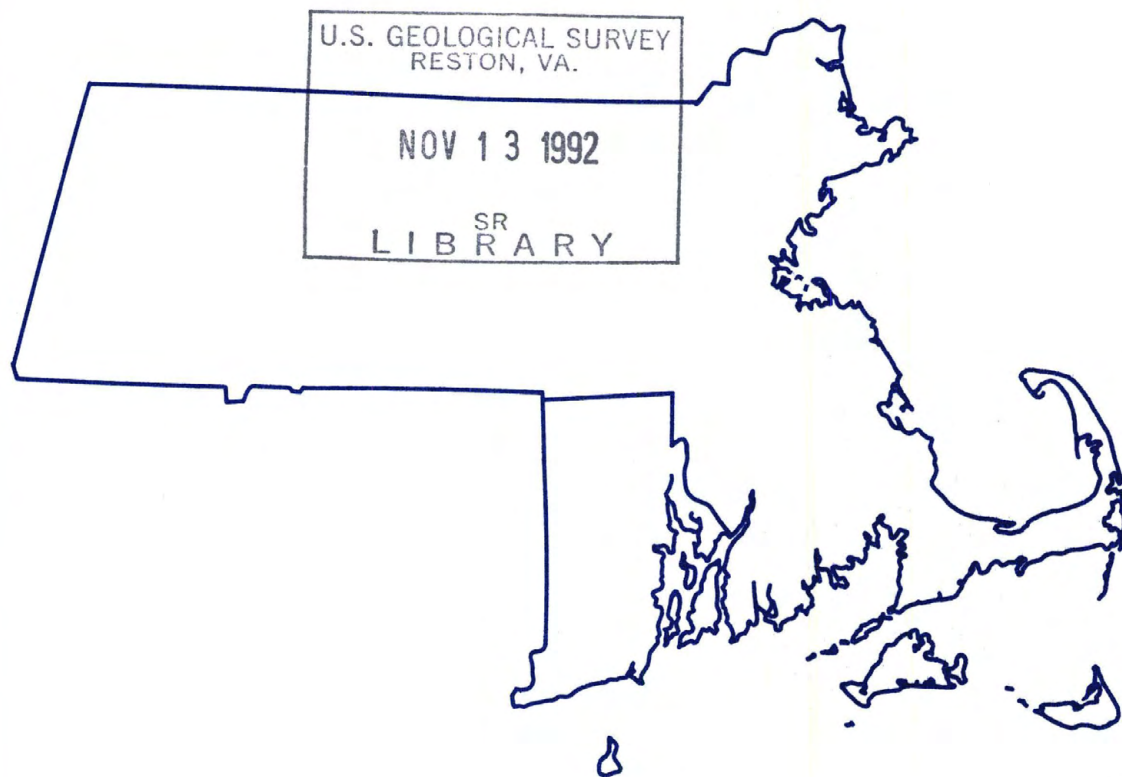


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Water Resources Data Massachusetts and Rhode Island Water Year 1991



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MA-RI-91-1
Prepared in cooperation with the States of Massachusetts and
Rhode Island and with other agencies

CALENDAR FOR WATER YEAR 1991

1990

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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7	8	9	10	11	12	13								2	3	4	5	6	7	8
14	15	16	17	18	19	20	4	5	6	7	8	9	10	9	10	11	12	13	14	15
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1991

JANUARY							FEBRUARY							MARCH						
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JULY							AUGUST							SEPTEMBER						
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28	29	30	31				25	26	27	28	29	30	31	29	30					



Water Resources Data Massachusetts and Rhode Island Water Year 1991

by R.A. Gadoury, R.S. Socolow, and L.R. Ramsbey



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT MA-RI-91-1
Prepared in cooperation with the States of Massachusetts
and Rhode Island and with other agencies

U.S. DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., *Secretary*

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, *Director*

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U.S. Geological Survey
Water Resources Division
28 Lord Road, Suite 280
Marlborough, MA 01752

1992

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: L. Y. Comeau, L. J. Ostiguy, P. L. Provencher, D. J. Searles, C. Shivers, Jr., and J. L. Zanca.

Diane M Barrett was responsible for the word processing and publishing phases 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 I.C. James, II, Chief, New England Program Area, M.C. Yurewicz, Chief, Massachusetts-Rhode Island District, and V.A. de Lima, Acting Chief, Rhode Island Office.

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16. Abstract (Limit: 200 words) Water-resources data for the 1991 water year for Massachusetts and Rhode Island consists of stage, discharge, and water quality of streams; contents of lakes and reservoirs; and ground-water levels. This report contains discharge records for 79 gaging stations, monthend contents for six lakes and reservoirs, water quality for nine gaging stations, and water levels for 119 observation wells. Also included are data for 58 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. A few pertinent stations in bordering states are also included in this report. These data represent that portion of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Massachusetts and Rhode Island.			
17. Document Analysis a. Descriptors *Massachusetts, *Rhode Island, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels and analyses. b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
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CONTENTS

Preface	iv
List of stations, in downstream order, for which records are published in this volume	vii
List of ground-water wells, by county, for which records are published in this volume	x
List of discontinued surface-water discharge stations	xii
List of discontinued surface-water-quality of stations	xv
Introduction	1
Cooperation	5
Summary of hydrologic conditions	5
Streamflow	5
Storms and droughts	7
Reservoir storage	7
Water quality	8
Ground-water levels	8
Special networks and programs	8
Explanation of the records	10
Station-identification numbers	10
Downstream order system	10
Latitude-longitude system	10
Records of stage and water discharge	11
Data collection and computation	11
Data presentation	12
Station manuscript	12
Data table of daily mean values	14
Statistics of monthly mean data	14
Summary statistics	14
Identifying estimated daily discharge	16
Accuracy of the records	16
Other records available	16
Records of surface-water quality	16
Classification of records	16
Arrangement of records	17
On-site measurements and sample collection	17
Water temperature	17
Sediment	18
Laboratory measurements	18
Data presentation	18
Remark codes	19
Records of ground-water levels	19
Data collection and computation	19
Data presentation	20
Access to WATSTORE data	20
Definition of terms	21
Publications of techniques of water-resources investigations	29
Station records, surface water	33
Discharge at partial-record stations and miscellaneous sites	160
Low-flow partial-record stations	160
Measurements at miscellaneous sites	165
Supplemental water-quality data for gaging stations	171
Stations records, ground water	180
Ground-water levels in Massachusetts	180
Ground-water levels in Rhode Island	232
Index	243

ILLUSTRATIONS

	Page
Figure 1. Map showing location of gaging stations	2
2. Map showing location of partial-record stations.....	3
3. Map showing location of observation wells	4
4. Comparison of discharge at three long-term index stations during 1991 water year with median discharge for period 1961-90.....	6
5. Comparison of monthly water levels in selected observation wells during 1991water year with average, maximum, and minimum levels for periods of record.....	9
6. System for numbering wells and miscellaneous sites	11

**SURFACE-WATER AND WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER,
FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME**

vii

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

NORTH ATLANTIC SLOPE BASINS

MERRIMACK RIVER BASIN

Merrimack River:

	Page
North Nashua River (head of Nashua River) at Fitchburg, Mass. (d).....	01094400..... 33
North Nashua River near Leominster, Mass. (d).....	01094500..... 34
Nashua River at Clinton, Mass. (d)	01095500..... 35
Squannacook River near West Groton, Mass. (d)	01096000..... 36
Nashua River at East Pepperell, Mass. (d)	01096500..... 37
Merrimack River above Lowell, Mass. (c, m)	01096550..... 38
Assabet River (head of Concord River) at Maynard, Mass. (d)	01097000..... 40
Fort Pond Brook:	
Nashoba Brook near Acton, Mass. (d)	01097300..... 41
Sudbury River at Saxonville, Mass. (d)	01098530..... 42
Concord River below River Meadow Brook, at Lowell, Mass. (d).....	01099500..... 43
Merrimack River below Concord River, at Lowell, Mass. (d)	01100000..... 44
Shawsheen River near Wilmington, Mass. (d)	01100600..... 45

PARKER RIVER BASIN

Parker River at Byfield, Mass. (d).....	01101000..... 46
---	------------------

IPSWICH RIVER BASIN

Ipswich River at South Middleton, Mass. (d)	01101500..... 47
Ipswich River near Ipswich, Mass. (d)	01102000..... 48

MYSTIC RIVER BASIN

Aberjona River (head of Mystic River) at Winchester, Mass. (d)	01102500..... 49
--	------------------

CHARLES RIVER BASIN

Charles River at Dover, Mass. (d, c, m)	01103500..... 50
Mother Brook at Dedham, Mass. (d).....	01104000..... 53
Charles River at Wellesley, Mass. (d)	01104200..... 54
Charles River at Waltham, Mass. (d).....	01104500..... 55

NEPONSET RIVER BASIN

Neponset River at Norwood, Mass. (d).....	01105000..... 56
East Branch Neponset River at Canton, Mass. (d)	01105500..... 57

WEYMOUTH BACK RIVER BASIN

Whitmans Pond (head of Weymouth Back River):

Old Swamp River near South Weymouth, Mass. (d)	01105600..... 58
--	------------------

NORTH RIVER BASIN

Indian Head River (head of North River) at Hanover, Mass. (d)	01105730..... 59
---	------------------

JONES RIVER BASIN

Jones River at Kingston, Mass. (d)	01105870..... 60
--	------------------

QUASHNET RIVER BASIN

Quashnet River at Waquoit Village, Mass. (d)	011058837..... 61
--	-------------------

TAUNTON RIVER BASIN

Taunton River:

Wading River (head of Threemile River) near Norton, Mass (d)	01109000..... 62
Threemile River at North Dighton, Mass. (d)	01109060..... 63
Segreganset River near Dighton, Mass. (d).....	01109070..... 64

TEN MILE RIVER BASIN

Ten Mile River at Pawtucket Avenue, at East Providence, R.I. (d)	01109403..... 65
--	------------------

BLACKSTONE RIVER BASIN

Kettle Brook (head of Blackstone River): Page

Quinsigamond River at North Grafton, Mass. (d).....	01110000..... 66
Blackstone River at Millville, Mass. (c, m)	01111230..... 67
Clear River (head of Branch River):	
Nipmuc River near Harrisville, R. I. (d).....	01111300..... 73
Branch River at Forestdale, R.I. (d, c, m).....	01111500..... 74
Blackstone River at Woonsocket, R.I. (d).....	01112500..... 79
Blackstone River at Manville, R.I. (c, m).....	01112900..... 80

**SURFACE-WATER AND WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER,
FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME**

NORTH ATLANTIC SLOPE BASINS--Continued

MOSHASSUCK RIVER BASIN	Page
Moshassuck River at Providence, R.I. (d).....	01114000..... 84
WOONASQUATUCKET RIVER BASIN	
Woonasquatucket River at Centerdale, R.I. (d)	01114500..... 85
PAWTUXET RIVER BASIN	
Pawtuxet River:	
South Branch Pawtuxet River at Washington, R.I. (d, l).....	01116000..... 86
Pawtuxet River at Cranston, R.I. (d, l, c, m)	01116500..... 87
Pawtuxet River at Pawtuxet, R.I. (c, m).....	01116617..... 92
POTOWOMUT RIVER BASIN	
Hunt River near East Greenwich, R.I. (d).....	01117000..... 96
PAWCATUCK RIVER BASIN	
Chipuxet River (head of Pawcatuck River) at West Kingston, R.I. (d)	01117350..... 97
Usquepaug River near Usquepaug, R.I. (d).....	01117420..... 98
Beaver River near Usquepaug, R.I. (d).....	01117468..... 99
Pawcatuck River at Wood River Junction, R.I. (d).....	01117500..... 100
Wood River near Arcadia, R.I. (d).....	01117800..... 101
Wood River at Hope Valley, R.I. (d, c, t).....	01118000..... 102
Pawcatuck River at Westerly, R.I. (d, c, m, t, s).....	01118500..... 107
THAMES RIVER BASIN	
Shetucket River (head of Thames River):	
Quinebaug River at Quinebaug, Conn. (d, c, m)	01124000..... 115
CONNECTICUT RIVER BASIN	
Connecticut River:	
Millers River near Winchendon, Mass. (d).....	01162000..... 118
Priest Brook near Winchendon, Mass. (d).....	01162500..... 119
Otter River at Otter River, Mass. (d)	01163200..... 120
Whetstone Brook at Depot Road at Wendell Depot, Mass. (d).....	01166105..... 121
Millers River at Erving, Mass. (d)	01166500..... 122
Deerfield River near Rowe, Mass. (d)	01168151..... 123
Deerfield River at Charlemont, Mass. (d)	01168500..... 124
North River at Shattuckville, Mass. (d)	01169000..... 125
South River near Conway, Mass. (d).....	01169900..... 126
Deerfield River near West Deerfield, Mass. (d)	01170000..... 127
Green River near Colrain, Mass. (d).....	01170100..... 128
Connecticut River at Montague City, Mass. (d)	01170500..... 129
Fort River near Amherst, Mass. (d).....	01171300..... 130
Mill River at Northampton, Mass. (d)	01171500..... 131
Connecticut River below Holyoke Dam at Holyoke, Mass. (d)	01172003..... 132
Ware River (head of Chicopee River) near Barre, Mass. (d)	01172500..... 133
Ware River at intake works, near Barre, Mass. (d).....	01173000..... 134
Ware River at Gibbs Crossing, Mass. (d).....	01173500..... 135
Quabbin Reservoir (head of Swift River):	
East Branch Swift River near Hardwick, Mass. (d).....	01174500..... 136
Cadwell Creek near Pelham, Mass. (d).....	01174600..... 137
Cadwell Creek near Belchertown, Mass. (d).....	01174900..... 138
Swift River at West Ware, Mass. (d)	01175500..... 139
Sevenmile River (head of Quaboag River) near Spencer, Mass. (d)	01175670..... 140
Quaboag River at West Brimfield, Mass. (d)	01176000..... 141
Chicopee River at Indian Orchard, Mass. (d).....	01177000..... 142
Westfield River:	
West Branch Westfield River at Huntington, Mass. (d).....	01181000..... 143
Little River at outlet of Cobble Mountain Reservoir, near Westfield, Mass. (d)	01183000..... 144
Westfield River near Westfield, Mass. (d).....	01183500..... 145
Connecticut River at Thompsonville, Conn. (d, c, m, t, s).....	01184000..... 146
West Branch Farmington River near New Boston, Mass. (d).....	01185500..... 154

**SURFACE-WATER AND WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER,
FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME**

ix

NORTH ATLANTIC SLOPE BASINS--Continued

HOUSATONIC RIVER BASIN

Page

East Branch Housatonic River at Coltsville, Mass. (d)	01197000.....	155
Housatonic River near Great Barrington, Mass. (d).....	01197500.....	156

HUDSON RIVER BASIN

Hudson River:

Hoosic River at Adams, Mass. (d)	01331500.....	157
Hoosic River near Williamstown, Mass. (d)	01332500.....	158
Green River at Williamstown, Mass. (d)	01333000.....	159

**GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS
ARE PUBLISHED IN THIS VOLUME**

MASSACHUSETTS	Page	MASSACHUSETTS--Continued	Page
BARNSTABLE COUNTY		HAMPDEN COUNTY--Continued	
Barnstable well AIW 230	180	Granville well GLW 5	202
Barnstable well AIW 247	180	Granville well GLW 6	203
Bourne well BHW 198	181	Montgomery well M7W 19	203
Brewster well BMW 21	181	Southwick well SVW 95	204
Brewster well BMW 22	182	Westfield well WVW 62	204
Chatham well CGW 138	182	Westfield well WVW 152	205
Mashpee well MIW 29	183	Wilbraham well XJW 55	205
Sandwich well SDW 252	183		
Sandwich well SDW 253	184	HAMPSHIRE COUNTY	
Truro well TSW 1	184	Cummington well CYW 13	206
Truro well TSW 89	185	Granby well GKW 68	206
Wellfleet well WNW 17	185	Pelham well PDW 23 (recorder)	207
		Pelham well PDW 24	207
		Ware well WEW 43	208
		Westhampton well WXW 20	208
BERKSHIRE COUNTY		MIDDLESEX COUNTY	
Becket well A3W 12	186	Acton well ACW 158	209
Cheshire well CJW 2	186	Billerica well BCW 363	209
Great Barrington well GMW 2	187	Chelmsford well CHW 68	210
Otis well OTW 7	187	Chelmsford well CHW 385	210
Pittsfield well PTW 51 (recorder)	188	Concord well CTW 165	211
Sheffield well SJW 58	189	Concord well CTW 167	211
		Lexington well LTW 104	212
BRISTOL COUNTY		Southborough well SSW 12	212
Attleboro well ATW 83	189	Townsend well TRW 13	213
Freetown well F3W 23	190	Wakefield well WAW 38	213
New Bedford well NGW 116	190	Wayland well WKW 2	214
Norton well N4W 37	191	Wilmington well XMW 78 (recorder)	215
Seekonk well SHW 275	191	Winchester well XOW 14	216
Taunton well TAW 337	192		
DUKES COUNTY		NANTUCKET COUNTY	
Edgartown well ENW 52	192	Nantucket well NBW	216
ESSEX COUNTY		NORFOLK COUNTY	
Andover well AJW 26	193	Dedham well DDW 231	217
Andover well AJW 462	193	Dover well DVW 10	217
Georgetown well GCW 168	194	Foxborough well FXW 3	218
Haverhill well HLW 23 (recorder)	195	Norfolk well NNW 27	218
Newbury well NIW 27 (recorder)	196	Weymouth well XGW 2	219
Topsfield well TQW 1	197	Weymouth well XGW 3	219
Wenham well WPW 76	197	Weymouth well XGW 4	220
FRANKLIN COUNTY		PLYMOUTH COUNTY	
Colrain well CSW 8	198	Duxbury well D4W 79	220
Deerfield well DFW 44	198	Duxbury well D4W 80	221
Hawley well HMW 8	199	East Bridgewater well EBW 30	221
Montague well M5W 5	199	Halifax well HBW 97	222
Orange well ORW 63	200	Hanson well HGW 76	222
Sunderland well S6W 7	200	Lakeville well LKW 14 (recorder)	223
Sunderland well S6W 68	201	Middleborough well MTW 82	224
		Plymouth well PWW 22	224
HAMPDEN COUNTY		Plymouth well PWW 494	225
Blandford well BEW 9	201	Wareham well WFW 51	225
Chicopee well CMW 95	202		

**GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS
ARE PUBLISHED IN THIS VOLUME**

xi

MASSACHUSETTS--Continued	Page	RHODE ISLAND--Continued	Page
SUFFOLK COUNTY		PROVIDENCE COUNTY	
Boston well BGW 925.....	226	Burrillville well BUW 187	233
		Cumberland well CUW 265.....	233
		Lincoln well LIW 84.....	234
		North Smithfield well NSW 21	234
		Pawtucket well PAW 136	235
		Providence well PRW 48.....	235
		Providence well PRW 1051	236
WORCESTER COUNTY		WASHINGTON COUNTY	
Hardwick well HHW 1	226	Charlestown well CHW 18	236
Hardwick well HHW 31	227	Exeter well EXW 6.....	237
Northbridge well NXW 54	227	Exeter well EXW 16.....	237
Petersham well PHW 16	228	Exeter well EXW 475 (recorder).....	238
Sterling well SYW 1	228	Exeter well EXW 554.....	238
Templeton well TMW 3	229	North Kingstown well NKW 255	239
Webster well WLW 1	229	North Kingstown well NKW 450	239
West Brookfield well WUW 2	230	Richmond well RIW 231	240
West Brookfield well WUW 10	230	Richmond well RIW 417 (recorder).....	240
Winchendon well XNW 13	231	Richmond well RIW 600 (recorder).....	241
Worcester well XSW 274	231	South Kingstown well SNW 6 (recorder)	241
		South Kingstown well SNW 515.....	242
		Westerly well WEW 522	242
RHODE ISLAND			
KENT COUNTY			
Coventry well COW 411	232		
West Greenwich well GWG 181	232		

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

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
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
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
HERRING RIVER BASIN			
Herring River at North Harwich, Mass.	01105880	9.4	1966-88

Discontinued surface-water discharge stations.--Continued

Station Name	Station Number	Drainage Area (mi ²)	Period of Record
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
Taunton River near Bridgewater, Mass.	01108000	258	1930-76, 1985-88
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
Blackstone River at Northbridge, Mass.	01110500	141	1940-77
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
PAWCUCK RIVER BASIN			
Beaver River at Kenyon, R.I.	01117472	11.7	1975-79
Meadow Brook near Carolina, R.I.	01117600	5.53	1965-74

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Discontinued surface-water discharge stations.--Continued

Station Name	Station Number	Drainage Area (mi ²)	Period of Record
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
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
Mill River at Springfield, Mass.	01178000	33.2	1939-51
Westfield River at West Chesterfield, Mass.	01178500	110	1946-51
Westfield River at Knightville, Mass.	01179500	161	1909-90
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 at Great Barrington, Mass.	01198000	51.0	1952-71
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
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

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

xv

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
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
WEST BRANCH WESTPORT RIVER BASIN				
Adamsville Brook at Adamsville, R.I.	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
POTOWOMUT RIVER BASIN				
Hunt River near East Greenwich, R.I.	01117000	23.0	Temp., S.C.	1977-81

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

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

Station Name	Station Number	Drainage Area (mi ²)	Type of record	Period of record (water years)
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
HUDSON RIVER BASIN				
Hoosic River below Williamstown, Mass.	01333300	204	Temp., S.C., pH, D.O.	1969-75, 1978-81

Water Resources Data for Massachusetts and Rhode Island, 1991

By R.A. Gadoury, R.S. Socolow, 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."

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 records for water discharge at 79 gaging stations; monthend contents at 6 lakes and reservoirs; water quality at 9 gaging stations; and water levels at 119 observation wells. Also included are data for 58 low-flow partial record stations. Locations of these sites are shown in figures 1, 2, and 3. Miscellaneous hydrologic data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous discharge measurements. A few pertinent

stations (not included above) in bordering States are also included in this report. The data in this report represent that part of the National Water Data System collected 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 chem-

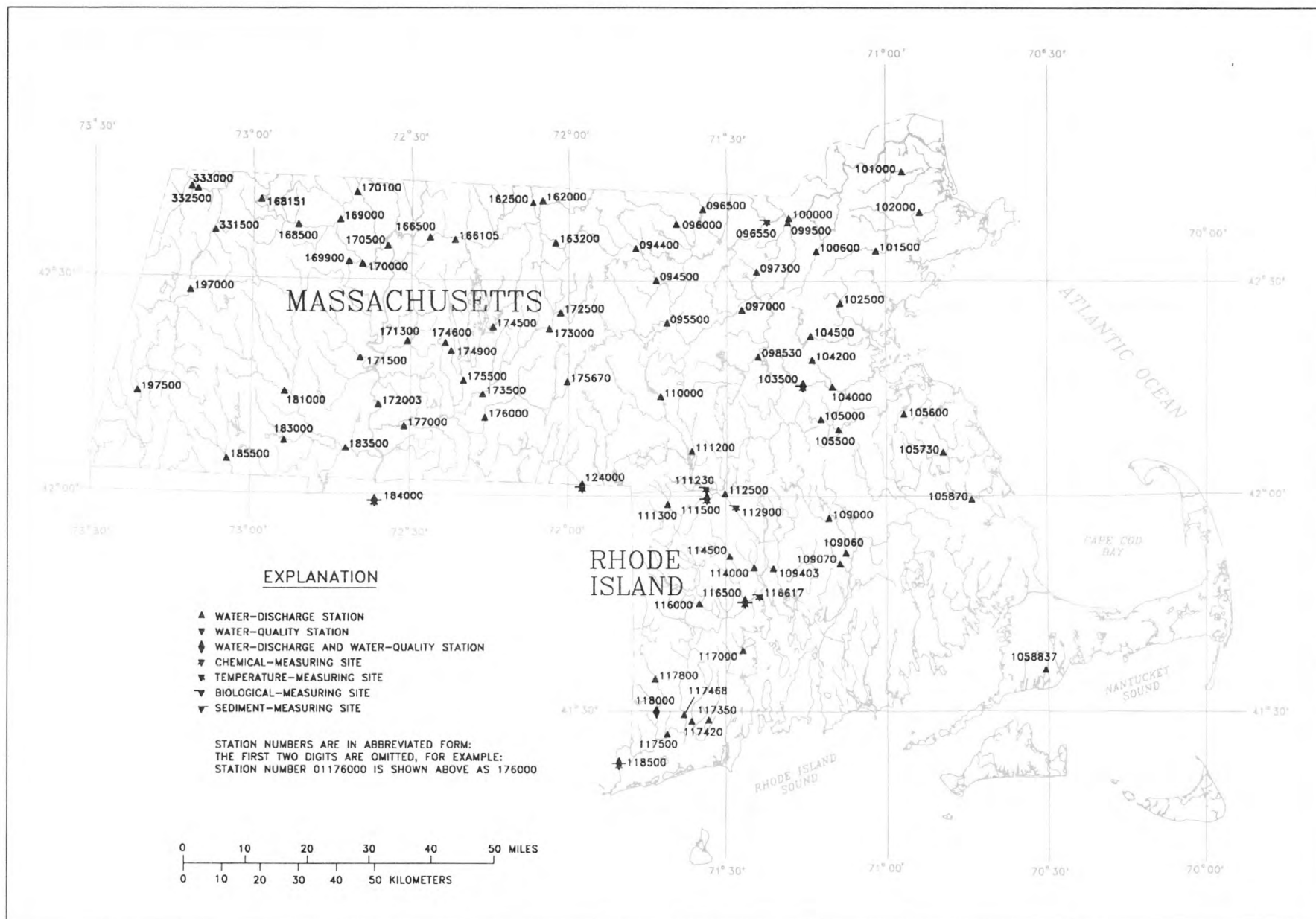


Figure 1.--Location of gaging-stations.

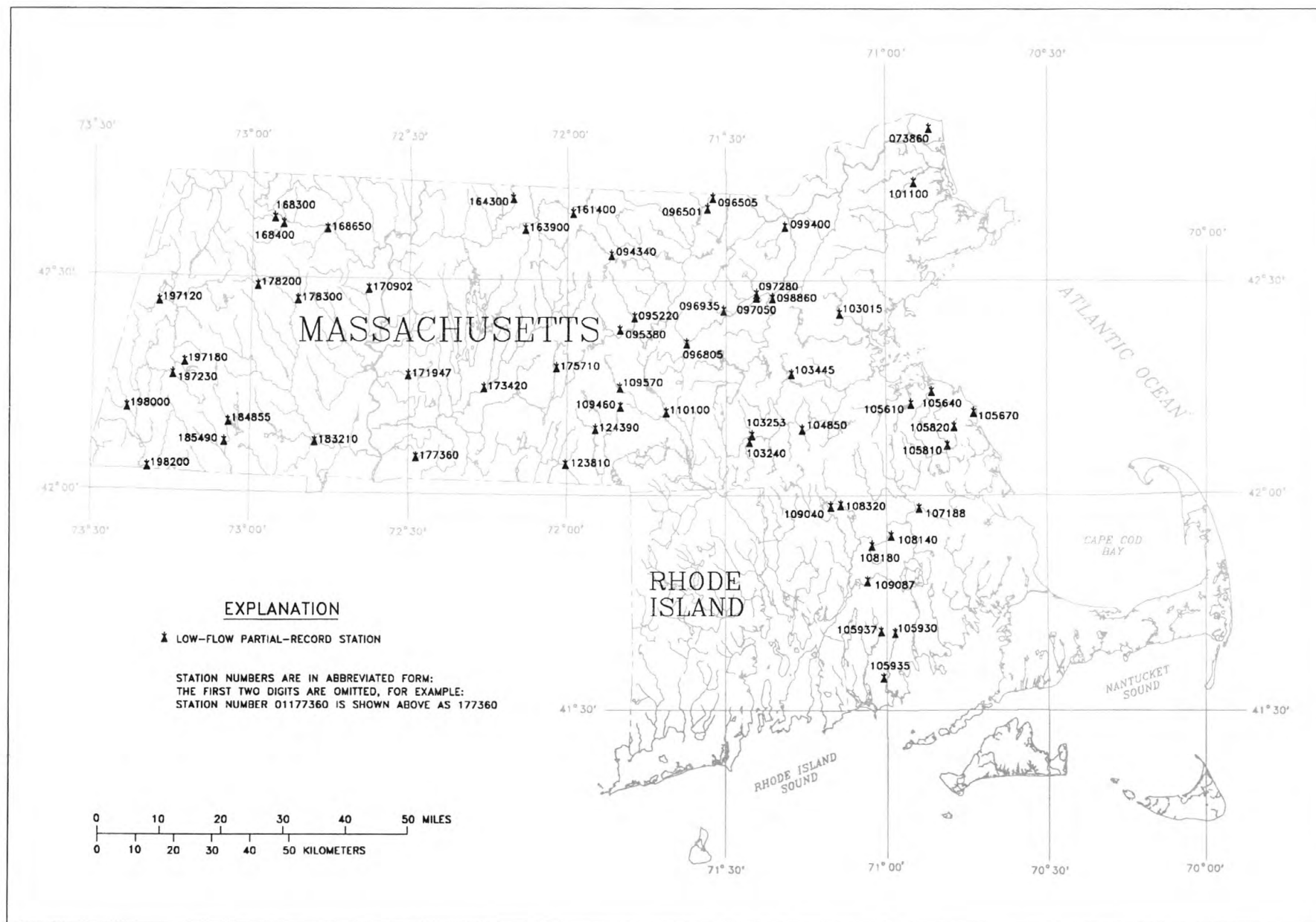


Figure 2.--Location of partial-record stations.

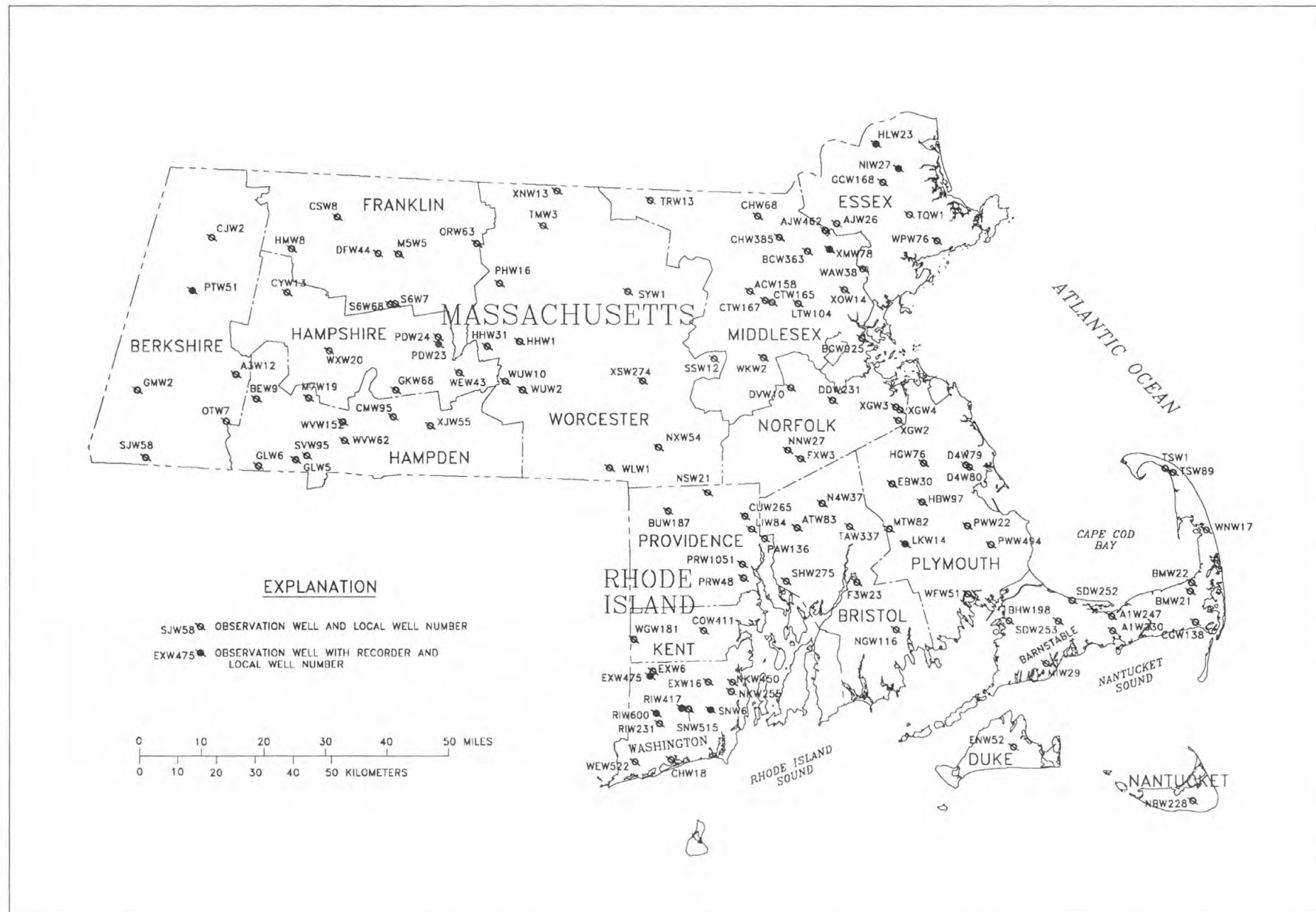


Figure 3 --Location of observation wells.

ical 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, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, CO 80225.

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-91-1." 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) 485-6360. A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225.

COOPERATION

The U.S. Geological Survey and agencies of the States of Massachusetts and Rhode Island have had cooperative agreements for the collection of stream-flow 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, R. Kendall, Commissioner, Division of Resource Conservation, R. H. Thibedeau, Director; Department of Environmental Protection, D. S. Greenbaum, Commissioner, Division of Water Pollution Control, Brian M. Donahoe, Director; Metropolitan District Commission, M. I. Bhatti, Commissioner, Division of Watershed Management, Joseph M. McGinn, Director, Parks Engineering and Construction Division, F. D. Faucher, Director; Department of Fisheries, Wildlife and Environmental Law Enforcement, John C. Phillips, Commissioner, Division of Fisheries and Wildlife, Wayne F. MacCalleem, Director.

Rhode Island: State Water Resources Board, S. M. Wick, Chairman, Thomas Walker, Acting General Manager; Department of Environmental Management, Louise Durfee, Director, Division of Water Resources, E. S. Szysmanski, Chief.

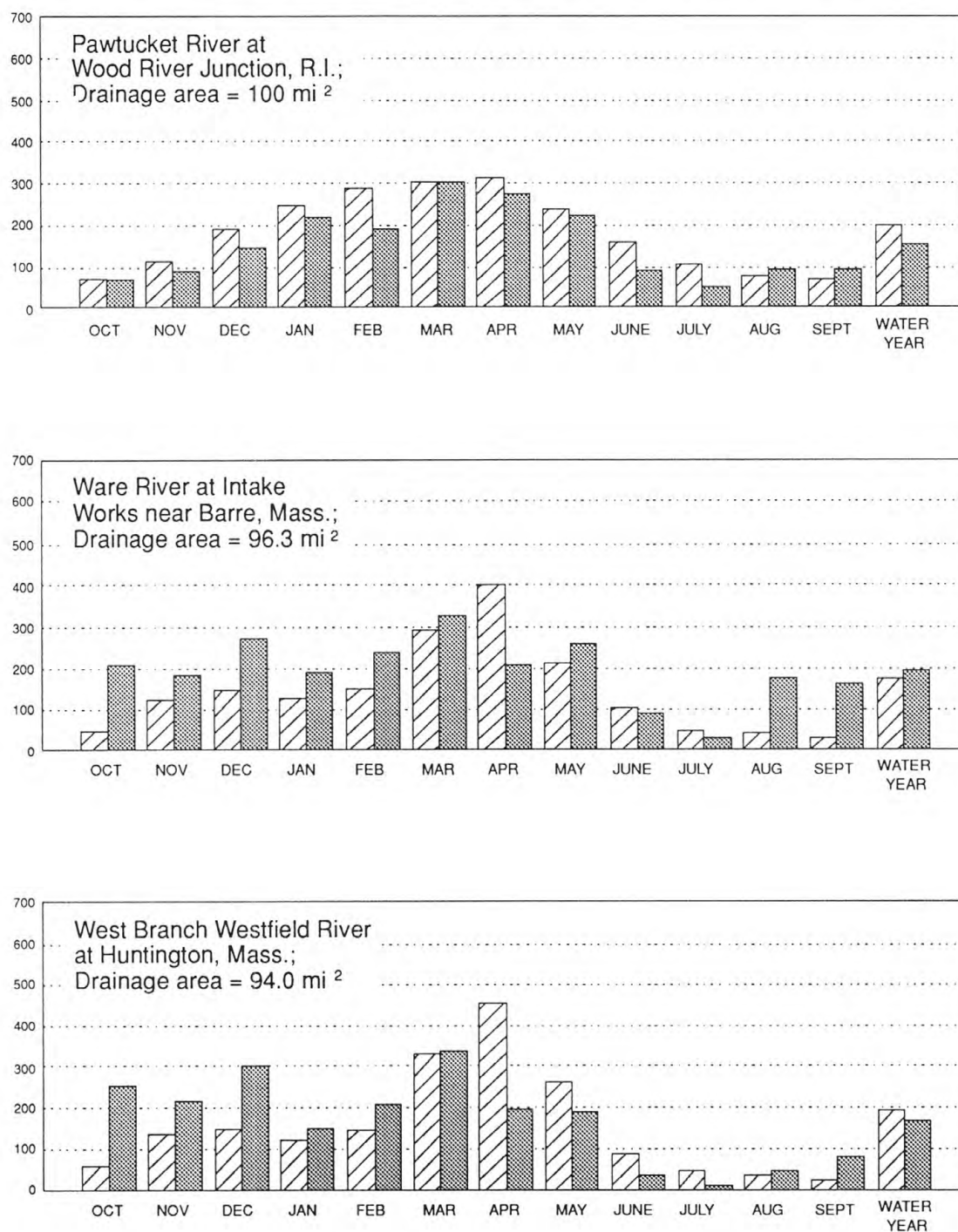
Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for one gaging station published in this report. Organizations supplying data are acknowledged in the station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

Runoff for the 1991 water year was in the normal range in Massachusetts and Rhode Island and ranged from a low of about 85 percent of median in southeastern Massachusetts and southern Rhode Island to a high of about 115 percent of median in central Massachusetts. During the first 6 months of the water year runoff was above normal (in the upper quartile of record) in the Nashua, Concord, Deerfield, Chicopee, Westfield, and Housatonic River basins and was in the normal range elsewhere in both States. During the last 6 months of the water year runoff was generally below normal (lower quartile of record) west of the Connecticut River and in the normal range elsewhere. The monthly and yearly discharges for three index gaging stations and median monthly and yearly discharges for the reference period 1961-90 are compared in figure 4.

DISCHARGE, IN CUBIC FEET PER SECOND

EXPLANATION

- ▨ Median of monthly and yearly mean discharge for period 1961-90.
 ▩ Monthly and yearly mean discharge for 1991 water year.

Figure 4.--Comparison of discharge at three long-term index gaging-stations during 1991 water year with median discharge for period 1961-90.

Runoff varied considerably from month to month. Monthly conditions are summarized below, first by most general trend, followed by exceptions:

October	Above normal; normal in southern Rhode Island
November	Normal; above normal in Merrimack, Ipswich, Charles, lower Chicopee, and lower Housatonic River basins
December	Above normal in western, central, and extreme northeastern Massachusetts; normal elsewhere
January	Normal
February	Normal
March	Normal
April	Normal in Rhode Island and southeastern Massachusetts; below normal elsewhere in Massachusetts
May	Normal
June	Below normal; normal in Nashua, Millers, Chicopee, and lower Housatonic River basins
July	Below normal; normal in lower Chicopee River basin
August	Above normal in northwestern, central, and northeastern Massachusetts and northern half of Rhode Island; normal elsewhere
September	Above normal; normal in south coastal Massachusetts

Storms and Droughts

On August 19 Hurricane Bob passed through Rhode Island and along the coast of Massachusetts. This storm had the potential for great damage from wind and flooding. Although there was considerable damage from winds the storm passed so quickly that flooding was minimized. This storm produced the peak discharge for the year at only three of the 16 gaging stations in Rhode Island and 15 of the 61 gaging stations in Massachusetts. Storm damage in Massachusetts was greatest on Cape Cod and south coastal areas. The hurricane barrier in Buzzards Bay at New Bedford was operated; the water level on the ocean side of this barrier was about 5 feet higher than the water level on the harbor side. In an article appearing in the August 30 edition of the Boston Herald, preliminary estimates of \$27.9 million in damages to houses, stores, offices and factories in Barnstable, Bristol and Plymouth counties were given; state officials estimated losses of \$1 billion in damages statewide; Cape Cod businesses estimated losses in tourist revenues of \$100 million. Some portions of Massachusetts were without power for more than a week following the storm. In Rhode Island, damages from winds, principally along the coast, were estimated to be in excess of \$14 million in public lands alone. The hurricane barrier across the Provi-

dence River at the head of Narragansett Bay was operated in earnest for the first time.

The dates of annual peak discharges varied throughout the two States. In Massachusetts most streams west of the Connecticut River recorded peak flows about October 24; streams in the Nashua and Concord River basins and in the headwaters of the Blackstone, Millers, and Chicopee River basins peaked around August 19-21, but streams in the lower reaches of the Millers and Chicopee River basins peaked on September 25; coastal streams in Massachusetts peaked variously about October 14-19 (Mystic, Charles, and Neponset River basins), April 22-24 (Parker, Ipswich, North, and Jones River basins), and January 17-18 (Taunton and Ten Mile River basins). In Rhode Island peaks occurred October 14 in the lower Blackstone River basin and on April 21 in central and southern portions of the State, except for west central areas where peaks occurred August 19. The recurrence intervals of peak discharges throughout both States were generally less than 2 years (a one in two chance of occurring in any year) and no peak exceeded the 5-year recurrence interval.

Streamflow declined substantially during the summer. By late July flows at gages in many areas of Massachusetts reached the 99 percent points on the flow-duration curves (a curve that defines the percentage of time a given discharge is exceeded). At the Wading River near Norton gage in southeastern Massachusetts daily flow equalled the 7Q10 discharge (a low-flow statistic that calculates the annual 7-day mean low discharge that has a 1 in 10 chance of occurring in any year). Flow at the index station in the Pawcatuck River basin exceeded the 98 percent duration discharge.

Reservoir Storage

Quabbin Reservoir in central Massachusetts ranged from 93 percent full at the beginning of the water year to 103 percent full at the end of May, and was 99 percent full at the end of the water year. The combined storage of Borden Brook and Cobble Mountain Reservoirs in western Massachusetts was 83 percent of capacity at the beginning of the water year, increased to 94 percent of capacity at the end of May, and declined to 73 percent of capacity by the end of the water year. Scituate Reservoir in central Rhode Island was 101 percent full at the beginning of the

water year, increased to 107 percent full at the end of April, and was 88 percent full at the end of the water year.

Water Quality

Selected water-quality characteristics--dissolved-oxygen concentration, specific conductance, pH, and water temperature--measured at three long-term surface-water sites in Massachusetts (Merrimack River above Lowell, Charles River at Dover, and Blackstone River at Millville) and two long-term surface-water sites in Rhode Island (Pawtuxet River at Cranston and Pawcatuck River at Westerly) indicated that all values were within the previously measured period-of-record extremes, except that a new low dissolved-oxygen concentration of 6.8 milligrams per liter was measured on August 15 at Pawcatuck River at Westerly, R.I.

Ground-Water Levels

Four new high water levels for periods of record were measured during the 1991 water year: Montgomery 19 (October 1986-) in November; Pelham 24 (August 1984-) in March; Templeton 3 (December 1957-) in August; and Providence 1051 (January 1948-) in September. Six new low water levels for periods of record were measured during the water year: Becket 12 (October 1986-), Cheshire 2 (October 1951-), and Cummington 13 (October 1986-) in July; Wareham 51 (July 1959-) in August; and Barnstable 230 (January 1958-) and Cheshire 2 again in September. During October through March, 47 new monthly high water levels and one new monthly low water level were measured. During April through September, 28 new monthly high water levels and 23 new monthly low water levels were measured. Ground-water levels on Cape Cod were below normal from December through September. Monthly water levels and median, maximum, and minimum monthly levels for periods of record of three observation wells in western and eastern Massachusetts and northern Rhode Island are shown in figure 5.

Monthly ground-water conditions, based on a network of 86 Massachusetts wells and 21 Rhode Island wells having 5 or more years of record, are summarized below. The summaries include the most wide-spread trend, exceptions to the trend, and num-

bers of new measured monthly high or low water levels.

October	Above normal; normal in southeastern Massachusetts and southern Rhode Island. Twelve new monthly high water levels were measured.
November	Normal; above-normal in western Massachusetts. Two new highs.
December	Above normal in western and central Massachusetts; normal in north and central sections of eastern Massachusetts and northern Rhode Island; below normal in southeastern Massachusetts and southern Rhode Island. Nine new highs.
January	Above normal in western and central Massachusetts; normal in Rhode Island and north and central sections of eastern Massachusetts; below normal in southeastern Massachusetts. Eight new highs.
February	Normal; above normal in a small section of north-central Massachusetts; below normal in extreme southeastern Massachusetts and Cape Cod. Eight new highs, one new low.
March	Normal; above normal in the Connecticut River valley in Massachusetts; below-normal on Cape Cod and northeastern Massachusetts. Eight new highs.
April	Normal in Rhode Island and western, central, and northeastern Massachusetts; below normal in central and southeastern Massachusetts. Six new highs, one new low.
May	Normal; scattered areas of below-normal levels in extreme northwestern, east central, and southeastern Massachusetts. Two new highs, two new lows.
June	Below normal; normal in central and northeastern Massachusetts and southern Rhode Island. Four new lows.
July	Below normal. Thirteen new lows.
August	Normal in Rhode Island, east central and northwestern Massachusetts; above normal in southwestern, central, and northeastern Massachusetts; below normal in southeastern Massachusetts. Thirteen new highs.
September	Normal in western Massachusetts and southern Rhode Island; above normal in central and east central Massachusetts and northern Rhode Island; below normal on Cape Cod. Seven new highs, two new lows.

SPECIAL NETWORKS AND PROGRAMS

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 quantity of water moving within

UNSHADED AREA SHOWS RANGE BETWEEN
HIGHEST AND LOWEST MONTHEND WATER LEVEL

CURRENT - - - MEDIAN —○—

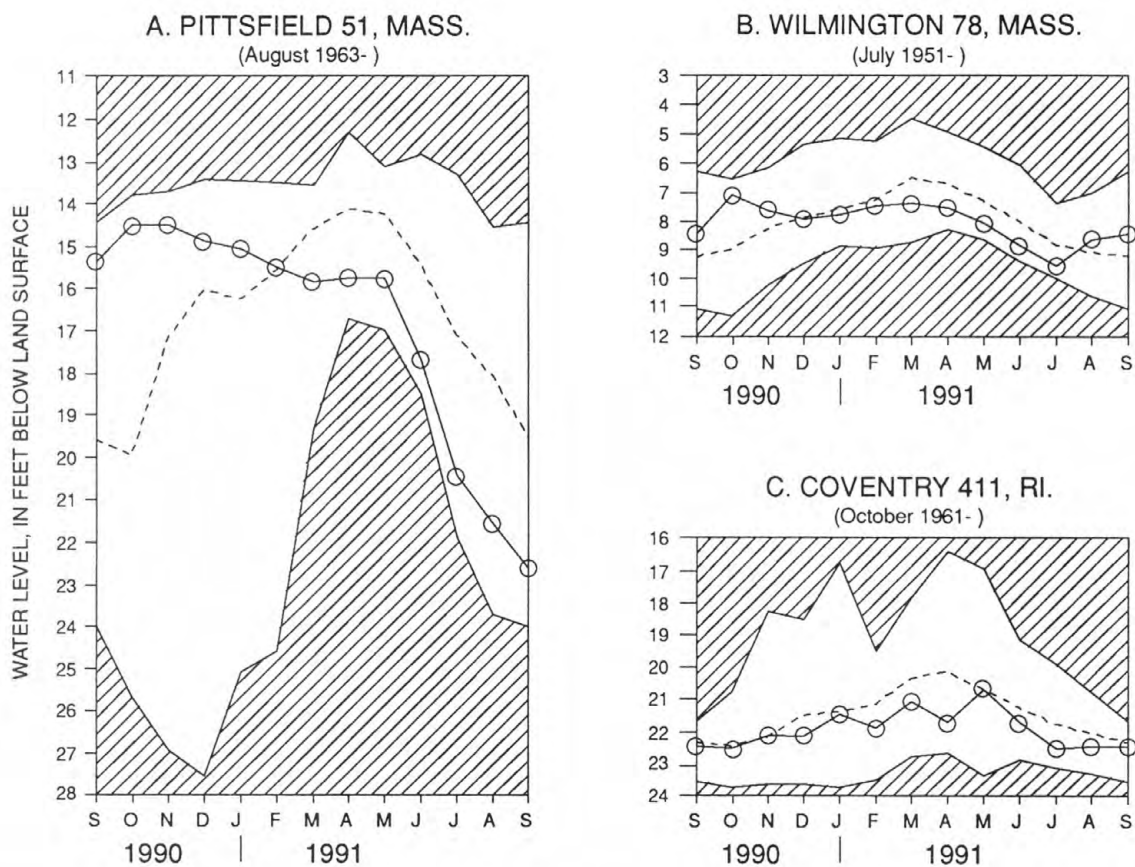


Figure 5.--Comparison of monthly water levels in selected observation wells during 1991 water year with median, maximum, and minimum levels for period of record.

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.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1991 water year that began October 1, 1990, and ended September 30, 1991. A calendar of the water year is provided on the inside of the front cover. The records contain stream-flow data, stage and content data for lakes and reservoirs, water-quality data for surface water, and ground-water-level data.

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 ground-water 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 indention in the "List of Stations" in the front of this report. Each indention 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 6.)

A local well 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 on figure 3.

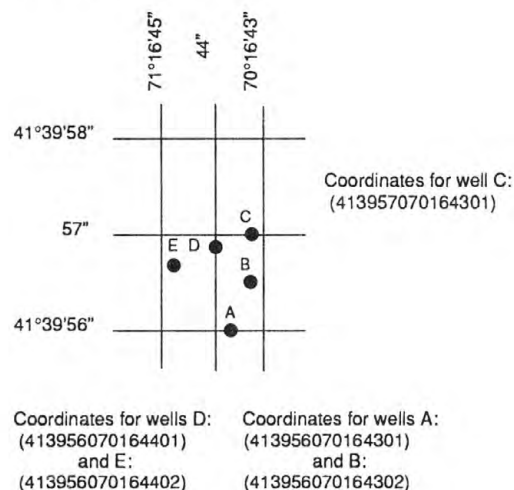


Figure 6.--System for numbering wells (latitude and longitude)

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 analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes 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 so obscure the stage-discharge relations that daily mean discharges must 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-dis-

charge 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

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four 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; and 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.

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 National Geodetic Vertical Datum of 1929 (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 non-contributing 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. At least 5 complete years of record must be available before this statistic is published for the designated period.

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 is exceeded by 10 percent of the flow for the designated period.

50 PERCENT EXCEEDS.--The discharge that is exceeded by 50 percent of the flow for the designated period.

90 PERCENT EXCEEDS.--The discharge that is exceeded by 90 percent of the flow 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) 485-6360.

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 punched at short intervals on a paper tape. 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. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

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. In addition, water temperatures are taken at the time of discharge

measurements for water-discharge 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, mean, maximum, and minimum 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 per cent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

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 the township-range location of the well. Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a 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 these 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) National Geodetic Vertical Datum of 1929 (NGVD of 1929); 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 U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the Geological Survey's program of releasing water data to the public, a

large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National Water Data Storage and Retrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey and to facilitate release of the data to the public. A variety of useful products, ranging from data tables to complex statistical analyses such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia, and consists of related files and data bases.

- * **Station Header File** - Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.

- * **Daily Values File** - Contains more than 220 million daily values of stream flows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.

- * **Peak Flow File** - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.

- * **Water Quality File** - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radio-chemical characteristics of both surface and ground water.

- * **Ground-Water Site Inventory Data Base** - Contains inventory data for more than 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disk; and, as noted in the introduction, on CD-ROM discs. Beginning with the 1990 water year, all water-data reports will also be 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. 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's District offices. (See address on the back of the title page.) A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

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 (ft^3/s) is the rate of discharge representing a volume of 1 ft^3 passing a given point during 1 second and is equivalent to 7.48 gal/s or 448.8 gal/min or $0.02832 \text{ m}^3/\text{s}$.

Cubic feet per second per square mile [$(\text{ft}^3/\text{s})/\text{mi}^2$] 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. Figures 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 groundwater 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 (mG/G, mg/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 (mG/L, mg/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, 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 quantity 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.

The 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.

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 or volume per unit time [$\text{mg C}/(\text{m}^2\text{-time})$] for periphyton and macrophytes and [$\text{mg C}/(\text{m}^3\text{-time})$] 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 or volume per unit time [$\text{mg O}_2/(\text{m}^2\text{-time})$] for periphyton and macrophytes and [$\text{mg O}_2/(\text{m}^3\text{-time})$] 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.

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 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 multi-

plate 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	Hexagenia 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, 1991, is called the "1991 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 executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and 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 sold by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, CO 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order 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, Chap. 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, Chap. 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, Chap. 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, Chap. E1. 1971. 126 pages.
- 2-E2 *Borehole geophysics applied to ground-water investigations*, by W. Scott 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 Warren 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, Chap. 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, Chap. A2. 1967. 12 pages.
- 3-A3 *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chap. A3. 1968. 60 pages.
- 3-A4 *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chap. A4. 1967. 44 pages.
- 3-A5 *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chap. A5. 1967. 29 pages.
- 3-A6 *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chap. A6. 1968. 13 pages.
- 3-A7 *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chap. A7. 1968. 28 pages.
- 3-A8 *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chap. A8. 1969. 65 pages.
- 3-A9 *Measurement of time-of-travel and dispersion in streams by dye tracing*, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chap. A9. 1982. 44 pages.
- 3-A10 *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chap. A10. 1985. 59 pages.
- 3-A11 *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chap. A11. 1969. 22 pages.
- 3-A12 *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. B. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chap. A12. Rev. 1986. 34 pages.

- 3-A13 *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chap. A13. 1983. 53 pages.
- 3-A14 *The use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chap. A14. 1983. 46 pages.
- 3-A15 *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chap. A15. 1984. 48 pages.
- 3-A16 *Measurements of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chap. A16. 1986. 52 pages.
- 3-A17 *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chap. A17. 1985. 38 pages.
- 3-A18 *Determination of stream rearing coefficients by use of tracers*, by F. A. Kilpatrick, R. E. Rathbun, N. Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52p.
- 3-A19 *Levels of streamflow gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 27 pages.
- 3-B1 *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS--TWRI Book 3, Chap. B1. 1971. 26 pages.
- 3-B2 *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chap. 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, Chap. B3. 1980. 106 pages.
- 3-B4 *Regression modeling of ground-water flow*, by Richard L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 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, Chap. 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, Chap. B6. 1987. 28 pages.
- 3-C1 *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chap. 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, Chap. C2. 1970. 59 pages.
- 3-C3 *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chap. C3. 1972. 66 pages.
- 4-A1 *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chap. A1. 1968. 39 pages.
- 4-A2 *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chap. A2. 1968. 15 pages.
- 4-B1 *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chap. B1. 1972. 18 pages.
- 4-B2 *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chap. B2. 1973. 20 pages.
- 4-B3 *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chap. B3. 1973. 15 pages.
- 4-D1 *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chap. D1. 1970. 17 pages.
- 5-A1 *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad, M. J. Fishman, L. C. Friedman, D. E. Erdmann, and S. S. Duncan, editors: USGS--TWRI Book 5, Chap. A1. 1979. 626 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, Chap. A2. 1971. 31 pages.
- 5-A3 *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chap. A3. 1972. 40 pages.
- 5-A4 *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chap. A4. 1977. 332 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, Chap. 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, Chap. A6. 1982. 181 pages.
- 5-C1 *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chap. 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.
- 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, Chap. 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, Chap. 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, Chap. 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, Chap. A1. 1968. 23 pages.
- 8-A2 *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chap. 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, Chap. B2. 1968. 15 pages.

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

Note: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (ug/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). Present data above the ug/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 will begin using new trace-element protocols in the near future.

MERRIMACK RIVER BASIN

33

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 National Geodetic Vertical Datum of 1929, 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	83	64	e215	133	90	131	484	131	37	33	40
2	17	83	66	e170	107	191	124	281	98	29	22	23
3	16	82	82	e150	100	302	117	196	74	27	18	28
4	18	80	367	e130	126	640	110	157	63	25	21	30
5	23	77	369	e115	156	442	104	132	64	23	28	75
6	21	170	219	108	179	268	101	304	61	24	22	57
7	18	131	168	e100	244	342	99	e800	54	25	9.2	44
8	16	111	138	e93	295	290	95	e370	47	36	13	37
9	29	97	127	e88	218	200	92	e250	40	26	18	32
10	25	279	127	e85	176	160	87	e220	36	22	139	29
11	30	427	99	e82	146	138	92	e190	60	21	58	27
12	30	234	121	e80	114	127	76	e160	120	20	37	22
13	341	165	e92	e78	102	119	73	e135	121	37	29	20
14	562	133	e82	e80	146	115	72	e120	79	53	25	22
15	224	118	e88	e84	225	116	74	e100	62	36	29	26
16	123	99	141	e94	157	111	83	e86	115	25	30	31
17	85	95	e145	160	128	113	78	e120	105	22	29	28
18	70	96	131	145	104	122	76	e150	90	23	23	23
19	156	88	149	115	105	207	75	e110	73	22	921	70
20	109	83	e125	104	210	181	69	e92	69	20	968	153
21	81	79	e115	97	194	142	658	e80	59	20	650	97
22	68	72	137	84	166	133	1010	69	48	21	353	64
23	116	79	140	e84	148	144	472	63	41	27	203	51
24	601	96	e600	76	115	190	287	58	36	20	143	45
25	324	85	e430	e72	108	197	219	54	33	18	94	757
26	186	75	e265	e66	101	180	171	46	29	51	74	846
27	130	70	e185	e64	98	187	148	72	26	90	66	424
28	109	70	e155	75	88	199	128	117	25	42	56	240
29	103	74	e155	74	---	182	114	67	22	29	49	171
30	88	69	200	75	---	160	376	71	38	24	40	129
31	88	---	e330	187	---	144	---	111	---	22	44	---
TOTAL	3822	3500	5612	3230	4189	6132	5411	5265	1919	917	4244.2	3641
MEAN	123	117	181	104	150	198	180	170	64.0	29.6	137	121
MAX	601	427	600	215	295	640	1010	800	131	90	968	846
MIN	15	69	64	64	88	90	69	46	22	18	9.2	20

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1991, BY WATER YEAR (WY)

	MEAN	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	79.0	116	135	129	149	239	240	152	97.0	49.6	54.5	47.4								
MAX	182	219	284	262	294	528	600	277	368	82.8	137	121								
(WY)	1976	1976	1974	1979	1984	1983	1987	1984	1982	1973	1991	1991								
MIN	24.7	31.3	43.6	24.6	34.6	84.1	84.1	63.2	36.1	27.4	15.8	15.8								
(WY)	1981	1979	1981	1981	1980	1989	1985	1985	1985	1985	1987	1984								

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1973 - 1991
ANNUAL TOTAL	46767	47882.2	
ANNUAL MEAN	128	131	124
HIGHEST ANNUAL MEAN			169
LOWEST ANNUAL MEAN			59.5
HIGHEST DAILY MEAN	732	1010	2830
LOWEST DAILY MEAN	11	9.2	7.9
ANNUAL SEVEN-DAY MINIMUM	15	18	12
INSTANTANEOUS PEAK FLOW		2320	3510
INSTANTANEOUS PEAK STAGE		7.07	9.25
INSTANTANEOUS LOW FLOW		4.7	4.5
10 PERCENT EXCEEDS	295	256	261
50 PERCENT EXCEEDS	96	94	80
90 PERCENT EXCEEDS	21	24	25

LOCATION.--Lat 42°30'06", long 71°43'23", Worcester County, Hydrologic Unit 01070004, on right bank 1.3 mi upstream from Wekepeke Brook, 2.5 mi southeast of Leominster, and 6.1 mi upstream from confluence with Nashua River.

PERIOD OF RECORD.--Discharge: September 1935 to current year.
Water-quality records: Water years 1955, 1958.

GAGE.--Water-stage recorder. Datum of gage is 270.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Regulation at low flow by mills upstream. Flow includes diversion to basin for municipal supplies: for Fitchburg, from Mare Meadow Reservoir since 1955; for Leominster, from Wachusett Reservoir since 1966 and from the Southeast Well Field since 1958. Maximum discharge since at least 1850, that of Mar. 18, 1936.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	168	128	409	276	184	244	819	209	78	52	91
2	44	164	126	327	212	381	232	479	157	60	49	69
3	41	152	147	286	212	572	218	343	127	54	43	75
4	47	144	636	247	269	1090	202	275	115	52	43	75
5	61	138	653	214	328	797	189	231	117	51	71	141
6	48	325	379	205	377	532	188	490	112	53	48	112
7	43	271	292	195	497	634	183	1140	99	53	36	93
8	42	219	250	162	595	543	174	604	90	68	34	83
9	78	186	235	162	444	402	164	409	78	56	42	76
10	54	517	231	e160	368	334	156	295	73	49	290	72
11	61	889	186	153	311	295	163	252	107	47	103	69
12	62	468	205	e160	250	267	141	227	187	46	72	63
13	554	335	175	e160	208	249	132	201	178	73	59	60
14	1030	270	153	e170	329	240	128	176	125	108	53	65
15	410	240	186	159	486	253	139	163	96	67	56	70
16	241	208	285	194	343	234	157	146	208	53	60	82
17	167	199	270	353	263	232	141	190	171	48	54	75
18	138	201	246	310	221	251	142	262	141	45	52	66
19	334	186	266	238	226	377	139	189	126	46	1430	145
20	205	167	225	210	452	331	126	154	119	41	1420	266
21	153	161	205	200	426	269	934	134	101	40	870	160
22	134	150	240	162	359	268	1540	118	86	44	500	119
23	280	166	246	e160	331	279	722	108	77	56	295	106
24	1100	202	871	154	253	388	446	102	73	45	212	99
25	582	179	731	133	232	388	322	99	70	39	154	1140
26	355	158	443	124	212	348	253	92	64	114	131	1240
27	266	144	316	123	204	354	215	119	59	187	123	691
28	233	144	284	169	186	359	189	217	56	76	111	398
29	214	148	279	153	---	321	173	122	55	58	101	284
30	183	139	357	154	---	297	626	141	100	52	92	225
31	176	---	591	425	---	268	---	199	---	50	101	---
TOTAL	7386	7038	9837	6431	8870	11737	8778	8496	3376	1909	6757	6310
MEAN	238	235	317	207	317	379	293	274	113	61.6	218	210
MAX	1100	889	871	425	595	1090	1540	1140	209	187	1430	1240
MIN	41	138	126	123	186	184	126	92	55	39	34	60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1991, BY WATER YEAR (WY)

MEAN	111	169	198	205	227	377	415	245	162	90.9	82.6	89.7
MAX	606	485	520	465	534	1289	1126	503	642	392	286	595
(WY)	1956	1956	1987	1956	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	42.9	38.1	36.7
(WY)	1942	1950	1966	1981	1980	1965	1985	1965	1964	1936	1941	1984

ANNUAL TOTAL	85627		86925			
ANNUAL MEAN	235		238		197	
HIGHEST ANNUAL MEAN					307	1956
LOWEST ANNUAL MEAN					81.2	1965
HIGHEST DAILY MEAN	1390	Feb 24	1540	Apr 22	7530	Mar 18 1936
LOWEST DAILY MEAN	36	Aug 5	34	Aug 8	22	Sep 27 1936
ANNUAL SEVEN-DAY MINIMUM	43	Jul 30	44	Jul 19	32	Sep 16 1941
INSTANTANEOUS PEAK FLOW			3640	Aug 19	16300	Mar 18 1936
INSTANTANEOUS PEAK STAGE			6.70	Aug 19	20.53	Mar 18 1936
INSTANTANEOUS LOW FLOW			30	Aug 7	11	Aug 29 1948
10 PERCENT EXCEEDS	514		472		410	
50 PERCENT EXCEEDS	186		176		124	
90 PERCENT EXCEEDS	52		54		50	

MERRIMACK RIVER BASIN

35

01095500 NASHUA RIVER AT CLINTON, MA

LOCATION.--Lat 42°24'12", long 71°41'19", Worcester County, Hydrologic Unit 01070004, at Wachusett Dam 1 mi south of Clinton.

DRAINAGE AREA.--107.69 mi², since July 1937.

PERIOD OF RECORD.--Discharge: July 1896 to current year. Prior to October 1978, published as South Branch Nashua River.

Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 1051: 1928. WDR MA-RI-78-1: 1977.

REMARKS.--Flow regulated by Wachusett Reservoir and several ponds. Records adjusted for change in contents in Wachusett Reservoir and diversions from Ware River and Quabbin Reservoir on Swift River. Entire flow, except required releases to the Nashua River, diverted for use of Boston metropolitan district and other municipalities.

COOPERATION.--Records provided by Water Division of Metropolitan District Commission.

AVERAGE DISCHARGE.--95 years, 190 ft³/s, 23.96 in/yr, adjusted to present drainage area.

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Mean	Per square mile	Runoff, in inches
October.....	237	2.20	2.54
November.....	204	1.89	2.11
December.....	283	2.63	3.03
Calendar year 1990.....	227	2.11	28.65
January.....	267	2.48	2.86
February.....	302	2.80	2.92
March.....	339	3.15	3.62
April.....	283	2.63	2.94
May.....	293	2.72	3.14
June.....	81.9	.76	.85
July.....	57.8	.54	.62
August.....	187	1.74	2.00
September.....	110	1.02	1.14
Water year 1991.....	220	2.04	27.77

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	86	83	273	193	137	148	590	79	23	16	31
2	15	79	79	209	e165	183	141	414	70	22	14	27
3	13	74	76	179	138	338	131	269	56	22	12	27
4	13	70	142	157	154	501	123	207	51	21	14	29
5	15	67	474	137	194	642	115	175	51	20	16	47
6	14	88	313	133	239	383	109	177	52	20	15	49
7	14	181	210	130	258	328	104	565	47	20	14	42
8	13	144	171	109	358	382	100	458	41	20	13	33
9	16	111	150	102	308	274	97	279	37	18	13	28
10	17	120	138	106	255	221	93	219	34	19	47	25
11	19	507	125	e110	221	195	93	186	35	16	57	23
12	20	429	113	101	175	177	87	163	55	16	37	21
13	48	249	108	112	155	163	83	142	68	17	25	19
14	339	186	104	111	166	154	81	124	55	34	20	20
15	265	157	97	106	269	153	82	113	42	32	18	21
16	137	142	136	108	266	147	91	101	79	26	19	23
17	90	132	178	157	e200	143	90	95	107	22	16	23
18	69	124	162	201	170	143	85	111	91	18	15	24
19	86	119	162	174	157	208	83	111	71	16	128	27
20	109	111	151	146	188	245	78	94	60	15	819	64
21	88	104	130	137	279	188	164	82	50	14	414	79
22	71	97	140	e125	243	165	964	73	42	14	288	54
23	68	97	156	e110	234	163	619	67	37	15	169	41
24	307	114	254	111	190	191	344	63	35	14	109	35
25	487	119	536	110	173	212	246	59	31	13	80	200
26	253	105	326	e95	162	205	200	59	27	18	66	744
27	169	94	224	89	151	209	172	58	26	43	58	537
28	133	90	182	95	136	211	150	69	23	33	49	270
29	123	88	171	104	---	202	136	69	22	24	41	170
30	111	86	176	101	---	180	181	59	22	21	35	127
31	97	---	268	157	---	162	---	69	---	18	33	---
TOTAL	3236	4170	5735	4095	5797	7205	5190	5320	1496	644	2670	2860
MEAN	104	139	185	132	207	232	173	172	49.9	20.8	86.1	95.3
MAX	487	507	536	273	358	642	964	590	107	43	819	744
MIN	13	67	76	89	136	137	78	58	22	13	12	19
CFSM	1.64	2.18	2.90	2.07	3.25	3.65	2.72	2.69	.78	.33	1.35	1.50
IN.	1.89	2.44	3.35	2.39	3.39	4.21	3.03	3.11	.87	.38	1.56	1.67

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1991, BY WATER YEAR (WY)

	MEAN	52.1	97.1	117	117	131	226	276	149	79.3	37.2	30.0	32.5
MAX	296	304	301	323	328	554	654	343	315	84.7	98.8	245	
(WY)	1956	1956	1987	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	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1950 - 1991	
ANNUAL TOTAL	47559		48418			
ANNUAL MEAN	130		133		112	
HIGHEST ANNUAL MEAN					174	
LOWEST ANNUAL MEAN					35.9	
HIGHEST DAILY MEAN	735	Apr 5	964	Apr 22	3420	Apr 6 1987
LOWEST DAILY MEAN	13	Oct 3	12	Aug 3	2.0	Sep 7 1965
ANNUAL SEVEN-DAY MINIMUM	14	Oct 2	14	Oct 2	4.3	Aug 28 1966
INSTANTANEOUS PEAK FLOW			1220	Apr 22	4220	Apr 6 1987
INSTANTANEOUS PEAK STAGE			5.72	Apr 22	8.16	Apr 6 1987
INSTANTANEOUS LOW FLOW			12	Aug 3		
ANNUAL RUNOFF (CFSM)	2.05		2.08		1.76	
ANNUAL RUNOFF (INCHES)	27.77		28.28		23.85	
10 PERCENT EXCEEDS	282		268		253	
50 PERCENT EXCEEDS	110		105		66	
90 PERCENT EXCEEDS	18		19		15	

MERRIMACK RIVER BASIN

37

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, flow diverted from 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 National Geodetic Vertical Datum of 1929.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	543	406	1250	853	739	791	1460	482	219	139	238
2	144	512	405	1040	759	541	774	1820	462	224	152	108
3	148	471	394	937	734	1090	760	1290	388	248	92	177
4	133	432	644	835	734	1680	603	943	364	141	45	184
5	215	418	1330	768	742	2330	620	780	358	118	137	247
6	154	427	1500	754	900	2150	486	741	355	87	138	328
7	83	734	1110	738	1060	1650	383	1390	353	48	137	178
8	160	736	900	552	1370	1610	621	2050	235	190	134	49
9	251	649	788	507	1420	1420	597	1530	208	187	138	273
10	119	471	682	517	1210	1150	561	1060	190	146	48	254
11	171	1230	742	533	1060	1010	454	851	249	94	353	183
12	122	1890	707	594	917	922	477	743	155	152	248	187
13	79	1420	488	270	792	857	376	712	405	101	203	202
14	1110	1020	585	615	770	806	173	713	416	115	190	87
15	1640	852	485	715	1080	802	525	667	340	173	142	40
16	1220	759	412	531	1200	796	472	605	356	142	171	180
17	809	691	843	723	995	770	282	540	400	145	94	177
18	474	673	801	723	858	763	380	627	444	138	45	179
19	645	658	767	814	781	799	380	662	391	130	392	169
20	717	619	748	754	816	973	376	572	346	87	2070	213
21	569	540	748	714	1140	933	446	498	352	73	3090	368
22	485	505	743	643	1130	837	1840	449	285	118	2650	349
23	456	398	738	583	1060	834	2900	419	123	115	1660	221
24	1040	366	745	420	939	943	2090	385	260	115	1020	287
25	1870	520	1450	510	828	1100	1200	363	301	115	706	508
26	1530	654	1590	450	780	1050	893	358	185	132	529	1990
27	1040	487	1160	284	763	967	744	296	132	95	450	2740
28	791	351	929	577	752	955	667	401	227	317	384	2140
29	721	409	824	529	---	936	596	466	99	300	351	1270
30	648	417	835	522	---	885	673	376	47	191	332	864
31	574	---	1040	545	---	849	---	410	---	134	334	---
TOTAL	18197	19852	25539	19947	26443	33147	22140	24177	8908	4590	16574	14390
MEAN	587	662	824	643	944	1069	738	780	297	148	535	480
MAX	1870	1890	1590	1250	1420	2330	2900	2050	482	317	3090	2740
MIN	79	351	394	270	734	541	173	296	47	48	45	40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1991, BY WATER YEAR (WY)

	301	472	580	588	668	1137	1241	729	488	257	219	239
MEAN	301	472	580	588	668	1137	1241	729	488	257	219	239
MAX	1356	1781	1535	1417	1544	3930	3676	1382	1976	1366	966	1671
(WY)	1956	1956	1987	1979	1970	1936	1987	1953	1982	1938	1938	1938
MIN	91.1	108	134	116	186	386	369	236	154	90.0	71.3	84.2
(WY)	1942	1965	1966	1981	1980	1989	1985	1965	1941	1966	1966	1941

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1936 - 1991

ANNUAL TOTAL	238972	233904	
ANNUAL MEAN	655	641	575
HIGHEST ANNUAL MEAN			969
LOWEST ANNUAL MEAN			214
HIGHEST DAILY MEAN	2800	3090	19400
LOWEST DAILY MEAN	74	40	1.1
ANNUAL SEVEN-DAY MINIMUM	100	108	14
INSTANTANEOUS PEAK FLOW		3280	20900
INSTANTANEOUS PEAK STAGE		6.57	19.10
INSTANTANEOUS LOW FLOW		10	
10 PERCENT EXCEEDS	1400	1220	1240
50 PERCENT EXCEEDS	574	540	361
90 PERCENT EXCEEDS	137	136	95

MERRIMACK RIVER BASIN

01096550 MERRIMACK RIVER ABOVE LOWELL, MA
(National stream-quality accounting network station)

LOCATION.--Lat 42°38'20", long 71°22'17", Middlesex County, Hydrologic Unit 01070002, on downstream side of Tyngsboro bridge on State Highway 113, 6.2 mi upstream from Pawtucket Dam, and 2 mi downstream from Massachusetts-New Hampshire State line.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January to September 1973.

WATER TEMPERATURE: January to September 1973.

REMARKS.--Discharge computed on basis of records for gaging station below Concord River (station 01100000) and gaging station on Concord River (station 01099500) or by discharge measurements on the day of sampling.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 06...	0915	6650	90	6.5	11.5	9.5	1.6	746	10.3	92	180	42
JAN 08...	1130	10200	93	6.6	-7.0	0.0	1.3	779	13.2	88	--	84
FEB 25...	1000	6900	114	6.5	5.0	2.0	2.0	758	13.4	97	K16	K9
APR 29...	0900	10300	75	6.7	13.0	13.0	1.5	770	10.2	96	--	--
JUN 24...	1100	1990	127	6.6	19.0	23.0	1.1	767	8.6	100	140	K22
AUG 27...	0900	5110	86	6.1	23.0	21.0	1.6	782	8.4	92	110	84

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)	CAR- BONATE WATER WH IT LAB (MG/L AS CO3) (00446)	CAR- BONATE WATER WH IT FIELD (MG/L AS CO3) (00447)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR- BONATE WATER WH IT LAB (MG/L AS HCO3) (00449)
NOV 06...	16	4.8	0.87	11	59	1	1.1	0	--	--	11
JAN 08...	15	4.7	0.90	10	57	1	0.90	0	--	--	10
FEB 25...	17	5.1	0.96	13	61	1	1.0	0	--	--	12
APR 29...	13	3.9	0.66	8.6	58	1	0.90	0	--	--	6
JUN 24...	20	6.1	1.2	15	60	1	1.3	--	0	--	--
AUG 27...	15	4.6	0.84	10	57	1	0.90	--	--	0	--

DATE	BICAR- BONATE WATER WH IT FIELD (MG/L AS HCO3) (00450)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	HY- DROXIDE WATER WH IT LAB (MG/L AS OH) (71831)	HY- DROXIDE WATER WH IT FIELD (MG/L AS OH) (71832)	HY- DROXIDE WATER DIS IT FIELD (MG/L AS OH) (71834)	ALKA- LITY WAT WH TOT IT LAB (MG/L AS CACO3) (00416)	ALKA- LITY WAT WH TOT IT FIELD (MG/L AS CACO3) (00419)	ALKA- LITY 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)
NOV 06...	--	--	0	--	--	9	--	--	8.6	18	<0.10
JAN 08...	--	--	0	--	--	8	--	--	7.8	17	<0.10
FEB 25...	--	--	0	--	--	9	--	--	7.8	22	<0.10
APR 29...	--	--	0	--	--	5	--	--	6.6	14	<0.10
JUN 24...	16	--	--	0	--	--	13	--	7.7	23	0.20
AUG 27...	--	9	--	--	0	--	--	7	12	8.6	0.50

MERRIMACK RIVER BASIN

39

01096550 MERRIMACK RIVER ABOVE LOWELL, MA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	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 TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	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)
NOV 06...	6.0	50	58	<0.010	0.300	0.140	0.140	0.40	0.040	0.030	0.040
JAN 08...	6.1	63	55	<0.010	0.300	0.180	0.190	0.40	0.030	0.020	0.020
FEB 25...	6.4	64	64	<0.010	0.300	0.170	0.180	0.40	0.040	0.030	0.040
APR 29...	5.0	56	45	<0.010	0.180	0.110	0.090	0.40	0.040	0.040	<0.010
JUN 24...	4.9	82	70	0.030	0.480	0.150	0.160	0.60	0.100	0.070	0.050
AUG 27...	4.8	51	48	0.020	0.180	0.130	0.120	0.50	0.060	0.040	0.010

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	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, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)
NOV 06...	40	<1	23	<0.5	<1.0	2	<3	5	130	7	<4
JAN 08...	60	<1	18	<0.5	1.0	<1	<3	4	110	12	<4
FEB 25...	--	--	--	--	--	--	--	--	--	--	--
APR 29...	140	<1	33	<0.5	<1.0	1	<3	4	250	9	<4
JUN 24...	30	1	40	<0.5	1.0	<1	<3	4	250	1	<4
AUG 27...	100	<1	14	<0.5	<1.0	<1	<3	3	190	2	<4

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	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)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 06...	41	<0.1	<10	1	<1	<1.0	34	<6	19	--	--
JAN 08...	35	<0.1	<10	2	<1	<1.0	34	<6	24	--	--
FEB 25...	--	--	--	--	--	--	--	--	--	3	100
APR 29...	40	0.1	<10	1	<1	<1.0	29	<6	13	11	64
JUN 24...	53	<0.1	<10	1	<1	<1.0	46	<6	12	1	94
AUG 27...	100	<0.1	<10	3	<1	<1.0	33	<6	17	--	--

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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. Maximum discharge since at least 1886, that of Aug. 20, 1955.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	204	132	298	256	186	247	525	124	62	23	64
2	39	181	124	277	241	207	234	633	118	52	22	61
3	30	167	118	243	224	266	220	530	101	44	21	59
4	29	161	182	219	232	491	207	426	88	38	26	55
5	50	153	298	200	252	607	195	354	92	35	33	67
6	50	155	359	188	267	568	186	326	93	35	41	90
7	42	155	324	185	287	499	180	447	87	37	35	87
8	44	151	276	173	346	465	173	559	84	49	20	79
9	59	145	229	162	385	420	166	506	92	47	17	70
10	72	152	202	164	351	360	161	407	83	42	32	63
11	73	270	181	163	310	315	156	344	74	36	52	59
12	68	347	168	175	270	288	148	299	77	35	44	59
13	e100	333	168	167	239	273	142	266	88	42	34	52
14	e350	267	160	185	246	258	135	236	81	41	46	66
15	e410	216	160	168	304	261	135	215	72	41	50	70
16	e380	192	216	172	316	256	149	201	84	26	27	67
17	e300	176	257	236	290	246	150	187	95	25	22	62
18	e260	166	256	290	248	239	143	210	91	23	21	57
19	e350	160	243	281	232	260	138	232	87	18	110	63
20	e340	150	228	256	241	271	136	203	84	23	323	91
21	e290	140	206	241	274	249	247	173	78	23	387	120
22	e270	135	201	e230	281	237	638	150	68	25	296	94
23	e260	134	206	e220	273	262	751	137	60	23	200	80
24	e400	154	246	e205	244	324	600	129	52	20	170	79
25	e450	180	285	e200	220	371	461	119	47	19	152	174
26	e410	181	287	e190	210	364	368	112	40	20	126	335
27	e350	174	248	e170	199	326	299	109	37	49	95	418
28	e340	154	220	166	190	295	260	124	35	54	76	332
29	e280	143	209	175	---	267	232	135	32	43	69	237
30	e250	140	223	176	---	255	276	122	43	37	66	220
31	237	---	273	225	---	255	---	119	---	29	64	---
TOTAL	6625	5436	6885	6400	7428	9941	7533	8535	2287	1093	2700	3430
MEAN	214	181	222	206	265	321	251	275	76.2	35.3	87.1	114
MAX	450	347	359	298	385	607	751	633	124	62	387	418
MIN	29	134	118	162	190	186	135	109	32	18	17	52

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1991, BY WATER YEAR (WY)

	MEAN	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956	1956
MEAN	87.6	151	186	210	244	404	377	238	153	71.8	61.1	63.3
MAX	375	542	476	670	696	776	1052	443	788	254	561	542
(WY)	1956	1956	1987	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

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1941 - 1991
ANNUAL TOTAL	76414	68293	
ANNUAL MEAN	209	187	
HIGHEST ANNUAL MEAN			187
LOWEST ANNUAL MEAN			296
HIGHEST DAILY MEAN	737	751	73.3
LOWEST DAILY MEAN	21	17	3650
ANNUAL SEVEN-DAY MINIMUM	35	22	.20
INSTANTANEOUS PEAK FLOW		779	1.0
INSTANTANEOUS PEAK STAGE		4.26	Aug 20 1955
INSTANTANEOUS LOW FLOW		15	Aug 20 1955
10 PERCENT EXCEEDS	408	348	420
50 PERCENT EXCEEDS	181	173	124
90 PERCENT EXCEEDS	44	38	24

MERRIMACK RIVER BASIN

41

01097300 NASHOBA BROOK NEAR ACTON, MA

LOCATION.--Lat 42°30'39", long 71°24'25", Middlesex County, Hydrologic Unit 01070005, on right bank 1,500 ft downstream from dam at North Acton, 2.2 mi northeast of Acton, and 5 mi upstream from mouth.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. Occasional regulation since 1967 by pond upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	15	8.9	35	35	20	22	63	11	4.4	.54	4.7
2	.84	13	8.7	25	26	29	21	51	7.9	3.0	.48	4.2
3	1.1	12	8.9	21	21	56	20	30	5.9	2.3	.38	4.1
4	2.5	12	22	17	26	78	18	22	5.7	1.9	.33	3.4
5	4.0	11	55	14	33	93	17	18	5.9	1.8	.27	5.6
6	3.6	12	46	14	41	66	17	19	5.9	1.6	.24	9.3
7	3.2	14	28	14	46	53	16	51	4.9	1.6	.24	6.5
8	2.8	12	22	11	64	55	15	48	4.1	1.6	.24	5.2
9	3.0	11	19	10	58	42	14	29	4.0	1.5	.24	4.5
10	4.8	15	17	11	46	34	13	21	3.3	1.2	1.1	4.0
11	4.9	44	16	11	38	30	13	18	2.9	.96	4.0	3.6
12	6.1	48	15	10	e29	28	12	16	3.7	.70	2.2	3.4
13	6.6	32	18	10	24	26	11	14	5.2	.65	1.2	3.2
14	94	22	16	12	27	25	11	13	4.3	1.6	.81	3.1
15	103	18	13	13	54	26	11	12	3.1	3.2	.53	3.2
16	55	17	29	14	56	26	14	10	8.5	1.7	.46	3.8
17	27	15	33	26	36	24	13	9.8	20	.96	.41	3.6
18	16	14	25	37	e25	23	11	15	15	.74	.51	2.6
19	33	13	26	36	23	33	11	13	9.4	.49	.25	2.1
20	41	12	23	29	28	36	10	11	8.9	.40	168	7.7
21	25	11	17	25	44	27	29	9.1	7.2	.28	156	14
22	16	11	19	e21	39	24	92	8.1	5.0	.22	91	7.5
23	19	11	20	18	36	29	74	7.3	4.1	.21	54	5.2
24	55	14	31	16	e27	42	42	6.7	3.6	.18	28	4.5
25	75	16	46	e15	24	51	28	6.5	3.2	.18	16	27
26	52	14	31	e11	22	41	22	6.3	2.7	.21	11	104
27	33	11	21	11	21	32	19	5.8	2.3	1.5	8.5	100
28	24	11	17	12	19	28	17	7.8	1.9	3.6	7.0	64
29	25	11	17	13	---	26	14	7.0	5.9	1.8	6.2	36
30	22	10	22	13	---	24	22	5.9	6.1	1.1	5.5	22
31	18	---	38	26	---	26	---	14	---	.79	5.0	---
TOTAL	778.94	482	728.5	551	968	1153	649	568.3	181.6	42.37	595.38	472.0
MEAN	25.1	16.1	23.5	17.8	34.6	37.2	21.6	18.3	6.05	1.37	19.2	15.7
MAX	103	48	55	37	64	93	92	63	20	4.4	168	104
MIN	.84	10	8.7	10	19	20	10	5.8	1.9	.18	.24	2.1

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1991, BY WATER YEAR (WY)

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	8.87	17.8	22.2	25.2	30.6	46.2	41.8	25.4	15.5	6.40	4.45	4.11																	
MAX	29.3	47.3	55.2	101	88.7	96.9	93.6	57.0	72.5	19.2	19.2	15.7																	
(WY)	1976	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																	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1963 - 1991

ANNUAL TOTAL	8264.04	7170.09	20.7
ANNUAL MEAN	22.6	19.6	36.1
HIGHEST ANNUAL MEAN			7.09
LOWEST ANNUAL MEAN			1978
HIGHEST DAILY MEAN	118	168	560
LOWEST DAILY MEAN	.84	.18	.05
ANNUAL SEVEN-DAY MINIMUM	1.4	.24	.11
INSTANTANEOUS PEAK FLOW		212	679
INSTANTANEOUS PEAK STAGE		4.47	5.73
INSTANTANEOUS LOW FLOW		.14	.02
10 PERCENT EXCEEDS	50	45	51
50 PERCENT EXCEEDS	17	14	11
90 PERCENT EXCEEDS	2.3	1.6	1.3

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.

GAGE.--Water-stage recorder. Datum of gage is 110.55 ft above National Geodetic Vertical Datum of 1929 (Massachusetts Department of Public Works benchmark).

REMARKS.--Records 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	306	108	226	181	247	314	438	61	e46	29	78
2	41	278	108	213	165	284	303	399	54	34	26	71
3	34	254	105	202	165	316	256	380	49	30	23	65
4	35	244	255	189	175	529	194	399	53	30	40	36
5	70	232	351	177	187	538	183	360	52	28	35	89
6	47	272	430	173	198	500	180	372	53	29	26	78
7	41	236	408	169	244	500	180	435	48	73	22	60
8	38	155	352	158	288	460	171	403	43	72	22	52
9	59	144	329	155	269	415	163	369	39	48	22	43
10	56	218	308	162	247	380	155	315	36	37	93	36
11	51	315	289	154	235	347	148	290	36	32	51	30
12	51	280	271	173	218	327	139	271	51	30	33	23
13	140	241	245	164	237	314	139	255	61	43	29	18
14	494	210	219	157	297	289	138	241	41	61	28	17
15	387	192	237	154	330	251	144	214	45	42	47	21
16	362	178	290	170	316	235	155	137	69	36	58	24
17	300	168	273	278	291	228	135	113	52	33	33	22
18	245	160	271	352	272	220	118	133	46	30	28	18
19	321	154	277	331	280	239	116	107	60	29	408	34
20	305	146	261	310	299	230	103	94	75	28	977	111
21	273	142	250	309	310	215	335	85	58	24	807	63
22	249	138	250	295	309	225	526	77	47	23	665	47
23	236	141	262	270	296	257	602	70	43	39	567	41
24	502	152	324	256	277	359	526	64	39	30	482	41
25	502	151	301	231	270	348	374	63	36	22	414	415
26	463	147	271	219	264	343	302	63	33	80	324	607
27	460	128	196	216	259	320	258	54	29	e146	157	638
28	416	122	189	188	250	307	229	57	29	62	132	587
29	415	119	190	135	---	298	208	54	28	42	111	516
30	371	115	208	132	---	326	320	54	55	36	98	448
31	341	---	244	203	---	329	---	60	---	33	92	---
TOTAL	7360	5738	8072	6521	7129	10176	7114	6426	1421	1328	5879	4329
MEAN	237	191	260	210	255	328	237	207	47.4	42.8	190	144
MAX	502	315	430	352	330	538	602	438	75	146	977	638
MIN	34	115	105	132	165	215	103	54	28	22	22	17

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1991, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	106	175	213	189	249	310	369	221	198	78.3	96.8	69.2
MAX	346	385	465	471	480	757	920	340	739	146	192	147
(WY)	1990	1990	1987	1982	1990	1983	1987	1990	1982	1984	1989	1989
MIN	41.5	72.2	93.1	59.5	67.6	121	98.7	75.2	43.2	32.7	27.8	23.6
(WY)	1987	1985	1983	1981	1980	1985	1985	1986	1981	1983	1983	1983

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1980 - 1991
ANNUAL TOTAL	84465	71493	
ANNUAL MEAN	231	196	
HIGHEST ANNUAL MEAN			192
LOWEST ANNUAL MEAN			253
HIGHEST DAILY MEAN	693	Jan 29	1984
LOWEST DAILY MEAN	34	Oct 3	1985
ANNUAL SEVEN-DAY MINIMUM	41	Sep 28	96.6
INSTANTANEOUS PEAK FLOW			2250
INSTANTANEOUS PEAK STAGE			9.5
INSTANTANEOUS LOW FLOW			12
10 PERCENT EXCEEDS	460	392	2420
50 PERCENT EXCEEDS	204	173	13.47
90 PERCENT EXCEEDS	63	33	5.7
			416
			125
			38

MERRIMACK RIVER BASIN

43

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 of 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 National Geodetic Vertical Datum of 1929.

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. Maximum gage height of 9.60 ft also occurred Apr. 10, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	1140	510	922	766	837	955	1090	311	137	97	573
2	136	1080	469	927	775	868	937	1140	295	140	96	511
3	141	1020	451	905	775	923	911	1200	286	122	97	440
4	139	973	559	860	797	1120	880	1190	268	131	76	375
5	149	905	700	816	827	1280	845	1190	254	138	89	379
6	144	881	776	778	881	1370	795	1150	249	117	82	333
7	153	859	858	736	936	1470	752	1190	245	114	98	340
8	138	813	906	687	1030	1470	715	1180	224	96	97	321
9	171	775	912	649	1090	1430	688	1200	213	127	49	261
10	182	788	898	643	1130	1380	645	1190	212	107	167	250
11	197	904	865	593	1120	1310	617	1130	180	105	114	206
12	196	900	835	511	1060	1250	575	1060	227	113	96	185
13	277	928	811	522	1010	1200	553	987	211	109	154	166
14	1220	941	775	575	1050	1130	551	915	190	148	86	158
15	1180	920	763	577	1120	1090	499	844	191	110	125	160
16	1230	884	814	588	1100	1060	522	778	281	130	101	166
17	1270	844	820	703	1090	1010	497	737	273	102	88	172
18	1240	803	846	785	1050	982	493	697	279	99	124	132
19	1310	742	871	849	1020	991	483	653	267	72	467	164
20	1210	700	863	905	1010	951	459	618	264	73	1100	201
21	1170	667	848	927	1030	931	584	579	239	72	1200	253
22	1120	631	847	912	1030	908	900	535	223	70	1400	268
23	1090	606	839	e850	1020	905	1050	471	202	73	1480	251
24	1250	596	900	841	1000	968	1200	434	185	68	1430	223
25	1260	593	925	e800	960	1020	1260	399	167	70	1330	490
26	1300	588	930	e760	924	1060	1250	357	144	83	1210	842
27	1340	576	920	718	892	1070	1190	341	137	168	1090	1040
28	1340	569	881	691	863	1070	1110	358	126	68	967	1210
29	1310	559	861	675	---	1030	1020	350	94	162	845	1280
30	1250	530	863	657	---	998	999	328	122	138	750	1270
31	1190	---	913	740	---	978	---	323	---	134	649	---
TOTAL	24436	23715	25029	23102	27356	34060	23935	24614	6559	3396	15754	12620
MEAN	788	790	807	745	977	1099	798	794	219	110	508	421
MAX	1340	1140	930	927	1130	1470	1260	1200	311	168	1480	1280
MIN	133	530	451	511	766	837	459	323	94	68	49	132

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1991, BY WATER YEAR (WY)

	MEAN	309	521	683	707	850	1257	1277	804	522	267	240	238
MAX	1257	1866	1587	1996	1856	2510	3149	1599	2502	1512	1403	1694	
(WY)	1956	1956	1984	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	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1937 - 1991
ANNUAL TOTAL	273702	244576	
ANNUAL MEAN	750	670	638
HIGHEST ANNUAL MEAN			1112
LOWEST ANNUAL MEAN			242
HIGHEST DAILY MEAN	1730	Feb 3	5340
LOWEST DAILY MEAN	84	Jul 22	4.0
ANNUAL SEVEN-DAY MINIMUM	137	Jul 18	16
INSTANTANEOUS PEAK FLOW		1560	5410
INSTANTANEOUS PEAK STAGE		6.61	9.60
INSTANTANEOUS LOW FLOW		14	
10 PERCENT EXCEEDS	1310	1190	1380
50 PERCENT EXCEEDS	798	752	475
90 PERCENT EXCEEDS	185	123	100

MERRIMACK RIVER BASIN

01100000 MERRIMACK RIVER BELOW CONCORD RIVER, AT LOWELL, MA

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 - diversions as needed from 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 National Geodetic Vertical Datum of 1929. 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. 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. Maximum discharge since 1735, that of Mar. 20, 1936.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2370	11600	7020	14800	7770	6840	13100	12500	4320	2780	1280	3900
2	2860	10200	6090	14000	6820	7580	12000	15600	5010	1570	1080	2800
3	3260	9380	7000	12400	7380	9160	11100	15500	4370	1500	1300	3270
4	3350	8890	7960	11600	7370	13900	9960	13800	4260	1530	826	3210
5	3270	8520	16000	10300	7580	20300	9520	11900	3840	1380	999	3170
6	3790	8430	19900	9630	8510	21800	9580	11000	3990	1510	948	3200
7	3610	9890	17400	9430	9480	21500	9870	13700	4000	1310	2260	3390
8	3580	10700	14900	9670	11100	22200	12000	19300	3480	1510	1010	3110
9	3080	10400	13300	7820	12300	21600	13600	18800	3190	1440	1280	2360
10	2910	10500	11900	5610	11300	18400	14200	16000	2770	1570	1960	2460
11	2850	17200	11200	6650	10800	15500	14400	13500	2280	1270	3460	2230
12	4040	26100	10600	6350	9090	13600	13100	11700	3450	1340	3990	2110
13	4890	24200	9550	6690	8240	12400	11000	9820	2410	1720	2970	2060
14	11000	20400	7920	8220	8590	11100	9380	9210	2910	2580	1730	2210
15	16700	17200	8950	7730	9420	10300	7980	7710	2590	1700	1480	1860
16	17200	15300	8140	9020	9630	10200	8340	7290	5640	1820	1610	2040
17	13100	14100	8520	9150	8330	9710	8120	6930	5460	1540	1310	2300
18	10900	12100	10400	8570	8120	9420	8340	7190	4740	1630	2510	2410
19	9660	12000	10200	9780	7870	10300	7900	7200	5130	1600	5460	2570
20	9700	12100	10900	9530	7820	12900	7480	6880	4560	1320	17000	4620
21	10100	11300	11000	9180	8500	13300	8670	6250	3910	1310	20900	3050
22	10400	10500	11000	7030	8800	12400	14600	5780	2880	1350	20500	4000
23	9010	9320	11800	7580	9350	11500	25800	5250	2880	1280	17200	3660
24	11700	9280	19200	6090	7870	11200	26800	4010	2290	1320	14400	3240
25	22500	9330	29700	7290	8070	10600	22400	4220	1880	1600	11700	6630
26	26800	8940	29200	6550	7690	10100	17700	4070	1480	1670	9450	15700
27	21800	8440	23600	6210	7190	10300	14400	4950	1190	2640	7250	18800
28	17300	7160	18100	6080	6490	10500	12700	5340	1130	1620	7090	17800
29	15000	8520	14800	6140	---	13000	11000	4130	1430	1550	5010	15300
30	13500	7030	13900	6560	---	16700	10500	3610	1830	1790	3370	12600
31	12100	---	14100	6950	---	15400	---	3360	---	1250	2060	---
TOTAL	302330	359030	414250	262610	241480	413710	375540	286500	99300	50000	173393	156060
MEAN	9753	11970	13360	8471	8624	13350	12520	9242	3310	1613	5593	5202
MAX	26800	26100	29700	14800	12300	22200	26800	19300	5640	2780	20900	18800
MIN	2370	7030	6090	5610	6490	6840	7480	3360	1130	1250	826	1860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1991, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)
1923	3984	12730	1036	1965
1924	6408	17690	1843	1965
1925	7415	19530	2127	1930
1926	6839	18530	1621	1925
1927	7434	18400	2105	1931
1928	12930	45780	4132	1940
1929	19330	37440	1987	1985
1930	11740	24770	1954	1941
1931	6320	23660	1984	1964
1932	3347	14520	1973	1965
1933	2854	11110	1990	1965
1934	3021	19650	1938	1957
1935			895	
1936			895	
1937			895	
1938			895	
1939			895	
1940			895	
1941			895	
1942			895	
1943			895	
1944			895	
1945			895	
1946			895	
1947			895	
1948			895	
1949			895	
1950			895	
1951			895	
1952			895	
1953			895	
1954			895	
1955			895	
1956			895	
1957			895	
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1976			895	
1977			895	
1978			895	
1979			895	
1980			895	
1981			895	
1982			895	
1983			895	
1984			895	
1985			895	
1986			895	
1987			895	
1988			895	
1989			895	
1990			895	
1991			895	

SUMMARY STATISTICS

	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1923 - 1991
ANNUAL TOTAL	3841380	3134203	
ANNUAL MEAN	10520	8587	
HIGHEST ANNUAL MEAN			7632
LOWEST ANNUAL MEAN			12490
HIGHEST DAILY MEAN	36900	29700	161000
LOWEST DAILY MEAN	1390	826	199
ANNUAL SEVEN-DAY MINIMUM	1690	1100	686
INSTANTANEOUS PEAK FLOW		32100	173000
INSTANTANEOUS PEAK STAGE		49.20	68.40
INSTANTANEOUS LOW FLOW		624	
10 PERCENT EXCEEDS	20500	16700	17000
50 PERCENT EXCEEDS	9330	8140	5090
90 PERCENT EXCEEDS	2730	1620	1640

MERRIMACK RIVER BASIN

45

01100600 SHAWSHEEN RIVER NEAR WILMINGTON, MA

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.

DRAINAGE AREA.--36.5 mi².

PERIOD OF RECORD.--Discharge: November 1963 to current year.
Water-quality records: Water year 1973.

REVISED RECORDS.--WDR MA-NH-RI-VT-74-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 80.44 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 20 ft³/s and 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. Gage height for the peak discharge for period of record on Jan. 26, 1979, was 9.85 ft, mean of recorded surge; 10.00 ft, maximum recorded surge; and about 10.4 ft in river, based on outside gage readings at slightly lower stages.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	51	37	88	e75	48	56	85	21	22	6.1	24
2	17	44	35	81	e79	53	53	129	17	16	4.9	17
3	14	40	34	66	72	64	53	91	17	12	4.0	16
4	17	36	49	56	64	104	46	63	46	11	4.2	15
5	32	36	102	e49	63	196	43	48	45	10	8.8	29
6	29	47	148	45	71	154	41	43	34	10	5.5	42
7	21	59	109	45	78	110	38	60	13	10	3.5	32
8	17	64	79	e44	104	101	35	73	8.1	10	3.1	21
9	26	58	63	39	120	90	33	65	4.8	9.1	3.1	18
10	44	54	53	e35	97	72	32	50	2.8	6.9	20	16
11	44	88	47	e30	78	60	32	40	2.2	5.1	35	14
12	30	155	43	32	e68	55	25	34	6.0	5.5	17	12
13	33	120	41	44	59	51	23	29	31	5.9	9.5	11
14	222	84	35	42	58	49	22	25	39	20	6.7	15
15	392	65	33	41	126	52	23	22	15	21	6.1	18
16	260	55	52	44	161	54	38	22	43	13	21	23
17	149	51	61	65	113	53	34	26	57	8.6	15	17
18	86	48	63	86	e77	49	28	50	60	6.9	9.5	14
19	86	46	59	97	63	55	24	55	45	5.2	52	16
20	134	44	56	93	59	58	22	39	37	4.5	338	43
21	116	42	53	82	69	56	49	28	32	4.1	405	53
22	80	41	53	e70	73	51	260	24	24	3.8	294	46
23	62	40	49	e61	70	54	260	21	19	4.6	169	27
24	91	44	56	e53	63	66	147	22	16	7.5	83	23
25	186	48	68	e45	56	94	89	21	13	4.2	50	63
26	150	45	72	e42	53	101	63	29	12	4.5	29	278
27	97	41	59	42	52	80	50	24	10	24	20	354
28	68	43	48	43	50	63	43	40	9.2	32	17	236
29	61	43	47	44	---	56	38	42	7.7	19	15	128
30	64	40	54	42	---	53	44	24	11	11	23	70
31	59	---	68	60	---	58	---	25	---	8.6	20	---
TOTAL	2701	1672	1826	1706	2171	2260	1744	1349	697.8	336.0	1698.0	1691
MEAN	87.1	55.7	58.9	55.0	77.5	72.9	58.1	43.5	23.3	10.8	54.8	56.4
MAX	392	155	148	97	161	196	260	129	60	32	405	354
MIN	14	36	33	30	50	48	22	21	2.2	3.8	3.1	11
(†)	3.10	0	1.86	.92	3.47	11.4	17.5	4.53	5.60	0	4.59	3.26

e Estimated

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	31.1	55.2	66.3	71.9	85.1	119	102	64.1	49.4	25.8	23.3	21.0																
MAX	95.3	128	153	289	208	279	269	130	251	72.4	56.9	56.4																
(WY)	1976	1976	1987	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																

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1964 - 1991
ANNUAL TOTAL	22797.8	19851.8	
ANNUAL MEAN	62.5	54.4	59.5
HIGHEST ANNUAL MEAN			107
LOWEST ANNUAL MEAN			28.2
HIGHEST DAILY MEAN	405	405	1580
LOWEST DAILY MEAN	2.7	2.2	1.0
ANNUAL SEVEN-DAY MINIMUM	6.5	4.6	1.3
INSTANTANEOUS PEAK FLOW		429	1660
INSTANTANEOUS PEAK STAGE		6.03	9.85
INSTANTANEOUS LOW FLOW		1.8	.70
10 PERCENT EXCEEDS	128	99	128
50 PERCENT EXCEEDS	49	44	38
90 PERCENT EXCEEDS	14	9.8	7.8

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.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 23.46 ft above National Geodetic Vertical Datum of 1929 (levels by Massachusetts Department of Public Works).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1991, BY WATER YEAR (WY)

MEAN	13.8	30.0	40.9	41.9	51.3	86.3	82.5	49.8	27.8	8.92	5.91	6.25
MAX	123	87.3	117	116	122	226	249	151	138	39.6	18.0	65.8
(WY)	1963	1973	1984	1958	1976	1983	1987	1983	1982	1972	1982	1954
MIN	.18	.92	1.74	2.98	5.25	33.6	25.2	19.1	4.25	.85	.37	.12
(WY)	1958	1966	1966	1966	1980	1989	1985	1985	1964	1991	1957	1957

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1946 - 1991

ANNUAL TOTAL	15632.3			13810.84					
ANNUAL MEAN	42.8			37.8				36.9	
HIGHEST ANNUAL MEAN								64.8	1984
LOWEST ANNUAL MEAN								13.2	1966
HIGHEST DAILY MEAN	152	Apr	6	148	Apr	23	779		Apr 7 1987
LOWEST DAILY MEAN	1.1	Jul	24	.13	Aug	8	.09		Sep 25 1957
ANNUAL SEVEN-DAY MINIMUM	1.3	Aug	4	.22	Aug	3	.10		Sep 24 1957
INSTANTANEOUS PEAK FLOW				152	Apr	23	790		Apr 7 1987
INSTANTANEOUS PEAK STAGE				3.31	Apr	23	7.35		Apr 7 1987
INSTANTANEOUS LOW FLOW				.13	Aug	7			
ANNUAL RUNOFF (CFSM)	2.01			1.78				1.73	
ANNUAL RUNOFF (INCHES)	27.30			24.12				23.53	
10 PERCENT EXCEEDS	88			77				89	
50 PERCENT EXCEEDS	45			39				23	
90 PERCENT EXCEEDS	2.9			.92				1.7	

IPSWICH RIVER BASIN

47

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 National Geodetic Vertical Datum of 1929 (Massachusetts Geodetic Survey benchmark.)

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	127	51	99	79	67	83	136	16	3.9	1.0	e7.2
2	8.1	116	48	92	73	72	77	124	15	3.2	.82	e5.6
3	7.0	107	46	88	75	84	72	114	14	2.7	.39	e4.5
4	7.5	99	80	80	87	133	67	107	14	2.1	.38	e3.9
5	15	91	130	71	97	151	62	98	15	1.7	.55	e11
6	15	98	116	69	108	141	58	91	14	1.8	.62	e9.0
7	11	108	109	64	118	149	54	103	14	1.8	.55	e7.6
8	9.7	101	111	52	143	151	49	94	14	1.9	.66	e6.2
9	24	94	109	51	141	136	46	83	13	1.5	.57	e5.2
10	32	102	102	48	139	122	44	76	12	1.2	.66	e4.3
11	28	162	92	46	127	111	43	70	10	1.1	.49	e3.5
12	28	156	82	47	114	102	40	63	11	.92	.80	e3.0
13	42	141	76	42	102	94	37	55	12	1.4	.77	e2.7
14	221	136	70	42	124	87	36	47	12	5.6	.67	e2.5
15	271	131	66	42	168	89	35	45	13	5.3	.91	e2.4
16	292	124	82	47	140	86	39	42	29	3.0	.74	e6.8
17	303	115	81	76	124	80	37	40	29	1.7	.53	e5.6
18	275	107	79	90	115	76	36	42	23	1.4	.50	e4.5
19	285	98	87	88	110	85	35	38	21	.94	.29	e10
20	258	89	84	88	112	84	33	35	21	.64	.83	e22
21	215	82	79	94	113	78	94	32	18	.56	e72	e18
22	183	76	79	89	110	78	233	29	15	.49	e58	e15
23	163	72	77	92	106	83	184	26	13	.86	e49	e12
24	227	73	88	89	91	106	173	25	11	.64	e40	e10
25	229	72	93	e80	89	113	166	22	8.4	.59	e33	e45
26	199	67	85	e73	81	109	147	20	6.7	1.0	e27	e160
27	180	63	78	e62	76	104	126	19	5.2	1.9	e22	e130
28	168	60	71	56	69	101	108	21	4.3	3.2	e18	e100
29	171	58	70	54	---	95	92	19	3.4	2.1	e15	e80
30	157	55	78	52	---	91	94	17	3.7	1.4	e11	e68
31	141	---	104	77	---	90	---	16	---	1.3	e9.0	---
TOTAL	4173.6	2980	2603	2140	3031	3148	2400	1749	410.7	57.84	477.61	765.5
MEAN	135	99.3	84.0	69.0	108	102	80.0	56.4	13.7	1.87	15.4	25.5
MAX	303	162	130	99	168	151	233	136	29	5.6	83	160
MIN	7.0	55	46	42	69	67	33	16	3.4	.49	.38	2.4

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1991, BY WATER YEAR (WY)

	MEAN	27.4	49.8	65.9	67.6	84.2	151	139	81.2	46.1	19.5	13.1	15.0
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	.64	.26	
(WY)	1958	1966	1966	1966	1980	1989	1985	1965	1966	1966	1957	1957	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1938 - 1991
ANNUAL TOTAL	30322.0	23936.25	
ANNUAL MEAN	83.1	65.6	62.6
HIGHEST ANNUAL MEAN			121
LOWEST ANNUAL MEAN			18.6
HIGHEST DAILY MEAN	303	Oct 17	995
LOWEST DAILY MEAN	1.1	Jul 21	.10
ANNUAL SEVEN-DAY MINIMUM	1.3	Jul 18	.53
INSTANTANEOUS PEAK FLOW			308
INSTANTANEOUS PEAK STAGE			4.33
INSTANTANEOUS LOW FLOW			.32
10 PERCENT EXCEEDS	163	137	154
50 PERCENT EXCEEDS	80	63	36
90 PERCENT EXCEEDS	9.2	1.8	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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Diversions upstream for municipal supply of Reading, Lynn, Peabody, Danvers, Salem, and Beverly. Some regulation by reservoirs upstream. Maximum discharge since 1886, that of Apr. 8, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	315	157	230	219	225	257	361	57	15	7.1	50
2	22	292	151	236	221	222	247	360	54	15	5.9	36
3	22	270	146	241	232	224	236	361	49	14	5.2	27
4	22	248	163	243	250	265	224	353	48	12	4.7	21
5	27	227	187	232	265	311	211	330	55	11	5.3	26
6	30	215	219	214	280	361	199	306	58	11	5.0	34
7	31	205	252	203	298	401	189	296	45	11	4.4	38
8	29	200	273	183	326	403	177	284	39	11	3.8	36
9	37	197	274	176	345	386	169	275	39	9.8	3.6	30
10	45	203	262	177	366	366	162	264	35	8.3	3.5	26
11	52	224	247	168	384	344	151	249	32	7.1	4.4	21
12	54	243	233	144	367	321	135	231	31	6.1	5.5	16
13	55	267	222	146	312	300	119	212	31	6.9	5.8	14
14	97	285	210	149	314	278	104	194	30	14	5.1	13
15	138	288	199	151	358	264	88	179	29	18	4.0	13
16	232	278	202	156	383	250	83	165	37	17	4.6	14
17	346	263	202	183	394	239	85	152	52	14	4.7	14
18	415	248	208	208	391	232	85	145	66	10	4.4	15
19	458	235	220	230	353	235	84	137	72	8.0	28	19
20	462	222	225	253	339	232	95	130	69	6.6	72	40
21	462	208	226	279	339	228	171	121	61	5.6	109	58
22	455	196	226	284	321	227	349	110	52	4.9	140	69
23	430	185	224	270	313	226	561	95	45	4.9	167	66
24	458	189	228	254	298	240	674	85	37	4.8	178	55
25	478	180	229	241	275	258	637	79	30	4.6	173	86
26	486	180	230	219	258	277	558	72	25	5.1	157	146
27	471	170	233	203	246	291	482	66	25	9.6	138	211
28	437	163	228	195	234	292	424	64	25	11	121	271
29	402	164	223	189	---	284	377	65	18	11	104	311
30	367	162	220	184	---	276	353	63	16	9.5	82	323
31	339	---	224	206	---	268	---	59	---	8.1	66	---
TOTAL	7382	6722	6743	6447	8681	8726	7686	5863	1262	304.9	1622.0	2099
MEAN	238	224	218	208	310	281	256	189	42.1	9.84	52.3	70.0
MAX	486	315	274	284	394	403	674	361	72	18	178	323
MIN	22	162	146	144	219	222	83	59	16	4.6	3.5	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1991, BY WATER YEAR (WY)

	MEAN	70.1	133	186	204	239	455	432	241	146	58.3	37.1	42.4
MAX	687	525	590	566	627	1158	1233	833	821	518	356	390	
(WY)	1963	1933	1984	1958	1984	1983	1987	1954	1982	1938	1938	1954	
MIN	4.80	6.87	11.5	14.4	16.4	75.0	97.1	86.9	25.6	5.75	2.13	1.76	
(WY)	1966	1966	1966	1966	1980	1989	1985	1985	1976	1957	1965	1965	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1930 - 1991

ANNUAL TOTAL	77548.9	63537.9	
ANNUAL MEAN	212	174	
HIGHEST ANNUAL MEAN			187
LOWEST ANNUAL MEAN			351
HIGHEST DAILY MEAN	810	674	3520
LOWEST DAILY MEAN	9.3	3.5	57.7
ANNUAL SEVEN-DAY MINIMUM	11	4.3	.59
INSTANTANEOUS PEAK FLOW		682	.94
INSTANTANEOUS PEAK STAGE		4.80	3550
INSTANTANEOUS LOW FLOW		3.3	9.43
10 PERCENT EXCEEDS	413	353	.34
50 PERCENT EXCEEDS	213	183	
90 PERCENT EXCEEDS	30	11	12

MYSTIC RIVER BASIN

49

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 National Geodetic Vertical Datum of 1929.

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. Maximum discharge since 1886, that of Jan. 25, 1979.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	43	16	37	43	26	33	92	11	8.7	3.8	5.9
2	7.2	38	16	31	33	31	32	61	9.8	5.1	3.2	4.9
3	5.3	33	15	29	33	33	31	46	9.9	4.6	2.8	4.9
4	7.8	30	78	27	34	108	30	39	12	4.2	3.3	5.1
5	18	28	77	24	35	74	29	34	12	4.2	3.6	34
6	8.5	56	46	24	36	53	27	43	9.9	4.4	2.9	23
7	6.0	46	35	23	48	65	25	58	8.9	4.4	2.8	11
8	5.0	34	30	21	57	56	24	42	7.8	4.6	2.6	7.9
9	31	29	27	20	47	45	23	34	6.3	4.0	2.6	6.4
10	20	65	25	24	41	40	23	31	6.6	3.5	22	5.8
11	15	91	22	22	37	37	22	29	11	3.3	9.7	5.2
12	17	57	21	22	33	35	20	26	37	3.2	5.3	4.6
13	89	44	21	23	30	33	18	25	30	12	4.0	4.3
14	414	38	19	21	94	33	17	23	12	27	3.3	6.9
15	198	34	26	21	85	41	20	22	9.7	11	13	8.4
16	88	32	43	42	57	35	25	20	58	6.0	19	12
17	55	29	32	92	43	31	20	22	36	4.6	8.2	6.9
18	41	28	29	71	38	32	17	34	18	4.0	5.0	5.2
19	125	26	34	49	39	41	13	19	15	3.5	133	19
20	72	24	27	41	41	34	13	16	15	3.2	131	56
21	48	23	24	40	39	29	153	14	10	2.5	91	23
22	38	22	24	34	37	32	161	13	8.3	2.4	39	12
23	54	23	23	30	33	39	90	12	7.5	5.8	27	9.1
24	149	28	47	29	30	77	61	12	6.9	3.7	18	18
25	96	24	36	26	29	57	49	13	6.3	2.7	14	177
26	66	21	28	24	29	44	43	14	5.9	10	11	222
27	57	20	24	23	28	39	40	14	5.4	27	10	133
28	58	19	24	25	26	37	35	26	5.2	12	9.6	71
29	66	19	27	24	---	34	33	15	4.6	6.5	7.6	48
30	49	18	37	24	---	40	72	13	12	4.8	6.9	39
31	42	---	46	62	---	38	---	13	---	4.2	8.9	---
TOTAL	1957.8	1022	979	1005	1155	1349	1199	875	408.0	207.1	624.1	989.5
MEAN	63.2	34.1	31.6	32.4	41.2	43.5	40.0	28.2	13.6	6.68	20.1	33.0
MAX	414	91	78	92	94	108	161	92	58	27	133	222
MIN	5.0	18	15	20	26	26	13	12	4.6	2.4	2.6	4.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1991, BY WATER YEAR (WY)

	12.5	23.0	30.3	36.1	41.5	64.8	53.4	33.5	21.9	9.73	9.77	9.28
MEAN	12.5	23.0	30.3	36.1	41.5	64.8	53.4	33.5	21.9	9.73	9.77	9.28
MAX	104	102	95.7	169	104	167	175	134	159	40.4	79.4	78.2
(WY)	1963	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

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1939 - 1991

ANNUAL TOTAL	14204.5	11770.5	
ANNUAL MEAN	38.9	32.2	
HIGHEST ANNUAL MEAN			28.8
LOWEST ANNUAL MEAN			58.3
HIGHEST DAILY MEAN	414	414	951
LOWEST DAILY MEAN	4.0	2.4	.25
ANNUAL SEVEN-DAY MINIMUM	5.2	2.9	.31
INSTANTANEOUS PEAK FLOW		496	1330
INSTANTANEOUS PEAK STAGE		13.07	15.46
INSTANTANEOUS LOW FLOW		2.1	.00
10 PERCENT EXCEEDS	73	61	68
50 PERCENT EXCEEDS	28	25	16
90 PERCENT EXCEEDS	7.9	5.0	1.2

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.

WATER-DISCHARGE RECORDS

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

REMARKS.--Records good. Flow affected by diversions to and from basin for municipal supplies.

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.

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	632	234	442	413	315	516	553	107	42	71	71
2	86	575	225	447	427	336	498	570	107	39	54	66
3	79	520	214	427	441	375	474	586	104	39	44	58
4	80	471	298	398	434	507	447	580	113	36	43	54
5	86	424	432	358	438	570	417	554	117	35	37	71
6	82	422	511	327	448	626	383	518	115	35	34	101
7	90	409	561	302	481	686	350	495	108	44	32	125
8	93	404	572	277	531	683	322	460	103	54	30	119
9	96	395	552	256	554	657	297	440	96	48	29	99
10	90	416	519	254	567	624	274	418	84	41	40	80
11	87	485	470	239	556	574	258	386	74	36	40	65
12	86	515	428	205	514	517	239	346	79	33	41	55
13	162	541	385	261	465	485	224	305	76	33	40	51
14	858	550	338	297	462	462	205	265	68	40	37	48
15	938	538	314	286	482	449	198	234	63	36	33	47
16	1070	512	348	295	495	437	212	216	72	34	31	49
17	1130	473	379	426	496	429	220	202	68	31	28	48
18	1100	429	419	499	477	421	218	208	67	29	26	45
19	1090	391	441	557	458	424	208	208	67	26	110	68
20	951	357	435	602	455	418	197	204	66	24	235	113
21	850	332	423	627	458	414	323	191	60	23	350	148
22	764	316	412	604	466	411	541	173	55	20	422	160
23	696	288	398	586	454	416	657	156	54	22	471	142
24	806	285	425	499	430	493	744	145	52	20	485	116
25	783	287	425	449	397	536	761	133	50	18	461	270
26	816	283	429	408	366	581	731	125	47	21	402	484
27	821	278	408	345	343	604	674	118	44	68	313	565
28	823	268	386	319	326	602	597	113	41	129	222	593
29	805	255	362	307	---	569	523	104	37	140	147	608
30	745	246	382	307	---	557	516	99	44	119	105	576
31	690	---	422	380	---	536	---	99	---	93	85	---
TOTAL	16946	12297	12547	11986	12834	15714	12224	9204	2238	1408	4498	5095
MEAN	547	410	405	387	458	507	407	297	74.6	45.4	145	170
MAX	1130	632	572	627	567	686	761	586	117	140	485	608
MIN	79	246	214	205	326	315	197	99	37	18	26	45

MEAN	139	250	334	360	430	621	581	362	239	128	121	103
MAX	600	892	838	1180	998	1171	1474	746	1129	1060	956	640
(WY)	1956	1956	1973	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

ANNUAL TOTAL	149459		116991						
ANNUAL MEAN	409		321			305			
HIGHEST ANNUAL MEAN						496		1984	
LOWEST ANNUAL MEAN						117		1966	
HIGHEST DAILY MEAN	1250	Aug 15	1130	Oct 17		3190		Mar 22	1968
LOWEST DAILY MEAN	75	Jul 23	18	Jul 25		.90		Oct 24	1952
ANNUAL SEVEN-DAY MINIMUM	85	Oct 1	21	Jul 20		4.5		Oct 1	1957
INSTANTANEOUS PEAK FLOW			1140	Oct 17		3220		Aug 23	1955
INSTANTANEOUS PEAK STAGE			4.24	Oct 17		9.24		Aug 23	1955
INSTANTANEOUS LOW FLOW			16	Jul 26		.50		Oct 24	1952
10 PERCENT EXCEEDS	747		595			690			
50 PERCENT EXCEEDS	394		319			209			
90 PERCENT EXCEEDS	105		41			43			

CHARLES RIVER BASIN

51

01103500 CHARLES RIVER AT DOVER, MA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to September 1981.

WATER TEMPERATURES: November 1974 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	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)
NOV 07...	1005	410	157	6.7	--	9.5	2.3	759	10.2	90	1200
FEB 26...	0900	368	204	6.7	1.0	2.0	3.5	757	13.8	100	K69
APR 16...	0936	221	210	--	--	12.0	--	--	--	--	--
JUN 26...	0930	55	243	7.2	23.5	25.0	2.3	767	8.6	104	40
JUL 10...	1018	42	253	--	--	--	--	--	--	--	--
AUG 28...	1000	154	191	6.5	25.0	22.0	2.4	725	7.8	94	100

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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 SODIUM PERCENT (00932)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CAR- BONATE WATER WH IT LAB CO3 (00446)	CAR- BONATE WATER WH IT FIELD CO3 (00447)	BICAR- BONATE WATER WH IT LAB HCO3 (00449)	
NOV 07...	660	32	9.1	2.2	18	53	1	1.9	0	--	22
FEB 26...	K41	33	9.7	2.2	23	59	2	1.4	0	--	21
APR 16...	--	--	--	--	--	--	--	--	--	--	--
JUN 26...	--	47	14	3.0	26	53	2	2.5	--	0	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 28...	2700	43	13	2.6	20	48	1	2.5	--	--	--

DATE	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3 (00450)	HY- DROXIDE WATER WH IT LAB OH (71831)	HY- DROXIDE WATER WH IT FIELD OH (71832)	ALKA- LINITY WAT WH TOT IT CACO3 (00416)	ALKA- LINITY WAT WH TOT IT CACO3 (00419)	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)
NOV 07...	--	0	--	18	--	10	28	<0.10	10	100	93
FEB 26...	--	0	--	17	--	13	40	<0.10	6.2	115	109
APR 16...	--	--	--	--	--	--	--	--	--	--	--
JUN 26...	41	--	0	--	34	13	42	<0.10	0.60	129	122
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 28...	--	--	--	--	--	22	31	<0.10	7.6	138	111

CHARLES RIVER BASIN

01103500 CHARLES RIVER AT DOVER, MA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)
NOV 07...	<0.010	0.400	0.060	0.060	0.50	0.050	0.030	60	<1
FEB 26...	0.010	0.600	0.040	0.030	0.40	0.020	0.020	30	<1
APR 16...	--	--	--	--	--	--	--	--	--
JUN 26...	<0.010	<0.050	0.090	0.080	1.3	0.100	0.030	30	<1
JUL 10...	--	--	--	--	--	--	--	--	--
AUG 28...	<0.010	0.160	0.060	0.070	1.0	0.120	0.080	70	<1

DATE	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, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
NOV 07...	25	<0.5	1.0	2	<3	3	290	2	<4	41
FEB 26...	27	<0.5	2.0	2	<3	2	100	2	<4	25
APR 16...	--	--	--	--	--	--	--	--	--	--
JUN 26...	41	<0.5	<1.0	<1	<3	<1	63	<1	<4	52
JUL 10...	--	--	--	--	--	--	--	--	--	--
AUG 28...	55	<0.5	<1.0	2	<3	5	450	4	<4	140

DATE	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	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)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 07...	<0.1	<10	1	<1	<1.0	51	<6	6	--	--
FEB 26...	<0.1	<10	1	<1	<1.0	53	<6	13	20	52
APR 16...	--	--	--	--	--	--	--	--	--	--
JUN 26...	<0.1	<10	1	<1	<1.0	76	<6	32	7	100
JUL 10...	--	--	--	--	--	--	--	--	--	--
AUG 28...	<0.1	<10	2	<1	<1.0	72	<6	11	--	--

CHARLES RIVER BASIN

53

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 National Geodetic Vertical Datum of 1929. Dec. 9, 1931, to June 9, 1960, nonrecording gage at site 200 ft upstream at same datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	144	48	65	90	61	137	150	4.7	1.1	7.7	4.8
2	1.1	129	42	77	87	64	117	136	3.8	1.4	9.8	2.0
3	.85	111	35	106	91	76	100	137	5.1	3.0	8.8	3.9
4	1.4	92	59	99	86	139	86	133	13	2.3	7.6	6.7
5	.93	66	98	86	83	153	72	119	13	1.5	5.3	22
6	.88	68	107	74	84	156	61	127	9.4	.99	2.8	24
7	.88	57	117	66	95	183	49	186	6.2	.85	1.6	22
8	.83	49	123	57	115	193	54	176	4.3	2.8	2.0	18
9	1.0	42	120	47	114	179	89	159	2.9	9.1	1.4	15
10	.92	48	101	44	115	163	80	146	4.5	6.7	2.9	14
11	.96	78	81	34	112	150	75	133	7.1	2.6	1.3	8.2
12	1.1	78	65	31	102	128	59	119	6.5	.96	2.4	4.9
13	5.1	82	52	32	81	103	44	96	9.9	1.0	3.6	4.0
14	181	80	40	42	86	92	34	76	9.3	1.1	1.9	2.7
15	196	75	29	42	90	91	27	62	6.0	1.6	1.1	1.8
16	198	69	39	46	91	80	40	61	7.9	3.2	.98	4.8
17	216	60	51	97	84	72	66	41	4.5	2.5	.59	12
18	212	51	81	108	97	66	66	36	6.9	1.5	.37	11
19	230	39	94	113	137	95	58	27	14	.83	31	18
20	207	38	89	121	139	141	49	23	9.1	.64	44	33
21	170	52	83	126	135	136	124	21	4.9	.52	107	24
22	144	48	78	118	135	132	202	21	5.5	.83	85	22
23	126	40	72	96	133	132	207	16	4.5	1.3	103	27
24	157	38	85	91	115	166	221	11	3.3	.73	110	35
25	152	34	79	75	103	171	222	9.4	4.1	.31	80	135
26	148	42	74	56	90	174	220	7.4	3.0	5.6	68	188
27	149	69	68	49	79	177	204	6.7	1.7	16	55	182
28	147	68	60	47	68	178	175	7.7	1.1	19	25	172
29	154	66	54	67	---	166	132	11	.80	15	14	165
30	146	58	54	65	---	164	125	7.9	2.1	6.0	15	122
31	157	---	68	88	---	151	---	5.4	---	5.6	9.2	---
TOTAL	3107.75	1971	2246	2265	2837	4132	3195	2267.5	179.10	116.56	808.34	1304.8
MEAN	100	65.7	72.5	73.1	101	133	106	73.1	5.97	3.76	26.1	43.5
MAX	230	144	123	126	139	193	222	186	14	19	110	188
MIN	.83	34	29	31	68	61	27	5.4	.80	.31	.37	1.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1991, BY WATER YEAR (WY)

	MEAN	26.8	57.9	84.7	97.5	115	180	160	90.8	56.4	22.9	23.3	21.2
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	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1932 - 1991

ANNUAL TOTAL	29975.13	24430.05	
ANNUAL MEAN	82.1	66.9	77.9
HIGHEST ANNUAL MEAN			149
LOWEST ANNUAL MEAN			20.6
HIGHEST DAILY MEAN	269	Feb 3	1010
LOWEST DAILY MEAN	.83	Oct 8	.00
ANNUAL SEVEN-DAY MINIMUM	.91	Oct 5	.00
INSTANTANEOUS PEAK FLOW		244	1040
INSTANTANEOUS PEAK STAGE		82.88	92.90
INSTANTANEOUS LOW FLOW		.23	.00
10 PERCENT EXCEEDS	173	155	205
50 PERCENT EXCEEDS	73	59	40
90 PERCENT EXCEEDS	1.9	1.6	1.7

CHARLES RIVER BASIN

01104200 CHARLES RIVER AT WELLESLEY, MA

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.

DRAINAGE AREA.--211 mi².

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

GAGE.--Water-stage recorder and masonry dam. Datum of gage is 67.92 ft above National Geodetic Vertical Datum of 1929.

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. No flow Sept. 15, Oct. 6, 1959 caused by closing of gates at dam at gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	534	223	419	365	306	464	578	116	69	42	87
2	92	498	215	341	372	329	454	539	120	39	37	82
3	90	458	212	337	398	356	446	537	91	39	44	54
4	88	425	289	337	401	487	434	539	117	45	55	53
5	100	397	370	321	406	512	419	533	134	45	50	77
6	90	422	409	303	415	535	394	395	132	47	48	98
7	88	410	445	285	452	583	373	378	126	49	32	111
8	93	390	466	266	506	591	266	370	121	37	28	122
9	100	386	463	254	503	573	252	360	125	42	33	83
10	101	415	446	256	509	551	256	342	82	49	52	74
11	94	473	436	239	506	523	233	325	79	48	52	76
12	97	464	413	238	481	482	235	300	105	50	37	61
13	159	480	381	244	450	458	229	280	81	49	39	57
14	699	495	348	288	474	439	217	254	72	62	39	59
15	768	493	334	290	484	438	212	206	75	36	40	59
16	792	483	361	305	467	423	167	191	98	35	35	38
17	839	450	304	444	463	413	175	197	88	38	35	37
18	863	418	338	476	370	411	187	224	62	41	32	47
19	918	389	370	498	363	333	189	212	61	40	148	66
20	853	305	375	527	374	318	184	193	72	34	246	137
21	768	302	373	560	384	337	334	192	60	31	305	131
22	699	303	375	514	379	347	516	186	62	32	327	144
23	650	292	370	459	378	366	528	164	65	29	350	104
24	733	290	396	472	373	440	583	154	51	29	364	93
25	718	286	399	431	354	457	616	153	52	29	368	264
26	690	225	391	372	335	477	616	160	55	31	311	443
27	688	224	383	365	321	499	585	137	53	94	281	490
28	701	235	374	287	312	501	540	96	48	107	244	481
29	692	229	369	281	---	495	492	101	48	141	138	483
30	598	225	381	294	---	497	518	108	68	141	106	483
31	554	---	403	356	---	484	---	110	---	81	97	---
TOTAL	14518	11396	11412	11059	11595	13961	11114	8514	2519	1639	4015	4594
MEAN	468	380	368	357	414	450	370	275	84.0	52.9	130	153
MAX	918	534	466	560	509	591	616	578	134	141	368	490
MIN	88	224	212	238	312	306	167	96	48	29	28	37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1991, BY WATER YEAR (WY)

MEAN	147	240	313	325	395	548	539	338	239	113	107	93.1
MAX	468	561	687	1018	766	1048	1223	575	951	280	430	253
(WY)	1991	1990	1987	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	29.2	13.0	14.9
(WY)	1966	1966	1966	1981	1980	1985	1985	1986	1964	1965	1965	1965

SUMMARY STATISTICS

	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1959 - 1991
ANNUAL TOTAL	140174	106336	
ANNUAL MEAN	384	291	282
HIGHEST ANNUAL MEAN			458
LOWEST ANNUAL MEAN			108
HIGHEST DAILY MEAN	1000	918	2330
LOWEST DAILY MEAN	60	28	1.0
ANNUAL SEVEN-DAY MINIMUM	78	31	4.1
INSTANTANEOUS PEAK FLOW		983	2410
INSTANTANEOUS PEAK STAGE		4.61	6.20
INSTANTANEOUS LOW FLOW		9.3	.00
10 PERCENT EXCEEDS	700	527	618
50 PERCENT EXCEEDS	380	303	206
90 PERCENT EXCEEDS	100	48	45

CHARLES RIVER BASIN

55

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 National Geodetic Vertical Datum of 1929. 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 excellent. 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. Maximum discharge since 1886 was that of Feb. 3, 1976, and was caused by release of water stored behind ice jam upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	571	262	502	424	359	496	672	127	103	74	114
2	112	532	254	452	422	385	481	608	132	77	49	105
3	102	496	249	377	441	416	473	574	121	54	51	91
4	107	465	372	384	456	593	457	561	118	56	69	66
5	126	434	456	363	462	612	449	554	149	59	65	112
6	110	474	466	348	468	598	419	499	153	61	58	128
7	100	462	484	333	511	647	395	434	147	63	52	129
8	101	436	500	311	577	642	340	423	140	64	40	142
9	118	422	497	303	566	616	269	401	142	50	40	127
10	116	475	482	302	559	592	288	385	124	55	68	91
11	108	549	467	286	553	566	272	363	95	57	68	93
12	110	530	450	304	532	537	254	341	123	56	58	79
13	234	523	426	289	503	510	252	318	122	59	47	68
14	886	528	388	314	551	494	242	292	91	78	49	74
15	842	526	385	330	581	496	234	255	94	65	50	78
16	811	537	420	362	539	475	215	222	128	46	52	73
17	822	494	381	526	516	460	158	229	116	44	50	46
18	839	463	370	542	470	457	207	276	102	44	46	50
19	960	436	411	539	419	430	217	252	82	45	294	49
20	874	381	413	554	452	359	212	235	91	43	349	146
21	786	334	413	584	448	378	430	219	82	39	392	157
22	708	343	417	547	445	397	649	214	72	37	386	168
23	702	339	415	502	432	418	614	196	80	41	407	160
24	847	336	455	509	430	515	615	162	79	37	411	119
25	800	332	450	475	409	528	625	165	71	36	416	424
26	739	294	448	423	394	529	629	184	76	41	387	570
27	713	257	438	409	378	536	600	163	76	95	331	583
28	722	275	444	365	364	542	562	139	73	107	303	559
29	725	271	438	327	---	525	517	110	67	133	223	530
30	658	263	453	335	---	530	585	122	107	153	139	517
31	577	---	483	424	---	518	---	127	---	127	134	---
TOTAL	15582	12778	12987	12621	13302	15660	12156	9695	3180	2025	5158	5648
MEAN	503	426	419	407	475	505	405	313	106	65.3	166	188
MAX	960	571	500	584	581	647	649	672	153	153	416	583
MIN	100	257	249	286	364	359	158	110	67	36	40	46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1991, BY WATER YEAR (WY)

	145	248	325	356	403	624	603	360	238	129	119	115
MEAN	145	248	325	356	403	624	603	360	238	129	119	115
MAX	634	1031	834	1173	946	1398	1446	798	1346	915	873	616
(WY)	1956	1956	1984	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

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1931 - 1991

	154242	120792	
ANNUAL TOTAL	154242	120792	
ANNUAL MEAN	423	331	305
HIGHEST ANNUAL MEAN			558
LOWEST ANNUAL MEAN			129
HIGHEST DAILY MEAN	1050	960	2940
LOWEST DAILY MEAN	79	36	.20
ANNUAL SEVEN-DAY MINIMUM	106	39	1.6
INSTANTANEOUS PEAK FLOW		1030	4150
INSTANTANEOUS PEAK STAGE		3.19	6.54
INSTANTANEOUS LOW FLOW		24	.10
10 PERCENT EXCEEDS	730	579	672
50 PERCENT EXCEEDS	420	359	216
90 PERCENT EXCEEDS	132	62	43

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 National Geodetic Vertical Datum of 1929. 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.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	57	34	69	79	47	e76	127	20	6.9	12	13
2	14	53	33	61	67	61	e70	114	18	6.6	9.8	12
3	13	51	32	58	65	73	e66	90	20	6.9	8.7	10
4	14	47	84	52	65	133	e61	76	27	11	8.6	9.1
5	15	45	124	48	65	129	e56	70	28	9.3	8.1	46
6	15	57	101	47	66	108	e53	70	28	7.9	7.6	46
7	14	58	72	47	79	118	e50	82	24	26	6.9	31
8	13	53	69	43	98	113	e48	74	21	23	6.2	23
9	12	48	66	45	91	94	e46	63	22	15	6.1	19
10	12	66	60	52	79	78	e46	58	18	11	15	17
11	13	102	53	49	70	72	e43	50	17	7.8	17	14
12	17	93	50	61	62	68	38	48	16	10	13	12
13	39	74	49	65	55	63	37	44	15	13	8.9	11
14	256	65	47	60	79	63	37	43	14	8.8	7.1	11
15	226	56	44	56	103	75	37	40	12	6.7	6.0	12
16	116	53	67	67	90	74	43	37	16	5.7	5.5	12
17	72	50	68	136	71	68	42	36	15	4.6	5.1	12
18	59	47	64	140	64	65	39	42	14	4.5	5.5	11
19	128	45	65	118	66	e87	38	39	14	4.1	61	15
20	103	43	58	103	74	e82	36	35	13	4.5	83	41
21	74	40	55	97	75	e76	137	31	12	4.8	140	35
22	64	39	58	87	70	e74	211	29	11	4.8	111	25
23	62	39	59	73	62	e86	157	26	13	5.1	75	19
24	123	43	78	68	54	e100	121	24	10	4.1	50	17
25	120	43	75	62	51	e92	98	26	9.1	4.0	35	97
26	96	40	69	57	49	e82	84	25	8.0	33	28	165
27	76	38	61	53	50	e75	73	22	6.9	93	25	140
28	72	37	58	54	48	e70	63	22	6.6	37	21	108
29	76	38	59	57	---	e66	60	20	5.5	23	19	76
30	70	37	68	57	---	e75	92	20	7.6	16	13	57
31	63	---	76	85	---	e84	---	21	---	14	15	---
TOTAL	2063	1557	1956	2127	1947	2551	2058	1504	461.7	432.1	833.1	1116.1
MEAN	66.5	51.9	63.1	68.6	69.5	82.3	68.6	48.5	15.4	13.9	26.9	37.2
MAX	256	102	124	140	103	133	211	127	28	93	140	165
MIN	12	37	32	43	48	47	36	20	5.5	4.0	5.1	9.1

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	27.4	46.7	60.7	67.8	77.3	111	99.9	63.1	40.8	21.2	24.6	21.8
MAX	126	187	187	224	188	236	284	146	213	79.3	226	87.7	
(WY)	1956	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	6.73	4.30	5.94	
(WY)	1958	1966	1966	1981	1980	1985	1966	1986	1981	1949	1981	1980	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1940 - 1991

ANNUAL TOTAL	24720.1	18606.0	
ANNUAL MEAN	67.7	51.0	55.0
HIGHEST ANNUAL MEAN			106
LOWEST ANNUAL MEAN			21.7
HIGHEST DAILY MEAN	460	Aug 12	256
LOWEST DAILY MEAN	7.7	Jul 23	4.0
ANNUAL SEVEN-DAY MINIMUM	11	Jul 18	4.5
INSTANTANEOUS PEAK FLOW			322
INSTANTANEOUS PEAK STAGE			7.82
INSTANTANEOUS LOW FLOW			3.7
10 PERCENT EXCEEDS	122		96
50 PERCENT EXCEEDS	59		48
90 PERCENT EXCEEDS	16		9.1
			123
			36
			9.2

NEPONSET RIVER BASIN

57

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 National Geodetic Vertical Datum of 1929 (Massachusetts Department of Public Works benchmark).

REMARKS.--Records good except those for estimated daily discharges and those for August and 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	e21	18	44	61	40	67	114	20	11	4.6	5.7
2	8.4	24	17	40	50	55	62	84	20	9.3	4.6	5.5
3	7.4	24	16	39	49	69	59	62	18	8.2	4.3	4.8
4	7.3	22	58	37	49	127	54	57	19	8.2	4.0	4.5
5	11	21	97	35	48	112	51	51	34	7.7	3.9	15
6	11	28	59	35	48	76	47	58	29	7.9	4.1	29
7	9.3	30	37	36	56	88	46	92	22	26	3.9	15
8	8.0	26	41	32	76	84	43	81	21	29	3.9	9.2
9	7.3	22	42	33	62	67	40	74	17	17	3.7	6.3
10	7.0	34	39	43	55	60	37	51	18	12	25	4.6
11	7.1	83	36	33	51	55	35	38	15	9.0	30	3.9
12	6.7	63	34	45	46	57	33	34	15	7.4	12	3.5
13	12	42	33	56	42	66	31	33	16	6.8	6.8	3.3
14	57	38	32	47	65	64	30	31	14	8.0	5.2	3.3
15	52	35	32	43	86	83	31	32	13	8.9	4.6	3.9
16	33	35	57	58	66	79	40	30	17	7.3	4.7	4.4
17	15	33	51	151	53	68	34	28	17	7.0	4.4	4.1
18	15	32	43	124	49	63	29	40	15	6.7	4.2	3.6
19	48	48	45	95	52	99	30	33	13	6.3	59	4.2
20	42	20	40	83	61	83	28	27	13	5.7	61	43
21	25	17	37	84	57	60	114	25	12	5.0	101	34
22	19	19	34	74	52	60	169	23	11	4.4	68	17
23	19	17	37	65	48	75	111	20	10	4.4	27	11
24	52	20	62	65	42	112	101	25	9.6	4.7	18	10
25	48	21	62	59	41	103	90	24	9.6	4.7	13	66
26	29	19	45	53	41	88	73	40	9.2	5.0	10	121
27	e23	17	54	51	41	79	62	28	7.3	18	8.8	90
28	e26	17	38	51	40	74	57	22	5.6	15	8.3	41
29	e24	19	42	50	---	68	49	20	6.0	8.1	7.0	37
30	e23	19	53	48	---	79	78	19	7.7	5.7	6.1	31
31	e22	---	52	76	---	79	---	18	---	4.9	5.8	---
TOTAL	684.4	866	1343	1785	1487	2372	1731	1314	454.0	289.3	526.9	634.8
MEAN	22.1	28.9	43.3	57.6	53.1	76.5	57.7	42.4	15.1	9.33	17.0	21.2
MAX	57	83	97	151	86	127	169	114	34	29	101	121
MIN	6.7	17	16	32	40	40	28	18	5.6	4.4	3.7	3.3

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1991, BY WATER YEAR (WY)

	MEAN	30.1	48.6	62.0	67.3	71.9	92.4	85.9	54.3	35.5	18.1	23.1	21.8
MAX	100	161	131	177	132	177	210	142	154	55.8	203	76.2	
(WY)	1963	1956	1987	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	4.42	
(WY)	1966	1966	1966	1966	1980	1985	1966	1965	1964	1965	1957	1957	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1953 - 1991

ANNUAL TOTAL	17266.8		13487.4										
ANNUAL MEAN	47.3		37.0							50.8			
HIGHEST ANNUAL MEAN										78.9		1984	
LOWEST ANNUAL MEAN										18.6		1966	
HIGHEST DAILY MEAN	232	Jan 30	169	Apr 22						1360	Aug 19	1955	
LOWEST DAILY MEAN	6.7	Oct 12	3.3	Sep 13						.60	Jul 7	1957	
ANNUAL SEVEN-DAY MINIMUM	8.1	Oct 6	3.7	Sep 12						3.0	Jul 5	1965	
INSTANTANEOUS PEAK FLOW			215	Apr 21						1790	Aug 19	1955	
INSTANTANEOUS PEAK STAGE			2.87	Apr 21						8.18	Aug 19	1955	
INSTANTANEOUS LOW FLOW			2.5	Nov 20									
10 PERCENT EXCEEDS	96		76							109			
50 PERCENT EXCEEDS	39		33							37			
90 PERCENT EXCEEDS	11		5.7							8.2			

WEYMOUTH BACK RIVER BASIN

01105600 OLD SWAMP RIVER NEAR SOUTH WEYMOUTH, MA

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, 100 ft downstream from unnamed tributary entering from left, 0.4 mi upstream from Whitmans Pond, and 1.2 mi north of South Weymouth.

DRAINAGE AREA.--4.29 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	3.1	2.3	7.6	9.1	5.4	9.3	27	1.8	.96	.37	.83
2	.86	3.1	2.3	6.0	5.9	17	8.3	11	1.6	.65	.33	.68
3	.77	2.9	2.3	5.7	5.5	16	7.5	7.7	5.9	.52	.28	.61
4	1.1	2.7	24	5.0	5.9	55	6.8	6.4	18	.52	2.0	.54
5	1.9	2.6	29	4.2	6.0	37	6.5	5.6	9.7	.46	.57	16
6	1.1	7.0	10	4.3	6.2	15	6.1	7.7	4.7	.46	.44	13
7	.87	5.0	6.2	4.4	11	23	5.7	10	3.2	.49	.35	4.5
8	.78	3.7	8.1	3.9	15	17	5.5	6.4	2.4	.52	.30	2.3
9	.78	3.0	8.1	4.7	9.6	11	5.4	5.3	2.7	.46	.27	1.5
10	.78	9.3	6.0	7.1	7.2	8.8	5.2	5.1	1.7	.39	21	1.2
11	1.0	16	4.6	5.1	5.8	7.8	5.1	4.9	1.3	.35	8.0	1.1
12	1.1	8.1	4.2	20	4.8	7.6	4.6	4.6	2.2	.34	1.9	.98
13	3.2	4.9	4.0	13	4.0	6.9	4.4	3.9	2.3	.32	1.0	.86
14	31	3.9	3.6	12	15	8.0	4.4	3.5	1.3	.46	.84	.78
15	16	3.5	5.0	9.3	16	18	5.5	3.4	1.1	.39	.68	.80
16	4.5	3.3	13	21	8.0	14	6.9	3.2	3.6	.30	.59	1.1
17	2.6	3.3	9.3	63	5.4	11	5.3	3.2	1.8	.24	.50	.86
18	2.1	3.1	7.3	41	4.9	9.7	4.7	7.5	1.4	.22	.46	.68
19	18	3.0	7.2	19	6.8	27	4.3	4.3	1.1	.24	19	2.8
20	8.0	2.7	5.4	12	9.9	15	4.3	3.3	1.1	.24	16	17
21	3.9	2.5	4.5	12	8.1	9.7	74	2.7	.98	.21	22	8.8
22	2.9	2.5	5.8	8.8	6.8	11	83	2.6	.76	.19	18	3.3
23	4.3	2.5	5.8	6.7	5.4	15	23	2.5	1.2	.33	5.7	2.5
24	21	2.8	26	5.7	4.3	33	12	2.3	.81	.26	2.8	2.4
25	12	2.9	17	5.2	4.4	24	8.8	3.2	.67	.19	1.9	26
26	6.6	2.7	8.3	4.7	4.4	15	7.3	3.5	.56	1.8	1.5	51
27	6.1	2.5	5.9	4.2	4.7	11	6.5	2.6	.46	3.2	1.2	30
28	6.0	2.5	6.1	4.8	4.5	10	5.7	2.2	.46	.82	1.1	11
29	6.9	2.5	10	5.1	---	8.4	5.2	1.8	.46	.45	.98	6.7
30	4.6	2.5	15	5.5	---	16	19	1.8	2.2	.40	.78	5.3
31	3.7	---	11	15	---	13	---	1.8	---	.36	.95	---
TOTAL	175.44	120.1	277.3	346.0	204.6	496.3	360.3	161.0	77.46	16.74	131.79	215.12
MEAN	5.66	4.00	8.95	11.2	7.31	16.0	12.0	5.19	2.58	.54	4.25	7.17
MAX	31	16	29	63	16	55	83	27	18	3.2	22	51
MIN	.77	2.5	2.3	3.9	4.0	5.4	4.3	1.8	.46	.19	.27	.54
CFSM	1.32	.93	2.09	2.60	1.70	3.73	2.80	1.21	.60	.13	.99	1.67
IN.	1.52	1.04	2.40	3.00	1.77	4.30	3.12	1.40	.67	.15	1.14	1.87

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1991, BY WATER YEAR (WY)

	MEAN	4.60	9.78	12.5	11.7	13.3	17.5	13.8	9.97	7.59	2.77	3.15	3.19
MAX	10.9	22.4	30.9	30.8	26.0	51.5	38.6	21.6	46.2	7.78	8.99	8.48	
(WY)	1990	1973	1970	1979	1984	1983	1987	1967	1982	1988	1990	1987	
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	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1966 - 1991

ANNUAL TOTAL	3220.70	2582.15	9.15
ANNUAL MEAN	8.82	7.07	14.4
HIGHEST ANNUAL MEAN			1984
LOWEST ANNUAL MEAN			1985
HIGHEST DAILY MEAN	104	Apr 4	361
LOWEST DAILY MEAN	.68	Jul 22	.11
ANNUAL SEVEN-DAY MINIMUM	.85	Jul 17	.13
INSTANTANEOUS PEAK FLOW		127	590
INSTANTANEOUS PEAK STAGE		4.36	5.35
INSTANTANEOUS LOW FLOW		.19	.11
ANNUAL RUNOFF (CFSM)	2.06	1.65	2.13
ANNUAL RUNOFF (INCHES)	27.93	22.39	28.98
10 PERCENT EXCEEDS	19	16	19
50 PERCENT EXCEEDS	5.4	4.5	5.5
90 PERCENT EXCEEDS	1.1	.52	.86

NORTH RIVER BASIN

59

01105730 INDIAN HEAD RIVER AT HANOVER, MA

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.

DRAINAGE AREA.--30.3 mi².

PERIOD OF RECORD.--Discharge: July 1966 to current year.
Water-quality records: Water years 1970-71.

GAGE.--Water-stage recorder. Datum of gage is 3.16 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Some regulation by mills and by Wampatuck, Indian Head, Maquan, and other ponds upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	35	20	57	74	49	78	e130	e14	10	6.5	9.7
2	10	32	20	48	56	80	71	e90	e13	8.8	5.8	8.1
3	9.2	31	19	45	54	102	65	e70	e14	7.5	5.1	7.6
4	9.6	29	54	41	56	209	60	e56	35	7.0	8.5	7.2
5	14	28	115	36	55	217	56	e48	51	6.7	8.0	14
6	13	36	72	36	57	148	53	e60	36	7.2	6.7	33
7	11	41	52	37	67	134	51	e82	26	7.4	5.7	27
8	9.3	36	49	33	101	126	47	e60	21	8.1	5.2	19
9	9.7	31	55	36	82	94	46	e50	19	6.6	4.9	14
10	8.7	35	47	48	68	79	44	e45	16	5.4	65	12
11	9.6	74	40	44	57	73	40	e42	15	5.0	68	10
12	11	62	35	61	46	68	36	e38	16	4.4	30	8.9
13	19	46	33	84	40	63	35	e35	18	4.1	17	7.9
14	83	38	31	69	66	63	35	e32	15	5.1	13	7.9
15	66	34	30	61	94	108	36	e30	13	4.9	11	9.2
16	39	33	60	67	68	99	48	e28	17	4.3	9.0	9.9
17	30	32	57	214	50	84	42	e26	18	3.8	8.1	9.8
18	37	30	47	211	45	76	38	e50	17	3.3	7.7	8.8
19	71	28	49	143	51	143	35	e45	15	2.8	25	9.8
20	54	26	41	106	70	125	32	e34	14	2.5	42	39
21	39	25	37	94	66	89	e200	e27	12	2.3	71	45
22	33	24	38	76	63	83	e400	e24	11	2.5	66	28
23	42	24	39	58	53	101	e200	e22	11	4.8	42	21
24	91	26	92	53	44	155	e120	e21	9.5	2.9	26	19
25	69	27	95	50	43	146	e85	e24	8.8	2.0	20	86
26	58	26	64	44	44	119	e65	e23	8.2	10	17	179
27	62	23	50	43	45	95	e54	e21	7.3	40	14	163
28	52	23	49	45	43	86	e48	e19	7.0	26	12	95
29	51	22	60	47	---	75	e45	e17	6.8	14	11	59
30	46	22	80	48	---	90	e80	e16	9.8	10	10	43
31	40	---	73	86	---	94	---	e15	---	7.8	10	---
TOTAL	1108.1	979	1603	2121	1658	3273	2245	1280	494.4	237.2	651.2	1010.8
MEAN	35.7	32.6	51.7	68.4	59.2	106	74.8	41.3	16.5	7.65	21.0	33.7
MAX	91	74	115	214	101	217	400	130	51	40	71	179
MIN	8.7	22	19	33	40	49	32	15	6.8	2.0	4.9	7.2
CFSM	1.18	1.08	1.71	2.26	1.95	3.48	2.47	1.36	.54	.25	.69	1.11
IN.	1.36	1.20	1.97	2.60	2.04	4.02	2.76	1.57	.61	.29	.80	1.24

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1991, BY WATER YEAR (WY)

	MEAN	31.7	63.1	80.0	81.1	91.2	116	96.7	66.8	46.6	22.1	23.0	21.1
MAX	88.5	143	180	218	172	276	230	155	203	70.4	93.0	65.0	
(WY)	1990	1973	1970	1979	1984	1983	1987	1967	1982	1973	1990	1972	
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	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1966 - 1991
ANNUAL TOTAL	23194.1	16660.7	
ANNUAL MEAN	63.5	45.6	61.6
HIGHEST ANNUAL MEAN			88.9
LOWEST ANNUAL MEAN			27.6
HIGHEST DAILY MEAN	550	Aug 12	1260
LOWEST DAILY MEAN	5.3	Jul 8	.18
ANNUAL SEVEN-DAY MINIMUM	8.4	Jul 18	.38
INSTANTANEOUS PEAK FLOW			1390
INSTANTANEOUS PEAK STAGE			7.13
INSTANTANEOUS LOW FLOW			.14
ANNUAL RUNOFF (CFSM)	2.10		2.03
ANNUAL RUNOFF (INCHES)	28.48		27.61
10 PERCENT EXCEEDS	121		137
50 PERCENT EXCEEDS	50		40
90 PERCENT EXCEEDS	12		7.3

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 National Geodetic Vertical Datum of 1929 (levels by Massachusetts Department of Public Works).

REMARKS.--Records 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	23	15	22	28	32	36	59	24	15	11	14
2	10	20	14	18	30	49	33	55	23	14	10	13
3	9.4	20	15	18	30	46	30	47	21	14	9.7	13
4	9.3	20	33	17	27	83	29	40	21	13	12	14
5	11	18	49	17	30	91	28	35	29	13	12	17
6	11	22	50	16	28	74	28	34	23	13	11	26
7	12	22	43	16	31	68	27	46	18	13	11	20
8	9.7	22	39	13	47	61	26	45	18	14	12	16
9	8.0	20	38	12	42	51	25	39	21	13	11	15
10	7.9	21	32	20	33	44	26	37	18	13	43	14
11	7.9	29	29	19	26	39	25	33	16	13	45	13
12	12	29	25	23	19	35	25	32	17	13	32	12
13	14	26	24	31	19	36	22	30	18	12	30	9.4
14	18	24	20	38	23	29	26	28	15	12	23	9.5
15	25	22	18	33	26	45	23	28	14	11	17	11
16	23	21	25	39	29	49	26	24	15	11	15	11
17	23	19	29	62	21	44	25	25	15	10	13	11
18	24	19	29	68	27	40	24	33	15	9.7	13	11
19	24	18	27	54	34	61	24	30	16	10	20	11
20	21	17	24	42	38	63	25	27	16	10	25	16
21	18	17	21	35	38	53	100	25	14	10	31	18
22	19	16	17	29	34	46	180	21	13	9.7	38	20
23	24	16	18	24	27	46	133	19	13	10	33	21
24	28	16	25	24	32	72	94	17	13	11	28	16
25	31	16	31	24	32	75	72	17	13	9.7	23	38
26	30	16	28	21	35	64	54	22	13	11	19	96
27	31	16	23	20	32	49	44	25	12	25	15	96
28	29	16	23	20	28	48	38	23	12	24	16	70
29	29	16	27	21	---	42	34	21	12	16	15	47
30	26	16	30	22	---	41	41	22	14	13	14	34
31	25	---	30	30	---	40	---	23	---	12	14	---
TOTAL	580.2	593	851	848	846	1616	1323	962	502	398.1	621.7	732.9
MEAN	18.7	19.8	27.5	27.4	30.2	52.1	44.1	31.0	16.7	12.8	20.1	24.4
MAX	31	29	50	68	47	91	180	59	29	25	45	96
MIN	7.9	16	14	12	19	29	22	17	12	9.7	9.7	9.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1991, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	17.7	29.2	33.1	35.6	44.0	55.4	47.7	37.8	26.6	17.8	17.0	16.9														
MAX	43.2	66.0	76.8	78.2	83.3	135	114	67.7	69.4	38.6	42.9	45.5														
(WY)	1978	1973	1973	1979	1984	1983	1984	1967	1984	1984	1979	1972														
MIN	7.94	5.71	10.8	9.00	20.1	25.8	17.3	14.9	9.56	6.34	4.79	5.49														
(WY)	1967	1975	1981	1981	1980	1985	1985	1981	1981	1981	1981	1976														

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1966 - 1991	
ANNUAL TOTAL	11904.2		9873.9			
ANNUAL MEAN	32.6		27.1			
HIGHEST ANNUAL MEAN					31.6	
LOWEST ANNUAL MEAN					54.6	
HIGHEST DAILY MEAN	216	Jul 25	180	Apr 22	14.9	1981
LOWEST DAILY MEAN	7.9	Oct 10	7.9	Oct 10	527	Mar 19 1968
ANNUAL SEVEN-DAY MINIMUM	9.6	Oct 5	9.6	Oct 5	1.1	Aug 11 1966
INSTANTANEOUS PEAK FLOW			212	Apr 22	575	Aug 6 1966
INSTANTANEOUS PEAK STAGE			4.30	Apr 22	5.88	Mar 19 1968
10 PERCENT EXCEEDS	56		46		61	Feb 7 1978
50 PERCENT EXCEEDS	27		23		24	
90 PERCENT EXCEEDS	14		12		9.0	

QUASHNET RIVER BASIN

61

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.

GAGE.--Water-stage recorder. Elevation of gage is 0.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow at times includes overflow and leakage from Johns Pond. Occasional regulation by cranberry bog upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	17	11	13	9.0	11	15	19	14	12	11	11
2	12	14	11	13	11	12	15	17	14	12	11	11
3	11	13	11	12	18	14	15	16	14	12	11	11
4	11	13	26	12	13	11	15	16	16	12	12	11
5	11	12	18	12	14	9.1	15	15	17	12	12	12
6	11	15	13	13	19	9.7	15	16	14	13	11	12
7	11	13	12	12	14	9.5	15	17	14	13	11	12
8	11	12	14	11	14	15	15	16	14	13	11	11
9	11	11	14	12	12	24	15	15	14	12	11	11
10	11	19	13	12	11	18	15	15	14	12	14	11
11	11	13	12	11	11	15	15	15	14	12	13	11
12	11	12	12	16	11	13	14	15	14	12	12	11
13	12	12	12	14	14	13	14	15	15	12	11	10
14	12	12	12	12	13	15	15	16	13	12	13	10
15	12	12	12	11	11	16	15	15	13	12	16	10
16	11	12	14	12	11	14	15	15	14	12	17	11
17	10	12	13	14	11	13	15	15	14	11	17	11
18	8.9	12	13	12	12	17	16	16	13	11	18	10
19	9.6	12	13	11	13	23	15	14	14	11	31	10
20	8.6	12	12	11	12	16	15	15	14	12	12	11
21	8.4	12	12	11	11	15	29	15	13	13	13	11
22	9.7	12	13	11	11	15	25	15	13	12	13	10
23	11	12	13	8.3	11	17	18	15	13	12	12	10
24	14	12	13	8.4	11	18	17	15	13	12	12	11
25	11	12	13	8.3	11	17	16	15	13	11	12	17
26	12	12	12	8.1	11	16	16	14	13	11	12	22
27	13	12	12	8.1	11	15	16	14	12	12	11	18
28	11	9.6	13	8.3	11	15	16	14	12	12	10	15
29	12	11	14	8.3	---	15	16	14	12	11	10	13
30	26	11	14	8.4	---	16	18	14	12	11	10	12
31	22	---	13	9.4	---	16	---	15	---	11	11	---
TOTAL	368.2	375.6	410	343.6	342.0	463.3	486	473	409	368	401	357
MEAN	11.9	12.5	13.2	11.1	12.2	14.9	16.2	15.3	13.6	11.9	12.9	11.9
MAX	26	19	26	16	19	24	29	19	17	13	31	22
MIN	8.4	9.6	11	8.1	9.0	9.1	14	14	12	11	10	10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1991, BY WATER YEAR (WY)

	1989	1990	1991	1989	1990	1991	1989	1990	1991	1989	1990	1991
MEAN	11.8	13.6	12.1	12.9	12.4	14.0	16.1	17.3	16.0	13.7	13.4	12.4
MAX	12.3	14.9	13.2	14.5	13.6	15.7	18.2	20.2	18.1	15.5	13.8	12.8
(WY)	1990	1990	1991	1989	1990	1990	1990	1990	1990	1990	1990	1989
MIN	11.2	12.5	11.4	11.1	11.4	11.4	13.9	15.3	13.6	11.9	12.9	11.9
(WY)	1989	1991	1990	1991	1989	1989	1989	1991	1991	1991	1991	1991

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1989 - 1991
ANNUAL TOTAL	5421.8	4796.7	
ANNUAL MEAN	14.9	13.1	13.8
HIGHEST ANNUAL MEAN			14.9
LOWEST ANNUAL MEAN			13.1
HIGHEST DAILY MEAN	29	31	38
LOWEST DAILY MEAN	7.8	8.1	7.0
ANNUAL SEVEN-DAY MINIMUM	8.3	8.3	7.4
INSTANTANEOUS PEAK FLOW		165	165
INSTANTANEOUS PEAK STAGE		4.55	4.55
INSTANTANEOUS LOW FLOW		8.0	6.7
10 PERCENT EXCEEDS	19	16	18
50 PERCENT EXCEEDS	14	12	13
90 PERCENT EXCEEDS	11	11	10

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 National Geodetic Vertical Datum of 1929. 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. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	53	27	103	98	79	119	156	27	3.4	3.3	8.7
2	11	47	26	85	82	93	110	148	23	3.5	2.8	7.4
3	10	43	25	74	80	127	106	126	19	3.5	2.3	6.7
4	9.2	39	49	71	79	193	102	109	20	3.2	2.5	6.1
5	11	39	129	62	78	221	96	95	22	3.0	3.0	9.1
6	12	51	123	58	78	177	91	89	23	3.3	3.1	21
7	11	61	98	55	84	171	86	126	22	4.3	2.9	23
8	10	56	89	47	111	185	81	127	19	7.3	2.8	18
9	9.6	46	89	49	110	161	79	110	17	10	2.7	14
10	9.4	47	81	60	98	139	79	97	14	7.3	24	11
11	9.4	96	72	64	88	127	75	89	13	4.8	33	9.4
12	9.4	110	62	67	75	119	68	81	13	3.7	19	8.1
13	13	88	55	76	68	110	61	73	15	3.4	12	7.2
14	92	73	50	82	77	105	58	67	14	3.8	8.7	6.6
15	141	64	50	72	125	119	55	60	11	4.0	6.8	6.7
16	90	57	78	79	118	120	59	51	9.7	3.6	6.3	7.2
17	65	51	96	226	93	107	57	39	8.8	3.2	5.6	7.3
18	53	50	88	240	82	100	54	55	8.2	2.9	5.0	6.8
19	71	46	88	186	88	153	51	59	7.4	2.7	21	7.0
20	94	42	80	159	109	164	48	50	7.2	2.5	84	22
21	73	37	71	147	110	139	98	45	6.7	2.2	110	35
22	59	34	69	e125	100	126	242	40	5.5	1.8	102	24
23	52	32	71	e100	91	141	200	34	5.4	1.7	68	17
24	81	34	102	91	80	181	160	31	5.0	1.8	46	15
25	122	39	127	84	77	200	140	29	4.7	2.0	34	30
26	106	40	103	e69	77	180	126	27	4.6	2.6	27	82
27	84	36	84	68	77	160	112	23	4.1	6.8	21	104
28	69	33	73	70	78	148	99	23	3.8	6.2	15	85
29	72	31	74	70	---	137	89	23	3.3	5.7	13	68
30	71	29	97	69	---	137	98	22	3.1	4.4	12	57
31	63	---	114	93	---	133	---	27	---	3.8	10	---
TOTAL	1596.0	1504	2440	2901	2511	4452	2899	2131	359.5	122.4	708.8	730.3
MEAN	51.5	50.1	78.7	93.6	89.7	144	96.6	68.7	12.0	3.95	22.9	24.3
MAX	141	110	129	240	125	221	242	156	27	10	110	104
MIN	9.2	29	25	47	68	79	48	22	3.1	1.7	2.3	6.1

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1991, BY WATER YEAR (WY)

	MEAN	30.7	61.1	89.6	98.8	106	154	135	83.6	52.3	24.7	22.7	21.6
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	35.0	28.6	9.79	3.57	2.55	1.76	
(WY)	1958	1958	1966	1981	1980	1985	1985	1965	1957	1957	1965	1930	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1925 - 1991

ANNUAL TOTAL	28605.8	22355.0	
ANNUAL MEAN	78.4	61.2	73.3
HIGHEST ANNUAL MEAN			123
LOWEST ANNUAL MEAN			28.8
HIGHEST DAILY MEAN	309	Jan 31	1280
LOWEST DAILY MEAN	9.2	Oct 4	.30
ANNUAL SEVEN-DAY MINIMUM	10	Oct 6	.89
INSTANTANEOUS PEAK FLOW			1460
INSTANTANEOUS PEAK STAGE			11.47
INSTANTANEOUS LOW FLOW			.30
10 PERCENT EXCEEDS	151	126	168
50 PERCENT EXCEEDS	69	57	50
90 PERCENT EXCEEDS	15	4.4	7.0

TAUNTON RIVER BASIN

63

01109060 THREEMILE RIVER AT NORTH DIGHTON, MA

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.

DRAINAGE AREA.--84.3 mi².

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Lake Mirimichi and other lakes and reservoirs upstream. Diversions to and from basin upstream for municipal supplies may be compensating.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	108	72	230	216	144	279	304	43	12	11	30
2	30	95	69	205	198	174	250	351	40	11	11	27
3	26	88	63	176	177	226	228	329	40	11	11	25
4	26	81	91	155	170	378	211	276	43	11	16	24
5	29	76	143	140	168	459	195	223	47	12	12	53
6	31	87	231	130	166	463	183	193	42	12	11	63
7	29	103	231	123	179	421	171	230	39	14	10	51
8	28	107	199	113	220	394	159	268	38	14	10	45
9	27	97	184	111	243	387	150	253	37	13	10	39
10	27	95	169	130	230	336	142	212	36	11	66	36
11	26	133	150	139	201	289	135	178	34	12	63	33
12	26	176	133	162	174	256	126	160	32	11	61	29
13	35	186	116	183	147	227	112	141	30	14	41	26
14	77	160	106	173	165	213	105	124	29	13	33	26
15	183	133	102	182	225	242	101	110	28	12	29	27
16	220	118	139	206	265	255	109	99	28	11	26	28
17	162	106	165	373	232	247	112	88	24	11	24	27
18	116	97	181	540	199	245	105	100	13	11	21	26
19	120	92	179	532	186	292	98	107	12	10	53	29
20	138	87	169	439	218	345	93	97	12	10	132	59
21	147	80	153	379	242	344	229	86	12	9.5	216	66
22	124	75	144	325	233	303	429	78	11	8.8	266	58
23	108	71	142	247	204	307	557	72	12	11	230	49
24	131	72	235	256	174	380	470	69	12	8.5	156	45
25	164	74	258	199	155	435	386	66	12	7.5	102	86
26	199	82	260	154	148	451	327	62	12	15	74	230
27	183	79	213	167	146	403	278	58	12	29	60	248
28	150	73	184	157	143	360	233	55	12	15	50	252
29	133	70	173	154	---	324	194	51	12	12	42	207
30	128	71	197	148	---	313	213	48	13	12	38	161
31	121	---	226	190	---	300	---	45	---	11	35	---
TOTAL	2976	2972	5077	6818	5424	9913	6380	4533	767	375.3	1920	2105
MEAN	96.0	99.1	164	220	194	320	213	146	25.6	12.1	61.9	70.2
MAX	220	186	260	540	265	463	557	351	47	29	266	252
MIN	26	70	63	111	143	144	93	45	11	7.5	10	24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1991, BY WATER YEAR (WY)

	MEAN	146	215	226	247	320	300	197	139	54.6	61.1	51.6
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	18.7	35.9	40.1	29.8	55.7	136	84.5	83.4	25.6	12.1	10.2	13.5
(WY)	1972	1972	1981	1981	1980	1985	1985	1981	1991	1991	1966	1980

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1966 - 1991

ANNUAL TOTAL	67013	49260.3	170
ANNUAL MEAN	184	135	255
HIGHEST ANNUAL MEAN			1984
LOWEST ANNUAL MEAN			64.4
HIGHEST DAILY MEAN	806	Jan 31	557
LOWEST DAILY MEAN	26	Oct 3	7.5
ANNUAL SEVEN-DAY MINIMUM	28	Oct 6	9.3
INSTANTANEOUS PEAK FLOW			595
INSTANTANEOUS PEAK STAGE			4.50
INSTANTANEOUS LOW FLOW			6.6
10 PERCENT EXCEEDS	383	278	386
50 PERCENT EXCEEDS	146	112	114
90 PERCENT EXCEEDS	41	12	24

TAUNTON RIVER BASIN

01109070 SEGREGANSET RIVER NEAR DIGHTON, MA

LOCATION.--Lat 41°50'25", long 71°08'36", Bristol County, Hydrologic Unit 01090004, on left bank 50 ft upstream from twin culverts on Center Street and 1.8 mi northwest of Dighton.

DRAINAGE AREA.--10.6 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 30 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, those below 1.0 ft³/s, and those for October and September, which are fair. Occasional regulation by ponds upstream. Diversion upstream for Dighton Water District.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.63	9.7	5.6	35	29	16	30	62	3.7	.12	.37	1.1
2	.50	8.0	5.4	26	21	25	26	57	3.0	.12	.25	.99
3	.41	8.1	5.1	21	19	39	23	36	2.4	.12	.17	.90
4	.32	7.2	23	18	19	100	20	26	2.4	.12	.85	.81
5	.27	6.8	54	15	19	109	19	20	4.1	.11	1.1	10
6	.31	11	45	15	19	61	15	18	3.9	.12	.56	37
7	.31	17	26	16	22	52	16	35	3.0	.13	.44	25
8	.27	15	22	13	36	54	15	36	2.5	.19	.33	13
9	.35	12	24	14	34	40	14	25	2.7	.20	.18	6.8
10	.52	15	22	24	26	29	14	19	2.2	.15	23	4.2
11	.64	28	17	28	21	25	13	17	2.2	.11	33	3.1
12	.71	30	14	27	15	22	11	15	2.2	.08	13	2.4
13	1.3	21	12	37	12	20	11	13	1.9	.06	5.2	1.6
14	3.4	15	11	35	23	20	11	11	1.6	.10	2.8	1.5
15	12	13	11	28	43	33	12	9.5	1.5	.16	1.9	1.7
16	11	11	28	37	35	40	16	8.6	1.3	.14	1.5	2.8
17	6.6	11	33	155	24	36	16	7.0	1.1	.09	1.0	2.6
18	4.8	9.5	27	125	18	32	14	12	1.4	.05	.76	2.1
19	7.4	8.8	27	67	21	61	12	17	1.2	.03	5.3	2.9
20	11	8.3	22	43	35	61	11	12	1.2	.02	28	26
21	8.8	7.2	17	e32	35	39	89	8.5	.92	.00	45	28
22	6.9	6.7	17	e23	27	31	200	6.7	.75	.00	55	16
23	6.5	6.8	17	e16	21	50	117	5.4	.60	.00	34	8.2
24	18	8.1	49	e15	16	111	57	4.5	.50	.00	16	8.0
25	24	8.6	80	e14	15	104	36	3.9	.42	.00	8.8	29
26	19	8.1	46	e11	15	70	27	3.5	.36	.27	5.5	100
27	17	6.9	29	11	16	47	22	3.2	.31	6.3	4.2	94
28	15	6.9	22	14	14	39	19	2.7	.24	5.7	3.3	58
29	15	6.9	25	15	---	32	17	2.6	.16	2.4	2.8	31
30	14	6.3	40	15	---	34	23	2.3	.11	1.1	2.1	18
31	12	---	47	27	---	36	---	3.5	---	.58	1.5	---
TOTAL	218.94	337.9	823.1	972	650	1468	926	502.9	49.87	18.57	297.91	536.70
MEAN	7.06	11.3	26.6	31.4	23.2	47.4	30.9	16.2	1.66	.60	9.61	17.9
MAX	24	30	80	155	43	111	200	62	4.1	6.3	55	100
MIN	.27	6.3	5.1	11	12	16	11	2.3	.11	.00	.17	.81
CFSM	.67	1.06	2.50	2.96	2.19	4.47	2.91	1.53	.16	.06	.91	1.69
IN.	.77	1.19	2.89	3.41	2.28	5.15	3.25	1.76	.18	.07	1.05	1.88

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1991, BY WATER YEAR (WY)

	9.49	22.1	31.3	33.3	35.2	43.9	37.2	24.5	15.3	5.37	5.70	5.87
MEAN	9.49	22.1	31.3	33.3	35.2	43.9	37.2	24.5	15.3	5.37	5.70	5.87
MAX	42.7	58.4	74.7	110	63.2	83.7	106	61.7	64.3	24.9	35.3	21.5
(WY)	1978	1973	1987	1979	1970	1968	1987	1967	1984	1973	1976	1972
MIN	.38	4.69	3.70	3.34	7.23	20.2	9.55	7.87	1.51	.25	.075	.018
(WY)	1989	1981	1981	1981	1980	1981	1985	1981	1981	1966	1966	1980

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1966 - 1991
ANNUAL TOTAL	7648.62	6801.89	
ANNUAL MEAN	21.0	18.6	22.4
HIGHEST ANNUAL MEAN			33.0
LOWEST ANNUAL MEAN			7.68
HIGHEST DAILY MEAN	204	200	670
LOWEST DAILY MEAN	.18	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.21	.01	.00
INSTANTANEOUS PEAK FLOW		233	867
INSTANTANEOUS PEAK STAGE		4.39	7.51
INSTANTANEOUS LOW FLOW		.00	.00
ANNUAL RUNOFF (CFSM)	1.98	1.76	2.11
ANNUAL RUNOFF (INCHES)	26.84	23.87	28.73
10 PERCENT EXCEEDS	45	40	50
50 PERCENT EXCEEDS	16	13	13
90 PERCENT EXCEEDS	1.1	.31	.64

TEN MILE RIVER BASIN

65

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. Flow affected by regulation and diversions from reservoirs upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	72	47	139	130	79	170	215	56	19	17	41
2	32	69	45	121	110	106	198	193	45	16	17	37
3	31	67	44	112	95	147	240	148	45	18	15	36
4	30	64	108	102	91	259	213	125	45	17	27	35
5	37	64	190	96	91	306	135	106	44	16	23	59
6	34	97	160	91	93	224	60	109	41	18	19	87
7	32	91	117	89	106	222	91	174	39	19	18	62
8	31	83	103	84	128	231	120	154	37	32	16	46
9	34	70	88	86	128	190	116	117	35	25	16	40
10	35	91	83	104	114	162	95	109	33	19	105	38
11	31	154	78	102	101	144	61	98	33	19	91	38
12	34	141	71	118	89	132	54	88	35	21	42	34
13	63	110	76	119	79	125	55	79	36	24	31	31
14	161	90	83	110	110	126	55	77	32	26	24	33
15	156	77	78	102	151	150	41	67	30	21	21	34
16	98	76	119	130	150	149	95	62	33	18	22	34
17	72	76	125	366	119	136	53	58	32	17	19	34
18	63	72	116	415	102	134	7.6	94	31	16	17	33
19	130	58	111	284	104	228	6.6	73	33	15	124	37
20	146	56	100	210	121	222	45	62	29	16	346	104
21	141	55	89	187	129	169	188	57	26	15	302	89
22	122	55	88	163	120	154	400	55	20	13	171	53
23	109	55	95	137	106	184	320	50	26	26	110	43
24	147	58	156	121	89	241	209	47	23	22	74	42
25	151	58	168	113	84	269	166	49	23	16	53	108
26	120	56	133	102	83	230	141	50	20	27	44	206
27	91	49	109	92	84	194	129	45	20	52	41	195
28	85	48	108	89	82	211	116	44	22	30	41	134
29	94	52	103	90	---	169	106	40	20	24	40	93
30	83	51	122	91	---	169	135	45	18	24	38	72
31	79	---	149	125	---	159	---	66	---	19	39	---
TOTAL	2507	2215	3262	4290	2989	5621	3821.2	2756	962	660	1963	1928
MEAN	80.9	73.8	105	138	107	181	127	88.9	32.1	21.3	63.3	64.3
MAX	161	154	190	415	151	306	400	215	56	52	346	206
MIN	30	48	44	84	79	79	6.6	40	18	13	15	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1991, BY WATER YEAR (WY)

	MEAN	79.5	117	133	123	144	141	196	133	59.3	42.3	68.4	60.2
MAX	171	223	303	201	261	181	407	188	103	65.4	119	94.4	
(WY)	1990	1990	1987	1987	1988	1991	1987	1989	1989	1989	1989	1987	
MIN	24.8	73.8	51.8	41.4	60.5	90.2	123	86.0	32.1	21.3	25.3	25.3	
(WY)	1989	1991	1989	1989	1989	1989	1988	1988	1991	1991	1988	1988	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1987 - 1991	
ANNUAL TOTAL	40126		32974.2		108	
ANNUAL MEAN	110		90.3		140	
HIGHEST ANNUAL MEAN					86.8	
LOWEST ANNUAL MEAN					1040	
HIGHEST DAILY MEAN	498	Aug 12	415	Jan 18	1040	Apr 6 1987
LOWEST DAILY MEAN	18	Jul 7	6.6	Apr 19	6.6	Apr 19 1991
ANNUAL SEVEN-DAY MINIMUM	29	Aug 1	16	Jul 16	16	Jul 16 1991
INSTANTANEOUS PEAK FLOW			445	Jan 18	1090	Apr 6 1987
INSTANTANEOUS PEAK STAGE			5.33	Jan 18	7.78	Apr 6 1987
INSTANTANEOUS LOW FLOW			5.0	Apr 19	5.0	Apr 19 1991
10 PERCENT EXCEEDS	188		169		214	
50 PERCENT EXCEEDS	97		82		85	
90 PERCENT EXCEEDS	36		21		26	

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 National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 7, 1939, staff gage at same site and datum.

REMARKS.--Records good. Some regulation by Lake Quinsigamond 2.3 mi upstream and by ponds upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	47	27	61	55	41	53	106	49	13	8.5	21
2	8.6	43	26	56	49	52	51	99	41	12	7.8	17
3	6.9	40	24	53	47	67	48	85	35	10	6.9	15
4	6.4	37	50	49	48	110	45	73	31	9.5	6.8	14
5	13	33	82	46	49	116	41	63	28	8.9	7.4	25
6	11	38	70	44	51	97	40	68	25	8.8	6.3	29
7	9.3	36	62	42	60	98	38	114	23	9.0	5.5	25
8	8.6	34	56	39	71	92	36	106	21	9.6	4.7	22
9	16	30	51	39	68	77	35	90	20	8.9	4.0	19
10	18	38	48	42	65	69	33	78	18	7.7	11	17
11	18	71	43	39	61	64	37	69	17	6.9	13	16
12	17	68	37	46	56	59	30	63	20	6.3	11	15
13	29	60	36	44	50	53	27	57	26	6.7	9.8	13
14	136	49	35	40	59	52	26	53	21	9.4	8.6	14
15	123	43	35	37	71	57	27	51	18	8.7	8.5	14
16	91	40	54	39	68	55	31	46	21	5.5	9.6	15
17	67	38	53	61	59	53	29	42	23	4.4	7.1	14
18	53	37	49	64	54	51	28	48	21	4.0	6.2	13
19	85	34	54	59	54	59	27	45	24	3.9	71	13
20	74	32	47	54	62	57	26	41	31	2.8	204	21
21	60	28	44	53	62	50	65	38	27	2.5	181	19
22	51	27	45	49	62	50	130	35	23	2.5	141	17
23	49	28	44	43	60	58	122	32	20	3.0	107	16
24	144	36	62	41	52	74	100	30	17	3.5	83	16
25	145	36	64	38	49	77	84	29	15	2.8	64	68
26	114	33	59	35	47	72	71	30	13	4.0	51	151
27	90	30	53	33	46	66	62	28	12	14	42	147
28	74	29	52	35	43	64	54	34	11	14	35	120
29	72	31	51	35	---	58	49	32	10	12	30	96
30	60	30	53	35	---	58	67	29	12	11	26	79
31	53	---	65	56	---	56	---	37	---	9.6	24	---
TOTAL	1711.8	1156	1531	1407	1578	2062	1512	1751	673	234.9	1201.7	1081
MEAN	55.2	38.5	49.4	45.4	56.4	66.5	50.4	56.5	22.4	7.58	38.8	36.0
MAX	145	71	82	64	71	116	130	114	49	14	204	151
MIN	6.4	27	24	33	43	41	26	28	10	2.5	4.0	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	20.3	33.0	42.8	46.6	54.0	77.4	76.7	53.3	38.9	20.3	17.9	15.8
MAX	94.3	149	108	159	141	154	202	92.3	143	64.2	169	130	
(WY)	1956	1956	1984	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	12.0	2.67	1.05	.84	
(WY)	1943	1942	1942	1981	1977	1989	1966	1965	1976	1965	1965	1980	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1940 - 1991

ANNUAL TOTAL	16258.3	15899.4	
ANNUAL MEAN	44.5	43.6	41.3
HIGHEST ANNUAL MEAN			68.4
LOWEST ANNUAL MEAN			16.5
HIGHEST DAILY MEAN	145	204	790
LOWEST DAILY MEAN	1.9	2.5	.00
ANNUAL SEVEN-DAY MINIMUM	6.2	3.0	.01
INSTANTANEOUS PEAK FLOW		215	820
INSTANTANEOUS PEAK STAGE		2.78	5.15
INSTANTANEOUS LOW FLOW		2.1	.00
10 PERCENT EXCEEDS	85	77	88
50 PERCENT EXCEEDS	43	40	31
90 PERCENT EXCEEDS	9.3	9.0	5.8

BLACKSTONE RIVER BASIN

67

0111230 BLACKSTONE RIVER AT MILLVILLE, MA
(National stream-quality accounting network station)

LOCATION.--Lat 42°01'16", long 71°34'04", Worcester County, Hydrologic Unit 01090003, on left bank 400 ft above railroad bridge, 0.8 mi southeast of Millville, and 1.4 mi upstream from Branch River.

DRAINAGE AREA.--277 mi³.

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1969 to December 1980.

pH: July to December 1980.

WATER TEMPERATURES: July 1969 to December 1980.

DISSOLVED OXYGEN: July 1969 to December 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT											
03...	0945	117	329	7.0	20.5	13.5	--	--	770	8.1	77
NOV											
07...	0945	674	204	6.9	9.0	8.5	--	--	760	10.5	90
DEC											
05...	0950	1730	136	6.8	6.5	5.0	--	5.5	755	10.9	87
JAN											21
09...	0930	451	236	6.9	-3.0	0.0	--	--	770	13.4	91
FEB											
06...	0915	708	225	7.0	9.5	2.5	--	--	770	13.2	95
MAR											
06...	0930	1180	189	7.0	11.0	4.0	22	4.5	757	12.4	95
APR											16
03...	1000	672	221	7.0	12.5	7.0	--	--	772	12.1	98
MAY											
08...	0940	1130	183	7.3	20.0	13.5	--	--	760	8.9	86
JUN											
05...	0950	284	217	6.9	10.0	16.0	--	4.0	758	7.8	79
JUL											16
10...	0915	99	326	7.7	23.5	20.0	--	--	757	7.5	83
AUG											
14...	0835	118	295	7.2	26.0	21.5	--	--	757	7.0	80
SEP											
11...	0830	158	294	7.6	24.0	19.5	12	1.0	755	7.5	83

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, FECAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI KF AGAR (COLS. PER 100 ML) (31673)	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 WH IT LAB MG/L AS HCO3 (00449)
OCT												
03...	--	750	46	44	--	--	--	--	--	--	--	28
NOV												
07...	<1.0	18000	720	150	--	--	--	--	--	--	--	21
DEC												
05...	--	>48000	>1100	>2800	22	6.6	1.3	14	55	1	2.3	15
JAN												
09...	1.0	36000	>910	650	--	--	--	--	--	--	--	28
FEB												
06...	--	38000	>910	320	--	--	--	--	--	--	--	21
MAR												
06...	2.0	55000	>2200	1700	28	8.7	1.5	23	62	2	1.9	19
APR												
03...	--	2700	K270	K8	--	--	--	--	--	--	--	19
MAY												
08...	3.0	20000	210	36	--	--	--	--	--	--	--	16
JUN												
05...	--	1300	170	200	45	14	2.3	33	60	2	3.2	22
JUL												
10...	3.0	340	100	--	--	--	--	--	--	--	--	37
AUG												
14...	--	340	58	59	--	--	--	--	--	--	--	29
SEP												
11...	1.0	4600	80	K120	47	15	2.3	35	59	2	4.4	32

BLACKSTONE RIVER BASIN

01111230 BLACKSTONE RIVER AT MILLVILLE, MA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CAR- BONATE WATER WH IT LAB MG/L AS CO3 (00446)	ALKA- LITY WAT WH TOT IT LAB MG/L AS CACO3 (00416)	HY- DROXIDE WATER WH IT LAB MG/L AS OH (71831)	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)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)
OCT 03...	0	23	0	--	--	--	--	--	--	--	--
NOV 07...	0	17	0	--	--	--	--	--	--	--	--
DEC 05...	0	12	0	15	21	0.10	5.6	71	77	3	77
JAN 09...	0	23	0	--	--	--	--	--	--	--	--
FEB 06...	0	18	0	--	--	--	--	--	--	--	--
MAR 06...	0	15	0	12	35	<0.10	5.8	119	101	6	102
APR 03...	0	16	0	--	--	--	--	--	--	--	--
MAY 08...	0	13	0	--	--	--	--	--	--	--	--
JUN 05...	0	18	0	16	52	0.20	6.3	131	154	12	159
JUL 10...	0	30	0	--	--	--	--	--	--	--	--
AUG 14...	0	24	0	--	--	--	--	--	--	--	--
SEP 11...	0	26	0	20	54	0.20	5.1	163	160	5	166

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	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)
OCT 03...	3.37	0.030	--	3.40	--	0.040	--	--	0.76	0.80	4.2
NOV 07...	1.07	0.030	--	1.10	--	0.110	--	--	0.49	0.60	1.7
DEC 05...	0.470	0.030	0.030	0.500	0.500	0.430	0.430	0.55	0.47	0.90	1.4
JAN 09...	0.680	0.020	--	0.700	--	1.20	--	--	0.10	1.3	2.0
FEB 06...	0.590	0.010	--	0.600	--	0.620	--	--	0.38	1.0	1.6
MAR 06...	0.570	0.020	0.020	0.590	0.590	0.310	0.310	0.40	0.79	1.1	1.7
APR 03...	0.670	0.030	--	0.700	--	0.640	--	--	0.56	1.2	1.9
MAY 08...	0.580	0.050	--	0.630	--	0.280	--	--	0.62	0.90	1.5
JUN 05...	1.56	0.040	0.050	1.60	1.70	0.070	0.100	0.13	0.83	0.90	2.5
JUL 10...	1.98	0.020	--	2.00	--	0.020	--	--	0.88	0.90	2.9
AUG 14...	1.09	0.010	--	1.10	--	0.040	--	--	0.46	0.50	1.6
SEP 11...	1.58	0.020	0.020	1.60	1.50	0.060	0.060	0.08	0.54	0.60	2.2

BLACKSTONE RIVER BASIN

69

01111230 BLACKSTONE RIVER AT MILLVILLE, MA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, TOTAL (MG/L AS P) (70507)	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)	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)
OCT 03...	19	0.810	--	0.800	--	--	--	--	--	--	--
NOV 07...	7.5	0.240	--	0.100	--	--	--	--	--	--	--
DEC 05...	6.2	0.230	0.100	0.140	0.100	--	60	--	<1	9	<0.5
JAN 09...	8.9	0.210	--	0.140	--	--	--	--	--	--	--
FEB 06...	7.1	0.150	--	0.150	--	--	--	--	--	--	--
MAR 06...	7.5	0.130	0.050	0.040	0.040	220	30	<1	<1	12	0.6
APR 03...	8.4	0.190	--	0.140	--	--	--	--	--	--	--
MAY 08...	6.8	0.190	--	0.080	--	--	--	--	--	--	--
JUN 05...	11	0.330	0.140	0.230	0.160	--	20	--	3	13	<0.5
JUL 10...	13	0.480	--	0.430	--	--	--	--	--	--	--
AUG 14...	7.1	0.350	--	0.280	--	--	--	--	--	--	--
SEP 11...	9.7	0.350	0.240	0.270	0.230	100	10	3	3	12	<0.5

DATE	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	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, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	1.0	--	<1	<3	--	10	--	160	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	20	1	<1.0	4	<1	<3	12	6	570	99	6
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	<1.0	--	<1	<3	--	10	--	270	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	100	1	<1.0	3	<1	<3	11	10	560	67	7

BLACKSTONE RIVER BASIN

01111230 BLACKSTONE RIVER AT MILLVILLE, MA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	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)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	2	<4	--	54	--	<0.1	--	<10	--	5	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	1	<4	80	60	<0.10	<0.1	<1	<10	6	4	<1
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	5	<4	--	99	--	<0.1	--	<10	--	7	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<1	<4	70	38	<0.10	<0.1	3	<10	11	10	<1

DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV- ERABLE GRAVI- METRIC (MG/L) (00556)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	<1	--	<1.0	39	<6	--	44	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<1	<1	<1.0	52	<6	20	25	<1	<1	<0.1	--
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	<1	--	<1.0	82	<6	--	41	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<1	<1	<1.0	82	<6	30	21	3	<1	<0.1	150

BLACKSTONE RIVER BASIN

71

01111230 BLACKSTONE RIVER AT MILLVILLE, MA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- ELDRIN TOTAL (UG/L) (39380)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<0.010	--	<0.1	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<0.010	<1.0	<0.1	17	<0.010	3.0	<0.010	4.0	<0.010	3.0	<0.010

DATE	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. TOTAL (UG/L) (39420)	HEPTA- CHLOR EPOXIDE MATL. TOTAL (UG/KG) (39423)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	6.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0

BLACKSTONE RIVER BASIN

01111230 BLACKSTONE RIVER AT MILLVILLE, MA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	MIREX, TOTAL (UG/L) (39755)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39758)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) (39250)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	PER- THANE TOTAL (UG/L) (39034)	PER- THANE TOTAL (UG/KG) (81886)	TOX- APHENE, TOTAL (UG/L) (39400)	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)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	31	72
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<0.01	<0.01	--	<0.10	--	<0.1	--	<1	--	13	56
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	12	93
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<0.01	<0.01	<1.0	<0.10	<10	<0.1	<10.0	<1	<100	--	--

BLACKSTONE RIVER BASIN

73

01111300 NIPMUC RIVER NEAR HARRISVILLE, RI

LOCATION.--Lat 41°58'52", long 71°41'11", Providence County, Hydrologic Unit 01090003, on left bank 1.0 mi upstream from mouth and 1.2 mi northwest of Harrisville.

DRAINAGE AREA.--16.0 mi².

PERIOD OF RECORD.--Discharge: March 1964 to current year.
Water-quality records: Water year 1968.

GAGE.--Water-stage recorder. Elevation of gage is 340 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those above 80 ft³/s, and those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	34	17	45	e44	26	42	83	16	1.5	2.1	e4.0
2	6.8	32	16	38	e33	52	39	48	11	1.2	1.6	e3.8
3	6.2	30	16	34	31	61	35	39	8.3	1.1	1.6	e3.6
4	5.8	29	138	30	35	139	33	34	7.6	1.1	1.6	e3.4
5	10	27	171	26	38	94	31	31	7.6	.98	3.4	e9.0
6	11	35	75	26	39	56	30	36	7.6	1.0	4.0	e21
7	7.9	37	53	26	53	69	28	61	7.3	1.4	1.7	e18
8	6.3	32	47	e24	69	56	26	41	6.4	2.3	1.3	e14
9	6.0	28	42	21	47	44	24	34	5.3	1.5	1.2	e11
10	7.7	45	37	21	40	40	22	36	4.9	2.2	8.4	e9.0
11	8.6	102	33	e23	34	38	20	35	5.0	1.2	9.1	e7.0
12	9.1	57	31	e22	e29	35	18	30	3.8	.94	4.7	e5.6
13	30	42	31	e20	26	34	17	26	3.8	.90	e2.6	e4.5
14	354	35	28	e21	37	33	19	22	3.5	1.1	e2.2	e4.5
15	124	31	30	e23	55	36	20	22	3.2	1.2	e1.9	e5.2
16	58	29	68	27	e44	36	26	19	3.0	.97	e1.7	e5.3
17	39	27	51	84	e35	40	21	17	3.1	.84	e1.5	e5.1
18	31	24	45	65	e29	44	19	24	3.7	.67	e1.3	e4.7
19	91	23	48	46	30	60	18	20	3.2	.65	e45	e6.6
20	59	20	39	39	49	47	16	17	3.0	.55	e210	e13
21	38	20	34	38	45	38	149	14	2.6	.48	e110	e18
22	31	19	37	e35	38	38	193	13	2.3	.42	e64	e15
23	35	21	40	e35	34	53	84	12	2.0	.63	e35	e12
24	243	30	57	e33	e29	95	52	12	2.0	.73	e19	e12
25	137	26	50	e30	28	86	44	10	2.0	.66	e12	e27
26	76	21	39	e30	28	58	38	9.5	1.6	3.6	e10	e68
27	55	19	33	30	27	48	34	8.4	1.4	23	e8.0	e86
28	50	18	32	e29	e26	46	31	7.8	1.2	11	e6.2	e56
29	57	19	32	e27	---	40	29	7.5	1.1	5.3	e5.4	e35
30	46	18	48	26	---	49	54	7.7	1.1	3.8	e4.9	e22
31	38	---	62	53	---	50	---	17	---	2.8	e4.4	---
TOTAL	1684.0	930	1480	1027	1052	1641	1212	793.9	134.6	75.72	585.8	509.3
MEAN	54.3	31.0	47.7	33.1	37.6	52.9	40.4	25.6	4.49	2.44	18.9	17.0
MAX	354	102	171	84	69	139	193	83	16	23	210	86
MIN	5.8	18	16	20	26	26	16	7.5	1.1	.42	1.2	3.4
CFSM	3.40	1.94	2.98	2.07	2.35	3.31	2.52	1.60	.28	.15	1.18	1.06
IN.	3.92	2.16	3.44	2.39	2.45	3.82	2.82	1.85	.31	.18	1.36	1.18

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

MEAN	13.7	27.0	38.6	41.0	44.0	62.0	58.7	36.8	23.3	8.11	8.65	5.75
MAX	59.9	81.5	95.4	176	92.7	124	156	69.0	109	29.8	49.5	23.7
(WY)	1990	1973	1973	1979	1970	1983	1987	1967	1982	1984	1990	1989
MIN	1.85	3.31	7.45	7.13	7.93	30.5	19.3	12.6	4.13	1.41	.90	.36
(WY)	1965	1966	1966	1981	1980	1989	1966	1986	1964	1965	1964	1983

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1964 - 1991
ANNUAL TOTAL	13907.6	11125.32	
ANNUAL MEAN	38.1	30.5	30.7
HIGHEST ANNUAL MEAN			44.9
LOWEST ANNUAL MEAN			13.5
HIGHEST DAILY MEAN	354	Oct 14	937
LOWEST DAILY MEAN	2.2	Jul 24	.14
ANNUAL SEVEN-DAY MINIMUM	2.7	Jul 18	.59
INSTANTANEOUS PEAK FLOW			527
INSTANTANEOUS PEAK STAGE			6.44
INSTANTANEOUS LOW FLOW			.42
ANNUAL RUNOFF (CFSM)	2.38		1.91
ANNUAL RUNOFF (INCHES)	32.34		25.87
10 PERCENT EXCEEDS	76		57
50 PERCENT EXCEEDS	30		26
90 PERCENT EXCEEDS	6.2		1.7
			1.8

BLACKSTONE RIVER BASIN

01111500 BRANCH RIVER AT FORESTDALE, RI

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.

DRAINAGE AREA.--91.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September to December 1909 and January 1912 to July 1913 (gage heights only; published as "at Branch Village"), January 1940 to current year.

REVISED RECORDS.--WSP 2101: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 180 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 28, 1913, nonrecording gage at site 1 mi downstream at different datum.

REMARKS.--Records good. Occasional regulation by pond upstream. Prior to 1957, greater regulation by mills and reservoirs upstream.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	304	132	315	269	210	285	471	177	24	33	42
2	51	291	129	245	211	272	260	351	128	23	28	41
3	46	276	126	219	200	388	243	269	94	22	25	39
4	50	228	387	200	210	630	226	226	80	22	28	37
5	49	190	949	185	215	630	216	213	74	22	31	56
6	52	211	572	181	217	425	205	195	70	25	29	109
7	52	231	409	181	250	424	176	337	66	27	28	103
8	60	217	344	167	356	419	162	275	59	38	25	79
9	66	203	270	168	296	333	147	217	53	34	24	66
10	61	240	280	177	252	289	138	239	46	28	51	59
11	60	547	231	174	226	269	129	269	44	24	58	49
12	66	426	212	187	198	243	117	236	45	23	49	41
13	136	314	212	184	184	225	116	220	41	23	38	36
14	1730	266	209	170	225	220	120	174	38	26	32	40
15	1140	243	252	163	350	248	124	158	37	24	29	42
16	595	231	413	179	283	242	147	141	38	23	27	44
17	391	219	352	414	223	255	140	126	41	21	26	43
18	308	208	306	426	203	259	128	138	42	20	24	41
19	480	199	312	305	241	380	121	144	39	19	292	45
20	467	212	277	262	311	353	115	139	38	18	1150	78
21	358	175	252	260	329	280	501	126	35	17	630	108
22	310	148	256	229	284	263	1140	111	33	19	399	84
23	308	153	266	194	257	340	620	95	33	20	223	76
24	903	181	332	193	227	510	377	88	30	19	160	78
25	895	203	348	184	221	530	307	84	30	17	118	169
26	590	160	278	163	217	428	260	78	29	39	79	481
27	452	142	242	164	218	346	225	73	26	113	66	515
28	388	144	238	170	206	314	204	69	26	104	62	315
29	401	168	236	179	---	278	186	64	24	63	57	208
30	359	145	281	178	---	306	235	65	26	44	52	166
31	325	---	380	299	---	332	---	116	---	36	47	---
TOTAL	11196	6875	9483	6715	6879	10641	7370	5507	1542	977	3920	3290
MEAN	361	229	306	217	246	343	246	178	51.4	31.5	126	110
MAX	1730	547	949	426	356	630	1140	471	177	113	1150	515
MIN	46	142	126	163	184	210	115	64	24	17	24	36
CFSM	3.96	2.51	3.35	2.38	2.69	3.76	2.69	1.95	.56	.35	1.39	1.20
IN.	4.57	2.80	3.87	2.74	2.81	4.34	3.01	2.25	.63	.40	1.60	1.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	96.9	158	208	220	241	338	316	205	133	58.7	62.7	64.6
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	19.4	
(WY)	1958	1966	1966	1981	1980	1989	1966	1965	1964	1965	1970	1957	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1940 - 1991	
ANNUAL TOTAL	88602		74395		175	
ANNUAL MEAN	243		204		261	
HIGHEST ANNUAL MEAN					76.5	
LOWEST ANNUAL MEAN					4020	
HIGHEST DAILY MEAN	2070	Aug 12	1730	Oct 14	4020	Jun 6 1982
LOWEST DAILY MEAN	23	Jul 24	17	Jul 21	5.2	Oct 7 1948
ANNUAL SEVEN-DAY MINIMUM	28	Jul 20	18	Jul 19	7.7	Oct 26 1957
INSTANTANEOUS PEAK FLOW			2230	Oct 14	5470	Jan 25 1979
INSTANTANEOUS PEAK STAGE			7.83	Oct 14	11.90	Mar 18 1968
ANNUAL RUNOFF (CFSM)	2.66		2.23		1.91	
ANNUAL RUNOFF (INCHES)	36.14		30.35		26.01	
10 PERCENT EXCEEDS	453		389		379	
50 PERCENT EXCEEDS	208		181		121	
90 PERCENT EXCEEDS	48		29		26	

BLACKSTONE RIVER BASIN

75

01111500 BRANCH RIVER AT FORESTDALE, RI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954, 1968, 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT											
03...	1050	57	112	7.3	17.0	15.0	--	--	770	9.4	92
NOV											
07...	1100	258	71	6.8	11.0	9.0	--	--	760	11.3	98
DEC											
05...	1045	1010	70	7.0	7.0	5.0	--	17	755	12.4	98
JAN											16
09...	1030	163	83	7.3	-2.0	1.0	--	--	770	14.0	97
FEB											
06...	1115	219	85	7.0	10.5	3.0	--	--	770	13.8	101
MAR											
06...	1115	422	68	6.9	16.0	5.0	22	1.2	755	13.1	104
APR											12
03...	1115	239	77	6.9	10.5	7.5	--	--	771	12.3	101
MAY											
08...	1050	271	70	7.6	17.0	14.0	--	--	760	10.1	98
JUN											
05...	1145	75	82	7.0	14.5	16.0	--	1.8	760	8.8	90
JUL											12
10...	0800	25	116	7.4	20.5	21.5	--	--	758	8.2	94
AUG											
14...	0730	30	130	7.5	26.5	22.5	--	--	756	7.7	90
SEP											
11...	1015	50	50	7.5	23.0	20.5	30	1.1	755	8.0	90
											25

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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 WH IT LAB MG/L AS HCO3 (00449)
OCT												
03...	--	520	48	98	--	--	--	--	--	--	--	12
NOV												
07...	<1.0	900	110	22	--	--	--	--	--	--	--	5
DEC												
05...	--	8200	400	620	--	--	--	--	--	--	--	4
JAN												
09...	<1.0	700	28	K14	--	--	--	--	--	--	--	7
FEB												
06...	--	420	29	K14	--	--	--	--	--	--	--	7
MAR												
06...	1.0	1000	35	24	9	2.8	0.60	7.3	60	1	0.80	13
APR												
03...	--	230	K8	K9	--	--	--	--	--	--	--	4
MAY												
08...	1.0	980	55	33	--	--	--	--	--	--	--	6
JUN												
05...	--	2200	170	290	--	--	--	--	--	--	--	10
JUL												
10...	1.0	370	97	32000	--	--	--	--	--	--	--	20
AUG												
14...	--	260	45	360	--	--	--	--	--	--	--	18
SEP												
11...	1.0	1200	200	700	15	4.6	0.94	11	58	1	1.3	9

BLACKSTONE RIVER BASIN

01111500 BRANCH RIVER AT FORESTDALE, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CAR- BONATE WATER WH IT LAB MG/L AS CO3 (00446)	ALKA- LINITY WAT WH TOT IT LAB MG/L AS CACO3 (00416)	HY- DROXIDE WATER WH IT FIELD MG/L AS OH (71831)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	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, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT 03...	0	10	0	--	--	--	--	--	--	<0.010	0.500	0.100
NOV 07...	0	4	0	--	--	--	--	--	--	<0.010	0.200	0.070
DEC 05...	0	3	0	--	--	--	2	56	--	<0.010	0.200	0.070
JAN 09...	0	5	0	--	--	--	--	--	--	<0.010	0.300	0.130
FEB 06...	0	6	0	--	--	--	--	--	--	<0.010	0.400	0.110
MAR 06...	0	11	0	7.2	11	36	<1	44	--	<0.010	0.200	0.040
APR 03...	0	3	0	--	--	--	--	--	--	<0.010	0.300	0.090
MAY 08...	0	5	0	--	--	--	--	--	--	<0.010	0.210	0.060
JUN 05...	0	9	0	--	--	--	8	59	0.280	0.020	0.300	0.120
JUL 10...	0	17	0	--	--	--	--	--	--	<0.010	0.220	0.100
AUG 14...	0	15	0	--	--	--	--	--	--	<0.010	0.190	0.100
SEP 11...	0	7	0	10	18	51	<1	66	--	<0.010	0.290	0.110

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)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P) (70507)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
OCT 03...	0.60	0.70	1.2	5.3	0.040	<0.010	--	--	--	--	--	--
NOV 07...	0.43	0.50	0.70	3.1	<0.010	<0.010	--	--	--	--	--	--
DEC 05...	--	<0.30	--	--	0.030	0.010	--	--	--	--	--	--
JAN 09...	0.37	0.50	0.80	3.5	0.010	<0.010	--	--	--	--	--	--
FEB 06...	0.39	0.50	0.90	4.0	<0.010	0.020	--	--	--	--	--	--
MAR 06...	0.56	0.60	0.80	3.5	0.020	<0.010	170	<1	<10	<1	3	2
APR 03...	0.31	0.40	0.70	3.1	0.010	<0.010	--	--	--	--	--	--
MAY 08...	0.44	0.50	0.71	3.1	0.020	<0.010	--	--	--	--	--	--
JUN 05...	0.28	0.40	0.70	3.1	0.030	<0.010	--	--	--	--	--	--
JUL 10...	0.40	0.50	0.72	3.2	0.030	<0.010	--	--	--	--	--	--
AUG 14...	0.40	0.50	0.69	3.1	0.020	<0.010	--	--	--	--	--	--
SEP 11...	0.49	0.60	0.89	3.9	0.030	<0.010	90	<1	20	<1	1	3

BLACKSTONE RIVER BASIN

77

01111500 BRANCH RIVER AT FORESTDALE, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	PCB, TOTAL (UG/L) (39516)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	220	<1	50	<0.10	<1	<1	<1	<1	<10	1	<1	<0.1
APR 03...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	680	3	90	<0.10	2	1	<1	<1	10	2	<1	<0.1

DATE	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	<0.010	--	<0.1	--	<0.010	--	<0.010	--	<0.010	--
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	9	<0.010	<1.0	<0.1	26	<0.010	7.0	<0.010	17	<0.010	32

BLACKSTONE RIVER BASIN

01111500 BRANCH RIVER AT FORESTDALE, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDO-SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA-CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH-CHLOR, METH- OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL (UG/L) (39755)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39758)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	PER-THANE TOTAL (UG/L) (39034)	PER-THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (81886)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	<0.01	--	<0.01	--	<0.10	--	<0.1	--	<1	--
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<1.0	<0.01	<100	<0.01	1.0	<0.10	<10	<0.1	<10.0	<1	<100

BLACKSTONE RIVER BASIN

79

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. 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. Maximum discharge since at least 1645, that of Aug. 19, 1955.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	1160	608	1370	1280	800	1240	1980	777	196	169	241
2	254	1080	590	1190	1060	966	1130	1750	598	147	157	202
3	247	1030	570	1070	935	1480	1060	1410	461	147	144	207
4	254	933	1300	963	944	2270	1030	1170	399	140	158	190
5	317	856	2850	871	1010	2590	934	1050	521	132	163	325
6	333	920	2020	843	1050	1960	835	977	352	143	155	548
7	301	1110	1620	822	1190	1820	798	1670	353	151	160	416
8	300	1060	1340	763	1640	1820	736	1640	330	183	109	311
9	312	1000	1140	732	1510	1570	681	1310	315	159	121	279
10	425	1100	1080	774	1310	1380	665	1200	274	142	286	247
11	363	1920	987	772	1130	1250	629	1130	252	132	365	211
12	399	1730	912	804	1020	1150	563	1020	245	123	236	192
13	763	1380	873	816	883	1040	559	913	172	126	185	183
14	4600	1170	849	766	1000	985	521	814	239	174	157	191
15	3660	1030	876	754	1440	1060	546	720	212	157	146	220
16	2140	924	1390	777	1340	1070	623	673	218	138	146	232
17	1540	877	1400	1480	1090	1090	596	618	265	122	131	227
18	1210	802	1270	1710	943	1060	557	678	257	112	127	214
19	1640	808	1280	1400	957	1290	534	668	228	114	885	256
20	1710	708	1170	1220	1180	1290	491	606	300	114	3340	457
21	1340	673	1050	1140	1350	1100	1410	532	301	111	2460	502
22	1090	616	1050	1020	1250	1030	3490	500	226	104	1790	365
23	1070	629	1060	901	1130	1250	2620	468	224	111	1260	325
24	2940	713	1270	842	969	1780	1870	424	186	133	827	318
25	3480	797	1450	784	895	1950	1520	402	192	102	649	727
26	2470	713	1250	679	874	1720	1240	403	175	312	518	2350
27	1880	642	1080	681	850	1500	1060	374	160	636	417	2470
28	1650	632	993	692	803	1360	939	381	143	472	385	1740
29	1610	660	967	780	---	1210	848	391	147	301	326	1260
30	1440	672	1090	758	---	1290	1010	323	150	227	297	933
31	1290	---	1420	1170	---	1380	---	520	---	195	265	---
TOTAL	41273	28345	36805	29344	31033	43511	30735	26715	8672	5556	16534	16339
MEAN	1331	945	1187	947	1108	1404	1024	862	289	179	533	545
MAX	4600	1920	2850	1710	1640	2590	3490	1980	777	636	3340	2470
MIN	245	616	570	679	803	800	491	323	143	102	109	183

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1991, BY WATER YEAR (WY)

	MEAN	422	659	843	934	997	1504	1427	893	619	339	320	337
MAX	2007	2233	2265	3167	2493	4063	3643	1779	2826	2453	2704	1980	
(WY)	1956	1956	1973	1979	1970	1936	1987	1972	1982	1938	1955	1954	
MIN	128	127	186	183	262	653	479	303	181	125	111	113	
(WY)	1932	1932	1966	1981	1980	1989	1966	1930	1930	1957	1966	1957	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1929 - 1991	
ANNUAL TOTAL	360369		314862		773	
ANNUAL MEAN	987		863		1162	
HIGHEST ANNUAL MEAN					345	
LOWEST ANNUAL MEAN					25900	
HIGHEST DAILY MEAN	4600	Oct 14	4600	Oct 14	Aug 20	1955
LOWEST DAILY MEAN	143	Jul 21	102	Jul 25	Aug 11	1934
ANNUAL SEVEN-DAY MINIMUM	183	Jul 18	113	Jul 17	Aug 1	1930
INSTANTANEOUS PEAK FLOW			5560	Oct 14	Aug 19	1955
INSTANTANEOUS PEAK STAGE			8.14	Oct 14	Aug 19	1955
10 PERCENT EXCEEDS	1820		1640		1660	
50 PERCENT EXCEEDS	919		800		530	
90 PERCENT EXCEEDS	254		160		165	

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.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE	PH WATER WHOLE FIELD (STAND- ARD UNITS)	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 (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL)
		(00061)	(00095)	(00400)	(00020)	(00010)	(00080)	(00076)	(00025)	(00300)	(00301)	(00340)
OCT												
03...	1240	257	305	7.2	22.0	16.0	--	--	770	9.4	94	--
NOV												
07...	1300	1160	178	7.1	16.5	9.5	--	--	760	11.1	97	--
DEC												
05...	1250	3100	122	7.1	5.0	5.5	--	5.4	755	12.3	98	23
JAN												
09...	1200	738	201	6.9	-1.0	0.0	--	--	770	13.9	94	--
FEB												
06...	1315	1110	204	7.2	10.5	3.0	--	--	770	13.1	96	--
MAR												
06...	1330	1970	160	6.9	15.0	5.0	20	2.5	756	13.0	103	15
APR												
03...	1300	1100	197	7.0	14.5	7.5	--	--	774	12.6	103	--
MAY												
08...	1225	1680	158	7.3	25.0	14.5	--	--	760	9.3	92	--
JUN												
05...	1315	459	185	7.2	16.5	16.0	--	4.3	763	9.2	93	18
JUL												
10...	1130	172	368	7.8	32.0	23.0	--	--	760	7.9	92	--
AUG												
14...	1015	187	305	7.3	31.5	23.5	--	--	766	7.6	88	--
SEP												
11...	1240	247	294	7.7	29.0	20.5	28	1.6	756	7.8	88	34
DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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 WH IT LAB MG/L AS HCO3 (00449)
OCT												
03...	--	820	84	42	--	--	--	--	--	--	--	29
NOV												
07...	1.0	10000	640	60	--	--	--	--	--	--	--	18
DEC												
05...	--	38000	>1100	2100	--	--	--	--	--	--	--	14
JAN												
09...	1.0	14000	390	94	--	--	--	--	--	--	--	23
FEB												
06...	--	23000	180	K17	--	--	--	--	--	--	--	24
MAR												
06...	2.0	44000	390	130	22	7.0	1.2	18	61	2	1.7	17
APR												
03...	--	950	K32	K3	--	--	--	--	--	--	--	20
MAY												
08...	3.0	22000	140	K12	--	--	--	--	--	--	--	15
JUN												
05...	--	10000	870	1300	--	--	--	--	--	--	--	20
JUL												
10...	6.0	1400	210	0	--	--	--	--	--	--	--	48
AUG												
14...	--	440	110	480	--	--	--	--	--	--	--	31
SEP												
11...	2.0	1700	<150	<65	39	12	2.1	37	65	3	3.7	27

BLACKSTONE RIVER BASIN

81

01112900 BLACKSTONE RIVER AT MANVILLE, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CAR- BONATE WATER WH IT LAB MG/L AS CO3 (00446)	ALKA- LINIT WAT WH TOT IT LAB MG/L AS CACO3 (00416)	HY- DROXIDE WATER WH IT FIELD MG/L AS OH (71831)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	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, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT 03...	0	23	0	--	--	--	--	--	1.88	0.020	1.90	0.340
NOV 07...	0	14	0	--	--	--	--	--	0.880	0.020	0.900	0.200
DEC 05...	0	13	0	--	--	--	5	69	0.380	0.020	0.400	0.340
JAN 09...	0	19	0	--	--	--	--	--	0.680	0.020	0.700	0.840
FEB 06...	0	20	0	--	--	--	--	--	0.590	0.010	0.600	0.700
MAR 06...	0	14	0	11	30	78	1	91	--	<0.010	0.440	0.260
APR 03...	0	16	0	--	--	--	--	--	0.610	0.020	0.630	0.590
MAY 08...	0	13	0	--	--	--	--	--	0.500	0.040	0.540	0.280
JUN 05...	0	17	0	--	--	--	8	127	1.07	0.030	1.10	0.120
JUL 10...	0	39	0	--	--	--	--	--	1.34	0.060	1.40	1.20
AUG 14...	0	25	0	--	--	--	--	--	1.02	0.080	1.10	0.630
SEP 11...	0	22	0	24	55	147	21	173	1.17	0.030	1.20	0.110

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)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P) (70507)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
OCT 03...	0.96	1.3	3.2	14	0.540	0.530	--	--	--	--	--	--
NOV 07...	0.60	0.80	1.7	7.5	0.210	0.080	--	--	--	--	--	--
DEC 05...	0.56	0.90	1.3	5.8	0.190	0.100	--	--	--	--	--	--
JAN 09...	0.16	1.0	1.7	7.5	0.190	0.140	--	--	--	--	--	--
FEB 06...	0.30	1.0	1.6	7.1	0.130	0.120	--	--	--	--	--	--
MAR 06...	0.74	1.0	1.4	6.4	0.110	0.020	210	<1	40	<1	4	11
APR 03...	0.51	1.1	1.7	7.7	0.160	0.120	--	--	--	--	--	--
MAY 08...	0.52	0.80	1.3	5.9	0.180	0.090	--	--	--	--	--	--
JUN 05...	1.4	1.5	2.6	12	0.210	0.140	--	--	--	--	--	--
JUL 10...	1.1	2.3	3.7	16	0.380	0.280	--	--	--	--	--	--
AUG 14...	0.77	1.4	2.5	11	0.510	0.420	--	--	--	--	--	--
SEP 11...	0.69	0.80	2.0	8.9	0.350	0.260	100	2	60	1	2	11

BLACKSTONE RIVER BASIN

01112900 BLACKSTONE RIVER AT MANVILLE, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	PCB, TOTAL (UG/L) (39516)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	450	4	80	<0.10	<1	2	<1	<1	20	1	<1	<0.1
APR 03...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	570	5	130	<0.10	4	8	<1	<1	20	2	<1	<0.1

DATE	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	<0.010	--	<0.1	--	<0.010	--	<0.010	--	<0.010	--
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	300	<0.010	<1.0	<0.1	70	<0.010	9.0	<0.010	16	<0.010	2.0

BLACKSTONE RIVER BASIN

83

01112900 BLACKSTONE RIVER AT MANVILLE, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDO-SULFAN, IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<0.010	3.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL (UG/L) (39755)	MIREX, IN BOT- TOM MA- TERIAL (UG/KG) (39758)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) (39250)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	PER- THANE TOTAL (UG/L) (39034)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG) (81886)	TOX- APHENE, TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
OCT 03...	--	--	--	--	--	--	--	--	--	--	--
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 05...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	<0.01	--	<0.01	--	<0.10	--	<0.1	--	<1	--
APR 03...	--	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--	--
JUN 05...	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	<1.0	<0.01	<100	<0.01	<1.0	<0.10	<10	<0.1	<10.0	<1	<100

MOSHASSUCK RIVER BASIN

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 National Geodetic Vertical Datum of 1929. 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. Occasional regulation at low flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	21	17	41	35	29	49	92	43	5.3	6.3	7.6
2	8.5	16	13	36	28	69	46	57	23	4.9	4.5	6.1
3	8.2	18	16	34	27	63	43	45	20	8.0	3.9	6.0
4	14	12	175	31	27	196	39	38	24	9.5	18	6.0
5	15	16	102	29	27	80	46	34	18	4.8	10	56
6	10	50	49	29	28	56	44	66	15	4.3	6.0	20
7	9.4	22	38	29	46	104	40	68	15	13	5.0	12
8	9.1	24	37	26	49	65	39	46	15	13	4.3	9.4
9	17	16	33	39	38	50	36	37	13	9.9	6.5	8.1
10	13	112	30	43	34	43	35	51	14	5.3	162	7.5
11	11	100	27	33	30	41	33	39	13	22	21	6.0
12	18	46	25	54	27	38	28	34	17	14	11	4.8
13	78	33	25	44	25	36	28	32	16	13	9.2	4.3
14	173	27	24	33	88	44	32	30	14	9.6	7.8	11
15	46	26	47	32	72	60	38	29	8.8	12	6.6	7.5
16	25	25	68	146	47	55	37	27	12	7.6	5.5	9.9
17	21	22	42	178	35	51	32	33	12	5.3	4.7	7.0
18	14	20	40	88	33	76	30	51	8.4	4.9	4.3	9.9
19	135	22	36	59	42	118	28	32	12	4.6	255	34
20	34	18	29	50	50	66	28	27	10	4.2	90	61
21	22	16	27	49	43	49	291	26	11	3.9	133	19
22	19	15	35	40	37	63	180	26	7.5	3.9	45	9.2
23	36	20	35	34	33	93	82	25	7.3	46	24	12
24	103	26	99	33	28	115	60	19	8.0	11	15	9.0
25	44	18	51	32	28	93	52	35	6.2	8.9	13	133
26	30	21	37	28	28	69	44	19	5.9	32	12	128
27	25	19	34	27	30	61	41	15	5.3	37	10	52
28	30	16	35	29	30	59	37	20	6.6	16	9.9	27
29	27	21	41	30	---	54	34	22	5.7	11	9.1	22
30	19	13	50	28	---	71	108	58	6.0	9.7	8.4	16
31	19	---	55	57	---	57	---	71	---	8.6	8.3	---
TOTAL	1043.2	831	1372	1441	1045	2124	1660	1204	392.7	363.2	929.3	721.3
MEAN	33.7	27.7	44.3	46.5	37.3	68.5	55.3	38.8	13.1	11.7	30.0	24.0
MAX	173	112	175	178	88	196	291	92	43	46	255	133
MIN	8.2	12	13	26	25	29	28	15	5.3	3.9	3.9	4.3
CFSM	1.46	1.20	1.92	2.01	1.62	2.97	2.40	1.68	.57	.51	1.30	1.04
IN.	1.68	1.34	2.21	2.32	1.68	3.42	2.67	1.94	.63	.58	1.50	1.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1991, BY WATER YEAR (WY)

	MEAN	23.3	38.2	50.2	51.7	53.7	66.8	66.0	46.7	33.3	19.6	21.1	19.7
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	8.72	10.6	10.6	12.9	26.4	29.0	22.9	24.2	13.1	8.71	7.27	5.09	
(WY)	1966	1966	1966	1981	1969	1985	1966	1965	1991	1965	1970	1970	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1963 - 1991

ANNUAL TOTAL	15674.2	13126.7	
ANNUAL MEAN	42.9	36.0	40.8
HIGHEST ANNUAL MEAN			62.5
LOWEST ANNUAL MEAN			20.2
HIGHEST DAILY MEAN	354	291	1750
LOWEST DAILY MEAN	7.3	3.9	1.7
ANNUAL SEVEN-DAY MINIMUM	8.2	4.9	2.6
INSTANTANEOUS PEAK FLOW		1130	2390
INSTANTANEOUS PEAK STAGE		5.07	5.81
INSTANTANEOUS LOW FLOW		3.4	1.3
ANNUAL RUNOFF (CFSM)	1.86	1.56	1.77
ANNUAL RUNOFF (INCHES)	25.24	21.14	24.01
10 PERCENT EXCEEDS	83	69	80
50 PERCENT EXCEEDS	34	28	28
90 PERCENT EXCEEDS	10	7.4	8.7

85

ANNUAL TOTAL	31448		26656.9			
ANNUAL MEAN	86.2		73.0		73.2	
HIGHEST ANNUAL MEAN					119	1984
LOWEST ANNUAL MEAN					31.5	1966
HIGHEST DAILY MEAN	339	Jan 30	243	Apr 21	1250	Mar 18 1968
LOWEST DAILY MEAN	15	Jul 22	6.6	Jul 16	2.1	Aug 26 1963
ANNUAL SEVEN-DAY MINIMUM	17	Jul 31	7.3	Jul 16	3.1	Aug 21 1963
INSTANTANEOUS PEAK FLOW			425	Apr 21	1440	Mar 18 1968
INSTANTANEOUS PEAK STAGE			4.17	Apr 21	7.75	Mar 18 1968
10 PERCENT EXCEEDS	155		131		151	
50 PERCENT EXCEEDS	74		75		50	
90 PERCENT EXCEEDS	29		17		18	

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Flat River Reservoir 2 mi upstream (see table below), 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.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	90	121	198	189	135	241	93	89	53	27	62
2	118	90	111	197	187	143	240	75	84	53	27	62
3	116	88	56	194	185	143	235	70	77	53	26	62
4	116	88	94	191	176	170	231	70	73	53	34	63
5	115	86	88	187	174	159	228	87	72	53	46	118
6	112	96	76	190	173	154	227	123	72	54	32	122
7	112	93	100	187	178	187	215	201	70	55	30	117
8	147	94	104	186	179	182	182	222	66	54	27	115
9	159	92	102	188	176	179	180	193	62	52	28	113
10	157	111	106	191	173	179	179	189	59	52	56	112
11	156	136	153	186	172	197	177	201	57	35	40	111
12	156	162	156	192	169	196	174	185	57	31	33	109
13	162	159	153	189	166	194	173	166	56	32	30	109
14	180	156	151	185	177	196	172	151	53	33	29	100
15	167	155	155	183	177	202	150	141	53	32	30	52
16	160	175	163	196	175	199	148	134	53	31	30	49
17	155	176	160	229	179	198	147	129	54	26	29	48
18	151	172	161	219	152	201	146	150	55	24	29	48
19	164	135	160	211	154	219	122	157	57	24	220	49
20	154	130	157	208	160	215	118	144	56	24	323	58
21	151	129	156	205	158	216	183	131	54	24	213	51
22	148	129	159	203	155	213	179	119	55	24	258	50
23	151	130	158	199	153	217	161	113	55	26	166	49
24	160	130	179	197	150	230	149	108	55	26	137	48
25	106	129	174	195	150	260	145	101	54	25	125	104
26	96	126	171	193	150	255	141	94	54	32	113	146
27	92	125	172	191	150	253	139	88	53	40	96	138
28	92	124	204	192	147	248	141	85	53	31	82	128
29	92	124	202	190	---	244	141	81	52	29	73	130
30	90	122	201	188	---	248	152	79	53	28	67	145
31	90	---	202	196	---	245	---	89	---	28	64	---
TOTAL	4131	3752	4505	6056	4684	6277	5216	3969	1813	1137	2520	2668
MEAN	133	125	145	195	167	202	174	128	60.4	36.7	81.3	88.9
MAX	180	176	204	229	189	260	241	222	89	55	323	146
MIN	90	86	56	183	147	135	118	70	52	24	26	48
(†)	72	82.5	154.5	133.5	92	168	197.5	253.5	229.5	216	253.5	240

† Monthend contents, in millions of cubic feet, in Flat River Reservoir; records furnished by Quindnick Reservoir Co.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1991, BY WATER YEAR (WY)

	MEAN	73.3	100	156	167	178	224	213	153	112	64.9	64.0	65.4
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	72.0	39.2	34.1	23.6	29.1	
(WY)	1942	1966	1966	1966	1966	1944	1966	1964	1957	1957	1974	1957	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1941 - 1991

ANNUAL TOTAL	51253	46728	131
ANNUAL MEAN	140	128	202
HIGHEST ANNUAL MEAN			56.9
LOWEST ANNUAL MEAN			2.8
HIGHEST DAILY MEAN	299	Feb 3	323
LOWEST DAILY MEAN	26	Sep 5	24
ANNUAL SEVEN-DAY MINIMUM	31	Aug 31	25
INSTANTANEOUS PEAK FLOW			452
INSTANTANEOUS PEAK STAGE			2.74
10 PERCENT EXCEEDS	235		201
50 PERCENT EXCEEDS	126		137
90 PERCENT EXCEEDS	58		40

PAWTUXET RIVER BASIN

87

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 National Geodetic Vertical Datum of 1929.

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, and see table with station 01116000 for monthend contents in Flat River Reservoir.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	194	246	674	445	339	763	657	221	124	108	136
2	156	199	240	642	424	401	722	527	205	122	105	133
3	162	207	201	607	415	438	675	477	194	136	102	135
4	161	206	630	562	403	961	631	435	188	127	155	138
5	168	206	723	509	394	964	590	400	184	126	285	319
6	161	313	611	493	390	737	561	472	180	128	127	292
7	155	249	587	471	431	896	529	614	173	131	108	225
8	176	242	584	438	463	839	466	605	166	132	99	209
9	249	230	528	461	443	750	430	546	157	126	98	204
10	221	412	465	501	432	674	416	593	149	126	506	199
11	211	725	459	441	418	637	400	555	141	118	191	195
12	229	477	443	531	397	592	374	502	140	118	128	191
13	340	443	418	500	378	531	356	460	139	122	112	190
14	776	402	395	451	525	522	356	415	132	120	106	211
15	373	380	419	428	549	611	345	382	127	111	102	158
16	270	388	543	591	493	558	345	353	126	104	111	125
17	243	383	497	1130	445	546	327	328	126	105	110	116
18	230	374	521	959	416	586	327	395	125	100	97	118
19	457	331	534	859	429	992	296	357	139	98	578	120
20	278	302	494	791	479	836	275	336	139	99	1160	255
21	245	291	464	755	456	763	1080	307	127	99	825	147
22	236	281	471	687	440	729	1320	280	120	101	705	122
23	263	281	484	606	418	810	1080	258	122	126	538	120
24	490	295	819	567	389	1030	942	241	123	114	351	120
25	272	284	713	518	381	1100	820	233	137	104	278	488
26	210	277	646	471	372	1040	710	219	105	162	244	649
27	198	269	587	445	370	967	618	210	118	329	218	483
28	198	266	604	439	354	928	538	205	119	133	190	323
29	210	262	630	423	---	848	485	197	119	118	188	270
30	196	255	666	409	---	878	626	209	119	114	140	307
31	192	---	717	490	---	814	---	250	---	112	146	---
TOTAL	7837	9424	16339	17849	11949	23317	17403	12018	4360	3885	8211	6698
MEAN	253	314	527	576	427	752	580	388	145	125	265	223
MAX	776	725	819	1130	549	1100	1320	657	221	329	1160	649
MIN	111	194	201	409	354	339	275	197	105	98	97	116
(†)	5082	5515	5644	5557	5605	5577	5660	5659	5472	5082	4646	4663
(‡)	103	96.4	94.8	96.6	97.9	95.5	97.0	116	137	140	121	110

† Monthend contents, in millions of cubic feet, of Scituate Reservoir and five smaller reservoirs.

‡ Diversion, in cubic feet per second, for municipal supplies. Figures of diversion and monthend contents provided by Providence Water Supply Board.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	193	279	394	448	483	578	584	397	277	172	179	181
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

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1940 - 1991
ANNUAL TOTAL	151247	139290	
ANNUAL MEAN	414	382	346
HIGHEST ANNUAL MEAN			595
LOWEST ANNUAL MEAN			126
HIGHEST DAILY MEAN	1530	Jan 30	5170
LOWEST DAILY MEAN	86	Sep 6	22
ANNUAL SEVEN-DAY MINIMUM	91	Sep 1	48
INSTANTANEOUS PEAK FLOW			5440
INSTANTANEOUS PEAK STAGE		8.32	14.50
10 PERCENT EXCEEDS	788		732
50 PERCENT EXCEEDS	375		242
90 PERCENT EXCEEDS	135		101

PAWTUXET RIVER BASIN

01116500 PAWTUXET RIVER AT CRANSTON, RI--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1961 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1969 to September 1981.

WATER TEMPERATURES: November 1961 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT												
02...	0945	262	420	6.7	18.5	17.0	--	--	760	4.1	43	--
NOV												
06...	1015	427	237	6.6	14.5	12.0	--	--	755	8.7	81	--
DEC												
04...	1035	565	215	6.9	15.0	7.5	--	16	755	11.5	97	30
JAN												
08...	1000	443	171	6.9	-5.0	1.5	--	--	760	13.4	96	--
FEB												
05...	1015	389	199	6.8	20.5	2.0	--	--	770	13.2	95	--
MAR												
05...	0930	352	154	6.6	5.5	5.5	17	2.5	753	12.1	98	14
APR												
02...	1015	717	157	6.9	12.0	6.0	--	--	768	12.1	97	--
MAY												
07...	0950	611	185	6.9	19.5	13.5	--	--	766	9.6	91	--
JUN												
04...	1015	211	273	6.6	15.0	20.0	--	3.7	757	4.7	52	20
JUL												
09...	0835	189	341	6.9	25.0	20.5	--	--	760	3.9	43	--
AUG												
13...	0830	207	330	7.0	24.5	21.0	--	--	765	2.2	24	--
SEP												
10...	0942	296	349	7.2	24.0	20.0	7	1.9	766	2.3	25	30
DATE		OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, KF AGAR UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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 WH IT LAB MG/L AS HCO3 (00449)
OCT												
02...	--	>56000	760	410	--	--	--	--	--	--	--	33
NOV												
06...	4.0	11000	220	950	--	--	--	--	--	--	--	24
DEC												
04...	--	18000	490	2400	--	--	--	--	--	--	--	34
JAN												
08...	1.0	420	21	K4	--	--	--	--	--	--	--	24
FEB												
05...	--	470	28	K5	--	--	--	--	--	--	--	28
MAR												
05...	1.0	3200	160	55	20	6.4	0.96	18	64	2	1.7	12
APR												
02...	--	3100	68	800	--	--	--	--	--	--	--	9
MAY												
07...	2.0	6500	360	130	--	--	--	--	--	--	--	20
JUN												
04...	--	29000	800	1300	--	--	--	--	--	--	--	30
JUL												
09...	3.0	820	K90	--	--	--	--	--	--	--	--	29
AUG												
13...	--	1000	K60	130	--	--	--	--	--	--	--	32
SEP												
10...	5.0	530	48	100	38	13	1.4	48	71	3	3.4	27

PAWTUXET RIVER BASIN

89

01116500 PAWTUXET RIVER AT CRANSTON, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CAR- BONATE WATER WH IT LAB MG/L AS CO3 (00446)	ALKA- LITY WAT WH TOT IT LAB MG/L AS CACO3 (00416)	HY- DROXIDE WATER WH IT FIELD MG/L AS OH (71831)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	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, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT 02...	0	27	0	--	--	--	--	--	0.980	0.120	1.10	0.560
NOV 06...	0	20	0	--	--	--	--	--	0.600	0.100	0.700	1.00
DEC 04...	0	28	0	--	--	--	20	160	0.370	0.030	0.400	1.10
JAN 08...	0	19	0	--	--	--	--	--	0.390	0.010	0.400	0.620
FEB 05...	0	23	0	--	--	--	--	--	--	<0.010	0.400	0.680
MAR 05...	0	10	0	14	26	74	<1	92	--	<0.010	0.340	0.380
APR 02...	0	7	0	--	--	--	--	--	--	<0.010	0.330	0.520
MAY 07...	0	16	0	--	--	--	--	--	0.510	0.010	0.520	0.410
JUN 04...	0	25	0	--	--	--	10	167	0.820	0.280	1.10	1.20
JUL 09...	0	24	0	--	--	--	--	--	1.43	0.270	1.70	0.590
AUG 13...	0	26	0	--	--	--	--	--	0.900	0.100	1.00	0.630
SEP 10...	0	22	0	46	51	177	3	230	0.490	0.080	0.570	0.570

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)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P) (70507)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
OCT 02...	0.84	1.4	2.5	11	0.170	0.160	--	--	--	--	--	--
NOV 06...	0.80	1.8	2.5	11	0.330	0.190	--	--	--	--	--	--
DEC 04...	0.70	1.8	2.2	9.7	0.310	0.190	--	--	--	--	--	--
JAN 08...	0.18	0.80	1.2	5.3	0.150	0.100	--	--	--	--	--	--
FEB 05...	0.42	1.1	1.5	6.6	0.140	0.130	--	--	--	--	--	--
MAR 05...	0.82	1.2	1.5	6.8	0.110	0.050	210	<1	40	<1	4	4
APR 02...	0.38	0.90	1.2	5.4	0.120	0.080	--	--	--	--	--	--
MAY 07...	0.39	0.80	1.3	5.8	0.130	0.080	--	--	--	--	--	--
JUN 04...	0.80	2.0	3.1	14	0.410	0.330	--	--	--	--	--	--
JUL 09...	0.71	1.3	3.0	13	0.400	0.410	--	--	--	--	--	--
AUG 13...	0.37	1.0	2.0	8.9	0.530	0.470	--	--	--	--	--	--
SEP 10...	0.73	1.3	1.9	8.3	0.350	0.270	40	<1	30	1	<1	8

PAWTUXET RIVER BASIN

01116500 PAWTUXET RIVER AT CRANSTON, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS 2N) (01092)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOVERABLE GRAVI- METRIC (MG/L) (00556)	PCB, TOTAL (UG/L) (39516)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 04...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	450	6	80	<0.10	<1	2	<1	<1	<10	1	<1	<1.0
APR 02...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 09...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	790	3	210	<0.10	3	8	<1	<1	10	3	<1	<0.1

DATE	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL CHLOR- DANE, TOTAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
DEC 04...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	--	<0.010	--	<0.1	--	<0.010	--	<0.010	--	<0.010	--
APR 02...	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	--	--	--	--	--	--	--	--	--	--	--
JUL 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	20	<0.010	<1.0	<0.1	21	<0.010	3.0	<0.010	2.5	<0.010	2.7

PAWTUXET RIVER BASIN

91

01116500 PAWTUXET RIVER AT CRANSTON, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DI- ELDRIN TOTAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39420)	HEPTA- CHLOR EPOXIDE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	<0.010	<0.1	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39480)	METH- OXY- CHLOR, TOT. IN BOTTOM MATERIAL (UG/KG) (39481)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39755)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39758)	NAPH- THA- LENES, POLY- CHLOR. TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39250)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39034)	PER- THANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (81886)	TOX- APHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
OCT											
02...	--	--	--	--	--	--	--	--	--	--	--
NOV											
06...	--	--	--	--	--	--	--	--	--	--	--
DEC											
04...	--	--	--	--	--	--	--	--	--	--	--
JAN											
08...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	<0.01	--	<0.01	--	<1.0	--	<0.1	--	<1	--
APR											
02...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
JUL											
09...	--	--	--	--	--	--	--	--	--	--	--
AUG											
13...	--	--	--	--	--	--	--	--	--	--	--
SEP											
10...	<0.1	<0.01	<100	<0.01	<1.0	<0.10	<10	<0.1	<10.0	<1	<100

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.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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 (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT												
02...	1115	E372	403	7.1	19.5	16.5	--	--	760	2.1	22	--
NOV												
06...	1145	E670	210	6.9	15.0	12.0	--	--	755	6.6	62	--
DEC												
04...	1130	997	199	6.8	16.5	8.5	--	13	755	10.4	89	32
JAN												
08...	1055	495	198	6.7	-3.0	1.5	--	--	760	12.3	88	--
FEB												
05...	1145	442	222	7.1	20.0	2.5	--	--	770	12.2	88	--
MAR												
05...	1110	847	182	7.1	9.5	6.5	21	2.3	755	10.9	89	16
APR												
02...	1130	734	177	7.1	11.5	6.5	--	--	768	11.4	92	--
MAY												
07...	1057	691	207	7.1	23.0	14.0	--	--	767	8.7	84	--
JUN												
04...	1145	E384	297	7.2	17.0	19.0	--	3.9	757	3.6	39	22
JUL												
09...	0935	312	374	6.9	27.5	21.0	--	--	760	3.4	38	--
AUG												
13...	0930	384	325	6.8	28.0	21.5	--	--	765	1.6	18	--
SEP												
10...	1130	405	348	7.2	28.5	20.0	55	1.5	765	8.8	97	29

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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 WH IT LAB MG/L AS HCO3 (00449)
OCT											
02...	--	1700	260	57	--	--	--	--	--	--	45
NOV											
06...	8.0	6100	800	980	--	--	--	--	--	--	28
DEC											
04...	--	28000	610	1900	--	--	--	--	--	--	26
JAN											
08...	2.0	380	K8	K5	--	--	--	--	--	--	19
FEB											
05...	--	280	K1	K3	--	--	--	--	--	--	21
MAR											
05...	1.0	1200	32	28	25	7.8	1.4	21	62	2	15
APR											
02...	--	980	28	K7	--	--	--	--	--	--	15
MAY											
07...	4.0	4400	280	59	--	--	--	--	--	--	21
JUN											
04...	--	6000	670	710	--	--	--	--	--	--	34
JUL											
09...	5.0	180	K160	--	--	--	--	--	--	--	50
AUG											
13...	--	510	200	180	--	--	--	--	--	--	44
SEP											
10...	4.0	390	590	170	42	14	1.8	45	67	3	30

PAWTUXET RIVER BASIN

93

01116617 PAWTUXET RIVER AT PAWTUXET, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CAR- BONATE WATER WH IT LAB MG/L AS CO3 (00446)	ALKA- LINITY WAT WH TOT IT LAB MG/L AS CACO3 (00416)	HY- DROXIDE WATER WH IT FIELD MG/L AS OH (71831)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	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, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT												
02...	0	37	0	--	--	--	--	--	1.69	0.210	1.90	1.60
NOV												
06...	0	23	0	--	--	--	--	--	0.900	0.100	1.00	1.40
DEC												
04...	0	21	0	--	--	--	14	126	0.660	0.040	0.700	1.90
JAN												
08...	0	15	0	--	--	--	--	--	0.480	0.020	0.500	0.890
FEB												
05...	0	18	0	--	--	--	--	--	--	<0.010	0.500	1.00
MAR												
05...	0	12	0	15	31	87	5	99	--	<0.010	0.500	0.840
APR												
02...	0	12	0	--	--	--	--	--	0.430	0.010	0.440	0.840
MAY												
07...	0	17	0	--	--	--	--	--	0.600	0.030	0.630	0.860
JUN												
04...	0	28	0	--	--	--	7	171	1.03	0.270	1.30	1.70
JUL												
09...	0	41	0	--	--	--	--	--	2.12	0.280	2.40	1.60
AUG												
13...	0	36	0	--	--	--	--	--	1.20	0.200	1.40	1.70
SEP												
10...	0	24	0	56	56	193	15	219	1.07	0.130	1.20	1.20

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)	NITRO- GEN, TOTAL (MG/L AS NO3) (71887)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P) (70507)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
OCT												
02...	0.80	2.4	4.3	19	0.550	0.540	--	--	--	--	--	--
NOV												
06...	0.80	2.2	3.2	14	0.430	0.230	--	--	--	--	--	--
DEC												
04...	0.90	2.8	3.5	15	0.470	0.300	--	--	--	--	--	--
JAN												
08...	0.31	1.2	1.7	7.5	0.250	0.150	--	--	--	--	--	--
FEB												
05...	0.70	1.7	2.2	9.7	0.200	0.180	--	--	--	--	--	--
MAR												
05...	0.46	1.3	1.8	8.0	0.160	0.080	240	<1	50	<1	2	4
APR												
02...	0.66	1.5	1.9	8.6	0.190	0.130	--	--	--	--	--	--
MAY												
07...	0.44	1.3	1.9	8.5	0.220	0.140	--	--	--	--	--	--
JUN												
04...	1.9	3.6	4.9	22	0.550	0.470	--	--	--	--	--	--
JUL												
09...	2.3	3.9	6.3	28	0.890	0.880	--	--	--	--	--	--
AUG												
13...	0.60	2.3	3.7	16	0.980	0.940	--	--	--	--	--	--
SEP												
10...	0.80	2.0	3.2	14	0.620	0.540	20	<1	60	1	<1	8

PAWTUXET RIVER BASIN

01116617 PAWTUXET RIVER AT PAWTUXET, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI- METRIC (MG/L) (00556)	PCB, TOTAL (UG/L) (39516)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 04...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	580	4	90	<0.10	<1	3	<1	<1	<10	2	<1	<1.0
APR 02...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 09...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	690	2	220	<0.10	4	10	<1	<1	20	4	<1	<0.1

DATE	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL CHLOR- DANE, TOTAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
DEC 04...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	--	<0.010	--	<0.1	--	<0.010	--	<0.010	--	<0.010	--
APR 02...	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	--	--	--	--	--	--	--	--	--	--	--
JUL 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	460	<0.010	<10	<0.1	360	<0.010	20	<0.010	31	<0.010	15

PAWTUXET RIVER BASIN

95

01116617 PAWTUXET RIVER AT PAWTUXET, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDO-SULFAN, IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
DEC 04...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010
APR 02...	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	--	--	--	--	--	--	--	--	--	--	--
JUL 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	<0.010	3.0	<0.010	<10	<0.010	<10	<0.010	<10	<0.010	<10	<0.010

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL (UG/L) (39755)	MIREX, IN BOT- TOM MA- TERIAL (UG/KG) (39758)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) (39250)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	PER- THANE IN BOT- TOM MA- TERIAL (UG/L) (39034)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG) (81886)	TOX- APHENE, TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--
NOV 06...	--	--	--	--	--	--	--	--	--	--	--
DEC 04...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 05...	--	--	--	--	--	--	--	--	--	--	--
MAR 05...	--	<0.01	--	<0.01	--	<1.0	--	<0.1	--	<1	--
APR 02...	--	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	--	--	--	--	--	--	--	--	--	--	--
JUL 09...	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	<10	<0.01	<100	<0.01	<10	<0.10	<10	<0.1	<100.0	<1	<100

POTOWOMUT RIVER BASIN

0117000 HUNT RIVER NEAR EAST GREENWICH, RI

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.

DRAINAGE AREA.--23.0 mi².

PERIOD OF RECORD.--Discharge: August 1940 to current year. Prior to October 1977, published as "Potowomut River." Water-quality records: Water years 1977-81.

REVISED RECORDS.--WSP 1621: 1957-58.

GAGE.--Water-stage recorder. Datum of gage is 5.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 20 ft³/s, which are fair. Flow affected by diversions for supply of East Greenwich, North Kingstown, Warwick, and Quonset Point (formerly U.S. Naval establishments).

SUPPLEMENTAL EXTREMES FOR PERIOD OF RECORD.--Maximum gage height of 6.78 ft on Aug. 31, 1954 caused by 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).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	19	26	57	53	42	78	135	35	6.5	7.2	8.5
2	6.8	18	25	48	44	55	72	101	30	6.5	6.2	8.5
3	6.9	18	23	44	43	66	68	83	25	6.5	4.7	8.3
4	6.9	18	85	40	45	166	63	73	29	6.5	7.6	8.1
5	7.4	18	140	37	45	130	61	67	32	6.5	33	23
6	7.5	54	79	39	44	89	60	74	30	6.5	14	44
7	7.5	55	56	38	54	97	59	131	25	6.8	8.2	28
8	7.6	39	53	34	67	90	55	98	22	7.0	7.2	20
9	9.7	32	53	38	55	73	53	77	21	6.5	6.5	13
10	12	48	44	57	47	65	51	92	18	6.2	92	9.3
11	9.0	106	39	50	43	61	48	93	16	5.6	59	9.2
12	12	66	34	64	38	58	46	76	16	4.7	29	8.5
13	29	42	33	69	36	54	47	65	16	4.6	17	8.3
14	72	30	31	54	65	56	48	59	15	5.9	10	8.8
15	56	26	35	46	85	78	50	56	15	6.2	8.5	9.9
16	28	24	79	66	62	73	59	52	14	5.8	8.0	10
17	20	24	61	186	48	70	52	48	14	5.6	7.5	9.1
18	17	23	50	135	44	70	52	78	13	5.3	7.5	8.5
19	35	24	52	91	51	176	49	67	13	4.6	45	11
20	29	23	41	74	80	132	45	54	14	4.1	78	34
21	22	25	34	69	70	93	238	45	11	3.7	57	28
22	16	26	39	60	57	78	319	41	8.9	4.0	40	19
23	18	27	41	50	48	88	189	38	9.0	4.9	25	12
24	56	30	87	52	42	154	127	36	7.5	6.3	28	11
25	42	30	85	48	43	146	101	34	7.2	5.4	27	53
26	28	28	56	42	43	113	87	33	7.1	8.3	19	81
27	24	27	44	43	43	95	80	31	6.5	29	14	57
28	23	26	42	48	42	88	76	29	6.5	16	11	36
29	26	26	48	49	---	79	70	26	6.5	9.2	10	25
30	25	27	67	47	---	93	94	26	6.5	7.5	9.2	19
31	21	---	72	60	---	90	---	42	---	7.5	9.4	---
TOTAL	687.5	979	1654	1835	1437	2818	2497	1960	489.7	219.7	705.7	629.0
MEAN	22.2	32.6	53.4	59.2	51.3	90.9	83.2	63.2	16.3	7.09	22.8	21.0
MAX	72	106	140	186	85	176	319	135	35	29	92	81
MIN	6.8	18	23	34	36	42	45	26	6.5	3.7	4.7	8.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	18.9	37.4	53.1	62.1	70.2	87.0	82.9	62.0	38.3	18.5	15.8	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	30.0	10.8	5.65	3.06	1.59	
(WY)	1969	1950	1966	1966	1944	1981	1966	1981	1957	1965	1965	1968	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1940 - 1991

ANNUAL TOTAL	17784.7	15911.6	
ANNUAL MEAN	48.7	43.6	46.5
HIGHEST ANNUAL MEAN			81.5
LOWEST ANNUAL MEAN			17.7
HIGHEST DAILY MEAN	278	319	861
LOWEST DAILY MEAN	6.8	3.7	.00
ANNUAL SEVEN-DAY MINIMUM	7.2	4.6	.10
INSTANTANEOUS PEAK FLOW		453	1020
INSTANTANEOUS PEAK STAGE		6.80	6.78
INSTANTANEOUS LOW FLOW		3.6	
10 PERCENT EXCEEDS	94	86	100
50 PERCENT EXCEEDS	46	38	33
90 PERCENT EXCEEDS	9.5	7.2	6.2

PAWCATUCK RIVER BASIN

97

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 National Geodetic Vertical Datum of 1929 (Rhode Island State Board of Public Roads benchmark).

REMARKS.--Records good. Diversion upstream for supply of University of Rhode Island. Instantaneous maximum and minimum discharges not available prior to Sept. 14, 1973.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	7.1	8.5	18	18	16	30	30	16	7.1	5.0	5.4
2	5.2	6.9	8.4	18	18	16	28	33	15	6.8	4.8	5.2
3	5.0	6.9	7.7	17	18	17	27	31	15	6.7	4.6	5.2
4	4.9	6.7	9.5	16	17	24	25	29	14	6.7	5.5	5.1
5	4.9	6.5	13	15	16	33	24	26	14	6.7	6.8	6.7
6	4.8	7.0	15	15	16	35	24	25	14	6.8	6.6	9.6
7	4.7	7.1	15	15	17	33	23	28	13	6.7	6.5	12
8	4.9	7.4	14	14	18	30	22	30	13	6.7	6.1	12
9	5.2	7.5	14	14	18	28	22	29	13	6.5	5.7	10
10	5.2	8.2	13	15	18	25	21	28	12	6.1	12	8.7
11	5.2	8.6	13	15	16	23	20	29	11	5.9	17	7.8
12	5.3	8.8	12	18	16	21	20	28	11	5.8	18	7.1
13	5.9	9.4	12	20	16	20	19	27	11	5.7	14	6.5
14	6.3	9.1	11	20	16	20	19	25	10	5.7	11	6.2
15	6.6	8.6	11	19	19	22	19	23	10	5.9	8.8	6.1
16	6.7	8.5	13	20	21	23	20	22	9.8	5.7	7.5	6.0
17	6.4	8.5	15	36	20	23	20	21	9.6	5.4	6.8	5.9
18	6.2	8.4	16	49	18	24	20	22	9.4	5.0	6.2	5.7
19	6.3	8.2	16	45	18	31	19	23	9.1	4.7	7.5	5.2
20	6.2	8.0	16	37	20	39	19	23	9.0	4.6	9.3	5.9
21	6.2	8.0	15	32	21	38	28	21	8.8	4.5	12	6.2
22	6.3	8.3	15	27	21	33	58	20	8.7	4.3	11	6.5
23	6.4	9.3	15	23	20	30	66	18	8.4	4.6	10	5.7
24	7.0	9.6	16	21	19	33	55	18	8.3	4.8	9.4	5.2
25	7.8	9.4	16	19	18	40	46	17	7.9	4.9	8.4	6.6
26	8.5	9.2	17	18	17	41	38	16	7.3	4.9	7.7	8.8
27	8.4	8.9	16	18	17	38	33	15	7.1	5.5	6.9	10
28	7.9	8.5	16	17	16	35	30	15	7.0	6.4	6.5	9.8
29	7.7	8.6	16	17	---	32	27	15	6.9	5.8	6.0	8.7
30	7.5	8.6	16	17	---	31	27	15	7.0	5.4	5.8	7.4
31	7.4	---	18	18	---	31	---	15	---	5.1	5.8	---
TOTAL	192.4	245.8	429.1	663	503	885	849	717	316.3	177.4	259.2	217.2
MEAN	6.21	8.19	13.8	21.4	18.0	28.5	28.3	23.1	10.5	5.72	8.36	7.24
MAX	8.5	9.6	18	49	21	41	66	33	16	7.1	18	12
MIN	4.7	6.5	7.7	14	16	16	19	15	6.9	4.3	4.6	5.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1991, BY WATER YEAR (WY)

	MEAN	10.3	16.1	22.6	28.6	29.5	34.6	34.6	27.9	22.2	14.6	11.2	9.89
MAX	29.1	43.4	59.4	64.2	43.6	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	4.99	5.11	3.54	10.4	9.14	12.7	11.5	7.89	3.94	2.78	3.28	
(WY)	1981	1977	1981	1981	1981	1981	1985	1981	1976	1976	1981	1981	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1958 - 1991

ANNUAL TOTAL	7766.5	5454.4	
ANNUAL MEAN	21.3	14.9	21.6
HIGHEST ANNUAL MEAN			32.8
LOWEST ANNUAL MEAN			6.89
HIGHEST DAILY MEAN	71	Apr 5	235
LOWEST DAILY MEAN	4.7	Sep 7	2.1
ANNUAL SEVEN-DAY MINIMUM	4.8	Sep 7	2.2
INSTANTANEOUS PEAK FLOW			250
INSTANTANEOUS PEAK STAGE			Jun 6 1982
INSTANTANEOUS LOW FLOW			2.1
10 PERCENT EXCEEDS	40	29	43
50 PERCENT EXCEEDS	18	13	17
90 PERCENT EXCEEDS	6.2	5.7	5.9

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 National Geodetic Vertical Datum of 1929 (State of Rhode Island benchmark).

REMARKS.--Records good. Flow affected at times by irrigation upstream. Instantaneous maximum and minimum discharges not available prior to Dec. 5, 1974.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	30	34	107	87	63	131	129	58	21	17	26
2	17	29	34	90	75	71	120	134	50	18	15	24
3	16	28	33	82	72	88	111	116	44	19	14	23
4	16	28	61	75	71	127	104	99	46	19	28	22
5	19	29	114	70	70	161	99	90	50	18	45	37
6	19	48	107	69	69	147	96	89	47	20	35	91
7	18	56	74	69	75	128	90	133	43	21	26	66
8	17	44	63	65	93	129	86	145	39	21	21	43
9	18	39	66	65	87	118	82	123	36	18	19	33
10	20	44	59	88	75	103	77	110	34	17	72	29
11	20	87	54	86	69	94	74	122	33	15	95	26
12	21	80	51	89	63	89	69	113	33	15	54	24
13	33	58	49	103	59	85	66	99	33	16	35	22
14	57	48	49	88	76	85	67	88	30	19	28	21
15	69	43	51	78	103	104	69	81	28	17	25	23
16	47	41	91	88	95	109	79	77	27	14	25	24
17	33	40	93	164	72	106	74	73	27	14	22	23
18	31	39	79	200	68	104	67	102	27	14	20	21
19	38	38	86	172	70	158	62	102	27	12	33	20
20	37	37	74	142	100	195	58	82	27	12	96	33
21	32	36	64	124	107	171	101	73	26	12	106	40
22	30	35	69	110	91	142	223	67	24	11	101	32
23	29	35	76	90	78	127	235	63	23	17	70	27
24	54	38	96	94	70	154	185	60	23	19	53	27
25	53	39	120	88	68	189	145	58	22	15	59	52
26	41	37	110	74	67	183	122	54	21	16	51	99
27	36	36	87	80	65	161	107	51	21	35	41	106
28	33	35	79	78	64	146	99	51	19	31	35	79
29	34	36	81	81	---	135	93	48	19	24	32	52
30	33	36	97	77	---	132	96	45	20	21	30	44
31	32	---	112	87	---	138	---	61	---	19	30	---
TOTAL	972	1249	2313	2973	2159	3942	3087	2738	957	560	1333	1189
MEAN	31.4	41.6	74.6	95.9	77.1	127	103	88.3	31.9	18.1	43.0	39.6
MAX	69	87	120	200	107	195	235	145	58	35	106	106
MIN	16	28	33	65	59	63	58	45	19	11	14	20
CFSM	.87	1.15	2.07	2.66	2.14	3.52	2.85	2.45	.88	.50	1.19	1.10
IN.	1.00	1.29	2.38	3.06	2.22	4.06	3.18	2.82	.99	.58	1.37	1.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1991, BY WATER YEAR (WY)

	MEAN	37.8	65.4	87.0	105	106	126	134	98.7	76.2	38.0	32.0	27.4
MAX	85.7	150	212	266	180	240	335	335	179	276	71.9	56.1	75.7
(WY)	1990	1990	1987	1979	1982	1983	1983	1978	1982	1984	1979	1985	1985
MIN	14.3	20.8	21.1	16.9	39.1	56.2	46.3	45.5	31.9	17.4	11.6	7.40	7.40
(WY)	1981	1981	1981	1981	1980	1981	1985	1981	1991	1976	1981	1980	1980

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1958 - 1991
ANNUAL TOTAL	27007	23472	
ANNUAL MEAN	74.0	64.3	77.7
HIGHEST ANNUAL MEAN			110
LOWEST ANNUAL MEAN			30.6
HIGHEST DAILY MEAN	230	Jan 31	1020
LOWEST DAILY MEAN	15	Sep 10	4.2
ANNUAL SEVEN-DAY MINIMUM	16	Sep 8	5.7
INSTANTANEOUS PEAK FLOW		249	1060
INSTANTANEOUS PEAK STAGE		5.67	9.23
INSTANTANEOUS LOW FLOW		8.4	3.9
ANNUAL RUNOFF (CFSM)	2.05	1.78	2.15
ANNUAL RUNOFF (INCHES)	27.83	24.19	29.24
10 PERCENT EXCEEDS	140	120	160
50 PERCENT EXCEEDS	69	58	59
90 PERCENT EXCEEDS	21	19	18

PAWCATUCK RIVER BASIN

99

01117468 BEAVER RIVER NEAR USQUEPAUG, RI

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.

DRAINAGE AREA.--8.87 mi².

PERIOD OF RECORD.--Discharge: December 1974 to current year.

Water-quality records: Water years 1979-83.

REVISED RECORDS.--WDR MA-RI-79-1: 1978, WDR MA-RI-81-1: 1978-80 (P).

GAGE.--Water-stage recorder. Datum of gage is 107.68 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	6.9	8.2	29	23	18	35	43	18	6.5	4.5	6.8
2	4.2	6.7	8.0	25	21	21	33	34	16	5.9	3.9	6.4
3	4.1	6.3	8.5	24	20	25	31	29	14	5.7	3.7	6.1
4	3.8	6.2	24	22	20	45	30	27	16	5.7	9.7	6.0
5	4.2	6.2	34	21	20	39	29	26	16	5.7	13	15
6	4.2	12	22	21	19	29	28	30	15	6.0	8.6	20
7	4.0	12	16	21	23	33	27	49	14	6.0	6.1	12
8	3.9	9.5	17	20	26	32	26	37	13	5.9	5.0	9.1
9	4.1	8.7	17	21	22	28	26	31	12	5.3	4.8	7.8
10	4.5	12	15	28	20	26	25	33	11	4.8	27	7.2
11	4.5	23	14	23	18	25	24	35	11	4.6	18	6.8
12	4.9	16	13	27	17	24	23	30	11	4.5	9.8	6.4
13	7.4	12	13	28	16	24	22	27	11	4.5	7.2	6.1
14	17	11	13	e23	24	25	22	26	9.6	5.3	6.1	6.2
15	13	10	15	21	29	32	23	25	9.2	4.7	5.5	6.6
16	8.9	9.8	31	28	23	29	25	24	9.0	4.1	5.3	6.9
17	6.9	9.6	24	63	19	29	23	23	9.0	3.9	4.9	6.6
18	6.2	9.2	21	50	18	30	22	37	8.9	3.7	4.4	6.1
19	9.3	9.1	23	37	20	65	21	29	8.9	3.5	15	6.4
20	9.1	8.7	19	32	31	52	20	24	9.4	3.4	31	11
21	7.1	8.5	17	31	26	39	52	23	8.6	3.2	30	11
22	6.4	8.5	21	29	22	35	74	21	8.1	3.1	21	8.3
23	6.7	8.5	21	e27	20	36	52	21	7.9	5.0	14	7.3
24	16	9.3	e28	26	19	55	38	20	7.6	4.6	13	7.2
25	13	9.4	e36	25	19	54	33	19	7.2	3.7	15	22
26	10	8.9	e32	e24	19	45	31	18	6.9	5.2	11	31
27	9.0	8.5	e27	23	19	40	29	17	6.7	16	9.7	23
28	8.1	8.5	e23	23	18	39	28	17	6.4	11	8.7	16
29	8.2	8.5	26	23	---	36	27	16	6.0	6.6	8.0	13
30	8.0	8.5	32	22	---	40	34	16	6.4	5.6	7.5	11
31	7.2	---	34	25	---	39	---	21	---	5.0	7.1	---
TOTAL	228.2	292.0	652.7	842	591	1089	913	828	313.8	168.7	338.5	315.3
MEAN	7.36	9.73	21.1	27.2	21.1	35.1	30.4	26.7	10.5	5.44	10.9	10.5
MAX	17	23	36	63	31	65	74	49	18	16	31	31
MIN	3.8	6.2	8.0	20	16	18	20	16	6.0	3.1	3.7	6.0
CFSM	.83	1.10	2.37	3.06	2.38	3.96	3.43	3.01	1.18	.61	1.23	1.18
IN.	.96	1.22	2.74	3.53	2.48	4.57	3.83	3.47	1.32	.71	1.42	1.32

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1991, BY WATER YEAR (WY)

	9.59	18.6	25.2	29.4	28.4	35.2	38.1	29.3	23.1	10.9	8.87	7.36
MEAN	9.59	18.6	25.2	29.4	28.4	35.2	38.1	29.3	23.1	10.9	8.87	7.36
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	3.40	4.59	4.43	3.17	11.5	18.9	13.9	13.7	9.56	4.72	2.73	1.90
(WY)	1981	1981	1981	1981	1985	1981	1985	1981	1976	1976	1987	1980

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1975 - 1991
ANNUAL TOTAL	7400.8	6572.2	
ANNUAL MEAN	20.3	18.0	22.0
HIGHEST ANNUAL MEAN			30.4
LOWEST ANNUAL MEAN			8.67
HIGHEST DAILY MEAN	72	74	324
LOWEST DAILY MEAN	3.0	3.1	1.4
ANNUAL SEVEN-DAY MINIMUM	3.2	3.6	1.7
INSTANTANEOUS PEAK FLOW		81	370
INSTANTANEOUS PEAK STAGE		2.35	3.83
INSTANTANEOUS LOW FLOW		2.9	1.3
ANNUAL RUNOFF (CFSM)	2.29	2.03	2.49
ANNUAL RUNOFF (INCHES)	31.04	27.56	33.77
10 PERCENT EXCEEDS	39	33	44
50 PERCENT EXCEEDS	18	16	17
90 PERCENT EXCEEDS	4.5	5.3	4.4

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 National Geodetic Vertical Datum of 1929. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	69	73	213	205	168	327	302	150	60	43	60
2	51	67	71	200	193	175	308	319	140	55	40	56
3	47	66	70	184	185	192	289	300	127	53	37	55
4	46	64	109	170	182	260	272	270	128	54	73	55
5	47	64	166	159	180	300	258	248	133	55	103	87
6	47	96	185	158	179	308	249	241	130	55	88	140
7	45	114	167	158	189	306	241	281	121	56	67	e150
8	44	107	145	151	209	289	232	303	113	55	55	e130
9	45	91	138	152	212	272	224	291	107	51	50	e110
10	46	98	130	177	200	254	217	274	100	46	166	e90
11	45	133	119	184	185	237	209	272	96	44	218	e78
12	48	147	111	191	169	225	198	268	95	43	177	67
13	63	133	107	209	158	216	191	252	94	45	118	64
14	87	111	103	206	182	215	187	236	88	50	84	64
15	107	98	108	198	217	241	190	222	84	48	71	65
16	104	92	156	206	219	253	203	211	82	42	66	66
17	83	88	178	324	194	248	204	201	79	38	62	66
18	70	85	175	385	181	250	198	218	78	37	57	64
19	79	81	174	393	184	351	187	232	79	36	76	62
20	81	80	165	345	218	405	179	224	79	36	114	81
21	73	77	151	301	235	411	251	205	74	37	158	93
22	67	76	146	264	228	365	422	190	71	34	163	90
23	68	77	154	227	209	330	533	180	70	46	144	80
24	102	82	174	224	189	379	532	172	67	48	120	79
25	115	83	201	216	181	436	455	163	65	43	99	118
26	104	80	207	194	178	460	371	151	62	44	96	167
27	90	77	189	191	174	437	309	143	60	65	88	196
28	81	76	168	194	170	399	276	141	57	69	78	184
29	80	76	172	195	---	355	256	135	58	58	71	152
30	76	75	198	195	---	349	258	129	59	51	67	123
31	73	---	215	209	---	340	---	143	---	47	65	---
TOTAL	2166	2663	4625	6773	5405	9426	8226	6917	2746	1501	2914	2892
MEAN	69.9	88.8	149	218	193	304	274	223	91.5	48.4	94.0	96.4
MAX	115	147	215	393	235	460	533	319	150	69	218	196
MIN	44	64	70	151	158	168	179	129	57	34	37	55
CFSM	.70	.89	1.49	2.18	1.93	3.04	2.74	2.23	.92	.48	.94	.96
IN.	.81	.99	1.72	2.52	2.01	3.51	3.06	2.57	1.02	.56	1.08	1.08

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1991, BY WATER YEAR (WY)

	MEAN	89.7	149	209	247	272	343	333	256	186	102	87.1	80.6
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	31.7	29.5	
(WY)	1950	1966	1966	1981	1944	1981	1985	1981	1957	1957	1949	1980	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1941 - 1991
ANNUAL TOTAL	68370	56254	
ANNUAL MEAN	187	154	197
HIGHEST ANNUAL MEAN			311
LOWEST ANNUAL MEAN			84.4
HIGHEST DAILY MEAN	683	Feb 1	1830
LOWEST DAILY MEAN	44	Oct 8	15
ANNUAL SEVEN-DAY MINIMUM	46	Oct 5	25
INSTANTANEOUS PEAK FLOW		551	1860
INSTANTANEOUS PEAK STAGE		4.03	8.75
INSTANTANEOUS LOW FLOW		32	7.4
ANNUAL RUNOFF (CFSM)	1.87	1.54	1.97
ANNUAL RUNOFF (INCHES)	25.43	20.93	26.72
10 PERCENT EXCEEDS	346	284	395
50 PERCENT EXCEEDS	165	140	157
90 PERCENT EXCEEDS	61	53	51

PAWCATUCK RIVER BASIN

101

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 National Geodetic Vertical Datum of 1929 (Rhode Island State Board of Public Roads benchmark). Prior to Oct. 1, 1985, datum erroneously published as 137.97 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 6, 1982, reached a discharge of 1,010 ft³/s, gage height, 8.97 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	58	45	124	99	68	124	e145	51	15	9.4	34
2	17	55	45	110	89	82	116	e130	47	13	8.2	26
3	18	52	46	103	85	97	108	e115	43	13	7.8	23
4	16	49	134	93	82	184	102	e100	45	12	18	20
5	17	47	210	86	81	192	99	e95	46	12	32	30
6	17	59	180	85	80	157	95	e105	44	14	22	38
7	16	56	137	84	90	172	92	e140	40	14	17	32
8	15	52	117	79	103	159	88	124	37	14	13	29
9	22	50	102	81	97	138	86	109	35	13	12	25
10	23	70	90	96	89	118	83	114	48	11	61	25
11	24	139	81	92	82	107	86	113	42	10	42	24
12	26	144	74	98	74	99	80	103	37	9.5	28	23
13	53	118	71	100	69	93	75	94	35	9.8	22	21
14	117	95	68	89	86	95	73	89	31	14	18	22
15	156	82	74	84	108	116	74	82	29	13	18	25
16	126	73	114	104	101	109	81	74	27	10	19	25
17	91	68	109	234	86	112	77	68	26	9.6	16	22
18	73	64	108	225	80	119	77	96	25	9.0	14	20
19	110	59	109	177	80	196	76	87	25	8.1	116	20
20	94	56	97	146	109	175	72	80	28	7.3	202	42
21	85	53	90	130	105	149	168	74	26	7.5	229	37
22	74	52	93	110	95	126	255	68	23	7.9	166	39
23	75	52	96	100	85	127	215	64	22	12	105	37
24	121	56	157	97	76	175	164	60	20	12	95	37
25	120	56	159	90	75	192	134	56	18	9.7	71	72
26	109	54	139	85	73	174	115	53	17	15	55	113
27	90	52	117	84	71	154	104	49	16	36	49	122
28	79	50	108	84	69	142	e100	48	15	23	43	91
29	75	49	103	85	---	128	e97	44	14	16	38	75
30	68	47	114	84	---	137	e120	43	14	13	36	65
31	62	---	131	104	---	131	---	55	---	11	38	---
TOTAL	2008	1967	3318	3343	2419	4223	3236	2677	926	394.4	1620.4	1214
MEAN	64.8	65.6	107	108	86.4	136	108	86.4	30.9	12.7	52.3	40.5
MAX	156	144	210	234	109	196	255	145	51	36	229	122
MIN	15	47	45	79	69	68	72	43	14	7.3	7.8	20
CFSM	1.84	1.86	3.04	3.06	2.45	3.87	3.06	2.45	.88	.36	1.48	1.15
IN.	2.12	2.08	3.51	3.53	2.56	4.46	3.42	2.83	.98	.42	1.71	1.28

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	37.4	68.3	97.8	101	108	135	134	95.4	61.4	34.1	31.7	23.8
MEAN	37.4	68.3	97.8	101	108	135	134	95.4	61.4	34.1	31.7	23.8
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	12.6	11.2	15.5	19.0	43.6	76.3	44.2	48.7	26.9	12.7	9.40	7.05
(WY)	1966	1966	1966	1966	1980	1985	1966	1986	1964	1991	1965	1980

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1964 - 1991
ANNUAL TOTAL	30991	27345.8	
ANNUAL MEAN	84.9	74.9	77.5
HIGHEST ANNUAL MEAN			114
LOWEST ANNUAL MEAN			33.3
HIGHEST DAILY MEAN	283	Jan 30	826
LOWEST DAILY MEAN	15	Sep 13	4.9
ANNUAL SEVEN-DAY MINIMUM	17	Oct 2	5.4
INSTANTANEOUS PEAK FLOW			896
INSTANTANEOUS PEAK STAGE			8.64
INSTANTANEOUS LOW FLOW			4.9
ANNUAL RUNOFF (CFSM)	2.41		2.20
ANNUAL RUNOFF (INCHES)	32.75		29.90
10 PERCENT EXCEEDS	150		159
50 PERCENT EXCEEDS	85		58
90 PERCENT EXCEEDS	22		16

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 National Geodetic Vertical Datum of 1929. August to December 1909, nonrecording gage at site 1,000 ft upstream at different datum.

REMARKS.--Records excellent. 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.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	92	74	245	195	138	252	300	107	36	31	64
2	33	87	74	216	171	161	240	260	95	34	28	55
3	31	82	74	199	163	210	226	226	86	34	27	51
4	31	77	184	183	157	369	211	202	92	33	48	47
5	32	75	407	165	154	397	203	184	93	33	65	68
6	31	99	313	163	154	314	195	200	90	35	59	96
7	30	104	241	161	174	327	188	339	83	35	45	78
8	30	94	211	149	211	327	179	278	77	35	37	65
9	34	85	190	154	192	273	174	233	72	33	34	57
10	40	106	165	198	174	241	166	233	77	30	134	52
11	44	246	144	186	159	217	162	250	76	29	135	51
12	54	234	131	203	143	201	151	219	72	28	75	47
13	83	189	124	212	135	189	146	195	69	28	56	44
14	193	152	117	181	170	194	147	181	63	32	47	45
15	226	130	128	168	236	245	146	175	60	31	42	50
16	190	117	251	201	208	233	167	158	58	28	42	51
17	135	109	232	506	174	233	158	147	57	27	38	48
18	107	102	211	473	160	243	153	215	55	26	34	45
19	161	95	221	363	165	455	148	192	55	25	134	44
20	163	90	190	298	231	385	140	169	58	24	478	73
21	130	87	170	268	229	308	322	153	54	23	430	80
22	111	84	185	235	199	268	596	140	50	23	344	67
23	110	85	198	197	177	266	448	129	48	31	222	64
24	216	93	341	198	156	388	334	122	45	30	179	62
25	224	92	373	184	151	409	277	116	43	28	167	128
26	182	88	288	162	148	361	242	108	42	34	119	257
27	147	85	242	164	145	315	218	100	39	95	101	256
28	127	82	225	165	140	297	200	100	38	69	90	189
29	122	81	216	166	---	269	187	92	36	47	79	139
30	110	78	237	163	---	284	216	90	36	39	71	117
31	100	---	271	197	---	277	---	111	---	35	70	---
TOTAL	3262	3220	6428	6723	4871	8794	6592	5617	1926	1070	3461	2490
MEAN	105	107	207	217	174	284	220	181	64.2	34.5	112	83.0
MAX	226	246	407	506	236	455	596	339	107	95	478	257
MIN	30	75	74	149	135	138	140	90	36	23	27	44
CFSM	1.45	1.48	2.86	3.00	2.40	3.92	3.03	2.50	.89	.48	1.54	1.15
IN.	1.68	1.65	3.30	3.45	2.50	4.52	3.39	2.89	.99	.55	1.78	1.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1991, BY WATER YEAR (WY)

	MEAN	77.3	133	184	199	217	276	263	195	132	71.8	64.7	61.0
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	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1941 - 1991

ANNUAL TOTAL	60382		54454										
ANNUAL MEAN	165		149										
HIGHEST ANNUAL MEAN										156			
LOWEST ANNUAL MEAN										235			
HIGHEST DAILY MEAN	614	Jan 31	596	Apr 22						71.2			
LOWEST DAILY MEAN	30	Oct 7	23	Jul 21						2200	Jun 6 1982		
ANNUAL SEVEN-DAY MINIMUM	31	Oct 2	25	Jul 16						10	Oct 13 1941		
INSTANTANEOUS PEAK FLOW			638	Apr 22						14	Oct 2 1957		
INSTANTANEOUS PEAK STAGE			4.75	Apr 22						2390	Jun 6 1982		
INSTANTANEOUS LOW FLOW			22	Jul 20						10.26	Jun 6 1982		
ANNUAL RUNOFF (CFSM)	2.28		2.06							4.0	Sep 9 1987		
ANNUAL RUNOFF (INCHES)	31.03		27.98							2.16			
10 PERCENT EXCEEDS	305		272							29.30			
50 PERCENT EXCEEDS	159		143							315			
90 PERCENT EXCEEDS	43		35							120			
										35			

PAWCATUCK RIVER BASIN

103

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 TEMPERATURES: October 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1977.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 298 microsiemens, Feb. 12, 1988; minimum recorded, 21 microsiemens, Jan. 23, 1979.

WATER TEMPERATURES: Maximum recorded, 29.5°C, July 24, 1987, July 26, 27, 28, 1989; minimum recorded, 0.0°C, on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 199 microsiemens, Apr. 9; minimum recorded, 59 microsiemens, Jan. 18, 19.

WATER TEMPERATURES: Maximum recorded, 26.0°C, Aug. 13, 14, 16-18; minimum recorded, 0.5°C, Jan. 23, 26, Feb. 16-18.

SPECIFIC CONDUCTANCE, $\mu\text{S}/\text{CM}$ @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	88	84	86	70	69	70	73	72	73	64	63	63
2	93	86	88	70	69	70	73	72	73	69	63	65
3	95	89	92	71	70	70	73	72	73	66	64	65
4	93	91	92	71	70	70	75	69	73	67	65	66
5	93	91	92	71	70	70	68	65	67	70	66	68
6	92	90	91	75	68	71	66	61	63	74	69	70
7	91	89	90	72	71	72	62	61	61	78	69	71
8	91	90	91	75	72	73	64	62	63	70	69	70
9	94	91	92	75	74	74	65	63	64	127	70	88
10	94	89	91	78	72	74	66	64	65	86	75	79
11	89	87	88	74	67	70	67	65	66	80	73	74
12	87	82	85	67	63	66	67	66	66	155	73	102
13	89	81	85	63	62	62	68	66	67	83	75	77
14	81	72	75	63	62	62	69	67	68	89	75	79
15	78	73	75	65	63	64	71	67	68	77	74	75
16	73	67	69	66	64	65	69	65	67	87	73	78
17	69	67	68	67	65	66	69	67	67	77	65	71
18	71	69	70	69	67	68	70	66	68	64	59	62
19	75	68	70	69	68	69	73	65	68	61	59	59
20	70	67	68	70	69	69	68	65	66	63	61	62
21	71	69	70	70	69	70	68	65	66	69	63	65
22	70	69	69	71	69	70	67	66	66	72	64	66
23	71	67	69	72	70	71	68	66	66	73	67	70
24	73	67	69	72	70	71	71	64	67	72	69	70
25	69	67	68	72	71	71	65	63	64	71	69	70
26	68	65	67	72	71	71	63	62	63	76	71	73
27	66	65	65	72	71	71	63	62	63	76	73	74
28	67	65	66	72	71	72	93	63	70	76	73	74
29	67	66	67	73	72	72	71	66	68	74	72	73
30	68	67	68	73	72	72	74	65	66	74	73	74
31	70	68	69	---	---	---	72	64	66	77	70	73
MONTH	95	65	78	78	62	70	93	61	67	155	59	72

PAWCATUCK RIVER BASIN

105

01118000 WOOD RIVER AT HOPE VALLEY, RI--Continued

WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.5	17.0	17.5	11.5	8.0	10.0	7.0	5.5	6.0	4.0	2.0	3.0
2	17.0	15.5	16.5	10.5	8.5	9.5	5.5	4.5	5.0	2.5	2.0	2.0
3	16.0	4.5	12.0	12.5	9.5	11.0	5.0	4.0	4.5	3.0	2.5	2.5
4	4.5	2.0	3.5	13.0	11.0	12.0	7.0	4.5	6.0	3.0	2.0	2.5
5	4.0	2.0	3.0	13.0	11.5	12.0	7.0	5.0	6.0	2.5	1.5	2.0
6	5.0	2.0	3.5	13.0	11.0	12.0	4.5	3.5	4.0	3.0	2.0	2.5
7	5.5	3.0	4.5	11.0	10.0	10.5	3.5	3.0	3.5	4.0	3.0	3.5
8	7.0	5.0	6.0	10.0	8.0	9.5	4.0	3.5	4.0	3.0	2.0	2.5
9	8.0	6.0	7.0	8.0	7.0	7.5	4.5	3.5	4.0	2.0	2.0	2.0
10	16.5	5.5	10.5	8.5	7.0	7.5	4.5	3.0	4.0	3.0	2.0	2.5
11	17.5	14.5	16.0	8.0	7.0	7.5	3.0	2.5	2.5	2.5	1.0	2.0
12	16.5	15.0	15.5	7.5	5.0	6.5	3.0	2.5	2.5	2.0	1.0	1.5
13	15.5	14.0	14.5	5.0	3.0	4.0	4.0	2.5	3.5	2.5	1.5	2.0
14	17.0	14.0	15.5	3.5	2.5	3.0	3.5	2.5	3.0	2.0	1.5	1.5
15	16.0	14.0	15.0	4.5	2.5	3.5	3.5	2.0	2.5	2.5	1.0	1.5
16	14.0	10.5	12.5	5.5	3.5	4.0	4.0	3.0	3.5	3.0	2.0	2.5
17	10.5	7.5	9.0	6.0	4.5	5.5	4.0	3.5	3.5	3.0	2.5	3.0
18	10.5	7.5	9.0	6.0	5.5	6.0	5.0	3.5	4.0	2.5	2.0	2.0
19	11.0	8.5	9.5	6.0	4.5	5.5	6.0	5.0	5.5	2.0	1.5	2.0
20	8.0	2.5	5.0	5.5	4.0	4.5	5.5	4.5	5.0	3.0	2.0	2.5
21	5.0	.5	3.0	5.0	4.0	4.5	5.0	4.0	4.5	3.0	2.0	3.0
22	5.0	2.0	3.5	5.0	3.5	4.0	7.5	5.0	6.0	2.0	1.0	1.5
23	6.0	4.0	4.5	5.0	4.0	4.5	9.5	7.5	8.5	1.5	.5	1.0
24	8.0	4.5	6.5	5.5	4.5	5.0	10.0	8.5	9.5	1.5	1.0	1.5
25	4.5	2.0	3.5	6.5	4.5	5.5	8.0	4.5	6.5	1.5	1.0	1.0
26	20.5	.5	9.5	6.5	5.5	6.0	4.5	2.5	3.5	1.5	.5	1.0
27	16.5	14.0	15.5	6.5	5.0	6.0	2.5	1.5	2.0	2.0	1.0	1.5
28	14.0	12.5	13.5	8.0	6.0	7.0	1.5	1.0	1.5	2.5	1.5	2.0
29	13.5	12.0	12.5	8.5	8.0	8.5	3.0	1.5	2.0	3.0	2.0	2.5
30	13.5	10.0	12.0	8.0	6.5	7.5	5.0	3.0	4.0	3.5	2.5	3.0
31	13.0	9.0	11.5	---	---	---	5.5	4.5	5.0	4.0	3.0	3.5
MONTH	20.5	.5	9.5	13.0	2.5	7.0	10.0	1.0	4.5	4.0	.5	2.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	2.5	1.5	2.0	5.5	2.5	4.0	8.5	7.0	7.5	---	---	---
2	3.0	1.5	2.0	7.5	4.5	6.5	8.5	7.0	7.5	---	---	---
3	4.0	2.0	3.0	10.5	8.0	9.0	9.5	7.0	8.0	---	---	---
4	5.5	3.5	4.5	9.5	8.5	9.0	11.0	7.5	9.0	---	---	---
5	6.0	4.0	5.0	9.0	8.0	8.5	12.0	9.0	10.5	---	---	---
6	6.5	5.0	6.0	8.5	7.0	7.5	15.0	11.0	13.0	---	---	---
7	6.0	6.0	6.0	10.0	8.0	9.0	17.5	14.0	16.0	---	---	---
8	6.5	5.5	6.0	9.0	6.0	7.5	19.5	16.5	18.0	---	---	---
9	6.0	4.5	5.5	5.5	4.0	5.0	21.0	17.5	19.0	---	---	---
10	6.0	4.0	5.0	5.0	3.0	4.0	---	---	---	---	---	---
11	5.0	3.5	4.5	4.0	2.5	3.0	---	---	---	---	---	---
12	3.0	1.5	2.5	5.0	2.5	3.5	---	---	---	---	---	---
13	2.5	1.5	2.0	5.5	3.0	4.0	---	---	---	---	---	---
14	3.0	1.5	2.5	4.5	3.5	4.0	---	---	---	---	---	---
15	3.5	2.5	3.0	3.5	2.5	3.0	---	---	---	---	---	---
16	2.5	.5	1.5	4.0	2.0	3.0	---	---	---	---	---	---
17	1.5	.5	1.0	6.0	3.0	4.5	---	---	---	---	---	---
18	2.5	.5	1.5	5.5	4.5	5.0	---	---	---	---	---	---
19	3.5	2.0	2.5	7.0	5.5	6.0	---	---	---	---	---	---
20	5.0	3.5	4.5	7.5	5.5	6.5	---	---	---	---	---	---
21	5.0	3.5	4.5	7.0	6.0	6.5	---	---	---	---	---	---
22	6.0	4.0	5.0	7.5	6.0	6.5	---	---	---	---	---	---
23	5.0	3.0	4.5	6.5	5.0	6.0	---	---	---	---	---	---
24	3.5	2.5	3.0	5.5	5.0	5.0	---	---	---	---	---	---
25	3.5	2.5	3.0	5.5	5.0	5.0	---	---	---	---	---	---
26	4.5	3.0	4.0	6.0	5.0	5.5	---	---	---	---	---	---
27	4.5	3.0	4.0	6.0	5.5	6.0	---	---	---	---	---	---
28	4.5	2.5	3.5	9.5	6.0	8.0	---	---	---	---	---	---
29	---	---	---	10.0	9.0	9.5	---	---	---	---	---	---
30	---	---	---	9.0	7.5	8.5	---	---	---	---	---	---
31	---	---	---	8.0	6.0	7.0	---	---	---	---	---	---
MONTH	6.5	.5	3.5	10.5	2.0	6.0	21.0	7.0	12.0	---	---	---

PAWCATUCK RIVER BASIN

107

01118500 PAWCATUCK RIVER AT WESTERLY, RI
(National stream-quality accounting network station)

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 National Geodetic Vertical Datum of 1929.

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.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	250	e240	848	644	516	1020	1030	403	151	117	218
2	151	238	e225	765	604	531	945	1080	379	144	108	205
3	147	234	e220	679	570	628	885	983	339	138	105	193
4	134	217	e500	595	547	1050	826	876	334	136	247	183
5	121	213	e900	541	531	1260	776	781	353	135	321	234
6	121	273	e820	523	519	1190	742	745	339	137	257	365
7	113	333	e740	e520	548	1130	712	989	319	137	205	376
8	118	312	e640	e500	649	1080	676	1070	294	140	169	302
9	123	285	e580	e500	670	989	647	969	273	134	150	260
10	149	283	e520	e580	630	877	629	906	255	123	302	234
11	145	405	e470	645	577	786	593	914	247	118	538	217
12	147	486	e420	698	518	719	565	866	247	113	458	202
13	187	446	e390	770	479	657	532	796	242	110	326	194
14	287	383	e360	719	531	633	521	730	225	121	231	195
15	366	330	360	654	698	762	531	681	213	121	195	200
16	366	e310	581	707	738	822	588	618	209	114	180	208
17	318	e295	712	1360	641	796	588	581	202	105	170	204
18	263	e285	691	1510	563	813	573	618	191	99	160	198
19	274	e280	683	1400	556	1240	531	673	193	97	307	194
20	317	e270	639	1240	709	1410	510	645	196	95	839	237
21	306	e260	574	1090	801	1290	770	583	191	94	1050	275
22	270	e255	548	960	763	1150	1480	531	182	95	1010	265
23	256	e260	582	793	680	1060	1570	492	174	105	805	245
24	354	e270	782	736	591	1260	1460	459	169	121	612	245
25	453	e275	1040	686	546	1410	1290	438	160	113	497	333
26	427	e265	980	603	545	1380	1100	417	154	108	412	681
27	360	e255	829	585	545	1290	950	381	149	169	336	830
28	307	e250	734	588	534	1220	857	376	146	201	294	761
29	296	e250	686	595	---	1130	770	363	141	165	266	606
30	285	e245	757	581	---	1100	770	338	149	139	242	458
31	260	---	843	610	---	1090	---	381	---	125	231	---
TOTAL	7583	8713	19046	23581	16927	31269	24407	21310	7068	3903	11140	9318
MEAN	245	290	614	761	605	1009	814	687	236	126	359	311
MAX	453	486	1040	1510	801	1410	1570	1080	403	201	1050	830
MIN	113	213	220	500	479	516	510	338	141	94	105	183
CFSM	.83	.98	2.08	2.58	2.05	3.42	2.76	2.33	.80	.43	1.22	1.05
IN.	.96	1.10	2.40	2.97	2.13	3.94	3.08	2.69	.89	.49	1.40	1.18

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1991, BY WATER YEAR (WY)

	MEAN	263	464	653	748	814	1031	980	726	509	272	241	225
MAX	1186	1450	1789	2151	1377	1766	2603	1274	2246	642	763	1233	
(WY)	1956	1956	1987	1979	1982	1953	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	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1941 - 1991
ANNUAL TOTAL	213226	184265	
ANNUAL MEAN	584	505	579
HIGHEST ANNUAL MEAN			871
LOWEST ANNUAL MEAN			251
HIGHEST DAILY MEAN	1910	Jan 31	6220
LOWEST DAILY MEAN	113	Oct 7	25
ANNUAL SEVEN-DAY MINIMUM	125	Oct 3	52
INSTANTANEOUS PEAK FLOW			7070
INSTANTANEOUS PEAK STAGE			12.86
ANNUAL RUNOFF (CFSM)	1.98	7.12	1.96
ANNUAL RUNOFF (INCHES)	26.89	23.24	26.67
10 PERCENT EXCEEDS	1110	989	1200
50 PERCENT EXCEEDS	520	453	450
90 PERCENT EXCEEDS	169	143	130

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 current year.

WATER TEMPERATURES: June 1978 to current year.

INSTRUMENTATION.--Water-quality monitor since June 1978.

REMARKS.--Interruptions in the record were due to instrument malfunction. Instantaneous records are representative of the cross section while continuous records are based on point samples. The instantaneous record values will not necessarily fall within the corresponding daily range of the continuous records.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 354 microsiemens, June 25, 1985; minimum, 27 microsiemens June 7, 1982.

WATER TEMPERATURES: Maximum, 30.0°C, Aug. 9, 1980, Aug. 17, 18, 1987; minimum, 0.0°C, on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: No data available because of equipment failure.

WATER TEMPERATURES: Maximum, 26.0°C, Aug. 18; minimum not determined, no record during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

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)	
OCT												
25...	1000	452	110	6.9	18.0	14.0	--	1.5	760	10.2	99	--
NOV												
16...	1300	310	97	--	--	5.5	--	--	--	--	--	--
16...	1315	310	94	7.1	21.0	5.5	--	1.0	760	12.7	101	--
DEC												
14...	1120	360	94	6.8	9.0	3.0	--	1.2	770	12.9	95	18
26...	1000	996	78	--	--	4.0	--	--	--	--	--	--
JAN												
10...	1320	633	108	6.8	3.0	1.5	--	2.5	770	13.5	95	--
FEB												
11...	1300	573	--	--	--	4.5	--	--	--	--	--	--
20...	1030	702	110	6.8	11.0	3.0	--	1.2	760	13.7	102	--
MAR												
20...	1100	1440	92	6.5	12.5	6.5	50	2.0	750	11.9	98	19
26...	1200	1390	80	--	--	6.5	--	--	--	--	--	--
APR												
09...	1045	657	90	6.4	26.0	16.5	--	1.0	750	9.1	95	--
MAY												
08...	1150	1070	85	6.6	18.0	16.0	--	1.1	770	9.1	91	--
13...	1500	787	83	--	--	19.0	--	--	--	--	--	--
JUN												
11...	0930	249	107	7.0	31.5	21.0	--	1.5	760	9.0	101	16
24...	1500	166	111	--	--	22.0	--	--	--	--	--	--
JUL												
09...	1245	132	115	8.6	27.0	24.0	--	0.80	760	10.0	119	--
AUG												
09...	1500	150	167	--	--	22.5	--	--	--	--	--	--
15...	1030	194	131	6.6	23.5	22.5	--	0.80	760	6.8	79	--
SEP												
09...	1000	307	113	6.7	27.5	20.5	65	1.1	770	8.7	96	36
19...	1300	194	131	--	--	22.0	--	--	--	--	--	--

109

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible][illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

111

01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible][illegible]

PAWCATUCK RIVER BASIN

01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) (39250)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39251)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)
MAR 20...	1100	<0.1	--	<0.10	--	<0.010	--	<0.1	--	<0.010	--	<0.010
SEP 09...	1000	<0.1	<10	<0.10	<10	<0.010	<1.0	<0.1	5.0	<0.010	0.5	<0.010

DATE	TIME	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39389)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)
MAR 20...	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	--	<0.010	<0.010
SEP 09...	1.0	<0.010	0.6	<0.010	0.1	<0.010	<1.0	<0.010	<1.0	<0.010	<1.0	<0.010	<0.010

DATE	TIME	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39755)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39758)	PER- THANE TOTAL (UG/L) (39034)	PER- THANE TOTAL (UG/KG) (81886)	TOX- APHENE, TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
MAR 20...	--	<0.010	--	<0.01	--	<0.01	--	<0.1	--	<1	--	--
SEP 09...	<1.0	<0.010	<0.1	<0.01	<10	<0.01	<1.0	<0.1	<10.0	<1	<100	<100

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PEN- DED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PEN- DED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 16...	1315	310	5	4.2	87
JAN 10...	1320	633	5	8.5	82
MAY 08...	1150	1070	6	17	74
JUL 09...	1245	132	5	1.8	69

PAWCATUCK RIVER BASIN

113

01118500 PAWCATUCK RIVER AT WESTERLY, RI--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	-	-	-	8.0	6.0	7.0	-	-	-	-	-	-
2	-	-	-	8.5	7.0	8.0	-	-	-	-	-	-
3	-	-	-	9.5	7.5	8.5	-	-	-	-	-	-
4	-	-	-	10.0	8.5	9.5	-	-	-	-	-	-
5	-	-	-	10.0	9.0	9.5	-	-	-	-	-	-
6	-	-	-	11.0	9.5	10.0	-	-	-	-	-	-
7	-	-	-	10.0	9.0	9.5	-	-	-	-	-	-
8	-	-	-	9.0	7.5	8.5	-	-	-	-	-	-
9	-	-	-	7.5	6.5	7.0	-	-	-	-	-	-
10	-	-	-	7.5	6.5	7.0	-	-	-	-	-	-
11	-	-	-	7.0	6.5	6.5	-	-	-	-	-	-
12	-	-	-	6.0	5.0	5.5	-	-	-	-	-	-
13	-	-	-	5.0	3.0	4.0	-	-	-	-	-	-
14	-	-	-	3.5	2.5	3.0	-	-	-	-	-	-
15	-	-	-	3.5	2.0	3.0	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-
26	12.5	10.5	12.0	-	-	-	-	-	-	-	-	-
27	10.5	8.5	10.0	-	-	-	-	-	-	-	-	-
28	8.5	8.0	8.5	-	-	-	-	-	-	-	-	-
29	8.0	7.0	7.5	-	-	-	-	-	-	-	-	-
30	7.5	6.5	7.0	-	-	-	-	-	-	-	-	-
31	8.0	6.5	7.5	---	---	---	-	-	-	-	-	-
MONTH	-	-	-	-	-	-	-	-	-	-	-	-

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	-	-	-	-	-	-	8.5	7.5	8.0	13.5	12.0	12.5
2	-	-	-	-	-	-	8.5	8.0	8.0	14.5	13.0	14.0
3	-	-	-	-	-	-	9.0	7.5	8.5	14.5	14.0	14.5
4	-	-	-	-	-	-	10.0	8.0	9.0	15.5	13.5	14.5
5	-	-	-	-	-	-	11.0	9.0	10.0	16.0	14.0	15.0
6	-	-	-	-	-	-	12.5	10.5	11.5	15.5	14.5	15.0
7	-	-	-	-	-	-	15.0	12.5	13.5	16.0	14.0	15.0
8	-	-	-	-	-	-	16.5	14.0	15.5	16.5	14.5	15.5
9	-	-	-	-	-	-	17.5	15.5	16.5	16.0	15.0	15.5
10	-	-	-	-	-	-	17.0	15.5	16.0	15.5	14.5	15.0
11	-	-	-	-	-	-	15.5	13.5	14.5	16.0	14.0	15.0
12	-	-	-	-	-	-	14.0	12.0	13.0	17.0	15.5	16.5
13	-	-	-	-	-	-	12.0	10.5	11.5	19.0	17.0	18.0
14	-	-	-	-	-	-	12.0	9.5	11.0	19.0	18.0	18.5
15	-	-	-	-	-	-	10.5	10.0	10.5	19.5	17.5	18.5
16	-	-	-	-	-	-	12.0	9.5	11.0	20.0	17.5	18.5
17	-	-	-	-	-	-	12.0	11.5	11.5	20.5	18.0	19.0
18	-	-	-	-	-	-	12.0	10.5	11.5	20.0	18.0	19.0
19	-	-	-	-	-	-	12.5	10.0	11.0	18.5	16.5	17.5
20	-	-	-	-	-	-	12.0	10.5	11.0	18.0	16.0	16.5
21	-	-	-	7.0	6.0	6.5	11.0	9.5	10.0	18.5	15.5	17.0
22	-	-	-	7.0	6.0	6.5	9.0	8.5	9.0	19.0	16.5	18.0
23	-	-	-	6.5	5.5	6.0	11.5	8.5	10.0	19.5	18.0	18.5
24	-	-	-	5.5	5.5	5.5	12.5	10.5	12.0	20.0	18.0	19.0
25	-	-	-	6.0	5.5	5.5	13.5	12.0	13.0	21.5	19.0	20.0
26	-	-	-	6.5	5.5	6.0	14.5	12.5	13.5	22.0	20.0	21.0
27	-	-	-	6.5	6.0	6.0	15.5	14.0	14.5	22.5	20.0	21.0
28	-	-	-	9.0	6.5	7.5	16.0	14.5	15.0	23.5	21.0	22.0
29	---	---	---	9.5	8.5	9.0	15.0	13.5	14.5	24.0	21.5	22.5
30	---	---	---	9.5	8.0	9.0	13.5	12.0	13.0	24.5	22.0	23.0
31	---	---	---	8.5	7.5	8.0	---	---	---	23.0	21.5	22.5
MONTH	-	-	-	-	-	-	17.5	7.5	12.0	24.5	12.0	17.5

THAMES RIVER BASIN

115

01124000 QUINEBAUG RIVER AT QUINEBAUG, CT

LOCATION.--Lat 42°01'20", long 71°57'22", Windham County, Hydrologic Unit 01100001, on right bank at Quinebaug, 500 ft upstream from bridge on State Highway 197, 0.2 mi downstream from Massachusetts-Connecticut State line, 7.8 mi upstream from French River, and at mile 46.

DRAINAGE AREA.--155 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1931 to current year.

REVISED RECORDS.--WSP 851: 1936(M). WSP 1201: 1939-43, 1949. WSP 1381: 1938(M). WDR MA-RI-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 341.52 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by East Brimfield and Westville Lakes and by smaller reservoirs upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	269	161	475	356	e240	401	497	232	30	25	33
2	55	249	157	e420	e325	462	378	433	181	28	59	66
3	29	233	171	e370	e305	606	361	377	145	27	32	34
4	44	212	460	e320	e290	920	336	327	109	25	51	42
5	60	199	628	e290	e310	908	296	285	106	25	52	74
6	33	211	510	e270	347	740	288	375	97	24	55	82
7	55	219	463	e255	462	786	269	702	101	27	53	76
8	60	204	458	e240	567	766	243	620	72	28	34	66
9	61	186	392	e230	545	637	194	558	69	25	13	61
10	65	255	407	242	493	525	171	523	79	24	68	51
11	67	442	239	e230	399	451	162	467	67	23	47	43
12	69	393	263	e220	e330	413	163	402	48	22	57	44
13	148	309	243	e210	e280	377	143	352	29	26	55	24
14	401	312	225	e200	350	360	145	306	44	24	32	64
15	367	284	221	e190	446	367	150	274	52	23	40	46
16	438	298	341	250	385	360	163	253	44	22	40	42
17	485	204	382	442	e335	355	158	221	50	22	39	56
18	392	224	271	396	e315	359	121	247	53	21	33	39
19	461	206	409	425	e300	466	150	238	71	21	327	58
20	344	150	269	343	393	456	151	203	102	22	469	85
21	296	189	291	354	417	400	450	178	62	22	656	87
22	310	145	294	e310	e400	392	724	162	71	22	1040	77
23	242	178	297	e270	e350	460	834	148	66	30	876	77
24	628	184	441	e230	e300	615	749	141	56	25	890	73
25	711	197	e415	e210	e280	702	629	117	49	18	380	538
26	632	188	e380	e200	e265	636	436	114	43	30	221	941
27	500	149	e350	e190	e255	575	378	114	43	122	171	796
28	407	185	e330	e180	e245	535	313	97	30	76	162	603
29	422	211	e315	e175	---	483	281	97	33	94	90	472
30	284	211	367	222	---	451	367	103	31	80	94	349
31	320	---	516	388	---	440	---	152	---	97	73	---
TOTAL	8442	6896	10666	8747	10045	16243	9604	9083	2235	1105	6234	5099
MEAN	272	230	344	282	359	524	320	293	74.5	35.6	201	170
MAX	711	442	628	475	567	920	834	702	232	122	1040	941
MIN	29	145	157	175	245	240	121	97	29	18	13	24

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1991, BY WATER YEAR (WY)

	MEAN	148	224	300	324	338	537	541	314	219	104	116	118
MAX	701	711	794	1028	845	1669	1239	658	1057	700	1971	1296	
(WY)	1956	1956	1984	1979	1970	1936	1940	1989	1982	1938	1955	1938	
MIN	16.3	34.4	81.4	57.4	83.0	235	169	131	45.9	17.8	12.9	12.2	
(WY)	1958	1950	1966	1981	1980	1989	1985	1957	1957	1957	1957	1957	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1932 - 1991
ANNUAL TOTAL	108479	94399	
ANNUAL MEAN	297	259	273
HIGHEST ANNUAL MEAN			466
LOWEST ANNUAL MEAN			124
HIGHEST DAILY MEAN	1400	1040	26500
LOWEST DAILY MEAN	11	13	1.0
ANNUAL SEVEN-DAY MINIMUM	28	22	8.7
INSTANTANEOUS PEAK FLOW		1360	49300
INSTANTANEOUS PEAK STAGE		4.73	18.96
INSTANTANEOUS LOW FLOW		7.2	1.0
ANNUAL RUNOFF (CFSM)	1.92	1.67	1.76
ANNUAL RUNOFF (INCHES)	26.03	22.66	23.94
10 PERCENT EXCEEDS	633	512	606
50 PERCENT EXCEEDS	260	230	185
90 PERCENT EXCEEDS	41	33	38

THAMES RIVER BASIN

01124000 QUINEBAUG RIVER AT QUINEBAUG, CT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses available for water years 1953 (WSP 1290), 1960 (WSP 1741), 1963 (WSP 1941), 1969 (WSP 2143). Water temperatures available for water year 1960 (WSP 1741), 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1959 to September 1960, October 1968 to September 1969.

pH: October 1959 to September 1960, October 1968 to September 1969.

WATER TEMPERATURES: October 1959 to September 1960, October 1968 to September 1969.

DISSOLVED OXYGEN: October 1959 to September 1960, October 1968 to September 1969.

INSTRUMENTATION.--Multiple parameter water-quality monitor located on right bank 50 ft upstream from bridge on Massachusetts State Highway 131, 0.2 mi upstream from State line, 0.4 mi upstream from gaging station, 2.0 mi southwest of Dudley, Massachusetts.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 308 microsiemens, Jan. 31, 1969; minimum, 49 microsiemens, Apr. 2, 1960.

pH: Maximum, 7.7 units, June 14, 1969; minimum, 5.8 units, July 18, 1969.

WATER TEMPERATURES: Maximum, 30.5 C, July 16, 1969; minimum, 0.0 C, on many days during winter periods.

DISSOLVED OXYGEN: Maximum, 15.1 mg/L, Dec. 28, 1968; minimum, 1.4 mg/L, Sept. 7, 1969.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML) (31616)	ENTERO- COCCI ME, MF TOTAL (COL / 100 ML) (31649)
OCT											
24...	1315	576	83	6.9	21.0	14.0	4.5	9.9	99	2000	2400
NOV											
19...	1340	207	108	6.6	8.0	4.0	1.5	13.0	101	170	2200
DEC											
13...	1000	243	104	6.5	10.0	2.5	1.4	13.1	99	42	65
JAN											
16...	1150	277	118	6.8	3.0	0.5	1.8	14.1	99	530	110
MAR											
18...	1420	355	115	7.1	8.0	5.0	1.0	12.8	102	K3	K13
APR											
10...	0945	239	128	7.3	7.0	15.0	1.7	9.1	92	240	28
JUN											
12...	1130	52	145	7.5	26.0	25.0	2.0	8.6	106	230	37
JUL											
15...	1000	23	185	7.4	27.5	19.0	2.1	9.8	106	150	440
AUG											
16...	1200	41	173	7.7	27.5	25.5	1.8	8.9	111	64	24
SEP											
11...	1031	67	218	7.6	25.0	22.0	2.1	9.3	108	140	33

DATE	STREP- TOCOC FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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)	ALKA- LINITY 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)
OCT										
24...	6900	22	6.3	1.6	--	9.3	14	<0.10	--	72
NOV										
19...	160	22	5.9	1.8	11	12	23	<0.10	6.6	64
DEC										
13...	120	21	5.6	1.7	--	11	9.0	<0.10	--	69
JAN										
16...	170	22	5.7	1.8	11	10	23	0.10	8.8	70
MAR										
18...	33	20	5.5	1.6	--	10	22	<0.10	--	70
APR										
10...	27	24	6.7	1.8	--	11	23	0.20	--	69
JUN										
12...	85	28	7.6	2.1	--	9.5	31	0.10	--	80
JUL										
15...	140	33	8.7	2.8	19	9.5	37	0.20	2.7	101
AUG										
16...	54	28	7.4	2.3	17	13	32	<0.10	4.3	93
SEP										
11...	1300	27	7.3	2.1	--	11	29	0.10	--	98

THAMES RIVER BASIN

117

01124000 QUINEBAUG RIVER AT QUINEBAUG, CT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NITRATE TOTAL (MG/L) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L) (00625)	NITRO- GEN, TOTAL (MG/L) (00600)	PHOS- PHORUS TOTAL (MG/L) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L) (00666)
OCT 24...	81	--	<0.010	0.400	0.030	0.57	0.60	1.0	0.080	0.070
NOV 19...	64	0.190	0.010	0.200	0.100	0.30	0.40	0.60	0.040	0.030
DEC 13...	73	0.280	0.020	0.300	0.110	0.59	0.70	1.0	0.030	0.020
JAN 16...	79	0.280	0.020	0.300	0.140	0.36	0.50	0.80	0.060	0.020
MAR 18...	79	--	<0.010	0.300	0.050	0.35	0.40	0.70	0.040	0.030
APR 10...	70	0.250	0.020	0.270	0.070	0.33	0.40	0.67	0.080	0.040
JUN 12...	87	0.620	0.020	0.640	0.030	0.37	0.40	1.0	0.200	0.180
JUL 15...	107	0.920	0.020	0.940	0.080	0.62	0.70	1.6	0.200	0.150
AUG 16...	120	0.480	0.010	0.490	0.020	0.38	0.40	0.89	0.210	0.150
SEP 11...	134	--	<0.010	0.470	0.020	0.58	0.60	1.1	0.170	0.150

DATE	PHOS- PHORUS ORTHO TOTAL (MG/L) AS P) (70507)	CADMIUM DIS- SOLVED (UG/L) AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L) AS CR) (01030)	COPPER, DIS- SOLVED (UG/L) AS CU) (01040)	IRON, DIS- SOLVED (UG/L) AS FE) (01046)	LEAD, DIS- SOLVED (UG/L) AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L) AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L) AS NI) (01065)	ZINC, DIS- SOLVED (UG/L) AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L) AS C) (00680)
OCT 24...	0.050	<1.0	<1	2	--	1	--	2	16	9.3
NOV 19...	0.030	<1.0	<1	2	230	1	30	1	7	4.8
DEC 13...	0.020	<1.0	1	2	--	<1	--	1	8	4.5
JAN 16...	0.030	2.0	<1	1	160	<1	29	1	4	3.4
MAR 18...	0.020	<1.0	<1	1	--	<1	--	<1	5	2.9
APR 10...	0.040	<1.0	<1	2	--	3	--	<1	8	3.6
JUN 12...	0.170	<1.0	<1	4	--	2	--	5	7	5.1
JUL 15...	0.180	<1.0	1	5	220	1	88	1	<3	5.0
AUG 16...	0.160	<1.0	<1	2	230	1	42	2	<10	5.0
SEP 11...	0.120	<1.0	<1	3	--	1	--	2	13	6.2

CONNECTICUT RIVER BASIN

01162000 MILLERS RIVER NEAR WINCHENDON, MA

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.

DRAINAGE AREA.--81.8 mi².

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.

REVISED RECORDS.--WSP 451: 1916. WSP 1051: 1919, 1920-21(M), 1922-24, 1928(M), 1933-34.
WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 6, 1933. Datum of gage is 826.66 ft above National Geodetic Vertical Datum of 1929. Prior to July 27, 1916, nonrecording gage at bridge at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplant and by Lake Monomonac and other reservoirs upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	106	76	364	136	121	202	398	83	33	9.3	77
2	73	98	74	330	132	203	181	348	69	29	9.0	70
3	69	92	73	255	102	337	167	289	59	25	8.9	61
4	68	93	163	239	106	544	152	235	59	20	9.4	50
5	70	97	248	206	121	659	143	188	62	17	11	64
6	69	115	220	188	141	576	139	234	59	16	8.8	58
7	64	118	190	168	194	563	133	514	54	15	8.0	51
8	60	132	168	146	260	545	125	528	48	15	8.1	43
9	58	127	149	139	250	460	118	429	44	14	8.7	37
10	48	170	136	138	234	376	113	339	40	13	21	33
11	38	307	118	e130	208	315	104	265	42	12	15	30
12	35	266	110	e125	175	269	83	211	58	11	13	26
13	57	214	105	e140	155	232	73	174	77	12	13	23
14	178	173	101	e130	178	213	68	146	68	14	12	23
15	154	154	97	125	273	210	64	130	57	12	12	23
16	116	141	130	125	243	192	69	112	68	12	13	24
17	91	130	137	161	212	180	65	111	81	12	12	28
18	79	130	145	167	178	180	60	134	79	11	13	33
19	136	120	187	159	162	286	57	117	75	10	292	62
20	128	112	176	143	196	296	55	100	77	10	1110	178
21	159	105	163	134	202	280	126	86	84	10	1260	155
22	119	101	196	e120	197	259	409	79	69	10	926	122
23	134	102	202	145	192	235	552	72	60	11	568	104
24	320	108	475	115	167	234	482	66	54	10	385	95
25	303	105	627	99	153	234	374	61	47	11	293	472
26	253	96	571	88	141	227	296	58	42	11	223	928
27	207	87	445	76	133	234	244	59	38	13	171	882
28	163	85	365	75	123	250	196	85	34	11	138	644
29	168	83	327	72	---	256	167	78	31	11	117	466
30	139	80	316	75	---	246	248	79	35	10	89	371
31	122	---	380	121	---	225	---	102	---	9.8	84	---
TOTAL	3756	3847	6870	4698	4964	9437	5265	5827	1753	430.8	5861.2	5233
MEAN	121	128	222	152	177	304	175	188	58.4	13.9	189	174
MAX	320	307	627	364	273	659	552	528	84	33	1260	928
MIN	35	80	73	72	102	121	55	58	31	9.8	8.0	23

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1991, BY WATER YEAR (WY)

	MEAN	89.8	114	135	134	136	263	375	185	115	63.0	53.8	68.2
MAX	520	416	406	371	400	931	788	412	515	261	249	752	
(WY)	1956	1956	1974	1956	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	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1916 - 1991

ANNUAL TOTAL	54385		57942.0		144		
ANNUAL MEAN	149		159		231		1956
HIGHEST ANNUAL MEAN					38.5		1965
LOWEST ANNUAL MEAN					6130		Sep 22 1938
HIGHEST DAILY MEAN	900	Mar 18	1260	Aug 21	3.1		Oct 4 1930
LOWEST DAILY MEAN	13	Jul 19	8.0	Aug 7	4.5		Sep 24 1939
ANNUAL SEVEN-DAY MINIMUM	14	Jul 16	9.0	Aug 3	8500		Sep 22 1938
INSTANTANEOUS PEAK FLOW			1350	Aug 21	21.55		Sep 22 1938
INSTANTANEOUS PEAK STAGE			9.32	Aug 21	.00		Sep 20 1918
INSTANTANEOUS LOW FLOW			7.8	Aug 7			
10 PERCENT EXCEEDS	315		333		332		
50 PERCENT EXCEEDS	118		120		88		
90 PERCENT EXCEEDS	24		13		19		

119

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: Water years 1965-66.

GAGE.--Water-stage recorder. Concrete control since September 1936. Datum of gage is 849.67 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 11, 1936, nonrecording gage on left bank at same datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

e Estimated

MEAN	15.6	28.1	33.1	29.1	27.8	63.7	93.0	43.5	25.2	12.5	10.3	12.7
MAX	69.2	124	111	79.0	102	162	225	93.9	125	62.5	68.8	178
(WY)	1976	1928	1974	1952	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

ANNUAL TOTAL	14007.2		13287.0					
ANNUAL MEAN	38.4		36.4			32.8		
HIGHEST ANNUAL MEAN						55.0		1928
LOWEST ANNUAL MEAN						8.19		1965
HIGHEST DAILY MEAN	354	Mar 18	331	Aug 20		2280		Sep 21 1938
LOWEST DAILY MEAN	1.7	Jul 20	1.8	Aug 2		.10		Sep 4 1929
ANNUAL SEVEN-DAY MINIMUM	1.9	Jul 15	1.9	Jul 31		.19		Sep 2 1929
INSTANTANEOUS PEAK FLOW			377	Aug 20		3000		Sep 21 1938
INSTANTANEOUS PEAK STAGE			4.81	Aug 20		9.90		Sep 21 1938
INSTANTANEOUS LOW FLOW			1.6	Aug 6		.08		Sep 15 1929
ANNUAL RUNOFF (CFSM)	1.98		1.88			1.69		
ANNUAL RUNOFF (INCHES)	26.86		25.48			22.96		
10 PERCENT EXCEEDS	87		82			80		
50 PERCENT EXCEEDS	26		25			17		
90 PERCENT EXCEEDS	4.2		3.4			2.4		

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 years 1965-66.

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

GAGE.--Water-stage recorder. Elevation of gage is 900 ft above National Geodetic Vertical Datum of 1929 from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	39	32	159	e90	50	81	183	217	34	14	33
2	19	37	31	127	e75	92	74	176	171	24	13	28
3	17	35	29	100	67	192	70	121	118	20	11	25
4	16	33	98	82	72	250	66	89	82	18	12	22
5	20	31	219	70	83	270	62	73	62	16	12	42
6	19	51	183	65	94	209	58	85	57	16	12	52
7	17	68	119	62	113	198	57	246	50	15	11	41
8	15	63	85	e56	155	211	54	254	41	15	12	34
9	18	52	71	51	145	164	48	185	36	15	12	27
10	20	59	62	54	118	125	44	140	29	14	45	24
11	19	120	56	e53	96	100	43	101	28	13	65	22
12	19	118	49	58	81	87	40	86	69	12	41	19
13	49	89	47	63	62	80	36	73	97	13	26	17
14	152	66	45	e57	67	76	34	72	76	23	20	17
15	154	54	44	51	116	76	34	84	47	24	17	19
16	106	50	77	54	112	73	41	82	79	20	26	21
17	74	47	85	81	e81	72	40	62	97	17	22	22
18	56	47	79	89	67	77	40	95	84	15	20	21
19	92	45	95	81	60	126	40	80	64	14	105	33
20	89	41	91	70	94	137	36	60	56	12	496	102
21	64	38	75	64	110	110	89	49	46	12	520	119
22	49	38	86	e60	99	92	226	40	36	12	408	81
23	49	39	93	e51	89	94	231	35	31	14	276	53
24	132	46	173	46	e72	105	169	31	28	14	167	44
25	163	47	268	e46	61	121	117	31	26	12	100	182
26	127	42	211	e40	56	121	86	31	24	12	63	451
27	86	37	142	37	53	118	72	35	21	31	49	416
28	65	36	102	45	51	122	63	110	19	36	39	288
29	56	35	88	47	---	120	54	90	16	25	35	188
30	48	34	97	52	---	108	84	63	25	19	31	122
31	43	---	150	100	---	94	---	101	---	16	32	---
TOTAL	1873	1537	3082	2071	2439	3870	2189	2963	1832	553	2712	2565
MEAN	60.4	51.2	99.4	66.8	87.1	125	73.0	95.6	61.1	17.8	87.5	85.5
MAX	163	120	268	159	155	270	231	254	217	36	520	451
MIN	15	31	29	37	51	50	34	31	16	12	11	17
CFSM	1.77	1.50	2.92	1.96	2.55	3.66	2.14	2.80	1.79	.52	2.57	2.51
IN.	2.04	1.68	3.36	2.26	2.66	4.22	2.39	3.23	2.00	.60	2.96	2.80

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1991, BY WATER YEAR (WY)

	MEAN	39.8	56.8	64.7	57.5	67.6	110	125	76.6	54.3	27.8	27.0	26.2
MAX	117	118	155	149	153	223	279	139	148	58.2	87.5	85.5	
(WY)	1980	1976	1974	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	6.06	
(WY)	1969	1979	1965	1981	1977	1965	1985	1965	1965	1966	1966	1965	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1965 - 1991

ANNUAL TOTAL	25613.9	27686	
ANNUAL MEAN	70.2	75.9	62.3
HIGHEST ANNUAL MEAN			90.0
LOWEST ANNUAL MEAN			30.2
HIGHEST DAILY MEAN	297	Feb 24	883
LOWEST DAILY MEAN	9.9	Aug 5	3.3
ANNUAL SEVEN-DAY MINIMUM	11	Jul 31	3.7
INSTANTANEOUS PEAK FLOW			948
INSTANTANEOUS PEAK STAGE			5.02
INSTANTANEOUS LOW FLOW			2.2
ANNUAL RUNOFF (CFSM)	2.06	2.22	1.83
ANNUAL RUNOFF (INCHES)	27.94	30.20	24.83
10 PERCENT EXCEEDS	159	153	135
50 PERCENT EXCEEDS	53	57	41
90 PERCENT EXCEEDS	15	17	11

CONNECTICUT RIVER BASIN

121

01166105 WHETSTONE BROOK AT DEPOT ROAD AT WENDELL DEPOT, MA

LOCATION.--Lat 42°35'39", long 72°21'41", Franklin County, Hydrologic Unit 01080202, on left bank at downstream side of bridge on Depot Road, 0.2 mi southwest of Wendell Depot, and 600 ft upstream from mouth.

DRAINAGE AREA.--5.22 mi².

PERIOD OF RECORD.--December 1985 to September 1991 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 470 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.6	5.4	6.2	e18	e14	7.6	7.9	29	8.3	3.2	1.5	2.3
2	e2.5	5.1	6.2	13	e12	35	7.3	18	5.8	2.6	1.4	1.9
3	e2.4	4.9	5.5	12	11	50	7.0	13	4.4	2.4	1.4	1.9
4	e2.4	4.7	33	e11	10	60	5.9	10	4.2	2.3	2.0	2.2
5	e3.0	4.6	25	e10	14	29	5.8	8.7	4.4	2.2	2.5	3.7
6	e2.8	11	15	9.6	17	25	6.0	34	4.3	2.2	2.1	3.6
7	e2.6	9.7	12	9.3	26	35	6.1	55	4.5	3.0	1.7	3.3
8	e2.5	7.5	11	e8.2	24	22	5.3	23	4.0	2.8	1.6	2.7
9	e2.6	6.3	9.4	e8.0	18	19	5.5	17	3.3	2.2	1.8	2.3
10	e3.1	64	8.7	e8.4	16	16	5.5	14	3.3	2.2	11	2.0
11	e2.9	57	7.9	e7.9	e12	13	5.2	12	3.4	2.2	4.9	1.8
12	e3.0	23	7.9	e10	e10	11	5.1	11	5.5	2.2	3.4	1.7
13	e5.0	15	7.4	e9.0	11	10	4.8	9.1	5.8	2.4	2.7	1.8
14	e27	12	e7.0	e8.4	17	10	4.9	8.6	4.4	3.3	2.4	1.9
15	e11	11	e8.3	e8.0	22	10	5.0	8.4	3.4	2.7	2.2	2.2
16	5.9	10	13	e10	e14	10	5.7	7.0	7.4	2.4	2.0	2.6
17	4.5	10	12	e15	e12	10	5.3	7.2	8.7	2.1	1.9	2.5
18	4.0	12	13	13	11	22	5.6	8.4	6.3	1.7	1.9	2.4
19	20	9.7	17	9.9	9.7	26	5.9	7.0	4.8	1.6	123	9.5
20	9.7	9.2	12	8.8	14	17	5.6	6.7	4.2	1.6	39	19
21	6.3	8.0	11	e7.9	14	13	31	5.5	3.5	1.6	42	13
22	5.2	7.9	14	e7.4	13	12	39	5.4	3.3	1.5	17	10
23	10	8.7	13	e7.2	e12	13	21	5.5	3.1	2.6	7.6	8.1
24	54	12	58	e7.0	e10	13	14	5.1	2.6	1.9	5.2	8.3
25	21	11	30	e6.8	8.5	14	12	4.9	2.3	1.6	3.9	137
26	12	8.8	18	e6.5	7.7	13	8.9	4.1	2.4	1.8	3.4	63
27	8.9	8.0	e14	e6.6	e7.4	13	6.9	4.0	2.3	2.3	2.9	28
28	7.8	7.5	13	e7.4	e7.0	13	6.5	4.9	2.2	2.1	2.5	16
29	7.0	7.1	13	e7.6	---	12	6.6	4.0	2.1	1.6	1.9	10
30	6.3	6.6	14	e8.0	---	9.9	22	4.7	3.3	1.6	2.1	9.3
31	5.8	---	26	e17	---	8.6	---	7.0	---	1.5	2.4	---
TOTAL	263.8	377.7	461.5	296.9	374.3	572.1	283.3	362.2	127.5	67.4	301.3	374.0
MEAN	8.51	12.6	14.9	9.58	13.4	18.5	9.44	11.7	4.25	2.17	9.72	12.5
MAX	54	64	58	18	26	60	39	55	8.7	3.3	123	137
MIN	2.4	4.6	5.5	6.5	7.0	7.6	4.8	4.0	2.1	1.5	1.4	1.7
CFSM	1.63	2.41	2.85	1.83	2.56	3.54	1.81	2.24	.81	.42	1.86	2.39
IN.	1.88	2.69	3.29	2.12	2.67	4.08	2.02	2.58	.91	.48	2.15	2.67

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1991, BY WATER YEAR (WY)

	MEAN	11.3	10.0	7.88	9.28	17.2	16.3	13.0	6.90	4.41	7.05	5.58
MAX	20.3	14.0	14.9	14.5	13.4	22.4	28.1	26.2	16.6	5.79	12.2	12.5
(WY)	1990	1990	1991	1986	1991	1990	1987	1989	1989	1989	1990	1991
MIN	2.69	6.85	5.64	4.74	3.17	7.06	9.44	4.48	3.50	2.17	1.43	1.34
(WY)	1987	1988	1990	1989	1987	1989	1991	1986	1988	1991	1987	1986

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1986 - 1991

ANNUAL TOTAL	4149.49	3862.0	
ANNUAL MEAN	11.4	10.6	
HIGHEST ANNUAL MEAN			9.94
LOWEST ANNUAL MEAN			11.7
HIGHEST DAILY MEAN	92	Mar 18	7.81
LOWEST DAILY MEAN	.99	Jul 20	7.81
ANNUAL SEVEN-DAY MINIMUM	1.2	Jul 30	.79
INSTANTANEOUS PEAK FLOW			.88
INSTANTANEOUS PEAK STAGE			513
INSTANTANEOUS LOW FLOW			11.44
ANNUAL RUNOFF (CFSM)	2.18		.79
ANNUAL RUNOFF (INCHES)	29.57		1.91
10 PERCENT EXCEEDS	25		25.88
50 PERCENT EXCEEDS	7.9		19
90 PERCENT EXCEEDS	2.4		6.2
			2.0

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 5 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.

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 National Geodetic Vertical Datum of 1929, 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, non-recording 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 except those for estimated daily discharges, which are poor. Flow regulated by powerplants and by Lake Monomonac 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	495	424	1480	742	547	707	1470	769	188	71	e300
2	179	457	380	1390	750	743	614	1470	781	186	65	e270
3	172	397	371	1350	696	1310	443	1300	609	160	72	e250
4	168	375	675	1050	624	2160	494	985	487	145	59	e240
5	168	364	1260	863	705	2560	550	859	406	137	81	228
6	57	434	1440	794	829	2460	1410	917	382	128	66	255
7	118	526	1230	683	1000	2460	888	1970	340	91	65	281
8	151	510	829	625	1320	2300	704	2200	319	103	64	277
9	152	488	727	e590	1380	1990	565	1880	274	98	70	244
10	142	753	670	e560	1190	1630	559	1570	255	88	e230	220
11	156	1810	719	e540	1110	1340	510	1170	242	78	e200	196
12	157	1390	604	e520	895	1120	475	944	329	81	e150	178
13	143	1190	501	e520	812	946	414	782	489	82	e110	173
14	674	1210	480	e520	733	882	391	667	504	112	84	172
15	734	889	465	e560	1020	835	385	602	431	133	79	178
16	686	754	599	e620	1020	798	397	574	484	84	90	198
17	535	682	696	736	1000	777	397	509	538	85	89	264
18	462	674	732	847	827	769	392	618	537	80	114	197
19	634	636	909	799	705	1090	393	646	490	93	e1000	225
20	652	569	893	718	768	1200	378	573	469	80	e2500	611
21	573	533	843	647	876	1140	573	528	411	88	e3000	745
22	526	489	884	536	891	1040	1350	461	371	80	e2900	598
23	512	533	922	551	853	1020	1700	402	305	80	e2600	484
24	1140	553	1860	e520	761	1000	1490	351	244	76	e2300	458
25	1410	554	2350	e480	700	1040	1370	322	199	88	e1900	1840
26	1410	524	2160	e450	619	956	947	306	202	69	e1300	3260
27	978	478	2050	e430	592	960	750	285	169	e95	e700	3500
28	799	429	1640	e410	559	984	660	500	157	e110	e500	3120
29	678	415	1300	e430	---	972	587	589	143	96	e400	2690
30	566	381	1140	449	---	888	769	525	149	98	e350	2110
31	538	---	1420	663	---	728	---	542	---	85	e320	---
TOTAL	15449	19492	31173	21331	23977	38645	21262	26517	11485	3197	21529	23762
MEAN	498	650	1006	688	856	1247	709	855	383	103	694	792
MAX	1410	1810	2350	1480	1380	2560	1700	2200	781	188	3000	3500
MIN	57	364	371	410	559	547	378	285	143	69	59	172

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1991, BY WATER YEAR (WY)

	MEAN	337	512	630	600	605	1179	1591	847	532	291	236	275
MAX	1622	1617	1683	1444	1894	3989	3584	1652	1932	1118	1052	3030	
(WY)	1976	1928	1974	1978	1984	1936	1940	1945	1984	1938	1928	1938	
MIN	74.0	79.7	143	69.5	132	362	443	288	92.5	61.7	52.6	43.2	
(WY)	1940	1965	1931	1981	1931	1989	1985	1965	1964	1966	1964	1964	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1916 - 1991
ANNUAL TOTAL	258594	257819	
ANNUAL MEAN	708	706	635
HIGHEST ANNUAL MEAN			1044
LOWEST ANNUAL MEAN			196
HIGHEST DAILY MEAN	3460	Mar 23	22000
LOWEST DAILY MEAN	57	Oct 6	8.0
ANNUAL SEVEN-DAY MINIMUM	102	Jul 16	35
INSTANTANEOUS PEAK FLOW			29000
INSTANTANEOUS PEAK STAGE		5.96	13.37
INSTANTANEOUS LOW FLOW		40	
10 PERCENT EXCEEDS	1470	1410	1490
50 PERCENT EXCEEDS	567	559	399
90 PERCENT EXCEEDS	145	107	105

CONNECTICUT RIVER BASIN

123

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 down-stream 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 current year.

REVISED RECORDS.--WDR MA-RI-78: 1977.

GAGE.--Water-stage recorder. Datum of gage is 745.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Somerset and Harriman Reservoirs (See table below) and by several powerplants upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	409	1100	457	1080	1090	1480	1020	1530	80	171	141	260
2	538	1050	362	1110	1030	1340	710	1430	114	98	147	116
3	460	1020	694	1060	1030	1510	597	1460	369	132	152	139
4	397	984	1000	1060	1050	1660	589	1350	172	178	143	277
5	716	1050	1180	1030	1090	1560	623	1340	204	184	99	97
6	283	1030	955	1040	1090	1310	713	1350	191	207	109	147
7	226	499	755	1040	1110	1120	1130	1520	169	176	109	142
8	389	522	692	1060	1140	1170	1130	1360	82	98	150	148
9	223	592	672	1100	1070	1030	1340	1350	78	106	259	231
10	373	1120	769	969	1070	288	1420	1390	284	107	151	157
11	642	1480	913	1160	1060	572	1290	1230	178	112	208	541
12	1060	1350	967	1010	1070	367	1080	1040	163	108	98	144
13	1140	1090	1040	976	1040	419	1090	1000	145	179	109	182
14	1060	1200	999	1080	1050	475	1030	725	143	178	109	528
15	1020	1060	755	1080	1090	589	1030	614	85	181	144	176
16	724	1110	427	1140	1040	358	1080	589	844	120	148	212
17	714	1040	798	1030	1030	147	1060	517	506	115	146	166
18	710	1010	1130	1120	1060	756	1070	202	190	186	338	185
19	890	1060	1040	1020	1070	956	1060	222	76	175	1050	275
20	234	802	795	1020	1070	555	977	356	152	178	570	403
21	266	798	1110	988	1060	704	1030	249	79	173	159	81
22	813	650	1140	1080	1100	738	1600	173	159	107	198	78
23	1150	745	1140	1030	1060	378	1480	147	184	101	167	289
24	1790	1070	1540	1090	1020	290	1470	82	163	181	178	442
25	1350	998	1480	1060	1100	600	1440	86	77	181	93	709
26	1370	1030	1300	982	1180	519	1380	80	78	194	184	375
27	1250	544	824	1020	1450	484	1350	161	156	190	94	204
28	1300	563	1040	1060	1640	759	1320	78	150	178	391	124
29	1270	545	1050	977	---	1220	1460	80	161	190	307	134
30	1180	738	1170	1050	---	975	1450	80	163	107	322	227
31	1060	---	1180	1090	---	1040	---	81	---	107	189	---
TOTAL	25007	27850	29374	32612	30960	25369	34019	21872	5595	4698	6662	7189
MEAN	807	928	948	1052	1106	818	1134	706	186	152	215	240
MAX	1790	1480	1540	1160	1640	1660	1600	1530	844	207	1050	709
MIN	223	499	362	969	1020	147	589	78	76	98	93	78
(†)	5700.0	5370.0	5957.0	4607.8	3499.6	4356.4	5574.5	5300.5	5528.2	5301.7	5547.5	5608.4

† Monthend contents, in millions of cubic feet, in Somerset and Harriman Reservoirs; records furnished by New England Power Co.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1991, BY WATER YEAR (WY)

	658	744	825	873	914	1044	1090	876	538	401	504	478
MEAN	658	744	825	873	914	1044	1090	876	538	401	504	478
MAX	1238	1233	1252	1502	1694	1993	2045	1934	1290	696	1630	957
(WY)	1978	1976	1976	1978	1981	1990	1987	1984	1989	1989	1976	1974
MIN	127	215	466	472	543	659	354	212	186	152	215	229
(WY)	1983	1981	1977	1977	1980	1980	1985	1987	1991	1991	1991	1982

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1974 - 1991

ANNUAL TOTAL	328559	251207	
ANNUAL MEAN	900	688	743
HIGHEST ANNUAL MEAN			1001
LOWEST ANNUAL MEAN			471
HIGHEST DAILY MEAN	4870	Mar 17	12000
LOWEST DAILY MEAN	85	Sep 13	28
ANNUAL SEVEN-DAY MINIMUM	121	Jul 30	86
INSTANTANEOUS PEAK FLOW			20900
INSTANTANEOUS PEAK STAGE			14.79
INSTANTANEOUS LOW FLOW			
10 PERCENT EXCEEDS	1490	1300	1300
50 PERCENT EXCEEDS	813	713	652
90 PERCENT EXCEEDS	217	113	142

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.

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Somerset Reservoir, since 1924 by Harriman Reservoir (See station 01168151), and by several powerplants upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	506	1160	730	1410	e1200	e1490	1270	1990	181	218	e170	e230
2	515	1100	655	1370	e1150	e1500	988	1790	155	132	e130	e120
3	506	1050	664	1280	e1150	e1900	900	1660	454	165	e170	e160
4	436	1070	510	1210	e1180	e2900	803	1520	236	211	e170	e320
5	675	1040	622	1190	e1250	e2100	827	1470	272	214	e140	e140
6	483	1170	1240	1180	e1400	e1700	893	1690	273	245	e94	e150
7	257	810	1670	1150	e1900	e1800	1320	2020	231	214	e110	e180
8	363	613	1300	1110	e1780	e1600	1300	1640	137	125	e190	e190
9	330	678	880	1180	e1580	e1280	1470	1560	127	132	e400	e270
10	404	1520	877	1080	e1400	e620	1540	1580	316	136	e250	170
11	499	2600	851	1190	e1210	e760	1400	1400	224	135	e220	357
12	1010	1710	850	1100	e1120	e580	1170	1220	247	142	e120	325
13	1320	1410	1060	1080	e1120	e600	1180	1130	246	214	e98	193
14	1460	1390	1040	1120	e1200	e600	1130	927	200	239	e120	448
15	1160	1220	1080	1120	e1150	e700	1100	761	131	209	e180	279
16	825	1250	1080	1250	e1080	e450	1180	728	801	146	e170	248
17	774	1180	1100	1300	e1050	e460	1150	676	680	132	e160	190
18	769	1160	1260	1270	e1090	e760	1220	496	272	208	e400	202
19	1360	1210	1440	1150	e1100	1370	1200	344	140	e200	e700	472
20	617	869	1010	1130	e1110	868	1070	533	203	e160	e1000	525
21	446	940	1300	1080	e1280	885	2040	371	121	e260	e580	164
22	762	935	1540	1100	e1180	954	2920	291	196	e100	e450	129
23	1320	663	1460	1110	e1100	797	1960	255	219	e130	e300	312
24	3990	1220	2330	1120	e1050	591	1740	166	192	e150	e270	434
25	1900	1070	1880	1100	e1120	933	1620	169	114	e150	e160	1330
26	1590	1060	1580	1020	e1200	793	1520	162	101	e170	e230	914
27	1420	1100	1030	1060	e1450	893	1480	240	178	e200	e130	482
28	1410	1130	1230	1110	e1490	1230	1420	166	177	e150	e320	284
29	1350	811	1270	1030	---	1670	1490	145	190	e130	e310	253
30	1290	587	1470	e1100	---	1370	1790	193	209	e110	e260	305
31	1120	---	1800	e1250	---	1290	---	273	---	e100	e250	---
TOTAL	30867	33726	36809	35950	35090	35444	41091	27566	7223	5227	8252	9776
MEAN	996	1124	1187	1160	1253	1143	1370	889	241	169	266	326
MAX	3990	2600	2330	1410	1900	2900	2920	2020	801	260	1000	1330
MIN	257	587	510	1020	1050	450	803	145	101	100	94	120

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1991, BY WATER YEAR (WY)

MEAN	603	835	979	967	985	1384	1860	1142	657	449	462	496
MAX	2766	2123	2026	2092	2450	3642	4106	2889	1686	1611	1886	2404
(WY)	1956	1956	1928	1978	1981	1921	1914	1943	1972	1915	1976	1938
MIN	90.8	177	133	363	268	429	561	314	188	78.1	131	74.0
(WY)	1915	1915	1915	1914	1919	1931	1985	1985	1941	1962	1964	1953

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1913 - 1991	
ANNUAL TOTAL	407010		307021		901	
ANNUAL MEAN	1115		841		1364	
HIGHEST ANNUAL MEAN					1928	
LOWEST ANNUAL MEAN					455	
HIGHEST DAILY MEAN	7110	Mar 18	3990	Oct 24	31100	Dec 31 1948
LOWEST DAILY MEAN	122	Aug 5	94	Aug 6	5.0	Jun 17 1921
ANNUAL SEVEN-DAY MINIMUM	137	Jul 30	137	Jul 28	34	Sep 19 1953
INSTANTANEOUS PEAK FLOW			6170	Oct 24	56300	Sep 21 1938
INSTANTANEOUS PEAK STAGE			6.65	Oct 24	20.17	Sep 21 1938
INSTANTANEOUS LOW FLOW			93	Jun 28		
10 PERCENT EXCEEDS	2020		1530		1690	
50 PERCENT EXCEEDS	992		877		680	
90 PERCENT EXCEEDS	273		153		182	

CONNECTICUT RIVER BASIN

125

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.

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	129	110	284	e190	125	258	556	94	50	18	e28
2	47	126	107	255	e160	263	240	375	68	40	15	e25
3	42	119	103	223	e140	496	233	287	54	39	15	e24
4	43	110	755	180	219	1460	229	257	49	37	17	e24
5	97	103	516	e175	333	774	250	212	62	34	17	e30
6	61	215	285	179	429	460	286	464	63	35	16	e23
7	48	180	234	155	569	742	291	682	53	37	14	20
8	42	144	209	101	581	469	265	368	45	38	12	18
9	42	125	189	126	422	333	265	287	42	34	10	17
10	42	976	178	147	344	270	262	261	42	29	73	16
11	45	1100	150	e140	270	232	219	222	42	20	43	17
12	53	475	146	140	e180	209	185	194	65	18	36	18
13	235	329	143	e145	e195	196	169	168	74	19	30	17
14	311	266	129	e130	194	190	160	152	46	54	24	21
15	145	250	e100	123	210	180	156	143	42	39	33	27
16	96	245	180	155	168	172	191	133	250	32	40	42
17	77	218	150	301	e150	177	154	119	173	25	33	30
18	73	211	204	226	e150	261	198	136	99	21	27	17
19	384	184	340	e170	149	504	169	106	71	17	617	158
20	175	168	236	e155	215	322	144	94	57	15	367	121
21	120	158	231	143	242	255	1190	85	45	13	361	53
22	100	148	460	e105	216	235	1690	77	42	12	185	37
23	200	181	395	e105	196	230	725	69	42	25	100	32
24	2110	195	1050	e120	e130	245	456	64	41	40	70	32
25	624	166	508	e110	e155	282	350	61	41	30	50	733
26	363	145	319	e100	140	276	285	57	39	25	e41	404
27	261	135	e240	e105	128	317	249	54	36	58	e36	201
28	216	133	207	106	119	528	219	60	33	39	e32	119
29	189	126	237	e98	---	505	197	51	35	32	e30	91
30	164	116	313	103	---	374	420	73	47	26	e28	76
31	149	---	531	274	---	289	---	164	---	22	e31	---
TOTAL	6606	7176	8955	4879	6594	11371	10105	6031	1892	955	2421	2471
MEAN	213	239	289	157	235	367	337	195	63.1	30.8	78.1	82.4
MAX	2110	1100	1050	301	581	1460	1690	682	250	58	617	733
MIN	42	103	100	98	119	125	144	51	33	12	10	16
CFSM	2.39	2.69	3.25	1.77	2.65	4.12	3.78	2.19	.71	.35	.88	.93
IN.	2.76	3.00	3.74	2.04	2.76	4.75	4.22	2.52	.79	.40	1.01	1.03

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	97.9	169	175	139	161	337	570	280	138	67.1	50.6	55.9
	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

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1940 - 1991
ANNUAL TOTAL	91468.9	69456	
ANNUAL MEAN	251	190	186
HIGHEST ANNUAL MEAN			299
LOWEST ANNUAL MEAN			79.9
HIGHEST DAILY MEAN	2550	Mar 17	8740
LOWEST DAILY MEAN	7.5	Aug 5	5.1
ANNUAL SEVEN-DAY MINIMUM	12	Jul 30	6.3
INSTANTANEOUS PEAK FLOW			14200
INSTANTANEOUS PEAK STAGE			11.19
INSTANTANEOUS LOW FLOW			
ANNUAL RUNOFF (CFSM)	2.82	2.14	2.09
ANNUAL RUNOFF (INCHES)	38.23	29.03	28.44
10 PERCENT EXCEEDS	539	388	428
50 PERCENT EXCEEDS	150	143	91
90 PERCENT EXCEEDS	37	27	20

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.

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 National Geodetic Vertical Datum of 1929, 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 powerplant upstream since April 1982.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	45	41	81	e54	51	65	131	21	10	e3.7	8.9
2	14	43	40	e70	e49	108	63	86	17	7.7	e3.4	7.7
3	13	42	38	e62	e47	125	58	71	15	7.5	e3.6	7.5
4	14	39	192	e62	e54	346	56	63	14	7.4	e5.2	7.3
5	24	38	102	e61	e86	151	55	57	17	6.9	e6.2	12
6	16	74	69	e56	e120	106	54	220	17	7.8	e4.4	9.4
7	14	50	62	50	170	165	51	182	15	7.8	e3.9	8.2
8	13	44	58	e49	120	103	49	98	13	8.4	e3.8	7.6
9	13	41	54	e46	93	83	49	81	13	6.8	6.9	7.3
10	13	322	52	e43	79	76	46	88	11	5.9	41	6.6
11	15	189	47	e41	66	69	46	74	13	5.5	11	6.5
12	17	108	45	e40	54	65	43	64	22	5.2	7.4	6.3
13	75	84	46	e39	e58	62	38	57	15	6.2	6.3	5.8
14	96	73	42	e38	e63	61	37	52	12	9.8	5.5	7.9
15	37	71	51	e38	e80	62	39	50	11	6.6	5.1	8.6
16	27	68	65	e50	e62	61	45	44	21	5.6	5.9	9.9
17	24	69	55	e85	e58	64	37	43	28	4.8	5.5	8.0
18	24	78	84	e80	e52	96	50	54	16	e4.4	5.1	6.8
19	84	64	89	e58	e54	130	41	40	15	e4.2	362	57
20	36	57	60	e51	e70	84	36	36	14	e4.3	83	43
21	29	54	65	e47	79	69	453	33	11	e4.4	88	18
22	27	51	85	e45	84	84	347	30	10	e3.7	42	14
23	101	64	69	e52	65	90	143	27	9.7	e4.3	25	12
24	523	71	167	e43	53	96	104	24	9.3	e4.1	18	12
25	112	57	85	e39	58	106	88	23	8.6	e3.7	15	257
26	81	50	70	e37	49	91	77	21	8.1	e5.2	12	109
27	66	47	e60	e36	45	96	71	20	7.4	e7.6	12	54
28	60	47	e66	e35	45	103	64	24	7.1	e5.6	11	36
29	56	45	e67	e35	---	84	60	20	6.5	e4.3	9.7	29
30	52	42	93	e36	---	76	132	23	11	e4.0	9.2	24
31	48	---	150	e90	---	68	---	30	---	e3.8	9.1	---
TOTAL	1742	2127	2269	1595	1967	3031	2497	1866	408.7	183.5	829.9	807.3
MEAN	56.2	70.9	73.2	51.5	70.2	97.8	83.2	60.2	13.6	5.92	26.8	26.9
MAX	523	322	192	90	170	346	453	220	28	10	362	257
MIN	13	38	38	35	45	51	36	20	6.5	3.7	3.4	5.8
CFSM	2.33	2.94	3.04	2.13	2.91	4.06	3.45	2.50	.57	.25	1.11	1.12
IN.	2.69	3.28	3.50	2.46	3.04	4.68	3.85	2.88	.63	.28	1.28	1.25

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1991, BY WATER YEAR (WY)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	27.6	47.8	52.2	43.8	54.9	95.7	129	75.1	47.5	21.7	18.5	16.8														
MAX	85.5	109	142	116	163	179	236	171	144	60.0	57.0	65.1														
(WY)	1976	1978	1974	1978	1981	1979	1987	1984	1982	1972	1975	1975														
MIN	6.22	11.0	13.9	7.27	14.1	32.3	32.6	26.0	12.6	5.92	4.86	4.27														
(WY)	1983	1983	1983	1981	1980	1967	1985	1985	1985	1991	1981	1980														

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1966 - 1991

ANNUAL TOTAL	23566.1	19323.4	
ANNUAL MEAN	64.6	52.9	
HIGHEST ANNUAL MEAN			52.6
LOWEST ANNUAL MEAN			76.9
HIGHEST DAILY MEAN	554	Mar 20	21.5
LOWEST DAILY MEAN	5.6	Aug 4	1570
ANNUAL SEVEN-DAY MINIMUM	6.8	Jul 30	2.5
INSTANTANEOUS PEAK FLOW			2.8
INSTANTANEOUS PEAK STAGE			5750
INSTANTANEOUS LOW FLOW			10.16
ANNUAL RUNOFF (CFSM)	2.68	2.20	2.5
ANNUAL RUNOFF (INCHES)	36.38	29.83	2.18
10 PERCENT EXCEEDS	129	96	29.65
50 PERCENT EXCEEDS	45	45	111
90 PERCENT EXCEEDS	14	6.5	29
			7.3

CONNECTICUT RIVER BASIN

127

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: Water years 1953, 1967-70.

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

GAGE.--Water-stage recorder. Elevation of gage is 155 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 16, 1905, nonrecording gage at site 1.5 mi downstream at different datum.

REMARKS.--Records good. Flow regulated since 1913 by Somerset Reservoir, since 1924 by Harriman Reservoir (See station 01168151), and by several powerplants upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	57	52	122	e90	e56	121	237	100	28	9.2	16
2	18	54	52	113	e72	e120	114	176	52	19	9.4	14
3	15	52	50	105	e64	e230	110	143	40	18	9.9	13
4	17	50	292	e85	e74	e500	105	128	37	17	11	13
5	29	49	216	e80	e150	e320	108	114	40	16	11	15
6	23	92	129	e80	e190	e190	131	191	44	17	8.6	13
7	19	80	106	e70	e250	e290	133	264	35	18	7.6	13
8	17	67	94	e60	e260	e190	125	171	30	18	7.0	11
9	16	59	87	e64	e190	e140	118	141	25	17	8.4	10
10	16	339	79	e70	e160	e120	119	129	24	14	36	9.6
11	18	395	68	e66	e130	e105	105	117	23	13	21	9.2
12	21	190	65	e64	e82	e96	87	103	37	13	14	7.7
13	106	134	65	e63	e88	e92	78	90	36	14	11	7.3
14	108	111	62	e60	e90	e88	74	80	27	31	9.5	7.9
15	e55	99	59	e58	e95	e84	66	77	25	20	19	10
16	e40	96	84	e70	e76	e80	78	69	124	15	23	15
17	e31	87	70	e130	e68	e82	66	64	96	13	14	12
18	e28	84	79	e105	e69	e110	81	70	56	12	12	9.7
19	e130	78	120	e80	e70	e190	79	59	42	11	282	73
20	61	73	99	e72	e98	e130	65	55	35	9.9	154	51
21	48	69	96	e66	e110	118	699	51	29	8.7	166	27
22	38	65	183	e48	e98	111	684	45	25	8.9	90	19
23	65	72	180	e49	e90	109	303	42	24	23	47	17
24	607	79	432	e54	e60	108	208	41	22	19	34	17
25	211	73	224	e50	e70	108	177	38	21	12	27	265
26	132	65	149	e47	e66	109	150	38	19	13	23	170
27	99	60	104	e48	e60	121	134	36	18	30	20	94
28	85	60	104	e48	e55	196	122	36	18	19	18	58
29	75	58	104	e46	---	217	116	33	15	14	17	47
30	67	55	116	e47	---	169	198	43	28	12	15	40
31	62	---	194	e120	---	130	---	64	---	10	17	---
TOTAL	2276	2902	3814	2240	2975	4709	4754	2945	1147	503.5	1151.6	1084.4
MEAN	73.4	96.7	123	72.3	106	152	158	95.0	38.2	16.2	37.1	36.1
MAX	607	395	432	130	260	500	699	264	124	31	282	265
MIN	15	49	50	46	55	56	65	33	15	8.7	7.0	7.3
CFSM	1.77	2.34	2.97	1.75	2.57	3.67	3.83	2.29	.92	.39	.90	.87
IN.	2.05	2.61	3.43	2.01	2.67	4.23	4.27	2.65	1.03	.45	1.03	.97

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1991, BY WATER YEAR (WY)

	MEAN	48.7	83.2	86.1	67.6	86.8	168	255	137	74.1	38.3	28.2	25.2
MAX	190	203	198	178	277	355	442	287	188	105	80.4	92.2	
(WY)	1976	1970	1974	1978	1981	1979	1969	1984	1973	1973	1969	1975	
MIN	11.4	17.8	27.9	11.6	18.1	53.2	80.1	42.1	24.9	13.2	9.62	6.55	
(WY)	1983	1979	1983	1981	1980	1971	1981	1986	1985	1971	1968	1983	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1968 - 1991
ANNUAL TOTAL	39869.3	30501.5	
ANNUAL MEAN	109	83.6	91.3
HIGHEST ANNUAL MEAN			136
LOWEST ANNUAL MEAN			44.4
HIGHEST DAILY MEAN	1040	699	2420
LOWEST DAILY MEAN	6.5	7.0	3.3
ANNUAL SEVEN-DAY MINIMUM	7.6	8.8	3.6
INSTANTANEOUS PEAK FLOW		1920	4560
INSTANTANEOUS PEAK STAGE		6.02	8.87
INSTANTANEOUS LOW FLOW		6.5	1.9
ANNUAL RUNOFF (CFSM)	2.64	2.02	2.21
ANNUAL RUNOFF (INCHES)	35.82	27.41	29.97
10 PERCENT EXCEEDS	243	176	211
50 PERCENT EXCEEDS	71	65	49
90 PERCENT EXCEEDS	16	13	12

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.

REVISED RECORDS.--WDR MA-NH-RI-VT-71-1: 1968(M), 1969.

GAGE.--Water-stage recorder. Elevation of gage is 435 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	57	52	122	e90	e56	121	237	100	28	9.2	16
2	18	54	52	113	e72	e120	114	176	52	19	9.4	14
3	15	52	50	105	e64	e230	110	143	40	18	9.9	13
4	17	50	292	e85	e74	e500	105	128	37	17	11	13
5	29	49	216	e80	e150	e320	108	114	40	16	11	15
6	23	92	129	e80	e190	e190	131	191	44	17	8.6	13
7	19	80	106	e70	e250	e290	133	264	35	18	7.6	13
8	17	67	94	e60	e260	e190	125	171	30	18	7.0	11
9	16	59	87	e64	e190	e140	118	141	25	17	8.4	10
10	16	339	79	e70	e160	e120	119	129	24	14	36	9.6
11	18	395	68	e66	e130	e105	105	117	23	13	21	9.2
12	21	190	65	e64	e82	e96	87	103	37	13	14	7.7
13	106	134	65	e63	e88	e92	78	90	36	14	11	7.3
14	108	111	62	e60	e90	e88	74	80	27	31	9.5	7.9
15	e55	99	59	e58	e95	e84	66	77	25	20	19	10
16	e40	96	84	e70	e76	e80	78	69	124	15	23	15
17	e31	87	70	e130	e68	e82	66	64	96	13	14	12
18	e28	84	79	e105	e69	e110	81	70	56	12	12	9.7
19	e130	78	120	e80	e70	e190	79	59	42	11	282	73
20	61	73	99	e72	e98	e130	65	55	35	9.9	154	51
21	48	69	96	e66	e110	118	699	51	29	8.7	166	27
22	38	65	183	e48	e98	111	684	45	25	8.9	90	19
23	65	72	180	e49	e90	109	303	42	24	23	47	17
24	607	79	432	e54	e60	108	208	41	22	19	34	17
25	211	73	224	e50	e70	108	177	38	21	12	27	265
26	132	65	149	e47	e66	109	150	38	19	13	23	170
27	99	60	104	e48	e60	121	134	36	18	30	20	94
28	85	60	104	e48	e55	196	122	36	18	19	18	58
29	75	58	104	e46	---	217	116	33	15	14	17	47
30	67	55	116	e47	---	169	198	43	28	12	15	40
31	62	---	194	e120	---	130	---	64	---	10	17	---
TOTAL	2276	2902	3814	2240	2975	4709	4754	2945	1147	503.5	1151.6	1084.4
MEAN	73.4	96.7	123	72.3	106	152	158	95.0	38.2	16.2	37.1	36.1
MAX	607	395	432	130	260	500	699	264	124	31	282	265
MIN	15	49	50	46	55	56	65	33	15	8.7	7.0	7.3
CFSM	1.77	2.34	2.97	1.75	2.57	3.67	3.83	2.29	.92	.39	.90	.87
IN.	2.05	2.61	3.43	2.01	2.67	4.23	4.27	2.65	1.03	.45	1.03	.97

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1991, BY WATER YEAR (WY)

	MEAN	190	83.2	86.1	67.6	86.8	168	255	137	74.1	38.3	28.2	25.2
MAX	190	203	198	178	277	355	442	287	188	105	80.4	92.2	
(WY)	1976	1970	1974	1978	1981	1979	1969	1984	1973	1973	1969	1975	
MIN	11.4	17.8	27.9	11.6	18.1	53.2	80.1	42.1	24.9	13.2	9.62	6.55	
(WY)	1983	1979	1983	1981	1980	1971	1981	1986	1985	1971	1968	1983	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1968 - 1991

ANNUAL TOTAL	39869.3	30501.5	91.3
ANNUAL MEAN	109	83.6	136
HIGHEST ANNUAL MEAN			44.4
LOWEST ANNUAL MEAN			2420
HIGHEST DAILY MEAN	1040	Apr 4	699
LOWEST DAILY MEAN	6.5	Aug 5	7.0
ANNUAL SEVEN-DAY MINIMUM	7.6	Jul 30	8.8
INSTANTANEOUS PEAK FLOW			1920
INSTANTANEOUS PEAK STAGE			6.02
INSTANTANEOUS LOW FLOW			6.5
ANNUAL RUNOFF (CFSM)	2.64	2.02	1.9
ANNUAL RUNOFF (INCHES)	35.82	27.41	2.21
10 PERCENT EXCEEDS	243	176	211
50 PERCENT EXCEEDS	71	65	49
90 PERCENT EXCEEDS	16	13	12

CONNECTICUT RIVER BASIN

129

01170500 CONNECTICUT RIVER AT MONTAGUE CITY, MA

LOCATION.--Lat 42°34'48", 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.--March 1904 to current year. Prior to October 1929, published as "at Sunderland." Records published for both sites October 1929 to September 1932.

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 National Geodetic Vertical Datum of 1929. 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. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7810	16100	16900	34600	13500	12800	24500	29400	8200	3210	4270	6500
2	8340	16100	13900	28000	11100	12700	19000	28100	7860	3640	2340	5500
3	7530	15500	17500	27200	11500	16100	20400	24700	10000	3890	2340	5250
4	7660	8560	20800	20300	11700	39500	19000	21800	10900	3870	2400	6710
5	8870	13600	31000	16700	13200	47500	19200	20000	10600	3260	2440	4760
6	10800	15300	30800	18600	14400	44600	21200	21000	6930	2620	2390	6800
7	8700	18200	24600	15900	17900	37700	29200	34100	6780	2710	4190	3660
8	6610	15900	19800	15100	24400	42400	32700	30600	4890	2830	3070	3050
9	8410	14700	15200	14800	21100	31300	37500	28400	3800	2660	2960	3140
10	9480	17900	13700	13700	17600	24300	38900	24600	6640	2900	4570	5140
11	9550	46200	14600	12800	16500	18300	39500	22000	6920	5230	3430	3610
12	12300	46400	17300	13200	16300	21100	40500	17600	6770	4020	5070	3810
13	16000	37200	13400	12700	16100	20500	36700	16500	5970	2260	6500	3800
14	23500	30100	14900	11600	15100	18900	29800	17600	5060	2310	5840	3570
15	28900	21800	14200	11700	13600	17700	26300	13000	5090	3170	5910	3470
16	27300	22200	9640	14000	13600	15800	22500	14500	7210	2310	4690	5770
17	22900	20400	11700	19200	12500	15300	23200	14800	9340	3560	2980	7390
18	19200	26600	15700	18900	11500	17700	22100	10300	9430	4110	5000	7280
19	16000	30500	16700	16600	12200	25100	24000	9940	9200	4990	15700	8970
20	19400	26500	18500	11800	15000	23600	21000	9510	9190	3300	22700	10800
21	18400	21000	21100	12900	14800	20100	22700	10800	8490	2800	13800	10100
22	15200	18900	20900	14600	15800	18600	51200	12000	4530	3040	19800	4900
23	22100	18700	32200	13000	14500	19200	53800	9140	3180	3510	13700	6030
24	40400	18400	54600	11100	14200	13400	43800	6940	4900	3300	6820	8380
25	59500	14700	74200	12700	11900	17600	31900	6530	4270	3340	6420	17400
26	49900	16100	63200	11700	13900	16800	26100	4370	4230	3430	8160	24000
27	37900	15900	49000	8300	14500	17200	22200	4210	3900	3870	6210	22800
28	30300	16900	35700	10200	14400	20600	20700	10900	6360	2310	7740	18500
29	27700	17900	25100	12100	---	35200	21500	10200	3250	2200	8900	10700
30	23800	15900	26300	11900	---	33100	21000	8480	2960	2220	8010	12400
31	16300	---	31800	11600	---	25400	---	8620	---	5360	6330	---
TOTAL	620760	634160	784940	477500	412800	740100	862100	500640	196850	102230	214680	244190
MEAN	20020	21140	25320	15400	14740	23870	28740	16150	6562	3298	6925	8140
MAX	59500	46400	74200	34600	24400	47500	53800	34100	10900	5360	22700	24000
MIN	6610	8560	9640	8300	11100	12700	19000	4210	2960	2200	2340	3050

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1991, BY WATER YEAR (WY)

	MEAN	8401	12250	12340	10640	10400	20810	38830	23610	11430	6554	5543	5957
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	18620	8080	4270	2250	2412	1834	
(WY)	1909	1909	1911	1905	1905	1940	1946	1941	1964	1911	1965	1908	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1904 - 1991

ANNUAL TOTAL	7271420	5790950	
ANNUAL MEAN	19920	15870	13890
HIGHEST ANNUAL MEAN			20680
LOWEST ANNUAL MEAN			6768
HIGHEST DAILY MEAN	87500	Mar 18	233000
LOWEST DAILY MEAN	2170	Jul 22	215
ANNUAL SEVEN-DAY MINIMUM	4720	Sep 3	1300
INSTANTANEOUS PEAK FLOW			236000
INSTANTANEOUS PEAK STAGE			27.88
INSTANTANEOUS LOW FLOW			49.20
10 PERCENT EXCEEDS	39600	30700	31800
50 PERCENT EXCEEDS	16100	14200	8870
90 PERCENT EXCEEDS	6320	3540	3000

CONNECTICUT RIVER BASIN

01171300 FORT RIVER NEAR AMHERST, MA

LOCATION.--Lat 42°21'30", long 72°30'23", Hampshire County, Hydrologic Unit 01080201, on left bank 400 ft downstream from Southeast Street Bridge, 600 ft downstream from Hop Brook, and 1.3 mi southeast of Amherst.

DRAINAGE AREA.--36.3 mi², excludes 5.16 mi², drained by Nurse and Dean Brooks, flow of which is diverted from basin.

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

Water-quality records: Water years 1971, 1973.

REVISED RECORDS.--WDR MA-RI-84-1: 1968-69(M), 1970(P), 1974-77(M), 1979(M), 1980(P), 1983(M), drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 147 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 10, 1974, at site 400 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diversions upstream for municipal supply of Amherst.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in March 1936 and September 1938 reached discharges of 2,360 ft³/s and 1,640 ft³/s, respectively, by computation of flow over dam 1.2 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	39	36	133	103	56	69	161	86	20	9.0	22
2	15	38	35	100	e77	128	67	107	59	17	7.6	20
3	13	36	34	83	66	186	64	79	46	16	8.1	18
4	13	34	164	70	77	381	58	66	41	15	11	18
5	19	32	254	66	87	262	54	57	40	14	16	27
6	19	58	125	62	103	155	53	115	40	14	11	25
7	16	63	85	61	158	206	51	413	42	15	8.9	20
8	15	52	70	57	179	163	48	183	39	15	7.8	18
9	16	44	63	51	127	114	47	116	31	14	11	17
10	19	100	58	52	104	92	47	112	28	12	58	15
11	21	350	52	e51	84	83	45	100	27	11	37	15
12	17	162	49	52	74	76	44	82	30	10	19	13
13	e60	96	46	55	68	72	41	69	39	11	14	12
14	e250	73	44	e52	90	71	42	61	33	15	12	16
15	e170	62	41	51	137	78	42	60	27	13	11	18
16	e60	57	91	56	102	80	51	53	35	11	19	21
17	e39	53	94	100	90	82	46	54	50	9.5	15	17
18	32	57	107	87	72	90	43	83	39	8.7	18	14
19	104	52	143	76	67	160	41	66	32	8.3	222	38
20	76	47	99	67	94	121	39	52	33	8.5	375	117
21	51	44	79	62	98	91	141	45	27	7.4	277	75
22	40	41	105	e49	85	89	299	40	23	7.2	160	41
23	52	49	96	e47	73	115	163	36	22	11	86	28
24	281	74	312	48	62	149	102	33	20	9.1	55	28
25	189	67	284	e44	59	165	78	32	18	7.8	41	645
26	105	55	144	e37	54	124	65	30	17	11	33	604
27	74	48	100	40	52	103	58	79	16	23	29	262
28	58	45	86	42	50	98	51	284	15	17	27	128
29	54	44	82	43	---	87	48	113	14	12	24	87
30	48	40	104	47	---	79	108	74	18	10	22	72
31	43	---	202	130	---	73	---	105	---	9.5	22	---
TOTAL	1983	2012	3284	1971	2492	3829	2105	2960	987	383.0	1666.4	2451
MEAN	64.0	67.1	106	63.6	89.0	124	70.2	95.5	32.9	12.4	53.8	81.7
MAX	281	350	312	133	179	381	299	413	86	23	375	645
MIN	13	32	34	37	50	56	39	30	14	7.2	7.6	12

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1991, BY WATER YEAR (WY)

	MEAN	40.8	52.8	68.0	66.8	79.3	124	117	81.9	50.9	25.7	27.2	25.2
MAX	136	124	132	149	184	212	220	192	152	74.8	86.7	106	
(WY)	1990	1976	1974	1976	1976	1979	1983	1989	1972	1972	1969	1975	
MIN	6.94	9.68	13.3	5.80	21.2	43.6	34.6	27.4	14.3	10.5	4.40	5.75	
(WY)	1981	1979	1981	1981	1980	1989	1985	1986	1988	1971	1966	1978	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1966 - 1991

ANNUAL TOTAL	27741.9												
ANNUAL MEAN	76.0												
HIGHEST ANNUAL MEAN										63.3			
LOWEST ANNUAL MEAN										89.0			1976
HIGHEST DAILY MEAN	623	Aug 11				645	Sep 25			29.5			1981
LOWEST DAILY MEAN	7.3	Aug 5				7.2	Jul 22			1580	May 30		1984
ANNUAL SEVEN-DAY MINIMUM	8.1	Jul 30				8.5	Jul 19			2.1	Sep 2		1966
INSTANTANEOUS PEAK FLOW						1420	Sep 25			3.1	Aug 28		1966
INSTANTANEOUS PEAK STAGE						8.07	Sep 25			2100	Mar 6		1979
INSTANTANEOUS LOW FLOW						6.7	Jul 22			9.94	Mar 6		1979
10 PERCENT EXCEEDS	173					143				1.9	Sep 3		1966
50 PERCENT EXCEEDS	55					52				135			
90 PERCENT EXCEEDS	16					14				37			
										10			

CONNECTICUT RIVER BASIN

131

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.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Prior to 1956, flow regulated by mill upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	87	77	174	e105	92	122	235	87	22	8.1	15
2	23	83	75	150	e95	179	117	157	59	17	7.5	12
3	20	78	73	135	93	222	109	124	48	16	8.1	12
4	22	74	342	118	e120	594	104	109	44	15	12	12
5	35	71	244	108	e160	325	100	99	48	15	14	20
6	26	136	149	114	e175	210	98	341	47	16	10	18
7	22	113	128	105	295	329	93	488	41	17	8.7	14
8	21	90	117	83	244	223	88	215	36	18	8.1	12
9	21	80	110	e86	188	172	85	169	31	15	12	12
10	22	414	104	e82	166	153	82	191	28	13	83	11
11	47	464	93	e80	142	140	76	164	26	12	25	11
12	44	215	89	e78	107	130	68	136	32	11	15	9.7
13	166	164	89	e76	114	124	67	118	36	13	12	7.1
14	231	142	84	e75	141	123	67	106	27	21	10	9.6
15	101	133	76	e74	190	126	68	103	24	15	11	13
16	71	127	133	e100	120	122	84	88	31	12	15	15
17	45	122	126	e170	114	128	70	87	58	11	11	12
18	46	147	161	139	105	163	74	114	37	9.7	11	10
19	154	120	185	111	108	319	69	84	34	9.3	308	52
20	79	107	127	99	160	181	62	73	35	9.2	241	85
21	57	101	120	94	155	146	550	66	27	9.7	189	37
22	49	95	162	76	150	156	673	59	24	7.9	103	26
23	115	119	140	e100	142	191	291	54	23	9.7	55	22
24	1070	151	377	e85	103	201	196	50	21	9.2	39	22
25	274	121	214	e75	107	226	163	48	19	8.1	31	341
26	180	103	155	e68	99	180	140	43	18	12	26	253
27	143	93	125	e70	95	171	128	66	17	17	23	126
28	127	91	131	e70	87	180	115	174	15	12	21	71
29	111	88	133	e69	---	156	106	72	14	9.5	18	52
30	100	81	156	e68	---	141	219	86	20	8.9	17	43
31	93	---	303	e170	---	129	---	174	---	8.4	17	---
TOTAL	3542	4010	4598	3102	3880	5932	4284	4093	1007	399.6	1369.5	1355.4
MEAN	114	134	148	100	139	191	143	132	33.6	12.9	44.2	45.2
MAX	1070	464	377	174	295	594	673	488	87	22	308	341
MIN	20	71	73	68	87	92	62	43	14	7.9	7.5	7.1
CFSM	2.12	2.48	2.75	1.85	2.57	3.54	2.64	2.45	.62	.24	.82	.84
IN.	2.44	2.76	3.17	2.14	2.67	4.09	2.95	2.82	.69	.28	.94	.93

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1991, BY WATER YEAR (WY)

	MEAN	52.9	85.1	95.8	86.1	103	192	233	134	77.3	38.1	34.9	33.3
MAX	456	334	227	287	338	475	471	326	300	125	254	150	
(WY)	1956	1956	1974	1978	1981	1953	1940	1984	1982	1973	1955	1975	
MIN	8.52	13.2	23.9	15.5	24.1	63.9	53.5	45.9	15.9	9.13	4.96	5.48	
(WY)	1965	1965	1947	1981	1940	1989	1985	1985	1964	1957	1957	1957	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1939 - 1991
ANNUAL TOTAL	44711.3	37572.5	
ANNUAL MEAN	122	103	96.9
HIGHEST ANNUAL MEAN			152
LOWEST ANNUAL MEAN			39.1
HIGHEST DAILY MEAN	1070	1070	3870
LOWEST DAILY MEAN	8.4	7.1	4.2
ANNUAL SEVEN-DAY MINIMUM	11	8.9	4.3
INSTANTANEOUS PEAK FLOW		1870	6300
INSTANTANEOUS PEAK STAGE		5.92	11.78
INSTANTANEOUS LOW FLOW		6.7	2.2
ANNUAL RUNOFF (CFSM)	2.27	1.91	1.80
ANNUAL RUNOFF (INCHES)	30.80	25.88	24.39
10 PERCENT EXCEEDS	241	191	216
50 PERCENT EXCEEDS	96	87	54
90 PERCENT EXCEEDS	26	12	14

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, 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 43.28 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by powerplants, by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs and other reservoirs, combined usable capacity, about 44 billion ft³. Records do not include water diverted around gage by Holyoke Water Power Co. for industrial use.

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.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5500	12200	11000	29700	12900	e9200	20600	23000	7020	2300	4840	4150
2	6880	12100	10900	e24000	10900	9910	19500	26000	7380	2360	2130	3850
3	4860	12100	9510	e20000	e9600	12600	16400	23100	9000	2570	1960	3610
4	4560	9770	13700	e17000	11100	27400	17200	20700	9050	3600	1970	4310
5	5520	8460	24900	e15000	12000	44300	16900	17700	8750	2760	1960	3700
6	6760	9770	26700	e14000	10400	44400	16800	17600	7490	2110	1950	4960
7	6520	13400	22000	e12500	14200	36200	23700	28500	6130	2090	2050	2810
8	4830	11100	16900	e11500	19500	37600	26600	30400	4400	2300	3970	2330
9	4950	10700	12500	e11000	20400	33900	32500	26100	3910	2260	2060	2270
10	6980	10200	9440	e10500	16900	22300	34200	24000	4390	2050	4130	2320
11	6550	33900	9870	e10000	14500	19800	35600	20600	5280	2890	3570	3810
12	7300	43400	11500	e11000	e13500	16700	35700	17000	5390	3990	3120	2820
13	9700	36000	11500	e10700	e12500	19000	34500	14600	5940	2900	4680	2580
14	14700	29600	10300	e10300	e11500	17500	28800	14200	4470	2290	5420	2310
15	23200	19700	10800	e10000	e10500	15800	25000	13100	3760	2150	5270	2550
16	22900	16500	9680	e9500	e10000	14400	19800	11000	5550	2100	3820	2750
17	19900	16200	6980	14900	e9300	13300	20000	11900	8130	1880	3780	4470
18	15200	19400	10600	16800	e8500	13400	20400	10700	8740	2760	2660	4750
19	13600	25400	11600	16000	e8200	20900	19900	10700	7270	3800	9100	4260
20	13100	22100	11800	12000	11000	21800	19400	8060	8150	3280	19800	5400
21	14900	19700	14800	9740	12800	19800	18200	8310	7400	2480	11700	8290
22	11600	14600	15400	12600	12900	17000	41400	9550	5500	1890	12500	4930
23	13400	13700	22100	10600	e12000	17200	54200	8780	2900	2700	12400	3890
24	29400	14900	41100	e10000	e11300	14200	46000	6220	4200	2560	7110	4460
25	52000	12100	70400	e9500	e10500	13600	32700	5880	3430	2430	4130	10000
26	52100	11300	66400	e9000	e9800	15900	24900	4620	2620	2970	6980	18300
27	39100	11600	e50000	e8800	e9600	14400	22700	3500	3010	3020	5070	17100
28	29800	10800	e32000	e8600	e9400	16600	19800	7710	5160	2780	4350	15200
29	24100	11100	e22500	11100	---	26500	18600	9410	2620	1940	6520	8720
30	20400	12600	e20000	11500	---	31900	18900	7860	2290	1850	5710	7030
31	16200	---	25300	11300	---	26300	---	8390	---	2860	5650	---
TOTAL	506510	504400	642180	399140	335700	663810	780900	449190	169330	79920	170360	167930
MEAN	16340	16810	20720	12880	11990	21410	26030	14490	5644	2578	5495	5598
MAX	52100	43400	70400	29700	20400	44400	54200	30400	9050	3990	19800	18300
MIN	4560	8460	6980	8600	8200	9200	16400	3500	2290	1850	1950	2270

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1991, BY WATER YEAR (WY)

MEAN	9503	12170	10660	7698	10320	18930	31060	17530	11450	5776	6237	5192
MAX	16340	16810	20720	12880	21890	34660	50380	31900	31100	8595	14780	8601
(WY)	1991	1991	1991	1991	1984	1990	1987	1989	1984	1984	1990	1987
MIN	1512	3540	5787	4760	4250	9579	15650	7366	4088	2578	2718	1378
(WY)	1985	1985	1985	1989	1987	1989	1985	1987	1988	1991	1985	1984

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1984 - 1991
ANNUAL TOTAL	6028600	4869370	
ANNUAL MEAN	16520	13340	11640
HIGHEST ANNUAL MEAN			15310
LOWEST ANNUAL MEAN			6580
HIGHEST DAILY MEAN	85900	Mar 18	145000
LOWEST DAILY MEAN	2110	Jul 22	519
ANNUAL SEVEN-DAY MINIMUM	3870	Sep 4	707
INSTANTANEOUS PEAK FLOW			153000
INSTANTANEOUS PEAK STAGE		15.61	25.62
10 PERCENT EXCEEDS	32900	26500	26700
50 PERCENT EXCEEDS	12100	10900	7950
90 PERCENT EXCEEDS	4910	2730	2870

CONNECTICUT RIVER BASIN

133

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 year 1957.

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records 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. Maximum discharge since construction of Barre Falls Reservoir in 1958, 1,300 ft³/s, Oct. 23, 1989, gage height, 5.30 ft; maximum gage height, 5.62 ft, Mar. 14, 1979.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	94	72	236	105	90	127	330	96	26	21	40
2	13	86	72	235	111	101	118	304	111	25	17	36
3	14	82	72	232	111	104	114	214	87	23	14	31
4	16	77	100	178	109	226	106	159	68	20	15	28
5	25	72	160	143	108	297	101	128	64	18	18	34
6	23	94	194	142	125	301	97	153	62	17	16	37
7	21	145	186	123	156	296	95	394	54	19	15	34
8	18	139	176	104	181	347	93	434	46	26	13	30
9	21	116	173	85	185	362	89	375	40	24	12	26
10	22	114	140	80	185	342	85	227	36	19	38	23
11	23	189	126	76	185	237	80	182	32	16	51	21
12	24	209	124	73	182	159	72	150	32	13	40	19
13	66	187	108	73	161	143	66	127	44	12	29	17
14	106	138	82	73	134	140	64	118	42	16	23	17
15	407	111	73	96	126	125	61	123	36	17	19	19
16	500	98	75	118	123	118	70	111	50	15	22	22
17	466	91	92	127	124	118	70	101	88	12	18	21
18	263	92	101	111	124	118	70	145	85	10	16	20
19	176	93	120	106	125	152	68	151	67	8.7	23	25
20	184	85	128	109	128	171	61	115	60	7.8	23	70
21	139	74	96	109	191	167	112	94	50	6.7	294	85
22	110	70	79	107	174	158	339	81	39	5.9	539	63
23	113	70	80	92	148	153	408	73	33	7.6	654	47
24	278	71	156	84	146	163	262	64	29	9.3	651	39
25	374	72	200	70	111	174	186	58	26	13	555	37
26	285	72	233	64	96	179	140	58	23	20	113	57
27	207	73	246	64	95	211	117	55	20	55	89	297
28	156	73	243	66	78	222	103	82	18	58	67	412
29	131	73	238	66	---	216	91	74	16	40	55	398
30	116	73	235	83	---	175	126	66	20	30	47	378
31	104	---	234	91	---	143	---	86	---	25	43	---
TOTAL	4414	3033	4414	3416	3827	5908	3591	4832	1474	615.0	3550	2383
MEAN	142	101	142	110	137	191	120	156	49.1	19.8	115	79.4
MAX	500	209	246	236	191	362	408	434	111	58	654	412
MIN	13	70	72	64	78	90	61	55	16	5.9	12	17
(†)	4.2	38.3	51.1	37.4	22.9	4.4	14.3	4.2	2.6	2.6	3.1	47.7
MEAN†	143	114	147	105	131	184	124	152	48.5	19.8	115	96.6
CFSM†	2.60	2.07	2.67	1.91	2.38	3.34	2.25	2.76	.88	.36	2.09	1.75
IN.†	2.99	2.31	3.08	2.20	2.47	3.84	2.50	3.18	.98	.42	2.40	1.96

† Monthend contents, in millions of cubic feet, in Barre Falls Reservoir, records furnished by U.S. Army Corps of Engineers.

‡ Adjusted for change in contents in Barre Falls Reservoir.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1991, BY WATER YEAR (WY)

	MEAN	52.3	82.7	99.1	98.3	110	180	231	126	77.3	32.2	30.1	27.6
	MAX	275	233	231	285	271	365	559	257	368	91.0	169	205
	(WY)	1956	1956	1984	1979	1976	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

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1946 - 1991

ANNUAL TOTAL	44442.5	41457.0	95.2
ANNUAL MEAN	122	114	157
HIGHEST ANNUAL MEAN			1984
LOWEST ANNUAL MEAN			1965
HIGHEST DAILY MEAN	500	654	1520
LOWEST DAILY MEAN	1.5	5.9	.50
ANNUAL SEVEN-DAY MINIMUM	2.5	8.0	.67
INSTANTANEOUS PEAK FLOW		695	1890
INSTANTANEOUS PEAK STAGE		4.67	6.31
INSTANTANEOUS LOW FLOW		.28	.10
10 PERCENT EXCEEDS	269	235	220
50 PERCENT EXCEEDS	100	90	60
90 PERCENT EXCEEDS	11	19	7.6

Note.--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 National Geodetic Vertical Datum of 1929. Prior to Feb. 1, 1936, water-stage recorder at site 0.2 mi downstream at datum 631.91 ft above NGVD.

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. Maximum daily discharge since construction of Barre Falls Reservoir in 1958, 1,590 ft³/s, Apr. 14, 1987.

COOPERATION.--Computations of daily discharge made in cooperation with Water Division, Metropolitan District Commission, which collected gage-height and venturi-meter records.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	158	125	399	205	166	237	523	175	53	29	65
2	23	139	123	383	199	287	227	429	176	49	25	58
3	23	138	122	360	192	332	212	316	147	38	22	53
4	27	138	307	282	199	566	195	260	133	33	25	49
5	39	135	389	270	217	537	180	220	113	29	50	66
6	37	156	331	269	258	491	163	461	106	28	75	63
7	34	247	297	214	344	535	164	727	93	31	19	58
8	30	181	287	175	355	532	153	623	80	35	9.0	51
9	55	174	281	154	334	499	145	551	71	32	9.1	47
10	39	242	246	152	318	468	135	359	65	24	47	41
11	36	372	222	140	285	315	137	305	58	22	82	37
12	36	336	207	147	274	275	136	288	67	24	70	32
13	169	285	163	143	255	257	133	213	84	25	51	30
14	247	216	137	137	261	250	124	212	72	27	40	30
15	555	186	136	181	267	226	120	199	64	32	39	34
16	536	153	214	218	241	220	128	177	102	32	38	40
17	492	149	197	264	239	220	127	185	132	24	31	37
18	323	150	222	216	223	241	127	258	135	16	36	33
19	293	149	258	198	227	317	126	227	133	15	330	68
20	259	137	235	198	272	301	118	172	125	15	381	124
21	194	134	181	181	333	283	240	143	92	15	658	128
22	157	131	189	163	292	286	564	136	75	15	751	123
23	247	131	197	143	247	302	505	135	66	16	764	93
24	498	135	482	138	253	348	354	123	35	23	704	81
25	491	134	449	152	186	339	267	112	55	42	541	383
26	379	134	417	127	166	326	216	107	64	36	172	502
27	327	132	386	125	158	355	176	110	54	52	147	575
28	265	128	372	131	144	351	149	136	51	72	135	548
29	214	126	367	133	---	328	136	139	39	43	101	494
30	177	125	419	156	---	287	367	138	42	41	75	448
31	148	---	460	210	---	254	---	172	---	35	70	---
TOTAL	6374	5151	8418	6159	6944	10494	6061	8156	2704	974	5526.1	4391
MEAN	206	172	272	199	248	339	202	263	90.1	31.4	178	146
MAX	555	372	482	399	355	566	564	727	176	72	764	575
MIN	23	125	122	125	144	166	118	107	35	15	9.0	30
MEAN†	206	185	276	194	242	332	206	259	89.5	31.4	178	164
CFSM†	2.14	1.92	2.87	2.01	2.51	3.45	2.14	2.69	.93	.33	1.85	1.70
IN.†	2.47	2.14	3.31	2.32	2.62	3.97	2.39	3.11	1.04	.38	2.14	1.90

† Adjusted for change in contents in Barre Falls Reservoir.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1991, BY WATER YEAR (WY)

	MEAN	86.7	134	164	171	177	327	407	222	142	69.3	55.4	68.1
MAX	465	445	413	499	488	1066	963	438	503	337	319	893	
(WY)	1956	1956	1974	1979	1976	1936	1940	1989	1984	1938	1955	1938	
MIN	7.86	13.9	29.1	17.2	37.5	118	129	83.6	31.2	11.0	5.93	6.22	
(WY)	1965	1965	1966	1981	1980	1940	1985	1965	1964	1965	1966	1964	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1928 - 1991
ANNUAL TOTAL	73759	71352.1	
ANNUAL MEAN	202	195	168
HIGHEST ANNUAL MEAN			277
LOWEST ANNUAL MEAN			56.4
HIGHEST DAILY MEAN	744	Feb 24	8740
LOWEST DAILY MEAN	13	Aug 5	9.0
ANNUAL SEVEN-DAY MINIMUM	15	Jul 31	16
INSTANTANEOUS PEAK FLOW			14000
INSTANTANEOUS PEAK STAGE			664.28
10 PERCENT EXCEEDS	451	393	383
50 PERCENT EXCEEDS	169	156	109
90 PERCENT EXCEEDS	30	33	20

Note.--All statistics are based on unadjusted daily and monthly mean data.

CONNECTICUT RIVER BASIN

135

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.

WSP 1301: 1914(M). WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 379.79 ft above National Geodetic Vertical Datum of 1929. 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 fair. 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. Maximum discharge since construction of Barre Falls Reservoir, 5,050 ft³/s, Mar. 6, 1979.

AVERAGE DISCHARGE.--18 years, (water years 1913-30) prior to diversions in 1931, 313 ft³/s, 21.36 in/yr.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	273	224	600	e540	263	346	693	441	115	104	116
2	91	266	244	493	e440	398	332	498	359	107	62	103
3	76	274	245	413	356	637	312	401	314	121	62	97
4	62	250	412	374	360	945	302	348	268	99	72	72
5	105	267	798	350	395	836	291	326	248	104	73	76
6	110	292	537	349	431	592	288	396	224	98	86	97
7	92	354	384	336	519	576	286	1230	199	105	102	140
8	76	341	372	316	720	591	283	734	199	105	66	96
9	99	294	353	302	514	431	257	525	145	77	61	77
10	149	352	320	309	460	389	280	467	168	119	88	72
11	117	565	296	e290	e410	366	263	425	130	77	108	92
12	107	487	279	275	341	346	266	393	136	92	122	65
13	229	400	309	e300	315	335	251	351	173	91	99	77
14	1100	326	245	e350	359	328	243	336	172	77	93	54
15	684	293	292	e310	476	355	230	330	157	100	89	61
16	398	312	419	e300	455	338	252	292	205	74	89	82
17	304	301	378	425	e420	345	255	285	353	62	61	81
18	268	285	422	446	e350	346	250	385	334	64	72	65
19	395	284	422	424	323	437	232	330	308	63	439	109
20	352	274	435	354	420	420	240	293	303	63	1640	197
21	284	249	352	e340	478	362	402	281	257	62	1170	256
22	272	290	381	e330	373	343	786	260	204	59	764	205
23	311	250	412	e310	367	429	534	244	167	60	455	188
24	789	312	766	e290	293	544	415	236	144	54	304	171
25	637	321	890	e330	317	621	356	214	130	51	235	742
26	449	295	577	e300	296	506	323	201	102	62	289	1830
27	382	256	448	e280	295	461	311	187	159	109	233	1360
28	320	253	400	297	301	436	293	289	101	142	209	1040
29	288	269	382	e330	---	393	266	290	125	138	167	834
30	328	259	430	273	---	372	368	276	116	93	151	688
31	241	---	767	545	---	363	---	459	---	67	91	---
TOTAL	9188	9244	13191	10941	11324	14104	9513	11975	6341	2710	7656	9143
MEAN	296	308	426	353	404	455	317	386	211	87.4	247	305
MAX	1100	565	890	600	720	945	786	1230	441	142	1640	1830
MIN	62	249	224	273	293	263	230	187	101	51	61	54

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1991, BY WATER YEAR (WY)

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
MEAN	163	246	281	305	315	494	568	371	253	142	122	143	143
MAX	750	922	653	728	802	1838	1394	787	746	714	890	1707	1707
(WY)	1956	1956	1939	1952	1976	1936	1956	1984	1984	1938	1955	1938	1938
MIN	29.0	39.0	68.5	29.6	77.7	210	231	167	69.5	36.5	25.8	14.5	14.5
(WY)	1965	1965	1966	1981	1980	1989	1966	1965	1964	1965	1964	1953	1953

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1931 - 1991
ANNUAL TOTAL	131186	115330	
ANNUAL MEAN	359	316	283
HIGHEST ANNUAL MEAN			581
LOWEST ANNUAL MEAN			107
HIGHEST DAILY MEAN	1480	1830	16700
LOWEST DAILY MEAN	47	51	7.0
ANNUAL SEVEN-DAY MINIMUM	53	59	9.4
INSTANTANEOUS PEAK FLOW		1970	22700
INSTANTANEOUS PEAK STAGE		4.92	18.20
INSTANTANEOUS LOW FLOW		39	5.0
10 PERCENT EXCEEDS	729	535	582
50 PERCENT EXCEEDS	321	294	210
90 PERCENT EXCEEDS	84	79	48

CONNECTICUT RIVER BASIN

01174500 EAST BRANCH SWIFT RIVER NEAR HARDWICK, MA

LOCATION.--Lat 42°23'36", long 72°14'21", Worcester County, Hydrologic Unit 01080204, on left bank 100 ft above spillway of regulating dam and 4.6 mi northwest of Hardwick.

DRAINAGE AREA.--43.7 mi².

PERIOD OF RECORD.--Discharge: January 1937 to current year. Published as "near Dana" January 1937 to September 1939. Water-quality records: Water year 1957.

GAGE.--Water-stage recorder. Concrete spillway since Mar. 12, 1940. Datum of gage is 504.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No flow at times during several years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	50	44	210	137	80	106	248	82	23	7.5	16
2	9.7	47	43	161	110	126	101	212	66	21	6.2	13
3	9.2	44	43	133	94	260	97	151	53	21	6.4	12
4	9.3	42	118	113	91	375	91	117	48	19	7.1	12
5	12	41	292	96	102	382	86	96	44	18	9.4	20
6	13	51	212	90	121	265	83	119	48	17	8.1	25
7	13	64	148	86	159	251	81	431	43	17	7.1	25
8	12	66	117	71	225	257	77	339	39	17	6.2	22
9	19	58	98	74	196	199	75	210	34	16	5.9	19
10	24	73	85	79	158	159	72	160	30	13	19	17
11	21	177	75	75	133	135	65	132	29	12	21	17
12	19	174	69	85	106	119	59	114	32	12	18	14
13	34	124	64	80	94	110	54	100	39	13	14	12
14	166	96	61	74	109	107	54	92	34	16	12	14
15	163	80	62	71	169	106	55	88	31	14	12	15
16	103	73	91	75	150	101	63	78	47	11	16	17
17	66	69	111	105	120	99	63	73	76	8.8	13	18
18	48	63	109	122	103	104	61	105	71	7.9	12	17
19	87	53	131	108	104	149	58	105	58	7.3	114	31
20	96	53	125	94	116	160	57	89	51	6.2	495	86
21	73	52	106	89	142	136	104	78	43	5.8	447	91
22	58	51	111	75	134	124	206	68	36	5.0	340	72
23	63	56	119	63	128	141	190	58	31	6.8	191	55
24	182	66	254	63	106	167	142	50	27	6.2	115	45
25	207	68	372	61	98	199	110	52	24	5.0	75	323
26	143	64	243	54	91	182	91	52	21	9.3	52	692
27	97	58	169	55	88	160	80	47	20	19	39	460
28	79	54	138	62	81	151	69	71	19	16	32	264
29	73	54	120	69	---	140	60	73	18	13	26	173
30	60	51	122	71	---	127	101	67	22	11	21	125
31	54	---	213	118	---	114	---	83	---	9.1	20	---
TOTAL	2024.2	2072	4065	2782	3465	5185	2611	3758	1216	396.4	2167.9	2722
MEAN	65.3	69.1	131	89.7	124	167	87.0	121	40.5	12.8	69.9	90.7
MAX	207	177	372	210	225	382	206	431	82	23	495	692
MIN	9.2	41	43	54	81	80	54	47	18	5.0	5.9	12
CFSM	1.49	1.58	3.00	2.05	2.83	3.83	1.99	2.77	.93	.29	1.60	2.08
IN.	1.72	1.76	3.46	2.37	2.95	4.41	2.22	3.20	1.04	.34	1.85	2.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1991, BY WATER YEAR (WY)

	MEAN	37.1	60.9	72.1	74.4	78.4	133	160	92.4	59.7	29.0	22.2	27.0
MAX	155	177	161	192	207	266	420	189	175	179	127	390	
(WY)	1980	1956	1939	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	.25	
(WY)	1965	1965	1981	1981	1940	1965	1985	1985	1964	1949	1953	1964	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1937 - 1991

ANNUAL TOTAL	27835.39	32464.5	70.2
ANNUAL MEAN	76.3	88.9	123
HIGHEST ANNUAL MEAN			1938
LOWEST ANNUAL MEAN			22.8
HIGHEST DAILY MEAN	412	Feb 24	692
LOWEST DAILY MEAN	.64	Aug 5	5.0
ANNUAL SEVEN-DAY MINIMUM	1.6	Jul 31	6.0
INSTANTANEOUS PEAK FLOW			741
INSTANTANEOUS PEAK STAGE			20.79
INSTANTANEOUS LOW FLOW			2.6
ANNUAL RUNOFF (CFSM)	1.75	2.04	.00
ANNUAL RUNOFF (INCHES)	23.70	27.64	1.61
10 PERCENT EXCEEDS	170	175	21.82
50 PERCENT EXCEEDS	62	71	159
90 PERCENT EXCEEDS	9.5	13	43
			6.9

CONNECTICUT RIVER BASIN

137

01174600 CADWELL CREEK NEAR PELHAM, MA

LOCATION.--Lat 42°21'16", long 72°23'18", Hampshire County, Hydrologic Unit 01080204, on left bank 0.8 mi east of Knights Corner, 2 mi upstream from mouth, 2.7 mi south of Pelham, and 5 mi north of Belchertown.

DRAINAGE AREA.--0.60 mi².

PERIOD OF RECORD.--July 1961 to current year.

REVISED RECORDS.--WDR MA-RI-84-1: 1962(M), 1964(M), 1968-69(M), 1970(P), 1972-73(P), 1974(M), 1975-77(P), 1979-80(P), 1982-83(P), Drainage area.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 860 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No flow at times in several water years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.91	.73	2.5	1.7	.94	1.1	3.0	1.6	.04	.01	.05
2	.05	.83	.67	1.9	1.2	3.9	1.0	1.7	.97	.04	.01	.05
3	.05	.73	.66	1.6	1.2	3.8	.98	1.3	.66	.04	.02	.04
4	.09	.66	9.0	1.3	1.6	12	.89	1.1	.54	.04	.05	.04
5	.15	.68	4.6	1.1	2.2	4.7	.86	.89	.66	.04	.05	.06
6	.16	2.3	2.4	1.1	2.7	2.7	.82	7.4	.68	.05	.04	.08
7	.13	1.6	1.8	1.0	4.4	4.2	.75	7.9	.42	.04	.03	.08
8	.10	1.5	1.5	.81	3.7	2.6	.67	2.9	.33	.04	.02	.06
9	.21	1.1	1.3	.80	2.3	1.9	.64	1.9	.26	.02	.04	.05
10	.26	7.9	1.1	.86	1.8	1.5	.64	2.0	.19	.03	.86	.06
11	.17	6.9	.99	.74	1.4	1.3	.56	1.7	.18	.03	.25	.04
12	.14	2.8	.92	.80	1.1	1.2	.52	1.3	.51	.02	.09	.04
13	2.7	1.9	.91	.76	.92	1.1	.50	1.0	.66	.03	.05	.04
14	7.7	1.5	.81	.71	1.8	1.1	.50	.91	.25	.03	.04	.04
15	1.8	1.3	1.0	.70	2.7	1.1	.53	.85	.18	.02	.08	.05
16	1.0	1.2	2.5	1.2	1.8	1.1	.78	.67	.81	.02	.12	.05
17	.72	1.1	1.8	2.4	1.1	1.4	.58	1.3	.77	.01	.09	.06
18	1.1	1.3	2.9	1.8	.95	2.2	.52	2.8	.45	.01	.06	.05
19	5.3	1.1	3.7	1.3	1.1	4.7	.49	1.5	.40	.01	7.3	1.4
20	1.8	.98	2.0	1.2	2.3	2.4	.45	1.0	.43	.01	2.4	2.6
21	1.2	.91	1.8	1.1	2.1	1.7	6.2	.77	.22	.01	7.8	.75
22	.93	.84	2.5	.89	1.8	1.9	6.0	.62	.16	.01	1.9	.42
23	5.3	1.2	2.2	.82	1.5	2.5	2.8	.51	.13	.01	.86	.31
24	15	1.8	12	.72	1.1	4.0	1.8	.44	.10	.01	.47	.32
25	3.8	1.3	4.4	.63	.98	3.8	1.3	.39	.09	.01	.30	15
26	2.2	1.1	2.4	.65	.92	2.4	1.0	.34	.08	.04	.21	8.4
27	1.6	.95	1.8	.57	.88	2.0	.91	2.9	.07	.07	.14	3.2
28	1.4	.90	1.6	.78	.81	1.8	.76	5.2	.06	.12	.14	1.6
29	1.3	.83	1.5	.71	---	1.5	.68	1.7	.04	.06	.11	1.1
30	1.1	.77	3.2	.89	---	1.4	3.0	2.2	.06	.03	.09	.85
31	.94	---	5.5	3.3	---	1.2	---	3.5	---	.02	.08	---
TOTAL	58.47	48.89	80.19	35.64	48.06	80.04	38.23	61.69	11.96	0.96	23.71	36.89
MEAN	1.89	1.63	2.59	1.15	1.72	2.58	1.27	1.99	.40	.031	.76	1.23
MAX	15	7.9	12	3.3	4.4	12	6.2	7.9	1.6	.12	7.8	15
MIN	.05	.66	.66	.57	.81	.94	.45	.34	.04	.01	.01	.04
CFSM	3.14	2.72	4.31	1.92	2.86	4.30	2.12	3.32	.66	.05	1.27	2.05
IN.	3.63	3.03	4.97	2.21	2.98	4.96	2.37	3.82	.74	.06	1.47	2.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1991, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1961	.73	2.94	1976	.010	1965
1962	1.10	2.55	1976	.050	1965
1963	1.31	2.72	1974	.28	1981
1964	1.26	3.41	1979	.086	1981
1965	1.39	3.47	1984	.23	1980
1966	2.49	4.73	1977	.88	1989
1967	2.25	3.97	1983	.75	1985
1968	1.56	4.59	1984	.36	1986
1969	.86	3.43	1972	.050	1964
1970	.31	1.34	1975	.028	1964
1971	.33	1.73	1969	.002	1966
1972	.33	2.11	1975	.000	1964

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1961 - 1991

ANNUAL TOTAL	559.47	524.73	
ANNUAL MEAN	1.53	1.44	1.16
HIGHEST ANNUAL MEAN			1.78
LOWEST ANNUAL MEAN			.39
HIGHEST DAILY MEAN	15	Oct 24	37
LOWEST DAILY MEAN	.01	Aug 2	.00
ANNUAL SEVEN-DAY MINIMUM	.02	Jul 30	.00
INSTANTANEOUS PEAK FLOW			41
INSTANTANEOUS PEAK STAGE			4.99
INSTANTANEOUS LOW FLOW			.01
ANNUAL RUNOFF (CFSM)	2.55	2.40	1.93
ANNUAL RUNOFF (INCHES)	34.69	32.53	26.25
10 PERCENT EXCEEDS	3.5	3.1	2.6
50 PERCENT EXCEEDS	1.0	.91	.61
90 PERCENT EXCEEDS	.06	.04	.04

CONNECTICUT RIVER BASIN

01174900 CADWELL CREEK NEAR BELCHERTOWN, MA

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.

DRAINAGE AREA.--2.55 mi².

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for period of doubtful gage-height record, Dec. 1 to June 4, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.87	5.3	4.4	e15	e10	e6.0	7.0	13	8.8	1.1	.25	.99
2	.60	5.0	4.2	e11	e8.5	e22	6.4	8.7	5.4	.74	.20	.85
3	.47	4.7	4.0	e9.4	e6.8	e21	6.0	7.1	3.9	.63	.18	.76
4	.73	4.3	e33	e8.0	e8.5	e45	5.6	6.2	3.2	.57	.93	.69
5	1.7	4.0	24	e7.0	e11	e29	5.2	5.5	3.7	.47	2.0	.97
6	.88	9.0	13	e6.4	e15	e16	5.0	e35	3.8	.52	.70	1.0
7	.67	7.9	9.8	e5.8	e23	e20	4.7	40	2.8	.53	.47	.82
8	.61	6.7	8.4	e5.2	e21	e16	4.4	18	2.2	.55	.34	.66
9	2.1	6.1	7.5	e4.9	e15	e12	4.3	12	1.7	.47	.31	.56
10	1.4	15	e6.6	e4.8	e11	e9.2	4.1	11	1.4	.38	6.8	.49
11	1.1	34	e5.8	e4.7	e8.2	e7.6	3.8	11	1.3	.33	2.1	.46
12	.97	16	e5.4	e4.5	e6.8	e6.8	3.4	9.1	3.0	.29	.94	.41
13	11	11	e5.1	e4.4	e6.2	e6.3	3.2	7.4	4.7	.33	.61	.38
14	28	9.0	e4.9	e4.3	e10	e5.8	3.2	6.3	2.2	.78	.46	.55
15	8.2	7.9	e5.1	e4.2	e15	e5.9	3.3	5.8	1.6	.48	.68	.74
16	5.0	7.2	e12	e6.0	e10	e6.0	4.3	4.8	4.1	.33	1.6	1.1
17	3.8	6.7	e10	e12	e7.2	e8.0	3.7	5.4	4.9	.26	.80	.91
18	3.8	6.5	e14	10	e6.0	e12	3.4	12	3.5	.23	.55	.69
19	20	6.1	e18	e7.8	e7.0	e25	3.2	7.4	2.7	.19	25	5.2
20	9.1	5.7	e12	e6.5	e12	14	3.0	5.8	2.6	.17	16	10
21	6.5	5.4	10	e5.8	e11	e9.0	e30	4.6	1.7	.15	36	4.1
22	5.4	5.1	e13	e5.0	9.0	e10	23	3.8	1.2	.14	14	2.6
23	11	5.5	e12	e4.9	8.1	e13	12	3.2	1.1	.15	7.5	2.0
24	54	8.0	e44	e4.7	7.2	e21	8.5	2.8	.97	.14	5.1	1.9
25	20	7.5	e32	e4.5	6.4	e19	6.9	2.5	.85	.14	3.6	55
26	12	6.5	e15	e4.3	5.8	14	5.8	2.1	.74	1.0	2.6	54
27	9.1	5.9	e11	e4.1	5.4	12	5.3	3.2	.66	2.5	2.0	38
28	7.3	5.5	e9.2	e4.0	5.0	11	4.9	15	.57	.78	1.6	24
29	6.9	5.1	e8.5	4.5	---	10	4.5	6.5	.53	.48	1.3	17
30	6.3	4.8	e14	4.5	---	9.0	e17	6.4	1.1	.38	1.1	12
31	5.7	---	e27	e15	---	7.9	---	17	---	.31	1.0	---
TOTAL	245.20	237.4	402.9	203.2	276.1	429.5	205.1	298.6	76.92	15.52	136.72	238.83
MEAN	7.91	7.91	13.0	6.55	9.86	13.9	6.84	9.63	2.56	.50	4.41	7.96
MAX	54	34	44	15	23	45	30	40	8.8	2.5	36	55
MIN	.47	4.0	4.0	4.0	5.0	5.8	3.0	2.1	.53	.14	.18	.38
CFSM	3.10	3.10	5.10	2.57	3.87	5.43	2.68	3.78	1.01	.20	1.73	3.12
IN.	3.58	3.46	5.88	2.96	4.03	6.27	2.99	4.36	1.12	.23	1.99	3.48

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1991, BY WATER YEAR (WY)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	3.24	4.48	5.51	5.36	6.08	10.8	9.87	6.62	3.81	1.53	1.54	1.66																			
MAX	15.0	10.3	13.0	13.9	13.9	20.3	18.5	18.1	13.5	5.56	5.27	9.20																			
(WY)	1990	1976	1991	1979	1976	1977	1967	1984	1982	1975	1969	1975																			
MIN	.25	.48	1.29	.43	1.28	3.81	3.42	2.14	.50	.29	.17	.11																			
(WY)	1965	1965	1981	1981	1980	1989	1966	1986	1964	1964	1966	1964																			

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1961 - 1991

ANNUAL TOTAL	2629.94	2765.99	5.04
ANNUAL MEAN	7.21	7.58	7.58
HIGHEST ANNUAL MEAN			1.85
LOWEST ANNUAL MEAN			1.85
HIGHEST DAILY MEAN	56 Apr 4	55 Sep 25	181 Mar 6 1979
LOWEST DAILY MEAN	.13 Aug 1	.14 Jul 22	.07 Jul 16 1965
ANNUAL SEVEN-DAY MINIMUM	.14 Jul 30	.15 Jul 19	.08 Aug 2 1965
INSTANTANEOUS PEAK FLOW		105 Sep 25	283 Oct 20 1989
INSTANTANEOUS PEAK STAGE		6.63 Sep 25	7.42 Mar 6 1979
INSTANTANEOUS LOW FLOW		.13 Jul 22	.07 Aug 6 1964
ANNUAL RUNOFF (CFSM)	2.83	2.97	1.97
ANNUAL RUNOFF (INCHES)	38.37	40.35	26.83
10 PERCENT EXCEEDS	16	16	11
50 PERCENT EXCEEDS	5.3	5.4	2.9
90 PERCENT EXCEEDS	.53	.55	.34

CONNECTICUT RIVER BASIN

139

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 Beichertown, 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 National Geodetic Vertical Datum of 1929. Prior to Aug. 25, 1912, nonrecording gage at site 400 ft upstream at same datum.

REMARKS.--Records good. 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. Maximum discharge prior to construction of Quabbin Reservoir in 1939, 7,590 ft³/s, Mar. 19, 1936, gage height, 15.00 ft.

AVERAGE DISCHARGE.--27 years (water years 1913-39) prior to completion of Quabbin Reservoir, 314 ft³/s, 22.56 in/yr.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	131	137	139	135	141	150	37	246	37	128	43
2	30	132	137	138	135	146	150	39	223	93	128	37
3	29	132	137	137	136	144	150	41	209	99	129	42
4	31	132	145	137	136	152	148	40	224	42	130	42
5	30	132	139	137	134	147	150	40	187	48	130	42
6	29	134	136	136	137	146	150	48	172	42	129	94
7	30	133	137	135	141	147	150	179	160	42	129	131
8	30	131	137	133	137	144	150	258	155	86	128	132
9	30	132	136	134	138	102	150	248	150	127	130	132
10	29	135	135	135	137	151	150	244	111	128	131	132
11	30	133	135	135	137	131	148	264	83	128	130	132
12	30	130	135	135	137	137	149	278	67	101	129	131
13	33	132	133	134	134	150	148	298	64	84	129	133
14	33	131	135	134	140	151	148	300	86	84	129	132
15	30	127	136	131	141	152	148	328	86	112	129	132
16	30	130	136	135	139	152	147	316	88	128	104	132
17	29	130	135	136	139	152	146	278	88	128	86	131
18	30	129	136	134	139	152	146	286	88	128	86	127
19	76	128	136	134	139	154	146	290	89	101	74	134
20	134	136	135	133	141	142	146	291	88	85	41	133
21	133	139	135	133	141	152	155	277	66	85	49	131
22	133	140	135	133	141	152	151	217	41	112	41	130
23	136	140	135	133	141	152	148	175	41	130	48	131
24	139	141	142	132	140	153	148	114	37	130	42	131
25	133	141	139	132	140	151	147	93	44	129	47	148
26	134	140	139	132	139	149	118	93	78	134	36	139
27	134	140	137	132	141	150	79	96	126	130	43	134
28	133	139	137	133	141	150	92	152	97	129	43	133
29	133	136	137	133	---	150	92	172	42	128	43	134
30	133	137	139	134	---	150	63	185	42	128	49	131
31	133	---	141	138	---	150	---	224	---	128	43	---
TOTAL	2227	4023	4244	4167	3876	4552	4163	5901	3278	3186	2813	3486
MEAN	71.8	134	137	134	138	147	139	190	109	103	90.7	116
MAX	139	141	145	139	141	154	155	328	246	134	131	148
MIN	29	127	133	131	134	102	63	37	37	37	36	37
(†)	50712	50611	51644	52208	52655	54165	54521	55266	54280	52970	53731	53216

† Monthend contents, in millions of cubic feet, in Quabbin Reservoir. Records furnished by Water Division of Metropolitan District Commission.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	71.8	80.2	66.5	67.4	75.4	80.9	166	153	125	76.2	80.4	78.3
MAX	222	858	330	224	387	330	1099	775	1192	301	149	139	
(WY)	1956	1956	1956	1956	1952	1952	1953	1953	1984	1948	1961	1963	
MIN	30.3	31.3	30.6	30.9	29.2	31.3	30.5	29.0	28.6	31.2	30.7	30.3	
(WY)	1945	1945	1990	1945	1989	1946	1946	1945	1945	1944	1944	1990	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1940 - 1991
ANNUAL TOTAL	19149	45916	
ANNUAL MEAN	52.5	126	93.4
HIGHEST ANNUAL MEAN			347
LOWEST ANNUAL MEAN			30.7
HIGHEST DAILY MEAN	145	Dec 4	3040
LOWEST DAILY MEAN	19	Jan 13	9.1
ANNUAL SEVEN-DAY MINIMUM	28	Jan 9	27
INSTANTANEOUS PEAK FLOW			3070
INSTANTANEOUS PEAK STAGE		3.71	11.58
10 PERCENT EXCEEDS	135	152	139
50 PERCENT EXCEEDS	32	134	46
90 PERCENT EXCEEDS	30	42	32

CONNECTICUT RIVER BASIN

01175670 SEVENMILE RIVER NEAR SPENCER, MA

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.

DRAINAGE AREA.--8.68 mi².

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.

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 630 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 25, 1984, at datum 8.83 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional regulation by ponds upstream since 1971. Maximum gage heights shown in table below are for datums then in use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	13	9.9	e41	e26	17	e21	e45	13	2.3	2.9	4.1
2	.76	12	9.0	34	e21	28	e20	38	11	2.0	2.6	3.5
3	.80	12	8.4	30	19	37	e19	29	8.2	2.2	2.5	3.4
4	.73	11	23	e25	19	58	e18	24	7.1	2.3	2.5	3.1
5	1.7	9.2	40	e21	21	52	e17	21	6.6	2.2	2.5	5.6
6	1.7	11	32	e19	24	43	e16	28	6.1	2.4	2.3	5.0
7	1.5	11	26	e18	35	47	e15	e60	6.1	2.5	2.5	4.0
8	1.3	11	22	e16	43	43	e14	e46	5.6	2.3	2.0	3.5
9	2.2	11	19	e15	37	35	e14	e38	4.8	1.7	2.1	3.1
10	3.9	16	17	e16	31	30	e13	33	4.2	1.6	4.2	2.9
11	3.7	31	15	e15	e26	27	e12	29	3.3	1.5	3.2	2.6
12	2.2	29	14	e18	e22	24	e11	25	3.6	1.4	2.4	2.1
13	27	23	13	e16	e20	e23	e9.8	22	5.8	1.8	2.3	2.0
14	84	19	13	e15	e24	e22	e9.0	20	4.9	2.3	2.1	2.3
15	64	16	e13	e14	e34	e22	e9.4	19	4.7	1.7	2.1	2.1
16	36	15	21	e15	e29	e21	e10	15	9.1	1.3	2.2	2.7
17	23	14	22	e18	e25	e21	e11	15	13	1.4	2.1	2.2
18	16	14	23	e24	e22	e22	e11	20	8.3	1.2	1.9	2.3
19	23	13	26	e22	20	e25	e10	15	9.8	1.1	32	2.3
20	18	12	23	20	31	e26	e9.6	14	11	1.1	54	5.7
21	15	11	21	e18	32	e23	e20	12	8.6	1.2	76	3.5
22	13	11	21	e15	28	e21	e39	11	7.2	1.1	51	3.1
23	15	10	22	e13	26	e22	e29	9.9	6.0	.98	33	3.0
24	44	14	44	e12	e21	e30	e21	8.8	4.5	.87	22	2.9
25	42	13	48	e12	20	e40	e18	7.9	3.8	.73	15	42
26	32	12	37	e11	19	e36	e15	8.0	3.2	4.8	11	71
27	25	11	e28	e11	18	e32	e13	7.3	3.2	13	8.2	57
28	20	11	26	e12	18	e29	e12	9.8	2.8	5.2	7.1	38
29	19	9.9	25	e13	---	e27	e11	9.3	2.5	4.1	6.2	26
30	16	10	29	13	---	e25	e21	9.1	2.6	3.4	5.5	19
31	14	---	49	e25	---	e23	---	13	---	3.1	5.0	---
TOTAL	567.59	416.1	739.3	567	711	931	468.8	662.1	190.6	74.78	370.4	330.0
MEAN	18.3	13.9	23.8	18.3	25.4	30.0	15.6	21.4	6.35	2.41	11.9	11.0
MAX	84	31	49	41	43	58	39	60	13	13	76	71
MIN	.73	9.2	8.4	11	18	17	9.0	7.3	2.5	.73	1.9	2.0
CFSM	2.11	1.60	2.75	2.11	2.93	3.46	1.80	2.46	.73	.28	1.38	1.27
IN.	2.43	1.78	3.17	2.43	3.05	3.99	2.01	2.84	.82	.32	1.59	1.41

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1991, BY WATER YEAR (WY)

	7.75	12.0	16.4	16.3	18.7	30.5	31.7	19.0	12.8	4.90	4.00	3.94
MEAN	7.75	12.0	16.4	16.3	18.7	30.5	31.7	19.0	12.8	4.90	4.00	3.94
MAX	29.0	28.0	41.2	56.5	44.8	66.2	69.5	40.5	46.5	15.3	14.4	15.7
(WY)	1976	1976	1984	1979	1970	1983	1987	1967	1982	1972	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

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1961 - 1991
ANNUAL TOTAL	6615.19	6028.67	
ANNUAL MEAN	18.1	16.5	14.8
HIGHEST ANNUAL MEAN			22.1
LOWEST ANNUAL MEAN			5.40
HIGHEST DAILY MEAN	84	Oct 14	284
LOWEST DAILY MEAN	.35	Jul 31	.13
ANNUAL SEVEN-DAY MINIMUM	.51	Jul 30	.19
INSTANTANEOUS PEAK FLOW			412
INSTANTANEOUS PEAK STAGE			5.19
INSTANTANEOUS LOW FLOW			.04
ANNUAL RUNOFF (CFSM)	2.09	1.90	1.70
ANNUAL RUNOFF (INCHES)	28.35	25.84	23.15
10 PERCENT EXCEEDS	41	34	34
50 PERCENT EXCEEDS	15	14	9.2
90 PERCENT EXCEEDS	1.3	2.2	1.1

141

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.

Water-quality records: Water years 1953, 1967, 1969-70, 1972-74.

GAGE.--Water-stage recorder. Elevation of gage is 390 ft above National Geodetic Vertical Datum of 1929, 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 fair. 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.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	360	224	501	325	268	385	372	236	92	82	162
2	56	337	217	491	e320	318	366	371	193	91	73	144
3	52	314	213	470	326	364	347	364	172	90	66	128
4	57	295	325	445	338	528	330	352	156	88	72	114
5	68	278	349	421	347	534	315	341	155	87	96	119
6	65	281	355	406	358	544	298	406	152	85	70	113
7	64	267	359	387	411	566	282	534	151	83	62	106
8	63	271	353	e365	445	539	270	504	149	80	56	96
9	81	259	337	351	439	534	258	496	131	77	54	89
10	84	297	317	340	431	516	250	499	168	59	88	82
11	85	344	299	333	410	478	207	475	166	48	75	75
12	86	331	298	322	380	459	213	436	157	50	65	66
13	265	334	288	316	362	441	214	404	116	59	60	62
14	469	340	273	e303	370	429	206	377	98	62	55	64
15	462	338	292	298	399	412	199	354	95	57	54	66
16	460	326	326	299	361	395	198	319	94	54	55	69
17	443	313	319	339	e347	387	182	291	97	51	52	66
18	421	299	349	346	340	382	181	295	97	49	50	63
19	460	286	370	334	330	396	174	265	119	47	291	68
20	426	277	367	347	368	377	172	244	147	46	422	98
21	407	268	364	342	365	375	321	222	133	44	523	89
22	382	263	371	301	356	380	418	205	127	43	520	83
23	389	267	367	e306	336	403	411	189	125	44	508	81
24	541	274	461	e289	e323	439	411	169	122	41	474	80
25	519	267	467	e278	316	467	397	153	119	39	429	288
26	516	254	459	e265	301	460	374	142	112	55	381	431
27	490	255	441	e257	283	455	350	132	108	119	337	462
28	471	248	432	e257	272	442	326	140	106	107	295	443
29	433	237	424	252	---	428	295	125	102	105	258	429
30	410	229	455	250	---	413	326	126	94	101	215	401
31	385	---	521	338	---	400	---	198	---	92	188	---
TOTAL	9172	8709	10992	10549	9959	13529	8676	9500	3997	2145	6026	4637
MEAN	296	290	355	340	356	436	289	306	133	69.2	194	155
MAX	541	360	521	501	445	566	418	534	236	119	523	462
MIN	52	229	213	250	272	268	172	125	94	39	50	62
CFSM	1.97	1.94	2.36	2.27	2.37	2.91	1.93	2.04	.89	.46	1.30	1.03
IN.	2.27	2.16	2.73	2.62	2.47	3.36	2.15	2.36	.99	.53	1.49	1.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1991, BY WATER YEAR (WY)

MEAN	126	183	242	265	278	486	542	318	195	105	107	109
MAX	607	693	600	821	748	1399	1352	573	789	524	1440	1369
(WY)	1956	1956	1928	1979	1970	1936	1940	1943	1984	1938	1955	1938
MIN	11.9	26.9	48.5	46.6	65.2	169	173	108	46.6	17.6	12.8	12.0
(WY)	1958	1950	1931	1981	1977	1989	1915	1930	1964	1965	1957	1957

ANNUAL TOTAL	108753		97891			
ANNUAL MEAN	298		268		246	
HIGHEST ANNUAL MEAN					430	1938
LOWEST ANNUAL MEAN					104	1965
HIGHEST DAILY MEAN	684	May 21	566	Mar 7	7800	Sep 21 1938
LOWEST DAILY MEAN	46	Aug 5	39	Jul 25	6.6	Sep 28 1957
ANNUAL SEVEN-DAY MINIMUM	52	Jul 31	43	Jul 19	7.0	Sep 25 1957
INSTANTANEOUS PEAK FLOW			736	Aug 19	12800	Aug 19 1955
INSTANTANEOUS PEAK STAGE			5.12	Aug 19	15.36	Aug 19 1955
INSTANTANEOUS LOW FLOW			37	Jul 25		
ANNUAL RUNOFF (CFSM)	1.99		1.79		1.64	
ANNUAL RUNOFF (INCHES)	26.97		24.28		22.29	
10 PERCENT EXCEEDS	529		459		550	
50 PERCENT EXCEEDS	308		295		165	
90 PERCENT EXCEEDS	68		65		41	

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.

REVISED RECORDS.--WSP 1231: 1934. WDR MA-RI-84-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 125 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 1, 1938, water-stage recorder at site 1.8 mi downstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	308	953	691	1860	e1100	909	1110	1360	1190	290	356	399
2	255	1000	712	1550	e1100	1080	1140	1450	1120	312	378	390
3	236	883	714	1470	e1100	1500	1140	1130	872	427	350	343
4	280	843	1240	1380	e1150	2350	945	978	806	302	343	380
5	209	808	1980	1250	1180	2430	1110	922	773	231	349	355
6	316	933	1570	1180	1270	1950	963	1030	734	263	383	387
7	299	849	1400	1110	1360	1860	932	2520	626	251	354	472
8	253	1170	1120	1010	1850	1840	1020	2310	581	264	337	461
9	383	956	1050	991	1660	1590	909	1830	547	339	343	388
10	464	1000	1020	1060	1430	1420	856	1700	454	320	492	369
11	240	1390	947	955	1390	1400	836	1650	437	352	438	377
12	390	1460	973	956	1150	1330	741	1500	412	307	414	337
13	394	1350	918	1010	1060	1240	699	1440	440	320	417	335
14	2390	984	813	936	1160	1200	733	1260	480	341	371	366
15	1950	968	865	950	1260	1290	761	1340	448	307	378	357
16	1380	989	1150	976	1330	1170	1010	1200	458	344	433	398
17	995	918	1280	1180	1210	1260	769	1080	588	318	343	359
18	874	912	1140	1310	1130	1210	762	1200	628	303	281	347
19	1220	924	1350	1320	1050	1330	717	1300	717	301	730	409
20	1300	848	1310	1100	1130	1430	683	1290	682	264	2900	630
21	1090	818	1130	1130	1340	1390	937	1000	585	231	2820	634
22	990	806	1180	740	1380	1310	2210	901	574	271	2210	536
23	1020	878	1200	1030	1150	1310	1800	802	440	315	1580	524
24	2000	921	1470	e1000	1000	1470	1480	719	339	290	1250	501
25	2080	941	2210	e1000	1020	1890	1350	667	360	285	860	1530
26	1630	864	1720	e1000	972	1710	1120	573	361	321	982	3200
27	1400	870	1450	e1000	987	1520	978	600	378	541	833	2670
28	1250	816	1370	e950	921	1440	928	696	394	517	745	2040
29	1080	718	1320	e900	---	1380	859	734	319	505	625	1750
30	1070	736	1320	e850	---	1360	1010	751	286	444	571	1510
31	886	---	1810	e1000	---	1310	---	1150	---	415	486	---
TOTAL	28632	28506	38423	34154	33840	45879	30508	37083	17029	10291	23352	22754
MEAN	924	950	1239	1102	1209	1480	1017	1196	568	332	753	758
MAX	2390	1460	2210	1860	1850	2430	2210	2520	1190	541	2900	3200
MIN	209	718	691	740	921	909	683	573	286	231	281	335

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1991, BY WATER YEAR (WY)

	MEAN	521	718	855	934	990	1571	1797	1184	824	482	450	495
MAX	1953	3022	2278	2447	2374	5993	4117	2680	3519	2458	3719	5474	
(WY)	1956	1956	1939	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	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1928 - 1991
ANNUAL TOTAL	351392	350451	
ANNUAL MEAN	963	960	900
HIGHEST ANNUAL MEAN			1952
LOWEST ANNUAL MEAN			376
HIGHEST DAILY MEAN	2850	Aug 12	37000
LOWEST DAILY MEAN	146	Jul 10	16
ANNUAL SEVEN-DAY MINIMUM	211	Jul 30	96
INSTANTANEOUS PEAK FLOW		2730	Mar 4
INSTANTANEOUS PEAK STAGE		7.25	Mar 4
10 PERCENT EXCEEDS	1730	1560	1840
50 PERCENT EXCEEDS	941	950	644
90 PERCENT EXCEEDS	257	338	216

143

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 National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1989, at datum 5.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Prior to 1950, some diurnal fluctuation at low flow caused by small mill upstream.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	138	101	e500	e170	e115	198	277	128	14	4.8	12
2	39	127	98	e360	e135	e260	187	215	80	12	4.1	9.6
3	32	118	92	e290	e100	e400	172	173	57	12	4.0	8.5
4	29	109	573	e220	e130	e1400	158	149	47	12	5.6	7.7
5	82	102	489	e180	e210	e720	156	128	49	11	7.3	12
6	62	190	268	e180	e310	e390	164	553	63	11	5.9	16
7	44	183	212	e150	e680	e600	162	828	46	11	4.9	11
8	36	156	181	93	508	398	153	373	37	11	4.4	8.9
9	32	134	164	106	331	280	144	265	31	9.7	5.1	7.8
10	31	672	149	128	260	232	136	280	27	8.3	24	7.6
11	31	908	121	101	201	195	120	248	25	7.5	15	7.2
12	35	430	117	99	128	173	103	191	28	8.3	9.0	6.6
13	145	298	115	119	141	161	98	161	41	9.8	7.4	5.8
14	625	230	e105	117	155	158	97	150	28	18	7.1	6.2
15	236	214	e85	101	197	157	94	143	23	14	6.7	7.9
16	140	209	e190	e115	138	149	121	115	22	9.8	9.8	15
17	104	192	e180	e240	130	159	99	104	62	8.0	8.1	14
18	90	218	e230	e200	e125	248	111	204	39	7.2	5.8	9.9
19	417	179	e460	e140	e120	531	104	128	31	6.6	555	94
20	224	156	e275	e115	e290	356	88	100	33	6.2	303	153
21	148	145	e220	e105	e280	259	646	83	25	5.9	171	53
22	120	133	e310	e92	e230	252	855	71	21	6.2	104	31
23	193	160	e270	111	e210	279	435	60	20	6.3	56	23
24	2650	219	e1100	99	e150	288	288	52	18	5.5	37	22
25	715	185	e660	85	e150	406	228	48	16	4.9	29	775
26	416	153	e300	78	e130	338	185	44	14	5.3	23	538
27	292	131	e210	81	e120	345	163	39	13	8.6	18	238
28	233	130	e170	81	e115	383	142	94	12	8.0	14	118
29	198	123	e210	e79	---	328	125	56	11	6.1	12	80
30	174	109	e470	e80	---	265	210	121	11	5.4	11	60
31	155	---	e1250	e210	---	219	---	375	---	4.9	10	---
TOTAL	7769	6451	9375	4655	5844	10444	5942	5828	1058	274.5	1482.0	2358.7
MEAN	251	215	302	150	209	337	198	188	35.3	8.85	47.8	78.6
MAX	2650	908	1250	500	680	1400	855	828	128	18	555	775
MIN	29	102	85	78	100	115	88	39	11	4.9	4.0	5.8
CFSM	2.67	2.29	3.22	1.60	2.22	3.58	2.11	2.00	.38	.09	.51	.84
IN.	3.07	2.55	3.71	1.84	2.31	4.13	2.35	2.31	.42	.11	.59	.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1991, BY WATER YEAR (WY)

MEAN	104	175	196	170	189	372	495	261	139	64.8	58.4	64.3
MAX	1041	544	664	448	712	1098	1069	761	684	307	632	579
(WY)	1956	1956	1974	1978	1981	1936	1940	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

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1935 - 1991
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ANNUAL TOTAL	90645		61481.2				
ANNUAL MEAN	248		168		190		
HIGHEST ANNUAL MEAN					296		1972
LOWEST ANNUAL MEAN					73.6		1965
HIGHEST DAILY MEAN	2650	Oct 24	2650	Oct 24	10500		Aug 19 1955
LOWEST DAILY MEAN	10	Aug 5	4.0	Aug 3	3.3		Aug 9 1955
ANNUAL SEVEN-DAY MINIMUM	12	Jul 30	5.0	Jul 29	3.8		Aug 4 1955
INSTANTANEOUS PEAK FLOW			4730	Oct 24	26100		Aug 19 1955
INSTANTANEOUS PEAK STAGE			8.96	Oct 24	15.27		Aug 19 1955
INSTANTANEOUS LOW FLOW			3.8	Aug 2	3.3		Aug 9 1955
ANNUAL RUNOFF (CFSM)	2.64		1.79		2.02		
ANNUAL RUNOFF (INCHES)	35.87		24.33		27.51		
10 PERCENT EXCEEDS	577		374		436		
50 PERCENT EXCEEDS	156		120		94		
90 PERCENT EXCEEDS	33		8.1		17		

CONNECTICUT RIVER BASIN

01183000 LITTLE RIVER AT OUTLET OF COBBLE MOUNTAIN RESERVOIR, NEAR WESTFIELD, MA

LOCATION.--Lat 42°07'34", long 72°53'37", Hampden County, Hydrologic Unit 01080206, at Cobble Mountain Dam, 7.5 mi west of Westfield, and at mile 13.0.

DRAINAGE AREA.--45.8 mi².

PERIOD OF RECORD.--Discharge: July 1905 to current year. Published as Westfield Little River near Blandford 1905-11, as Westfield Little River near Westfield 1912-35, and as Westfield Little River at outlet of Cobble Mountain Reservoir, near Westfield 1936-76.
Water-quality records: Water year 1957.

REVISED RECORDS.--WSP 501: Drainage area. WDR MA-RI-80-1: 1979.

GAGE.--Venturi meters at outlet tunnel at powerhouse 2.4 mi downstream. Prior to Mar. 1, 1910, nonrecording gage at site 0.2 mi upstream, and Mar. 1, 1910, to Sept. 30, 1935, water-stage recorder at diversion dam 2.8 mi downstream.

REMARKS.--Discharge computed on basis of flow through venturi meters and flow over reservoir spillway or through bypass tunnel. Flow regulated by Borden Brook Reservoir since 1910 and Cobble Mountain Reservoir since August 1931, combined usable capacity, 3,394,000,000 ft³ (See table below for monthend contents).

COOPERATION.--Records provided by Springfield Board of Water Commissioners.

AVERAGE DISCHARGE.--81 years (water years 1911-91), 89.9 ft³/s, 26.66 in/yr, adjusted for storage.

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	Meant†	Per square mile†	Runoff, in inches†	Monthend Contents‡
October.....	110	2.40	2.77	2942.8
November.....	95.8	2.09	2.33	2907.7
December.....	168	3.67	4.24	3133.7
Calendar year 1990.....	111	2.42	33.01	
January.....	82.6	1.80	2.08	3041.1
February.....	115	2.51	2.62	2912.1
March.....	191	4.17	4.80	3084.0
April.....	108	2.36	2.63	3170.1
May.....	101	2.21	2.55	3179.4
June.....	13.2	.29	.32	2963.0
July.....	5.79	.13	.15	2742.4
August.....	25.8	.56	.65	2593.0
September.....	25.0	.55	.61	2467.3
Water year 1991.....	86.8	1.90	25.74	

† Adjusted for change in contents in Borden Brook and Cobble Mountain Reservoirs.

‡ Monthend contents, in millions of cubic feet, in Borden Brook and Cobble Mountain Reservoirs.

CONNECTICUT RIVER BASIN

145

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 records: Water years 1952-53, 1957, 1967-74.

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 National Geodetic Vertical Datum of 1929. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	917	571	2810	1110	929	1160	1870	759	157	185	165
2	238	1180	564	2230	1040	1180	1060	1460	539	191	104	126
3	230	891	565	1600	783	1590	1070	1190	423	171	87	150
4	211	911	1750	1190	906	3800	871	995	370	166	94	146
5	287	1060	2920	958	1110	4230	855	875	362	143	99	160
6	394	1080	1560	931	1560	3240	843	1310	370	146	100	176
7	294	1030	1190	984	2310	2870	788	4220	371	151	101	167
8	260	807	1020	835	2720	2640	794	2410	318	236	92	149
9	262	806	924	932	2290	1790	815	1580	275	158	116	136
10	230	1210	867	857	1780	1250	837	1460	320	131	406	143
11	207	3270	794	875	1370	1200	775	1430	400	120	309	129
12	237	2560	718	758	1260	1120	728	1160	361	115	193	105
13	461	2360	710	724	1200	1020	691	1090	342	125	148	150
14	1570	1620	696	689	1120	1020	694	984	285	144	125	163
15	1500	1120	605	697	1270	1080	648	886	240	155	117	119
16	1320	1040	841	780	1050	1060	535	793	260	138	118	201
17	634	973	987	1170	810	997	518	796	366	118	112	266
18	529	1060	997	1280	789	1130	494	922	349	110	116	196
19	1430	955	1580	1090	803	2280	576	826	328	109	1200	296
20	1210	861	1420	954	1130	2070	1090	695	292	103	1730	974
21	813	802	1270	865	1480	1540	1980	657	268	103	2600	646
22	669	758	1260	690	1520	1280	4000	603	236	90	2120	381
23	680	806	1220	830	1420	1440	4150	548	221	81	743	292
24	5500	994	2380	743	1000	1560	2560	513	198	67	488	266
25	3780	940	2530	618	911	1870	1410	419	187	69	370	1990
26	4380	812	1920	530	1000	1770	1150	408	169	137	304	3250
27	2640	732	1360	539	999	1580	1010	391	125	183	243	2350
28	1510	731	1280	560	907	1600	905	511	262	126	315	1040
29	1160	719	1280	552	---	1650	847	528	174	122	331	726
30	942	659	1400	583	---	1510	969	522	143	117	208	580
31	852	---	3460	966	---	1360	---	1210	---	187	189	---
TOTAL	34644	33664	40639	29820	35648	53656	34823	33262	9313	4169	13463	15638
MEAN	1118	1122	1311	962	1273	1731	1161	1073	310	134	434	521
MAX	5500	3270	3460	2810	2720	4230	4150	4220	759	236	2600	3250
MIN	207	659	564	530	783	929	494	391	125	67	87	105

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 1991, BY WATER YEAR (WY)

	MEAN	511	814	888	850	892	1682	2303	1233	738	403	393	403
MAX	4587	3344	2446	2635	2663	5064	4612	2630	2792	1738	3237	2938	
(WY)	1956	1928	1974	1949	1984	1936	1987	1989	1982	1972	1955	1938	
MIN	96.7	140	206	155	215	597	586	408	186	118	91.2	92.9	
(WY)	1965	1965	1915	1981	1920	1941	1985	1985	1964	1962	1957	1914	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1914 - 1991

ANNUAL TOTAL	428485	338739	
ANNUAL MEAN	1174	928	
HIGHEST ANNUAL MEAN			926
LOWEST ANNUAL MEAN			1594
HIGHEST DAILY MEAN	6410	Apr 4	368
LOWEST DAILY MEAN	81	Jul 28	37400
ANNUAL SEVEN-DAY MINIMUM	106	Jul 28	40
INSTANTANEOUS PEAK FLOW			59
INSTANTANEOUS PEAK STAGE			70300
INSTANTANEOUS LOW FLOW			34.20
10 PERCENT EXCEEDS	2540	1870	9.0
50 PERCENT EXCEEDS	891	802	
90 PERCENT EXCEEDS	233	138	

CONNECTICUT RIVER BASIN

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT
(National stream-quality accounting network and radiochemical station)

LOCATION.--Lat 41°59'14", long 72°36'21", Hartford County, Hydrologic Unit 01080205, on right bank just upstream from Enfield Dam, 1 mi downstream from Thompsonville, 3 mi downstream from Massachusetts-Connecticut State line, and at mile 68.2.

DRAINAGE AREA.--9,660 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1928 to current year.

REVISED RECORDS.--WSP 741: 1932. WDR MA-RI-77-1: 1976. WDR MA-RI-83-1: Drainage area, 1982.

GAGE.--Water-stage recorders on river and on canal of The Dexter Corp. Datum of gage is 38.48 ft above National Geodetic Vertical Datum of 1929. Nov. 28, 1986, to Aug. 2, 1990, recorder at site 200 ft downstream at datum 0.28 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Discharge includes water diverted around station by canal of The Dexter Corp. Flow regulated by powerplants, by diversion from Chicopee River basin, and by First Connecticut and Second Connecticut Lakes, Lake Francis, Moore and Comerford Reservoirs, Quabbin Reservoir, and other reservoirs, combined usable capacity, about 107 billion cu ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7480	20800	18800	40800	17300	e14000	27800	28000	10800	4410	5860	6810
2	9670	20400	19700	e36000	e15000	16100	27400	34000	10900	4400	4490	6730
3	8430	20300	17100	e32000	e13000	18600	23100	30900	11500	4590	3470	6120
4	8330	17300	23000	e27000	15200	33000	24100	28100	11600	5250	3400	6450
5	9820	13400	34700	e24000	16300	53000	23300	24400	12300	5130	3480	7030
6	12000	17600	37400	e22000	16800	52000	23700	25200	11300	4250	3400	6080
7	12200	21800	33200	e19500	20200	45000	28300	37000	8420	3850	3360	7010
8	8260	20900	27400	e17000	25700	48000	31900	40800	7830	3850	4710	4780
9	8900	20500	23500	e15500	29000	43600	37700	34300	6440	3930	4100	4560
10	11300	20200	19000	e14500	24100	30500	40100	32600	6730	3710	5660	4380
11	10800	38800	18700	e14000	21400	28000	41800	28700	7060	3820	6040	5630
12	12700	51400	19100	15200	e20000	23000	42000	25100	8000	5330	4390	5070
13	17500	46800	19800	e14500	e19000	25700	41400	22000	8550	4590	5700	4810
14	23500	39700	18400	e14000	e18000	23900	36300	20900	7350	4100	7010	4670
15	31600	29600	18600	e13500	e17000	23100	32000	20600	6270	3770	6400	4500
16	32300	25400	17200	e13000	e16000	21800	27000	17100	7250	3760	6150	4890
17	27700	25000	14900	18700	e15000	19900	26200	17800	10500	3510	5360	7400
18	23200	26100	18200	22300	e14000	20000	26400	16300	11700	3560	4030	7900
19	21500	32700	22200	21400	e13500	26700	25400	14700	10200	4840	11000	8640
20	20700	31300	22600	18000	16100	29700	26500	13100	10800	5320	25900	12800
21	22000	28100	24300	14000	18700	27600	26200	12700	10200	4110	20000	13200
22	20000	23800	25400	15800	19200	24200	46400	14500	8780	3670	21000	8910
23	20400	22600	29100	e15000	e18000	24000	64300	13800	5940	3900	19000	6820
24	38500	23700	45900	e14500	e17000	22800	56400	10300	5230	4250	11000	6960
25	58700	21300	76200	e14000	e16000	21200	42700	9030	6020	3980	7400	17700
26	63500	19700	76200	e13500	e15500	23800	33400	8350	4830	4320	11500	30500
27	50400	20000	e60000	e13000	e15000	22200	29800	6850	5200	5050	9000	29700
28	38600	19600	e46000	12300	e14500	23400	25500	9610	5980	4820	7600	25700
29	32400	20300	35900	14600	---	31000	24400	13600	6130	3800	9260	18400
30	29600	21300	30800	15700	---	39300	23400	11900	4470	3510	9500	13700
31	25800	---	35700	16100	---	34800	---	13300	---	3590	8770	---
TOTAL	717790	760400	929000	571400	496500	889900	984900	635540	248280	130970	257940	297850
MEAN	23150	25350	29970	18430	17730	28710	32830	20500	8276	4225	8321	9928
MAX	63500	51400	76200	40800	29000	53000	64300	40800	12300	5330	25900	30500
MIN	7480	13400	14900	12300	13000	14000	23100	6850	4470	3510	3360	4380

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1991, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1928	9861	31730	1978	2690	1964
1929	14590	31690	1956	5015	1965
1930	15200	38350	1984	5548	1948
1931	13580	30180	1978	4311	1931
1932	13660	39100	1981	4386	1940
1933	25170	89210	1936	6965	1940
1934	44970	76050	1960	20070	1946
1935	27510	51520	1972	9611	1941
1936	13740	42600	1984	4900	1964
1937	7634	28810	1973	3202	1962
1938	6946	22530	1955	2911	1965
1939	7172	42700	1938	2719	1964

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1928 - 1991
ANNUAL TOTAL	8746780	6920470	
ANNUAL MEAN	23960	18960	16640
HIGHEST ANNUAL MEAN			24830
LOWEST ANNUAL MEAN			7847
HIGHEST DAILY MEAN	98300	Mar 21	278000
LOWEST DAILY MEAN	3920	Sep 9	968
ANNUAL SEVEN-DAY MINIMUM	5460	Sep 4	1870
INSTANTANEOUS PEAK FLOW			282000
INSTANTANEOUS PEAK STAGE		4.96	16.60
10 PERCENT EXCEEDS	45100	35800	37300
50 PERCENT EXCEEDS	20200	17300	10900
90 PERCENT EXCEEDS	7220	4590	4000

CONNECTICUT RIVER BASIN

147

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956, 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to current year.

WATER TEMPERATURES: October 1955 to September 1956, October 1973 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1973.

REMARKS.--Interruptions in the record are due to malfunctions of the instrument. Instantaneous records are representative of the cross section while continuous records are based on point samples. The instantaneous record values will not necessarily fall within the corresponding daily range of the continuous records.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 246 microsiemens, Jan. 26, 1984; minimum, 46 microsiemens, Apr. 2, 1977.

WATER TEMPERATURES: Maximum, 36.5°C, Aug. 30, 1977; minimum, 0.0°C, on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 148 microsiemens, Sept. 6, 7, 14; minimum, 56 microsiemens, Oct. 24.

WATER TEMPERATURES: Maximum, 26.0°C, Aug. 17, 18; minimum, 0.0°C, on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	ENTERO- COCCI ME, MF WATER TOTAL (COL / 100 ML) (31649)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	
OCT													
02...	0815	10100	146	7.5	14.5	18.0	1.0	8.9	94	--	--	--	
23...	1418	20700	80	7.1	16.0	14.0	2.5	10.4	101	130	56	190	
NOV													
05...	0920	13100	103	--	12.5	10.0	1.9	9.5	84	--	--	--	
21...	1030	29000	89	7.2	8.0	4.5	2.5	12.9	99	170	100	170	
DEC													
02...	1125	20600	103	--	11.5	4.5	1.6	11.1	85	--	--	--	
18...	1100	18500	108	7.2	10.0	2.0	2.0	12.2	90	380	700	1100	
JAN													
15...	1015	12800	100	7.3	4.0	0.0	2.1	14.3	98	100	270	300	
MAR													
11...	1450	27600	90	7.2	4.0	2.0	3.6	13.8	100	38	60	56	
APR													
12...	0910	41700	82	7.5	5.0	9.5	8.1	11.4	99	K6	K15	K18	
MAY													
14...	0950	20700	90	7.2	17.0	16.0	2.5	9.4	97	K8	39	51	
JUN													
10...	0953	6560	115	7.3	25.5	22.0	1.0	7.6	87	51	K5	K16	
JUL													
18...	0915	3380	147	7.7	30.5	26.5	0.50	9.5	119	50	80	220	
AUG													
14...	1315	6920	141	7.7	31.5	25.0	0.80	7.9	99	86	K1	K4	
SEP													
05...	1000	7840	133	7.4	21.5	22.5	0.80	8.3	96	200	20	140	
DATE		COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	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)	BICAR- BONATE WATER DIS IT FIELD HCO3 (00453)	ALKA- LINITY WAT DIS TOT IT FIELD CACO3 (39086)	ALKA- LINITY 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)
OCT													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	120	31	10	1.5	--	--	--	26	21	--	8.2	8.8	<0.10
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	170	34	11	1.6	4.8	1.0	--	34	28	25	9.9	7.7	<0.10
DEC													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	35	11	1.9	--	--	--	--	--	--	9.7	12	<0.10
JAN													
15...	230	37	12	1.6	6.6	1.1	--	31	25	27	8.3	8.6	<0.10
MAR													
11...	--	27	8.9	1.2	--	--	--	--	--	--	8.3	8.7	0.10
APR													
12...	--	30	9.9	1.2	--	--	--	--	--	--	7.0	6.4	0.20
MAY													
14...	K2	28	9.1	1.3	5.6	0.90	--	23	19	21	7.8	8.9	<0.10
JUN													
10...	--	40	13	1.8	--	--	--	--	--	--	11	11	<0.10
JUL													
18...	38	44	14	2.1	11	1.6	--	42	34	33	13	17	<0.10
AUG													
14...	--	41	13	2.0	--	--	--	--	--	--	9.6	14	<0.10
SEP													
05...	--	42	13	2.2	--	--	--	--	--	--	10	13	<0.10

CONNECTICUT RIVER BASIN

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, Conn.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	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)
OCT											
02...	--	--	--	0.280	0.020	0.300	0.300	0.280	0.270	0.32	0.60
23...	--	58	66	0.190	0.010	0.200	0.300	0.160	0.160	0.74	0.90
NOV											
05...	--	--	--	--	<0.010	0.400	0.400	0.140	0.150	0.16	0.30
21...	6.2	61	57	--	<0.010	0.300	0.300	0.110	0.100	0.19	0.30
DEC											
02...	--	--	--	--	<0.010	0.300	0.300	0.110	0.100	0.09	0.20
18...	--	62	67	--	<0.010	0.500	0.500	0.170	0.170	0.23	0.40
JAN											
15...	6.9	63	72	0.490	0.010	0.500	0.500	0.210	0.220	--	<0.20
MAR											
11...	--	54	55	0.350	0.020	0.370	--	0.090	--	0.41	0.50
APR											
12...	--	49	81	--	<0.010	0.290	--	0.030	--	0.57	0.60
MAY											
14...	5.4	47	77	0.290	0.010	0.300	0.310	0.070	0.060	1.1	1.2
JUN											
10...	--	75	76	0.390	0.010	0.400	--	0.080	--	0.62	0.70
JUL											
18...	3.2	85	88	0.390	0.020	0.410	0.390	0.070	0.090	0.53	0.60
AUG											
14...	--	76	88	--	<0.010	0.240	--	0.050	--	0.45	0.50
SEP											
05...	--	73	97	0.260	0.010	0.270	--	0.160	--	0.34	0.50

DATE	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 TOTAL (MG/L AS P) (70507)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	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 TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)
OCT											
02...	0.90	0.040	0.030	0.040	0.030	--	--	--	--	--	--
23...	1.1	0.030	0.040	0.020	0.020	--	--	--	--	<1	<1.0
NOV											
05...	0.70	0.040	0.040	0.050	0.040	--	--	--	--	--	--
21...	0.60	<0.010	<0.010	0.010	0.010	30	<1	10	<0.5	<1	1.0
DEC											
02...	0.50	0.020	<0.010	<0.010	0.010	--	--	--	--	--	--
18...	0.90	0.030	0.020	0.020	0.020	--	--	--	--	<1	<1.0
JAN											
15...	--	0.080	0.020	0.030	0.020	40	<1	13	<0.5	<1	<1.0
MAR											
11...	0.87	0.040	0.040	0.010	--	--	--	--	--	<1	<1.0
APR											
12...	0.89	0.040	<0.010	0.010	--	--	--	--	--	<1	<1.0
MAY											
14...	1.5	0.030	0.020	0.020	0.010	30	<1	12	<0.5	<1	<1.0
JUN											
10...	1.1	0.040	0.020	<0.010	--	--	--	--	--	<1	<1.0
JUL											
18...	1.0	0.070	0.040	0.030	0.020	<10	<1	16	<0.5	--	<1.0
AUG											
14...	0.74	0.040	0.030	0.020	--	--	--	--	--	<1	<1.0
SEP											
05...	0.77	0.060	0.050	0.020	--	--	--	--	--	<1	<1.0

CONNECTICUT RIVER BASIN

149

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGANESE, DIS- SOLVED (UG/L AS MN) (01056)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--
23...	2	<1	--	3	3	530	--	3	<1	--	--
NOV 05...	--	--	--	--	--	--	--	--	--	--	--
21...	<1	<1	<3	3	1	400	76	<1	<1	<4	14
DEC 02...	--	--	--	--	--	--	--	--	--	--	--
18...	<1	<1	--	5	5	290	--	6	1	--	--
JAN 15...	<1	<1	<3	3	2	190	84	1	<1	<4	25
MAR 11...	1	<1	--	5	1	710	--	3	1	--	--
APR 12...	<1	<1	--	3	1	1300	--	2	<1	--	--
MAY 14...	<1	<1	<3	3	2	400	110	1	<1	<4	19
JUN 10...	<1	4	--	6	5	210	--	2	1	--	--
JUL 18...	--	<1	<3	--	2	--	13	--	<1	<4	2
AUG 14...	<1	<1	--	4	3	80	--	1	<1	--	--
SEP 05...	1	<1	--	3	2	240	--	<1	<1	--	--

DATE	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELENIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRONTIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANADIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 02...	--	--	--	--	--	--	--	--	--	--	4.0
23...	--	--	1	1	--	--	--	--	10	5	6.1
NOV 05...	--	--	--	--	--	--	--	--	--	--	4.3
21...	<0.1	<10	<1	1	<1	<1.0	49	<6	10	<3	3.8
DEC 02...	--	--	--	--	--	--	--	--	--	--	3.8
18...	--	--	2	3	--	--	--	--	<10	9	3.2
JAN 15...	0.1	<10	1	1	<1	<1.0	53	<6	<10	4	2.7
MAR 11...	--	--	2	1	--	--	--	--	<10	9	3.2
APR 12...	--	--	2	<1	--	--	--	--	<10	3	3.4
MAY 14...	0.2	<10	3	1	<1	<1.0	47	<6	<10	3	3.6
JUN 10...	--	--	<1	1	--	--	--	--	<10	19	3.3
JUL 18...	0.2	<10	--	<1	<1	<1.0	78	<6	--	4	3.9
AUG 14...	--	--	<1	<1	--	--	--	--	<10	3	3.5
SEP 05...	--	--	2	<1	--	--	--	--	<10	12	4.2

CONNECTICUT RIVER BASIN

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
OCT 23...	1418	<0.6	<0.6	2.0	0.8	1.8	0.8	0.09	0.09
APR 12...	0910	0.4	0.8	1.2	1.5	1.0	1.5	0.02	0.07

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 23...	1418	20700	16	894	59
NOV 21...	1030	29000	6	470	85
JAN 15...	1015	12800	3	104	71
MAY 14...	0950	20700	10	559	83
JUL 18...	0915	3380	7	64	94

CONNECTICUT RIVER BASIN

151

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	142	135	139	78	75	77	112	107	109	76	74	75
2	140	136	138	80	75	78	112	111	111	77	74	76
3	135	131	133	80	75	77	116	112	114	79	77	78
4	142	133	138	84	77	81	116	103	109	83	79	80
5	141	133	137	88	85	86	105	91	94	85	82	83
6	137	131	135	89	84	86	94	92	93	87	85	86
7	132	124	127	89	83	86	95	92	94	87	84	85
8	126	124	125	88	84	86	97	93	95	86	84	85
9	135	124	132	94	89	91	99	96	98	90	86	88
10	135	130	133	94	84	91	100	98	99	113	90	101
11	132	128	130	87	74	79	101	99	100	118	80	112
12	134	129	132	76	72	74	102	100	101	103	76	88
13	133	115	126	72	70	71	102	100	101	107	104	106
14	113	105	111	76	72	73	105	102	104	106	103	104
15	104	92	100	81	75	78	110	103	105	108	105	106
16	92	84	86	82	80	81	123	112	119	118	106	109
17	88	85	87	86	83	84	123	110	114	129	116	125
18	91	87	89	86	84	85	110	108	109	115	102	108
19	89	87	88	85	83	84	107	99	103	103	97	100
20	86	78	82	90	84	87	99	97	98	105	98	102
21	79	73	76	91	88	89	99	97	98	108	105	107
22	77	73	75	95	90	93	99	97	98	107	105	106
23	87	77	79	97	95	96	99	97	98	110	102	107
24	79	56	67	99	96	98	98	91	96	110	104	108
25	63	59	61	98	96	97	90	79	86	112	103	109
26	60	57	58	102	98	100	78	75	76	112	101	106
27	61	57	58	104	101	103	76	74	75	113	108	111
28	68	62	65	107	104	106	77	75	76	125	113	117
29	70	68	69	109	107	108	83	76	78	125	117	121
30	72	68	70	110	106	108	89	83	86	118	114	116
31	75	71	72	---	---	---	89	75	83	122	117	119
MONTH	142	56	101	110	70	88	123	74	97	129	74	101

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	119	107	113	113	108	110	105	94	99	91	84	88
2	107	103	105	120	108	112	102	93	95	86	80	83
3	112	103	109	114	102	108	98	95	97	86	82	84
4	112	109	111	101	86	95	103	97	99	87	84	86
5	110	105	107	87	82	85	110	99	102	90	87	88
6	105	99	102	84	81	82	109	101	103	91	83	88
7	99	94	97	86	82	84	110	98	102	86	74	79
8	94	87	90	83	82	82	104	98	100	80	74	77
9	89	86	88	87	83	84	99	97	98	83	79	81
10	91	87	89	90	87	89	98	93	96	85	82	84
11	93	89	91	91	90	90	92	87	90	86	83	84
12	97	93	94	94	92	93	89	85	87	88	84	86
13	97	93	95	94	92	93	87	84	85	90	8	89
14	137	95	105	97	93	95	88	84	86	91	68	90
15	134	106	117	113	96	102	87	85	86	93	90	91
16	107	103	104	113	102	107	88	86	87	95	93	94
17	109	102	106	105	103	104	90	86	88	96	94	95
18	111	108	110	105	103	104	90	87	89	98	93	95
19	146	111	118	106	92	100	93	90	92	97	93	95
20	145	118	132	93	89	90	97	90	92	100	94	96
21	117	104	110	92	89	91	96	86	90	104	100	101
22	107	101	104	97	92	95	86	75	80	103	100	102
23	104	100	102	98	95	96	74	71	73	101	99	100
24	107	100	104	97	95	96	77	72	74	106	100	103
25	110	105	107	100	95	97	78	75	76	110	107	109
26	110	107	109	95	93	94	83	76	79	111	108	109
27	111	106	108	97	95	96	85	82	83	114	108	111
28	114	110	112	97	95	96	87	83	85	122	109	116
29	---	---	---	107	95	97	88	87	88	112	108	110
30	---	---	---	108	95	101	92	87	90	110	107	109
31	---	---	---	104	93	97	---	---	---	113	106	109
MONTH	146	86	105	120	81	96	110	71	90	122	74	95

CONNECTICUT RIVER BASIN

01184000 CONNECTICUT RIVER AT THOMPSONVILLE, CT--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	106	104	105	132	130	131	145	141	144	127	125	126
2	107	104	105	136	130	134	-	-	-	129	125	128
3	107	104	106	136	134	134	-	-	-	134	129	131
4	124	106	115	138	134	135	-	-	-	138	132	136
5	124	121	123	134	130	133	-	-	-	142	136	139
6	124	120	122	134	130	132	-	-	-	148	142	144
7	125	120	122	136	132	134	-	-	-	148	141	144
8	128	120	122	138	134	137	-	-	-	143	141	142
9	128	119	124	140	136	138	-	-	-	145	141	142
10	129	120	124	140	136	139	-	-	-	143	141	142
11	131	121	127	140	136	138	-	-	-	147	141	144
12	133	125	129	138	132	136	-	-	-	146	144	145
13	129	121	125	135	131	132	-	-	-	146	142	144
14	129	123	125	135	131	133	-	-	-	148	140	143
15	133	123	128	137	133	136	140	136	138	146	142	143
16	139	127	131	141	137	138	145	138	142	144	139	142
17	135	125	129	141	137	139	147	143	145	145	139	141
18	127	121	123	141	139	140	147	145	145	141	135	139
19	123	119	121	141	137	139	147	131	141	143	137	139
20	125	119	122	139	135	137	135	122	127	141	131	136
21	126	121	123	137	133	136	120	108	112	131	122	126
22	128	122	125	139	87	133	108	102	105	124	118	121
23	128	122	125	145	105	138	113	106	108	124	120	123
24	128	120	124	145	143	144	113	109	111	130	124	127
25	132	124	128	143	141	142	113	111	113	128	112	124
26	128	124	126	143	141	142	119	113	116	112	99	106
27	130	126	128	143	141	142	119	116	118	99	95	96
28	130	124	127	141	137	138	120	118	119	103	97	100
29	132	128	131	139	135	137	124	116	121	105	101	103
30	134	128	130	141	139	140	122	118	119	109	106	107
31	---	---	---	145	139	142	125	121	124	---	---	---
MONTH	139	104	123	145	87	137	147	102	125	148	95	131
YEAR	148	56	107									

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	-	-	-	-	-	-	5.0	4.5	4.5	1.0	.0	.5
2	-	-	-	-	-	-	4.5	4.0	4.5	.5	.0	.5
3	-	-	-	-	-	-	4.0	3.5	4.0	1.0	.5	1.0
4	-	-	-	-	-	-	5.0	4.0	5.0	1.0	.5	.5
5	-	-	-	-	-	-	4.5	3.0	3.5	.5	.0	.0
6	-	-	-	-	-	-	3.0	2.5	3.0	.5	.0	.5
7	-	-	-	-	-	-	2.5	2.5	2.5	.5	.0	.5
8	-	-	-	-	-	-	3.0	2.5	2.5	.0	.0	.0
9	-	-	-	-	-	-	2.5	2.0	2.0	.0	.0	.0
10	-	-	-	-	-	-	2.5	2.0	2.5	.0	.0	.0
11	-	-	-	-	-	-	2.0	1.5	1.5	.0	.0	.0
12	-	-	-	-	-	-	2.0	1.5	1.5	.0	.0	.0
13	-	-	-	-	-	-	2.5	1.5	2.0	.0	.0	.0
14	-	-	-	-	-	-	2.0	1.0	1.5	.0	.0	.0
15	-	-	-	-	-	-	1.0	.5	1.0	.0	.0	.0
16	-	-	-	-	-	-	1.5	1.0	1.0	.0	.0	.0
17	-	-	-	-	-	-	1.5	1.0	1.5	.0	.0	.0
18	-	-	-	-	-	-	2.0	1.5	2.0	.5	.0	.5
19	-	-	-	-	-	-	2.5	2.0	2.5	.5	.5	.5
20	-	-	-	-	-	-	2.5	2.0	2.0	1.0	.5	.5
21	-	-	-	-	-	-	2.0	1.5	2.0	1.0	.0	.5
22	-	-	-	-	-	-	2.5	2.0	2.0	.0	.0	.0
23	-	-	-	-	-	-	4.0	2.5	3.5	.0	.0	.0
24	-	-	-	-	-	-	4.0	3.5	4.0	.0	.0	.0
25	-	-	-	-	-	-	3.0	2.0	2.5	.0	.0	.0
26	-	-	-	-	-	-	2.0	1.5	2.0	.0	.0	.0
27	-	-	-	-	-	-	1.0	.5	.5	.0	.0	.0
28	-	-	-	-	-	-	.5	.0	.0	.0	.0	.0
29	-	-	-	6.0	6.0	6.0	.5	.0	.0	.0	.0	.0
30	-	-	-	6.0	5.0	5.5	1.5	.5	1.0	.0	.0	.0
31	-	-	-	---	---	---	2.0	1.0	1.5	.5	.0	.5
MONTH	-	-	-	6.0	5.0	5.5	5.0	.0	2.0	1.0	.0	.0

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.

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Otis Reservoir 7.0 mi upstream on Fall River (see table below for monthend contents). High flow slightly affected by retarding reservoirs since 1966.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	276	213	572	e170	137	185	144	205	23	9.5	18
2	28	254	202	447	e140	224	172	132	144	21	9.0	16
3	26	220	196	379	e120	283	158	128	110	20	9.0	16
4	27	210	475	e320	e125	758	145	118	94	20	9.7	16
5	44	203	446	e280	e150	622	137	105	89	19	14	14
6	32	254	354	e270	e190	481	140	437	81	19	10	15
7	27	241	273	e210	362	586	139	625	67	20	9.2	14
8	25	233	212	e130	337	433	132	361	56	18	8.9	14
9	23	221	190	e125	265	311	126	259	47	15	10	14
10	22	460	166	e120	222	260	121	281	41	13	26	53
11	21	606	129	e110	178	221	108	245	40	13	17	68
12	25	436	128	e110	135	201	96	197	50	13	13	11
13	229	352	119	e115	131	172	90	159	55	16	11	9.4
14	422	297	111	e120	139	150	89	138	42	21	9.3	11
15	144	286	118	e120	169	156	92	124	35	16	8.8	14
16	97	266	221	e130	127	151	104	105	55	13	9.3	19
17	74	296	194	e170	123	155	93	124	76	12	9.1	14
18	73	296	262	e150	122	205	97	182	56	11	8.6	12
19	251	270	406	e130	123	368	91	134	59	10	282	40
20	300	252	299	e120	263	306	84	111	57	10	289	75
21	288	244	266	e110	236	248	288	93	45	9.5	286	57
22	277	235	299	e105	210	249	479	80	41	11	159	44
23	420	250	289	e105	175	277	330	70	38	15	100	35
24	1900	306	745	e110	138	288	257	62	34	14	69	32
25	927	283	551	e100	130	354	213	56	31	11	50	355
26	611	256	423	e95	130	307	168	49	29	13	39	399
27	453	239	345	e90	125	289	138	48	27	21	32	256
28	394	231	318	e88	126	291	115	65	25	14	28	160
29	348	226	306	e86	---	264	97	53	24	12	24	106
30	315	224	461	e84	---	236	141	201	24	11	23	83
31	294	---	865	e180	---	206	---	329	---	10	21	---
TOTAL	8147	8423	9582	5281	4861	9189	4625	5215	1777	464.5	1603.4	1990.4
MEAN	263	281	309	170	174	296	154	168	59.2	15.0	51.7	66.3
MAX	1900	606	865	572	362	758	479	625	205	23	289	399
MIN	21	203	111	84	120	137	84	48	24	9.5	8.6	9.4
(T)	612.0	376.7	364.3	355.1	431.3	513.6	589.7	680.3	688.0	680.3	695.7	707.2
(+)	-31.3	-90.8	-4.63	-3.43	+31.5	+30.7	+29.4	+33.8	+34.3	-2.87	+5.75	+4.44

† Monthend contents, in millions of cubic feet, in Otis Reservoir, records furnished by Massachusetts Department of Environmental Management, Division of Forests and Parks.

‡ Change in contents, equivalent in cubic feet per second, in Otis Reservoir.

MEAN	138	200	192	173	165	302	407	219	131	79.0	90.1	93.0
MAX	774	817	556	430	608	947	828	627	479	290	1002	644
(WY)	1956	1928	1974	1978	1981	1936	1958	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	11.6
(WY)	1915	1915	1918	1981	1980	1965	1985	1941	1964	1962	1957	1983

ANNUAL TOTAL	79251		61158.3				
ANNUAL MEAN	217		168		182		
HIGHEST ANNUAL MEAN					341		1928
LOWEST ANNUAL MEAN					66.1		1965
HIGHEST DAILY MEAN	1900	Oct 24	1900	Oct 24	16100	Aug 19	1955
LOWEST DAILY MEAN	12	Aug 3	8.6	Aug 18	2.4	Aug 20	1957
ANNUAL SEVEN-DAY MINIMUM	13	Jul 30	9.9	Aug 12	3.1	Sep 9	1957
INSTANTANEOUS PEAK FLOW			3340	Oct 24	34300	Aug 19	1955
INSTANTANEOUS PEAK STAGE			7.43	Oct 24	14.06	Aug 19	1955
10 PERCENT EXCEEDS	446		353		396		
50 PERCENT EXCEEDS	190		126		113		
90 PERCENT EXCEEDS	27		14		27		

HOUSATONIC RIVER BASIN

155

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 40 ft downstream from Hubbard Avenue Bridge at Coltsville, 1.2 mi upstream from Unkamet Brook, and 2 mi northeast of Pittsfield.

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 National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. 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. Maximum discharge since at least 1755, that of Sept. 21, 1938.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	87	58	244	102	69	105	250	69	28	19	20
2	48	86	76	172	85	134	101	200	43	25	19	18
3	55	82	99	138	74	243	116	140	38	24	21	19
4	61	76	246	113	86	472	125	108	35	24	23	20
5	141	73	347	96	111	349	128	88	35	22	23	28
6	86	112	183	82	159	190	114	134	37	22	20	28
7	57	121	139	79	279	282	113	315	34	23	19	23
8	49	93	124	63	310	214	109	176	31	23	18	19
9	55	84	98	68	191	127	114	112	27	22	20	19
10	66	245	87	72	141	95	109	122	28	20	26	19
11	68	509	71	66	109	82	91	131	28	19	23	19
12	71	269	67	69	84	77	76	104	37	19	22	18
13	188	186	67	71	86	76	67	89	36	22	19	16
14	523	151	65	67	89	83	65	82	29	24	18	19
15	259	143	58	70	94	88	70	82	26	22	20	24
16	148	145	80	81	73	89	94	86	30	19	21	30
17	98	115	84	126	74	96	81	98	67	19	18	26
18	88	104	121	130	72	129	143	151	46	19	20	23
19	349	88	264	137	78	217	110	95	35	18	211	175
20	209	79	167	128	152	184	78	62	36	18	287	159
21	134	77	141	115	167	134	255	54	31	18	203	76
22	115	82	212	89	127	132	465	48	30	17	109	39
23	156	115	197	86	105	140	273	43	24	19	49	37
24	1100	122	389	92	77	137	186	39	23	19	35	53
25	526	110	287	78	77	196	151	37	23	18	29	307
26	273	72	157	74	73	165	101	36	22	26	26	340
27	197	67	122	83	70	168	81	35	21	30	25	219
28	168	68	96	70	66	212	73	81	21	21	23	153
29	155	67	89	51	---	211	68	68	19	20	22	127
30	117	61	203	58	---	156	147	57	30	19	20	86
31	93	---	529	118	---	115	---	123	---	19	23	---
TOTAL	5707	3689	4923	2986	3211	5062	3809	3246	991	658	1431	2159
MEAN	184	123	159	96.3	115	163	127	105	33.0	21.2	46.2	72.0
MAX	1100	509	529	244	310	472	465	315	69	30	287	340
MIN	48	61	58	51	66	69	65	35	19	17	18	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1991, BY WATER YEAR (WY)

	MEAN	69.0	95.1	99.0	91.0	97.6	174	260	143	82.9	53.8	48.6	55.4
MAX	318	279	321	252	274	417	573	366	326	220	188	326	
(WY)	1956	1956	1974	1949	1984	1979	1940	1984	1972	1945	1990	1938	
MIN	19.9	19.1	31.2	15.5	16.0	50.4	66.3	37.7	25.4	12.9	14.9	14.3	
(WY)	1965	1965	1981	1981	1980	1965	1985	1985	1964	1962	1980	1983	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1936 - 1991

ANNUAL TOTAL	56015	37872	
ANNUAL MEAN	153	104	106
HIGHEST ANNUAL MEAN			155
LOWEST ANNUAL MEAN			42.6
HIGHEST DAILY MEAN	2010	Aug 7	4460
LOWEST DAILY MEAN	18	Aug 5	4.4
ANNUAL SEVEN-DAY MINIMUM	20	Jul 30	9.5
INSTANTANEOUS PEAK FLOW			6400
INSTANTANEOUS PEAK STAGE		4.95	10.80
INSTANTANEOUS LOW FLOW		14	
10 PERCENT EXCEEDS	324	211	230
50 PERCENT EXCEEDS	103	81	60
90 PERCENT EXCEEDS	40	20	24

HOUSATONIC RIVER BASIN

01197500 HOUSATONIC RIVER NEAR GREAT BARRINGTON, MA

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.

DRAINAGE AREA.--282 mi².

PERIOD OF RECORD.--Discharge: May 1913 to current year.

Water-quality records: Water years 1957-59, 1963-64, 1971, 1979-80.

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 National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Regulation at low flow by powerplants upstream. High flow slightly affected by retarding reservoir since 1973.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	258	580	394	1670	550	368	563	684	e1300	102	93	114
2	288	576	379	1280	451	446	529	753	e930	124	87	111
3	278	543	380	1030	422	636	510	684	e600	125	81	105
4	260	515	710	882	427	1010	484	597	e500	120	83	119
5	365	501	1220	777	471	1370	477	519	e450	117	94	112
6	419	543	1050	739	556	1140	478	537	e390	112	100	125
7	322	605	775	685	794	1040	464	975	e420	110	100	111
8	263	573	660	587	1070	1080	454	967	e310	109	100	108
9	247	538	596	529	940	867	446	728	e270	109	96	104
10	240	691	551	503	748	706	440	651	e240	107	95	102
11	242	1480	499	464	633	603	414	671	e230	103	98	105
12	219	1600	462	458	532	574	379	593	e260	100	103	173
13	347	1210	450	e460	507	550	351	522	e280	101	116	136
14	1150	905	435	e450	515	520	e330	484	e250	105	122	104
15	1190	772	404	448	561	541	e320	469	e230	111	101	100
16	805	729	506	460	488	528	e370	426	e220	110	93	150
17	567	721	549	677	e430	533	e340	405	e250	107	106	150
18	474	695	573	737	416	569	e430	572	e270	102	102	137
19	863	632	946	621	414	822	e500	531	224	97	403	362
20	995	587	960	573	583	842	e400	430	203	81	1030	701
21	758	571	780	541	693	710	e660	370	187	82	861	476
22	599	570	840	e450	618	635	e1000	328	157	85	628	313
23	592	600	878	e430	542	675	e1100	299	166	87	394	243
24	1820	654	1140	426	452	705	e850	282	147	91	259	212
25	2510	634	1370	e350	423	865	717	258	147	94	198	652
26	2180	591	1130	e320	403	857	607	244	124	95	158	1370
27	1440	516	846	355	388	795	498	229	122	95	141	1100
28	1000	473	782	361	370	816	446	292	117	107	135	728
29	818	437	735	e350	---	809	412	307	109	108	132	524
30	726	413	875	349	---	730	453	e330	128	103	123	423
31	643	---	1720	593	---	630	---	e1500	---	102	112	---
TOTAL	22878	20455	23595	18555	15397	22972	15422	16637	9231	3201	6344	9270
MEAN	738	682	761	599	550	741	514	537	308	103	205	309
MAX	2510	1600	1720	1670	1070	1370	1100	1500	1300	125	1030	1370
MIN	219	413	379	320	370	368	320	229	109	81	81	100
CFSM	2.62	2.42	2.70	2.12	1.95	2.63	1.82	1.90	1.09	.37	.73	1.10
IN.	3.02	2.70	3.11	2.45	2.03	3.03	2.03	2.19	1.22	.42	.84	1.22

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1991, BY WATER YEAR (WY)

	MEAN	299	459	514	494	499	914	1236	694	418	276	244	262
MAX	1170	2040	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	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1913 - 1991
ANNUAL TOTAL	269432	183957	
ANNUAL MEAN	738	504	526
HIGHEST ANNUAL MEAN			962
LOWEST ANNUAL MEAN			211
HIGHEST DAILY MEAN	3960	Aug 8	11100
LOWEST DAILY MEAN	107	Aug 1	1.0
ANNUAL SEVEN-DAY MINIMUM	114	Jul 30	40
INSTANTANEOUS PEAK FLOW		2600	12200
INSTANTANEOUS PEAK STAGE		5.83	12.08
INSTANTANEOUS LOW FLOW		65	
ANNUAL RUNOFF (CFSM)	2.62	1.79	1.86
ANNUAL RUNOFF (INCHES)	35.54	24.27	25.34
10 PERCENT EXCEEDS	1510	952	1160
50 PERCENT EXCEEDS	587	460	332
90 PERCENT EXCEEDS	228	105	127

HUDSON RIVER BASIN

157

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 National Geodetic Vertical Datum of 1929. 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. 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. Maximum gage heights shown in table below are for site and datum then in use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	96	65	170	88	68	128	219	54	28	15	23
2	47	91	64	156	75	86	125	179	46	24	15	19
3	40	78	40	137	75	178	119	136	43	21	15	18
4	43	56	117	119	100	243	93	119	42	21	20	18
5	83	57	196	106	117	303	90	107	45	20	23	22
6	65	83	115	107	140	185	96	155	48	21	19	19
7	75	75	98	106	239	189	97	235	44	21	17	19
8	37	70	91	78	213	198	97	163	41	20	16	17
9	29	69	85	85	154	140	110	117	41	20	19	17
10	29	68	83	73	134	129	104	122	27	18	34	17
11	29	340	71	63	109	111	94	114	25	17	24	19
12	35	242	71	66	84	106	83	101	35	17	22	16
13	158	157	55	67	88	83	78	93	35	21	19	17
14	240	125	46	62	90	80	79	85	26	33	17	18
15	138	113	43	63	99	77	85	83	23	24	18	22
16	108	112	73	81	75	75	98	76	26	20	25	30
17	91	108	84	136	77	79	83	100	26	20	21	24
18	103	105	150	98	76	87	124	131	23	18	20	22
19	257	94	221	81	76	159	99	82	22	17	210	119
20	143	86	133	79	117	143	88	69	22	18	192	80
21	112	62	145	74	148	124	208	64	21	17	155	44
22	101	59	225	61	109	126	272	59	20	15	104	36
23	145	64	180	63	105	128	185	65	20	18	48	33
24	544	76	373	66	77	138	145	51	21	17	39	35
25	251	71	235	61	82	141	106	50	21	14	33	273
26	180	79	166	57	78	122	95	50	19	15	30	227
27	152	79	131	59	74	129	89	49	18	29	28	141
28	137	77	128	59	69	186	82	58	18	20	26	85
29	128	76	133	59	---	180	77	48	18	17	25	70
30	114	69	211	70	---	151	165	48	31	18	23	56
31	105	---	288	151	---	134	---	87	---	15	27	---
TOTAL	3778	2937	4116	2713	2968	4278	3394	3115	901	614	1299	1556
MEAN	122	97.9	133	87.5	106	138	113	100	30.0	19.8	41.9	51.9
MAX	544	340	373	170	239	303	272	235	54	33	210	273
MIN	29	56	40	57	69	68	77	48	18	14	15	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1991, BY WATER YEAR (WY)

	MEAN	52.1	77.9	84.5	84.1	85.5	152	218	120	70.4	49.8	41.7	46.6
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	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1932 - 1991

ANNUAL TOTAL	46514	31669	90.1	
ANNUAL MEAN	127	86.8	130	1938
HIGHEST ANNUAL MEAN			41.2	1965
LOWEST ANNUAL MEAN			2410	Mar 18 1936
HIGHEST DAILY MEAN	888	Aug 7	8.0	Aug 31 1968
LOWEST DAILY MEAN	16	Aug 3	8.8	Sep 7 1980
ANNUAL SEVEN-DAY MINIMUM	19	Jul 30	5080	Sep 21 1938
INSTANTANEOUS PEAK FLOW		730	9.25	Sep 21 1938
INSTANTANEOUS PEAK STAGE		7.62		
INSTANTANEOUS LOW FLOW		12		
10 PERCENT EXCEEDS	268	168	191	
50 PERCENT EXCEEDS	91	77	56	
90 PERCENT EXCEEDS	39	19	22	

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.

PERIOD OF RECORD.--Discharge: July 1940 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 616.11 ft above National Geodetic Vertical Datum of 1929, (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 fair. Prior to 1966, slight diurnal fluctuation at low flow caused by mills upstream. Some regulation by Cheshire Reservoir 16 mi upstream. Maximum gage heights shown in table below are for site and datum then in use.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	260	167	486	254	202	372	735	137	95	53	87
2	105	252	163	438	217	389	347	624	113	70	54	72
3	93	221	133	376	224	629	330	446	107	67	53	63
4	108	192	583	313	276	1220	309	370	96	63	56	64
5	203	184	510	274	313	856	324	321	108	58	63	71
6	141	262	322	285	407	539	388	446	121	57	54	67
7	143	239	277	256	736	818	431	643	104	65	52	63
8	112	217	252	190	673	537	393	429	101	66	48	60
9	92	194	233	223	474	402	537	338	98	58	62	54
10	92	831	221	222	396	345	491	320	83	50	123	52
11	92	1110	190	178	328	307	370	300	85	49	77	65
12	99	550	198	185	242	285	309	266	150	48	66	61
13	426	408	179	200	264	259	262	241	148	65	57	52
14	651	333	157	188	267	246	240	218	98	100	49	54
15	340	304	141	191	279	244	251	215	80	68	60	68
16	252	292	213	235	215	237	294	190	547	61	70	97
17	216	283	214	483	225	238	242	239	238	60	57	72
18	214	270	376	333	214	341	311	336	153	60	63	64
19	627	238	693	255	225	486	268	215	116	58	766	238
20	352	219	397	240	442	372	235	187	98	54	531	220
21	274	194	426	215	329	322	685	169	88	51	458	129
22	246	180	846	165	297	322	962	164	78	52	353	106
23	321	210	671	e160	248	335	578	149	75	86	173	93
24	1960	224	1540	e150	209	378	437	122	73	70	124	96
25	850	200	784	e145	220	451	348	120	73	55	102	769
26	531	199	507	e140	206	397	301	120	67	60	87	620
27	419	192	370	e145	196	420	277	120	66	83	83	328
28	355	191	344	e145	183	645	250	145	66	69	80	219
29	329	181	361	e150	---	607	237	119	55	55	76	180
30	303	172	776	e180	---	484	518	143	109	54	67	155
31	285	---	803	437	---	403	---	219	---	50	96	---
TOTAL	10366	8802	13047	7583	8559	13716	11297	8669	3531	1957	4113	4339
MEAN	334	293	421	245	306	442	377	280	118	63.1	133	145
MAX	1960	1110	1540	486	736	1220	962	735	547	100	766	769
MIN	92	172	133	140	183	202	235	119	55	48	48	52
CFSM	2.65	2.33	3.34	1.94	2.43	3.51	2.99	2.22	.93	.50	1.05	1.15
IN.	3.06	2.60	3.85	2.24	2.53	4.05	3.34	2.56	1.04	.58	1.21	1.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

MEAN	172	257	269	237	249	452	676	379	219	135	118	124
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	1946	1987	1965	1962	1980	1980

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1940 - 1991
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ANNUAL TOTAL	131651		95979				
ANNUAL MEAN	361		263			274	
HIGHEST ANNUAL MEAN						368	1975
LOWEST ANNUAL MEAN						135	1965
HIGHEST DAILY MEAN	2610	Mar 18	1960	Oct 24		10400	Dec 31 1948
LOWEST DAILY MEAN	48	Aug 5	48	Jul 12		24	Sep 9 1980
ANNUAL SEVEN-DAY MINIMUM	52	Jul 30	54	Jul 29		25	Sep 9 1980
INSTANTANEOUS PEAK FLOW			2650	Oct 24		13000	Dec 31 1948
INSTANTANEOUS PEAK STAGE			8.38	Oct 24		14.85	Dec 31 1948
INSTANTANEOUS LOW FLOW			38	Aug 1		5.8	Aug 30 1940
ANNUAL RUNOFF (CFSM)	2.86		2.09			2.17	
ANNUAL RUNOFF (INCHES)	38.87		28.34			29.52	
10 PERCENT EXCEEDS	784		533			582	
50 PERCENT EXCEEDS	246		216			166	
90 PERCENT EXCEEDS	89		62			67	

HUDSON RIVER BASIN

159

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 National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for winter period, which are fair. Slight diurnal fluctuation at times caused by mill upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 31, 1948, reached a stage of about 7.5 ft, from floodmarks.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	74	44	143	58	57	110	209	45	16	6.1	22
2	21	67	43	127	62	85	103	199	39	13	7.8	18
3	20	62	41	115	63	102	93	153	36	13	7.5	16
4	25	58	146	103	67	272	85	131	36	12	11	16
5	43	55	107	93	73	189	82	115	39	11	8.9	19
6	28	76	90	90	89	133	84	148	35	12	6.6	15
7	25	61	84	79	242	250	84	161	32	14	6.4	14
8	24	60	78	56	184	153	82	125	29	12	5.7	13
9	23	56	72	68	140	125	113	115	27	10	7.5	13
10	22	392	66	68	121	113	114	115	25	8.8	24	13
11	22	358	55	57	107	101	99	104	27	8.3	11	14
12	22	202	54	67	77	94	88	93	39	9.0	8.6	12
13	52	145	53	64	91	85	81	82	33	13	7.9	11
14	67	118	49	73	97	80	77	77	25	18	8.1	13
15	46	107	49	62	101	77	79	70	23	11	27	15
16	38	101	61	87	66	72	78	62	26	9.0	24	19
17	35	98	52	121	71	73	71	113	24	7.8	13	14
18	39	90	106	80	67	101	92	112	21	6.9	20	12
19	115	83	143	65	89	116	76	82	20	6.6	257	43
20	66	76	102	61	145	98	71	71	19	6.5	105	35
21	56	70	142	54	94	86	146	64	16	6.7	112	23
22	51	64	184	42	89	98	176	59	16	6.4	96	20
23	75	72	154	50	72	101	142	54	16	12	59	19
24	515	67	459	60	66	146	120	49	14	7.3	46	21
25	256	59	267	47	69	148	108	47	14	6.4	37	230
26	172	53	184	50	63	126	98	44	13	7.8	32	162
27	134	50	138	62	60	129	89	43	12	11	27	98
28	121	50	122	54	55	183	80	50	12	7.0	24	70
29	108	48	121	45	---	149	74	39	11	6.4	21	58
30	92	46	193	79	---	128	146	53	24	6.2	19	50
31	82	---	212	121	---	117	---	69	---	5.9	28	---
TOTAL	2424	2918	3671	2343	2578	3787	2941	2908	748	301.0	1074.1	1098
MEAN	78.2	97.3	118	75.6	92.1	122	98.0	93.8	24.9	9.71	34.6	36.6
MAX	515	392	459	143	242	272	176	209	45	18	257	230
MIN	20	46	41	42	55	57	71	39	11	5.9	5.7	11
CFSM	1.84	2.28	2.78	1.77	2.16	2.87	2.30	2.20	.59	.23	.81	.86
IN.	2.12	2.55	3.21	2.05	2.25	3.31	2.57	2.54	.65	.26	.94	.96

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1991, BY WATER YEAR (WY)

	MEAN	45.3	77.1	91.9	76.9	84.8	146	207	113	63.7	31.3	27.7	29.6
MAX	222	171	259	219	239	376	390	251	256	112	147	158	
(WY)	1978	1956	1974	1979	1984	1979	1969	1984	1972	1975	1975	1960	
MIN	5.33	6.71	24.8	11.0	14.6	33.6	72.2	32.4	18.2	9.13	5.61	4.09	
(WY)	1965	1965	1965	1981	1980	1965	1985	1987	1965	1955	1964	1964	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1949 - 1991
ANNUAL TOTAL	42062.7	26791.1	
ANNUAL MEAN	115	73.4	82.7
HIGHEST ANNUAL MEAN			126
LOWEST ANNUAL MEAN			31.7
HIGHEST DAILY MEAN	640	Mar 18	2200
LOWEST DAILY MEAN	8.4	Aug 5	3.2
ANNUAL SEVEN-DAY MINIMUM	10	Jul 30	6.7
INSTANTANEOUS PEAK FLOW			1260
INSTANTANEOUS PEAK STAGE			4.12
INSTANTANEOUS LOW FLOW			5.2
ANNUAL RUNOFF (CFSM)	2.71	1.72	1.94
ANNUAL RUNOFF (INCHES)	36.73	23.40	26.37
10 PERCENT EXCEEDS	273	145	185
50 PERCENT EXCEEDS	77	62	48
90 PERCENT EXCEEDS	23	12	11

a Stage of instantaneous peak discharge was 5.68 ft in well, stage in river unknown.
b From floodmarks, stage in well not known.

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.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1991

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
BLACKWATER RIVER BASIN						
01073860	Smallpox Brook at Salisbury, MA	Lat 42°51'00", long 70°51'59", Essex County, at culvert on US Highway 1, 0.6 mi north of Salisbury.	1.82	1991	7-11-91 7-18-91 9-12-91	0.38 .31 2.55
MERRIMACK RIVER BASIN						
01094340	Whitman River near Westminister, MA	Lat 42°33'35", long 71°52'02", Worcester County, at State Highway 2A, 2.5 mi northeast of Westminister.	21.6	1973-74, 1991	7-12-91 7-19-91 9- 4-91	6.06 1.70 8.58
01095220	Stillwater River near Sterling, MA	Lat 42°24'39", long 71°47'30", Worcester County, at bridge on Muddy Pond Road, 2.5 mi southwest of Sterling.	31.6	1971-74, 1991	7-11-91 7-19-91 9- 4-91	8.54 3.75 18.1
01095380	Trout Brook near Holden, MA	Lat 42°23'00", long 71°50'12", Worcester County, at culvert on Manning Street, 2.2 mi north of Holden.	6.79	1971-73, 1991	7-11-91 7-19-91 9-14-91	1.05 .45 2.17
01096504	Reedy Meadow Brook at East Pepperell, MA	Lat 42°40'03", long 71°33'55", Middlesex County, at culvert on Lowell Road, at East Pepperell.	1.92	1971-73, 1991	7-11-91 7-18-91 9-12-91	.68 .52 .82
01096505	Unkety Brook near Pepperell, MA	Lat 42°41'23", long 71°32'54", Middlesex County, at culvert on River Street, 2.5 mi northeast of Pepperell.	6.85	1971-74, 1991	7-11-91 7-18-91 9-12-91	2.36 1.01 1.86
01096805	North Brook near Berlin, MA	Lat 42°21'15", long 71°37'40", Worcester County, at culvert on Whitney Street, 2.0 mi south of Berlin.	15.5	1975-78, 1990-91	7-11-91 7-18-91 9-12-91	2.55 .64 1.96
01096935	Elizabeth Brook at Wheeler Street at Stow, MA	Lat 42°25'47", long 71°30'56", Middlesex County, at culvert on Wheeler Street, 1.0 mi southwest of Stow.	--	1968, 1990-91	7-10-91 7-11-91 9-12-91	2.47 2.28 2.77
01097050	Assabet River at Main Street near Concord, MA	Lat 42°27'23", long 71°23'26", Middlesex County, at bridge on State Highway 62, 0.1 mi upstream from railroad bridge, 2.1 mi west of Concord.	--	1968, 1990-91	7-12-91 7-18-91 9-12-91	62.6 36.9 51.7
01097280	Fort Pond Brook at West Concord, MA	Lat 42°28'07", long 71°24'31", Middlesex County, at bridge on State Highway 2, 400 ft upstream from confluence with Nashoba Brook, 1.0 mi northwest of West Concord.	24.9	1975-78, 1990-91	7-12-91 7-18-91 9-12-91	1.41 1.79 5.71

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

161

Discharge measurements made at low-flow partial-record stations during water year 1991--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
MERRIMACK RIVER BASIN--Continued						
01098860	Sudbury River at Nashawtuc Street at Concord, MA	Lat 42°27'35", long 71°21'35", Middlesex County, at bridge on Nashawtuc Street, 0.5 mi upstream from mouth, at Concord.	--	1984, 1990-91	7-11-91 7-18-91 9-12-91	71.7 70.7 112
01099400	River Meadow Brook at Lowell, MA	Lat 42°37'29", long 71°19'11", Middlesex County, at bridge on Plain Street, at Lowell.	25.7	1975, 1978, 1990-91	7-11-91 7-18-91 9-12-91	2.35 2.25 11.7
PARKER RIVER BASIN						
01101100	Mill River near Rowley, MA	Lat 42°43'31", long 70°54'54", Essex County at bridge on Wethersfield Street, 2.0 mi west of Rowley.	5.0	1991	7-11-91 7-18-91 9-12-91	.81 1.31 1.50
MYSTIC RIVER BASIN						
01103015	Mill Brook at Arlington, MA	Lat 42°25'20", long 71°08'59", Middlesex County, 1200 ft upstream from mouth, 0.4 mi northeast of Arlington.	5.21	1973-74, 1989-91	7-12-91 7-18-91 9-13-91	1.10 1.00 1.16
CHARLES RIVER BASIN						
01103240	Mine Brook near Franklin, MA	Lat 42°07'29", long 71°25'52", Norfolk County, at bridge on Pond Street, 3.4 mi northwest of Franklin.	14.2	1968-70, 1983, 1989-91	6-26-91 7-18-91 9-12-91	1.28 1.00 6.09
01103253	Chicken Brook near West Medway, MA	Lat 42°08'27", long 71°25'26", Norfolk County, at culvert on Cottage Street, 3.5 mi southeast of West Medway.	7.22	1968-71, 1983, 1989-91	6-27-91 7-18-91 9-12-91	.74 .28 .95
01103445	Fuller Brook at Wellesley College Golf Course at Wellesley, MA	Lat 42°17'00", long 71°17'57", Norfolk County, at furthest downstream footbridge on Wellesley College Golf Course, 200 ft upstream from confluence with Waban Brook, 0.9 mi southwest of Wellesley.	5.33	1989-91	9-12-91	.89
NEPONSET RIVER BASIN						
01104850	Mine Brook at Walpole, MA	Lat 42°09'14", long 71°15'52", at inlet to Turner Pond, 0.75 mi northwest of Walpole.	5.98	1966-69, 1985-87, 1989-91	6-27-91 7-18-91 9-12-91	.72 .22 2.72
WEYMOUTH BACK RIVER BASIN						
01105610	Whitmans Pond Outlet at East Weymouth, MA	Lat 42°12'45", long 70°55'32", Norfolk County, at culvert on Pleasant Street, 0.9 mi southeast of Weymouth.	12.6	1966-67, 1989-91	6-27-91 7-18-91 8-29-91	2.67 .67 1.82
WEIR RIVER BASIN						
01105640	Weir River near Hingham, MA	Lat 42°14'31", long 70°51'36", Plymouth County, at culvert on Macadam Road, 0.3 mi above Foundry Pond, 1.5 mi east of Hingham.	14.6	1969-71, 1989-91	6-27-91 7-18-91 8-29-91	1.58 .22 2.36
SATUIT RIVER BASIN						
01105670	Satuit River at Scituate, MA	Lat 42°11'35", long 70°43'44", Plymouth County, at bridge on Old Parish Road, at Scituate.	--	1990-91	6-27-91 7-18-91 8-29-91	.34 .13 .28

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1991--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
NORTH RIVER BASIN						
01105810	Third Herring Brook at Hanover, MA	Lat 42°07'01", long 70°48'35", Plymouth County, at culvert on River Street, 0.5 mi northeast of Hanover.	9.78	1969-71, 1987, 1990-91	6-27-91 7-18-91 8-29-91	.75 .51 1.78
01105820	Second Herring Brook at Norwell, MA	Lat 42°09'36", long 70°47'20", Plymouth County, at culvert on State Highway 123, at Norwell.	3.15	1969-71, 1990-91	6-27-91 7-18-91 8-29-91	.14 .02 .47
SLOCUMS RIVER BASIN						
01105930	Paskamanset River at Turner Pond near New Bedford, MA	Lat 41°40'43", long 70°58'39", Bristol County, at bridge on Old Plainville Road, 4.0 mi northwest of New Bedford.	8.12	1991	5-21-91 5-30-91 6-13-91 6-27-91 7-10-91 7-19-91 8-15-91 8-30-91	6.85 4.46 2.86 1.11 .74 .87 1.09 1.34
01105935	Destruction Brook near South Dartmouth, MA	Lat 41°34'20", long 71°00'47", Bristol County, at bridge on Slades Corner Road, 5 mi southwest of South Dartmouth.	2.64	1972-74, 1991	5-22-91 5-30-91 6-14-91 6-27-91 7-10-91 7-19-91 8-15-91 8-30-91	3.17 2.35 1.21 .71 .56 .53 1.10 .88
WESTPORT RIVER BASIN						
01105937	Shingle Island River near North Dartmouth, MA	Lat 41°40'55", long 71°01'05", Bristol County, at bridge on Old Fall River Road, 3 mi northwest of North Dartmouth.	8.59	1957, 1972-74, 1991	5-22-91 5-31-91 6-14-91 6-27-91 7-11-91 7-18-91 8-15-91 8-30-91	5.66 6.85 1.46 .49 .16 .07 1.81 1.22
TAUNTON RIVER BASIN						
01107188	Winnetuxet River at Thompson Street near Halifax, MA	Lat 41°58'09", long 70°54'03", Plymouth County, at bridge on Thompson Street, 2.4 mi southwest of Halifax.	36.0	1990-91	6-26-91 7-19-91 8-29-91	9.80 8.00 22.3
01108140	Poquoy Brook near North Middleboro, MA	Lat 41°54'20", long 70°59'19", Plymouth County, at culvert on Vernon Street, 2.0 mi south of North Middleboro.	8.23	1966-68, 1990-91	6-26-91 7-19-91 8-29-91	2.69 2.39 2.79
01108180	Cotley Brook at East Taunton, MA	Lat 41°52'57", long 71°02'54", Bristol County, at bridge on Middleboro Avenue, 1.0 mi west of East Taunton.	7.53	1966-68, 1990-91	10- 4-90 6-26-91 7-19-91 8-29-91	1.57 1.41 1.25 1.48
01108320	Canoe River near Norton, MA	Lat 41°58'38", long 71°08'40", Bristol County, at bridge on Plain Street, 2.4 mi northeast of Norton.	18.3	1965-68, 1978-81, 1983, 1990-91	10- 4-90 6-26-91 7-22-91 8-29-91	4.61 3.04 .86 7.50
01109040	Rumford River at Norton, MA	Lat 41°58'23", long 71°10'32", Bristol County, at bridge on State Highway 123, 0.8 mi northeast of Norton.	20.7	1965, 1990-91	10- 4-90 7-19-91 8-26-91 8-29-91	3.65 .78 1.25 14.9
01109087	Assonet River at Assonet, MA	Lat 41°47'57", long 71°03'37", Bristol County, at bridge on Locust Street, 0.5 mi northeast of Assonet.	--	1986-88, 1990-91	6-26-91 7-19-91 8-29-91	3.97 2.64 5.68

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

163

Discharge measurements made at low-flow partial-record stations during water year 1991--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
BLACKSTONE RIVER BASIN						
01109460	Dark Brook at Auburn, MA	Lat 42°12'20", long 71°50'06", Worcester County, at bridge on State Highway 12, 0.7 mi north of Auburn.	11.1	1978-79, 1985-86, 1988-91	7-11-91 7-19-91 9-11-91	3.36 1.67 2.32
01109570	Tatnuck Brook below Coes Reservoir at Worcester, MA	Lat 42°15'03", long 71°50'15", Worcester County, at outlet below Coes Reservoir, 2.0 mi southwest of Worcester.	11.5	1989-91	7-11-91 7-19-91 9-11-91	.68 .27 1.24
01110100	Quinsigamond River near Grafton, MA	Lat 42°11'39", long 71°41'35", Worcester County, 0.4 mi upstream from Fisherville Pond, 1.0 mi south of Grafton.	37.2	1991	7-18-91 8- 8-91 9-11-91	4.40 4.66 14.6
THAMES RIVER BASIN						
01123810	Quinebaug River tributary at Sandersdale, MA	Lat 42°04'15", long 72°00'23", Worcester County, at bridge at wastewater treatment plant off Dresser Hill Road, 0.5 mi northeast of Sandersdale.	9.4	1980-82, 1991	7-19-91 9-11-91	.03 2.11
01124390	Little River at Richardson Corners, MA	Lat 42°09'16", long 71°54'47", Worcester County, at bridge on US Highway 20, 0.7 mi east of Richardson Corners.	8.58	1980-82, 1991	7-11-91 7-19-91 9-11-91	2.31 .53 .79
CONNECTICUT RIVER BASIN						
01161400	Millers River at Old North Ashburnham Station near Winchendon, MA	Lat 42°39'19", long 71°59'21", Worcester County, 200 ft below bridge on State Highway 12, 0.3 mi west of Old North Ashburnham Station, 3.7 mi southeast of Winchendon.	23.7	1965-66, 1991	7-12-91 7-19-91 9-12-91	1.19 1.06 5.17
01163900	Beaver Brook at South Royalston, MA	Lat 42°37'10", long 72°08'12", Worcester County, 0.9 mi upstream from mouth, 0.9 mi southeast of South Royalston.	8.88	1965-66, 1991	7-11-91 7-19-91 9-12-91	4.96 a a
01164300	Lawrence Brook at Royalston, MA	Lat 42°41'14", long 72°10'39", Worcester County, at Northeast Fitzwilliam Road, 0.9 mi northeast of Royalston.	16.4	1965-66, 1991	7-12-91 7-19-91 9-12-91	1.36 1.43 4.92
01168300	Cold River near Zoar, MA	Lat 42°38'12", long 72°56'10", Franklin County, at bridge 150 ft east of State Highway 2, 0.9 mi upstream from mouth, 1.1 mi south of Zoar.	29.6	1938, 1965, 1967-69, 1979-81, 1983, 1991	7-11-91 7-18-91 8-28-91	3.67 3.73 10.4
01168400	Chickley River near Charlemont, MA	Lat 42°37'28", long 72°54'27", Franklin County, at bridge on Chickley Road, 0.5 mi upstream from mouth, 1.7 mi west of Charlemont.	27.1	1967-69, 1991	7-11-91 7-18-91 8-28-91	5.82 5.14 9.00
01168650	Clesson Brook near Shelburne Falls, MA	Lat 42°36'47", long 72°46'10", Franklin County, at bridge on State Highway 112, 0.5 mi upstream from mouth, 1.7 mi northwest of Shelburne Falls.	18.2	1967-69, 1991	7-11-91 7-18-91 8-28-91	6.98 6.09 7.79
01170902	Bloody Brook near South Deerfield, MA	Lat 42°28'30", long 72°38'03", Franklin County, at culvert on Whately Road, 1.3 mi west of South Deerfield.	5.0	1991	6-26-91 7-11-91 7-18-91 8-28-91	.78 .09 .10 .78

a Ponded by beaver dams, no observable velocity.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at low-flow partial-record stations during water year 1991--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
CONNECTICUT RIVER BASIN--Continued						
01171947	Bachelor Brook at Granby, MA	Lat 42°16'33", long 72°30'31", Hampshire County, at bridge on North Street, 1.2 mi north of Granby.	--	1991	6-27-91 7-11-91 7-18-91 8-29-91	1.82 4.94 4.23 23.5
01173420	Muddy Brook at Ware, MA	Lat 42°14'53", long 72°15'59", Hampshire County, at bridge on Greenwich Street, 0.4 mi north of Ware.	18.5	1991	6-26-91 7-11-91 7-19-91 8-29-91	9.59 6.30 4.47 8.92
01175710	Fivemile River near North Brookfield, MA	Lat 42°17'39", long 72°02'18", Worcester County, at outlet of Brooks Pond, 2.5 mi northeast of North Brookfield.	13.2	1991	7-11-91 7-11-91 7-19-91 9-12-91	.86 .97 1.83 1.90
01177360	South Branch Mill River at Porter Road near East Longmeadow, MA	Lat 42°05'06", long 72°28'50", Hampden County, at bridge on Porter Road, 2.0 mi north of East Longmeadow.	--	1991	6-27-91 7-11-91 7-18-91 8-29-91	4.60 4.29 6.37 5.57
01178200	Westfield Brook at East Windsor, MA	Lat 42°28'41", long 72°59'09", Berkshire County, at bridge on High Street, at East Windsor, 1.6 mi upstream from mouth.	11.0	1962-65, 1984, 1991	6-28-91 7-19-91 8-28-91	1.55 .89 3.76
01178300	Swift River at Swift River, MA	Lat 42°26'50", long 72°51'29", Hampshire County, at bridge on State Highway 9, at Swift River.	22.9	1962-65, 1984, 1991	6-28-91 7-19-91 8-28-91	3.31 2.74 8.85
01183210	Munn Brook near Westfield, MA	Lat 42°07'05", long 72°48'01", Hampden County, at bridge on Granville Road, 2.0 mi west of Westfield.	25.0	1991	6-27-91 7-12-91 7-18-91 8-29-91	2.70 7.64 6.99 9.12
01184855	West Branch Farmington River near Otis, MA	Lat 42°09'40", long 73°04'19", Berkshire County, 20 ft upstream from confluence with Fall River, 2.4 mi south of Otis.	50.0	1991	6-28-91 7-12-91 7-18-91 8-28-91	19.0 4.47 3.38 13.2
01185490	Clam River at West New Boston, MA	Lat 42°06'03", long 73°05'43", Berkshire County, at culvert on State Highway 8, 2.1 mi South of New Boston.	2.62	1955, 1965, 1984, 1991	6-28-91 7-12-91 7-18-91 8-28-91	22.7 6.95 4.79 12.3
HOUSATONIC RIVER BASIN						
01197120	Southwest Branch Housatonic River at Pittsfield, MA	Lat 42°26'28", long 73°17'47", Berkshire County, at Mungerford Street, 550 ft downstream from Smith Brook, at Pittsfield.	20.4	1963-65, 1991	6-28-91 7-19-91 8-27-91	5.63 2.22 6.46
01197180	Greenwater Brook at East Lee, MA	Lat 42°17'59", long 73°12'53", Berkshire County, at bridge on private land near US Highway 20, 0.3 mi east of East Lee.	7.64	1963-65, 1991	6-28-91 7-12-91 7-18-91 8-28-91	3.46 2.37 2.35 2.83
01197230	Hop Brook near South Lee, MA	Lat 42°16'13", long 73°15'06", Berkshire County, at bridge on Meadow Street, 1.4 mi southeast of South Lee.	22.1	1963-65, 1991	6-28-91 7- 9-91 7-12-91 8-28-91	4.84 3.38 3.74 2.60
01198000	Green River near Great Barrington, MA	Lat 42°11'31", long 73°23'28", Berkshire County, at Hurlburt Street bridge, 1.5 mi west of Great Barrington, and 3 mi upstream from mouth.	51.0	1952-71†, 1973, 1980-81, 1983, 1991	6-27-91 7-12-91 7-19-91 8-28-91	23.6 12.1 9.68 13.9
01198200	Konkapot River at Ashley Falls, MA	Lat 42°03'11", long 73°19'35", Berkshire County, at bridge on US Highway 7, 0.5 mi southeast of Ashley Falls.	61.1	1963-65, 1991	6-27-91 7-12-91 7-19-91 8-28-91	45.7 34.4 22.3 26.1

† Operated as a continuous-record gaging station

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

165

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 during water year 1991

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
MERRIMACK RIVER BASIN						
01096640 Assabet River	Concord River	Lat 42°18'55", long 71°38'05", Worcester County, at culvert on railroad line east of School Street, at Northborough, MA	--	1975-78	7-12-91 7-18-91	7.29 6.42
01096870 Assabet River	do.	Lat 42°23'59", long 71°32'47", Middlesex County, at culvert on Cox Street at Hudson, MA	73.7	1978	7-12-91 7-18-91	22.2 21.2
01098795 Wash Brook	Sudbury River	Lat 42°21'26", long 71°24'13", Middlesex County, at culvert on Landham Road, 2.0 mi southeast of Sudbury, MA	21.4	1975-78	7-12-91	7.00
CHARLES RIVER BASIN						
01103440 Fuller Brook	Waban Brook	Lat 42°17'45", long 71°17'18", Norfolk County, at Brook Street bridge at Wellesley, MA	3.93	1959-60, 1968-71, 1983	7-18-91	.09
QUASHNET RIVER BASIN						
0110588363 Quashnet River	Nantucket Sound	Lat 41°38'08", long 70°30'49", Barnstable County, 300 ft northeast of weir at Johns Pond, 1.3 mi north of State Highway 151, 3.2 mi north of Waquoit Village, MA	2.05	1989-90	11- 2-90 7-17-91	0 0
0110588364 Quashnet River	do.	Lat 41°37'59", long 70°30'19", Barnstable County, 0.6 mi downstream of weir at Johns Pond, on bridge which crosses downstream end of cranberry bog, 3.2 mi northeast of Waquoit Village, MA	2.98	1990	11- 2-90 7-17-91	6.4 3.7
0110588366 Quashnet River	do.	Lat 41°37'03", long 70°30'04", Barnstable County, at downstream side of culvert on State Highway 151, 2.2 mi northeast of Waquoit Village, MA	3.92	1990	11- 2-90 7-17-91	8.4 5.7
0110588367 Quashnet River	do.	Lat 41°36'30", long 70°30'09", Barnstable County, on downstream side of fish ladder, 0.6 mi downstream from State Highway 151, 1.6 mi northeast of Waquoit Village, MA	4.25	1989-90	11- 2-90 7-17-91	10.6 7.2
0110588368 Quashnet River	do.	Lat 41°36'19", long 70°30'08", Barnstable County, 0.8 mi downstream from State Highway 151, 1.0 mi north of State Highway 28, 1.5 mi northeast of Waquoit Village, MA	4.35	1989-90	11- 2-90 7-17-91	11.9 8.0
0110588369 Quashnet River	do.	Lat 41°35'55", long 70°30'15", Barnstable County, 0.5 mi upstream from State Highway 28, 1.1 mi northeast of Waquoit Village, MA	4.61	1990	11- 2-90 7-17-91	13.2 9.8
01105883695 Quashnet River	do.	Lat 41°35'44", long 70°30'20", Barnstable County, 0.4 mi upstream from State Highway 28, 0.8 mi northeast of Waquoit Village, MA	--	--	7-17-91	11.1

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
WEWEANTIC RIVER BASIN						
01105895 Weweantic River	Buzzards Bay	Lat 41°46'12", long 70°45'18", Plymouth County, at bridge on Fearing Hill Road, 0.25 mi southwest of South Wareham, MA	56.1	1970-71†	6-12-91 7- 2-91	*9.12 *8.53
01105905 Sippican River	do.	Lat 41°44'03", long 70°46'31", Plymouth County, at bridge on County Road, 2.5 mi north of Marion, MA	28.1	1972-74	5-16-91 5-23-91 6-12-91 6-26-91 7-19-91 8-16-91 8-30-91	*39.0 *27.1 *13.6 *6.53 *4.24 *7.60 *4.71
MATTAPOISETT RIVER BASIN						
01105917 Mattapoisett River	Buzzards Bay	Lat 41°39'45", long 70°50'20", Plymouth County, 0.4 mi above bridge on U.S. Highway 6, 1.5 mi west of Mattapoisett, MA	24.0	1965, 1972-74, 1982	5-17-91 6-12-91 6-26-91 7-11-91 7-18-91 8-16-91 8-30-91	*22.9 *7.88 *3.78 *1.48 *.90 *2.08 *1.14
ACUSHNET RIVER BASIN						
01105926 Acushnet River	Buzzards Bay	Lat 41°41'45", long 70°54'52", Bristol County, at bridge on Hamlin Road, 1.0 mi north of Acushnet, MA	16.4	1972-74	5-17-91 5-23-91 6-13-91 6-26-91 7-10-91 7-18-91 8-15-91 8-30-91	*16.8 *9.84 *4.62 *2.10 *1.65 *2.11 *3.62 *2.48
SLOCUMS RIVER BASIN						
011059315 Paskamanset River	Buzzards Bay	Lat 41°37'36", long 70°59'12", Bristol County, near sewer pumping station at end of access road from Tucker Road at Friends Academy, 0.9 mi south of North Dartmouth, MA	18.1	--	9-18-91	*3.63
011059318 Unnamed Tributary	Paskamanset River	Lat 41°36'37", long 70°00'11", Bristol County, at culvert on Chase Road 2.3 mi south of North Dartmouth, MA	2.58	--	9-18-91	*0.18
01105932 Paskamanset River	Buzzards Bay	Lat 41°36'42", long 70°59'39", Bristol County, 400 ft east of well A off access road from Chase Road, 100 ft below tributary inflow, 2.0 mi south of North Dartmouth, MA	22.9	--	9-18-91	*3.50
011059326 Paskamanset River	do.	Lat 41°35'24", long 70°59'50", Bristol County, 500 ft east of water filtration plant at well D off Chase Road, 3.4 mi west of South Dartmouth, MA	25.8	--	9-18-91	*3.32
01105933 Paskamanset River	do.	Lat 41°35'07", long 70°59'27", Bristol County, at bridge on Russells Mills Road, 3 mi west of South Dartmouth, MA	26.2	1972-74	5-22-91 5-30-91 6-14-91 6-28-91 7-10-91 7-19-91 8-15-91 8-30-91 9-18-91	*16.3 *10.1 *5.45 *2.28 *1.55 *1.09 *4.05 *4.06 *3.76

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

167

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
EAST BRANCH WESTPORT RIVER BASIN						
01105943 Shingle Island River	Rhode Island Sound	Long 41°40'10", long 71°01'32", Bristol County, at bridge on Hixville Road, 3 mi northwest of North Dartmouth, MA	18.8	1972-74	5-22-91 6-28-91 7-11-91 7-18-91 8-15-91 8-30-91	*21.2 *2.83 *1.92 *1.58 *4.45 *3.91
01105945 East Branch Westport River	do.	Lat 41°37'52", long 71°03'15", Bristol County, at bridge on Forge Road, 0.8 mi north of head of Westport, MA	28.2	--	7-19-91	*2.07
WEST BRANCH WESTPORT RIVER BASIN						
01106000 Adamsville Brook	Rhode Island Sound	Lat 41°33'30", long 71°07'47", Newport County, on right bank 0.2 mi upstream from milldam at Adamsville, R.I., and 0.7 mi upstream from mouth	7.91	1941-1978+ 1986-87+	5-22-91 5-30-91 6-14-91 6-28-91 7-11-91 7-19-91 8-15-91 8-30-91	*7.34 *2.97 *1.59 *.28 *.09 *.12 *2.88 *1.30
BLACKSTONE RIVER BASIN						
01109650 Blackstone River	Narragansett Bay (Atlantic Ocean)	Lat 42°13'43", long 71°47'19", Worcester County, northside of Millbury Street, 0.2 mi northeast of State Highway 146, in Worcester, MA	63.8	1985	7-10-91 8-14-91	13.5 14.0
01110500 Blackstone River	do.	Lat 42°09'13", long 71°39'09", Worcester County, 100 ft downstream from Sutton Street Bridge, at Northbridge, MA	139	1940-77+, 1978-90	11- 9-90 3-13-91 4-22-91 7-10-91 8-14-91 8-20-91 8-22-91	263 316 1150 76.7 84.5 1380 563
01113650 Blackstone River	Providence River (Narragansett Bay)	Lat 41°54'40", long 71°24'12", Providence County, at bridge on Lonsdale Avenue, at Lonsdale, R.I.	441	1986-1988	7-10-91 8-14-91	189 200
POTOWOMUT RIVER BASIN						
01116850 Hunt River	Potowomut River	Lat 41°37'33", long 71°20'57", Washington County, at bridge on Davisville Road, 0.8 mi northeast of Davisville, RI	5.97	1961-63	6-19-91 7-18-91 8-29-91	4.15 1.59 2.72
01116880 Frenchtown Brook	Hunt River	Lat 41°37'03", long 71°29'03", Washington County, at bridge on Davisville Road 1.0 mi northeast of Davisville, RI	6.85	1961-63	6-19-91 7-18-91 8-29-91	3.04 1.01 2.83
01116910	Hunt River near Davisville, RI	Lat 41°38'03", long 71°28'05", Washington County, on downstream right bank at side of bridge on U.S. Highway 1, 0.75 mi downstream from Fry Brook, and 1.5 mi north of Davisville, RI	17.3	1962-63	6-19-91 7-18-91 8-29-91	11.9 1.93 5.98
PAWCATUCK RIVER BASIN						
01117339 Chipuxet River	Pawcatuck River	Lat 41°29'38", long 71°32'41", Washington County, at railroad bridge between Hundred Acre Pond and Thirty Acre Pond, 0.9 mi north of West Kingston, RI	6.00	1980	6-17-91 8-29-91	1.85 1.53

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PAWCATUCK RIVER BASIN--Continued						
01117355 Queen River	Usquepaug River	Lat 41°33'45", long 71°32'54", Washington County, at bridge on Reynolds Road, 1.2 mi southwest of Exeter, RI	3.69	1959-60, 1988-90	10-18-90	1.80
					11-20-90	2.87
					12-16-90	11.8
					1-24-91	10.2
					2-15-91	13.2
					3-13-91	8.95
					4-18-91	8.26
					6-18-91	2.07
					6-21-91	1.60
					8-29-91	1.90
01117360 Fisherville Brook	Queen River	Lat 41°33'51", long 71°33'54", Washington County, at bridge on Liberty Church Road, 1.7 mi southwest of Exeter, RI	8.14	1959-60, 1988-90	10-18-90	5.46
					11-20-90	5.88
					12-16-90	27.9
					1-24-91	23.7
					2-15-91	29.8
					3-13-91	24.1
					4-18-91	18.7
					6-18-91	4.70
					6-21-91	4.72
					7-17-91	1.31
01117365 Queens Fort Brook	do.	Lat 41°32'53", long 71°32'01", Washington County, at bridge on Slocumville Road, 2.0 mi south of Exeter, RI	3.22	1989-90	10-19-90	0
					11-21-90	0
					12-17-90	0
					1-23-91	0
					2-16-91	0
					3-14-91	0
					4-17-91	0
					6-20-91	0
					7-17-91	0
					01117370 Queen River	Usquepaug River
11-20-90	15.0					
12-16-90	44.6					
1-24-91	45.3					
2-15-91	55.4					
3-13-91	44.3					
4-18-91	34.9					
6-18-91	12.4					
6-20-91	13.8					
7-17-91	4.98					
01117375 Queen River tributary	Queen River	Lat 41°32'20", long 71°34'48", Washington County, at bridge on Mail Road, 0.3 mi west of Liberty, RI	0.82	1989-90	10-19-90	.05
					11-21-90	.28
					12-17-90	2.94
					1-23-91	2.22
					2-16-91	1.76
					3-14-91	3.07
					4-17-91	1.05
					6-21-91	.25
					7-17-91	Dry
					01117380 Locke Brook	do.
11-21-90	4.48					
12-17-90	15.3					
1-23-91	12.4					
2-16-91	12.9					
3-14-91	16.0					
4-17-91	9.86					
6-20-91	2.87					
7-17-91	1.17					
01117385 Rake Factory Brook	Usquepaug River	Lat 41°31'08", long 71°35'58", Washington County, at bridge on Glen Rock Road, 1.2 mi northeast of Usquepaug, RI	0.25	1989-90		
					11-21-90	0.13
					12-17-90	0.46
					2-16-91	0.46
					3-14-91	0.60
					4-17-91	0.13
					6-20-91	Dry
					7-17-91	Dry

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

169

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PAWCATUCK RIVER BASIN--Continued						
01117390 Glen Rock Brook	do.	Lat 41°30'59", long 71°36'23", Washington County, at culvert on Glen Rock Road, 1.0 mi north of Usquepaug, RI	2.83	1989-90	10-19-90 11-21-90 12-17-90 1-23-91 2-16-91 3-14-91 4-17-91 6-20-91 7-17-91	1.62 2.47 7.11 6.80 7.26 8.53 3.60 1.26 0.30
01117400 Sherman Brook	do.	Lat 41°31'04", long 71°36'18", Washington County, at culvert on Glen Rock Road, 1.1 mi north of Usquepaug, RI	1.04	1966-74+, 1989-90	10-19-90 11-21-90 12-17-90 1-23-91 2-16-91 3-14-91 4-17-91 6-20-91 7-17-91	0.65 1.09 2.45 2.98 3.27 3.61 2.12 0.92 0.02
01117410 Usquepaug River	Pawcatuck River	Lat 41°30'09", long 71°36'30", Washington County, at bridge on State Highway 138, 0.1 mi east of Usquepaug, RI	32.8	1972, 1989-90	10-18-90 11-20-90 1-24-91 3-13-91 4-18-91 6-17-91 6-21-91 7-17-91 8-29-91	24.5 25.6 73.8 68.7 61.3 21.5 21.9 7.66 16.4
01117424 Chickasheen Brook	Usquebaug River	Lat 41°28'49", long 71°34'26", Washington County, at bridge on Liberty Lane, 1.0 mi southwest of Kingston, RI	3.98	--	9-10-59 10- 7-59 10-22-59 6-17-91 7-18-91 8-29-91	2.26 .94 1.13 2.78 .30 1.89
01117451 Pawcatuck River	Block Island Sound (Atlantic Ocean)	Lat 41°26'42", long 71°37'39", Washington County, at bridge on Main Street 0.1 mi southwest of Kenyon, RI	88.0	--	6-28-91 7-18-91 8-29-91	36.4 26.1 51.5
01117465 Beaver River	Pawcatuck River	Lat 41°31'32", long 71°38'23", Washington County, at bridge on Hillsdale Road 0.3 mi north of Hillsdale, and 3.3 mi east of Wyoming, RI	5.53	1966-67, 1974, 1976	6-18-91 7-18-91 8-29-91	3.69 1.09 4.95
01117471 Beaver River	do	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	6-21-91 7-18-91 8-29-91	10.9 3.74 10.5
01117720 Wood River	Pawcatuck River	Lat 41°36'45", long 71°45'39", Washington County, at bridge on Stepstone Falls Road, 0.6 mi northeast of Escoheag, RI	11.4	1966-67	6-20-91 7-18-91 8-29-91	2.93 .18 8.63
01117740 Kelley Brook	Wood River	Lat 41°36'44", long 71°45'13", Washington County, at bridge on Stepstone Falls Road, 0.8 mi northeast of Escoheag, RI	4.20	1966-67	6-20-91 7-18-91 8-29-91	3.80 .38 6.29
01117780 Breakheart Brook	do.	Lat 41°35'16", long 71°42'36", Washington County, at bridge on Frosty Hollow Road, 0.8 mi north of West Exeter, and 2.4 mi north of Arcadia, RI	6.68	1966-67, 1979	6-20-91 7-18-91 8-29-91	4.42 1.87 7.22
01117830 Parris Brook	do.	Lat 41°35'53", long 71°43'47", Washington County, at bridge on Blitzkreig Road 400 ft above Woody Hill Brook, and 1.9 mi northwest of Arcadia, RI	5.01	1966-67	6-20-91 7-18-91 8-29-91	1.70 .27 4.05

See footnotes at end of table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1991--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PAWCATUCK RIVER BASIN--Continued						
01117870 Roaring Brook	do.	Lat 41°33'24", long 71°41'54", Washington County, at culvert on Bald Hill Road, 0.15 mi northwest of Arcadia, RI	5.01	1979	6-19-91 7-18-91 8-29-91	2.04 .73 6.43
01117900 Brushy Brook	do.	Lat 41°31'43", long 71°44'13", Washington County, at bridge on Sawmill Road, 0.4 mi northeast of Moscow, and 1.75 mi northwest of Hope Valley, RI	3.71	1966-67 1977, 1979	6-20-91 7-18-91 8-29-91	1.33 .36 2.45
01117950 Moscow Brook	Brushy Brook	Lat 41°31'38", long 71°44'12", Washington County, at bridge on Sawmill Road, 0.33 mi northeast of Moscow, and 1.75 mi northwest of Hope Valley, RI	6.37	1966-67, 1977, 1979	6-17-91 7-18-91 8-29-91	1.49 .36 5.84
01118006 Canonchet Brook	Wood River	Lat 41°28'39", long 71°43'47", Washington County, at bridge on Rockville-Alton Road, 1.3 mi southeast of Canonchet, and 1.3 mi northwest of Woodville, RI	5.46	1977-78, 1980	6-20-91 7-18-91 8-29-91	4.77 1.53 4.89
011180065 Wood River	Pawcatuck River	Lat 41°27'36", long 71°43'09", Washington County, at bridge on Woodville Road at Woodville, 1.5 mi north of Alton, RI	80.2	--	6-20-91 7-18-91 8-29-91	58.6 25.8 57.1
01118009 Wood River	do.	Lat 41°26'10", long 71°43'17", Washington County, 0.1 mi south of Alton-Carolina Road 0.1 mi south of Alton, RI	85.7	1977-78, 1981	6-28-91 7-18-91 8-29-91	42.2 31.8 97.2
01118010 Pawcatuck River	Block Island Sound (Atlantic Ocean)	Lat 41°24'58", long 71°43'46", Washington County, at bridge on Burdickville Road, at Burdickville, 1.5 mi south of Alton, RI	205	1966-67, 1977, 1979-81	6-28-91 7-18-91 8-29-91	120 83.7 186
01118055 Tomaquaug Brook	Pawcatuck River	Lat 41°25'38", long 71°45'40", Washington County, at bridge on Tomaquaug Valley Road, 1.25 mi east of Ashaway, RI	5.39	1966-67	6-21-91 7-18-91 8-29-91	3.22 1.38 4.72
01118360 Ashaway River	do.	Lat 41°25'24", long 71°47'23", Washington County, at bridge on Laurel Street, 0.4 mi west of Ashaway, RI	28.6	--	6-21-91 7-18-91 8-29-91	10.4 5.28 23.6
THAMES RIVER BASIN						
01125000 French River	Quinebaug River	Lat 42°03'03", long 71°53'08", Worcester County, on right bank in Dudley, 50 ft upstream from Pleasant Street Bridge at Webster, 1.1 mi upstream from Potash Brook, in Dudley, MA	85.3	1949-81†, 1982-90	11- 6-90 12- 7-90 3-12-91 7-16-91 9- 4-91	161 420 277 12.6 23.2
CONNECTICUT RIVER BASIN						
01173180 Ware River	Connecticut River	Lat 42°22'48", long 72°06'53", Worcester County, at bridge on Old Furnace Road, 0.3 mi west of Barre Plains, MA	--	1988-90	12-19-90 4-29-91	201 144

† Operated as a continuous-record gaging station.

‡ Operated as a crest-stage partial-record station and published as "Glen Rock Brook tributary".

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

171

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
MERRIMACK RIVER BASIN									
01094400 NORTH NASHUA RIVER AT FITCHBURG, MA									
OCT 1990					JUL 1991				
31...	1530	88	149	10.0	08...	0840	25	192	21.0
DEC					AUG				
12...	1015	131	124	2.0	14...	1550	22	259	27.0
MAR 1991									
05...	1220	442	136	--					
01094500 NORTH NASHUA RIVER NEAR LEOMINSTER, MA									
OCT 1990					AUG 1991				
31...	1308	169	231	10.0	14...	1407	48	333	--
MAR 1991									
06...	0946	592	142	3.0					
01096000 SQUANNAHOOK RIVER NEAR WEST GROTON, MA									
NOV 1990					APR 1991				
14...	1015	192	71	3.0	08...	1610	92	363	15.0
DEC					JUL				
24...	0908	172	76	7.0	08...	1047	21	136	20.0
FEB 1991					AUG				
04...	1032	143	93	1.0	15...	0846	17	118	23.0
01096500 NASHUA RIVER AT EAST PEPPERELL, MA									
NOV 1990					FEB 1991				
14...	1440	1000	121	3.0	04...	1110	717	170	1.0
DEC					JUL				
24...	1000	723	156	7.0	08...	1257	304	235	23.0
01097000 ASSABET RIVER AT MAYNARD, MA									
OCT 1990					MAR 1991				
30...	1407	251	195	--	04...	1205	502	184	5.0
DEC					JUL				
11...	1118	182	196	2.0	01...	1222	63	301	24.0
JAN 1991					AUG				
22...	1020	238	179	8.0	14...	0953	30	410	24.0
01097300 NASHOUBA BROOK NEAR ACTON, MA									
OCT 1990					APR 1991				
30...	1021	22	183	6.0	08...	0853	16	193	13.0
DEC					JUL				
11...	0920	17	194	2.0	01...	1035	4.6	302	19.0
JAN 1991					AUG				
22...	1000	21	172	0.0	14...	0842	0.81	279	21.0
MAR									
04...	0855	73	115	4.0					
01098530 SUDBURY RIVER AT SAXONVILLE, MA									
OCT 1990					APR 1991				
31...	1020	330	210	11.0	08...	1135	173	251	15.0
DEC					JUL				
11...	1410	287	213	--	01...	1415	43	280	--
JAN 1991					AUG				
23...	0936	297	252	0.0	14...	1133	29	259	25.0
MAR									
04...	1501	632	217	5.0					
01099500 CONCORD RIVER BELOW RIVER MEADOW BROOK, AT LOWELL, MA									
NOV 1990					MAR 1991				
20...	0820	713	214	3.0	07...	1445	1470	171	7.0
DEC					AUG				
24...	1107	847	203	8.0	15...	1151	168	324	25.0
FEB 1991									
04...	1223	810	--	0.5					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS--Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
MERRIMACK RIVER BASIN--Continued									
01100000 MERRIMACK RIVER BELOW CONCORD RIVER AT LOWELL, MA									
DEC 1990					MAR 1991				
24...	1157	18700	176	7.0	07...	1508	20500	144	6.0
FEB 1991					AUG				
04...	1314	5980	250	1.0	15...	1515	1570	300	26.0
01100600 SHAWSEEN RIVER NEAR WILMINGTON, MA									
NOV 1990					APR 1991				
16...	0859	55	302	5.0	10...	1006	32	96	14.0
DEC					JUL				
26...	1331	83	251	3.0	10...	1222	6.3	375	23.0
FEB 1991					AUG				
06...	0929	66	317	2.0	15...	1650	5.8	319	24.0
MAR									
05...	0918	196	216	5.0					
PARKER RIVER BASIN									
01101000 PARKER RIVER AT BYFIELD, MA									
DEC 1990					JUL 1991				
10...	1313	51	138	--	09...	1255	0.89	211	21.0
FEB 1991					AUG				
04...	1515	48	164	1.0	16...	1003	0.16	236	22.0
MAR									
08...	0935	85	112	2.0					
IPSWICH RIVER BASIN									
01101500 IPSWICH RIVER AT SOUTH MIDDLETON, MA									
NOV 1990					MAR 1991				
15...	1330	118	184	4.0	11...	0926	119	192	2.0
DEC					JUL				
26...	0951	90	301	3.0	09...	1555	1.4	291	23.0
FEB 1991					AUG				
05...	1403	97	229	1.0	16...	1505	0.72	293	29.0
01102000 IPSWICH RIVER NEAR IPSWICH, MA									
NOV 1990					MAR 1991				
21...	1330	215	184	5.0	08...	1505	436	148	6.0
DEC					AUG				
24...	1045	230	174	3.0	16...	1252	5.7	290	27.0
FEB 1991									
05...	1250	264	214	1.0					
MYSTIC RIVER BASIN									
01102500 ABERJONA RIVER AT WINCHESTER, MA									
NOV 1990					JUL 1991				
20...	1521	24	455	6.0	10...	1511	4.2	607	23.0
FEB 1991					AUG				
05...	1510	34	487	1.0	16...	1333	30	289	21.0
MAR									
11...	1210	37	482	4.0					
CHARLES RIVER BASIN									
01104000 MOTHER BROOK AT DEDHAM, MA									
DEC 1990					MAR 1991				
17...	1115	41	185	4.0	07...	1328	179	107	9.0
JAN 1991									
24...	1251	90	--	1.5					

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
CHARLES RIVER BASIN--Continued									
01104200 CHARLES RIVER AT WELLESLEY, MA									
MAY 1991 28...	1347	52	230	--	JUL 1991 10...	1325	48	291	--
01104500 CHARLES RIVER AT WALTHAM, MA									
DEC 1990 21...	1000	398	201	4.0	JUL 1991 22...	1149	35	322	--
MAR 1991 11...	1452	553	182	4.0					
NEPONSET RIVER BASIN									
01105000 NEPONSET RIVER AT NORWOOD, MA									
JAN 1991 25...	0757	64	151	--	JUL 1991 09...	0942	16	240	--
APR 17...	1000	43	210	9.0					
01105500 EAST BRANCH NEPONSET RIVER AT CANTON, MA									
JAN 1991 25...	0942	60	128	1.0	MAY 1991 29...	1136	20	188	--
APR 17...	1245	33	205	7.5	JUL 09...	1123	16	184	--
WEYMOUTH BACK RIVER BASIN									
01105600 OLD SWAMP RIVER NEAR SOUTH WEYMOUTH, MA									
JAN 1991 23...	1205	7.4	163	1.0	JUN 1991 03...	1215	1.3	258	--
MAR 06...	1444	14	164	10.0	JUL 12...	1220	0.44	277	--
APR 18...	1215	4.3	242	8.5	AUG 20...	0833	17	223	--
NORTH RIVER BASIN									
01105730 INDIAN HEAD RIVER AT HANOVER, MA									
MAR 1991 06...	1249	13	269	--	MAY 1991 03...	1316	13	269	--
APR 19...	1010	35	251	10.0	JUL 12...	1403	4.8	320	--
JONES RIVER BASIN									
01105870 JONES RIVER AT KINGSTON, MA									
JAN 1991 23...	0821	23	89	1.0	MAY 1991 31...	1456	24	104	--
MAR 05...	1344	87	46	8.0	JUL 16...	1330	11	114	--
APR 19...	1157	24	103	13.0	AUG 20...	1158	26	130	--
TAUNTON RIVER BASIN									
01109000 WADING RIVER NEAR NORTON, MA									
NOV 1990 13...	1100	88	141	3.5	MAY 1991 31...	1020	26	172	--
DEC 10...	1104	81	156	4.0	JUL 16...	1058	3.6	204	--
JAN 1991 18...	1150	231	137	0.0	AUG 21...	1310	106	201	--
MAR 05...	1014	243	83	7.0					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS--Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
TAUNTON RIVER BASIN--Continued									
01109060 THREEMILE RIVER AT NORTH DIGHTON, MA									
JAN 1991					MAY 1991				
22...	1136	328	162	1.0	30...	0825	52	189	--
APR									
22...	1245	409	111	9.5					
01109070 SEGREGANSET RIVER NEAR DIGHTON, MA									
JAN 1991					MAY 1991				
22...	1435	22	79	1.0	30...	0625	2.1	90	--
MAR					AUG				
06...	1008	58	41	6.0	21...	0959	41	161	--
APR									
23...	1335	98	51	--					
TEN MILE RIVER BASIN									
01109403 TEN MILE RIVER AT PAWTUCKET AVE AT EAST PROVIDENCE, RI									
NOV 1990					MAY 1991				
07...	1245	91	287	11.0	09...	1415	113	235	18.0
DEC					JUN				
19...	1000	108	286	5.0	18...	1345	32	165	21.5
FEB 1991					SEP				
11...	1015	102	265	4.5	16...	1430	34	374	22.0
MAR									
27...	1230	189	219	6.5					
BLACKSTONE RIVER BASIN									
01110000 QUINSIGAMOND RIVER AT NORTH GRAFTON, MA									
NOV 1990					MAR 1991				
08...	1130	31	292	8.5	14...	1317	51	308	5.0
01111300 NIPMUC RIVER NEAR HARRISVILLE, RI									
NOV 1990					JUN 1991				
08...	1000	33	50	7.5	25...	1230	1.9	67	16.0
30...	1000	44	49	1.5	SEP				
FEB 1991					17...	1000	4.9	69	20.5
06...	1230	39	28	2.5					
MAY									
06...	1015	29	50	12.5					
01112500 BLACKSTONE RIVER AT WOONSOCKET, RI									
DEC 1990					SEP 1991				
31...	0930	1570	238	4.5	17...	1315	217	281	22.5
MOSHASSUCK RIVER BASIN									
01114000 MOSHASSUCK RIVER AT PROVIDENCE, RI									
NOV 1990					MAY 1991				
09...	1330	20	329	8.5	07...	0945	68	224	14.5
DEC					JUN				
19...	1145	35	265	7.0	24...	1015	6.4	425	18.0
FEB 1991					SEP				
08...	1030	49	272	5.0	23...	0930	8.7	378	15.5
MAR									
22...	1000	45	285	7.0					

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
WOONASQUATUCKET RIVER BASIN									
01114500 WOONASQUATUCKET RIVER AT CENTERDALE, RI									
NOV 1990					MAY 1991				
07...	1530	88	144	11.0	06...	1500	110	117	15.0
FEB 1991					JUN				
06...	1530	76	159	6.0	25...	1415	19	180	22.0
MAR					SEP				
26...	1500	140	152	7.0	17...	1415	26	184	24.0
PAWTUXET RIVER BASIN									
01116000 SOUTH BRANCH PAWTUXET RIVER AT WASHINGTON, RI									
DEC 1990					JUN 1991				
18...	1200	162	75	3.5	18...	1000	54	95	20.5
FEB 1991					AUG				
13...	1030	170	87	1.0	09...	1230	28	123	24.5
MAR					SEP				
22...	1330	220	77	7.0	20...	1430	56	100	18.5
MAY									
09...	1200	193	68	15.5					
POTOMAC RIVER BASIN									
01117000 HUNT RIVER NEAR EAST GREENWICH, RI									
DEC 1990					MAY 1991				
19...	1400	53	114	7.5	09...	1000	76	107	14.5
FEB 1991					SEP				
13...	1430	36	132	1.5	18...	1030	8.7	161	22.5
MAR									
26...	1000	118	98	6.0					
PAWCATUCK RIVER BASIN									
01117350 CHIPUXET RIVER AT WEST KINGSTON, RI									
NOV 1990					MAY 1991				
15...	1500	8.5	111	8.5	14...	1145	25	85	21.0
DEC					JUN				
20...	1430	15	107	5.0	19...	1445	9.1	103	11.5
FEB 1991					AUG				
12...	1200	17	98	3.0	12...	1415	17	96	25.5
MAR					SEP				
25...	1430	42	87	6.5	18...	1430	5.6	107	24.0
01117420 USQUEPAUG RIVER NEAR USQUEPAUG, RI									
NOV 1990					MAY 1991				
15...	1230	42	69	4.5	13...	1230	99	59	14.0
DEC					JUN				
20...	1200	71	69	6.0	19...	1200	27	56	18.0
FEB 1991					AUG				
12...	1345	65	68	2.5	13...	1030	34	74	21.0
MAR					SEP				
25...	1200	184	45	5.5	20...	1200	35	75	18.0
01117468 BEAVER RIVER NEAR USQUEPAUG, RI									
NOV 1990					MAY 1991				
15...	1100	10	66	4.5	14...	1045	26	55	15.5
DEC					JUN				
20...	1030	18	63	4.0	19...	1045	8.8	60	14.0
FEB 1991					AUG				
12...	1030	18	62	1.5	12...	1115	9.3	73	17.5
MAR					SEP				
25...	1030	54	52	5.5	20...	1030	12	61	14.5

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS--Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
PAWCATUCK RIVER BASIN--Continued									
01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI									
OCT 1990					MAY 1991				
30...	1000	78	79	7.5	30...	1000	131	80	22.0
DEC					JUN				
28...	1030	166	77	0.5	27...	0900	62	86	19.0
MAR 1991					SEP				
28...	1100	407	64	9.5	27...	1000	190	74	15.0
01117800 WOOD RIVER NEAR ARCADIA, RI									
NOV 1990					MAY 1991				
13...	1545	106	45	3.0	08...	1400	125	40	17.0
DEC					JUN				
18...	1400	110	40	4.5	18...	1430	26	28	18.0
FEB 1991					AUG				
13...	1215	70	42	2.0	13...	1315	22	23	19.5
MAR					SEP				
27...	1500	148	38	6.5	19...	1045	19	45	18.5
01118000 WOOD RIVER AT HOPE VALLEY, RI									
NOV 1990					MAY 1991				
16...	1030	116	66	4.0	13...	1030	181	66	18.0
DEC					AUG				
21...	1100	164	66	4.0	12...	1300	74	90	22.5
FEB 1991					SEP				
11...	1500	150	69	4.5	18...	1230	45	90	20.5
MAR									
29...	1130	257	66	10.0					
CONNECTICUT RIVER BASIN									
01162000 MILLERS RIVER NEAR WINCHENDON, MA									
OCT 1990					APR 1991				
30...	1331	148	68	7.0	24...	1305	470	108	11.0
DEC					AUG				
05...	1403	230	67	2.5	28...	1245	154	61	23.0
MAR 1991									
05...	0940	663	57	3.0					
01162500 PRIEST BROOK NEAR WINCHENDON, MA									
OCT 1990					APR 1991				
29...	1230	30	52	5.0	23...	1112	100	48	9.0
DEC					MAY				
05...	1036	83	38	2.0	31...	0953	21	36	20.0
JAN 1991					AUG				
16...	1124	22	48	0.5	28...	1010	20	41	20.5
MAR									
05...	13+-30	194	44	3.0					
01163200 OTTER RIVER AT OTTER RIVER, MA									
OCT 1990					AUG 1991				
26...	1516	111	123	10.0	28...	1505	36	133	20.0
MAR 1991									
07...	1400	209	144	5.5					
01166105 WHETSTONE BROOK AT DEPOT ROAD AT WENDELL DEPOT, MA									
MAR 1991					JUL 1991				
22...	0936	13	25	2.0	18...	1550	1.6	30	19.0
APR					SEP				
26...	1025	10	27	8.0	04...	0835	1.8	30	13.5
JUN									
10...	1235	3.4	33	15.0					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS--Continued

177

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
CONNECTICUT RIVER BASIN--Continued									
01166500 MILLERS RIVER AT ERVING, MA									
JUN 1991					SEP 1991				
07...	1000	376	131	8.0	04...	1414	203	132	25.0
JUL									
18...	1425	68	279	29.0					
01168500 DEERFIELD RIVER AT CHARLEMONT, MA									
MAR 1991					SEP 1991				
18...	1030	275	55	20.0	09...	1033	115	54	21.0
01169000 NORTH RIVER AT SHATTUCKVILLE, MA									
MAR 1991					JUL 1991				
20...	1117	301	79	3.0	17...	0947	26	111	21.0
JUN					SEP				
06...	1105	65	135	15.5	05...	1217	33	263	20.0
01169900 SOUTH RIVER NEAR CONWAY, MA									
MAR 1991					JUL 1991				
21...	0911	67	104	3.0	18...	1120	3.7	171	22.0
APR					SEP				
25...	1536	82	101	7.0	05...	0812	13	169	17.0
JUN									
06...	1654	16	136	17.0					
01170000 DEERFIELD RIVER NEAR WEST DEERFIELD, MA									
APR 1991					SEP 1991				
25...	1135	2310	55	8.0	06...	0942	361	88	25.0
JUN									
06...	1414	600	102	14.0					
01170100 GREEN RIVER NEAR COLRAIN, MA									
MAR 1991					JUL 1991				
20...	1418	127	71	5.0	17...	1240	13	110	23.0
APR					SEP				
24...	1451	200	67	6.0	05...	1520	17	124	26.0
JUN									
06...	0630	42	68	--					
01171300 FORT RIVER NEAR AMHERST, MA									
NOV 1990					JUL 1991				
02...	1231	40	73	11.0	17...	1530	9.2	117	25.0
MAR 1991					SEP				
14...	1310	73	71	9.5	05...	1415	30	79	11.0
JUN									
05...	0900	38	71	12.0					
01171500 MILL RIVER AT NORTHAMPTON, MA									
NOV 1990					APR 1991				
08...	1323	91	78	7.0	25...	0845	169	65	10.0
DEC					JUN				
20...	1355	113	70	2.5	07...	0915	40	67	16.5
FEB 1991					JUL				
06...	0915	180	69	3.0	19...	0915	9.3	132	25.0
MAR					SEP				
19...	1000	308	57	9.5	10...	1000	12	3140	20.0
01172500 WARE RIVER NEAR BARRE, MA									
MAR 1991					JUL 1991				
11...	1430	191	52	3.0	10...	1214	19	63	22.0
APR									
29...	1235	95	60	14.0					

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS--Continued

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
CONNECTICUT RIVER BASIN--Continued									
01173000 WARE RIVER AT INTAKE WORKS NEAR BARRE, MA									
JUL 1991 10...	1000	28	58	21.0					
01173500 WARE RIVER AT GIBBS CROSSING, MA									
NOV 1990 01...	1340	260	70	9.0	JUL 1991 17...	0750	68	91	20.0
DEC 13...	0905	256	64	2.0	SEP 04...	1515	41	93	22.0
JUN 1991 04...	0745	258	67	20.0					
01174600 CADWELL CREEK NEAR PELHAM, MA									
NOV 1990 02...	1035	0.90	52	11.0	MAR 1991 14...	1010	1.0	43	9.0
01174900 CADWELL CREEK NEAR BELCHERTOWN, MA									
NOV 1990 02...	1050	5.3	33	8.0	JUN 1991 04...	1515	3.3	27	13.0
MAR 1991 14...	0800	6.9	28	7.0					
01175500 SWIFT RIVER AT WEST WARE, MA									
NOV 1990 01...	1555	128	42	14.0	APR 1991 22...	0800	147	45	9.0
DEC 14...	0736	135	41	2.0	JUN 04...	1100	228	43	12.5
JAN 1991 25...	1005	131	40	2.0	JUL 17...	1030	127	41	12.5
MAR 13...	1330	149	40	10.0	SEP 05...	0750	43	41	15.5
01175670 SEVENMILE RIVER NEAR SPENCER, MA									
NOV 1990 15...	0803	16	56	1.0	JUN 1991 10...	0728	4.5	60	17.0
DEC 20...	0751	23	55	2.0	JUL 10...	0739	1.6	69	16.0
MAR 1991 12...	0940	23	52	2.5	AUG 26...	1150	11	54	20.0
APR 30...	1025	14	55	12.5					
01176000 QUABOAG RIVER AT WEST BRIMFIELD, MA									
NOV 1990 01...	0915	336	90	9.0	JUL 1991 16...	1600	56	172	26.0
MAR 1991 12...	0800	417	80	4.5	SEP 04...	1230	105	99	22.5
01177000 CHICOPEE RIVER AT INDIAN ORCHARD, MA									
NOV 1990 05...	1015	582	89	15.0	MAR 1991 15...	0850	1090	80	7.5
01181000 WEST BRANCH WESTFIELD RIVER AT HUNTINGTON, MA									
NOV 1990 15...	0910	212	67	3.0	APR 1991 24...	1345	285	65	13.0
DEC 20...	1110	267	65	5.0	JUN 06...	1345	68	63	17.5
FEB 1991 07...	1200	712	68	9.5	JUL 18...	1430	6.9	93	28.0
MAR 20...	0815	348	62	5.0	SEP 09...	1455	8.3	66	16.5

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)
CONNECTICUT RIVER BASIN--Continued									
01183500 WESTFIELD RIVER NEAR WESTFIELD, MA									
NOV 1990 09...	0800	708	86	2.0	SEP 1991 10...	0800	136	111	20.0
01185500 WEST BRANCH FARMINGTON RIVER NEAR NEW BOSTON, MA									
DEC 1990 27...	1430	376	83	0.0	JUN 1991 26...	1420	30	104	24.0
FEB 1991 11...	1115	181	89	1.0	SEP 13...	1225	9.4	121	17.5
APR 23...	1215	333	79	9.5					
HOUSATONIC RIVER BASIN									
01197000 EAST BRANCH HOUSATONIC RIVER AT COLTSVILLE, MA									
NOV 1990 07...	0804	128	183	6.0	JUL 1991 16...	0818	18	311	16.5
JAN 1991 30...	0820	50	270	3.0	SEP 10...	0818	20	238	20.0
APR 23...	0858	296	121	6.5					
HUDSON RIVER BASIN									
01331500 HOOSIC RIVER AT ADAMS, MA									
NOV 1990 07...	1142	77	198	6.0	APR 1991 23...	1156	176	144	8.5
DEC 17...	1412	82	202	2.0	JUN 04...	1026	44	224	17.0
JAN 1991 31...	0855	155	160	--	JUL 16...	1003	19	225	23.5
MAR 19...	0838	184	161	2.0	SEP 10...	1113	17	264	18.0
01332500 HOOSIC RIVER NEAR WILLIAMSTOWN, MA									
NOV 1990 08...	0950	221	276	6.0	JUN 1991 05...	0852	99	345	13.5
DEC 18...	1400	385	310	4.0	JUL 16...	1537	58	368	23.5
JAN 1991 30...	1125	145	114	--	SEP 11...	0913	59	324	18.0
MAR 19...	1203	474	195	3.0					
01333000 GREEN RIVER AT WILLIAMSTOWN, MA									
NOV 1990 08...	1356	62	175	6.0	APR 1991 24...	0856	124	140	6.0
DEC 18...	1020	83	210	3.0	JUN 04...	1414	34	183	17.0
JAN 1991 30...	1355	65	214	1.0	JUL 16...	1259	10	189	22.0
MAR 19...	1457	110	163	4.5	SEP 10...	1512	12	236	21.0

GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. 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, 26.55 ft below land-surface datum, Sept. 23, 1991.

REVISIONS.--The revised water level for Oct. 25, 1988 is 26.28 ft below land-surface datum, superseding the figure published in the report for 1989.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	25.61	DEC 20	25.86	FEB 22	25.31	APR 23	24.42	JUN 21	24.95	AUG 26	26.14
NOV 20	25.74	JAN 24	25.37	MAR 25	24.80	MAY 21	24.52	JUL 23	25.62	SEP 23	26.55

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

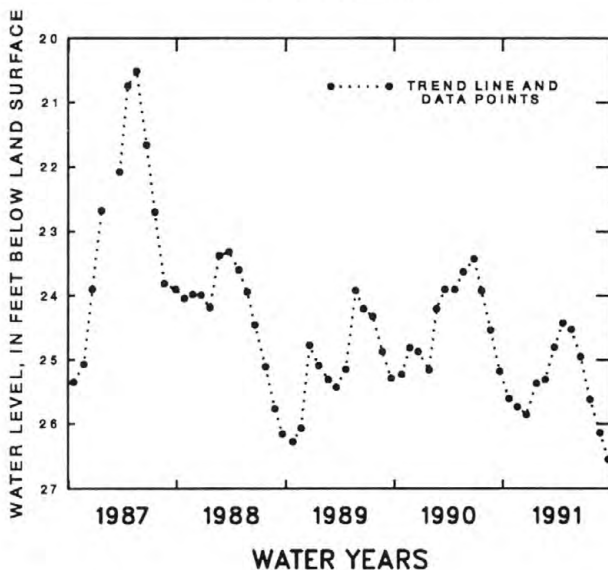
PERIOD OF RECORD.--November 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.73 ft below land-surface datum, May 26, 1987; lowest measured, 28.64 ft below land-surface datum, Oct. 25, 1966.

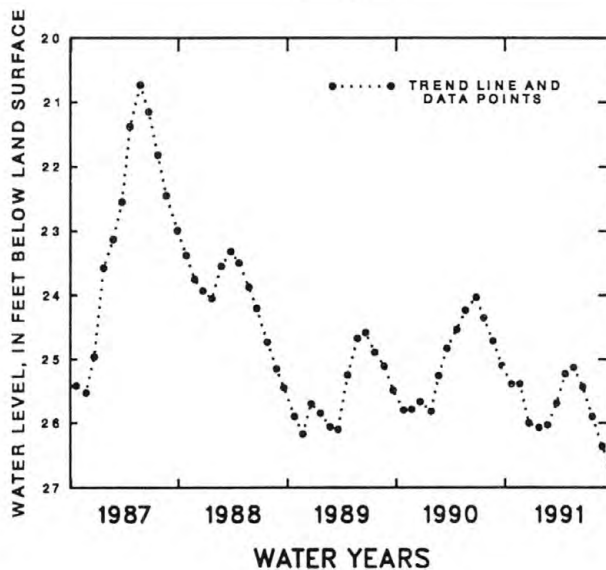
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	25.39	DEC 20	26.00	FEB 22	26.03	APR 23	25.23	JUN 21	25.44	AUG 26	26.36
NOV 20	25.39	JAN 24	26.07	MAR 25	25.69	MAY 21	25.13	JUL 23	25.90	SEP 23	26.67

A1W230



A1W247



GROUND-WATER LEVELS IN MASSACHUSETTS

181

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	34.22	DEC 20	34.40	FEB 21	33.83	APR 24	32.89	JUN 26	33.25	AUG 28	34.38
NOV 28	34.38	JAN 23	34.02	MAR 26	33.45	MAY 24	32.58	JUL 24	33.84	SEP 26	34.60

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.40 ft above land-surface datum.

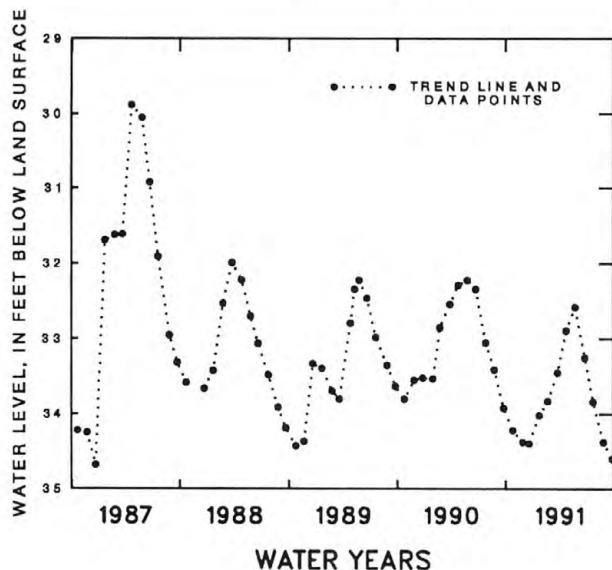
PERIOD OF RECORD.--October 1957 to current year.

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.

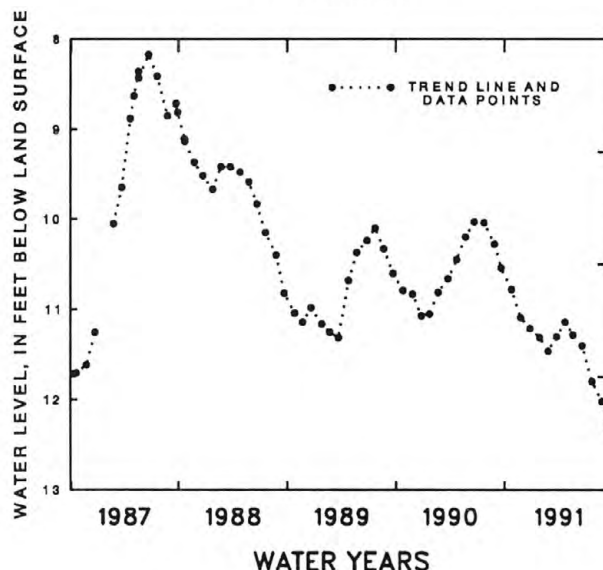
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	10.78	DEC 26	11.21	FEB 26	11.46	APR 25	11.14	JUN 21	11.40	AUG 27	12.02
NOV 25	11.09	JAN 28	11.31	MAR 27	11.30	MAY 21	11.28	JUL 25	11.80	SEP 25	12.32

BHW198



BMW21



GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	31.64	DEC 26	32.18	FEB 26	32.26	APR 25	32.63	JUL 25	32.20	SEP 25	32.82
NOV 25	31.98	JAN 28	32.17	MAR 27	33.00	JUN 21	31.70	AUG 27	32.49		

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.77 ft above land-surface datum; prior to June 1980, 3.80 ft above land-surface datum.

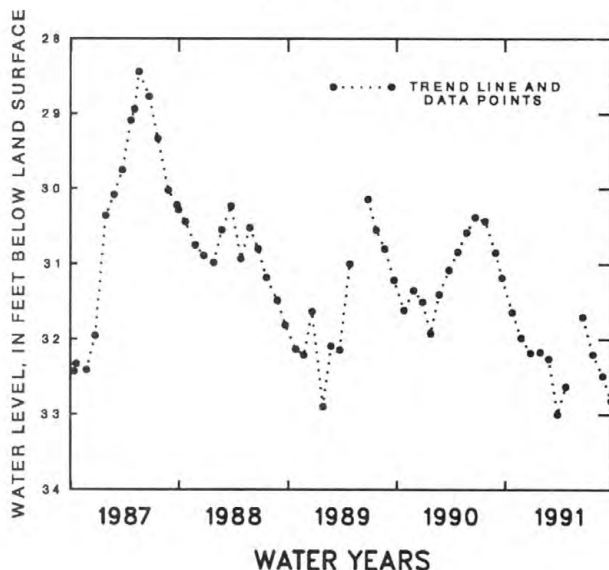
PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

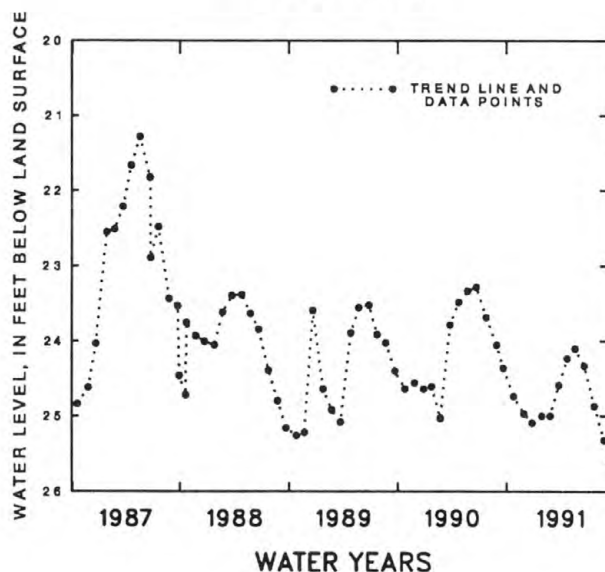
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	24.74	DEC 26	25.09	FEB 26	25.00	APR 25	24.23	JUN 21	24.33	AUG 27	25.32
NOV 28	24.97	JAN 28	25.00	MAR 27	24.59	MAY 21	24.10	JUL 25	24.87	SEP 25	25.58

BMW22



CGW138



GROUND-WATER LEVELS IN MASSACHUSETTS

183

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.66	DEC 20	9.61	FEB 21	9.22	APR 24	7.94	JUN 21	8.56	SEP 04	9.56
NOV 27	9.80	JAN 23	9.33	MAR 26	8.40	MAY 24	8.11	JUL 24	9.06	26	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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

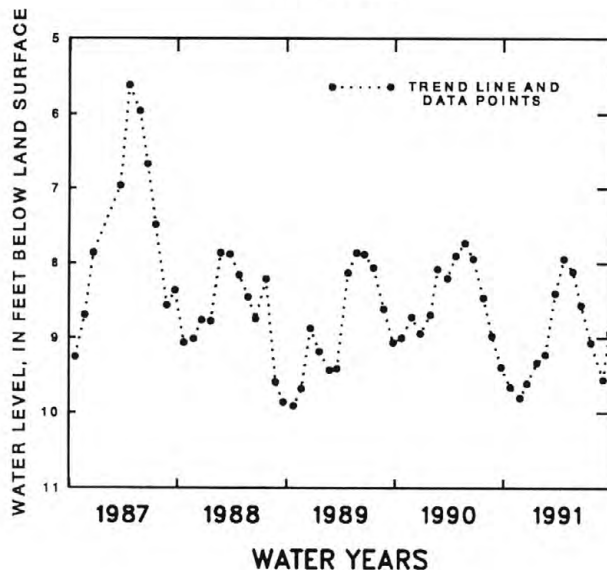
PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

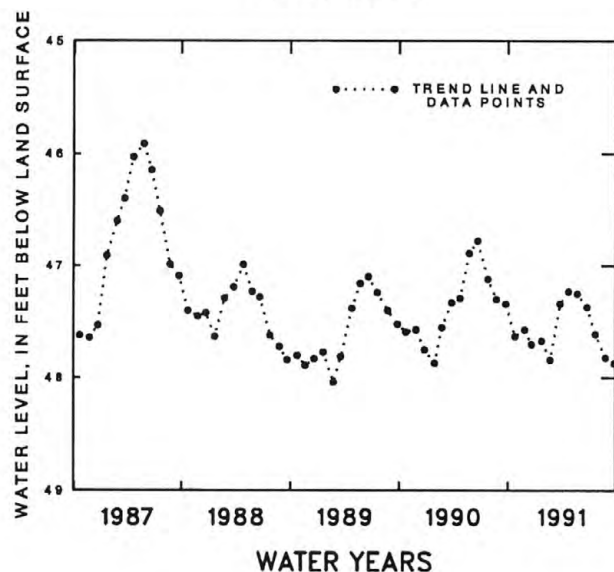
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	47.63	DEC 20	47.70	FEB 21	47.84	APR 24	47.23	JUN 26	47.37	AUG 28	47.82
NOV 27	47.57	JAN 23	47.67	MAR 26	47.34	MAY 24	47.25	JUL 24	47.61	SEP 26	47.87

MIW29



SDW252



GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	51.00	DEC 20	51.41	FEB 21	51.70	APR 24	51.27	JUN 26	51.52	AUG 28	52.22
NOV 27	51.33	JAN 23	51.57	MAR 26	51.43	MAY 24	51.29	JUL 24	51.86	SEP 26	52.39

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.50 ft above land-surface datum.

REMARKS.--Water levels affected by pumping, barometric pressure, and tide.

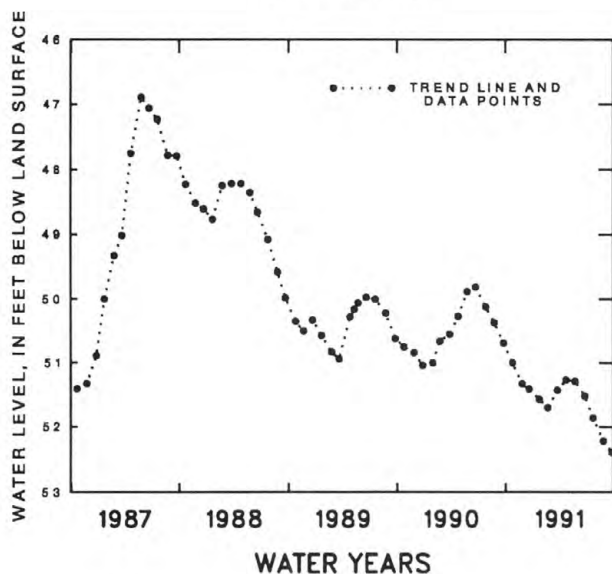
PERIOD OF RECORD.--August 1950 to current year.

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.

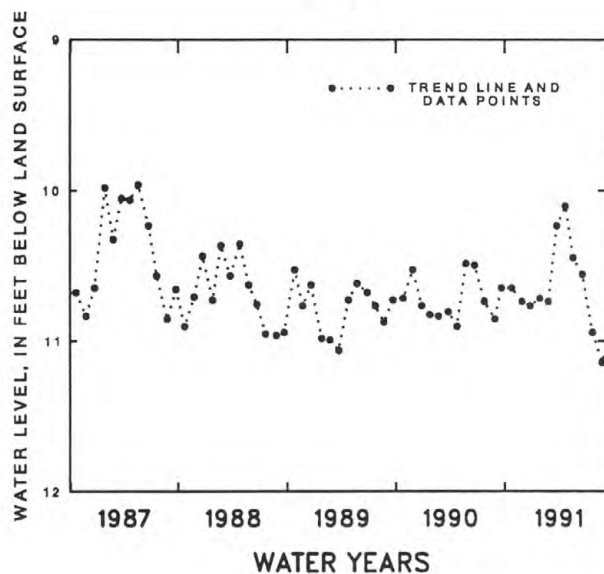
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	10.64	DEC 26	10.76	FEB 26	10.73	APR 25	10.10	JUN 21	10.55	AUG 27	11.14
NOV 28	10.73	JAN 28	10.71	MAR 27	10.23	MAY 21	10.44	JUL 25	10.94	SEP 25	10.95

SDW253



TSW1



GROUND-WATER LEVELS IN MASSACHUSETTS

185

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	12.51	DEC 26	12.46	FEB 26	12.41	APR 25	11.84	JUN 21	12.15	AUG 27	12.65
NOV 28	12.40	JAN 28	12.40	MAR 27	11.98	MAY 21	11.98	JUL 25	12.43	SEP 25	12.72

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.13 ft above land-surface datum.

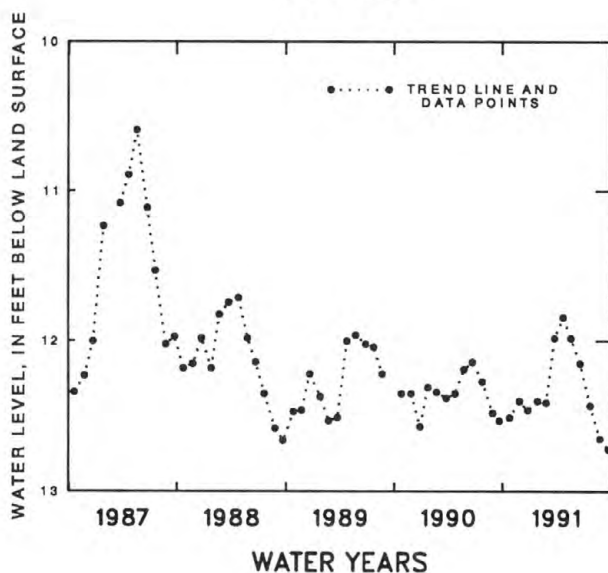
PERIOD OF RECORD.--November 1962 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.27 ft below land-surface datum, June 27, 1967; lowest measured, 12.75 ft below land-surface datum, Jan. 31, 1967.

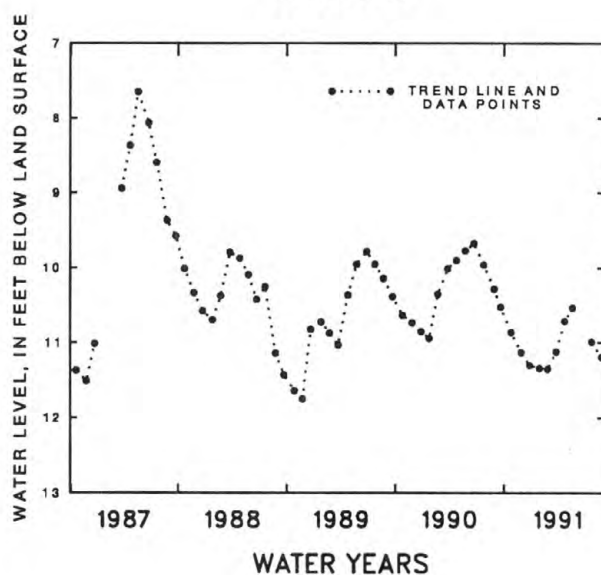
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	10.86	DEC 26	11.30	FEB 26	11.35	APR 25	10.71	JUL 25	10.99	SEP 25	11.41
NOV 28	11.13	JAN 28	11.34	MAR 27	11.12	MAY 21	10.53	AUG 27	11.19		

TSW89



WNW17



GROUND-WATER LEVELS IN MASSACHUSETTS

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: Jim McCann.

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 National Geodetic Vertical Datum of 1929. 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, 2.56 ft below land-surface datum, July 22, 1988; lowest measured, 4.62 ft below land-surface datum, Aug. 23, 1988, July 24, 1991.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	3.97	DEC 22	3.66	FEB 21	3.62	APR 23	3.27	JUN 23	4.39	AUG 22	3.73
NOV 24	3.82	JAN 22	4.02	MAR 25	3.34	MAY 23	4.16	JUL 24	4.62	SEP 20	3.58

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: John Jayko.

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 National Geodetic Vertical Datum of 1929. Measuring point:

Inside rim of concrete well top, 1.0 ft above land-surface datum.

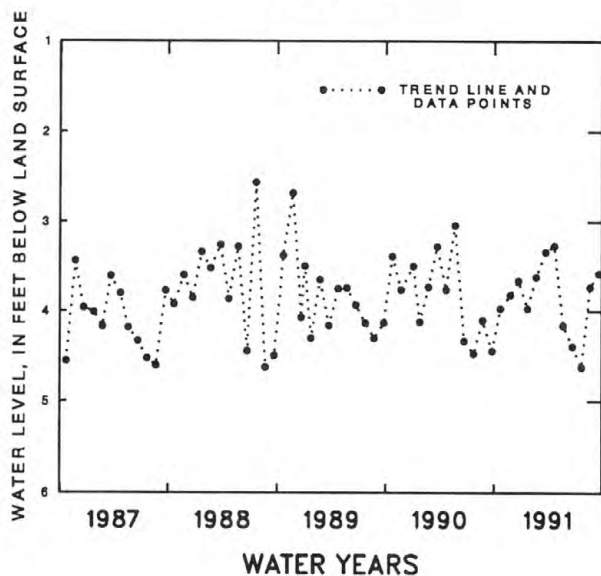
PERIOD OF RECORD.--October 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.09 ft below land-surface datum, Jan. 19, 1952; lowest measured, 14.03 ft below land-surface datum, Nov. 20, 1964.

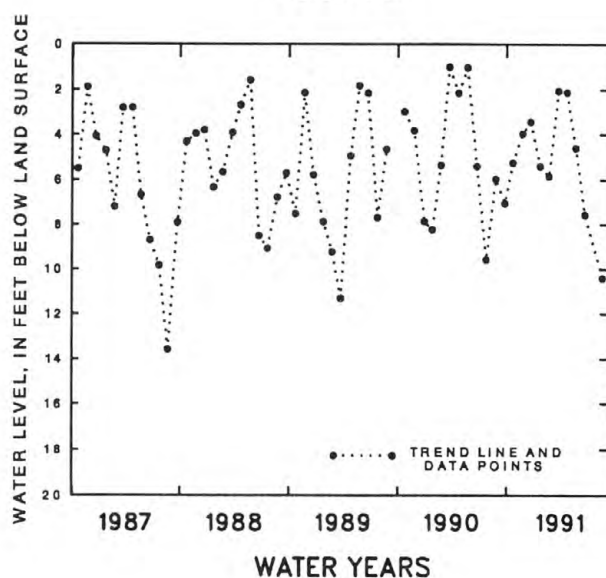
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	5.24	DEC 21	3.43	FEB 21	5.84	APR 23	2.12	JUN 23	7.55		
NOV 24	3.95	JAN 22	5.39	MAR 25	2.05	MAY 23	4.58	AUG 22	10.40		

A3W12



CJW2



GROUND-WATER LEVELS IN MASSACHUSETTS

187

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: Mr. Jacobson.

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.68	DEC 22	8.32	FEB 21	9.43	APR 23	8.36	JUN 23	11.51	AUG 22	9.66
NOV 24	8.85	JAN 22	9.21	MAR 25	7.85	MAY 23	10.85	JUL 24	12.82	SEP 20	12.50

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.5 ft above land-surface datum.

REMARKS.--Water levels affected by Minor Brook and Farmington River.

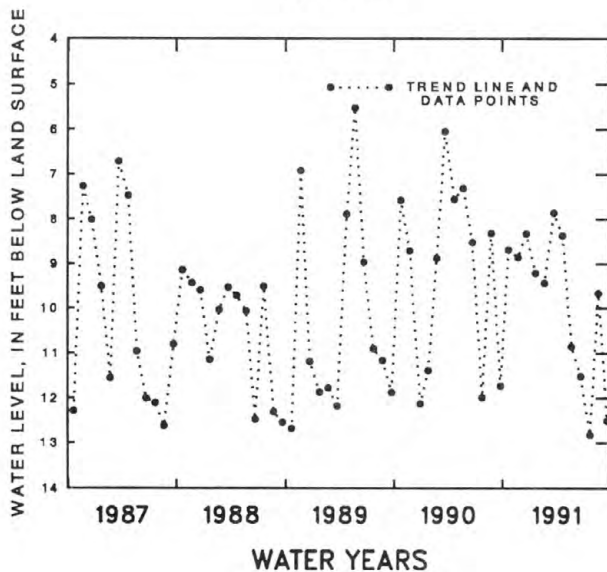
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

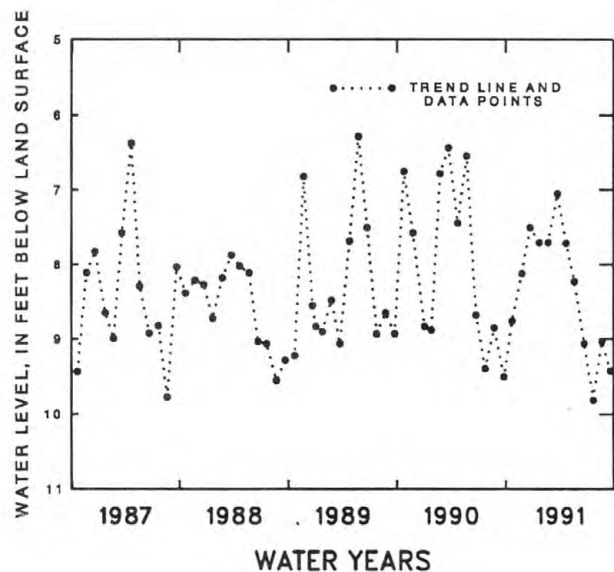
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.76	DEC 22	7.50	FEB 21	7.70	APR 23	7.71	JUN 23	9.06	AUG 22	9.03
NOV 24	8.12	JAN 22	7.70	MAR 25	7.05	MAY 21	8.23	JUL 24	9.81	SEP 20	9.42

GMW2



OTW7



GROUND-WATER LEVELS IN MASSACHUSETTS

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.--Augured observation water-table well, diameter 2.0 ft, depth 31.5 ft, screened 26.5 to 31.5 ft. Prior to July 1986, augured observation water-table well, diameter 1.25 in depth 31.5 ft, screened 29.5 to 31.5 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer. Digital recorder (60-min punch) July 1986 to current year.

DATUM.--Elevation of land-surface datum is 1,050 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 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.

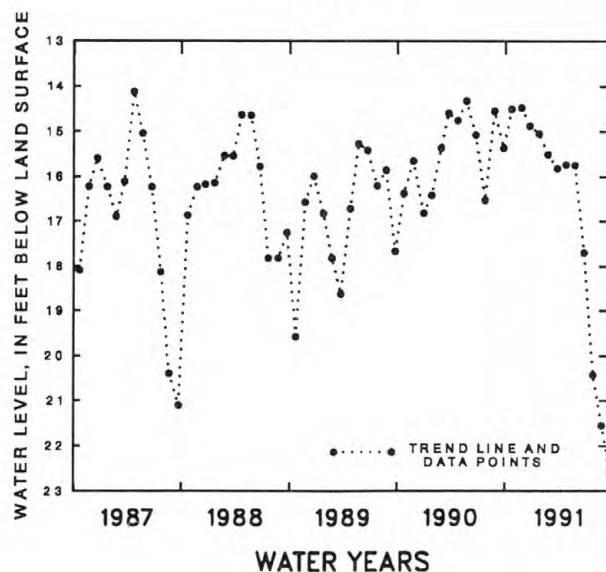
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.30 ft below land-surface datum, Apr. 25, 1969; lowest measured, 27.57 ft below land-surface datum, Dec. 11, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	15.92	15.70	15.94	18.37	21.06	22.16
2	---	---	---	---	---	---	15.92	15.67	15.97	18.50	21.13	22.19
3	---	---	---	---	---	---	15.89	15.66	16.02	18.62	21.20	22.25
4	---	---	---	---	---	---	15.89	15.66	16.07	18.71	21.23	22.32
5	---	---	---	---	---	---	15.88	15.68	16.13	18.81	21.30	22.36
6	---	---	---	---	---	15.68	15.77	15.67	16.19	18.92	21.39	22.38
7	---	---	---	---	---	15.67	---	15.61	16.24	19.02	21.47	22.42
8	---	---	---	---	---	15.69	---	15.61	16.31	19.09	21.55	22.48
9	---	---	---	---	---	15.71	---	15.62	16.39	19.17	21.61	22.55
10	---	---	---	---	---	15.71	---	15.62	16.49	19.27	21.64	22.59
11	---	---	---	---	---	15.72	---	15.62	16.60	19.39	21.71	22.62
12	---	---	---	---	---	15.74	---	15.62	16.66	19.48	21.78	22.67
13	---	---	---	---	---	15.76	---	15.62	16.70	19.57	21.85	22.73
14	---	---	---	---	---	15.78	---	15.62	16.85	19.58	21.93	22.83
15	---	---	---	---	---	15.82	---	15.62	16.94	19.68	21.97	22.84
16	---	---	---	---	---	15.85	---	15.62	17.03	19.79	22.03	22.85
17	---	---	---	---	---	15.87	---	15.62	17.03	19.88	22.09	22.86
18	---	---	---	---	---	15.86	---	15.62	17.15	19.98	22.12	22.90
19	---	---	---	---	---	15.81	---	15.63	17.26	20.07	21.91	22.88
20	---	---	---	---	---	15.80	---	15.66	17.36	20.17	21.74	22.63
21	---	---	---	---	m15.50	15.85	---	15.69	17.46	20.27	21.59	22.38
22	m14.50	---	m14.87	m15.04	---	15.89	15.75	15.72	17.59	20.35	21.52	22.22
23	---	---	---	---	---	15.94	15.75	15.76	17.69	20.44	21.58	22.21
24	---	m14.47	---	---	---	15.93	15.76	15.81	17.79	20.49	21.67	22.22
25	---	---	---	---	---	15.92	15.77	15.82	17.89	20.61	21.75	22.19
26	---	---	---	---	---	15.88	15.78	15.86	17.99	20.68	21.83	21.94
27	---	---	---	---	---	15.88	15.78	15.91	18.09	20.65	21.90	21.64
28	---	---	---	---	---	15.88	15.78	15.94	18.18	20.73	21.98	21.32
29	---	---	---	---	---	15.89	15.78	15.95	18.27	20.82	22.06	21.02
30	---	---	---	---	---	15.93	15.76	15.98	18.35	20.91	22.12	20.74
31	---	---	---	---	---	15.92	---	15.95	---	20.98	22.15	---
MEAN	---	---	---	---	---	---	---	15.71	17.02	19.77	21.71	22.31
LOW	---	---	---	---	---	---	---	15.98	18.35	20.98	22.15	22.90
HIGH	---	---	---	---	---	---	---	15.61	15.94	18.37	21.06	20.74

WTR YR 1991 HIGH 15.61 MAY 7, 8, 9 LOW 22.95 SEP 18, 19
m Measured

PTW51



GROUND-WATER LEVELS IN MASSACHUSETTS

189

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 National Geodetic Vertical Datum of 1929. 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, 15.82 ft below land-surface datum, Oct. 16, 1987.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	12.76	DEC 22	12.42	FEB 21	11.92	APR 23	11.85	JUN 23	11.45	AUG 22	12.78
NOV 24	12.37	JAN 22	11.52	MAR 25	12.04	MAY 23	11.94	JUL 24	12.18	SEP 20	13.37

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.5 ft above land-surface datum.

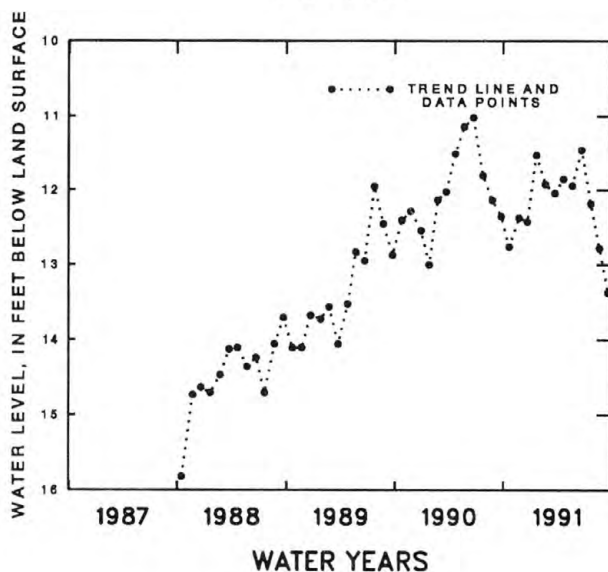
PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

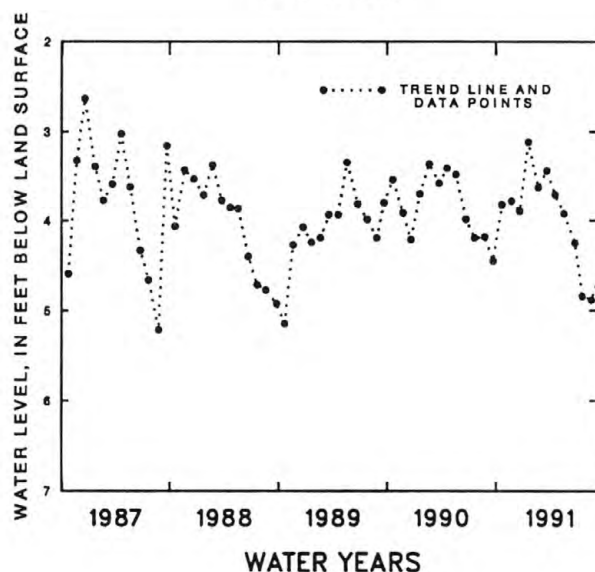
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	3.82	DEC 21	3.89	FEB 22	3.63	APR 20	3.71	JUN 26	4.25	AUG 20	4.88
NOV 23	3.78	JAN 20	3.11	MAR 23	3.44	MAY 20	3.92	JUL 20	4.84	SEP 27	4.52

SJW58



ATW83



GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	14.03	DEC 21	14.36	FEB 22	14.38	APR 20	13.68	JUN 26	14.13	AUG 20	14.71
NOV 23	14.18	JAN 20	14.13	MAR 23	13.76	MAY 20	13.47	JUL 20	14.60	SEP 27	14.52

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

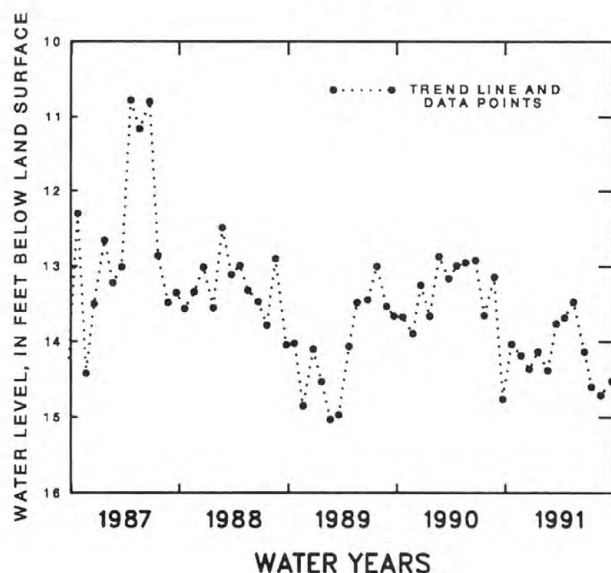
PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

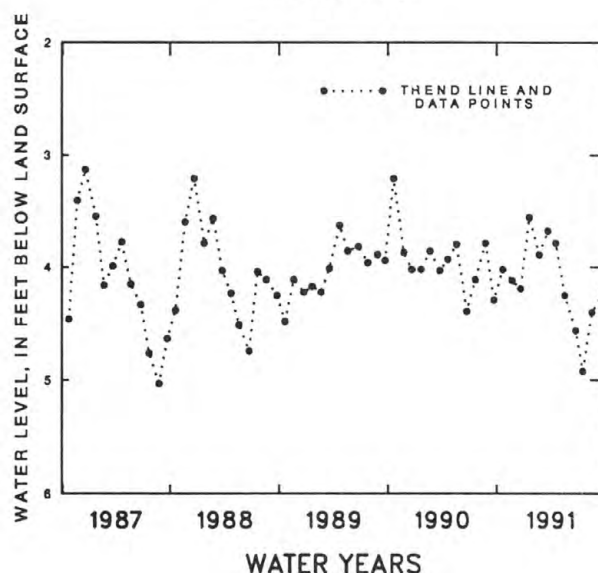
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	4.02	DEC 21	4.19	FEB 22	3.89	APR 20	3.79	JUN 26	4.56	AUG 20	4.40
NOV 23	4.12	JAN 20	3.56	MAR 23	3.68	MAY 20	4.25	JUL 20	4.92	SEP 27	4.23

F3W23



NGW116



GROUND-WATER LEVELS IN MASSACHUSETTS

191

BRISTOL COUNTY--Continued

41581207111101. 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 National Geodetic Vertical Datum of 1929. 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, 11.24 ft below land-surface datum, Oct. 23, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	7.60	DEC 21	6.88	FEB 22	6.36	APR 20	7.04	JUN 26	9.36	AUG 20	9.74
NOV 23	6.72	JAN 20	5.70	MAR 23	5.69	MAY 20	7.38	JUL 27	10.21	SEP 27	6.87

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

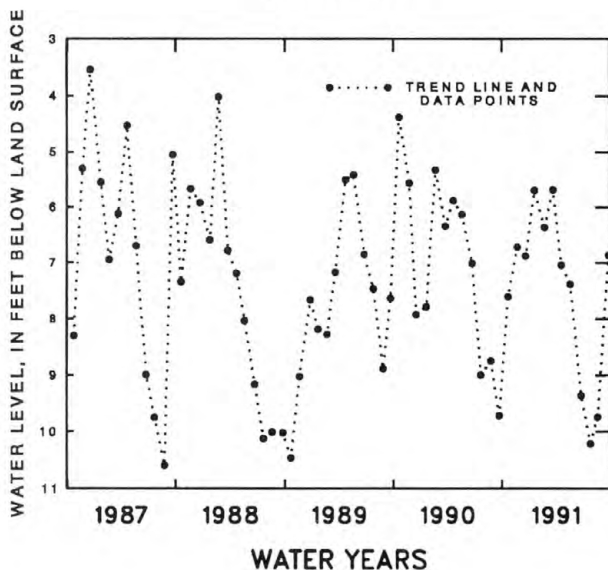
PERIOD OF RECORD.--June 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

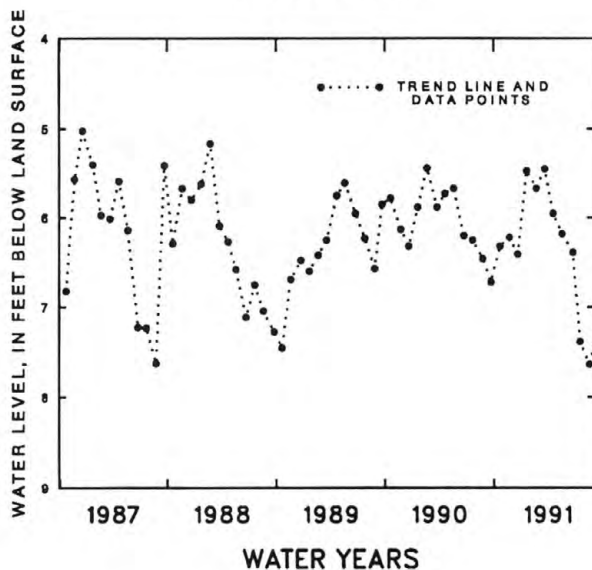
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	6.32	DEC 21	6.41	FEB 22	5.67	APR 20	5.95	JUN 26	6.39	AUG 20	7.63
NOV 23	6.22	JAN 20	5.47	MAR 23	5.45	MAY 20	6.18	JUL 20	7.38	SEP 27	7.18

N4W37



SHW275



GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.21	DEC 21	9.13	FEB 22	8.72	APR 20	8.74	JUN 26	9.55	AUG 20	9.86
NOV 23	9.30	JAN 20	8.38	MAR 23	8.21	MAY 20	8.94	JUL 20	9.98	SEP 27	9.15

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 64.02 ft, screened 61.02 to 64.02 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 34 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.02 ft below land-surface datum.

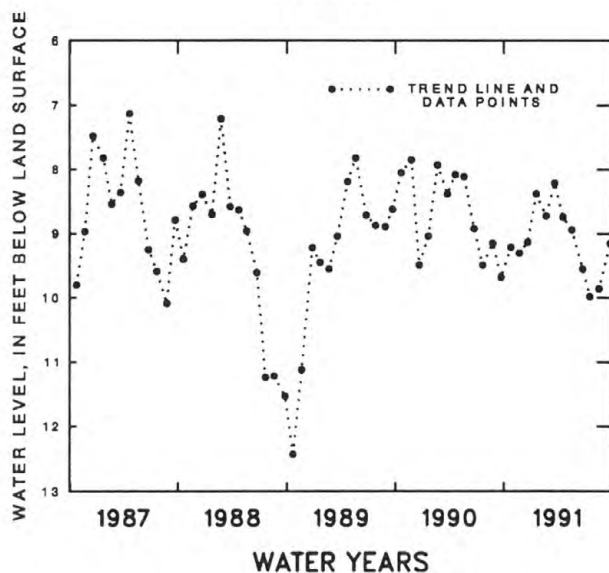
PERIOD OF RECORD.--December 1976 to current year.

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.

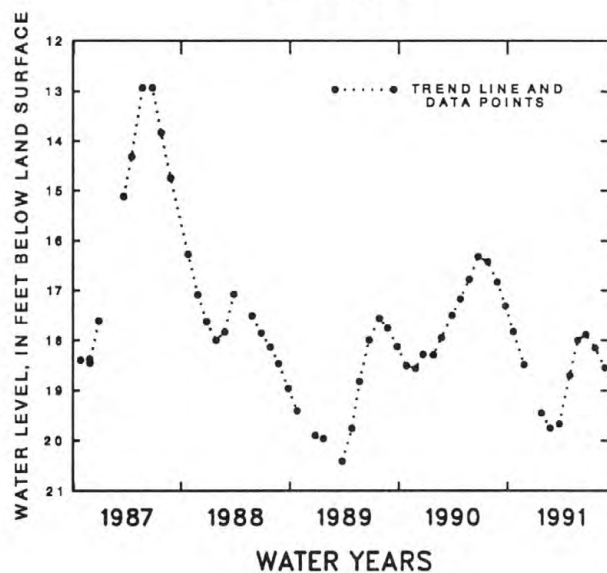
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	17.82	JAN 24	19.45	MAR 25	19.67	MAY 27	17.99	JUL 25	18.15	SEP 27	18.96
NOV 26	18.48	FEB 22	19.75	APR 30	18.70	JUN 24	17.88	AUG 27	18.54		

TAW337



ENW52



GROUND-WATER LEVELS IN MASSACHUSETTS

193

ESSEX COUNTY

423734071080901. Andover well AJW 26.

LOCATION.--Lat 42°37'34", long 71°08'09", Essex County, Hydrologic Unit 01070002, 90 ft north of Ballardvale Road and 30 ft west of Sunset Rock Road in Andover.

Owner: Harry K. Jenkins.

AQUIFER.--Glacial till of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 25 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 189 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Upper edge of brick lip in corner of opening, 2.5 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, 3.47 ft below land-surface datum, Mar. 26, 1969; lowest measured, dry, Oct. 26, 1986.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.79	DEC 25	9.96	FEB 24	9.55	APR 21	12.45	JUN 23	11.54	AUG 27	11.09
NOV 20	9.39	JAN 27	10.34	MAR 23	9.83	MAY 20	10.55	JUL 27	11.90	SEP 22	11.46

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

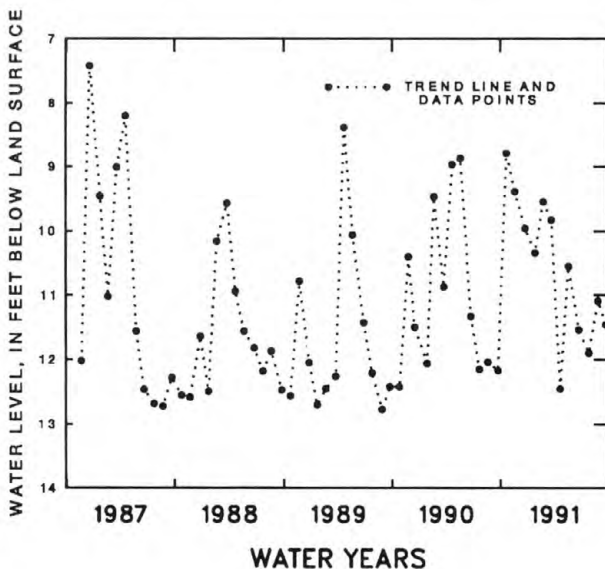
PERIOD OF RECORD.--November 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.72 ft below land-surface datum, June 20, 1984; lowest measured, 15.80 ft below land-surface datum, Oct. 23, 1980.

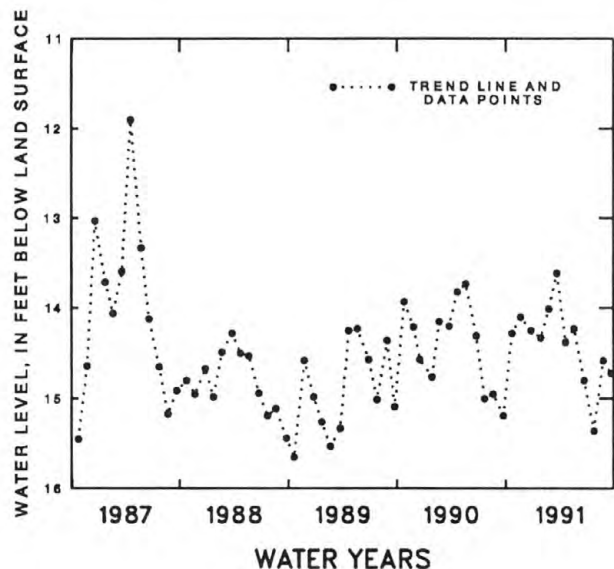
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	14.28	DEC 25	14.25	FEB 24	14.01	APR 21	14.38	JUN 23	14.80	AUG 27	14.58
NOV 20	14.10	JAN 27	14.33	MAR 23	13.61	MAY 20	14.23	JUL 27	15.36	SEP 22	14.72

AJW26



AJW462



GROUND-WATER LEVELS IN MASSACHUSETTS

ESSEX COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

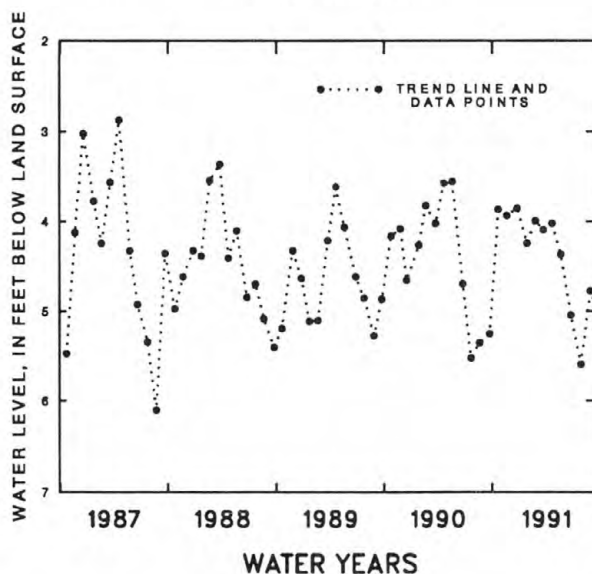
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	3.86	DEC 25	3.85	FEB 24	3.99	APR 21	4.02	JUN 23	5.04	AUG 27	4.77
NOV 20	3.93	JAN 27	4.24	MAR 23	4.09	MAY 20	4.36	JUL 27	5.59	SEP 22	4.99

GCW168



GROUND-WATER LEVELS IN MASSACHUSETTS

195

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: Mrs. Benjamin Hamm.

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 chalked 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 National Geodetic Vertical Datum of 1929. Measuring point: Top edge of hole in base of wooden recorder shelter, 1.65 ft above land-surface datum.

PERIOD OF RECORD.--October 1960 to current year.

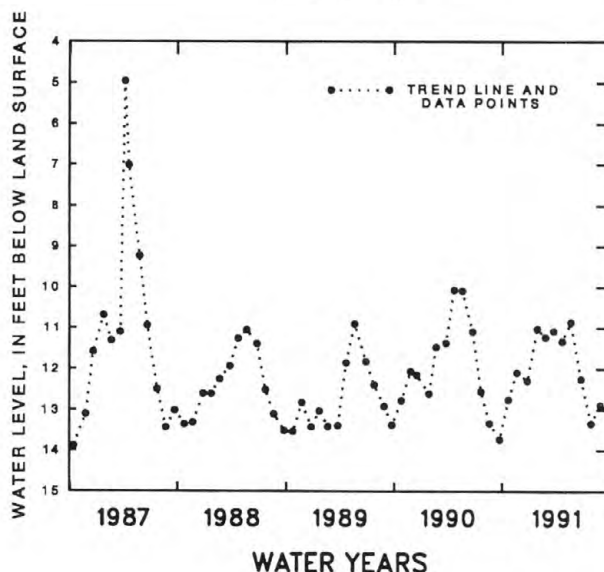
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.96 ft below land-surface datum, Apr. 7, 8, 1987; lowest, 15.02 ft below land-surface datum, Feb. 2, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.78	12.28	12.29	12.05	12.00	11.35	10.87	10.43	11.36	12.57	13.43	13.01
2	13.79	12.29	12.31	12.03	11.99	11.36	10.86	10.42	11.40	12.60	13.46	13.05
3	13.81	12.29	12.33	12.01	11.99	11.37	10.89	10.44	11.45	12.64	13.48	13.07
4	13.83	12.30	12.33	11.99	11.94	11.33	10.90	10.48	11.50	12.68	13.50	13.10
5	13.84	12.31	12.28	11.96	11.89	11.26	10.90	10.53	11.55	12.72	13.52	13.12
6	13.85	12.32	12.27	11.94	11.87	11.20	10.90	10.55	11.60	12.76	13.54	13.13
7	13.86	12.33	12.28	11.93	11.85	11.14	10.92	10.54	11.64	12.80	13.56	13.15
8	13.87	12.35	12.29	11.93	11.83	11.08	10.95	10.57	11.68	12.83	13.58	13.18
9	13.88	12.37	12.29	11.93	11.80	11.04	10.98	10.60	11.73	12.87	13.60	13.19
10	13.89	12.37	12.27	11.94	11.79	10.99	11.01	10.62	11.77	12.90	13.61	13.22
11	13.90	12.29	12.28	11.96	11.77	10.95	11.05	10.64	11.81	12.94	13.60	13.24
12	13.91	12.24	12.28	11.95	11.76	10.93	11.10	10.65	11.86	12.97	13.61	13.27
13	13.93	12.20	12.27	11.95	11.75	10.92	11.13	10.68	11.90	13.00	13.63	13.30
14	13.60	12.17	12.29	11.99	11.72	10.92	11.16	10.71	11.94	13.01	13.64	13.33
15	13.17	12.13	12.30	12.02	11.53	10.92	11.18	10.75	11.98	13.03	13.66	13.36
16	13.01	12.11	12.27	12.04	11.42	10.95	11.20	10.78	12.01	13.06	13.68	13.37
17	12.94	12.09	12.28	11.98	11.36	10.97	11.23	10.82	12.02	13.08	13.70	13.39
18	12.90	12.08	12.29	11.90	11.33	10.97	11.27	10.86	12.05	13.11	13.71	13.41
19	12.86	12.08	12.31	11.88	11.30	10.94	11.30	10.89	12.09	13.14	13.67	13.44
20	12.81	12.09	12.34	11.87	11.27	10.99	11.33	10.92	12.13	13.17	13.21	13.45
21	12.78	12.10	12.35	11.88	11.25	11.03	11.30	10.96	12.17	13.20	13.02	13.45
22	12.74	12.11	12.34	11.91	11.23	11.06	10.96	11.00	12.21	13.23	12.94	13.47
23	12.72	12.11	12.34	11.94	11.25	11.08	10.73	11.05	12.25	13.25	12.89	13.48
24	12.67	12.11	12.33	11.96	11.25	11.03	10.57	11.09	12.29	13.28	12.87	13.49
25	12.56	12.14	12.31	11.99	11.25	11.03	10.50	11.13	12.33	13.32	12.86	13.45
26	12.43	12.17	12.27	12.01	11.27	11.02	10.46	11.18	12.37	13.34	12.87	13.29
27	12.36	12.20	12.24	12.03	11.28	10.98	10.44	11.22	12.41	13.35	12.89	13.16
28	12.32	12.21	12.20	12.05	11.32	10.92	10.46	11.22	12.45	13.33	12.90	---
29	12.29	12.24	12.15	12.07	---	10.90	10.46	11.25	12.49	13.36	12.93	---
30	12.27	12.27	12.11	12.09	---	10.88	10.46	11.28	12.53	13.38	12.95	---
31	12.27	---	12.08	12.05	---	10.89	---	11.32	---	13.41	12.98	---
MEAN	13.19	12.21	12.28	11.98	11.58	11.05	10.92	10.83	11.97	13.04	13.34	---
LOW	13.93	12.37	12.35	12.09	12.00	11.37	11.33	11.32	12.53	13.41	13.71	---
HIGH	12.27	12.08	12.08	11.87	11.23	10.88	10.44	10.42	11.36	12.57	12.86	---

WTR YR 1991 HIGH 10.42 MAY 1, 2 LOW 13.93 OCT 13

HLW23



GROUND-WATER LEVELS IN MASSACHUSETTS

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: Mrs. George Brown.

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 chalked 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 National Geodetic Vertical Datum of 1929. 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.

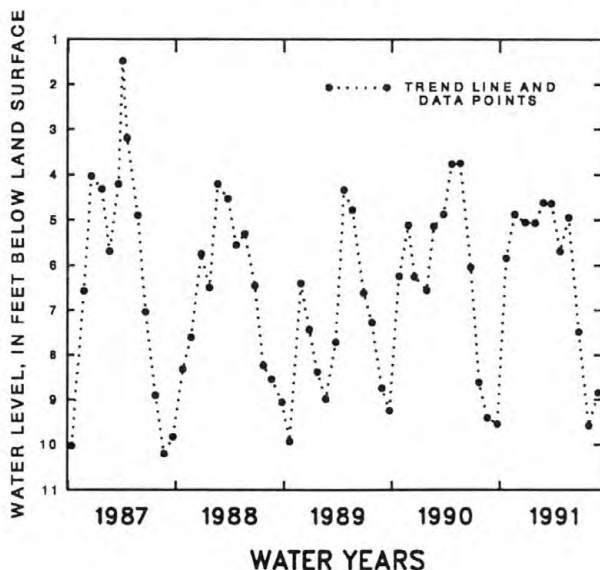
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.48 ft below land-surface datum, Apr. 5, 1987; lowest, 12.68 ft below land-surface datum, Nov. 24, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.71	5.04	5.62	4.80	4.85	4.90	4.46	3.70	6.04	8.08	9.71	9.16
2	9.73	5.07	5.68	4.73	4.94	4.93	4.51	3.73	6.13	8.15	9.71	9.23
3	9.76	5.12	5.76	4.74	4.97	4.95	4.59	3.82	6.22	8.22	9.77	9.29
4	9.77	5.18	5.71	4.80	4.94	4.60	4.65	3.93	6.31	8.31	9.84	9.34
5	9.77	5.24	5.34	4.86	4.94	4.04	4.69	4.03	6.38	8.38	9.89	9.36
6	9.79	5.26	5.11	4.91	4.95	4.01	4.74	4.09	6.45	8.45	9.95	9.30
7	9.83	5.27	5.07	4.98	4.94	3.91	4.80	4.01	6.53	8.51	10.01	9.28
8	9.88	5.29	5.09	5.07	4.76	3.88	4.87	4.08	6.61	8.57	10.06	9.32
9	9.89	5.33	5.11	5.11	4.65	3.95	4.92	4.17	6.71	8.64	10.11	9.37
10	9.89	5.31	5.13	5.16	4.63	4.01	4.98	4.25	6.80	8.71	10.12	9.41
11	---	4.84	5.21	5.24	4.66	4.08	5.07	4.34	6.89	8.78	10.10	9.44
12	---	4.57	5.26	5.25	4.72	4.15	5.16	4.40	6.96	8.85	10.11	9.50
13	---	4.60	5.28	5.30	4.78	4.22	5.24	4.48	6.98	8.93	10.15	9.56
14	---	4.68	5.37	5.38	4.55	4.29	5.31	4.56	7.04	8.94	10.19	9.61
15	---	4.73	5.43	5.47	4.10	4.36	5.37	4.66	7.11	8.96	10.21	9.64
16	5.60	4.76	5.41	5.52	4.15	4.41	5.41	4.75	7.12	9.01	10.24	9.65
17	5.72	4.79	5.42	5.13	4.26	4.48	5.47	4.83	7.12	9.05	10.28	9.65
18	5.91	4.86	5.41	4.71	4.39	4.52	5.54	4.90	7.16	9.08	10.30	9.68
19	5.96	4.89	5.38	4.65	4.44	4.46	5.61	4.97	7.21	9.11	10.28	9.72
20	5.84	4.96	5.41	4.65	4.40	4.46	5.67	5.05	7.26	9.16	9.64	9.69
21	5.80	5.03	5.37	4.68	4.41	4.55	5.41	5.12	7.31	9.21	9.17	9.56
22	5.83	5.09	5.31	4.72	4.43	4.61	3.52	5.21	7.39	9.29	8.81	9.50
23	---	5.12	5.28	4.77	4.52	4.63	3.45	5.31	7.48	9.36	8.66	9.50
24	---	5.17	5.22	4.81	4.60	4.47	3.51	5.39	7.56	9.41	8.65	9.51
25	---	5.23	5.07	4.90	4.64	4.31	3.60	5.48	7.64	9.47	8.68	9.31
26	---	5.31	4.97	4.98	4.70	4.25	3.68	5.58	7.71	9.54	8.74	8.14
27	---	5.38	4.98	5.05	4.76	4.24	3.73	5.66	7.79	9.57	8.81	6.78
28	---	5.41	5.00	5.11	4.84	4.23	3.82	5.74	7.87	9.57	8.88	6.25
29	---	5.47	5.01	5.16	---	4.31	3.90	5.81	7.93	9.59	8.96	6.23
30	---	5.55	4.99	5.20	---	4.37	3.91	5.89	8.01	9.63	9.03	6.39
31	---	---	4.89	4.88	---	4.43	---	5.97	---	9.68	9.08	---
MEAN	---	5.08	5.27	4.99	4.64	4.36	4.65	4.77	7.06	8.97	9.62	9.01
LOW	---	5.55	5.76	5.52	4.97	4.95	5.67	5.97	8.01	9.68	10.30	9.72
HIGH	---	4.57	4.89	4.65	4.10	3.88	3.45	3.70	6.04	8.08	8.65	6.23

WTR YR 1991 HIGH 3.42 APR 22 LOW 10.34 AUG 19

NIW27



GROUND-WATER LEVELS IN MASSACHUSETTS

197

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: Mr. Sullivan.

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	14.65	DEC 25	10.62	FEB 24	9.30	APR 21	11.15	JUN 23	12.89	AUG 27	14.99
NOV 20	12.92	JAN 27	8.97	MAR 23	9.79	MAY 20	10.97	JUL 27	14.61	SEP 22	15.30

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

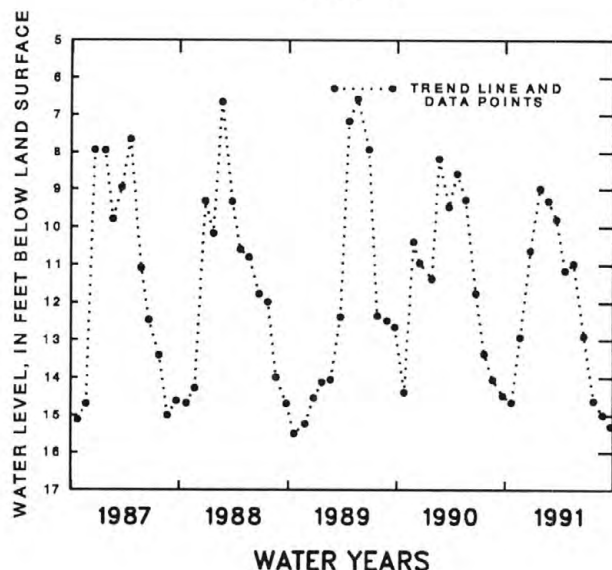
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.39 ft below land-surface datum, Jan. 26, 1978; lowest measured, 4.36 ft below land-surface datum, Sept. 28, 1971.

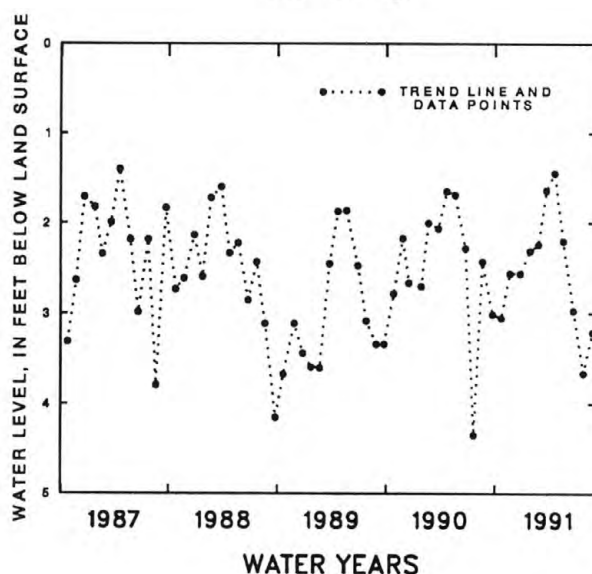
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	3.05	DEC 25	2.56	FEB 24	2.24	APR 21	1.45	JUN 23	2.97	AUG 27	3.21
NOV 20	2.56	JAN 27	2.31	MAR 23	1.64	MAY 20	2.20	JUL 27	3.66	SEP 22	3.35

TQW1



WPW76



GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.

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, 14.62 ft below land-surface datum, Apr. 24, 1969; lowest measured, 23.48 ft below land-surface datum, Jan. 31, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	21.16	DEC 21	18.79	FEB 21	17.81	APR 23	17.33	JUN 23	19.23	AUG 23	20.77
NOV 24	20.09	JAN 22	18.29	MAR 24	17.44	MAY 22	17.90	JUL 24	20.45	SEP 22	21.56

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

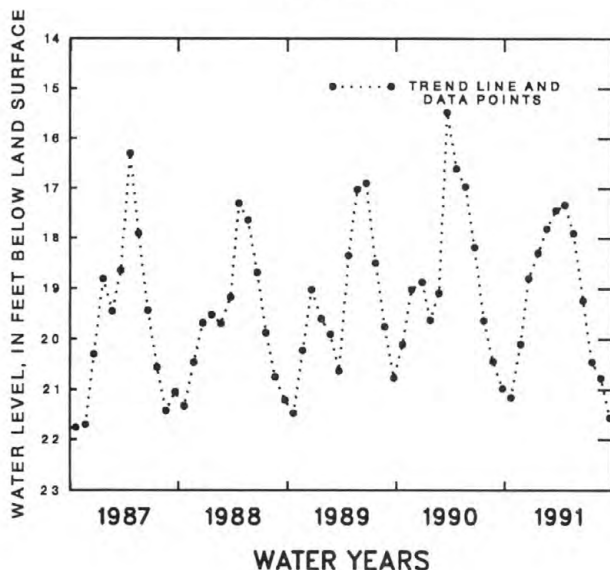
PERIOD OF RECORD.--December 1964 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

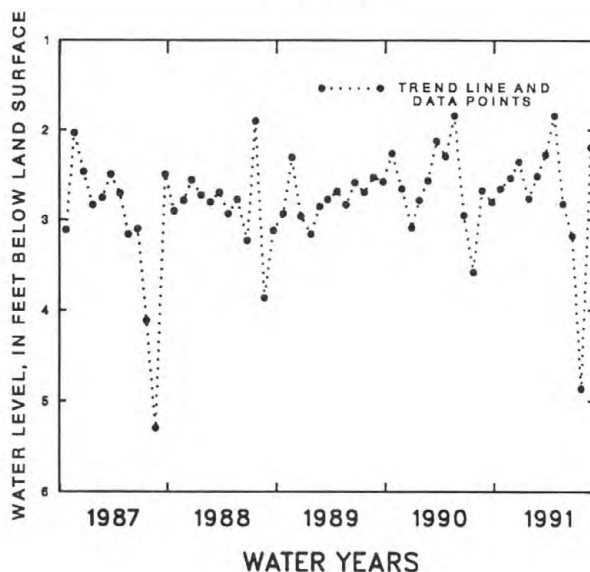
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	2.65	DEC 23	2.35	FEB 23	2.51	APR 22	1.84	JUN 22	3.18	AUG 24	2.19
NOV 25	2.53	JAN 25	2.76	MAR 23	2.27	MAY 21	2.82	JUL 22	4.86	SEP 21	2.55

CSW8



DFW44



GROUND-WATER LEVELS IN MASSACHUSETTS

199

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 National Geodetic Vertical Datum of 1929. 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, 2.92 ft below land-surface datum, May 23, 1990; lowest measured, 6.45 ft below land-surface datum, Aug. 22, 1987.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	4.13	DEC 22	4.04	FEB 22	3.89	APR 24	3.08	JUN 24	4.46	AUG 23	4.19
NOV 25	4.04	JAN 23	4.11	MAR 24	3.76	MAY 22	3.66	JUL 24	5.60	SEP 22	4.61

423305072320301. Montague well M5W 5.

LOCATION.--Lat 42°33'05", long 72°32'03", Franklin County, Hydrologic Unit 01080201, about 15 ft west of Montague Road, 0.2 mi north of Old Northfield Road, and 1.0 mi north of Montague.

Owner: Thomas C. Kurtyka.

AQUIFER.--Glacial outwash of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in, depth 12 ft, screened 9 to 12 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 240 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.75 ft above land-surface datum.

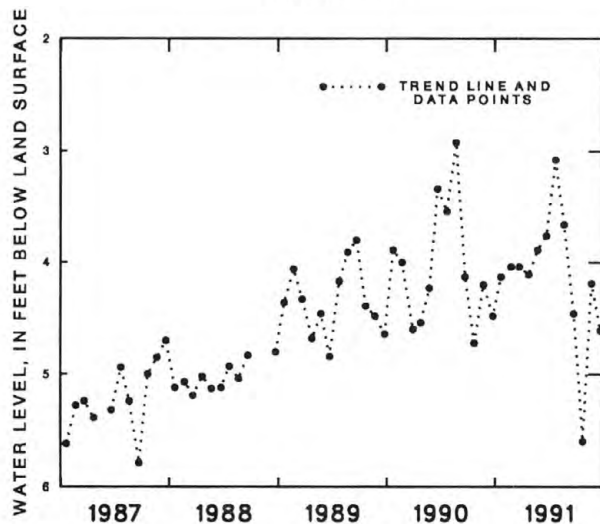
PERIOD OF RECORD.--January 1936 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.41 ft below land-surface datum, Feb. 26, 1976; lowest measured, 8.00 ft below land-surface datum, Dec. 28, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

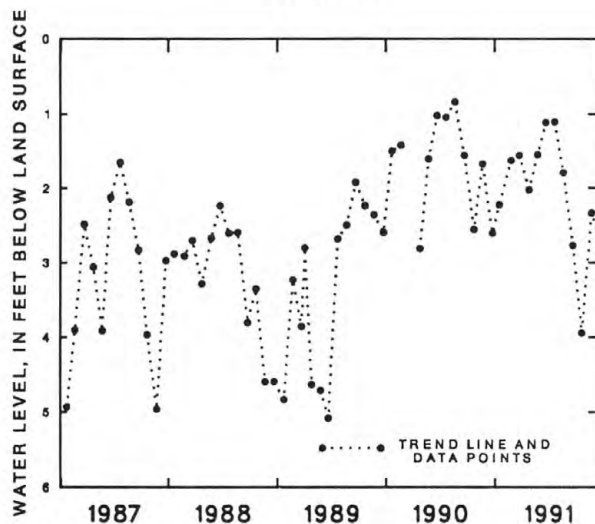
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	2.22	DEC 23	1.55	FEB 23	1.54	APR 22	1.10	JUN 22	2.77	AUG 24	2.33
NOV 25	1.62	JAN 25	2.02	MAR 23	1.11	MAY 21	1.79	JUL 22	3.94	SEP 21	2.66

HMW8



WATER YEARS

M5W5



WATER YEARS

GROUND-WATER LEVELS IN MASSACHUSETTS

FRANKLIN COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.45 ft above land-surface datum.

PERIOD OF RECORD.--January 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.20 ft below land-surface datum, June 21, 1989; lowest measured, 8.44 ft below land-surface datum, Mar. 22, 1989.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	7.63	DEC 22	6.82	FEB 22	6.77	APR 22	6.59	JUN 24	7.15	AUG 23	6.69
NOV 25	6.83	JAN 23	6.67	MAR 25	6.17	MAY 21	6.23	JUL 22	7.87	SEP 22	7.18

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.

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

REMARKS.--Water level affected by pumping and nearby Russellville Brook.

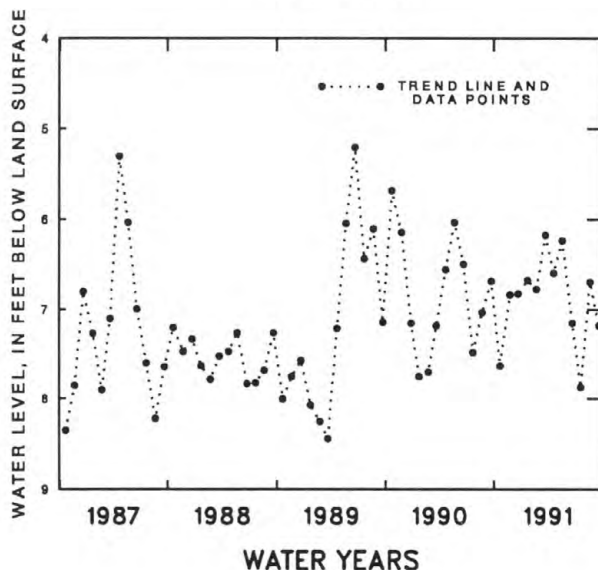
PERIOD OF RECORD.--November 1957 to current year.

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.

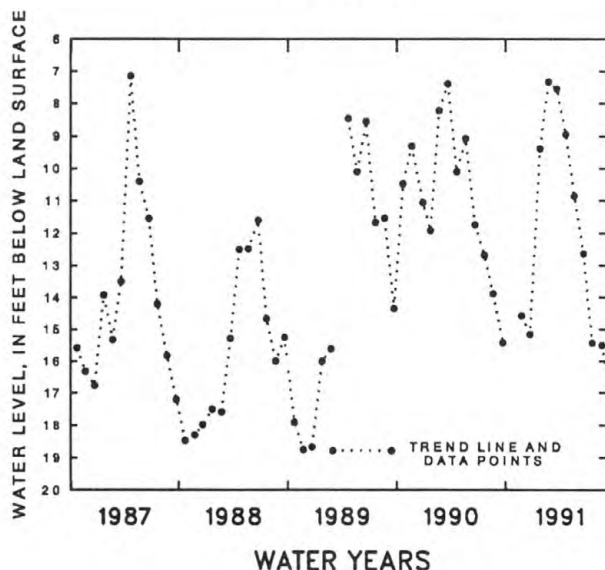
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 25	14.57	JAN 25	9.38	MAR 23	7.55	MAY 21	10.85	JUL 22	15.43	SEP 21	16.85
DEC 23	15.16	FEB 23	7.33	APR 22	8.95	JUN 22	12.64	AUG 24	15.50		

ORW63



S6W7



GROUND-WATER LEVELS IN MASSACHUSETTS

201

FRANKLIN COUNTY--Continued

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: Robert Laurenitis.

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 National Geodetic Vertical Datum of 1929. 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 YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	2.96	DEC 23	2.45	FEB 23	2.40	APR 22	1.80	JUN 22	3.42	AUG 24	3.10
NOV 25	2.60	JAN 25	2.85	MAR 23	1.72	MAY 21	2.37	JUL 22	4.33	SEP 21	3.64

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

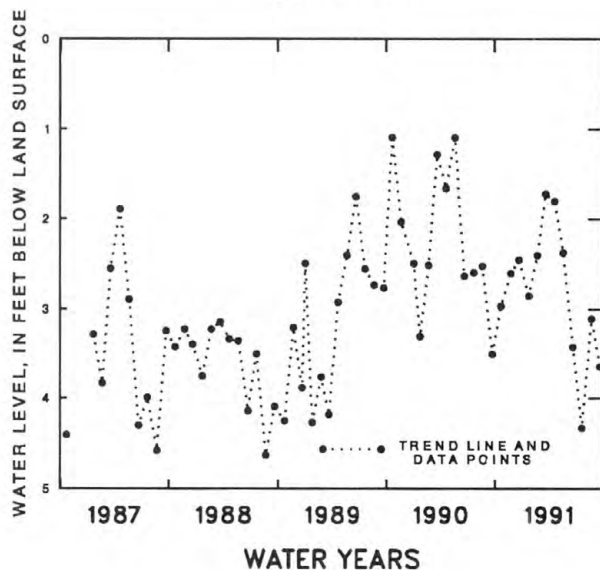
PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.89 ft below land-surface datum, May 22, 1990; lowest measured, 3.85 ft below land-surface datum, Aug. 22, 1987.

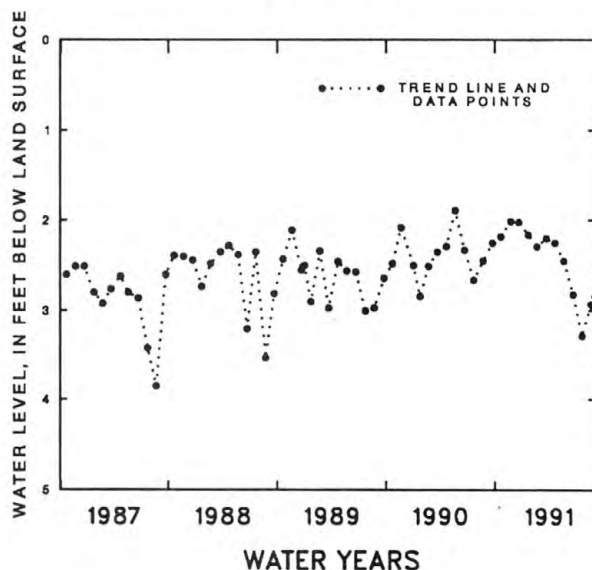
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	2.18	DEC 21	2.02	FEB 21	2.29	APR 23	2.25	JUN 23	2.82	AUG 22	2.93
NOV 24	2.01	JAN 22	2.16	MAR 25	2.20	MAY 23	2.45	JUL 23	3.28	SEP 20	2.51

S6W68



BEW9



GROUND-WATER LEVELS IN MASSACHUSETTS

HAMPDEN COUNTY--Continued

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 in 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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	21.20	DEC 23	20.89	FEB 23	20.68	APR 22	20.13	JUN 22	20.37	AUG 24	21.21
NOV 23	21.13	JAN 24	20.58	MAR 23	20.37	MAY 21	20.00	JUL 22	20.94	SEP 21	21.50

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

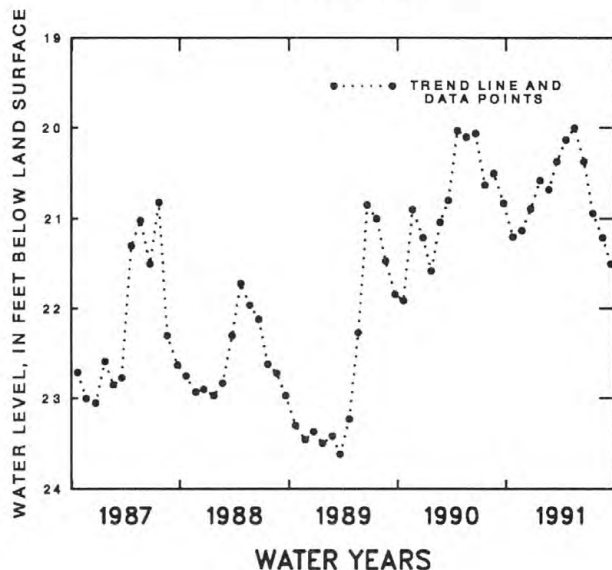
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

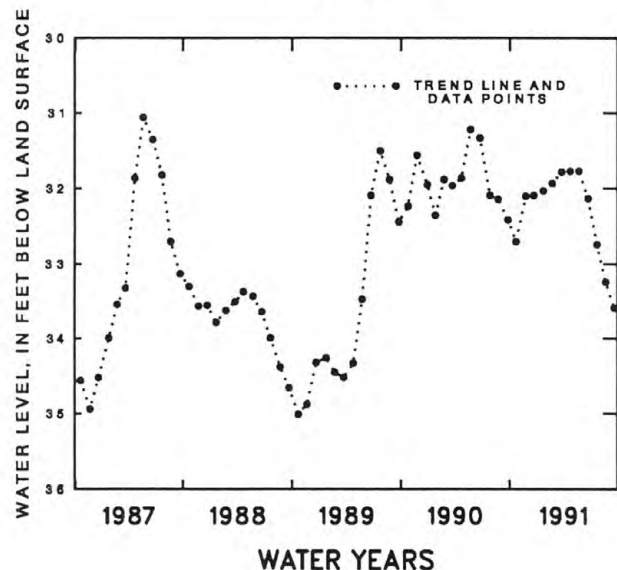
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	32.70	DEC 21	32.09	FEB 21	31.93	APR 23	31.77	JUN 23	32.13	AUG 22	33.24
NOV 24	32.10	JAN 22	32.03	MAR 25	31.78	MAY 23	31.77	JUL 23	32.74	SEP 20	33.59

CMW95



GLW5



GROUND-WATER LEVELS IN MASSACHUSETTS

203

HAMPDEN COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.5 ft above land-surface datum.

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, 8.42 ft below land-surface datum, Aug. 25, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	5.49	DEC 22	3.32	FEB 21	3.52	APR 23	3.13	JUN 23	6.71	AUG 22	4.97
NOV 24	3.50	JAN 22	4.23	MAR 25	2.93	MAY 23	4.89	JUL 24	8.36	SEP 20	7.27

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

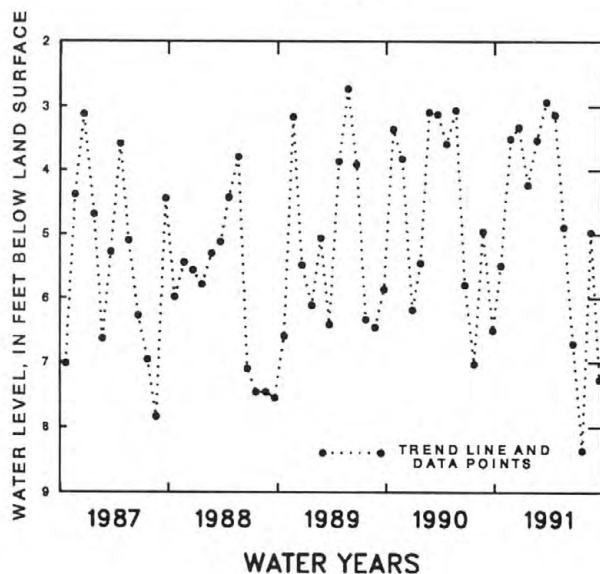
PERIOD OF RECORD.--October 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.22 ft below land-surface datum, Apr. 22, 1990; lowest measured, 5.86 ft below land-surface datum, Aug. 22, 1987.

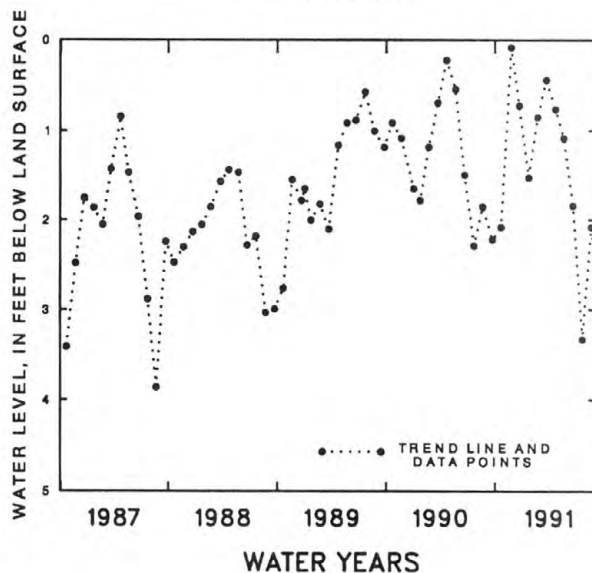
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	2.08	DEC 22	0.72	FEB 22	0.85	APR 24	0.76	JUN 22	1.84	AUG 23	2.08
NOV 25	0.08	JAN 23	1.53	MAR 24	.44	MAY 22	1.08	JUL 24	3.33	SEP 21	2.78

GLW6



M7W19



GROUND-WATER LEVELS IN MASSACHUSETTS

HAMPDEN COUNTY--Continued

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: Paul Zaschack.

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 National Geodetic Vertical Datum of 1929. 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, 0.66 ft below land-surface datum, July 24, 1989; lowest measured, 4.87 ft below land-surface datum, Oct. 22, 1986.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	2.52	DEC 21	3.00	FEB 21	2.72	APR 23	2.08	JUN 23	3.66	AUG 22	3.55
NOV 24	2.96	JAN 22	3.11	MAR 25	2.07	MAY 23	2.79	JUL 23	4.58	SEP 20	4.52

420646072420101. Westfield well WVW 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 25 ft, casing information not available.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 210 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.5 ft above land-surface datum.

REMARKS.--Water level affected by pumping.

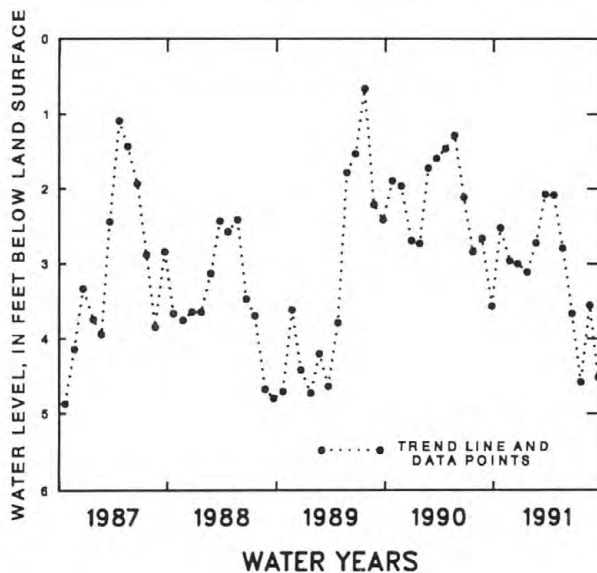
PERIOD OF RECORD.--August 1957 to current year.

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, Mar. 21, 1985.

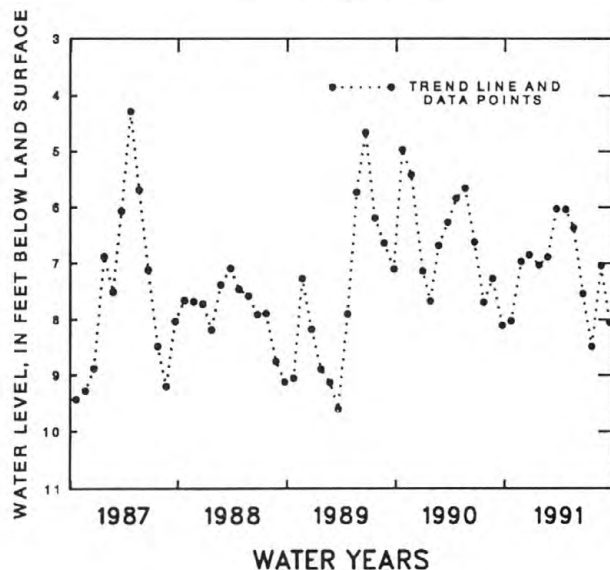
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.02	DEC 22	6.85	FEB 22	6.89	APR 24	6.04	JUN 22	7.54	AUG 23	7.04
NOV 25	6.97	JAN 24	7.03	MAR 24	6.03	MAY 21	6.37	JUL 22	8.48	SEP 21	8.05

SVW95



WVW62



GROUND-WATER LEVELS IN MASSACHUSETTS

205

HAMPDEN COUNTY--Continued

420924072422602. Westfield well WVW 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 National Geodetic Vertical Datum of 1929. 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, 2.20 ft below land-surface datum, June 21, 1989; lowest measured, 4.72 ft below land-surface datum, Dec. 21, 1986, Jan. 24, 1987.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	3.92	DEC 22	3.38	FEB 22	3.37	APR 24	3.11	JUN 22	3.94	AUG 23	3.02
NOV 25	3.49	JAN 23	3.47	MAR 24	3.04	MAY 21	3.84	JUL 22	4.23	SEP 21	3.45

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.0 ft above land-surface datum.

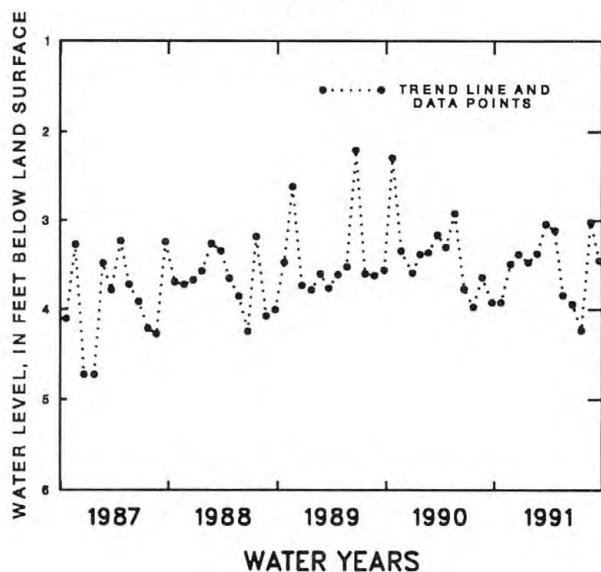
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.56 ft below land-surface datum, Mar. 28, 1979; lowest measured, 45.44 ft below land-surface datum, Jan. 24, 1966.

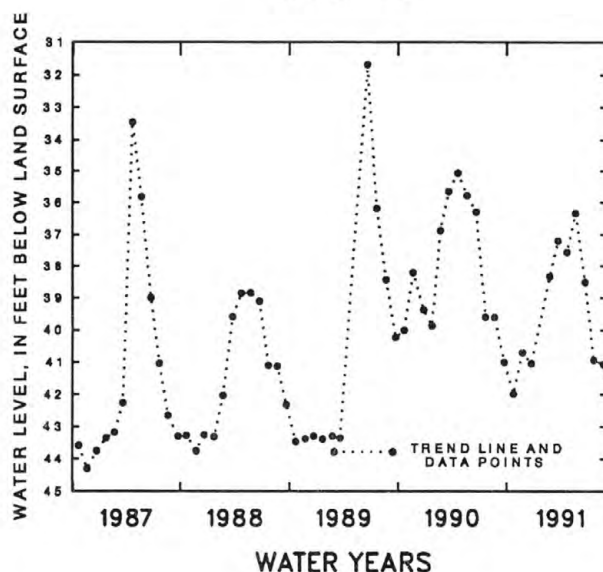
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	41.98	DEC 23	41.04	MAR 23	37.20	MAY 21	36.33	JUL 22	40.93	SEP 21	41.92
NOV 23	40.70	FEB 23	38.33	APR 22	37.56	JUN 22	38.50	AUG 24	41.06		

WVW152



XJW55



GROUND-WATER LEVELS IN MASSACHUSETTS

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.--Augured 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 National Geodetic Vertical Datum of 1929. 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, 2.11 ft below land-surface datum, Mar. 22, 1990; lowest measured, 6.24 ft below land-surface datum, July 24, 1991.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	4.91	DEC 21	4.23	FEB 22	4.18	APR 24	3.45	JUN 24	5.68	AUG 23	4.76
NOV 25	4.40	JAN 23	4.49	MAR 24	4.04	MAY 22	4.49	JUL 24	6.24	SEP 22	5.52

421355072322001. Granby well GKW 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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

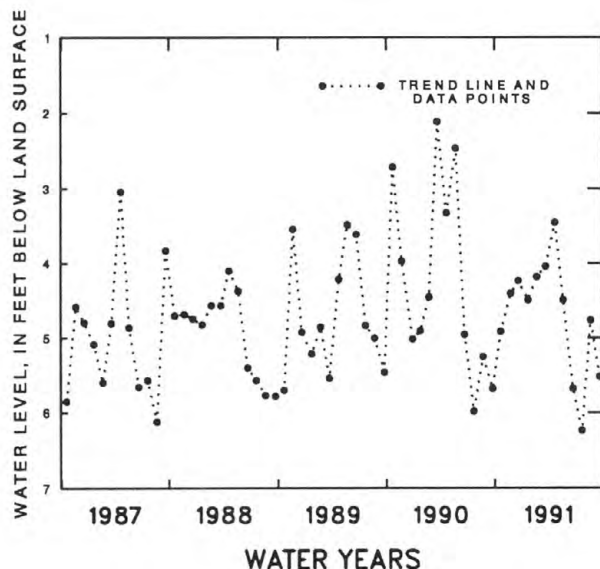
PERIOD OF RECORD.--April 1954 to current year.

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.

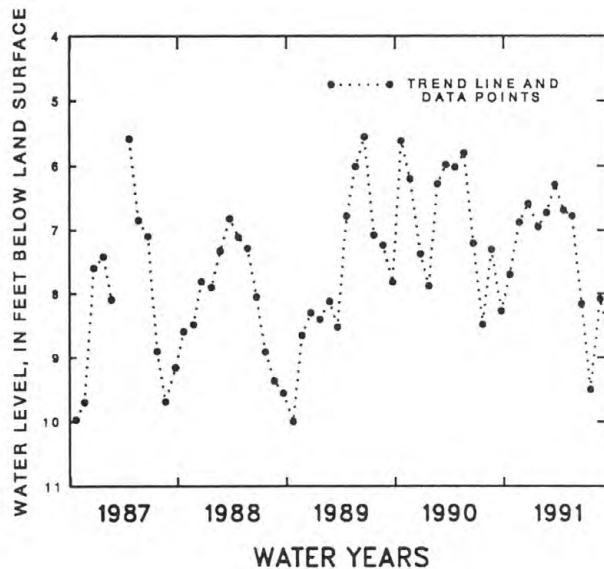
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	7.70	DEC 23	6.59	FEB 23	6.73	APR 22	6.69	JUN 22	8.16	AUG 24	8.08
NOV 23	6.88	JAN 25	6.95	MAR 23	6.29	MAY 21	6.78	JUL 22	9.50	SEP 21	8.64

CYW13



GKW68



GROUND-WATER LEVELS IN MASSACHUSETTS

207

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.--Glacial sand and gravel of the Pleistocene age and 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 chalked tape by observer. Continuous graphic recorder October 1981 to December 1983, April 1986 to current year.

DATUM.--Elevation of land-surface datum is 939 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of hole in base of wooden recorder shelter, 1.6 ft above land-surface datum.

PERIOD OF RECORD.--October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.44 ft below land-surface datum, Apr. 7, 1982; lowest, 15.72 ft below land-surface datum, Sept. 21, 1983.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.52	11.43	11.09	10.93	11.38	11.04	10.98	12.02	12.03	12.96	13.87	13.48
10	13.58	11.20	11.03	11.05	11.23	11.02	11.10	11.96	12.14	13.10	14.00	13.70
15	13.20	11.15	11.13	11.05	11.06	11.02	11.71	11.84	12.29	13.38	14.03	---
20	12.68	11.12	11.10	11.03	11.21	10.96	11.97	12.02	12.43	13.47	13.71	---
25	11.97	11.07	10.93	11.16	11.21	10.89	11.92	12.06	12.56	13.80	13.46	12.70
EOM	11.57	11.21	10.89	11.29	11.20	10.83	12.03	11.94	12.75	13.87	13.30	12.49

WTR YR 1991 HIGH 10.83 MAR 31 LOW 14.03 AUG 15

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

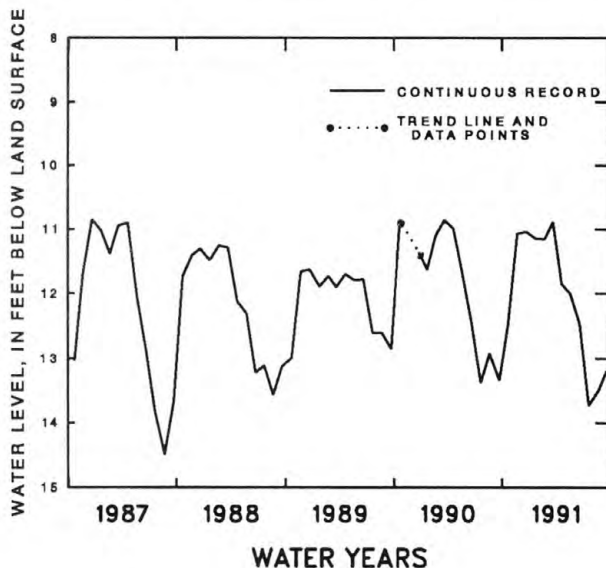
PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.30 ft below land-surface datum, May 21, 1990, Mar. 24, 1991; lowest water level measured, 6.79 ft below land-surface datum, Aug. 23, 1987.

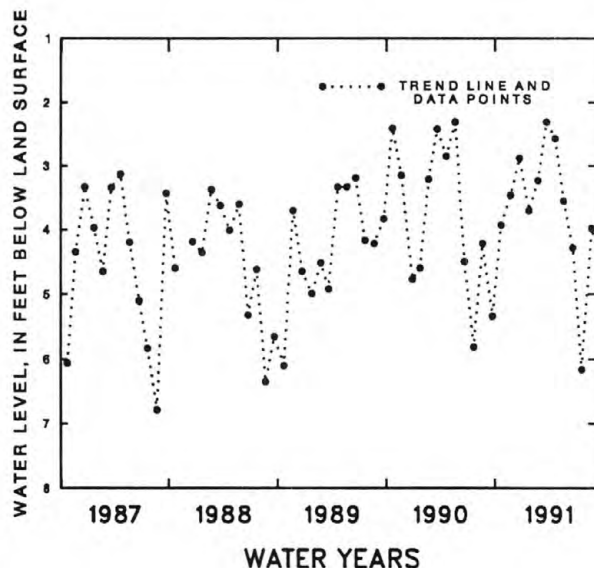
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	3.93	DEC 23	2.88	FEB 23	3.23	APR 22	2.56	JUN 22	4.29	AUG 25	3.98
NOV 23	3.46	JAN 24	3.70	MAR 24	2.30	MAY 21	3.55	JUL 22	6.16	SEP 21	4.42

PDW23



PDW24



GROUND-WATER LEVELS IN MASSACHUSETTS

HAMPSHIRE COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. 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, 5.17 ft below land-surface datum, June 22, 1984; lowest measured, 10.34 ft below land-surface datum, Jan. 26, 1971.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.96	DEC 23	8.24	FEB 23	8.13	APR 22	8.04	JUN 22	8.78	AUG 24	8.99
NOV 23	8.39	JAN 25	8.24	MAR 23	8.00	MAY 21	7.47	JUL 22	8.84	SEP 21	8.83

421923072451001. Westhampton well WXW 20.

LOCATION.--Lat 42°19'23", long 72°45'10", 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: Daniel Krug.

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

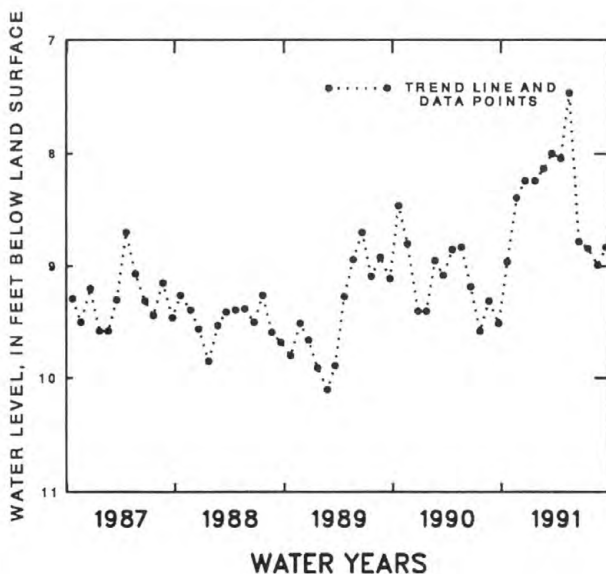
PERIOD OF RECORD.--July 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.30 ft below land-surface datum, June 22, 1989; lowest measured, 15.63 ft below land-surface datum, Sept. 22, 1991.

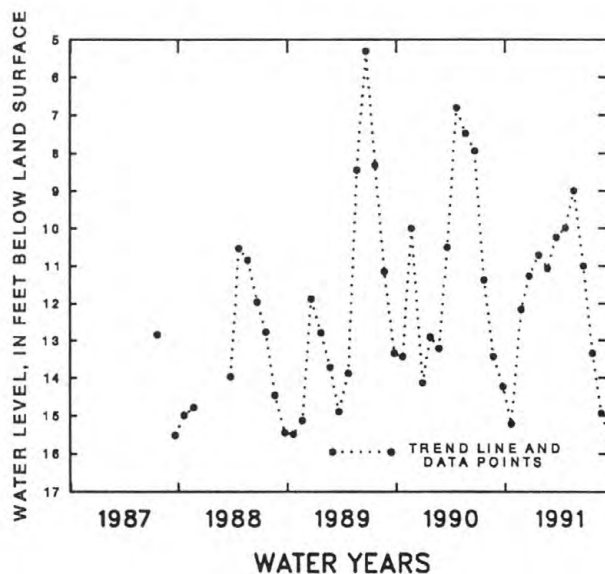
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	15.22	DEC 22	11.27	FEB 22	11.07	APR 24	9.99	JUN 24	11.00	AUG 23	14.93
NOV 25	12.16	JAN 23	10.71	MAR 24	10.23	MAY 22	8.99	JUL 24	13.34	SEP 22	15.63

WEW43



WXW20



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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	19.74	DEC 26	18.88	FEB 25	17.98	APR 25	17.97	JUN 26	18.94	AUG 28	19.87
NOV 26	18.99	JAN 23	18.49	MAR 26	17.78	MAY 29	18.32	JUL 30	19.70	SEP 26	20.05

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: Robert M. Young.

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of hole in wooden cover, 2.35 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, 1.13 ft below land-surface datum, Mar. 22, 1984; lowest measured, dry Aug. 24, Sept. 22, Oct. 25, 1983.

REVISIONS.--Revised water levels for water years 1987-90 are given below. These figures supersede those published in the reports for 1987-90.

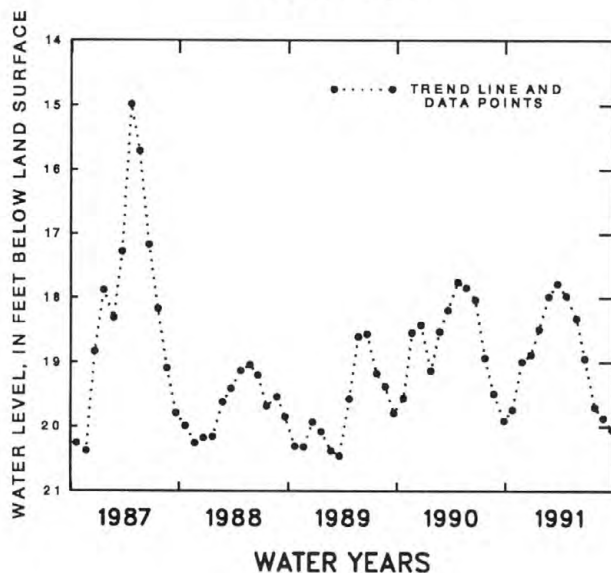
REVISED WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, NOVEMBER 1986 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 24, 1986	8.38	NOV 24	9.09	NOV 22	8.10	NOV 21	4.78
DEC 22	3.37	DEC 22	7.28	DEC 22	8.28	DEC 21	7.12
JAN 21, 1987	4.42	JAN 22, 1988	7.67	JAN 20, 1989	8.83	JAN 25, 1990	8.09
FEB 23	5.70	FEB 23	5.08	FEB 22	8.47	FEB 22	4.33
MAR 24	3.87	MAR 23	5.55	MAR 22	8.30	MAR 22	4.48
APR 23	2.78	APR 25	5.67	APR 24	3.30	APR 23	3.57
MAY 21	5.02	MAY 26	5.23	MAY 24	4.36	MAY 21	3.41
JUN 22	7.42	JUN 21	7.40	JUN 22	5.71	JUN 22	6.47
JUL 21	9.11	JUL 22	8.30	JUL 24	8.16	JUL 24	9.35
AUG 21	10.38	AUG 25	9.03	AUG 23	7.51	AUG 23	8.87
SEP 21	9.30	SEP 21	10.21	SEP 21	9.16	SEP 27	10.28
OCT 22	8.66	OCT 24	11.11	OCT 24	6.67		

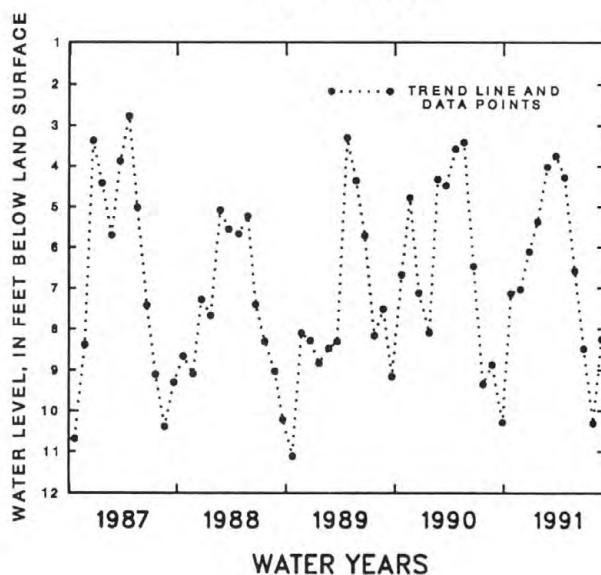
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	7.14	DEC 26	6.11	FEB 25	4.02	APR 25	4.28	JUN 28	8.48	AUG 28	8.25
NOV 26	7.03	JAN 23	5.37	MAR 26	3.74	MAY 29	6.58	JUL 30	10.30	SEP 26	8.22

ACW158



BCW363



GROUND-WATER LEVELS IN MASSACHUSETTS

MIDDLESEX COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. Measuring point:

Top of hole in cap on casing, 1.40 ft below land-surface datum.

PERIOD OF RECORD.--August 1939 to current year.

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	7.23	DEC 26	7.11	FEB 25	7.21	APR 25	6.67	JUN 27	9.10	AUG 28	7.07
NOV 26	7.21	JAN 23	7.69	MAR 26	6.56	MAY 29	7.76	JUL 30	9.05	SEP 26	6.89

423546071190702. Chelmsford well CHW 385.

LOCATION.--Lat 42°35'46", long 71°19'07", Middlesex County, Hydrologic Unit 01070002, 15 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.--Augured observation water-table well, diameter 2.0 in, depth 42.8 ft, screened 40.8 to 42.8 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by observer.

DATUM.--Elevation of land-surface datum is 123.30 ft above National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 0.3 ft below land-surface datum.

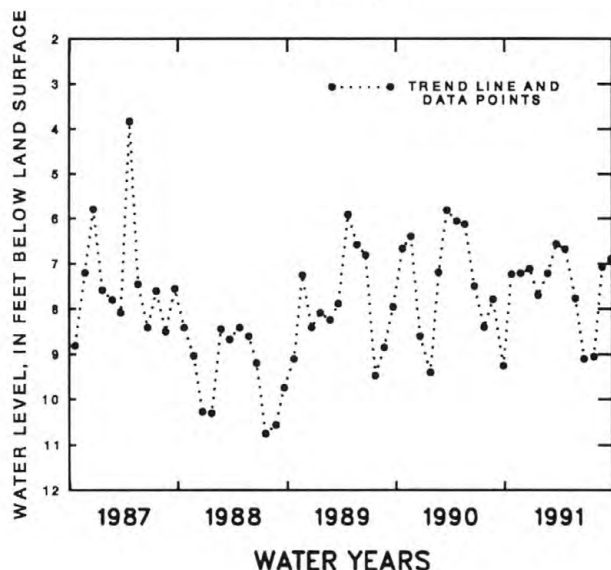
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.83 ft below land-surface datum, June 25, 1982; lowest measured, 19.04 ft below land-surface datum, Nov. 21, 1965.

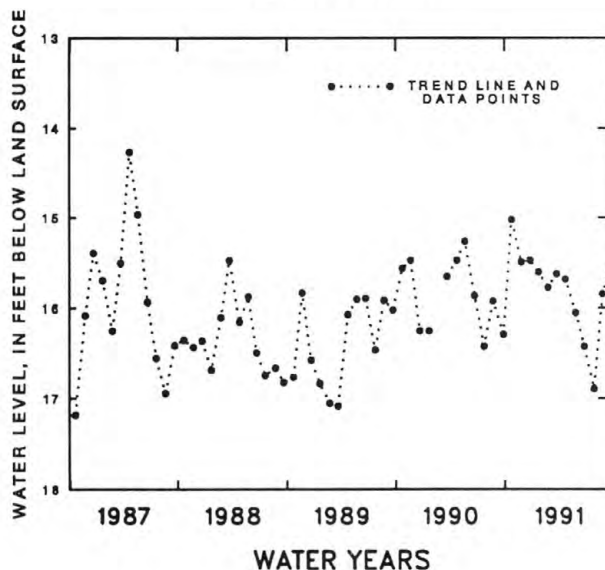
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	15.02	DEC 26	15.47	FEB 25	15.77	APR 25	15.68	JUN 27	16.42	AUG 28	15.84
NOV 26	15.49	JAN 23	15.60	MAR 26	15.62	MAY 29	16.05	JUL 30	16.89	SEP 28	15.53

CHW68



CHW385



MIDDLESEX COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. Measuring point:

Top of casing, 2.0 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 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	42.06	DEC 26	42.35	FEB 25	42.02	APR 25	41.49	JUN 26	41.20	AUG 28	41.82
NOV 26	42.28	JAN 23	42.17	MAR 26	41.71	MAY 29	41.18	JUL 30	41.58	SEP 26	42.08

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 National Geodetic Vertical Datum of 1929. Measuring point: Top

of casing, 3.30 ft above land-surface datum.

PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data

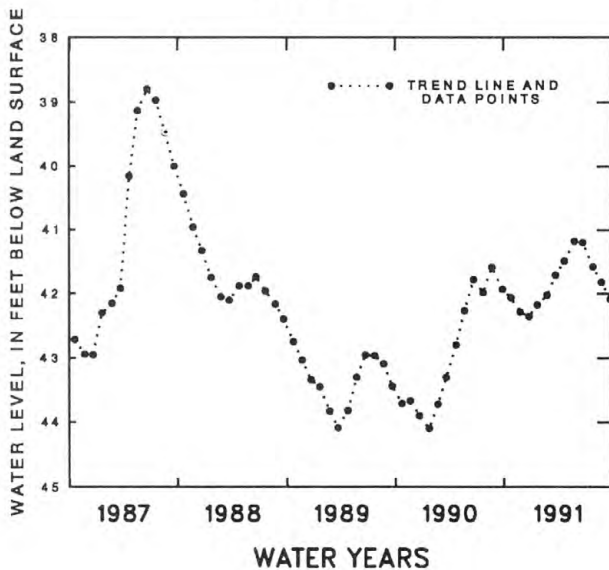
Report No. 17.

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.

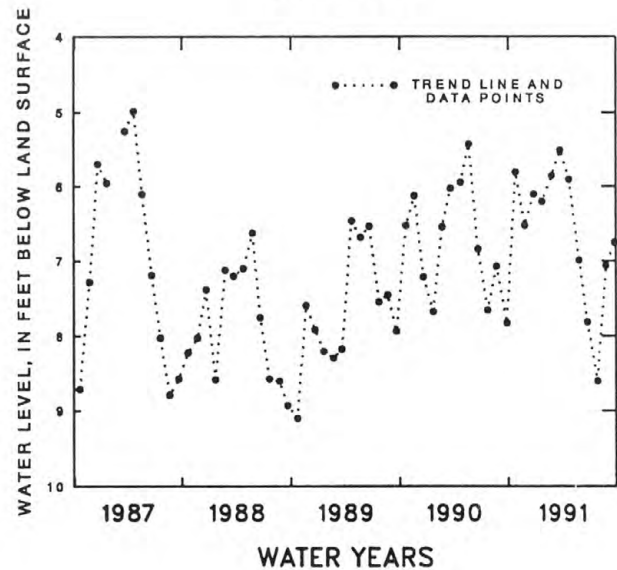
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	5.80	DEC 26	6.10	FEB 25	5.85	APR 25	5.90	JUN 26	7.81	AUG 28	7.06
NOV 26	6.52	JAN 23	6.20	MAR 26	5.50	MAY 29	6.99	JUL 30	8.60	SEP 26	6.75

CTW165



CTW167



GROUND-WATER LEVELS IN MASSACHUSETTS

MIDDLESEX COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. 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, 1.22 ft below land-surface datum, Mar. 20, 1984; lowest measured, 4.35 ft below land-surface datum, Aug. 26, 1975.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	2.15	DEC 26	2.35	FEB 25	2.08	APR 25	2.05	JUN 27	3.14	AUG 28	2.93
NOV 26	2.59	JAN 23	2.12	MAR 26	1.97	MAY 29	2.61	JUL 30	3.33	SEP 26	1.58

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 National Geodetic Vertical Datum of 1929. 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, 2.77 ft below land-surface datum, Mar. 28, 1991; lowest measured, 12.73 ft below land-surface datum, July 30, 1991.

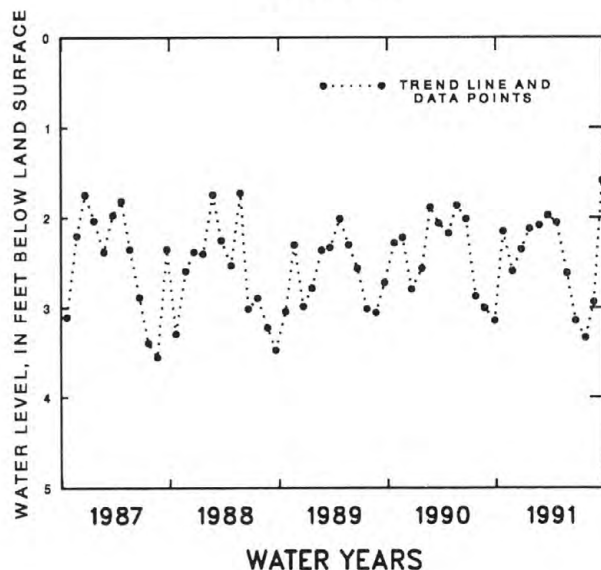
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUL 26	10.24	AUG 28	8.56	SEP 27	10.75

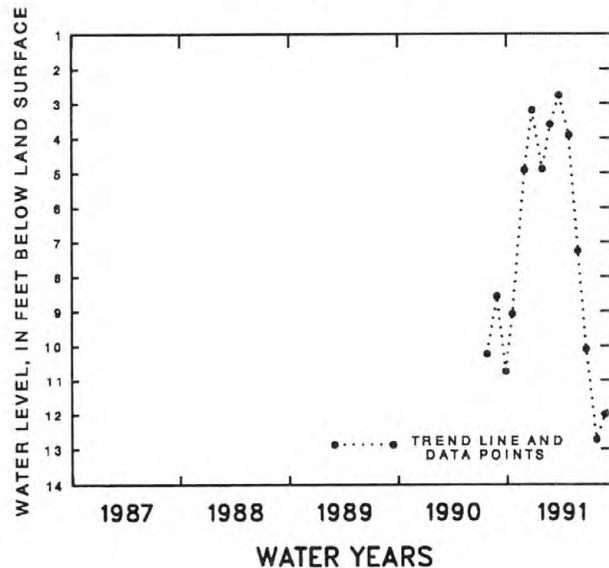
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	9.07	DEC 27	3.20	FEB 26	3.60	APR 30	3.91	JUN 26	10.10	AUG 28	12.00
NOV 30	4.91	JAN 30	4.88	MAR 28	2.77	MAY 29	7.26	JUL 30	12.73	SEP 26	11.60

LTW104



SSW12



GROUND-WATER LEVELS IN MASSACHUSETTS

213

MIDDLESEX COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	14.20	DEC 26	13.49	FEB 25	12.96	APR 25	12.29	JUN 27	12.68	AUG 28	13.44
NOV 26	13.69	JAN 23	13.18	MAR 26	12.48	MAY 29	12.08	JUL 30	13.45	SEP 26	13.50

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

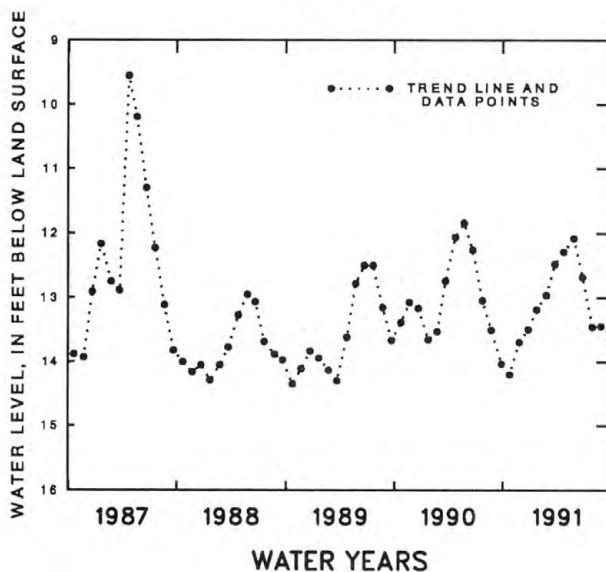
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.51 ft below land-surface datum, Mar. 27, 1969; lowest measured, 9.99 ft below land-surface datum, Sept. 22, 1965.

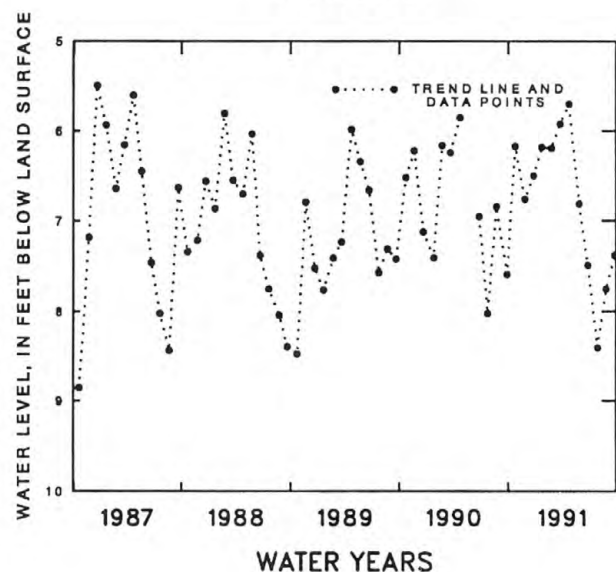
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	6.17	DEC 26	6.50	FEB 25	6.19	APR 25	5.70	JUN 27	7.49	AUG 28	7.75
NOV 26	6.76	JAN 23	6.18	MAR 26	5.92	MAY 29	6.81	JUL 30	8.40	SEP 26	7.38

TRW13



WAW38



GROUND-WATER LEVELS IN MASSACHUSETTS

MIDDLESEX COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 4.0 ft above land-surface datum.

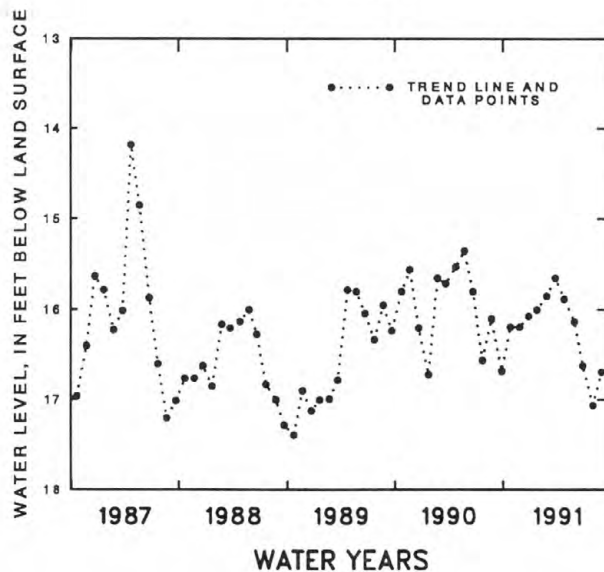
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.96 ft below land-surface datum, Mar. 27, 1972; lowest measured, 17.47 ft below land-surface datum, Jan. 22, 1981.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	16.19	DEC 26	16.07	FEB 25	15.85	APR 25	15.88	JUN 26	16.62	AUG 28	16.69
NOV 26	16.19	JAN 23	16.00	MAR 26	15.65	MAY 29	16.13	JUL 30	17.06	SEP 26	16.67

WKW2



GROUND-WATER LEVELS IN MASSACHUSETTS

215

MIDDLESEX COUNTY--Continued

423401071093801. Wilmington well XMW 78.

LOCATION.--Lat 42°34'01", long 71°09'38", Middlesex County, Hydrologic Unit 01090001, at 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 chalked 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 National Geodetic Vertical Datum of 1929. Measuring point: Top edge of hole in base of wooden recorder shelter, 0.42 ft above land-surface datum.

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.

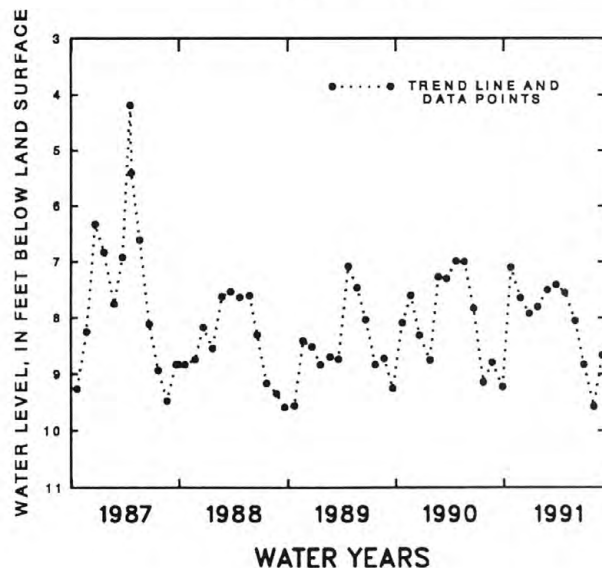
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.28	7.13	7.82	7.78	7.88	7.64	7.39	7.48	8.26	8.93	9.61	8.78
2	9.29	7.16	7.86	7.74	7.91	7.66	7.44	7.48	8.29	8.96	9.62	8.81
3	9.31	7.21	7.90	7.72	7.90	7.67	7.47	7.49	8.32	8.98	9.64	8.84
4	9.33	7.25	7.78	7.71	7.87	7.49	7.49	7.52	8.35	9.01	9.65	8.87
5	9.30	7.30	7.74	7.71	7.85	7.45	7.52	7.56	8.38	9.04	9.67	8.87
6	9.33	7.27	7.76	7.72	7.82	7.40	7.55	7.55	8.40	9.06	9.69	8.88
7	9.35	7.32	7.76	7.76	7.77	7.35	7.59	7.56	8.43	9.09	9.70	8.90
8	9.36	7.37	7.75	7.81	7.70	7.31	7.62	7.58	8.46	9.11	9.72	8.92
9	9.34	7.40	7.75	7.84	7.64	7.28	7.64	7.62	8.49	9.15	9.73	8.95
10	9.35	7.33	7.75	7.87	7.61	7.26	7.68	7.65	8.53	9.17	9.73	8.97
11	9.36	7.20	7.79	7.90	7.58	7.24	7.72	7.68	8.56	9.20	9.75	8.99
12	9.37	7.20	7.82	7.91	7.57	7.25	7.75	7.70	8.59	9.23	9.76	9.02
13	9.24	7.18	7.84	7.96	7.56	7.27	7.78	7.74	8.61	9.26	9.77	9.05
14	7.72	7.19	7.90	7.98	7.43	7.31	7.80	7.77	8.64	9.25	9.78	9.07
15	7.82	7.19	7.92	8.01	7.40	7.35	7.82	7.81	8.67	9.28	9.79	9.09
16	7.64	7.22	7.92	7.99	7.42	7.39	7.85	7.84	8.53	9.30	9.80	9.10
17	7.54	7.26	7.94	7.70	7.42	7.43	7.88	7.86	8.61	9.32	9.81	9.11
18	7.47	7.34	7.93	7.76	7.43	7.44	7.91	7.90	8.64	9.34	9.82	9.13
19	7.23	7.38	7.95	7.79	7.42	7.44	7.94	7.93	8.67	9.37	9.27	9.14
20	7.29	7.43	7.97	7.78	7.41	7.47	7.87	7.97	8.68	9.39	9.03	9.07
21	7.28	7.47	7.96	7.78	7.42	7.49	7.49	8.00	8.70	9.41	8.93	9.04
22	7.26	7.50	7.95	7.79	7.41	7.51	7.60	8.03	8.72	9.44	8.84	9.04
23	7.26	7.53	7.94	7.80	7.46	7.52	7.57	8.07	8.74	9.46	8.77	9.04
24	7.10	7.57	7.93	7.81	7.48	7.46	7.53	8.10	8.76	9.48	8.72	9.05
25	7.09	7.60	7.92	7.85	7.50	7.41	7.51	8.13	8.79	9.51	8.69	8.47
26	7.05	7.65	7.89	7.88	7.53	7.34	7.50	8.16	8.81	9.53	8.66	8.41
27	7.03	7.68	7.89	7.90	7.56	7.29	7.50	8.19	8.83	9.53	8.65	8.26
28	7.02	7.71	7.87	7.94	7.61	7.30	7.53	m8.20	8.85	9.54	8.66	8.14
29	7.01	7.75	7.85	7.98	---	7.31	7.56	m8.20	8.88	9.55	8.68	8.06
30	7.05	7.79	7.83	8.00	---	7.36	7.48	8.20	8.90	9.57	8.70	8.01
31	7.09	---	7.81	7.79	---	7.36	---	8.23	---	9.59	8.73	---
MEAN	8.13	7.39	7.86	7.84	7.59	7.40	7.63	7.85	8.60	9.29	9.32	8.84
LOW	9.37	7.79	7.97	8.01	7.91	7.67	7.94	8.23	8.90	9.59	9.82	9.14
HIGH	7.01	7.13	7.74	7.70	7.40	7.24	7.39	7.48	8.26	8.93	8.65	8.01

WTR YR 1991 HIGH 6.57 OCT 14 LOW 9.83 AUG 18, 19

m Measured

XMW78



GROUND-WATER LEVELS IN MASSACHUSETTS

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: J. E. Sharkey.

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	6.93	DEC 26	9.18	FEB 25	8.92	APR 25	7.47	JUN 27	12.99	AUG 28	13.53
NOV 26	9.81	JAN 23	8.13	MAR 26	8.68	MAY 29	12.04	JUL 30	13.85	SEP 26	13.05

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 0.7 ft above land-surface datum.

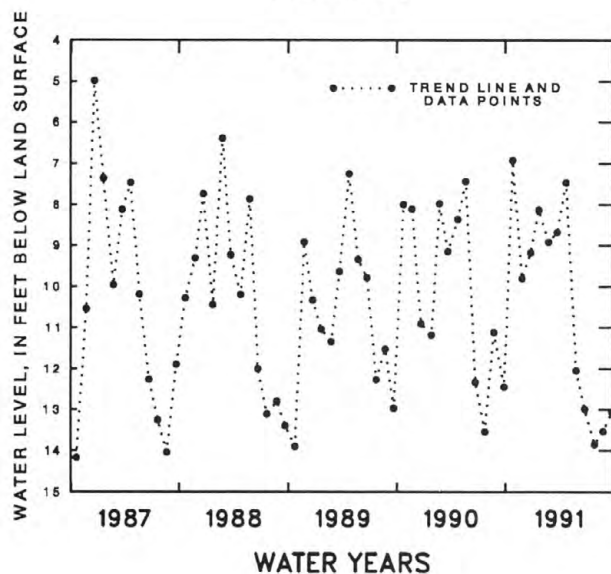
PERIOD OF RECORD.--March 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.45 ft below land-surface datum, Apr. 21, 1978; lowest measured, 27.90 ft below land-surface datum, Feb. 23, 1981.

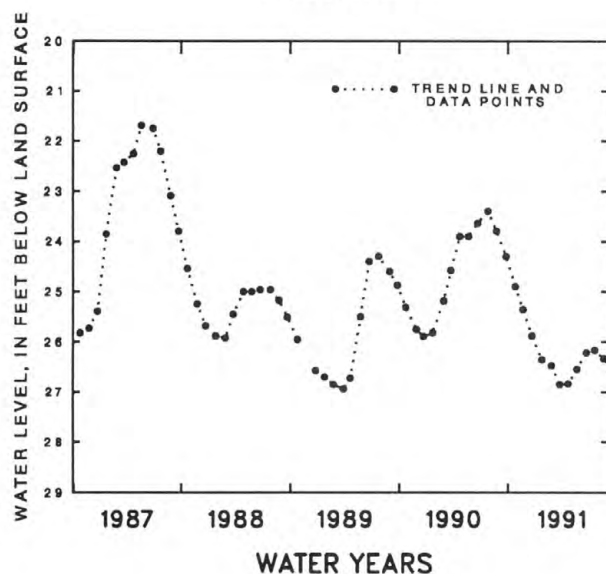
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	24.90	DEC 21	25.88	FEB 25	26.47	APR 23	26.84	JUN 24	26.21	AUG 22	26.33
NOV 21	25.36	JAN 24	26.35	MAR 26	26.85	MAY 23	26.54	JUL 22	26.16	SEP 23	26.56

XOW14



NBW228



GROUND-WATER LEVELS IN MASSACHUSETTS

217

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 National Geodetic Vertical Datum of 1929. 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, 13.81 ft below land-surface datum, Sept. 27, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	9.36	DEC 20	7.44	FEB 24	6.05	APR 21	6.41	JUN 23	9.55	AUG 28	10.29
NOV 20	7.65	JAN 27	5.99	MAR 23	5.36	MAY 20	6.65	JUL 27	11.20	SEP 22	10.66

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

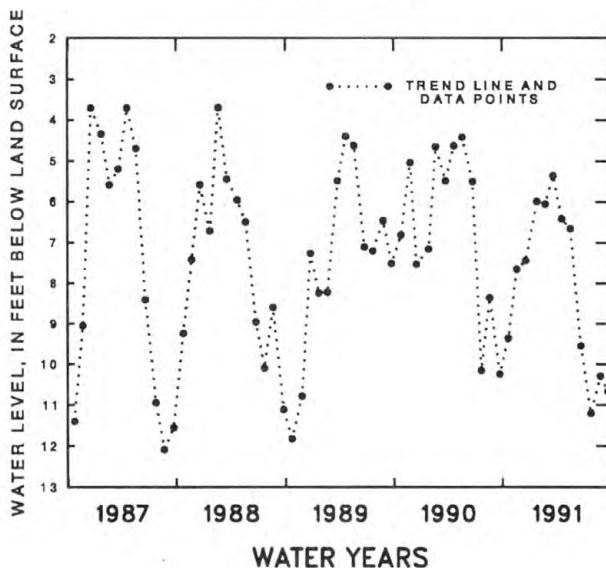
PERIOD OF RECORD.--January 1965 to current year.

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.

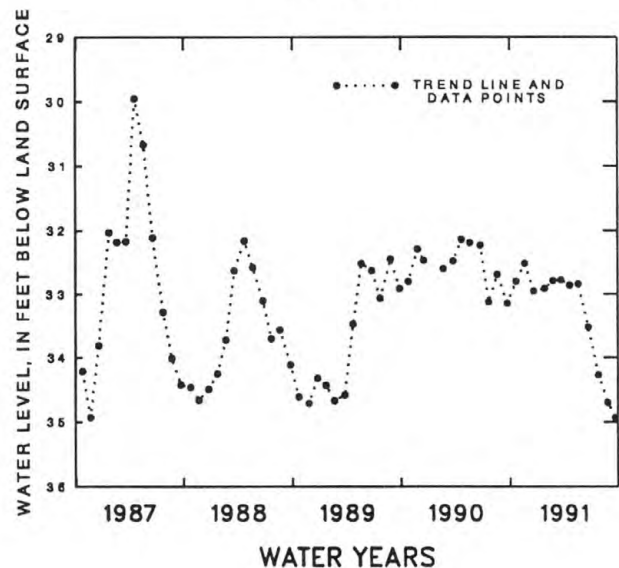
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	32.80	DEC 20	32.95	FEB 24	32.79	APR 21	32.86	JUN 23	33.52	AUG 28	34.70
NOV 20	32.52	JAN 27	32.91	MAR 23	32.78	MAY 20	32.84	JUL 27	34.27	SEP 22	34.93

DDW231



DVW10



GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	19.88	DEC 24	19.28	FEB 24	19.20	APR 21	18.79	JUN 23	19.67	AUG 28	20.03
NOV 20	19.50	JAN 27	19.00	MAR 23	18.69	MAY 20	18.88	JUL 27	20.32	SEP 22	20.35

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.7 ft above land-surface datum.

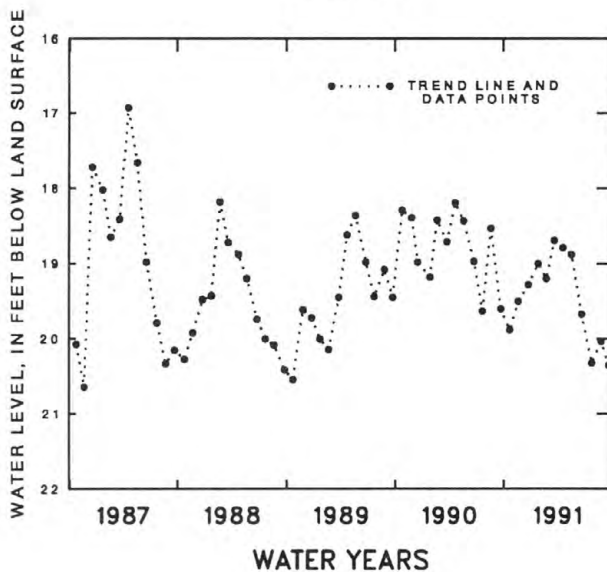
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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, 7.97 ft below land-surface datum, Sept. 24, 1980.

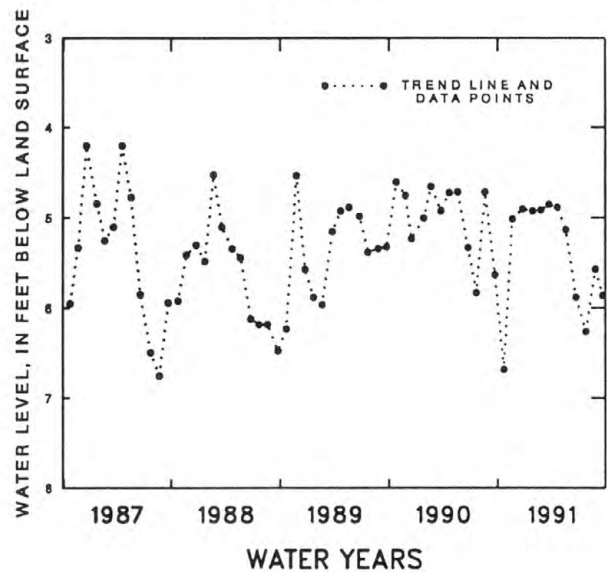
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	6.68	DEC 24	4.90	FEB 24	4.91	APR 21	4.88	JUN 23	5.88	AUG 28	5.57
NOV 20	5.01	JAN 27	4.92	MAR 23	4.85	MAY 20	5.13	JUL 27	6.26	SEP 22	5.86

FXW3



NNW27



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 National Geodetic Vertical Datum of 1929. 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, 5.25 ft below land-surface datum, Jan. 28, 1970; lowest measured, 22.63 ft below land-surface datum, Nov. 21, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.85	DEC 24	12.98	FEB 24	9.79	APR 21	9.25	JUN 23	12.64	AUG 28	17.24
NOV 20	13.72	JAN 27	9.69	MAR 23	7.88	MAY 20	9.40	JUL 27	13.14	SEP 22	18.05

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.5 ft above land-surface datum.

REMARKS.--Water level affected by pumping.

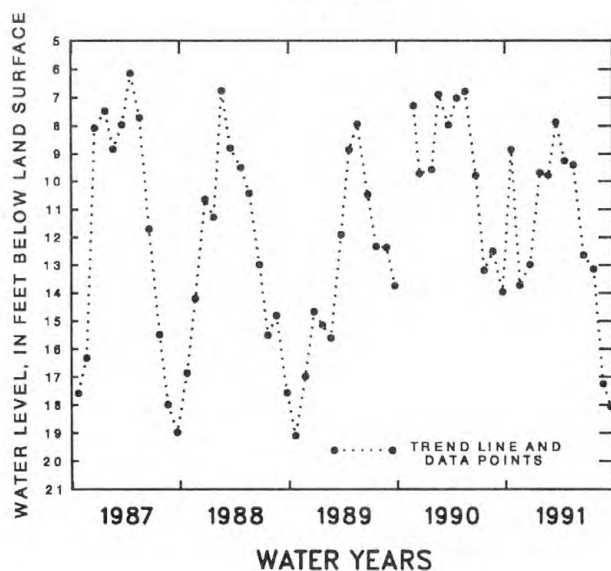
PERIOD OF RECORD.--January 1965 to current year.

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.

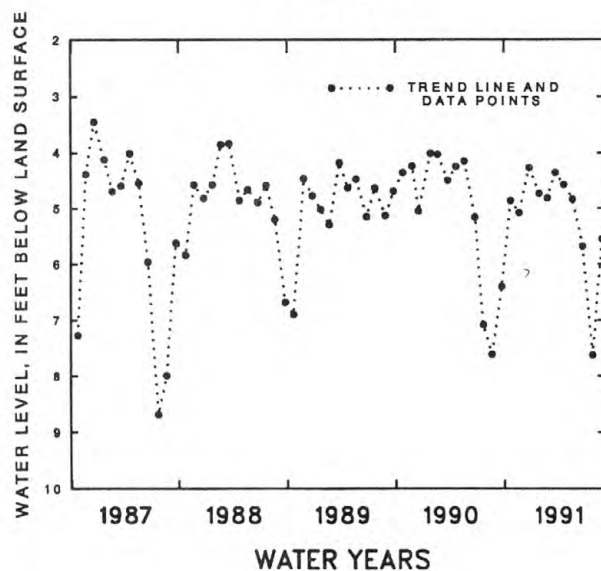
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	4.87	DEC 24	4.27	FEB 24	4.82	APR 21	4.58	JUN 23	5.68	AUG 28	5.55
NOV 20	5.08	JAN 27	4.74	MAR 23	4.36	MAY 20	4.84	JUL 27	7.62	SEP 22	5.32

XGW2



XGW3



GROUND-WATER LEVELS IN MASSACHUSETTS

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 National Geodetic Vertical Datum of 1929. 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, 4.75 ft below land-surface datum, Mar. 29, 1983; lowest measured, 10.45 ft below land-surface datum, Sept. 27, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	6.60	DEC 24	6.21	FEB 24	6.58	APR 21	6.31	JUN 23	7.31	SEP 22	6.56
NOV 20	6.77	JAN 27	6.34	MAR 23	5.98	MAY 20	6.65	JUL 27	9.07		

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.5 ft above land-surface datum.

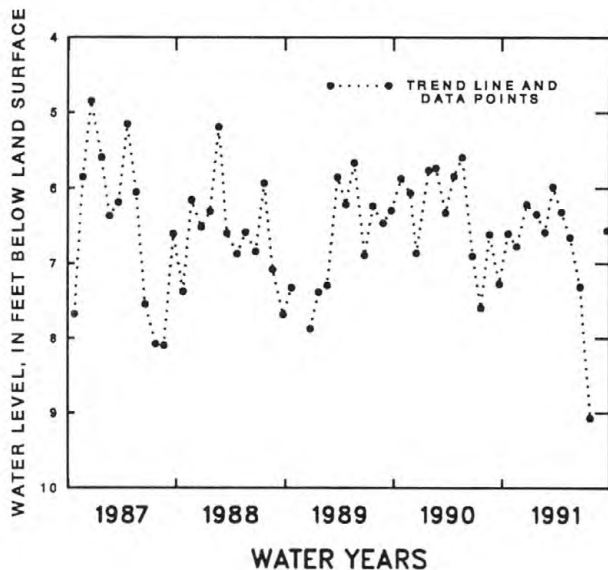
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

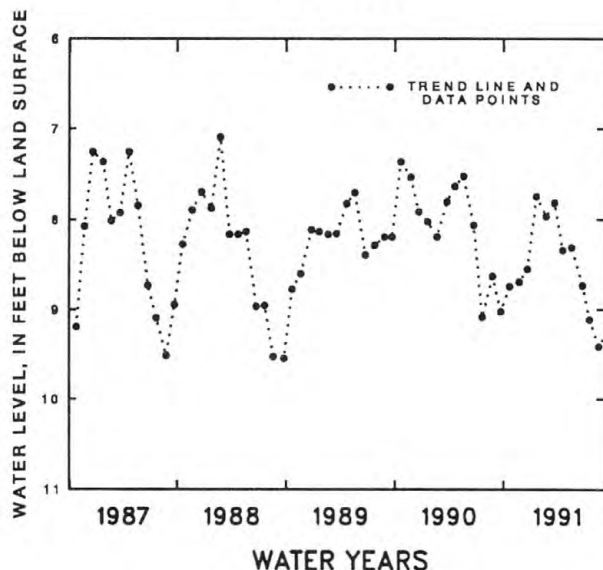
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.74	DEC 21	8.55	FEB 22	7.96	APR 20	8.34	JUN 26	8.73	AUG 20	9.41
NOV 23	8.69	JAN 20	7.74	MAR 23	7.81	MAY 20	8.31	JUL 20	9.11	SEP 27	9.20

XGW4



D4W79



GROUND-WATER LEVELS IN MASSACHUSETTS

221

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 23	22.38	JAN 20	21.24	MAR 23	21.60	MAY 20	21.77	JUL 20	23.09	SEP 27	22.39
DEC 21	21.80	FEB 22	21.59	APR 20	21.94	JUN 26	21.50	AUG 20	22.86		

420056070575701. East Bridgewater well EBW 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 National Geodetic Vertical Datum of 1929. Measuring point: Top of stone casing curb, 2.6 ft above land-surface datum.

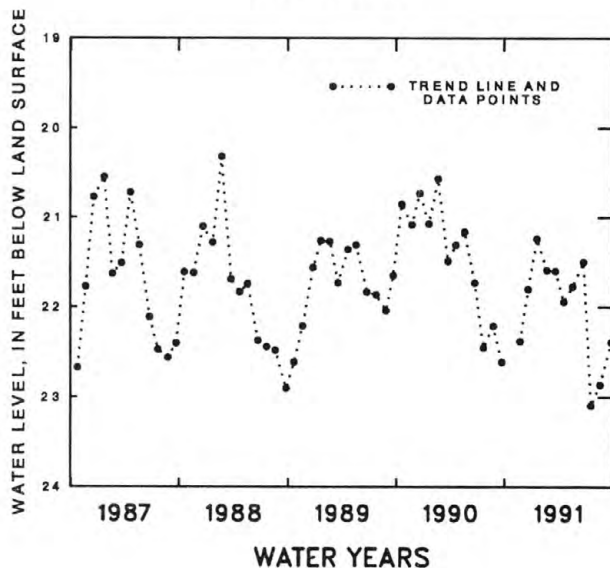
PERIOD OF RECORD.--July 1958 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.40 ft below land-surface datum, Mar. 27, 1969; lowest measured, 17.83 ft below land-surface datum, Dec. 28, 1965.

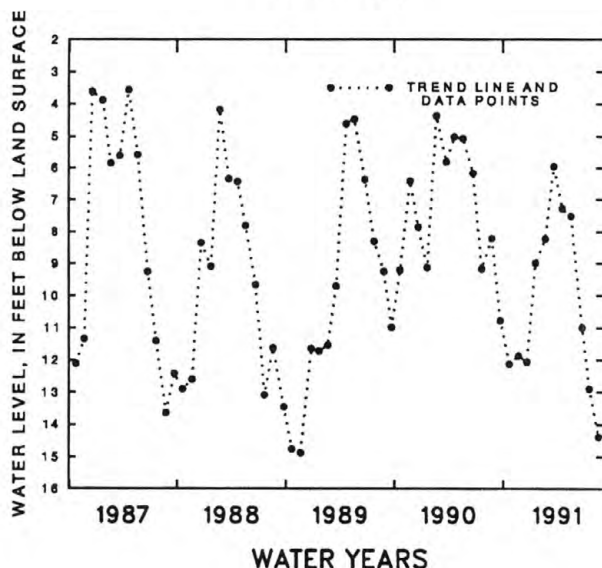
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	12.12	DEC 21	12.06	FEB 22	8.22	APR 20	7.27	JUN 26	11.00	AUG 20	14.39
NOV 23	11.87	JAN 20	8.99	MAR 23	5.95	MAY 20	7.51	JUL 20	12.89	SEP 27	14.27

D4W80



EBW30



GROUND-WATER LEVELS IN MASSACHUSETTS

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: Richard W. Green.

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 National Geodetic Vertical Datum of 1929. 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, 5.82 ft below land-surface datum, Oct. 24, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	4.01	DEC 21	3.89	FEB 22	3.51	APR 20	3.69	JUN 26	4.59	AUG 20	5.12
NOV 23	4.04	JAN 20	3.54	MAR 23	3.38	MAY 20	3.83	JUL 20	5.22	SEP 27	4.68

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 National Geodetic Vertical Datum of 1929. 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.

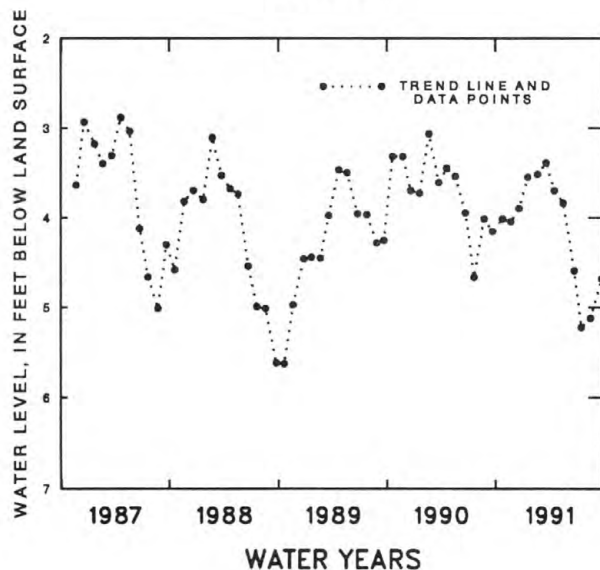
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.50 ft below land-surface datum, Mar. 26, 1969; lowest

measured, 6.53 ft below land-surface datum, Sept. 25, 1980.

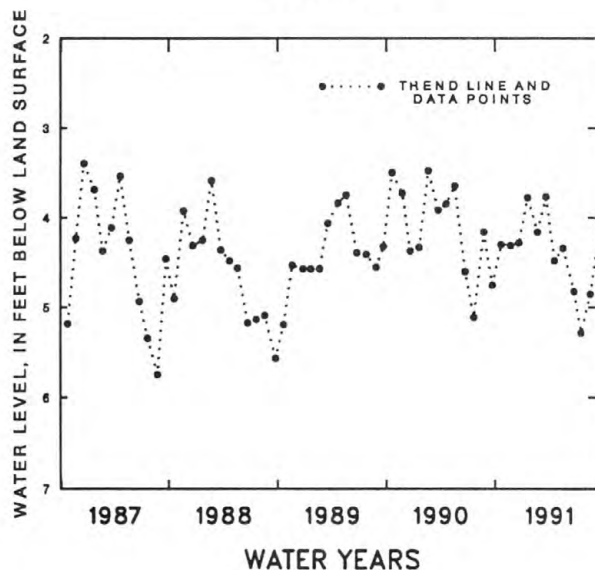
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	4.30	DEC 21	4.28	FEB 22	4.16	APR 20	4.48	JUN 26	4.82	AUG 20	4.85
NOV 23	4.31	JAN 20	3.77	MAR 23	3.76	MAY 20	4.34	JUL 20	5.28	SEP 27	4.05

HBW97



HGW76



GROUND-WATER LEVELS IN MASSACHUSETTS

223

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 or more frequent measurements with chalked tape by observer. Digital recorder (60-min punch) July 1986 to current year.

DATUM.--Elevation of land-surface datum is 105 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 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.

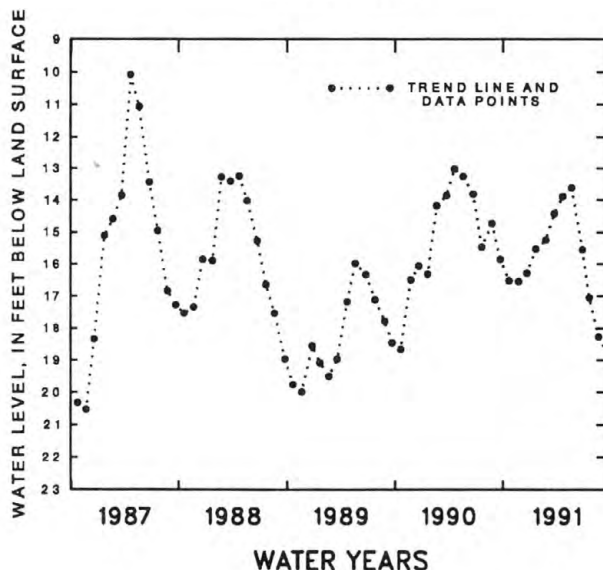
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.28 ft below land-surface datum, Mar. 29, 1983; lowest measured, 23.59 ft below land-surface datum, Oct. 26, 1966.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	15.24	---	---	14.17	---	17.61	18.53
2	---	---	---	---	---	15.22	---	---	14.23	---	17.66	18.54
3	---	---	---	---	---	15.22	---	---	14.28	---	17.71	18.57
4	---	---	---	---	---	15.21	---	---	---	---	17.73	18.59
5	---	---	---	---	m14.93	15.20	---	---	---	---	17.78	18.60
6	---	---	---	---	15.06	15.18	---	---	---	---	17.84	18.63
7	---	---	---	---	15.08	15.06	---	---	---	---	17.89	18.66
8	---	---	---	---	15.07	15.02	---	---	---	---	17.93	18.68
9	---	---	---	---	15.07	14.97	---	---	---	---	17.98	18.70
10	---	---	---	---	15.08	14.93	---	---	---	---	18.01	18.72
11	---	---	---	---	15.11	14.88	---	---	---	---	18.04	18.74
12	---	---	---	---	15.15	14.83	---	---	---	---	18.07	18.76
13	---	---	---	---	15.16	14.78	---	---	---	---	18.09	m18.82
14	---	---	---	---	15.13	14.74	---	---	---	---	18.11	18.82
15	---	---	---	---	15.13	14.70	---	---	---	---	18.12	18.84
16	---	---	---	---	15.20	14.68	---	---	---	---	18.14	18.85
17	---	---	---	---	15.26	14.65	---	---	---	m16.69	18.17	18.88
18	---	---	---	---	15.30	14.60	---	---	---	16.88	18.23	18.90
19	---	---	---	---	15.29	14.54	---	---	---	16.94	18.27	18.91
20	---	---	---	m15.53	15.26	14.52	---	m13.62	---	17.01	18.31	18.94
21	---	---	m16.28	---	15.27	14.50	---	m13.65	---	17.06	18.31	18.96
22	m16.52	---	---	---	15.24	14.48	---	13.68	---	17.11	18.32	18.98
23	---	m16.54	---	---	15.26	14.47	---	13.73	---	17.18	18.35	18.99
24	---	---	---	---	15.29	---	---	13.77	---	17.24	18.37	19.01
25	---	---	---	---	15.26	---	---	13.81	---	17.31	18.40	19.02
26	---	---	---	---	15.24	---	---	13.88	m15.55	17.36	18.41	19.03
27	---	---	---	---	15.21	---	---	13.92	---	17.40	18.42	19.02
28	---	---	---	---	15.23	---	---	13.97	---	17.44	18.43	18.96
29	---	---	---	---	---	---	---	14.02	---	17.48	18.45	18.86
30	---	---	---	---	---	---	---	14.05	---	17.53	18.48	18.77
31	---	---	---	---	---	---	---	14.12	---	17.56	18.50	---
MEAN	---	---	---	---	---	---	---	---	---	---	18.13	18.81
LOW	---	---	---	---	---	---	---	---	---	---	18.50	19.03
HIGH	---	---	---	---	---	---	---	---	---	---	17.61	18.53

WTR YR 1991 HIGH 13.67 MAY 21, 22 LOW 19.03 SEP 25, 26, 27
m Measured

LKW 14



GROUND-WATER LEVELS IN MASSACHUSETTS

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 State Highway 25 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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	12.94	DEC 21	10.48	FEB 22	7.18	APR 20	5.56	JUN 26	11.39	AUG 20	15.78
NOV 23	11.47	JAN 20	7.24	MAR 23	4.88	MAY 20	6.09	JUL 20	14.68	SEP 27	14.49

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, at land-surface datum.

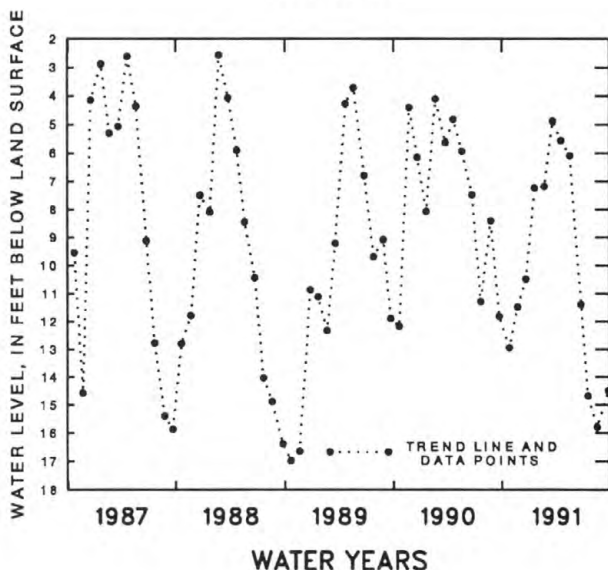
PERIOD OF RECORD.--November 1956 to current year.

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.

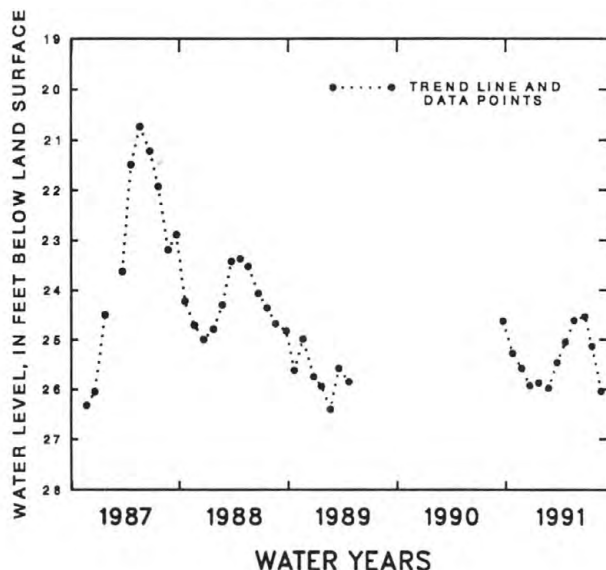
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	25.27	DEC 21	25.93	FEB 22	25.98	APR 20	25.05	JUN 26	24.53	AUG 20	26.04
NOV 23	25.58	JAN 20	25.87	MAR 23	25.46	MAY 20	24.61	JUL 20	25.13	SEP 27	25.88

MTW82



PWW22



GROUND-WATER LEVELS IN MASSACHUSETTS

225

PLYMOUTH COUNTY--Continued

415217070393102. Plymouth well PWW 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 National Geodetic Vertical Datum of 1929. 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, 27.24 ft below land-surface datum, May 14, 1987; lowest measured, 32.26 ft below land-surface datum, Mar. 23, 1991.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEARS OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	31.03	DEC 21	31.61	FEB 22	31.90	APR 20	31.99	JUN 26	31.65	AUG 20	32.04
NOV 23	31.36	JAN 20	31.79	MAR 23	32.26	MAY 20	31.46	JUL 20	31.92	SEP 27	31.57

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: Thomas B. Rogers.

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 National Geodetic Vertical Datum of 1929. Measuring point: Top edge of tile casing, 2.3 ft above land-surface datum.

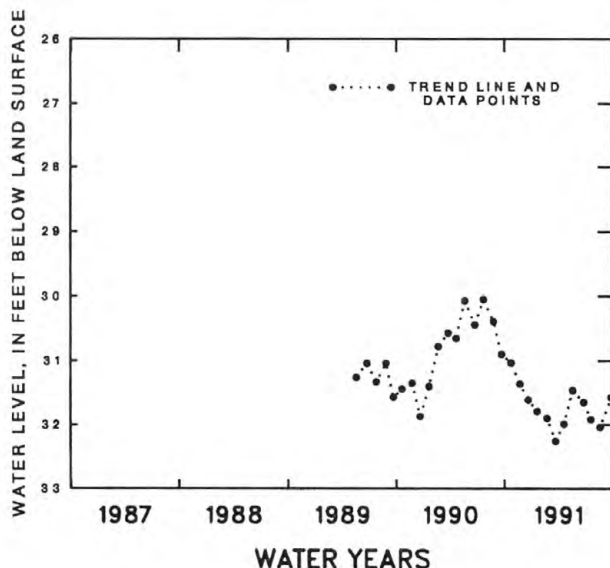
PERIOD OF RECORD.--July 1959 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft below land-surface datum, Jan. 26, 1978; lowest measured, 11.49 ft below land-surface datum, Aug. 20, 1991; well found dry several months in water years 1980-84.

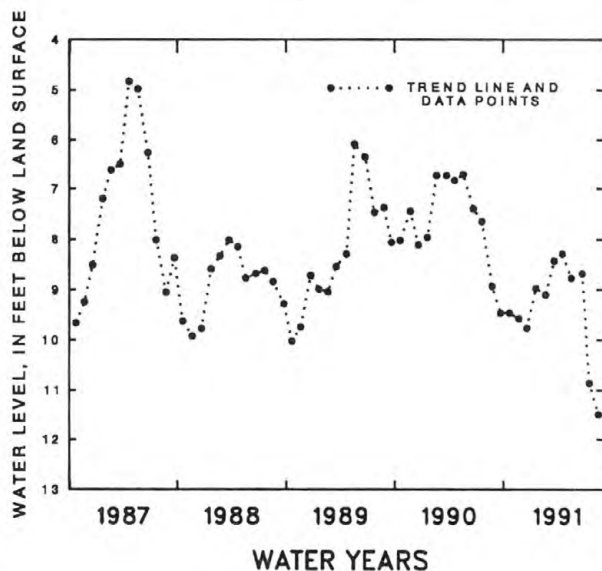
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	9.46	DEC 21	9.76	FEB 22	9.10	APR 20	8.29	JUN 26	8.68	AUG 20	11.49
NOV 23	9.57	JAN 20	8.97	MAR 23	8.43	MAY 20	8.77	JUL 20	10.86	SEP 27	11.25

PWW494



WFW51



GROUND-WATER LEVELS IN MASSACHUSETTS

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 Scolley 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 National Geodetic Vertical Datum of 1929. 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 current year. 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 MEASURING POINT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 28	22.07	FEB 26	23.34	APR 26	22.53	JUN 27	22.86	AUG 27	22.30		
JAN 21	21.98	MAR 23	22.37	MAY 30	22.30	JUL 24	22.28	SEP 25	22.01		

WORCESTER COUNTY

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.--Augured 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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.5 ft above land-surface datum.

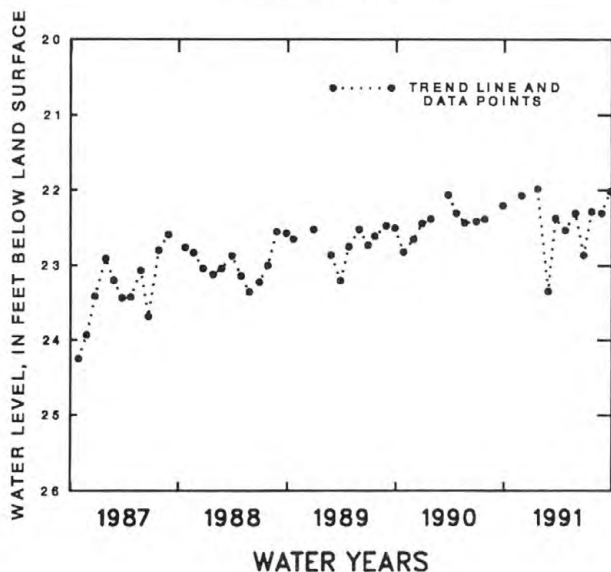
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

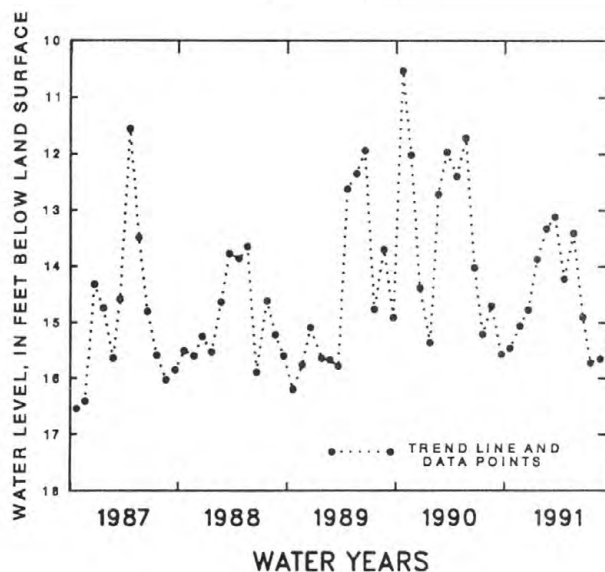
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	15.46	DEC 19	14.77	FEB 19	13.33	APR 19	14.22	JUN 21	14.90	AUG 21	15.65
NOV 21	15.06	JAN 18	13.87	MAR 19	13.12	MAY 21	13.41	JUL 18	15.72	SEP 19	15.50

BGW925



HHW1



GROUND-WATER LEVELS IN MASSACHUSETTS

227

WORCESTER COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. 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, 10.25 ft below land-surface datum, Oct. 22, 1989; lowest measured, 12.00 ft below land-surface datum, Nov. 25, 1984.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	11.40	DEC 23	11.06	FEB 23	10.98	APR 23	10.89	JUN 22	11.37	AUG 24	11.35
NOV 23	11.29	JAN 25	11.10	MAR 23	10.89	MAY 21	11.06	JUL 22	11.80	SEP 21	11.54

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.0 ft above land-surface datum.

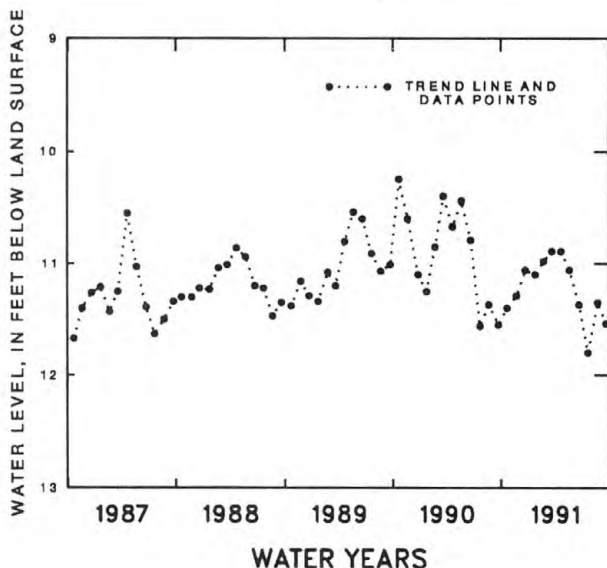
PERIOD OF RECORD.--August 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.33 ft below land-surface datum, Apr. 21, 1987; lowest measured, 5.14 ft below land-surface datum, Oct. 22, 1986.

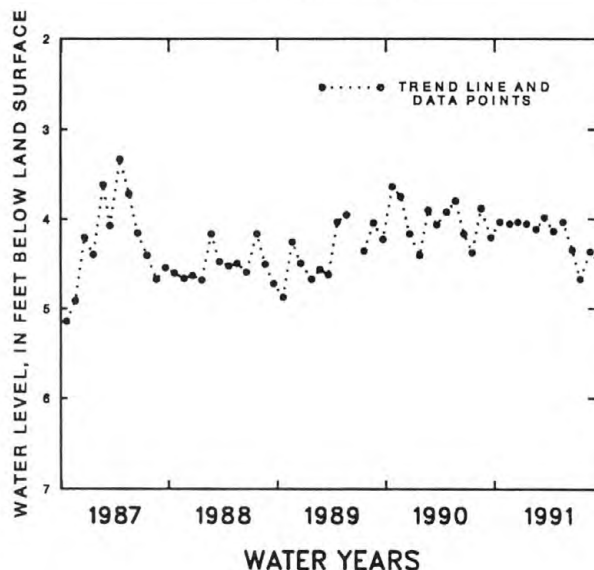
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	4.03	DEC 19	4.03	FEB 19	4.11	APR 19	4.13	JUN 21	4.34	AUG 21	4.36
NOV 21	4.05	JAN 18	4.05	MAR 19	3.98	MAY 21	4.03	JUL 18	4.67	SEP 19	4.47

HHW31



NXW54



GROUND-WATER LEVELS IN MASSACHUSETTS

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: Mr. Berry.

AQUIFER.--Glacial sand and gravel of the Pleistocene age.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 2.0 in 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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	15.12	DEC 23	12.67	FEB 23	12.72	APR 22	13.48	JUN 22	14.57	AUG 24	15.51
NOV 23	13.45	JAN 25	13.13	MAR 23	12.60	MAY 21	12.96	JUL 22	15.31	SEP 21	14.46

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: N. Lanciani.

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 National Geodetic Vertical Datum of 1929. Measuring point: Top edge of angle iron, at land-surface datum.

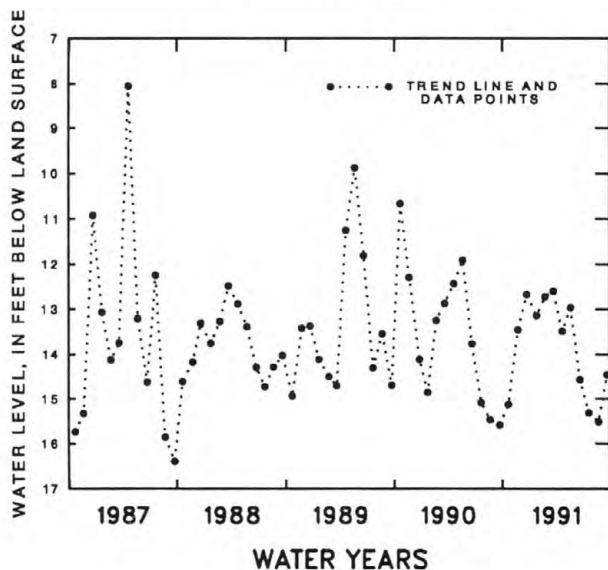
PERIOD OF RECORD.--May 1947 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.66 ft below land-surface datum, Mar. 26, 1969; dry, Nov. 28, 1964

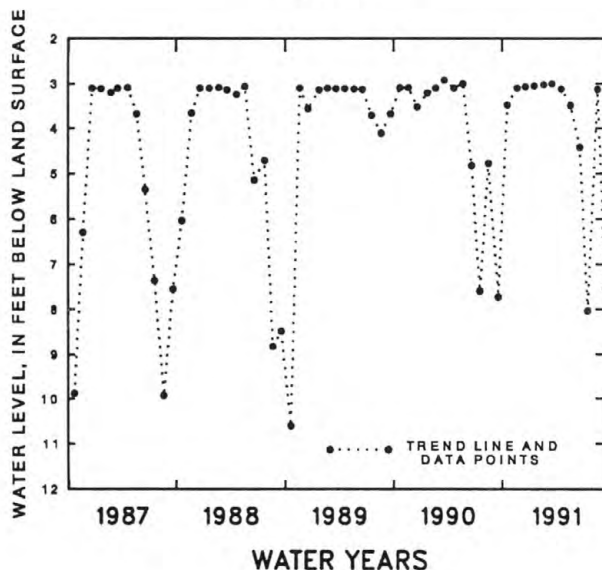
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	3.48	DEC 19	3.07	FEB 19	3.02	APR 19	3.12	JUN 21	4.41	AUG 21	3.13
NOV 21	3.10	JAN 18	3.05	MAR 19	3.00	MAY 21	3.49	JUL 18	8.03	SEP 19	7.53

PHW16



SYW1



GROUND-WATER LEVELS IN MASSACHUSETTS

229

WORCESTER COUNTY--Continued

423717072043101. Templeton well TMW 3.

LOCATION.--Lat 42°37'17"N, long 72°04'31"W, 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 National Geodetic Vertical Datum of 1929. 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, 2.42 ft below land-surface datum, Oct. 23, 1989; lowest measured, 5.10 ft below land-surface datum, Sept. 29, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	3.54	DEC 19	3.35	FEB 19	3.30	APR 19	3.66	JUN 21	3.59	AUG 21	2.38
NOV 21	3.55	JAN 18	3.35	MAR 19	3.27	MAY 21	3.62	JUL 18	4.10	SEP 19	3.90

420314071514001. Webster well WLW 1.

LOCATION.--Lat 42°03'14"N, long 71°51'40"W, 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 National Geodetic Vertical Datum of 1929. 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.

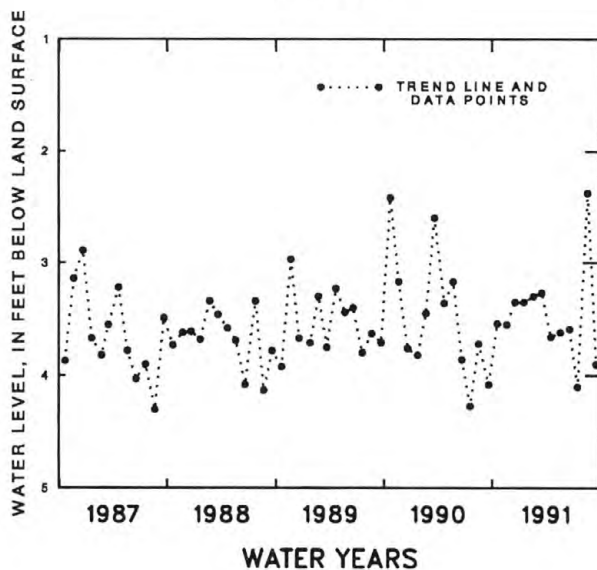
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.28 ft below land-surface datum, Mar. 25, 1968; lowest measured, 17.90 ft below land-surface datum, Dec. 20, 1965

REVISIONS.--The water level reported for Oct. 27, 1981, was in error and should not be used.

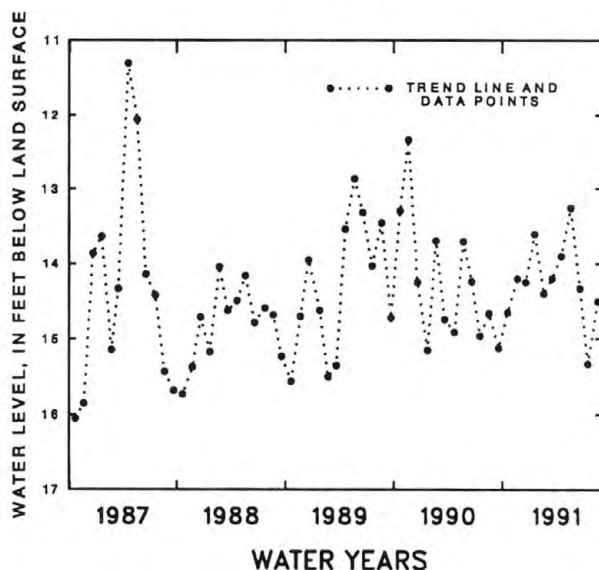
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	14.65	DEC 19	14.25	FEB 19	14.40	APR 19	13.90	JUN 21	14.33	AUG 21	14.50
NOV 21	14.20	JAN 18	13.60	MAR 19	14.20	MAY 21	13.25	JUL 18	15.33	SEP 19	14.29

TMW3



WLW1



GROUND-WATER LEVELS IN MASSACHUSETTS

WORCESTER COUNTY--Continued

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.--Augered 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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	18.09	DEC 19	17.78	FEB 19	17.44	APR 19	17.21	JUN 21	17.28	AUG 21	18.09
NOV 21	17.71	JAN 18	17.48	MAR 19	17.33	MAY 21	17.10	JUL 18	17.70	SEP 19	18.20

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.85 ft above land-surface datum.

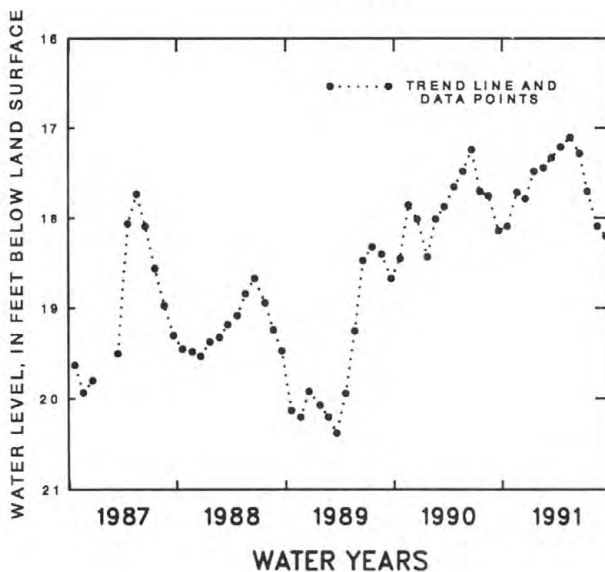
PERIOD OF RECORD.--October 1970 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.57 ft below land-surface datum, Feb. 2, 1976; lowest measured, 12.36 ft below land-surface datum, Nov. 20, 1985.

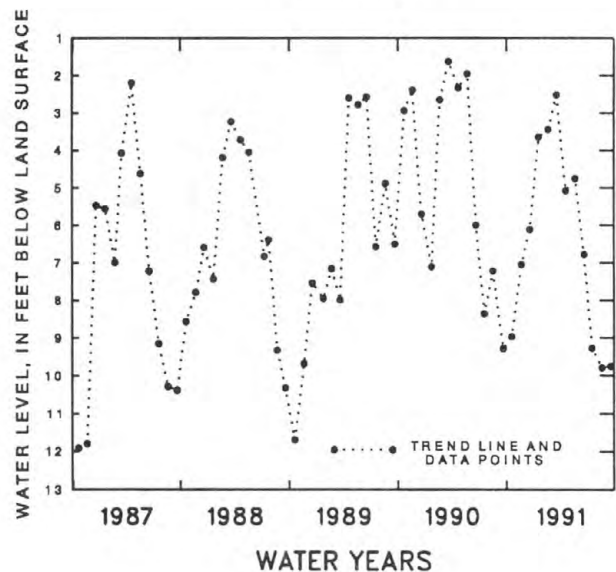
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	8.96	DEC 19	6.11	FEB 19	3.44	APR 19	5.07	JUN 21	6.78	AUG 21	9.79
NOV 21	7.05	JAN 18	3.64	MAR 19	2.52	MAY 21	4.75	JUL 18	9.27	SEP 19	9.75

WUW2



WUW10



GROUND-WATER LEVELS IN MASSACHUSETTS

231

WORCESTER COUNTY--Continued

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: W. B. Hart.

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 National Geodetic Vertical Datum of 1929. 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, 13.36 ft below land-surface datum, Dec. 24, 1964.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	11.81	DEC 19	4.65	FEB 19	3.87	APR 19	4.58	JUN 21	7.05	AUG 21	7.60
NOV 21	6.30	JAN 18	3.80	MAR 19	3.02	MAY 21	4.58	JUL 18	9.90	SEP 19	8.42

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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

REMARKS.--Water levels affected by Lake Quinsigamond.

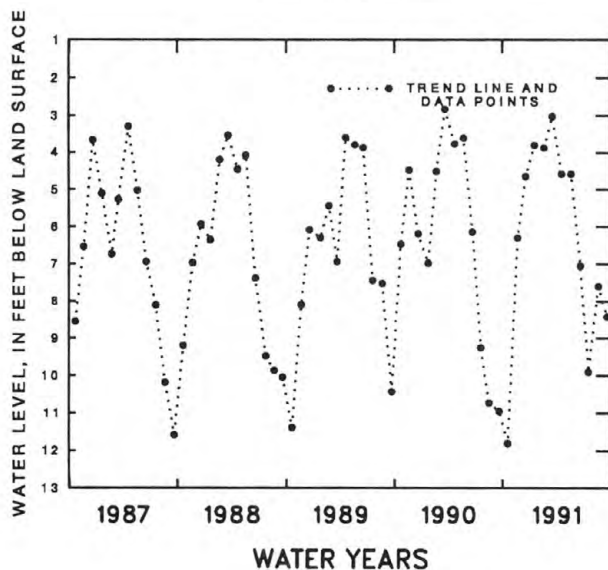
PERIOD OF RECORD.--January 1965 to current year. Prior to October 1974, published in Massachusetts Hydrologic-Data Report No. 17.

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.

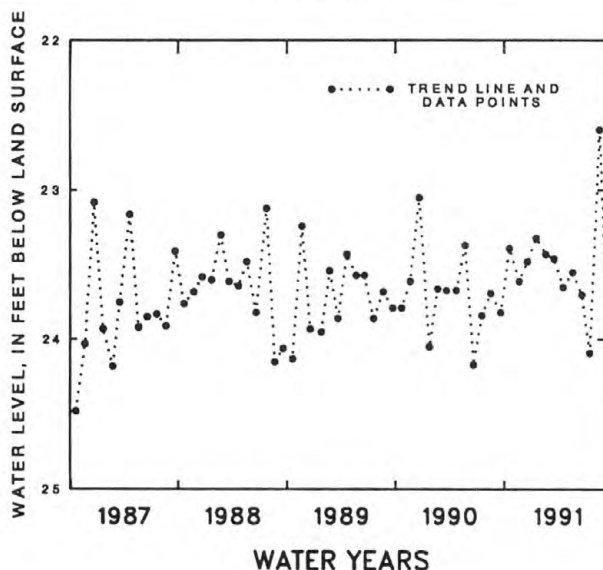
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	23.39	DEC 19	23.48	FEB 19	23.43	APR 19	23.65	JUN 21	23.70	AUG 21	22.59
NOV 21	23.61	JAN 18	23.32	MAR 19	23.46	MAY 21	23.55	JUL 18	24.09	SEP 19	24.10

XNW13



XSW274



GROUND-WATER LEVELS IN RHODE ISLAND

KENT COUNTY

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: Robert Card.

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	22.53	DEC 20	22.14	FEB 22	21.88	APR 24	20.72	JUN 21	21.73	AUG 21	22.46
NOV 27	22.12	JAN 25	21.44	MAR 26	21.09	MAY 23	20.67	JUL 25	22.51	SEP 24	22.44

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: E. Lambert.

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.

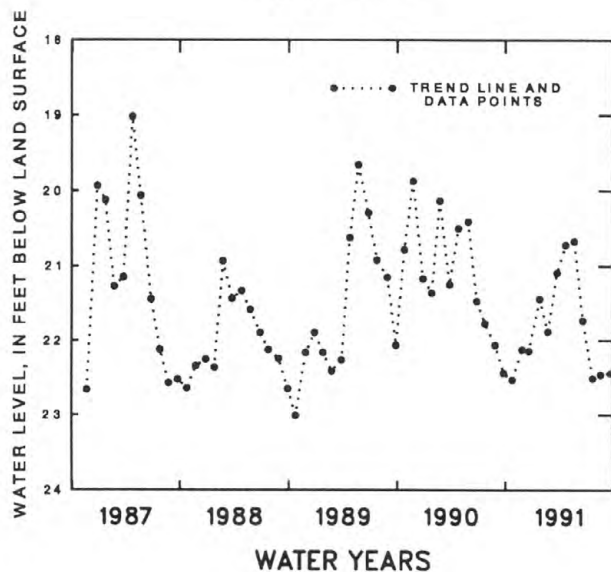
PERIOD OF RECORD.--January 1969 to current year.

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.

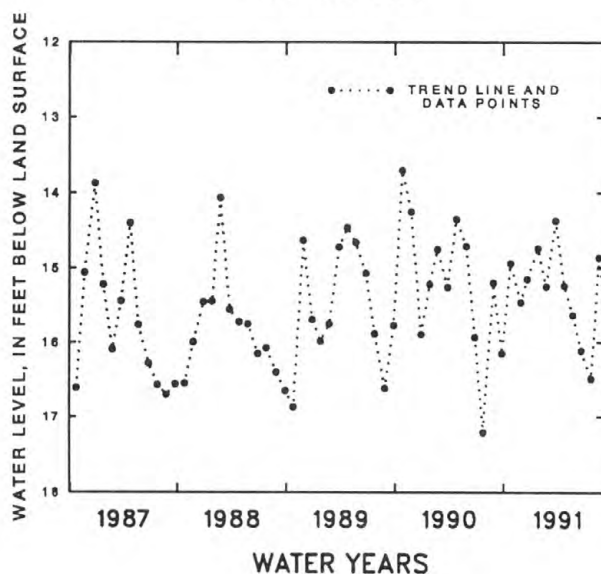
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	14.94	DEC 20	15.15	FEB 22	15.25	APR 24	15.24	JUN 21	16.11	AUG 21	14.86
NOV 28	15.46	JAN 25	14.74	MAR 26	14.37	MAY 23	15.63	JUL 25	16.49	SEP 25	15.88

COW411



GWG181



GROUND-WATER LEVELS IN RHODE ISLAND

233

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	14.50	DEC 20	14.40	FEB 22	14.73	APR 24	14.57	JUN 21	15.47	AUG 21	16.04
NOV 27	14.46	JAN 25	14.47	MAR 26	14.52	MAY 23	14.75	JUL 25	16.35	SEP 25	15.71

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: Francis J. Varone.

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.

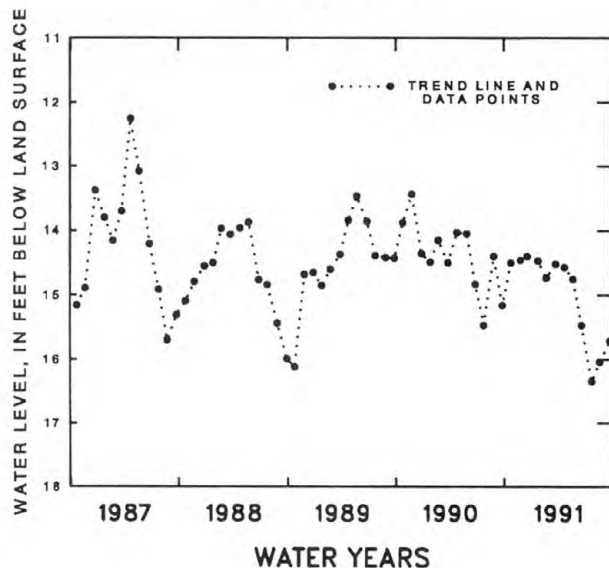
PERIOD OF RECORD.--August 1946 to current year.

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.

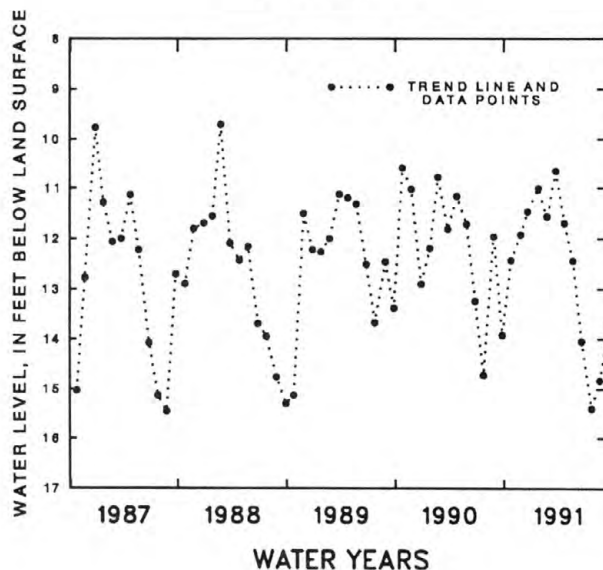
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	12.43	JAN 25	11.00	MAR 26	10.65	JUN 21	14.04	SEP 25	13.72		
NOV 27	11.92	FEB 22	11.56	APR 24	11.69	JUL 25	15.40				
DEC 20	11.46	25	11.56	MAY 23	12.44	AUG 22	14.83				

BUW187



CUW265



GROUND-WATER LEVELS IN RHODE ISLAND

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-in 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	1.91	DEC 20	4.50	FEB 22	4.64	APR 24	3.52	JUN 21	5.00	AUG 21	2.56
NOV 27	4.96	JAN 25	5.02	MAR 26	3.98	MAY 23	5.33	JUL 25	5.71	SEP 25	5.13

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: Thomas E. Esty.

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 National Geodetic Vertical Datum of 1929. 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.

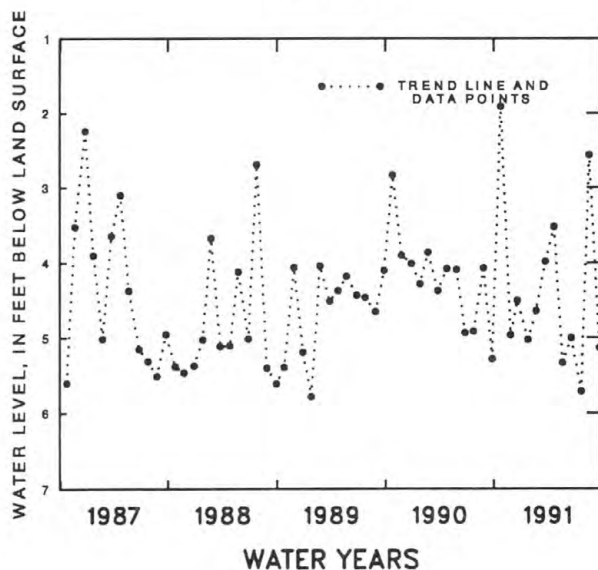
PERIOD OF RECORD.--May 1947 to current year.

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.

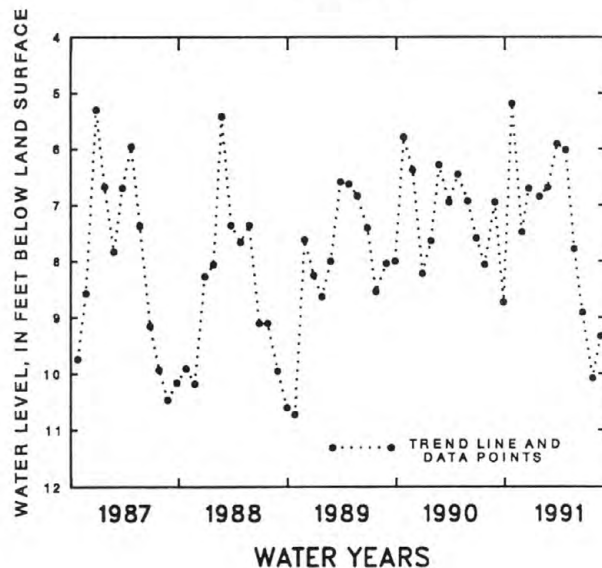
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	5.19	DEC 20	6.71	FEB 22	6.69	APR 24	6.02	JUN 21	8.91	AUG 21	9.33
NOV 27	7.48	JAN 25	6.85	MAR 26	5.91	MAY 23	7.78	JUL 25	10.08	SEP 25	9.66

LIW84



NSW21



GROUND-WATER LEVELS IN RHODE ISLAND

235

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	4.91	DEC 20	5.23	FEB 22	4.79	APR 24	3.91	JUN 21	4.78	AUG 21	4.67
NOV 27	5.07	JAN 25	4.71	MAR 26	4.10	MAY 23	4.29	JUL 25	5.24	SEP 25	4.85

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 National Geodetic Vertical Datum of 1929. 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.

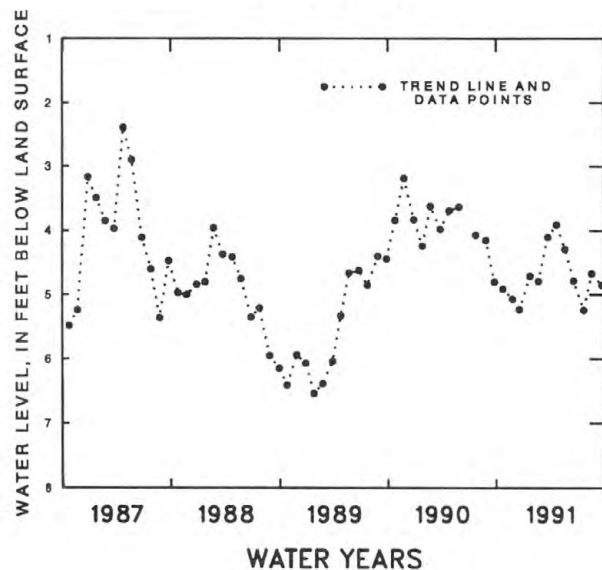
PERIOD OF RECORD.--December 1944 to current year.

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.

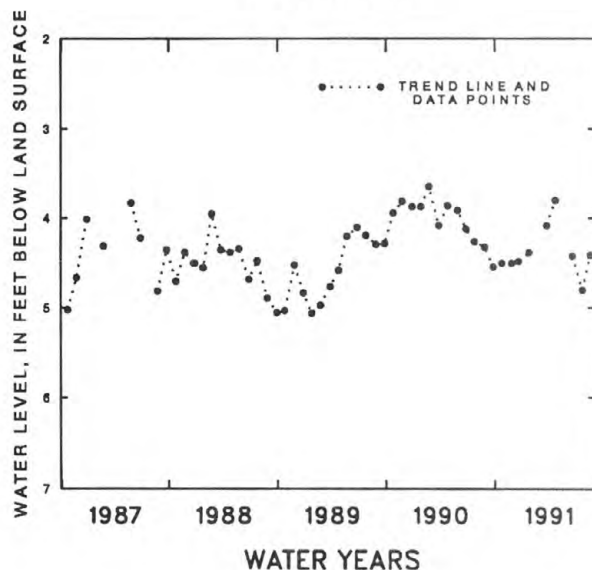
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	4.50	DEC 20	4.48	MAR 26	4.08	JUN 21	4.42	AUG 21	4.41		
NOV 27	4.50	JAN 25	4.38	APR 24	3.80	JUL 25	4.80				

PAW136



PRW48



GROUND-WATER LEVELS IN RHODE ISLAND

PROVIDENCE COUNTY--Continued

414939071260801. Providence well PRW 1051.

LOCATION.--Lat 41°49'39", long 71°26'08", Providence County, Hydrologic Unit 01090004, city of Providence, at 10 Eagle Street, and 200 ft south of Valley and 300 ft east of Eagle Streets.

Owner: Licht Industries.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 10 in, depth 82 ft, cased to 82 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 10 ft. Measuring point: Top of extension on pipe, 2.83 ft above land-surface datum.

REMARKS.--Water level affected by pumping from one or more nearby wells. Since October 1971, reduced pumping has resulted in higher water levels.

PERIOD OF RECORD.--January 1948 to current year. January 1948 to March 1949, weekly water level measurements.

April 1949 to February 1976, continuous graphic recorder (published water levels were monthly lows). Since April

1976, water levels measured near end of month.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.26 ft above land-surface datum, Sep. 25, 1991; observed flowing at times in 1978-80, 1987-88; lowest measured, 16.10 ft below land-surface datum, Jan. 16, 1948.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
(READINGS ABOVE LAND SURFACE INDICATED BY "-")

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	-0.11	DEC 20	-0.03	FEB 22	0.04	APR 24	-0.06	JUN 21	-0.06	AUG 21	-0.14
NOV 27	.00	JAN 25	.03	MAR 26	.04	MAY 23	-.09	JUL 25	-.01	SEP 25	-.26

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.

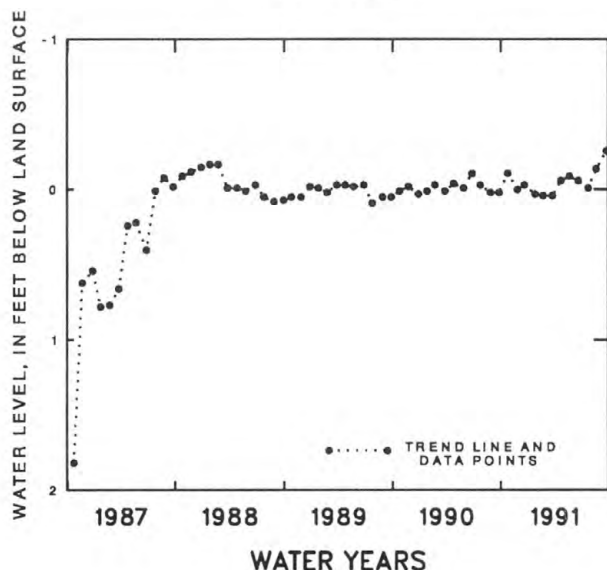
PERIOD OF RECORD.--October 1946 to current year.

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.

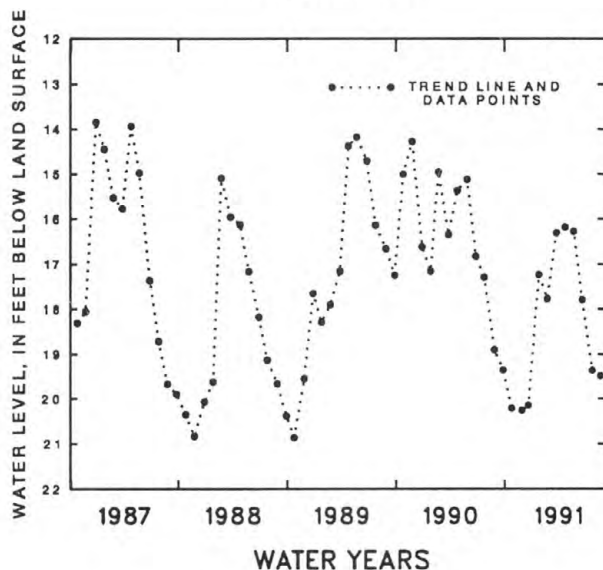
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	20.20	DEC 20	20.14	FEB 22	17.77	APR 24	16.18	JUN 21	17.79	AUG 22	19.48
NOV 28	20.25	JAN 25	17.23	MAR 26	16.30	MAY 23	16.27	JUL 25	19.36	SEP 24	19.27

PRW1051



CHW18



GROUND-WATER LEVELS IN RHODE ISLAND

237

WASHINGTON COUNTY--Continued

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 National Geodetic Vertical Datum of 1929. 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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	5.77	DEC 20	5.42	FEB 22	4.89	APR 24	4.36	JUN 21	5.98	AUG 22	4.91
NOV 28	6.22	JAN 25	4.95	MAR 26	4.16	MAY 23	5.24	JUL 25	6.68	SEP 24	6.28

413307071323601. Exeter well EXW 16.

LOCATION.--Lat 41°33'07", long 71°32'36", Washington County, Hydrologic Unit 01090005, town of Exeter, about 25 ft southwest of fire station at Exeter State (Dr. Joseph H. Ladd) School.

Owner: State Dept. of Public Welfare.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 2.5 in, depth 27 ft, cased to 27 ft, open end.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Land-surface datum is 154.47 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.78 ft above land-surface datum.

REMARKS.--Nearby well either being pumped or pumped recently.

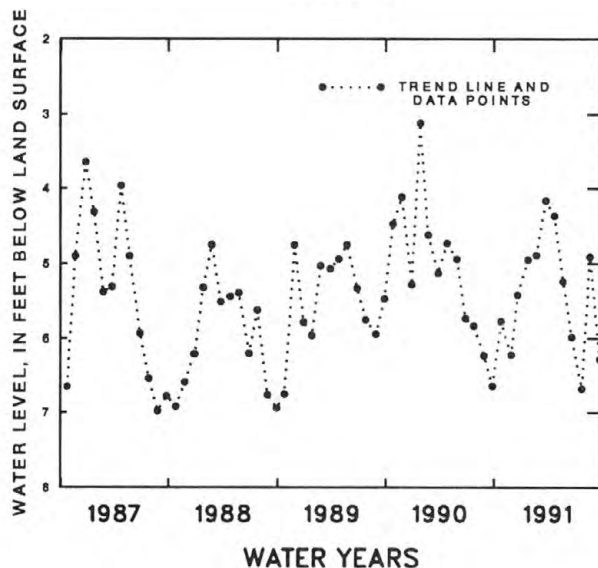
PERIOD OF RECORD.--July 1946 to January 1991.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.90 ft below land-surface datum, Jan. 26, May 15, 1990; lowest measured, 15.40 ft below land-surface datum, Oct. 30, 1957.

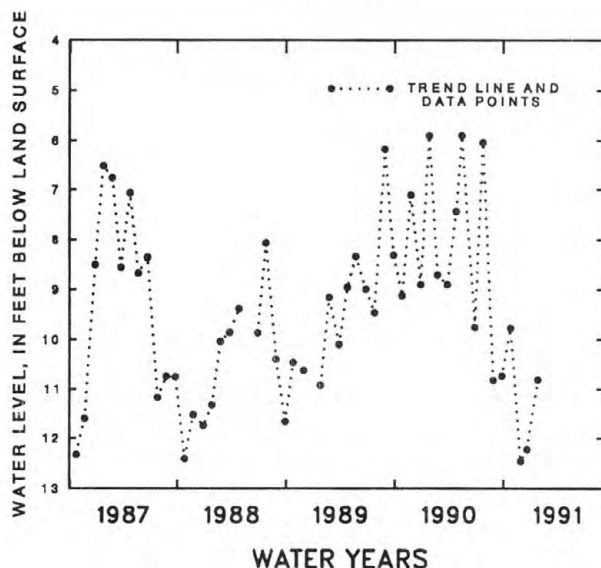
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	10.79	NOV 16	12.21	DEC 14	12.30	JAN 19	10.78				
25	9.77	28	12.45	20	12.22	25	10.81				

EXW6



EXW16



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 Barberville.

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 minute punch) June 1988 to current year.

DATUM.--Land-surface datum is 142.92 ft above National Geodetic Vertical Datum of 1929. 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.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	16.09	15.81	15.58	14.44	13.86	13.91	13.18	13.45	13.91	14.92	15.72	15.21
10	16.16	15.83	15.41	14.34	13.89	13.73	13.23	13.41	14.06	15.08	15.78	15.28
15	16.01	15.68	15.33	14.25	13.92	13.68	13.37	13.45	14.21	15.24	15.80	15.39
20	15.94	15.66	15.16	14.01	13.97	13.56	13.50	13.53	14.38	15.39	15.65	15.46
25	15.83	15.68	14.94	13.88	13.99	13.38	13.32	13.62	14.56	15.55	15.23	15.49
EOM	15.77	15.73	14.60	13.83	14.05	13.23	13.38	13.77	14.74	15.63	15.13	15.24

WTR YR 1991 HIGH 13.18 APR 5, 6 LOW 16.16 OCT 10, 11

413252071323601. Exeter well EXW 554.

LOCATION.--Lat 41°32'52", long 71°32'36", Washington County, hydrologic Unit 01090005, town of Exeter, about 1500 ft south of fire station at Exeter State (Dr. Joseph H. Ladd) School. One half mile West of Rt. 2 on Dawley Rd. and approx. 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 National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.40 ft above land-surface datum.

REMARKS.--Replacement well for EXW16, which was influenced by parking lot runoff.

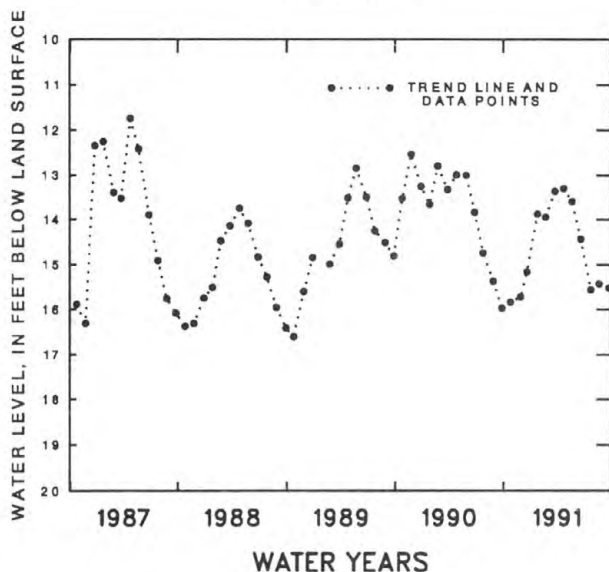
PERIOD OF RECORD.--December 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.54 ft below land-surface datum, May 15, 1989; lowest measured, 11.19 ft below land-surface datum, Nov. 28, 1990.

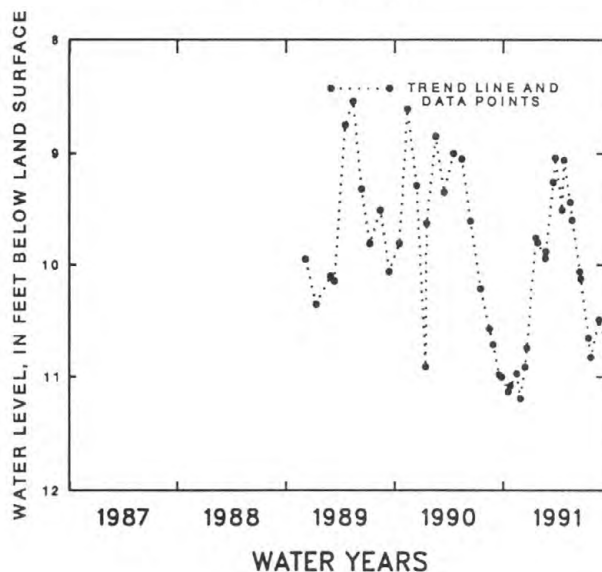
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, DECEMBER 1988 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 06, 1988	9.95	DEC 14, 1989	9.29	SEP 26, 1990	11.00	MAR 26, 1991	9.04
JAN 11, 1989	10.35	JAN 14, 1990	10.91	OCT 18	11.13	APR 18	9.51
FEB 28	10.10	17	9.63	25	11.08	24	9.06
MAR 13	10.14	FEB 16	8.85	NOV 16	10.97	MAY 16	9.44
APR 18	8.75	MAR 16	9.35	28	11.19	23	9.60
MAY 15	8.54	APR 17	9.00	DEC 14	10.91	JUN 18	10.06
JUN 12	9.32	MAY 15	9.05	20	10.74	21	10.12
JUL 10	9.81	JUN 13	9.61	JAN 19, 1991	9.76	JUL 17	10.65
AUG 14	9.51	JUL 17	10.21	25	9.80	25	10.82
SEP 13	10.06	AUG 16	10.57	FEB 20	9.94	AUG 22	10.49
OCT 17	9.81	28	10.71	22	9.88	SEP 24	10.78
NOV 13	8.61	SEP 18	10.98	MAR 19	9.26	OCT 26	10.73

EXW475



EXW554



GROUND-WATER LEVELS IN RHODE ISLAND

239

WASHINGTON COUNTY--Continued

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: Marcel Lacroix.

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 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	9.81	DEC 20	8.27	FEB 22	8.92	APR 24	8.27	JUN 21	9.08	AUG 22	9.09
NOV 28	9.91	JAN 25	8.76	MAR 26	7.79	MAY 23	8.13	JUL 25	9.98	SEP 24	9.22

413308071280501. North Kingstown well NKW 450.

LOCATION.--Lat 41°33'08", long 71°28'05", Washington County, Hydrologic Unit 01090004, town of North Kingstown, at 890 Tower Hill Road in Belleville, and 0.35 mi north of intersection of alternate U.S. Highway 1 and West Allenton Road.

Owner: Richard S. Bannister.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 24 in, depth 17 ft, cased with concrete to 17 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: Hole in top of concrete cover, 1.96 ft above land-surface datum.

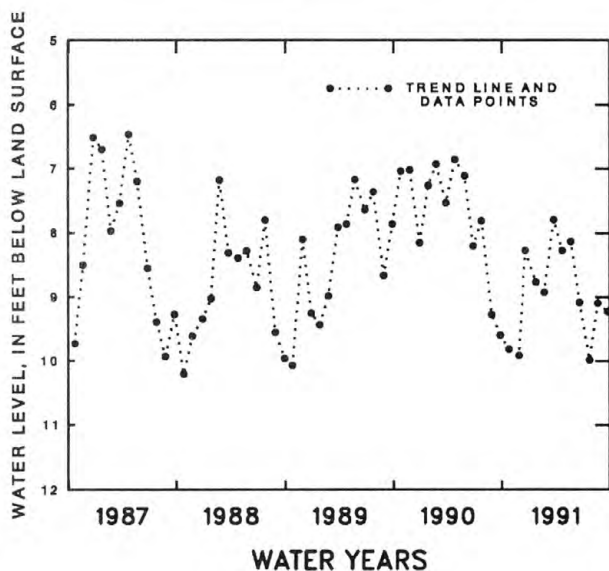
PERIOD OF RECORD.--October 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.32 ft below land-surface datum, Apr. 23, 1983; lowest measured, well dry several times in water years 1980-82, 1984, 1988.

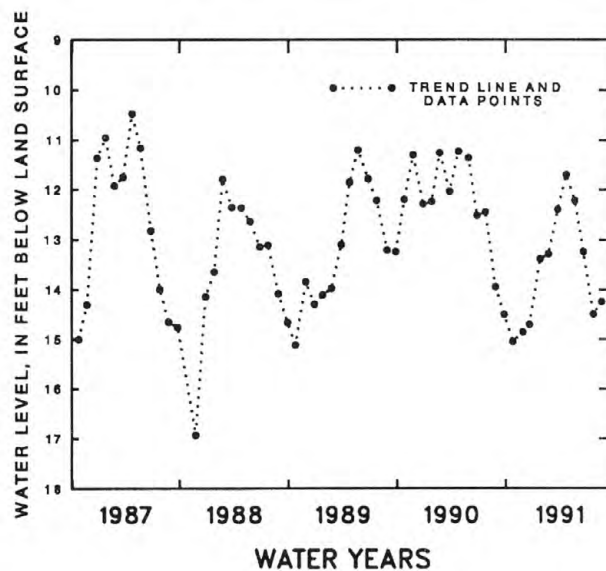
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	15.04	DEC 20	14.70	FEB 22	13.28	APR 24	11.70	JUN 21	13.24	AUG 22	14.24
NOV 28	14.85	JAN 25	13.38	MAR 26	12.39	MAY 23	12.21	JUL 25	14.49	SEP 24	14.26

NKW255



NKW450



GROUND-WATER LEVELS IN RHODE ISLAND

WASHINGTON COUNTY--Continued

412717071415301. Richmond well RIW 231.

LOCATION.--Lat 41°27'17", long 71°41'53", Washington County, Hydrologic Unit 01090005, town of Richmond, about 50 ft west of Narragansett Trail, and 1.2 mi north of Wood River Junction.

Owner: Tuckahoe Turf Farms.

AQUIFER.--Sand and gravel of Pleistocene age.

WELL CHARACTERISTICS.--Dug observation water-table well, diameter 30 in, depth 29 ft, lined with stone to 29 ft, shored.

INSTRUMENTATION.--Monthly measurement with chalked tape by U.S. Geological Survey personnel.

DATUM.--Elevation of land-surface datum is 84 ft. Measuring point: Hole in top of concrete cover, 0.06 ft above land-surface datum.

PERIOD OF RECORD.--May 1955 to July 1991.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.38 ft below land-surface datum, May 21, 1983. Dry several times in water years 1965-67, 1977, 1981-82, 1988.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	26.59	DEC 20	27.59	FEB 22	26.51	APR 24	25.17	JUN 21	25.38		
NOV 28	27.15	JAN 25	26.72	MAR 26	26.10	MAY 23	25.02	JUL 25	26.02		

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 National Geodetic Vertical Datum of 1929. 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.

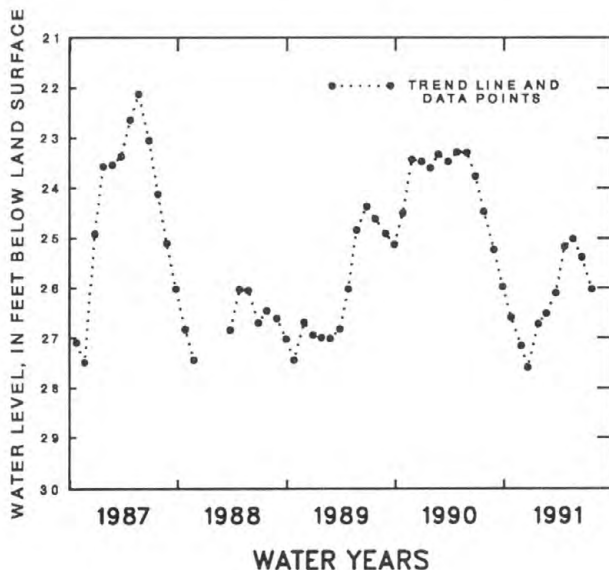
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.08 ft below land-surface datum, Apr. 25, 1983; lowest, 8.02 ft below land-surface datum, Oct. 3, 1980.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

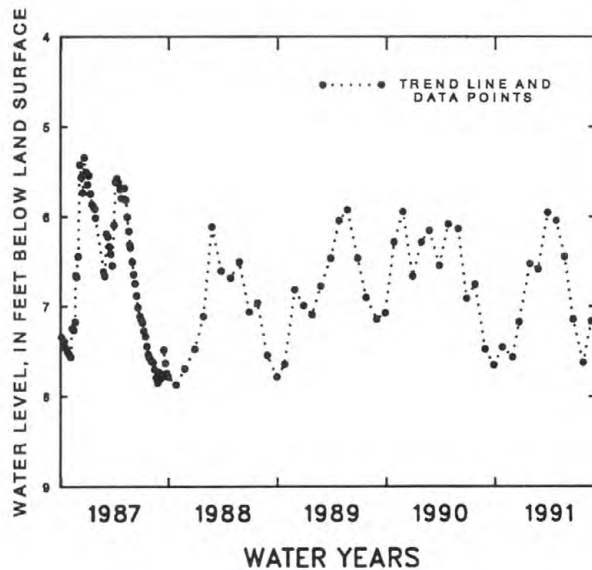
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.70	7.62	7.23	6.94	6.62	6.39	6.13	6.30	6.77	7.41	7.55	7.45
10	7.72	7.48	7.32	6.88	6.64	6.39	6.27	6.19	6.91	7.45	7.39	7.45
15	7.44	7.41	7.36	6.84	6.59	6.41	6.41	6.30	7.02	7.52	7.51	7.54
20	7.54	7.48	7.16	6.43	6.58	6.06	6.52	6.36	7.10	7.61	7.21	7.51
25	7.43	7.52	6.95	6.50	6.63	5.92	6.12	6.52	7.23	7.61	7.28	7.33
EOM	7.55	7.57	6.88	6.55	6.67	5.98	6.24	6.65	7.35	7.63	7.48	7.24

WTR YR 1991 HIGH 5.92 MAR 25 LOW 7.73 AUG 3, 9

RIW231



RIW417



GROUND-WATER LEVELS IN RHODE ISLAND

241

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 National Geodetic Vertical Datum of 1929. 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.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	34.64	---	34.62	34.18	33.71	33.69	33.12	33.22	33.56	34.09	34.52	34.32
10	34.71	---	34.53	34.15	33.71	33.60	33.15	33.23	33.63	34.18	34.52	34.28
15	34.70	---	34.51	34.09	33.72	33.58	33.22	33.26	33.72	34.27	34.46	34.32
20	34.70	---	34.42	33.90	33.72	33.49	33.29	33.32	33.81	34.37	34.46	34.35
25	34.66	---	34.35	33.76	33.71	33.32	33.15	33.38	33.90	34.47	34.26	34.34
EOM	---	34.65	34.24	33.70	33.74	33.17	33.19	33.48	34.00	34.49	34.23	34.19

WTR YR 1991 HIGH 33.12 APR 5, 6, 7 LOW 34.73 OCT 12, 13

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 National Geodetic Vertical Datum of 1929. 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.

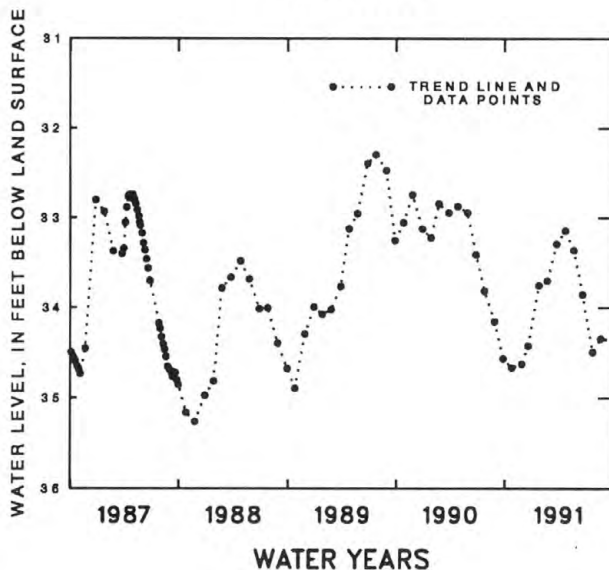
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.91 ft below land-surface datum, Apr. 25, 26, 1983; lowest, 15.06 ft below land-surface datum, Dec. 29, 1965.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

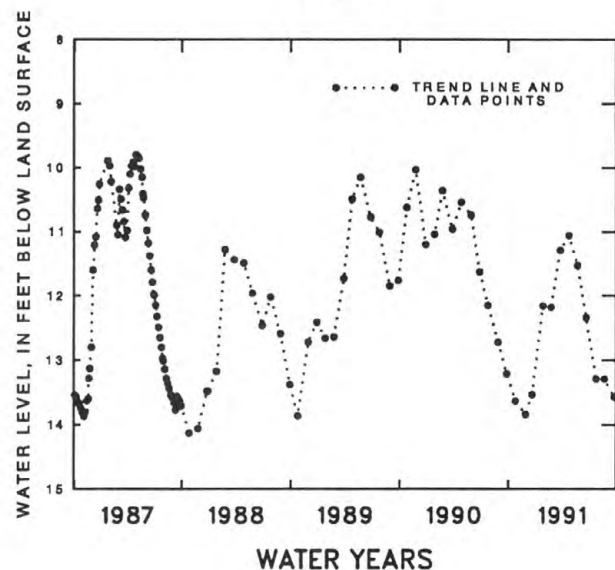
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.39	13.73	13.83	13.11	12.22	12.18	11.11	11.22	11.87	12.77	13.53	13.57
10	13.51	13.73	13.69	13.07	12.28	11.94	11.12	11.28	12.00	12.95	13.43	13.35
15	13.57	13.64	13.67	12.88	12.22	11.97	11.28	11.35	12.12	13.08	13.26	13.47
20	13.63	13.74	13.54	11.98	12.26	11.59	11.40	11.42	12.30	13.11	13.36	13.59
25	13.65	13.80	13.43	12.11	12.26	11.35	11.08	11.55	12.43	13.29	13.29	13.57
EOM	13.67	13.86	13.25	12.11	12.39	11.19	11.17	11.73	12.58	13.44	13.47	13.33

WTR YR 1991 HIGH 11.06 APR 24 LOW 13.89 DEC 3

RIW600



SNW6



GROUND-WATER LEVELS IN RHODE ISLAND

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 Kingston.

Owner: R. R. Holley.

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 National Geodetic Vertical Datum of 1929. 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, 23.73 ft below land-surface datum, Apr. 23, 1983, Dry several times in water years 1978, 1980-85, 1987-88, 1991.

WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 17	29.11	DEC 13	28.21	FEB 22	27.06	APR 24	26.41	JUN 21	27.66	SEP 24	28.49
25	28.75	20	28.08	MAR 19	26.64	MAY 15	26.46	JUL 16	DRY		
NOV 15	28.60	JAN 25	26.76	26	26.29	23	26.63	25	28.82		
28	28.47	FEB 19	27.16	APR 17	26.48	JUN 17	27.49	AUG 22	28.28		

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: S. Panciera.

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.

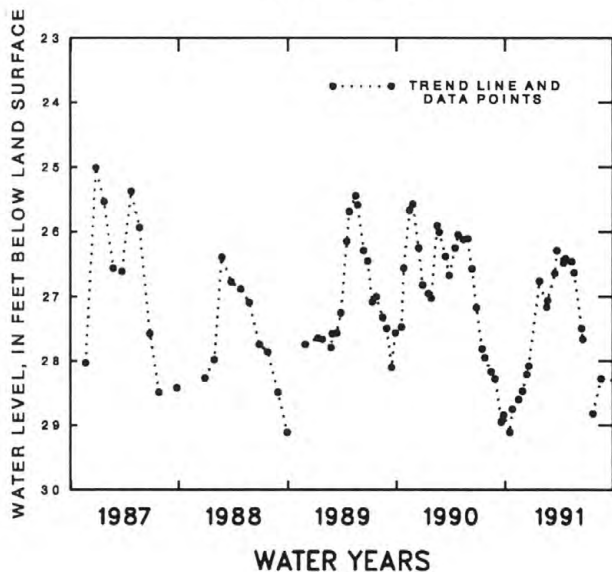
PERIOD OF RECORD.--January 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.23 ft below land-surface datum, Apr. 23, 1983; lowest measured, 14.61 ft below land-surface datum, Sept. 24, 1980.

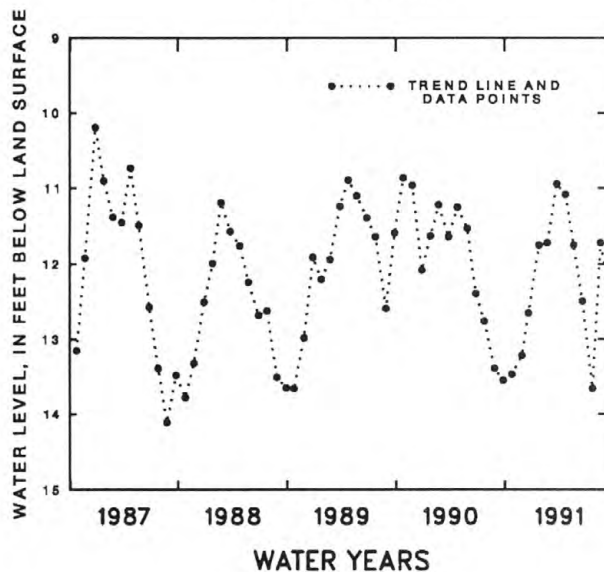
WATER LEVELS, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	13.47	DEC 20	12.65	FEB 22	11.72	APR 24	11.08	JUN 21	12.49	AUG 22	11.72
NOV 28	13.22	JAN 25	11.75	MAR 26	10.94	MAY 23	11.75	JUL 25	13.66	SEP 24	12.40

SNW515



WEW522



	Page		Page
Aberjona River at Winchester, MA	49, 172	Canoe River near Norton, MA	162
Access to WATSTORE data, explanation of	20	Canton, MA, East Branch Neponset River at	57, 173
Accuracy of the Records, explanation of	16	Cells/volume, definition of	22
Acre-foot, definition of	21	Centerdale, RI, Woonasquatucket River at	85, 175
Acton, MA, Nashoba Brook near	41, 171	Charlemont, MA, Deerfield River at	124, 177
Acushnet River basin, discharge measurements		Chickley River near	163
at miscellaneous site in	166	Charles River at Dover, MA	50-52
Adams, MA, Hoosic River at	157, 179	at Waltham, MA	55, 173
Adenosine triphosphate, definition of	21	at Wellesley	54, 173
Algae, definition of	21	Charles River basin, discharge measurements	
Algal growth potential, definition of	21	at miscellaneous site in	165
Amherst, MA, Fort River near	130, 177	gaging-station records in	50-55
Annual 7-day minimum, definition of	23	low-flow partial-record stations in	161
Aquifer, definition of	22	supplemental water-quality data for	
Arcadia, RI, Wood River near	101, 176	gaging-stations in	172, 173
Arlington, MA, Mill Brook at	161	Chemical oxygen demand, definition of	22
Arrangement of records, explanation of	17	Chicken Brook near West Medway, MA	161
Artesian, definition of	22	Chickley River near Charlemont, MA	163
Artificial substrate, definition of	27	Chicopee River at Indian Orchard, MA	142, 178
Ash mass, definition of	22	Chipuxet River at West Kingston, RI	97, 175
Ashley Falls, MA, Konkapot River at	164	Chlorophyll, definition of	23
Assabet River at Main Street near Concord, MA	160	Clam River at West New Boston, MA	164
at Maynard, MA	40, 171	Classification of records, definition of	16
Assonet River at Assonet, MA	162	Clesson Brook near Shelburne Falls, MA	163
Auburn, MA, Dark Brook at	163	Clinton, MA, Nashua River at	35
		Cold River near Zoar, MA	163
Bachelor Brook at Granby, MA	164	Color unit, definition of	23
Bacteria, definition of	22	Colrain, MA, Green River near	128, 177
Barnstable County, ground-water levels in	180-185	Coltsville, MA, East Branch, Housatonic River at	155, 179
Barre Falls Reservoir, contents of	133	Concord River below River Meadow Brook	
Barre, MA, Ware River at intake works, near	134, 178	at Lowell, MA	43, 171
Ware River near	133, 177	Concord, MA, Assabet River at Main Street near	160
Beaver Brook at South Royalston, MA	163	Sudbury River at Nashawtuc Street at	161
Beaver River near Usquepaug, RI	99, 175	Connecticut River at Montague City, MA	129
Bed load, definition of	26	at Thompsonville, CT	146-153
Bed load discharge, definition of	26	below Holyoke Dam at Holyoke, MA	132
Bed material, definition of	22	Connecticut River basin, discharge measurements	
Belchertown, MA, Cadwell Creek		at miscellaneous site in	170
near Belchertown, MA	138, 178	gaging-station records in	118-154
Berkshire County, ground-water levels in	186-189	low-flow partial-record stations in	163, 164
Berlin, MA, North Brook near	160	supplemental water-quality data for	
Biochemical oxygen demand, definition of	22	gaging-stations	176-179
Biomass, definition of	22	Contents, definition of	23
Blackstone River at Manville, RI	80-83	Control, definition of	23
at Millville, MA	67-72	Control structure, definition of	23
Woonsocket, RI	79, 174	Conway, MA, South River near	126, 177
Blackstone River basin, discharge measurements		Cooperation, explanation of	5
at miscellaneous sites in	167	Cotley Brook at East Taunton, MA	162
gaging-station records in	66-83	Cranston, RI, Pawtuxet River at	87-91
low-flow partial-record stations in	163	Cubic foot per second, definition of	23
supplemental water-quality data		Cubic feet per second per square mile, definition of ...	23
for gaging-stations in	174		
Blackwater River Basin,		Dark Brook at Auburn, MA	163
low-flow partial-record stations in	160	Data collection and computation, explanation of	11, 19
Bloody Brook near South Deerfield, MA	163	Data presentation, explanation of	12, 18, 20
Blue-green algae, definition of	25	Data table of daily mean values, explanation of	14
Bottom material, definition of	22	Dedham, MA, Mother Brook at	53, 172
Branch River at Forestdale, RI	74-78	Deerfield River at Charlemont, MA	124, 177
Bristol County, ground-water levels in	189-192	near Rowe, MA	123
Byfield, MA, Parker River at	46, 172	near West Deerfield, MA	127, 177
		Definition of terms, explanation of	21
Cadwell Creek near Belchertown, MA	138, 178	Destruction Brook near South Dartmouth, MA	162
near Pelham, MA	137, 178	Diatoms, definition of	25

	Page		Page
Dighton, MA, Segreganset River near	64, 174	Hampden County, ground-water levels in	201-205
Discharge, definition of	23	Hampshire County, ground-water levels in	206-208
Dissolved, definition of	23	Hanover, MA, Third Herring Brook at	162
Dissolved-solids concentration, definition of	23	Indian Head River at	59, 173
Dover, MA, Charles River at	50-52	Hardness of water, definition of	23
Downstream order system, explanation of	10	Hardwick, MA, East Branch Swift River near	136
Drainage area, definition of	23	Harrisville, RI, Nipmuc River near	73, 174
Drainage basin, definition of	23	Hingham, MA, Weir River near	161
Dry mass, definition of	22	Holden, MA, Trout Brook near	160
Dukes County, ground-water levels in	192	Holyoke, MA, Connecticut River	
		below Holyoke Dam at	132
East Branch Westport River basin, discharge		Hoosic River at Adams, MA	157, 179
measurements at miscellaneous sites in	167	near Williamstown, MA	158, 179
East Greenwich, RI, Hunt River near	96, 175	Hop Brook near South Lee, MA	164
East Lee, MA, Greenwater Brook at	164	Hope Valley, RI, Wood River at	102-106, 176
East Longmeadow, MA, South Branch Mill River		Housatonic River basin,	
at Porter Road near	164	gaging-station records in	155, 156
East Pepperell, MA, Reedy Meadow Brook at	160	low-flow partial-record stations in	164
Nashua River at	37, 171	supplemental water-quality data	
East Providence, RI, Ten Mile River		for gaging-stations in	179
at Pawtucket Avenue at	65, 174	Housatonic River, East Branch, at Coltsville, MA	155, 179
East Taunton, MA, Cotley Brook at	162	near Great Barrington, MA	156
East Weymouth, MA, Whitmans Pond Outlet at	161	Hudson River basin, gaging-station records in	157-159
East Windsor, MA, Westfield Brook at	164	supplemental water-quality data for	
Elizabeth Brook at Wheeler Street at Stow, MA	160	gaging-stations in	179
Erving, MA, Millers River at	122, 177	Hunt River near East Greenwich, RI	96, 175
Essex County, ground-water levels in	193-197	Huntington, MA, West Branch, Westfield River at	143, 178
Explanation of the records, explanation of	10	Hydrologic Bench-Mark Network, definition of	24
		Hydrologic unit, definition of	24
Farmington River, West Branch,			
near New Boston, MA	154, 179	Identifying estimated daily discharge, definition of	16
near Otis, MA	164	Indian Head River at Hanover, MA	59, 173
Fecal coliform bacteria, definition of	22	Indian Orchard, MA, Chicopee River at	142, 178
Fecal streptococcal bacteria, definition of	22	Instantaneous discharge, definition of	23
Fitchburg, MA, North Nashua River at	33, 171	Introduction, explanation of	1
Fivemile River near North Brookfield, MA	164	Ipswich River at South Middleton, MA	47, 172
Flat River Reservoir, contents of	86	near Ipswich, MA	48, 172
Forestdale, RI, Branch River at	74-78	Ipswich River Basin, gaging-station records in	47, 48
Fort Pond Brook at West Concord, MA	160	supplemental water-quality data for	
Fort River near Amherst, MA	130, 177	gaging-stations in	172
Franklin County, ground-water levels in	198-201		
Franklin, MA, Mine Brook near	161	Jones River at Kingston, MA	60, 173
Fuller Brook at Wellesley College Golf Course		Jones River basin, supplemental water-quality	
at Wellesley, MA	161	data for gaging-stations in	173
Gage height, definition of	23	Kent County, ground-water levels in	232
Gaging station, definition of	23	Kingston, MA, Jones River at	60, 173
Gibbs Crossing, MA, Ware River at	135, 178	Konkapot River at Ashley Falls, MA	164
Grafton, MA, Quinsigamond River near	163		
Granby, MA, Bachelor Brook at	164	Laboratory measurements, explanation of	18
Great Barrington, MA, Green River near	164	Land-surface datum, definition of	24
Housatonic River near	156	Latitude-longitude system, explanation of	10
Green algae, definition of	25	Lawrence Brook at Royalston, MA	163
Green River at Williamstown, MA	159, 179	Leominster, MA, North Nashua River near	34, 171
near Colrain, MA	128, 177	Little River (Connecticut River basin) at outlet of	
near Great Barrington, MA	164	Cobble Mountain Reservoir, near Westfield, MA ..	144
Greenwater Brook at East Lee, MA	164	at Richardson Corners, MA	163
Ground-water levels in Massachusetts	180-231	Lowell, MA, River Meadow Brook at	161
Ground-water levels in Rhode Island	232-242	Concord River below River Meadow Brook at	43, 171
Ground-water levels, explanation of	8	Merrimack River above	38, 39
		Merrimack River below Concord River at	44, 172
Halifax, MA, Winnetuxet River		Manville, RI, Blackstone River at	80-83
at Thompson Street near	162		

	Page		Page
Mattapoissett River basin, discharge measurements		Networks, special, explanation of.....	8
at miscellaneous sites in.....	166	New Bedford, MA, Paskamanset River	
Maynard, MA, Assabet River at	40, 171	at Turner Pond near	162
Mean concentration(sediment), definition of.....	26	New Boston, MA,	
Mean discharge , definition of	23	West Branch Farmington River near	154, 179
Measuring point, definition of	24	Nipmuc River near Harrisville, RI.....	73, 174
Merrimack River above Lowell, MA.....	38, 39	Norfolk County, ground-water levels in.....	217-220
below Concord River at Lowell, MA.....	44, 172	North Brook near Berlin, MA	160
Merrimack River basin, discharge measurements		North Brookfield, MA, Fivemile River near	164
at miscellaneous sites in	165	North Dartmouth, MA, Shingle Island River near	162
gaging-station records in.....	33-45	North Dighton, MA, Threemile River at.....	63, 174
low-flow partial-record stations in	160, 161	North Grafton, MA, Quinsigamond River at.....	66, 174
supplemental water-quality data for		North Middleboro, MA, Poquoy Brook near	162
gaging-stations in	171, 172	North Nashua River at Fitchburg, MA,.....	33, 171
Metamorphic stage, definition of	24	near Leominster.....	34, 171
Methylene blue active substances, definition of.....	24	North River at Shattuckville, MA	125, 177
Micrograms per gram, definition of.....	24	North River basin, gaging-station record in	59
Micrograms per liter, definition of	24	low-flow partial-record stations in	162
Middlesex County, ground water levels in.....	209-216	supplemental water-quality data for	
Mill Brook at Arlington, MA	161	gaging-stations in	173
Mill River at Northhampton, MA.....	131, 177	Northampton, MA, Mill River at.....	131, 177
near Rowley, MA.....	161	Norton, MA, Canoe River near	162
Mill River, South Branch, at Porter Road		Rumford River at	162
near East Longmeadow, MA.....	164	Wading River near	62, 173
Millers River at Erving, MA	122, 177	Norwell, MA, Second Herring Brook at	162
at Old North Ashburnham Station		Norwood, MA, Neponset River at	56, 173
near Winchendon, MA	163	Numbering system for wells, description of.....	11
near Winchendon, MA	118, 176		
Milligrams of carbon, definition of	26	Old Swamp River near South Weymouth, MA.....	58, 173
Milligrams of oxygen, definition of.....	26	On-site measurements and sample collection,	
Milligrams per liter, definition of.....	24	explanation of.....	17
Millville, MA, Blackstone River at	67-72	Order of listing stations	10
Mine Brook at Walpole, MA.....	161	Organic mass, definition of.....	22
near Franklin, MA	161	Organism count/volume, definition of.....	24
Montague City, MA, Connecticut River at.....	129	Other records available, explanation of.....	16
Moshassuck River at Providence, RI.....	84, 174	Otis Reservoir, contents of.....	154
Moshassuck River basin, supplemental water-quality		Otis, MA, West Branch Farmington River near.....	164
data for gaging-stations in	174	Otter River at Otter River, MA	120, 176
Mother Brook at Dedham, MA	53, 172		
Muddy Brook at Ware, MA.....	164	Parameter Code, definition of	25
Munn Brook near Westfield, MA	164	Parker River at Byfield, MA	46, 172
Mystic River basin, gaging-station record in.....	49	Parker River Basin, low-flow partial-record	
low-flow partial-record station in	161	station in	161
supplemental water-quality		supplemental water-quality data	
data for gaging-station in.....	172	for gaging-stations in	172
		Partial-record station, definition of.....	25
Nantucket County, ground-water levels in.....	216	Particle size, definition of	25
Nashoba Brook near Acton, MA	41, 171	Particle-size classification, definition of.....	25
Nashua River at Clinton, MA	35	Paskamanset River at Turner Pond	
at East Pepperell, MA.....	37, 171	near New Bedford, MA	162
National Geodetic Vertical Datum of 1929		Pawcatuck River at Westerly, RI	107-114
(NGVD of 1929), definition of.....	24	Pawcatuck River at Wood River Junction, RI	100, 176
National Stream Quality Accounting Network		Pawcatuck River basin, discharge measurements	
(NASQAN), definition of.....	24	at miscellaneous sites in	167-170
National stream-quality accounting		gaging-station records in	97-114
network station.....	38, 50, 67, 107, 146	supplemental water-quality data for	
Natural substrate, definition of	27	gaging-stations in	175-176
Neponset River at Norwood, MA	56, 173	Pawtuxet River at Cranston, RI	87-91
East Branch, at Canton, MA.....	57, 173	at Pawtuxet, RI	92-95
Neponset River basin, gaging-station records in.....	56, 57	South Branch, at Washington, RI.....	86, 175
low-flow partial-record station in.....	161	Pawtuxet River basin, gaging-station records in	86-95
supplemental water-quality		supplemental water-quality data for	
data for gaging stations in.....	173	gaging-stations in	175

	Page		Page
Pelham, MA, Cadwell Creek near	137, 178	Sevenmile River near Spencer, MA.....	140, 178
Pepperell, MA, Unkety Brook near	160	Shattuckville, MA, North River at	125, 177
Percent composition, definition of	25	Shawsheen River near Wilmington, MA.....	45, 172
Periphyton, definition of	25	Shelburne Falls, MA, Clesson Brook near	163
Pesticides, definition of	25	Shingle Island River near North Dartmouth, MA	162
Phytoplankton, definition of	25	Slocums River basin, discharge measurements	
Picocurie, definition of	25	at miscellaneous sites in	166
Pittsfield, MA, Southwest Branch Housatonic River at	164	low-flow partial-record stations in	162
Plankton, definition of	25	Smallpox Brook at Salisbury, MA	160
Plymouth County, ground-water levels in	220-225	Sodium-adsorption-ratio, definition of	27
Poquoy Brook near North Middleboro, MA	162	Solute, definition of	27
Potowomut River basin, discharge measurements		South Dartmouth, MA, Destruction Brook near	162
at miscellaneous sites in	167	South Deerfield, MA, Bloody Brook near	163
gaging-station record in	96	South Lee, MA, Hop Brook near	164
supplemental water-quality data for		South Middleton, MA, Ipswich River at	47, 172
gaging-stations in	175	South River near Conway, MA	126, 177
Priest Brook near Winchendon, MA.....	119, 176	South Royalston, MA, Beaver Brook at	163
Primary productivity, definition of	26	South Weymouth, MA, Old Swamp River near	58, 173
Programs, special, explanation of	8	Southwest Branch Housatonic River at Pittsfield, MA	164
Providence County, ground-water levels in	233-236	Specific conductance, definition of	27
Providence, RI, Moshassuck River at	84, 174	Spencer, MA, Sevenmile River near	140, 178
Publications on techniques of		Squannacook River near West Groton, MA	36, 171
water-resources investigations	29	Stage-discharge relation, definition of	27
Quabbin Reservoir, contents of	139	Station manuscript, explanation of	12
Quaboag River at West Brimfield, MA	141, 178	Station-Identification numbers, explanation of	10
Quashnet River at Waquoit Village, MA	61	Statistics of monthly mean data, explanation of	14
Quashnet River basin, discharge measurements		Stillwater River near Sterling, MA	160
at miscellaneous sites in	165	Storms and droughts, explanation of	7
Quinebaug River at Quinebaug, CT	115-117	Stow, MA, Elizabeth Brook at Wheeler Street at	160
Quinebaug River tributary at Sandersdale, MA	163	Streamflow, definition of	27
Quinsigamond River at North Grafton, MA	66, 174	Streamflow, explanation of	5
near Grafton, MA	163	Substrate, definition of	27
Radiochemical program, definition of	26	Sudbury River at Nashawtuc Street at Concord, MA ..	161
Records of ground-water levels, explanation of	19	at Saxonville, MA	42, 171
Records of Stage and Water Discharge, explanation of	11	Suffolk County, ground-water levels in	226
Records of surface-water quality, definition of	16	Summary of hydrologic conditions, summary of	5
Recoverable from bottom material, definition of	26	Summary statistics, explanation of	14
Reedy Meadow Brook at East Pepperell, MA	160	Surface area, definition of	27
Remark codes, explanation of	19, 31	Surficial bed material, definition of	27
Reservoir storage, explanation of	7	Suspended sediment, definition of	26
Return period, definition of	26	Suspended, definition of	27
Richardson Corners, MA, Little River at	163	Suspended, recoverable, definition of	27
River Meadow Brook at Lowell, MA	161	Suspended, total, definition of	27
Rowe, MA, Deerfield River near	123	Suspended-sediment load, definition of	26
Rowley, MA, Mill River near	161	Swift River at Swift River, MA	164
Royalston, MA, Lawrence Brook at	163	at West Ware, MA	139, 178
Rumford River at Norton, MA	162	East Branch, near Hardwick, MA	136
Runoff in inches, definition of	26	Tatnuck Brook below Coes Reservoir at Worcester, MA	163
Salisbury, MA, Smallpox Brook at	160	Taunton River basin, gaging-station records in	62-64
Sandersdale, MA, Quinebaug River tributary at	163	low-flow partial-record stations in	162
Satuit River at Scituate, MA	161	supplemental water-quality data	
Satuit River basin, low-flow partial-record station in ..	161	for gaging-stations in	173, 174
Saxonville, MA, Sudbury River at	42, 171	Taxonomy, definition of	28
Scituate Reservoir, contents of	87	Ten Mile River at Pawtucket Avenue	
Scituate, MA, Satuit River at	161	at East Providence, RI	65, 174
Second Herring Brook at Norwell, MA	162	Ten Mile River basin, supplemental	
Sediment, definition of	26	water-quality data for gaging-stations in	174
Sediment, explanation of	18	Thames River basin, discharge measurements	
Segreganset River near Dighton, MA	64, 174	at miscellaneous site in	170
Seven-day ten-year low flow, definition of	27	gaging-station records in	115-117
		low-flow partial-record stations in	163
		The National Trends Network, definition of	24

	Page		Page
Thermograph, definition of	28	West Medway, MA, Chicken Brook near	161
Third Herring Brook at Hanover, MA	162	West New Boston, MA, Clam River at	164
Thompsonville, CT, Connecticut River at	146-153	West Ware, MA, Swift River at	139, 178
Threemile River at North Dighton, MA	63, 174	Westerly, RI, Pawcatuck River at	107-114
Time-weighted average, definition of	28	Westfield Brook at East Windsor, MA	164
Tons per acre-foot, definition of	28	Westfield River near Westfield, MA	145, 179
Tons per day, definition of	28	West Branch, at Huntington, MA	143, 178
Total, definition of	28	Westfield, MA, Little River at outlet	
Total coliform bacteria, definition of	22	of Cobble Mountain Reservoir, near	144
Total discharge, definition of	28	Munn Brook near	164
Total organism count, definition of	25	Westfield River near	145, 179
Total sediment discharge, definition of	26	Westminister, MA, Whitman River near	160
Total, recoverable, definition of	28	Westport River basin, low-flow	
Total-sediment load, definition of	26	partial-record station in	162
Tritium network, definition of	28	Wet mass, definition of	22
Trout Brook near Holden, MA	160	Weweantic River basin, discharge measurements at	
		miscellaneous sites in	166
Unkety Brook near Pepperell, MA	160	Weymouth Back River Basin, gaging-station record in	58
Usquepaug River near Usquepaug, RI	98, 175	low-flow partial-record station in	161
Usquepaug, RI, Beaver River near	99, 175	supplemental water-quality data for	
		gaging-stations in	173
Wading River near Norton, MA	62, 173	Whetstone Brook at Depot Road	
Walpole, MA, Mine Brook at	161	at Wendell Depot, MA	121, 176
Waltham, MA, Charles River at	55, 173	Whitman River near Westminister, MA	160
Waquoit Village, MA, Quashnet River at	61	Whitmans Pond Outlet at East Weymouth, MA	161
Ware River at Gibbs Crossing, MA	135, 178	Williamstown, MA, Green River at	159, 179
at intake works, near Barre, MA	134, 178	Hoosic River near	158, 179
near Barre, MA	133, 177	Wilmington, MA, Shawsheen River near	45, 172
Ware, MA, Muddy Brook at	164	Winchendon, MA, Millers River	
Washington County, ground-water levels in	236-242	at Old North Ashburnham Station near	163
Washington, RI., South Branch Pawtuxet River at	86, 175	Millers River near	118, 176
Water quality, explanation of	8	Priest Brook near	119, 176
Water temperature, explanation of	17	Winchester, MA, Aberjona River at	49, 172
Water year, definition of	28	Winnituxet River at Thompson Street	
WDR, definition of	29	near Halifax, MA	162
Weighted average, definition of	29	Wood River at Hope Valley, RI	102-106, 176
Weir River Basin, low-flow partial-record station in ..	161	near Arcadia, RI	101, 176
Weir River near Hingham, MA	161	Wood River Junction, RI, Pawcatuck River at	100, 176
Wellesley, MA, Charles River at	54, 173	Woonasquatucket River at Centerdale, RI	85, 175
Fuller Brook at Wellesley College Golf Course at..	161	Woonasquatucket River basin, supplemental	
Wendell Depot, MA, Whetstone Brook		water-quality data for gaging-stations in	175
at Depot Road at	121, 176	Woonsocket, RI, Blackstone River at	79, 174
West Branch Westport River basin, discharge		Worcester County, ground-water levels in	226-231
measurements at miscellaneous site in	167	Worcester, MA, Tatnuck Brook	
West Brimfield, MA, Quaboag River at	141, 178	below Coes Reservoir at	163
West Concord, MA, Fort Pond Brook at	160	WSP, definition of	29
West Deerfield, MA, Deerfield River near	127, 177		
West Groton, MA, Squannacook River near	36, 171	Zoar, MA, Cold River near	163
West Kingston, RI, Chipuxet River at	97, 175	Zooplankton, definition of	25

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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