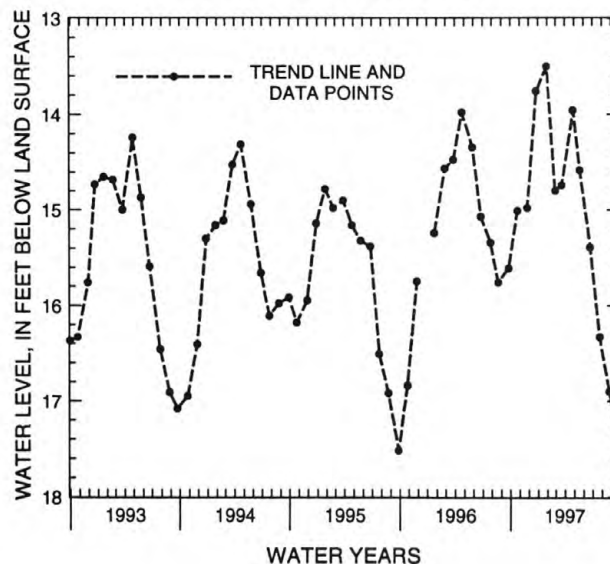
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	15.01	DEC 26	13.76	FEB 27	14.80	APR 28	13.96	JUN 23	15.39	AUG 25	16.90
NOV 26	14.98	JAN 30	13.50	MAR 21	14.74	MAY 20	14.58	JUL 24	16.33	SEP 25	17.37

TIVERTON 274 WELL



BURRILLVILLE 187 WELL



PROVIDENCE COUNTY--Continued

415546071474701. Burrillville well BUW 395.

LOCATION.--Lat 41°55'46", long 71°47'47", Providence County, Hydrologic Unit 01100001, town of Burrillville, Pulaski Memorial State Park, near southeast corner of parking area #3.
 Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 17.7 ft, cased to 7.8 ft, screened from 7.8 ft to 17.2 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 575 ft. Measuring point: Notch in PVC casing, 1.1 ft above land-surface datum.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.04 ft below land-surface datum, Mar. 28, 1994; lowest measured, 12.05 ft below land-surface datum, Sept. 28, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	6.02	DEC 23	5.55	FEB 24	6.24	APR 22	5.69	JUN 25	8.69	AUG 22	11.56
NOV 27	6.12	JAN 21	6.22	MAR 24	6.22	MAY 21	6.73	JUL 23	10.41	SEP 24	11.68

4158470711471401. Burrillville well BUW 396.

LOCATION.--Lat 41°58'47", long 71°47'14", Providence County, Hydrologic Unit 01100001, town of Burrillville, Buck Hill Road, 0.3 miles West of Wakefield Road; north side of road at turn-out, near stream. Near power-line pole #64.
 Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 17.4 ft, cased to 7.2 ft, screened from 7.2 ft to 16.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 530 ft. Measuring point: Notch in PVC casing, 0.8 ft above land-surface datum.

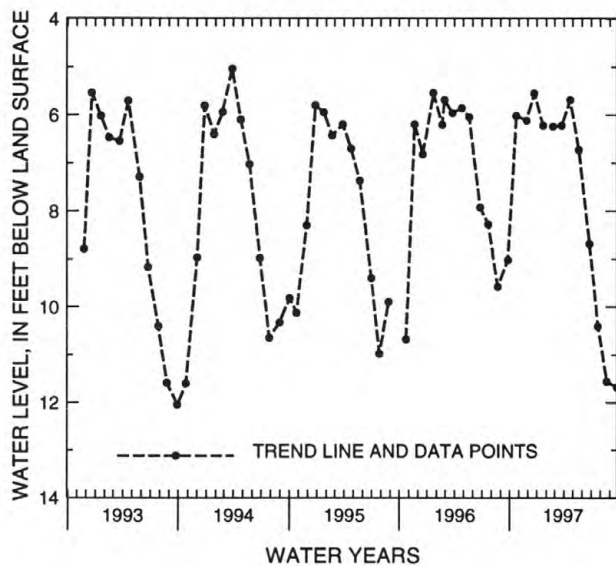
PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.32 ft below land-surface datum, Mar. 28, 1994; lowest measured, 6.82 ft below land-surface datum, Sept. 26, 1995.

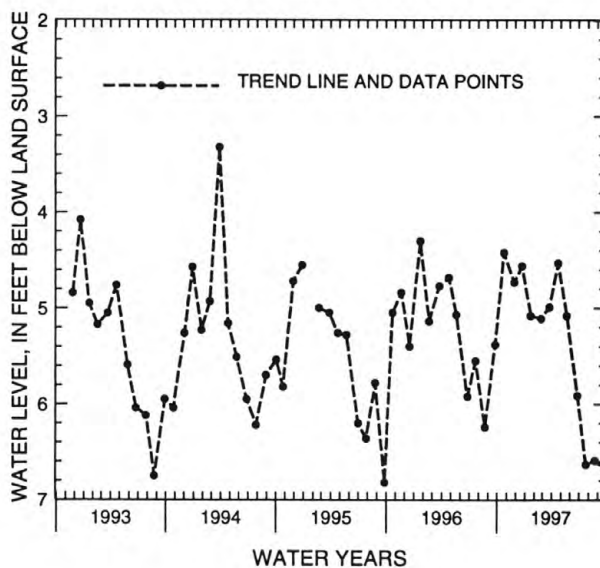
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	4.42	DEC 23	4.56	FEB 24	5.11	APR 22	4.53	JUN 25	5.91	AUG 22	6.59
NOV 27	4.73	JAN 21	5.08	MAR 24	4.99	MAY 21	5.08	JUL 23	6.63	SEP 25	6.67

BURRILLVILLE 395 WELL



BURRILLVILLE 396 WELL



PROVIDENCE COUNTY--Continued

415606071462201. Burrillville well BUW 397.

LOCATION.--Lat 41°56'06", long 71°46'22", Providence County, Hydrologic Unit 01100001, town of Burrillville, Pulaski Memorial State Park, Center Trail, east of buw 395.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 25.6 ft, cased to 15.2 ft, screened from 15.2 ft to 24.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 705 ft. Measuring point: Notch in PVC casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.00 ft below land-surface datum, Mar. 28, 1994; lowest measured, dry, Nov. 25, 1992.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	15.43	DEC 23	8.03	FEB 24	13.02	APR 22	9.58	JUN 25	18.08	AUG 22	22.41
NOV 27	15.95	JAN 21	12.32	MAR 24	13.58	MAY 21	14.16	JUL 23	20.50	SEP 24	dry

415559071471201. Burrillville well BUW 398.

LOCATION.--Lat 41°55'59", long 71°47'12", Providence County, Hydrologic Unit 01100001, town of Burrillville, Pulaski Park, Center Trail.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 13.5 ft, cased to 3.3 ft, screened from 3.3 ft to 12.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 615 ft. Measuring point: Notch in PVC casing, 1.7 ft above land-surface datum.

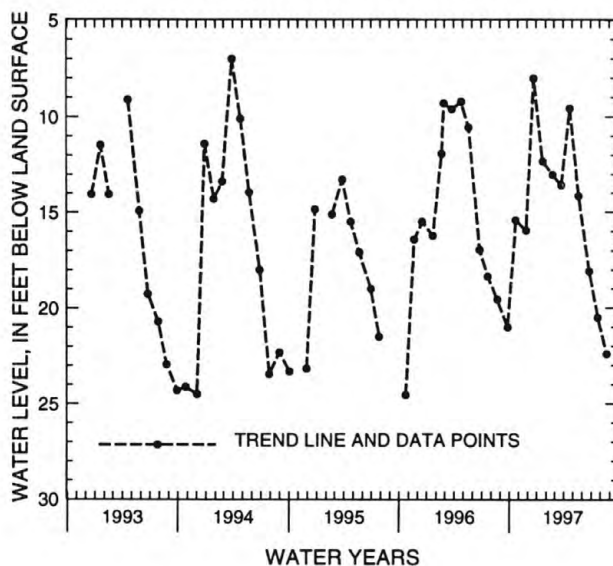
PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.65 ft below land-surface datum, Mar. 28, 1994; lowest measured, 12.28 ft below land-surface datum, Dec. 2, 1993.

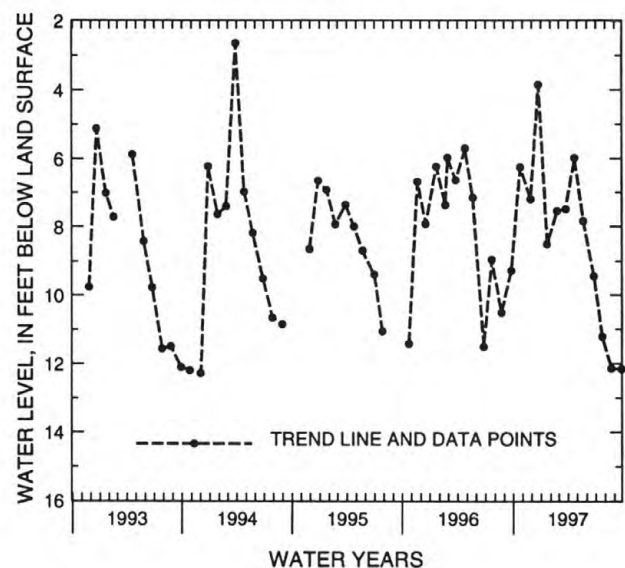
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	6.25	DEC 23	3.85	FEB 24	7.55	APR 22	5.98	JUN 25	9.45	AUG 22	12.14
NOV 27	7.20	JAN 21	8.51	MAR 24	7.49	MAY 21	7.84	JUL 23	11.22	SEP 24	12.16

BURRILLVILLE 397 WELL



BURRILLVILLE 398 WELL



GROUND-WATER LEVELS IN RHODE ISLAND

PROVIDENCE COUNTY--Continued

414448071323001. Cranston well CRW 439.

LOCATION.--Lat 41°44'48", long 71°32'30", Providence County, Hydrologic Unit 01090004, town of Cranston, J.L. Curran Park, west side of Laten Knight Road, 0.3 miles north of Hope Road.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 23.1 ft, cased to 12.9 ft, screened from 12.9 ft to 22.3 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 395 ft. Measuring point: Notch in PVC casing, 1.8 ft above land-surface datum.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.77 ft below land-surface datum, Mar. 28, 1994; lowest measured, 20.56 ft below land-surface datum, Sept. 28, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	17.94	DEC 23	6.22	FEB 24	10.83	APR 22	8.30	JUN 25	16.19	AUG 22	19.35
NOV 27	15.42	JAN 21	10.35	MAR 25	12.78	MAY 22	12.93	JUL 23	18.33	SEP 24	19.66

415626071254601. Cumberland well CUW 265.

LOCATION.--Lat 41°56'26", long 71°25'46", Providence County, Hydrologic Unit 01090003, town of Cumberland, at 27 Scott Street, 900 ft northeast of intersection of Scott Street and Mendon Road in Ashton.

Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in., depth 20 ft, lined with stone to 20 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 130 ft. Measuring point: Hole in wooden cover, 0.06 ft above land-surface datum.

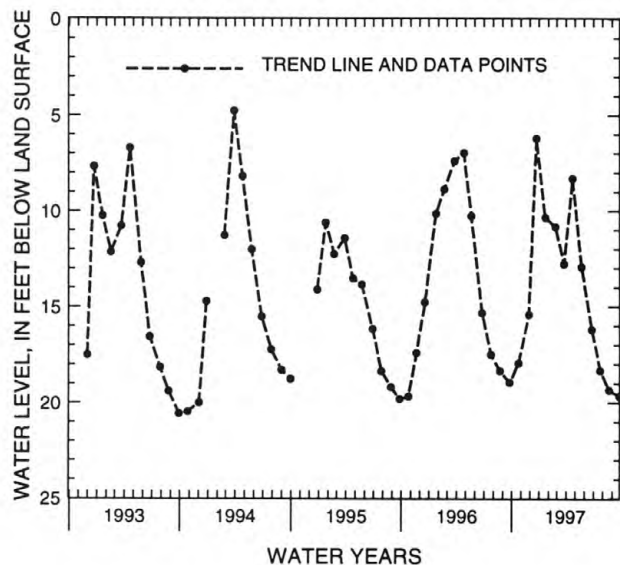
PERIOD OF RECORD.--August 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.20 ft below land-surface datum, Jan. 27, 1979; lowest measured, 17.20 ft below land-surface datum, Sept. 29, 1949.

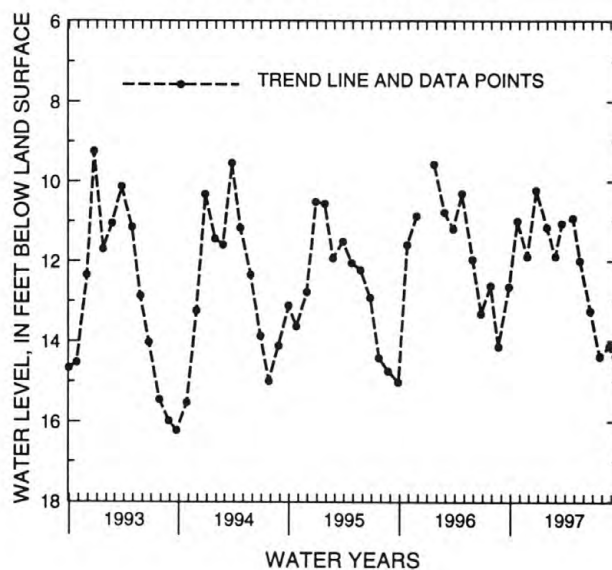
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	11.00	DEC 26	10.22	FEB 27	11.89	APR 28	10.93	JUN 23	13.26	AUG 25	14.13
NOV 26	11.89	JAN 30	11.16	MAR 21	11.06	MAY 20	12.00	JUL 24	14.39	SEP 25	14.69

CRANSTON CITY 439 WELL



CUMBERLAND 265 WELL



PROVIDENCE COUNTY--Continued

414420071422301. Foster well FOW 40.

LOCATION.--Lat 41°44'20", long 71°42'23", Providence County, Hydrologic Unit 01090004, town of Foster, Plainfield Pike..
Owner: Private owner.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 48 in., depth 15.4 ft, cased with stone to 15.4 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 630 ft. Measuring point: Spray painted arrow top of casing, 0.40 ft. above land-surface datum.

PERIOD OF RECORD.--July 1953 to February 1959, April 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.29 ft below land-surface datum, May 27, 1954; lowest measured, 13.97 ft below land-surface datum, Oct. 28, 1957.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	2.76	DEC 26	2.84	FEB 27	4.09	APR 28	4.05	JUN 23	7.50	AUG 25	10.07
NOV 26	3.55	JAN 30	3.03	MAR 21	3.66	MAY 20	4.63	JUL 24	10.55	SEP 25	9.80

414357071405101. Foster well FOW 290.

LOCATION.--Lat 41°43'57", long 71°40'51", Providence County, Hydrologic Unit 01090004, town of Foster, Parker Woodland, Audobon Society. Pig Hill Road, 1 mile north of Maple Valley Road.
Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 15.4 ft, cased to 5.2 ft, screened from 5.2 ft to 14.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 345 ft. Measuring point: Notch in PVC casing, 1.6 ft above land-surface datum.

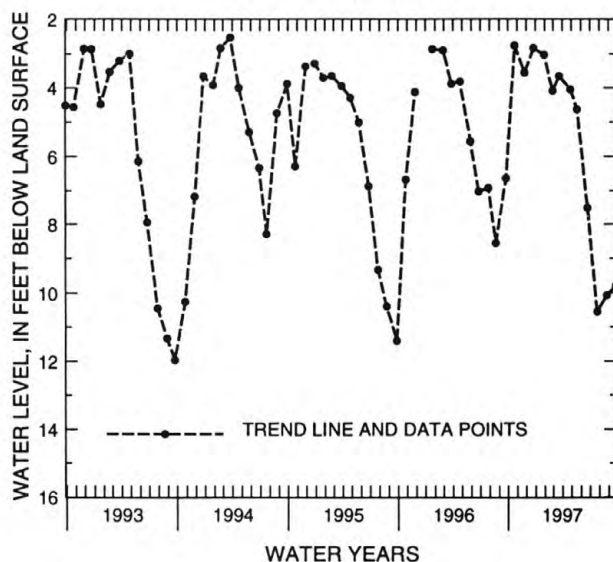
PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.36 ft below land-surface datum, Mar. 28, 1994; lowest measured, dry, several times in water years 1993 and 1994.

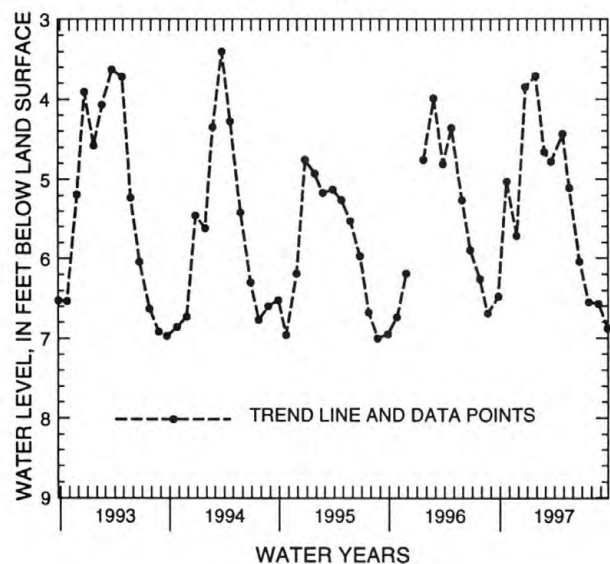
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	10.16	DEC 23	3.61	FEB 24	5.02	APR 22	4.21	JUN 25	8.82	AUG 22	14.26
NOV 27	6.92	JAN 21	4.96	MAR 25	5.53	MAY 22	5.83	JUL 23	12.08	SEP 24	dry

FOSTER 40 WELL



FOSTER 290 WELL



PROVIDENCE COUNTY--Continued

415437071242201. Lincoln well LIW 84.

LOCATION.--Lat 41°54'37", long 71°24'22", Providence County, Hydrologic Unit 0190003, town of Lincoln, at north side of Maplehurst Farms building, and 800 ft west of Blackstone River bridge in Lonsdale.
 Owner: Maplehurst Farms, Inc.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in., depth 107 ft, cased to 107 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 60 ft. Measuring point: Inside lower lip of 8-inch pipe, 3.32 ft above land-surface datum.

REMARKS.--Water level affected by Blackstone River floods.

PERIOD OF RECORD.--June 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.97 ft above land-surface datum, Jan. 28, 1976, lowest measured, 7.30 ft below land-surface datum, Aug. 24, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	2.39	DEC 26	2.66	FEB 27	4.60	APR 28	3.85	JUN 23	4.69	AUG 25	5.35
NOV 26	4.64	JAN 30	3.39	MAR 21	4.18	MAY 20	3.32	JUL 24	5.31	SEP 24	5.68

415948071325001 North Smithfield well NSW 21.

LOCATION.--Lat 41°59'48", long 71°32'50", Providence County, Hydrologic Unit 1090003, town of North Smithfield, 500 ft southwest of State Highway 146A, 900 ft west of intersection of State Highway 146A and Harkness Road at Branch Village.
 Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug domestic water-table well, diameter 24 in., depth 16 ft, cased with tile to 16 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 238.68 ft above sea level. Measuring point: Hole in concrete cover at top of tile casing, 1.84 ft below land-surface datum.

REMARKS.--Well used for domestic supply; water levels affected by pumping, 1947-80.

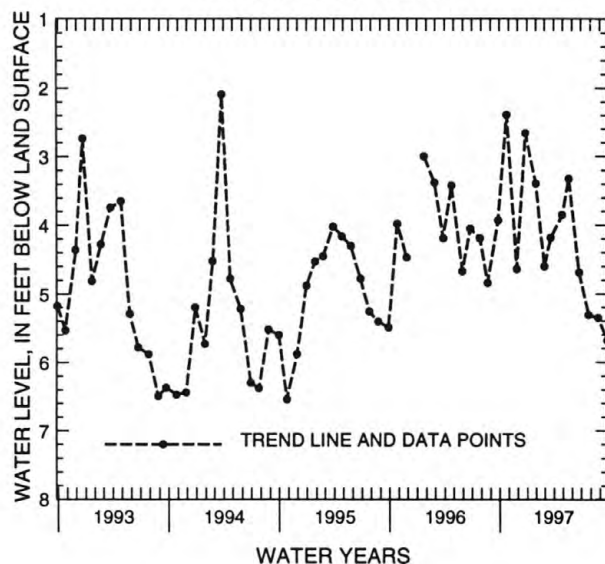
PERIOD OF RECORD.--May 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.67 ft below land-surface datum, Mar. 26, 1969; lowest measured, 11.71 ft below land-surface datum, Oct. 28, 1957.

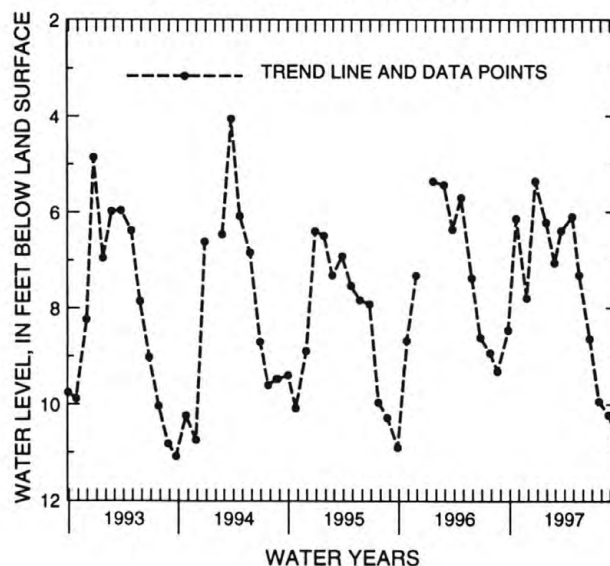
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	6.14	DEC 26	5.36	FEB 27	7.06	APR 28	6.10	JUN 23	8.64	AUG 25	10.22
NOV 26	7.79	JAN 30	6.22	MAR 21	6.39	MAY 20	7.31	JUL 24	9.94	SEP 25	10.74

LINCOLN 84 WELL



NORTH SMITHFIELD 21 WELL



PROVIDENCE COUNTY--Continued

415317071220601. Pawtucket well PAW 136.

LOCATION.--Lat 41°53'17", long 71°22'06", Providence County, Hydrologic Unit 01090004, city of Pawtucket, at 314 Woodbine Street, and 1,500 ft northeast of intersection of Cottage Street and Central Avenue.
Owner: Greenhalgh Mills, Inc.

AQUIFER.--Gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 43 ft, cased to about 40 ft, screened about 40 to 43 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 86 ft. Measuring point: Top of casing, 3.15 ft above land-surface datum.

PERIOD OF RECORD.--January 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.98 ft below land-surface datum, Apr. 23, 1983; lowest measured, 7.28 ft below land-surface datum, Jan. 29, 1966.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	3.73	DEC 26	2.78	FEB 27	3.40	APR 28	1.99	JUN 23	3.37	AUG 25	4.51
NOV 26	4.09	JAN 30	3.02	MAR 21	3.34	MAY 20	2.58	JUL 24	4.13	SEP 25	4.78

414746071255601. Providence well PRW 48.

LOCATION.--Lat 41°47'46", long 71°25'56", Providence County, Hydrologic Unit 01090004, city of Providence, at 333 Adelaide Avenue, and 800 ft northwest of Adelaide and 800 ft west of Narragansett Avenues.
Owner: Gorham Division of Textron.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 8 in., depth 124 ft, cased to 116 ft, screened 116 to 124 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 45.79 ft, above sea level. Measuring point: Top edge of hole in center of steel cover, 0.48 ft below land-surface datum.

REMARKS.--Water level affected by pumping from one or more nearby wells.

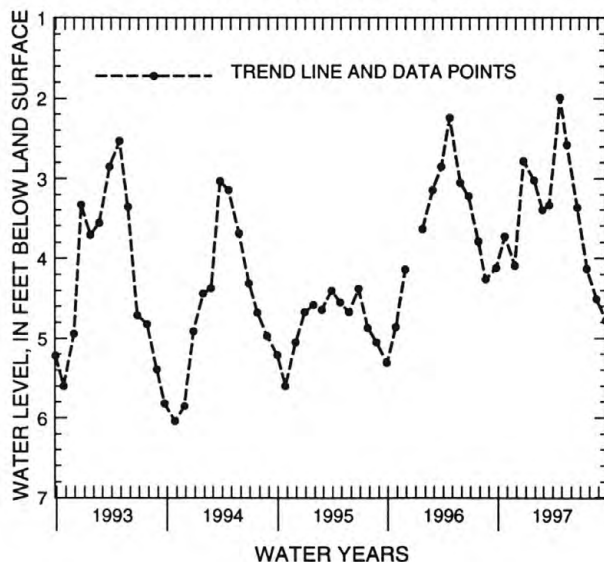
PERIOD OF RECORD.--December 1944 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.78 ft below land-surface datum, Apr. 23, 1983; lowest measured, 10.22 ft below land-surface datum, Oct. 20, 1947.

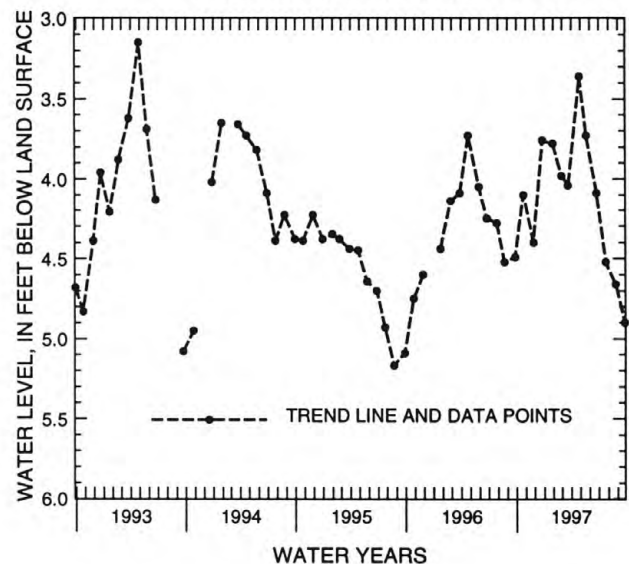
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	4.10	DEC 26	3.76	FEB 27	3.98	APR 28	3.36	JUN 23	4.09	AUG 25	4.66
NOV 26	4.40	JAN 29	3.78	MAR 21	4.04	MAY 20	3.73	JUL 23	4.52	SEP 24	4.90

PAWTUCKET 136 WELL



PROVIDENCE 48 WELL



WASHINGTON COUNTY

412214071394001. Charlestown well CHW 18.

LOCATION.--Lat 41°22'14", long 71°39'40", Washington County, Hydrologic Unit 01090005, town of Charlestown, 1,900 ft southeast of U.S. Highway 1, at former U.S. Navy Auxiliary Air Station.

Owner: U.S. General Services Administration.

AQUIFER.--Sand and clay of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in., depth 32 ft, cased to 32 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 26 ft. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--October 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.09 ft below land-surface datum, Apr. 23, 1983; lowest measured, 21.63 ft below land-surface datum, Dec. 29, 1965.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	16.91	DEC 26	14.56	FEB 26	15.53	APR 29	14.80	JUN 24	17.27	AUG 26	19.63
NOV 27	16.94	JAN 29	15.83	MAR 24	15.92	MAY 21	15.84	JUL 25	18.69	SEP 24	19.71

412434071422401. Charlestown well CHW 586.

LOCATION.--Lat 41°24'34", long 71°42'24", Washington County, Hydrologic Unit 01090005, town of Charlestown, Burlingame State Park, 0.7 mi from Buckeye Road on Clawson Trail.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 14.3 ft, cased to 4.1 ft, screened from 4.1 ft to 13.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 125 ft. Measuring point: Notch in PVC casing, 1.3 ft above land-surface datum.

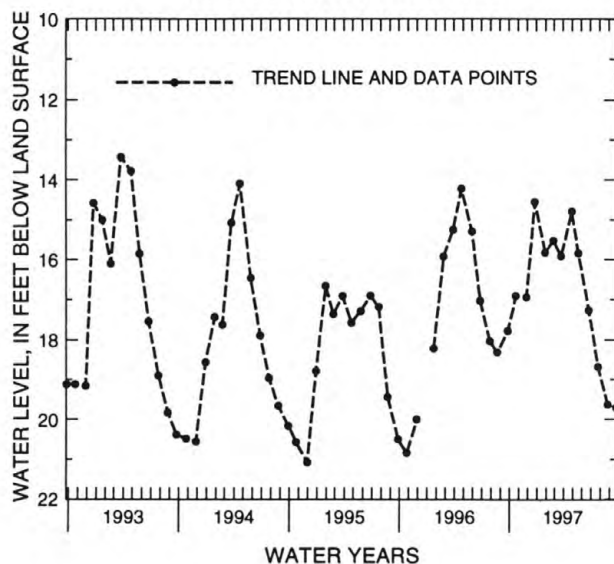
PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.57 ft below land-surface datum, Nov. 28, 1994; lowest measured, 5.20 ft below land-surface datum, Aug. 29, 1995.

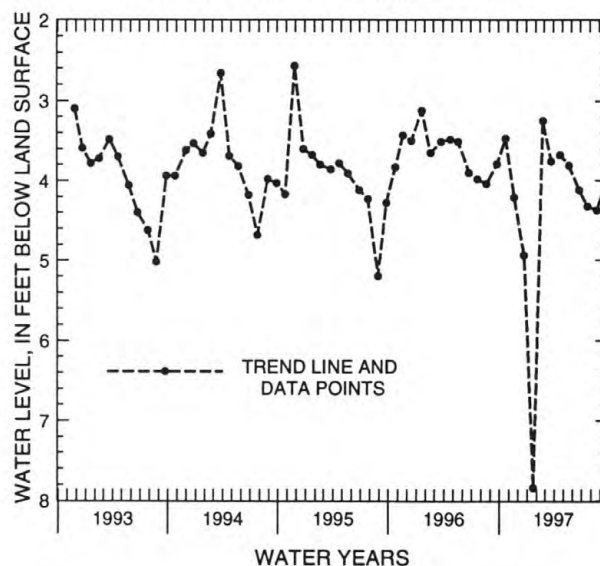
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	3.47	DEC 23	4.94	FEB 24	3.25	APR 22	3.68	JUN 25	4.12	AUG 22	4.37
NOV 21	4.21	JAN 21	7.84	MAR 24	3.76	MAY 22	3.81	JUL 23	4.32	SEP 25	4.01

CHARLESTOWN 18 WELL



CHARLESTOWN 586 WELL



GROUND-WATER LEVELS IN RHODE ISLAND

319

WASHINGTON COUNTY--Continued

412424071423601. Charlestown well CHW 587.

LOCATION.--Lat 41°24'24", long 71°42'36", Washington County, Hydrologic Unit 01090005, town of Charlestown, Burligame State Park, 0.8 mi from Buckeye Brook Road on Mills Trail.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 12.5 ft, cased to 2.3 ft, screened from 2.3 ft to 11.7 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 90 ft. Measuring point: Notch in PVC casing, 1.6 ft above land-surface datum.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.80 ft below land-surface datum, Mar. 28, 1994; lowest measured, 12.33 ft below land-surface datum, Aug. 22, 1997.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	5.44	DEC 23	3.31	FEB 24	7.24	APR 22	6.58	JUN 25	10.24	AUG 22	12.33
NOV 21	8.38	JAN 21	3.42	MAR 24	6.99	MAY 22	8.27	JUL 23	11.88	SEP 25	11.86

413423071431901. Exeter well EXW 6.

LOCATION.--Lat 41°34'23", long 71°43'19", Washington County, Hydrologic Unit 01090005, town of Exeter, in Arcadia State Forest, 150 ft west of Wood River, 250 ft south of Ten Rod Road, and 2.0 mi west of Millville.

Owner: State Dept. of Natural Resources.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in., depth 10 ft, cased with concrete to 10 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 132.80 ft above sea level. Measuring point: Hole in top of wooden cover, at land-surface datum.

REMARKS.--Water level affected by stage of nearby Wood River.

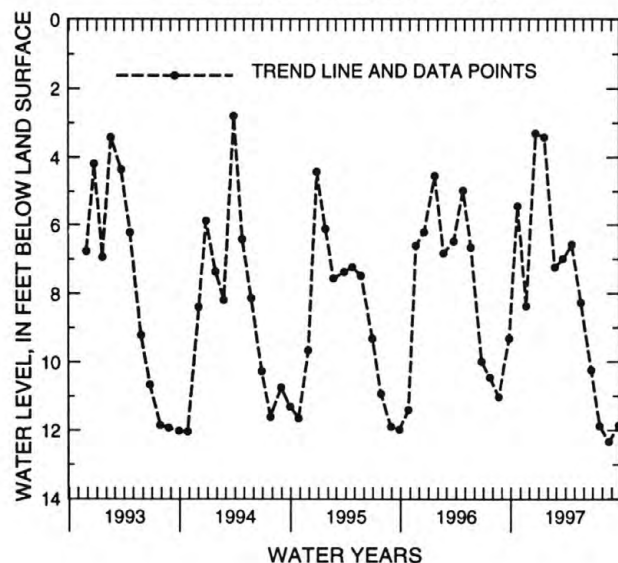
PERIOD OF RECORD.--December 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.34 ft below land-surface datum, Jan. 27, 1979; lowest measured, 7.97 ft below land-surface datum, Sept. 26, 1981.

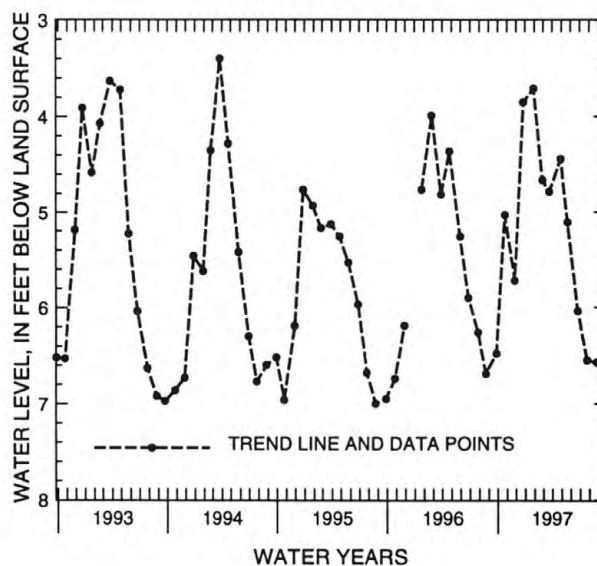
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	5.03	DEC 26	3.85	FEB 26	4.66	APR 28	4.44	JUN 23	6.04	AUG 25	6.57
NOV 26	5.72	JAN 29	3.71	MAR 21	4.78	MAY 20	5.11	JUL 23	6.55	SEP 24	6.88

CHARLESTOWN 587 WELL



EXETER 6 WELL



WASHINGTON COUNTY--Continued

413505071452801. Exeter well EXW 158.

LOCATION.--Lat 41°35'05", long 71°45'28", Washington County, Hydrologic Unit 01090005, town of Exeter, Escoheag Hill Road.

Owner: State of Rhode Island.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in., depth 18.3 ft, cased with stone to 18.3 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 315 ft. Measuring point: Spray painted arrow on rock, at land-surface datum.

PERIOD OF RECORD.--September 1953 to February 1959, November 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.85 ft below land-surface datum, Mar. 25, 1994; lowest measured, dry, Oct. 26 and Nov. 27, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	12.43	DEC 26	4.49	FEB 27	6.28	APR 28	5.95	JUN 23	12.56	AUG 25	16.75
NOV 26	8.01	JAN 30	4.59	MAR 21	6.53	MAY 20	7.78	JUL 24	16.17	SEP 25	17.17

413400071363101. Exeter well EXW 238.

LOCATION.--Lat 41°34'00", long 71°36'31", Washington County, Hydrologic Unit 01090005, town of Exeter, Tripps Corner Road.

Owner: Private owner.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in., depth 14.4 ft, cased with stone to 14.4 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 333.80 ft. Measuring point: Spray painted arrow on rock, at land-surface datum.

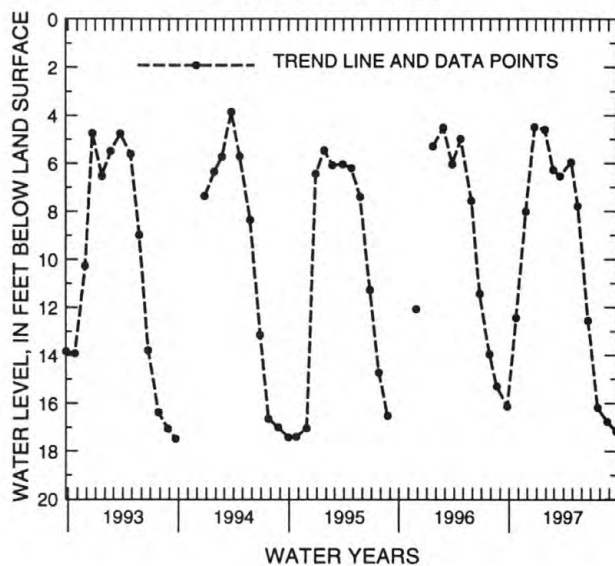
PERIOD OF RECORD.--October 1955 to June 1960, May 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.37 ft below land-surface datum Oct. 17, 1955; lowest measured, 13.43 ft below land-surface datum, Oct. 2, 1957, Aug. 23, 1995.

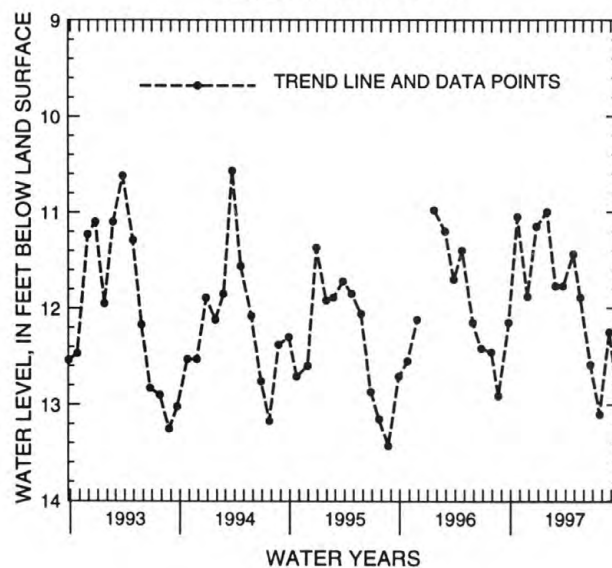
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	11.05	DEC 26	11.15	FEB 27	11.77	APR 28	11.44	JUN 24	12.59	AUG 25	12.25
NOV 26	11.88	JAN 30	11.00	MAR 24	11.77	MAY 21	11.89	JUL 24	13.10	SEP 25	12.97

EXETER 158 WELL



EXETER 238 WELL



GROUND-WATER LEVELS IN RHODE ISLAND

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WASHINGTON COUNTY--Continued

413135071314201. Exeter well EXW 278.

LOCATION.--Lat 41°31'35", long 71°31'42", Washington County, Hydrologic Unit 01090005, town of Exeter, Liberty Road 1.04 mi from Rt. 2.

Owner: Private owner.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 23.9 ft, cased with stone to 23.9 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 230.90 ft. Measuring point: Spray painted arrow top of casing, 1.20 ft. above land-surface datum.

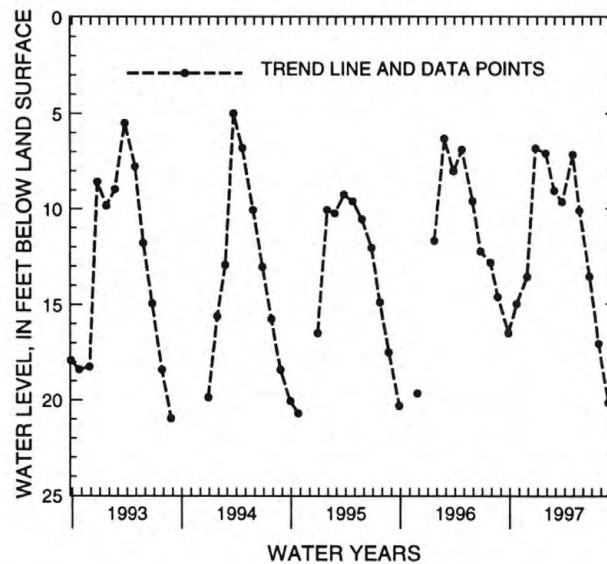
PERIOD OF RECORD.--August 1954 to June 1960, March 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.06 ft below land-surface datum, May 29, 1991; lowest measured, dry, Sept. 23, Oct. 25, and Nov. 26, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	15.00	DEC 26	6.83	FEB 26	9.05	APR 29	7.17	JUN 24	13.57	AUG 25	20.15
NOV 27	13.58	JAN 29	7.09	MAR 24	9.65	MAY 21	10.12	JUL 23	17.07	SEP 24	dry

EXETER 278 WELL



GROUND-WATER LEVELS IN RHODE ISLAND

WASHINGTON COUNTY--Continued

413358071433801. Exeter well EXW 475.

LOCATION.--Lat 41°33'58", long 71°43'38", Washington County, Hydrologic Unit 01090005, town of Exeter, 70 ft east of Mt. Tom Road, 50 ft north of Blitzkrieg Trail, and 2.4 mi northwest of Barbersville.

Owner: State Department of Environmental Management.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 40 ft, cased to 38 ft, screened 38 to 40 ft.

INSTRUMENTATION.--Continuous graphic recorder March 1981 to May 1988, digital recorder (60-min punch) June 1988 to current year.

DATUM.--Land-surface datum is 142.92 ft above sea level. Measuring point: Floor of recorder shelter, 3.38 ft above land-surface datum.

PERIOD OF RECORD.--March 1981 to current year.

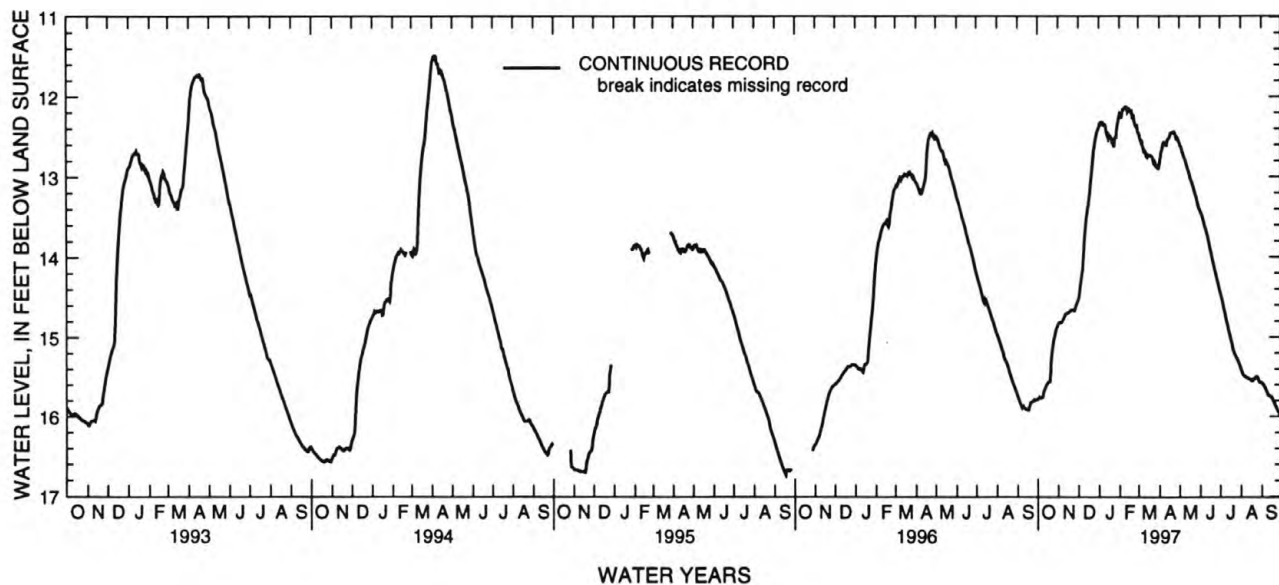
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.58 ft below land-surface datum, Apr. 28, 29, 1983; lowest, 16.74 ft below land-surface datum, Oct. 19, 1981, Sept. 17, 1995.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.78	14.83	14.52	12.38	12.22	12.46	12.86	12.57	13.43	14.45	15.40	15.57
2	15.77	14.82	14.48	12.34	12.24	12.46	12.81	12.61	13.45	14.49	15.43	15.58
3	15.76	14.82	14.40	12.33	12.24	12.52	12.75	12.62	13.47	14.52	15.45	15.59
4	15.77	14.82	14.34	12.34	12.27	12.54	12.69	12.64	13.49	14.55	15.47	15.60
5	15.77	14.82	14.28	12.32	12.20	12.57	12.67	12.69	13.52	14.60	15.48	15.62
6	15.77	14.81	14.22	12.32	12.16	12.54	12.62	12.70	13.56	14.64	15.49	15.63
7	15.76	14.80	14.16	12.33	12.16	12.61	12.58	12.73	13.59	14.68	15.49	15.65
8	15.76	14.78	14.05	12.36	12.15	12.64	12.57	12.76	13.62	14.71	15.50	15.67
9	15.71	14.76	13.91	12.36	12.13	12.68	12.58	12.77	13.64	14.75	15.51	15.69
10	15.68	14.74	13.78	12.34	12.13	12.67	12.59	12.79	13.67	14.79	15.51	15.71
11	15.66	14.72	13.67	12.39	12.13	12.68	12.61	12.83	13.71	14.82	15.51	15.73
12	15.64	14.71	13.59	12.44	12.14	12.72	12.61	12.86	13.74	14.86	15.52	15.73
13	15.62	14.71	13.51	12.47	12.19	12.75	12.55	12.89	13.78	14.90	15.53	15.74
14	15.60	14.70	13.45	12.50	12.17	12.76	12.53	12.92	13.82	14.94	15.53	15.75
15	15.59	14.70	13.39	12.52	12.14	12.73	12.53	12.94	13.87	14.97	15.53	15.75
16	15.57	14.69	13.34	12.47	12.18	12.74	12.51	12.97	13.91	15.01	15.54	15.75
17	15.57	14.69	13.28	12.48	12.19	12.73	12.49	13.01	13.94	15.04	15.55	15.77
18	15.56	14.68	13.20	12.49	12.20	12.73	12.46	13.04	13.98	15.07	15.55	15.79
19	15.56	14.67	13.11	12.52	12.19	12.74	12.46	13.05	14.02	15.11	15.53	15.81
20	15.45	14.66	13.03	12.52	12.25	12.74	12.45	13.08	14.06	15.15	15.53	15.82
21	15.29	14.66	12.95	12.58	12.24	12.75	12.45	13.11	14.09	15.18	15.53	15.85
22	15.21	14.66	12.85	12.58	12.24	12.76	12.44	13.13	14.13	15.21	15.51	15.86
23	15.14	14.66	12.77	12.59	12.32	12.80	12.44	13.17	14.17	15.22	15.50	15.88
24	15.08	14.67	12.68	12.63	12.34	12.84	12.45	13.20	14.21	15.24	15.50	15.90
25	15.03	14.67	12.63	12.53	12.37	12.85	12.48	13.23	14.24	15.26	15.50	15.92
26	15.00	14.64	12.58	12.51	12.38	12.83	12.51	13.25	14.28	15.27	15.51	15.94
27	14.96	14.61	12.52	12.51	12.37	12.86	12.54	13.29	14.31	15.29	15.54	15.95
28	14.92	14.59	12.48	12.41	12.44	12.88	12.51	13.32	14.35	15.31	15.56	15.97
29	14.89	14.56	12.44	12.35	---	12.88	12.52	13.36	14.39	15.33	15.57	15.97
30	14.87	14.55	12.42	12.31	---	12.90	12.56	13.39	14.42	15.35	15.57	15.98
31	14.85	---	12.40	12.25	---	12.90	---	13.41	---	15.38	15.57	---
MEAN	15.44	14.71	13.37	12.43	12.23	12.72	12.56	12.98	13.90	14.97	15.51	15.77
LOW	15.78	14.83	14.52	12.63	12.44	12.90	12.86	13.41	14.42	15.38	15.57	15.98
HIGH	14.85	14.55	12.40	12.25	12.13	12.46	12.44	12.57	13.43	14.45	15.40	15.57

WTR YR 1997 HIGH 12.13 FEB 9, 10, 11, 15 LOW 15.98 SEP 29, 30

EXETER 475 WELL



WASHINGTON COUNTY--Continued

413252071323601. Exeter well EXW 554.

LOCATION.--Lat 41°32'52", long 71°32'36", Washington County, hydrologic Unit 01090005, town of Exeter, about 1,500 ft south of fire station at Exeter State (Dr. Joseph H. Ladd) School. One half mile West of Rt. 2 on Dawley Rd. and approximately 100 ft north of center line of Dawley Rd.
 Owner: State Dept. of Public Welfare.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in, depth 25.1 ft, cased to 22.8 ft, screened from 22.8 ft to 24.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 156.92 ft above sea level. Measuring point: Top of casing, 2.40 ft above land-surface datum.

REMARKS.--Replacement well for EXW16, which was influenced by parking lot runoff.

PERIOD OF RECORD.--December 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.22 ft below land-surface datum, Mar. 25, 1993; lowest measured, 12.20 ft below land-surface datum, Nov. 29, 1994.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	9.93	DEC 26	8.67	FEB 26	9.32	APR 29	9.09	JUN 23	10.20	AUG 25	10.76
NOV 27	10.06	JAN 29	9.00	MAR 24	9.67	MAY 21	9.71	JUL 23	10.82	SEP 24	11.21

413126071455501. Hopkinton well HOW 67.

LOCATION.--Lat 41°31'26", long 71°45'55", Washington County, Hydrologic Unit 01090005, town of Hopkinton, Beach Pond Road, Rt. 138.
 Owner: Rhode Island Boy Scouts.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 22.9 ft, cased with stone to 22.9 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 335 ft. Measuring point: Spray painted arrow on rock, 1.89 ft above land-surface datum.

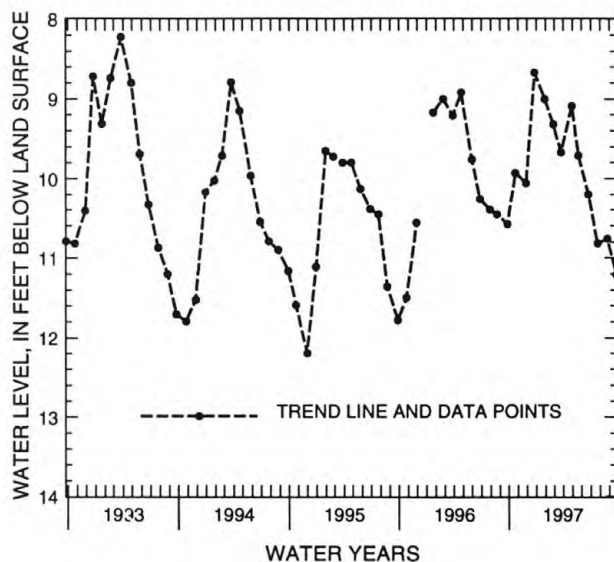
PERIOD OF RECORD.--August 1953 to February 1959, November 1990 to current year..

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.46 ft below land-surface datum, Mar. 24, 1994; lowest measured, dry, Oct. 29, 1957.

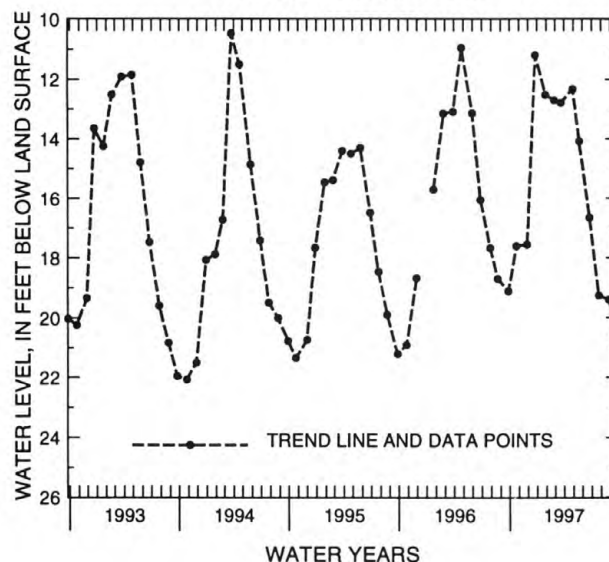
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	17.61	DEC 26	11.19	FEB 26	12.70	APR 29	12.33	JUN 23	16.67	AUG 26	19.41
NOV 27	17.56	JAN 29	12.53	MAR 21	12.79	MAY 20	14.08	JUL 23	19.27	SEP 24	20.55

EXETER 554 WELL



HOPKINTON 67 WELL



WASHINGTON COUNTY--Continued

410947071344803. New Shoreham well NHW 258.

LOCATION.--Lat 41°09'47", long 71°34'48", Washington County, Hydrologic Unit 01090005, town of New Shoreham, Lakeside Drive near Indian Cemetery.

Owner: State of Rhode Island, D.O.T.

AQUIFER.--Till of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in, depth 19.0 ft, cased to 14.0 ft, screened from 14.0 ft to 19.0 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 120 ft. Measuring point: Notch in PVC casing, 0.85 ft above land-surface datum.

PERIOD OF RECORD.--August 1990 and September 1990, June 1991 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.05 ft below land-surface datum, Mar. 29, 1993; lowest measured, 13.83 ft below land-surface datum, Nov. 21, 1993.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 22	11.25	JUN 19	11.75	JUL 24	12.29	AUG 28	12.80	SEP 18	12.94		

413148071281601. North Kingstown well NKW 255.

LOCATION.--Lat 41°31'48", long 71°28'16", Washington County, Hydrologic Unit 01090004, town of North Kingstown, 100 ft east of Pendar Road, 0.6 mi south of intersection of Pendar and Tower Hill Roads, and 1.0 mi south of Allenton.

Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 14 ft, cased with concrete to 14 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 50 ft. Measuring point: Hole in top of concrete cover, 0.24 ft above land-surface datum.

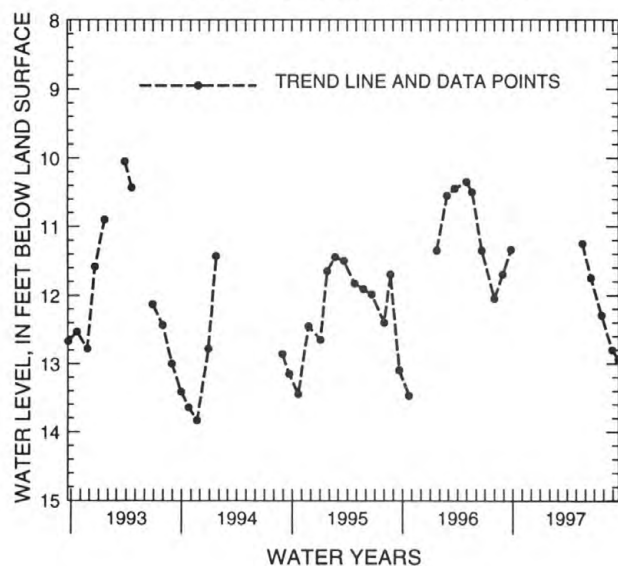
PERIOD OF RECORD.--August 1954 to December 1963, January 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.81 ft below land-surface datum, Mar. 26, 1968; lowest measured, 13.03 ft below land-surface datum, Oct. 26, 1981.

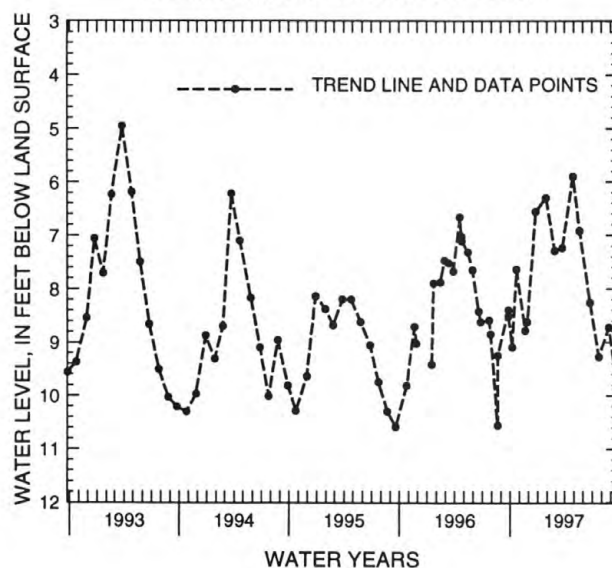
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 08	9.09	NOV 27	8.62	FEB 26	7.29	APR 29	5.90	JUN 24	8.26	AUG 26	8.72
23	7.64	DEC 26	6.56	MAR 24	7.24	MAY 21	6.92	JUL 23	9.27	SEP 24	9.86
NOV 20	8.78	JAN 29	6.30								

NEW SHOREHAM 258 WELL



NORTH KINGSTOWN 255 WELL



GROUND-WATER LEVELS IN RHODE ISLAND

325

WASHINGTON COUNTY--Continued

412932071374302. Richmond well RIW 417.

LOCATION.--Lat 41°29'32", long 71°37'43", Washington County, Hydrologic Unit 01090005, town of Richmond, about 50 ft south of State Highway 138, about 75 ft west of Beaver River, and 3.3 mi north of Kenyon.

Owner: State Department of Transportation.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 40 ft, cased to 37 ft, screened 37 to 40 ft.

INSTRUMENTATION.--Continuous graphic recorder December 1975 to May 1988, digital recorder (60 minute) June 1988 to current year.

DATUM.--Land-surface datum is 115.56 ft, above sea level. Measuring point: Floor of recorder shelter, 0.60 ft above land-surface datum.

REMARKS.--Water level affected by stage of nearby Beaver River.

PERIOD OF RECORD.--December 1975 to current year.

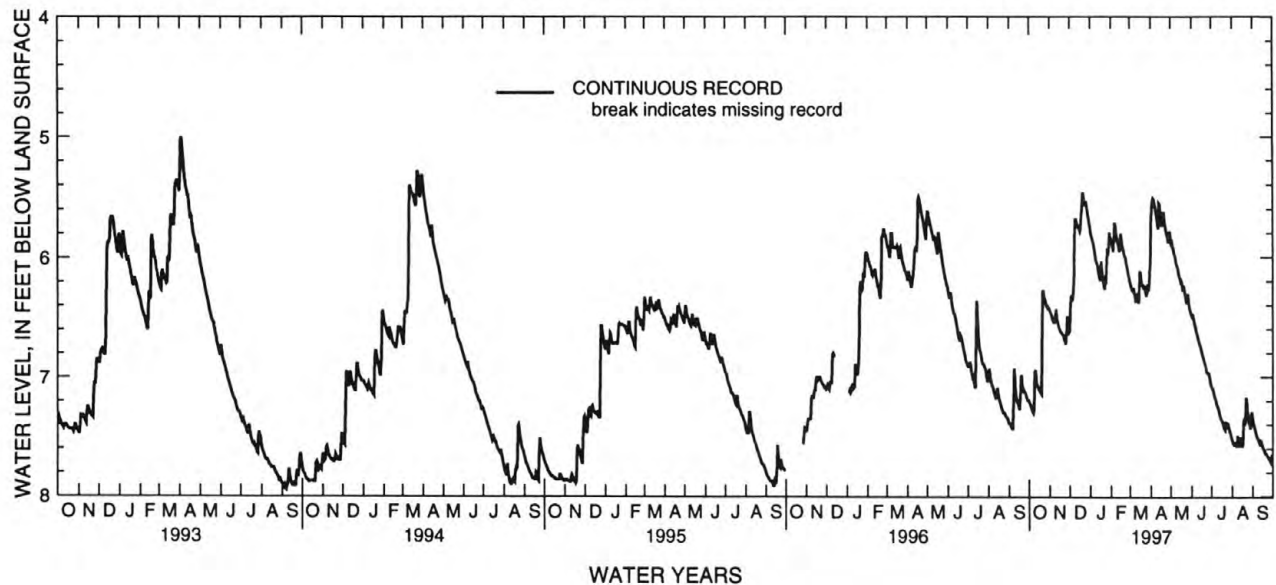
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.08 ft below land-surface datum, Apr. 25, 1983; lowest, 8.02 ft below land-surface datum, Oct. 3, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.21	6.45	6.61	5.80	5.86	6.22	5.70	5.88	6.49	7.08	7.53	7.36
2	7.22	6.46	6.42	5.82	5.89	6.23	5.58	5.87	6.50	7.09	7.55	7.39
3	7.24	6.48	6.31	5.84	5.92	6.26	5.53	5.91	6.49	7.10	7.56	7.41
4	7.26	6.51	6.33	5.86	5.95	6.27	5.51	5.92	6.52	7.12	7.55	7.43
5	7.27	6.52	6.36	5.88	5.82	6.28	5.52	5.96	6.55	7.15	7.55	7.46
6	7.29	6.54	6.30	5.91	5.71	6.25	5.55	5.98	6.57	7.17	7.55	7.48
7	7.30	6.54	6.19	5.95	5.75	6.29	5.57	5.99	6.60	7.18	7.57	7.50
8	7.26	6.54	5.83	5.99	5.80	6.32	5.62	6.03	6.62	7.21	7.58	7.51
9	6.96	6.49	5.68	6.03	5.83	6.35	5.66	6.06	6.64	7.23	7.49	7.52
10	6.94	6.43	5.68	6.04	5.87	6.34	5.70	6.07	6.66	7.24	7.51	7.54
11	7.00	6.47	5.71	6.06	5.89	6.32	5.74	6.09	6.69	7.26	7.55	7.55
12	7.05	6.52	5.73	6.10	5.92	6.34	5.76	6.13	6.71	7.28	7.58	7.53
13	7.07	6.54	5.74	6.13	5.95	6.37	5.55	6.16	6.73	7.31	7.56	7.53
14	7.08	6.57	5.75	6.16	5.92	6.37	5.56	6.17	6.74	7.33	7.50	7.55
15	7.10	6.59	5.76	6.19	5.80	6.13	5.64	6.20	6.77	7.35	7.55	7.57
16	7.11	6.60	5.78	6.13	5.85	6.11	5.71	6.19	6.79	7.36	7.58	7.59
17	7.12	6.62	5.76	6.03	5.89	6.16	5.74	6.21	6.82	7.37	7.55	7.60
18	7.13	6.62	5.65	6.11	5.92	6.20	5.70	6.25	6.83	7.39	7.56	7.61
19	7.14	6.63	5.60	6.16	5.94	6.23	5.64	6.24	6.85	7.41	7.55	7.63
20	6.60	6.64	5.46	6.21	5.98	6.24	5.62	6.24	6.87	7.43	7.40	7.64
21	6.28	6.65	5.47	6.24	5.99	6.26	5.69	6.27	6.89	7.44	7.30	7.64
22	6.28	6.67	5.52	6.26	6.00	6.24	5.73	6.31	6.91	7.37	7.17	7.65
23	6.34	6.69	5.55	6.18	6.05	6.25	5.77	6.35	6.94	7.39	7.22	7.66
24	6.34	6.70	5.57	6.22	6.07	6.29	5.80	6.38	6.96	7.41	7.29	7.67
25	6.36	6.72	5.53	6.04	6.10	6.32	5.82	6.36	6.96	7.38	7.34	7.68
26	6.39	6.61	5.57	5.92	6.14	6.25	5.85	6.30	6.97	7.40	7.38	7.69
27	6.41	6.49	5.61	5.98	6.16	6.22	5.88	6.36	6.97	7.43	7.40	7.70
28	6.42	6.52	5.65	5.91	6.19	6.27	5.84	6.40	7.00	7.45	7.43	7.71
29	6.41	6.58	5.68	5.79	---	6.26	5.78	6.43	7.03	7.47	7.40	7.67
30	6.42	6.62	5.72	5.83	---	6.11	5.84	6.45	7.06	7.49	7.29	7.68
31	6.43	---	5.75	5.85	---	6.05	---	6.47	---	7.51	7.31	---
MEAN	6.85	6.57	5.82	6.02	5.93	6.25	5.69	6.18	6.77	7.32	7.45	7.57
LOW	7.30	6.72	6.61	6.26	6.19	6.37	5.88	6.47	7.06	7.51	7.58	7.71
HIGH	6.28	6.43	5.46	5.79	5.71	6.05	5.51	5.87	6.49	7.08	7.17	7.36

WTR YR 1997 HIGH 5.45 DEC 20, 21 LOW 7.72 SEP 28, 29

RICHMOND 417 WELL



GROUND-WATER LEVELS IN RHODE ISLAND

WASHINGTON COUNTY--Continued

412844071422802. Richmond well RIW 600.

LOCATION.--Lat 41°28'44", long 71°42'28", Washington County, Hydrologic Unit 01090005, town of Richmond, about 50 ft west of Hope Valley Road, and 1.5 mi northeast of Woodville.

Owner: State Department of Transportation.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 54 ft, cased to 49 ft, screened 49 to 54 ft.

INSTRUMENTATION.--Continuous graphic recorder September 1977 to May 1988, digital recorder (60 minute) June 1988 to current year.

DATUM.--Land-surface datum is 100.17 ft, above sea level. Measuring point: Floor of recorder shelter, 2.63 ft above land-surface datum.

PERIOD OF RECORD.--September 1977 to current year.

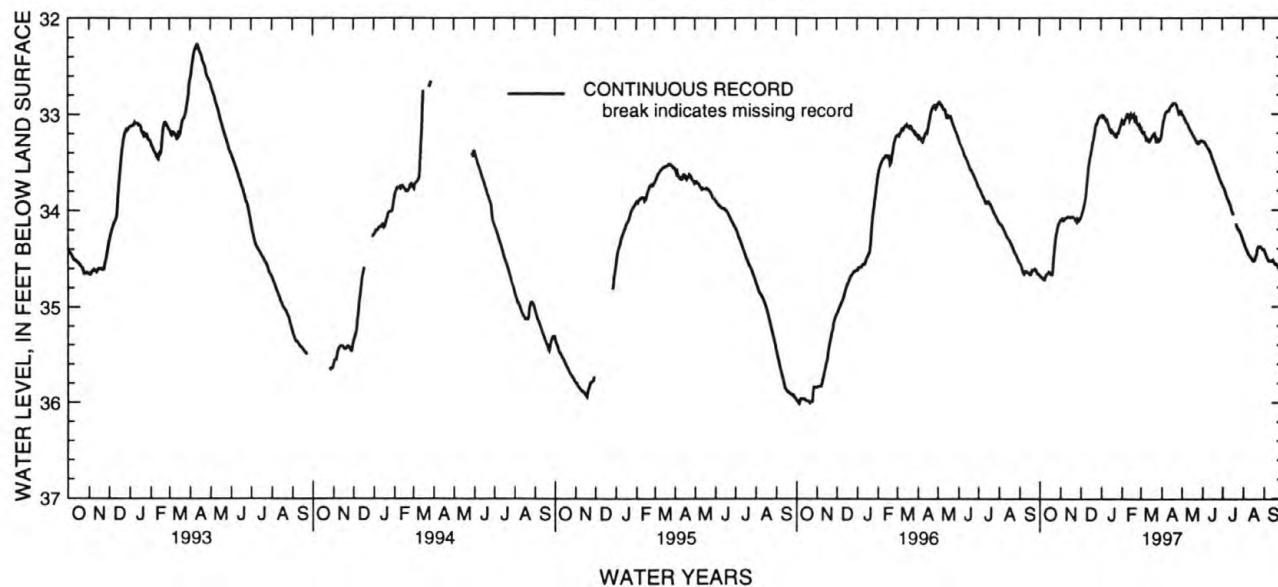
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 31.42 ft below land-surface datum, June 11, 1982; lowest, 35.94 ft below land-surface datum, Feb. 2, 1981.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34.68	34.10	34.08	33.02	33.07	33.16	33.21	32.98	33.28	33.74	34.32	34.41
2	34.69	34.10	34.06	33.01	33.09	33.15	33.16	33.00	33.29	33.76	34.34	34.42
3	34.69	34.09	34.04	33.01	33.09	33.18	33.11	33.01	33.29	33.77	34.36	34.44
4	34.70	34.10	34.01	33.03	33.11	33.20	33.07	33.02	33.29	33.79	34.38	34.46
5	34.71	34.09	33.99	33.02	33.07	33.20	33.05	33.05	33.30	33.81	34.40	34.48
6	34.71	34.10	33.96	33.03	33.06	33.18	33.01	33.05	33.32	33.83	34.42	34.50
7	34.72	34.09	33.92	33.05	33.04	33.22	32.99	33.07	33.33	33.86	34.43	34.51
8	34.72	34.09	33.89	33.07	33.02	33.23	32.98	33.09	33.34	33.87	34.45	34.52
9	34.69	34.08	33.83	33.08	33.00	33.26	32.97	33.09	33.35	33.89	34.46	34.53
10	34.67	34.08	33.76	33.07	33.00	33.25	32.97	33.10	33.36	33.90	34.47	34.53
11	34.66	34.07	33.68	33.10	33.01	33.26	32.97	33.12	33.37	33.92	34.48	34.53
12	34.66	34.07	33.62	33.13	33.02	33.28	32.97	33.14	33.39	33.94	34.49	34.53
13	34.65	34.07	33.55	33.14	33.06	33.29	32.94	33.15	33.40	33.96	34.50	34.53
14	34.64	34.07	33.51	33.17	33.04	33.29	32.93	33.17	33.42	33.99	34.51	34.53
15	34.65	34.08	33.46	33.18	33.01	33.27	32.92	33.18	33.45	34.01	34.52	34.52
16	34.65	34.08	33.43	33.15	33.03	33.27	32.91	33.19	33.47	34.03	34.53	34.54
17	34.66	34.07	33.39	33.18	33.03	33.24	32.91	33.21	33.48	34.05	34.53	34.55
18	34.67	34.07	33.35	33.18	33.02	33.23	32.89	33.22	33.50	---	34.52	34.56
19	34.67	34.07	33.30	33.20	33.01	33.22	32.89	33.23	33.52	---	34.49	34.56
20	34.63	34.07	33.28	33.20	33.06	33.21	32.89	33.24	33.54	---	34.48	34.56
21	34.53	34.08	33.24	33.22	33.05	33.22	32.89	33.26	33.56	34.14	34.46	34.57
22	34.45	34.09	33.20	33.23	33.04	33.21	32.89	33.27	33.58	34.16	34.41	34.58
23	34.38	34.10	33.14	33.23	33.09	33.25	32.90	33.29	33.60	34.18	34.39	34.59
24	34.31	34.11	33.11	33.25	33.10	33.29	32.92	33.30	33.62	34.20	34.38	34.60
25	34.26	34.12	33.11	33.20	33.11	33.29	32.95	33.29	33.64	34.20	34.38	34.61
26	34.23	34.09	33.09	33.20	33.12	33.26	32.97	33.29	33.66	34.21	34.38	34.63
27	34.19	34.10	33.06	33.20	33.11	33.27	32.99	33.30	33.68	34.23	34.38	34.64
28	34.16	34.11	33.05	33.16	33.15	33.28	32.97	33.29	33.70	34.24	34.39	34.65
29	34.14	34.10	33.03	33.15	---	33.27	32.97	33.28	33.71	34.26	34.40	34.66
30	34.13	34.09	33.03	33.12	---	33.27	32.99	33.28	33.73	34.28	34.41	---
31	34.11	---	33.02	33.09	---	33.25	---	33.28	---	34.30	34.41	---
MEAN	34.53	34.09	33.49	33.13	33.06	33.24	32.97	33.18	33.47	---	34.43	---
LOW	34.72	34.12	34.08	33.25	33.15	33.29	33.21	33.30	33.73	---	34.53	---
HIGH	34.11	34.07	33.02	33.01	33.00	33.15	32.89	32.98	33.28	---	34.32	---

WTR YR 1997 HIGH 32.88 APR 18, 19 LOW 34.72 OCT 7, 8

RICHMOND 600 WELL



WASHINGTON COUNTY--Continued

412718071415201. Richmond well RIW 785.

LOCATION.--Lat 41°27'18", long 71°41'52", Washington County, Hydrologic Unit 01090005, town of Richmond, about 50 ft. west of Narragansett Trail, and 1.2 miles north of Wood River Junction.

Owner: Tuckahoe Turf Farms.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in, depth 40.06 ft, cased to 34.21 ft, screened from 34.21 ft to 40.06 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey Personnel.

DATUM.--Elevation of land-surface datum is 85 ft. Measuring point: Top of casing, 0.65 ft above land-surface datum.

REMARKS.--Replacement well for RIW 231 which was destroyed.

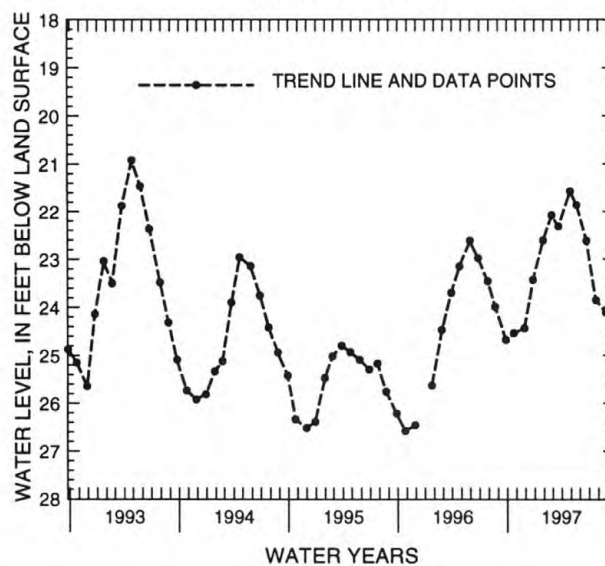
PERIOD OF RECORD.--October 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.92 ft below land-surface datum, Apr. 27, 1993 lowest measured, 26.58 ft below land-surface datum, Oct. 26, 1995.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	24.54	DEC 26	23.43	FEB 26	22.08	APR 29	21.57	JUN 23	22.62	AUG 26	24.11
NOV 27	24.44	JAN 29	22.61	MAR 21	22.32	MAY 21	21.86	JUL 23	23.85	SEP 24	24.74

RICHMOND 785 WELL



GROUND-WATER LEVELS IN RHODE ISLAND

WASHINGTON COUNTY--Continued

412918071321001. South Kingstown well SNW 6.

LOCATION.--Lat 41°29'18", long 71°32'10", Washington County, Hydrologic Unit 01090005, town of South Kingstown, at northwest corner of Mead Field at University of Rhode Island, and 0.9 mi northwest of Kingston.

Owner: University of Rhode Island.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water table well, diameter 10 in, depth 34 ft, cased to 34 ft, open end.

INSTRUMENTATION.--Continuous graphic recorder July 1973 to May 1988, digital recorder (60 minute) June 1988 to current year.

DATUM.--Land-surface datum is 111.89 ft above sea level. Measuring point: Floor of recorder shelter, 0.04 ft above land-surface datum.

RECORD OF PERIOD.--November to December 1947, February 1955 to current year.

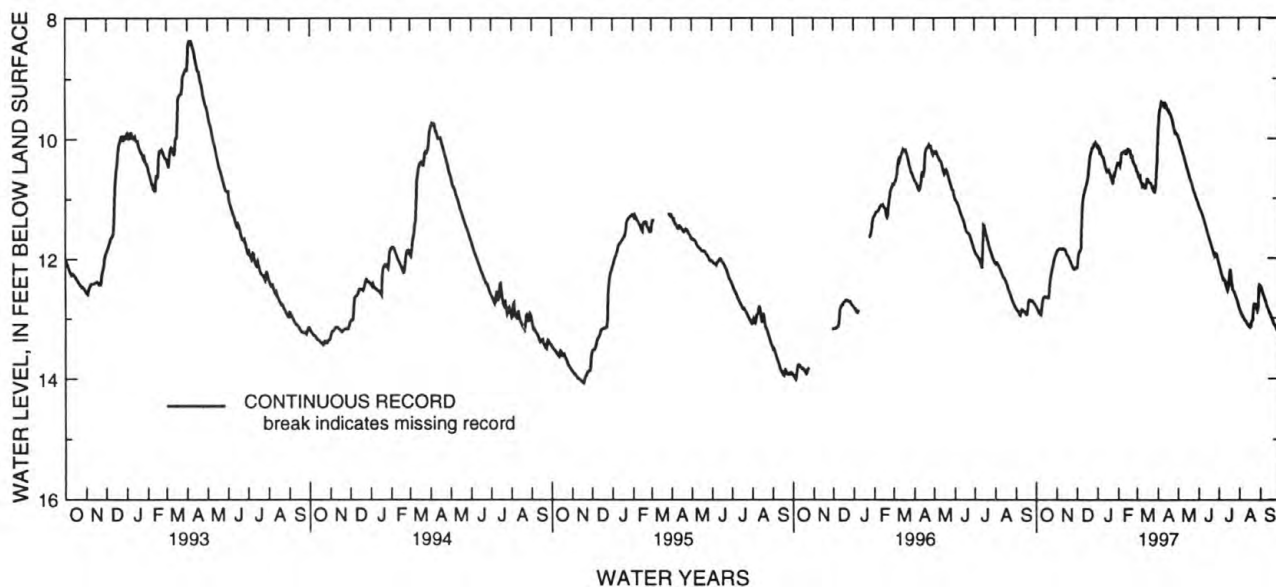
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.91 ft below land-surface datum, Apr. 25, 26, 1983; lowest, 15.06 ft below land-surface datum, Dec. 29, 1965.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.81	11.89	12.16	10.14	10.41	10.55	10.07	9.94	11.11	12.08	12.84	12.46
2	12.83	11.87	12.12	10.12	10.44	10.56	9.86	9.99	11.15	12.12	12.87	12.48
3	12.85	11.86	11.97	10.14	10.44	10.62	9.65	10.01	11.17	12.17	12.91	12.51
4	12.88	11.85	11.90	10.21	10.46	10.65	9.54	10.05	11.19	12.21	12.94	12.55
5	12.91	11.84	11.89	10.19	10.38	10.67	9.50	10.11	11.22	12.26	12.94	12.59
6	12.92	11.84	11.87	10.23	10.27	10.65	9.43	10.13	11.26	12.30	12.97	12.62
7	12.93	11.84	11.84	10.27	10.24	10.73	9.39	10.18	11.29	12.34	12.99	12.65
8	12.94	11.84	11.50	10.30	10.24	10.74	9.40	10.22	11.32	12.38	13.01	12.69
9	12.85	11.85	11.17	10.32	10.22	10.79	9.40	10.25	11.36	12.35	13.03	12.72
10	12.74	11.84	11.04	10.32	10.22	10.77	9.43	10.29	11.40	12.37	13.04	12.75
11	12.68	11.84	10.96	10.39	10.21	10.79	9.47	10.34	11.44	12.43	13.05	12.79
12	12.66	11.85	10.92	10.44	10.22	10.82	9.48	10.38	11.48	12.47	13.08	12.82
13	12.65	11.85	10.87	10.48	10.27	10.83	9.42	10.42	11.52	12.51	13.10	12.84
14	12.64	11.87	10.83	10.52	10.23	10.83	9.44	10.47	11.56	12.54	13.11	12.87
15	12.65	11.91	10.79	10.55	10.19	10.76	9.49	10.51	11.61	12.51	13.13	12.90
16	12.65	11.94	10.75	10.53	10.18	10.68	9.52	10.54	11.64	12.39	13.14	12.92
17	12.65	11.95	10.70	10.54	10.19	10.68	9.54	10.59	11.68	12.27	13.15	12.95
18	12.66	11.97	10.62	10.53	10.20	10.71	9.53	10.63	11.71	12.19	13.14	12.98
19	12.66	11.99	10.51	10.58	10.20	10.73	9.58	10.66	11.74	12.25	13.07	13.00
20	12.62	12.02	10.37	10.60	10.29	10.73	9.58	10.69	11.79	12.36	13.04	13.03
21	12.46	12.05	10.29	10.66	10.28	10.75	9.61	10.73	11.83	12.46	13.03	13.06
22	12.35	12.07	10.25	10.69	10.29	10.75	9.65	10.76	11.86	12.53	12.84	13.09
23	12.29	12.10	10.21	10.71	10.38	10.81	9.70	10.81	11.91	12.55	12.76	13.11
24	12.23	12.13	10.16	10.76	10.40	10.84	9.74	10.86	11.95	12.56	12.76	13.13
25	12.17	12.16	10.16	10.67	10.43	10.86	9.81	10.89	11.97	12.60	12.79	13.15
26	12.12	12.17	10.14	10.60	10.45	10.82	9.85	10.91	11.96	12.63	12.81	13.17
27	12.06	12.18	10.09	10.61	10.46	10.83	9.90	10.95	11.92	12.66	12.84	13.14
28	12.01	12.17	10.09	10.56	10.53	10.86	9.89	10.98	11.93	12.69	12.87	13.16
29	11.98	12.16	10.07	10.49	---	10.82	9.91	11.01	11.99	12.73	12.83	13.18
30	11.94	12.16	10.10	10.45	---	10.57	9.94	11.04	12.03	12.77	12.51	13.20
31	11.91	---	10.12	10.41	---	10.44	---	11.07	---	12.80	12.45	---
MEAN	12.54	11.97	10.85	10.45	10.31	10.73	9.62	10.53	11.60	12.43	12.94	12.88
LOW	12.94	12.18	12.16	10.76	10.53	10.86	10.07	11.07	12.03	12.80	13.15	13.20
HIGH	11.91	11.84	10.07	10.12	10.18	10.44	9.39	9.94	11.11	12.08	12.45	12.46

WTR YR 1997 HIGH 9.37 APR 7, 8 LOW 13.21 SEP 30

SOUTH KINGSTOWN 6 WELL



WASHINGTON COUNTY--Continued

412923071361601. South Kingstown well SNW 515.

LOCATION.--Lat 41°29'23", long 71°36'16", Washington County, Hydrologic Unit 01090005, town of South Kingstown, at Laurel Lane Golf Course, 2.7 mi west of West Kingstown.
 Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 36 in, depth 30 ft, lined with stone to 30 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 127.84 ft above sea level. Measuring point: Top edge of concrete casing on south rim of well, 2.11 ft above land-surface datum. Dec. 27, 1975, to Apr. 25, 1981, measuring point 1.61 ft lower.

PERIOD OF RECORD.--May 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.44 ft below land-surface datum, May 26, 1966. Dry several times in water years 1978, 1980-85, 1987-88, 1991, and 1994-95.

WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	27.61	DEC 26	25.39	FEB 26	26.02	APR 29	25.62	JUN 24	27.56	AUG 26	28.58
NOV 27	27.30	JAN 29	25.98	MAR 24	26.53	MAY 21	26.40	JUL 23	28.91	SEP 24	dry

412154071462901. Westerly well WEW 522.

LOCATION.--Lat 41°21'54", long 71°46'29", Washington County, Hydrologic Unit 01090005, town of Westerly, 350 ft northwest of intersection of Pound and Old Shore Roads and 1.0 mi north of Dunn Corner.
 Owner: Private owner.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 16 ft, lined with stone to 16 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 45 ft. Measuring point: Southwest corner of stone casing, 0.91 ft above land-surface datum.

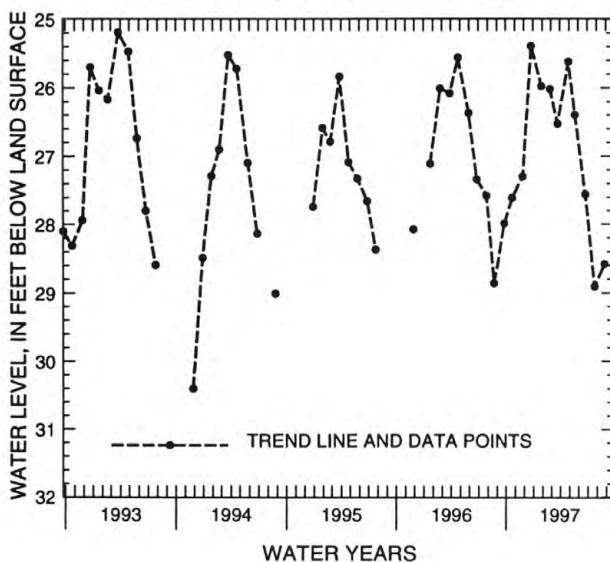
PERIOD OF RECORD.--January 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.23 ft below land-surface datum, Apr. 23, 1983; lowest measured, 14.69 ft below land-surface datum, Sept. 23, 1993.

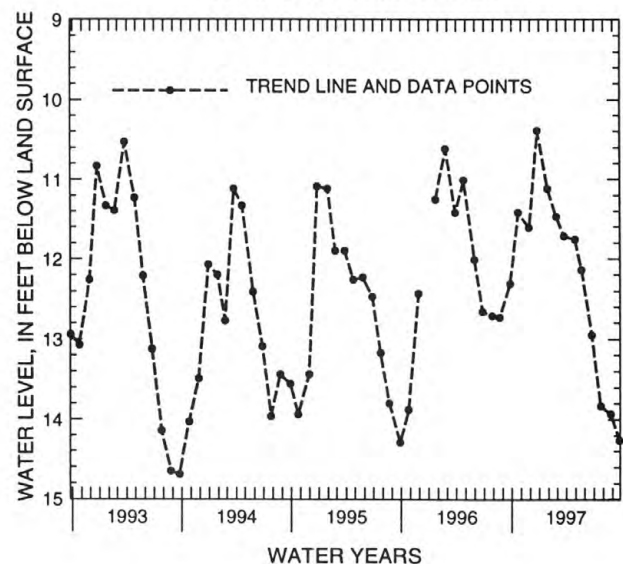
WATER LEVELS, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	11.42	DEC 26	10.39	FEB 26	11.47	APR 29	11.76	JUN 24	12.95	AUG 26	13.93
NOV 27	11.61	JAN 29	11.12	MAR 24	11.72	MAY 21	12.14	JUL 23	13.83	SEP 24	14.26

SOUTH KINGSTOWN 515 WELL



WESTERLY 522 WELL





USGS provides discharge measurement training to State and local environmental staff at Quinebaug River near East Brimfield, Mass.

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CALENDAR FOR WATER YEAR 1997

1996

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				

1997

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4							1							
5	6	7	8	9	10	11	2	3	4	5	6	7	8	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28		23	24	25	26	27	28	29
														30	31					
APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5					1	2	3	1	2	3	4	5	6	7
6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
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20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
27	28	29	30				25	26	27	28	29	30	31	29	30					
JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2		1	2	3	4	5	6
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							31													

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