

Water Resources Data New Jersey Water Year 1998

Volume 1. Surface-Water Data

Water-Data Report NJ-98-1



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Prepared in cooperation with the New Jersey Department
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SURFACE WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

Note.--Data for partial-record stations and miscellaneous sites for surface-water discharge are published in separate sections of the data report. See references at the end of this list for page numbers for these sections.

[Letter after station name designates type of data: (d) discharge, (e) elevation, gage height or contents]

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DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

The following continuous-record surface-water discharge stations in New Jersey have been discontinued. Daily streamflow records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as crest-stage partial-record stations. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

Discontinued Surface-Water Discharge Stations

Station name	Station number	Drainage area (mi ²)	Period of record
Wallkill River near Unionville, NY	01368000	140	1938-81
Auxiliary outlet of Upper Greenwood Lake at Moe, NJ	01368720	----	1968-80a
Passaic River near Bernardsville, NJ	01378690	8.83	1968-77
Passaic River at Hanover Neck, NJ	01379580	132	1993-97
Russia Brook tributary at Milton, NJ	01379630	1.64	1969-71
Rockaway River at Berkshire Valley, NJ	01379700	24.4	1960-72, 1985-96
Beaver Brook at Splitrock Reservoir, NJ	01380000	5.50	1925-46, 1976-88a
Passaic River at Towaco, NJ	01381950	355	1993-97
Pequannock River at Riverdale, NJ	01382800	83.9	1994-97
Wanaque River at Monks, NJ	01384000	40.4	1935-85
Cupsaw Brook near Wanaque, NJ	01385000	4.37	1935-58
Erskine Brook near Wanaque, NJ	01385500	1.14	1934-38
West Brook near Wanaque, NJ	01386000	11.8	1935-78
Blue Mine Brook near Wanaque, NJ	01386500	1.01	1935-58
Pompton River at Mountain View, NJ	01388910	371	1993-97
Deepavaal Brook near Fairfield, NJ	01389130	1.37	1993-97
Passaic River at Paterson, NJ	01389800	785	1897-1955
Hohokus Brook at Ho-Ho-Kus, NJ	01391000*	16.4	1954-73, 1977-96
Weasel Brook at Clifton, NJ	01392000	4.45	1937-62
Third River at Passaic, NJ	01392210	11.8	1977-97
Second River at Belleville, NJ	01392500	11.6	1938-64
Elizabeth River at Irvington, NJ	01393000	2.90	1931-38
Elizabeth River at Elizabeth, NJ	01393500	20.2	1922-73
East Fork East Branch Rahway River at West Orange, NJ	01393800	.83	1972-74
West Branch Rahway River at Millburn, NJ	01394000	7.10	1940-50
Robinsons Branch Rahway River at Goodmans, NJ	01395500	12.7	1921-24
Robinsons Branch at Rahway, NJ	01396000	21.6	1939-96
Walnut Brook near Flemington, NJ	01397500*	2.24	1936-61
Back Brook tributary near Ringoes, NJ	01398045*	1.98	1977-88
Holland Brook at Readington, NJ	01398107	9.00	1978-95
North Branch Raritan River at Pluckemin, NJ	01399000	52.0	1903-06
Lamington (Black) River at Succasunna, NJ	01399190	7.37	1976-87
Lamington (Black) River near Ironia, NJ	01399200	10.9	1975-87
Upper Cold Brook near Pottersville, NJ	01399510	2.18	1972-96
Axle Brook near Pottersville, NJ	01399525*	1.22	1977-88
South Branch Rockaway Creek at Whitehouse, NJ	01399690	13.2	1964-67, 1977-86
North Branch Raritan River at North Branch, NJ	01399830*	174	1977-81
Peters Brook near Raritan, NJ	01400300	4.19	1978-95
Macs Brook at Somerville, NJ	01400350	.77	1982-95
Millstone River at Plainsboro, NJ	01400730*	65.8	1964-75, 1987-89
Baldwins Creek at Baldwin Lake, near Pennington, NJ	01400932	2.52	1963-70
Honey Branch near Pennington, NJ	01400953	.70	1967-75
Millstone River at Carnegie Lake, at Princeton, NJ	01401301*	159	1972-74, 1987-89
Millstone River near Kingston, NJ	01401500	171	1934-49
Royce Brook tributary at Frankfort, NJ	01402590	.29	1969-74

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record
Royce Brook tributary near Belle Mead, NJ	01402600	1.20	1966-74, 1980-95
Raritan River at Bound Brook, NJ	01403000	779	1903-09, 1945-66
WB Middle Brook near Somerville, NJ	01403160	3.83	1983-86
Green Brook at Plainfield, NJ	01403500*	9.75	1938-84
Bound Brook at Middlesex, NJ	01403900*	48.4	1972-77
Bound Brook at Bound Brook, NJ	01404000	49.0	1923-30
Lawrence Brook at Patricks Corner, NJ	01404500	29.0	1922-26
Lawrence Brook at Farrington Dam, NJ	01405000	34.4	1927-90
Matchaponix Brook at Spotswood, NJ	01405300	43.9	1957-67
South River at Old Bridge, NJ	01405500	94.6	1939-88
Deep Run near Browntown, NJ	01406000	8.07	1932-40
Tennent Brook near Browntown, NJ	01406500	5.25	1932-41
Matawan Creek at Matawan, NJ	01407000	6.11	1932-55
South Branch Metedeconk River at Lakewood, NJ	01408140	26.0	1973-76
Cedar Creek at Lanoka Harbor, NJ	01409000	55.3	1933-58, 1971
Oyster Creek near Brookville, NJ	01409095	7.43	1965-84
Westecunk Creek at Stafford Forge, NJ	01409280	15.8	1974-88
West Branch Wading River near Jenkins, NJ	01409810	84.1	1974-96
Absecon Creek at Absecon, NJ	01410500	17.9	1946-85
Great Egg Harbor River tributary at Sicklerville, NJ	01410787	1.64	1972-79
Fourmile Branch at New Brooklyn, NJ	01410810	7.74	1973-79
Great Egg Harbor River near Blue Anchor, NJ	01410820	37.3	1972-79
Maurice River at Brotmanville, NJ	01411485	88.1	1992-94
Blackwater Branch at Norma, NJ	01411495	12.5	1992-94
Maurice River near Millville, NJ	01411800	191	1992-94
Maurice River at Union Lake Dam at Millville, NJ	01411878	216 (revised)	1993-94
Menantico Creek near Millville, NJ	01412000	23.2	1931-57, 1978-85
West Branch Cohansey River at Seeley, NJ	01412500*	2.58	1951-67
Cohansey River at Seeley, NJ	01412800	28.0	1978-88
Loper Run near Bridgeton, NJ	01413000	2.34	1937-59
Delaware River below Tocks Island Damsite, near Delaware Water Gap	01440200	3,850	1964-96
Paulins Kill at Columbia, NJ	01444000	179	1908-09
Pequest River at Huntsville, NJ	01445000	31.0	1940-62
Pequest River at Townsburly, NJ	01445430	92.5	1977-80
Beaver Brook near Belvidere, NJ	01446000	36.7	1923-61
Brass Castle Creek near Washington, NJ	01455160	2.34	1970-83a
Pohatcong Creek at New Village, NJ	01455200	33.3	1960-70
Beaver Brook near Weldon, NJ	01455355	1.72	1969-71
Musconetcong River at outlet of Lake Hopatcong, NJ	01455500	25.3	1928-75
Musconetcong River near Hackettstown, NJ	01456000	68.9	1922-73
Delaware River at Riegelsville, NJ	01457500*	6328	1906-71
Delaware and Raritan Canal at Kingston, NJ	01460500	---	1947-91
Delaware River at Lambertville, NJ	01462000	6680	1898-06
New Sharon Run at Carsons Mills, NJ	01463587	6.63	1976-77
Shipetaukin Creek tributary at Lawrenceville, NJ	01463657	.78	1976-77
Little Shabakunk Creek at Bakersville, NJ	01463690	3.98	1976-77
Thorton Creek at Bordentown, NJ	01464525*	.84	1976-77
South Branch Rancocas Creek at Vincentown, NJ	01465850	64.5	1961-75
Middle Branch Mount Misery Brook in Lebanon State Forest, NJ	01466000	2.82	1953-65, 1977
Mill Creek near Willingboro, NJ	01467019	4.12	1975-78

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record
Mill Creek at Levitt Parkway, at Willingboro, NJ	01467021	9.12	1975-77
Mantua Creek at Pitman, NJ	01475000	6.05	1940-76
Still Run near Mickleton, NJ	01476600	3.98	1957-66
Oldmans Creek near Woodstown, NJ	01477500	18.5	1932-40
Salem River at Woodstown, NJ	01482500	14.6	1940-85, 1989
Alloway Creek at Alloway, NJ	01483000	20.3	1953-72

a Not published, on file at U.S. Geological Survey, West Trenton, NJ.

DISCONTINUED LOW-FLOW STATIONS

The following low-flow partial-record stations in New Jersey have been discontinued. Stream flow measurements were made during periods of base-flow, for the period of record shown for each station. These measurements, when correlated with the simultaneous discharge at nearby continuous-record sites, will give a picture of the low-flow potentiality of a stream.

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Wallkill River at outlet Lk Mohawk at Sparta, NJ	01367620	4.38	1979-86
Wallkill River at Franklin, NJ	01367700	29.4	1959-64, 1982-83, 1985, 1987-90
Beaver Run near Hamburg, NJ	01367750	5.59	1966-72
Papakating Creek at Pelletstown, NJ	01367800	15.8	1959-64
West Branch Papakating Creek at McCoys Corner, NJ	01367850	11.0	1967-72
Clove Brook above Clove Acre Lake at Sussex, NJ	01367890	19.2	1967-72
Clove Brook at Sussex, NJ	01367900	19.7	1959-64
Musquapsink Brook near Westwood, NJ	01377475	2.12	1964-72, 1975, 1978, 1981-86
Tenakill Brook at Cresskill, NJ	01378350	3.01	1964-73, 1975
Dwars Kill at Norwood, NJ	01378410	4.23	1973-80
Norwood Brook at Norwood, NJ	01378430	2.03	1973-80
Hirshfeld Brook at New Milford, NJ	01378520	4.54	1965-72
French Brook at New Bridge, NJ	01378530	.46	1965-72
Coles Brook at Hackensack, NJ	01378560	7.00	1965-72
Wolf Creek at Ridgewood, NJ	01378615	1.18	1964-72
Passaic River at outlet Osborn Pd at Osborn Mill, NJ	01378700	10.1	1961-68
Great Brook at Green Village, NJ	01378750	7.92	1961-65
Primrose Brook near New Vernon, NJ	01378800	4.68	1961-65
Great Brook near Basking Ridge, NJ	01378850	23.1	1961-65
Black Brook near Meyersville, NJ	01378900	11.7	1959-63
Harrisons Brook at Liberty Corner, NJ	01379150	3.74	1964-67
Dead River near Millington, NJ	01379200	20.8	1961-67, 1973-75, 1986-89
Passaic River at Stirling, NJ	01379300	84.1	1968-70, 1972-73, 1983-84
Passaic River at Lower Chatham Bridge near Chatham, NJ	01379550	116.0	1964, 1984, 1988-89
Passaic River at Hanover, NJ	01379570	128.0	1963-66, 1973, 1987-89
Rockaway River at Dover, NJ	01379750	30.8	1963-66, 1983-86
Hibernia Brook at outlet of Lake Telemark, NJ	01380050	2.53	1966-72
Stony Brook near Rockaway Valley, NJ	01380300	8.43	1963-67, 1985-86
Crooked Brook near Boonton, NJ	01381150	7.86	1963-66
Whippany River near Morristown, NJ	01381400	14.0	1964-72
Jacquis Brook at Greystone Park State Hospital, NJ	01381470	1.39	1967-73
Watnong Brook at Morris Plains NJ	01381490	7.77	1966-72, 1995
Whippany River near Whippany, NJ	01381600	48.5	1963-66, 1973
Troy Brook at Troy Hills, NJ	01381700	10.1	1961-66, 1972-73
West Brook at Troy Hills, NJ	01381750	1.32	1961-66
Pequannock River near Stockholm, NJ	01382050	5.39	1959-64
Kanouse Brook at Newfoundland, NJ	01382360	3.87	1963-67
Macopin River at Macopin Reservoir, NJ	01382450	5.25	1970-73
Belcher Creek at Stowaway Rd at West Milford, NJ	01382870	2.44	1973-77
Belcher Creek tributary at West Milford, NJ	01382880	.61	1973-77
Belcher Creek at West Milford, NJ	01382890	7.27	1973-77, 1995
Morsetown Brook at West Milford, NJ	01382910	1.31	1973-77
Green Brook near West Milford, NJ	01382960	1.47	1973-77
Cooley Brook near West Milford, NJ	01382990	1.34	1973-77
Stag Brook near Mahwah, NJ	01387520	1.35	1963-70, 1972

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Darlington Brook at Darlington, NJ	01387600	3.38	1963-67
Ramapo River near Darlington, NJ	01387670	131	1963-66,1982-83
Bear Swamp Brook near Oakland, NJ	01387700	3.25	1963-67
Ramapo River tributary 5 at Oakland, NJ	01387930	.86	1963-67
Ramapo River tributary 6 at Pompton Plains, NJ	01387950	1.79	1963-67
Haycock Brook at Pompton Lakes, NJ	01387980	4.18	1963-64,1973-77
Pompton River at Two Bridges, NJ	01389000	372	1963-68,1984,1986-88
Goffle Brook at Hawthorne, NJ	01389850	8.77	1963-67
Hohokus Brook at Wyckoff, NJ	01390700	5.31	1963-67
Valentine Brook at Allendale, NJ	01390800	2.48	1963-67
Saddle River at Paramus, NJ	01391110	45.0	1964-69,1971-72
Sprout Brook at Rochelle Park, NJ	01391485	5.56	1964-72
Third River at Nutley, NJ	01392200	11.4	1963-73
Elizabeth River below Chancellor Ave at Irvington, NJ	01393200	5.14	1955,1961-62,1966
South Branch Rahway River at Colonia, NJ	01396030	9.41	1979-86
South Branch Raritan River trib 7 at Budd Lake, NJ	01396080	.21	1973-1977
South Branch Raritan River at outlet of Budd Lake, NJ	01396090	5.03	1964,1973-77,1980-83
South Branch Raritan River at Bartley, NJ	01396120	12.5	1964-73,1990
Drakes Brook at Reger Road at Flanders, NJ	01396160	11.6	1965,1990
Drakes Brook at Bartly, NJ	01396180	16.6	1964-73,1975-76,1988-90
South Branch Raritan River at Middle Valley, NJ	01396280	47.7	1963-67,1973,1975,1982-92
South Branch Raritan River at Califon, NJ	01396350	58.5	1975-76,1989-90
Spruce Run near High Bridge, NJ	01396590	15.5	1973-77
Spruce Run near Clinton, NJ	01396600	18.1	1959-64
Mulhockaway Creek at Van Syckel, NJ	01396670	11.8	1973-77
Mulhockaway Creek near Clinton, NJ	01396700	20.5	1959-64
Capoolong Creek at Lansdowne, NJ	01396900	14.1	1959-65
Prescott Brook at Round Valley, NJ	01397100	4.61	1958-63
Assiscong Creek at Bartles Corners, NJ	01397290	2.98	1981-89
Neshanic River near Fleminton, NJ	01397800	11.4	1981-89
Third Neshanic River near Ringoes, NJ	01397900	9.24	1981-89
Back Brook near Reaville, NJ	01398052	11.4	1981-89
Pleasant Run at Centerville, NJ	01398075	8.11	1982-89
India Brook near Mendham, NJ	01398220	4.36	1964-67
North Branch Raritan River near Chester, NJ	01398260	7.57	1964-67,1980-92
Dawsons Brook near Ironia, NJ	01398300	1.04	1964-67
Burnett Brook near Chester, NJ	01398360	6.64	1964-67
Peapack Brook at Gladstone, NJ	01398700	4.23	1964-67
Peapack Brook at Far Hills, NJ	01398850	11.7	1964-67,1973-76
Mine Brook at Far Hills, NJ	01398950	7.78	1964-67,1973-76
Middle Brook at Burnt Mills, NJ	01399100	6.67	1964-67,1976
Lamington River near Chester, NJ	01399280	17.3	1963-64,1973,1990
Cold Brook at Oldwick, NJ	01399540	5.32	1973-76
Rockaway Creek at McCrea Mills, NJ	01399570	17.0	1961-65
South Branch Rockaway Creek tributary at Lebanon, NJ	01399600	1.02	1958,1960-64

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Rockaway Creek at Whitehouse, NJ	01399700	37.1	1959-62, 1964-65, 1973
Chambers Brook near North Branch, NJ	01399820	4.71	1964-72
Chambers Brook at North Branch Depot, NJ	01399900	10.2	1959-64, 1976
Millstone River at Applegarth, NJ	01400560	15.0	1960-64, 1971-72
Millstone River at Hightstown, NJ	01400580	19.7	1960-64, 1969-74
Rocky Brook at Hightstown, NJ	01400593	9.58	1965-72
Peddie Brook at Hightstown, NJ	01400596	3.07	1965-72
Millstone River at Locust Corner, NJ	01400600	37.5	1959-64, 1971-72
Cranbury Brook at Old Church, NJ	01400670	3.69	1960-64
Cranbury Brook at Cranbury Station, NJ	01400700	9.56	1959-64, 1971-72
Bear Brook near Hickory Corner, NJ	01400750	3.46	1960-65
Little Bear Brook at Hickory Corner, NJ	01400770	1.88	1960-64
Bear Brook near Grovers Mill, NJ	01400800	9.52	1959-64
Bear Brook at Princeton Junction, NJ	01400810	12.4	1962-67, 1971-72
Millstone River at Princeton Junction, NJ	01400820	78.5	1960-61
Woodsville Brook at Woodsville, NJ	01400850	1.78	1957-59, 1965-73
Stony Brook at Pennington, NJ	01400947	26.7	1965-72
Honey Branch near Rosedale, NJ	01400970	3.83	1957-59, 1971-72
Stony Brook at Clarksville, NJ	01401100	46.5	1959-64
Duck Pond Run at Clarksville, NJ	01401200	3.74 (revised)	1954-55, 1960-67
Beden Brook near Hopewell, NJ	01401520	6.67	1965-72
Rock Brook at Blawenburg, NJ	01401590	8.02	1962-67, 1971-72
Pike Run near Rocky Hill, NJ	01401700	22.2	1959-63, 1971-72
Ten Mile Run near Blackwells Mills, NJ	01401800	4.36	1960-64, 1971-72
Six Mile Run at Blackwells Mills, NJ	01401900	16.1	1960-67, 1971-72
Royce Brook at Manville, NJ	01402700	11.7	1960-64
East Branch Middle Brook at Martinsville, NJ	01403100	8.45	1959-64
Bound Brook at South Plainfield, NJ	01403330	9.55	1979-86
Cedar Brook at South Plainfield, NJ	01403350	7.10	1979-86
Ambrose Brook at Middlesex, NJ	01404060	13.9	1979-91
Mill Brook at Highland Park, NJ	01404180	1.41	1979-86
Lawrence Brook at outlet of Davidsons Mill Pond, NJ	01404300	12.2	1973-77
Oakeys Brook near Patricks Corner, NJ	01404400	4.75	1973-77
Beaverdam Brook near Patricks Corner, NJ	01404700	1.51	1973-77
Milford Brook at Englishtown, NJ	01405170	4.86	1982, 1984-91
McGellairds Brook at Englishtown, NJ	01405180	14.9	1982, 1984-91
Pine Brook at Clarks Mills, NJ	01405210	4.66	1982, 1984-91
Matchaponix Brook near Englishtown, NJ	01405240	29.1	1978-88
Barclay Brook near Englishtown, NJ	01405285	4.94	1977-88
Manalapan Brook near Manalapan, NJ	01405335	16.0	1979-88
Manalapan Brook at Bridge Street at Spotswood, NJ	01405440	43.9	1973-76
Iresick Brook at East Spotswood, NJ	01405470	2.29	1973-77
East Creek at North Centerville, NJ	01407055	2.56	1969, 1986-93
Waachaack Creek at Middle Road near Keansburg, NJ	01407070	4.30	1987-93
Town Brook at Church Street at New Monmouth, NJ	01407102	3.35	1987-93

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Hop Brook at Holmdel, NJ	01407200	5.72	1969-74,1989
Willow Brook at Holmdel, NJ	01407250	6.88	1969-74,1989
Big Brook at Vanderburg, NJ	01407300	8.41	1969-74,1989
Yellow Brook at Colts Neck, NJ	01407400	9.71	1969-74,1989
Mine Brook at Colts Neck, NJ	01407450	5.48	1969-74,1989
Pine Brook at Tinton Falls, NJ	01407520	12.1	1969-74,1989
Poricy Brook at Red Bank, NJ	01407532	2.54	1987-93
Shark River at Glendola, NJ	01407700	9.14	1956-63,1966
Wreck Pond Brook near Spring Lake, NJ	01407800	7.00	1956-63,1966
Debois Creek at Adelphia, NJ	01407860	7.21	1966,1969-74
Yellow Brook at West Farms, NJ	01407890	3.57	1966,1969-74
Manasquan River at West Farms, NJ	01407900	33.5	1959-66,1973
Timber Swamp Creek near Farmingdale, NJ	01407970	3.38	1964-72
Mingamahone Brook at Squankum, NJ	01408020	10.7	1966,1969-74
North Branch Metedeconk River at Lakewood, NJ	01408100	19.4	1959-63,1966
Toms River at Whitesville, NJ	01408300	45.2	1959-63,1966
Union Branch at Lakehurst, NJ	01408440	19.0	1960-64
Manapaqua Brook at Lakehurst, NJ	01408460	6.32	1960-64
Ridgeway Branch near Lakehurst, NJ	01408490	28.2	1959-63
Webbs Mill Branch near Whiting, NJ	01408800	2.92	1973-77
Webbs Mill Branch tributary near Whiting, NJ	01408810	.53	1973-77
North Branch Forked River near Forked River, NJ	01409050	13.4	1961-65
South Branch Forked River near Forked River, NJ	01409080	1.28	1968-74
Oyster Creek near Waretown, NJ	01409100	9.95	1961-65
Mill Creek near Manahawkin, NJ	01409150	10.4	1961-67
Fourmile Branch near Manahawkin, NJ	01409200	5.24	1961-67
Cedar Run near Manahawkin, NJ	01409250	3.34	1961-67
Mullica River at outlet Atsion Lake at Atsion, NJ	01409387	26.7	1980-81,1985-89
Mill Branch near Tuckerton, NJ	01409300	4.89	1961-67
Mullica River tributary near Atsion, NJ	01409395	4.10	1975-77
Wildcat Branch at Chesilhurst, NJ	01409403	1.03	1974-77
Sleeper Branch near Atsion, NJ	01409404	18.2	1975-77
Clark Branch near Atsion, NJ	01409405	7.12	1975-77
Sleeper Branch at Batsto, NJ	01409406	36.1	1975-77
Pump Branch near Blue Anchor, NJ	01409407	6.20	1974-77
Blue Anchor Brook near Blue Anchor, NJ	01409409	3.01	1974-77
Albertson Brook near Hammonton, NJ	01409410	19.3	1975-77
Nescochague Creek at Pleasant Mills, NJ	01409411	43.8	1975-77
Springers Brook near Indian Mills, NJ	01409450	12.6	1959-63,1977
Springers Brook near Atsion, NJ	01409460	21.2	1975-77
Landing Creek at Philadelphia Ave at Egg Harbor City, NJ	01409575	4.86	1974-77
West Branch Wading River near Chatsworth, NJ	01409730	44.8	1975-77
Tulpehocken Creek near Jenkins, NJ	01409780	21.9	1975-77
West Branch Wading River near Harrisville, NJ	01409800	83.9	1957-63
Oswego River at Oswego Lake, NJ	01409970	61.4	1975-77

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
West Branch Bass River near New Gretna, NJ	01410200	6.54	1969-74
Clarks Mill Stream at Port Republic, NJ	01410215	8.61	1986-93
Morses Mill Stream at Port Republic, NJ	01410225	8.25	1986-93
Great Egg Harbor River at Berlin, NJ	01410775	1.88	1964-74
Great Egg Harbor River near Sicklerville, NJ	01410784	15.1	1971-77
Fourmile Branch near Williamstown, NJ	01410800	5.34	1959-64, 1971
Penny Pot Stream near Folsom, NJ	01411020	5.35	1968-72
Hospitality Branch near Cecil, NJ	01411040	8.30	1990-92
Whitehall Branch near Cecil, NJ	01411042	2.21	1990-92
Hospitality Branch at Berryland, NJ	01411053	20.0	1976-86
Deep Run at Weymouth, NJ	01411140	20.0	1976-86
Babcock Creek at Mays Landing, NJ	01411200	20.0	1959-63
English Creek near Scullville, NJ	01411250	3.80	1986-93
Tarkiln Brook near Head of River, NJ	01411299	7.40	1990-92
Mill Creek near Steelmantown, NJ	01411302	3.82	1990-91
Mill Branch near Northfield, NJ	01411305	7.47	1986-93
Mill Creek at outlet Magnolia Lk at Ocean View, NJ	01411351	2.28	1991-92
Mill Creek at Cold Spring, NJ	01411388	1.34	1991-92
Fishing Creek at Rio Grande, NJ	01411400	2.29	1965-72, 1990-92
Green Creek at Green Creek, NJ	01411404	2.49	1965-72
Dias Creek near Cape May Court House, NJ	01411408	1.27	1965-73, 1991-92
Bidwell Creek tributary near Cape May Court House, NJ	01411410	.41	1967-73, 1990-92
Bidwell Creek trib. No. 2 near Cape May Court House, NJ	01411412	.19	1967-72
Goshen Creek at Goshen, NJ	01411418	.33	1967-72, 1990-92
Dennis Creek trib No. 2 at Dennisville, NJ	01411428	4.00	1990-92
Sluice Creek at Clermont, NJ	01411430	.67	1967-72, 1990-91
Sluice Creek near South Dennis, NJ	01411434	8.47	1991-92
Dennis Creek trib. No. 1 near Dennisville, NJ	01411438	2.74	1990-92
East Creek near Eldora, NJ	01411442	8.10	1990-92
West Creek at outlet Pickle Factory Pond near Eldora, NJ	01411445	11.9	1990-92
Still Run at Aura, NJ	01411450	3.21	1976-90
Scotland Run near Williamstown, NJ	01411460	3.96	1966, 1990-92
Scotland Run at Fries Mill, NJ	01411461	9.25	1990-92
Scotland Run at Franklinville, NJ	01411462	14.8	1976-90
Muddy Run at Centerton, NJ	01411700	37.7	1976-84
Maurice River near Millville, NJ	01411800	191.0	1966-72
Mill Creek near Millville, NJ	01411850	15.1	1973-79
Buckshutem Creek near Laurel Lake, NJ	01411950	16.1	1976-84
Muskee River near Port Elizabeth, NJ	01412120	13.1	1969, 1976-84
Cohansey River near Beals Mill, NJ	01412405	9.44	1976-84
Barrett Run near Bridgeton, NJ	01413010	7.02	1966, 1976-84
Indian Fields Branch at Bridgeton, NJ	01413020	4.64	1976-84
Stow Creek at Jericho, NJ	01413050	8.00	1966-74
Canton Ditch near Canton, NJ	01413060	2.50	1959-63
Raccoon Ditch at Davis Mill, NJ	01413080	3.19	1976-84

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Shimers Brook near Montague, NJ	01438400	7.07	1958-64,1966
Big Flat Brook near Hainesville, NJ	01439800	22.6	1959-64,1966
Big Flat Brook at Tuttles Corner, NJ	01439830	28.2	1963,1970-73
Little Flat Brook at Hainesville, NJ	01439900	7.73	1959-64
Vancampens Brook near Millbrook, NJ	01440100	7.27	1958-68
Stony Brook near Columbia, NJ	01442800	3.51	1958-68
East Branch Paulins Kill Trib. No. 2 near Woodruffs, NJ	01443260	2.81	1992-97
East Branch Paulins Kill Trib. No. 1 near Lafayette, NJ	01443275	1.81	1992-97
Paulins Kill at Lafayette, NJ	01443300	33.0	1959-64,1966
Culvers Creek at Branchville, NJ	01443400	11.2	1959-64
Paulins Kill near Newton, NJ	01443450	69.0	1973-77
Paulins Kill at Paulins Kill, NJ	01443460	72.9	1973-77
Trout Brook near Middletown, NJ	01443475	24.0	1979-89
Honey Run near Ramseysburg, NJ	01445800	2.21	1982-90
Honey Run near Hope, NJ	01445900	10.3	1966-72
Pohatcong Creek at Carpentersville, NJ	01455300	57.1	1932,1952-64
Weldon Brook near Woodport, NJ	01455350	3.27	1965-69,1971-72
Beaver Brook near Woodport, NJ	01455360	2.79	1966-72
Weldon Brook at Hurdton, NJ	01455370	8.10	1973-77
Musconetcong River at Stanhope, NJ	01455550	29.7	1973-76
Lubbers Run at Lockwood, NJ	01455780	16.3	1982-90, 1995
Hatchery Brook at Hackettstown, NJ	01456100	1.81	1966-72
Hakihokake Creek at Milford, NJ	01458100	17.2	1944,1958-64
Harihokake Creek near Frenchtown, NJ	01458400	9.75	1944,1958-65
Nishisakawick Creek at Frenchtown, NJ	01458600	11.0	1958-64
Little Nishisakawick Creek at Frenchtown, NJ	01458700	3.50	1958-65
Lockatong Creek near Raven Rock, NJ	01460900	23.2	1944,1958-64
Alexauken Creek near Lambertville, NJ	01461900	14.9	1944,1958-64
Moore Creek near Titusville, NJ	01462200	10.2	1958-64
Jacobs Creek at Somerset, NJ	01462800	13.3	1957-64
Shipetaukin Creek at Lawrenceville, NJ	01463650	4.48	1963-67
Shipetaukin Creek at Bakersville, NJ	01463670	8.96	1963-67
Shabakunk Creek at Ewingville, NJ	01463750	5.00	1963-67
West Branch Shabakunk Creek near Ewingville, NJ	01463790	4.56	1963-72
Miry Run at Robbinsville, NJ	01463830	4.02	1963-67
Miry Run at Mercerville, NJ	01463860	12.4	1963-67
Pond Run at Trenton, NJ	01463980	8.94	1963-69,1971-72
Crosswicks Creek near Cookstown, NJ	01464300	24.9	1966,1969-74
North Run at Cookstown, NJ	01464380	7.17	1966,1969-74
Lahaway Creek near Hornerstown, NJ	01464460	21.4	1966,1969-74
Miry Run at Holmes Mills, NJ	01464480	3.15	1966,1969-74
Doctors Creek at Allentown, NJ	01464515	17.2	1966,1968-72,1991-92
Blacks Creek at Mansfield Square, NJ	01464530	19.7	1966-72
Crafts Creek at Hedding, NJ	01464540	10.6	1959-63
Assiscunk Creek at Columbus, NJ	01464580	8.28	1959-63

DISCONTINUED LOW-FLOW STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Assiscunk Creek near Burlington, NJ	01464590	37.2	1966-74
Southwest Branch Rancocas Creek at Medford, NJ	01465880	47.2	1961-66,1973
Sharps Run at Medford, NJ	01465884	4.41	1982-90
Little Creek near Lumberton, NJ	01465898	19.2	1982-90
Southwest Branch Rancocas Creek at Eayrestown, NJ	01465900	76.2	1959-61
Parkers Creek near Mount Laurel, NJ	01467010	2.66	1964-72
Mill Creek at Willingboro, NJ	01467020	7.73	1959-64,1976
Pompeston Creek at Cinnaminson, NJ	01467057	5.74	1964-72
North Branch Pennsauken Creek at Maple Shade, NJ	01467070	13.0	1959-63
South Branch Pennsauken Creek at Maple Shade, NJ	01467080	8.13	1964-67
Newton Creek at Collingswood, NJ	01467305	1.32	1964-72
Newton Creek at West Collingswood, NJ	01467312	3.48	1964-72
S. Br. Newton Creek at Glover Ave at Haddon Heights, NJ	01467315	.52	1968-74
S. Br. Newton Creek at Haddon Heights, NJ	01467317	.63	1964-67
N. Br. Big Timber Creek at Laurel Springs, NJ	01467350	6.55	1959-71
Mantua Creek at Glassboro, NJ	01474950	1.20	1965-66,1974-77
Mantua Creek at Greentree Road, at Glassboro, NJ	01474970	2.78	1965-66,1974-77
Raccoon Creek near Mullica Hill, NJ	01477100	10.1	1959-63
South Branch Raccoon Creek near Mullica Hill, NJ	01477118	8.30	1966-72
Salem River at Sharptown, NJ	01482520	27.3	1966-72,1974-75
Major Run at Sharptown, NJ	01482530	3.04	1966-72,1974-75
Deep Run near Alloway, NJ	01483010	5.30	1977-84

WATER RESOURCES DATA - NEW JERSEY, 1998

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey (USGS), in cooperation with Federal, State, and local agencies, collects a large amount of data pertaining to the water resources of New Jersey each water year. These data, accumulated over many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the USGS, the data are published annually in this report series, titled "Water Resources Data-New Jersey."

This report series includes records of stage, discharge, and water quality in streams; stage and contents, and water quality in lakes and reservoirs; and water levels and water quality in ground-water wells. This volume contains records of water discharge at 91 gaging stations; tide summaries at 7 gaging stations; and stage and contents at 35 lakes and reservoirs. Also included are stage and discharge for 71 crest-stage partial-record stations and stage-only at 29 tidal crest-stage gages. Locations of these sites are shown in figures 6 and 7. Additional water data were collected at various sites that are not part of the systematic data-collection program. These include discharge measurements made at 78 low-flow partial-record stations and 82 miscellaneous sites. The data in this report represent that part of the National Water Information System (NWIS) data collected by the USGS and cooperating Federal, State, and local agencies in New Jersey.

This series of annual reports for New Jersey 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 in 1975, surface-water, water-quality, and ground-water data were combined in one volume. Beginning with the 1977 water year, these data were published in two volumes based on drainage basins. Beginning with the 1990 water year, the format was changed to include all surface-water discharge and surface-water quality records in Volume 1 and all ground-water level and ground-water quality records in Volume 2. Beginning this water year, the format has changed to include surface-water discharge records in Volume 1, ground-water level records in Volume 2, and surface-water and ground-water quality records in Volume 3.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for New Jersey 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, Part 1B." For water years 1961 through 1970, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for water years 1941 through 1970 were published annually under the title "Quality of Surface Waters of the United States," and water levels for water years 1935 through 1974 were published under the title "Ground-Water Levels in the United States." The above-mentioned Water-Supply Papers can be consulted in the libraries of the principal cities of the United States and can be purchased from U.S. Geological Survey, Branch of Information Services, Box 25286, Denver, CO 80225-0286, (303) 202-4610.

Publications similar to this report are produced annually by the USGS for all States. These 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 NJ-98-1." For archiving and general distribution purposes, the reports for water years 1971 through 1974 also are identified as water-data reports. Water-data reports are available for purchase in paper copy or in microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports can be obtained from the District Chief, USGS, New Jersey District, at the address given on the back of the title page of this report or by telephone ((609) 771-3900).

COOPERATION

The U.S. Geological Survey and agencies of the State of New Jersey have had joint-funding agreements for the collection of water-resource records since 1921. Organizations that assisted in collecting the data in this report through joint-funding agreements with the USGS are--

New Jersey Department of Environmental Protection,
Robert C. Shinn, Jr., Commissioner
New Jersey Department of Transportation, James Weinstein,
Commissioner
New Jersey Water Supply Authority, Thomas G. Baxter,
Executive Director
North Jersey District Water Supply Commission, Jerry
Notte, General Manager
Passaic Valley Water Commission, Joseph A. Bella,
Executive Director
City of New Brunswick, Shawn Maloney, Director, Water
Utility Department
County of Bergen, Quenten Weist II, Director of Public
Works and County Engineer
County of Essex, John A. Vitale, County Engineer
County of Gloucester, Charles E. Romick, Director of
Planning
County of Mercer, James Lambert, Executive Director,
Mercer County Improvement Authority
County of Morris, Alexander A. Slavin, Chairman, Morris
County Municipal Utilities Authority
County of Somerset, Michael J. Amorosa, County Engineer
Pinelands Commission, Terrance D. Moore, Executive
Director
Brick Township Municipal Utilities Authority, Kevin F.
Donald, Executive Director
Township of West Windsor, Ronald Rogers, Chairman of
Environmental Commission
Borough of Westwood, Donald F. Rainey, Borough
Administrator
Delaware River Basin Commission, Carol R. Collier,
Executive Director
Ocean County Soil Conservation District, David B.
Friedman, Director

Funding assistance was provided by the U.S. Army Corps of Engineers, for the collection of records at 4 surface-water stations, by the Fort Dix Directorate of Public Works for collection of records at 1 surface-water station, and by the U.S. Army Armament Research and Development Center for the collection of records at 3 surface-water stations. In addition, several stations were operated fully or partially with funds appropriated directly to the USGS. Funding also was supplied by the following Federal Energy Regulatory Commission licensees: GPU Generation Corporation, Passaic Valley Water Commission, and DAI Great Falls, Inc. Assistance was provided by the National Weather Service and the National Ocean Service.

The following organizations aided in collecting records:

New Jersey Department of Environmental Protection; Municipalities of Jersey City, Newark, New Brunswick, and Spotswood; Elizabethtown Water Company; Ewing-Lawrence Sewerage Authority; United Water New Jersey; New Jersey-American Water Company; Rockaway Valley Regional Sewerage Authority; and GPU Generation Corporation.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Precipitation and Reservoir Contents

Water year 1998 was a year of contrasts. The water year began and ended with below-normal precipitation and streamflow, but as a result of much greater than normal precipitation during the middle six months of the year, the yearly average for precipitation was greater than normal.

On October 27, the Delaware River Basin Commission (DRBC) issued a declaration of drought warning because of several months of below-normal precipitation. A declaration of drought warning in the Delaware River Basin is issued when the combined storage in three water-supply reservoirs in the upper part of the basin in New York falls below predetermined levels.

By January 13, above-normal precipitation, snow-melt, and water-use restrictions caused reservoir levels to increase sufficiently for the drought warning to be lifted. Precipitation during January through June was much greater than normal throughout the State, making it the third wettest January through June on record. (David Robinson, State Climatologist, Rutgers University, oral commun., 1999). During one 13-day period in May, some parts of the State received as much as 5 inches of rain. Water levels in many reservoirs reached spillway levels in April and continued to spill into June. By the end of June, weather patterns had shifted again, resulting in below-normal precipitation during July through September.

Water-year 1998 precipitation totals were above normal at the Trenton, Newark, and Atlantic City National Weather Service observer stations. The Trenton station

recorded 50.7 inches of precipitation, which is 116 percent of the 30-year reference-period (1961-90) mean. The Newark station recorded 50.47 inches, which is 115 percent of the 30-year mean. The Atlantic City station recorded 46.5 inches, which is 115 percent of the 30-year mean. Figure 1 shows monthly precipitation at the three National Weather Service stations compared with the 30-year means.

Combined usable contents of the 13 major water-supply reservoirs in New Jersey were 54.5 billion gallons at the end of September 1997, which is 103 percent of the 30-year mean (normal) contents for the end of September, and 67.9 percent of capacity. Contents increased to a maximum of 80.1 billion gallons by the end of April, which is 112 percent of normal contents for the end of April, and 99.7 percent of capacity. By September 30, 1998, the contents had declined to the minimum contents for the water year, 45.7 billion gallons, which is 86.6 percent of normal contents for the end of September, and 56.8 percent of capacity (fig. 2). The term "usable contents" is used here as a measure of the total volume of water that can be removed from a reservoir without pumping, and does not account for the volume of water below the bottom of the lowest outlet or pipe (sometimes referred to as dead storage).

Streamflow

The first noteworthy hydrologic event of the water year was the tidal flooding (at high tide) on November 7 that caused beach erosion in Atlantic and Ocean Counties. Several "Nor'easters" in November, December, and January brought more tidal flooding and beach erosion in Atlantic and Ocean Counties. The "Nor'easter" of February 4 packed more force than previous ones, and resulted in widespread flooding and \$17 million in property damage. Governor Christine Whitman declared Monmouth, Ocean, Atlantic and Cape May Counties to be disaster areas.

Streamflow at the index station for northern New Jersey (South Branch Raritan River near High Bridge) averaged 119 ft³/s for the water year, which is 96.7 percent of the 1919-98 average. Streamflow at the index station for southern New Jersey (Great Egg Harbor River at Folsom) averaged 87.6 ft³/s, which is 102 percent of the 1926-98 average. The observed annual mean discharge of the Delaware River at Trenton was 12,810 ft³/s, which is 109 percent of the 1913-98 average. The Delaware River is highly regulated by reservoirs and diversions. Monthly mean discharge at each of these index gaging stations during the current water year and the long-term normal monthly discharge are shown in figure 3. Annual mean discharge at each of these index gaging stations and the mean annual discharge for the period of record are shown in figure 4. Peak discharges at selected streamflow-gaging stations in the State are listed in table 1.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 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 human activities.

Table 1. Instantaneous peak discharge for water year 1998 and maximum instantaneous peak discharge for period of record prior to the 1998 water year at selected sites in New Jersey[>, greater than; <, less than; ft³/s, cubic feet per second]

Station number	Station name	Drainage area (square miles)	Date	Maximum instantaneous peak discharge, water year 1998 (ft ³ /s)	Approximate recurrence interval (years)	Date	Maximum instantaneous peak discharge prior to water year 1998 (ft ³ /s)
01379000	Passaic River near Millington	55.4	05/12	836	>2	10/20/96	2,290
01387500	Ramapo River near Mahwah	120	05/11	3,340	>2	04/05/84	15,500
01396500	South Branch Raritan River near High Bridge	65.3	04/10	1,210	<2	01/25/79	6,910
01400000	North Branch Raritan River near Raritan	190	04/10	5,110	<2	10/19/96	29,100
01402000	Millstone River at Blackwells Mills	258	01/24	5,180	<2	08/28/71	22,200
01403060	Raritan River below Calco Dam at Bound Brook	785	01/24	14,100	<2	08/28/71	46,100
01408000	Manasquan River at Squankum	44.0	03/09	1,530	>5	09/21/38	2,940
01408500	Toms River near Toms River	123	05/11	1,590	>10	09/23/38	2,000
01411000	Great Egg Harbor River at Folsom	57.1	05/11	365	>2	09/03/40	1,440
01411500	Maurice River at Norma	112	03/23	478	<2	09/02/40	7,360
01438500	Delaware River at Montague	3,480	01/09	43,800	<2	08/19/55	250,000
01440000	Flat Brook near Flatbrookville	64.0	05/11	1,040	<2	08/19/55	9,560
01445500	Pequest River at Pequest	106	05/12	1,160	>2	01/25/79	2,130
01463500	Delaware River at Trenton	6,780	05/12	69,500	<2	08/20/55	329,000

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

The National Atmospheric Deposition Program/ National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific

basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

<http://nadp.nrel.colostate.edu/NADP>

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

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

WATER RESOURCES DATA-NEW JERSEY, 1998

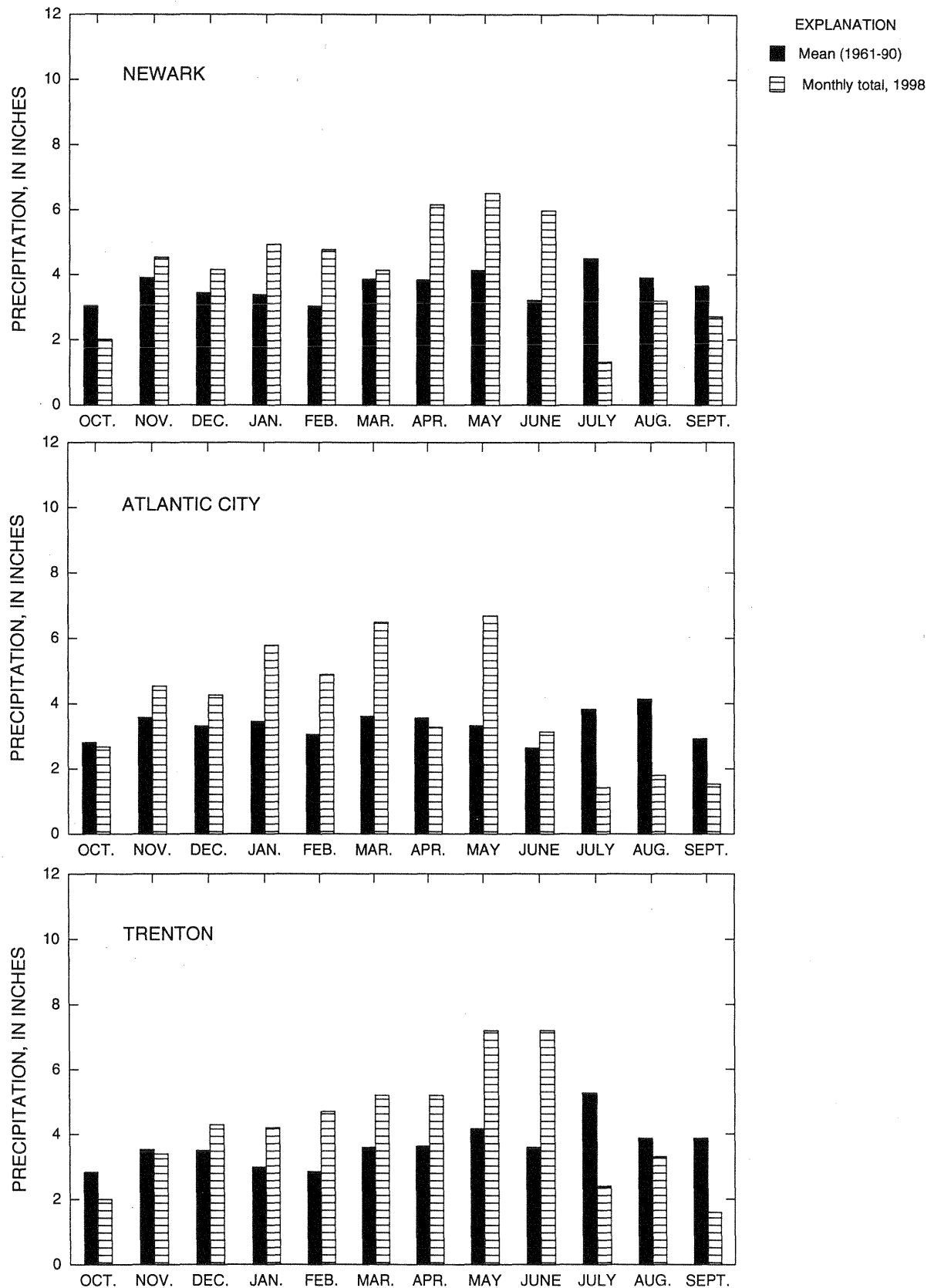
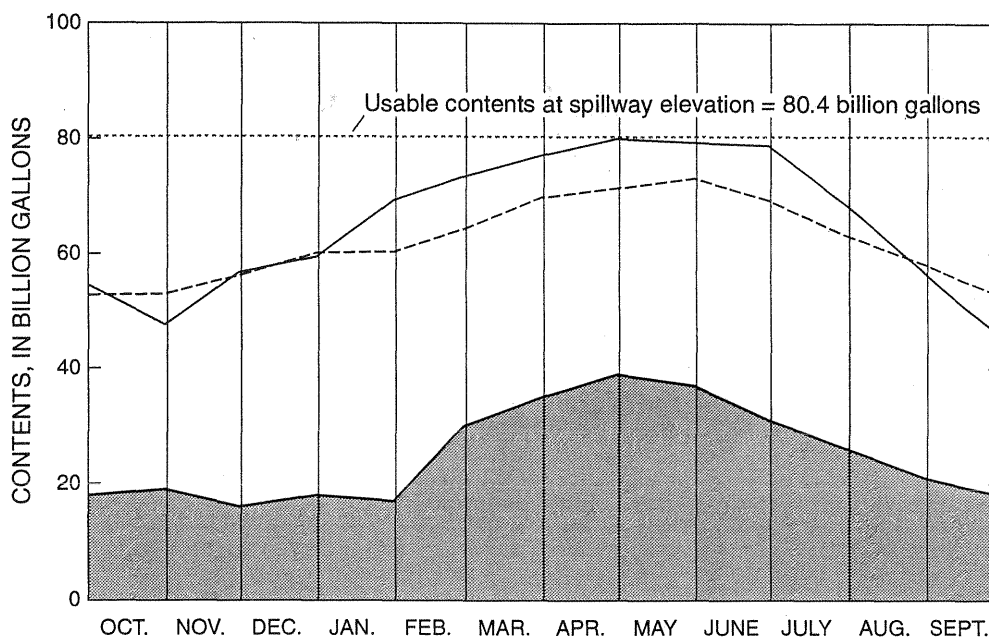



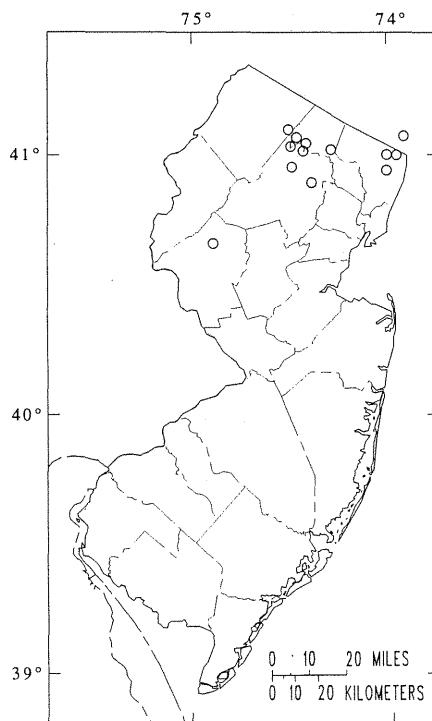


Figure 1. Monthly precipitation at three National Weather Service locations.



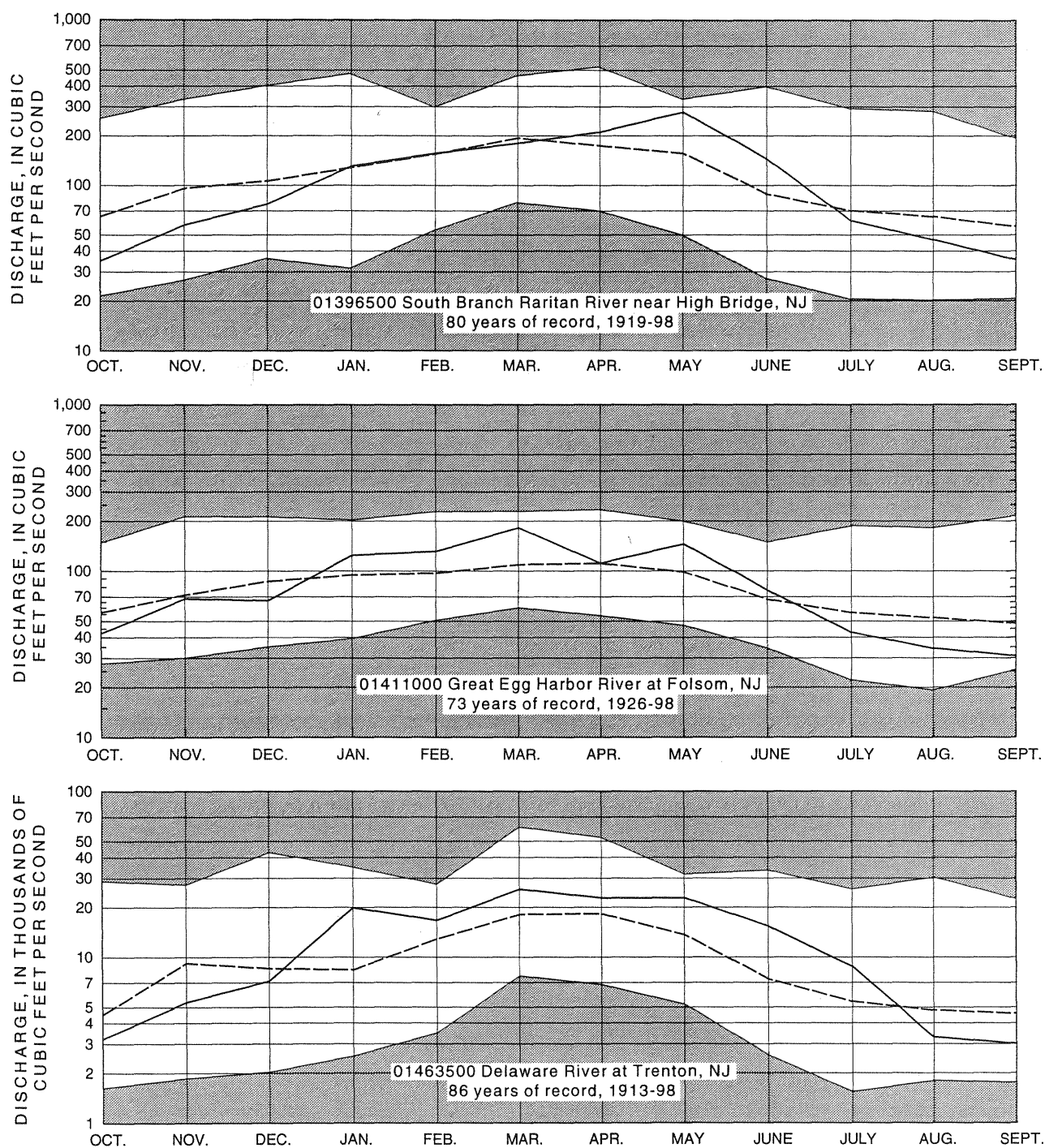
EXPLANATION

-  Shaded area indicates lowest monthly usable contents for reference period
-  Mean usable contents, 1961-90
-  Month-end usable contents, 1998 water year



Map showing locations of reservoirs

Figure 2. Combined usable contents of 13 major water-supply reservoirs.



EXPLANATION

UNSHADED AREA--Indicates range between highest and lowest mean recorded for the month, prior to 1998 water year

BROKEN LINE--Indicates normal (median of the monthly means) for the standard reference period, 1961-90

SOLID LINE--Indicates observed monthly mean flow for the 1998 water year

Figure 3. Monthly mean discharge at index gaging stations.

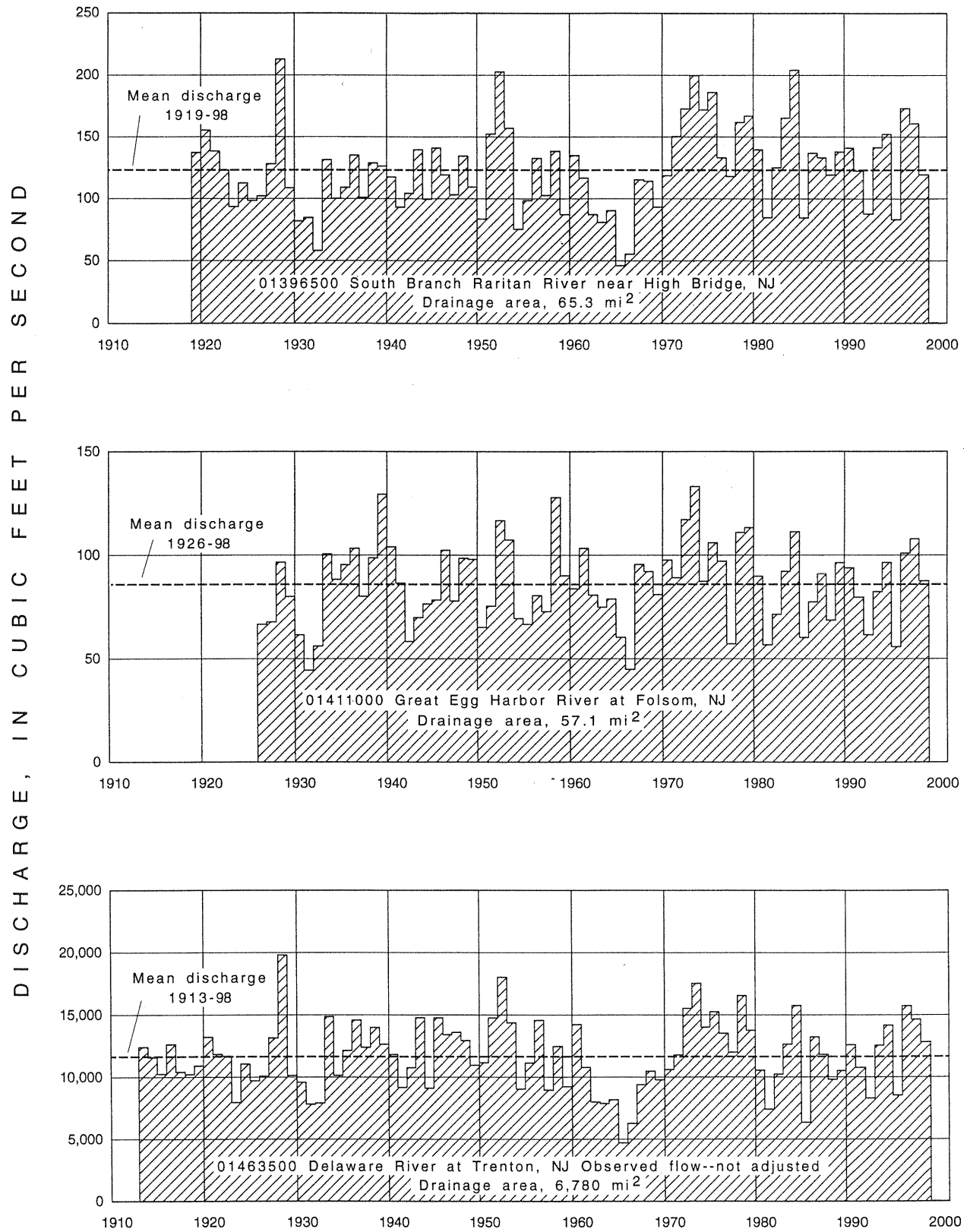


Figure 4. Annual mean discharge at index gaging stations.

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

Additional information about the NAWQA Program is available through the world wide web at:

http://www.wrvar.es.usgs.gov/nawqa/nawqa_home.html

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1998 water year that began October 1, 1997, and ended September 30, 1998. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs. The locations of the stations where the data were collected are shown in figures 6 and 7. 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 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. Generally the "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells.

Downstream Order System

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

bers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both 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 eight-digit number for each station, such as 01396500, which appears just to the left of the station name, includes the two-digit Part number "01" plus the 6-digit downstream-order number "396500". The Part number designates the major drainage basin; for example, Part "01" covers the North Atlantic slope basins. In some areas where all 8-digit numbers are used up, 10-digit station numbers are assigned between the 8-digit numbers.

Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites 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 are 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 (fig. 5).

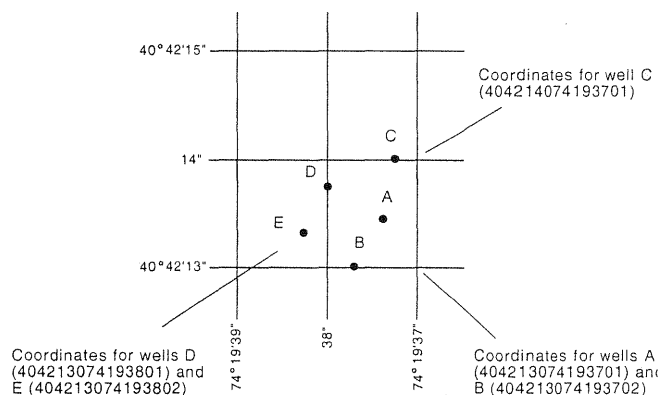


Figure 5.--System for numbering wells and miscellaneous sites (latitude and longitude)

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 con-

tinuous 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. Location of all gaging stations and partial-record stations for which data are given in this report are shown in figures 6 and 7.

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-capacity curves or tables to compute lake storage.

Continuous records of stage are obtained at a gaging station with one or more of the following instruments:

- analog recorders that trace continuous graphs of stage on graphic charts,
- digital recorders that punch stage values on paper tapes at selected time intervals,
- electronic data loggers that electronically record stage values at selected time intervals, and
- data collection platforms (DCP) that electronically record and then transmit the data via satellite to ground receiving stations.

At some gaging stations, acoustic velocity meter (AVM) systems are used to compute discharges. The AVM system measures the stream's velocity at one or more paths in the cross section. Coefficients are developed to relate this path velocity to the mean velocity in the cross section. Because the AVM sensors are fixed in position, the adjustment coefficients generally vary with stage. Cross-sectional area curves are developed to relate stage, recorded as noted above, to cross section area. Discharge is computed by multiplying path velocity by the appropriate stage related coefficient and area. Measurements of discharge are made with current meters using methods adopted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in U.S. Geological Survey Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investi-

gations, Book 3, Chapter A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

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 discharges are computed by applying the unit mean stages (gage heights) to the stage-discharge curves or tables and averaging the results. 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-discharge relationships much as other stream discharges are computed.

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is

so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

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

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 gaging station 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 records have been published 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 flow at it can reasonably be considered equivalent to flow at the present station.

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

GAGE.--The type of gage in current use, the datum of the current gage referred to sea level (see Definition of Terms), 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 station, 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.

PEAK DISCHARGES FOR CURRENT YEAR.--

For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. All peaks greater than the base discharge are listed with the maximum for the year footnoted by an asterisk (*). Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man or at locations where the instantaneous peak discharge does not exceed the mean daily discharge by 10 percent. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330.

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.

Data table of daily mean values

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

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS ____-____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station records 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 the designated period, as appropriate. The designated period selected, "WATER YEARS ____-____," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (See line headings below.), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

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

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

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

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

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

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

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

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date for 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. Secondary instantaneous peak discharges above a selected base discharge are given in the station manuscript under the heading "PEAK DISCHARGES FOR CURRENT YEAR."

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 equivalent 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 of area drained, assuming the runoff is distributed uniformly in time and area.

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

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

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

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

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at

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

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. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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 New Jersey 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 offices whose addresses are given on the back of the title page of this report.

Water Temperature

Water temperatures are usually taken at time of discharge measurements for water-discharge stations. 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.

CURRENT WATER RESOURCES PROJECTS IN NEW JERSEY

The Geological Survey is currently involved in a number of hydrologic investigations in the State of New Jersey. The following is a list of these investigations. Results are published at the conclusion of short-term projects or periodically in the case of long-term projects. Hydrologic data from these projects are entered into the NWIS data base.

A Watershed-Based Method for Relating Water Quality to Flow Characteristics

Barnegat Bay Non-Point Source

Compositional Modeling of Organic Transport and Biodegradation of Organic Compounds in the Unsaturated Zone and Ground Water

Distribution and Sources of Arsenic in Soils near the Imperial Oil Site, Monmouth County, New Jersey

EPA Technical Assistance Program

Flood Characteristics of New Jersey Streams

Geohydrology of the Naval Air Warfare Center, West Trenton, New Jersey

Ground-Water Contamination with Chlorinated Volatile Organic Compounds at Picatinny Arsenal, Morris County, New Jersey

Ground-Water Data Collection Network

Ground-Water Levels and Chloride Concentrations in Major Aquifers of the Coastal Plain

High-Flow Water Quality Management Objectives

Hydrologic Controls on Well-Contributing Areas in New Jersey

Hydrology of Surficial Aquifer Systems

Hydrogeologic Support to Fort Dix, Burlington County, New Jersey

Hydrogeologic Support to McGuire A.F.B., Burlington County, New Jersey

Hydrogeologic Support to Picatinny Arsenal, Morris County, New Jersey

Investigation of Contaminant Transport in a Fractured Rock Aquifer, Rutgers University, Busch Campus

Investigation of Water Quality in the Wanaque South Diversion Area, Morris and Passaic Counties, New Jersey

Lake Herbicides

Low Flow Characteristics of New Jersey Streams

Modeling and Experimental Investigation of Hydrocarbon Transport and Biodegradation in the Unsaturated Zone

Movement of Chromium in the Ground Water of Pennsauken Township, Camden County

Multispecies Transport in Ground Water

New Jersey-Long Island National Water Quality Assessment

New Jersey Tide Telemetry System

Pascack Brook Flood Warning System

Passaic Flood Warning System

Program to Maintain and Update Ground-Water Models to Evaluate Continued Water-Supply Development

Quality of Water Data Collection Network

Radium and Trace Metal Leaching in the Kirkwood-Cohansey Aquifer System

Rahway Flood Warning System

Reconstruction of Natural Streamflow Records, Passaic and Hackensack River Basins

Relations Between Streamflow, Salinity, and Water Quality in Estuaries of the Toms and Metedeconk Rivers, New Jersey

Removal of Volatile Ground-Water Contaminants by Inducing Air-Phase Transport

Review of Remedial Investigation for the Vineland Chemical Superfund Site

Small-Scale Watershed Delineation for GIS (14-Digit Hydrologic Unit Codes)

Small Watershed Flood Data Collection

Somerset County Flood-Information System

Strategic Environmental Research Development Program, Biodegradation, Picatinny Arsenal

Surface Water Data Collection Network

Surfactant Sorption to Soil and its Effect on the Distribution of Anthropogenic Organic Compounds

Trends in the Water Quality of Streams in New Jersey

Vulnerability Assessment of the Kirkwood-Cohansey Aquifer System to Radium, Mercury, and Trace Metals

Vulnerability of Community Water-Supply Wells in New Jersey to Contamination by Volatile Organic Compounds and Disinfection By-Products

Water-Supply Availability in Salem and Gloucester Counties, New Jersey

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ACCESS TO USGS WATER DATA

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

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

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

DEFINITION OF TERMS

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

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point.

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 cubic feet or about 326,000 gallons or 1,233 cubic meters.

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 measurement 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 multi-celled 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.

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid.

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. This group includes coliforms that inhabit the intestine of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. 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°C plus or minus 1.0°C 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°C plus or minus 0.2°C on M-FC 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°C plus or minus 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Enterococcus bacteria are commonly found in the feces of humans and other warm-blooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria which produce pink to red colonies with black or reddish-brown precipitate after incubation at 41°C on mE agar and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis*, *Streptococcus feacium*, *Streptococcus avium*, and their variants.

Bedload is the sediment which moves along in essentially continuous contact with the streambed by rolling, sliding, and making brief excursions into the flow a few diameters above the bed.

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

Benthic invertebrates are invertebrate animals inhabiting the bottoms of lakes, streams, and other water bodies. They are useful as indicators of water quality.

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 microorganisms, 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°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square mile (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105°C 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 (mL) or liters (L).

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

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 BOD 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 one 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.

Continuing-record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.
2. When water temperature records include observations taken one or more times daily.
3. When sediment discharge records include periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

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.

Cubic foot per second (FT^3/S , ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute.

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 μm 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 specific 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.

Extractable organic halides (EOX) are organic compounds which contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried stream bottom sediments. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the

halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the stream bottom sediments.

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).

High tide is the maximum height reached by each rising tide.

Hydrologic Benchmark Network is a network of 50 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 human activities.

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 (fig. 9).

Low tide is the minimum height reached by each falling tide.

Mean high tide is the average of all high tides over a specified period.

Mean low tide is the average of all low tides over a specified period.

Mean water level is the average of all tides over a specified period.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

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

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

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

Microsiemens per centimeter ($\mu\text{S/cm}$, US/CM) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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 mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. It is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic-invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

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) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO_2 emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO_2 and NO_x scheduled to begin in 2000.

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

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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 (mL) or liter (L). 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 U.S. Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent. The codes used in NWIS 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 (mm), 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 recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay	0.00024 - 0.004	Sedimentation
Silt .....	.004 - .062	Sedimentation
Sand .....	.062 - 2.0	Sedimentation/sieve
Gravel	2.0 - 64.0	Sieve

The partial-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 (cells/mL) 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 (cells/mL) 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.

Polychlorinated biphenyls (PCB's) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

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 [mg C/(m²/time)] for periphyton and macrophytes and [mg C/(m³/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 [mg O₂/(m²/time)] for periphyton and macrophytes and [mg O₂/(m³/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.

River mile as used herein, is the distance above the mouth of Delaware Bay, measured along the center line of the navigation channel or the main stem of the Delaware River. River mile data were furnished by the Delaware River Basin Commission.

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

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

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

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

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

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of

water-sediment mixture (mg/L). The entire sample is used for the analysis.

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

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

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

Suspended total residue at 105 Deg. C concentration is the concentration of suspended sediment in the sampled zone expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). A small aliquot of the sample is used for the analysis.

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.

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°C. 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 from 55 to 75 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 or 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 U.S.G.S. 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 planimeted. All areas shown are those for the stage when the planimeted 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 um 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 um 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.

Synoptic Studies Short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

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

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-foot 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, and 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.

Volatile Organic Compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are man-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

Water year in U.S. 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, 1985, is called the "1985 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.

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PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics)

pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

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

Book 1. Collection of Water Data by Direct Measurement**Section D. Water Quality**

- 1-D1. *Water temperature—influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J.F. Ficke, and G. F. Smoot: USGS-TWRI Book 1, Chapter D1. 1975. 65 pages.
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Book 2. Collection of Environmental Data**Section D. Surface Geophysical Methods**

- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A. R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS-TWRI Book 2, Chapter D1. 1974. 116 pages.
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- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS-TWRI Book 2, Chapter E1. 1971. 126 pages.
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Book 7. Automated Data Processing and Computations

Section C. Computer Programs

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Section A. Instruments for Measurement of Water Level

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- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS-TWRI Book 8, Chapter B2. 1968. 15 pages.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

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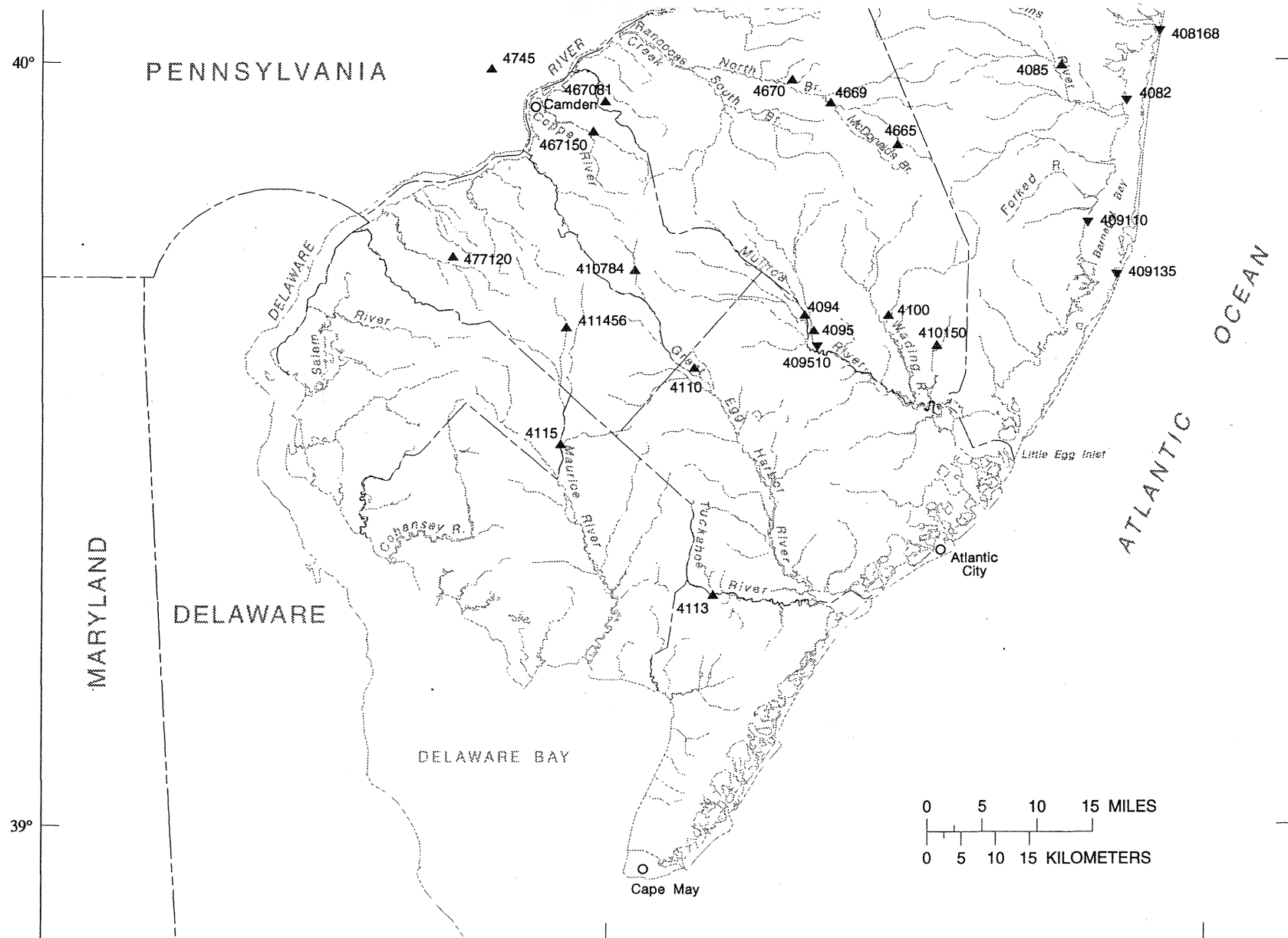
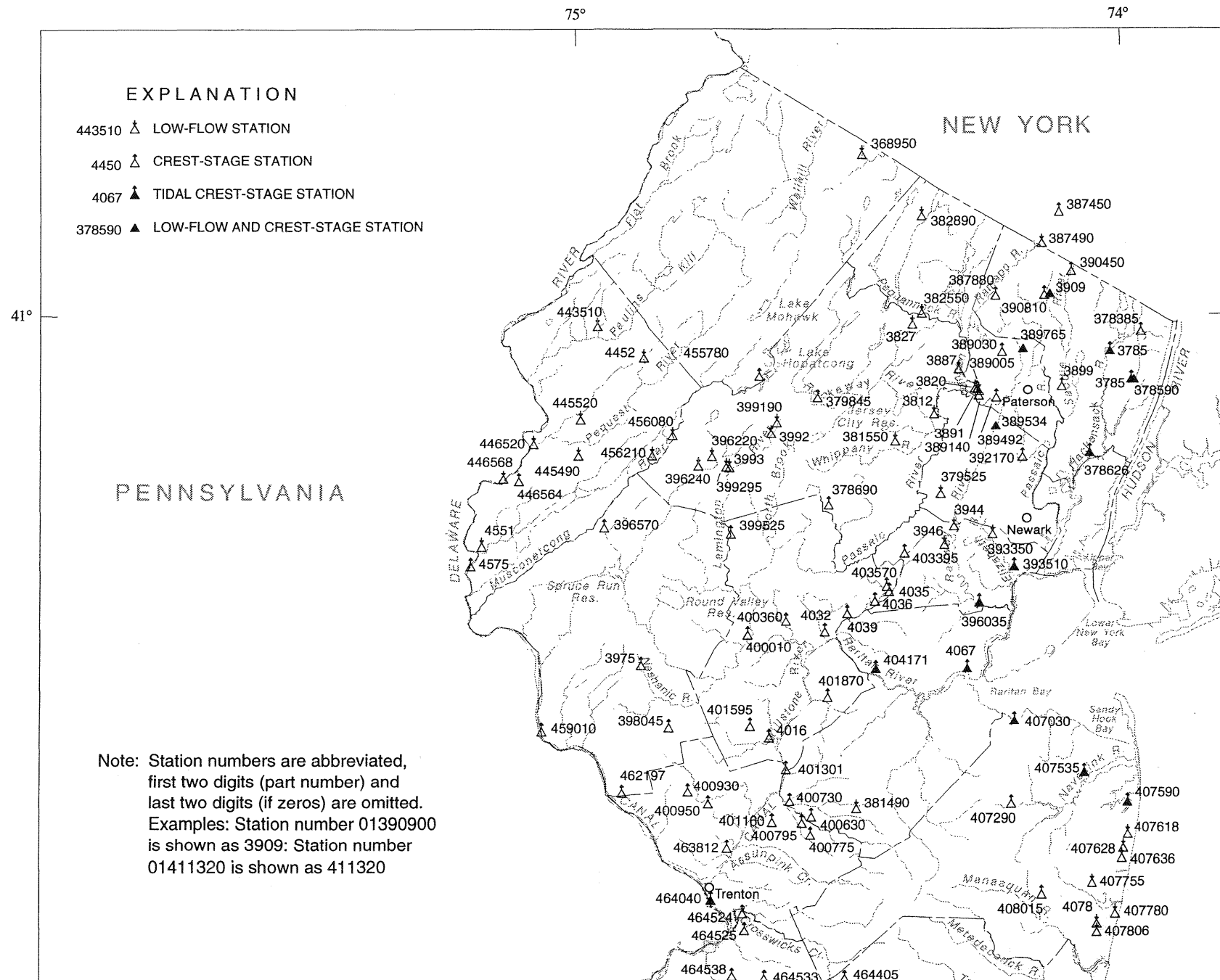


Figure 6. Map showing location of surface-water gaging stations.

WATER RESOURCES DATA-NEW JERSEY, 1998

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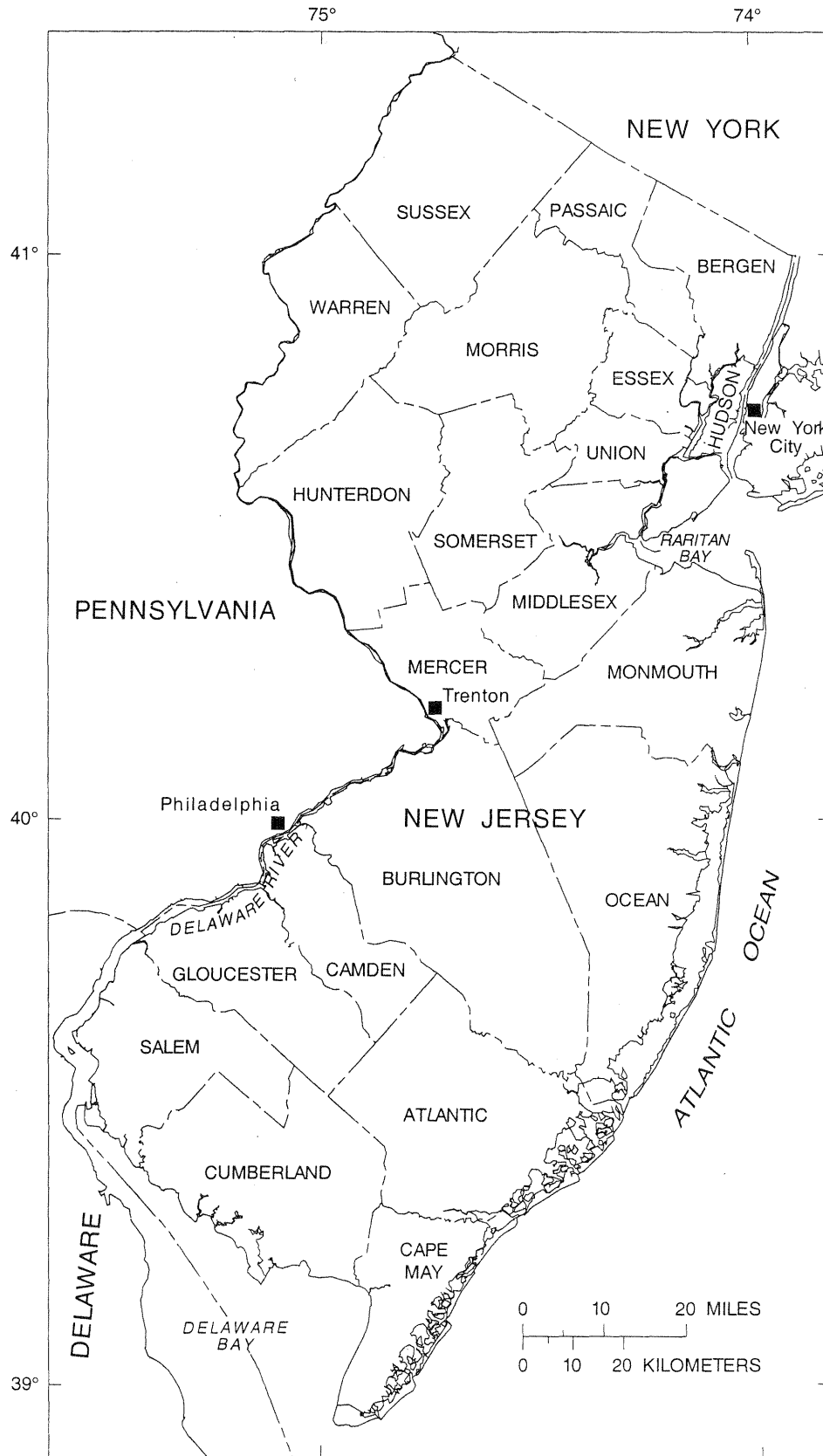


Figure 8. Map showing counties in New Jersey.

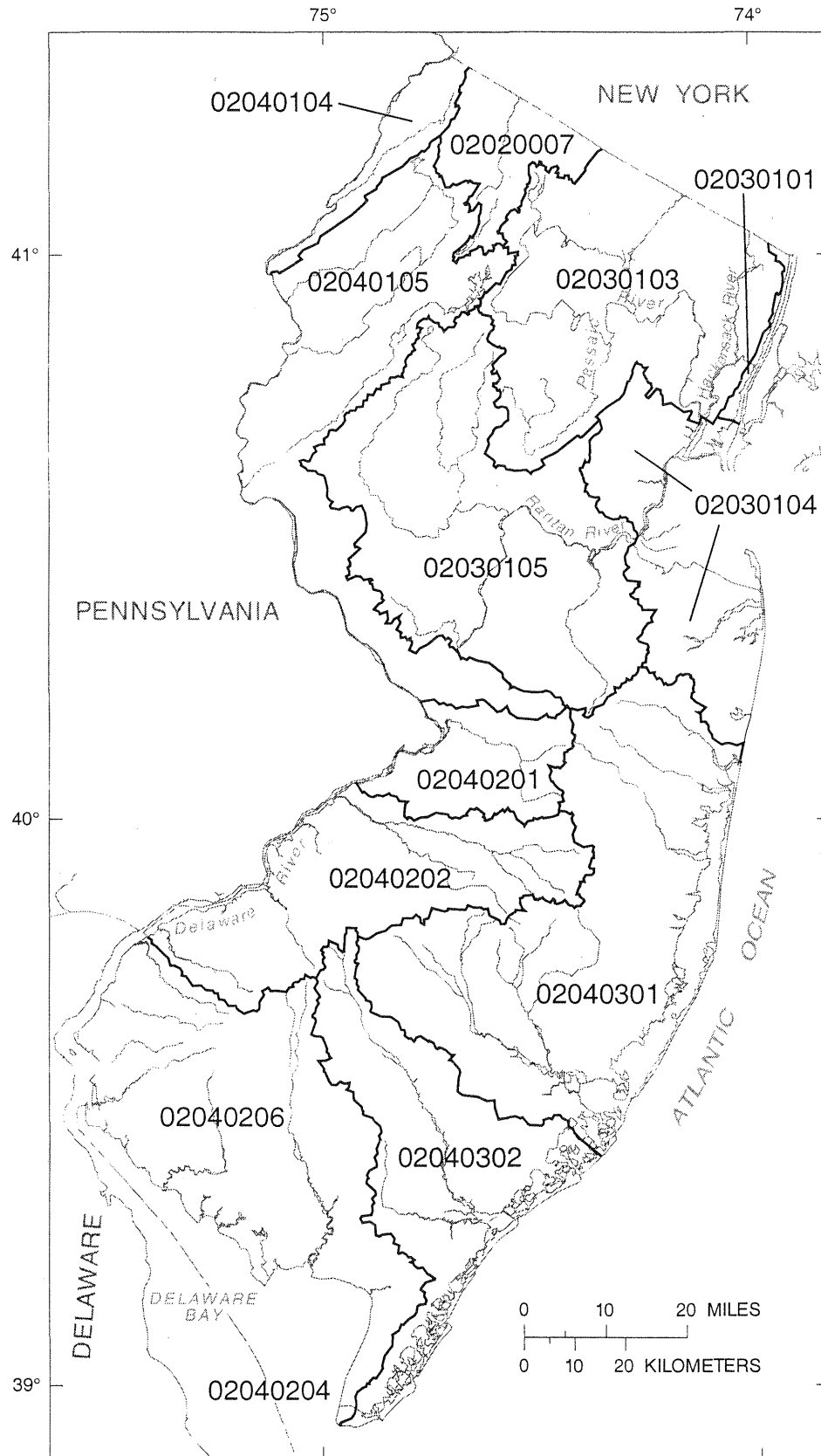


Figure 9. Map showing hydrologic cataloging units and codes in New Jersey. (Modified from Seaber and others, 1987)

HACKENSACK RIVER BASIN

01376800 HACKENSACK RIVER AT WEST NYACK, NY

LOCATION.--Lat 41°05'44", long 73°57'52", Rockland County, Hydrologic Unit 02030103, on right bank 20 ft downstream from Penn Central Transportation Co. railroad bridge at West Nyack, 1,000 ft upstream from State Highway 59, and 1.0 mi downstream from DeForest Lake.

DRAINAGE AREA.--30.7 mi².

PERIOD OF RECORD.--December 1958 to current year.

REVISIONS.--WDR NY-90-1: Drainage area.

GAGE.--Water-stage recorder, stop-log control, and crest-stage gage. Datum of gage is 53.50 ft above sea level (levels by Hackensack Water Co.).

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by DeForest Lake (see Reservoirs in Hackensack River Basin). Diversion from gaging station pool for municipal supply for village of Nyack (see Diversions in Hackensack River Basin). Discharge given for this station represents the flow of Hackensack River downstream from this diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft³/s, Feb. 3, 1973, gage height, 9.38 ft, from floodmarks, from rating curve extended above 840 ft³/s; maximum gage height, 10.52 ft, May 30, 1984; minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 525 ft³/s, May 11, gage height, 6.80 ft; minimum discharge, 9.4 ft³/s, Jan. 20, 21, Feb. 19; minimum gage height, 2.48 ft, June 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	43	14	12	13	29	55	27	41	15	14	33
2	38	58	12	12	13	29	262	71	28	14	14	36
3	40	29	12	13	13	32	110	67	29	13	13	32
4	39	25	13	13	13	29	75	60	19	13	13	31
5	38	21	14	13	22	29	60	63	15	15	14	34
6	37	21	14	13	13	26	42	109	13	13	14	34
7	37	17	13	15	15	24	36	71	14	13	14	39
8	36	30	12	21	15	28	32	56	15	13	12	45
9	36	26	14	16	15	277	45	143	14	13	12	36
10	37	16	13	14	15	208	358	364	14	13	15	35
11	37	14	14	13	15	87	146	435	15	14	26	33
12	38	19	14	13	33	60	74	271	23	14	32	33
13	37	31	13	13	16	48	64	120	58	14	31	34
14	37	20	13	15	13	49	54	80	266	14	33	34
15	37	16	12	14	13	53	51	69	147	14	36	34
16	37	13	12	28	13	47	47	60	146	14	34	35
17	37	13	12	14	14	37	49	52	93	14	33	36
18	37	24	13	13	30	39	58	45	101	14	35	36
19	37	15	13	12	12	177	50	40	56	14	35	36
20	32	13	12	11	14	173	114	33	40	14	34	35
21	35	13	13	11	15	112	76	37	28	14	33	34
22	36	19	12	12	13	112	58	31	20	14	32	42
23	37	13	19	31	16	84	55	21	15	16	31	35
24	36	15	14	39	36	79	52	17	24	14	30	35
25	39	13	29	14	28	67	42	20	19	13	31	35
26	35	13	15	17	20	58	41	34	20	14	40	35
27	44	13	13	18	23	52	58	27	35	15	32	35
28	31	13	13	17	23	47	44	21	28	14	28	37
29	34	13	18	15	---	43	32	18	15	14	29	37
30	34	13	37	14	---	38	28	21	15	14	29	36
31	37	---	14	13	---	34	---	17	---	15	31	---
TOTAL	1140	602	456	489	494	2207	2268	2500	1366	432	810	1062
MEAN	36.8	20.1	14.7	15.8	17.6	71.2	75.6	80.6	45.5	13.9	26.1	35.4
MAX	44	58	37	39	36	277	358	435	266	16	40	45
MIN	31	13	12	11	12	24	28	17	13	13	12	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

	MEAN	31.2	31.1	38.5	43.4	49.4	70.0	73.5	52.6	34.9	33.6	27.9	33.4
MAX	84.2	88.6	135	125	152	151	204	162	162	127	83.3	100	
(WY)	1990	1976	1997	1978	1973	1961	1983	1989	1972	1984	1966	1975	
MIN	7.27	7.59	5.63	8.95	10.3	6.95	9.61	7.04	12.7	11.6	12.3	9.34	
(WY)	1967	1967	1967	1967	1967	1981	1966	1965	1981	1977	1981	1962	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1959 - 1998

ANNUAL TOTAL	12733	13826	
ANNUAL MEAN	34.9	37.9	43.5
HIGHEST ANNUAL MEAN			74.1
LOWEST ANNUAL MEAN			13.4
HIGHEST DAILY MEAN	445	Apr 1	435
LOWEST DAILY MEAN	11	Jul 23	11
ANNUAL SEVEN-DAY MINIMUM	12	Dec 14	12
10 PERCENT EXCEEDS	57		61
50 PERCENT EXCEEDS	25		28
90 PERCENT EXCEEDS	13		13
			12
			1320
			2.2
			3.1
			86
			24
			12
			1984
			1981
			Feb 3 1973
			Jan 13 1996
			Sep 25 1966

01377000 HACKENSACK RIVER AT RIVERVALE, NJ

LOCATION.--Lat 40°59'55", long 73°59'27", Bergen County, Hydrologic Unit 02030103, on upstream right bank at bridge on Westwood Avenue in Rivervale, 1.5 mi upstream from Pascack Brook, 4.6 mi upstream from Oradell Dam, and 27.2 mi upstream from mouth.

DRAINAGE AREA.--58.0 mi².

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WDR-NJ-80-1: 1968-79(M).

GAGE.--Water-stage recorder, crest-stage gages, and concrete control. Datum of gage is 22.51 ft above sea level.

REMARKS.--Records good. Flow regulated by De Forest Lake (since Feb. 1956) and Lake Tappan (since 1965), see Hackensack River basin, reservoirs in. Diversions from De Forest Lake and West Nyack, NY, for municipal water supply (see Hackensack River basin, diversions). Water occasionally diverted from Oradell Reservoir to Lake Tappan. Several measurements of water temperature, other than those published, were made during the year. United Water New Jersey (formerly Hackensack Water Co.) gage-height telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with United Water New Jersey (formerly Hackensack Water Co.).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	40	29	34	44	73	110	68	105	61	63	69
2	21	75	28	34	43	74	522	140	76	47	63	66
3	20	43	28	34	41	85	250	138	70	39	62	69
4	20	28	29	34	43	74	150	126	58	34	61	65
5	20	28	30	33	107	68	119	130	47	35	61	65
6	20	27	30	32	89	63	93	179	40	32	61	65
7	19	28	28	42	65	59	79	156	35	31	64	70
8	19	48	26	55	57	65	72	127	34	29	74	73
9	19	50	23	42	50	405	91	242	32	29	74	64
10	19	35	24	37	48	473	725	737	32	29	74	51
11	19	26	23	35	47	187	373	934	31	29	76	46
12	19	25	26	34	133	131	161	620	62	29	74	44
13	20	25	26	34	108	105	126	268	196	29	74	44
14	38	36	25	34	76	100	109	163	386	28	74	44
15	79	35	54	34	59	104	101	135	323	43	74	44
16	76	28	94	59	50	94	97	115	231	70	74	44
17	22	26	94	39	52	83	95	100	179	80	74	41
18	21	26	94	33	135	82	104	90	157	80	74	40
19	21	25	94	32	112	253	99	80	120	80	74	40
20	21	25	93	32	87	347	175	73	92	100	73	40
21	21	25	84	31	75	199	158	67	73	108	72	40
22	22	41	51	31	62	193	123	60	58	60	72	42
23	24	28	63	54	59	168	107	52	50	66	72	41
24	25	26	51	169	137	150	115	48	51	64	72	45
25	35	25	69	135	180	125	93	47	57	63	72	74
26	28	25	39	91	117	106	94	65	51	63	71	80
27	47	25	35	73	87	97	124	60	49	63	33	79
28	30	26	36	68	74	88	99	53	47	63	32	78
29	28	27	40	55	---	83	81	48	42	63	40	78
30	28	27	93	50	---	76	71	51	59	63	72	71
31	28	---	40	48	---	70	---	47	---	64	72	---
TOTAL	855	954	1499	1548	2237	4280	4716	5219	2843	1674	2078	1712
MEAN	27.6	31.8	48.4	49.9	79.9	138	157	168	94.8	54.0	67.0	57.1
MAX	79	75	94	169	180	473	725	934	386	108	76	80
MIN	19	25	23	31	41	59	71	47	31	28	32	40

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1998, BY WATER YEAR (WY)

	MEAN	59.1	69.7	80.4	89.1	92.3	136	140	103	74.6	78.2	70.4	63.7
MAX	312	240	248	251	221	379	438	310	319	339	197	177	
(WY)	1956	1956	1997	1949	1951	1953	1983	1989	1972	1945	1955	1975	
MIN	12.1	16.6	12.6	22.6	23.0	11.2	14.5	20.4	13.4	11.6	11.4	7.87	
(WY)	1942	1996	1981	1982	1967	1981	1981	1981	1957	1954	1944	1953	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

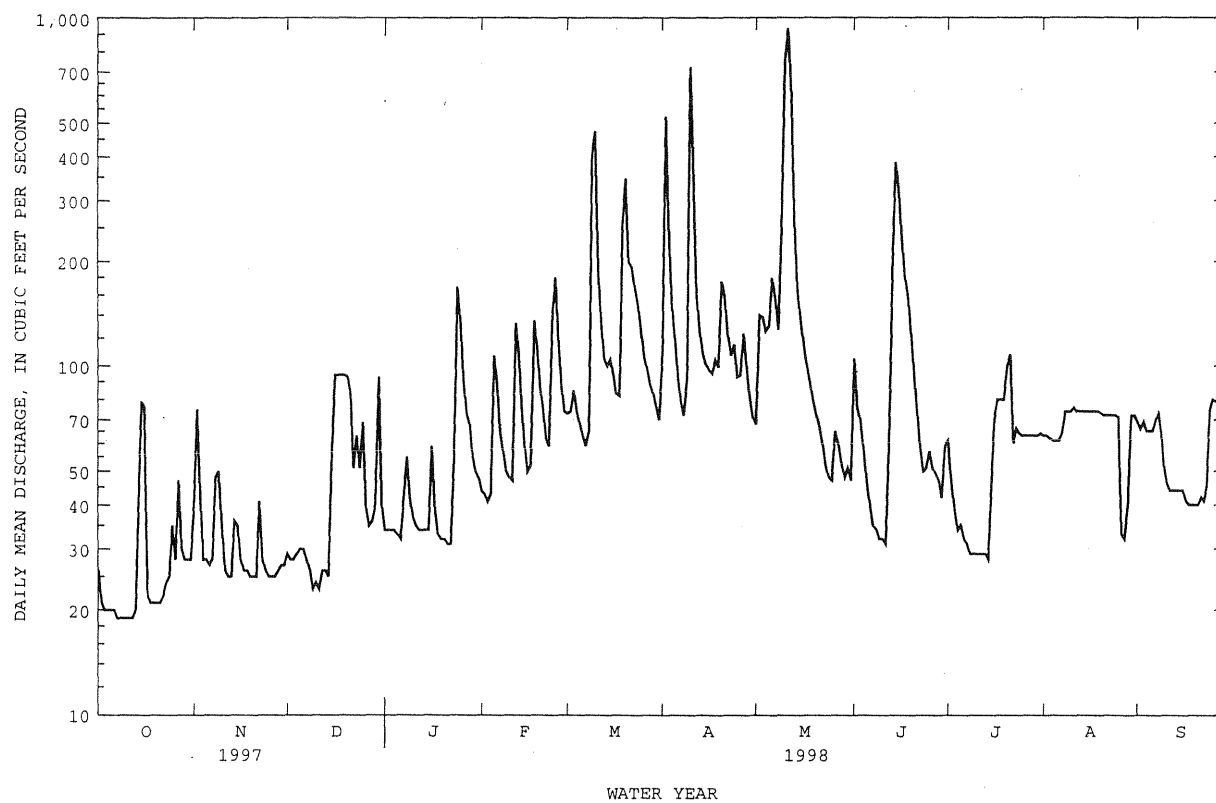
FOR 1998 WATER YEAR

WATER YEARS 1942 - 1998

ANNUAL TOTAL	27852	29615	
ANNUAL MEAN	76.3	81.1	88.1
HIGHEST ANNUAL MEAN			156
LOWEST ANNUAL MEAN			30.9
HIGHEST DAILY MEAN	1170	Apr 1	2190 May 31 1984
LOWEST DAILY MEAN	19	Oct 7	4.4 Oct 10 1995
ANNUAL SEVEN-DAY MINIMUM	19	Oct 6	5.0 Oct 7 1995
INSTANTANEOUS PEAK FLOW		1070	2530 May 17 1989
INSTANTANEOUS PEAK STAGE		4.43	8.08 May 17 1989
INSTANTANEOUS LOW FLOW		19	.00 Jan 16 1970
10 PERCENT EXCEEDS	126	136	170
50 PERCENT EXCEEDS	64	62	60
90 PERCENT EXCEEDS	25	26	21

HACKENSACK RIVER BASIN

01377000 HACKENSACK RIVER AT RIVERVALE, NJ--Continued



01377500 PASCACK BROOK AT WESTWOOD, NJ

LOCATION.--Lat 40°59'33", long 74°01'19", Bergen County, Hydrologic Unit 02030103, on right bank 75 ft upstream from Harrington Avenue in Westwood, 500 ft downstream from Musquapsink Brook, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--29.6 mi².

PERIOD OF RECORD.--October 1934 to current year.

REVISED RECORDS.--WDR NJ-87-1: 1984 (P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 28.62 ft above sea level.

REMARKS.--Records fair. Flow regulated by Woodcliff Lake 3.0 mi above station (see Hackensack River basin, reservoirs in). Water diverted for municipal supply by United Water New York (formerly Spring Valley Water Company), by pumpage from well fields in headwater area of Pascack Brook in vicinity of Spring Valley, NY, and by Park Ridge Water Department by pumping from wells above Woodcliff Lake probably reduces flow past this station. Several measurements of water temperature were made during the year. United Water New Jersey gage- height telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with United Water New Jersey.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	0600	825	4.23	Jun 13	1300	448	3.40
May 10	1945	*973	*4.50	Jun 15	1700	503	3.54
May 11	0300	719	4.02	Jun 16	0900	508	3.55
May 11	2245	606	3.78				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	44	24	37	32	36	94	46	117	57	15	24
2	27	96	21	66	50	36	211	130	57	28	16	37
3	29	103	19	72	87	37	79	76	37	27	21	47
4	28	33	20	29	45	34	60	55	40	27	24	30
5	28	38	22	27	89	33	52	51	39	27	24	28
6	27	78	21	26	81	32	48	42	35	26	25	27
7	26	23	20	66	34	56	46	35	32	26	22	34
8	26	76	19	93	32	97	47	34	32	26	24	43
9	24	106	18	59	32	185	104	112	32	26	23	31
10	24	70	18	31	31	105	430	346	32	25	24	28
11	21	24	20	30	32	101	98	357	32	24	28	26
12	17	22	20	29	130	88	68	174	89	24	24	23
13	16	21	19	64	65	48	59	129	174	24	21	21
14	17	34	18	35	35	51	55	119	150	23	21	21
15	24	42	18	33	33	73	57	104	242	25	22	25
16	21	36	18	79	33	54	55	65	294	37	20	25
17	25	30	18	62	91	69	68	62	129	35	23	24
18	23	27	17	32	134	46	69	61	130	34	33	20
19	22	25	18	32	59	125	59	59	75	33	29	20
20	21	24	18	31	83	106	135	58	32	33	25	19
21	23	52	18	31	61	107	80	57	30	31	25	18
22	20	73	18	31	58	105	62	51	29	35	25	19
23	16	25	46	136	65	103	60	37	29	38	22	18
24	17	22	28	194	132	78	70	37	29	34	21	17
25	33	20	103	108	110	66	51	39	28	33	23	18
26	16	20	60	95	95	55	62	49	30	30	53	19
27	36	21	37	48	82	40	85	71	28	30	31	20
28	25	22	54	35	35	40	51	49	26	25	29	19
29	19	22	108	35	---	39	44	32	26	24	27	16
30	23	23	173	33	---	39	43	32	80	20	25	15
31	23	---	58	32	---	39	---	61	---	24	23	---
TOTAL	724	1252	1089	1711	1846	2123	2502	2630	2135	911	768	732
MEAN	23.4	41.7	35.1	55.2	65.9	68.5	83.4	84.8	71.2	29.4	24.8	24.4
MAX	36	106	173	194	134	185	430	357	294	57	53	47
MIN	16	20	17	26	31	32	43	32	26	20	15	15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1998, BY WATER YEAR (WY)

	MEAN	39.1	48.9	52.4	54.5	58.7	79.1	79.3	62.6	49.8	45.5	42.2	39.5
MAX	143	131	129	151	135	197	198	155	175	180	127	157	
(WY)	1956	1978	1984	1979	1973	1953	1983	1989	1972	1945	1971	1971	
MIN	10.2	9.83	15.9	10.8	15.7	34.8	28.9	21.2	18.2	14.2	10.1	9.52	
(WY)	1942	1950	1940	1954	1954	1965	1991	1992	1939	1944	1935	1939	

HACKENSACK RIVER BASIN

01377500 PASCACK BROOK AT WESTWOOD, NJ--Continued

SUMMARY STATISTICS

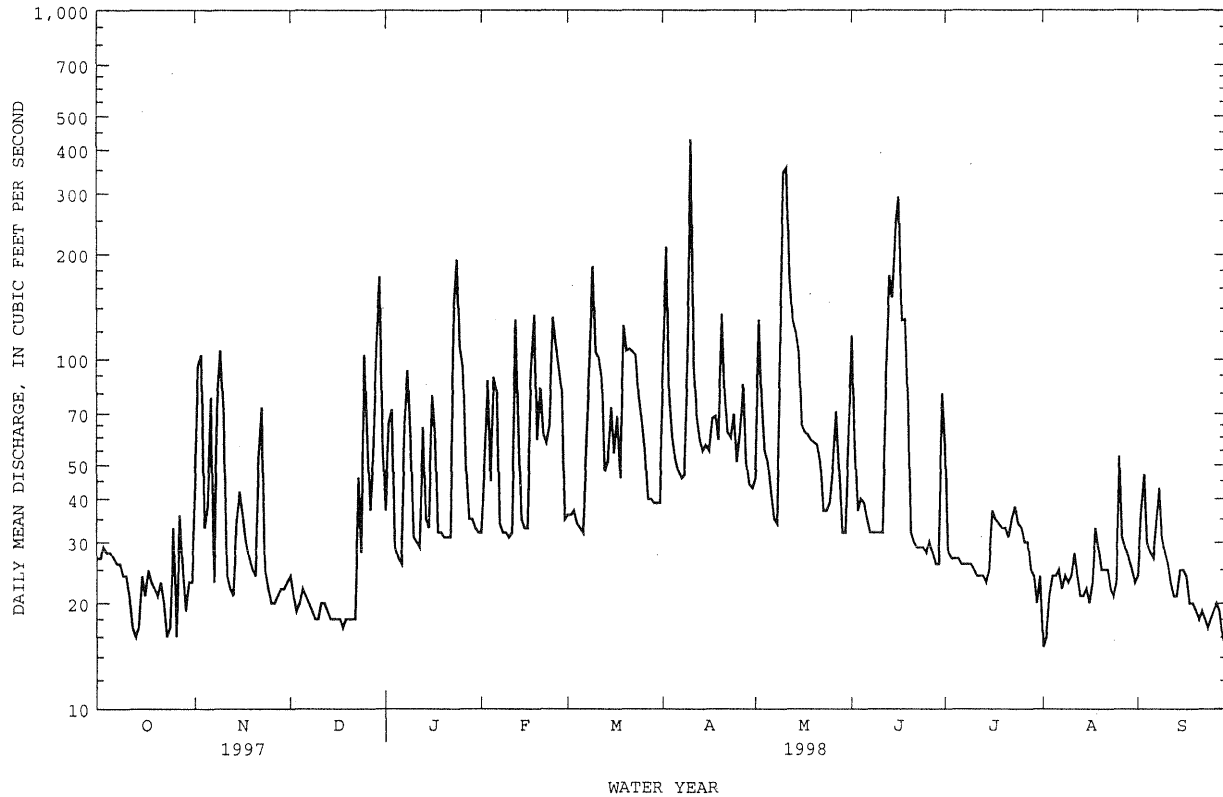
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1935 - 1998

ANNUAL TOTAL	16554	18423	
ANNUAL MEAN	45.4	50.5	54.3
HIGHEST ANNUAL MEAN			88.6
LOWEST ANNUAL MEAN			27.6
HIGHEST DAILY MEAN	486	430	1770
LOWEST DAILY MEAN	16	15	.45
ANNUAL SEVEN-DAY MINIMUM	18	18	6.3
INSTANTANEOUS PEAK FLOW		973	2440
INSTANTANEOUS PEAK STAGE		4.50	7.57
INSTANTANEOUS LOW FLOW		11	.05a
10 PERCENT EXCEEDS	89	103	96
50 PERCENT EXCEEDS	35	33	39
90 PERCENT EXCEEDS	21	20	18

a Also occurred Sept. 28, 1993.



01378500 HACKENSACK RIVER AT NEW MILFORD, NJ

LOCATION.--Lat 40°56'52", long 74°01'34", Bergen County, Hydrologic Unit 02030103, on right bank upstream from two masonry dams and two lift gates at former pumping plant of United Water New Jersey (formerly known as Hackensack Water Co.), New Milford, 4.0 mi downstream from Pascack Brook, 0.6 mi downstream from Oradell Reservoir Dam, and 21.8 mi upstream from mouth.

DRAINAGE AREA.--113 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October 1921, published in WSP 1302.

REVISED RECORDS: WSP 601: Drainage area. WSP 711: 1927-28(M). WRD-NJ 1970: 1969. WDR-NJ 1977: 1975(M). WDR-NJ 1984: 1983. WDR-NJ 1991: 1990.

GAGE.--Water-stage recorder, crest-stage gage above south dam, and tidal crest-stage gage downstream from south dam. Datum of gage is 6.25 ft above sea level. October 1921 to November 23, 1923, nonrecording gage and Nov. 23, 1923, to Sept. 25, 1934, water-stage recorder at same site at datum 0.05 ft lower.

REMARKS.-- Records good except those below 20 ft³/s, which are fair. Flow regulated by DeForest Lake, Lake Tappan, Woodcliff Lake 9.0 mi upstream from station, and Oradell Reservoir 0.6 mi upstream from station (see Hackensack River basin, reservoirs in). Water pumped into basin above gage from Sparkill Creek (Hudson River basin), Saddle River and Ramapo River (Passaic River basin) by United Water New Jersey for municipal supply (see Hackensack River basin, diversions). Water diverted from Oradell Reservoir at Haworth Plant, De Forest Lake, and West Nyack, NY, for municipal supply (see Hackensack River basin, diversions). Diversion at gage was discontinued on May 30, 1990. Several measurements of water temperature were made during the year. National Weather Service telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with United Water New Jersey.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	6.6	.19	1.2	12	18	197	25	17	19	.54	.66
2	.96	6.1	.24	12	12	18	875	220	15	19	.53	2.9
3	.63	.74	1.8	16	12	17	292	195	15	19	.55	1.1
4	.54	.61	2.2	15	12	18	185	71	17	18	.57	.39
5	.51	.58	2.3	16	155	17	101	257	17	18	.56	.45
6	.46	.48	2.0	30	110	17	16	251	17	18	.52	.63
7	.43	.23	1.5	15	9.4	17	116	103	15	18	.53	2.2
8	.54	1.9	1.3	15	9.3	38	64	101	14	18	.42	1.8
9	.65	2.0	1.1	16	16	788	254	612	19	18	.43	.61
10	.64	.89	1.7	15	19	729	1320	1220	15	17	.58	.65
11	.65	.12	1.7	14	20	267	428	1680	18	17	.70	.66
12	.66	.18	1.6	15	20	61	83	1040	19	17	.42	.66
13	.88	.20	1.3	15	20	22	91	206	101	15	.42	.66
14	.96	1.9	1.2	15	20	22	80	40	482	13	.41	.66
15	1.4	1.7	1.4	15	20	22	81	14	547	8.9	.33	.43
16	1.5	1.0	1.4	16	20	22	80	44	332	.21	.32	.10
17	1.2	.99	1.4	12	164	173	79	67	109	.06	2.4	.01
18	1.1	23	1.4	13	238	192	78	56	239	.07	.86	.07
19	1.1	.10	1.4	13	187	398	78	36	156	.10	.58	.10
20	1.3	.00	1.7	13	184	638	159	25	49	.12	.66	.10
21	1.4	.00	1.7	13	181	251	145	24	21	.31	.50	.10
22	1.1	1.8	1.8	13	179	212	95	18	19	.53	.42	.10
23	1.1	.46	3.8	32	176	175	168	12	19	.93	.47	.11
24	1.3	.11	1.3	206	178	249	88	12	19	.62	.62	.40
25	3.1	.09	3.6	106	466	208	53	12	19	.62	.63	.63
26	2.3	.09	1.7	106	188	85	94	14	19	.56	2.1	.66
27	4.3	.15	1.9	81	47	29	149	17	19	.60	.66	.66
28	2.8	.18	1.9	8.9	17	22	72	16	19	.65	.63	.63
29	2.4	.02	4.1	8.7	---	23	45	16	19	.65	.65	.65
30	2.4	.03	3.7	9.9	---	20	28	17	20	.57	.64	.66
31	2.4	---	1.4	11	---	16	---	17	---	1.1	.65	---
TOTAL	41.57	52.25	55.73	887.7	2691.7	4784	5594	6438	2406	260.60	20.30	19.44
MEAN	1.34	1.74	1.80	28.6	96.1	154	186	208	80.2	8.41	.65	.65
MAX	4.3	.23	4.1	206	466	788	1320	1680	547	19	2.4	2.9
MIN	.43	.00	.19	1.2	9.3	16	16	12	14	.06	.32	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

	MEAN	34.5	63.2	87.2	102	125	209	198	123	60.3	45.3	38.5	41.0
MAX	480	356	339	359	396	651	774	528	612	543	373	385	
(WY)	1956	1928	1997	1937	1939	1936	1983	1989	1972	1945	1927	1927	
MIN	.000	.000	.000	.000	.000	.000	.000	.39	.000	.000	.000	.000	
(WY)	1922	1924	1932	1971	1977	1981	1981	1985	1977	1954	1924	1923	

SUMMARY STATISTICS

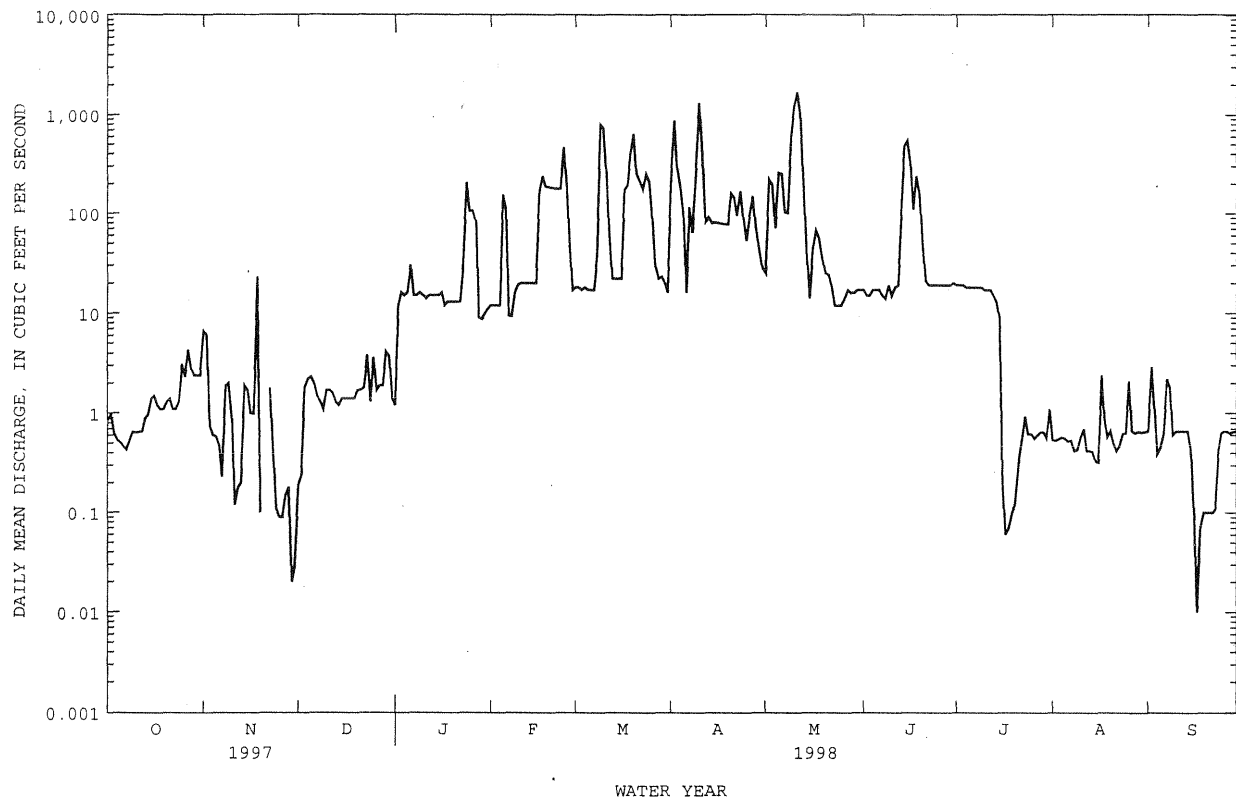
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1922 - 1998

ANNUAL TOTAL	16151.08	23251.29	
ANNUAL MEAN	44.2	63.7	93.7
HIGHEST ANNUAL MEAN			263
LOWEST ANNUAL MEAN			.40
HIGHEST DAILY MEAN	1930	Apr 1	4230
LOWEST DAILY MEAN	.00	Nov 20	.00
ANNUAL SEVEN-DAY MINIMUM	.10	Nov 24	.08
INSTANTANEOUS PEAK FLOW			2010
INSTANTANEOUS PEAK STAGE			4.70
INSTANTANEOUS LOW FLOW			.00
10 PERCENT EXCEEDS	65		182
50 PERCENT EXCEEDS	9.9		12
90 PERCENT EXCEEDS	.75		.42
			.00

01378500 HACKENSACK RIVER AT NEW MILFORD, NJ--Continued



RESERVOIRS IN HACKENSACK RIVER BASIN

01376700 DE FOREST LAKE.--Lat 41°06'23", long 73°58'01, Rockland County, NY, Hydrologic Unit 02030103, at dam on Hackensack River, 0.8 mi north of West Nyack, NY. DRAINAGE AREA, 27.5 mi². PERIOD OF RECORD, February 1956 to current year. REVISED RECORDS.--WDR NJ-84-1: Drainage area. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam with sheet piling cutoff and concrete spillway; dam completed and storage began in February 1956. Crest of dam topped by two 50 ft Bascule Gates, 5 ft high. Capacity 5,670,000,000 gal, elevation, 85.00 ft, top of Bascule gates. Flow regulated by 12-inch Howell-Bunger valve at elevation, 59.25 ft and 24-inch Howell-Bunger valve at elevation, 61.25 ft. Reservoir used for storage and water released by United Water New Jersey, for municipal water supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

01376950 LAKE TAPPAN.--Lat 41°01'05", long 74°00'05", Bergen County, Hydrologic Unit 02030103, at dam on Hackensack River, 0.5 mi north of Old Tappan. DRAINAGE AREA, about 49.0 mi². PERIOD OF RECORD, October 1966 to current year. REVISED RECORDS, WDR NJ-89-1: Capacity. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam, completed in 1966. Capacity, 3,853,000,000 gal, elevation, 55.00 ft at top of Bascule gates. Flow regulated by four Bascule gates and one sluice gate. Water is released for diversion at New Milford (diversion discontinued May 1990) and Haworth by United Water New Jersey, for municipal water supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

01377450 WOODCLIFF LAKE.--Lat 41°00'46", long 74°02'58", Bergen County, Hydrologic Unit 02030103, at dam on Pascack Brook, 0.7 mi north of Hillsdale. DRAINAGE AREA, 19.4 mi². PERIOD OF RECORD, December 1929 to current year. Monthend contents only, prior to September 1953, published in WSP 1302, 1722. REVISED RECORDS, WDR NJ-89-1: Capacity. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam, completed about 1905. The dam was modified in 1984, which increased capacity, 871,000,000 gal, elevation, 95.00 ft at top of Bascule gates. Flow is regulated by two Bascule gates 85 ft long and 6 ft high each and one 24-inch Ball valve. Water is released for diversion at New Milford (diversion discontinued May 1990) and Haworth by United Water New Jersey, for municipal supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

01378480 ORADELL RESERVOIR.--Lat 40°57'22", long 74°01'46", Bergen County, Hydrologic Unit 02030103, at dam on Hackensack River at Oradell. DRAINAGE AREA, 113 mi². PERIOD OF RECORD, December 1922 to current year. Monthend contents only, prior to September 1953, published in WSP 1302, 1722. REVISED RECORDS.--WDR NJ-84-1: Spillway elevation, WDR NJ-89-1: Capacity. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by hollow concrete dam, completed in 1922. Capacity at spillway level, 3,507,000,000 gal, elevation, 23.16 ft. Flow regulated by seven sluice gates (7 by 9 ft). Prior to May 1990, water was released for diversion by United Water New Jersey, 1 mi downstream from dam for municipal supply. Water is diverted from reservoir at Haworth by United Water New Jersey, for municipal supply.

COOPERATION.--Records provided by United Water New Jersey (formerly Hackensack Water Company).

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01376700 DE FOREST LAKE				01376950 LAKE TAPPAN		
Sept. 30.....	81.01	4,420	--	49.93	2,185	--
Oct. 31.....	78.07	3,550	-43.4	51.39	2,630	+22.2
Nov. 30.....	79.71	4,032	+24.9	53.72	3,399	+39.7
Dec. 31.....	80.89	4,384	+17.6	54.10	3,533	+6.7
CAL YR 1997			-5.8			-1.8
Jan. 31.....	83.12	5,069	+34.2	55.15	3,906	+18.6
Feb. 28.....	83.78	5,327	+14.3	55.23	3,938	+1.8
Mar. 31.....	85.21	5,740	+20.6	55.31	3,966	+1.4
Apr. 30.....	85.22	5,744	+2	55.33	3,970	+2
May 31.....	85.22	5,742	-1	55.29	3,956	-7
June 30.....	85.07	5,697	-2.3	55.20	3,926	-1.5
July 31.....	84.14	5,392	-15.2	54.53	3,686	-12.0
Aug. 31.....	81.73	4,640	-37.5	52.02	2,833	-42.6
Sept. 30.....	79.08	3,847	-40.9	50.43	2,336	-25.6
WTR YR 1998			-2.4			+6
Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01377450 WOODCLIFF LAKE				01378480 ORADELL RESERVOIR		
Sept. 30.....	90.42	622	--	19.87	2,670	--
Oct. 31.....	89.48	574	-2.4	18.70	2,397	-13.6
Nov. 30.....	90.70	637	+3.2	19.67	2,623	+11.7
Dec. 31.....	91.12	659	+1.1	20.70	2,871	+12.4
CAL YR 1997			0			-1.2
Jan. 31.....	90.23	612	-2.3	20.95	2,932	+3.0
Feb. 28.....	89.68	585	-1.5	21.24	3,004	+4.0
Mar. 31.....	89.79	591	+3	21.41	3,047	+2.1
Apr. 30.....	91.14	660	+3.6	22.86	3,425	+19.5
May 31.....	93.22	772	+5.6	22.89	3,435	+5
June 30.....	91.81	697	-3.9	22.44	3,315	-6.2
July 31.....	89.53	577	-6.0	19.66	2,625	-34.4
Aug. 31.....	87.89	497	-4.0	18.04	2,248	-18.8
Sept. 30.....	86.99	454	-2.2	18.48	2,347	+5.1
WTR YR 1998			-7			-1.4

† Elevation at 2400 of the last day of each month.

HACKENSACK RIVER BASIN

DIVERSIONS INTO AND FROM HACKENSACK RIVER BASIN

- 01376272 United Water New Jersey, diverts water from Sparkill Creek (Hudson River basin) at foot of Danny Lane in Northvale, 300 ft south of New York-New Jersey state line and 0.6 mi upstream from Sparkill Brook. Water is diverted into Oradell Reservoir on the Hackensack River, for municipal supply. Records provided by United Water New Jersey (formerly Hackensack Water Company).
- 01376699 United Water New York (formerly Spring Valley Water Company), diverts water from De Forest Lake for municipal supply in Rockland County, NY. Records provided by United Water New York (formerly Spring Valley Water Company).
- 01376810 Village of Nyack, NY, diverts water from Hackensack River 100 ft downstream from gaging station on Hackensack River at West Nyack, NY (station 01376800, measured flow includes diversions) for municipal supply. Records provided by Board of Water Commissioners of Nyack, NY.
- 01378490 United Water New Jersey, diverts water for municipal supply from Oradell Reservoir at Haworth pumping station (station 01378478) 2.0 mi upstream from gaging station on Hackensack River at New Milford and prior to May 1990 from Hackensack River, at New Milford pumping station just upstream from gaging station on Hackensack River at New Milford, NJ (station 01378500). Diversion from the New Milford pumping station was discontinued in May 1990. Records provided by United Water New Jersey (formerly Hackensack Water Company).
- 01378520 United Water New Jersey, diverts water from Hirshfeld Brook, a tributary of the Hackensack River, below the gaging station on Hackensack River at New Milford, NJ, for municipal supply. Records provided by United Water New Jersey (formerly Hackensack Water Company).
- 01390520 (revised) United Water New Jersey, diverts water from Saddle River (Passaic River basin) 0.3 mi downstream from Grove Street in Paramus, and 0.3 mi upstream from Hohokus Brook. Water is diverted into Oradell Reservoir on the Hackensack River via Musquapsink and Pascack Brooks for municipal supply. Records provided by United Water New Jersey (formerly Hackensack Water Company).

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

MONTH	01376699 UNITED WATER NEW YORK.	01376810 WEST NYACK, NY	01378490 UNITED WATER NEW JERSEY
October	12.76	2.74	143
November	8.66	2.38	130
December	7.78	2.36	119
CAL YR 1997	12.74	2.45	142
January	11.73	2.43	134
February	13.14	2.60	127
March	11.57	2.65	120
April	12.71	2.71	123
May	13.90	2.81	142
June	15.34	2.67	154
July	19.71	3.29	175
August	21.97	3.40	186
September	17.64	3.25	164
WTR YR 1998	13.91	2.77	143

The following are diversions by pumpage from sources other than the Hackensack River into Oradell Reservoir. These figures are included in diversions from Hackensack River as noted above (station 01378490).

MONTH	01376272 SPARKILL CREEK (HUDSON RIVER BASIN)	01378520 HIRSHFELD BROOK (HACKENSACK RIVER BASIN)	01388981 POMPTON RIVER (PASSAIC RIVER BASIN)	01390520 SADDLE RIVER (PASSAIC RIVER BASIN)	WELLS TO SURFACE SUPPLY
October	0	0	52.60	13.8	.43
November	0	0	10.06	.67	.43
December	0	0	0	0	.46
CAL YR 1997	0	0	12.77	2.97	.37
January	0	0	0	0	.47
February	0	0	0	0	.46
March	0	0	0	0	.47
April	0	0	0	0	.50
May	0	0	0	0	.37
June	0	0	4.11	0	.35
July	0	0	37.14	5.83	.53
August	0	3.56	64.09	5.96	.77
September	0	2.33	63.05	4.11	.71
WTR YR 1998	0	.49	18.41	2.53	.50

LOCATION.--Lat 40°40'48", long 74°31'45", Somerset County, Hydrologic Unit 02030103, on right bank 200 ft downstream from Davis Bridge on Maple Avenue, 0.7 mi northwest of Millington, and 1.8 mi downstream from Black Brook.

PERIOD OF RECORD.--November 1903 to June 1906 (published as "at Millington"), October 1921 to current year. Monthly discharge only for some periods published in WSP 1302.

GAGE.--Water-stage recorder, crest-stage gage, and concrete-block control. Datum of gage is 215.60 ft above sea level (levels from New Jersey Geological Survey bench mark). Nov. 25, 1903 to July 15, 1906, nonrecording gage at bridge 0.8 mi downstream at different datum. Nov. 10, 1921 to Sept. 1, 1923, nonrecording gage at site 200 ft downstream at present datum. Oct. 31, 1923 to July 3, 1925, nonrecording gage and concrete control at present site and datum.

REMARKS.--Records fair. Diversion from Osborn Pond by Commonwealth Water Co., Bernards Division, was discontinued in April 1979 and the installation dismantled. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	2015	510	6.79	Apr 10	1745	555	6.91
Jan 24	1815	510	6.79	May 12	1200	*836	*7.57
Feb 25	0230	525	6.83				

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	48	36	369	92	218	100	83	74	48	18	4.5
2	10	210	35	273	78	177	390	179	69	34	11	4.1
3	9.2	182	30	195	73	158	369	253	50	29	8.8	10
4	8.3	147	30	160	71	137	303	209	43	30	7.1	9.5
5	7.9	117	32	132	118	115	244	175	40	27	6.8	6.9
6	6.2	84	30	109	164	100	183	214	36	23	6.2	5.1
7	5.1	64	27	109	137	91	143	206	34	20	5.6	16
8	9.3	57	25	184	112	88	116	186	32	21	7.0	45
9	13	62	22	207	94	210	120	256	31	24	5.7	25
10	11	67	23	179	83	295	462	486	28	21	6.4	15
11	9.6	61	36	144	77	253	482	680	28	18	12	10
12	9.6	50	37	115	129	202	397	810	46	16	12	8.3
13	9.1	42	47	93	161	156	299	716	88	14	8.0	8.8
14	9.1	47	51	80	131	124	217	571	265	13	6.9	8.6
15	11	74	46	68	103	121	171	435	435	13	6.9	7.5
16	16	80	40	154	83	108	151	319	423	13	6.4	7.4
17	14	67	38	183	88	95	137	230	392	13	6.9	10
18	14	54	37	162	332	95	146	173	332	19	9.4	9.0
19	13	45	34	146	415	221	127	144	235	11	9.7	7.1
20	12	40	33	125	392	345	192	114	142	12	7.9	6.4
21	12	37	32	103	335	341	189	96	97	13	5.9	5.9
22	11	61	27	87	261	387	153	79	76	13	4.3	6.5
23	11	92	60	137	206	345	126	68	64	12	4.1	6.7
24	11	80	100	458	416	284	114	62	57	12	4.2	5.1
25	36	78	171	471	510	216	98	77	49	9.9	4.1	4.6
26	66	65	247	413	451	158	94	109	42	9.0	14	5.8
27	70	52	216	324	363	123	149	74	39	8.2	17	5.9
28	49	44	199	238	276	102	133	59	34	7.5	11	5.1
29	27	39	189	176	---	88	106	54	30	7.9	7.1	4.2
30	18	37	438	139	---	77	89	72	41	9.8	6.0	3.8
31	14	---	443	113	---	68	---	56	---	18	5.0	---
TOTAL	536.4	2183	2811	5846	5751	5498	6000	7245	3352	539.3	251.4	277.8
MEAN	17.3	72.8	90.7	189	205	177	200	234	112	17.4	8.11	9.26
MAX	70	210	443	471	510	387	482	810	435	48	18	45
MIN	5.1	37	22	68	71	68	89	54	28	7.5	4.1	3.8
CFSM	.31	1.31	1.64	3.40	3.71	3.20	3.61	4.22	2.02	.31	.15	.17
IN.	.36	1.47	1.89	3.93	3.86	3.69	4.03	4.86	2.25	.36	.17	.19

MEAN	49.1	86.8	107	114	130	187	145	94.2	57.9	45.4	49.2	50.3
MAX	345	340	335	463	380	439	420	365	292	307	398	380
(WY)	1997	1933	1984	1905	1904	1994	1983	1989	1972	1975	1942	1971
MIN	3.56	7.47	8.18	6.78	26.1	64.2	25.9	20.3	3.95	1.25	1.37	.73
(WY)	1964	1966	1966	1981	1934	1981	1985	1965	1965	1965	1966	1964

PASSAIC RIVER BASIN

01379000 PASSAIC RIVER NEAR MILLINGTON, NJ--Continued

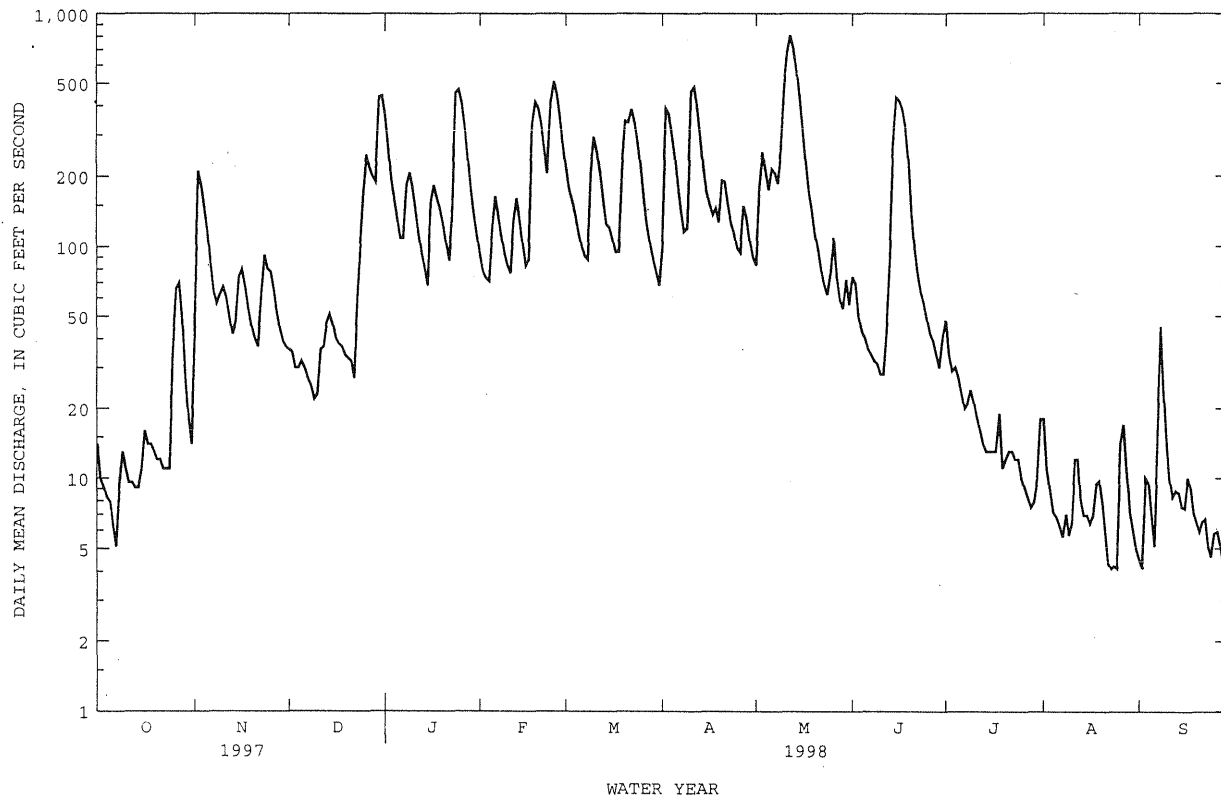
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1904 - 1998

ANNUAL TOTAL	27656.4	40290.9	91.9	
ANNUAL MEAN	75.8	110	163	1984
HIGHEST ANNUAL MEAN			32.3	1965
LOWEST ANNUAL MEAN			2230	Oct 20 1996
HIGHEST DAILY MEAN	492 Apr 2	810 May 12	.30	Sep 13 1966
LOWEST DAILY MEAN	5.1 Oct 7	3.8 Sep 30	.47	Sep 11 1964
ANNUAL SEVEN-DAY MINIMUM	8.0 Oct 2	4.9 Sep 24	2290	Oct 20 1996
INSTANTANEOUS PEAK FLOW		836 May 12	9.89	Oct 20 1996
INSTANTANEOUS PEAK STAGE		7.57 May 12	.20	Sep 12 1966
INSTANTANEOUS LOW FLOW		3.0 Sep 2	1.66	
ANNUAL RUNOFF (CFSM)	1.37	1.99	22.54	
ANNUAL RUNOFF (INCHES)	18.57	27.05	226	
10 PERCENT EXCEEDS	176	301	48	
50 PERCENT EXCEEDS	50	64	9.0	
90 PERCENT EXCEEDS	11	7.1		



01379500 PASSAIC RIVER NEAR CHATHAM, NJ

LOCATION.--Lat 40°43'31", long 74°23'23", Morris County, Hydrologic Unit 02030103, on left bank 150 ft downstream from Stanley Avenue bridge in Chatham, and 3.0 mi upstream from Canoe Brook.

DRAINAGE AREA.--100 mi².

PERIOD OF RECORD.--February 1903 to December 1911, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WDR NJ-86-1: 1984 (M).

GAGE.--Water-stage recorder. Concrete control since Sept. 19, 1938. Datum of gage is 193.51 ft above sea level. Prior to Dec. 31, 1911, nonrecording gage at bridge 150 ft upstream at different datum.

REMARKS.--Records good. Diversion from Osborn Pond by Commonwealth Water Co., Bernards Division, during water years 1903-79. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 29	2345	842	5.43	May 11	2330	*1,290	*6.19
Feb 24	0215	836	5.42	Jun 14	1000	1,030	5.75
Apr 1	2400	842	5.43				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	134	61	561	145	404	260	128	118	89	41	17
2	27	282	61	457	120	312	701	321	106	68	32	23
3	25	266	58	362	107	247	697	391	83	51	24	36
4	24	197	56	271	102	216	580	407	67	45	23	28
5	23	149	55	200	233	176	462	352	58	48	22	23
6	22	117	54	158	331	147	351	367	54	43	22	19
7	22	93	49	167	264	128	239	338	49	39	21	44
8	21	85	46	292	190	130	176	298	47	39	20	194
9	20	98	44	308	149	399	193	466	46	43	19	98
10	23	100	49	276	124	454	662	768	45	41	20	52
11	22	90	78	219	112	411	704	1020	43	36	31	35
12	20	80	91	173	242	334	631	1220	78	33	30	28
13	20	69	90	143	235	247	524	1170	162	31	32	25
14	20	97	88	122	197	193	418	1040	632	30	23	23
15	27	145	81	115	155	166	316	880	665	29	21	22
16	30	133	72	294	123	149	232	705	706	29	20	23
17	29	112	66	303	153	133	207	522	605	32	41	31
18	27	96	63	258	556	132	208	379	515	46	33	26
19	24	78	59	219	601	383	193	240	430	38	26	25
20	23	67	56	190	599	510	306	170	302	30	23	21
21	22	62	54	160	530	588	300	139	177	30	22	20
22	22	140	51	132	452	609	238	113	119	28	20	35
23	22	163	132	309	389	575	197	97	101	42	19	33
24	21	132	168	712	725	489	173	85	89	34	20	25
25	46	110	327	787	749	400	149	123	78	27	18	23
26	49	103	369	716	725	308	151	140	66	23	24	24
27	105	88	327	591	621	226	263	120	58	23	34	23
28	82	72	276	474	507	185	230	90	54	22	30	22
29	62	66	296	371	---	159	173	83	48	22	23	22
30	48	61	648	267	---	138	139	92	83	25	19	20
31	41	---	663	187	---	121	---	91	---	41	17	---
TOTAL	1001	3485	4588	9794	9436	9069	10073	12355	5684	1157	770	1040
MEAN	32.3	116	148	316	337	293	336	399	189	37.3	24.8	34.7
MAX	105	282	663	787	749	609	704	1220	706	89	41	194
MIN	20	61	44	115	102	121	139	83	43	22	17	17
CFSM	.32	1.16	1.48	3.16	3.37	2.93	3.36	3.99	1.89	.37	.25	.35
IN.	.37	1.30	1.71	3.64	3.51	3.37	3.75	4.60	2.11	.43	.29	.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 1998, BY WATER YEAR (WY)

	94.4	159	205	228	240	341	266	176	115	84.9	93.6	92.4
MEAN	94.4	159	205	228	240	341	266	176	115	84.9	93.6	92.4
MAX	576	590	655	735	493	719	711	637	533	539	664	713
(WY)	1904	1973	1984	1979	1908	1994	1983	1989	1972	1975	1942	1971
MIN	8.05	13.8	32.3	21.5	63.2	94.5	54.3	7.52	13.6	7.74	7.35	4.70
(WY)	1965	1950	1940	1981	1980	1911	1985	1903	1965	1966	1957	1906

PASSAIC RIVER BASIN

01379500 PASSAIC RIVER NEAR CHATHAM, NJ--Continued

SUMMARY STATISTICS

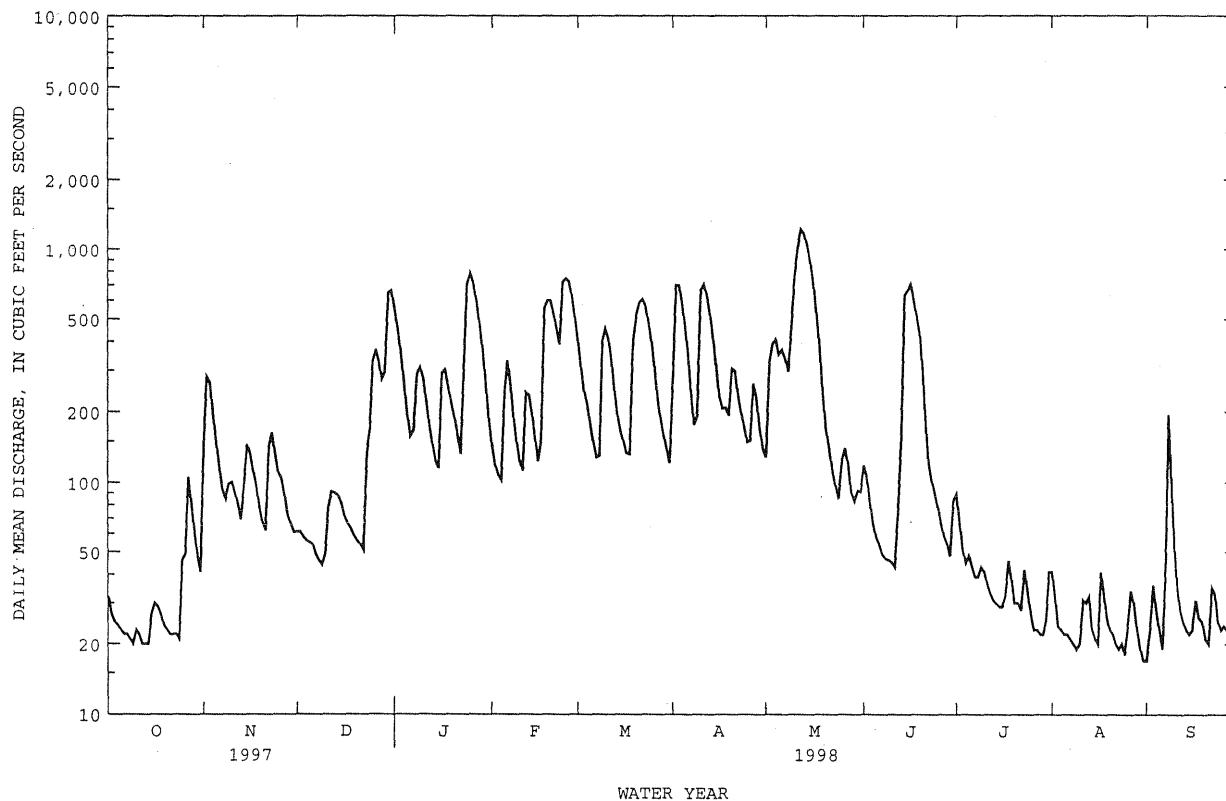
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1903 - 1998

ANNUAL TOTAL	53435		68452		
ANNUAL MEAN	146		188		173
HIGHEST ANNUAL MEAN					305
LOWEST ANNUAL MEAN					67.7
HIGHEST DAILY MEAN	988	Jul 25	1220	May 12	2990
LOWEST DAILY MEAN	20	Jul 17	17	Aug 31	2.0
ANNUAL SEVEN-DAY MINIMUM	21	Oct 8	21	Oct 8	2.0
INSTANTANEOUS PEAK FLOW			1290	May 11	3380
INSTANTANEOUS PEAK STAGE			6.19	May 11	9.36a
INSTANTANEOUS LOW FLOW			8.7	Aug 24	
ANNUAL RUNOFF (CFSM)	1.46		1.88		1.73
ANNUAL RUNOFF (INCHES)	19.88		25.46		23.55
10 PERCENT EXCEEDS	339		523		462
50 PERCENT EXCEEDS	90		101		84
90 PERCENT EXCEEDS	25		22		17

a From floodmark.



01379773 GREEN POND BROOK AT PICATINNY ARSENAL, NJ

LOCATION.--Lat 40°57'34", long 74°32'24", Morris County, Hydrologic Unit 02030103, on left bank at Picatinny Arsenal, 500 ft upstream from Picatinny Lake, and 0.55 mi downstream from Burnt Meadow Brook.

DRAINAGE AREA.--7.65 mi².

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 712.54 ft above sea level (U.S. Army, Picatinny Arsenal, bench mark).

REMARKS.--Records good. Discharges given herein includes flow through sluice gates when open. Some regulation by Lake Denmark and Green Pond. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 75 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 11	2230	121	2.69	Jun 14	1445	*135	*2.76

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	3.9	6.3	30	17	32	20	12	12	15	2.1	1.7
2	1.7	6.4	5.4	29	15	29	34	19	10	12	1.9	1.7
3	1.1	6.0	4.6	26	15	24	35	19	8.6	9.9	1.9	1.8
4	.80	7.7	5.0	24	15	20	45	19	7.6	8.0	1.8	1.6
5	.74	7.9	5.4	23	20	17	40	20	6.7	6.7	1.6	1.6
6	.55	10	5.1	21	18	15	34	26	6.0	5.7	1.5	1.5
7	.38	12	4.7	22	17	13	29	30	5.6	5.0	1.4	1.9
8	.33	11	4.5	30	20	14	24	31	5.0	4.7	1.4	2.5
9	.33	11	4.3	33	24	22	27	39	4.4	4.5	1.5	2.2
10	.33	8.9	4.7	30	22	26	55	74	4.1	4.0	2.9	1.9
11	.33	7.3	5.4	25	21	25	57	113	4.0	3.5	3.8	1.8
12	.33	5.9	5.3	22	29	22	50	108	5.5	3.3	3.2	1.6
13	.33	5.3	5.2	19	26	20	41	105	14	3.3	2.5	1.6
14	.33	7.3	4.9	16	24	18	33	81	91	2.7	2.3	1.3
15	.36	6.4	4.5	15	22	17	29	66	109	2.5	2.2	1.3
16	.43	5.8	4.1	20	19	16	25	57	88	2.4	2.0	1.3
17	.47	5.1	4.0	19	19	14	22	49	74	2.5	2.2	1.3
18	.46	4.7	3.9	18	31	15	20	40	66	2.6	2.4	1.3
19	.36	4.4	3.8	18	33	23	19	35	56	2.3	2.3	1.2
20	.36	4.2	3.8	16	32	26	21	31	48	2.3	2.2	1.2
21	.40	4.0	3.8	15	30	30	19	27	40	2.2	2.1	.91
22	.36	7.2	3.5	13	27	31	18	23	34	2.2	2.1	1.0
23	.33	7.6	5.4	17	26	30	16	20	30	2.2	2.0	.95
24	.30	7.6	5.5	33	44	28	14	17	27	2.2	1.9	.78
25	.79	6.8	11	36	52	25	13	16	24	2.2	1.9	.72
26	.75	6.3	12	34	48	23	14	15	22	2.1	3.2	.78
27	1.7	5.9	12	31	40	21	16	13	20	2.1	2.9	.84
28	1.3	5.7	12	28	33	19	14	11	18	2.1	2.4	.89
29	1.1	5.4	14	24	---	18	13	10	16	2.1	2.2	.82
30	.97	5.2	31	21	---	17	12	10	16	2.1	2.1	.70
31	.79	---	31	19	---	15	---	9.2	---	2.1	1.9	---
TOTAL	21.11	202.9	236.1	727	739	665	809	1145.2	872.5	126.5	67.8	40.69
MEAN	.68	6.76	7.62	23.5	26.4	21.5	27.0	36.9	29.1	4.08	2.19	1.36
MAX	2.3	12	31	36	52	32	57	113	109	15	3.8	2.5
MIN	.30	3.9	3.5	13	15	13	12	9.2	4.0	2.1	1.4	.70
CFSM	.09	.88	1.00	3.07	3.45	2.80	3.53	4.83	3.80	.53	.29	.18
IN.	.10	.99	1.15	3.54	3.59	3.23	3.93	5.57	4.24	.62	.33	.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1998, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	7.54	11.3	18.5	16.1	16.6	23.3	26.5	18.8	11.1	7.74	5.77	5.59				
MAX	26.1	22.4	49.5	45.5	32.0	49.5	64.1	50.6	29.1	32.6	20.9	24.7				
(WY)	1990	1996	1997	1996	1996	1983	1983	1989	1998	1984	1990	1987				
MIN	.68	2.07	5.29	5.85	5.92	10.5	3.84	5.77	3.54	2.65	2.13	1.36				
(WY)	1998	1985	1992	1992	1992	1985	1985	1995	1987	1991	1991	1998				

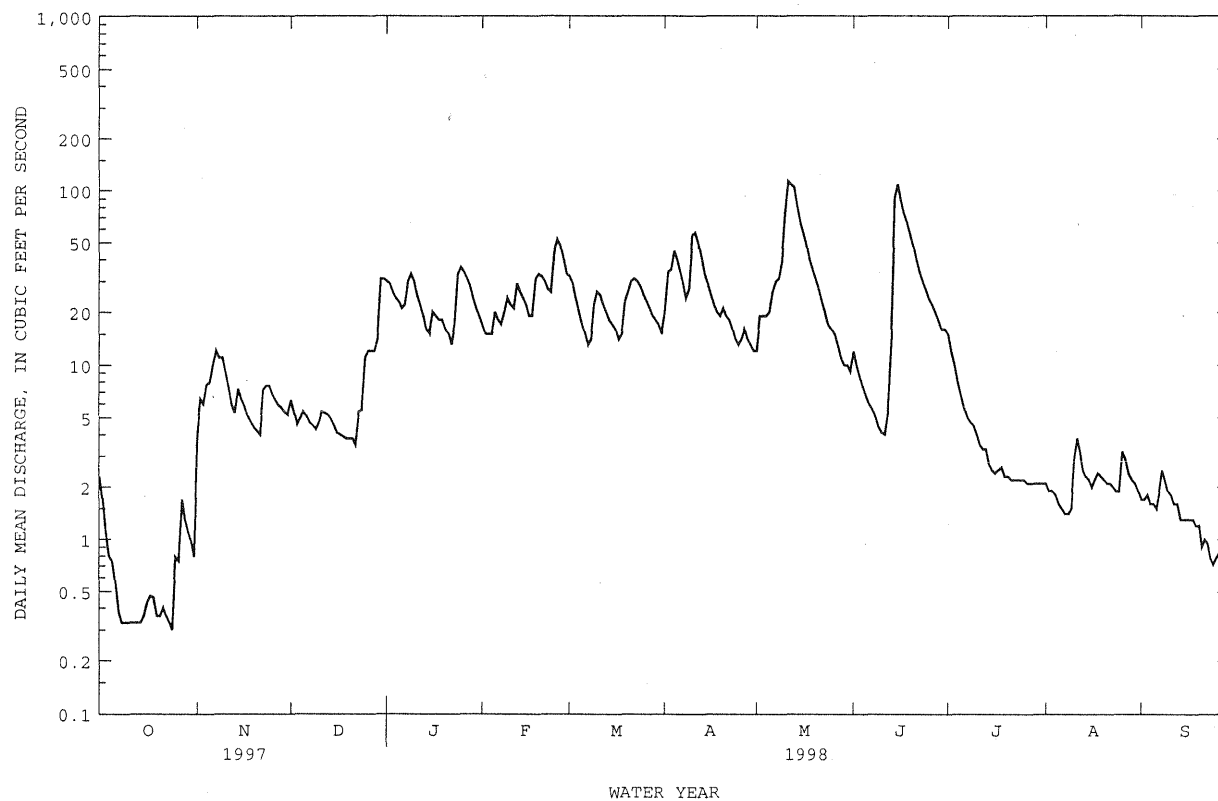
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1983 - 1998

ANNUAL TOTAL	3331.01	5652.80	
ANNUAL MEAN	9.13	15.5	14.1
HIGHEST ANNUAL MEAN			21.4
LOWEST ANNUAL MEAN			6.63
HIGHEST DAILY MEAN	51	113	248
LOWEST DAILY MEAN	.30	.30	.30
ANNUAL SEVEN-DAY MINIMUM	.33	.33	.33
INSTANTANEOUS PEAK FLOW		135	333
INSTANTANEOUS PEAK STAGE		2.76	3.51
INSTANTANEOUS LOW FLOW		.28	.28
ANNUAL RUNOFF (CFSM)	1.19	2.02	1.84
ANNUAL RUNOFF (INCHES)	16.20	27.49	24.96
10 PERCENT EXCEEDS	20	33	31
50 PERCENT EXCEEDS	5.8	10	8.8
90 PERCENT EXCEEDS	2.3	1.1	2.7



01379780 GREEN POND BROOK BELOW PICATINNY LAKE, AT PICATINNY ARSENAL, NJ

LOCATION.--Lat 40°56'56", long 74°33'29", Morris County, Hydrologic Unit 02030103, on left bank 100 ft upstream from bridge on Whitmore Avenue at Picatinny Arsenal, and 200 ft downstream from dam on Picatinny Lake.

DRAINAGE AREA.--9.16 mi².

PERIOD OF RECORD.--October 1984 to current year.

REVISED RECORDS.--WDR NJ-90-1: 1987 (M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 694.91 ft above sea level (U.S. Army, Picatinny Arsenal, benchmark).

REMARKS.--Records good. Occasional regulation at Picatinny Lake. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 5, 1984 reached an elevation of 699.0 ft above sea level, 200 ft upstream from bridge on Whitmore Avenue.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 11	1515	73	3.05	May 14	1400	122	3.28
May 11	1000	*189	*3.54	Jun 14	1545	169	3.47

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.1	8.6	33	21	40	20	16	14	18	1.3	4.2
2	1.6	1.5	7.0	32	19	36	34	17	14	17	1.4	4.1
3	1.6	4.0	6.7	29	17	32	38	17	13	16	1.4	2.6
4	1.6	9.7	6.7	27	17	28	46	18	6.1	15	1.4	1.7
5	1.5	10	6.7	26	21	26	45	18	2.6	14	1.4	1.6
6	1.5	8.4	6.7	24	21	25	40	26	2.6	7.2	1.4	1.6
7	1.5	10	6.7	25	19	23	34	35	2.6	2.1	1.3	1.6
8	1.5	12	6.5	34	20	21	29	36	2.4	2.0	1.3	1.6
9	1.5	13	6.3	39	24	21	29	46	2.3	2.0	1.3	1.6
10	1.5	12	6.3	35	25	22	66	81	2.3	2.1	1.3	1.6
11	1.5	9.9	6.3	29	23	21	71	141	2.3	2.1	1.4	1.6
12	1.4	8.2	6.3	25	32	21	62	124	2.3	2.2	1.4	1.7
13	1.4	6.9	6.3	22	31	21	51	111	4.4	2.2	1.3	1.7
14	1.4	9.5	6.3	20	28	21	41	103	91	2.3	1.3	1.7
15	1.4	8.7	6.3	18	25	20	36	81	125	2.3	1.3	1.7
16	1.3	7.6	6.3	24	23	20	30	61	106	2.3	1.3	1.7
17	1.3	6.5	6.3	22	23	19	26	53	92	2.3	1.3	1.5
18	1.3	5.9	6.3	22	37	19	24	49	86	2.2	1.3	1.4
19	1.3	5.5	6.3	21	41	19	22	43	72	2.1	1.2	1.4
20	1.3	5.1	5.9	19	40	22	24	36	60	2.1	1.2	1.4
21	1.3	8.4	5.9	17	37	26	23	32	44	2.1	1.2	1.4
22	1.3	11	5.9	16	34	33	21	28	32	2.1	1.2	1.4
23	1.2	11	5.9	21	40	33	19	24	32	2.1	1.2	1.3
24	1.2	10	5.9	40	53	31	19	21	45	2.1	1.2	1.4
25	1.2	9.8	6.3	45	64	28	18	19	32	2.1	1.2	1.4
26	1.2	9.5	6.9	43	61	26	17	18	22	1.9	1.2	1.4
27	1.2	9.5	7.4	39	52	24	17	17	18	1.8	1.2	1.4
28	1.2	9.1	9.1	35	43	23	17	16	9.9	1.8	1.2	1.4
29	1.2	9.0	13	29	---	21	17	16	15	1.8	1.2	1.4
30	1.2	9.0	35	26	---	20	16	15	19	1.7	1.2	1.4
31	1.2	---	36	23	---	19	---	15	---	1.6	2.1	---
TOTAL	42.5	251.8	268.1	860	891	761	952	1333	971.8	138.6	40.6	51.9
MEAN	1.37	8.39	8.65	27.7	31.8	24.5	31.7	43.0	32.4	4.47	1.31	1.73
MAX	1.7	13	36	45	64	40	71	141	125	18	2.1	4.2
MIN	1.2	1.1	5.9	16	17	19	16	15	2.3	1.6	1.2	1.3
CFSM	.15	.92	.94	3.03	3.47	2.68	3.46	4.69	3.54	.49	.14	.19
IN.	.17	1.02	1.09	3.49	3.62	3.09	3.87	5.41	3.95	.56	.16	.21

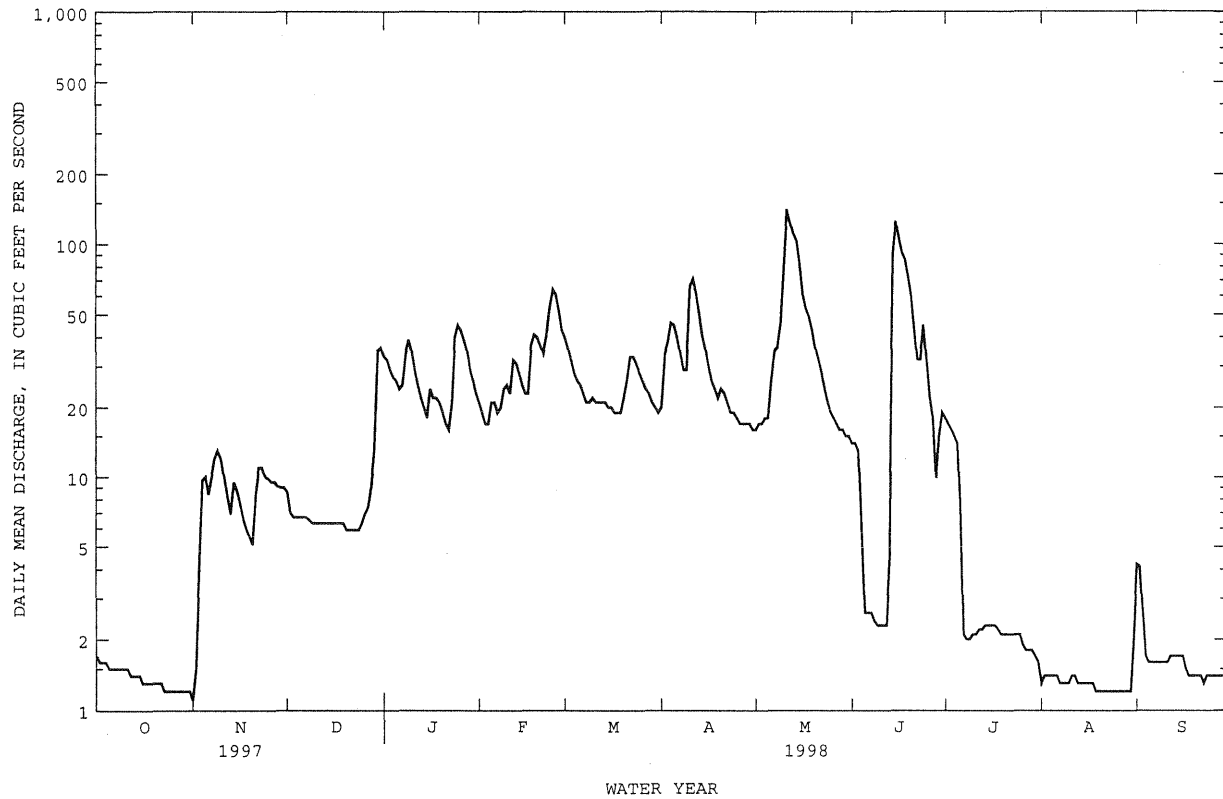
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1998, BY WATER YEAR (WY)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	8.76	14.3	22.0	19.0	17.8	23.8	25.8	21.4	11.9	6.53	6.42	7.00		
MAX	33.3	29.5	60.7	51.2	31.8	38.8	51.1	66.7	32.4	18.4	28.6	36.7		
(WY)	1990	1996	1997	1996	1998	1994	1993	1989	1998	1990	1990	1987		
MIN	.71	.28	5.28	6.98	7.08	10.6	2.48	5.32	2.23	1.48	.54	1.73		
(WY)	1985	1985	1985	1985	1992	1985	1985	1995	1987	1993	1991	1998		

PASSAIC RIVER BASIN

01379780 GREEN POND BROOK BELOW PICATINNY LAKE, AT PICATINNY ARSENAL, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1985 - 1998	
ANNUAL TOTAL	3835.5		6562.3		15.4	
ANNUAL MEAN	10.5		18.0		22.1	
HIGHEST ANNUAL MEAN					6.35	
LOWEST ANNUAL MEAN					206	
HIGHEST DAILY MEAN	62	Apr 4	141	May 11	206	May 17 1990
LOWEST DAILY MEAN	1.1	Nov 1	1.1	Nov 1	.20	Nov 20 1984
ANNUAL SEVEN-DAY MINIMUM	1.2	Oct 26	1.2	Oct 26	.20	Nov 17 1984
INSTANTANEOUS PEAK FLOW			189	May 11	243	Sep 13 1987
INSTANTANEOUS PEAK STAGE			3.54	May 11	3.70	Sep 13 1987
INSTANTANEOUS LOW FLOW			1.1	Nov. 1	1.0	Oct 21 1995
ANNUAL RUNOFF (CFSM)	1.15		1.96		1.68	
ANNUAL RUNOFF (INCHES)	15.58		26.65		22.80	
10 PERCENT EXCEEDS	22		40		34	
50 PERCENT EXCEEDS	6.7		11		9.5	
90 PERCENT EXCEEDS	1.5		1.3		1.7	



01379790 GREEN POND BROOK AT WHARTON, NJ

LOCATION.--Lat 40°55'04", long 74°35'02", Morris County, Hydrologic Unit 02030103, on left bank 600 ft upstream from bridge on northbound lane of State Route 15, 0.2 mi northwest of Wharton, and 1.7 mi upstream from mouth.

DRAINAGE AREA.--12.6 mi².

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 680.26 ft above sea level (U.S. Army, Picatinny Arsenal, bench mark).

REMARKS.--Records good. Some regulation from Lake Picatinny, Picatinny Arsenal sewage treatment plant, and flood gates located about 800 ft upstream from gage. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 12	0245	*212	*3.84	Jun 16	1745	192	3.77
Jun 15	1015	186	3.75	Jun 17	2215	131	3.53

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	20	14	44	33	57	41	25	19	24	3.1	5.2
2	3.6	22	12	42	30	51	63	38	16	21	2.8	6.0
3	3.4	14	12	39	28	46	53	31	15	19	3.0	6.1
4	3.2	15	12	37	27	41	56	29	12	18	3.2	3.2
5	2.9	17	12	35	38	39	56	31	4.2	19	4.0	2.4
6	3.0	14	12	33	35	36	51	46	4.2	15	4.2	2.6
7	2.8	15	12	36	32	34	45	53	4.0	6.9	3.9	3.4
8	2.8	18	12	54	30	33	41	50	3.8	6.3	2.6	6.5
9	5.7	20	11	55	32	51	48	68	3.5	6.3	2.3	3.0
10	2.4	18	11	48	34	42	114	106	3.5	5.9	5.6	3.0
11	2.8	16	12	43	32	34	89	171	3.3	5.7	7.7	2.9
12	2.8	14	12	38	49	33	78	189	6.6	5.5	4.3	2.7
13	5.3	12	12	34	42	32	67	143	25	5.5	3.0	2.5
14	4.7	15	12	30	38	33	56	122	101	5.5	2.6	2.4
15	3.3	16	12	28	34	32	52	105	173	5.3	2.5	2.6
16	3.4	14	11	42	31	30	46	76	141	5.3	2.4	2.7
17	3.1	12	13	35	32	29	41	63	119	5.8	3.2	2.3
18	2.8	11	12	33	62	30	38	58	108	5.9	4.1	2.0
19	2.9	10	12	32	59	46	37	51	81	5.1	3.9	2.1
20	2.9	9.8	12	30	53	40	44	44	67	5.0	2.2	1.6
21	2.7	11	11	27	50	45	37	39	50	4.8	2.0	1.6
22	2.9	20	11	25	46	49	33	34	37	4.7	1.9	1.8
23	2.9	17	14	35	50	48	31	30	38	5.0	2.9	1.7
24	5.3	16	13	71	84	47	29	26	45	4.8	2.1	1.5
25	5.3	15	23	64	85	42	27	25	40	4.5	1.7	1.7
26	3.3	14	17	58	74	39	32	23	27	4.3	6.8	1.6
27	6.5	14	16	53	66	37	34	20	23	3.8	2.9	1.4
28	4.5	13	16	48	58	35	28	19	16	3.7	2.4	1.5
29	3.8	13	21	43	---	32	27	19	17	4.6	2.4	1.5
30	4.3	13	62	40	---	30	25	18	25	4.7	1.9	1.5
31	5.4	---	49	36	---	28	---	17	---	4.2	2.0	---
TOTAL	114.4	448.8	493	1268	1264	1201	1419	1769	1228.1	245.1	99.6	81.0
MEAN	3.69	15.0	15.9	40.9	45.1	38.7	47.3	57.1	40.9	7.91	3.21	2.70
MAX	6.5	22	62	71	85	57	114	189	173	24	7.7	6.5
MIN	2.4	9.8	11	25	27	28	25	17	3.3	3.7	1.7	1.4
CFSM	.29	1.19	1.26	3.25	3.58	3.07	3.75	4.53	3.25	.63	.25	.21
IN.	.34	1.33	1.46	3.74	3.73	3.55	4.19	5.22	3.63	.72	.29	.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1998, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	13.6	21.4	33.1	29.1	29.6	41.5	47.9	33.6	19.9	14.3	10.1	11.3				
MAX	46.7	46.3	79.4	80.2	49.7	89.2	112	87.0	40.9	61.4	36.4	54.0				
(WY)	1990	1996	1997	1996	1996	1983	1983	1989	1998	1984	1990	1987				
MIN	3.69	4.23	11.7	11.3	13.2	17.8	8.96	10.7	6.65	3.12	3.04	2.70				
(WY)	1998	1985	1985	1985	1992	1985	1985	1995	1987	1993	1993	1998				

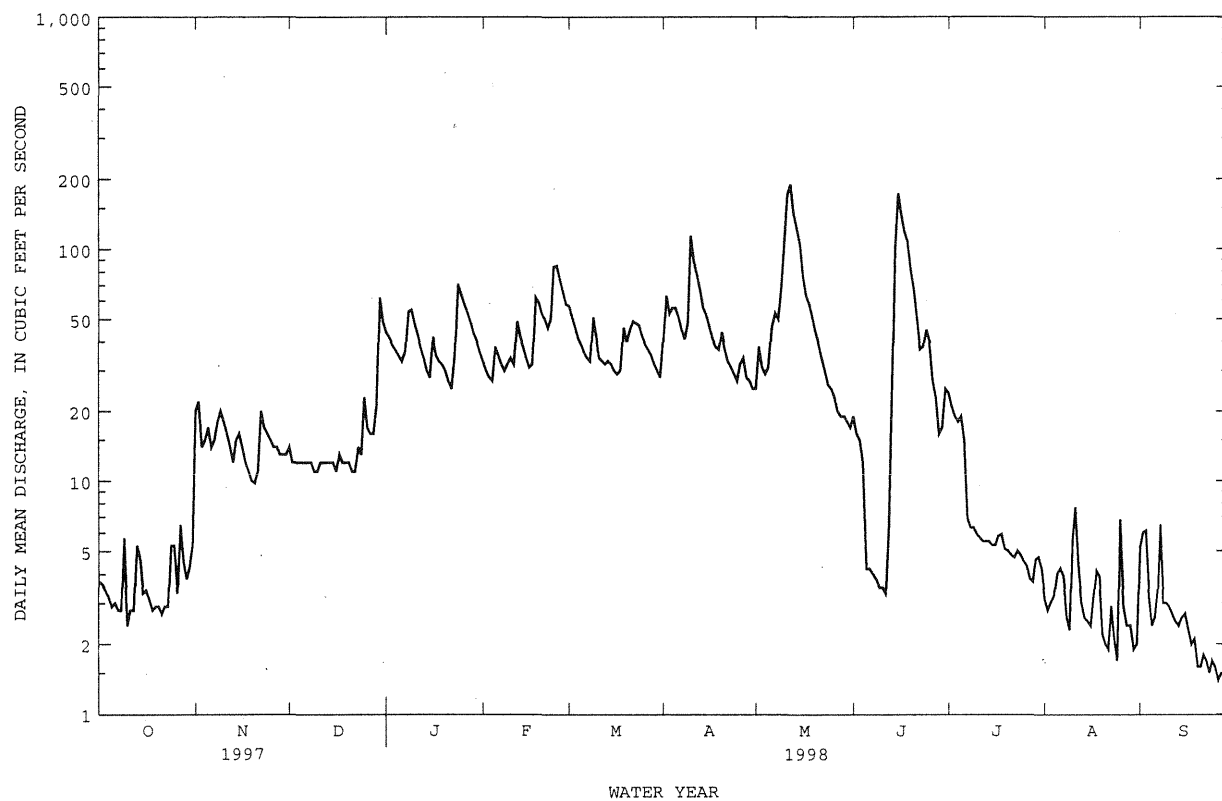
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1983 - 1998

ANNUAL TOTAL	6347.9	9631.0	
ANNUAL MEAN	17.4	26.4	25.4
HIGHEST ANNUAL MEAN			40.7
LOWEST ANNUAL MEAN			12.5
HIGHEST DAILY MEAN	87	189	512
LOWEST DAILY MEAN	2.4	1.4	1.4
ANNUAL SEVEN-DAY MINIMUM	2.9	1.5	1.5
INSTANTANEOUS PEAK FLOW		212	572
INSTANTANEOUS PEAK STAGE		3.84	5.11
INSTANTANEOUS LOW FLOW		.82	.82
ANNUAL RUNOFF (CFSM)	1.38	2.09	2.02
ANNUAL RUNOFF (INCHES)	18.74	28.43	27.42
10 PERCENT EXCEEDS	35	56	54
50 PERCENT EXCEEDS	13	17	16
90 PERCENT EXCEEDS	3.7	2.7	4.7



LOCATION.--Lat 40°54'10", long 74°24'36", Morris County, Hydrologic Unit 02030103, on right bank, under New Jersey Transit railroad bridge, just downstream from bridge on Morris Avenue in Boonton, 1.8 mi unstream from dam at Boonton Reservoir.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1302.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 364.47 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good. Flow regulated by Splitrock Reservoir on Beaver Brook, 14.5 mi upstream from station (see Passaic River basin, reservoirs in). Town of Boonton diverts water for municipal supply from Taylortown Reservoir on Stony Brook, capacity, 75,000,000 gal and by pumping from wells in vicinity of Boonton. For diversion from Taylortown Reservoir, see Passaic River Basin diversions. Rockaway Valley trunk sewer bypasses the station (see station 01381000). Several measurements of water temperature were made during the year. Satellite telemeter at station.

COOPERATION. - Gage-height record collected in cooperation with Jersey City, Bureau of Water.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 950 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb 24	2230	983	3.75	May 12	0900	2,190	4.94
Apr 10	1200	1,520	4.34	Jun 14	2315	*2,720	*5.33

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	207	138	287	283	503	298	236	204	229	46	26
2	37	596	122	324	260	474	820	485	172	170	37	29
3	37	291	107	283	246	433	563	403	152	141	33	56
4	44	179	114	285	237	372	456	324	137	125	31	35
5	42	144	139	273	366	329	409	329	119	120	30	29
6	38	122	135	254	379	304	358	505	107	111	29	26
7	37	116	125	278	312	283	314	575	98	97	28	30
8	39	152	116	488	272	282	283	498	93	91	27	122
9	40	180	110	500	244	585	335	710	90	89	26	54
10	41	173	112	393	230	634	1290	1370	88	82	33	40
11	34	134	125	323	221	456	902	2010	85	81	164	55
12	35	118	125	295	438	371	634	2060	158	77	74	57
13	34	101	123	278	390	328	546	1560	367	70	51	52
14	36	134	111	259	295	327	492	1080	1610	63	40	43
15	34	175	101	244	255	330	477	827	1960	58	36	27
16	42	155	97	478	231	301	455	666	1140	59	34	27
17	37	135	97	412	236	278	404	561	905	79	43	26
18	31	121	100	323	635	285	382	501	939	107	71	24
19	27	112	96	299	587	531	363	440	667	70	52	24
20	26	107	96	277	488	574	513	382	497	57	44	23
21	24	103	95	246	435	520	440	326	446	58	39	22
22	22	203	90	224	388	555	355	282	331	55	35	23
23	24	200	155	278	356	485	307	247	292	57	33	25
24	37	165	151	843	782	467	292	226	255	70	32	33
25	96	145	305	664	907	418	258	226	236	52	29	35
26	77	138	291	496	676	379	287	222	199	47	81	48
27	140	133	215	432	576	334	482	202	177	41	62	31
28	97	121	197	391	519	303	329	188	151	39	45	41
29	72	118	201	358	---	292	269	174	139	38	37	70
30	60	121	704	332	---	281	243	174	192	49	32	58
31	59	---	497	307	---	253	---	159	---	57	28	---
TOTAL	1442	4899	5190	11124	11244	12267	13556	17948	12006	2539	1382	1191
MEAN	46.5	163	167	359	402	396	452	579	400	81.9	44.6	39.7
MAX	140	596	704	843	907	634	1290	2060	1960	229	164	122
MIN	22	101	90	224	221	253	243	159	85	38	26	22

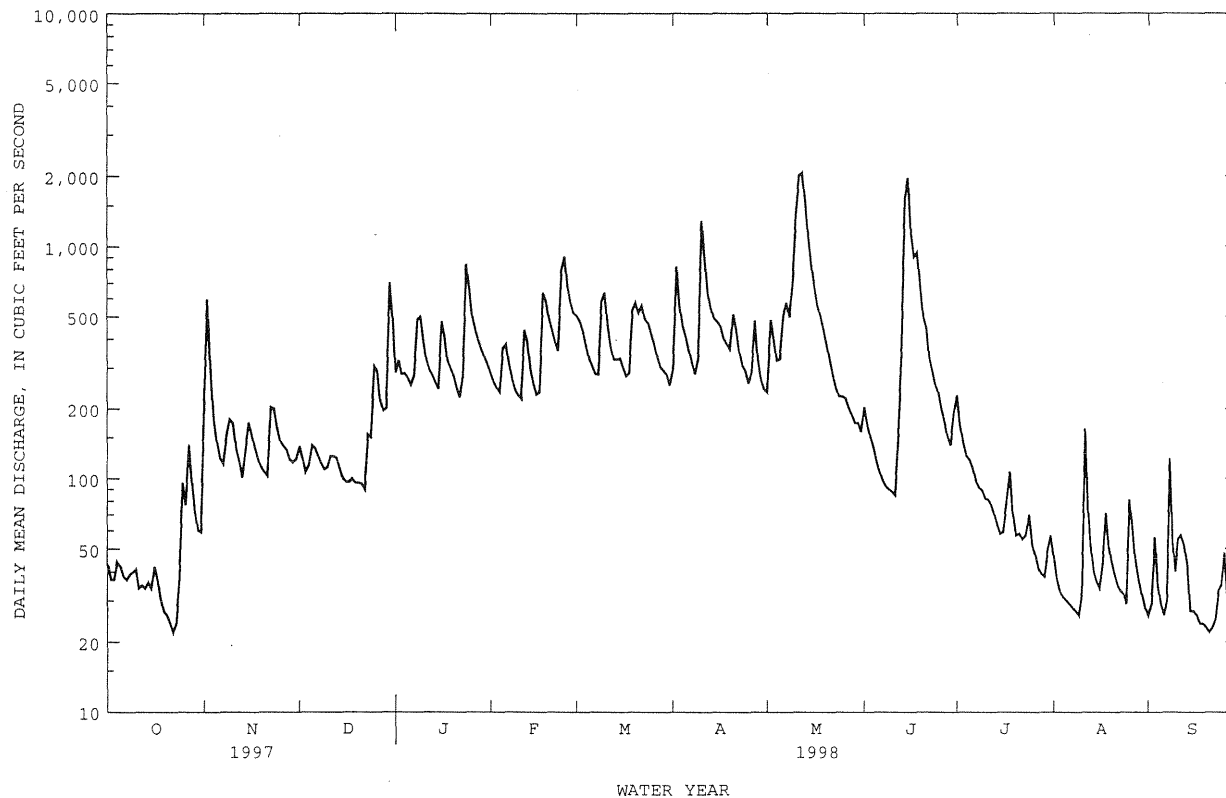
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1998, BY WATER YEAR (WY)

MEAN	126	223	278	266	278	393	395	281	183	128	115	119
MAX	523	694	718	855	590	798	979	836	847	553	447	484
(WY)	1956	1973	1997	1979	1973	1977	1983	1989	1972	1975	1955	1971
MIN	23.7	63.7	67.2	74.8	107	152	87.0	90.5	35.3	18.1	16.6	16.8
(WY)	1965	1962	1940	1981	1940	1985	1985	1965	1965	1966	1957	1964

PASSAIC RIVER BASIN

01380500 ROCKAWAY RIVER ABOVE RESERVOIR, AT BOONTON, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1938 - 1998	
ANNUAL TOTAL	72072		94788		232	
ANNUAL MEAN	197		260		396	
HIGHEST ANNUAL MEAN					88.3	
LOWEST ANNUAL MEAN					1952	
HIGHEST DAILY MEAN	1240	Sep 12	2060	May 12	4220	Jan 25 1979
LOWEST DAILY MEAN	22	Oct 22	22	Oct 22	6.0	Sep 6 1995
ANNUAL SEVEN-DAY MINIMUM	27	Oct 17	24	Sep 17	8.5	Sep 2 1995
INSTANTANEOUS PEAK FLOW			2720	Jun 14	5590	Apr 5 1984
INSTANTANEOUS PEAK STAGE			5.33	Jun 14	7.23	Apr 5 1984
INSTANTANEOUS LOW FLOW			21	many days		
10 PERCENT EXCEEDS	390		537		500	
50 PERCENT EXCEEDS	146		174		156	
90 PERCENT EXCEEDS	39		34		44	



LOCATION.--Lat 40°53'49", long 74°23'42", Morris County, Hydrologic Unit 02030103, on right bank 2,000 ft downstream from Boonton Reservoir Dam at Boonton, and 0.4 mi upstream at bridge on Greenback Road.

PERIOD OF RECORD.--March to December 1903; January, February 1904 (gage height only); January 1906 to September 1950 (monthly discharge only, published in WSP 1302) October 1950 to current year (figures of daily discharge for October 1950 to September 1954 published in Special Report 16 of New Jersey Department of Environmental Protection). Published as "near Boonton" 1903-4, and as "at Boonton" 1906-37.

GAGE.--Water-stage recorder. Concrete control since Nov. 5, 1936. Datum of gage is 195.68 ft above sea level (levels from New Jersey Geological Survey bench mark). Mar. 15, 1903 to Feb. 2, 1904, nonrecording gage at site 1.9 mi downstream at different datum. Jan. 1, 1906 to Mar. 3, 1918, nonrecording gage on Boonton Reservoir Dam 2,000 ft upstream at datum 305.25 ft sea level (levels from New Jersey Geological Survey bench mark).

COOPERATION.--Gage-height record collected in cooperation with Jersey City, Bureau of Water, and sewage flows provided by Rockaway Valley Regional Sewerage Authority.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	18	11	272	208	410	185	160	96	123	10	11
2	12	15	11	230	187	407	632	324	98	90	10	11
3	12	15	11	213	172	411	518	338	75	65	10	11
4	12	15	11	199	163	363	353	261	55	46	10	11
5	12	14	11	193	236	324	304	250	37	34	11	11
6	14	14	12	182	291	300	265	362	24	26	11	11
7	17	14	11	194	246	282	235	461	19	17	11	12
8	17	14	10	311	211	279	204	408	13	11	11	11
9	17	14	9.2	386	180	466	239	579	11	10	11	11
10	17	14	9.2	318	161	649	1030	1240	10	9.7	11	11
11	16	13	9.2	255	150	463	947	2020	10	9.6	11	11
12	17	13	9.2	219	276	365	588	2070	13	9.6	11	11
13	17	13	13	205	312	319	462	1610	135	9.6	11	11
14	17	14	15	185	239	315	397	1090	1240	9.6	11	11
15	17	14	16	173	193	292	377	791	2030	9.6	11	11
16	17	14	9.2	298	166	245	356	607	1160	9.6	11	11
17	16	13	161	330	160	102	329	473	846	11	11	11
18	16	13	212	263	421	11	295	395	846	9.6	12	11
19	16	13	293	227	516	28	284	335	640	9.6	12	11
20	16	13	90	203	401	363	383	280	414	9.9	11	11
21	16	13	34	178	327	405	354	241	341	10	11	11
22	16	14	21	155	283	465	285	191	259	10	11	11
23	15	13	49	181	263	388	240	161	209	10	11	11
24	15	13	77	588	548	345	221	141	176	10	11	11
25	15	13	157	656	835	309	182	140	152	10	11	11
26	15	12	243	432	655	278	190	137	118	10	12	11
27	15	12	168	338	518	250	338	118	89	10	11	11
28	14	12	133	300	441	217	271	106	72	10	11	11
29	13	12	129	276	---	197	202	94	57	10	11	11
30	13	11	549	252	---	190	166	87	79	10	11	11
31	13	---	550	229	---	169	---	89	---	10	11	---
TOTAL	467	405	3044.0	8441	8759	9607	10832	15559	9324	639.4	340	331
MEAN	15.1	13.5	98.2	272	313	310	361	502	311	20.6	11.0	11.0
MAX	17	18	550	656	835	649	1030	2070	2030	123	12	12
MIN	12	11	9.2	155	150	11	166	87	10	9.6	10	11
(+)	12.4	13.4	13.7	16.0	16.9	17.7	18.2	18.7	16.2	13.6	12.9	12.7
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1998, BY WATER YEAR (WY)												
MEAN	50.3	103	177	171	178	283	304	197	102	52.4	42.0	45.1
MAX	408	483	802	692	499	739	978	873	671	4		

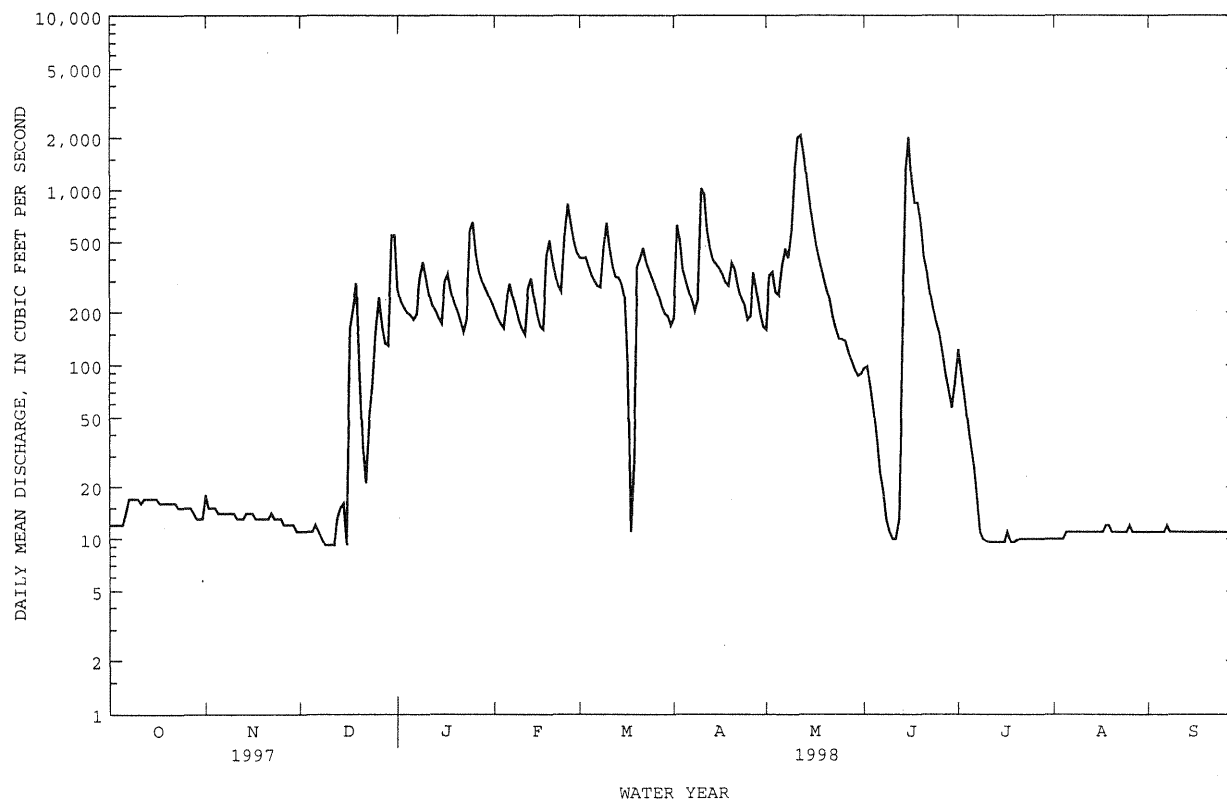
01381000 ROCKAWAY RIVER BELOW RESERVOIR, AT BOONTON, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1950 - 1998	
ANNUAL TOTAL	44597.8		67748.4		142	
ANNUAL MEAN	122		186		---	
	14.4		15.2		296	
HIGHEST ANNUAL MEAN					7.19	
LOWEST ANNUAL MEAN					3850	
HIGHEST DAILY MEAN	1190	Apr 1	2070	May 12		1952
LOWEST DAILY MEAN	9.2	Dec 9	9.2	Dec 9		1965
ANNUAL SEVEN-DAY MINIMUM	9.8	Jul 15	9.6	Jul 10		Apr 6 1984
INSTANTANEOUS PEAK FLOW			2420	Jun 15		Jan 19 1959
INSTANTANEOUS PEAK STAGE			6.37	Jun 15		Dec 18 1963
INSTANTANEOUS LOW FLOW			8.8	Dec 16		Oct 10 1903
10 PERCENT EXCEEDS	309		436			.00a
50 PERCENT EXCEEDS	17		72			372
90 PERCENT EXCEEDS	11		11			40
						.90

a Since 1903; see period of record section.

b Maximum daily.

† Sewage effluent, in cubic feet per second, from plant at Rockaway Valley Regional Sewerage Authority.



01381400 WHIPPANY RIVER NEAR MORRISTOWN, NJ

LOCATION.--Lat 40°48'44", long 74°30'44", Morris County, Hydrologic Unit 02030103, on left downstream side of bridge on Sussex Avenue, 1.9 mi northwest of Morristown, and 2.7 mi upstream from Lake Pocahontas Dam.

DRAINAGE AREA.--14.0 mi².

PERIOD OF RECORD.--Low-flow partial-record site 1964-72. August 1995 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 310 ft above sea level (from topographic map)..

REMARKS.--Records good. Water diverted at Clyde Potts Reservoir for municipal supply by the Southeast Morris County Municipal Utilities Authority. Several measurements of water temperature were made during the year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov 2	0100	240	5.22	Mar 19	1445	175	4.89
Dec 30	0545	295	5.43	Apr 2	0515	199	5.02
Jan 24	0345	264	5.32	Apr 10	0445	*513	*5.93
Feb 18	0800	216	5.11	May 12	0330	272	5.35
Feb 24	0945	212	5.09	Jun 14	1500	483	5.87
Mar 9	1615	165	4.83				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	64	12	27	27	48	50	32	42	16	6.2	3.5
2	8.1	125	9.3	18	25	44	147	92	23	13	5.5	6.9
3	8.5	23	8.8	18	25	43	51	43	21	11	5.3	7.3
4	8.0	14	9.3	18	24	38	43	37	19	11	5.2	4.2
5	7.9	11	9.2	17	55	36	40	45	17	11	5.2	3.9
6	7.5	11	8.9	16	37	34	38	61	16	10	4.9	3.6
7	8.3	10	8.0	29	28	32	36	40	16	9.8	4.8	5.7
8	8.2	16	7.5	67	25	37	35	43	15	10	4.6	23
9	8.2	23	7.2	37	23	125	54	108	14	11	4.6	4.9
10	8.5	16	8.0	28	22	72	284	184	14	9.7	9.6	4.6
11	8.4	12	10	22	22	41	90	193	14	8.8	13	4.3
12	8.5	11	11	20	80	36	60	207	34	8.3	5.4	4.1
13	8.5	9.9	11	20	34	34	54	120	71	7.8	5.0	4.1
14	9.0	21	9.5	18	27	38	50	90	264	7.6	5.1	4.1
15	11	24	8.5	19	23	35	53	75	108	7.5	5.1	4.1
16	10	16	8.3	78	22	32	47	64	42	7.6	4.7	4.0
17	8.9	13	9.1	31	30	31	50	56	44	7.9	5.8	4.0
18	9.1	11	9.4	27	161	37	47	51	29	7.7	6.8	3.9
19	9.5	11	8.8	25	84	119	47	46	24	6.9	5.3	3.9
20	8.8	10	9.2	23	50	72	74	42	23	7.6	4.5	3.8
21	8.3	9.8	8.9	20	43	81	43	39	21	8.8	4.4	3.9
22	6.6	35	8.2	19	37	74	38	35	19	7.2	4.5	4.2
23	7.0	17	31	53	39	54	36	33	19	7.3	4.4	3.9
24	7.3	12	17	193	179	49	35	31	18	7.0	4.2	3.5
25	21	11	80	67	121	42	32	36	16	6.1	3.9	3.8
26	10	11	30	42	61	41	44	31	15	5.9	9.6	4.4
27	28	11	18	37	52	39	57	27	15	5.7	4.9	4.0
28	10	10	17	36	49	37	34	25	13	5.7	4.2	3.5
29	8.2	9.9	27	33	---	36	31	27	13	5.6	3.9	3.4
30	7.8	10	185	31	---	34	29	29	20	5.9	3.8	3.5
31	7.5	---	34	29	---	33	---	23	---	11	3.7	---
TOTAL	294.5	588.6	639.1	1118	1405	1504	1729	1965	1019	266.4	168.1	146.0
MEAN	9.50	19.6	20.6	36.1	50.2	48.5	57.6	63.4	34.0	8.59	5.42	4.87
MAX	28	125	185	193	179	125	284	207	264	16	13	23
MIN	6.6	9.8	7.2	16	22	31	29	23	13	5.6	3.7	3.4
CFSM	.68	1.40	1.47	2.58	3.58	3.47	4.12	4.53	2.43	.61	.39	.35
IN.	.78	1.56	1.70	2.97	3.73	4.00	4.59	5.22	2.71	.71	.45	.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 1998, BY WATER YEAR (WY)

	MEAN	60.5	31.4	64.7	52.9	47.2	46.8	55.3	46.7	24.7	18.9	8.56	10.4
MAX	145	40.4	154	73.8	52.3	49.9	60.6	63.4	34.0	31.3	11.0	16.7	
(WY)	1997	1996	1997	1996	1996	1996	1996	1998	1998	1996	1997	1996	
MIN	9.50	19.6	19.2	36.1	38.8	41.9	47.7	35.4	18.5	8.59	5.42	4.87	
(WY)	1998	1998	1996	1998	1997	1997	1997	1997	1997	1998	1998	1998	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

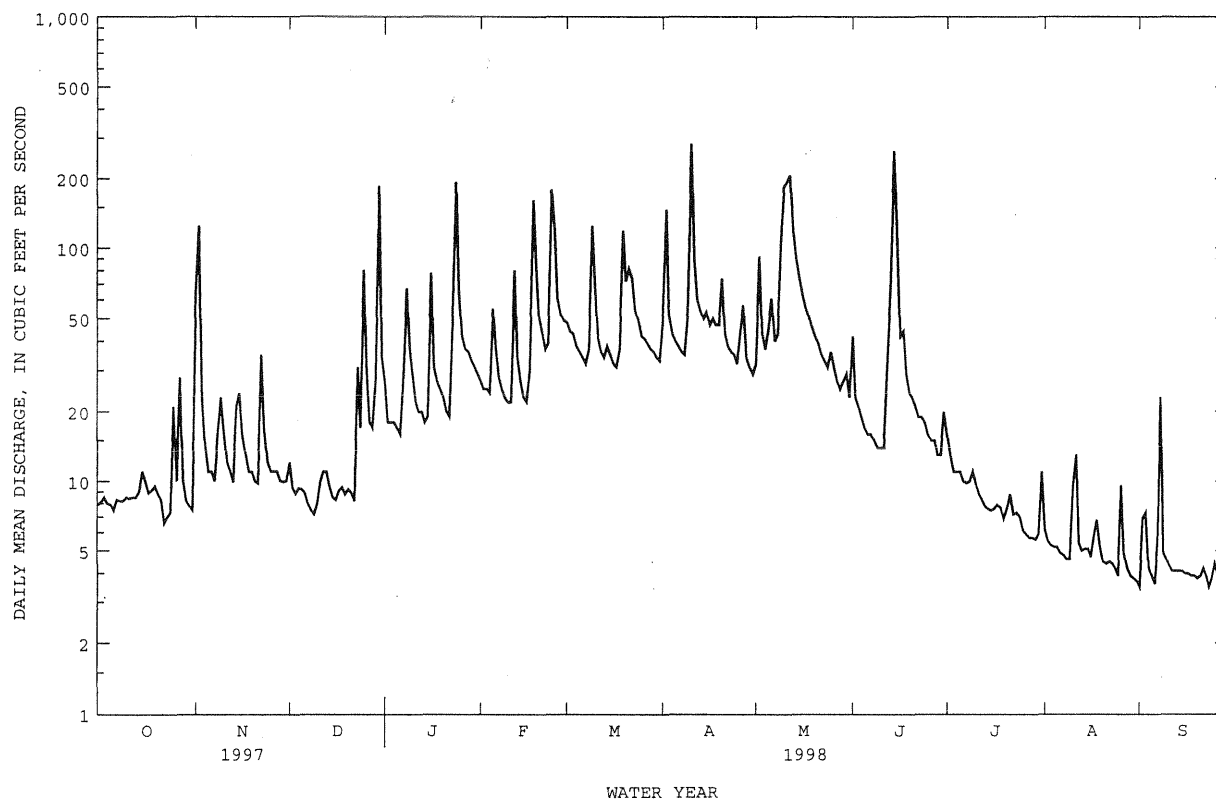
WATER YEARS 1995 - 1998

ANNUAL TOTAL	9768.5	10842.7	
ANNUAL MEAN	26.8	29.7	39.1
HIGHEST ANNUAL MEAN			50.9
LOWEST ANNUAL MEAN			29.7
HIGHEST DAILY MEAN	255	Jan 25	2000
LOWEST DAILY MEAN	4.7	Jul 21	3.4
ANNUAL SEVEN-DAY MINIMUM	5.7	Jul 15	3.7
INSTANTANEOUS PEAK FLOW			513
INSTANTANEOUS PEAK STAGE			5.93
INSTANTANEOUS LOW FLOW			3.2
ANNUAL RUNOFF (CFSM)	1.91		2.12
ANNUAL RUNOFF (INCHES)	25.96		28.81
10 PERCENT EXCEEDS	49		61
50 PERCENT EXCEEDS	20		18
90 PERCENT EXCEEDS	7.5		4.6
			6.7

a From outside high-water mark.

PASSAIC RIVER BASIN

01381400 WHIPPANY RIVER NEAR MORRISTOWN, NJ--Continued



01381500 WHIPPANY RIVER AT MORRISTOWN, NJ

LOCATION.--Lat 40°48'26", long 74°27'22", Morris County, Hydrologic Unit 02030103, on left bank at Morristown sewage-disposal plant, 0.8 mi northeast of Morristown, and 9.0 mi upstream from mouth.

DRAINAGE AREA.--29.4 mi².

PERIOD OF RECORD.--August 1921 to current year.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922-23(M), 1924, 1925-27(M) 1928-29, 1930-32(M), 1933-34. WRD-NJ 1974: 1965. WDR NJ-84-1: 1971(M).

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since July 1, 1936. Datum of gage is 260.01 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to July 16, 1930, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow occasionally regulated by operation of gates in Pocahontas Dam, 2.5 mi above station. Diurnal fluctuations from sewage effluent noticeable at low flow. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	0745	787	4.90	Jun 14	0845	*1,190	*5.78

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	170	30	50	53	94	127	75	98	55	27	18
2	21	215	25	43	52	88	272	182	60	42	23	38
3	23	59	25	41	52	86	112	99	52	37	23	38
4	22	36	27	41	51	78	90	83	47	35	22	22
5	22	29	26	38	108	73	84	102	45	35	22	19
6	22	27	26	37	75	68	78	139	43	33	22	18
7	22	26	25	67	56	66	75	97	41	33	21	33
8	21	34	24	120	51	79	75	94	41	34	21	79
9	22	49	24	77	49	224	141	206	40	35	21	25
10	21	38	27	62	47	145	539	372	39	36	28	21
11	20	30	31	50	50	85	168	419	39	30	52	20
12	20	27	33	44	157	75	120	381	81	29	24	19
13	20	25	32	43	75	70	109	208	149	29	22	19
14	21	46	29	44	57	76	103	167	759	28	22	19
15	24	49	27	49	50	74	110	145	241	28	22	19
16	25	37	27	143	48	67	99	129	101	29	21	20
17	22	31	28	66	76	64	104	116	95	33	26	19
18	22	28	28	56	288	75	98	107	73	34	28	19
19	22	27	28	52	156	217	104	99	62	27	23	18
20	21	27	28	48	102	148	149	92	59	31	21	18
21	20	26	28	44	87	161	93	86	58	33	20	18
22	19	67	26	42	75	148	81	77	51	28	20	20
23	19	43	67	138	84	113	78	73	50	28	19	19
24	19	34	46	331	330	103	76	69	49	29	20	17
25	50	29	143	129	203	88	70	81	45	25	19	18
26	32	28	76	83	120	84	96	71	46	24	49	20
27	62	27	47	72	104	82	125	63	43	24	24	19
28	28	26	42	68	97	78	75	60	39	24	20	30
29	23	26	89	64	---	75	68	69	39	24	19	18
30	24	27	307	61	---	75	65	69	60	24	18	17
31	22	---	81	57	---	71	---	55	---	46	18	---
TOTAL	753	1343	1502	2260	2753	3030	3584	4085	2645	982	737	697
MEAN	24.3	44.8	48.5	72.9	98.3	97.7	119	132	88.2	31.7	23.8	23.2
MAX	62	215	307	331	330	224	539	419	759	55	52	79
MIN	19	25	24	37	47	64	65	55	39	24	18	17
CFM	.83	1.52	1.65	2.48	3.34	3.32	4.06	4.48	3.00	1.08	.81	.79
IN.	.95	1.70	1.90	2.86	3.48	3.83	4.53	5.17	3.35	1.24	.93	.88

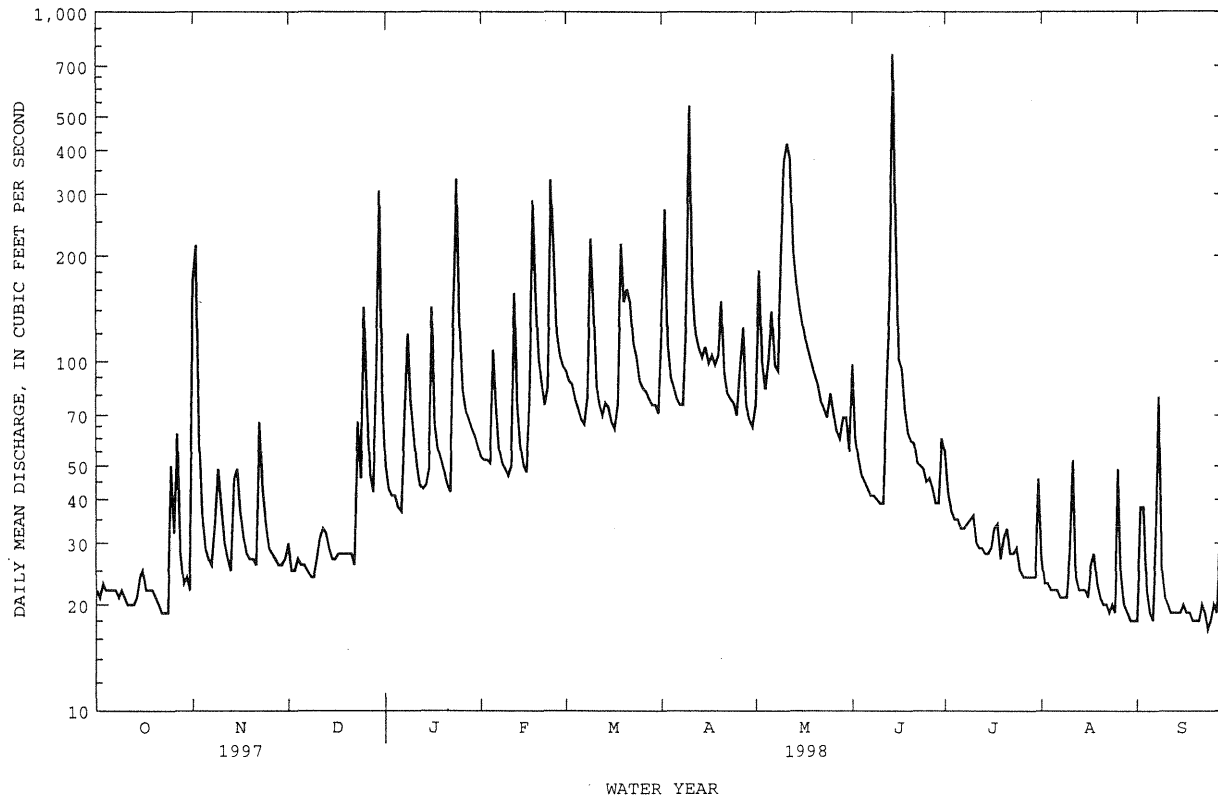
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

	MEAN	32.9	46.0	55.2	59.4	65.0	87.5	88.2	67.4	47.5	38.7	35.3	34.2
MAX	133	132	185	211	147	215	231	237	214	186	158	123	
(WY)	1997	1933	1997	1979	1973	1936	1983	1989	1972	1975	1942	1971	
MIN	8.72	13.4	14.2	16.9	23.5	28.1	30.2	24.4	14.6	10.3	8.02	7.25	
(WY)	1931	1937	1940	1922	1940	1981	1985	1941	1965	1965	1932	1932	

PASSAIC RIVER BASIN

01381500 WHIPPANY RIVER AT MORRISTOWN, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	22194		24371			
ANNUAL MEAN	60.8		66.8		54.7	
HIGHEST ANNUAL MEAN					98.5	
LOWEST ANNUAL MEAN					23.3	
HIGHEST DAILY MEAN	487	Jan 25	759	Jun 14	1510	Aug 28 1971
LOWEST DAILY MEAN	19	Oct 22	17	Sep 24	4.2	Sep 10 1932
ANNUAL SEVEN-DAY MINIMUM	20	Oct 18	18	Sep 19	4.7	Sep 9 1932
INSTANTANEOUS PEAK FLOW			1190	Jun 14	2800	Aug 28 1971
INSTANTANEOUS PEAK STAGE			5.78	Jun 14	8.60	Aug 28 1971
INSTANTANEOUS LOW FLOW			15	Sep 29	2.8	Aug 27 1932
ANNUAL RUNOFF (CFSM)	2.07		2.27		1.86	
ANNUAL RUNOFF (INCHES)	28.08		30.84		25.28	
10 PERCENT EXCEEDS	105		129		105	
50 PERCENT EXCEEDS	46		45		37	
90 PERCENT EXCEEDS	23		20		15	



01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ

LOCATION.--Lat 40°50'42", long 74°20'51", Morris County, Hydrologic Unit 02030103, on left upstream abutment of former bridge on Edwards Road, 200 ft downstream from bridges of Interstate 280, 0.4 mi upstream from Rockaway River, and 1.2 mi southwest of Pine Brook. Water-quality samples collected 450 ft upstream at bridge on Ridgedale Avenue.

DRAINAGE AREA.--68.5 mi²

PERIOD OF RECORD.--Low-flow partial record station water years 1963-69, 1973, 1979-96. November 1992 to September 1996 (gage height and discharge measurements only), October 1996 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 162 ft above sea level (from topographic map).

REMARKS.--Records poor. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	136	66	383	116	309	142	121	107	91	54	24
2	34	359	65	363	97	270	305	215	85	70	37	28
3	34	380	55	243	81	251	352	249	68	58	34	86
4	34	323	56	183	71	220	318	224	58	52	34	37
5	33	217	56	139	114	188	286	209	53	54	32	29
6	32	124	55	109	169	174	260	244	50	54	32	25
7	33	82	49	104	131	160	237	257	47	53	30	27
8	32	97	45	188	105	149	212	251	47	55	29	146
9	32	127	43	241	88	228	199	280	46	56	28	58
10	32	125	44	222	75	335	343	419	45	54	31	36
11	31	92	60	159	67	321	423	563	45	50	78	31
12	30	72	68	111	144	262	399	652	69	44	44	30
13	31	59	75	94	203	223	350	667	116	44	35	28
14	33	91	69	81	141	210	310	623	317	43	33	28
15	37	144	60	70	99	207	287	558	559	43	32	28
16	51	122	56	156	81	184	270	487	579	44	29	29
17	38	93	87	214	74	144	255	416	535	52	43	28
18	36	73	138	169	249	93	243	347	497	98	55	28
19	34	62	157	122	361	173	223	280	441	51	38	26
20	35	58	113	103	360	258	265	224	367	45	33	26
21	33	54	58	87	323	288	272	197	291	55	30	26
22	33	129	47	73	267	328	244	167	220	48	29	27
23	32	145	146	90	218	325	214	132	183	44	27	28
24	33	111	172	330	339	300	193	99	149	51	27	25
25	88	83	212	412	436	278	161	97	109	39	28	25
26	78	71	224	396	438	257	144	103	82	36	81	30
27	148	66	163	350	401	238	227	88	68	35	47	28
28	105	59	111	295	354	218	218	78	57	36	31	28
29	66	58	97	247	---	193	176	73	54	35	27	36
30	53	58	328	202	---	166	141	90	73	36	25	24
31	49	---	404	158	---	142	---	69	---	76	24	---
TOTAL	1409	3670	3379	6094	5602	7092	7669	8479	5417	1602	1137	1055
MEAN	45.5	122	109	197	200	229	256	274	181	51.7	36.7	35.2
MAX	148	380	404	412	438	335	423	667	579	98	81	146
MIN	30	54	43	70	67	93	141	69	45	35	24	24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1998, BY WATER YEAR (WY)

	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
MEAN	184	142	403	228	237	231	293	241	136	77.7	50.9	55.5
MAX	323	161	696	260	274	234	331	274	181	104	65.1	75.8
(WY)	1997	1997	1997	1997	1997	1997	1997	1998	1998	1997	1997	1997
MIN	45.5	122	109	197	200	229	256	208	90.7	51.7	36.7	35.2
(WY)	1998	1998	1998	1998	1998	1998	1998	1997	1997	1998	1998	1998

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1997 - 1998

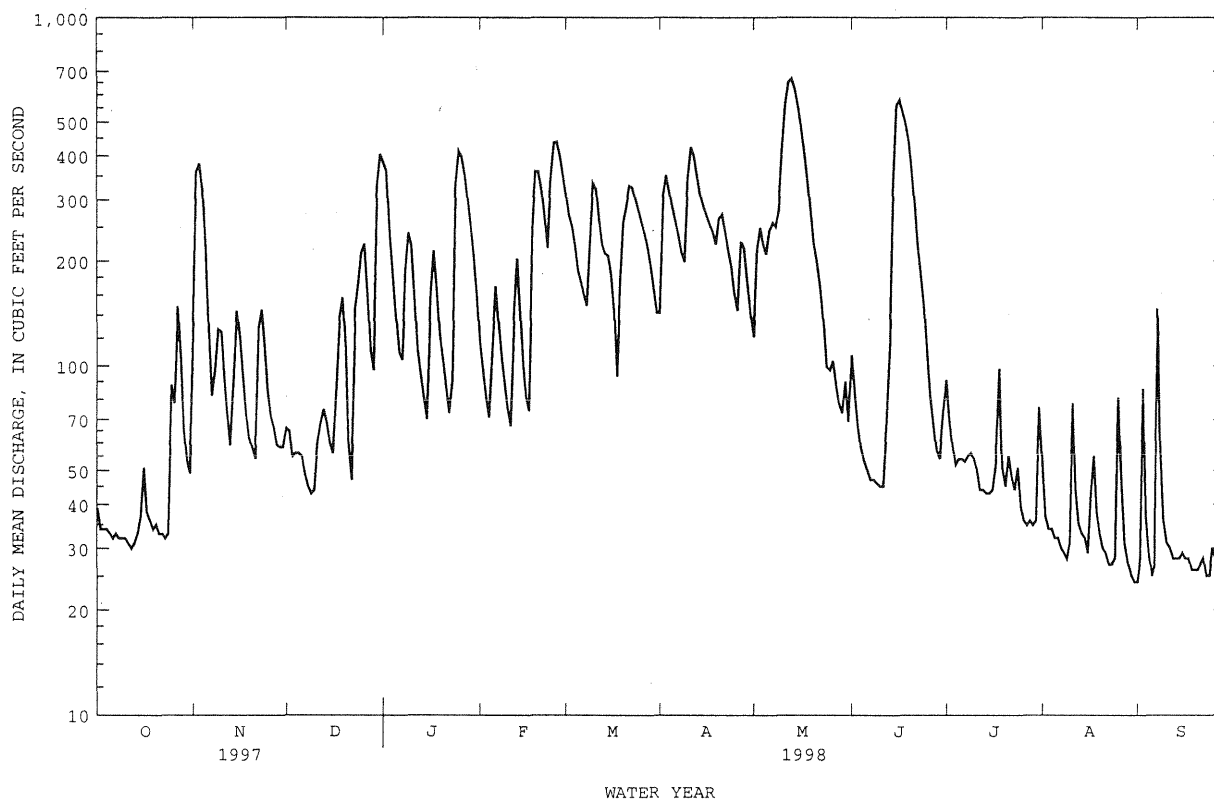
ANNUAL TOTAL	58049	52605	
ANNUAL MEAN	159	144	190
HIGHEST ANNUAL MEAN			236
LOWEST ANNUAL MEAN			144
HIGHEST DAILY MEAN	561	Apr 2	1820
LOWEST DAILY MEAN	30	Oct 12	24
ANNUAL SEVEN-DAY MINIMUM	32	Oct 7	26
INSTANTANEOUS PEAK FLOW			672
INSTANTANEOUS PEAK STAGE		8.10	May 12
INSTANTANEOUS LOW FLOW			22
10 PERCENT EXCEEDS	367	332	17
50 PERCENT EXCEEDS	116	90	408
90 PERCENT EXCEEDS	36	31	125
			34

a Stage on Oct.20,1996 was higher (unknown).

e Estimated.

PASSAIC RIVER BASIN

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ--Continued



01381900 PASSAIC RIVER AT PINE BROOK, NJ

LOCATION.--Lat 40°51'45", long 74°19'18", Morris County, Hydrologic Unit 02030103, on left bank 20 ft downstream from bridge on U.S. Route 46, 0.5 mi east of Pine Brook, and 1.3 mi downstream from Rockaway River.

DRAINAGE AREA.--349 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1963-69, 1973, and annual maximum, water years 1966-75, 1978-79. October 1979 to current year. Feb. 19 to Aug. 24, 1939 in files of U.S. Army Corps of Engineers, New York District.

REVISED RECORDS.--WDR NJ-77-1: 1967 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 149.26 ft above sea level. December 1965 to September 1979, crest-stage gage at same site at datum 10.00 ft higher. Feb. 19 to Aug. 24, 1939, water-stage recorder at present State Route 506 bridge, 1,600 ft upstream from gage, operated by U.S. Army Corps of Engineers, New York District at datum 13.05 ft higher.

REMARKS.--Records fair except those above 1,000 ft³/s, which are poor. Flow regulated by Boonton and Splitrock Reservoirs (see Passaic River basin, reservoirs in) and many small lakes. Water diverted from Boonton Reservoir for municipal supply of Jersey City (see Passaic River basin, diversions). Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1810, according to State Geologist's report for 1904, 23.2 ft, Oct. 10, 1903, present datum, from King Survey of highwater marks at present State Route 506 bridge, 1,600 ft upstream from gage. Floods of Mar. 13, 1936 and Sept. 24, 1938 reached stages of 20.8 ft and 19.4 ft respectively, at present State Route 506 bridge and present datum. Flood of July 23, 1945 reached a stage of 22.3 ft at present site and datum according to U.S. Army Corps of Engineers; minimum observed, 41.1 ft³/s, Sept. 22, 1964.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 26	0900	2,030	18.10	May 13	0615	*4,020	*20.10
Feb 26	0230	2,440	18.59	Jun 16	1000	3,110	19.23
Apr 12	0215	2,200	18.37				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	299	226	1870	941	1760	631	559	e460	402	211	102
2	132	757	228	1720	790	1550	1040	688	e440	374	166	104
3	125	859	213	1540	635	1380	1620	850	383	309	147	188
4	121	839	208	1300	519	1190	1730	898	313	255	138	149
5	117	709	211	1090	637	1060	1600	897	262	231	133	121
6	115	522	209	932	812	956	1390	960	227	219	131	106
7	118	372	194	797	843	855	1160	1030	206	204	129	105
8	117	331	185	857	789	758	1020	1070	196	192	125	380
9	117	374	179	963	685	886	906	1180	187	193	123	368
10	117	395	176	1020	578	1190	1250	1910	182	191	125	236
11	117	340	209	973	496	1460	2000	3030	177	184	181	165
12	116	288	254	863	677	1390	2150	3770	224	170	164	134
13	116	249	283	723	841	1190	1960	3990	426	163	146	121
14	120	276	268	593	850	1070	1750	3740	971	160	142	115
15	125	408	244	492	756	988	1550	3330	2400	159	133	113
16	156	416	237	699	623	894	1330	2910	3080	159	126	112
17	143	367	258	882	529	765	1140	2430	2930	177	156	113
18	134	310	394	917	900	559	1040	1990	2720	289	240	118
19	129	266	417	868	1340	665	947	1660	2440	212	183	113
20	128	241	416	777	1650	918	978	1330	2070	178	144	110
21	124	225	276	665	1640	1160	1030	1080	1740	177	129	107
22	121	341	220	552	1500	1510	1010	911	1420	172	121	109
23	120	440	339	529	1300	1670	930	731	1080	165	114	123
24	122	408	503	1110	1670	1640	845	533	871	191	111	118
25	190	348	624	1790	2240	1520	741	442	656	167	110	111
26	243	296	839	2020	2410	1330	624	496	487	147	182	114
27	340	267	899	1910	2230	1140	740	480	390	140	169	112
28	337	242	856	1730	1970	1020	813	419	319	140	132	108
29	243	228	771	1500	---	908	765	369	284	139	120	115
30	203	218	1190	1250	---	788	661	402	304	143	110	104
31	180	---	1770	1080	---	675	---	356	---	195	104	---
TOTAL	4733	11631	13296	34012	30851	34845	35351	44441	27845	6197	4445	4194
MEAN	153	388	429	1097	1102	1124	1178	1434	928	200	143	140
MAX	340	859	1770	2020	2410	1760	2150	3990	3080	402	240	380
MIN	115	218	176	492	496	559	624	356	177	139	104	102

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1998, BY WATER YEAR (WY)

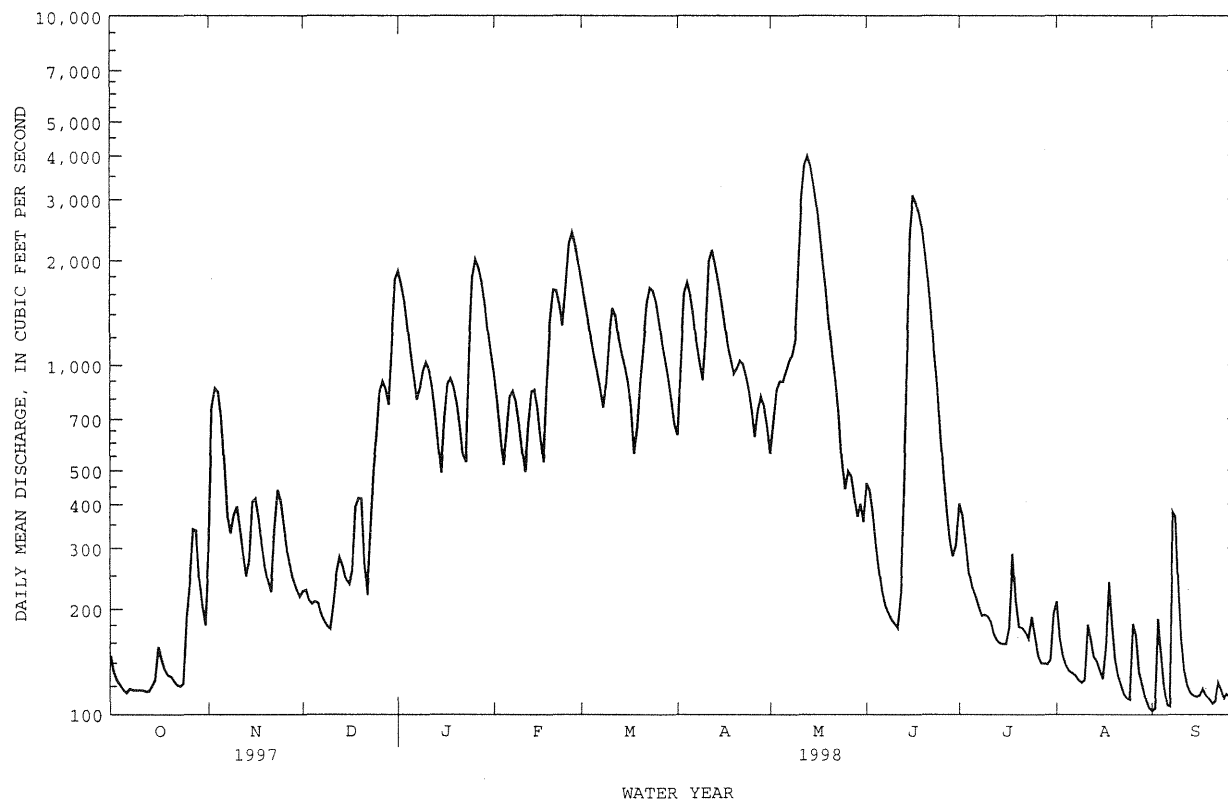
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	409	574	801	681	798	1017	1202	826	536	367	251								
MAX	1566	1355	2286	1516	1268	2204	2842	2537	1482	1485	1024	849							
(WY)	1997	1996	1984	1996	1996	1994	1983	1989	1984	1984	1990	1989							
MIN	133	161	107	105	211	272	161	289	188	126	117	91.0							
(WY)	1995	1981	1981	1981	1980	1981	1985	1995	1981	1993	1981	1980							

PASSAIC RIVER BASIN

01381900 PASSAIC RIVER AT PINE BROOK, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1980 - 1998	
ANNUAL TOTAL	189706		251841		642	
ANNUAL MEAN	520		690		1125	
HIGHEST ANNUAL MEAN					276	
LOWEST ANNUAL MEAN					72	
HIGHEST DAILY MEAN	2420	Apr 3	3990	May 13	7910	Apr 7 1984
LOWEST DAILY MEAN	109	Jul 18	102	Sep 1	72	Sep 29 1980
ANNUAL SEVEN-DAY MINIMUM	117	Oct 6	112	Sep 16	78	Oct 12 1980
INSTANTANEOUS PEAK FLOW			4020	May 13	8000	Apr 7 1984
INSTANTANEOUS PEAK STAGE			20.10	May 13	22.90a	Apr 7 1984
INSTANTANEOUS LOW FLOW			96	Sep 7	70	Sep 29 1980
10 PERCENT EXCEEDS	1080		1650		1530	
50 PERCENT EXCEEDS	374		408		365	
90 PERCENT EXCEEDS	123		120		125	

a Affected by backwater
e Estimated



01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ

LOCATION.--Lat 41°01'05", long 74°24'07", Morris County, Hydrologic Unit 02030103, on left bank 15 ft downstream from culvert at crossover between northbound and southbound lanes on State Route 23, 1,000 ft downstream from Macopin Intake Dam, 0.6 mi downstream from Macopin River, and 2.8 mi northwest of Butler.

DRAINAGE AREA.--63.7 mi².

PERIOD OF RECORD.--January 1898 to March 1990, September 1992 to current year. Monthly discharge only for some periods, published in WSP 1302. Records for January 1892 to December 1897, published in WSP 541, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 549.17 ft above sea level. Prior to May 22, 1970, at site just upstream from Macopin Intake Dam, at datum 36.35 ft higher. May 22, 1970 to March 5, 1990, at site just upstream from Macopin Intake Dam, at datum 20.83 ft higher.

REMARKS.--Records good. Flow regulated by Canistear, Oak Ridge, Clinton, Charlotteburg Reservoirs, and Echo Lake (see Passaic River basin, reservoirs in). Water diverted at Charlotteburg Reservoir for municipal supply of city of Newark (see Passaic River basin, diversions). During peak flows, frequent variations in flow due to automatic gate operations upstream. Several measurements of water temperature were made during the year. Satellite telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with and record of gate openings provided by the Department of Public Affairs, Division of Water Supply, city of Newark. Prior to May 22, 1970, discharge figures provided by city of Newark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	10	15	35	28	282	123	41	40	28	1.5	1.5
2	3.3	26	17	32	28	298	384	124	55	22	1.4	1.3
3	2.1	27	10	29	39	216	267	132	34	7.7	1.2	2.2
4	1.9	26	7.2	29	62	177	167	119	28	6.0	1.2	1.8
5	1.9	23	8.6	28	134	150	147	120	7.2	6.4	1.2	1.9
6	2.0	18	10	26	113	125	121	213	5.6	4.4	1.1	1.5
7	2.1	10	9.0	25	80	104	111	287	4.3	3.5	1.1	1.8
8	2.0	13	10	30	65	100	100	244	4.2	3.4	1.1	6.8
9	2.1	20	6.5	40	52	284	148	409	3.7	3.8	1.2	5.4
10	2.1	22	7.2	38	46	339	598	910	3.1	4.0	3.0	4.0
11	3.4	21	10	36	45	251	486	1320	2.9	4.3	6.1	2.2
12	2.5	18	10	34	146	149	353	1140	7.8	2.7	2.3	1.7
13	2.4	12	9.6	32	207	123	277	727	19	2.1	1.6	1.5
14	2.5	14	9.0	29	159	120	197	469	506	1.9	1.4	1.5
15	2.8	17	8.1	25	116	124	199	363	894	1.9	1.3	1.5
16	4.4	15	7.3	28	91	102	168	254	553	1.9	1.2	1.5
17	3.1	12	7.8	30	92	86	156	195	408	2.9	4.8	1.8
18	2.8	10	8.1	28	273	93	141	161	288	11	10	1.6
19	2.7	8.9	7.5	26	333	208	118	131	174	3.8	6.2	1.5
20	2.6	9.1	8.5	24	254	241	198	106	125	2.7	2.3	1.4
21	3.4	8.5	9.9	20	238	235	151	93	100	2.5	1.6	1.4
22	2.9	15	6.7	16	157	240	121	82	63	2.6	1.4	1.7
23	3.6	19	12	17	140	169	103	47	44	2.3	1.3	2.9
24	3.2	18	13	44	422	160	93	36	38	2.3	1.2	2.2
25	7.1	16	19	51	477	146	66	34	36	2.0	1.2	1.7
26	6.0	10	25	37	352	131	56	33	35	1.5	9.7	1.8
27	13	15	25	33	265	120	113	33	33	1.5	5.8	1.7
28	9.9	9.5	25	33	261	111	92	31	26	1.3	3.4	1.8
29	3.6	9.3	24	31	---	98	59	26	11	1.4	2.3	2.4
30	3.0	8.5	36	30	---	86	41	20	16	1.5	1.8	1.8
31	2.8	---	39	29	---	74	---	23	---	1.6	1.6	---
TOTAL	111.3	460.8	421.0	945	4675	5142	5354	7923	3564.8	144.9	82.5	63.8
MEAN	3.59	15.4	13.6	30.5	167	166	178	256	119	4.67	2.66	2.13
MAX	13	27	39	51	477	339	598	1320	894	28	10	6.8
MIN	1.9	8.5	6.5	16	28	74	41	20	2.9	1.3	1.1	1.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1998, BY WATER YEAR (WY)

	MEAN	16.7	33.3	41.6	42.4	52.2	100	134	68.5	32.2	19.0	14.6	18.7
MAX	288	309	357	308	270	572	506	263	360	238	228	211	
(WY)	1956	1928	1997	1996	1939	1936	1983	1989	1972	1938	1955	1960	
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
(WY)	1929	1929	1929	1931	1930	1965	1950	1954	1944	1923	1923	1929	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

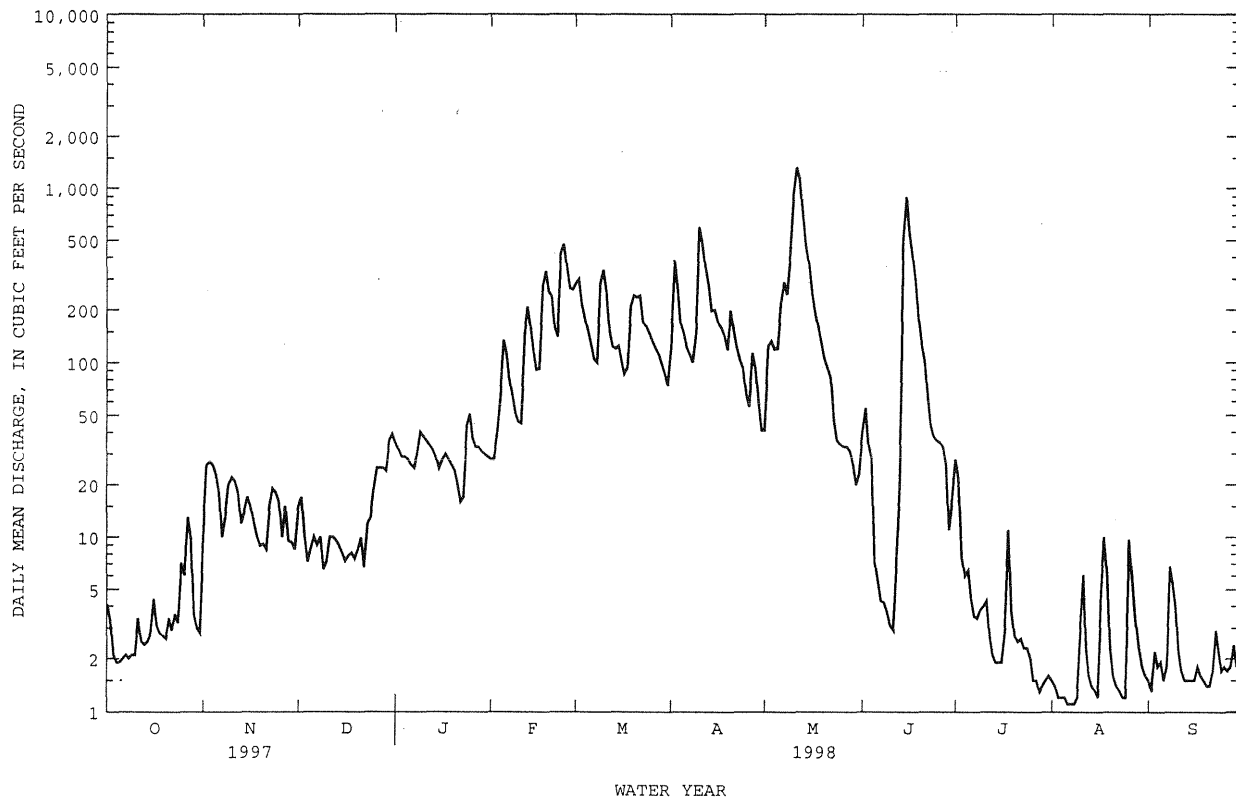
WATER YEARS 1923 - 1998

ANNUAL TOTAL	14662.6	28888.1	
ANNUAL MEAN	40.2	79.1	47.6
HIGHEST ANNUAL MEAN			109
LOWEST ANNUAL MEAN			.12
HIGHEST DAILY MEAN	485	1320	3170
LOWEST DAILY MEAN	1.2	1.1	.00
ANNUAL SEVEN-DAY MINIMUM	1.3	1.2	.00
INSTANTANEOUS PEAK FLOW		1600	6100
INSTANTANEOUS PEAK STAGE		5.97	17.40a
INSTANTANEOUS LOW FLOW		.80	.00
10 PERCENT EXCEEDS	119	239	144
50 PERCENT EXCEEDS	11	20	5.3
90 PERCENT EXCEEDS	1.8	1.7	.00

a Highest since 1898, site and datum then in use.

PASSAIC RIVER BASIN

01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ--Continued



01383500 WANAQUE RIVER AT AWOSTING, NJ

LOCATION.--Lat 41°09'31", long 74°20'00", Passaic County, Hydrologic Unit 02030103, on right bank 700 ft downstream from dam at outlet of Greenwood Lake at Awosting.

DRAINAGE AREA.--27.1 mi².

PERIOD OF RECORD.--May 1919 to current year. Prior to October 1940, published as "at Greenwood Lake".

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922(M), 1928(M), 1936. WDR NJ-79-1: 1933(M), 1936(M), 1945(M), 1948(P), 1951(P), 1952(P), 1953(M), 1955(P), 1956(M), 1957(M), 1958(M), 1960(P), 1961(M), 1968(P), 1969(P). WDR NJ-80-1: 1960(P).

GAGE.--Water-stage recorder. Concrete control since Oct. 31, 1938. Datum of gage is 601.32 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to Apr. 1, 1926, nonrecording gage and Apr. 1, 1926, to Oct. 31, 1938, water-stage recorder at site 100 ft upstream at same datum.

REMARKS.--Records good. Flow completely regulated by Greenwood Lake (see Passaic River basin, reservoirs in). Water diverted into basin above gage from Upper Greenwood Lake (Hudson River basin) by North Jersey District Water Supply Commission since 1968. Several measurements of water temperature were made during the year.

COOPERATION.--Gage-height record collected in cooperation with North Jersey District Water Supply Commission.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 9	1530	211	3.10	May 12	0130	*621	*3.97
Jan 29	1400	256	3.23	Jun 15	1445	299	3.34
Apr 10	2315	214	3.11				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	4.9	75	80	177	10	74	42	50	33	8.3	8.7
2	67	5.0	68	90	86	9.7	122	65	40	27	8.3	8.7
3	57	4.8	64	100	19	8.4	121	68	43	23	8.3	7.4
4	39	4.8	63	100	19	8.0	113	68	32	20	8.3	6.2
5	39	4.7	94	101	19	8.0	97	67	25	17	8.3	6.1
6	39	4.5	117	100	19	8.0	84	77	20	13	8.3	5.9
7	39	38	100	103	16	8.0	72	82	14	10	8.2	5.9
8	39	119	101	99	16	7.7	65	84	11	9.4	8.0	5.8
9	39	109	102	138	14	7.9	68	118	9.5	10	8.0	5.8
10	38	102	100	193	11	6.4	181	245	8.1	11	8.0	5.8
11	38	100	99	181	8.9	1.8	211	537	7.6	8.7	8.0	6.1
12	38	98	98	168	8.7	7.2	192	589	13	5.3	8.0	6.1
13	38	93	97	161	8.2	12	162	444	37	4.4	8.0	6.1
14	37	94	95	150	8.0	12	131	318	154	3.9	8.0	6.1
15	37	94	92	145	7.7	13	114	224	294	3.7	8.0	6.1
16	36	92	91	136	7.8	12	100	166	275	3.5	8.0	6.0
17	36	88	89	123	8.0	12	90	129	221	7.6	7.8	6.1
18	36	85	87	123	8.0	14	80	108	176	24	7.6	6.1
19	36	84	105	122	7.2	41	71	87	148	20	8.0	6.1
20	36	81	125	120	7.4	72	79	70	118	16	7.8	6.1
21	36	79	112	119	6.2	92	71	62	93	15	7.6	6.1
22	20	77	117	118	5.7	113	64	49	74	16	7.6	6.1
23	4.4	76	111	118	5.8	107	60	38	61	14	7.6	6.1
24	4.8	75	98	122	5.7	102	57	32	54	12	8.4	6.1
25	5.4	104	96	123	5.9	94	53	29	50	9.8	6.8	6.1
26	5.2	143	95	124	6.9	89	51	33	43	9.1	4.8	6.1
27	5.3	88	100	124	10	89	62	26	40	9.0	6.8	6.1
28	5.3	81	92	124	10	85	54	25	29	9.0	8.7	6.1
29	5.3	80	90	159	---	83	46	24	23	9.0	8.7	6.1
30	5.0	79	83	201	---	75	42	32	26	8.8	8.7	6.1
31	4.8	---	81	187	---	69	---	25	---	8.5	8.7	---
TOTAL	916.5	2187.7	2937	4052	532.1	1277.1	2787	3963	2189.2	390.7	245.6	188.2
MEAN	29.6	72.9	94.7	131	19.0	41.2	92.9	128	73.0	12.6	7.92	6.27
MAX	67	143	125	201	177	113	211	589	294	33	8.7	8.7
MIN	4.4	4.5	63	80	5.7	1.8	42	24	7.6	3.5	4.8	5.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 1998, BY WATER YEAR (WY)

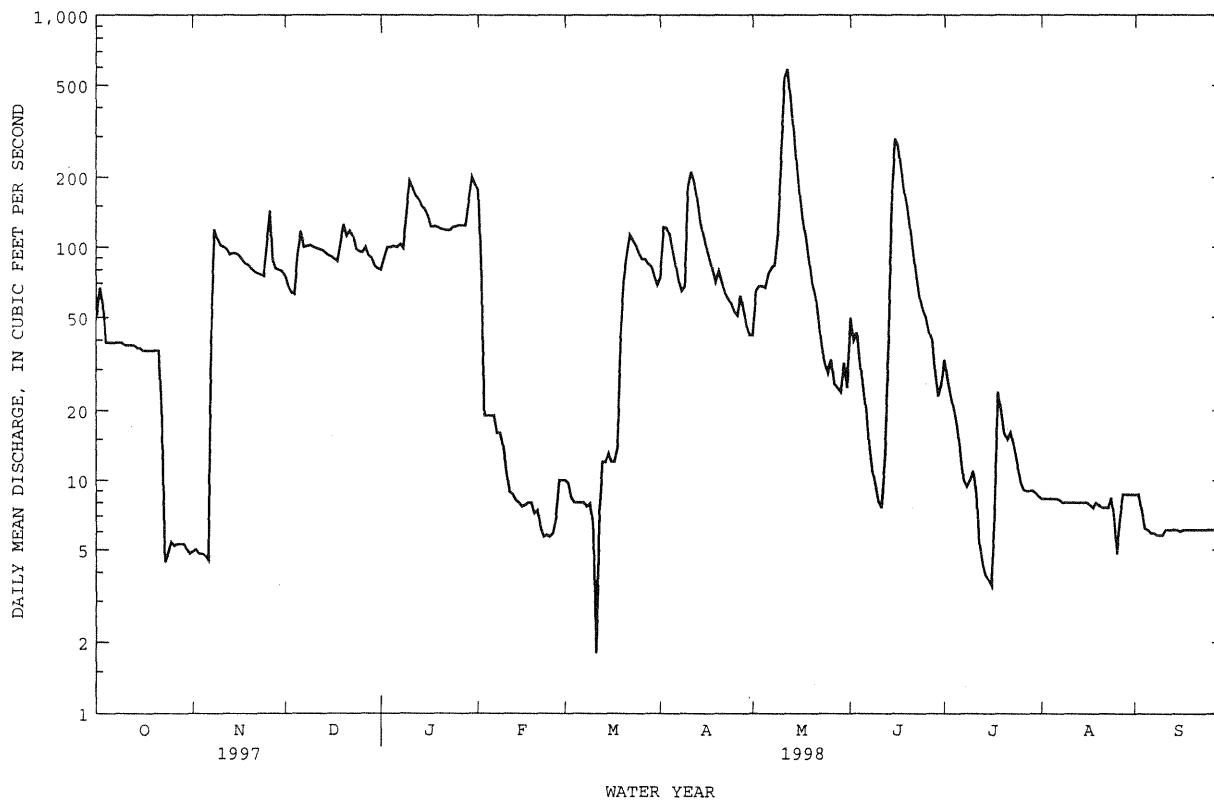
	MEAN	29.2	56.6	66.3	64.1	63.2	102	96.2	61.5	36.8	26.2	25.9	28.3
MAX	210	210	197	221	168	271	333	233	178	132	208	231	
(WY)	1956	1984	1974	1979	1981	1980	1984	1989	1972	1938	1955	1927	
MIN	.20	.18	1.88	3.00	3.04	41.2	24.7	13.4	4.37	2.76	.006	.057	
(WY)	1932	1932	1985	1922	1922	1998	1985	1941	1957	1981	1929	1929	

PASSAIC RIVER BASIN

01383500 WANAQUE RIVER AT AWOSTING, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1919 - 1998	
ANNUAL TOTAL	17925.2		21666.1			
ANNUAL MEAN	49.1		59.4		54.6	
HIGHEST ANNUAL MEAN					105	
LOWEST ANNUAL MEAN					19.9	
HIGHEST DAILY MEAN	306	Apr 1	589	May 12	2350	Apr 6 1984
LOWEST DAILY MEAN	4.4	Oct 23	1.8	Mar 11	.00	Oct 15 1928
ANNUAL SEVEN-DAY MINIMUM	4.8	Oct 31	4.8	Oct 31	.00	Jul 27 1929
INSTANTANEOUS PEAK FLOW			621	May 12	2800a	Apr 5 1984
INSTANTANEOUS PEAK STAGE			3.97	May 12	6.65	Apr 5 1984
INSTANTANEOUS LOW FLOW			1.5	Mar 11	.00	Many days
10 PERCENT EXCEEDS	98		123		126	
50 PERCENT EXCEEDS	41		38		33	
90 PERCENT EXCEEDS	5.4		6.1		4.8	

a From rating curve extended above 750 ft³/s based on theoretical weir formula.



LOCATION.--Lat 41°07'36", long 74°15'52", Passaic County, Hydrologic Unit 02030103, on right bank 500 ft upstream from Wanauque Reservoir, 0.7 mi downstream from Ringwood Mill Pond dam, and 6.5 mi north of Wanauque.

PERIOD OF RECORD.--October 1934 to September 1978, October 1985 to current year. Monthly discharge only for some periods, published in WSP 1302.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 292.67 ft above sea level (levels by New Jersey Geological Survey). Prior to Sept. 30, 1978, at datum 10.0 ft higher.

REMARKS.--Records good except for those above 40 ft³/s, which are fair. Records given herein include flow over spillway and through ports in dam when open or through waste gate in dam. No flow through ports or waste gates this year. Flow slightly regulated by Ringwood Mill Pond, Sterling, and Sterling Forest Lakes, and several smaller lakes above station. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 230 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	0345	291	11.69	May 11	0530	*366	*11.87

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	6.3	26	41	41	89	60	29	29	26	2.3	1.6
2	2.9	19	23	37	37	75	111	43	21	18	2.0	1.9
3	2.6	17	21	38	36	66	72	39	26	15	1.8	2.5
4	2.6	12	21	40	34	59	63	37	18	14	1.6	2.5
5	2.4	9.0	22	39	46	53	57	38	15	12	1.6	2.0
6	2.2	7.1	23	37	39	48	51	46	13	11	1.6	1.7
7	2.1	7.9	21	45	34	44	46	42	12	11	1.5	2.5
8	2.0	25	19	83	32	44	43	38	11	10	1.4	4.0
9	1.9	49	18	87	29	96	53	66	11	9.9	1.3	3.2
10	1.9	41	18	74	27	83	207	179	10	9.4	1.9	2.5
11	1.8	28	19	64	27	64	121	332	9.9	8.5	3.2	2.2
12	1.6	22	19	57	62	57	94	260	13	7.6	2.7	2.1
13	1.6	19	18	52	51	51	80	172	46	6.9	1.8	1.8
14	1.5	23	18	46	44	51	70	130	71	6.8	1.6	1.5
15	1.4	23	17	42	39	49	65	105	70	6.4	1.4	1.3
16	1.5	20	16	74	35	44	60	84	63	5.8	1.4	1.3
17	1.6	18	16	54	38	39	54	69	51	6.6	1.9	1.3
18	1.7	17	16	47	105	42	48	61	48	8.6	2.9	1.2
19	1.7	15	15	43	89	84	45	49	40	8.0	2.4	1.1
20	1.6	14	15	39	76	70	58	42	33	7.3	2.0	1.1
21	1.4	15	15	35	69	70	52	37	29	6.2	1.8	1.0
22	1.4	27	14	32	61	71	40	31	25	5.4	1.5	1.1
23	1.3	27	20	44	56	64	36	27	23	5.0	1.3	1.2
24	1.3	23	20	120	124	65	35	23	23	5.1	1.2	1.1
25	2.1	20	39	92	145	62	32	23	25	4.8	1.0	1.1
26	4.0	19	39	72	109	59	34	30	21	4.3	6.9	1.1
27	9.7	20	33	63	93	57	42	23	19	3.7	7.2	1.2
28	7.5	23	31	59	85	54	33	20	17	3.1	4.3	1.2
29	4.1	22	33	53	---	50	29	19	15	2.9	3.2	1.1
30	3.0	22	80	49	---	46	27	21	22	2.6	2.4	1.0
31	2.9	---	53	46	---	43	---	18	---	2.5	1.8	---
TOTAL	78.9	610.3	758	1704	1663	1849	1818	2133	829.9	254.4	70.9	50.4
MEAN	2.55	20.3	24.5	55.0	59.4	59.6	60.6	68.8	27.7	8.21	2.29	1.68
MAX	9.7	49	80	120	145	96	207	332	71	26	7.2	4.0
MIN	1.3	6.3	14	32	27	39	27	18	9.9	2.5	1.0	1.0
CFSM	.13	1.07	1.28	2.88	3.11	3.12	3.17	3.60	1.45	.43	.12	.09
IN.	.15	1.19	1.48	3.32	3.24	3.60	3.54	4.15	1.62	.50	.12	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 1998, BY WATER YEAR (WY)

MEAN	16.2	32.7	43.4	42.0	41.5	66.0	59.3	39.9	22.4	14.4	12.8	11.5
MAX	131	88.8	124	149	109	157	123	131	121	86.1	107	59.0
(WY)	1956	1973	1997	1979	1970	1936	1940	1989	1972	1945	1955	1960
MIN	1.07	2.27	4.06	12.5	14.0	28.5	18.3	10.9	3.78	1.31	.70	.28
(WY)	1945	1950	1940	1940	1940	1938	1966	1941	1957	1966	1966	1964

PASSAIC RIVER BASIN

01384500 RINGWOOD CREEK NEAR WANAQUE, NJ--Continued

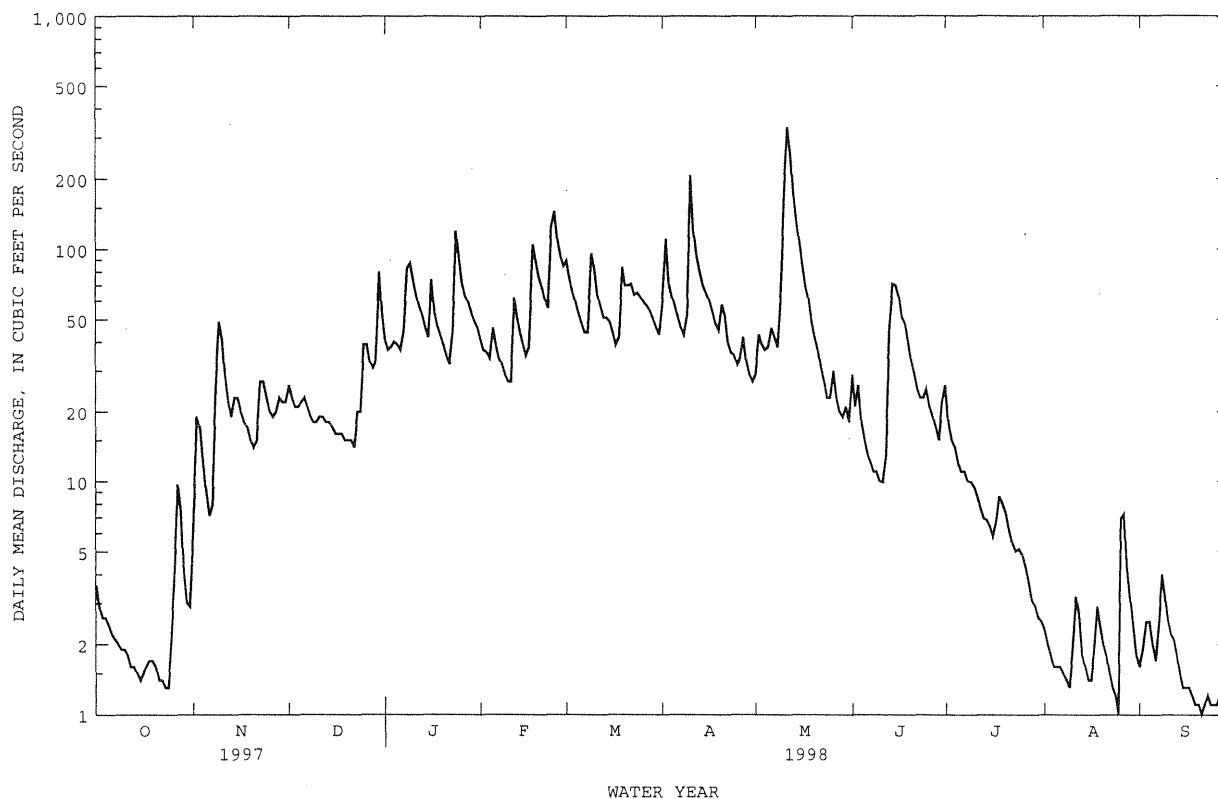
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1935 - 1998

ANNUAL TOTAL	8398.45	11819.8	
ANNUAL MEAN	23.0	32.4	33.4
HIGHEST ANNUAL MEAN			54.4
LOWEST ANNUAL MEAN			13.2
HIGHEST DAILY MEAN	227	332	756
LOWEST DAILY MEAN	.90	1.0	.00
ANNUAL SEVEN-DAY MINIMUM	1.0	1.1	.16
INSTANTANEOUS PEAK FLOW		366	1570
INSTANTANEOUS PEAK STAGE		11.87	13.74
INSTANTANEOUS LOW FLOW		1.0	.00
ANNUAL RUNOFF (CFSM)	1.20	1.70	1.75
ANNUAL RUNOFF (INCHES)	16.36	23.02	23.78
10 PERCENT EXCEEDS	47	70	76
50 PERCENT EXCEEDS	18	23	21
90 PERCENT EXCEEDS	1.7	1.6	2.2



01387000 WANAQUE RIVER AT WANAQUE, NJ

LOCATION.--Lat 41°02'39", long 74°17'36", Passaic County, Hydrologic Unit 02030103, on left bank 750 ft downstream from Raymond Dam in Wanaque, and 50 ft upstream from bridge on State Highway 511.

DRAINAGE AREA.--90.4 mi², considered as 94 mi² Oct. 1, 1928 to Sept. 30, 1934.

PERIOD OF RECORD.--December 1903 to December 1905 (gage heights only), September 1912 to April 1915, May 1919 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 210.00 ft above sea level (levels from New Jersey Geological Survey bench mark). Dec. 16, 1903, to Dec. 31, 1905, nonrecording gage on highway bridge at site 50 ft downstream at different datum. Sept. 15, 1912, to Apr. 1, 1922, nonrecording gage at site 200 ft downstream from present concrete control at different datum. Apr. 1, 1922 to Mar. 14, 1931, water-stage recorder at site 400 ft downstream from present concrete control at present datum.

REMARKS.--Records good. Flow regulated by Greenwood Lake 11 mi above station, since October 1987 by Monksville Reservoir just upstream from Wanaque Reservoir, and since 1928 by Wanaque Reservoir (see Passaic River basin, reservoirs in). North Jersey District Water Supply Commission diverts water for municipal supply from Wanaque Reservoir. Water is diverted to Wanaque Reservoir from Posts Brook at Wanaque and from Ramapo River at Pompton Lakes (see Passaic River basin, diversions). Water diverted into basin above gage from Upper Greenwood Lake (Hudson River basin) by North Jersey District Water Supply Commission since 1968. Several measurements of water temperature, other than those published, were made during the year. National Weather Service rain-gage and USGS satellite gage-height telemeters at station.

COOPERATION.--Gage-height record collected in cooperation with North Jersey District Water Supply Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	18	18	19	17	18	19	17	18	18	18	17
2	17	17	18	19	17	17	18	20	18	18	18	17
3	17	17	18	18	17	17	18	18	18	17	18	17
4	17	17	19	18	18	17	17	17	17	17	18	17
5	17	17	19	18	18	17	17	18	17	17	18	17
6	17	17	19	17	17	17	17	44	17	17	18	17
7	17	17	19	17	17	17	18	77	17	17	18	17
8	17	17	19	17	17	18	17	97	17	17	17	17
9	17	17	19	17	17	19	19	212	17	17	17	17
10	17	18	19	17	17	18	20	699	17	17	18	17
11	17	18	19	17	18	18	18	1470	17	17	17	17
12	17	17	19	17	18	17	18	1430	18	17	17	17
13	17	17	19	17	17	17	30	975	20	17	17	17
14	17	17	19	17	17	17	103	673	20	17	17	17
15	17	17	19	18	17	17	154	479	18	17	17	17
16	16	17	19	18	17	17	163	316	18	17	17	17
17	16	17	19	17	18	17	146	211	18	17	18	17
18	17	17	19	17	18	17	130	161	24	17	17	17
19	17	17	19	17	18	18	102	119	18	17	17	17
20	18	17	19	17	17	18	145	79	18	17	17	17
21	17	17	19	17	17	18	113	71	18	17	17	16
22	17	18	19	17	17	18	83	57	18	17	17	17
23	17	17	19	18	18	18	83	22	18	17	17	17
24	17	18	19	18	19	18	52	19	18	17	17	18
25	17	18	19	18	18	17	60	18	18	17	17	18
26	17	18	19	18	18	17	23	18	18	17	18	18
27	17	18	19	17	18	17	52	18	19	54	17	17
28	17	18	19	17	18	17	34	18	18	75	17	17
29	17	19	20	17	---	17	18	18	18	75	17	17
30	17	18	20	17	---	17	18	18	18	75	17	17
31	17	---	19	17	---	17	---	18	---	40	17	---
TOTAL	526	522	588	540	490	539	1725	7427	543	763	537	512
MEAN	17.0	17.4	19.0	17.4	17.5	17.4	57.5	240	18.1	24.6	17.3	17.1
MAX	18	19	20	19	19	19	163	1470	24	75	18	18
MIN	16	17	18	17	17	17	17	17	17	17	17	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1998, BY WATER YEAR (WY)

	36.2	47.1	64.2	69.2	76.7	160	182	101	58.2	39.6	28.3	34.7
MEAN	36.2	47.1	64.2	69.2	76.7	160	182	101	58.2	39.6	28.3	34.7
MAX	258	435	434	453	471	758	806	545	416	247	258	477
(WY)	1956	1928	1921	1915	1915	1920	1984	1989	1972	1938	1927	1927
MIN	1.82	1.70	1.48	.76	2.05	1.91	1.54	1.72	2.17	1.73	1.53	1.51
(WY)	1966	1966	1950	1950	1966	1966	1966	1966	1966	1965	1965	1965

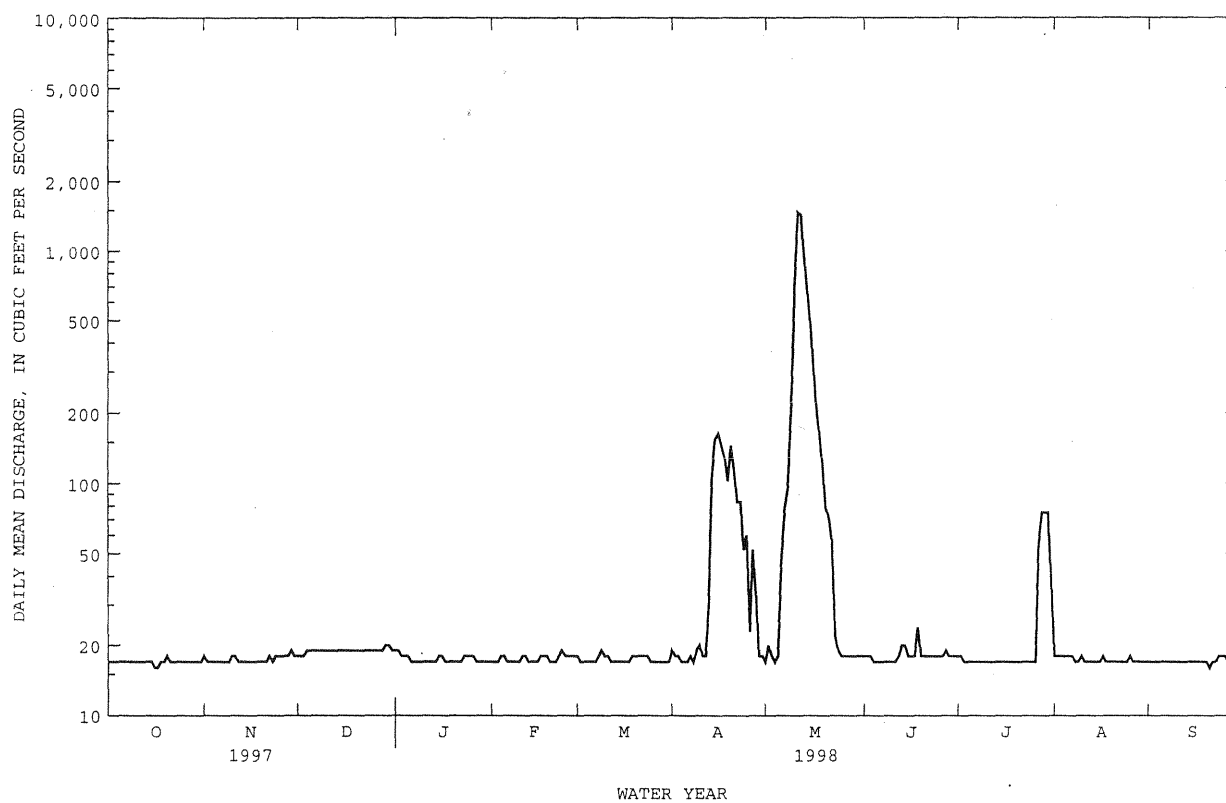
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1912 - 1998

ANNUAL TOTAL	14222	14712	
ANNUAL MEAN	39.0	40.3	
HIGHEST ANNUAL MEAN			73.3
LOWEST ANNUAL MEAN			231
HIGHEST DAILY MEAN	794	Apr 1	1920
LOWEST DAILY MEAN	16	Jul 21	1966
ANNUAL SEVEN-DAY MINIMUM	17	Oct 11	1.93
INSTANTANEOUS PEAK FLOW			5470
INSTANTANEOUS PEAK STAGE			.06
INSTANTANEOUS LOW FLOW			.50
10 PERCENT EXCEEDS	48		10500
50 PERCENT EXCEEDS	18		10.82
90 PERCENT EXCEEDS	17		



LOCATION.--Lat 41°07'06", long 74°09'38", Rockland County, Hydrologic Unit 02030103, on left bank, 145 ft downstream from highway bridge on New York State Thruway at Suffern, and 1.1 mi upstream from Mahwah River.

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

REMARKS.--No estimated daily discharges. Records fair. Flow affected by diversion from United Water New York well field upstream from station and by occasional regulation by Lake Sebago.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,300 ft³/s, Apr. 5, 1984, gage height, 15.38 ft, from rating curve extended above 5,400 ft³/s; minimum discharge, 1.7 ft³/s, Sept. 7, 1995, gage height, 1.04 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 6,600 ft³/s, Mar. 12, 1936, by computation of flow over dam at site 0.65 mi upstream, drainage area, 90.6 mi².

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 10	1745	1,120	5.65	May 11	0815	*2,440	*8.26

Minimum discharge, 5.7 ft³/s, Sept. 30, gage height, 1.29 ft.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	35	121	312	196	578	240	138	278	111	13	16
2	16	252	113	255	176	490	546	268	224	78	14	18
3	14	234	95	229	166	411	413	282	166	58	13	19
4	13	130	90	258	166	348	333	248	124	45	14	17
5	12	91	94	269	296	304	289	228	91	39	14	15
6	12	72	107	252	268	272	248	301	73	34	14	15
7	12	60	96	272	220	239	215	298	60	29	14	17
8	12	112	88	444	192	226	194	257	54	28	14	25
9	13	373	81	545	172	471	216	421	48	29	13	20
10	13	453	79	467	163	574	967	1380	43	26	15	15
11	12	307	87	370	163	407	806	2310	39	22	15	16
12	12	205	85	308	489	323	514	1790	60	19	15	15
13	12	154	84	270	570	277	401	1040	189	17	15	15
14	12	153	81	235	402	268	341	657	405	16	15	15
15	12	155	75	189	312	262	309	484	506	15	16	13
16	13	129	71	313	260	228	285	379	461	14	15	13
17	13	113	70	290	244	198	257	310	370	16	16	13
18	12	101	69	238	594	200	222	263	489	12	19	13
19	12	93	66	211	615	388	195	209	374	15	27	13
20	13	88	67	193	503	447	292	178	253	15	20	14
21	13	86	67	172	421	385	236	175	179	14	16	14
22	13	151	63	154	351	391	187	145	137	14	14	12
23	12	214	80	190	310	349	165	114	114	14	14	17
24	12	180	86	533	683	334	203	99	102	18	15	13
25	17	145	180	551	913	326	176	100	89	14	15	12
26	24	126	258	408	777	318	167	146	78	13	71	9.6
27	37	119	216	335	656	322	243	114	70	13	60	8.2
28	38	104	186	298	550	304	189	90	61	14	30	9.0
29	27	96	192	267	---	275	158	84	52	14	21	13
30	22	93	643	242	---	236	143	95	76	13	17	10
31	19	---	468	222	---	209	---	80	---	14	16	---
TOTAL	491	4624	4158	9292	10828	10360	9150	12683	5265	793	600	434.8
MEAN	15.8	154	134	300	387	334	305	409	176	25.6	19.4	14.5
MAX	38	453	643	551	913	578	967	2310	506	111	71	25
MIN	12	35	63	154	163	198	143	80	39	12	13	8.2
+	9.6	12	13	11	11	12	12	12	13	12	8.8	7.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1998, BY WATER YEAR (WY)

MEAN	104	187	224	200	218	316	354	227	107	60.1	49.1	55.9
MAX	389	496	693	654	475	816	862	777	269	308	305	219
(WY)	1990	1996	1984	1996	1981	1983	1984	1989	1982	1996	1990	1987
MIN	11.0	17.1	29.6	6.84	49.7	128	77.1	79.4	19.2	8.03	7.40	8.17
(WY)	1985	1985	1981	1981	1980	1981	1985	1995	1995	1993	1993	1995

PASSAIC RIVER BASIN

01387420 RAMAPO RIVER AT SUFFERN, NY--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1979 - 1998	
ANNUAL TOTAL	44927		68678.8			
ANNUAL MEAN	123		188		175	
ANNUAL MEAN (+)	10.9		11.2			
HIGHEST ANNUAL MEAN					295	1984
LOWEST ANNUAL MEAN					78.2	1985
HIGHEST DAILY MEAN	1090	Apr 1	2310	May 11	7110	Apr 5 1984
LOWEST DAILY MEAN	11	Jul 6	8.2	Sep 27	2.3	Sep 7 1995
ANNUAL SEVEN-DAY MINIMUM	11	Aug 2	11	Sep 24	3.1	Sep 7 1995
10 PERCENT EXCEEDS	265		430		376	
50 PERCENT EXCEEDS	88		114		90	
90 PERCENT EXCEEDS	12		13		13	

* Diversion, in cubic feet per second, by pumpage from well field upstream of station.

01387500 RAMAPO RIVER NEAR MAHWAH, NJ

LOCATION.--Lat 41°05'51", long 74°09'48", Bergen County, Hydrologic Unit 02030103, on left bank 350 ft downstream from State Highway 17, 0.6 mi downstream from Mahwah River, and 1.0 mi west of Mahwah. Water-quality samples collected at bridge, 350 ft upstream from gage, at high flows.

DRAINAGE AREA.--120 mi².

PERIOD OF RECORD.--October 1902 to December 1906, September 1922 to current year. October 1902 to February 1905 monthly discharge only, published in WSP 1302. Figures of daily discharge Feb. 10, 1903, to Dec. 31, 1904, published in WSP 97, 125, are unreliable and should not be used. Gage-height records for 1903-14 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 781: 1904(M). WSP 1031: 1938, 1940. WSP 1552: 1923(M), 1924, 1925-26(M), 1927-28, 1933, 1937. WRD- NJ 1971: 1968(M). WDR NJ-82-1: Drainage area. WDR-NJ-87-1: 1986.

GAGE.--Water-stage recorder. Datum of gage is 253.10 ft above sea level. Prior to Dec. 31, 1906, nonrecording gage on former bridge at site 250 ft downstream at different datum. Sept. 1, 1922 to Dec. 23, 1936, water-stage recorder just below former bridge at present datum.

REMARKS.--Records good. Flow affected by diversion from United Water New York well field upstream from station (see station 01387420). Occasional regulation from lakes and ponds upstream from the station. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	1430	1,580	6.36	May 11	0915	*3,340	*8.01

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	79	159	393	252	686	355	203	353	156	21	22
2	24	347	148	321	233	587	790	376	267	103	20	30
3	22	306	122	294	222	492	530	359	221	76	20	33
4	21	167	116	316	222	414	416	311	166	61	20	25
5	20	115	125	321	405	361	358	301	125	57	20	22
6	19	88	142	305	338	321	311	388	101	49	20	22
7	18	72	124	332	280	290	282	372	84	44	20	35
8	18	181	112	555	251	290	261	319	76	42	19	49
9	19	477	103	653	229	668	309	587	69	43	19	29
10	20	556	101	558	218	755	1450	1870	63	39	28	23
11	19	368	115	441	217	510	1070	3190	59	34	30	22
12	19	253	112	364	619	397	648	2480	123	31	21	21
13	18	196	110	320	676	337	504	1390	323	28	20	21
14	19	213	103	287	474	332	426	846	586	28	20	21
15	21	215	95	247	364	324	387	612	634	28	20	18
16	21	177	89	413	304	290	355	476	617	25	21	18
17	20	150	88	357	296	260	328	384	475	31	29	18
18	20	132	88	295	758	264	297	326	588	27	36	18
19	19	119	84	266	760	529	274	274	446	24	33	18
20	19	113	84	245	607	568	420	241	298	25	27	18
21	19	110	84	222	503	489	318	232	228	23	22	19
22	18	212	79	203	417	492	263	202	183	23	20	24
23	18	267	134	286	367	434	244	168	158	25	19	24
24	18	229	125	719	913	413	288	146	142	26	21	20
25	50	188	277	688	1210	394	250	156	124	23	21	19
26	39	165	348	496	971	380	252	214	106	21	130	16
27	93	158	295	400	795	383	318	164	104	21	75	14
28	61	135	258	355	662	361	258	134	85	21	37	15
29	43	124	286	320	---	327	224	128	70	21	29	18
30	35	123	920	294	---	292	207	148	128	20	25	16
31	32	---	608	275	---	268	---	122	---	22	23	---
TOTAL	831	6035	5634	11541	13563	12908	12393	17119	7002	1197	886	668
MEAN	26.8	201	182	372	484	416	413	552	233	38.6	28.6	22.3
MAX	93	556	920	719	1210	755	1450	3190	634	156	130	49
MIN	18	72	79	203	217	260	207	122	59	20	19	14
CFSM	.22	1.68	1.51	3.10	4.04	3.47	3.44	4.60	1.94	.32	.24	.19
IN.	.26	1.87	1.75	3.58	4.20	4.00	3.84	5.31	2.17	.37	.27	.21

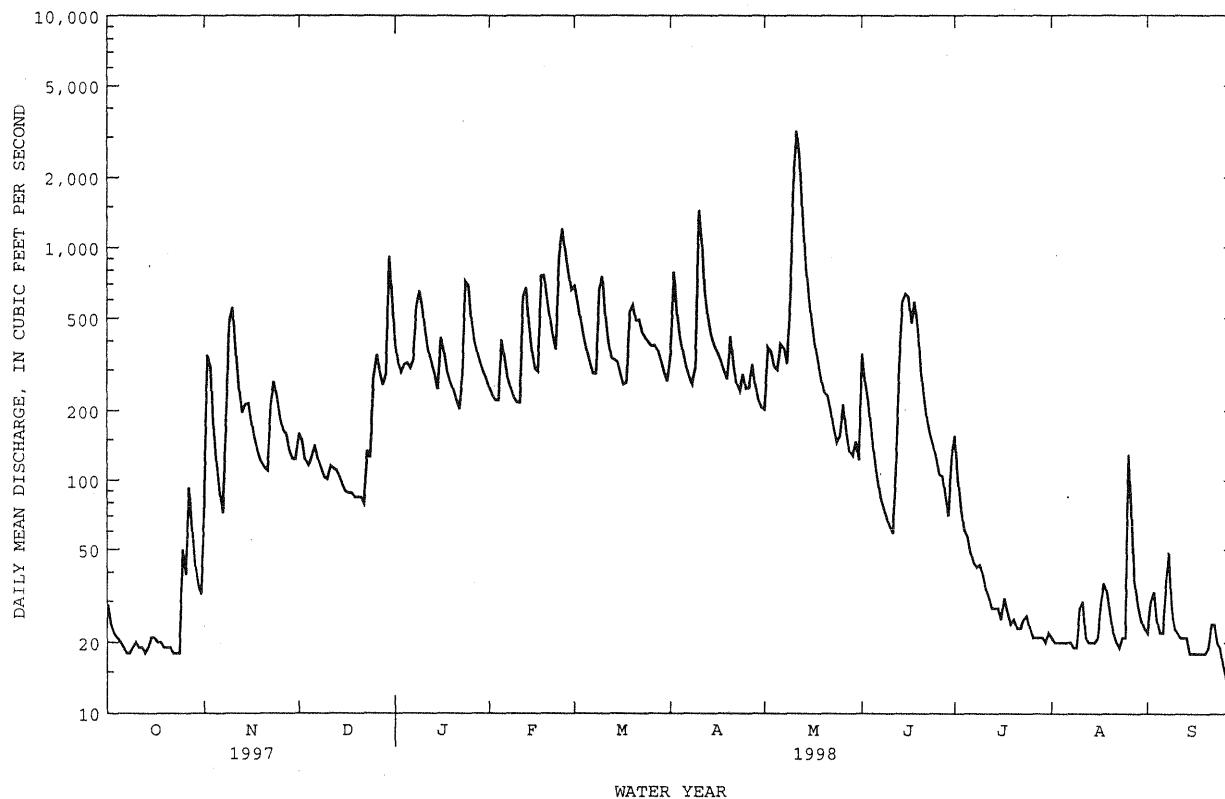
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 1998, BY WATER YEAR (WY)

	144	227	276	268	281	441	405	261	152	99.0	99.5	106
MEAN	144	227	276	268	281	441	405	261	152	99.0	99.5	106
MAX	954	736	873	877	701	1151	1055	994	735	602	755	478
(WY)	1904	1978	1984	1979	1970	1936	1984	1989	1972	1945	1955	1927
MIN	13.8	24.4	43.4	16.5	70.8	144	88.4	79.5	30.7	15.8	11.3	11.1
(WY)	1942	1965	1981	1981	1980	1985	1985	1905	1995	1993	1993	1964

PASSAIC RIVER BASIN

01387500 RAMAPO RIVER NEAR MAHWAH, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1903 - 1998	
ANNUAL TOTAL	57079		89777		230	
ANNUAL MEAN	156		246		461	1903
HIGHEST ANNUAL MEAN					99.5	1985
LOWEST ANNUAL MEAN					8920	Oct 9 1903
HIGHEST DAILY MEAN	1330	Apr 1	3190	May 11	1.2	Aug 12 1993
LOWEST DAILY MEAN	15	Aug 12	14	Sep 27	3.7	Sep 7 1995
ANNUAL SEVEN-DAY MINIMUM	17	Aug 6	17	Sep 24	15500a	Apr 5 1984
INSTANTANEOUS PEAK FLOW			3340	May 11	13.35	Apr 5 1984
INSTANTANEOUS PEAK STAGE			8.01	May 11	.20	Aug 11 1993
INSTANTANEOUS LOW FLOW			13	Sep 30	1.91	
ANNUAL RUNOFF (CFSM)	1.30		2.05		26.01	
ANNUAL RUNOFF (INCHES)	17.69		27.83		510	
10 PERCENT EXCEEDS	317		557		138	
50 PERCENT EXCEEDS	116		164		27	
90 PERCENT EXCEEDS	20		20			

a From rating curve extended above 6,500 ft³/s

LOCATION.--Lat 40°59'33", long 74°16'44", Passaic County, Hydrologic Unit 02030103, on right end of dam at pumping station in Pompton Lakes, 700 ft upstream from bridge on Paterson-Hamburg Turnpike, and 2.0 mi upstream from mouth. Water samples collected upstream from dam at water-supply intake, on right bank. Water-quality monitor is 450 ft downstream from dam.

PERIOD OF RECORD.--October 1921 to current year.

REVISED RECORDS.--WSP 1552: 1922(M), 1924-25, 1929-31(M), 1934-35(M). WRD-NJ 1970: 1968-69. WRD-NJ 1988: 1984(M).

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 190.96 ft above sea level. Prior to October 1, 1981, at datum 10.00 ft higher.

REMARKS.--Records good. Diversion by North Jersey District Water Supply Commission to Wanaque Reservoir since December 1953 (see Passaic River basin, diversions) and to Oradell Reservoir by United Water New Jersey since February 1985 (see Passaic River basin, diversions) for municipal supply. Slight regulation by Pompton Lake, capacity, 300,000,000 gal. Several measurements of water temperature, other than those published, were made during the year. National Weather Service telephone telemeter at station. Satellite telemeter at auxiliary station 700 ft below station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	1700	1,730	11.35	May 11	2130	*3,280	*12.00

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	64	192	554	349	817	435	300	320	204	27	27
2	41	239	202	436	322	765	1130	483	424	160	27	28
3	38	423	173	382	304	656	838	510	277	122	26	39
4	36	256	163	380	293	567	626	451	246	102	23	35
5	34	175	163	384	475	499	529	415	182	94	26	29
6	34	137	182	378	481	437	462	521	150	85	25	25
7	35	113	175	394	389	396	413	515	127	72	24	31
8	32	160	158	609	345	375	380	460	114	66	23	70
9	31	441	150	763	318	779	404	673	105	66	22	48
10	31	602	147	701	296	999	1560	1690	94	62	24	32
11	31	484	155	579	289	743	1470	3050	87	56	43	26
12	31	343	157	482	627	566	970	2840	131	49	32	23
13	31	268	157	425	836	474	737	1850	362	45	24	22
14	31	265	149	388	646	448	611	1200	1040	42	23	20
15	34	301	139	348	501	453	553	887	944	42	23	20
16	33	259	133	520	418	404	514	702	839	41	23	19
17	32	220	129	513	387	364	477	573	704	40	27	16
18	32	194	126	427	897	357	448	492	676	56	56	16
19	33	175	126	379	1020	641	404	429	661	42	42	16
20	31	161	126	348	860	797	613	365	453	38	36	16
21	31	153	120	320	706	694	506	332	339	35	31	15
22	31	231	118	291	585	702	406	299	267	34	26	16
23	31	322	179	319	510	624	365	251	224	37	25	15
24	28	308	201	930	941	592	388	216	201	37	23	16
25	48	261	332	937	1430	555	372	203	180	34	23	17
26	70	228	463	713	1170	523	336	257	158	33	93	17
27	105	217	405	566	982	518	436	241	147	29	118	16
28	108	194	353	494	846	496	375	197	130	27	62	15
29	73	177	328	448	---	463	331	176	111	28	42	13
30	57	169	1020	409	---	415	309	188	137	27	33	14
31	49	---	854	380	---	382	---	172	---	29	29	---
TOTAL	1314	7540	7475	15197	17223	17501	17398	20938	9830	1834	1081	712
MEAN	42.4	251	241	490	615	565	580	675	328	59.2	34.9	23.7
MAX	108	602	1020	937	1430	999	1560	3050	1040	204	118	70
MIN	28	64	118	291	289	357	309	172	87	27	22	1

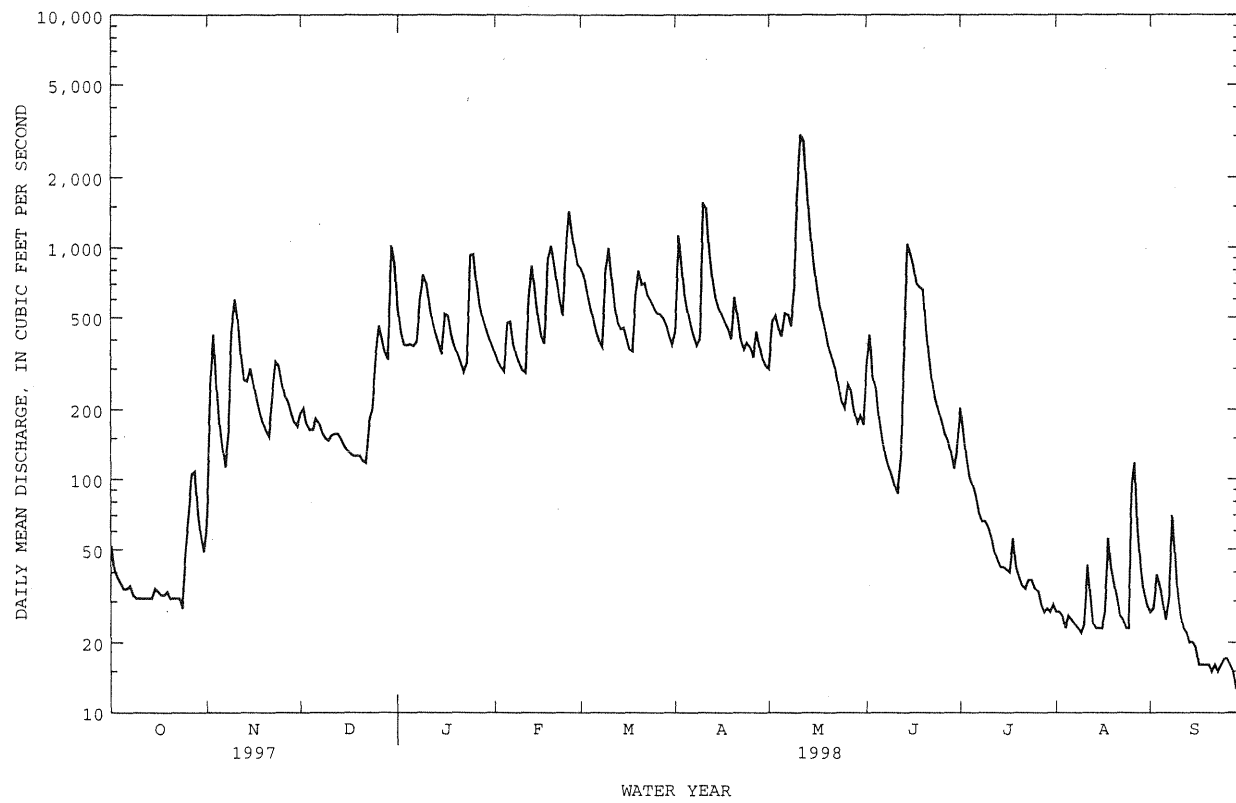
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

MEAN	150	270	325	325	354	548	518	350	205	136	133	139
MAX	1154	954	1181	1035	838	1670	1465	1195	973	895	889	725
(WY)	1956	1933	1997	1979	1970	1936	1983	1989	1972	1945	1955	1927
MIN	13.6	22.2	12.8	27.5	83.0	67.8	24.9	72.0	39.9	5.89	6.17	10.8
(WY)	1981	1981	1981	1981	1969	1985	1985	1965	1965	1985	1985	1964

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1922 - 1998
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ANNUAL TOTAL	81201		118043				
ANNUAL MEAN	222		323				
HIGHEST ANNUAL MEAN					287		
LOWEST ANNUAL MEAN					512		1984
HIGHEST DAILY MEAN	1900	Apr 1	3050	May 11	73.1		1985
LOWEST DAILY MEAN	16	Jul 21	13	Sep 29	10400		Mar 12 1936
ANNUAL SEVEN-DAY MINIMUM	18	Aug 8	15	Sep 24	.00		Oct 1 1922
INSTANTANEOUS PEAK FLOW			3280	May 11	.00		Dec 1 1980
INSTANTANEOUS PEAK STAGE			12.00	May 11	15400		Apr 5 1984
INSTANTANEOUS LOW FLOW			13	May 11	15.21a		Apr 5 1984
10 PERCENT EXCEEDS	457		709	many days	.00		many days
50 PERCENT EXCEEDS	173		224		645		
90 PERCENT EXCEEDS	31		26		163		
					36		

a From gage well, outside high-water marks at 15.33 ft.



LOCATION.--Lat 40°58'09", long 74°16'56", Passaic County, Hydrologic Unit 02030103, on left bank in Passaic Valley Water Commission pumping station, 800 ft below confluence of Pequannock and Ramapo Rivers, 100 ft upstream from bridge on Jackson Avenue (Pompton Plains Cross Road), and 0.7 mi east of Pompton Plains.

PERIOD OF RECORD.--March 1903 to December 1904, May 1940 to current year. Monthly discharge only for some periods, published in WSP 1302.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 160.00 ft above sea level. March 1903 to December 1904, nonrecording gage on main spillway of dam 2,000 ft upstream at different datum. May 1940 to September 1964 two water-stage recorders, each above a concrete dam about 2,000 ft upstream at datum 14.46 ft higher.

REMARKS.--Records good. Water diverted from reservoirs on Pequannock and Wanaque Rivers, from Pompton River to Point View Reservoir, capacity 2.8 billion gallons (no diversion this year), and from Ramapo River to Wanaque Reservoir and Oradell Reservoir (from February 1985) for municipal supply (see Passaic River basin, diversions into and from and Passaic River basin, diversions). Prior to the 1969 water year, published discharge included flow over the weir and pumpage to Point View Reservoir from Jackson Avenue Pumping Station. Since water year 1969, the published discharges have included only flow over the weir. Flow regulated by Canistear, Oak Ridge, Clinton, Charlotteburg and Echo Lake Reservoirs on Pequannock River and by Greenwood Lake, Monksville, and Wanaque Reservoirs on Wanaque River (see Passaic River basin, reservoirs in). Several measurements of water temperature were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	0930	3,320	11.87	Jun 14	1900	3,310	11.86
May 12	0115	*8,620	*16.32				

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	166	264	890	510	1610	823	448	491	331	67	63
2	90	438	280	686	467	1500	2200	905	684	264	64	66
3	73	580	242	589	443	1320	1660	934	400	199	60	87
4	69	350	222	579	467	1120	1270	809	348	167	58	80
5	70	264	230	577	887	944	1030	777	262	160	59	69
6	69	214	263	548	855	809	859	1110	210	149	58	64
7	69	179	252	589	653	706	758	1250	185	132	54	83
8	66	263	233	983	557	680	678	1150	174	126	52	144
9	63	631	212	1190	492	1570	804	1850	162	123	53	102
10	62	814	213	1060	452	1930	3090	4310	151	119	64	80
11	59	634	232	860	446	1490	2690	7950	144	107	121	71
12	63	443	235	707	1130	1100	1930	7880	246	97	74	67
13	64	338	233	616	1450	896	1530	5340	763	88	60	64
14	67	354	224	549	1160	828	1340	3360	2380	85	57	60
15	71	403	205	480	872	835	1340	2410	2680	83	56	60
16	69	348	194	827	698	723	1260	1890	2090	83	55	61
17	67	307	190	761	659	629	1150	1470	1630	103	63	55
18	68	279	190	619	1720	627	1050	1240	1420	145	140	54
19	68	255	187	543	1860	1300	883	1040	1230	94	100	53
20	64	241	187	489	1620	1520	1420	867	905	81	79	53
21	61	226	187	442	1370	1420	1140	733	724	78	68	52
22	65	345	183	396	1130	1440	869	674	500	76	63	53
23	64	441	280	500	974	1240	748	439	383	79	58	52
24	62	413	301	1540	1940	1160	743	353	344	81	55	50
25	107	339	552	1480	2600	1070	657	335	316	73	54	53
26	114	301	700	1130	2110	977	563	387	281	71	178	54
27	192	292	588	882	1800	936	839	361	266	85	181	51
28	154	266	509	770	1580	881	683	307	232	122	113	47
29	114	244	516	682	---	802	533	282	194	125	83	43
30	94	233	1660	614	---	708	463	290	237	127	72	45
31	84	---	1350	562	---	632	---	270	---	115	65	---
TOTAL	2486	10601	11314	23140	30902	33403	35003	51421	20032	3768	2384	1936
MEAN	80.2	353	365	746	1104	1078	1167	1659	668	122	76.9	64.5
MAX	192	814	1660	1540	2600	1930	3090	7950	2680	331	181	144
MIN	59	166	183	396	443	627	463	270	144	71	52	44

MEAN	292	423	538	521	573	931	972	631	377	238	213	218
MAX	2370	1417	2245	1777	1654	2477	2995	2778	2177	1530	1520	1057
(WY)	1904	1956	1997	1996	1973	1983	1983	1989	1972	1945	1955	1971
MIN	40.2	52.3	34.8	39.2	149	118	62.7	110	62.9	34.2	34.2	46.7
(WY)	1981	1981	1981	1981	1969	1981	1985	1965	1965	1965	1966	1980

PASSAIC RIVER BASIN

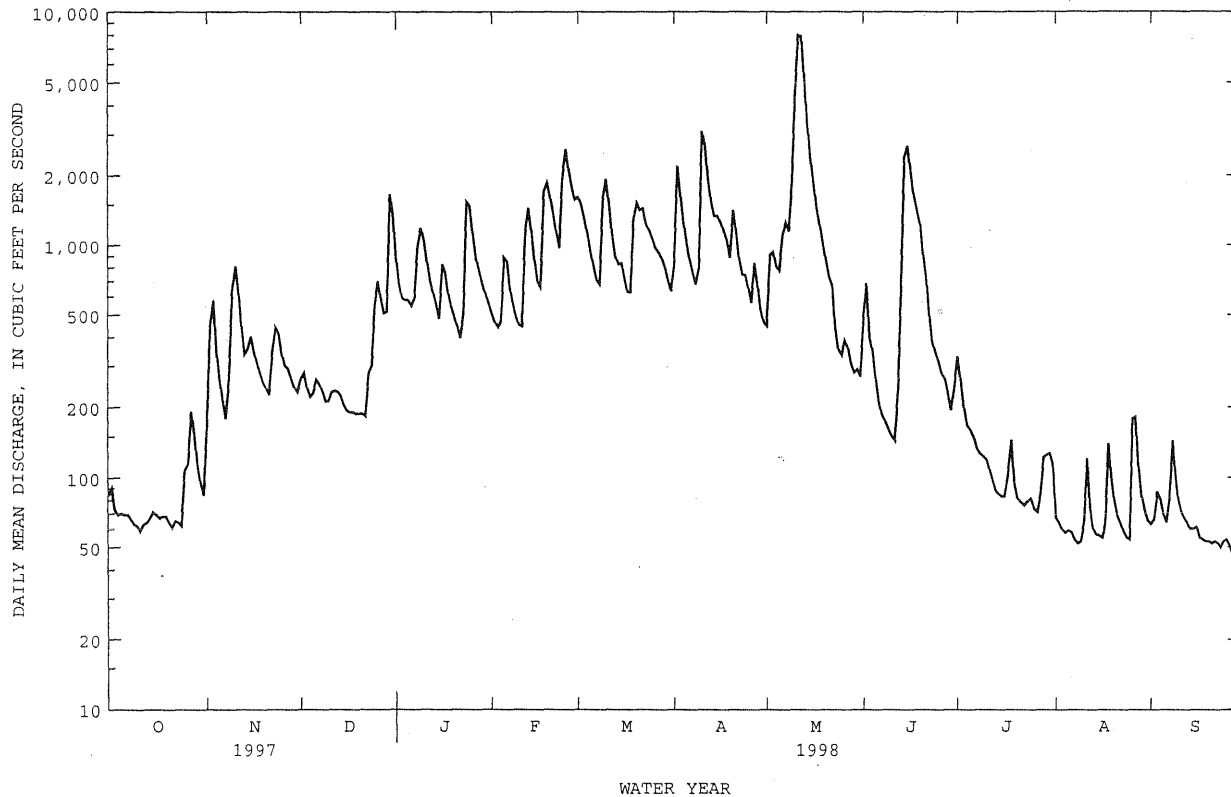
01388500 POMPTON RIVER AT POMPTON PLAINS, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1903 - 1998	
ANNUAL TOTAL	148275		226390		492	
ANNUAL MEAN	406		620		906	
HIGHEST ANNUAL MEAN					117	
LOWEST ANNUAL MEAN					28300	
HIGHEST DAILY MEAN	3730	Apr 1	7950	May 11		1952
LOWEST DAILY MEAN	49	Aug 11	43	Sep 29	.00	1965
ANNUAL SEVEN-DAY MINIMUM	51	Aug 9	49	Sep 24	1.7	1903
INSTANTANEOUS PEAK FLOW			8620	May 12	28300a	1904
INSTANTANEOUS PEAK STAGE			16.32	May 12	14.30bc	1903
INSTANTANEOUS LOW FLOW			42	Sep 28	.00	1904
10 PERCENT EXCEEDS	866		1460		1150	
50 PERCENT EXCEEDS	255		339		246	
90 PERCENT EXCEEDS	66		63		73	

a By computation of peak flow over dam, maximum observed.

b Site and datum then in use.

c Maximum stage at present site and datum was 24.47 ft, Apr. 6, 1984.



LOCATION.--Lat 40°53'05", long 74°13'35", Passaic County, Hydrologic Unit 02030103, on left bank 0.6 mi downstream from Beatties Dam in Little Falls, and 1.0 mi upstream from Peckman River.

PERIOD OF RECORD.--September 1897 to current year. Monthly discharge only for September 1897, published in WSP 1302. Published as "at Paterson", September 1897 to September 1955.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 120.00 ft above sea level (levels by Passaic Valley Water Commission). Prior to Jan. 8, 1933, nonrecording gage and Jan. 8, 1933, to Sept. 30, 1955, water-stage recorder, at site 3.7 mi downstream at sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good. Diurnal fluctuation at medium and low flow caused by hydroelectric plant at Beatties Dam. Flow regulated by reservoirs in Rockaway, Pequannock, Wanaque, and Ramapo River subbasins (see Passaic River basin, reservoirs in). Large diversions for municipal supply from Passaic River above Beatties Dam, and from Rockaway, Pequannock, Pompton, Ramapo, and Wanaque Rivers (see Passaic River basin, diversions). In addition, the New Jersey-American Water Company (formerly Commonwealth Water Co.) diverts from Canoe Brook near Summit and from Passaic River (see Passaic River basin, diversions); that company, the city of East Orange, and others also divert water for municipal supply by pumping wells in the basin. Several measurements of water temperature, other than those published, were made during the year. National Weather Service raingage and gage-height telemetry and USGS satellite telemeters at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 13	0215	*8,950	*8.57	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	299	111	2320	1680	3290	1430	1070	784	666	237	94
2	119	893	300	2230	1460	3040	2710	1400	942	658	163	91
3	110	1080	320	2110	1220	2730	2760	1620	806	506	133	155
4	72	938	284	1950	1050	2390	2660	1650	666	409	115	174
5	56	734	283	1790	1380	2100	2570	1630	514	368	96	134
6	95	485	177	1630	1640	1840	2370	1820	411	326	96	103
7	102	232	125	1550	1560	1620	2140	1980	368	287	93	108
8	81	184	236	1760	1440	1470	1890	2020	339	266	86	452
9	123	549	259	1930	1270	2110	1760	2470	133	258	86	486
10	80	715	228	1960	1120	2610	3200	3970	294	214	92	323
11	65	646	294	1840	1000	2540	3710	6350	219	213	178	181
12	56	419	344	1650	1550	2340	3740	8380	373	211	159	147
13	76	222	189	1370	1980	2140	3490	8840	803	178	125	123
14	92	263	139	1170	1950	1970	3170	7920	2630	161	112	108
15	90	427	269	967	1700	1850	2900	6620	3510	159	108	102
16	108	431	404	1390	1420	1680	2670	5440	3950	151	96	107
17	103	344	408	1430	1270	1470	2410	4370	4110	197	121	106
18	75	261	556	1350	2320	1280	2180	3530	4040	411	277	101
19	67	155	587	1370	2690	1740	1930	2920	3620	273	248	99
20	95	123	626	1280	2770	2210	2180	2420	3060	188	173	95
21	93	89	503	1210	2760	2320	2120	2000	2610	174	139	90
22	90	284	404	960	2590	2490	1910	1680	2150	175	124	91
23	89	521	599	1100	2390	2560	1740	1330	1750	165	97	99
24	94	494	825	2040	3120	2580	1620	1010	1430	196	92	109
25	114	374	1180	2190	3740	2510	1460	794	1110	164	78	108
26	114	233	1470	2380	4000	2370	1310	845	836	148	299	112
27	387	231	1500	2520	3870	2200	1450	838	673	129	310	112
28	407	208	1440	2360	3570	2010	1500	746	531	166	189	100
29	247	115	1440	2300	---	1810	1380	635	470	175	152	95
30	176	94	2540	2100	---	1590	1210	648	554	180	128	95
31	163	---	2520	1890	---	1370	---	618	---	260	108	---
TOTAL	3778	12043	20560	54097	58510	66230	67570	87564	43866	8032	4510	4300
MEAN	122	401	663	1745	2090	2136	2252	2825	1462	259	145	143
MAX	407	1080	2540	2520	4000	3290	3740	8840	4110	666	310	486
MIN	56	89	111	960	1000	1280	1210	618	219	129	78	99

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1998, BY WATER YEAR (WY)

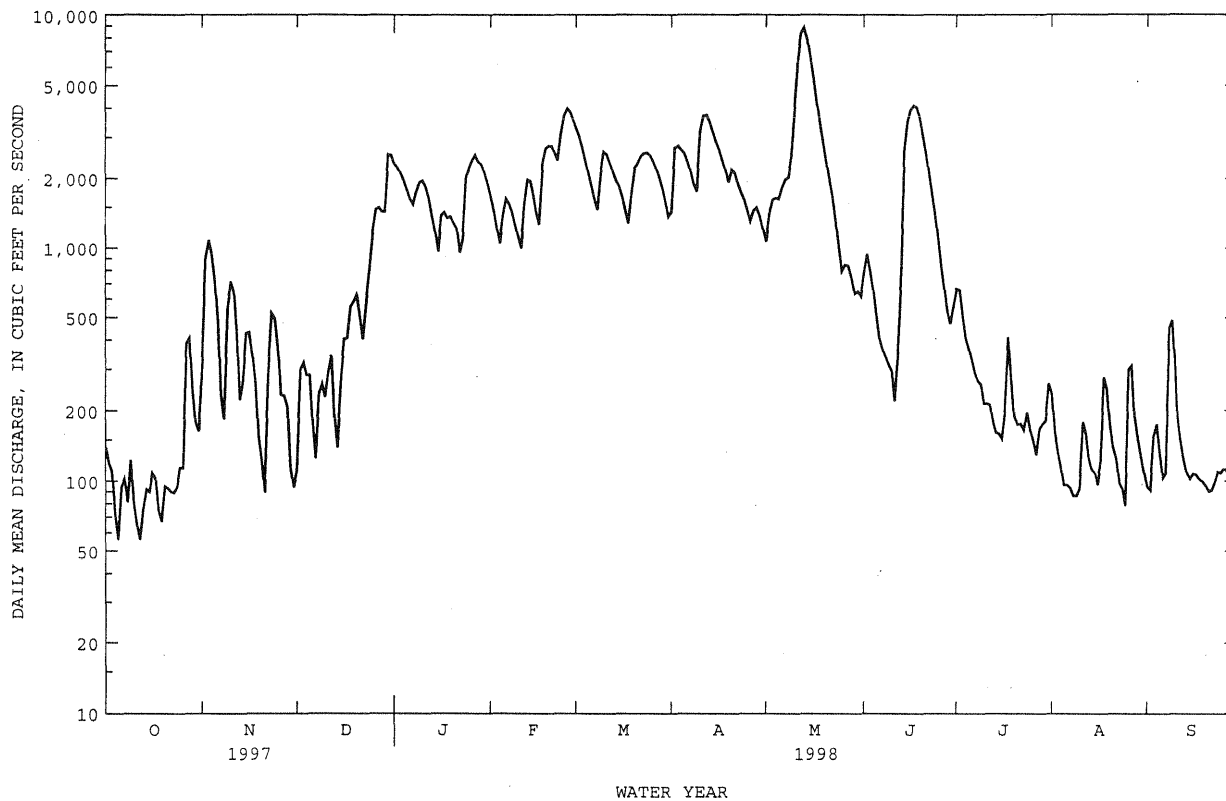
MEAN	624	944	1273	1350	1442	2363	2090	1325	770	534	538	520
MAX	5613	4757	4497	4039	3787	6755	5761	4554	4290	3124	2859	3561
(WY)	1904	1908	1903	1979	1973	1936	1983	1989	1972	1945	1942	1971
MIN	44.5	79.2	111	104	178	423	228	227	84.6	60.3	30.4	28.9
(WY)	1931	1932	1981	1981	1901	1981	1985	1965	1965	1954	1923	1964

PASSAIC RIVER BASIN

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1898 - 1998	
ANNUAL TOTAL	306628		431060		1146	
ANNUAL MEAN	840		1181		2394	
HIGHEST ANNUAL MEAN					269	
LOWEST ANNUAL MEAN					28000	
HIGHEST DAILY MEAN	4890	Apr 3	8840	May 13	28000	Oct 10 1903
LOWEST DAILY MEAN	50	Jun 23	56	Oct 5	.00	Jul 3 1904
ANNUAL SEVEN-DAY MINIMUM	69	Jun 22	81	Oct 10	13	Sep 19 1932
INSTANTANEOUS PEAK FLOW			8950	May 13	31700a	Oct 10 1903
INSTANTANEOUS PEAK STAGE			8.57	May 13	----	
INSTANTANEOUS LOW FLOW			29	many days	.00	Jul 3 1904
10 PERCENT EXCEEDS	1980		2660		2770	
50 PERCENT EXCEEDS	588		648		634	
90 PERCENT EXCEEDS	95		98		124	

a Present site.



01390500 SADDLE RIVER AT RIDGEWOOD, NJ

LOCATION.--Lat 40°59'05", long 74°05'30", Bergen County, Hydrologic Unit 02030103, on left bank 15 ft upstream from bridge on State Highway 17 in Ridgewood and 2.8 mi upstream from Hohokus Brook.

DRAINAGE AREA.--21.6 mi².

PERIOD OF RECORD.--October 1954 to September 1974, October 1977 to current year. Operated as a maximum-stage gage water years 1975- 77.

REVISED RECORDS.--WRD-NJ 1974: 1971.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 71.74 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records fair. The flow past this station is affected by pumpage from wells by United Water New Jersey and others. Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE OF PERIOD OF RECORD.--Flood of July 23, 1945, reached a discharge of 6,400 ft³/s, at site 1.6 mi upstream, drainage area, 19.1 mi², by slope-area measurement.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0200	457	4.07	Mar 9	0945	472	4.12
Jan 23	2315	429	3.97	Apr 10	0415	*686	*4.80

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	34	14	28	19	37	102	29	55	25	5.1	2.5
2	5.7	105	13	22	19	40	147	75	24	15	3.9	8.6
3	5.6	53	12	21	18	39	54	37	29	13	3.5	9.0
4	5.4	28	13	19	19	31	45	32	21	12	3.3	4.5
5	5.2	23	13	18	72	29	42	45	19	15	3.2	3.6
6	4.9	19	17	17	34	27	39	48	18	12	3.0	3.0
7	4.9	18	14	27	25	27	37	34	16	11	2.6	11
8	4.8	74	13	50	23	35	35	32	16	11	2.5	22
9	4.8	74	13	32	21	211	65	127	15	11	2.1	6.2
10	4.7	46	13	25	20	65	282	223	14	9.6	2.4	4.6
11	4.8	29	15	21	21	44	61	199	14	8.6	7.7	4.2
12	4.5	23	15	19	83	38	46	117	66	8.1	4.3	3.5
13	4.6	20	16	19	30	35	42	68	89	7.5	3.0	3.2
14	4.8	38	15	18	24	40	41	58	114	6.9	2.6	4.6
15	5.7	40	14	19	21	36	42	52	52	6.5	2.6	4.3
16	5.9	29	13	65	20	32	39	48	100	6.5	2.3	3.0
17	5.8	22	13	28	24	31	45	44	55	6.6	3.2	2.8
18	5.6	19	13	23	106	37	42	41	53	6.5	7.8	2.9
19	5.5	17	13	21	49	141	39	39	31	5.8	4.9	2.6
20	5.4	16	13	18	36	60	87	37	25	5.5	3.6	2.4
21	5.1	15	12	16	33	64	38	35	21	5.5	3.2	2.1
22	5.1	42	12	15	28	61	34	32	20	5.0	2.8	2.8
23	5.3	25	28	84	28	57	35	30	20	7.9	2.7	2.9
24	6.0	17	20	132	138	54	42	28	20	7.6	2.3	2.8
25	22	15	66	44	74	45	32	32	17	4.8	2.3	2.7
26	11	14	28	31	42	42	47	40	19	4.2	48	2.7
27	45	13	18	27	37	40	47	27	17	3.9	8.4	3.9
28	14	13	17	25	34	38	32	24	15	3.8	5.2	2.2
29	7.7	12	30	23	---	36	29	23	14	3.5	4.2	1.8
30	6.4	12	140	22	---	35	28	29	35	3.5	3.4	1.9
31	5.7	---	35	21	---	34	---	22	---	5.4	2.9	---
TOTAL	238.7	905	681	950	1098	1541	1696	1707	1024	258.2	159.0	134.3
MEAN	7.70	30.2	22.0	30.6	39.2	49.7	56.5	55.1	34.1	8.33	5.13	4.48
MAX	45	105	140	132	138	211	282	223	114	25	48	22
MIN	4.5	12	12	15	18	27	28	22	14	3.5	2.1	1.8
CFSM	.36	1.40	1.02	1.42	1.82	2.30	2.62	2.55	1.58	.39	.24	.21
IN.	.41	1.56	1.17	1.64	1.89	2.65	2.92	2.94	1.76	.44	.27	.23

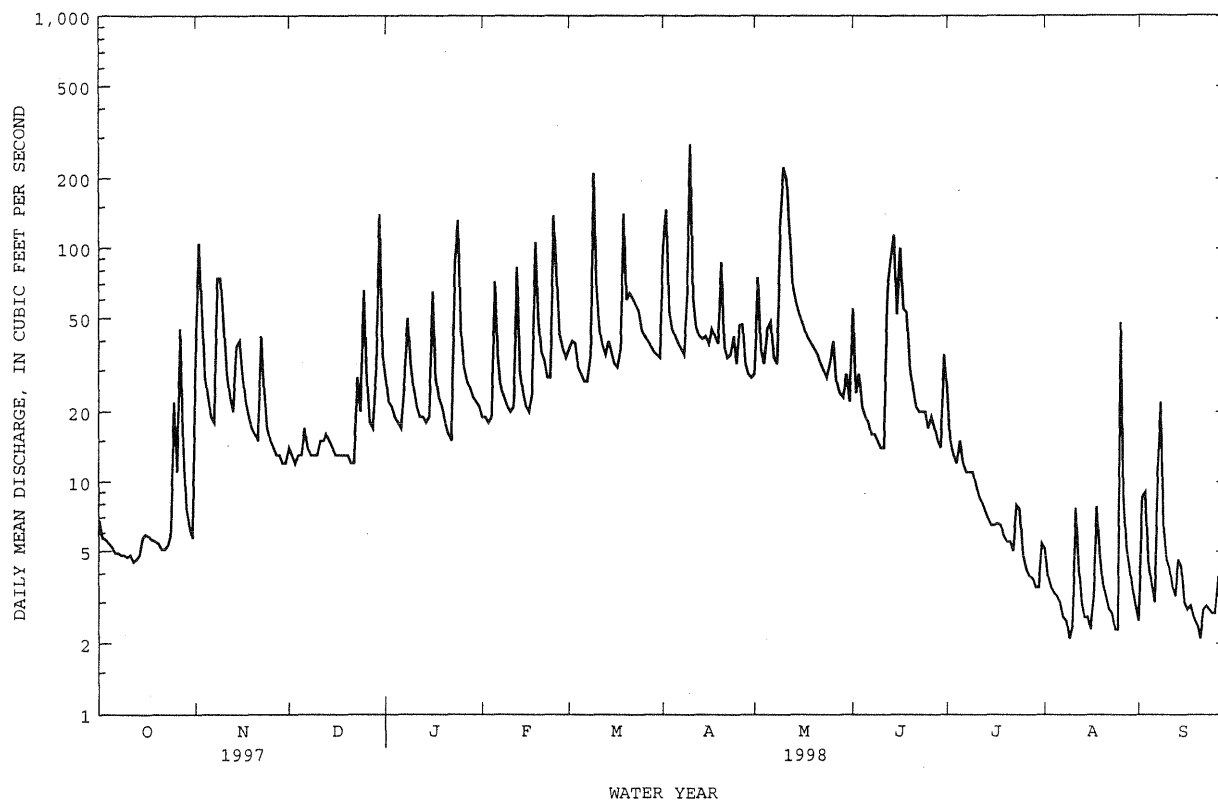
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1998, BY WATER YEAR (WY)

	MEAN	22.0	34.4	36.6	36.6	40.5	54.9	59.0	42.8	27.5	20.3	19.1	17.5
MAX	104	109	109	115	86.9	104	153	118	121	87.6	77.1	70.6	
(WY)	1956	1978	1973	1979	1961	1983	1983	1989	1972	1984	1955	1971	
MIN	5.79	8.41	7.49	6.43	11.8	15.6	11.0	12.4	7.46	3.23	2.69	2.34	
(WY)	1983	1982	1981	1981	1980	1985	1985	1995	1965	1966	1995	1980	

PASSAIC RIVER BASIN

01390500 SADDLE RIVER AT RIDGEWOOD, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1955 - 1998	
ANNUAL TOTAL	10280.4		10392.2			
ANNUAL MEAN	28.2		28.5		34.2	
HIGHEST ANNUAL MEAN					58.7	
LOWEST ANNUAL MEAN					14.7	
HIGHEST DAILY MEAN	279	Jan 25	282	Apr 10	1250	Nov 8 1977
LOWEST DAILY MEAN	3.4	Jul 21	1.8	Sep 29	.20	Sep 17 1966
ANNUAL SEVEN-DAY MINIMUM	4.0	Jul 15	2.6	Sep 24	.75	Sep 10 1995
INSTANTANEOUS PEAK FLOW			686	Apr 10	4650	Nov 8 1977
INSTANTANEOUS PEAK STAGE			4.80	Apr 10	12.25	Nov 8 1977
INSTANTANEOUS LOW FLOW			1.9	Aug 9		
ANNUAL RUNOFF (CFSM)	1.30		1.32		1.58	
ANNUAL RUNOFF (INCHES)	17.71		17.90		21.52	
10 PERCENT EXCEEDS	52		57		68	
50 PERCENT EXCEEDS	23		20		22	
90 PERCENT EXCEEDS	5.6		3.5		6.7	



01391500 SADDLE RIVER AT LODI, NJ

LOCATION.--Lat 40°53'25", long 74°04'51", Bergen County, Hydrologic Unit 02030103, on left bank 560 ft upstream from bridge on Outwater Lane in Lodi and 3.2 mi upstream from mouth.

DRAINAGE AREA.--54.6 mi².

PERIOD OF RECORD.--September 1923 to current year.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1031: 1940(M). WSP 1552: 1929(M), 1936(M), 1938. WRD-NJ 1969: 1967. WRD- NJ 1970: 1968, 1969.

GAGE.--Water-stage recorder. Concrete control since Nov. 2, 1938. Datum of gage is 25.00 ft above sea level. Prior to Nov. 2, 1938, at site 560 ft downstream at datum 2.54 ft lower.

REMARKS.--Records fair. Occasional regulation at low flow. Diversion upstream from station at Paramus by United Water New Jersey, for municipal supply (see Hackensack River Basin, diversions). The flow past this station is affected by pumpage from wells by United Water New Jersey and others. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 2	0030	1,200	4.68	Apr 10	0645	*1,490	*5.15

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	144	59	92	82	123	267	111	222	108	41	27
2	25	307	52	82	79	116	575	279	100	75	38	42
3	25	177	48	77	77	138	202	143	98	68	34	88
4	24	71	53	74	77	107	156	127	85	65	29	32
5	23	53	58	72	257	100	138	161	79	72	28	28
6	25	51	58	69	136	95	132	195	75	66	26	26
7	22	48	53	119	99	93	122	132	72	62	28	81
8	22	190	50	202	90	126	118	126	72	63	28	150
9	22	219	50	124	84	594	194	361	68	64	27	46
10	22	121	53	97	81	252	851	659	67	61	33	37
11	26	72	67	81	80	153	251	570	66	57	45	34
12	30	60	66	75	318	131	184	440	199	56	36	38
13	31	55	61	72	127	123	158	243	373	56	31	36
14	28	102	57	69	100	136	146	204	458	54	31	34
15	31	109	53	77	88	128	148	184	236	50	29	28
16	35	73	50	254	84	111	140	170	288	40	29	26
17	22	64	50	112	103	105	156	153	163	63	89	26
18	21	58	49	88	412	117	151	144	222	43	56	29
19	22	56	48	82	191	416	136	135	119	36	39	29
20	24	54	48	77	136	228	323	129	102	34	30	28
21	19	53	47	72	122	213	163	120	94	34	27	29
22	22	145	47	69	105	219	137	108	87	32	26	27
23	24	85	145	262	109	195	142	106	85	43	29	27
24	23	65	85	512	421	183	173	103	85	47	27	27
25	81	58	247	201	293	149	129	125	80	31	23	25
26	60	57	120	128	152	135	163	130	78	31	161	27
27	156	55	83	107	128	132	226	102	83	28	54	23
28	55	53	79	100	118	125	129	94	73	29	31	23
29	37	52	123	94	---	120	114	95	70	30	31	24
30	28	53	495	89	---	115	109	106	140	32	30	24
31	26	---	138	86	---	112	---	89	---	57	30	---
TOTAL	1039	2760	2692	3715	4149	5090	6033	5844	4039	1587	1196	1121
MEAN	33.5	92.0	86.8	120	148	164	201	189	135	51.2	38.6	37.4
MAX	156	307	495	512	421	594	851	659	458	108	161	150
MIN	19	48	47	69	77	93	109	89	66	28	23	23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

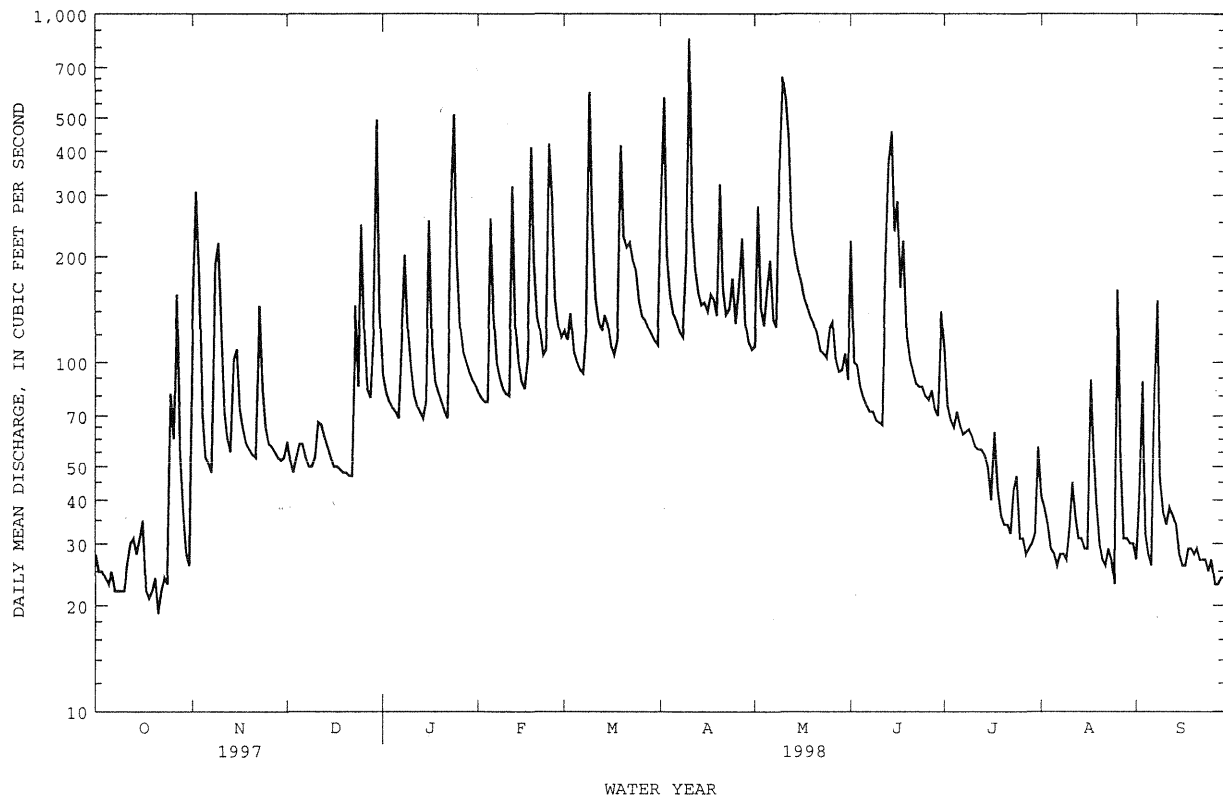
	65.4	89.7	101	106	119	156	157	119	84.9	72.1	67.8	67.2
MEAN	257	284	301	331	258	333	457	315	336	371	225	256
MAX	1956	1978	1984	1979	1973	1953	1983	1984	1972	1945	1955	1971
(WY)	16.5	25.5	17.0	12.1	38.1	40.1	32.9	44.9	31.8	14.1	15.1	11.4
MIN	1936	1982	1981	1981	1980	1981	1985	1941	1965	1966	1966	1932
(WY)												

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1924 - 1998
ANNUAL TOTAL	33944	39265	
ANNUAL MEAN	93.0	108	100
HIGHEST ANNUAL MEAN			187
LOWEST ANNUAL MEAN			45.2
HIGHEST DAILY MEAN	865	851	2970
LOWEST DAILY MEAN	16	19	4.9
ANNUAL SEVEN-DAY MINIMUM	22	22	7.1
INSTANTANEOUS PEAK FLOW		1490	4500
INSTANTANEOUS PEAK STAGE		5.15	12.36a
INSTANTANEOUS LOW FLOW		15	1.0
10 PERCENT EXCEEDS	151	208	192
50 PERCENT EXCEEDS	78	80	69
90 PERCENT EXCEEDS	26	27	26

a From high-water mark in gage house.

PASSAIC RIVER BASIN

01391500 SADDLE RIVER AT LODI, NJ--Continued



01392590 PASSAIC RIVER AT NEWARK, NJ

LOCATION.--Lat 40°44'00", long 74°09'30", Essex County, Hydrologic Unit 02030103, on right bank at Newark Fire Training Academy in Newark, 800 ft upstream from bridge on South Fourth Street, 0.3 mi downstream from railroad bridges on AMTRAK mainline, and 4.2 mi upstream from Newark Bay.

DRAINAGE AREA.--923 mi².

PERIOD OF RECORD.--June 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (---) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 7.54 ft, Oct. 19, 1996; minimum recorded, -4.77 ft, Nov. 5, 1994.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 10.9 ft, Dec. 11, 1992, from high-water mark.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 6.82, Feb. 24; minimum recorded, -4.14 ft, Dec. 31.

Summaries of tide elevations during the year are as follows:

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	5.69	6.50	5.63	6.51	6.82	5.93	5.59	6.09	5.53	5.04	4.95	5.69
high tide	Date	20	14	30	29	24	22	23	12	23	23	9	7
Minimum	Elevation	-2.35	-4.09	-4.14	-3.58	-2.16	-3.66	-2.88	-2.60	-2.03	-2.08	-2.46	-2.94
low tide	Date	15	27	31	1	13	27	29	25	24	21	10	7
Mean high tide		4.09	4.07	3.77	4.22	4.54	4.13	4.33	4.48	4.28	4.10	4.05	4.11
Mean water level		1.41	1.47	1.08	1.65	1.96	1.40	1.65	1.88	1.60	1.47	1.42	1.45
Mean low tide		-1.43	-1.40	-1.82	-1.24	-.74	-1.54	-1.88	-.92	-1.24	-1.34	-1.37	-1.36

RESERVOIRS IN PASSAIC RIVER BASIN

- 01379990 SPLITROCK RESERVOIR.--Lat 40°57'40", long 74°27'45", Morris County, Hydrologic Unit 02030103, at dam on Beaver Brook, 2 mi northeast of Hibernia. DRAINAGE AREA, 5.50 mi². PERIOD OF RECORD, September 1925 to September 1931, December 1948 to September 1950, October 1953 to current year. Monthend contents only 1925-31, 1948-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, water-stage recorder. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-94-1: 1993.
REMARKS.--Reservoir is formed by a concrete gravity dam with earth embankment; present dam constructed 1946-48 and sluice gate first closed Dec. 22, 1948. Prior to 1946, reservoir was formed by earthfill dam with crest about 20 ft lower. Capacity of spillway level, 3,310,000,000 gal, elevation, 835 ft. Flow is regulated by two 30-inch sluice gates. Flow is released for diversion for municipal supply of United Water New Jersey.
COOPERATION.--Records provided by United Water New Jersey, Bureau of Water.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,652,500,000 gal, Apr. 5, 1973, elevation, 836.75 ft; minimum, 1,522,800,000 gal, Jan. 4, 1954, elevation, 824.20 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,573,000,000 gal, May 11, 12, and June 15, elevation, 836.05 ft; minimum, 3,117,000,000 gal, Sept. 22, 30, elevation, 834.05 ft.
- 01380900 BOONTON RESERVOIR.--Lat 40°53'45", long 74°23'55", Morris County, Hydrologic Unit 02030103, at dam on Rockaway River at Boonton. DRAINAGE AREA, 119 mi². PERIOD OF RECORD, April 1904 to September 1950, October 1953 to current year. Monthend contents only 1904-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. REVISED RECORDS.--WDR NJ-85-1: 1984. GAGE, hook gage. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-94-1: 1993.
REMARKS.--Reservoir is formed by a cyclopean masonry dam with earth wings; dam completed and storage began in 1904. Total capacity at spillway level, 7,620,000,000 gal elevation, 305.25 ft of which 7,366,000,000 gal is usable contents above elevation 259.75 ft, sill of lowest outlet gate. Spillway is topped with two Bascule gates, 2 ft high; prior to 1952, flashboards were used. Flow regulated by Bascule gates, three outlets in gatehouse at head of conduit and by two 48-inch pipes (bottom of sluice pipes at elevation 205 ft). Water is diverted from reservoir for municipal supply of United Water New Jersey.
COOPERATION.--Records provided by United Water New Jersey, Bureau of Water.
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,580,000,000 gal, May 12, 1998, elevation, 309.50 ft; minimum, 1,445,000,000 gal, Jan. 31, 1981, elevation 274.71 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,580,000,000 gal, May 12, elevation, 309.50 ft; minimum, 4,965,000,000 gal, Sept. 30, elevation, 294.79 ft.
- 01382100 CANISTEAR RESERVOIR.--Lat 41°06'30", long 74°29'30", Sussex County, Hydrologic Unit 02030103, at dam on Pacock Brook, 1.8 mi northeast of Stockholm. DRAINAGE AREA, 5.6 mi². PERIOD OF RECORD, October 1923 to September 1950, October 1953 to current year. Monthend contents 1923-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REVISED RECORDS.--WDR NJ-94-1: 1993.
REMARKS.--Reservoir is formed by earth-embankment type dam, completed about 1896. Capacity at spillway level, 2,407,000,000 gal, elevation, 1,086.0 ft. Reservoir used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and for diversion at Charlotteburg Reservoir on Pequannock River since May 21, 1961, for municipal supply for City of Newark. Outflow is controlled mostly by operation of gates in pipes through dam.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382200 OAK RIDGE RESERVOIR.--Lat 41°02'30", long 74°30'10", Passaic County, Hydrologic Unit 02030103, at dam on Pequannock River, 0.9 mi southwest of Oak Ridge. DRAINAGE AREA, 27.3 mi². PERIOD OF RECORD, October 1923 to September 1950, October 1953 to current year. Monthend contents only 1924-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REMARKS.--Reservoir is formed by earthfill dam with concrete-core wall and ogee overflow section; dam constructed between 1880-92; dam raised 10 ft during 1917-19. Capacity at spillway level, 3,895,000,000 gal, elevation, 846.0 ft. Reservoir used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and diversion at Charlotteburg Reservoir on Pequannock River since May 21, 1961, for municipal supply of City of Newark. Outflow is controlled mostly by operation of gates in pipes through dam.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382300 CLINTON RESERVOIR.--Lat 41°04'30", long 74°27'00", Passaic County, Hydrologic Unit 02030103, at dam on Clinton Brook, 2.0 mi north of Newfoundland. DRAINAGE AREA, 10.5 mi². PERIOD OF RECORD, October 1923 to September 1950, October 1953 to current year. Monthend contents only 1923-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REMARKS.--Reservoir is formed by earthfill dam constructed between 1889-92. Capacity at spillway level, 3,518,000,000 gal, elevation, 992.0 ft. Reservoir used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and for diversion at Charlotteburg Reservoir since May 21, 1961, for municipal supply of City of Newark. Outflow is controlled mostly by operation of gates in pipes through dam.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382380 CHARLOTTEBURG RESERVOIR.--Lat 41°01'34", long 74°25'30", Passaic County, Hydrologic Unit 02030103, at dam on Pequannock River, 1.1 mi upstream from Macopin River, and 1.5 mi southeast of Newfoundland, NJ. DRAINAGE AREA, 56.2 mi². PERIOD OF RECORD, May 1961 to current year. REVISED RECORDS.--WRD NJ-74: Station number. GAGE, water-stage recorder. Datum of gage is sea level.
REMARKS.--Reservoir is formed by concrete-masonry dam and earth embankment, with concrete spillway at elevation 738.00 ft; storage began May 19, 1961. Spillway equipped with automatic Bascule gate 5 ft high. Capacity, 2,964,000,000 gal, elevation, 743.00 ft, top of Bascule gate. No dead storage. Outflow is controlled by sluice and automatic Bascule gates. Water diverted from reservoir since May 21, 1961, for municipal supply of City of Newark.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.
- 01382400 ECHO LAKE.--Lat 41°03'00", long 74°24'30", Passaic County, Hydrologic Unit 02030103, at Echo Lake Dam on Macopin River, 1.6 mi north of Charlotteburg, and 1.9 mi upstream from mouth. DRAINAGE AREA, 4.35 mi². PERIOD OF RECORD, October 1927 to September 1950, October 1953 to current year. Monthend contents only 1928-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, staff gage. Datum of gage is sea level.
REMARKS.--Lake is formed by earth-embankment type dam completed about 1925. Capacity at spillway level, 1,583,000,000 gal, elevation, 893.0 ft, with provision for additional storage of 180,000,000 gal at elevation 894.9 ft with flashboards. Usable contents, 1,045,000,000 gal above elevation 880.0 ft. Lake used for storage and water released for diversion at Macopin intake dam on Pequannock River prior to May 21, 1961, and water diverted to Charlotteburg Reservoir on Pequannock River since May 21, 1961, for municipal supply of City of Newark. Outflow to Macopin River controlled by operation of gates in gatehouse at dam and water released through pipe and canal to Charlotteburg Reservoir.
COOPERATION.--Records provided by City of Newark, Division of Water Supply.

RESERVOIRS IN PASSAIC RIVER BASIN--Continued

01383000 GREENWOOD LAKE.--Lat 41°09'36", long 74°20'03", Passaic County, Hydrologic Unit 02030103, in gatehouse near right end of Greenwood Lake Dam on Wanaque River at Awosting. DRAINAGE AREA, 27.1 mi². PERIOD OF RECORD, June 1898 to November 1903, June 1907 to current year (gage heights only prior to October 1953). GAGE, water-stage recorder. Datum of gage is 608.86 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to Oct. 1, 1931, staff gage on former railroad bridge at site 100 ft upstream at datum 89.75 ft lower.

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway; dam completed about 1837 and reconstruction completed in 1928 with crest of spillway 0.25 ft lower. Usable capacity, 6,860,000,000 gal between gage heights -4.00 ft, sill of gate, and 10.00 ft, crest of spillway. Dead storage, 7,140,000,000 gal. Outflow mostly regulated by two gates, 3.5 by 5.0 ft. Records given herein represent usable capacity. Lake used for recreation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 9,528,000,000 gal, Oct. 9-14, 1903, gage height, 14.25 ft, present datum; minimum, 3,160,000,000 gal, several days in November 1900, gage height, 3.50 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,556,000,000 gal, May 12, gage height, 11.12 ft; minimum, 4,191,000,000 gal, Feb. 2, gage height, 5.42 ft.

REVISED RECORDS.--WDR NJ-94-1: 1993, WDR NJ-97-1: 1995-96.

01384002 MONKSVILLE RESERVOIR.--Lat 41°07'20", long 74°17'49", Passaic County, Hydrologic Unit 02030103, at dam on Wanaque River at Monks. DRAINAGE AREA, 40.4 mi². PERIOD OF RECORD, September 1988 to current year. GAGE, measurement from reference point. Datum of gage is sea level.

REMARKS.--Reservoir is formed by a roller compacted concrete dam constructed in 1988. Total capacity at spillway level, 7,000,000,000 gal, elevation 400.0 ft. Reservoir used for storage and water released to Wanaque Reservoir. Outflow is controlled by a 60-inch fixed-cone valve in a 72-inch pipe and 10-inch cone valve which can discharge directly into Wanaque Reservoir or into the 72-inch pipe.

COOPERATION.--Records provided by North Jersey District Water Supply Commission.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 7,150,000,000 gal, Oct. 20, 1989, elevation 401.1 ft (corrected); minimum, 860,000,000 gal, Sept. 28, 1988 (first filling), elevation 339.0 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,000,000,000 gal, many days, elevation 400.0 ft; minimum, 7,000,000,000 gal, many days, elevation 400.0 ft.

01386990 WANAQUE RESERVOIR.--Lat 41°02'42", long 74°17'44", Passaic County, Hydrologic Unit 02030103, at Raymond Dam on Wanaque River at Wanaque. DRAINAGE AREA, 90.4 mi². PERIOD OF RECORD, February 1928 to September 1950, October 1953 to current year. Monthend contents only 1928-50, published in WSP 1302. October 1950 to September 1953 in Special Report 16, New Jersey Department of Environmental Protection. GAGE, water-stage recorder. Datum of gage is sea level (levels by North Jersey District Water Supply Commission).

REMARKS.--Reservoir is formed by earthfill with concrete-core wall main dam and seven secondary dams; dams completed in 1927 and storage began in March 1928. Total capacity at spillway level, 29,630,000,000 gal, revised, elevation, 302.4 ft, revised, prior to 1986, 300.3 ft. Capacity available by gravity at spillway level, 27,850,000,000 gal, revised. Outflow mostly controlled by sluice gates in intake conduits in gate house. Water is diverted from reservoir for municipal supply. Diversion to reservoir from Posts Brook, Pompton River, and Ramapo River (see Passaic River basin, diversions).

COOPERATION.--Records provided by North Jersey District Water Supply Commission.

REVISED RECORDS.--WDR NJ-85-1: 1984 (M).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,280,000,000 gal, Apr. 5, 1984, elevation, 304.52 ft; minimum, 5,110,000,000 gal, Dec. 26, 1964, elevation, 256.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,310,000,000 gal, May 12, elevation, 303.28 ft; minimum, 12,830,000,000 gal, Nov. 1, elevation, 275.74 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)*	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)*	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
	01379990	SPLITROCK RESERVOIR		01380900	BOONTON RESERVOIR		01382100	CANISTEAR RESERVOIR	
Sept. 30.....	835.00	3,306	--	304.73	7,346	--	1,085.80	2,386	0
Oct. 31.....	834.70	3,246	-3.0	300.94	6,400	-47.2	1,085.80	2,386	0
Nov. 30.....	835.20	3,345	+5.1	306.33	7,752	+69.7	1,085.80	2,386	0
Dec. 31.....	835.40	3,385	+2.0	305.83	7,624	-6.4	1,085.80	2,386	0
CAL YR 1997			+2			-1.9			-1.1
Jan. 31.....	835.30	3,365	-1.0	305.50	7,542	-4.1	1,085.90	2,396	+5
Feb. 28.....	835.40	3,385	+1.1	305.83	7,624	+4.5	1,085.90	2,396	0
Mar. 31.....	835.30	3,365	-1.0	307.46	8,043	+20.9	1,086.00	2,407	+5
Apr. 30.....	835.25	3,355	-5	307.46	8,043	0	1,085.90	2,396	-6
May 31.....	835.05	3,315	-2.0	307.33	8,009	-1.7	1,085.90	2,396	0
June 30.....	835.10	3,325	+5	307.35	8,014	+3	1,086.00	2,407	+6
July 31.....	834.70	3,246	-3.9	304.85	7,376	-31.8	1,086.00	2,407	0
Aug. 31.....	834.45	3,197	-2.4	300.00	6,168	-60.3	1,085.70	2,375	-1.6
Sept. 30.....	834.05	3,117	-4.1	294.79	4,965	-62.0	1,085.90	2,396	+1.1
WTR YR 1998			-8			-10.1			0

PASSAIC RIVER BASIN

RESERVOIRS IN PASSAIC RIVER BASIN--Continued

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01382200 OAK RIDGE RESERVOIR				01382300 CLINTON RESERVOIR			01382380 CHARLOTTEBURG RESERVOIR		
Sept.30.....	838.2	2,836	--	990.3	3,300	--	735.00	2,110	--
Oct.31.....	838.4	2,862	+1.3	990.3	3,300	0	734.80	2,091	-.9
Nov.30.....	837.2	2,708	-7.9	985.8	2,704	-30.7	733.15	1,939	-7.8
Dec.31.....	838.8	2,914	+10.3	985.0	2,608	-4.8	735.25	2,133	+9.7
CAL YR 1997			-4.2			-3.9			-.8
Jan.31.....	840.3	3,111	+9.8	986.6	2,808	+10.0	733.40	1,961	-8.6
Feb.28.....	846.2	3,924	+44.9	992.1	3,531	+40.0	742.80	2,941	+54.2
Mar.31.....	846.3	3,938	+7	992.2	3,544	+6	743.40	3,014	+3.6
Apr.30.....	846.2	3,924	-7	992.2	3,544	0	743.15	2,983	-1.6
May31.....	846.1	3,909	-7	992.1	3,531	-.6	743.10	2,977	-.3
June30.....	846.1	3,909	0	992.2	3,544	+7	743.20	2,989	+6
July31.....	846.1	3,909	0	992.2	3,544	0	742.90	2,952	-1.8
Aug.31.....	845.7	3,852	-2.8	992.0	3,518	-1.3	734.85	2,096	-42.7
Sept.30.....	837.7	2,772	-55.7	991.6	3,467	-2.6	736.00	2,205	+5.6
WTR YR 1998			-.3			+7			+4
Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)**	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01382400 ECHO LAKE				01383000 GREENWOOD LAKE			01384002 MONKSVILLE RESERVOIR		
Sept.30.....	893.7	1,648	--	10.06	6,897	--	400.0	7,000	--
Oct.31.....	893.7	1,648	0	9.29	6,427	-23.5	400.0	7,000	0
Nov.30.....	893.1	1,592	-2.9	8.89	6,184	-12.5	400.0	7,000	0
Dec.31.....	892.4	1,528	-3.2	7.17	5,169	-50.7	400.0	7,000	0
CAL YR 1997			-.4			-8.0			0
Jan.31.....	892.5	1,537	+4	5.62	4,301	-43.3	400.0	7,000	0
Feb.28.....	892.5	1,537	0	8.51	5,956	+91.5	400.0	7,000	0
Mar.31.....	892.6	1,546	+4	10.21	6,990	+51.6	400.0	7,000	0
Apr.30.....	893.4	1,621	+3.9	10.13	6,941	-2.5	400.0	7,000	0
May31.....	893.5	1,629	+4	10.15	6,953	+6	400.0	7,000	0
June30.....	893.5	1,629	0	10.11	6,928	-1.3	400.0	7,000	0
July31.....	893.5	1,629	0	9.82	6,750	-8.9	400.0	7,000	0
Aug.31.....	893.3	1,611	-.9	9.62	6,628	-6.1	400.0	7,000	0
Sept.30.....	893.5	1,629	+9	9.39	6,488	-7.2	400.0	7,000	0
WTR YR 1998			-.1			-1.7			0
Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)						
01386990 WANAQUE RESERVOIR									
Sept.30.....	280.61	15,350	--						
Oct.31.....	275.89	12,860	-125.8						
Nov.30.....	286.06	18,380	+292.9						
Dec.31.....	288.05	19,570	+52.4						
CAL YR 1997			-43.1						
Jan.31.....	295.65	24,630	+259.0						
Feb.28.....	297.77	26,130	+79.6						
Mar.31.....	299.24	27,200	+52.9						
Apr.30.....	302.21	29,480	+115.0						
May31.....	301.50	28,940	-27.5						
June30.....	301.40	28,860	-4.1						
July31.....	294.88	24,090	-241.1						
Aug.31.....	286.90	18,870	-263.0						
Sept.30.....	278.58	14,260	-236.2						
WTR YR 1998			-5.0						

e Estimated.

* Elevation at 0900 on the first day of following month.

** Elevation at 2400 on the last day of the month.

† Elevation at 0800 on first day of following month.

DIVERSIONS WITHIN PASSAIC RIVER BASIN

- 01368720 North Jersey District Water Supply Commission diverts water from Upper Greenwood Lake (Hudson River basin) near Moe, NJ to the Green Brook, a tributary of Greenwood Lake, for municipal supply. Consult North Jersey District Water Supply Commission for data available.
- 01379510 New Jersey-American Water Company diverts water from Passaic River, 1.2 mi upstream from Canoe Brook for municipal supply. Records provided by New Jersey-American Water Company.
- 01379530 New Jersey-American Water Company diverts water from Canoe Brook near Summit, 0.5 mi from mouth, for municipal supply. Records provided by New Jersey-American Water Company.
- 01380280 The Town of Boonton diverts water from a tributary of Stony Brook about 1 mi downstream from Taylortown Reservoir for Municipal Water Supply. Records furnished by Town of Boonton.
- 01380800 Jersey City diverts water from Boonton Reservoir on Rockaway River at Boonton for municipal supply. Records provided by United Water New Jersey. REVISED RECORDS.--WDR NJ-97-1: 1996.
- 01382370 City of Newark diverts water from Charlotteburg Reservoir on Pequannock River since May 21, 1961 for municipal supply. Prior to May 21, 1961 water was diverted from reservoir formed by Macopin intake dam on Pequannock River (former diversion 01382490). Records provided by City of Newark, Division of Water Supply. REVISED RECORDS.--WDR NJ-82-1: Station number.
- 01386980 North Jersey District Water Supply Commission diverts water for municipal supply from Wanaque Reservoir on Wanaque River. Records provided by North Jersey District Water Supply Commission.
- 01387020 North Jersey District Water Supply Commission diverts water from Posts Brook near Wanaque into Wanaque Reservoir for municipal supply. Records not available.
- 01387990 North Jersey District Water Supply Commission diverts water from Ramapo River by pumping from Pompton Lakes into Wanaque Reservoir. Records provided by North Jersey District Water Supply Commission.
- 01388490 Passaic Valley Water Commission supplements the dependable yield of its supply at Little Falls by diverting water at high flows at the Jackson Avenue Pumping Station into Point View Reservoir on Haycock Brook for release as required to sustain minimum flow requirements. Also water may be released into Haycock Brook for maintenance of flow in that stream. These diversions and releases occur upstream from Pompton Plains gaging station. Records provided by Passaic Valley Water Commission. No diversion or release during the year. REVISED RECORDS.--WDR NJ-82-1: Station number.
- 01388980 North Jersey District Water Supply Commission diverts water from the Wanaque South pumping station on the Pompton River at Two Bridges, 750 ft upstream from the Passaic River, to Wanaque Reservoir since January 1987. Record provided by the North Jersey District Water Supply Commission.
- 01388981 United Water New Jersey diverts water from the Wanaque South pumping station on the Pompton River at Two Bridges, 750 ft upstream from the Passaic River, to Oradell Reservoir. Water can also be diverted from Wanaque Reservoir to Oradell Reservoir in the Hackensack River basin. Figures given herein include diversion from both sources. Prior to water year 1989, diversion was from Ramapo River at Pompton Lakes. Records provided by the United Water New Jersey.
- 01389490 The Passaic Valley Water Commission diverts water from Passaic River above Beatties Dam at Little Falls for municipal supply. Records provided by Passaic Valley Water Commission.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

MONTH	<u>01379510</u> New Jersey - American Water Company from Passaic River	<u>01379530</u> New Jersey - American Water Company from Canoe Brook	<u>01380280</u> Stony Brook tributary diversion at Taylortown	<u>01380800</u> Jersey City	<u>01380800</u> Jersey City (1996 WY)	<u>01382370</u> Newark
October.....	2.32	1.47	.83	77.5	63.5a	68.6
November.....	12.4	7.48	.87	86.3	64.1a	68.2
December.....	9.37	7.39	.85	79.7	60.5a	70.2
CAL YR 1997	6.36	3.22	.79	83.5	66.6a	71.3
January.....	27.7	15.3	.87	72.6	60.1a	71.6
February.....	17.4	8.38	.87	75.3	73.6a	75.8
March.....	0	5.71	.78	47.4	65.1a	75.5
April.....	10.1	1.19	.78	78.3	63.6a	65.7
May.....	11.6	2.59	.79	77.9	63.6a	66.3
June.....	.26	9.13	.86	83.4	70.0a	68.9
July.....	0	.01	.84	88.8	84.2a	69.7
August.....	0	.43	.86	89.0	85.9a	70.5
September.....	0	1.24	.85	89.1	81.2a	70.2
WTR YR 1998	7.60	5.03	.84	79.0	69.6a	70.1

a Revised 1996 data.

PASSAIC RIVER BASIN

DIVERSIONS WITHIN PASSAIC RIVER BASIN--Continued

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998, Continued

MONTH	<u>01386980</u>	<u>01387990</u>	<u>01388980</u>	<u>01388981*</u>	<u>01389490</u>
	Wanaque Reservoir	Ramapo River to Wanaque Reservoir	Pompton River to Wanaque Reservoir	To Oradell Reservoir	Passaic Valley Water Commission
October	167	0	76.9	52.60	73.3
November	165	0	350	10.06	71.2
December	177	0	105	0	68.5
CAL YR 1997	174	0	57.5	14.3	69.2
January	166	0	73.4	0	67.5
February	157	0	0	0	64.6
March	184	0	0	0	75.7
April	156	0	0	0	74.0
May	156	0	0	0	72.2
June	177	0	17.7	4.11	84.3
July	194	0	0	37.14	96.4
August	189	0	0	64.09	102
September	172	0	0	63.05	100
WTR YR 1998	172	0	51.9	19.25	79.14

* Diversion is to the Hackensack River Basin from Pompton River or Wanaque Reservoir.

01393450 ELIZABETH RIVER AT URSINO LAKE, AT ELIZABETH, NJ

LOCATION.--Lat 40°40'30", long 74°13'20", Union County, Hydrologic Unit 02030104, on left bank at Ursino Lake Dam in Elizabeth, 75 ft upstream from bridge on Trotters Lane and 3.8 mi upstream from mouth.

DRAINAGE AREA.--16.9 mi².

PERIOD OF RECORD.--October 1921 to current year.

REVISED RECORDS.--WSP 1552: Drainage area, 1922-23, 1927-29(M), 1932, 1933-34(M), 1938(P), 1942(M) 1944(P), 1945(M), 1948(P), 1952-53(M). WDR NJ-84-1: 1974.

GAGE.--Water-stage recorder, two crest-stage gages, and two concrete weirs. The right concrete weir was lowered 5 ft on Dec. 18, 1985. Datum of gage is sea level (levels by Corps of Engineers). Prior to Oct. 1, 1922, nonrecording gage at site 2,800 ft downstream at datum 4.14 ft higher and Oct. 1, 1922 to May 18, 1923, at same site at datum 5.23 ft higher. May 19, 1923 to Dec. 27, 1972, at site 2,800 ft downstream at datum 5.23 ft higher and published as "Elizabeth River at Elizabeth" (station 01393500), drainage area 18.0 mi².

REMARKS.--Records fair. Diversion by pumpage from Hammock Well Field in Union for municipal supply by Elizabethtown Water Co., probably reduces the flow past the station. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 29	2400	1,660	19.08	Feb 18	0315	1,640	19.06
Jan 23	2000	1,730	19.17	Sep 8	0245	*2,100	*19.60

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	135	7.6	14	8.4	13	182	25	153	26	8.6	6.7
2	7.6	70	6.7	10	8.2	12	153	78	16	14	7.3	56
3	7.4	21	6.6	8.8	8.0	13	38	21	12	11	7.5	16
4	7.4	12	15	8.0	9.0	11	23	17	11	10	7.2	8.5
5	7.4	8.4	7.7	7.7	123	10	18	86	10	19	7.1	7.6
6	6.9	7.3	7.2	8.3	25	9.8	16	40	10	11	6.9	7.1
7	6.9	6.9	6.4	60	14	9.4	14	20	10	9.7	7.0	73
8	6.9	39	6.4	41	10	23	15	51	10	13	7.0	359
9	6.9	46	6.4	14	9.3	113	81	261	9.4	10	6.7	28
10	6.7	12	45	10	8.9	31	276	299	9.6	9.5	7.8	13
11	6.6	8.8	24	8.4	12	18	43	445	11	9.0	14	8.4
12	6.5	7.5	21	8.0	95	14	25	147	96	8.8	7.3	7.9
13	6.4	7.1	9.8	8.8	16	12	20	53	90	9.0	6.7	7.5
14	6.4	64	7.9	6.8	11	18	17	32	276	9.0	6.9	7.5
15	30	21	7.1	40	9.0	11	24	24	51	8.7	6.8	7.4
16	11	11	6.9	79	8.4	11	16	20	33	8.5	6.8	7.6
17	6.4	9.2	6.8	16	100	11	44	16	28	12	215	7.7
18	6.2	8.7	6.5	17	286	27	33	16	48	15	24	7.4
19	6.1	8.5	6.4	11	48	156	31	15	16	8.5	9.1	6.9
20	6.1	7.9	6.4	9.7	24	33	53	15	38	19	7.8	6.8
21	6.0	8.9	6.1	8.9	18	51	21	14	16	14	7.6	6.7
22	6.0	97	6.2	8.4	13	56	17	12	13	9.8	7.4	18
23	5.9	14	90	441	44	26	40	12	13	39	7.3	7.2
24	5.7	10	11	119	288	18	26	11	12	9.5	7.3	6.7
25	66	8.5	166	54	52	15	15	75	12	8.0	7.2	11
26	33	7.8	19	21	25	14	62	18	14	7.6	16	7.6
27	79	6.9	21	15	18	13	38	11	12	7.5	7.7	6.7
28	11	7.1	19	14	15	13	18	9.8	11	7.6	7.1	6.9
29	7.4	6.7	206	12	---	12	14	53	11	7.6	6.9	7.1
30	6.5	6.8	202	10	---	12	15	17	83	7.6	6.9	6.7
31	6.6	---	28	9.3	---	12	---	8.6	---	43	7.0	---
TOTAL	397.1	685.0	992.1	1099.1	1306.2	798.2	1388	1922.4	1135.0	401.9	465.9	734.6
MEAN	12.8	22.8	32.0	35.5	46.6	25.7	46.3	62.0	37.8	13.0	15.0	24.5
MAX	79	135	206	441	288	156	276	445	276	43	215	359
MIN	5.7	6.7	6.1	6.8	8.0	9.4	14	8.6	9.4	7.5	6.7	6.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

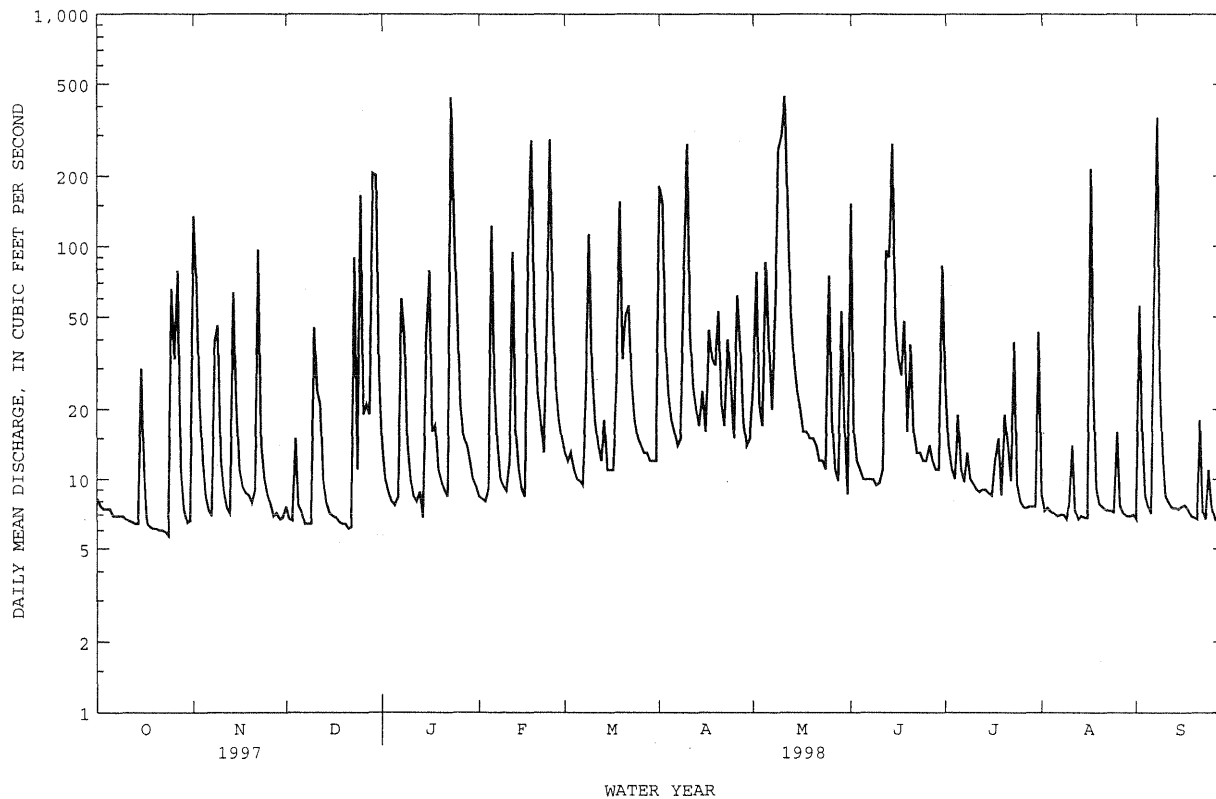
MEAN	20.6	24.7	23.6	23.8	26.4	32.0	29.8	27.2	23.2	27.4	27.4	25.0
MAX	60.1	90.7	85.1	86.3	55.1	75.6	97.0	83.8	57.4	83.1	195	102
(WY)	1928	1973	1984	1979	1971	1983	1983	1968	1972	1922	1971	1966
MIN	1.58	5.05	6.25	3.71	6.56	6.03	10.3	5.97	3.94	3.24	.068	1.99
(WY)	1922	1923	1981	1925	1934	1981	1963	1923	1923	1923	1923	1923

ELIZABETH RIVER BASIN

01393450 ELIZABETH RIVER AT URSINO LAKE, AT ELIZABETH, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	10468.6		11325.5		25.9	
ANNUAL MEAN	28.7		31.0		48.3	
HIGHEST ANNUAL MEAN					10.2	
LOWEST ANNUAL MEAN					1900	
HIGHEST DAILY MEAN	945	Jul 25	445	May 11	Aug 28 1971	
LOWEST DAILY MEAN	5.7	Oct 24	5.7	Oct 24	Jul 14 1922	
ANNUAL SEVEN-DAY MINIMUM	6.0	Oct 18	6.0	Oct 18	Aug 7 1923	
INSTANTANEOUS PEAK FLOW			2100	Sep 8	Aug 28 1971	
INSTANTANEOUS PEAK STAGE			19.60	Sep 8	Aug 28 1971	
INSTANTANEOUS LOW FLOW			6.1	Dec 21	Many days	
10 PERCENT EXCEEDS	48		71		51	
50 PERCENT EXCEEDS	12		11		11	
90 PERCENT EXCEEDS	6.9		6.8		5.6	

a From floodmark, site and datum then in use, from rating curve extended above 1,100 ft³/s on basis of contracted-opening measurement of peak flow: Maximum gage height at current site and datum was 25.77 ft., Aug. 2, 1973.



LOCATION.--Lat 40°41'11", long 74°18'44", Union County, Hydrologic Unit 02030104, on left bank 50 ft downstream from bridge on eastbound U.S. Highway 22, 100 ft downstream from Pope Brook, and 1.5 mi south of Springfield.

PERIOD OF RECORD.--July 1938 to current year.

REVISED RECORDS.--WSP 1622: 1945. WRD-NJ 1973: 1938(M), 1968(M), 1971(M).

GAGE.--Water-stage recorder. Former concrete control is no longer effective. Datum of gage is 66.17 ft above sea level.

REMARKS.--Records good. Water for municipal supply diverted from river by city of Orange. The flow past this station is affected by diversions by pumpage from wells by Orange, South Orange, Short Hills Water Co., and Springfield station of Elizabethtown Water Co. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station. Since 1980, the site may be affected during high flows by backwater from the Lenapi Park flood control dam, about 1 mi downstream. Occasional regulation due to gate operation at small dam upstream.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0030	1,000	5.62	Apr 2	0030	*1,400	*6.51
Jan 23	2200	1,060	5.79				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	140	16	25	18	33	272	30	96	18	9.3	8.2
2	11	98	16	20	17	28	472	129	18	13	8.6	30
3	13	20	17	19	16	26	67	101	16	12	8.6	24
4	11	13	25	18	17	23	46	80	14	11	8.6	8.0
5	11	11	17	17	153	21	37	91	13	16	8.6	7.8
6	10	13	16	17	49	20	30	66	12	11	8.6	7.4
7	9.9	19	15	55	25	20	26	30	12	11	8.2	62
8	9.8	35	14	76	21	47	27	47	12	14	8.1	267
9	11	39	15	41	18	310	112	254	12	12	8.0	14
10	13	15	39	23	18	69	441	338	12	12	8.3	10
11	16	12	31	19	20	38	64	382	12	9.9	13	8.6
12	17	12	24	18	136	28	44	302	64	8.5	8.0	8.7
13	18	14	15	17	29	24	36	81	113	8.5	10	8.3
14	18	56	12	15	21	31	33	54	423	8.9	7.7	8.4
15	33	25	12	38	18	26	35	43	68	9.3	8.1	8.3
16	15	13	12	107	18	22	29	34	82	8.5	8.1	8.7
17	12	11	12	31	81	20	49	30	26	16	145	14
18	12	11	11	25	430	32	32	26	32	20	21	7.5
19	12	11	11	21	91	270	36	25	18	8.4	10	7.8
20	13	13	11	18	49	73	103	23	17	12	8.0	7.8
21	15	12	11	17	41	153	31	22	17	16	7.6	7.9
22	15	85	13	16	28	108	26	21	14	9.4	8.1	15
23	15	12	89	330	76	63	41	20	15	38	8.4	8.1
24	16	9.4	16	359	561	52	36	20	15	12	8.8	7.7
25	62	9.3	150	81	138	37	25	87	13	9.2	9.0	9.5
26	20	9.3	25	38	58	34	62	24	13	9.0	18	9.2
27	83	10	22	29	44	31	58	18	14	8.7	8.7	7.6
28	8.9	12	23	28	36	27	27	18	12	9.3	8.3	7.9
29	7.7	15	131	24	---	25	23	39	12	9.0	8.7	8.1
30	11	15	350	21	---	23	22	34	63	9.3	8.7	8.3
31	13	---	48	19	---	23	---	18	---	37	8.1	---
TOTAL	542.3	770.0	1219	1582	2227	1737	2342	2487	1260	406.9	426.2	615.8
MEAN	17.5	25.7	39.3	51.0	79.5	56.0	78.1	80.2	42.0	13.1	13.7	20.5
MAX	83	140	350	359	561	310	472	382	423	38	145	267
MIN	7.7	9.3	11	15	16	20	22	18	12	8.4	7.6	7.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1998, BY WATER YEAR (WY)

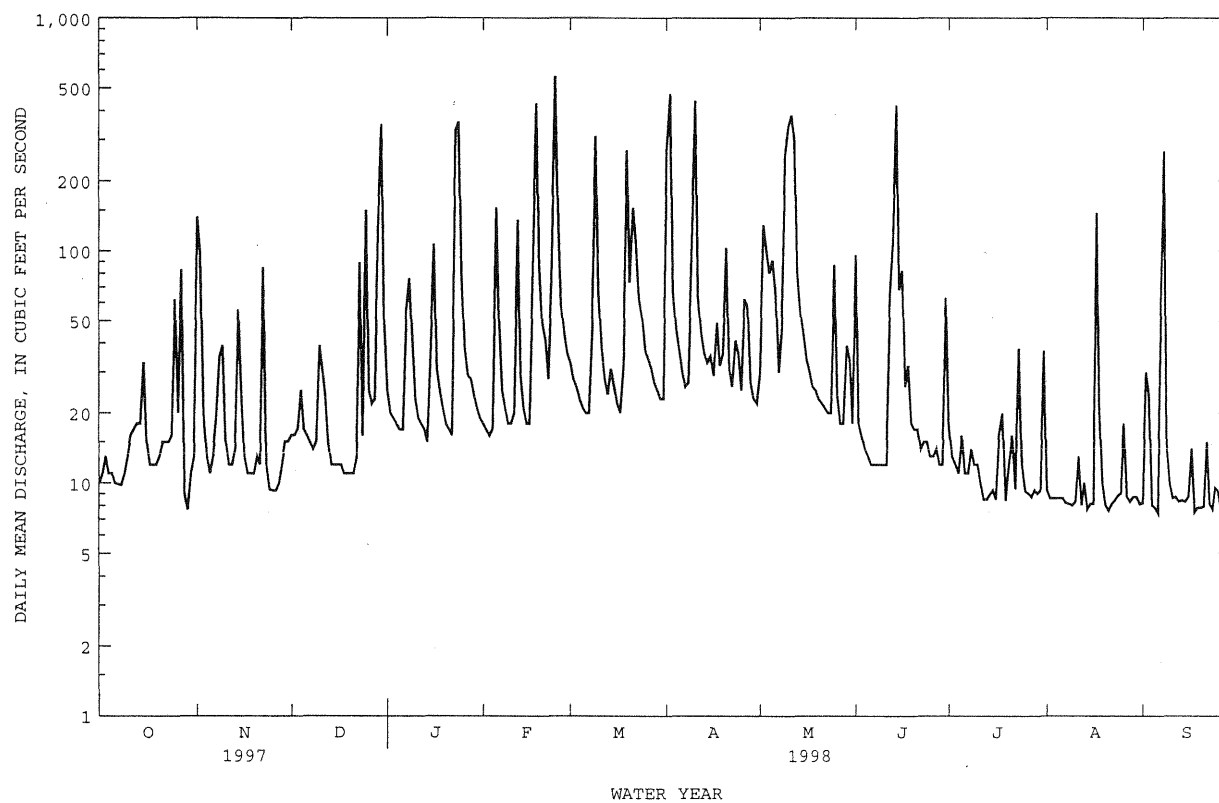
MEAN	18.8	27.6	31.1	31.2	34.6	47.9	43.4	34.8	24.2	25.4	22.7	21.1
MAX	108	107	129	116	79.5	120	139	112	110	138	112	100
(WY)	1997	1973	1984	1979	1998	1994	1983	1989	1972	1975	1942	1975
MIN	2.17	2.73	4.02	4.26	7.01	8.08	7.37	6.31	4.14	2.23	2.10	2.97
(WY)	1964	1950	1940	1966	1954	1981	1963	1965	1965	1966	1964	1964

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1939 - 1998
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ANNUAL TOTAL	13537.2		15615.2				
ANNUAL MEAN	37.1		42.8		30.2		
HIGHEST ANNUAL MEAN					55.9		1973
LOWEST ANNUAL MEAN					10.0		1965
HIGHEST DAILY MEAN	1700	Jul 25	561	Feb 24	1700	Jul 25	1997
LOWEST DAILY MEAN	7.2	Sep 20	7.4	Sep 6	.40	Sep 11	1966
ANNUAL SEVEN-DAY MINIMUM	7.6	Sep 15	8.3	Sep 23	.71	Oct 8	1970
INSTANTANEOUS PEAK FLOW			1400	Apr 2	5430a	Aug 2	1973
INSTANTANEOUS PEAK STAGE			6.51	Apr 2	9.76b	Aug 2	1973
INSTANTANEOUS LOW FLOW			6.1	Aug 14	.10	Sep 11	1966
10 PERCENT EXCEEDS	63		88		60		
50 PERCENT EXCEEDS	17		18		11		
90 PERCENT EXCEEDS	9.0		8.6		3.4		

a From rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow.

b From floodmark.



01395000 RAHWAY RIVER AT RAHWAY, NJ

LOCATION.--Lat 40°37'05", long 74°17'00", Union County, Hydrologic Unit 02030104, on left bank 100 ft upstream from St. Georges Avenue bridge in Rahway and 0.9 mi upstream from Robinsons Branch.

DRAINAGE AREA.--40.9 mi².

PERIOD OF RECORD.--July 1908 to April 1915 (gage heights and discharge measurements only), October 1921 to current year.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922-23(M), 1924, 1930-31(M), 1937. WDR NJ-79-1: 1978.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 8.77 ft above sea level. Prior to Aug. 25, 1934, nonrecording gage at site 40 ft downstream from Church Street and 1,500 ft downstream from present site at datum 2.77 ft lower.

REMARKS.--Records good. Water for municipal supply diverted from river by Rahway and Orange. The flow past this station is affected by diversions by pumpage from wells by Orange, South Orange, Short Hills Water Co., Springfield station of Elizabethtown Water Co., by storage in the Lenape Park flood control reservoir (since 1980) and by gate operations at Hansel's Dam 5.6 mi upstream from gage in Cranford, and Taylor Park Dam 11.6 mi upstream from gage on the West Branch Rahway River in Millburn. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0200	1,040	3.96	Apr 1	2230	1,300	4.37
Jan 23	2200	*1,440	*4.56	Apr 10	0530	1,160	4.15
Feb 18	0415	1,230	4.26	May 12	0045	956	3.83
Feb 24	0500	1,090	4.05	Jun 14	1215	1,070	4.01
Mar 9	1030	782	3.53	Jun 30	1000	686	3.35
Mar 19	1030	782	3.53	Sep 8	0645	691	3.36

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	123	17	43	28	52	247	35	173	50	17	6.1
2	12	226	15	30	25	46	964	206	36	20	9.8	30
3	14	99	14	26	26	45	138	51	26	16	8.4	92
4	14	25	25	27	26	35	67	36	23	16	7.7	12
5	13	17	29	24	227	16	49	58	21	40	6.8	9.1
6	12	15	17	21	147	27	45	146	21	16	6.4	7.6
7	12	16	15	103	53	28	41	45	21	15	6.4	65
8	10	41	14	123	37	51	39	70	21	18	6.5	441
9	12	64	14	79	30	549	92	373	20	20	5.9	46
10	12	44	24	41	18	160	848	663	19	14	7.2	13
11	11	18	84	31	28	59	149	699	19	12	16	9.3
12	11	15	34	23	214	46	66	661	109	12	7.6	8.4
13	11	14	33	27	61	38	52	140	194	11	7.4	7.7
14	13	82	17	24	37	44	47	82	738	11	7.0	7.8
15	27	72	15	30	29	43	47	65	334	11	5.6	6.6
16	45	27	16	192	27	35	43	55	125	11	6.0	6.6
17	14	18	16	70	47	30	65	48	64	12	162	24
18	12	16	13	43	817	47	78	44	49	38	108	9.7
19	12	16	15	32	214	474	49	39	37	11	16	7.5
20	14	15	13	32	83	177	166	35	34	11	13	7.3
21	12	18	12	18	68	253	51	33	45	25	9.0	7.1
22	11	149	14	22	51	187	35	30	25	11	8.3	24
23	11	42	133	361	61	101	49	29	25	26	11	11
24	10	20	39	919	939	77	68	27	24	26	10	7.5
25	96	14	234	188	387	56	36	148	21	9.5	7.9	7.5
26	40	17	71	74	102	49	64	48	19	8.5	20	15
27	160	14	32	48	66	46	136	27	20	8.5	14	7.5
28	31	13	43	48	56	42	41	27	18	8.7	8.5	8.3
29	15	15	92	44	---	38	33	27	16	8.9	8.8	6.2
30	14	15	753	34	---	35	29	82	213	8.4	6.6	6.7
31	15	---	138	29	---	34	---	27	---	56	6.4	---
TOTAL	711	1280	2001	2806	3904	2920	3834	4056	2510	561.5	541.2	917.5
MEAN	22.9	42.7	64.5	90.5	139	94.2	128	131	83.7	18.1	17.5	30.6
MAX	160	226	753	919	939	549	964	699	738	56	162	441
MIN	10	13	12	18	18	16	29	27	16	8.4	5.6	6.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

	MEAN	29.3	43.8	48.5	51.6	58.7	78.9	69.8	53.3	37.3	42.4	39.0	35.8
MAX	197	221	255	211	156	190	246	199	173	268	242	175	
(WY)	1997	1973	1984	1979	1925	1983	1983	1989	1972	1975	1971	1975	
MIN	1.48	3.05	3.27	1.41	12.5	12.6	7.80	6.20	3.32	.33	.43	2.26	
(WY)	1964	1966	1981	1981	1954	1981	1963	1965	1965	1966	1964	1964	

RAHWAY RIVER BASIN

01395000 RAHWAY RIVER AT RAHWAY, NJ--Continued

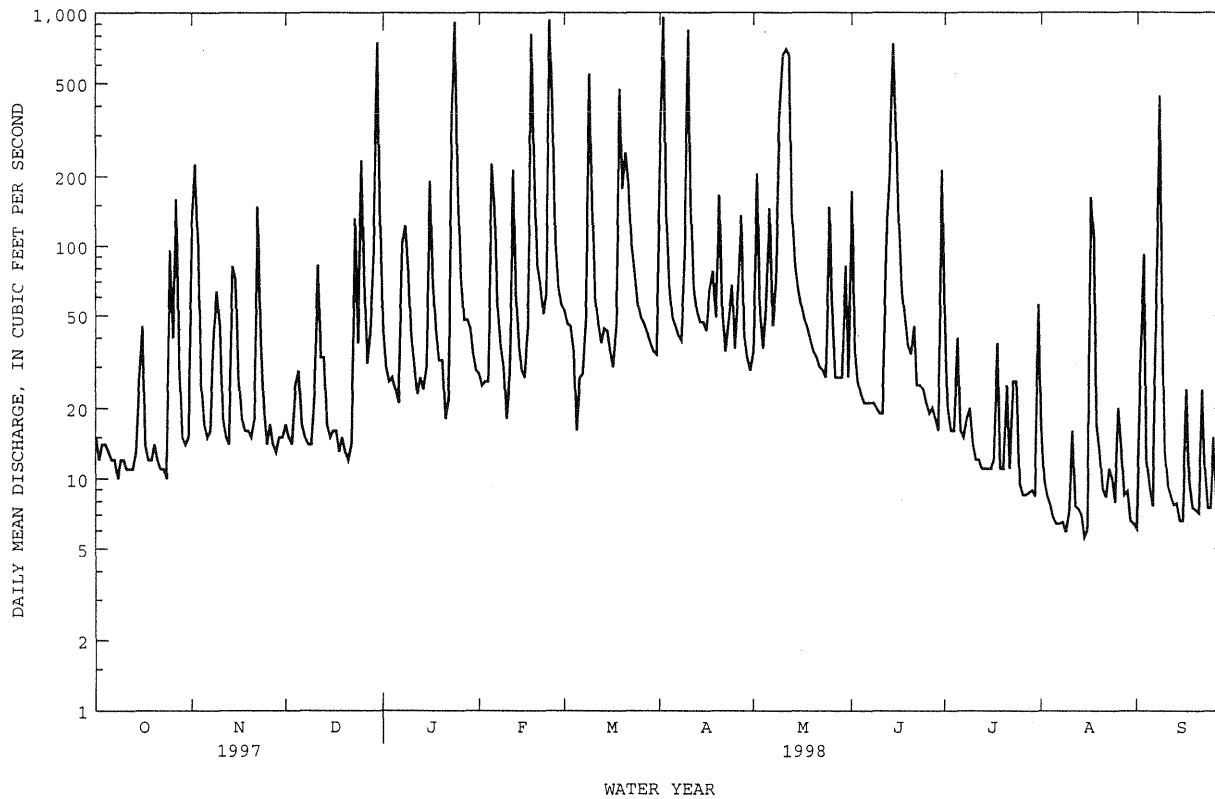
SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1922 - 1998

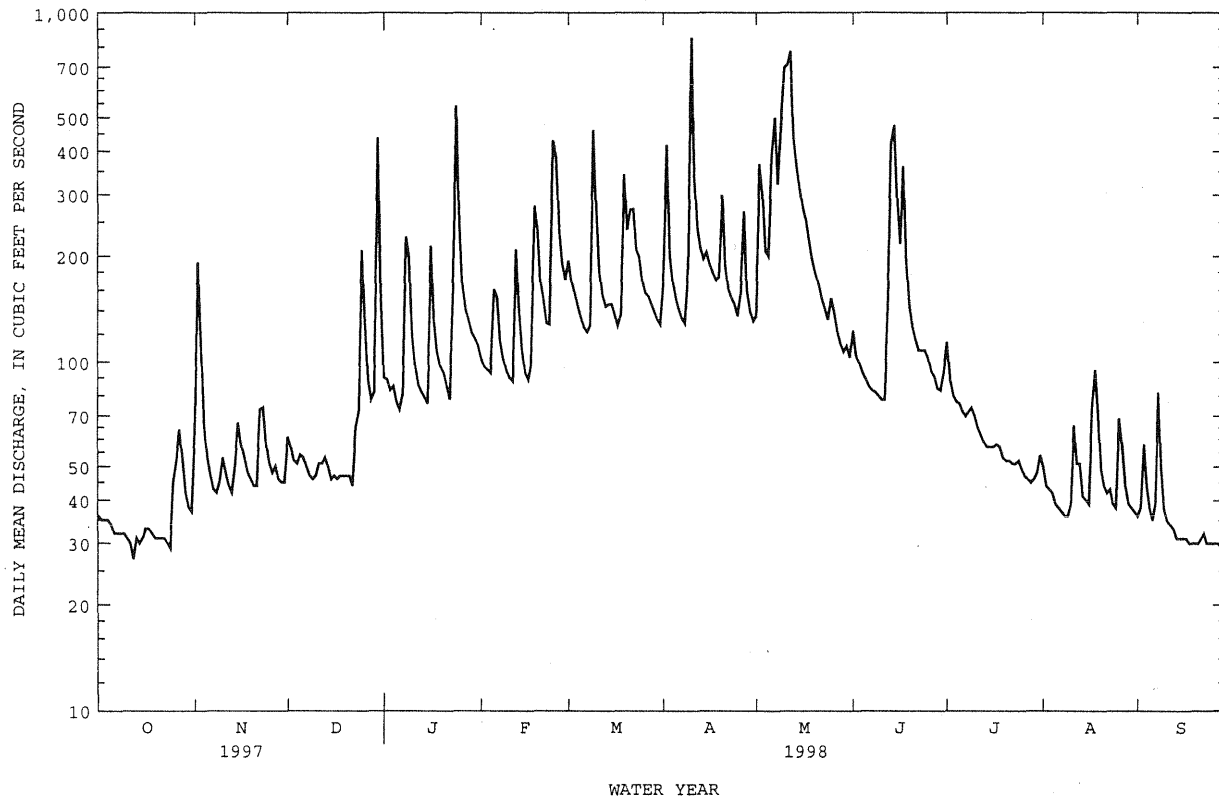
ANNUAL TOTAL	22402.0	26042.2			49.0	
ANNUAL MEAN	61.4	71.3			15.0	1973
HIGHEST ANNUAL MEAN					105	1965
LOWEST ANNUAL MEAN					15.0	1965
HIGHEST DAILY MEAN	2990	Jul 25	964	Apr 2	3450	Aug 28 1971
LOWEST DAILY MEAN	6.0	Aug 8	5.6	Aug 15	.00	Oct 9 1964
ANNUAL SEVEN-DAY MINIMUM	7.8	Jul 11	6.7	Aug 4	.00	Jul 10 1981
INSTANTANEOUS PEAK FLOW			1440	Jan 23	5420a	Aug 2 1973
INSTANTANEOUS PEAK STAGE			4.56	Jan 23	7.88	Aug 2 1973
INSTANTANEOUS LOW FLOW			2.1	Feb 10	.00	Oct 1 1981
10 PERCENT EXCEEDS	105		153		100	
50 PERCENT EXCEEDS	26		27		19	
90 PERCENT EXCEEDS	11		8.5		3.5	

a From rating curve extended above 3,000 ft³/s.

01396500 SOUTH BRANCH RARITAN RIVER NEAR HIGH BRIDGE, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1919 - 1998	
ANNUAL TOTAL	39738		43406		123	
ANNUAL MEAN	109		119		213	1928
HIGHEST ANNUAL MEAN					46.2	1965
LOWEST ANNUAL MEAN					3340	Jan 25 1979
HIGHEST DAILY MEAN	880	Jan 25	851	Apr 10	13	Aug 11 1966
LOWEST DAILY MEAN	27	Oct 12	27	Oct 12	18	Aug 11 1965
ANNUAL SEVEN-DAY MINIMUM	30	Oct 9	30	Sep 24	6910	Jan 25 1979
INSTANTANEOUS PEAK FLOW			1210	Apr 10	14.26a	Jan 28 1994
INSTANTANEOUS PEAK STAGE			8.69	Apr 10	6.6	Oct 11 1930
INSTANTANEOUS LOW FLOW			24	many days	1.89	
ANNUAL RUNOFF (CFSM)	1.67		1.82		25.69	
ANNUAL RUNOFF (INCHES)	22.64		24.73		236	
10 PERCENT EXCEEDS	196		238		87	
50 PERCENT EXCEEDS	78		82		36	
90 PERCENT EXCEEDS	37		33			

a Result of an ice jam.



01396580 SPRUCE RUN AT GLEN GARDNER, NJ

LOCATION.--Lat 40°41'35", long 74°56'25", Hunterdon County, Hydrologic Unit 02030105, on right downstream wingwall of bridge on Sanatorium Road in Glen Gardner, 0.8 mi downstream from Alpaugh Brook, and 2.0 mi upstream from Spruce Run Reservoir.

DRAINAGE AREA.--11.3 mi².

PERIOD OF RECORD.--March 1978 to September 1988, December 1991 to current year.

REVISED RECORD.--WDR NJ-86-1: 1983-85(P). WDR NJ-93-1: Drainage area, longitude.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 389.10 ft above sea level.

REMARKS.--Records poor. Some regulation from unknown sources upstream. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 29	2345	519	3.80	Apr. 9	2315	*567	*3.92

REVISIONS.--Some peak discharges and the annual maximum(*) for water years 1979, 1980, 1981, 1987, 1988, 1996 and 1997 have been revised as shown in the following table. They supersede figures published in the state reports for 1979, 1980, 1981, 1987, 1988, 1996 and 1997.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 8, 1979	--	395	3.56
Jan. 21, 1979	--	579	3.87
Jan. 24, 1979	--	*2,080	7.60
Feb. 26, 1979	--	1,160	4.93
Sep. 6, 1979	--	1,310	5.30
Sep. 22, 1979	--	616	3.93
Oct. 1, 1979	--	671	4.02
Oct. 5, 1979	--	*1,100	4.81
Nov. 3, 1979	--	556	3.83
Mar. 21, 1980	--	1,050	4.71
Oct. 25, 1980	--	996	4.58
Nov. 20, 1986	--	870	4.70
Nov. 26, 1986	--	395	3.76
Dec. 3, 1986	--	395	3.76
Apr. 4, 1987	--	*1,060	5.10
Sep. 13, 1987	--	510	4.02
Oct. 28, 1987	--	*785	4.53
Nov. 29, 1987	--	390	3.72
Nov. 30, 1987	--	710	4.40
May 23, 1988	--	450	3.86
Apr. 16, 1996	--	470	3.89
Oct. 19, 1996	1415	*2,220	7.96

RARITAN RIVER BASIN

01396580 SPRUCE RUN AT GLEN GARDNER, NJ--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	36	7.2	18	5.7	25	42	23	15	e11	e4.2	e2.0
2	2.4	18	5.6	10	5.2	15	67	104	11	e7.9	e3.4	e2.2
3	2.5	8.5	4.8	9.9	5.0	15	33	55	11	e7.1	e3.2	e4.0
4	2.5	4.9	5.9	9.9	5.0	12	29	39	11	e6.7	e3.3	e2.6
5	2.3	4.1	6.1	8.3	36	10	26	42	10	e7.3	e2.7	e2.1
6	2.1	3.7	5.7	7.6	14	9.2	24	72	10	e6.3	e2.3	e1.5
7	2.2	3.4	4.8	12	8.4	8.6	23	53	e8.9	e6.2	e2.1	e3.7
8	2.3	3.6	4.4	70	6.8	16	22	59	e8.8	e7.4	e2.0	e8.4
9	2.1	4.7	4.1	32	5.8	140	98	110	e8.5	e7.3	e1.8	e3.0
10	2.2	4.9	5.0	15	5.2	55	145	119	e8.2	e6.4	e2.4	e2.3
11	2.4	4.0	7.5	12	5.4	39	52	148	e8.2	e5.6	e6.3	e2.0
12	2.6	3.5	7.0	9.9	35	33	39	136	36	e5.2	e2.9	e1.9
13	3.2	3.1	7.6	9.9	11	30	34	70	120	e5.0	e3.4	e1.8
14	3.5	8.9	6.3	8.7	7.2	32	31	57	54	e4.4	e2.4	e1.6
15	4.4	9.9	6.0	9.5	5.9	31	37	49	35	e4.3	e2.2	1.7
16	4.8	7.5	5.4	54	5.3	28	30	42	32	e4.2	e2.2	1.5
17	4.1	6.4	5.8	18	12	26	28	45	43	e4.3	e6.3	1.7
18	4.4	5.1	6.0	14	72	31	26	36	30	e4.8	e7.7	2.1
19	4.4	4.7	5.5	13	34	91	33	31	21	e3.8	e4.2	1.7
20	4.0	4.5	5.6	12	16	46	68	27	19	e4.0	e2.6	1.6
21	4.0	4.2	5.6	10	13	67	31	24	e14	e4.0	e2.3	1.6
22	3.7	14	6.4	9.1	10	54	26	20	e10	e3.9	e2.2	2.3
23	3.8	8.7	14	80	22	46	24	19	e11	e3.8	e3.0	2.3
24	3.9	6.2	10	69	121	41	23	17	e11	e3.7	e2.3	1.6
25	11	5.3	53	23	50	35	20	29	e9.9	e3.3	e2.3	1.6
26	8.3	4.8	12	13	24	32	42	21	e8.8	e3.3	e7.6	2.0
27	13	4.7	6.6	11	18	31	48	16	e8.7	e3.3	e4.0	2.0
28	7.7	4.6	5.7	10	18	29	26	14	e7.8	e3.3	e2.6	1.9
29	6.3	4.8	37	8.8	---	28	22	13	e8.1	e3.5	e2.0	1.4
30	5.9	4.8	105	8.3	---	26	20	15	e11	e3.7	e2.1	1.3
31	5.8	---	19	7.0	---	25	---	12	---	e5.1	e2.1	---
TOTAL	134.2	211.5	390.6	602.9	576.9	1106.8	1169	1517	600.9	160.1	100.1	67.4
MEAN	4.33	7.05	12.6	19.4	20.6	35.7	39.0	48.9	20.0	5.16	3.23	2.25
MAX	13	36	105	80	121	140	145	148	120	11	7.7	8.4
MIN	2.1	3.1	4.1	7.0	5.0	8.6	20	12	7.8	3.3	1.8	1.3
CFSM	.38	.62	1.12	1.72	1.82	3.16	3.45	4.33	1.77	.46	.29	.20
IN.	.44	.70	1.29	1.98	1.90	3.64	3.85	4.99	1.98	.53	.33	.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

MEAN	13.5	19.3	25.9	27.1	25.9	36.7	36.6	25.7	14.8	11.7	6.43	8.05
MAX	44.4	34.6	87.6	106	44.7	83.5	73.7	61.3	31.4	46.9	11.4	29.5
(WY)	1996	1986	1997	1979	1979	1994	1983	1984	1992	1984	1978	1979
MIN	3.54	5.60	6.96	5.66	9.93	12.8	9.74	8.95	5.76	3.20	2.54	1.88
(WY)	1983	1985	1981	1981	1980	1981	1985	1995	1993	1993	1995	1980

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1978 - 1998

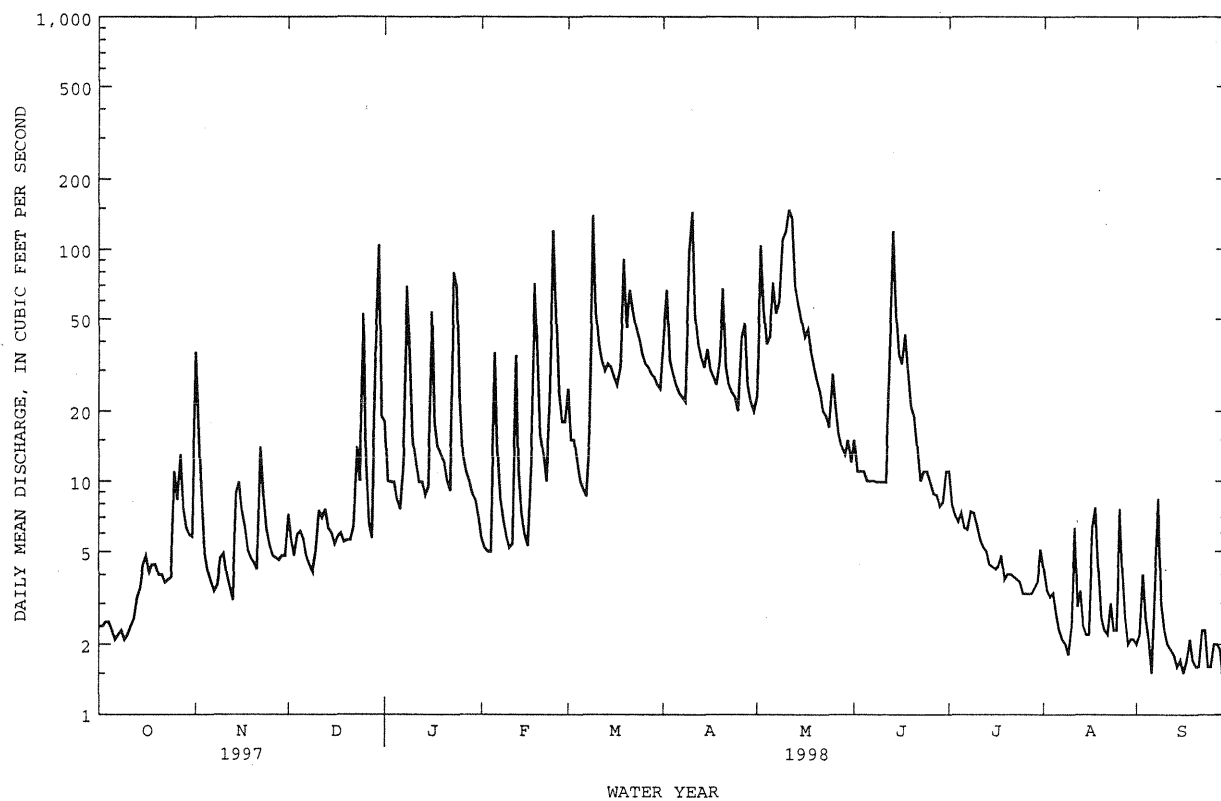
ANNUAL TOTAL	5779.40	6637.4	
ANNUAL MEAN	15.8	18.2	21.3
HIGHEST ANNUAL MEAN			33.3
LOWEST ANNUAL MEAN			11.3
HIGHEST DAILY MEAN	204	Jan 25	586
LOWEST DAILY MEAN	2.0	Sep 27	1.2
ANNUAL SEVEN-DAY MINIMUM	2.2	Sep 22	1.5
INSTANTANEOUS PEAK FLOW			2220ab
INSTANTANEOUS PEAK STAGE			7.96
INSTANTANEOUS LOW FLOW			.80
ANNUAL RUNOFF (CFSM)	1.40		1.88
ANNUAL RUNOFF (INCHES)	19.03		25.59
10 PERCENT EXCEEDS	32		42
50 PERCENT EXCEEDS	10		11
90 PERCENT EXCEEDS	3.2		3.8

a From rating curve extended above 600 ft³/s on basis of slope-conveyance computation.

b Revised.

e Estimated.

01396580 SPRUCE RUN AT GLEN GARDNER, NJ--Continued



RARITAN RIVER BASIN

01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ

LOCATION.--Lat 40°38'51", long 74°58'09", Hunterdon County, Hydrologic Unit 02030105, on left bank downstream side of bridge on Jutland Road, 0.2 mi south of Van Syckel, 0.8 mi north of Perryville, and 0.3 mi upstream from Spruce Run Reservoir.

DRAINAGE AREA.--11.8 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1973-77. July 1977 to current year.

REVISED RECORDS.--WDR-NJ 89-1: 1978(P), 1979(P), 1980(P), 1981(P), 1982(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 280.25 ft above sea level.

REMARKS.--Records good except for estimated discharges which are fair. Several measurements of water temperature, other than those published, were made during the year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0015	373	2.85	May 6	1615	*685	*3.75
Mar 9	1030	407	2.96	May 12	0015	326	2.69
Apr 9	2345	642	3.65				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	23	7.4	12	e14	27	39	19	18	9.2	4.7	3.4
2	4.7	20	6.6	11	e13	23	42	55	14	7.4	4.0	13
3	4.6	11	6.5	11	e13	23	24	24	13	6.8	3.8	8.7
4	4.7	7.3	6.8	11	e12	21	21	24	12	6.6	3.7	4.6
5	4.9	6.2	6.7	9.7	e40	19	20	30	12	6.8	3.6	4.0
6	4.6	6.1	6.4	9.6	e20	18	19	166	11	6.2	3.5	3.7
7	4.6	6.1	6.1	21	e17	17	18	58	11	6.0	3.9	6.6
8	4.6	6.5	6.1	62	e15	32	18	74	11	8.1	3.3	15
9	4.6	7.8	6.1	28	e14	141	95	130	11	7.7	3.2	5.3
10	4.6	7.2	6.7	17	e12	40	164	110	10	6.4	4.4	4.7
11	4.6	6.4	9.4	14	e12	28	40	140	11	5.6	6.0	4.2
12	4.6	6.5	9.2	12	e35	24	31	116	41	5.3	4.6	4.0
13	4.6	6.3	9.0	e12	e15	23	29	64	63	5.2	9.0	3.8
14	4.5	17	8.4	e10	e14	24	27	53	29	5.1	4.5	3.8
15	4.4	15	7.6	e10	e12	22	27	45	22	5.1	4.1	3.7
16	4.3	9.4	7.4	e45	e10	20	25	40	17	5.1	3.8	3.6
17	4.3	7.5	7.3	e17	e15	19	26	39	15	5.1	9.7	7.1
18	4.3	6.7	7.1	e15	e60	24	24	33	13	5.0	6.2	5.7
19	4.3	6.4	6.8	e14	44	87	31	29	11	4.8	4.5	4.2
20	4.3	6.1	6.8	e13	26	34	45	28	10	4.6	3.8	4.1
21	4.3	5.9	6.6	e12	23	58	25	25	9.5	4.8	3.7	4.1
22	4.2	17	6.5	e10	19	44	22	23	9.4	4.8	3.6	4.6
23	4.1	11	15	e60	30	32	21	21	10	4.9	17	4.0
24	4.1	8.3	10	e75	110	28	21	20	10	4.6	5.3	3.7
25	10	7.2	49	e30	43	25	19	22	8.8	3.9	4.2	4.6
26	6.1	7.2	17	e20	28	24	38	19	8.3	3.8	13	4.9
27	14	6.8	12	e19	25	23	35	17	8.2	3.7	5.3	4.4
28	5.7	6.6	12	e19	25	22	21	16	7.6	3.7	4.3	4.2
29	5.2	6.6	30	e19	---	21	19	17	7.7	4.0	4.0	3.8
30	5.2	6.7	87	e17	---	20	18	18	10	4.2	3.8	3.8
31	5.1	---	19	e15	---	19	---	15	---	8.7	3.6	---
TOTAL	159.0	271.8	408.5	650.3	716	982	1004	1490	444.5	173.2	162.1	155.3
MEAN	5.13	9.06	13.2	21.0	25.6	31.7	33.5	48.1	14.8	5.59	5.23	5.18
MAX	14	23	87	75	110	141	164	166	63	9.2	17	15
MIN	4.1	5.9	6.1	9.6	10	17	18	15	7.6	3.7	3.2	3.4
CFSM	.43	.77	1.12	1.78	2.17	2.68	2.84	4.07	1.26	.47	.44	.44
IN.	.50	.86	1.29	2.05	2.26	3.10	3.17	4.70	1.40	.55	.51	.49

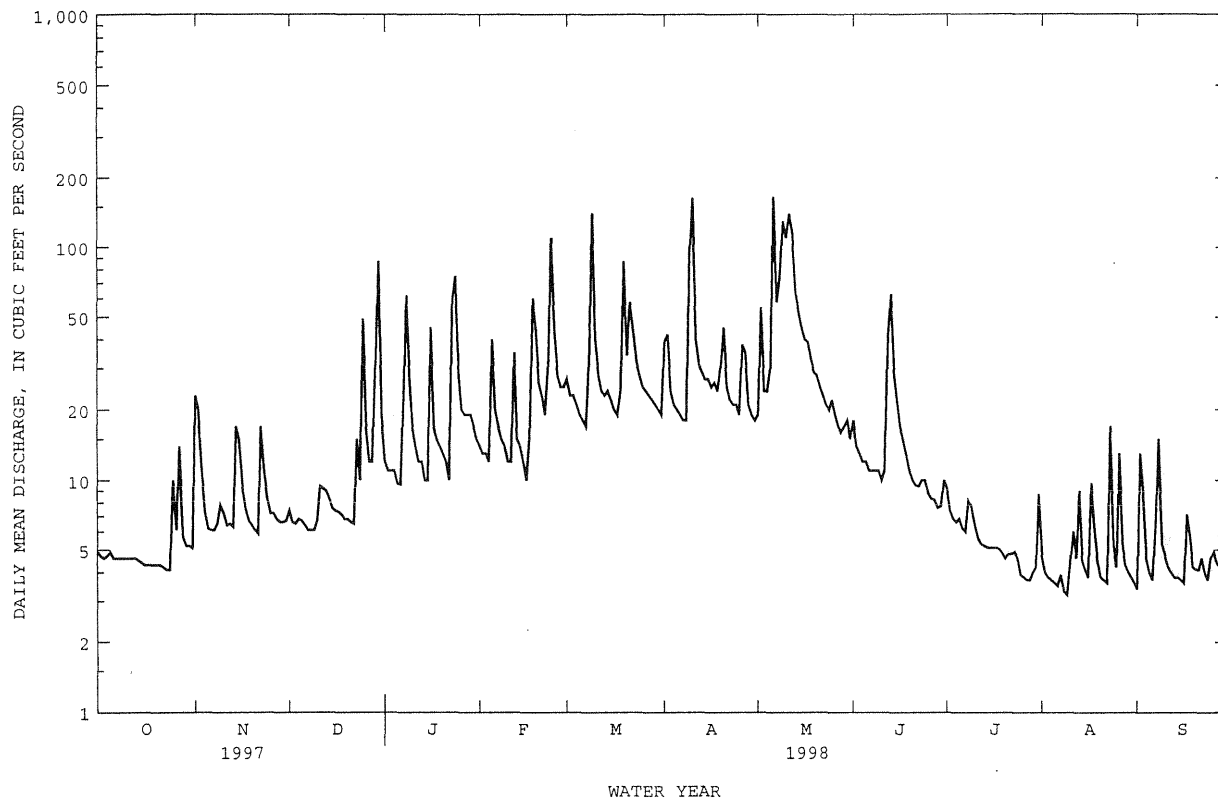
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1998, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1977	12.6	35.6	1990	4.55	1983
1978	17.5	32.6	1986	6.34	1985
1979	22.8	77.9	1997	5.61	1981
1980	25.0	79.2	1979	5.01	1981
1981	24.3	40.2	1979	11.1	1980
1982	32.1	76.8	1994	10.2	1985
1983	35.3	94.1	1984	6.88	1985
1984	27.3	59.2	1984	10.0	1995
1985	17.5	61.1	1989	6.03	1995
1986	12.7	53.2	1984	4.83	1993
1987	8.67	25.3	1990	2.79	1995
1988	8.67	22.8	1989	2.85	1980

01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1977 - 1998	
ANNUAL TOTAL	5927.7		6616.7		20.4	
ANNUAL MEAN	16.2		18.1		35.2	
HIGHEST ANNUAL MEAN					11.1	
LOWEST ANNUAL MEAN					11.1	
HIGHEST DAILY MEAN	190	Jan 25	166	May 6	700	Apr 5 1984
LOWEST DAILY MEAN	4.1	Oct 23	3.2	Aug 9	1.4	Aug 25 1995
ANNUAL SEVEN-DAY MINIMUM	4.2	Oct 18	3.6	Aug 3	1.4	Sep 1 1995
INSTANTANEOUS PEAK FLOW			685	May 6	3590	Sep 20 1989
INSTANTANEOUS PEAK STAGE			3.75	May 6	7.41	Sep 20 1989
INSTANTANEOUS LOW FLOW			2.9	Aug 8	1.1	Sep 23 1980
ANNUAL RUNOFF (CFSM)	1.38		1.54		1.73	
ANNUAL RUNOFF (INCHES)	18.69		20.86		23.47	
10 PERCENT EXCEEDS	28		39		39	
50 PERCENT EXCEEDS	11		11		12	
90 PERCENT EXCEEDS	5.2		4.1		4.4	

e Estimated



RARITAN RIVER BASIN

01396800 SPRUCE RUN AT CLINTON, NJ

LOCATION.--Lat 40°38'21", long 74°54'58", Hunterdon County, Hydrologic Unit 02030105, 1,800 ft downstream from dam at Spruce Run Reservoir, 0.2 mi north of Clinton, 0.3 mi upstream from mouth, and 2.2 mi southwest of High Bridge.

DRAINAGE AREA.--41.3 mi².

PERIOD OF RECORD.--May 1959 to current year.

GAGE.--Water-stage recorder. Concrete control since Mar. 15, 1964. Datum of gage is 193.5 ft above sea level. May to Nov. 24, 1959, nonrecording gage; Nov. 25, 1959 to July 23, 1961, water-stage recorder at site 1,800 ft upstream and at datum 1.41 ft lower; July 24, 1961 to Mar. 14, 1964, water-stage recorder at site 1,500 ft upstream at datum 1.41 ft lower.

REMARKS.--Records good. Flow regulated by Spruce Run Reservoir (see Raritan River basin, reservoirs in). Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124	23	7.2	7.9	6.4	6.1	7.6	71	71	43	158	215
2	133	7.7	7.4	7.8	6.4	5.9	13	199	37	14	173	202
3	142	6.5	7.4	7.2	6.4	5.5	11	175	63	7.3	187	147
4	142	8.1	7.4	6.9	6.2	5.9	8.7	123	39	7.9	200	127
5	148	7.9	7.4	6.7	7.4	6.9	36	122	30	23	209	154
6	152	7.9	7.4	6.4	7.0	6.9	30	225	32	6.4	226	188
7	155	7.7	7.4	6.6	6.6	6.9	18	278	21	18	238	191
8	156	7.1	7.4	7.4	6.4	7.2	36	199	28	26	235	59
9	167	7.1	7.4	7.4	6.4	11	104	357	12	8.6	236	52
10	177	6.9	7.6	7.1	6.4	7.6	690	424	9.8	20	236	110
11	174	6.9	7.9	6.9	6.5	6.4	271	472	10	34	169	128
12	176	6.9	7.9	6.9	7.4	6.3	171	564	75	51	147	129
13	180	11	7.2	6.9	6.7	6.0	140	312	214	80	179	141
14	179	12	7.0	6.6	6.4	6.0	126	232	204	111	187	160
15	158	7.4	6.9	6.7	6.4	5.7	124	195	117	116	179	173
16	123	6.6	7.0	7.6	6.4	5.5	117	167	91	103	185	173
17	107	6.8	6.9	6.9	6.9	5.5	114	153	92	98	154	162
18	113	9.1	6.9	6.9	8.6	5.5	109	141	66	113	87	144
19	123	9.2	6.9	6.9	7.8	7.6	103	118	44	120	86	155
20	127	9.2	6.9	6.9	7.4	6.5	181	98	36	120	114	162
21	131	9.2	6.9	6.9	7.3	7.3	125	107	27	137	146	163
22	128	9.8	17	6.5	6.9	7.2	95	81	22	155	157	112
23	134	9.8	18	10	7.4	6.9	88	55	23	171	117	88
24	134	9.2	7.7	11	9.8	6.6	86	52	27	172	115	113
25	91	7.7	9.7	11	7.3	6.4	85	71	27	166	159	124
26	48	7.4	7.9	9.3	6.8	6.2	74	80	24	208	140	124
27	20	7.2	7.2	8.3	6.4	6.0	166	62	39	215	113	115
28	6.7	7.7	7.0	7.6	6.2	5.9	101	56	9.4	218	74	123
29	32	7.4	8.5	6.9	---	5.7	75	59	10	214	94	151
30	55	7.5	11	6.9	---	5.7	69	64	24	214	164	163
31	46	---	8.3	6.5	---	6.4	---	56	---	166	208	---
TOTAL	3781.7	257.9	254.7	231.5	194.2	201.2	3374.3	5368	1524.2	3156.2	5072	4248
MEAN	122	8.60	8.22	7.47	6.94	6.49	112	173	50.8	102	164	142
MAX	180	23	18	11	9.8	11	690	564	214	218	238	215
MIN	6.7	6.5	6.9	6.4	6.2	5.5	7.6	52	9.4	6.4	74	52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1998, BY WATER YEAR (WY)

	MEAN	59.6	31.3	50.5	62.0	66.8	79.9	102	74.4	60.6	74.5	60.3	77.0
MAX	290	96.2	308	258	162	190	342	225	278	244	171	241	
(WY)	1990	1990	1997	1979	1971	1993	1983	1984	1972	1975	1995	1989	
MIN	.000	.000	.000	.000	.000	.19	.86	.81	2.60	4.24	4.32	.50	
(WY)	1964	1964	1964	1964	1964	1964	1964	1964	1981	1964	1963	1963	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

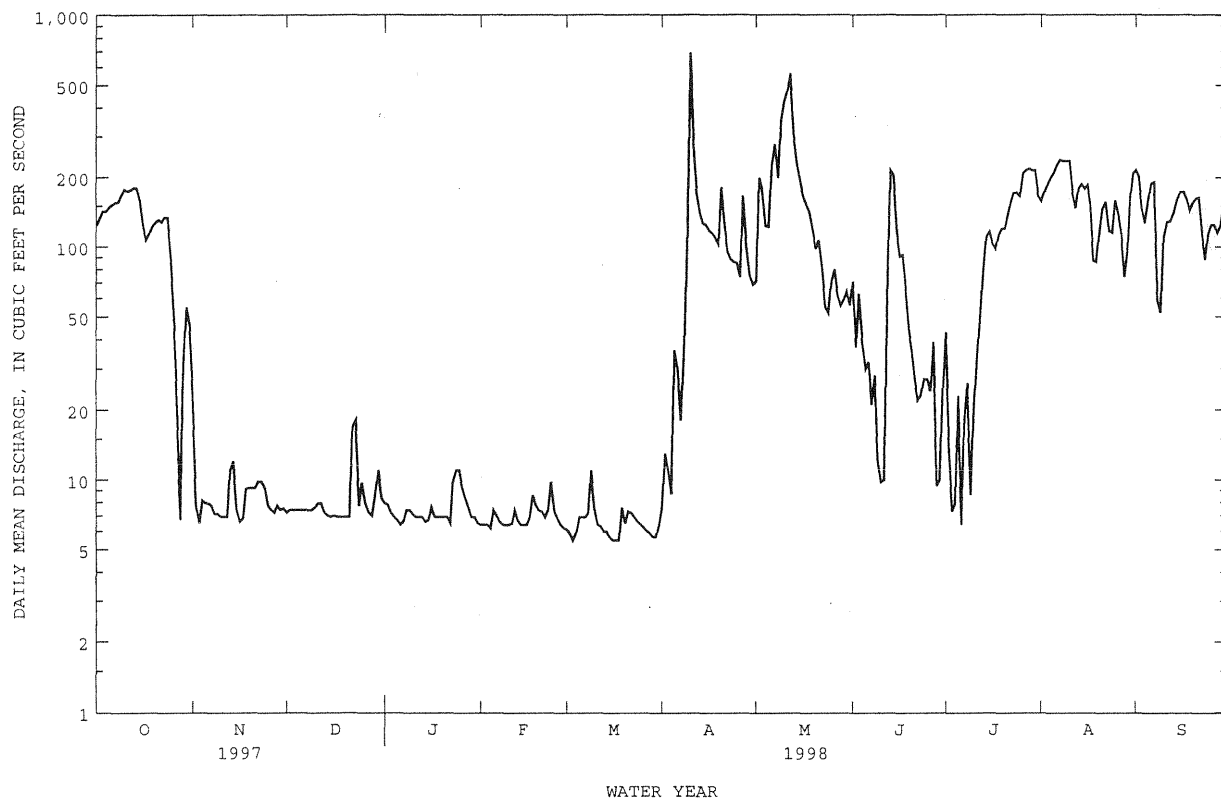
FOR 1998 WATER YEAR

WATER YEARS 1959 - 1998

ANNUAL TOTAL	30222.5	27663.9	
ANNUAL MEAN	82.8	75.8	66.6
HIGHEST ANNUAL MEAN			111
LOWEST ANNUAL MEAN			3.81
HIGHEST DAILY MEAN	388	690	2060
LOWEST DAILY MEAN	6.5	5.5	.00a
ANNUAL SEVEN-DAY MINIMUM	6.9	5.8	.00a
INSTANTANEOUS PEAK FLOW		915	6410
INSTANTANEOUS PEAK STAGE		2.88	5.17
INSTANTANEOUS LOW FLOW		5.5	.00a
10 PERCENT EXCEEDS	171	180	154
50 PERCENT EXCEEDS	76	30	42
90 PERCENT EXCEEDS	7.6	6.5	7.1

a Result of reservoir filling.

01396800 SPRUCE RUN AT CLINTON, NJ--Continued



01397000 SOUTH BRANCH RARITAN RIVER AT STANTON, NJ

LOCATION.--Lat 40°34'20", long 74°52'06", Hunterdon County, Hydrologic Unit 02030105, on right bank at downstream side of bridge on Stanton Road at Stanton Station, 0.4 mi upstream from Prescott Brook, and 1.4 mi west of Stanton.

DRAINAGE AREA.--147 mi².

PERIOD OF RECORD.--July 1903 to December 1906, July 1919 to current year. Monthly discharge only for some periods published in WSP 1302.

REVISED RECORDS.--WSP 561: Drainage area. WSP 1552: 1904, 1922-24(M), 1928-29(M), 1933-35(M). WDR NJ-88-1: 1982.

GAGE.--Water-stage recorder. Datum of gage is 125.01 ft above sea level. Prior to Aug. 17, 1925, nonrecording gage on downstream side of highway bridge at same site and datum.

REMARKS.--Records good. Flow regulated by Spruce Run Reservoir since September 1963 (see Raritan River basin, reservoirs in). Occasional regulation at low flows by ponds above station. Water diverted by Hamden Pumping Station, 4.0 mi upstream, into Round Valley Reservoir since February 1966 (see Raritan River basin, diversions). Water can be released (maximum rate 186 ft³/s) from Round Valley Reservoir at Hamden Pumping Station since July 1990. Several measurements of water temperature were made during the year. National Weather Service telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	149	108	75	169	162	299	262	358	245	180	195	251
2	152	258	81	173	151	261	753	849	183	132	206	249
3	163	155	73	132	146	245	342	756	189	101	212	231
4	163	97	73	129	140	220	270	543	161	96	224	166
5	167	77	74	120	313	203	269	557	144	110	227	179
6	169	69	72	112	271	189	246	928	145	91	244	210
7	173	65	71	131	194	180	217	1240	128	89	264	245
8	174	62	67	336	172	195	221	895	131	120	259	216
9	188	69	65	324	158	868	324	1320	116	97	255	100
10	199	73	72	196	149	526	1980	1570	108	98	273	142
11	195	69	83	158	144	318	857	1680	109	104	250	172
12	195	63	77	140	324	261	549	1860	258	115	178	162
13	207	61	76	131	234	235	457	1110	638	135	224	175
14	204	88	74	125	177	231	406	951	858	165	213	193
15	186	103	69	120	154	225	410	862	552	171	205	209
16	156	88	67	329	144	206	377	737	375	161	205	209
17	133	77	67	217	158	192	358	678	547	155	229	207
18	137	73	67	175	571	201	352	636	319	169	193	172
19	144	69	67	160	417	597	323	571	224	169	156	178
20	148	67	65	150	300	421	634	519	190	166	144	184
21	149	67	66	136	254	487	395	403	169	173	169	192
22	148	103	68	125	218	496	312	305	153	191	181	168
23	155	120	108	489	230	357	283	151	153	211	230	113
24	154	89	104	1000	842	324	276	137	158	217	136	135
25	156	76	293	471	688	277	263	272	152	204	178	150
26	116	72	227	301	409	251	259	287	137	245	221	151
27	111	71	137	245	322	239	569	236	146	257	182	144
28	82	70	120	225	282	224	324	217	114	250	131	144
29	70	68	133	204	---	211	320	208	107	241	112	166
30	95	67	868	189	---	199	331	229	130	248	179	182
31	89	---	278	176	---	191	---	201	---	241	234	---
TOTAL	4727	2594	3837	7088	7724	9329	12939	21266	7039	5102	6309	5395
MEAN	152	86.5	124	229	276	301	431	686	235	165	204	180
MAX	207	258	868	1000	842	868	1980	1860	858	257	273	251
MIN	70	61	65	112	140	180	217	137	107	89	112	100

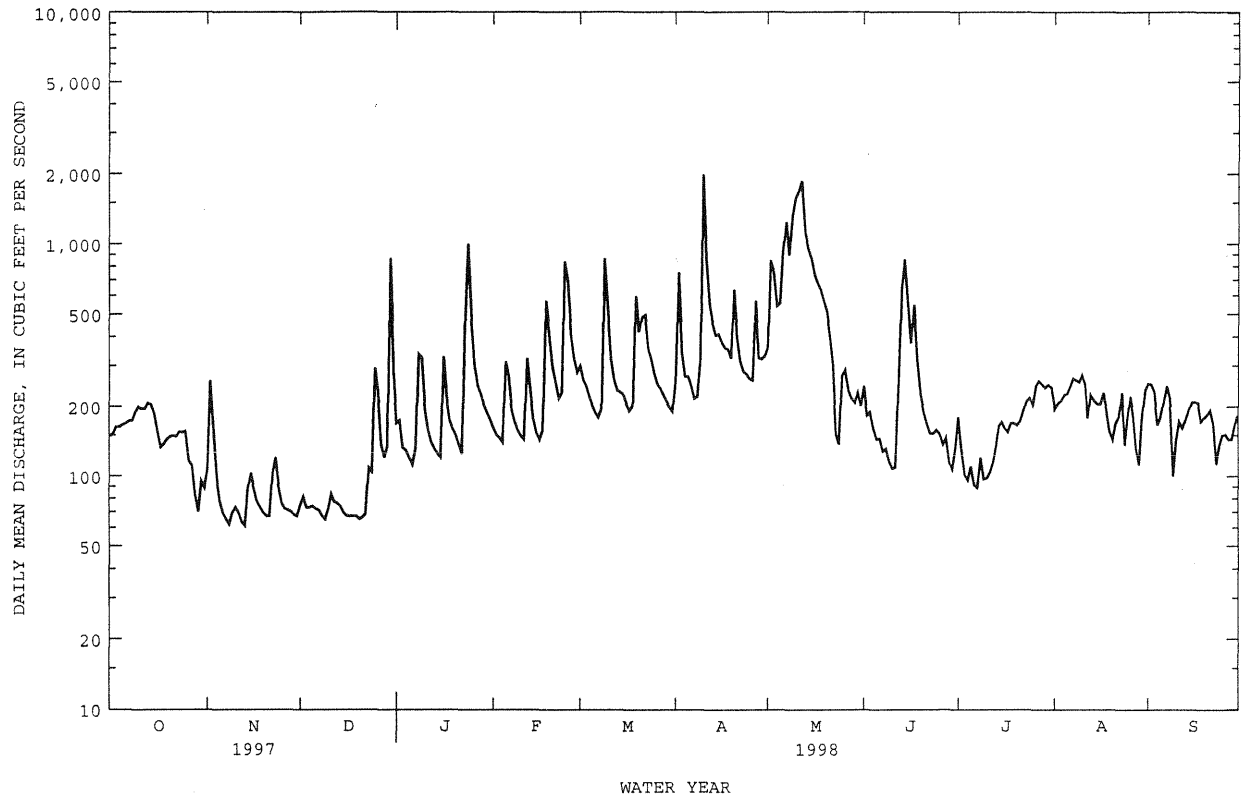
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1998, BY WATER YEAR (WY)

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
MEAN	165	206	267	289	319	403	378	273	191	180	164	162
MAX	641	659	1026	1099	807	1057	1137	750	967	752	793	554
(WY)	1904	1952	1997	1979	1925	1936	1983	1989	1972	1975	1955	1989
MIN	34.1	46.2	65.1	55.0	61.2	61.3	58.5	80.3	60.1	40.7	30.1	31.0
(WY)	1964	1965	1966	1966	1967	1981	1981	1965	1965	1955	1957	1957

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1904 - 1998
ANNUAL TOTAL	87522	93349	
ANNUAL MEAN	240	256	249
HIGHEST ANNUAL MEAN			413
LOWEST ANNUAL MEAN			95.0
HIGHEST DAILY MEAN	1730	1980	8060
LOWEST DAILY MEAN	61	61	12
ANNUAL SEVEN-DAY MINIMUM	66	66	25
INSTANTANEOUS PEAK FLOW		2520	18000
INSTANTANEOUS PEAK STAGE		6.61	15.22a
INSTANTANEOUS LOW FLOW		58	9.0
10 PERCENT EXCEEDS	424	522	490
50 PERCENT EXCEEDS	193	184	167
90 PERCENT EXCEEDS	76	76	64

a From rating curve extended above 6,400 ft³/s on basis of computation of flow over Clinton Dam, 6.5 mi upstream, at gage height 10.72 ft, contracted-opening measurement 1.7 mi downstream, and slope-area measurement 0.4 mi downstream at gage height 15.22 ft, adjusted to present site.

01397000 SOUTH BRANCH RARITAN RIVER AT STANTON, NJ--Continued



01398000 NESHANIC RIVER AT REAVILLE, NJ

LOCATION.--Lat 40°28'18", long 74°49'42", Hunterdon County, Hydrologic Unit 02030105, on left bank 50 ft downstream from bridge on Everitts Road, 0.6 mi southwest of Reaville, 1.5 mi downstream from Third Neshanic River, and 2.2 mi upstream from Back Brook.

DRAINAGE AREA.--25.7 mi².

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

REVISED RECORDS. --WSP 1552: 1933, 1934(M), 1936(M), 1938, 1940(M), 1942(M), 1945-46, 1951, 1952(M).

GAGE. -Water stage recorder. Concrete control since Sept. 26, 1935. Datum of gage is 109.46 ft above sea level.

REMARKS.--Records good. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0115	*2,090	*7.82	Apr 10	0115	2,040	7.76
Jan 23	2015	1,890	7.56				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	26	10	40	27	47	171	28	60	5.6	2.5	.56
2	1.3	22	7.8	32	24	41	332	143	13	3.9	1.6	.56
3	1.3	11	6.8	30	23	53	82	87	10	3.5	1.3	.86
4	1.5	7.2	9.0	27	22	39	59	54	8.3	3.3	1.6	1.1
5	1.2	5.5	8.2	23	195	33	46	51	7.5	4.3	1.1	.63
6	1.1	4.7	7.0	21	95	28	38	175	6.8	3.2	.63	.30
7	1.3	4.7	6.6	70	57	25	32	106	6.2	3.0	.52	2.7
8	1.2	4.9	6.1	164	45	43	28	301	5.9	5.4	.53	4.0
9	1.4	6.8	5.6	74	36	426	167	616	5.8	5.3	.40	1.5
10	1.0	5.9	7.4	49	31	120	579	575	5.4	3.7	.66	.81
11	1.0	4.7	14	38	28	71	105	392	5.5	2.9	2.8	.71
12	.66	4.3	15	30	95	52	68	309	29	2.6	1.0	.62
13	.94	4.0	17	28	42	43	52	126	19	2.6	.84	.54
14	1.1	24	13	22	33	42	43	85	16	1.8	.87	.47
15	1.8	28	11	25	27	34	39	62	12	1.7	.57	.43
16	2.2	16	10	144	23	28	56	48	10	1.8	.59	.41
17	1.6	12	9.3	57	37	25	54	62	33	2.1	1.8	2.8
18	1.8	9.9	8.2	49	215	34	39	37	13	3.5	3.2	5.0
19	2.0	8.6	7.5	43	156	375	38	30	9.0	2.2	1.2	1.2
20	1.6	7.8	7.2	36	86	126	74	33	7.2	2.6	.77	.85
21	1.4	7.2	6.4	29	65	241	39	26	6.1	2.6	.59	.90
22	1.3	58	5.7	25	49	156	33	19	5.6	2.4	.56	4.6
23	1.3	26	35	503	99	92	30	17	6.2	2.0	1.2	1.0
24	1.2	18	20	342	572	65	28	15	6.4	1.7	.95	.43
25	9.7	14	147	124	185	50	22	15	5.3	1.4	.76	.39
26	5.9	13	53	72	94	44	56	13	4.6	1.5	4.4	.51
27	18	10	40	55	68	39	98	11	4.5	1.4	1.8	.52
28	5.3	9.8	41	60	54	34	38	10	4.0	1.5	.87	.40
29	3.3	10	117	48	---	29	31	11	4.5	1.5	.61	.32
30	2.8	9.1	486	40	---	26	27	12	9.2	1.5	.56	.23
31	2.4	---	77	33	---	24	---	8.6	---	3.0	.56	---
TOTAL	80.10	393.1	1214.8	2333	2483	2485	2504	3477.6	339.0	85.5	37.34	35.35
MEAN	2.58	13.1	39.2	75.3	88.7	80.2	83.5	112	11.3	2.76	1.20	1.18
MAX	18	58	486	503	572	426	579	616	60	5.6	4.4	5.0
MIN	.66	4.0	5.6	21	22	24	22	8.6	4.0	1.4	.40	.23
CFSM	.10	.51	1.52	2.93	3.45	3.12	3.25	4.37	.44	.11	.05	.05
IN.	.12	.57	1.76	3.38	3.59	3.60	3.62	5.03	.49	.12	.05	.05

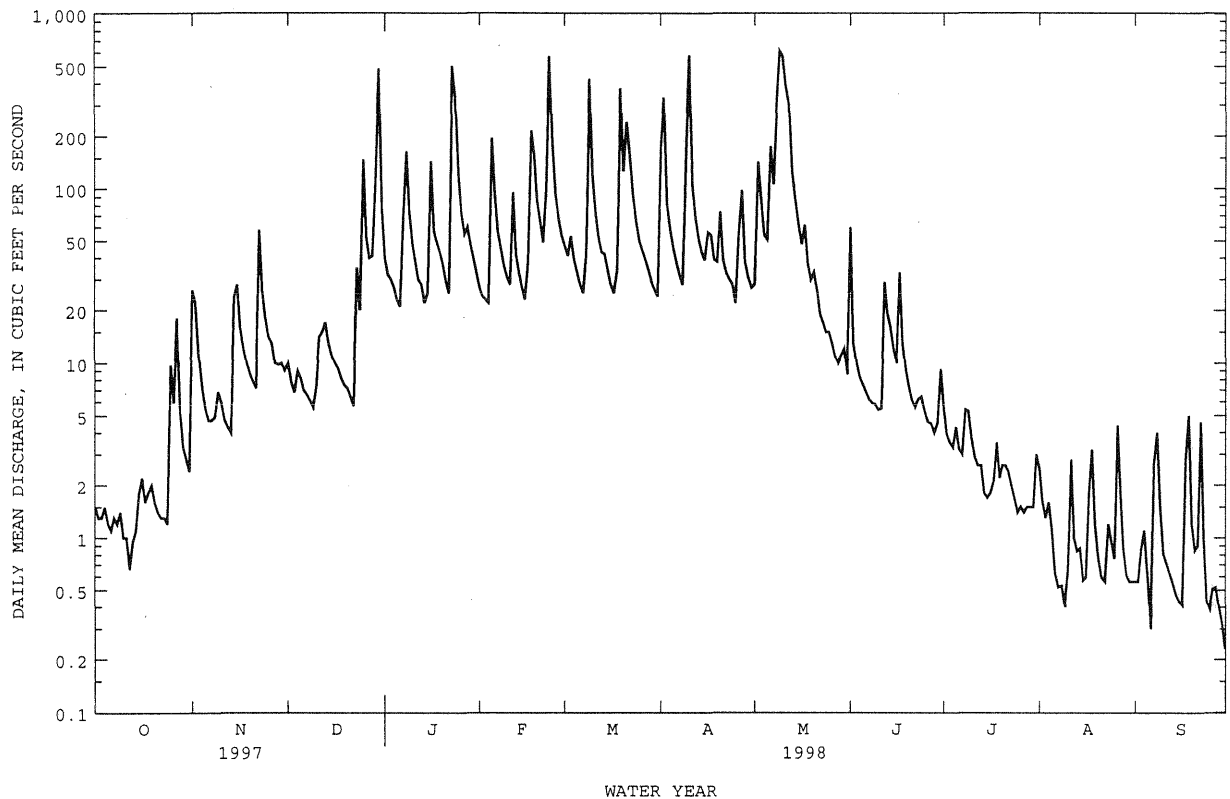
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998, BY WATER YEAR (WY)

MEAN	15.5	34.4	49.5	57.8	58.7	77.1	56.3	33.7	21.6	18.8	18.2	15.1
MAX	147	139	206	280	147	201	200	135	119	138	216	135
(WY)	1997	1933	1997	1994	1939	1994	1983	1989	1972	1938	1971	1989
MIN	.67	.90	1.59	1.14	3.92	15.2	7.20	3.78	1.11	.37	.44	.47
(WY)	1965	1966	1966	1981	1934	1985	1985	1963	1965	1966	1964	1965

01398000 NESHANIC RIVER AT REAVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1931 - 1998	
ANNUAL TOTAL	11246.28		15467.79		38.0	
ANNUAL MEAN	30.8		42.4		70.8	
HIGHEST ANNUAL MEAN					14.5	
LOWEST ANNUAL MEAN					4740	
HIGHEST DAILY MEAN	636	Jan 25	616	May 9		Aug 28 1971
LOWEST DAILY MEAN	.66	Oct 12	.23	Sep 30	.00	Jul 29 1965
ANNUAL SEVEN-DAY MINIMUM	1.0	Oct 8	.40	Sep 24	.00	Aug 4 1966
INSTANTANEOUS PEAK FLOW			2090	Dec 30	15900a	Aug 28 1971
INSTANTANEOUS PEAK STAGE			7.82	Dec 30	13.84b	Aug 28 1971
INSTANTANEOUS LOW FLOW			.06	Aug 10	.00	Jul 29 1965
ANNUAL RUNOFF (CFSM)	1.20		1.65		1.48	
ANNUAL RUNOFF (INCHES)	16.28		22.39		20.07	
10 PERCENT EXCEEDS	65		95		77	
50 PERCENT EXCEEDS	13		11		13	
90 PERCENT EXCEEDS	1.9		.87		1.4	

a From rating curve extended above 1,700 ft³/s on basis of slope-area measurement 0.7 mi downstream (adjusted to present site) at gage height 11.90 ft.
 b From high-water mark in gage house.



01398500 NORTH BRANCH RARITAN RIVER NEAR FAR HILLS, NJ

LOCATION.--Lat 40°42'30", long 74°38'11", Somerset County, Hydrologic Unit 02030105, on left bank 75 ft upstream from Ravine Lake Dam, 1.6 mi north of Far Hills, and 2.3 mi upstream from Peapack Brook.

DRAINAGE AREA.--26.2 mi².

PERIOD OF RECORD.--October 1921 to September 1975, October 1977 to current year. Operated as crest-stage gage, water years 1976-77. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 781: Drainage area. WSP 1552: 1922-23, 1924-25(M), 1935(M). WSP 1902: 1954.

GAGE.--Water-stage recorder and crest-stage gage above masonry dam. Datum of gage is 224.49 ft above sea level (New Jersey Geological Survey bench mark). Prior to June 18, 1925, nonrecording gage in stilling box at left end of dam at same datum.

REMARKS.--Records good. Records given herein include diversion by small turbine at dam (average discharge, 3.0 ft³/s) and returned to river 1,000 ft downstream from Ravine Lake Dam. Turbine was not operating. Flow regulated occasionally by operation of waste gate in dam. Recording rain gage, with telemeter, 500 ft downstream from station. Several measurements of water temperature were made during the year. Gage-height and rain-gage radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stage of 7.6 ft, from floodmark, occurred July 23, 1919, discharge about 7,000 ft³/s.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0045	817	3.51	Apr 10	0145	*1,040	*3.77

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	100	21	39	45	84	88	57	69	40	18	5.5
2	5.8	105	18	40	45	76	179	133	45	28	13	5.7
3	5.6	44	16	38	44	73	75	73	41	24	12	11
4	6.2	27	19	38	42	67	66	64	38	23	11	7.2
5	7.3	21	21	35	69	63	63	66	37	23	11	5.8
6	8.6	18	22	33	57	58	61	102	35	21	9.9	5.2
7	8.3	17	21	42	47	57	59	83	34	21	9.5	5.7
8	9.2	16	19	95	44	61	57	77	34	22	8.7	44
9	8.0	23	18	64	41	165	85	152	33	24	8.7	18
10	8.6	27	20	50	39	93	408	295	31	21	10	12
11	9.4	20	28	44	39	65	121	280	31	19	31	11
12	9.1	16	27	41	92	62	95	291	61	17	11	9.9
13	9.9	15	28	41	52	58	86	160	118	17	7.9	10
14	10	23	25	39	44	60	81	131	298	17	6.8	9.4
15	12	35	21	37	41	58	88	113	97	17	7.1	9.3
16	16	26	20	101	40	54	80	100	64	17	6.9	9.2
17	13	22	20	51	45	53	80	92	79	17	8.2	9.5
18	11	19	21	45	157	58	78	84	53	17	15	9.1
19	10	18	21	44	94	167	75	77	46	15	12	8.5
20	10	17	21	42	67	91	113	72	42	14	8.3	8.7
21	9.8	17	21	38	63	109	72	67	40	16	7.3	8.7
22	9.5	42	19	37	58	91	65	61	37	15	7.2	9.5
23	9.3	36	35	110	61	76	62	59	38	14	7.3	10
24	9.3	26	33	223	255	72	61	55	37	14	7.1	8.9
25	22	21	83	87	136	65	57	71	33	12	6.7	8.6
26	24	20	48	64	93	63	72	57	31	12	15	9.7
27	32	19	34	58	90	62	98	51	30	11	14	9.9
28	23	18	31	55	84	60	61	48	27	11	8.3	9.7
29	14	18	51	52	---	59	56	47	26	12	6.7	8.8
30	12	18	260	50	---	57	55	54	37	13	6.3	8.6
31	11	---	57	47	---	55	---	44	---	22	6.1	---
TOTAL	360.8	844	1099	1780	1984	2292	2697	3116	1622	566	318.0	307.1
MEAN	11.6	28.1	35.5	57.4	70.9	73.9	89.9	101	54.1	18.3	10.3	10.2
MAX	32	105	260	223	255	167	408	295	298	40	31	44
MIN	5.6	15	16	33	39	53	55	44	26	11	6.1	5.2
CFSM	.44	1.07	1.35	2.19	2.70	2.82	3.43	3.84	2.06	.70	.39	.39
IN.	.51	1.20	1.56	2.53	2.82	3.25	3.83	4.42	2.30	.80	.45	.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

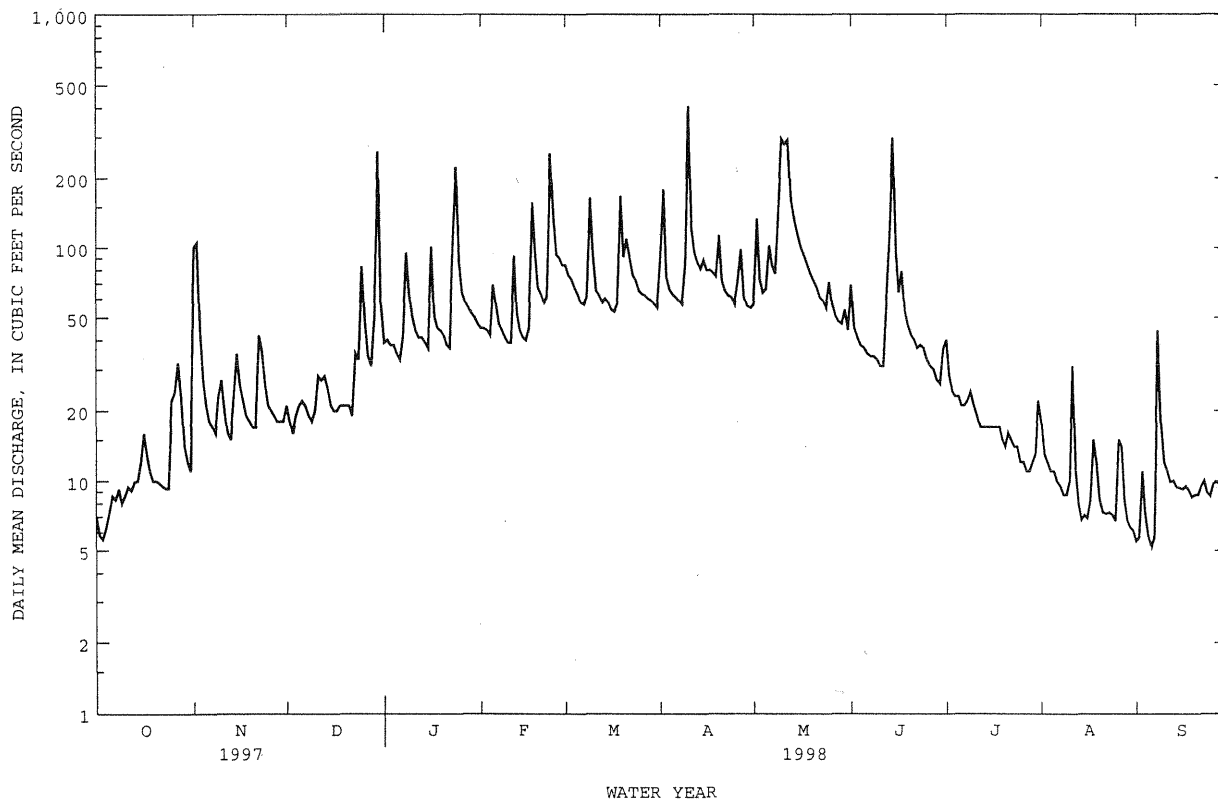
	MEAN	26.7	43.2	50.2	54.9	59.6	82.0	82.8	59.9	38.9	30.7	27.7	26.8
MAX	120	170	124	182	128	207	226	178	190	132	153	135	
(WY)	1997	1928	1974	1979	1973	1936	1983	1989	1972	1984	1942	1971	
MIN	6.29	9.22	8.43	6.76	22.1	22.8	26.8	20.0	10.5	4.41	4.55	3.61	
(WY)	1954	1965	1981	1981	1934	1981	1985	1965	1965	1966	1965	1964	

01398500 NORTH BRANCH RARITAN RIVER NEAR FAR HILLS, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	15275.4		16985.9		48.5	
ANNUAL MEAN	41.9		46.5		89.7	
HIGHEST ANNUAL MEAN					17.7	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	454	Jan 25	408	Apr 10	1770	Oct 19 1996
LOWEST DAILY MEAN	5.6	Oct 3	5.2	Sep 6	.20	Oct 22 1953
ANNUAL SEVEN-DAY MINIMUM	7.0	Oct 1	6.6	Sep 1	.20	Oct 22 1953
INSTANTANEOUS PEAK FLOW			1040	Apr 10	6390a	Aug 28 1971
INSTANTANEOUS PEAK STAGE			3.77	Apr 10	7.28	Aug 28 1971
INSTANTANEOUS LOW FLOW			5.1	Sep 2	.00b	
ANNUAL RUNOFF (CFSM)	1.60		1.78		1.85	
ANNUAL RUNOFF (INCHES)	21.69		24.12		25.18	
10 PERCENT EXCEEDS	72		92		96	
50 PERCENT EXCEEDS	34		35		33	
90 PERCENT EXCEEDS	11		8.7		10	

a From rating curve extended above 2000 ft³/s on basis of computation of peak flow over dam.

b Several times when lake was filling.



01399500 LAMINGTON (BLACK) RIVER NEAR POTTERSVILLE, NJ

LOCATION.--Lat 40°43'39", long 74°43'50", Morris County, Hydrologic Unit 02030105, on right bank 1.1 mi upstream from bridge on State Highway 512, 1.2 mi northwest of Pottersville, and 5.5 mi upstream from Cold Brook. Water-quality samples collected at bridge 1.1 mi downstream from gage at high flows.

DRAINAGE AREA.--32.8 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October and November 1921, published in WSP 1302. Prior to October 1952, published as "Black River near Pottersville".

REVISED RECORDS.--WSP 741: 1932. WSP 781: Drainage area. WSP 1552: 1922, 1924-29(M), 1931(M), 1933-34(M), 1938(P), 1939(M), 1940, 1941(M), 1942-46(P), 1947(M), 1948-49(P), 1951-52(P), 1953(M). WDR-NJ-80-1: Correction 1979(P).

GAGE.--Water-stage recorder. Concrete control since July 1, 1937. Datum of gage is 284.14 ft above sea level (levels from New Jersey Geological Survey bench mark). Prior to July 1, 1922, nonrecording gage on downstream side of highway bridge at Pottersville, 1.1 mi downstream at different datum.

REMARKS.--Records fair. Flow regulated occasionally by pond above station. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
No peak greater than base discharge.				Apr. 9	2245	378	2.92

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	44	27	101	54	90	81	76	62	42	16	11
2	14	57	25	93	52	81	127	131	52	37	15	13
3	14	45	24	67	51	76	93	96	49	35	15	14
4	14	44	24	61	49	72	103	95	48	33	14	12
5	13	51	24	56	62	68	92	97	46	33	13	11
6	13	46	23	51	58	64	81	122	44	31	12	11
7	12	39	22	52	55	61	73	123	42	30	11	12
8	12	33	21	80	58	64	68	111	41	30	11	29
9	12	32	20	70	55	153	113	147	39	29	10	18
10	11	29	21	61	52	109	218	199	38	27	21	16
11	11	27	22	61	49	97	153	252	37	25	21	16
12	11	25	22	57	77	92	150	287	69	23	16	15
13	11	24	23	52	60	81	124	245	102	22	16	13
14	11	29	23	46	59	76	103	207	144	22	17	12
15	12	30	25	44	60	72	98	176	130	21	17	11
16	12	27	22	74	56	67	90	148	136	20	16	11
17	11	28	22	56	55	64	87	131	172	20	22	12
18	11	30	22	53	87	67	83	115	124	19	26	11
19	11	29	21	56	84	126	85	101	93	19	23	10
20	11	27	21	54	82	102	102	93	76	19	20	10
21	11	25	21	49	83	131	86	86	64	19	19	9.8
22	11	37	26	45	75	135	84	78	58	19	17	11
23	11	33	29	87	71	111	81	73	56	18	15	11
24	11	31	28	155	132	98	76	69	54	18	14	9.7
25	19	33	63	93	124	87	69	80	49	18	12	9.3
26	17	35	51	95	121	80	80	72	46	17	20	9.5
27	26	33	44	90	112	75	88	64	43	16	16	9.4
28	20	30	46	81	96	72	75	60	40	16	14	9.1
29	20	28	53	71	---	70	77	57	38	16	13	8.6
30	20	27	123	64	---	68	75	57	43	16	12	8.3
31	20	---	76	59	---	65	---	52	---	20	12	---
TOTAL	427	1008	1014	2134	2029	2674	2915	3700	2035	730	496	363.7
MEAN	13.8	33.6	32.7	68.8	72.5	86.3	97.2	119	67.8	23.5	16.0	12.1
MAX	26	57	123	155	132	153	218	287	172	42	26	29
MIN	11	24	20	44	49	61	68	52	37	16	10	8.3
CFSM	.42	1.02	1.00	2.10	2.21	2.63	2.96	3.64	2.07	.72	.49	.37
IN.	.48	1.14	1.15	2.42	2.30	3.03	3.31	4.20	2.31	.83	.56	.41

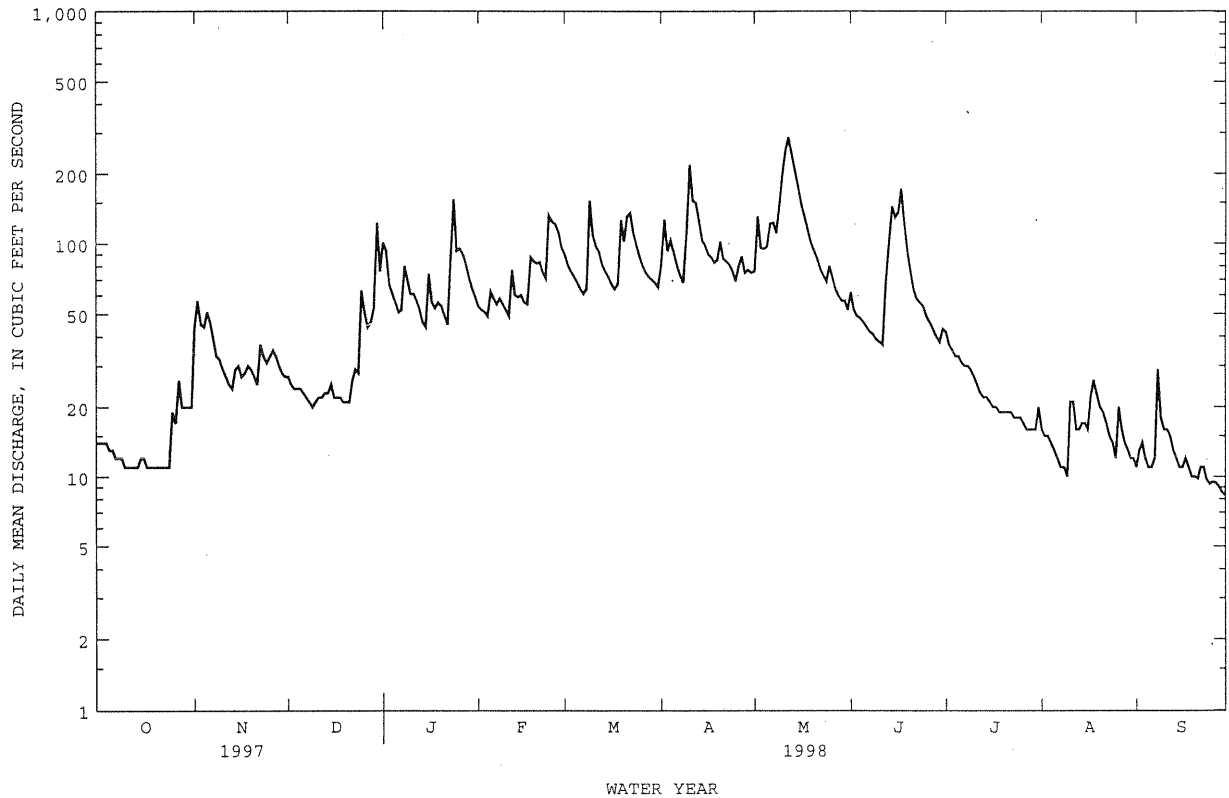
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
34.6	116	1956	50.2	163	1928
60.6	207	1997	65.4	15.4	1981
70.7	225	1979	144	11.7	1981
90.3	230	1973	239	28.0	1934
89.0	239	1936	169	32.0	1981
67.4	191	1984	165	25.9	1985
45.9	191	1989	165	19.0	1965
36.9	191	1972	165	10.1	1965
32.7	191	1984	126	5.48	1965
32.4	123	1928	3.76	5.61	1966
		1971			1964

01399500 LAMINGTON (BLACK) RIVER NEAR POTTERSVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	18808		19525.7			
ANNUAL MEAN	51.5		53.5		56.3	
HIGHEST ANNUAL MEAN					104	
LOWEST ANNUAL MEAN					20.5	
HIGHEST DAILY MEAN	292	Jan 25	287	May 12	905	Jan 25 1979
LOWEST DAILY MEAN	11	Oct 10	8.3	Sep 30	1.5	Oct 4 1930
ANNUAL SEVEN-DAY MINIMUM	11	Oct 17	9.1	Sep 24	2.4	Sep 22 1964
INSTANTANEOUS PEAK FLOW			378	Apr 9	3460a	Jul 7 1984
INSTANTANEOUS PEAK STAGE			2.92	Apr 9	5.94b	Jul 7 1984
INSTANTANEOUS LOW FLOW			8.3	Sep 29	1.3	Oct 4 1930
ANNUAL RUNOFF (CFSM)	1.57		1.63		1.72	
ANNUAL RUNOFF (INCHES)	21.33		22.15		23.30	
10 PERCENT EXCEEDS	96		110		113	
50 PERCENT EXCEEDS	44		44		43	
90 PERCENT EXCEEDS	14		12		14	

a From rating curve extended above 380 ft³/s on basis of slope-area measurement at gage height 4.71 ft.
b From floodmark.



01399670 SOUTH BRANCH ROCKAWAY CREEK AT WHITEHOUSE STATION, NJ

LOCATION.--Lat 40°37'10", long 74°46'30", Hunterdon County, Hydrologic Unit 02030105, on right bank 1,700 ft upstream from bridge on U.S. Route 22, 0.4 mi northeast of Whitehouse Station, and 0.8 mi upstream from mouth.

DRAINAGE AREA.--12.3 mi².

PERIOD OF RECORD.--October 1986 to current year. March 1977 to September 1986, water-stage recorder 1,700 ft downstream, at datum 8.07 ft lower (sta. 01399690), drainage area 13.2 mi².

REVISED RECORDS.--WDR NJ-88-1: 1987. WDR NJ-90-1: 1988.

GAGE.--Water-stage recorder. Datum of gage is 121.5 ft above sea level.

REMARKS.--Records good except for daily discharges below 5.0 ft³/s, which are fair. Releases from Round Valley Reservoir enter stream directly upstream from station (see Raritan River basin, reservoirs in and diversions from). Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	21	6.6	13	12	21	47	19	17	15	5.8	3.5
2	3.7	24	7.1	12	11	19	127	91	12	9.7	4.2	6.5
3	3.8	11	4.5	11	11	19	30	63	11	9.2	3.9	12
4	3.9	7.2	5.4	11	11	17	25	32	10	9.1	3.8	4.6
5	4.5	5.7	4.9	9.3	30	15	22	31	9.9	9.8	3.7	4.0
6	4.1	5.3	4.4	8.7	21	14	20	89	9.7	8.4	3.4	3.6
7	3.7	5.1	4.0	24	14	13	18	52	9.3	8.1	3.3	7.9
8	3.7	5.1	3.9	62	13	21	17	77	9.3	10	3.2	37
9	3.7	8.4	3.7	28	11	151	38	137	14	10	3.4	6.3
10	3.5	6.1	5.0	18	11	42	197	106	10	8.4	10	4.7
11	2.9	5.1	10	14	11	27	38	166	10	7.2	15	4.3
12	3.2	4.7	9.5	12	55	22	30	154	36	6.9	4.8	4.0
13	3.4	4.4	9.2	12	20	20	26	59	38	6.8	4.9	3.9
14	4.1	16	6.7	9.8	15	21	24	46	56	6.2	8.2	3.8
15	6.1	18	5.3	11	13	18	24	38	26	6.0	4.3	3.7
16	5.2	9.2	5.2	61	12	16	21	33	21	6.0	3.8	3.5
17	4.0	6.7	5.2	21	22	15	22	30	24	6.8	18	5.0
18	4.5	5.9	4.7	18	99	19	22	26	17	6.5	11	6.4
19	4.2	5.6	4.5	17	54	110	21	24	15	5.2	5.5	3.9
20	6.4	5.3	4.4	14	30	38	34	22	14	5.1	4.2	3.8
21	5.3	5.0	4.2	12	25	81	20	21	14	5.0	3.9	4.0
22	4.2	24	3.9	11	20	59	18	18	13	4.9	3.7	6.8
23	4.0	11	17	168	22	34	17	17	14	4.7	29	4.1
24	4.0	8.0	9.3	136	97	68	17	16	15	4.5	6.3	3.4
25	14	6.2	62	42	51	90	15	19	13	4.0	4.5	3.9
26	7.8	6.3	19	27	29	88	25	16	12	4.0	18	4.5
27	22	5.9	13	22	24	88	36	14	11	3.8	6.6	4.0
28	7.8	5.2	13	21	22	86	18	13	10	3.9	4.7	4.0
29	5.5	5.8	29	18	---	85	15	14	10	4.8	4.1	3.3
30	4.7	5.4	141	16	---	62	15	17	19	8.1	4.0	3.5
31	4.5	---	23	14	---	16	---	12	---	16	3.9	---
TOTAL	166.5	262.6	448.6	873.8	766	1395	999	1472	500.2	224.1	213.1	173.9
MEAN	5.37	8.75	14.5	28.2	27.4	45.0	33.3	47.5	16.7	7.23	6.87	5.80
MAX	22	24	141	168	99	151	197	166	56	16	29	37
MIN	2.9	4.4	3.7	8.7	11	13	15	12	9.3	3.8	3.2	3.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1998, BY WATER YEAR (WY)

	MEAN	26.5	25.2	32.3	33.9	26.5	33.7	32.3	25.8	18.8	20.4	25.8	28.6
MAX	116	64.0	91.6	93.3	51.1	74.5	85.0	60.5	38.7	80.5	128	146	
(WY)	1981	1981	1981	1981	1979	1994	1983	1989	1989	1984	1980	1980	
MIN	4.55	6.58	9.85	8.31	9.90	10.2	3.80	8.18	8.50	4.78	5.49	4.19	
(WY)	1995	1982	1996	1985	1992	1985	1985	1995	1993	1993	1983	1983	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

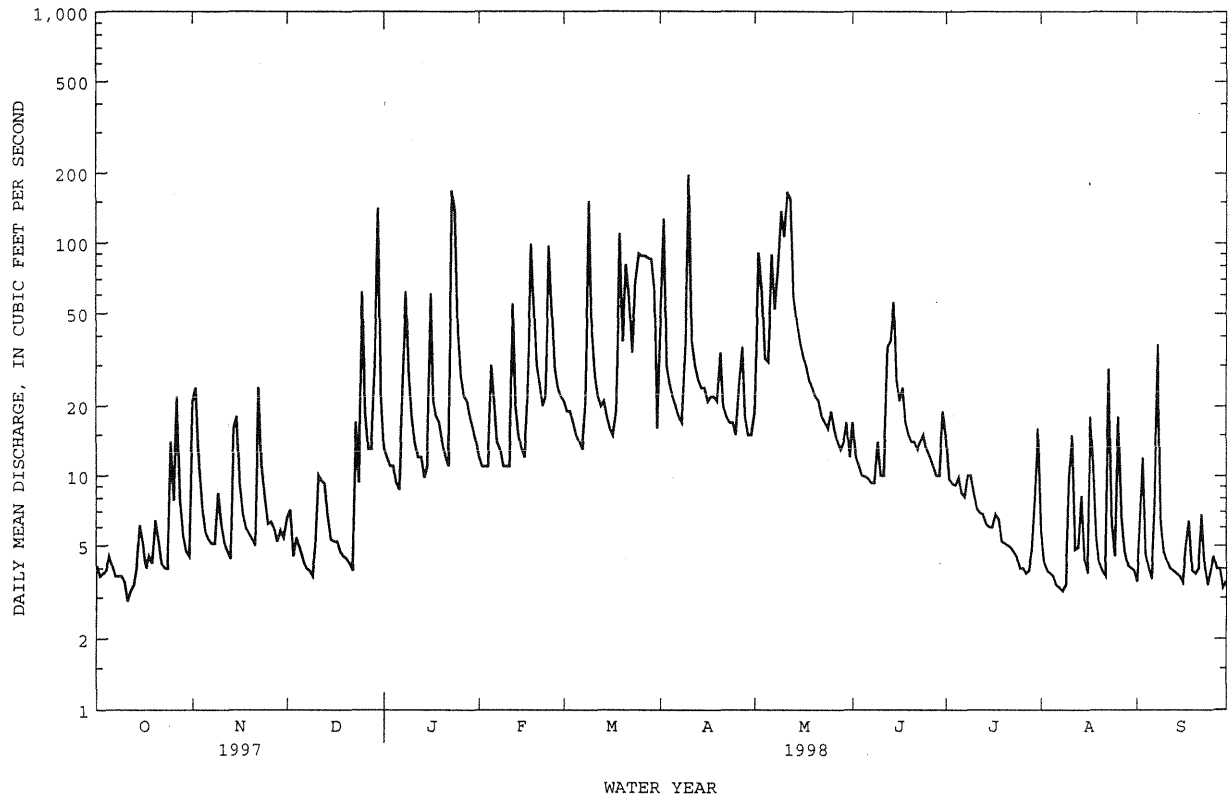
FOR 1998 WATER YEAR

WATER YEARS 1977 - 1998

ANNUAL TOTAL	6313.7	7494.8	
ANNUAL MEAN	17.3	20.5	27.7
HIGHEST ANNUAL MEAN			55.2
LOWEST ANNUAL MEAN			11.1
HIGHEST DAILY MEAN	309	Jan 25	737
LOWEST DAILY MEAN	2.9	Oct 11	.07
ANNUAL SEVEN-DAY MINIMUM	3.4	Oct 7	.09
INSTANTANEOUS PEAK FLOW			2190
INSTANTANEOUS PEAK STAGE			15.89a
INSTANTANEOUS LOW FLOW			.00
10 PERCENT EXCEEDS	29		61
50 PERCENT EXCEEDS	11		14
90 PERCENT EXCEEDS	4.1		4.8

a Site and datum then in use.

01399670 SOUTH BRANCH ROCKAWAY CREEK AT WHITEHOUSE STATION, NJ--Continued



RARITAN RIVER BASIN

01400000 NORTH BRANCH RARITAN RIVER NEAR RARITAN, NJ

LOCATION.--Lat 40°34'10", long 74°40'45", Somerset County, Hydrologic Unit 02030105, on right bank, 400 ft upstream from U.S. Highway 202, 1.4 mi upstream from confluence with South Branch, and 2.7 mi west of Raritan.

DRAINAGE AREA.--190 mi².

PERIOD OF RECORD.--June 1923 to current year. Monthly discharge only for June 1923, published in WSP 1302. Prior to October 1943, published as "at Milltown".

REVISED RECORDS.--WSP 1552: 1924-26, 1928-35. WDR NJ-79-1: 1971-78(P).

GAGE.--Water-stage recorder. Concrete control since Sept. 1, 1936. Datum of gage is 50.43 ft above sea level. Prior to Oct. 17, 1936, nonrecording gage at site 30 ft downstream at same datum.

REMARKS.--Records good. Releases from Round Valley Reservoir enter basin upstream from gage. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	0715	*5,110	*8.06	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	223	106	275	242	418	552	282	308	192	96	46
2	62	547	98	305	224	387	1750	1050	216	141	67	54
3	59	223	88	243	219	407	550	634	198	125	61	99
4	58	138	93	227	210	347	457	440	183	120	58	65
5	60	121	94	209	508	315	403	430	174	122	55	54
6	59	112	88	183	419	292	360	842	166	113	51	47
7	56	103	84	319	284	277	329	777	158	107	48	71
8	55	96	83	900	251	309	307	718	157	113	45	320
9	55	110	81	481	232	1530	397	1360	153	123	44	98
10	54	116	88	327	215	717	2690	1560	150	109	53	67
11	52	97	156	268	205	459	774	1960	149	98	199	58
12	56	88	146	233	680	392	603	2060	396	89	81	52
13	52	84	158	215	360	352	517	1010	604	85	79	48
14	54	153	121	196	277	352	452	814	1180	80	72	45
15	64	237	102	186	243	338	450	678	577	78	63	43
16	74	140	98	852	231	300	408	574	413	78	58	43
17	64	112	96	374	254	283	409	515	447	83	80	46
18	62	102	94	301	1180	319	413	448	345	105	122	58
19	61	97	90	289	802	1500	368	395	265	79	97	44
20	59	94	89	261	511	730	679	359	226	73	69	41
21	60	90	87	221	436	1100	401	333	202	72	60	40
22	57	301	79	199	360	978	347	298	182	72	56	81
23	55	205	248	1110	369	610	328	280	181	69	130	57
24	57	137	193	2220	1670	526	317	267	186	72	72	42
25	114	115	863	743	962	498	291	359	169	64	59	39
26	114	111	387	492	589	462	344	303	154	61	130	45
27	213	108	241	411	504	438	662	250	151	58	99	44
28	122	97	235	375	440	411	332	233	140	57	69	47
29	84	100	374	332	---	387	295	221	134	59	58	38
30	75	96	2030	300	---	364	282	264	197	87	53	35
31	70	---	463	272	---	289	---	212	---	123	49	---
TOTAL	2204	4353	7253	13319	12877	16087	16467	19926	8161	2907	2333	1867
MEAN	71.1	145	234	430	460	519	549	643	272	93.8	75.3	62.2
MAX	213	547	2030	2220	1670	1530	2690	2060	1180	192	199	320
MIN	52	84	79	183	205	277	282	212	134	57	44	35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

	178	284	356	396	433	523	477	345	225	184	185	167
MEAN	178	284	356	396	433	523	477	345	225	184	185	167
MAX	882	824	1077	1416	948	1272	1368	1027	1270	1291	1068	672
(WY)	1997	1973	1997	1979	1925	1936	1983	1989	1972	1984	1942	1975
MIN	26.6	46.1	73.1	79.4	109	163	117	84.1	46.4	25.5	22.3	14.8
(WY)	1931	1965	1966	1940	1934	1981	1985	1926	1965	1966	1932	1964

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

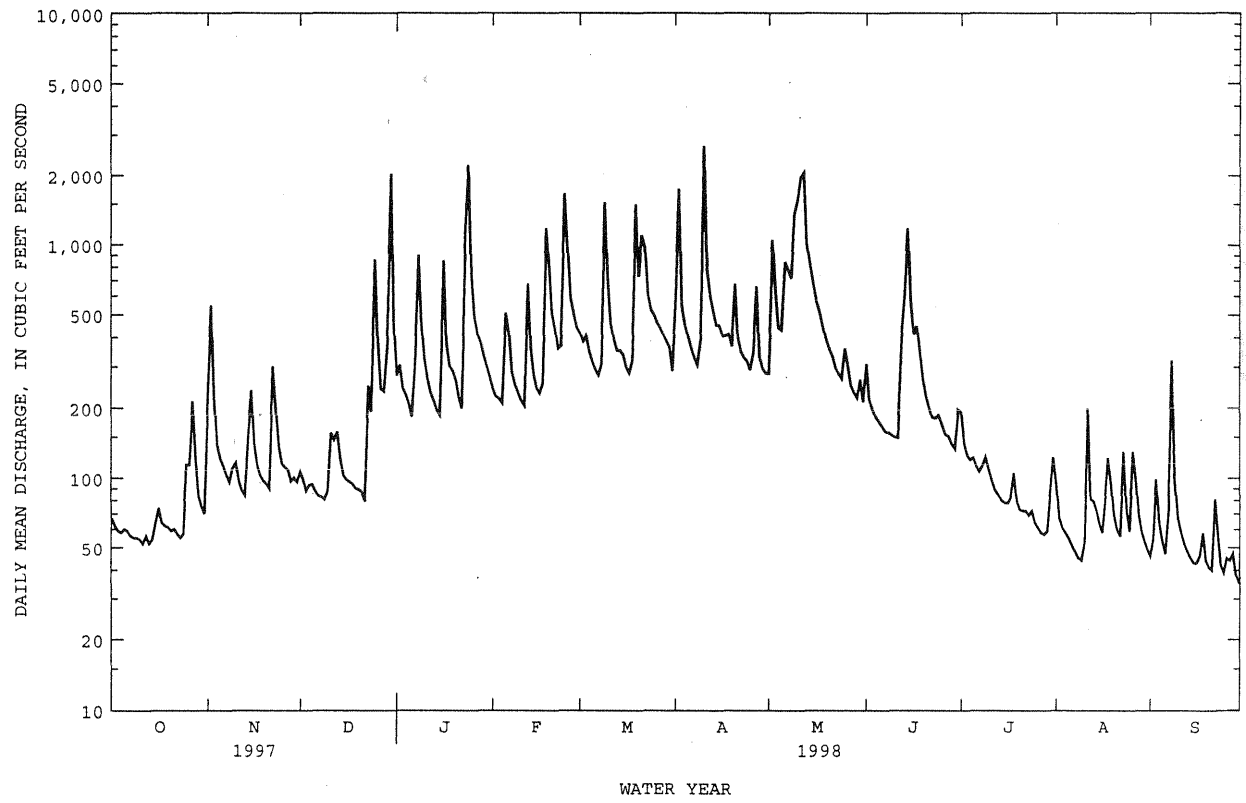
FOR 1998 WATER YEAR

WATER YEARS 1924 - 1998

ANNUAL TOTAL	96677	107754	
ANNUAL MEAN	265	295	312
HIGHEST ANNUAL MEAN			605
LOWEST ANNUAL MEAN			120
HIGHEST DAILY MEAN	3360	Jan 25	15300
LOWEST DAILY MEAN	52	Jul 17	7.5
ANNUAL SEVEN-DAY MINIMUM	54	Oct 8	8.9
INSTANTANEOUS PEAK FLOW			29100
INSTANTANEOUS PEAK STAGE		8.06	15.57
INSTANTANEOUS LOW FLOW		33	3.0a
10 PERCENT EXCEEDS	476	620	627
50 PERCENT EXCEEDS	181	186	185
90 PERCENT EXCEEDS	63	56	56

a About, result of freezeup.

01400000 NORTH BRANCH RARITAN RIVER NEAR RARITAN, NJ--Continued



01400500 RARITAN RIVER AT MANVILLE, NJ

LOCATION.--Lat 40°33'18", long 74°35'02", Somerset County, Hydrologic Unit 02030105, on left bank at downstream side of bridge on North Main Street (Finderne Avenue) at Manville, and 1.4 mi upstream from Millstone River.

DRAINAGE AREA.--490 mi².

PERIOD OF RECORD.--June 1903 to March 1907 (published as "at Finderne"), August 1908 to April 1915 (gage heights only, published in WSP 521), August 1921 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WSP 1552: 1904, 1906, 1922, 1923(M), 1924-25, 1926-29(M), 1930, 1932-33(M), 1924-54. WDR NJ-75-1: 1964(M), 1969(M), 1970(P), 1971(P), 1972(P), 1973(P).

GAGE.--Water-stage recorder. Datum of gage is 20.61 ft above sea level. Prior to Aug. 15, 1923, nonrecording gage on downstream side of highway bridge at same site and datum. From Oct. 1, 1952 to Sept. 30, 1966, water-stage recorder at station at Bound Brook, above Calco Dam (station 01403000) used as auxiliary gage when stage is above 5.0 ft. In Oct. 1, 1966, water-stage recorder at station at Bound Brook, used as auxiliary gage, was moved downstream to present site (station 01403060). Between June 9, 1978 and June 7, 1979, gage temporarily relocated at site 1.4 mi downstream, just upstream from Millstone River, because of reconstruction of highway bridge.

REMARKS.--Records good. Records given herein represent flow at gage only. Slight diurnal fluctuation at low flow. Flow regulated by Spruce Run and Round Valley Reservoirs (see Raritan River basin, reservoirs in). Diversion to Round Valley Reservoir since March 1966 (see Raritan River basin, diversions). Prior to Sept. 1, 1986, water diverted 1,500 ft upstream from station by Johns-Manville Corporation and returned to river, 600 ft downstream from Millstone River. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 24	0600	10,000	*12.28	Apr 10	1145	*10,900	12.26

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234	276	233	816	548	948	1240	775	791	421	325	294
2	222	1040	229	687	506	859	5590	2810	543	355	291	303
3	228	513	210	583	484	1060	2030	2430	441	273	282	377
4	238	338	214	543	466	878	1150	1410	412	252	297	268
5	239	266	217	494	1360	742	947	1280	375	258	296	230
6	242	237	205	448	1580	657	830	1990	353	256	299	244
7	237	215	197	675	817	605	728	3580	337	218	323	319
8	237	201	192	2380	668	618	666	2730	324	244	328	657
9	242	216	182	1410	584	4300	778	5420	320	275	322	284
10	254	241	190	875	531	2910	7910	6210	301	237	339	196
11	252	213	312	668	500	1380	3490	6360	296	222	527	222
12	248	189	309	575	1430	978	1930	6520	607	217	311	233
13	255	175	338	523	951	819	1330	3850	1170	228	300	224
14	265	276	292	485	653	778	1120	2890	2930	249	324	241
15	273	478	254	449	554	747	1050	2240	1710	271	303	256
16	261	354	234	2150	502	649	994	1760	995	266	284	260
17	216	286	228	1090	519	592	1010	1570	1040	267	349	270
18	203	251	218	771	3180	631	1040	1330	838	304	393	267
19	207	230	210	703	2550	4020	860	1140	592	273	297	231
20	209	220	205	625	1470	3100	1790	1020	488	259	244	227
21	208	212	201	548	1090	3260	1130	926	433	255	235	234
22	210	579	182	496	855	3540	867	742	389	274	252	345
23	206	519	473	1980	795	1980	780	592	382	286	477	213
24	212	366	455	7160	5110	1310	760	500	392	303	260	176
25	314	296	2090	3120	3870	1100	683	609	372	290	226	193
26	316	268	1220	1560	2080	956	696	715	342	283	365	208
27	459	252	646	1030	1270	883	2100	576	324	335	342	205
28	297	228	597	896	1030	817	982	517	319	317	250	197
29	193	233	707	823	---	757	785	493	278	321	186	193
30	178	222	5860	695	---	699	730	581	393	350	194	213
31	184	---	2070	618	---	605	---	488	---	397	258	---
TOTAL	7539	9390	19170	35876	35953	43178	45996	64054	18487	8756	9479	7780
MEAN	243	313	618	1157	1284	1393	1533	2066	616	282	306	259
MAX	459	1040	5860	7160	5110	4300	7910	6520	2930	421	527	657
MIN	178	175	182	448	466	592	666	488	278	217	186	176

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1998, BY WATER YEAR (WY)

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
MEAN	464	681	897	997	1073	1366	1168	812	527	474	461	456
MAX	2434	2460	2877	3856	2406	3260	3507	2707	2581	2542	2552	2069
(WY)	1904	1933	1997	1979	1925	1936	1983	1989	1972	1975	1955	1971
MIN	64.8	87.5	148	188	265	354	259	212	88.8	65.1	50.5	51.2
(WY)	1942	1932	1966	1966	1934	1981	1985	1926	1965	1955	1932	1941

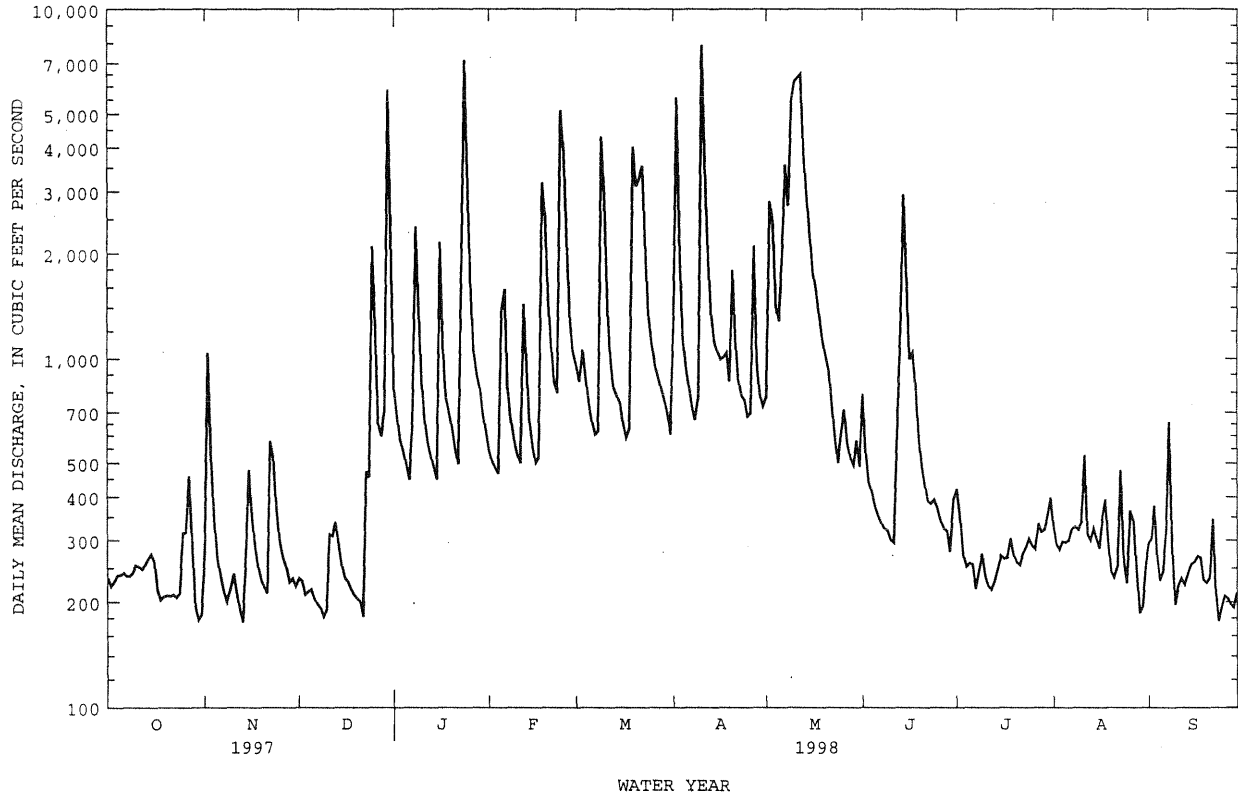
01400500 RARITAN RIVER AT MANVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1904 - 1998	
ANNUAL TOTAL	240284		305658		780	
ANNUAL MEAN	658		837		1365	
HIGHEST ANNUAL MEAN					309	
LOWEST ANNUAL MEAN					21600	
HIGHEST DAILY MEAN	5860	Dec 30	7910	Apr 10	17a	Sep 22 1938
LOWEST DAILY MEAN	175	Nov 13	175	Nov 13	29	Sep 19 1964
ANNUAL SEVEN-DAY MINIMUM	200	Dec 4	198	Sep 23	36300b	Aug 27 1944
INSTANTANEOUS PEAK FLOW			10900	Apr 10	23.80c	Aug 28 1971
INSTANTANEOUS PEAK STAGE			12.33	Jan 24		
INSTANTANEOUS LOW FLOW			148	Dec 22		
10 PERCENT EXCEEDS	1240		1980		1600	
50 PERCENT EXCEEDS	407		421		441	
90 PERCENT EXCEEDS	211		214		140	

a Does not include water diverted to Johns-Manville plant.

b From rating curve extended above 14,000 ft³/s on basis of slope-area measurements at gage heights 14.9 and 20.42 ft.

c From flood mark (backwater from Millstone River).



RARITAN RIVER BASIN

01401000 STONY BROOK AT PRINCETON, NJ

LOCATION.--Lat 40°19'59", long 74°40'56", Mercer County, Hydrologic Unit 02030105, on right bank 10 ft downstream from bridge on U.S. Highway 206, 1.6 mi southwest of Princeton, and 4.0 mi upstream from Carnegie Lake.

DRAINAGE AREA.--44.5 mi².

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 62.23 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records fair. Since July 1959 some regulation by several small reservoirs, combined capacity, 49,800,000 gal. Several measurements of water temperature, other than those published, were made during the year. Satellite gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0345	2,780	6.81	Apr 2	0215	*4,210	*8.69
Jan 23	2315	3,760	8.12	Apr 10	0530	3,390	7.64
Feb 24	0430	2,160	5.94	May 8	2045	1,810	5.44
Mar 19	1300	2,570	6.53	May 9	1915	1,920	5.60

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	13	9.6	58	44	84	490	53	96	15	1.9	.87
2	3.1	58	9.4	47	37	71	1440	330	27	10	1.7	1.7
3	3.0	19	8.7	37	35	137	196	261	15	8.1	1.5	3.2
4	2.7	11	9.5	35	32	106	128	110	12	9.0	1.3	1.8
5	2.6	8.0	10	29	226	67	95	93	11	10	1.0	1.4
6	2.5	6.7	9.7	26	191	52	73	107	9.8	7.8	.82	1.1
7	2.5	6.1	8.9	83	87	43	59	143	9.2	6.6	.72	2.4
8	2.6	6.2	8.2	294	62	61	51	527	8.7	8.9	.66	7.4
9	2.7	8.2	7.7	131	49	645	194	1070	8.5	10	.68	4.3
10	3.3	8.6	8.5	71	41	212	1510	940	8.2	8.4	.69	2.7
11	2.8	7.8	14	48	36	110	255	734	8.2	6.4	1.8	2.3
12	2.3	7.0	17	36	219	78	134	683	30	5.0	2.8	2.0
13	2.4	6.4	18	32	101	61	100	209	114	4.3	1.8	1.8
14	2.3	11	15	28	61	61	79	140	81	3.8	1.4	1.5
15	3.0	21	12	30	44	58	69	107	35	3.5	1.3	1.3
16	3.7	15	11	307	35	44	59	83	24	4.0	1.1	1.4
17	3.0	11	10	118	46	37	66	133	24	3.4	4.6	1.7
18	3.4	9.5	9.7	79	434	47	79	82	17	3.1	6.3	1.9
19	3.4	7.7	9.5	70	239	1060	60	55	14	3.3	3.1	1.6
20	3.2	7.2	8.9	55	140	292	207	46	20	3.0	2.1	1.5
21	3.1	7.0	8.5	43	105	535	89	47	14	2.7	1.7	1.4
22	3.1	119	7.4	34	75	398	58	32	10	2.7	1.5	14
23	2.9	49	53	915	95	175	51	24	10	2.3	2.2	11
24	2.8	20	40	1010	1090	122	58	21	11	2.2	1.6	4.9
25	8.8	14	256	234	421	92	40	28	10	2.1	1.3	3.0
26	9.5	12	99	130	170	77	70	27	9.3	1.8	1.3	2.1
27	24	10	45	93	127	68	339	19	8.6	1.6	1.3	1.4
28	12	9.3	50	98	94	60	91	16	8.0	1.5	1.2	1.0
29	7.4	9.2	135	112	---	51	59	14	7.4	1.5	1.2	.94
30	5.7	9.1	991	73	---	42	48	15	10	1.7	1.3	1.0
31	5.1	---	151	56	---	37	---	14	---	2.0	1.1	---
TOTAL	142.4	507.0	2051.2	4412	4336	4983	6247	6163	670.9	155.7	52.97	84.61
MEAN	4.59	16.9	66.2	142	155	161	208	199	22.4	5.02	1.71	2.82
MAX	24	119	991	1010	1090	1060	1510	1070	114	15	6.3	14
MIN	2.3	6.1	7.4	26	32	37	40	14	7.4	1.5	.66	.87
CFSM	.10	.38	1.49	3.20	3.48	3.61	4.68	4.47	.50	.11	.04	.06
IN.	.12	.42	1.71	3.69	3.62	4.17	5.22	5.15	.56	.13	.04	.07

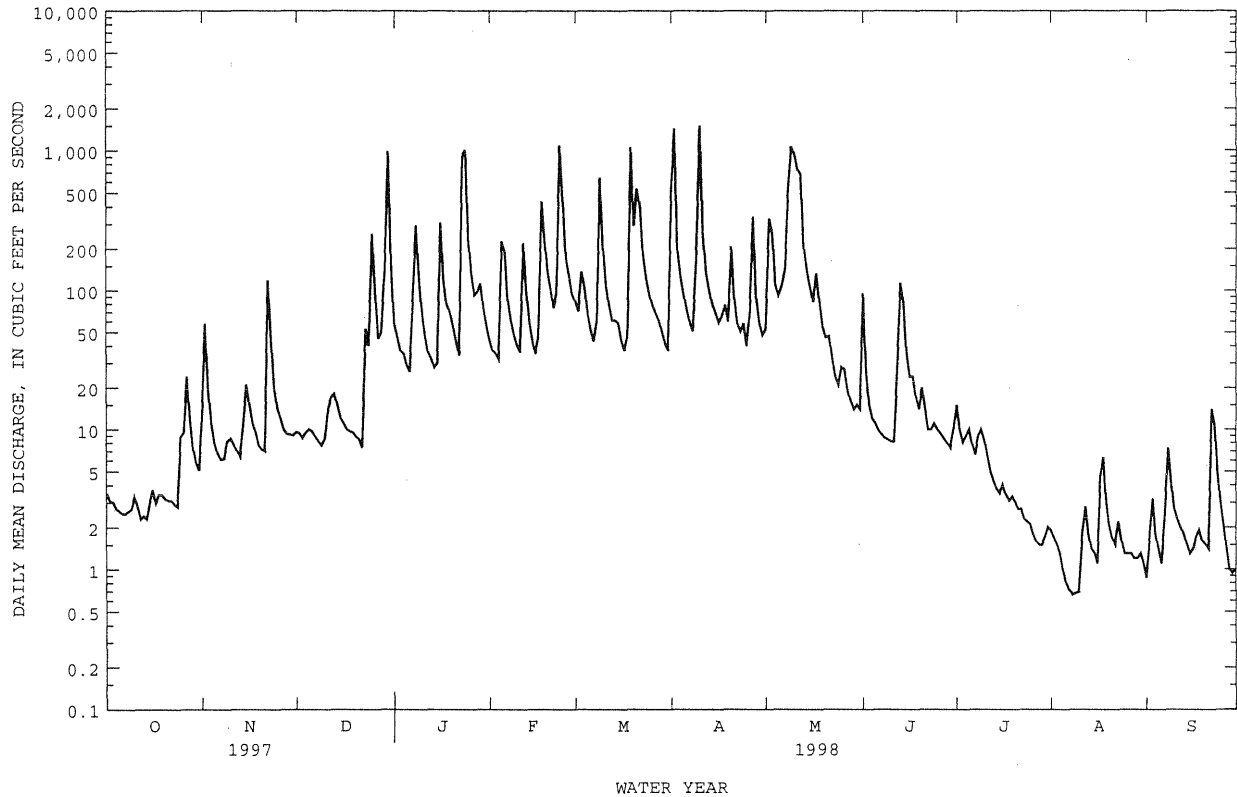
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

	MEAN	29.1	53.4	92.1	98.5	106	133	107	64.3	33.3	33.1	30.2	26.8
MAX	181	212	363	319	203	337	295	216	165	216	240	158	
(WY)	1997	1973	1997	1996	1971	1994	1983	1989	1989	1975	1955	1975	
MIN	1.00	1.50	4.56	3.22	19.7	31.3	20.9	8.95	2.67	.56	.14	1.31	
(WY)	1958	1966	1966	1981	1978	1985	1985	1963	1957	1957	1966	1970	

01401000 STONY BROOK AT PRINCETON, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1954 - 1998	
ANNUAL TOTAL	22301.6		29805.78		67.0	
ANNUAL MEAN	61.1		81.7		118	
HIGHEST ANNUAL MEAN					28.5	
LOWEST ANNUAL MEAN					3410	
HIGHEST DAILY MEAN	1290	Jul 25	1510	Apr 10	Aug 27 1971	
LOWEST DAILY MEAN	2.3	Oct 12	.66	Aug 8	Aug 5 1966	
ANNUAL SEVEN-DAY MINIMUM	2.6	Oct 8	.84	Aug 4	Aug 5 1966	
INSTANTANEOUS PEAK FLOW			4210	Apr 2	8960a	
INSTANTANEOUS PEAK STAGE			8.69	Apr 2	14.26	
INSTANTANEOUS LOW FLOW			.62	many days	.00 many days 1966	
ANNUAL RUNOFF (CFSM)	1.37		1.84		1.51	
ANNUAL RUNOFF (INCHES)	18.64		24.92		20.46	
10 PERCENT EXCEEDS	133		181		143	
50 PERCENT EXCEEDS	17		14		22	
90 PERCENT EXCEEDS	3.5		1.7		2.1	

a From rating extended above 4,000 ft³/s on basis of contracted-opening measurement of peak flow.



01401650 PIKE RUN AT BELLE MEAD, NJ

LOCATION.--Lat 40°28'05", long 74°38'57", Somerset County, Hydrologic Unit 02030105, on right bank 20 ft upstream from bridge on Township Line Road, 0.7 mi east of Belle Mead, 0.8 mi upstream from Cruser Brook, and 1.0 mi downstream from bridge on U.S. Route 206.

DRAINAGE AREA.--5.36 mi².

PERIOD OF RECORD.--July 1980 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete parking-block control. Datum of gage is 58.85 ft above sea level.

REMARKS.--Records fair. Several measurements of water temperature were made during the year. Some regulation during summer months, possibly from irrigation. Rain-gage and gage-height radio telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1810, 13.5 ft, Aug. 28, 1971, from floodmark, present datum.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0100	448	5.99	Apr 1	2245	485	6.14
Jan 23	2045	*659	*6.81	Apr 10	0215	581	6.52
Mar 19	1045	338	5.50				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	7.9	2.1	8.2	4.7	7.6	96	5.1	13	2.0	.10	.00
2	.25	11	1.8	4.9	4.3	6.5	102	31	3.2	.92	.00	.00
3	.13	5.1	1.5	4.7	4.2	12	14	18	2.3	.65	.00	.00
4	.06	1.7	2.0	4.7	4.0	8.1	9.2	8.2	1.8	.57	.00	.00
5	.03	.90	2.1	4.1	54	6.1	7.3	8.2	1.6	.82	.00	.00
6	.00	.63	1.7	3.9	21	5.1	6.2	13	1.5	.65	.00	.00
7	.00	.51	1.4	36	9.5	4.7	5.4	8.9	1.3	.48	.00	.00
8	.00	.45	1.2	46	7.4	8.2	4.8	53	1.3	1.2	.00	1.4
9	.00	1.1	1.2	15	6.2	79	33	101	1.7	1.3	.00	.47
10	.00	1.5	1.5	8.9	5.5	18	165	110	1.3	.74	.00	.03
11	.00	.86	4.2	6.6	5.2	8.9	15	96	1.3	.45	.14	.00
12	.00	.66	4.8	5.3	31	6.9	9.5	68	7.0	.32	.02	.00
13	.00	.54	5.6	4.8	9.4	6.0	7.4	18	7.1	.20	.00	.00
14	.00	7.4	3.5	4.3	6.7	6.3	6.4	12	24	.12	.00	.00
15	.51	9.0	2.6	5.8	5.2	5.6	6.0	9.1	6.9	.05	.00	.00
16	1.7	3.4	2.2	52	4.5	4.7	5.3	7.3	4.5	.05	.00	.00
17	.58	1.9	2.0	12	7.5	4.3	6.4	7.3	3.2	.05	3.8	.00
18	.49	1.2	1.7	9.7	56	6.3	6.0	6.1	2.3	.03	5.9	.00
19	.52	.97	1.5	8.6	30	119	5.8	5.1	1.9	.00	1.8	.00
20	.52	.89	1.5	6.6	13	24	24	4.8	1.5	.00	.59	.00
21	.41	.83	1.4	5.0	9.3	65	7.7	4.5	1.2	.00	.04	.01
22	.37	24	1.3	4.4	7.1	37	5.7	3.9	1.1	.00	.00	18
23	.33	7.2	18	184	16	14	5.4	3.5	1.3	.00	4.4	2.8
24	.40	4.4	7.4	83	116	9.7	6.0	3.2	1.3	.00	2.2	.73
25	6.7	3.1	53	23	32	7.7	4.5	3.5	1.0	.00	.39	.20
26	2.2	2.6	13	11	12	6.9	14	3.4	.86	.00	1.4	.20
27	14	2.2	8.5	8.4	8.7	6.4	28	2.7	.81	.00	.70	.01
28	2.6	1.9	11	8.8	7.4	5.8	7.6	2.3	.63	.00	.02	.00
29	.96	2.1	51	8.1	---	5.3	5.8	2.4	.57	.00	.00	.00
30	.61	1.9	104	6.6	---	4.7	4.9	3.7	4.9	.00	.00	.00
31	.44	---	14	5.5	---	4.5	---	2.1	---	.08	.00	---
TOTAL	34.16	107.84	328.7	599.9	497.8	514.3	624.3	625.3	102.37	10.68	21.50	23.85
MEAN	1.10	3.59	10.6	19.4	17.8	16.6	20.8	20.2	3.41	.34	.69	.80
MAX	14	24	104	184	116	119	165	110	24	2.0	5.9	18
MIN	.00	.45	1.2	3.9	4.0	4.3	4.5	2.1	.57	.00	.00	.00
CFSM	.21	.67	1.98	3.61	3.32	3.10	3.88	3.76	.64	.06	.13	.15
IN.	.24	.75	2.28	4.16	3.45	3.57	4.33	4.34	.71	.07	.15	.17

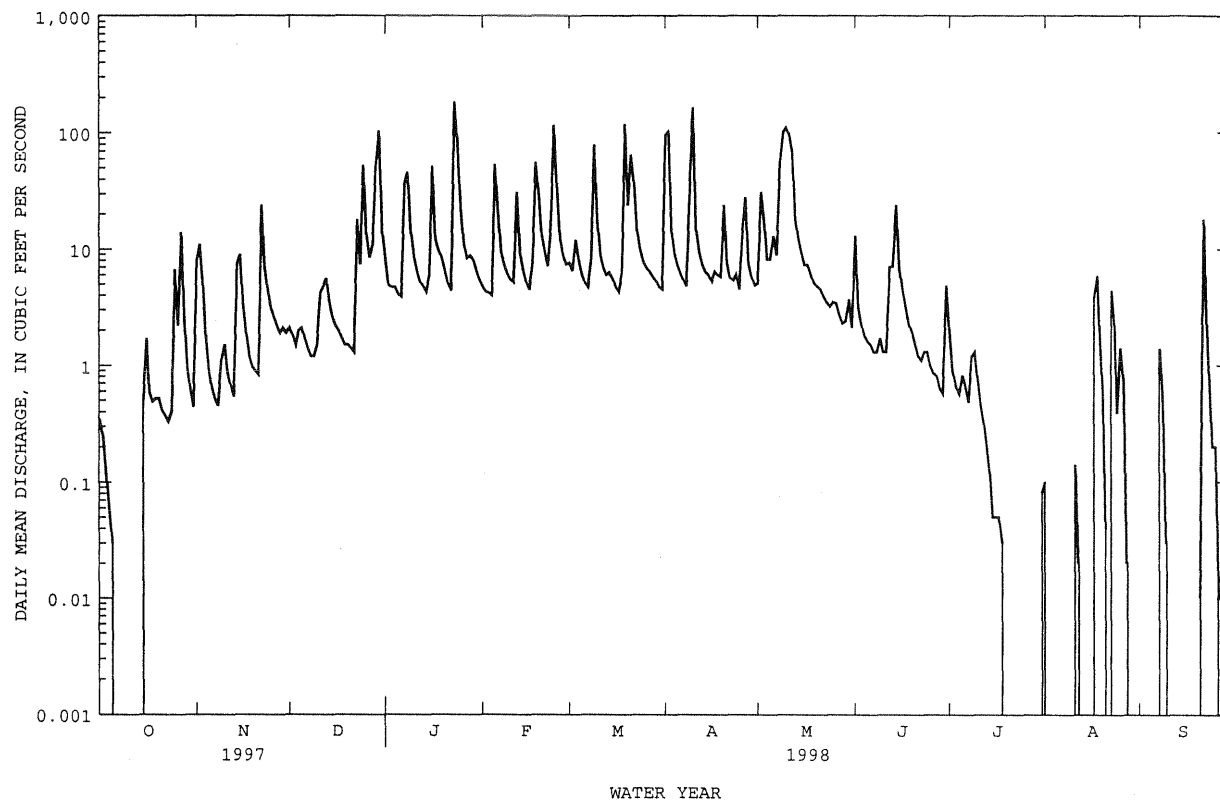
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1998, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	5.88	8.75	12.0	14.2	13.0	14.4	13.6	9.35	4.82	6.66	3.10	2.85
MAX	40.1	22.3	35.5	43.3	27.5	38.8	43.1	26.2	20.9	26.1	9.94	17.1
(WY)	1997	1989	1997	1996	1994	1994	1983	1989	1989	1984	1990	1989
MIN	.55	2.09	.73	.043	4.74	3.05	2.18	1.89	.37	.34	.17	.51
(WY)	1995	1985	1981	1981	1992	1981	1985	1986	1995	1998	1980	1983

01401650 PIKE RUN AT BELLE MEAD, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1980 - 1998	
ANNUAL TOTAL	2702.29		3490.70		9.10	
ANNUAL MEAN	7.40		9.56		14.3	
HIGHEST ANNUAL MEAN					3.79	
LOWEST ANNUAL MEAN					1010	
HIGHEST DAILY MEAN	194	Jul 25	184	Jan 23		Oct 19 1996
LOWEST DAILY MEAN	.00	Jul 15	.00	Oct 6	.00	Aug 20 1980
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 6	.00	Oct 6	.00	Aug 20 1980
INSTANTANEOUS PEAK FLOW			659	Jan 23	4690	Oct 19 1996
INSTANTANEOUS PEAK STAGE			6.81	Jan 23	12.17a	Oct 19 1996
INSTANTANEOUS LOW FLOW			.00	Many days	.00	Aug 20 1980
ANNUAL RUNOFF (CFSM)	1.38		1.78		1.70	
ANNUAL RUNOFF (INCHES)	18.75		24.23		23.06	
10 PERCENT EXCEEDS	14		18		16	
50 PERCENT EXCEEDS	2.8		3.2		2.8	
90 PERCENT EXCEEDS	.24		.00		.30	

a From high-water mark in gage.



01402000 MILLSTONE RIVER AT BLACKWELLS MILLS, NJ

LOCATION.--Lat 40°28'30", long 74°34'34", Somerset County, Hydrologic Unit 02030105, on left bank 30 ft downstream from highway bridge at Blackwells Mills, and 0.3 mi downstream from Six Mile Run.

DRAINAGE AREA.--258 mi².

PERIOD OF RECORD.--June 1903 to December 1904 (gage heights only), August 1921 to current year. Monthly discharge only for some periods, published in WSP 1302. Published as "at Millstone" 1903-04.

REVISED RECORDS.--WSP 1552: 1924-25(M), 1926.

GAGE.--Water-stage recorder. Concrete control since Nov. 18, 1933. Datum of gage is 26.97 ft above sea level. June 27, 1903 to Dec. 31, 1904, nonrecording gage at bridge 2.0 mi downstream at Millstone at different datum. Aug. 4, 1921 to Aug. 16, 1928, nonrecording gage at present site and datum.

REMARKS.--Records good. Inflow from and losses to Delaware and Raritan Canal above station. Flow slightly regulated by Carnegie Lake, capacity, 310,000,000 gal and several smaller reservoirs, combined capacity, 49,800,000 gal. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	2000	3,110	7.54	Apr 2	1315	4,680	9.34
Jan 24	1245	*5,180	*9.83	Apr 10	1730	4,870	9.53
Feb 25	0500	3,460	7.97	May 11	0830	5,030	9.69
Mar 20	0500	3,370	7.87				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	131	115	983	309	478	619	310	496	167	79	56
2	66	356	107	455	279	421	4160	975	387	150	74	56
3	62	338	101	340	270	453	2150	971	261	129	71	124
4	58	219	109	298	288	511	611	594	189	111	61	99
5	57	170	114	267	656	407	466	460	154	179	57	77
6	56	133	109	244	950	342	389	518	138	160	55	65
7	50	106	103	406	527	308	343	522	127	131	51	64
8	43	98	97	1200	403	309	309	791	121	123	49	140
9	43	109	94	921	335	1620	373	2330	118	154	48	115
10	43	119	94	567	293	2180	3810	4360	117	143	48	91
11	41	109	134	373	271	1250	3230	4950	116	118	65	76
12	40	102	148	280	803	605	1350	4420	197	102	66	66
13	41	92	162	248	640	421	636	2860	532	94	59	61
14	43	139	152	238	471	383	486	1350	1160	88	54	58
15	50	241	135	232	347	363	422	676	1170	85	51	57
16	63	211	122	1030	288	322	378	513	961	81	49	56
17	56	164	113	766	297	291	386	488	516	82	82	57
18	53	136	107	521	1510	304	410	458	301	95	169	68
19	52	119	102	431	1400	1740	369	365	222	75	128	71
20	51	106	99	350	971	3060	697	297	191	72	109	70
21	50	97	95	297	596	2210	541	314	253	71	81	66
22	47	414	92	263	453	2610	411	293	243	67	62	243
23	44	456	257	849	422	1690	343	253	184	64	104	175
24	44	296	313	4610	2360	845	393	219	178	62	81	111
25	110	229	850	3330	3250	592	360	225	170	58	68	86
26	140	180	789	1630	1980	483	338	265	157	56	64	78
27	297	149	436	640	788	429	1140	228	143	56	107	72
28	234	128	379	511	536	393	652	190	127	55	325	67
29	146	123	407	503	---	344	446	176	120	54	179	62
30	106	114	2740	416	---	320	344	183	153	57	95	60
31	83	---	2440	352	---	296	---	174	---	66	67	---
TOTAL	2340	5384	11115	23551	21693	25980	26562	30728	9202	3005	2658	2547
MEAN	75.5	179	359	760	775	838	885	991	307	96.9	85.7	84.9
MAX	297	456	2740	4610	3250	3060	4160	4950	1170	179	325	243
MIN	40	92	92	232	270	291	309	174	116	54	48	56
CFSM	.29	.70	1.39	2.94	3.00	3.25	3.43	3.84	1.19	.38	.33	.33
IN.	.34	.78	1.60	3.40	3.13	3.75	3.83	4.43	1.33	.43	.38	.37

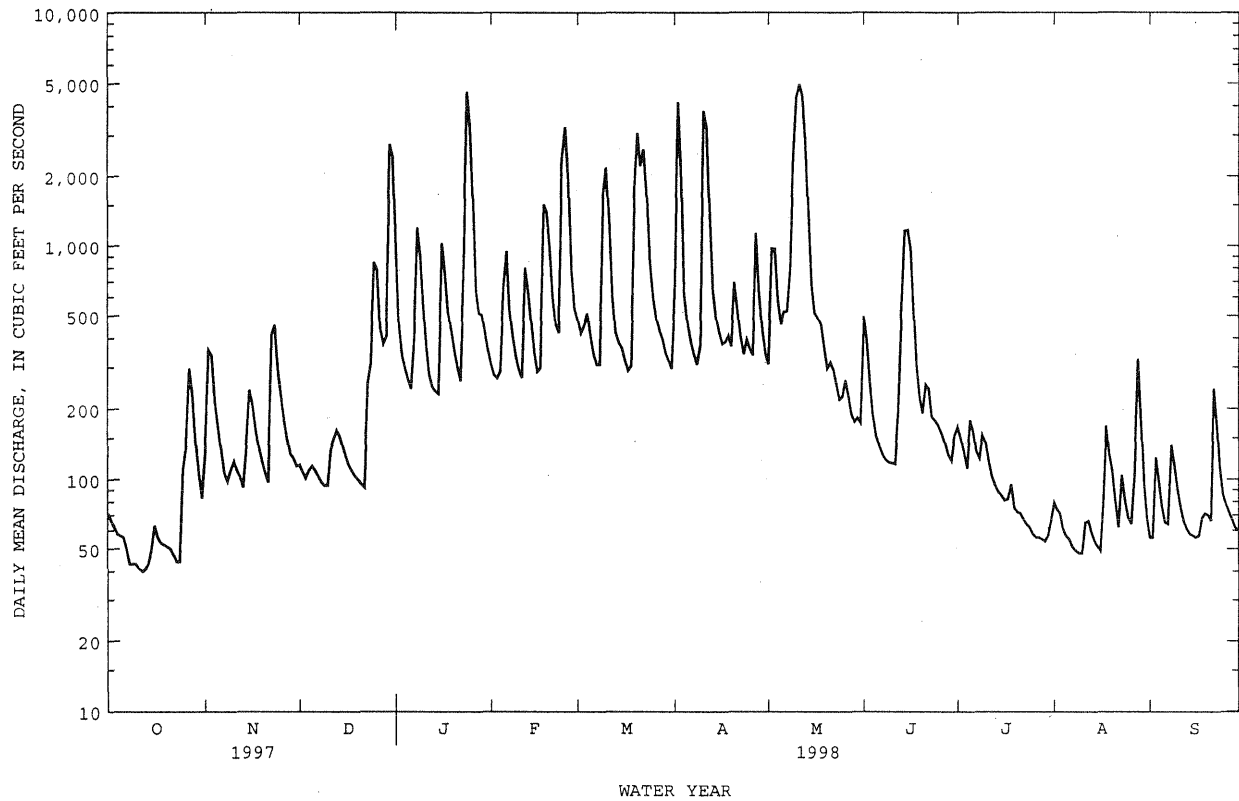
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

	200	335	470	518	571	693	545	364	239	248	217	216
MEAN	200	335	470	518	571	693	545	364	239	248	217	216
MAX	1079	1113	1550	1743	1199	1882	1520	1264	823	1808	1267	1277
(WY)	1997	1973	1997	1979	1925	1994	1983	1989	1989	1975	1971	1938
MIN	42.6	51.2	67.0	62.9	105	158	103	82.8	45.5	19.3	17.3	20.2
(WY)	1942	1966	1966	1981	1934	1985	1985	1963	1963	1966	1981	1980

01402000 MILLSTONE RIVER AT BLACKWELLS MILLS, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	132528		164765			
ANNUAL MEAN	363		451		384	
HIGHEST ANNUAL MEAN					690	1975
LOWEST ANNUAL MEAN					165	1985
HIGHEST DAILY MEAN	5430	Jul 25	4950	May 11	17400	Aug 28 1971
LOWEST DAILY MEAN	40	Oct 12	40	Oct 12	5.0	Sep 16 1923
ANNUAL SEVEN-DAY MINIMUM	42	Oct 8	42	Oct 8	6.3	Aug 7 1966
INSTANTANEOUS PEAK FLOW			5180	Jan 24	22200	Aug 28 1971
INSTANTANEOUS PEAK STAGE			9.83	Jan 24	18.68a	Aug 28 1971
INSTANTANEOUS LOW FLOW			38	many days	5.0	Sep 16 1923
ANNUAL RUNOFF (CFSM)	1.41		1.75		1.49	
ANNUAL RUNOFF (INCHES)	19.11		23.76		20.21	
10 PERCENT EXCEEDS	805		973		827	
50 PERCENT EXCEEDS	206		191		200	
90 PERCENT EXCEEDS	63		57		59	

a From high-water mark.



01403060 RARITAN RIVER BELOW CALCO DAM, AT BOUND BROOK, NJ

LOCATION.--Lat 40°33'05", long 74°32'54", Somerset County, Hydrologic Unit 02030105, on right bank 1,000 ft downstream from Calco Dam and Cuckold Brook, 1,400 ft upstream from bridge on Interstate 287, 1.2 mi downstream from Millstone River, and 1.2 mi southwest of Bound Brook.

DRAINAGE AREA.--785 mi² (includes 11 mi² which drains into the Delaware and Raritan Canal).

PERIOD OF RECORD.--September 1903 to March 1909, October 1944 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1966 published as "Raritan River at Bound Brook" (station 01403000).

REVISED RECORDS.--WSP 1552: 1903-07, 1946(M), 1949, 1952(P).

GAGE.--Water-stage recorder. Datum of gage is sea level. Sept. 12, 1903 to Mar. 31, 1909, nonrecording gages at highway bridge, 1.2 mi downstream at different datum. October 1944 to Sept. 30, 1966, water-stage recorder and concrete control at site 1,000 ft upstream at datum 18.06 ft higher.

REMARKS.--Records good. Water diverted 1.2 mi above station by Elizabethtown Water Co. for municipal supply (see Raritan River basin, diversions). Flow regulated by Spruce Run and Round Valley Reservoirs (see Raritan River basin, reservoirs in). Diversions to and releases from Round Valley Reservoir (see Raritan River basin, diversions and station 01399690). Slight diurnal fluctuations at low flow. Several measurements of water temperature were made during the year. National Weather Service gage- height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 24	1145	*14,100	*26.39	May 12	1030	13,300	26.02

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172	314	250	2010	846	1570	1410	1070	1220	465	262	183
2	161	1400	242	1190	745	1380	8360	3450	851	367	190	202
3	161	838	217	899	712	1640	4540	3270	569	259	167	361
4	167	461	224	791	725	1540	2020	2160	464	227	167	244
5	165	331	236	699	1970	1220	1560	1860	384	297	158	176
6	163	274	220	624	2760	1020	1290	2360	335	269	147	171
7	152	229	203	1130	1530	889	1090	3830	307	206	156	242
8	146	200	187	3460	1150	885	953	3050	286	223	160	703
9	152	224	177	2540	931	5120	1050	7140	284	287	160	293
10	164	272	187	1600	800	4940	8550	10300	258	224	186	161
11	158	224	359	1060	729	2820	6910	11800	268	185	430	170
12	157	188	375	791	2230	1780	3410	12000	667	161	208	172
13	158	163	423	678	1800	1340	2150	6790	1600	155	164	150
14	181	301	363	637	1200	1230	1750	4060	3990	160	193	154
15	212	642	303	593	909	1160	1570	2870	2920	177	175	173
16	220	479	270	3060	761	956	1450	2310	2080	180	145	165
17	165	357	255	2130	769	854	1460	2070	1620	192	288	189
18	147	289	241	1430	4290	911	1540	1880	1130	265	444	207
19	153	244	223	1220	3830	4770	1270	1560	703	189	291	171
20	152	215	224	990	2640	5940	2510	1330	547	151	211	164
21	157	203	211	811	1930	5220	1830	1220	528	145	164	164
22	158	963	182	703	1440	5890	1330	946	485	152	153	492
23	153	999	667	2050	1280	3740	1140	722	428	162	493	296
24	151	595	734	11300	6710	2380	1160	595	425	175	218	180
25	323	430	2740	6370	7010	1890	1020	696	376	157	142	168
26	369	344	2240	3370	4070	1570	981	900	330	151	273	181
27	718	314	1180	1920	2330	1390	3020	686	311	192	298	168
28	458	267	1030	1570	1760	1260	1810	572	296	181	389	149
29	247	269	1070	1470	---	1130	1270	524	251	173	227	137
30	189	246	8230	1200	---	991	1070	645	436	232	133	148
31	175	---	4400	1010	---	859	---	512	---	305	155	---
TOTAL	6404	12275	27863	59306	57857	68285	69474	93178	24349	6664	6947	6534
MEAN	207	409	899	1913	2066	2203	2316	3006	812	215	224	218
MAX	718	1400	8230	11300	7010	5940	8550	12000	3990	465	493	703
MIN	146	163	177	593	712	854	953	512	251	145	133	137

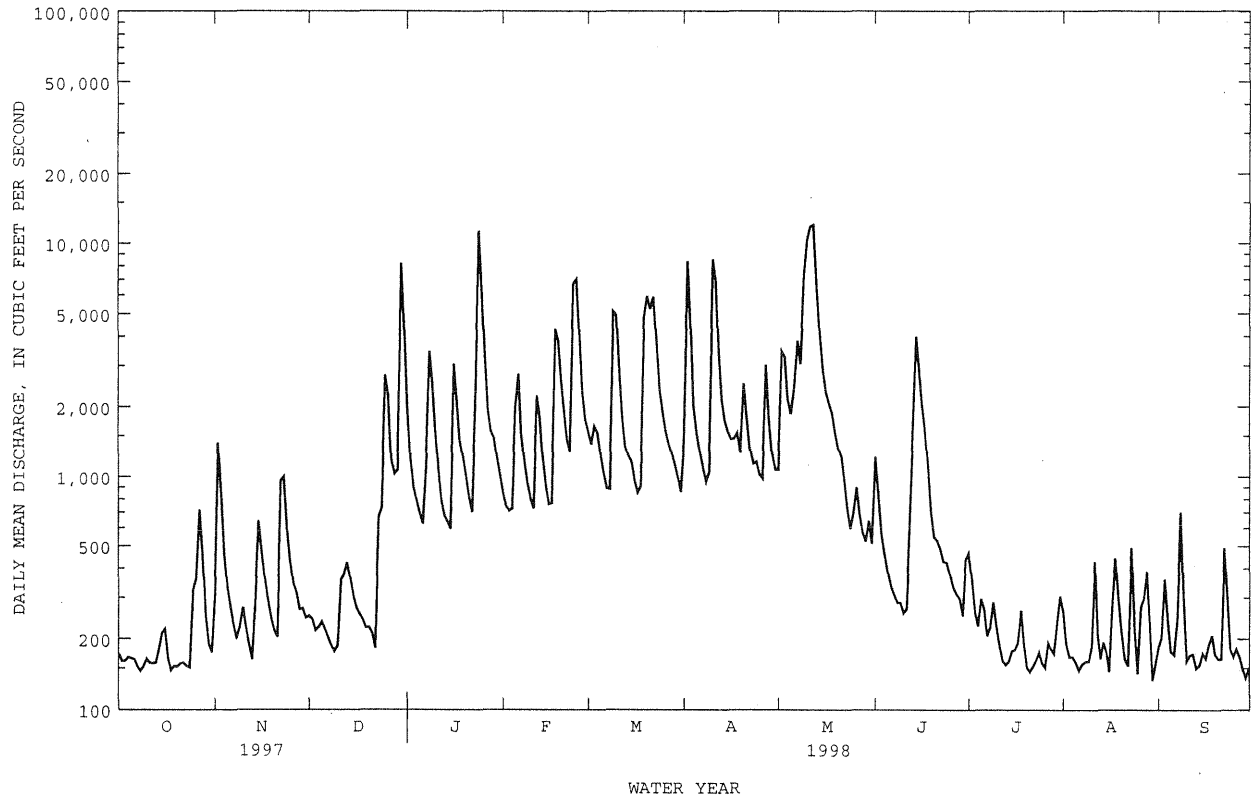
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 1998, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1903	683	2953	1904	113	1958
1904	1049	3684	1905	138	1966
1905	1494	4615	1906	178	1966
1906	1620	5825	1907	179	1981
1907	1700	3232	1908	485	1980
1908	2156	5093	1909	454	1985
1909	1786	5326	1910	230	1985
1910	1285	3862	1911	329	1992
1911	770	3883	1912	117	1965
1912	687	4624	1913	84.7	1955
1913	657	3576	1914	69.9	1957
1914	645	3158	1915	76.1	1957

01403060 RARITAN RIVER BELOW CALCO DAM, AT BOUND BROOK, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1903 - 1998	
ANNUAL TOTAL	345597		439136		1208	
ANNUAL MEAN	947		1203		2046	
HIGHEST ANNUAL MEAN					480	
LOWEST ANNUAL MEAN					34100	
HIGHEST DAILY MEAN	11400	Jul 25	12000	May 12	37	Aug 28 1971
LOWEST DAILY MEAN	140	Jul 7	133	Aug 30	46	Sep 6 1964
ANNUAL SEVEN-DAY MINIMUM	153	Oct 18	153	Oct 18	46100	Sep 4 1957
INSTANTANEOUS PEAK FLOW			14100	Jan 24	37.47a	Aug 28 1971
INSTANTANEOUS PEAK STAGE			26.39	Jan 24		
INSTANTANEOUS LOW FLOW			111	Dec 8		
10 PERCENT EXCEEDS	2070		2960		2620	
50 PERCENT EXCEEDS	504		492		638	
90 PERCENT EXCEEDS	165		161		170	

a From floodmark, highest since 1896.



01403150 WEST BRANCH MIDDLE BROOK NEAR MARTINSVILLE, NJ

LOCATION.--Lat 40°36'44", long 74°35'28", Somerset County, Hydrologic Unit 02030105, on left bank 150 ft upstream from bridge on Crim Road, 1.4 mi northwest of Martinsville, and 1.8 mi upstream from confluence with East Branch, Middle Brook.

DRAINAGE AREA.--1.99 mi².

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

REVISED RECORDS.--WDR NJ-91-1: 1990. WDR NJ-96-1: 1980-94 (P).

GAGE.--Water-stage recorder. Datum of gage is 240.48 ft above sea level (levels by Somerset County).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. Rain-gage and gage-height radio telemeter at station.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 29	2145	300	5.16	Apr 1	1845	*337	*5.39
Jan 23	1830	167	4.39	Apr 9	2215	180	4.47

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	10	.95	e1.5	.12	.81	43	6.1	1.8	.59	.18	.09
2	.20	2.2	1.0	e1.6	.10	1.6	20	16	.79	.43	.13	1.8
3	.19	.57	1.0	e1.3	.10	3.4	3.5	6.6	.73	.39	.13	.35
4	.19	.24	1.4	e1.2	.14	.84	2.6	2.9	.64	.35	.13	.11
5	.20	.19	1.2	e1.1	13	.54	2.1	5.7	.62	.35	.12	.09
6	.21	.19	1.0	e1.0	1.4	.38	1.8	4.3	.57	.33	.10	.09
7	.22	.35	.88	e3.7	.44	.32	1.6	2.7	.55	.30	.10	3.0
8	.22	.62	.85	e8.3	.28	3.7	1.6	7.9	.51	.39	.10	5.8
9	.22	1.3	.79	e3.1	.21	29	30	36	.51	.34	.09	.09
10	.22	.96	1.5	e1.7	.17	2.5	25	34	.49	.29	.25	.06
11	.22	.66	2.2	e1.4	.51	.83	3.6	62	.50	.26	.25	.05
12	.24	.64	2.2	e1.2	6.8	.59	2.6	16	6.2	.25	.11	.04
13	.26	.57	1.7	e1.1	.48	.43	2.3	4.6	2.7	.22	.10	.04
14	.26	4.6	1.1	e1.0	.27	.51	2.1	3.5	32	.22	.10	.04
15	.54	3.0	.81	e1.9	.18	.38	2.4	3.0	2.6	.21	.09	.04
16	.56	.86	.73	e1.1	.15	.30	2.2	2.6	2.9	.21	.09	.04
17	.41	.55	.70	e2.0	6.5	.26	3.5	2.3	1.3	5.1	.50	.05
18	.44	.45	.60	e1.8	26	1.3	2.4	2.1	.94	.66	.26	.06
19	.45	.40	.64	e1.6	7.0	39	6.6	1.8	.74	.27	.18	.05
20	.43	.40	.64	e1.3	1.4	5.3	7.8	1.6	.66	.24	.11	.05
21	.40	.40	.64	e1.2	.76	19	2.6	1.4	.55	.20	.10	1.2
22	.42	7.5	.60	e.89	.42	7.2	2.1	1.3	.57	.20	.09	3.0
23	.45	.97	6.9	46	10	3.5	2.0	1.2	.57	.19	.70	.12
24	.45	.61	1.4	18	40	2.5	1.8	1.1	.55	.18	.12	.06
25	1.7	.52	21	2.9	5.0	2.0	1.4	1.7	.48	.16	.09	.07
26	1.0	.46	2.3	.62	1.2	2.0	10	1.1	.45	.15	.47	.07
27	3.6	.66	1.6	.37	.69	1.8	4.3	.92	.45	.13	.18	.06
28	.67	.82	1.7	.43	.73	1.7	2.1	.84	.44	.13	.12	.08
29	.54	.76	39	.29	---	1.5	1.7	2.1	.40	.46	.10	.06
30	.51	.74	20	.21	---	1.5	1.5	1.0	2.6	.25	.10	.05
31	.47	---	2.3	.16	---	1.4	---	.79	---	.54	.10	---
TOTAL	16.11	42.19	119.33	119.87	124.05	136.09	196.2	235.15	64.81	13.99	5.29	16.71
MEAN	.52	1.41	3.85	3.87	4.43	4.39	6.54	7.59	2.16	.45	.17	.56
MAX	3.6	10	39	46	40	39	43	62	32	5.1	.70	5.8
MIN	.19	.19	.60	.16	.10	.26	1.4	.79	.40	.13	.09	.04
CFSM	.26	.71	1.93	1.94	2.23	2.21	3.29	3.81	1.09	.23	.09	.28
IN.	.30	.79	2.23	2.24	2.32	2.54	3.67	4.40	1.21	.26	.10	.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1998, BY WATER YEAR (WY)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MEAN	2.48	3.80	4.74	4.68	4.27	6.47	5.98	4.86	2.25	2.16	1.06	1.56
MAX	9.28	10.5	11.5	11.9	9.02	21.4	11.6	19.4	6.88	6.40	5.85	7.43
(WY)	1990	1989	1984	1996	1988	1994	1983	1989	1989	1984	1990	1989
MIN	.22	.67	.18	.12	.92	1.64	.74	.76	.41	.083	.12	.11
(WY)	1987	1981	1981	1981	1980	1985	1985	1986	1980	1980	1980	1980

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

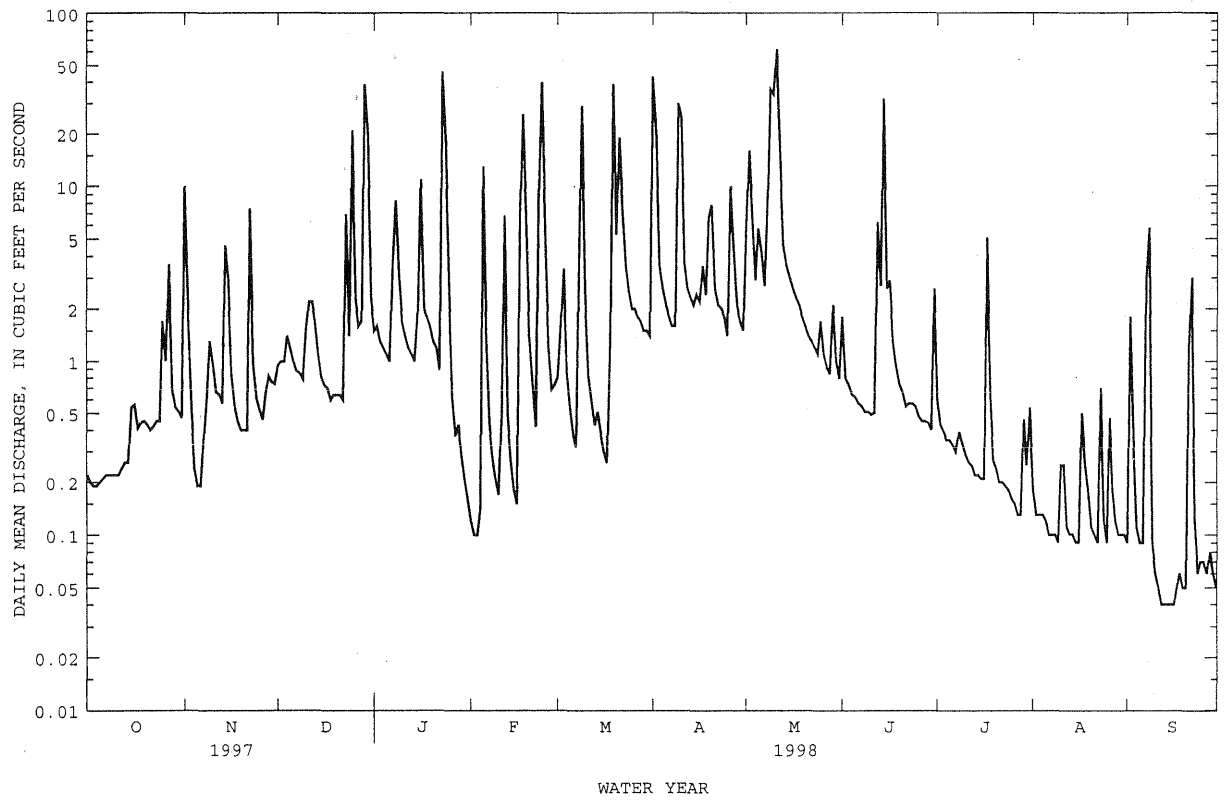
FOR 1998 WATER YEAR

WATER YEARS 1979 - 1998

ANNUAL TOTAL	932.01	1089.79	
ANNUAL MEAN	2.55	2.99	
HIGHEST ANNUAL MEAN			3.70
LOWEST ANNUAL MEAN			5.48
HIGHEST DAILY MEAN	46	Mar 31	181
LOWEST DAILY MEAN	.10	Sep 8	.00
ANNUAL SEVEN-DAY MINIMUM	.12	Sep 4	.00
INSTANTANEOUS PEAK FLOW			337
INSTANTANEOUS PEAK STAGE			5.39
INSTANTANEOUS LOW FLOW			.03
ANNUAL RUNOFF (CFSM)	1.28		1.50
ANNUAL RUNOFF (INCHES)	17.42		20.37
10 PERCENT EXCEEDS	4.0		6.3
50 PERCENT EXCEEDS	.97		.67
90 PERCENT EXCEEDS	.19		.10

e Estimated

01403150 WEST BRANCH MIDDLE BROOK NEAR MARTINSVILLE, NJ--Continued



01403400 GREEN BROOK AT SEELEY MILLS, NJ

LOCATION.--Lat 40°39'58", long 74°24'15" (revised), Somerset County, Hydrologic Unit 02030105, on right bank at Seeley Mills, 250 ft downstream from Blue Brook, 300 ft downstream from bridge on Diamond Hill Road, and 0.5 mi northwest of Scotch Plains.

DRAINAGE AREA.--6.23 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1959-64, 1969: annual maximum, water years 1969-79. June 1979 to current year. Fragmentary records 1944-53 in the files of the Geological Survey. Crest-stage data 1927-38, 1958-68 in files of Union County Park Commission.

REVISED RECORDS.--WDR-NJ 81-1: 1979(M). WDR-NJ 87-1: 1971(M), 1973(M), 1975(M).

GAGE.--Water-stage recorder. Datum of gage is 184.44 ft above sea level. From 1944 to 1953, water-stage recorder and masonry dam about 400 ft downstream above lower Seeley Mills dam at different datum. From July 1969 to May 1979, crest-stage gage about 450 ft downstream below lower Seeley Mills dam (washed out May 29, 1968) at different datum.

REMARKS.--Records are poor. Several measurements of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 23, 1938 reached an elevation of 196.5 ft, New Jersey Geological Survey datum, above lower Seeley Mills dam, discharge, 5,840 ft³/s, computed by State Water Policy Commission.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 29	2345	371	2.55	Apr 1	1915	*463	*2.83
Jan 23	2030	326	2.41	May 11	2245	251	2.16
Feb 18	0200	307	2.35	Jun 14	1000	304	2.34
Feb 24	0130	292	2.30				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.0	42	1.8	7.1	4.9	10	82	12	17	3.5	e2.0	1.0
2	e2.1	20	1.0	4.9	4.2	8.8	98	36	5.3	2.1	e1.2	6.6
3	e2.0	5.7	1.3	4.3	3.7	8.4	27	16	3.9	1.5	e1.0	3.7
4	e2.0	2.8	2.9	3.5	4.5	6.7	20	13	3.0	1.0	e1.0	1.0
5	e1.9	2.1	e2.9	2.6	41	5.6	16	22	2.8	1.8	e1.0	1.0
6	e2.0	1.9	e2.8	2.5	19	4.7	14	26	2.5	.88	e1.0	.98
7	e2.0	1.9	e2.7	13	10	4.2	12	16	2.5	.71	e.90	14
8	e2.0	4.2	e2.7	27	7.6	9.2	11	20	2.4	2.5	e.90	22
9	e2.1	8.6	e2.7	16	6.2	75	27	70	2.1	e3.0	e.90	e2.0
10	e2.2	3.6	e2.7	8.5	5.1	23	103	101	2.1	e2.9	e1.3	e2.0
11	e2.3	2.3	6.9	5.3	6.6	13	25	134	2.1	e2.5	e1.9	e1.9
12	e2.5	1.9	4.8	3.8	36	9.5	16	86	16	e2.0	e1.0	e1.8
13	e3.0	1.7	3.6	3.9	12	8.4	14	41	17	e1.8	e1.0	e1.5
14	.86	12	e2.9	2.8	7.7	9.3	13	29	119	e1.8	e1.0	e1.2
15	5.3	6.9	e2.9	8.9	5.9	8.0	13	24	31	e1.8	e1.0	e1.0
16	2.5	3.1	e.90	40	5.0	6.4	12	20	17	e1.8	e1.4	e1.1
17	1.3	2.4	e2.9	13	27	5.5	14	17	9.7	e1.8	10	e1.1
18	1.5	2.1	e.80	8.6	105	9.4	12	14	7.4	e3.0	3.5	e1.9
19	1.4	1.8	e5.8	7.0	31	81	14	13	5.6	e1.8	2.2	e.70
20	1.6	1.7	e2.8	5.5	17	29	30	11	8.5	e1.9	1.6	e.70
21	1.7	1.6	e2.8	4.9	13	52	15	9.6	7.5	e2.0	1.1	.65
22	1.7	20	e2.8	4.2	9.8	32	12	8.0	4.3	e1.9	1.2	4.8
23	1.3	4.3	27	101	22	22	14	7.1	4.2	e3.0	2.5	e2.0
24	1.4	2.6	6.3	86	134	18	13	6.2	3.7	e1.6	1.5	e1.2
25	11	2.2	46	28	41	15	11	17	2.4	e1.3	1.0	e1.3
26	4.2	2.1	13	16	19	13	19	9.0	2.4	e1.1	3.3	e1.3
27	17	1.8	8.0	12	14	12	23	5.8	2.1	e1.0	1.9	e1.1
28	2.8	2.0	7.6	12	12	9.9	13	5.1	2.0	e1.0	1.4	e1.5
29	2.1	1.8	51	8.9	---	8.9	10	8.0	1.7	e1.1	1.0	e1.5
30	1.6	1.9	83	7.4	---	7.8	10	6.7	9.2	e1.1	1.0	e1.3
31	1.0	---	19	6.0	---	6.9	---	4.6	---	e4.3	1.0	---
TOTAL	88.36	169.0	324.30	474.6	624.2	532.6	713	808.1	316.4	59.49	52.70	83.83
MEAN	2.85	5.63	10.5	15.3	22.3	17.2	23.8	26.1	10.5	1.92	1.70	2.79
MAX	17	42	83	101	134	81	103	134	119	4.3	10	22
MIN	.86	1.6	.80	2.5	3.7	4.2	10	4.6	1.7	.71	.90	.65
CFSM	.46	.90	1.68	2.46	3.58	2.76	3.81	4.18	1.69	.31	.27	.45
IN.	.53	1.01	1.94	2.83	3.73	3.18	4.26	4.83	1.89	.36	.31	.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1998, BY WATER YEAR (WY)

	7.65	10.0	12.5	12.2	11.8	17.5	18.7	13.6	7.45	6.90	4.53	5.39
MEAN	7.65	10.0	12.5	12.2	11.8	17.5	18.7	13.6	7.45	6.90	4.53	5.39
MAX	31.9	22.4	46.9	27.1	22.3	40.9	41.1	42.0	23.4	18.9	16.1	24.6
(WY)	1997	1986	1984	1996	1998	1994	1983	1989	1992	1984	1990	1989
MIN	1.21	2.04	2.57	1.67	2.95	5.11	3.50	4.48	2.74	1.68	1.33	1.68
(WY)	1995	1982	1981	1981	1980	1985	1985	1986	1981	1993	1981	1994

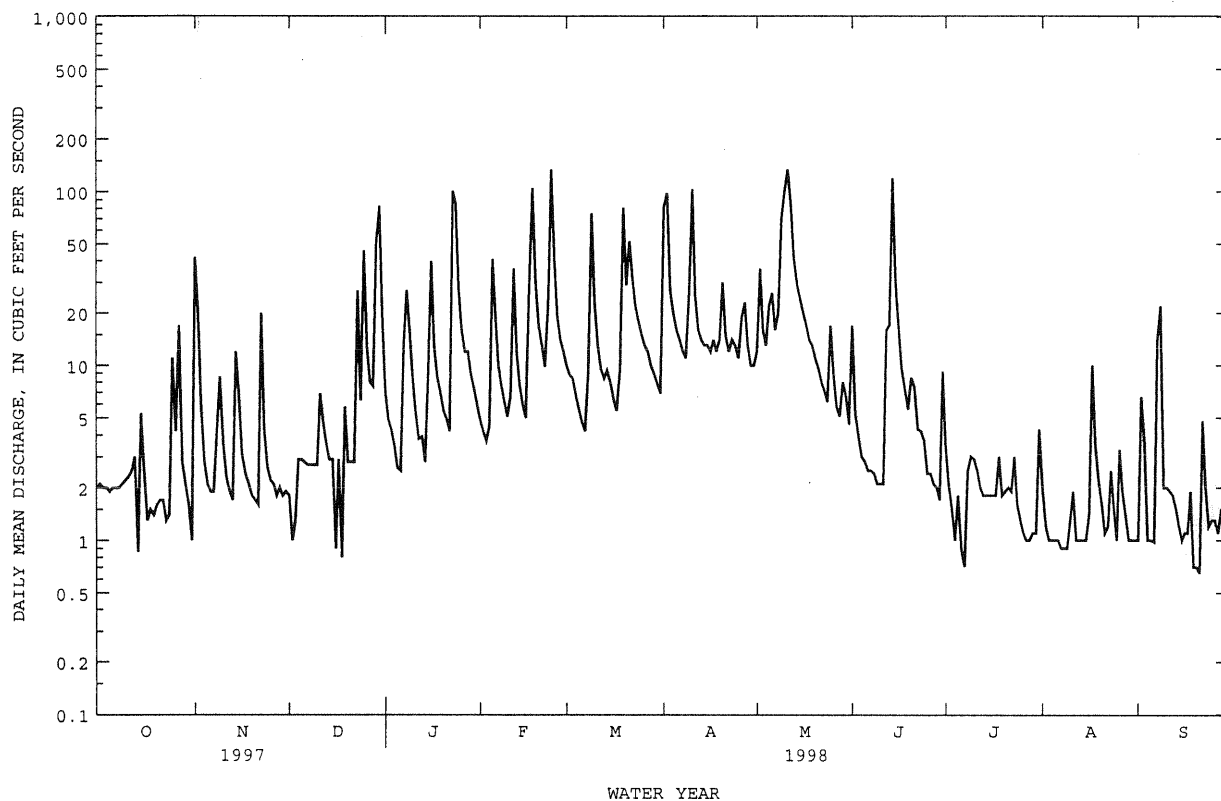
01403400 GREEN BROOK AT SEELEY MILLS, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1979 - 1998	
ANNUAL TOTAL	3052.56		4246.58			
ANNUAL MEAN	8.36		11.6		10.7	
HIGHEST ANNUAL MEAN					18.2	
LOWEST ANNUAL MEAN					5.16	
HIGHEST DAILY MEAN	230	Jul 25	134	Feb 24	554	Oct 19 1996
LOWEST DAILY MEAN	.80	Dec 18	.65	Sep 21	.00	Sep 11 1981
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 4	.96	Aug 3	.05	Sep 24 1981
INSTANTANEOUS PEAK FLOW			463	Apr 1	6240a	Aug 2 1973
INSTANTANEOUS PEAK STAGE			2.83	Apr 1	16.10b	Aug 2 1973
INSTANTANEOUS LOW FLOW			.65	Sep 21	.00	Sep 11 1981
ANNUAL RUNOFF (CFSM)	1.34		1.87		1.72	
ANNUAL RUNOFF (INCHES)	18.23		25.36		23.31	
10 PERCENT EXCEEDS	17		27		21	
50 PERCENT EXCEEDS	2.9		4.3		5.0	
90 PERCENT EXCEEDS	1.5		1.1		1.5	

a From rating curve extended above 600 ft³/f on basis of slope area measurement of peak flow.

b Site and datum then in use.

e Estimated



01403535 EAST BRANCH STONY BROOK AT BEST LAKE, AT WATCHUNG, NJ

LOCATION.--Lat 40°38'25", long 74°26'52", Somerset County, Hydrologic Unit 02030105, 700 ft upstream from dam on Best Lake in Watchung, 1,400 ft upstream from mouth, and 0.5 mi northeast of Watchung.

DRAINAGE AREA.--1.57 mi².

PERIOD OF RECORD.--July 1980 to current year.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 193.87 ft above sea level (levels by Somerset County).

REMARKS.--Records fair except those below 2.0 ft³/s and estimated daily discharges, which are poor. Records given herein represent flow over dam and leakage through ports in dam. Several measurements of water temperature were made during the year. Rain-gage and gage-height radio telemeter at station.

COOPERATION.--Gage-height record collected in cooperation with Somerset County.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 2, 1973, reached a stage of 5.9 ft, present datum, from floodmarks, discharge, 2,840 ft³/s, by computation of flow over dam, embankment, and road.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 29	2230	155	1.83	Apr 1	1845	*237	*2.03
Jan 23	1830	145	1.80	Apr 10	0015	132	1.77
Feb 24	0100	120	1.74				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.75	9.8	2.1	e2.6	1.7	4.9	31	4.0	1.8	.81	.63	.43
2	.72	6.3	1.7	e3.0	1.6	4.4	18	8.1	.84	.73	.62	.46
3	.71	2.5	1.4	e2.0	1.7	3.8	5.5	3.6	.81	.67	.62	.66
4	.69	1.4	2.3	e2.0	1.5	3.1	4.3	3.1	.78	.58	.63	.59
5	.70	1.1	2.3	e1.9	9.5	2.6	3.7	5.9	.75	.53	.61	.55
6	.70	1.0	1.6	e2.0	4.5	2.5	3.3	5.3	.72	.47	.61	.52
7	.69	1.0	1.2	e7.2	2.9	2.3	3.0	4.0	.71	.42	.60	1.0
8	.67	1.2	1.0	e12	2.4	3.5	2.8	5.6	.69	.40	.60	3.1
9	.66	3.8	.94	e5.4	2.1	19	12	19	.67	.42	.58	.64
10	.65	3.9	1.8	e3.6	1.9	5.9	28	24	.67	.44	.56	.61
11	.62	2.6	4.0	e3.1	2.4	4.1	5.8	41	.66	.46	.63	.57
12	.58	2.0	4.1	e2.5	8.8	3.5	4.3	17	2.1	.46	.61	.54
13	.56	1.5	3.2	e2.4	3.2	3.0	3.8	8.5	2.1	.46	.59	.52
14	.55	5.2	2.3	e2.3	2.4	3.2	3.6	6.9	17	.45	.55	.50
15	.62	5.2	1.7	e4.3	2.0	2.7	3.9	5.8	3.1	.45	.54	.48
16	.83	3.6	1.5	e23	1.9	2.6	3.6	4.2	1.8	.44	.53	.47
17	.81	2.8	1.3	e5.4	6.9	2.5	4.0	3.6	1.3	.46	.61	.48
18	.78	2.6	1.1	e4.7	23	3.4	3.3	2.8	1.2	.63	.67	.51
19	.76	2.3	1.0	e4.0	7.2	24	3.8	2.3	.90	.63	.62	.50
20	.73	2.1	.98	e3.0	4.9	7.2	6.5	2.1	.94	.63	.59	.48
21	.67	1.9	.92	1.5	4.0	14	3.8	1.8	.97	.63	.56	.47
22	.61	7.6	.88	1.5	3.5	8.7	3.4	1.3	.84	.63	.54	.61
23	.55	3.3	8.0	33	8.4	6.9	3.8	1.2	.84	.63	.54	.62
24	.54	2.3	4.4	14	33	5.7	3.2	1.1	.86	.63	.53	.58
25	3.0	1.7	13	5.2	8.4	4.8	2.5	2.5	.82	.63	.52	.54
26	2.9	1.7	3.0	3.6	6.0	4.5	5.9	1.2	.80	.63	.52	.54
27	6.7	1.6	1.9	3.1	5.6	4.3	5.3	1.0	.79	.63	.51	.52
28	1.6	1.8	1.8	2.6	5.6	3.7	3.5	.93	.76	.63	.50	.52
29	1.1	2.2	23	2.6	---	3.3	3.0	1.3	.71	.63	.48	.49
30	.93	1.9	15	2.3	---	2.9	2.8	1.1	1.7	.63	.46	.46
31	.86	---	3.3	1.8	---	2.4	---	.84	---	.72	.44	---
TOTAL	33.24	87.9	112.72	167.6	167.0	169.4	191.4	191.07	48.63	17.56	17.60	18.96
MEAN	1.07	2.93	3.64	5.41	5.96	5.46	6.38	6.16	1.62	.57	.57	.63
MAX	6.7	9.8	23	33	33	24	31	41	17	.81	.67	3.1
MIN	.54	1.0	.88	1.5	1.5	2.3	2.5	.84	.66	.40	.44	.43
CFSM	.68	1.87	2.32	3.44	3.80	3.48	4.06	3.93	1.03	.36	.36	.40
IN.	.79	2.08	2.67	3.97	3.96	4.01	4.54	4.53	1.15	.42	.42	.45

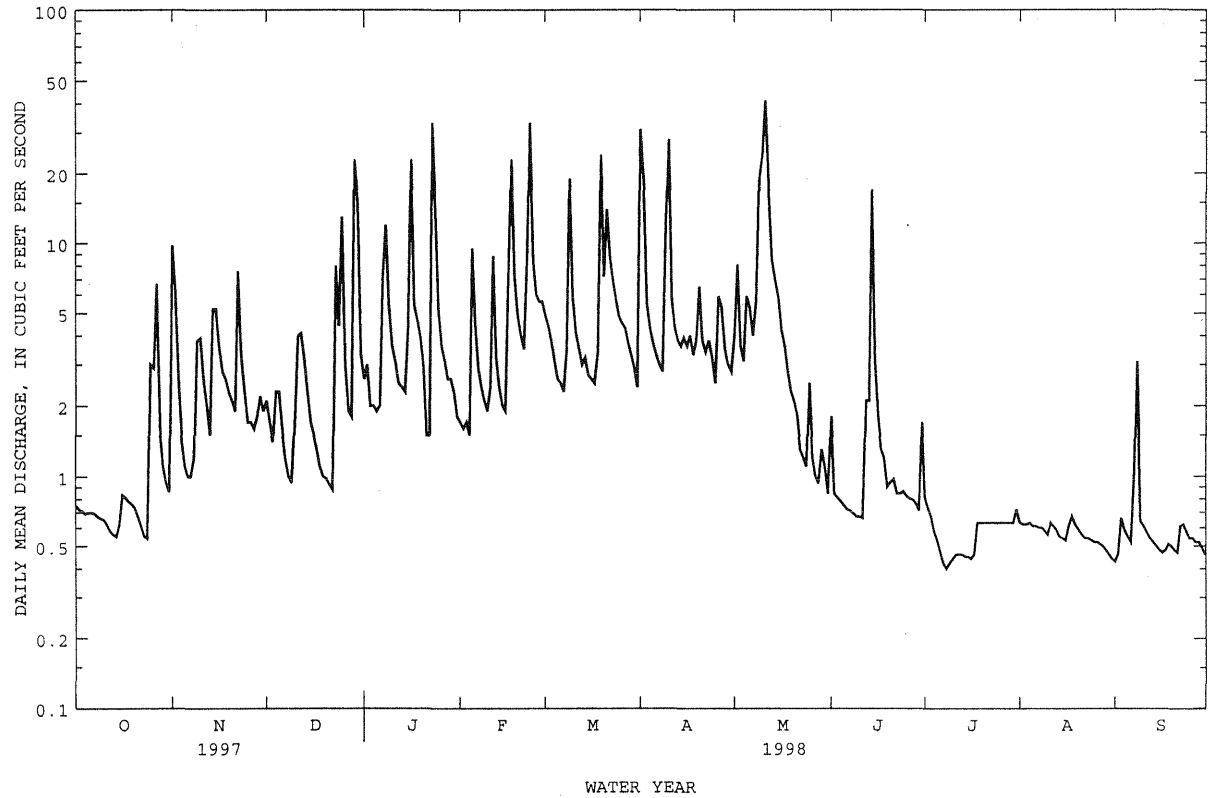
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1998, BY WATER YEAR (WY)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	1.80	2.86	3.39	3.27	3.37	4.60	4.75	3.61	1.78	1.61	.84	.94
MAX	9.14	5.73	10.1	7.90	5.96	10.7	10.2	10.9	4.97	4.53	2.19	4.65
(WY)	1997	1986	1984	1996	1998	1994	1983	1989	1992	1984	1990	1989
MIN	.12	.80	.52	.068	1.40	1.67	.82	1.25	.56	.36	.095	.24
(WY)	1995	1995	1981	1981	1992	1981	1985	1986	1993	1980	1980	1994

01403535 EAST BRANCH STONY BROOK AT BEST LAKE, AT WATCHUNG, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1980 - 1998	
ANNUAL TOTAL	930.12		1223.08			
ANNUAL MEAN	2.55		3.35		2.74	
HIGHEST ANNUAL MEAN					4.47	1984
LOWEST ANNUAL MEAN					1.48	1981
HIGHEST DAILY MEAN	58	Jul 25	41	May 11	176	Oct 19 1996
LOWEST DAILY MEAN	.10	Aug 24	.40	Jul 8	.00	Aug 30 1980
ANNUAL SEVEN-DAY MINIMUM	.15	Aug 23	.44	Jul 7	.00	Sep 3 1980
INSTANTANEOUS PEAK FLOW			237	Apr 1	2240	Oct 19 1996
INSTANTANEOUS PEAK STAGE			2.03	Apr 1	5.24	Oct 19 1996
INSTANTANEOUS LOW FLOW			.39	Jul 8	.00	Aug 30 1980
ANNUAL RUNOFF (CFSM)	1.62		2.13		1.75	
ANNUAL RUNOFF (INCHES)	22.04		28.98		23.75	
10 PERCENT EXCEEDS	4.4		6.9		5.5	
50 PERCENT EXCEEDS	1.3		1.8		1.1	
90 PERCENT EXCEEDS	.29		.53		.28	

e Estimated



LOCATION.--Lat 40°38'12", long 74°27'06", Somerset County, Hydrologic Unit 02030105, on right bank at Watchung Borough Administration Building in Watchung, 150 ft downstream from bridge on Mountain Boulevard, 400 ft downstream from East Branch Stony Brook, and 2.9 mi upstream from confluence with Green Brook.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 162.24 ft above sea level. Prior to Oct. 1, 1996, at datum 10.00 ft higher.

REMARKS.--Records poor. Occasional regulation from Watchung and Best Lakes directly upstream from station and other small lakes. Several measurements of water temperature were made during the year. Gage-height radio telemetry at station. Channel significant enlarged and modified in 1991.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 2, 1973, reached a stage of 24.5 ft, from floodmark, corrected to current datum, discharge, 10,500 ft³/s, from slope-area measurements of peak flow.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 23	2000	390	12.27	May 11	2300	318	12.07
Apr 1	2345	*464	*12.45				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.0	e23	2.7	5.3	6.1	11	56	8.5	6.9	3.3	1.2	.52
2	e1.0	e11	2.3	4.4	5.7	9.9	95	31	3.4	2.3	.71	2.0
3	e1.0	e4.2	2.1	4.2	5.1	9.9	36	10	2.7	2.0	.54	3.8
4	e1.0	e2.0	2.8	3.7	5.4	8.6	14	9.4	2.3	1.8	.52	1.3
5	e1.0	e1.6	2.6	3.1	36	7.8	12	17	2.1	1.7	.48	.84
6	e1.0	e1.5	2.4	3.1	17	6.7	10	21	1.8	1.6	.44	.74
7	e1.0	e1.8	2.1	8.5	9.6	6.0	9.7	11	1.7	1.6	.38	4.2
8	e1.0	e2.1	1.9	17	8.5	9.6	9.2	17	1.7	1.8	.38	19
9	e1.0	e3.7	1.9	7.9	7.4	55	24	55	1.6	1.9	.38	2.7
10	e1.0	e3.2	3.2	5.7	6.3	25	92	78	1.6	1.5	.47	1.6
11	e1.0	e2.4	4.1	4.8	6.7	11	37	149	1.6	1.1	.88	1.3
12	e1.0	e2.3	3.6	4.0	28	9.4	14	86	8.1	.97	.67	1.2
13	e1.0	e2.3	3.3	3.8	9.7	8.7	12	53	8.8	.89	.49	1.0
14	e1.1	5.8	2.8	3.3	8.1	9.0	11	17	85	.90	.44	.98
15	e2.2	4.6	2.7	5.8	6.5	8.1	13	5.5	12	.89	.44	.96
16	e2.3	2.9	2.6	37	5.9	7.1	9.7	4.7	11	.88	.44	.89
17	e1.5	2.7	2.5	11	16	6.3	11	4.4	6.4	2.1	2.2	1.6
18	e1.7	2.5	2.3	9.4	73	8.5	9.7	9.4	5.4	4.7	2.6	1.9
19	e1.7	2.4	2.1	8.5	43	61	9.8	7.3	4.3	1.5	1.1	1.2
20	e1.7	2.2	2.0	7.3	15	40	24	7.6	3.8	1.1	.68	.93
21	e1.7	2.2	1.9	5.9	13	40	10	6.1	4.0	.92	.52	1.1
22	e1.7	16	2.0	5.4	10	35	8.9	5.0	3.1	.87	.52	3.8
23	e1.7	4.8	15	91	19	19	9.1	4.6	3.0	.70	.88	2.2
24	e1.7	3.2	4.7	75	92	15	8.8	4.3	3.0	.68	.75	1.4
25	e6.0	2.9	28	35	55	12	7.0	8.3	2.6	.58	.60	1.3
26	e3.5	2.8	16	12	22	11	13	4.7	2.3	.52	1.0	1.5
27	e11	2.8	6.6	9.9	14	10	21	3.7	2.1	.52	1.0	1.5
28	e3.1	2.8	5.4	9.9	12	9.5	9.1	3.2	1.8	.51	.78	1.7
29	e2.3	2.8	40	9.3	---	8.8	7.8	4.1	1.7	.59	.67	1.2
30	e2.3	2.7	86	8.2	---	8.0	7.1	4.5	6.7	.83	.59	1.1
31	e2.2	---	19	7.0	---	7.5	---	3.0	---	2.2	.52	---
TOTAL	62.4	127.2	276.6	426.4	556.0	494.4	610.9	653.3	202.5	43.45	23.27	65.46
MEAN	2.01	4.24	8.92	13.8	19.9	15.9	20.4	21.1	6.75	1.40	.75	2.18
MAX	11	23	86	91	92	61	95	149	85	4.7	2.6	19
MIN	1.0	1.5	1.9	3.1	5.1	6.0	7.0	3.0	1.6	.51	.38	.52
CFSM	.37	.77	1.62	2.50	3.60	2.89	3.70	3.82	1.23	.25	.14	.40
IN.	.42	.86	1.87	2.88	3.75	3.34	4.12	4.41	1.37	.29	.16	.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1998, BY WATER YEAR (WY)

MEAN	6.14	9.57	12.5	14.1	12.3	17.7	16.5	12.3	6.60	6.44	3.58	4.54
MAX	24.6	25.6	37.1	37.5	20.1	45.0	38.3	37.8	20.1	32.1	11.0	18.6
(WY)	1997	1996	1984	1979	1988	1994	1983	1989	1992	1975	1990	1975
MIN	.81	1.94	1.79	1.08	3.60	5.60	3.89	3.42	2.27	1.27	.75	.87
(WY)	1995	1977	1981	1981	1980	1985	1985	1986	1980	1977	1998	1983

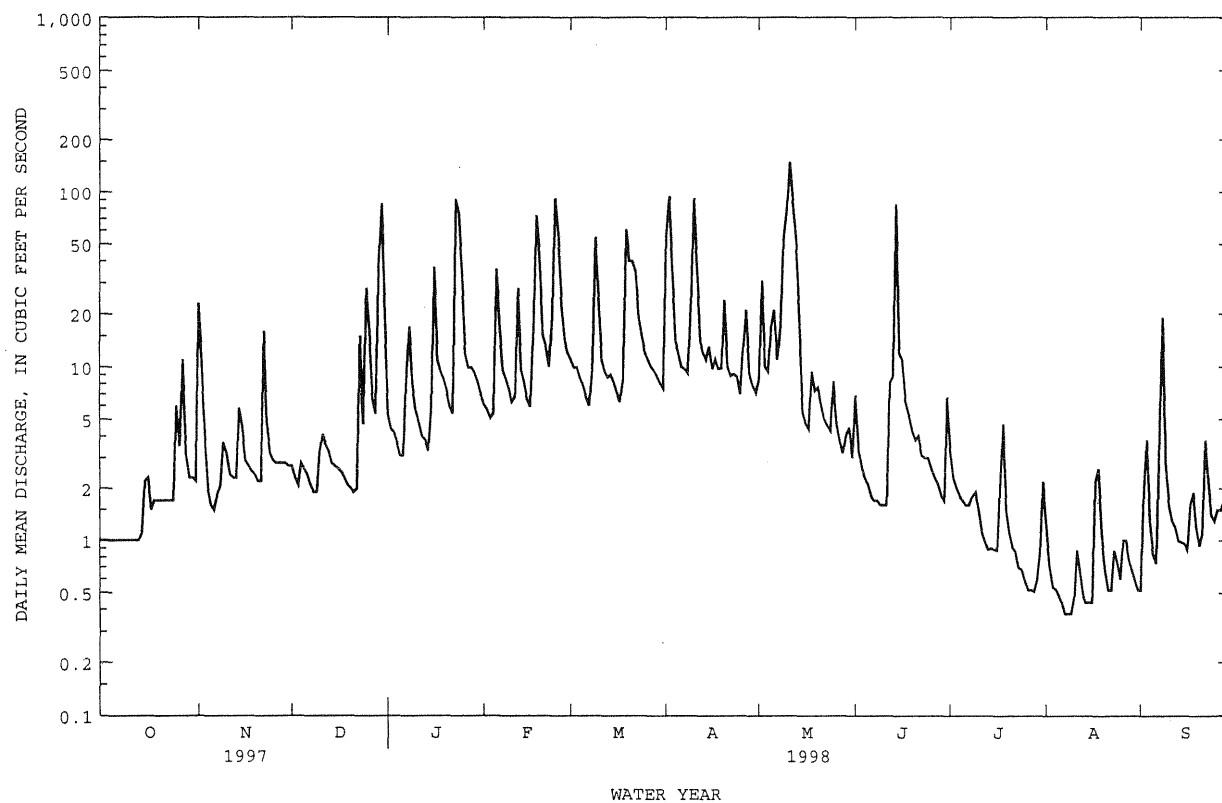
01403540 STONY BROOK AT WATCHUNG, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1975 - 1998	
ANNUAL TOTAL	3022.74		3541.88		10.2	
ANNUAL MEAN	8.28		9.70		16.0	
HIGHEST ANNUAL MEAN					5.43	
LOWEST ANNUAL MEAN					1984	
HIGHEST DAILY MEAN	204	Jul 25	149	May 11	525	Oct 19 1996
LOWEST DAILY MEAN	.64	Jul 21	.38	Aug 7	.00	Sep 18 1982
ANNUAL SEVEN-DAY MINIMUM	.78	Sep 4	.44	Aug 4	.06	Sep 13 1982
INSTANTANEOUS PEAK FLOW			464	Apr 1	4420a	Jul 14 1975
INSTANTANEOUS PEAK STAGE			12.45	Apr 1	20.40b	Jul 14 1975
INSTANTANEOUS LOW FLOW			.38	Aug 7	.00	Sep 13 1982
ANNUAL RUNOFF (CFSM)	1.50		1.76		1.85	
ANNUAL RUNOFF (INCHES)	20.41		23.91		25.11	
10 PERCENT EXCEEDS	16		21		20	
50 PERCENT EXCEEDS	3.7		3.7		4.7	
90 PERCENT EXCEEDS	1.0		.88		1.1	

a From rating curve above 500 ft³/s on basis of slope-area measurement of peak flow.

b Corrected to current datum.

e Estimated



01403900 BOUND BROOK AT MIDDLESEX, NJ

LOCATION.--Lat 40°35'06", long 74°30'29", Somerset County, Hydrologic Unit 02030105, at downstream right abutment bridge on Sebring Mill Road, 0.4 mi downstream from mouth of Green Brook, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--48.4 mi².

PERIOD OF RECORD.--October 1972 to October 1977 recording gage 107 ft upstream of bridge at datum 26.52 ft lower. April 1996 to current year. Operated as a crest-stage water years 1992-95, current site and datum.

GAGE.--Water-stage recorder. Datum of gage is 26.52 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Water diverted from Baltusrol well field by New Jersey- American Water Company, for municipal supply and from private and industrial wells in Plainfield and vicinity.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 24	0300	1,330	6.98	Apr 2	0430	*1,360	*7.05

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	157	16	59	37	62	204	78	107	46	15	8.7
2	6.2	271	16	47	35	57	905	257	39	22	11	29
3	6.2	113	14	40	32	63	237	108	26	19	11	54
4	6.2	e24	21	36	32	54	98	95	24	17	10	11
5	6.2	e16	19	31	243	45	71	107	22	21	10	8.8
6	6.1	e13	14	29	187	41	62	159	19	16	9.9	8.7
7	6.1	12	14	148	67	38	58	102	19	16	9.9	47
8	6.3	15	14	191	55	55	57	142	18	23	9.5	161
9	6.5	37	15	84	46	438	105	418	18	22	9.3	21
10	6.2	29	20	55	41	204	749	637	17	16	9.4	12
11	6.1	14	52	43	38	70	238	804	18	16	16	11
12	6.1	11	35	36	232	54	105	796	85	15	10	11
13	6.1	12	27	35	72	50	81	278	118	15	8.9	11
14	6.1	64	20	31	52	47	75	151	634	14	8.7	11
15	18	57	16	36	42	46	76	104	316	13	8.7	11
16	20	24	16	247	36	39	71	88	84	13	8.7	11
17	e6.2	16	16	76	62	35	88	77	66	31	101	14
18	6.7	14	16	54	581	48	88	72	54	70	72	13
19	6.7	13	e17	49	248	402	74	63	42	16	19	11
20	6.7	13	e16	41	107	288	145	60	35	13	11	11
21	6.7	13	e15	35	76	280	84	56	46	13	9.1	17
22	6.7	145	e14	30	59	245	74	48	27	13	8.8	105
23	6.7	51	125	308	82	127	76	43	28	13	46	24
24	7.0	26	47	853	760	84	90	39	26	13	14	12
25	65	19	249	258	365	64	e45	73	21	13	9.9	11
26	25	17	100	89	135	54	e63	53	20	11	15	12
27	157	16	50	63	83	53	209	35	20	11	12	11
28	28	15	52	59	66	50	91	30	17	11	9.9	15
29	e12	17	112	56	---	44	78	37	e15	18	9.1	11
30	9.3	15	748	48	---	40	73	63	e127	19	8.7	11
31	9.1	---	214	43	---	38	---	29	---	36	8.7	---
TOTAL	483.7	1259	2120	3210	3871	3215	4470	5102	2108	605	520.2	705.2
MEAN	15.6	42.0	68.4	104	138	104	149	165	70.3	19.5	16.8	23.5
MAX	157	271	748	853	760	438	905	804	634	70	101	161
MIN	6.1	11	14	29	32	35	45	29	15	11	8.7	8.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1998, BY WATER YEAR (WY)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	68.8	56.4	113	84.8	95.8	92.9	107	81.7	54.3	74.0	53.6	51.4															
MAX	192	125	210	112	170	110	178	165	128	263	258	198															
(WY)	1977	1973	1997	1975	1973	1977	1973	1998	1975	1973	1973	1975															
MIN	15.6	17.4	30.6	16.5	41.7	57.6	58.0	27.3	22.8	9.45	13.0	8.75															
(WY)	1998	1977	1977	1977	1974	1976	1976	1977	1974	1974	1972	1972															

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

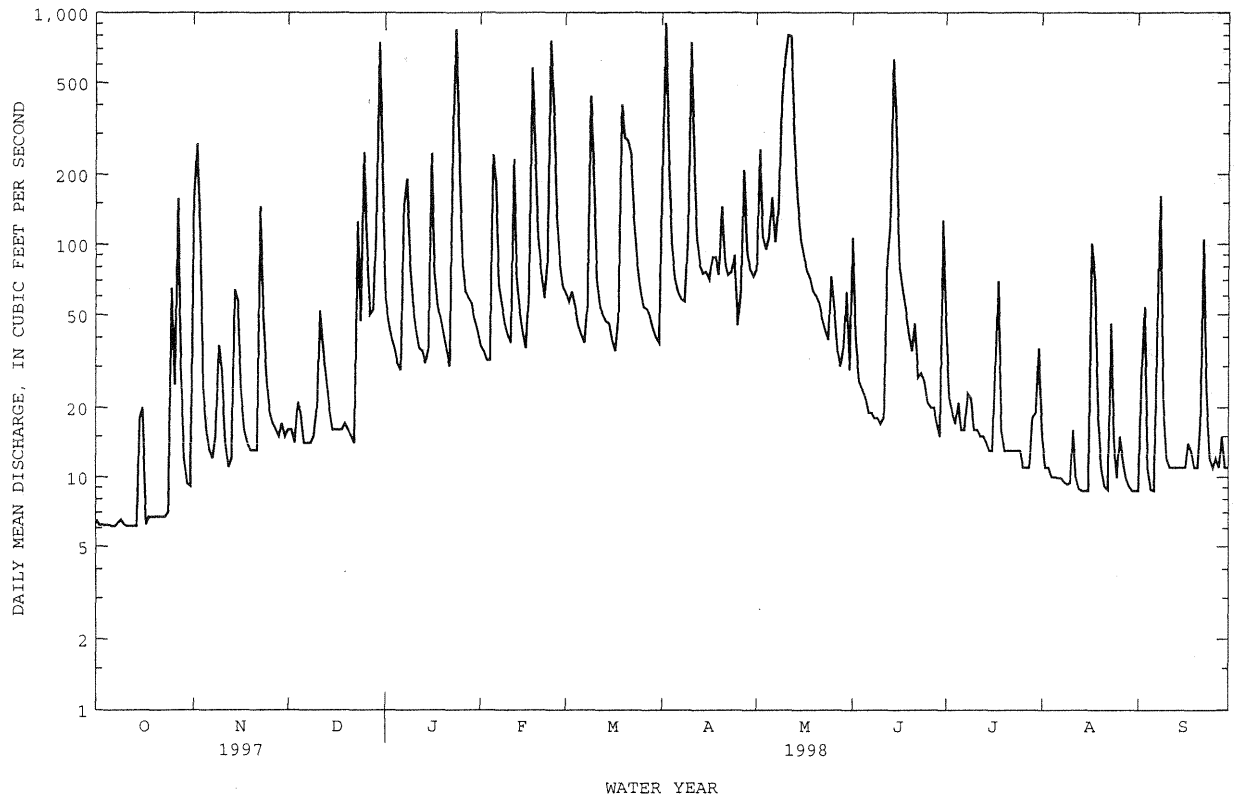
WATER YEARS 1972 - 1998

ANNUAL TOTAL	22496.3	27669.1	
ANNUAL MEAN	61.6	75.8	78.8
HIGHEST ANNUAL MEAN			112
LOWEST ANNUAL MEAN			40.3
HIGHEST DAILY MEAN	1750	905	2990
LOWEST DAILY MEAN	6.1	6.1	2.5
ANNUAL SEVEN-DAY MINIMUM	6.2	6.2	3.3
INSTANTANEOUS PEAK FLOW		1360	7000
INSTANTANEOUS PEAK STAGE		7.05	41.18a
INSTANTANEOUS LOW FLOW		5.0	2.5
10 PERCENT EXCEEDS	112	171	154
50 PERCENT EXCEEDS	29	35	37
90 PERCENT EXCEEDS	7.2	9.3	9.4

a Site and datum then in use.

e Estimated

01403900 BOUND BROOK AT MIDDLESEX, NJ--Continued



01405030 LAWRENCE BROOK AT WESTONS MILLS, NJ

LOCATION.--Lat 40°28'59", long 74°24'45", Middlesex County, Hydrologic Unit 02030105, on left bank at dam on Westons Mill Pond at Westons Mills, 200 ft downstream from bridge on State Route 18, and 1.3 mi upstream from mouth.

DRAINAGE AREA.--44.9 mi².

PERIOD OF RECORD.--Water-quality records water years 1976-81. December 1988 to October 1994, July 1995 to current year.

REVISED RECORDS.--WDR NJ-89-1: Drainage area.

GAGE.--Water-stage recorder above masonry dam. Datum of gage is sea level.

REMARKS.--Records fair. Bypass gates were opened on June 14. Flow regulated by Farrington Lake, capacity, 655,250,000 gal. Diversion at gage by New Brunswick Water Department (see Raritan River basin, diversions). Several measurements of water temperature were made during the year.

COOPERATION.--Water-stage recorder inspected by and records of gate openings and diversions provided by employees of City of New Brunswick.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	76	23	61	39	62	116	52	348	32	36	5.9
2	14	54	24	45	35	53	399	171	79	22	35	12
3	14	34	22	39	34	62	103	90	41	21	30	13
4	13	22	25	32	32	55	64	57	34	22	26	10
5	14	22	25	24	177	48	53	70	29	31	23	17
6	11	22	23	24	142	43	46	121	26	22	21	16
7	11	19	23	69	62	41	40	75	25	19	19	16
8	11	27	23	168	48	57	40	147	23	32	18	16
9	9.4	23	22	67	42	544	99	556	24	34	15	17
10	13	12	24	47	38	218	887	829	25	25	14	17
11	13	5.5	32	42	40	94	213	590	26	20	13	17
12	16	4.8	28	36	187	65	110	441	82	19	11	17
13	16	19	25	35	79	54	78	189	184	18	11	17
14	15	47	24	31	53	56	56	120	717	21	11	17
15	17	42	23	42	43	50	59	90	242	33	11	17
16	23	15	23	190	38	44	53	72	115	33	9.6	16
17	22	17	23	79	52	42	70	63	112	30	12	16
18	24	23	23	55	374	51	63	56	62	30	21	15
19	24	22	23	45	165	612	59	47	49	29	19	17
20	23	22	24	39	90	293	118	42	42	24	16	17
21	22	23	24	35	66	327	64	41	37	24	14	16
22	23	103	24	32	53	261	50	36	32	25	13	21
23	22	55	64	357	80	134	57	35	33	29	22	21
24	24	32	27	767	638	88	67	34	30	31	21	21
25	51	26	161	176	300	70	44	43	19	32	20	20
26	35	28	78	80	122	58	65	41	21	35	18	20
27	62	24	45	52	79	56	182	35	25	34	16	20
28	23	25	48	51	65	53	73	35	23	36	14	19
29	25	25	125	46	---	48	53	33	22	36	11	21
30	31	24	548	36	---	46	45	46	38	35	8.0	22
31	30	---	109	36	---	42	---	32	---	37	4.6	---
TOTAL	664.4	893.3	1735	2838	3173	3727	3426	4289	2565	871	533.2	506.9
MEAN	21.4	29.8	56.0	91.5	113	120	114	138	85.5	28.1	17.2	16.9
MAX	62	103	548	767	638	612	887	829	717	37	36	22
MIN	9.4	4.8	22	24	32	41	40	32	19	18	4.6	5.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1998, BY WATER YEAR (WY)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	41.9	41.7	73.1	69.4	55.5	83.6	77.7	71.0	48.7	45.3
MAX	104	70.9	174	114	113	179	116	169	98.9	92.7
(WY)	1997	1996	1993	1996	1998	1993	1993	1989	1989	1989
MIN	13.1	14.6	15.3	28.0	21.3	44.7	27.4	24.9	16.4	20.2
(WY)	1993	1992	1990	1992	1992	1992	1995	1995	1995	1993

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

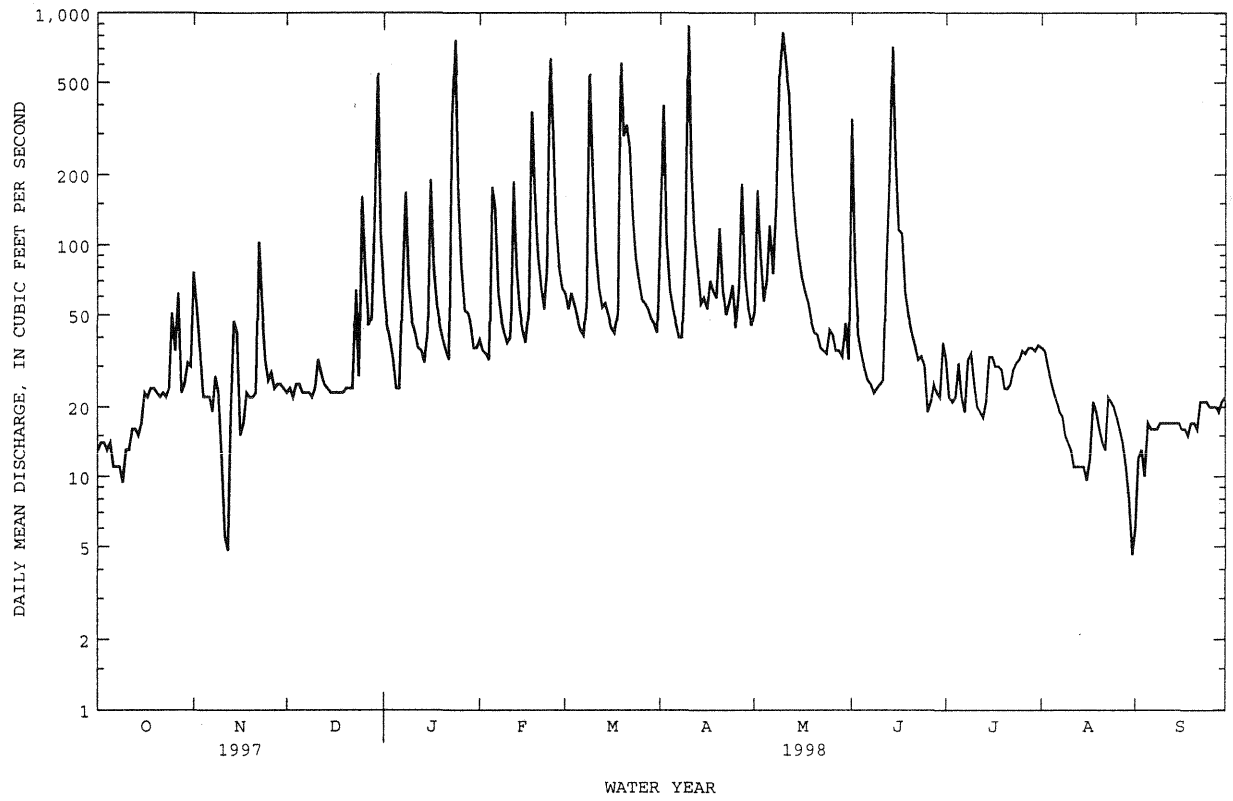
FOR 1998 WATER YEAR

WATER YEARS 1989 - 1998

ANNUAL TOTAL	18543.9	25221.8	
ANNUAL MEAN	50.8	69.1	55.5
HIGHEST ANNUAL MEAN			69.1
LOWEST ANNUAL MEAN			30.6
HIGHEST DAILY MEAN	1080	887	2200
LOWEST DAILY MEAN	4.8	4.6	.00
ANNUAL SEVEN-DAY MINIMUM	9.6	9.2	.00
INSTANTANEOUS PEAK FLOW		1440	4850a
INSTANTANEOUS PEAK STAGE		17.42	19.20
INSTANTANEOUS LOW FLOW		.05	.00
10 PERCENT EXCEEDS	88	129	106
50 PERCENT EXCEEDS	29	34	32
90 PERCENT EXCEEDS	13	16	10

a From rating curve extended above 1,000 ft³/s.

01405030 LAWRENCE BROOK AT WESTONS MILLS, NJ--Continued



01405400 MANALAPAN BROOK AT SPOTSWOOD, NJ

LOCATION.--Lat 40°23'22", long 74°23'27", Middlesex County, Hydrologic Unit 02030105, on right bank of DeVoe Lake Dam in Spotswood, 0.1 mi upstream from Cedar Brook, and 0.6 mi upstream from confluence with Matchaponix Brook.

DRAINAGE AREA.--40.7 mi².

PERIOD OF RECORD.--January 1957 to current year.

REVISED RECORDS.--WSP 1722: 1957-60.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is sea level (levels by Duhermal Water System). January 1957 to September 1966 at datum 17.72 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Discharge given herein includes flow through sluice gate when open. Gate open Jan. 1-2, 7 to Mar. 24, May 14-15, July 18 to Aug. 17, and Aug. 29 to Sept. 30. Some regulation by Lake Manalapan, Helmetta Pond, and DeVoe Lake. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e39	52	34	e100	e60	e63	65	e41	58	37	e36	.00
2	e32	60	18	e60	e60	e74	e122	77	64	31	e29	e8.0
3	e30	101	17	64	e60	e60	e61	92	53	30	e22	e22
4	e29	78	29	61	e60	e63	e59	56	45	30	e19	e16
5	e29	48	35	60	e60	e91	e57	51	40	30	e17	e15
6	e29	46	34	60	e60	e60	45	68	37	29	e16	e14
7	e28	55	31	e97	e62	e60	43	70	37	28	e15	e27
8	20	45	30	e133	e60	e60	54	89	36	37	e14	e56
9	21	42	34	e141	e60	e192	99	209	35	45	e15	e20
10	19	21	56	e60	e60	e458	231	582	35	26	e15	e17
11	17	19	44	e60	e60	e276	398	641	35	25	e17	e15
12	17	26	37	e60	e61	e63	156	423	53	25	e21	e15
13	17	40	24	e60	e112	e72	85	249	113	23	e19	e15
14	17	47	21	e60	e100	e102	72	e74	253	23	e17	e15
15	20	50	26	e60	e64	e98	67	e51	406	21	e16	e15
16	23	49	29	e74	e60	e77	62	81	287	20	e15	e15
17	30	44	30	e135	e64	e88	57	75	42	19	e24	e28
18	43	41	28	e124	e163	e125	47	72	49	e12	57	e43
19	41	40	28	e80	e222	e161	49	66	53	e13	47	e32
20	34	40	28	e65	e83	e296	79	62	49	e13	27	e25
21	16	38	28	e60	e62	e290	77	60	66	e15	17	e21
22	14	64	28	e60	e60	e242	56	57	52	e19	14	e48
23	13	84	51	e84	e60	e159	57	55	47	e18	21	e33
24	13	63	71	e349	e196	e63	60	53	50	e16	20	e25
25	30	46	97	e533	e349	78	56	59	48	e15	16	e22
26	22	43	105	e181	e175	69	59	65	41	e16	29	e22
27	60	41	69	e60	e61	65	88	59	40	e17	85	e21
28	51	40	63	e64	e60	61	74	56	39	e16	71	e19
29	35	40	90	e60	---	57	58	55	38	e16	e15	e18
30	28	40	241	e60	---	54	48	55	39	e16	e8.0	e48
31	28	---	331	e60	---	52	---	45	---	e25	e6.0	---
TOTAL	845	1443	1787	3185	2614	3729	2541	3748	2240	706	760.0	690.00
MEAN	27.3	48.1	57.6	103	93.4	120	84.7	121	74.7	22.8	24.5	23.0
MAX	60	101	331	533	349	458	398	641	406	45	85	56
MIN	13	19	17	60	60	52	43	41	35	12	6.0	.00
CFSM	.67	1.18	1.42	2.52	2.29	2.96	2.08	2.97	1.83	.56	.60	.57
IN.	.77	1.32	1.63	2.91	2.39	3.41	2.32	3.43	2.05	.65	.69	.63

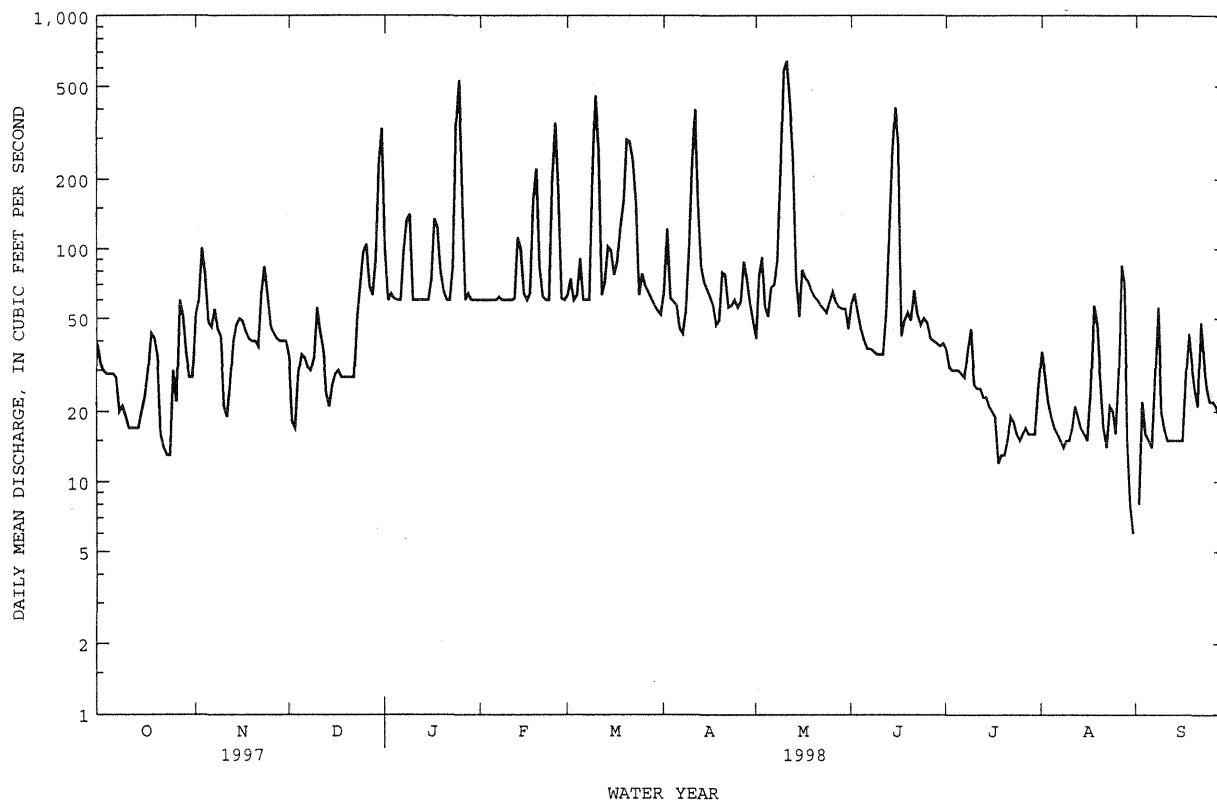
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1998, BY WATER YEAR (WY)

	MEAN	41.1	57.7	76.1	80.2	78.5	91.8	85.5	68.3	47.5	43.9	43.4	40.8
MAX	95.2	154	156	186	139	164	154	148	109	141	128	138	
(WY)	1990	1978	1984	1978	1979	1958	1983	1984	1968	1975	1990	1989	
MIN	13.7	21.7	27.4	21.1	29.8	37.1	31.1	26.5	17.4	4.40	5.56	11.6	
(WY)	1983	1966	1981	1981	1992	1985	1985	1977	1966	1966	1966	1965	

01405400 MANALAPAN BROOK AT SPOTSWOOD, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1957 - 1998	
ANNUAL TOTAL	20257		24288.00			
ANNUAL MEAN	55.5		66.5		63.1	
HIGHEST ANNUAL MEAN					101	
LOWEST ANNUAL MEAN					34.3	
HIGHEST DAILY MEAN	331	Dec 31	641	May 11	1390	May 30 1968
LOWEST DAILY MEAN	13	Oct 23	.00	Sep 1	.00	Jun 16 1957
ANNUAL SEVEN-DAY MINIMUM	18	Sep 17	11	Aug 29	2.0	Jul 22 1966
INSTANTANEOUS PEAK FLOW			759	May 10	1700a	Sep 20 1989
INSTANTANEOUS PEAK STAGE			19.16	May 10	19.97	Sep 20 1989
INSTANTANEOUS LOW FLOW			.00	Jan 10	.00	Jun 16 1957
ANNUAL RUNOFF (CFSM)	1.36		1.63		1.55	
ANNUAL RUNOFF (INCHES)	18.51		22.20		21.08	
10 PERCENT EXCEEDS	101		112		119	
50 PERCENT EXCEEDS	40		49		46	
90 PERCENT EXCEEDS	21		16		19	

a Sluice gate open.
e Estimated



RESERVOIRS IN RARITAN RIVER BASIN

01396790 SPRUCE RUN RESERVOIR.--Lat 40°38'37", long 74°55'26", Hunterdon County, Hydrologic Unit 02030105, at dam on Spruce Run, 0.5 mi north of Clinton, and 0.6 mi upstream from mouth. DRAINAGE AREA, 41.3 mi². PERIOD OF RECORD, November 1963 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway; dam completed in October 1963 with crest of spillway at elevation 273.00 ft. Usable capacity, 11,000,000,000 gal. Dead storage 300,000 gal. Reservoir used for water supply and recreation. Outflow mostly regulated by gates. Water is released to maintain minimum flow on the South Branch Raritan River and, at times, for municipal supply. Records given herein represent usable capacity.

COOPERATION.--Records provided by New Jersey Water Supply Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 11,820,000,000 gal, Jan. 24, 1979, elevation, 274.72 ft; minimum observed, 3,100,000,000 gal, Oct. 18, 1983, elevation, 246.68 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,250,000,000 gal, Apr. 10, elevation, 273.49 ft; minimum observed, 4,210,000,000 gal, Sept. 30, elevation, 251.76 ft.

REVISED RECORDS.--WDR NJ-84-1: (M). WDR NJ-85-1: 1984.

01397050 ROUND VALLEY RESERVOIR.--Lat 40°36'39", long 74°50'42", Hunterdon County, Hydrologic Unit 02030105, at main dam on Prescott Brook, 1.8 mi south of Lebanon, 3.2 mi upstream from mouth, and 4.5 mi west of Whitehouse. DRAINAGE AREA, 5.7 mi². PERIOD OF RECORD, March 1966 to current year. Nonrecording gage read daily. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthfill dam at main dam on Prescott Brook and two dams on South Branch Rockaway River at Lebanon; storage began in March 1966. Capacity at spillway level, 55,000,000,000 gal, elevation, 385.00 ft. Reservoir is used primarily for storage and is filled by pumping from South Branch Raritan River at Hamden Pumping Station (see following page). Outflow is controlled by operation of gates in pipe in dams. Water is released into South Branch Rockaway Creek and Prescott Brook.

COOPERATION.--Records provided by New Jersey Water Supply Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 55,400,000,000 gal, June 15, 1975, elevation, 385.63 ft; minimum observed (after first filling), 37,100,000,000 gal, Feb. 9, 1981, elevation, 361.30 ft.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 55,200,000,000 gal, Apr. 20, elevation, 385.20 ft; minimum observed, 54,230,000,000 gal, Dec. 22, elevation, 384.03 ft.

REVISED RECORDS.--WDR NJ-85-1: 1984.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01396790 SPRUCE RUN RESERVOIR				01397050 ROUND VALLEY RESERVOIR		
Sept.30.....	260.37	6,450	--	384.46	54,560	--
Oct. 31.....	253.44	4,640	-90.3	384.28	54,390	-8.5
Nov. 30.....	254.90	5,010	+19.1	384.15	54,330	-3.1
Dec. 31.....	257.30	5,630	+30.9	384.23	54,370	+2.0
CAL YR 1997			-22.9			+3
Jan. 31.....	261.91	6,920	+64.4	384.48	54,580	+10.5
Feb. 28.....	266.90	8,620	+93.9	384.81	54,810	+12.7
Mar. 31.....	272.23	10,660	+101.8	384.78	54,780	-1.5
Apr. 30.....	273.01	11,010	+18.1	385.07	55,070	+15.0
May 31.....	273.00	11,000	-5	384.34	54,440	-31.4
June 30.....	272.95	10,980	-1.0	384.47	54,570	+6.7
July 31.....	268.31	9,150	-91.3	384.26	54,380	-9.5
Aug. 31.....	260.30	6,430	-135.8	384.23	54,370	-5
Sept.30.....	251.76	4,210	-114.5	384.04	54,240	-6.7
WTR YR 1998			-9.5			-1.4

† Elevation at 0900 of the last day of each month.

DIVERSIONS IN RARITAN RIVER BASIN

01396920 Water is diverted 4.0 mi upstream from the gaging station on South Branch Raritan River at Stanton (see station 01397000), at the Hamden Pumping Station, for storage in Round Valley Reservoir. Water can also be released from Round Valley Reservoir into the South Branch Raritan River at Hamden and are noted as negative discharge. Records provided by New Jersey Water Supply Authority. REVISED RECORDS.--WDR NJ-85-1: 1984.

01399669 Water is released from Round Valley Reservoir and enters the South Branch Rockaway Creek directly upstream from gaging station (01399670) at Whitehouse Station. Records provided by New Jersey Water Supply Authority.

01400509 Elizabethtown Water Company diverts water from the Raritan and Millstone Rivers just upstream from the mouth of the Millstone River at Manville. Records given herein represent the total diversion from both rivers. Records provided by the Elizabethtown Water Company. REVISION.--The mean diversion for water year 1991 has been revised to 146 ft³/s superceding the figure published in WDR NJ-91-1.

01400836 Water is diverted from Carnegie Lake (Millstone River) at Princeton to the Delaware and Raritan Canal at the aqueduct 4.1 mi downstream from the gaging station on the Delaware and Raritan Canal at Port Mercer (station 01460440). Negative discharge indicates flow from Canal to Carnegie Lake. Records provided by New Jersey Water Supply Authority. REVISED RECORDS.--WDR NJ-85-1: 1984.

01402910 Water is diverted from the Raritan River just below the Millstone River to the Delaware and Raritan Canal at Ten Mile Lock for municipal supply. Negative discharge indicates flow from Canal to Millstone River. Records provided by the New Jersey Water Supply Authority. REVISED RECORDS.--WDR NJ-85-1: 1984.

01405029 Water is diverted from Lawrence Brook at Westons Mills, just upstream of gaging station (01405030), by City of New Brunswick (since 1873), for municipal supply. Records provided by City of New Brunswick Water Department.

01460570 Elizabethtown Water Company diverts water from the Delaware and Raritan Canal 1200 ft downstream from Ten Mile Lock at Franklin for municipal supply. Records provided by the Elizabethtown Water Company.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

MONTH	<u>01396920</u> Hamden pumping station	<u>01399669</u> Whitehouse Release	<u>01400509</u> Raritan and Millstone Rivers	<u>01400836</u> Carnegie Lake	<u>01402910</u> Ten Mile Lock diversion	<u>01405029</u> Westons Mills	<u>01460570</u> Delaware and Raritan Canal
October	0	0	150	0	-12.3	2.20	25.1
November	0	0	139	0	-7.6	4.58	23.1
December	0	0	135	0	-7.6	1.66	26.3
CAL YR 1997	0	---	166	0	-19.4	3.89	13.8
January	0	0	161	1.5	-35.1	6.98	1.73
February	0	0	166	0	-43.3	1.35	0
March	-15.6	15.6	168	3.1	-51.7	1.84	0
April	-5.4	0	170	0	-55.0	2.50	0
May	-54.6	0	181	0	-44.7	1.96	0
June	0	0	197	0	-45.7	2.89	.60
July	0	0	223	0	-42.2	3.22	.73
August	0	0	228	0	-36.3	2.67	0
September ...	0	0	193	0	-40.8	2.99	0
WTR YR 1998	-6.3	1.3	176	.4	-35.2	2.90	6.46

SHREWSBURY RIVER BASIN

01407500 SWIMMING RIVER NEAR RED BANK, NJ

LOCATION.--Lat 40°19'10", long 74°06'55", Monmouth County, Hydrologic Unit 02030104, on left bank 50 ft upstream from spillway at Swimming River Reservoir, 3.3 mi southwest of Red Bank, and 4.8 mi upstream from mouth.

DRAINAGE AREA.--49.2 mi².

PERIOD OF RECORD.--August 1922 to current year.

REVISED RECORDS.--WSP 891: 1939. WDR NJ-83-1: Drainage area. WDR NJ-90-1: 1989.

GAGE.--Water-stage recorder above concrete dam. Datum of gage is 30.00 ft above sea level. Prior to Jan. 19, 1962, at site 800 ft upstream at datum 17.67 ft lower. Jan. 19 to Mar. 30, 1962, nonrecording gage, 700 ft upstream at datum 13.87 ft lower.

REMARKS.--Records excellent for days of no flow, good above 200 ft³/s, and fair below 200 ft³/s. Records given herein represent flow over spillway and flow or leakage through blowoff gates. Diversion above station for municipal supply. Flow regulated by Swimming River Reservoir. Several measurements of water temperature were made during the year.

COOPERATION.--Water-stage recorder inspected by and record of diversion furnished by New Jersey-American Water Co.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in July 1919 reached a stage of 7.84 ft (site and datum then in use), from floodmark, discharge about 11,800 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.17	12	50	46	105	73	83	151	48	.71	.00
2	.00	47	10	37	43	96	110	317	86	36	.61	.00
3	.00	144	8.7	37	43	108	81	133	61	29	.25	.00
4	.00	51	9.7	36	44	98	72	91	51	24	.03	.00
5	.00	34	11	35	493	82	74	107	50	34	.00	.00
6	.00	23	10	36	395	75	63	210	46	30	.00	.00
7	.00	19	8.3	63	135	75	63	118	42	26	.00	.00
8	.00	24	6.7	218	100	98	62	160	38	37	.00	.00
9	.00	55	5.8	86	83	1470	110	1060	39	52	.00	.00
10	.00	57	5.2	51	78	407	740	1310	40	37	.00	.00
11	.00	37	8.5	41	76	163	202	743	39	24	.00	.00
12	.00	26	11	36	347	121	108	661	86	17	.00	.00
13	.00	20	12	37	140	108	92	294	382	15	.00	.00
14	.00	40	11	28	84	109	80	193	1270	11	.00	.00
15	.00	72	8.6	30	72	95	82	159	434	8.6	.00	.00
16	.00	42	7.7	212	66	89	79	143	172	7.2	.00	.00
17	.00	26	7.4	91	101	86	91	128	113	7.5	.00	.00
18	.00	21	6.3	52	543	101	84	119	82	15	.00	.00
19	.00	19	5.9	44	191	546	85	105	71	15	.00	.00
20	.00	18	5.3	39	118	368	153	95	61	14	.00	.00
21	.00	16	4.5	35	93	381	90	90	62	11	.00	.00
22	.00	129	3.6	33	78	436	70	78	54	8.5	.00	.00
23	.00	79	28	240	109	226	123	74	80	5.6	.00	.00
24	.00	38	44	846	1240	151	188	67	85	3.5	.00	.00
25	.00	23	117	192	389	118	91	94	60	1.7	.00	.00
26	.00	18	74	96	159	103	90	100	43	.57	.00	.00
27	.00	15	46	70	122	98	260	70	41	.06	.00	.00
28	.00	12	53	88	108	91	109	63	35	.00	.00	.00
29	.00	12	80	94	---	80	84	59	32	.00	.00	.00
30	.00	11	752	63	---	77	75	67	46	.00	.00	.00
31	.00	---	125	54	---	75	---	56	---	.16	.00	---
TOTAL	0.00	1128.17	1498.2	3070	5496	6236	3684	7047	3852	518.39	1.60	0.00
MEAN	.000	37.6	48.3	99.0	196	201	123	227	128	16.7	.052	.000
MAX	.00	144	752	846	1240	1470	740	1310	1270	52	.71	.00
MIN	.00	.17	3.6	28	43	75	62	56	32	.00	.00	.00
(+)	37.3	43.8	40.1	38.3	33.2	33.4	32.0	13.2	36.5	43.8	38.7	37.5
MEAN*	37.3	81.4	88.4	137.3	229.5	234.6	154.8	240.5	164.9	60.5	38.8	37.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

	MEAN	38.9	54.8	68.2	79.8	91.6	104	91.9	70.9	47.9	39.7	37.8	37.3
MAX	163	208	196	248	201	216	209	227	135	187	128	210	
(WY)	1944	1973	1978	1978	1979	1994	1980	1972	1938	1955	1938		
MIN	.000	.000	.000	.000	1.19	18.1	2.93	4.07	.000	.000	.000	.000	
(WY)	1971	1981	1981	1981	1989	1985	1962	1985	1985	1966	1957	1980	

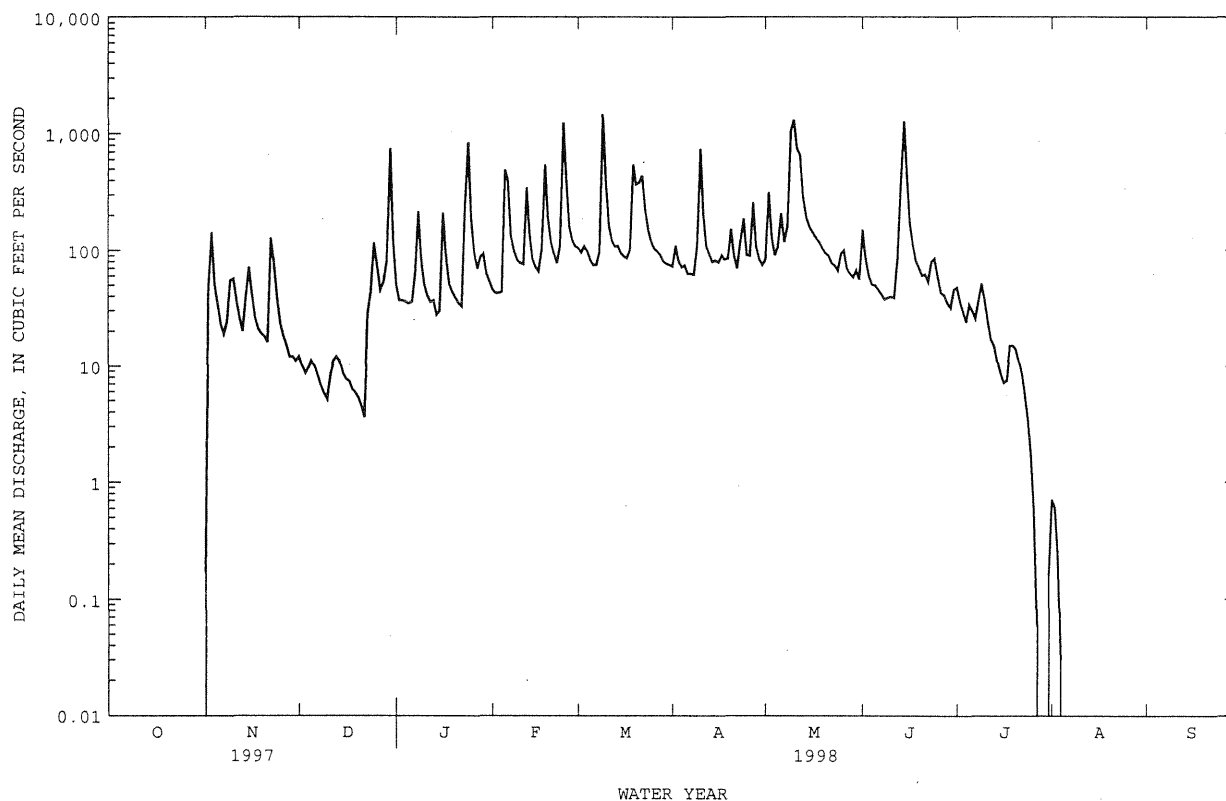
01407500 SWIMMING RIVER NEAR RED BANK, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	16423.42		32531.36			
ANNUAL MEAN	45.0	Unadjusted	89.1	Unadjusted	63.4	Unadjusted
ANNUAL MEAN*	81.9		126.4		81.5	
HIGHEST ANNUAL MEAN					123	1928
LOWEST ANNUAL MEAN					9.76	1985
HIGHEST DAILY MEAN	752	Dec 30	1470	Mar 9	3050	Oct 27 1943
LOWEST DAILY MEAN	.00	Jul 1	.00	Many days	.00	Jun 22 1923
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 1	.00	Oct 1	.00	Jul 16 1955
INSTANTANEOUS PEAK FLOW			2800	Mar 9	8910a	Oct 27 1943
INSTANTANEOUS PEAK STAGE			6.63	Mar 9	8.96	Oct 27 1943
INSTANTANEOUS LOW FLOW			.00	Many days		
ANNUAL RUNOFF (CFSM)	.91		1.81		1.29	
ANNUAL RUNOFF (CFSM)*	1.67		2.57		1.66	
ANNUAL RUNOFF (INCHES)	12.42	Unadjusted	24.60	Unadjusted	17.51	Unadjusted
ANNUAL RUNOFF (INCHES)*	22.62		34.87		22.83	
10 PERCENT EXCEEDS	96		167		121	
50 PERCENT EXCEEDS	31		40		45	
90 PERCENT EXCEEDS	.00		.00		.40	

a From rating curve extended above 1,000 ft³/s on basis of weir formula, site and datum then in use.

† Diversion and change in contents, in cubic feet per second, from Swimming River Reservoir.

* Adjusted for diversion and change in contents.



SHARK RIVER BASIN

01407705 SHARK RIVER NEAR NEPTUNE CITY, NJ

LOCATION.--Lat 40°11'56", long 74°04'14", Monmouth County, Hydrologic Unit 02030104, on left bank 100 ft upstream from bridge on Remsen Mill Road, 0.3 mi downstream from Robins Swamp Brook, and 1.7 mi west of Neptune City.

DRAINAGE AREA.--9.96 mi².

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 7.05 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Diversion above station by New Jersey-American Water Co. for municipal supply (See Shark River basin diversions) and by farmers for irrigation. Entire flow from 0.34 mi² of drainage area, subsequent to November 1962, controlled by Glendola Reservoir (capacity 1,000 million gal) on Robins Swamp Brook, 0.6 mi southwest of gage. Water pumped into Glendola Reservoir from Manasquan River or Reservoir subsequent to July 1990 (see Manasquan River Basin diversions). Several measurements of water temperature were made during the year.

COOPERATION.--Water-stage recorder inspected by New Jersey-American Water Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	43	3.1	12	e15	17	7.8	14	19	13	6.0	4.2
2	2.5	49	2.3	9.6	e10	16	15	107	11	4.8	3.4	3.7
3	2.7	23	2.4	8.9	e10	20	12	35	9.0	3.0	3.8	7.5
4	3.0	10	2.9	7.8	e10	17	11	16	7.0	11	4.4	5.0
5	2.7	5.9	1.7	6.5	e95	15	11	28	6.4	21	6.9	5.1
6	2.6	4.0	2.5	6.2	e50	14	10	46	6.4	4.3	5.7	5.6
7	3.5	5.6	1.9	18	e25	13	9.1	22	6.4	4.0	5.1	5.0
8	3.1	13	2.7	65	e20	34	8.9	59	6.6	7.4	5.5	8.6
9	4.1	25	2.6	21	e16	370	31	279	7.1	6.3	5.5	3.3
10	2.4	13	2.2	15	16	83	179	316	7.3	3.0	5.6	3.7
11	3.1	8.1	4.0	13	14	31	42	160	7.4	3.0	6.3	3.6
12	2.9	5.6	4.0	13	88	19	18	154	12	3.4	5.7	3.6
13	3.0	4.4	2.4	14	30	17	16	60	15	4.1	4.5	5.1
14	3.2	28	2.6	12	15	16	16	38	133	4.0	3.4	5.0
15	5.5	18	2.7	16	12	16	17	29	41	3.9	3.4	4.1
16	3.6	10	2.6	78	11	15	17	24	17	4.4	3.7	12
17	4.1	5.0	3.9	29	30	14	23	20	11	10	15	26
18	2.6	3.6	2.4	18	94	16	18	18	8.1	9.4	9.1	5.9
19	2.2	3.1	2.6	16	39	117	16	16	6.4	3.1	7.3	3.4
20	2.8	2.7	2.6	15	20	81	26	14	7.2	3.1	3.4	3.2
21	3.3	2.8	2.4	15	17	106	13	13	8.0	4.6	4.1	3.6
22	3.3	47	2.6	14	13	102	12	12	6.0	4.3	3.8	3.8
23	3.4	15	35	91	29	43	43	11	17	3.9	5.9	3.0
24	3.7	8.3	14	e135	349	22	50	11	11	3.1	2.4	3.4
25	43	5.3	41	e40	87	16	15	15	5.9	3.8	3.3	3.0
26	8.8	4.8	19	e20	33	14	13	13	4.8	3.2	2.7	3.1
27	22	3.3	16	e15	20	13	27	11	3.9	4.0	6.3	2.8
28	6.7	3.3	18	e30	18	13	13	10	4.4	3.2	1.9	4.9
29	2.2	3.5	37	e30	---	12	10	9.4	5.9	3.7	2.7	7.7
30	4.3	3.3	151	e20	---	9.9	8.9	9.1	14	3.9	3.6	4.5
31	4.6	---	29	e15	---	7.6	---	8.0	---	55	2.7	---
TOTAL	167.9	376.6	419.1	819.0	1186	1299.5	708.7	1577.5	425.2	218.9	153.1	163.4
MEAN	5.42	12.6	13.5	26.4	42.4	41.9	23.6	50.9	14.2	7.06	4.94	5.45
MAX	43	49	151	135	349	370	179	316	133	55	15	26
MIN	2.2	2.7	1.7	6.2	10	7.6	7.8	8.0	3.9	3.0	1.9	2.8

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1998, BY WATER YEAR (WY)

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MEAN	10.1	13.2	17.3	17.9	16.4	22.4	20.2	17.1	9.29	9.89	11.1	8.68												
MAX	34.0	31.7	44.2	41.1	42.4	56.3	48.3	50.9	21.9	30.1	29.2	22.6												
(WY)	1990	1978	1970	1978	1998	1993	1983	1998	1975	1984	1992	1989												
MIN	2.81	1.73	4.11	3.57	3.79	6.53	6.39	3.51	2.13	3.47	3.11	1.28												
(WY)	1982	1982	1981	1981	1974	1986	1985	1986	1986	1985	1995	1988												

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

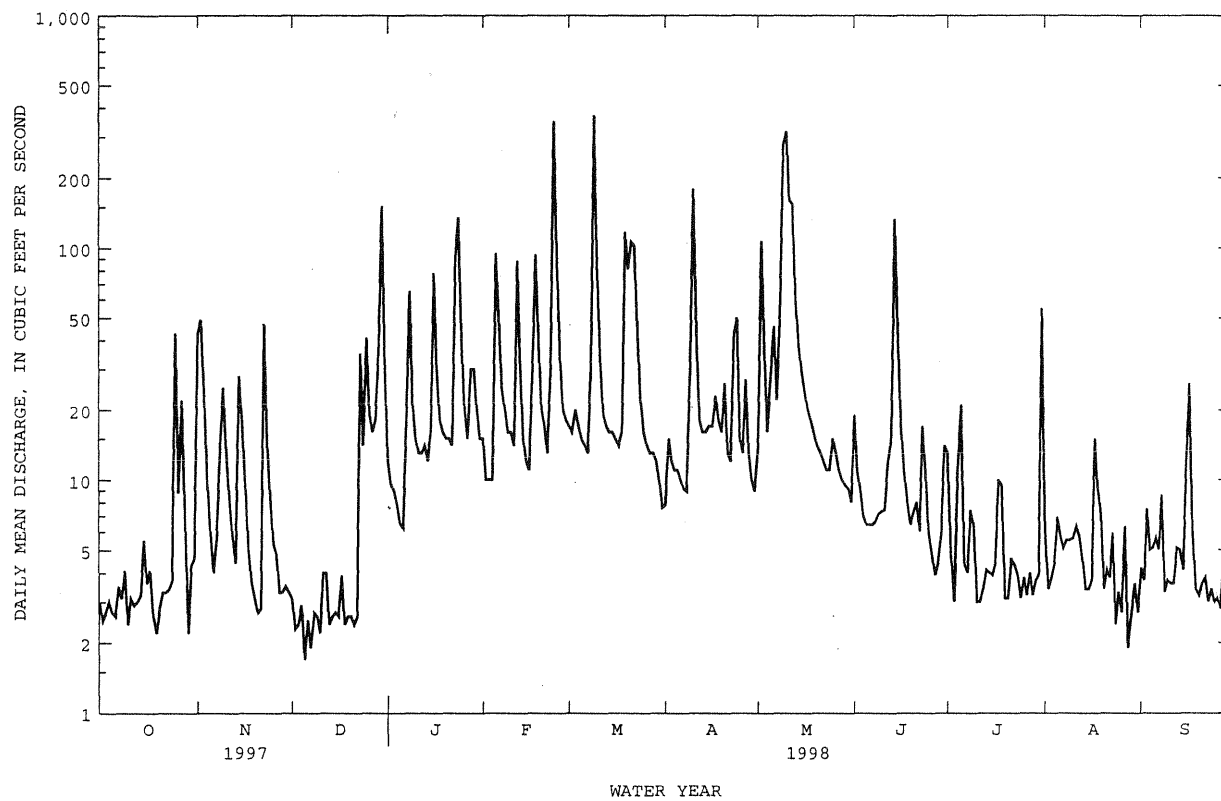
FOR 1998 WATER YEAR

WATER YEARS 1967 - 1998

ANNUAL TOTAL	4428.5	7514.9	
ANNUAL MEAN	12.1	20.6	14.5
HIGHEST ANNUAL MEAN			24.9
LOWEST ANNUAL MEAN			6.80
HIGHEST DAILY MEAN	160	Jul 25	560
LOWEST DAILY MEAN	1.7	Dec 5	.00
ANNUAL SEVEN-DAY MINIMUM	2.3	Dec 2	.70
INSTANTANEOUS PEAK FLOW			608
INSTANTANEOUS PEAK STAGE			5.65
INSTANTANEOUS LOW FLOW			.00
10 PERCENT EXCEEDS	25	41	28
50 PERCENT EXCEEDS	5.6	9.4	8.2
90 PERCENT EXCEEDS	2.7	3.0	2.6

e Estimated

01407705 SHARK RIVER NEAR NEPTUNE CITY, NJ--Continued



01407760 JUMPING BROOK NEAR NEPTUNE CITY, NJ

LOCATION.--Lat 40°12'13", long 74°03'58", Monmouth County, Hydrologic Unit 02030104, on left bank 60 ft downstream from dam on Jumping Brook Reservoir, 0.8 mi upstream from mouth, and 1.4 mi west of Neptune City. Water-quality samples collected at bridge on Corlies Avenue, 600 ft downstream from gaging station.

DRAINAGE AREA.--6.46 mi².

PERIOD OF RECORD.--October 1966 to current year. Records for water years 1976-83 are unpublished but are available in the files of New Jersey District Office.

REVISED RECORDS.--WDR-84-1: drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 13.76 ft above sea level.

REMARKS.--Records good except those above 300 ft³/s, which are fair. Diversion above station by New Jersey-American Water Co. for municipal supply (See shark river basin diversions for record) and by farmers for irrigation. Several measurements of water temperature, other than those published, were made during the year.

COOPERATION.--Water-stage recorder inspected by and records of diversion provided by New Jersey-American Water Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	20	5.7	7.9	8.9	12	11	16	21	11	8.4	2.6
2	4.2	27	4.7	7.1	8.2	12	15	75	9.1	6.4	4.8	4.3
3	3.4	13	4.4	6.9	7.9	15	11	25	7.6	5.8	4.2	9.2
4	3.3	6.2	6.3	6.4	7.9	13	9.5	15	6.7	12	3.4	3.9
5	3.1	4.9	5.3	6.1	105	11	9.1	25	6.0	14	3.1	3.3
6	2.9	4.4	4.6	6.0	46	9.9	9.0	32	6.0	6.6	3.0	2.9
7	2.5	4.9	4.3	18	15	9.6	8.6	16	5.9	5.6	3.5	2.9
8	2.8	11	4.1	43	12	28	8.6	48	5.4	8.2	3.2	13
9	2.4	23	4.1	13	9.9	276	42	242	5.6	7.6	3.3	4.2
10	2.6	12	4.4	9.1	9.1	35	154	174	5.5	5.8	3.8	3.0
11	2.5	6.5	8.0	7.3	9.3	18	23	90	5.5	4.6	3.4	2.6
12	2.5	5.2	6.8	6.5	57	15	15	88	15	4.6	3.0	2.9
13	2.6	4.7	5.3	6.5	16	14	13	27	16	4.0	3.0	2.7
14	2.4	24	4.5	6.0	11	13	12	22	66	3.6	3.2	2.7
15	7.3	16	4.1	11	9.3	12	12	17	20	3.5	3.0	2.5
16	7.0	7.5	4.1	56	8.5	11	11	15	12	4.2	3.0	11
17	4.4	5.7	4.1	14	20	10	18	14	9.1	11	14	34
18	3.5	5.1	4.1	9.1	45	13	14	13	7.7	17	9.2	7.4
19	3.2	4.9	3.9	7.8	17	81	13	12	6.9	6.0	7.8	4.7
20	3.0	4.7	3.9	7.1	13	33	23	11	7.3	5.0	3.8	4.0
21	2.8	4.7	3.9	6.6	11	76	13	10	7.7	4.2	3.4	3.7
22	2.7	38	3.9	6.3	9.4	55	10	9.5	6.6	3.5	3.0	6.3
23	2.6	11	27	76	24	22	34	8.8	13	3.2	7.1	5.3
24	2.6	6.6	9.0	133	255	16	31	8.5	9.9	3.3	4.6	3.6
25	37	5.5	28	24	39	14	13	15	7.0	3.3	4.0	3.1
26	13	5.3	10	14	18	13	15	11	6.3	3.3	3.5	3.5
27	25	5.0	8.7	11	14	12	26	9.5	6.0	2.9	14	3.3
28	7.4	5.0	13	27	13	11	13	7.9	5.3	3.0	5.4	3.0
29	5.1	5.0	26	22	---	11	11	7.4	5.4	3.0	4.2	2.5
30	4.1	4.9	92	12	---	11	9.9	7.4	17	2.7	3.5	2.7
31	3.9	---	14	10	---	10	---	7.2	---	54	3.1	---
TOTAL	177.5	301.7	332.2	596.7	819.4	892.5	607.7	1079.2	328.5	232.9	149.9	160.8
MEAN	5.73	10.1	10.7	19.2	29.3	28.8	20.3	34.8	10.9	7.51	4.84	5.36
MAX	37	38	92	133	255	276	154	242	66	54	14	34
MIN	2.4	4.4	3.9	6.0	7.9	9.6	8.6	7.2	5.3	2.7	3.0	2.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1998, BY WATER YEAR (WY)

	MEAN	7.12	8.98	10.8	12.6	11.9	14.3	12.7	7.08	7.14	7.58	6.61
MAX	34.5	47.3	30.5	55.5	62.1	47.1	66.5	53.8	23.7	21.5	19.0	24.2
(WY)	1990	1978	1970	1979	1979	1984	1980	1989	1972	1989	1992	1971
MIN	1.97	1.89	2.78	1.94	3.53	3.86	3.29	2.08	2.11	2.44	1.52	1.25
(WY)	1982	1982	1981	1981	1968	1985	1985	1977	1986	1988	1982	1982

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

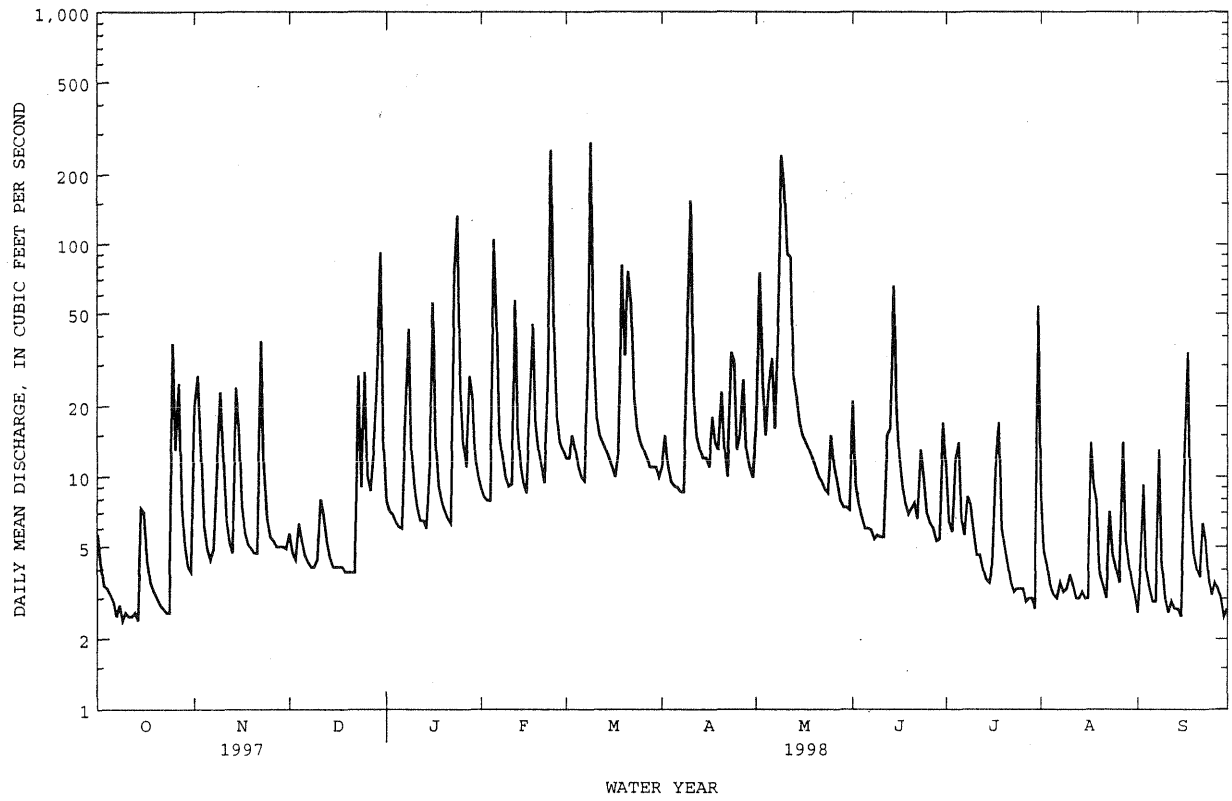
FOR 1998 WATER YEAR

WATER YEARS 1967 - 1998

ANNUAL TOTAL	3493.49	5679.0	
ANNUAL MEAN	9.57	15.6	10.1
HIGHEST ANNUAL MEAN			20.4
LOWEST ANNUAL MEAN			4.05
HIGHEST DAILY MEAN	318	276	954
LOWEST DAILY MEAN	.68	2.4	.12
ANNUAL SEVEN-DAY MINIMUM	.90	2.5	.51
INSTANTANEOUS PEAK FLOW		556	1830a
INSTANTANEOUS PEAK STAGE		6.01	7.43
INSTANTANEOUS LOW FLOW		1.9	.00
10 PERCENT EXCEEDS	17	27	18
50 PERCENT EXCEEDS	5.7	7.9	5.0
90 PERCENT EXCEEDS	2.3	3.1	2.0

a From rating curve extended above 150 ft³/s.

01407760 JUMPING BROOK NEAR NEPTUNE CITY, NJ--Continued



DIVERSIONS IN SHARK RIVER BASIN

01407704 Water is diverted from Shark River just upstream of gaging station (01407705) near Neptune City by New Jersey-American Water Company (since 1962), for municipal supply. Records provided by New Jersey-American Water Company.

01407759 Water is diverted from Jumping Brook just upstream of gaging station (01407760) near Neptune City by New Jersey-American Water Company (since 1962), for municipal supply. Records provided by New Jersey-American Water Company.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998			
MONTH	01407704 Shark River	01407759 Jumping Brook	01407759 Jumping Brook (1997 revised)
October.....	8.3	0	0
November.....	16.6	0	0
December.....	9.3	0	0
CAL YR 1997	9.1	.1	.1
January.....	6.1	0	0
February.....	5.8	0	0
March.....	6.0	0	0
April.....	14.5	0	0
May.....	10.8	0	0
June.....	15.3	0	.5
July.....	14.1	0	.4
August.....	11.3	0	0
September.....	12.9	0	0
WTR YR 1998	10.9	0	.1

01408000 MANASQUAN RIVER AT SQUANKUM, NJ

LOCATION.--Lat 40°09'41", Long 74°09'18" (revised), Monmouth County, Hydrologic Unit 02040301, on right bank 50 ft upstream from northbound bridge on State Highway 547 (Squankum Park Road) in Squankum, and 0.4 mi downstream from Marsh Bog Brook.

DRAINAGE AREA.--44.0 mi².

PERIOD OF RECORD.--July 1931 to current year. Monthly discharge only for July 1931, published in WSP 1302.

REVISED RECORDS.--WDR NJ-83-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 18.82 ft above sea level. Prior to Aug. 13, 1940, water stage recorder at site 80 ft upstream at same datum.

REMARKS.--Records good except for daily discharges above 300 ft³/s and estimated daily discharges, which are fair. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	1400	730	6.20	May 10	0645	1,190	7.83
Mar 9	1830	*1,530	*8.97	May 12	0930	871	6.76
Mar 19	2145	720	6.16	Jun 15	0045	665	5.91
Apr 10	1030	696	6.05				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	69	43	84	83	111	81	72	111	71	57	27
2	23	156	41	70	77	104	109	209	72	54	41	27
3	23	155	39	65	74	110	82	105	64	50	36	56
4	22	54	43	62	70	112	76	94	58	54	34	31
5	22	42	42	58	212	94	73	91	55	127	32	29
6	21	38	40	55	164	87	70	156	52	63	32	27
7	21	37	39	74	e150	82	67	114	51	54	30	26
8	21	48	37	180	e125	87	66	156	50	60	29	53
9	21	73	37	100	e100	951	87	608	49	68	29	30
10	21	57	37	76	e70	482	499	1040	48	54	29	27
11	20	43	45	66	e75	199	193	692	48	48	36	26
12	20	39	43	60	e270	147	123	686	78	45	30	26
13	20	36	42	58	e150	124	101	291	99	44	27	25
14	20	70	40	54	e95	119	92	200	434	40	27	25
15	24	80	39	54	e80	109	88	171	288	39	27	25
16	29	51	37	195	e75	98	82	161	135	38	28	37
17	24	44	37	97	e120	93	96	151	99	39	54	253
18	22	40	36	76	271	97	92	142	88	40	98	62
19	21	38	35	67	162	380	87	132	79	38	62	41
20	21	37	35	62	120	342	136	123	87	36	36	34
21	21	35	35	57	103	322	88	115	93	35	33	30
22	20	167	34	54	91	324	77	106	72	33	31	31
23	20	82	104	120	97	191	118	99	109	32	42	32
24	20	59	75	329	301	149	163	94	93	32	34	27
25	87	51	132	208	300	125	92	99	73	31	30	26
26	42	48	76	129	173	114	78	86	67	30	29	26
27	84	47	60	103	135	108	136	75	64	29	43	26
28	37	43	73	120	120	103	85	70	58	29	35	25
29	29	42	91	141	---	95	76	67	54	29	32	24
30	27	41	527	103	---	88	73	69	75	28	29	24
31	26	---	152	91	---	85	---	64	---	161	28	---
TOTAL	854	1822	2146	3068	3863	5632	3286	6338	2803	1531	1140	1158
MEAN	27.5	60.7	69.2	99.0	138	182	110	204	93.4	49.4	36.8	38.6
MAX	87	167	527	329	301	951	499	1040	434	161	98	253
MIN	20	35	34	54	70	82	66	64	48	28	27	24
CFSM	.63	1.38	1.57	2.25	3.14	4.13	2.49	4.65	2.12	1.12	.84	.88
IN.	.72	1.54	1.81	2.59	3.27	4.76	2.78	5.36	2.37	1.29	.96	.98

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1998, BY WATER YEAR (WY)

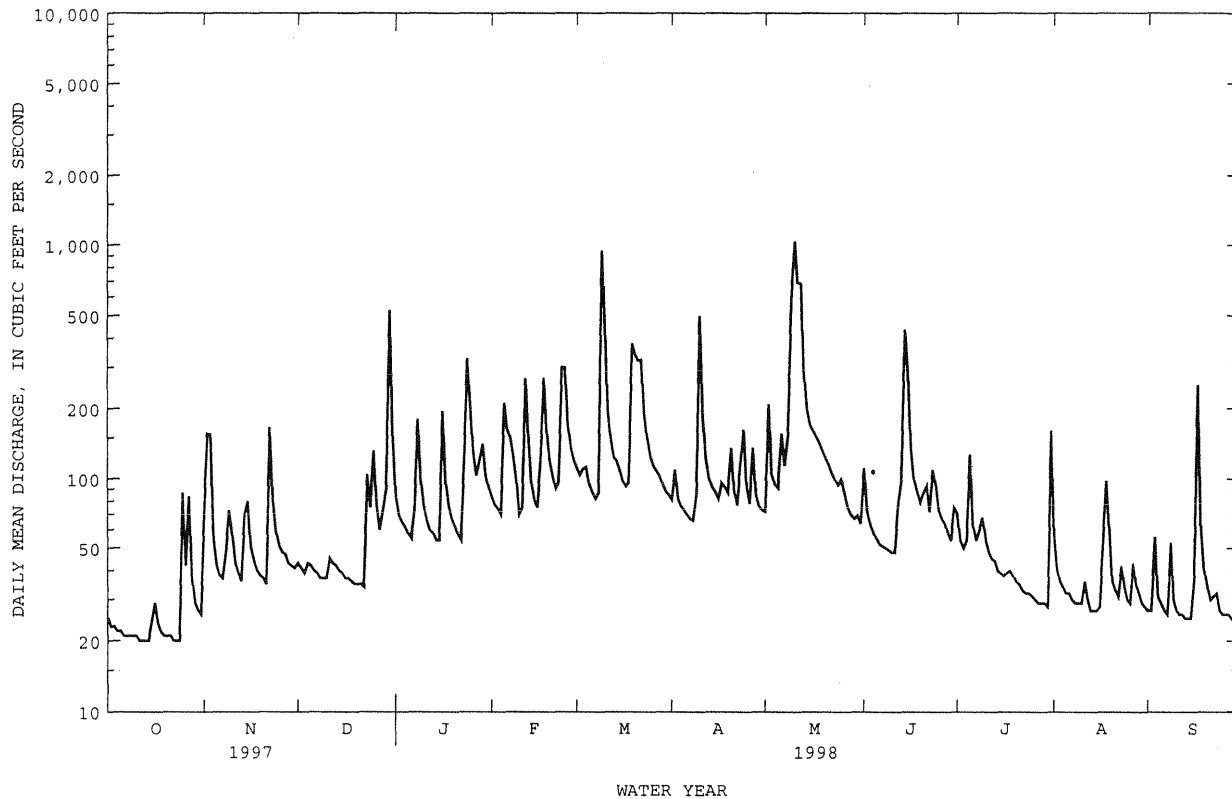
	MEAN	51.1	70.0	82.2	90.2	96.8	113	101	80.5	57.8	52.5	51.4	51.3
MAX	130	231	212	218	214	221	218	204	126	200	108	183	
(WY)	1972	1978	1978	1979	1979	1984	1983	1998	1968	1938	1948	1938	
MIN	22.1	22.3	26.4	30.7	37.8	47.2	38.6	38.8	26.6	19.9	16.7	16.7	
(WY)	1964	1966	1966	1981	1992	1985	1995	1955	1957	1966	1932	1932	

MANASQUAN RIVER BASIN

01408000 MANASQUAN RIVER AT SQUANKUM, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1932 - 1998	
ANNUAL TOTAL	24283		33641		74.7	
ANNUAL MEAN	66.5		92.2		131	
HIGHEST ANNUAL MEAN					40.2	
HIGHEST DAILY MEAN	527	Dec 30	1040	May 10	1720	Nov 8 1977
LOWEST DAILY MEAN	19	Jul 20	20	Oct 11	12	Sep 11 1995
ANNUAL SEVEN-DAY MINIMUM	20	Jul 15	20	Oct 8	13	Sep 7 1995
INSTANTANEOUS PEAK FLOW			1530	Mar 9	2940	Sep 21 1938
INSTANTANEOUS PEAK STAGE			8.97	Mar 9	12.45	Sep 21 1938
INSTANTANEOUS LOW FLOW			20	Oct 11	8.1	Aug 6 1981
ANNUAL RUNOFF (CFSM)	1.51		2.09		1.70	
ANNUAL RUNOFF (INCHES)	20.53		28.44		23.07	
10 PERCENT EXCEEDS	122		161		131	
50 PERCENT EXCEEDS	54		64		54	
90 PERCENT EXCEEDS	22		27		26	

e Estimated



01408029 MANASQUAN RIVER NEAR ALLENWOOD, NJ

LOCATION.--Lat 40°08'48", long 74°07'23", Monmouth County, Hydrologic Unit 02040301, on left bank just downstream from pumping station of Manasquan Water Supply System, 1400 ft upstream from Hospital Road near Allenwood, 1.2 mi downstream from Mill Run, and 7.9 mi from mouth.

DRAINAGE AREA.--63.3 mi².

PERIOD OF RECORD.--June 1990 to current year.

REVISED RECORDS.--WDR NJ-92-1: 1991 Diversion.

GAGE.--Water-stage recorder and concrete control. Datum of gage is sea level (New Jersey Water Supply Authority benchmark).

REMARKS.--Records good. Diversion by New Jersey-American Water Company from Manasquan Reservoir since 1990 and by Manasquan Water Supply System at gage to Manasquan Reservoir for municipal supply since March 1990 (see Manasquan River, diversions). Records of diversions provided by New Jersey Water Supply Authority. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	56	41	85	100	149	100	99	125	78	41	15
2	15	203	35	72	94	134	135	428	80	48	36	15
3	13	251	31	45	93	157	108	226	62	40	26	47
4	14	53	39	40	81	146	97	147	53	53	22	19
5	15	35	40	51	388	119	92	142	48	175	19	15
6	16	36	34	46	533	106	86	284	44	70	17	14
7	16	37	31	69	204	100	82	169	43	49	17	15
8	23	39	29	294	137	125	81	218	47	56	14	44
9	18	37	28	115	114	1590	113	1020	41	73	15	18
10	14	51	28	40	115	1030	868	1740	39	50	14	14
11	15	39	41	46	97	336	382	1210	40	39	20	15
12	15	40	42	54	449	212	185	1210	73	34	15	14
13	15	34	38	55	261	166	142	519	77	31	12	15
14	16	71	32	61	148	155	125	310	741	27	15	16
15	19	49	29	62	113	141	117	237	623	31	15	16
16	23	31	28	342	99	124	111	204	186	25	17	24
17	17	42	33	172	133	114	127	180	117	38	79	324
18	13	40	26	108	630	123	140	151	96	34	151	73
19	14	37	27	88	299	488	119	127	80	28	73	37
20	15	34	26	76	186	693	195	115	101	25	26	27
21	16	32	26	67	148	532	140	108	115	22	21	22
22	15	175	24	62	121	631	113	96	74	20	17	22
23	25	51	111	200	142	343	170	87	158	18	29	25
24	28	56	52	1320	1440	238	326	82	169	17	24	17
25	130	41	154	406	760	187	185	102	107	15	17	17
26	87	47	84	203	301	151	143	104	86	14	14	18
27	137	43	35	159	205	139	225	80	81	14	29	18
28	71	38	47	211	169	128	155	72	71	12	25	16
29	50	38	94	269	---	120	127	66	56	13	20	14
30	43	37	957	167	---	111	103	69	72	12	15	16
31	32	---	253	118	---	105	---	61	---	261	13	---
TOTAL	960	1773	2495	5103	7560	8893	5092	9663	3705	1422	868	962
MEAN	31.0	59.1	80.5	165	270	287	170	312	124	45.9	28.0	32.1
MAX	137	251	957	1320	1440	1590	868	1740	741	261	151	324
MIN	13	31	24	40	81	100	81	61	39	12	12	14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

	MEAN	52.8	62.3	108	136	112	176	122	94.1	53.7	40.7	63.3	41.6
MAX	152	129	227	218	270	319	181	312	124	66.4	131	88.8	
(WY)	1997	1996	1997	1996	1998	1993	1997	1998	1998	1990	1990	1996	
MIN	19.2	22.2	48.5	57.1	35.8	44.5	28.0	31.2	21.5	24.9	28.0	21.7	
(WY)	1995	1992	1992	1995	1992	1992	1992	1992	1991	1994	1998	1995	

SUMMARY STATISTICS

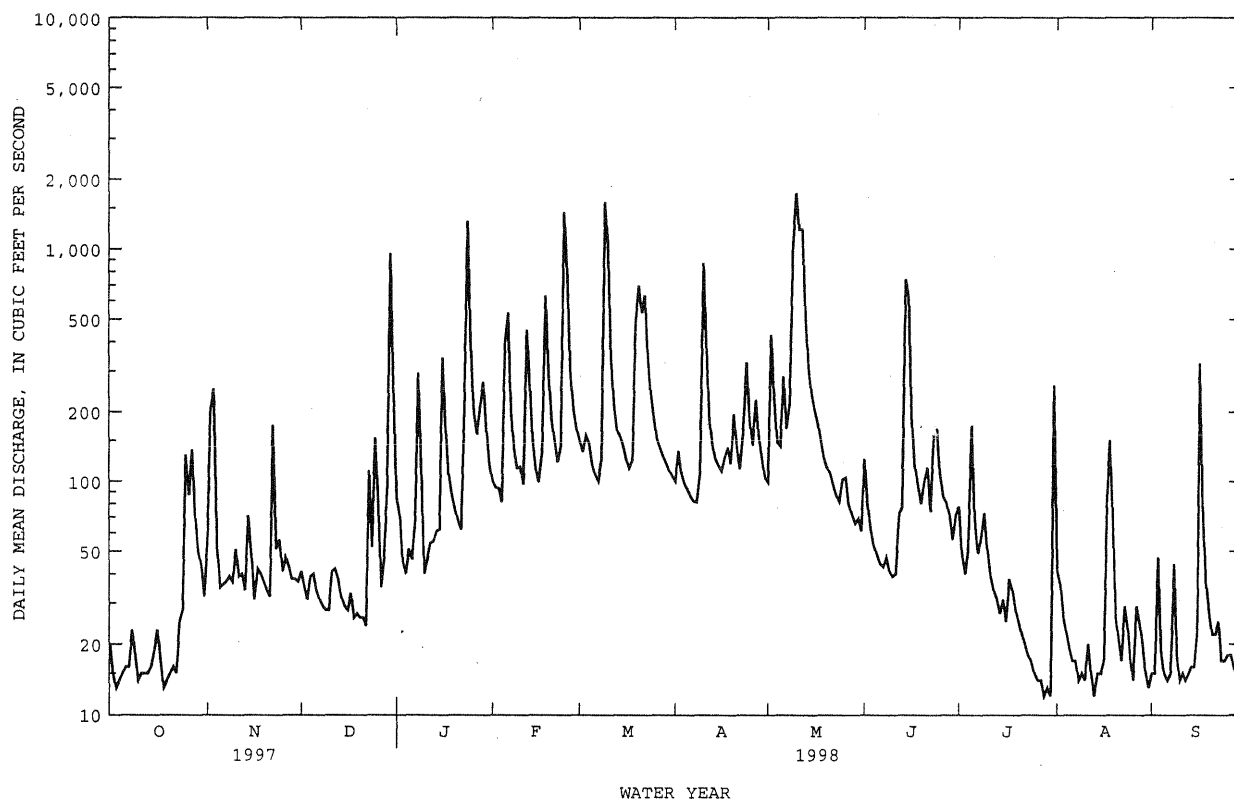
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1990 - 1998

ANNUAL TOTAL	28702	48496	
ANNUAL MEAN	78.6	133	87.6
HIGHEST ANNUAL MEAN			133
LOWEST ANNUAL MEAN			39.4
HIGHEST DAILY MEAN	957	Dec 30	1740
LOWEST DAILY MEAN	12	Jul 15	12
ANNUAL SEVEN-DAY MINIMUM	15	Jul 14	14
INSTANTANEOUS PEAK FLOW			2580
INSTANTANEOUS PEAK STAGE			15.87
INSTANTANEOUS LOW FLOW			9.5
10 PERCENT EXCEEDS	163		264
50 PERCENT EXCEEDS	49		66
90 PERCENT EXCEEDS	15		15
			174
			47
			16

a Result of pumping to Manasquan Reservoir.



RESERVOIRS IN MANASQUAN RIVER BASIN

01407965 MANASQUAN RESERVOIR.--Lat 40°10'48", long 74°11'40", Monmouth County, Hydrologic Unit 02040301, at dam on Timber Swamp Brook, 1.6 mi southwest of Farmingdale, and 1.2 mi upstream from the Manasquan River. DRAINAGE AREA, 3.18 mi² (revised). PERIOD OF RECORD, March 1990 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by an earthfill dam 4,840 ft long, utilizing a soil-bentonite cut-off wall to control water seepage; dam completed in July 1990 with nominal crest elevation 112.0 ft, but filling began earlier. Usable capacity 4,669,700,000 gal (revised) at elevation 103.0 ft, which represents the normal and service spillway elevation; outflow is regulated through an inlet/outlet tower and the reservoir is filled by pumping from the Manasquan River Intake Pumping Station and the Reservoir Pumping Station through 5.25 mi of 66-in. pipeline (see station 01408029). Water is used for municipal supply.

COOPERATION.--Records provided by New Jersey Water Supply Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,694,000,000 gal, Mar. 26, 1993, elevation, 103.1 ft; minimum (after first filling), 3,531,000,000 gal, Feb. 26, 1992, elevation 97.7 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents 4,720,000,000 gal, Mar. 9, elevation, 103.2 ft; minimum, 3,610,000,000 gal, Oct. 31, elevation, 98.15 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)†	Contents (million gallons)	Change in contents (equivalent in ft ³ /s)
01407965 MANASQUAN RESERVOIR			
Sept.30.....	99.76	3,945	-
Oct.31.....	98.15	3,610	-16.7
Nov.30.....	99.68	3,920	+16.0
Dec.31.....	100.62	4,140	+11.0
CAL YR 1997			-1.6
Jan.31.....	102.33	4,500	+18.0
Feb.29.....	102.92	4,640	+7.7
Mar.31.....	102.90	4,640	0
Apr.30.....	102.64	4,570	-3.6
May31.....	102.58	4,550	-1.0
June30.....	102.49	5,530	+50.5
July31.....	102.20	4,480	-52.4
Aug.31.....	101.60	4,350	-6.5
Sept.30.....	101.10	4,240	-5.7
WTR YR 1998			+1.3

† Elevation at 2400 of the last day of each month.

DIVERSIONS IN MANASQUAN RIVER BASIN

- 140802880 New Jersey Water Supply Authority diverts water from the Manasquan Reservoir System, for municipal supply. Figures include water pumped to Glendola Reservoir for New Jersey American Water Company.
- 140802890 New Jersey Water Supply Authority diverts water from the Manasquan Reservoir System to the Glendola Reservoir of New Jersey American Water Company in the Shark River Basin, for municipal supply.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

MONTH	0140802880	0140802890
	Manasquan Reservoir System	Glendola Reservoir NJ American Water Company
October	17.4	17.3
November	40.3	18.3
December	32.4	17.9
CAL YR 1997	25.7	22.7
January	36.3	16.9
February	22.6	17.1
March	19.7	18.2
April	21.7	17.8
May	21.5	18.3
June	24.0	18.3
July	26.8	18.3
August	24.7	17.6
September	24.1	18.4
WTR YR 1998	26.0	17.9

METEDECONK RIVER BASIN

01408120 NORTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ

LOCATION.--Lat 40°05'30", long 74°09'10", Ocean County, Hydrologic Unit 02040301, on upstream right bank at bridge on State Route 549, 1.0 mi upstream from confluence with South Branch Metedeconk River, and 2.3 mi east of Lakewood.

DRAINAGE AREA.--34.9 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3.89 ft above sea level. Prior to Nov. 17, 1977, gage located on upstream left side of bridge. Nov. 17, 1977 to Dec. 19, 1984, gage located on the downstream side of bridge.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	1245	322	6.60	Apr 11	0115	281	6.38
Jan 24	1515	399	6.92	May 10	0400	598	7.61
Feb 24	1215	513	7.34	Jun 14	1630	657	7.78
Mar 9		*736	7.99	Jul 31	1430	479	7.22
Mar 22	0300	333	6.65				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	54	38	134	61	103	64	62	76	62	223	21
2	24	110	37	88	56	97	66	174	75	47	68	23
3	23	107	35	55	54	106	71	188	61	40	37	48
4	22	78	39	49	52	107	65	128	56	48	31	33
5	22	59	40	46	137	97	63	94	53	124	28	25
6	21	42	37	45	195	87	60	132	51	83	26	21
7	21	39	35	53	129	81	58	107	50	55	25	20
8	21	49	34	121	86	102	58	118	49	51	24	45
9	21	71	33	124	67	e480	75	356	49	67	24	33
10	20	63	33	86	62	477	236	573	48	52	24	24
11	20	47	39	60	58	275	241	512	49	41	25	21
12	20	40	41	49	148	170	166	502	67	36	25	20
13	20	36	39	46	146	107	111	355	82	34	23	19
14	20	57	36	44	106	86	76	234	339	32	22	19
15	33	71	34	45	74	81	68	162	426	31	21	19
16	34	57	33	122	59	75	64	117	209	30	21	19
17	29	46	32	112	70	69	73	102	116	37	50	37
18	28	40	31	83	183	73	86	102	70	34	155	41
19	24	37	31	62	189	146	75	93	60	30	91	29
20	22	36	31	52	133	276	93	83	53	28	42	24
21	22	35	31	47	94	269	83	78	51	27	30	22
22	22	93	30	45	70	307	70	73	50	25	27	24
23	21	95	68	93	82	234	94	69	72	24	35	26
24	21	69	70	359	461	162	159	67	87	25	31	21
25	71	50	82	293	459	111	111	80	65	23	26	19
26	87	42	80	190	295	88	78	90	51	22	23	20
27	91	39	63	118	187	79	95	72	47	22	27	20
28	61	37	62	94	122	77	81	65	43	24	30	18
29	40	37	72	110	---	71	67	62	41	23	28	17
30	33	36	260	90	---	68	59	63	50	22	24	17
31	31	---	240	73	---	65	---	59	---	259	22	---
TOTAL	976	1672	1766	2988	3835	4626	2766	4972	2596	1458	1288	745
MEAN	31.5	55.7	57.0	96.4	137	149	92.2	160	86.5	47.0	41.5	24.8
MAX	91	110	260	359	461	480	241	573	426	259	223	48
MIN	20	35	30	44	52	65	58	59	41	22	21	17
CFSM	.90	1.60	1.63	2.76	3.92	4.28	2.64	4.60	2.48	1.35	1.19	.71
IN.	1.04	1.78	1.88	3.18	4.09	4.93	2.95	5.30	2.77	1.55	1.37	.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1998, BY WATER YEAR (WY)

	MEAN	44.7	59.6	72.5	76.4	72.2	85.0	83.1	67.8	48.7	44.1	43.2	38.4
MAX		92.6	141	129	153	153	160	153	160	89.6	107	88.8	80.9
(WY)		1990	1973	1978	1979	1979	1984	1984	1998	1984	1984	1990	1989
MIN		24.4	26.1	32.2	25.2	33.0	38.8	32.9	27.1	26.0	21.7	15.2	17.8
(WY)		1982	1982	1989	1981	1992	1981	1995	1977	1986	1988	1981	1988

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

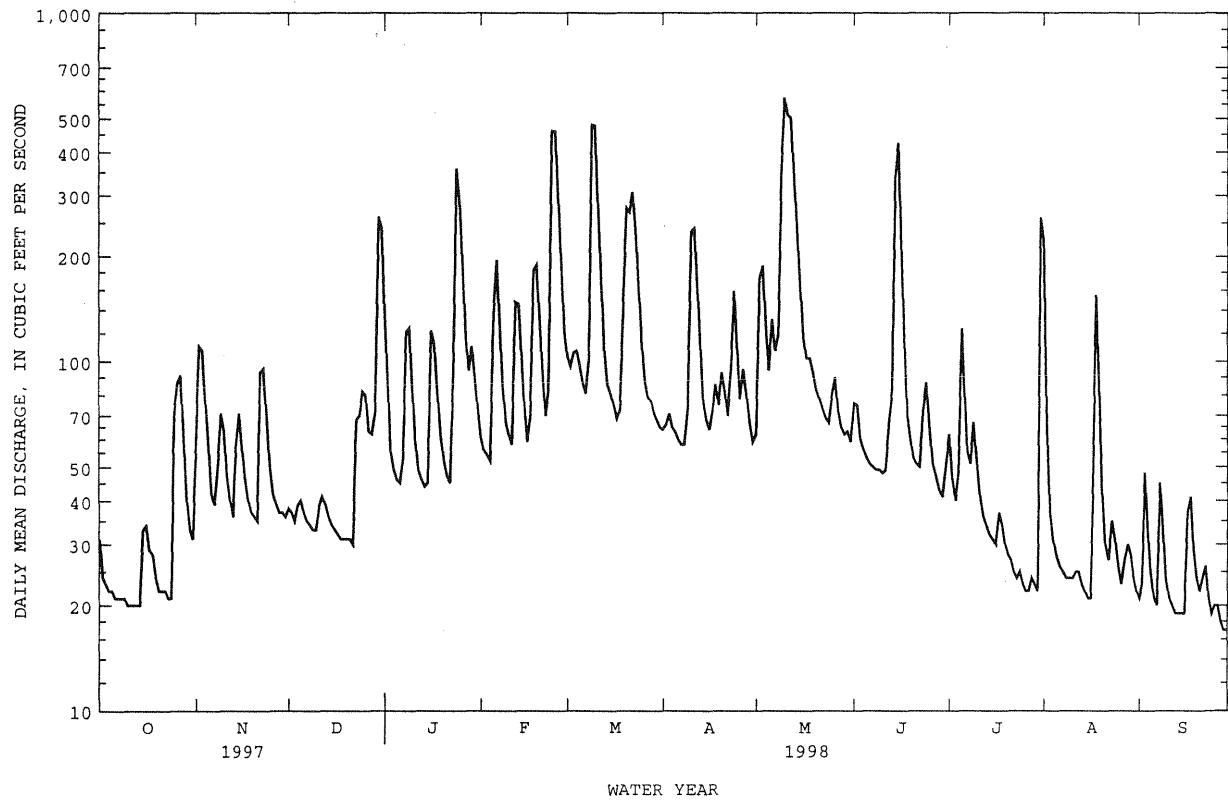
FOR 1998 WATER YEAR

WATER YEARS 1973 - 1998

ANNUAL TOTAL	20476	29688	
ANNUAL MEAN	56.1	81.3	61.3
HIGHEST ANNUAL MEAN			91.5
LOWEST ANNUAL MEAN			34.7
HIGHEST DAILY MEAN	296	Aug 21	838
LOWEST DAILY MEAN	16	Jul 20	10
ANNUAL SEVEN-DAY MINIMUM	17	Jul 15	11
INSTANTANEOUS PEAK FLOW			1370a
INSTANTANEOUS PEAK STAGE			7.99b
INSTANTANEOUS LOW FLOW			17
ANNUAL RUNOFF (CFSM)	1.61	2.33	1.76
ANNUAL RUNOFF (INCHES)	21.83	31.64	23.85
10 PERCENT EXCEEDS	99	164	112
50 PERCENT EXCEEDS	46	57	46
90 PERCENT EXCEEDS	21	22	22

01408120 NORTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ--Continued

a From rating curve above 600 ft³/s.
 b From crest-stage gage
 e Estimated



METEDECONK RIVER BASIN

01408150 SOUTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ

LOCATION.--Lat 40°05'09", long 74°11'09", Ocean County, Hydrologic Unit 02040301, on right side of dam at Lake Shenandoah, 1.5 mi downstream from Lake Carasaljo, 0.8 mi east of Lakewood, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--27.5 mi².

PERIOD OF RECORD.--June 1992 to current year.

GAGE.--Water-stage recorder and crest-stage gage above a concrete dam. Datum of gage is 23.0 ft above sea level.

REMARKS.--Records good for entire water year. Regulation from Lakes Carasaljo, Manetta, and Shenandoah. Diversions for golf course irrigation during growing season occur upstream of gaging station.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 25	1645	273	2.69	May 11	0600	494	3.14
Feb 2	2330	231	2.59	Jun 14	2045	311	2.78
Mar 10	0115	*553	*3.24	Jul 31	1845	412	2.99
Mar 20	1700	282	2.71				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	56	12	150	63	71	57	68	82	66	122	25
2	39	94	28	109	91	84	60	97	75	69	51	31
3	37	70	49	56	146	94	66	146	64	67	44	41
4	37	92	44	53	61	84	69	143	64	68	49	43
5	38	61	41	45	82	81	65	76	62	80	43	42
6	37	91	40	31	88	77	61	105	52	82	16	39
7	36	65	38	47	110	72	60	118	35	78	15	46
8	36	37	37	105	94	86	73	97	38	73	20	79
9	37	44	36	122	59	297	107	237	44	78	26	54
10	39	52	37	79	60	427	122	371	48	78	33	43
11	38	52	38	62	58	227	157	459	57	72	43	16
12	38	53	38	36	81	146	171	378	73	67	43	19
13	37	69	38	50	85	101	111	241	74	65	42	29
14	33	56	37	50	87	48	56	220	198	50	42	42
15	51	54	36	70	89	80	74	111	221	27	42	68
16	46	53	35	110	82	75	70	113	105	30	21	59
17	44	53	35	66	74	71	78	100	110	38	41	42
18	38	48	35	74	97	83	90	98	80	39	151	40
19	25	23	36	71	107	123	86	102	53	39	134	39
20	22	41	35	65	113	189	79	84	52	39	54	40
21	23	60	35	61	106	236	64	54	53	38	38	41
22	22	73	32	57	88	185	70	83	53	37	44	44
23	21	77	38	44	83	129	92	98	60	35	51	42
24	19	77	49	177	145	138	109	89	64	35	53	39
25	40	58	66	246	165	119	101	93	63	35	54	39
26	59	38	74	188	179	87	95	99	60	35	90	39
27	76	38	69	87	157	60	92	98	57	35	52	39
28	64	49	62	97	54	69	82	91	56	35	46	37
29	48	72	68	93	---	75	65	85	56	27	18	33
30	29	54	121	60	---	84	65	82	58	27	15	15
31	32	---	160	66	---	69	---	79	---	216	19	---
TOTAL	1181	1760	1499	2627	2704	3767	2547	4315	2167	1760	1512	1205
MEAN	38.1	58.7	48.4	84.7	96.6	122	84.9	139	72.2	56.8	48.8	40.2
MAX	76	94	160	246	179	427	171	459	221	216	151	79
MIN	19	23	12	31	54	48	56	54	35	27	15	15
CFSM	1.39	2.13	1.76	3.08	3.51	4.42	3.09	5.06	2.63	2.06	1.77	1.46
IN.	1.60	2.38	2.03	3.55	3.66	5.10	3.45	5.84	2.93	2.38	2.05	1.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MEAN	44.1	51.7	61.8	71.6	71.0	85.8	70.8	67.8	46.8	45.1	52.8	42.1
MAX	73.5	72.9	101	99.4	96.6	122	93.0	139	72.2	68.7	76.8	61.4
(WY)	1997	1996	1997	1996	1998	1998	1997	1998	1996	1992	1993	1993
MIN	28.5	37.8	38.7	50.5	43.7	41.3	31.6	36.1	26.7	28.3	30.6	23.6
(WY)	1995	1995	1996	1995	1995	1995	1995	1995	1994	1992	1995	1995

SUMMARY STATISTICS

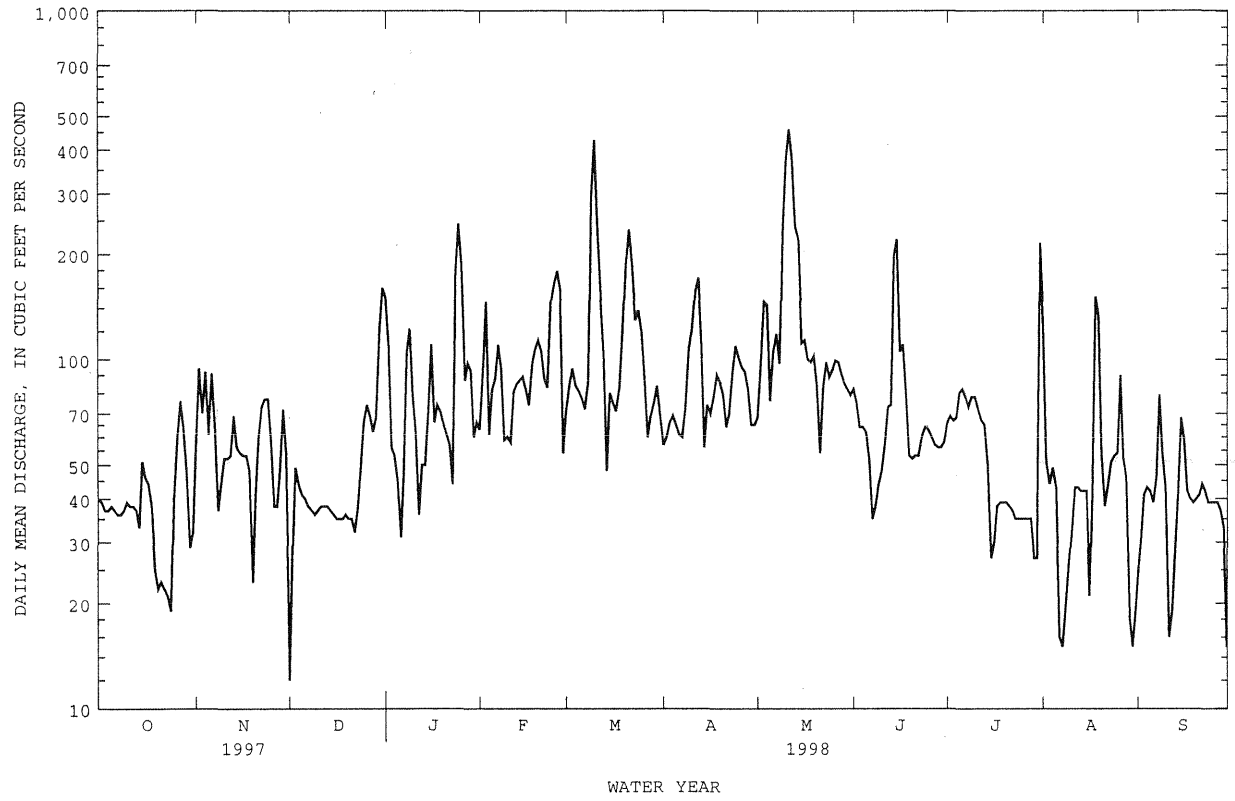
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1992 - 1998

ANNUAL TOTAL	21488	27044	
ANNUAL MEAN	58.9	74.1	59.2
HIGHEST ANNUAL MEAN			74.1
LOWEST ANNUAL MEAN			36.4
HIGHEST DAILY MEAN	202	Aug 21	514
LOWEST DAILY MEAN	12	Aug 2	5.2
ANNUAL SEVEN-DAY MINIMUM	24	Oct 18	13
INSTANTANEOUS PEAK FLOW			652
INSTANTANEOUS PEAK STAGE			3.38
INSTANTANEOUS LOW FLOW			4.5
ANNUAL RUNOFF (CFSM)	2.14	2.69	2.15
ANNUAL RUNOFF (INCHES)	29.07	36.58	29.27
10 PERCENT EXCEEDS	97	122	102
50 PERCENT EXCEEDS	53	61	46
90 PERCENT EXCEEDS	28	35	25

01408150 SOUTH BRANCH METEDECONK RIVER NEAR LAKEWOOD, NJ--Continued



01408168 BARNEGAT BAY AT MANTOLOKING, NJ

LOCATION.--Lat 40°42'24", long 74°03'25", Ocean County, Hydrologic Unit 02040301, at east end of Downer Avenue in Mantoloking and 0.1 mi south of bridge on State Route 528.

PERIOD OF RECORD.--Tidal crest-stage gage 1979-85, 1993. June 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, May 16-18. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation known, 4.93 ft, Oct. 11, 1992, from crest-stage gage; minimum recorded, -0.42 ft, Oct. 8, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 3.68 ft, Mar. 9; minimum recorded, -0.25 ft, Jan. 1.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	2.73	3.06	3.32	3.16	3.10	3.68	2.58	2.41	2.39	2.14	2.30	2.23
high tide	Date	20	2	30	23	6	9	10	14	16	13	29	4
Minimum	Elevation	.61	-.13	.29	-.25	-.24	.21	.63	-.04	.49	.58	.54	.69
low tide	Date	30	27	8	1	5	15	9,21	9	5,6	31	28	29
Mean high tide		1.67	1.57	1.44	1.66	1.87	1.66	1.78	1.85	1.76	1.74	1.67	1.69
Mean water level		1.43	1.28	1.17	1.38	1.48	1.35	1.50	1.56	1.51	1.48	1.41	1.46
Mean low tide		1.17	1.04	.86	1.11	1.21	1.08	1.26	1.28	1.25	1.18	1.09	1.20

01408200 BARNEGAT BAY AT BAY SHORE, NJ

LOCATION.--Lat 39°56'56", long 74°06'52", Ocean County, Hydrologic Unit 02040301, at west end of bridge on State Route 37 over Barnegat Bay at Bay Shore, 2.2 mi west of Seaside Heights, and 4.5 mi east of Toms River.

PERIOD OF RECORD.--Tidal crest-stage gage 1965-86, 1992. August 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, Oct. 4 to Nov. 5, Mar. 4 to Apr. 3, and Aug. 3 to Sept. 1. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

COOPERATION.--Record of stage collected in cooperation with the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation known, 4.27 ft, Oct. 30, 1991, from crest-stage gage; minimum recorded, -0.10 ft, Mar. 29, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 3.34 ft, Mar. 9; minimum recorded, 0.3 ft, Nov. 27 and Mar. 15, but lower elevation could have occurred during the period of missing record.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	e2.8	e3.1	3.14	3.08	3.32	3.34	2.70	2.66	2.46	2.16	2.25	2.32
high tide	Date	20	2	30	29	6	9	10	4	16	14	29	4
Minimum	Elevation	e.7	e.3	.40	.38	.47	e.3	.67	1.07	.63	.94	e.9	.76
low tide	Date	30	27	31	2,3	5	15	21	9	6	31	3	29
Mean high tide		---	---	1.46	1.75	2.00	---	---	1.97	1.85	1.81	---	1.83
Mean water level		---	---	1.22	1.47	1.66	---	---	1.70	1.57	1.56	---	1.52
Mean low tide		---	---	.96	1.19	1.36	---	---	1.43	1.35	1.30	---	1.20

e Estimated.

LOCATION.--Lat 39°59'10", long 74°13'29", Ocean County, Hydrologic Unit 02040301, on left bank 500 ft downstream from bridge on State Route 527 (Oak Ridge Parkway), 1.9 mi downstream from Union Branch, and 2.6 mi northwest of community of Toms River.

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for October and November 1928, published in WSP 1302.

REVISED RECORDS.--WSP 1702: 1938. WDR NJ-76-1: 1975 (M). WDR NJ-77-1: 1976.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.10 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. Diversions by Ciba-Geigy Inc. since July 1966, 800 ft. upstream; the effluent is returned by pipeline directly into the Atlantic Ocean, thus bypassing station. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 1	1200	548	6.69	Apr 12	1130	625	7.19
Jan 26	0230	756	7.87	May 11	1230	*1,590	*10.98
Jan 30	1600	751	7.84	May 16	1800	604	7.10
Mar 22	0215	778	7.99	Jun 15	0400	639	7.22

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	155	161	532	685	e380	269	241	277	198	264	104
2	109	202	157	478	652	e320	262	303	274	196	252	104
3	103	232	154	374	624	e310	259	335	289	179	186	127
4	99	260	155	290	602	e320	266	434	268	169	154	126
5	96	294	163	261	e235	e315	275	436	244	216	135	120
6	93	267	163	238	e265	e300	255	421	227	216	124	113
7	90	204	156	224	e275	e280	239	392	218	198	118	107
8	89	184	150	250	e265	e270	233	408	209	186	114	123
9	88	192	158	282	e255	e420	243	624	206	207	112	126
10	88	190	149	315	e230	e650	373	1060	202	214	111	116
11	86	185	147	309	e220	e690	460	1530	200	195	115	109
12	84	171	152	268	e265	e695	604	1450	214	176	117	104
13	85	158	155	236	e320	595	532	1270	249	161	113	101
14	99	173	150	213	e310	490	413	978	495	152	109	99
15	124	190	145	200	e310	425	323	765	629	146	107	98
16	121	198	139	240	e275	384	282	635	604	144	105	97
17	112	192	136	265	e250	355	271	532	546	143	120	95
18	108	177	133	294	e300	343	277	459	434	142	191	98
19	104	165	132	292	e360	400	276	416	328	137	195	99
20	100	158	131	260	e345	501	290	389	271	132	194	97
21	96	152	130	234	e345	681	290	415	239	129	145	96
22	94	199	128	214	e300	769	295	393	225	123	128	97
23	92	225	156	230	e280	733	301	360	231	120	129	98
24	91	245	180	350	e410	655	321	324	251	118	131	95
25	130	240	211	585	e580	565	316	318	249	114	121	93
26	164	205	219	723	e600	477	315	357	233	110	113	93
27	202	186	225	595	e600	408	306	352	215	109	113	93
28	198	174	219	482	e480	361	280	334	199	109	119	91
29	189	165	222	409	---	328	274	302	191	118	118	87
30	164	160	329	641	---	298	256	284	192	111	114	88
31	144	---	431	723	---	282	---	269	---	189	108	---
TOTAL	3568	5898	5436	11007	10638	14000	9356	16786	8609	4857	4275	3094
MEAN	115	197	175	355	380	452	312	541	287	157	138	103
MAX	202	294	431	723	685	769	604	1530	629	216	264	127
MIN	84	152	128	200	220	270	233	241	191	109	105	87
CFSM	.94	1.60	1.43	2.89	3.09	3.67	2.54	4.40	2.33	1.27	1.12	.84
IN.	1.08	1.78	1.64	3.33	3.22	4.23	2.83	5.08	2.60	1.47	1.29	.94

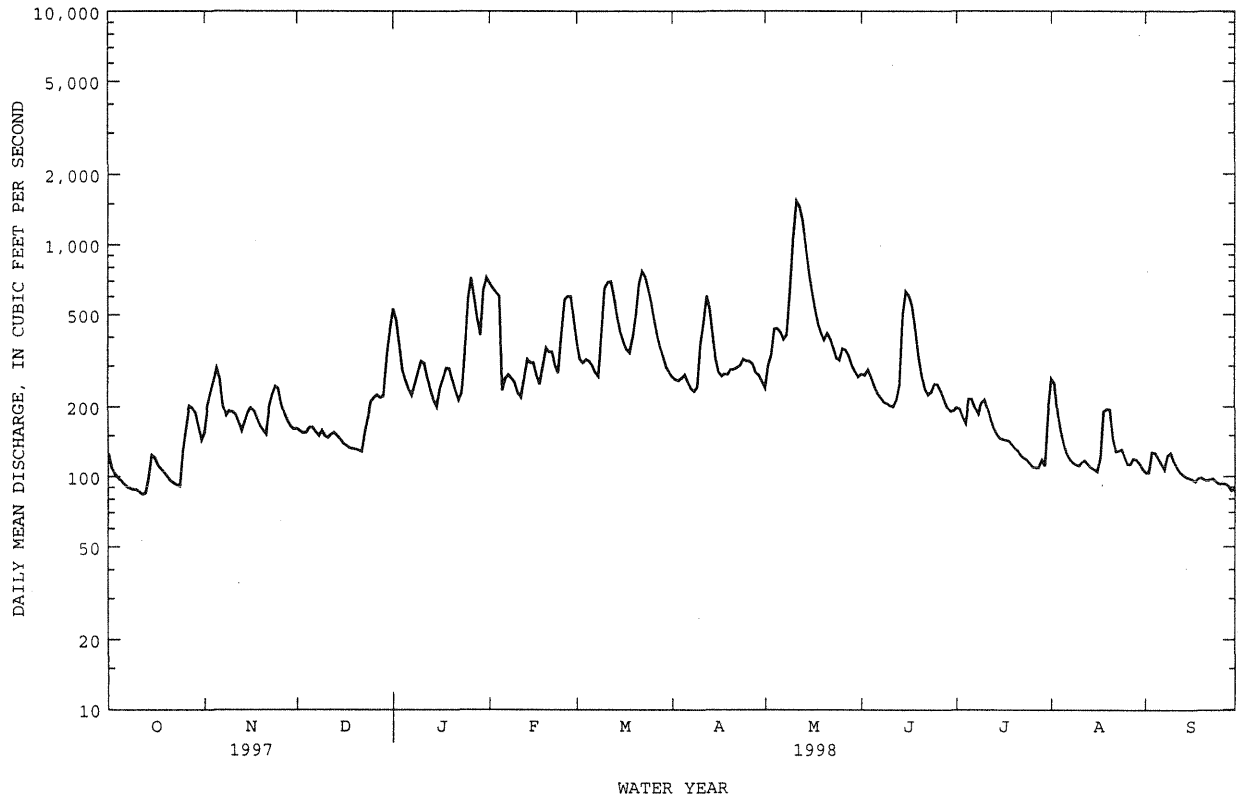
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1998, BY WATER YEAR (WY)

MEAN	156	199	225	246	253	293	282	247	187	157	161	150
MAX	325	475	447	506	455	541	573	541	463	439	359	414
(WY)	1972	1973	1973	1978	1973	1958	1984	1998	1968	1938	1990	1971
MIN	83.3	85.5	96.1	104	128	143	120	118	96.8	77.3	57.9	63.0
(WY)	1942	1966	1966	1981	1992	1985	1985	1992	1977	1988	1966	1995

01408500 TOMS RIVER NEAR TOMS RIVER, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1929 - 1998	
ANNUAL TOTAL	74993		97524		213	
ANNUAL MEAN	205		267		335	
HIGHEST ANNUAL MEAN					128	
LOWEST ANNUAL MEAN					1910	
HIGHEST DAILY MEAN	605	Apr 3	1530	May 11	1910	Sep 23 1938
LOWEST DAILY MEAN	79	Jul 20	84	Oct 12	43	Sep 11 1995
ANNUAL SEVEN-DAY MINIMUM	83	Jul 15	87	Oct 7	44	Sep 10 1995
INSTANTANEOUS PEAK FLOW			1590	May 11	2000a	Sep 23 1938
INSTANTANEOUS PEAK STAGE			10.98	May 11	12.50b	Sep 23 1938
INSTANTANEOUS LOW FLOW			77	Sep 29	42	Sep 11 1995
ANNUAL RUNOFF (CFSM)	1.67		2.17		1.73	
ANNUAL RUNOFF (INCHES)	22.68		29.50		23.50	
10 PERCENT EXCEEDS	328		513		355	
50 PERCENT EXCEEDS	190		219		184	
90 PERCENT EXCEEDS	94		104		97	

a From rating curve extended above 1,500ft³/s
 b From flood mark
 e Estimated



01409110 BARNEGAT BAY AT WARETOWN, NJ

LOCATION.--Lat 39°47'29", long 74°10'58", Ocean County, Hydrologic Unit 02040301, on the pier of the Waretown Fishing Station at the end of Bryant Road on west side of Barnegat Bay, 0.7 mi east of Waretown, and 3.2 mi south of Forked River.

PERIOD OF RECORD.--August 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, Oct. 28 to Nov. 5, 1997, Dec. 14 to Feb. 2. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 3.63 ft, Oct. 19, 1996; minimum recorded, -0.64 ft, Mar. 4, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 3.61 ft, Feb. 6; minimum recorded, 0.00 ft, Jan. 1, but lower elevation could have occurred during the periods of missing record.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	2.86	3.19	2.83	3.32	3.61	3.13	2.53	3.11	2.29	2.01	1.98	2.29
high tide	Date	20	8	29	29	6	22	10	12	16	13	29	4
Minimum	Elevation	e.7	.03	.17	.00	.29	.12	.65	.90	.56	.89	.80	.91
low tide	Date	28	28	3	1	21	13	20	30	6	21	2	29
Mean high tide		1.86	1.73	---	---	---	1.51	1.77	1.94	1.68	1.64	1.66	1.79
Mean water level		1.64	1.51	---	---	---	1.30	1.52	1.70	1.46	1.40	1.42	1.55
Mean low tide		1.40	1.26	---	---	---	1.01	1.26	1.46	1.22	1.15	1.17	1.27

e Estimated.

01409135 BARNEGAT BAY AT LOVELADIES, NJ

LOCATION.--Lat 39°43'24", long 74°08'06", Ocean County, Hydrologic Unit 02040301, on the bulkhead at Mathew's Point Park on the east shore of Barnegat Bay in Loveladies on Long Beach Island, 2.0 mi north of Harvey Cedars, and 3.0 mi south of Barnegat Inlet.

PERIOD OF RECORD.--August 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.00 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, Dec. 24 to Feb. 3, Mar. 10-20, 23 to Apr. 6, and May 19 to Sept. 4. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 4.46 ft, Feb. 6, 1996; minimum recorded, -0.34 ft, Mar. 5, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 4.46 ft, Feb. 6; minimum recorded, 0.50 ft, Nov. 8.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	3.51	3.91	e3.30	e3.90	4.46	4.22	3.67	4.06	e2.80	2.56	2.56	2.80
high tide	Date	20	8	29	29	6	22	9	12	16	13	29	4
Minimum	Elevation	1.15	.50	.79	e.60	1.40	e1.00	1.47	e1.70	e1.20	e1.20	1.11	1.17
low tide	Date	29	28	3	1	22	13	19	30	6	21	2	30
Mean high tide		2.41	2.43	---	---	2.92	---	2.69	---	---	---	---	2.26
Mean water level		2.12	2.12	---	---	2.60	---	2.34	---	---	---	---	1.91
Mean low tide		1.84	1.82	---	---	2.28	---	2.03	---	---	---	---	1.58

e Estimated.

MULLICA RIVER BASIN

01409400 MULLICA RIVER NEAR BATSTO, NJ

LOCATION.--Lat 39°40'28", long 74°39'55", Atlantic County, Hydrologic Unit 02040301, on right bank 2.4 mi upstream from Sleeper Branch, and 2.5 mi north of Batsto.

DRAINAGE AREA.--46.7 mi².

PERIOD OF RECORD.--September 1957 to current year.

REVISED RECORDS.--WRD-NJ 1969: 1958(M), 1960(M), 1967-68(M), WDR NJ-83-1: Drainage area.

GAGE. Water stage recorder and crest stage gage. Datum of gage is 11.93 ft above sea level.

REMARKS.--Records fair. Some regulation from upstream cranberry bogs and Atsion Lake. Diversions from Sleeper Branch enter river upstream from gage and substantially increase the discharge at the gage. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	68	71	210	178	246	142	122	87	52	40	21
2	28	77	68	190	167	227	138	133	84	51	44	21
3	29	80	65	177	187	228	129	132	81	50	35	24
4	31	79	69	161	180	243	124	129	77	49	32	23
5	27	75	70	150	172	226	124	129	74	48	30	22
6	25	73	69	122	147	208	121	133	70	46	29	24
7	25	71	68	108	114	190	116	149	68	44	28	22
8	24	79	70	126	107	185	113	176	68	46	28	26
9	24	89	73	144	111	397	116	389	68	49	27	23
10	24	88	80	158	124	480	152	562	65	49	27	23
11	23	73	94	142	134	437	170	658	59	48	33	22
12	27	63	104	128	159	397	175	729	70	45	32	21
13	26	51	77	118	155	350	180	672	99	43	30	23
14	28	67	60	97	138	289	172	557	123	38	28	21
15	30	71	59	85	136	221	161	469	128	37	27	20
16	34	71	58	111	136	192	155	383	126	36	27	21
17	31	68	56	134	145	176	151	301	117	36	29	27
18	31	67	55	150	183	173	151	243	105	37	32	25
19	32	65	53	147	188	227	157	212	95	37	30	24
20	32	63	52	138	179	323	168	189	63	36	28	23
21	32	62	50	126	172	359	158	166	56	35	26	21
22	34	88	49	129	163	415	157	149	57	32	25	21
23	35	93	65	232	176	408	157	117	59	30	25	21
24	30	94	67	302	286	380	169	100	62	30	24	21
25	43	93	83	314	314	333	164	99	61	28	24	21
26	56	92	92	344	294	294	155	102	62	27	23	21
27	71	89	97	323	283	263	152	98	76	26	22	21
28	67	81	104	305	262	238	136	94	85	27	23	21
29	63	75	109	272	---	218	129	91	92	27	23	20
30	63	71	172	229	---	198	125	88	65	27	24	20
31	65	---	234	188	---	167	---	84	---	35	21	---
TOTAL	1119	2276	2493	5560	4990	8688	4417	7655	2402	1201	876	664
MEAN	36.1	75.9	80.4	179	178	280	147	247	80.1	38.7	28.3	22.1
MAX	71	94	234	344	314	480	180	729	128	52	44	27
MIN	23	51	49	85	107	167	113	84	56	26	21	20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1998, BY WATER YEAR (WY)

	MEAN	68.5	88.6	121	141	141	162	153	125	77.3	71.6	75.6	60.1
MAX	192	305	305	311	292	312	358	273	159	177	253	223	
(WY)	1976	1973	1973	1978	1979	1994	1983	1989	1979	1989	1958	1975	
MIN	24.1	22.0	29.8	29.3	64.4	59.1	50.3	53.3	32.3	21.9	19.8	17.6	
(WY)	1966	1966	1966	1981	1992	1985	1985	1992	1977	1977	1995	1995	

SUMMARY STATISTICS

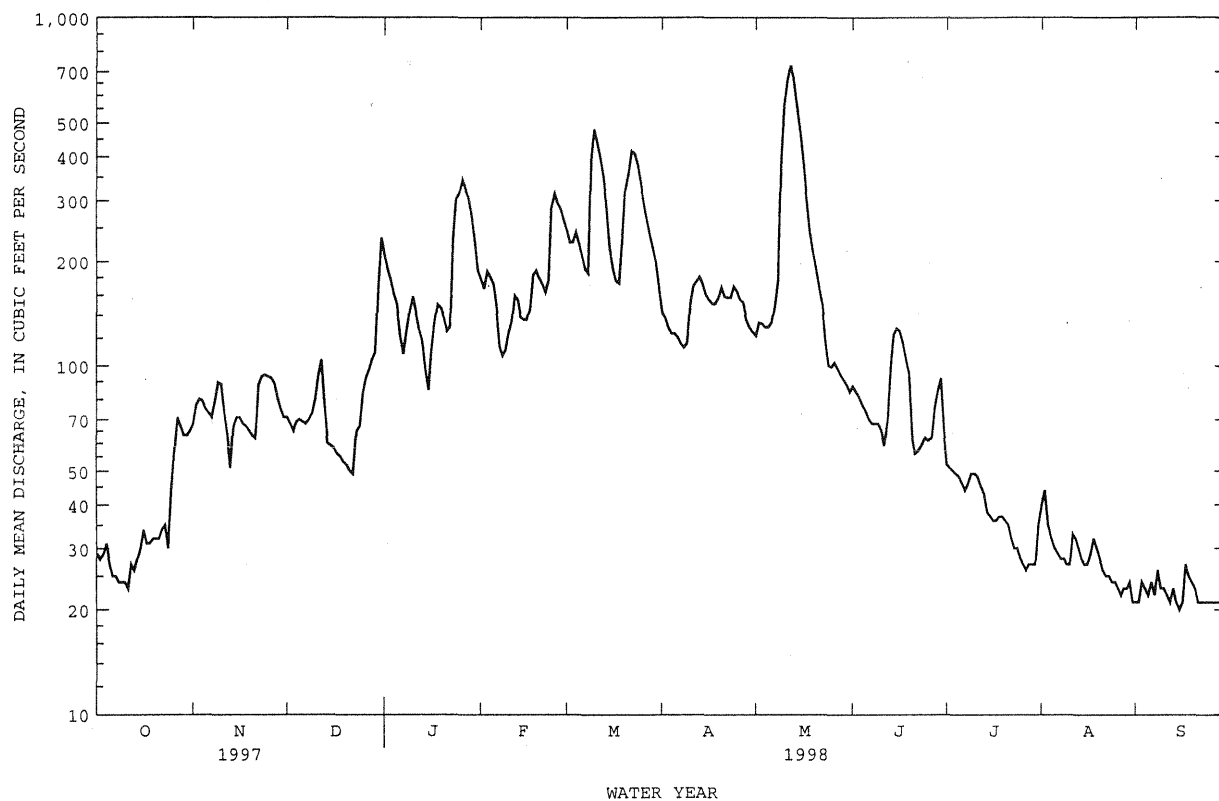
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1957 - 1998

ANNUAL TOTAL	38783	42341											
ANNUAL MEAN	106	116											
HIGHEST ANNUAL MEAN										107			
LOWEST ANNUAL MEAN										168			1973
HIGHEST DAILY MEAN	428	Apr 2	729	May 12	1630	Feb 26	1979			50.4			1966
LOWEST DAILY MEAN	22	Sep 19	20	Sep 15	5.1	Sep 16	1995						
ANNUAL SEVEN-DAY MINIMUM	24	Jul 13	21	Sep 24	6.4	Sep 10	1995						
INSTANTANEOUS PEAK FLOW			747	May 12	1840	Feb 26	1979						
INSTANTANEOUS PEAK STAGE			4.49	May 12	6.14	Feb 26	1979						
INSTANTANEOUS LOW FLOW			20	Sep 15	4.9	Sep 16	1995						
10 PERCENT EXCEEDS	226		243		202								
50 PERCENT EXCEEDS	79		80		86								
90 PERCENT EXCEEDS	30		24		32								

01409400 MULICA RIVER NEAR BATSTO, NJ--Continued



01409500 BATSTO RIVER AT BATSTO, NJ

LOCATION.--Lat 39°38'33", long 74°39'00", Burlington County, Hydrologic Unit 02040301, on right bank 30 ft downstream from bridge on State Highway 542 at Batsto, and 1.0 mi upstream from mouth.

DRAINAGE AREA.--67.8 mi².

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for April to September 1939, published in WSP 1302.

REVISED RECORDS.--WSP 1432: 1930, 1933, 1936, 1938. WDR NJ-83-1: Drainage area. WDR-87-1: 1939 (M). WDR-94-1: 1993 (M).

GAGE.--Water-stage recorder. Concrete control since Oct. 12, 1939; prior to Mar. 24, 1939, wooden control at site 50 ft downstream. Datum of gage is 1.4 ft above sea level.

REMARKS.--Records fair. Considerable regulation at times by sluice gates prior to December 1954 and by automatic Bascule and sluice gates since July 1959 at Batsto Lake, 300 ft upstream; the capacity of Batsto Lake is about 60,000,000 gal. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	69	85	188	154	199	154	135	98	88	67	42
2	51	88	83	145	137	170	148	142	99	80	64	43
3	51	91	80	135	125	171	142	151	93	76	59	46
4	51	93	84	127	122	165	140	154	88	70	57	43
5	50	93	85	119	164	172	136	151	82	65	54	44
6	49	111	83	111	158	159	133	151	80	62	52	41
7	49	127	81	106	131	146	127	183	76	60	50	41
8	48	126	79	110	127	148	124	353	74	60	50	49
9	47	103	79	117	118	261	127	483	73	63	48	48
10	49	121	80	119	111	521	156	760	72	63	47	45
11	52	89	83	113	107	559	195	835	70	61	51	43
12	50	85	82	104	121	447	215	830	83	58	52	43
13	48	86	82	99	121	342	203	755	100	54	47	41
14	48	100	80	90	128	278	180	635	98	56	48	41
15	54	110	78	89	122	231	161	517	125	51	48	41
16	55	100	77	108	115	205	147	357	140	50	47	40
17	55	94	76	125	116	183	145	300	135	49	47	49
18	53	90	74	132	130	175	149	242	126	63	53	46
19	59	86	70	123	142	199	167	210	110	64	52	44
20	59	76	68	113	149	256	174	190	95	63	52	43
21	51	34	66	103	138	320	166	160	85	62	50	42
22	48	66	66	98	130	417	159	146	80	60	48	42
23	47	109	74	117	130	468	157	127	77	58	48	40
24	47	111	83	162	189	402	166	120	77	59	47	40
25	57	106	98	290	282	329	168	115	77	57	47	41
26	69	100	97	376	343	274	161	114	75	56	47	41
27	75	96	99	332	303	234	155	112	88	54	46	42
28	69	92	100	265	244	207	148	105	95	54	45	41
29	62	88	109	237	---	189	143	101	95	53	45	38
30	58	86	148	213	---	175	134	100	90	52	44	39
31	59	---	170	181	---	163	---	94	---	56	44	---
TOTAL	1674	2826	2699	4747	4357	8165	4680	8828	2756	1877	1556	1279
MEAN	54.0	94.2	87.1	153	156	263	156	285	91.9	60.5	50.2	42.6
MAX	75	127	170	376	343	559	215	835	140	88	67	49
MIN	47	34	66	89	107	146	124	94	70	49	44	38
CFSM	.80	1.39	1.28	2.26	2.30	3.88	2.30	4.20	1.35	.89	.74	.63
IN.	.92	1.55	1.48	2.60	2.39	4.48	2.57	4.84	1.51	1.03	.85	.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1998, BY WATER YEAR (WY)

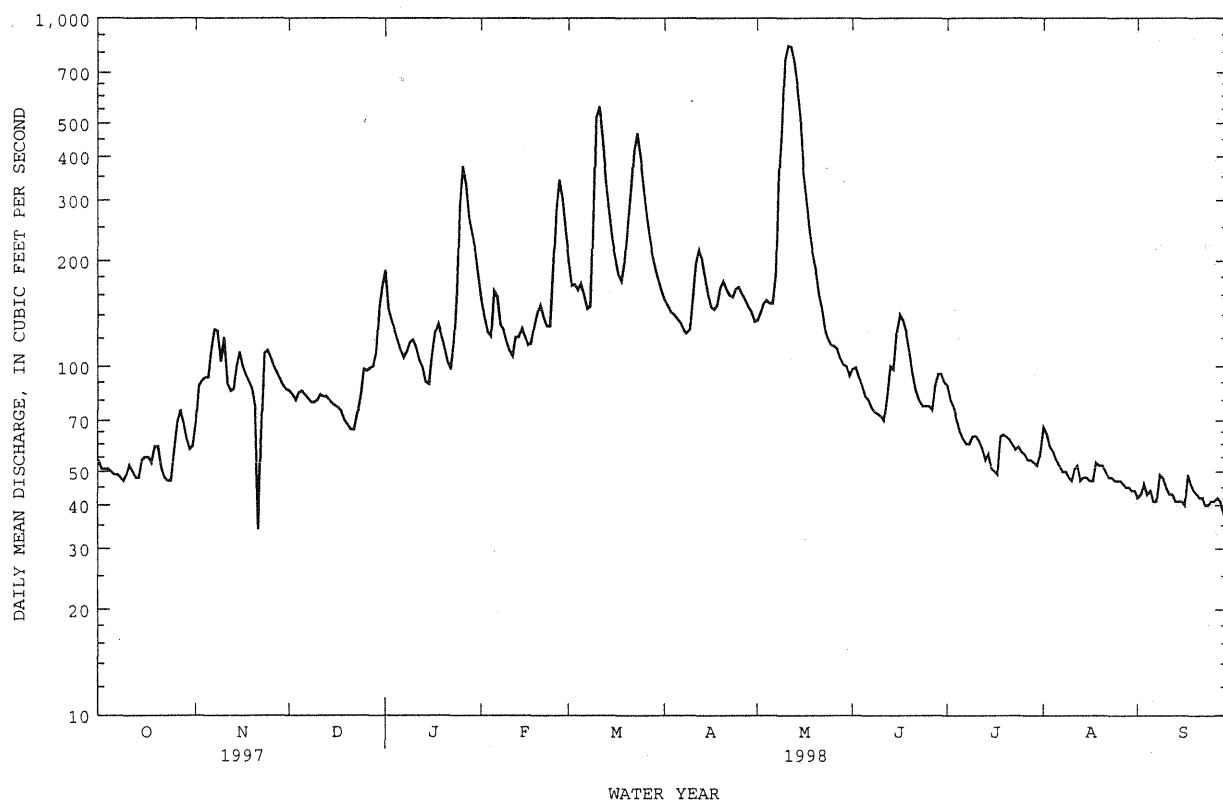
	MEAN	87.7	112	125	141	148	171	157	144	103	92.0	102	90.8
MAX	241	307	302	280	361	353	322	285	242	257	332	242	
(WY)	1959	1973	1973	1949	1939	1958	1970	1998	1948	1938	1958	1960	
MIN	43.9	43.4	48.4	55.6	75.9	79.5	71.8	65.1	50.9	40.6	42.0	40.5	
(WY)	1966	1966	1966	1966	1931	1981	1985	1977	1977	1977	1957	1995	

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1928 - 1998

	ANNUAL TOTAL	41394	45444	
ANNUAL MEAN	113	125	122	
HIGHEST ANNUAL MEAN			193	1958
LOWEST ANNUAL MEAN			66.2	1966
HIGHEST DAILY MEAN	396	Apr 3	835	May 11
LOWEST DAILY MEAN	34	Nov 21	34	Nov 21
ANNUAL SEVEN-DAY MINIMUM	49	Jul 15	40	Sep 24
INSTANTANEOUS PEAK FLOW			884	May 11
INSTANTANEOUS PEAK STAGE			5.67	May 11
ANNUAL RUNOFF (CFSM)	1.67		1.84	
ANNUAL RUNOFF (INCHES)	22.71		24.93	
10 PERCENT EXCEEDS	191		214	
50 PERCENT EXCEEDS	97		93	
90 PERCENT EXCEEDS	54		47	

a From floodmark.

01409500 BATSTO RIVER AT BATSTO, NJ--Continued



MULLICA RIVER BASIN

01409510 BATSTO RIVER AT PLEASANT MILLS, NJ

LOCATION.--Lat 39°37'55", long 74°38'40", Burlington County, Hydrologic Unit 02040301, on right bank, 0.4 mi upstream from Mullica River, 0.5 mi southeast of Pleasant Mills, and 0.9 mi downstream from highway bridge on State Highway 542 at Batsto.

DRAINAGE AREA.--73.6 mi².

PERIOD OF RECORD.--July 1958 to current year. Annual maximum only published for 1958 to 1965.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.6 ft below sea level. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--No gage-height or doubtful record, May 11 to June 15. Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (--) lines.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 7.2 ft, Mar. 7, 1962; minimum recorded (after 1965), -0.67 ft, Jan. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 5.80 ft, Feb. 5; minimum recorded, 0.19 ft, Nov. 22.

Summaries of tide elevations during the year are as follows:

TIDE ELEVATIONS, IN FEET, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	3.94	5.01	3.68	4.67	5.80	4.83	3.77	5.28	3.55	3.25	3.71	3.60
high tide	Date	19	8	30	28	5	21	10	13	14	31	19	4
Minimum	Elevation	.63	.19	.48	.63	.83	.95	.81	e.8	.69	.49	.95	.73
low tide	Date	24	22	19,20	14	11	31	7	28	26	6,15,22	3	16
Mean high tide		2.99	3.05	2.72	3.02	3.33	3.15	3.07	---	---	2.68	3.19	3.08
Mean water level		1.93	2.13	1.71	2.21	2.53	2.40	2.17	---	---	1.64	2.14	2.01
Mean low tide		.88	1.16	.76	1.32	1.57	1.66	1.13	---	---	.65	1.52	1.01

e Estimated.

01410000 OSWEGO RIVER AT HARRISVILLE, NJ

LOCATION.--Lat 39°39'47", long 74°31'26", Burlington County, Hydrologic Unit 02040301, on right bank 50 ft downstream from bridge on State Highway Spur 563 at Harrisville, and 0.3 mi upstream from confluence with West Branch Wading River.

DRAINAGE AREA.--72.5 mi².

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1302. Prior to October 1955, published as "East Branch Wading River at Harrisville".

REVISED RECORDS.--WDR NJ-83-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since June 23, 1939. Datum of gage is 4.62 ft above sea level.

REMARKS.--Records fair except for estimated daily discharge, which are poor. . Figures given herein represent flow over main spillway and through bypass channel. Flow regulated by Harrisville Pond 200 ft above station, capacity, about 30,000,000 gal and by ponds and cranberry bogs 5 to 10 mi upstream. Flow probably reduced by ground-water outflow to nearby surface drainage basins, such as Oyster Creek. Several measurements of water temperature, other than those published, were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	59	66	214	143	193	111	137	102	111	49	e47
2	52	83	62	166	130	163	113	160	102	103	48	e47
3	50	113	58	151	119	189	157	160	98	92	47	e54
4	49	99	61	135	113	206	120	145	92	75	43	e56
5	48	92	64	118	133	185	106	137	88	67	41	e54
6	48	96	63	105	148	159	103	146	84	63	e42	e50
7	50	98	62	106	136	147	102	177	80	61	e44	e49
8	47	98	61	118	126	172	130	230	79	62	e44	e55
9	42	112	59	119	120	413	135	431	78	69	e43	e57
10	42	111	60	110	112	598	202	638	77	71	e44	e55
11	42	101	67	101	108	523	214	678	e76	72	e49	e52
12	42	90	67	94	151	431	192	694	e100	67	e50	e51
13	44	83	65	90	157	328	159	661	e150	63	e49	e50
14	48	103	62	87	148	244	140	560	e220	60	e49	e48
15	55	117	59	87	134	196	134	454	e397	58	e48	e48
16	60	115	56	124	122	169	120	352	493	58	e48	e47
17	54	103	56	125	122	163	120	297	436	59	e47	e49
18	51	94	55	116	160	163	129	268	361	63	e53	e55
19	49	88	54	105	164	241	125	228	269	58	e55	e52
20	48	83	52	98	148	309	128	192	193	55	e53	e51
21	47	80	50	89	131	353	127	167	158	54	e52	e50
22	45	113	48	82	120	410	117	149	138	52	e51	e50
23	42	123	48	109	132	389	123	139	128	51	e51	e51
24	42	113	52	262	299	348	148	130	128	51	e50	e50
25	53	100	77	326	377	288	150	120	127	52	e50	e49
26	56	91	88	304	349	224	139	122	120	50	e50	e48
27	67	85	89	233	297	172	142	116	124	50	e49	e47
28	61	82	83	202	242	149	137	111	133	35	e48	e46
29	57	75	89	221	---	138	140	106	123	34	e48	e45
30	53	67	216	203	---	130	140	103	114	37	e48	e44
31	49	---	257	163	---	118	---	95	---	44	e47	---
TOTAL	1548	2867	2306	4563	4641	7911	4103	8103	4868	1897	1490	1507
MEAN	49.9	95.6	74.4	147	166	255	137	261	162	61.2	48.1	50.2
MAX	67	123	257	326	377	598	214	694	493	111	55	57
MIN	42	59	48	82	108	118	102	95	76	34	41	44
CFSM	.69	1.32	1.03	2.03	2.29	3.52	1.89	3.61	2.24	.84	.66	.69
IN.	.79	1.47	1.18	2.34	2.38	4.06	2.11	4.16	2.50	.97	.76	.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1998, BY WATER YEAR (WY)

	MEAN	64.0	82.2	84.9	102	104	120	114	99.2	71.9	67.2	75.8	61.5
MAX	176	234	200	242	210	255	253	261	162	201	207	163	
(WY)	1959	1973	1973	1979	1939	1998	1970	1998	1998	1938	1933	1938	
MIN	28.6	30.8	27.1	33.9	53.2	51.9	41.3	43.9	33.7	24.2	23.9	24.4	
(WY)	1966	1966	1966	1966	1931	1985	1985	1942	1966	1977	1957	1951	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1931 - 1998

ANNUAL TOTAL	33302	45804	
ANNUAL MEAN	91.2	125	87.1
HIGHEST ANNUAL MEAN			138
LOWEST ANNUAL MEAN			41.4
HIGHEST DAILY MEAN	566	Aug 22	694
LOWEST DAILY MEAN	32	Jul 15	34
ANNUAL SEVEN-DAY MINIMUM	33	Jul 12	42
INSTANTANEOUS PEAK FLOW			703
INSTANTANEOUS PEAK STAGE			5.63
INSTANTANEOUS LOW FLOW			32
ANNUAL RUNOFF (CFSM)	1.26	1.73	1.20
ANNUAL RUNOFF (INCHES)	17.09	23.50	16.32
10 PERCENT EXCEEDS	139	241	150
50 PERCENT EXCEEDS	85	98	72
90 PERCENT EXCEEDS	43	48	37

a From rating curve extended above 640 ft³/s.

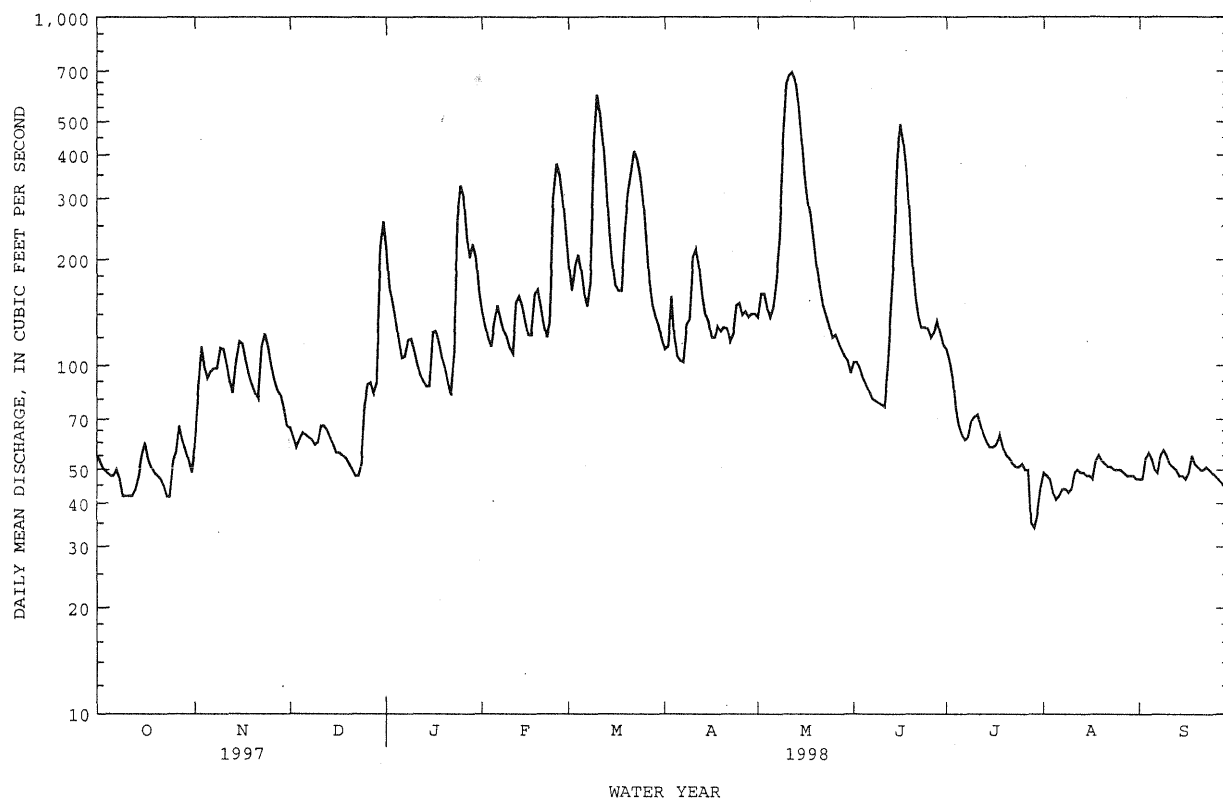
b From high-water mark in gage house.

c While pond filling.

e Estimated

MULLICA RIVER BASIN

01410000 OSWEGO RIVER AT HARRISVILLE, NJ--Continued



LOCATION.--Lat 39°37'23", long 74°26'30", Burlington County, Hydrologic Unit 02040301, on left bank upstream from bridge on Stage Road, 0.7 mi west of Lake Absegami, 2.2 mi north of New Gretna, and 5.3 mi upstream from mouth.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1969 to 1974. January 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1.10 ft above sea level.

REMARKS.--Records good, except for estimated periods and record above a gage height of 6.0 ft. which is considered poor. Some regulation by Lake Absegami. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 65 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb 24	1200	66	5.11	May 12	1845	82	5.27
Mar 9	1215	83	5.28	Jun 14	1015	*118	*5.50

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	29	16	33	31	33	e18	27	28	e25	e12	14
2	15	33	16	29	30	32	e19	41	28	e24	e13	14
3	15	29	15	27	29	40	e25	38	26	e22	e12	15
4	15	24	16	26	29	44	e19	31	25	e19	e12	15
5	15	21	16	26	38	38	e17	29	24	e18	s12	15
6	14	19	16	26	38	35	e16	30	24	e18	13	14
7	14	18	16	27	33	34	e17	29	23	e17	13	14
8	14	20	16	30	30	45	e21	38	23	e17	13	15
9	14	24	15	32	28	75	e25	66	23	e18	13	15
10	14	24	15	29	28	64	e29	71	23	e19	13	14
11	14	19	17	27	28	53	e29	66	23	e19	14	14
12	13	16	17	26	39	47	e26	74	28	e18	13	13
13	14	16	16	25	38	44	e23	69	32	e17	13	13
14	14	22	16	24	32	42	e22	54	83	e17	14	13
15	15	26	15	24	29	41	e21	48	e80	e16	13	13
16	17	22	15	33	28	38	e20	45	e79	e16	13	13
17	15	18	15	33	30	36	e20	48	e60	e17	14	14
18	15	17	15	28	37	35	e20	48	e50	e17	14	14
19	15	16	15	26	36	e40	e21	42	e40	e16	14	13
20	15	16	15	25	33	e50	e21	39	e33	e15	14	13
21	14	16	15	24	31	e56	e21	37	e32	e15	14	12
22	13	22	15	23	29	e59	e20	35	e31	e14	14	12
23	15	25	18	29	32	e52	e21	34	e31	e14	14	13
24	19	20	18	49	60	e45	e24	33	e32	e14	14	12
25	23	18	21	43	51	e40	e24	32	e32	e14	14	12
26	26	18	22	35	42	e34	e23	33	e30	e13	14	12
27	33	17	19	32	37	e27	e23	33	e30	e13	14	12
28	37	16	19	35	34	e24	28	31	e31	e13	14	11
29	31	16	24	42	---	e22	26	29	e27	e13	14	11
30	28	16	51	38	---	e20	25	29	e25	e12	14	11
31	26	---	44	33	---	e19	---	28	---	e12	14	---
TOTAL	559	613	579	939	960	1264	664	1287	1056	512	416	396
MEAN	18.0	20.4	18.7	30.3	34.3	40.8	22.1	41.5	35.2	16.5	13.4	13.2
MAX	37	33	51	49	60	75	29	74	83	25	14	15
MIN	13	16	15	23	28	19	16	27	23	12	12	11
CFSM	2.22	2.52	2.30	3.73	4.23	5.03	2.73	5.12	4.34	2.04	1.65	1.63
IN.	2.56	2.81	2.66	4.31	4.40	5.80	3.05	5.90	4.84	2.35	1.81	1.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1998, BY WATER YEAR (WY)

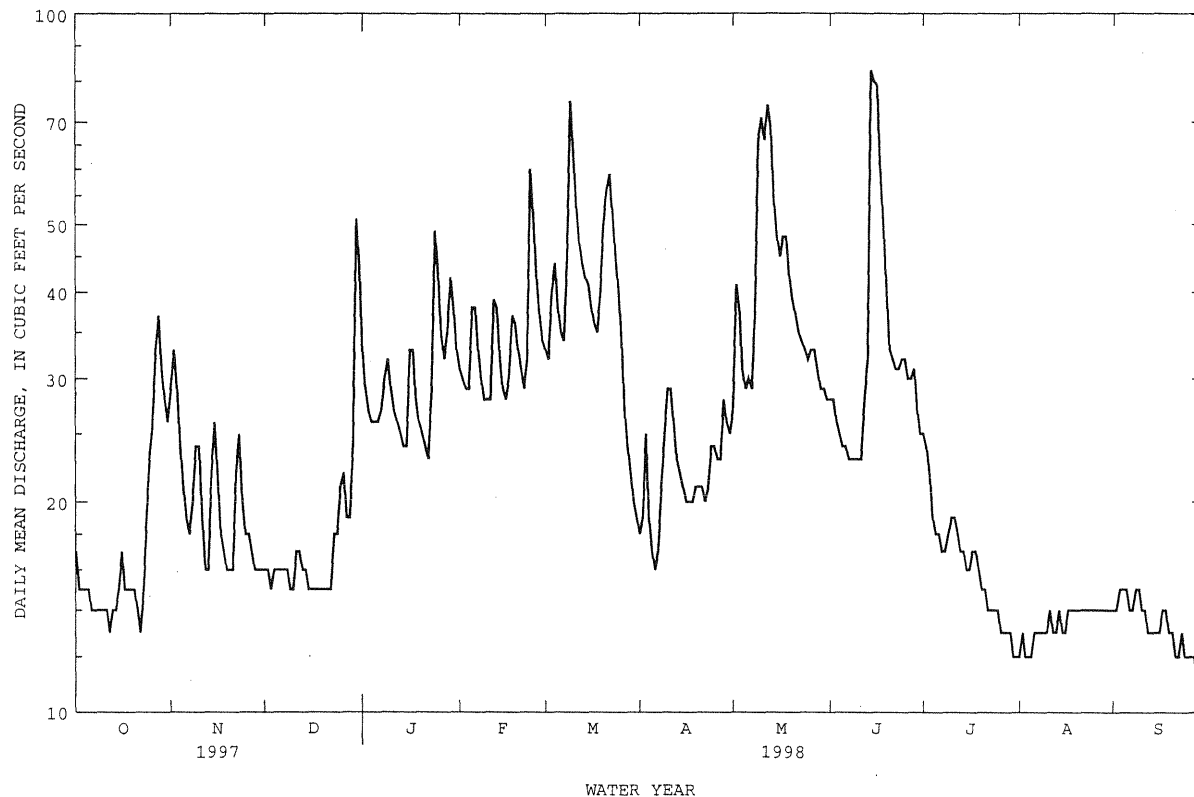
MEAN	12.3	13.9	15.7	18.8	18.4	21.4	21.8	20.2	15.9	13.9	14.8	12.2
MAX	24.2	23.1	28.3	35.0	34.3	40.8	38.6	41.5	35.2	25.8	43.7	21.0
(WY)	1990	1990	1997	1978	1998	1998	1984	1998	1998	1978	1997	1989
MIN	8.13	8.75	9.78	9.28	11.2	10.5	9.06	8.95	8.11	7.80	6.54	6.77
(WY)	1983	1982	1986	1981	1992	1981	1985	1985	1986	1985	1995	1995

MULLICA RIVER BASIN

01410150 EAST BRANCH BASS RIVER NEAR NEW GRETN, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1978 - 1998	
ANNUAL TOTAL	8206		9245		16.3	
ANNUAL MEAN	22.5		25.3		25.3	
HIGHEST ANNUAL MEAN					9.60	
LOWEST ANNUAL MEAN					1998	
HIGHEST DAILY MEAN	533	Aug 21	83	Jun 14	533	Aug 21 1997
LOWEST DAILY MEAN	13	Aug 10	11	Sep 28	4.8	Sep 15 1995
ANNUAL SEVEN-DAY MINIMUM	14	Oct 6	12	Sep 24	5.0	Sep 10 1995
INSTANTANEOUS PEAK FLOW			118	Jun 14	1130a	Aug 21 1997
INSTANTANEOUS PEAK STAGE			5.50	Jun 14	7.28	Aug 21 1997
INSTANTANEOUS LOW FLOW			11	Sep 29	4.7	Sep 15 1995
ANNUAL RUNOFF (CFSM)	2.77		3.12		2.01	
ANNUAL RUNOFF (INCHES)	37.64		42.41		27.33	
10 PERCENT EXCEEDS	29		42		28	
50 PERCENT EXCEEDS	20		22		14	
90 PERCENT EXCEEDS	14		13		8.6	

e Estimated

a From rating curve extended above 200 ft³/sec.

01410784 GREAT EGG HARBOR RIVER NEAR SICKLERVILLE, NJ

LOCATION.--Lat 39°44'02", long 74°57'05", Camden County, Hydrologic Unit 02040302, on right bank at downstream side of bridge on Sicklerville-New Freedom Road (Spur 536), 1.5 mi northeast of Sicklerville, and 2.7 mi upstream from New Brooklyn Lake dam.

DRAINAGE AREA.--15.1 mi².

PERIOD OF RECORD.--Low-flow partial-record station, water years 1971-77. March 27, 1996 to current year.

GAGE.--Water-stage recorder installed Mar. 27, 1996.

REMARKS.--Records good.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 25	0230	73	4.86	Mar 20	0515	64	4.70
Feb 24	2400	60	4.63	May 10	0845	*78	*4.94
Mar 10	0115	73	4.85				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	9.6	12	25	19	22	16	14	11	7.3	6.2	.53
2	3.8	19	12	19	18	20	16	18	12	6.2	4.3	.66
3	3.6	22	10	16	17	27	15	20	9.2	5.4	3.0	2.9
4	3.4	17	12	15	16	35	15	20	7.9	4.9	2.5	3.8
5	3.3	14	12	13	21	28	14	17	7.3	5.1	2.0	2.5
6	3.3	12	10	12	27	23	14	17	6.9	5.1	1.6	1.7
7	3.1	11	9.2	12	22	20	13	17	6.4	4.6	1.3	1.4
8	3.0	12	8.5	19	19	23	13	28	6.2	5.2	1.3	5.8
9	2.8	17	7.9	17	17	62	17	62	5.8	7.7	1.1	9.4
10	2.9	17	8.1	15	15	70	40	77	5.6	7.5	1.3	4.6
11	2.9	14	11	12	15	51	38	75	5.7	5.7	4.0	3.2
12	2.9	12	11	11	32	35	27	75	18	4.7	4.4	2.5
13	2.9	11	9.5	11	31	26	21	66	34	4.2	3.0	1.9
14	2.9	16	8.8	9.9	24	23	18	50	43	3.8	2.5	1.7
15	3.4	20	8.2	10	20	21	17	36	35	3.6	2.1	1.6
16	4.2	17	7.5	26	17	19	15	27	24	3.3	1.7	1.4
17	4.1	14	7.1	25	19	18	17	22	18	3.3	1.7	3.0
18	4.0	13	6.7	19	39	20	24	19	15	3.4	1.6	5.5
19	4.0	11	6.7	16	36	42	21	17	12	3.6	2.6	4.0
20	4.3	11	6.5	14	28	62	25	16	10	3.0	2.4	3.0
21	4.1	11	6.3	12	23	59	23	15	9.0	2.5	1.6	2.5
22	3.9	27	6.4	11	20	59	19	13	9.6	2.3	1.2	2.8
23	3.8	30	14	24	22	48	18	12	11	2.1	1.1	3.1
24	3.8	22	15	68	52	35	23	12	11	1.9	.99	2.6
25	10	17	19	69	57	27	20	11	9.5	1.6	.84	2.3
26	14	15	20	50	43	23	17	12	8.6	1.6	.77	2.2
27	17	13	16	33	31	21	20	11	13	1.6	1.1	1.9
28	14	12	17	29	25	20	18	9.7	12	1.6	1.0	1.5
29	9.3	12	19	33	---	18	16	9.0	8.9	1.5	.91	1.4
30	7.8	11	39	27	---	17	15	9.2	8.2	1.2	.76	1.4
31	7.2	---	37	22	---	17	---	8.7	---	3.7	.61	---
TOTAL	163.8	459.6	393.4	694.9	725	991	585	815.6	393.8	119.2	61.48	82.79
MEAN	5.28	15.3	12.7	22.4	25.9	32.0	19.5	26.3	13.1	3.85	1.98	2.76
MAX	17	30	39	69	57	70	40	77	43	7.7	6.2	9.4
MIN	2.8	9.6	6.3	9.9	15	17	13	8.7	5.6	1.2	.61	.53
CFSM	.35	1.01	.84	1.48	1.71	2.12	1.29	1.74	.87	.25	.13	.18
IN.	.40	1.13	.97	1.71	1.79	2.44	1.44	2.01	.97	.29	.15	.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1998, BY WATER YEAR (WY)

	1996	1997	1998	1996	1997	1998	1996	1997	1998	1996	1997	1998
MEAN	14.4	14.9	28.7	26.1	27.8	30.1	25.2	20.9	12.6	14.0	11.2	6.76
MAX	23.5	15.3	44.6	29.7	29.7	32.0	29.4	26.3	17.3	33.6	18.7	12.2
(WY)	1997	1998	1997	1997	1997	1998	1997	1998	1996	1996	1996	1996
MIN	5.28	14.5	12.7	22.4	25.9	28.2	19.5	17.0	7.41	3.85	1.98	2.76
(WY)	1998	1997	1998	1998	1998	1997	1998	1997	1997	1998	1998	1998

SUMMARY STATISTICS

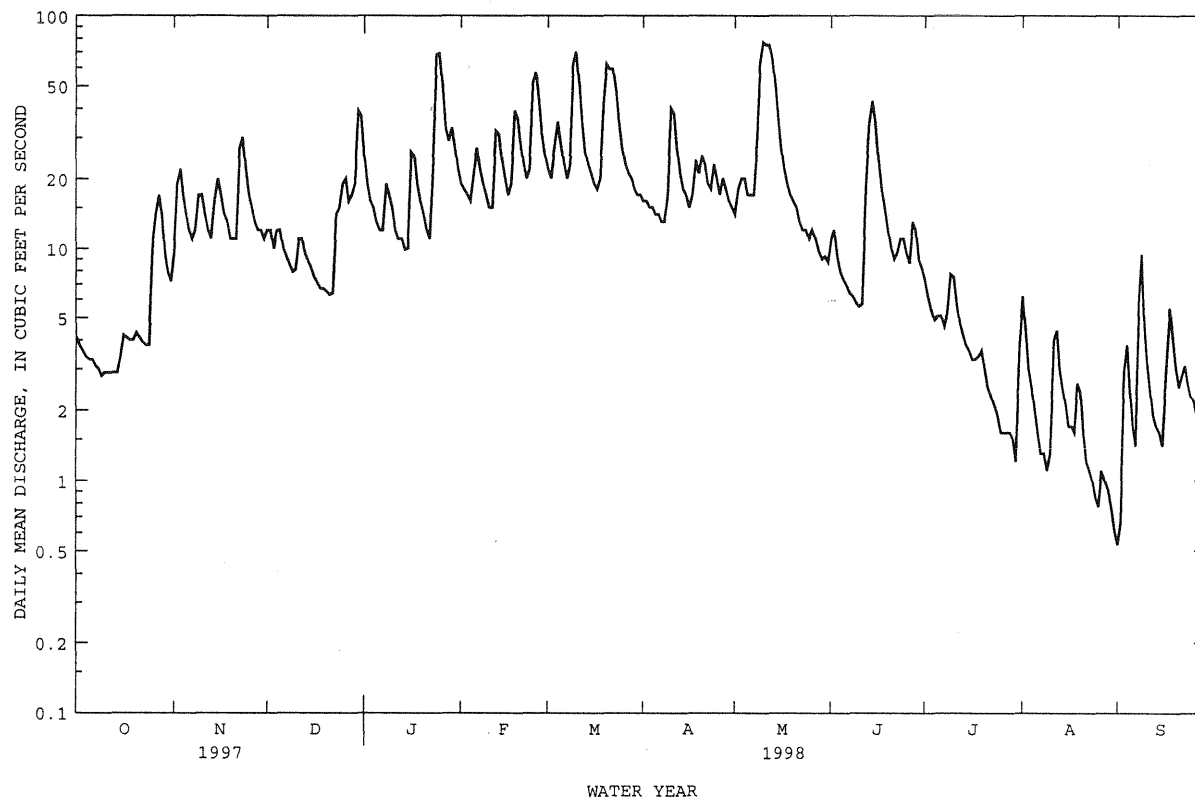
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1996 - 1998

ANNUAL TOTAL	5979.5	5485.57	
ANNUAL MEAN	16.4	15.0	17.8
HIGHEST ANNUAL MEAN			20.6
LOWEST ANNUAL MEAN			15.0
HIGHEST DAILY MEAN	65	Aug 21	77
LOWEST DAILY MEAN	1.2	Jul 21	.53
ANNUAL SEVEN-DAY MINIMUM	1.4	Jul 15	.80
INSTANTANEOUS PEAK FLOW			78
INSTANTANEOUS PEAK STAGE			4.94
INSTANTANEOUS LOW FLOW			.39
ANNUAL RUNOFF (CFSM)	1.08	1.00	1.18
ANNUAL RUNOFF (INCHES)	14.73	13.51	16.02
10 PERCENT EXCEEDS	34	31	40
50 PERCENT EXCEEDS	13	12	15
90 PERCENT EXCEEDS	3.6	1.9	3.3

01410784 GREAT EGG HARBOR RIVER NEAR SICKLERVILLE, NJ--Continued



01411000 GREAT EGG HARBOR RIVER AT FOLSOM, NJ

LOCATION.--Lat 39°35'42", long 74°51'06", Atlantic County, Hydrologic Unit 02040302, on left bank 25 ft upstream from bridge on State Highway 54, 1.0 mi south of Folsom, and 2.0 mi upstream from Pennypot Stream.

DRAINAGE AREA.--57.1 mi².

PERIOD OF RECORD.--September 1925 to current year. Prior to October 1947, published as "Great Egg River at Folsom".

REVISED RECORDS.--WSP 1432: 1928(M), 1933. WDR NJ-83-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Nov. 26, 1934. Datum of gage is 53.32 ft above sea level. Prior to Mar. 6, 1941, water-stage recorder at site 100 ft downstream at same datum. Mar. 6 to Oct. 5, 1941, nonrecording gage at site 145 ft downstream at datum 0.25 ft higher.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Satellite rain-gage and gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	52	62	143	138	156	105	91	73	54	46	27
2	39	65	62	136	117	130	102	96	78	52	41	27
3	37	74	60	112	105	127	100	98	72	50	39	34
4	37	75	62	94	99	146	97	96	67	48	36	39
5	37	71	66	85	99	166	96	96	63	47	35	33
6	36	62	63	80	104	162	94	97	60	46	33	31
7	36	57	60	78	108	143	91	102	58	45	32	29
8	36	58	58	92	107	132	88	110	57	47	32	35
9	34	64	56	102	99	175	91	154	55	54	31	39
10	34	68	56	99	93	280	112	273	54	54	31	35
11	34	66	60	88	88	332	138	355	53	51	39	33
12	33	61	64	79	102	277	161	357	70	47	41	31
13	33	57	62	75	118	219	151	347	101	45	37	29
14	33	63	58	72	141	178	127	328	132	43	35	28
15	34	72	56	71	136	147	107	269	155	42	33	27
16	38	74	55	89	113	130	99	213	154	41	32	27
17	38	70	54	104	100	118	97	173	131	41	32	30
18	38	64	54	112	112	113	105	142	102	41	39	36
19	38	60	53	106	134	132	114	119	81	40	43	34
20	39	57	52	93	153	190	118	105	71	39	38	33
21	38	56	51	83	145	288	122	95	65	38	35	31
22	37	72	50	77	125	323	120	89	62	37	34	31
23	36	86	61	88	111	298	113	84	63	36	33	32
24	36	94	71	152	141	256	116	80	64	37	32	30
25	44	94	77	254	206	214	117	77	63	36	30	29
26	62	83	84	301	253	180	112	79	59	34	29	30
27	73	73	85	256	231	153	109	78	61	34	29	29
28	74	67	83	213	192	135	110	74	59	33	29	27
29	68	64	85	188	---	123	106	70	57	33	29	26
30	58	62	104	173	---	114	97	72	55	33	28	24
31	53	---	125	161	---	109	---	71	---	42	28	---
TOTAL	1305	2041	2049	3856	3670	5646	3315	4490	2295	1320	1061	926
MEAN	42.1	68.0	66.1	124	131	182	111	145	76.5	42.6	34.2	30.9
MAX	74	94	125	301	253	332	161	357	155	54	46	39
MIN	33	52	50	71	88	109	88	70	53	33	28	24
CFSM	.74	1.19	1.16	2.18	2.30	3.19	1.94	2.54	1.34	.75	.60	.54
IN.	.85	1.33	1.33	2.51	2.39	3.68	2.16	2.93	1.50	.86	.69	.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1998, BY WATER YEAR (WY)

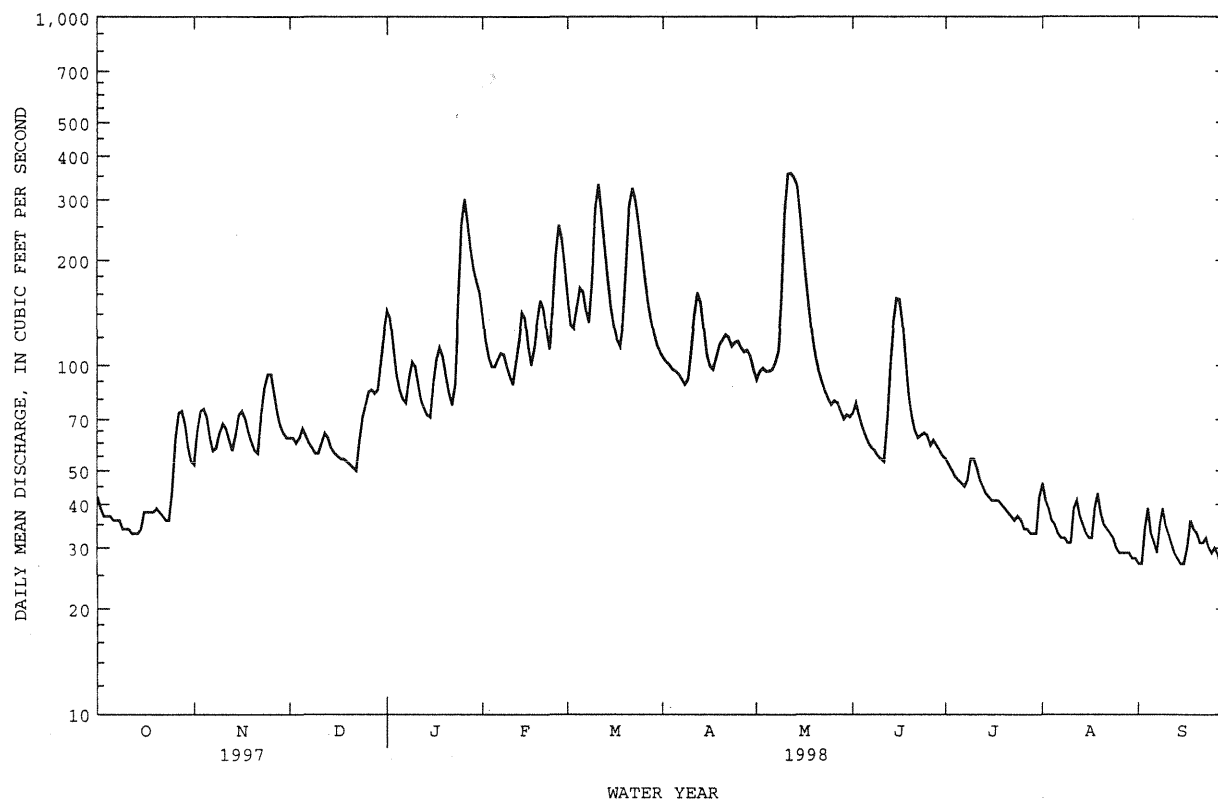
	MEAN	60.7	78.3	93.2	103	107	122	115	96.1	71.6	62.9	64.4	60.1
MAX	148	213	212	203	228	229	234	199	149	187	182	215	
(WY)	1939	1973	1973	1936	1939	1958	1983	1958	1948	1938	1967	1940	
MIN	27.8	30.1	35.1	39.3	50.7	60.1	53.9	47.1	34.4	22.1	19.3	25.6	
(WY)	1931	1966	1966	1981	1931	1981	1985	1955	1977	1966	1966	1964	

SUMMARY STATISTICS FOR 1997 CALENDAR YEAR FOR 1998 WATER YEAR WATER YEARS 1925 - 1998

ANNUAL TOTAL	32563	31974	
ANNUAL MEAN	89.2	87.6	86.1
HIGHEST ANNUAL MEAN			133
LOWEST ANNUAL MEAN			44.4
HIGHEST DAILY MEAN	312	Aug 23	1300
LOWEST DAILY MEAN	30	Jul 18	15
ANNUAL SEVEN-DAY MINIMUM	31	Jul 15	28
INSTANTANEOUS PEAK FLOW			365
INSTANTANEOUS PEAK STAGE		5.58	May 11
INSTANTANEOUS LOW FLOW		24	Sep 29
ANNUAL RUNOFF (CFSM)	1.56	1.53	1.51
ANNUAL RUNOFF (INCHES)	21.21	20.83	20.48
10 PERCENT EXCEEDS	163	155	148
50 PERCENT EXCEEDS	73	70	73
90 PERCENT EXCEEDS	38	33	36

GREAT EGG HARBOR RIVER BASIN

01411000 GREAT EGG HARBOR RIVER AT FOLSOM, NJ--Continued



01411300 TUCKAHOE RIVER AT HEAD OF RIVER, NJ

LOCATION.--Lat 39°18'25", long 74°49'15", Cape May County, Hydrologic Unit 02040302, on right bank at highway bridge on State Route 49, 0.2 mi upstream from McNeals Branch, 0.4 mi southeast of Head of River, and 3.7 mi west of Tuckahoe.

DRAINAGE AREA.--30.8 mi².

PERIOD OF RECORD.--December 1969 to current year.

REVISED RECORDS.--WDR NJ-78-1: 1975(M), 1976(M). WDR NJ-89-1: (M). WDR NJ-91-1: 1990. WRD NJ-97-1: 1971(M), 1978(M), 1979 (M), 1983 (P), 1994(P).

GAGE.--Water-stage recorder, wooden control, and downstream tidal crest-stage gage. Datum of gage is sea level.

REMARKS.--Records good except for periods of tide effect and estimated discharges, which are fair. Occasional regulation by ponds above station. There is a fish gate in the left weir which was open this year. Planks were placed on top of the center and right weirs from Mar.27 to May 20 to raise water level for fish migration. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 638 ft³/s, Feb 5, gage height, 6.72 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	34	41	78	95	92	120	94	39	e27	18	13
2	23	52	38	59	78	84	117	117	38	e25	16	13
3	22	56	36	53	69	120	111	114	35	e24	15	13
4	21	48	43	49	e70	185	112	104	33	e23	14	26
5	21	38	47	46	e200	163	134	100	32	e22	14	21
6	21	34	42	44	e120	136	127	100	31	e21	13	16
7	20	e36	39	45	87	112	115	94	30	e22	13	14
8	20	e60	37	54	75	135	105	104	29	e25	14	22
9	20	e80	36	55	65	323	111	171	29	e28	13	17
10	20	75	36	49	59	357	183	247	29	e25	13	15
11	21	57	45	45	56	244	183	244	29	e21	23	14
12	20	47	42	42	89	171	155	339	51	e20	19	13
13	19	41	39	43	107	137	132	392	83	e19	16	12
14	20	e57	36	50	90	117	116	275	77	e19	15	12
15	22	e80	35	47	74	106	107	205	61	e18	14	12
16	26	68	34	82	64	99	101	163	49	e19	14	12
17	25	55	33	84	63	91	114	140	41	e20	14	12
18	24	48	32	65	87	96	148	124	34	e22	14	12
19	28	42	32	55	87	153	138	110	e33	e19	15	12
20	32	40	31	50	77	223	134	81	e31	e16	14	12
21	27	38	31	46	68	e250	124	57	29	e16	13	11
22	24	57	31	44	60	e265	110	54	e32	e16	13	11
23	23	75	40	59	75	224	112	50	e33	e15	13	11
24	22	63	40	145	e200	176	154	48	e34	e18	12	11
25	31	52	53	148	234	144	149	45	e35	e16	12	11
26	37	47	64	123	176	124	134	45	e34	e13	11	11
27	46	43	54	93	137	130	128	44	e36	e13	11	11
28	45	40	55	e130	109	149	117	43	e35	e14	17	11
29	35	39	57	e190	---	141	103	41	e30	e15	19	10
30	30	38	107	e170	---	134	95	40	e28	15	15	11
31	28	---	108	123	---	127	---	38	---	16	13	---
TOTAL	797	1540	1394	2366	2771	5008	3789	3823	1140	602	450	402
MEAN	25.7	51.3	45.0	76.3	99.0	162	126	123	38.0	19.4	14.5	13.4
MAX	46	80	108	190	234	357	183	392	83	28	23	26
MIN	19	34	31	42	56	84	95	38	28	13	11	10
CFSM	.83	1.67	1.46	2.48	3.21	5.25	4.10	4.00	1.23	.63	.47	.44
IN.	.96	1.86	1.68	2.86	3.35	6.05	4.58	4.62	1.38	.73	.54	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1998, BY WATER YEAR (WY)

	MEAN	27.2	34.8	43.3	52.9	55.7	70.5	70.9	56.8	38.4	27.8	27.9	22.8
MAX	59.9	81.4	97.0	101	101	162	174	123	83.7	55.8	99.3	64.7	
(WY)	1997	1973	1997	1978	1973	1998	1983	1998	1984	1996	1997	1989	
MIN	15.1	16.8	19.4	16.0	24.4	26.4	21.3	20.0	14.8	12.7	10.6	7.04	
(WY)	1978	1992	1981	1981	1995	1995	1985	1977	1977	1988	1988	1980	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

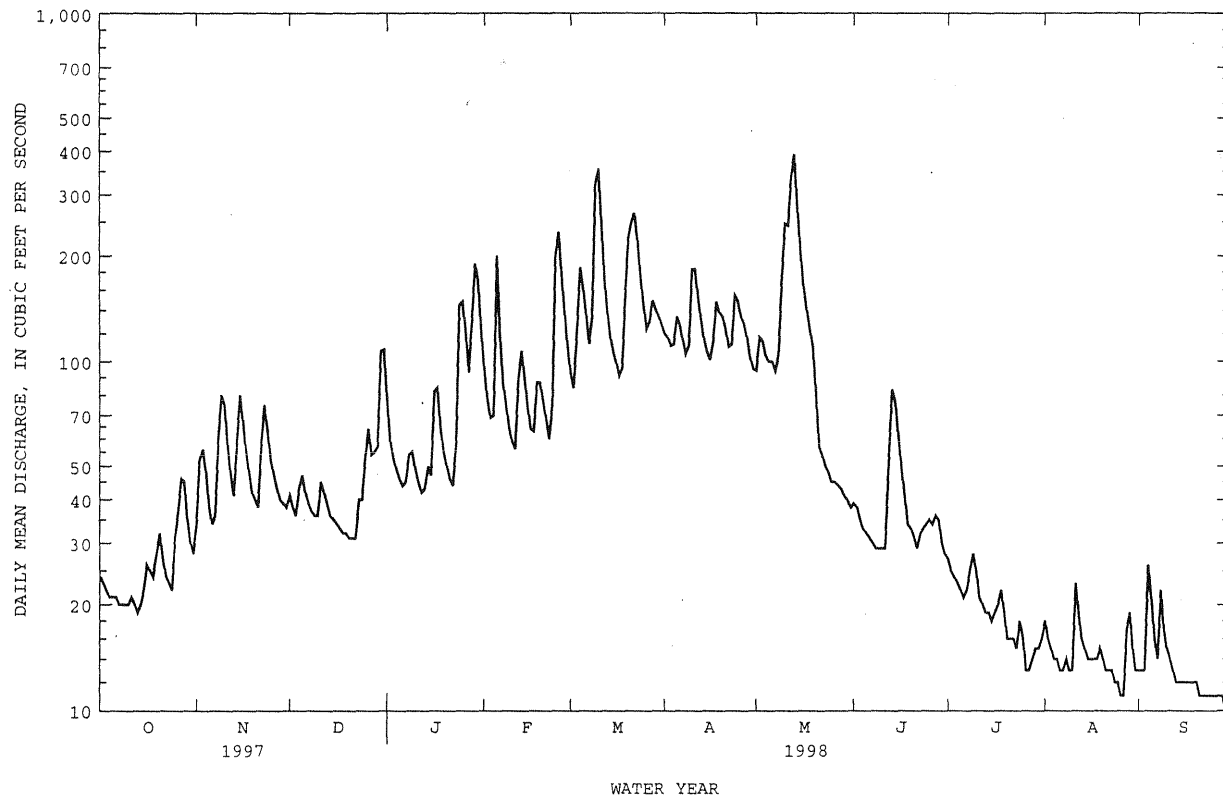
WATER YEARS 1970 - 1998

ANNUAL TOTAL	20150	24082	
ANNUAL MEAN	55.2	66.0	44.0
HIGHEST ANNUAL MEAN			66.0
LOWEST ANNUAL MEAN			21.7
HIGHEST DAILY MEAN	920	Aug 21	920
LOWEST DAILY MEAN	13	Aug 17	1.3
ANNUAL SEVEN-DAY MINIMUM	15	Jul 30	1.9
INSTANTANEOUS PEAK FLOW		638	1340
INSTANTANEOUS PEAK STAGE		6.72	9.09
INSTANTANEOUS LOW FLOW		6.2	
ANNUAL RUNOFF (CFSM)	1.79	2.14	1.43
ANNUAL RUNOFF (INCHES)	24.34	29.09	19.40
10 PERCENT EXCEEDS	88	142	85
50 PERCENT EXCEEDS	45	43	33
90 PERCENT EXCEEDS	20	14	15

e Estimated

TUCKAHOE RIVER BASIN

01411300 TUCKAHOE RIVER AT HEAD OF RIVER, NJ--Continued



01411456 LITTLE EASE RUN NEAR CLAYTON, NJ

LOCATION.--Lat 39°39'32", long 75°04'04", Gloucester County, Hydrologic Unit 02040206, on right bank 30 ft downstream from bridge on Academy Road (County Route 610), 0.9 mi west of Fries Mill, 1.3 mi east of Clayton, and 1.4 mi downstream from Beaverdam Branch.

DRAINAGE AREA.--9.77 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1966, 1976-84, 1987. February 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 100.94 ft above sea level.

REMARKS.--Records poor. Occasional regulation from unknown sources. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 9	2245	*56	*3.56	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	5.3	6.0	e20	18	21	e16	e14	e6.5	3.7	1.4	.85
2	1.2	12	5.6	e17	16	18	e16	e15	e6.0	3.4	1.1	.85
3	1.2	15	5.3	e15	14	22	e15	e16	e5.5	3.2	1.0	.94
4	1.2	13	6.7	e13	13	27	e15	e15	e5.0	2.8	.94	.94
5	1.2	12	7.2	e11	15	25	e16	e15	e4.5	2.8	.87	.91
6	1.2	12	6.3	e11	16	22	e15	e16	e4.5	2.6	.82	.91
7	1.1	12	5.7	e13	15	19	e14	e19	e4.1	2.4	.77	.94
8	1.1	e9.5	5.3	e16	14	20	e15	e18	e4.0	2.7	.77	1.2
9	1.1	e12	4.9	e16	13	46	e18	e27	e4.0	3.5	.77	1.2
10	1.1	e10	4.9	e15	12	51	e20	e40	e4.0	3.2	.77	1.1
11	1.1	e9.5	e7.0	e12	11	e44	e25	e45	e5.0	2.8	1.0	1.0
12	1.1	e8.0	e7.0	e10	19	e35	e24	e45	e10	2.5	1.0	.99
13	1.1	e8.5	e6.5	e7.5	20	e28	e22	e45	21	2.2	.94	.94
14	1.1	e11	e6.0	e9.0	19	e22	e18	e35	23	2.2	.91	.94
15	1.3	e12	e5.5	e11	16	e18	e16	e25	21	2.0	.94	.94
16	1.7	e10	e5.5	e14	14	e15	e16	e20	17	1.9	.94	.94
17	1.6	e9.0	e5.5	e17	14	e14	e17	e15	13	1.8	.94	1.1
18	1.6	e8.0	e5.5	e16	21	e18	e18	e15	9.5	1.8	.98	1.1
19	1.7	e7.0	e5.0	13	22	e34	e19	e10	7.6	1.6	1.1	.94
20	1.7	e6.5	e5.0	11	20	e58	e19	e10	6.3	1.6	1.0	.94
21	1.7	e8.0	e5.0	9.2	18	e62	e19	e9.0	5.7	1.4	.96	.85
22	1.6	e12	e6.0	8.0	16	e63	e18	e8.5	5.5	1.3	.94	.85
23	1.6	e15	e7.0	17	17	e49	e19	e6.5	5.3	1.3	.94	.85
24	1.6	e14	e8.5	45	35	e35	e18	e6.5	5.3	1.2	.94	.81
25	3.4	e12	e9.5	47	43	e30	e17	e6.5	4.8	1.1	.90	.77
26	5.0	e10	e10	40	39	e25	e17	e7.5	4.4	1.1	.85	.82
27	7.0	7.7	e9.5	32	32	e22	e17	e6.0	5.5	.96	.85	.81
28	6.6	6.7	e10	28	26	e20	e16	e5.5	4.6	.94	.85	.69
29	5.5	6.0	e13	27	---	e19	e15	e5.5	4.2	.94	.85	.67
30	4.8	5.6	e16	24	---	e18	e14	e5.5	4.0	.86	.85	.67
31	4.2	---	e20	20	---	e17	---	e6.0	---	1.2	.85	---
TOTAL	68.7	299.3	230.9	564.7	548	917	524	533.0	230.8	63.00	28.74	27.46
MEAN	2.22	9.98	7.45	18.2	19.6	29.6	17.5	17.2	7.69	2.03	.93	.92
MAX	7.0	15	20	47	43	63	25	45	23	3.7	1.4	1.2
MIN	1.1	5.3	4.9	7.5	11	14	14	5.5	4.0	.86	.77	.67
CFSM	.23	1.02	.76	1.86	2.00	3.03	1.79	1.76	.79	.21	.09	.09
IN.	.26	1.14	.88	2.15	2.09	3.49	2.00	2.03	.88	.24	.11	.10

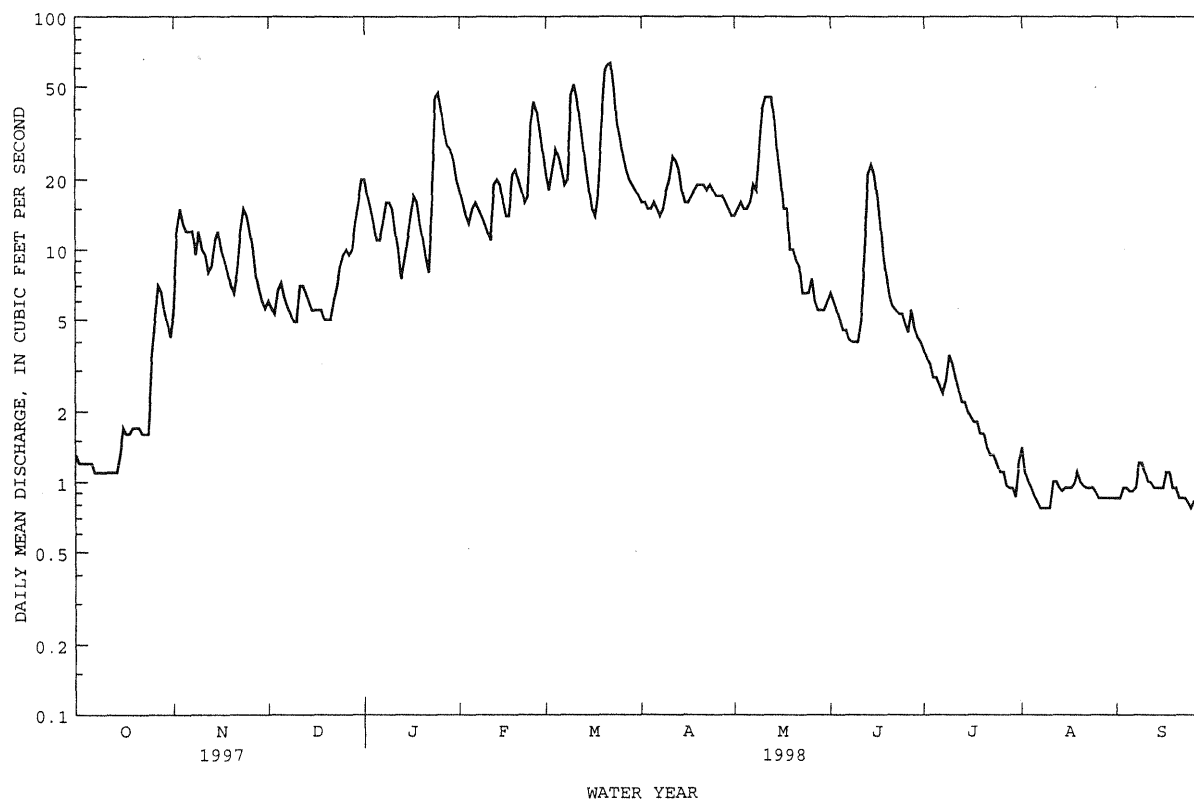
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1998, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	6.21	8.08	13.0	15.8	15.0	20.9	17.7	13.3	6.79	5.33	5.43	4.13
MAX	19.7	15.0	35.5	26.5	22.4	38.7	26.2	29.3	15.4	19.0	15.2	20.4
(WY)	1990	1990	1997	1991	1997	1994	1996	1989	1989	1989	1989	1989
MIN	1.93	4.22	6.86	6.98	6.37	9.91	5.65	4.54	2.14	1.68	.93	.92
(WY)	1989	1992	1995	1992	1992	1992	1992	1992	1995	1995	1998	1998

01411456 LITTLE EASE RUN NEAR CLAYTON, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1988 - 1998
ANNUAL TOTAL	4030.29	4035.60	
ANNUAL MEAN	11.0	11.1	11.2
HIGHEST ANNUAL MEAN			14.3
LOWEST ANNUAL MEAN			5.70
HIGHEST DAILY MEAN	63	63	111
LOWEST DAILY MEAN	.91	.67	.41
ANNUAL SEVEN-DAY MINIMUM	1.1	.75	.50
INSTANTANEOUS PEAK FLOW		56	124
INSTANTANEOUS PEAK STAGE		3.56	4.27
INSTANTANEOUS LOW FLOW		.61	.35
ANNUAL RUNOFF (CFSM)	1.13	1.13	1.14
ANNUAL RUNOFF (INCHES)	15.35	15.37	15.54
10 PERCENT EXCEEDS	25	23	24
50 PERCENT EXCEEDS	8.5	7.5	7.6
90 PERCENT EXCEEDS	1.3	.94	1.5

e Estimated



01411500 MAURICE RIVER AT NORMA, NJ

LOCATION.--Lat 39°29'42", long 75°04'38", Salem County, Hydrologic Unit 02040206, on right bank just upstream from bridge on Almond Road (State Route 540) at Norma, and 0.8 mi downstream from Blackwater Branch.

DRAINAGE AREA.--112 mi².

PERIOD OF RECORD.--July 1932 to current year. Monthly discharge only for December 1933, published in WSP 1302.

REVISED RECORDS.--WSP 1382: 1933. WDR NJ-79-1: 1967(P). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Dec. 27, 1937. Datum of gage is 46.94 ft above sea level.

REMARKS.--Records fair. Occasional regulation by ponds above station. Several measurements of water temperature, other than those published, were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 10	0230	463	3.59	May 12	1745	418	3.50
Mar 23	0430	*478	*3.62				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	112	130	161	254	278	249	204	166	121	92	58
2	76	135	127	164	239	281	244	204	169	118	90	58
3	73	158	122	166	228	286	238	201	166	114	85	64
4	70	152	124	166	215	291	233	195	160	109	81	64
5	69	141	127	157	210	292	234	192	155	107	77	62
6	68	131	127	149	211	287	232	192	148	102	74	60
7	66	123	124	146	209	276	227	192	138	100	73	59
8	64	129	121	148	206	289	222	208	129	108	72	65
9	63	147	118	153	204	411	221	270	129	118	70	66
10	63	152	117	157	201	458	248	325	128	117	72	66
11	64	147	125	157	204	448	266	380	127	113	95	63
12	63	138	127	151	204	432	281	407	169	108	87	61
13	62	129	125	143	207	396	281	411	222	103	80	59
14	62	134	124	138	210	354	270	383	303	100	78	58
15	64	146	119	133	214	318	256	357	318	97	77	57
16	68	146	116	139	214	291	241	326	287	95	76	56
17	67	144	114	145	214	271	237	294	252	99	75	54
18	69	138	114	148	217	262	240	254	221	93	79	54
19	73	130	113	151	221	302	235	241	182	84	106	54
20	76	123	110	153	224	364	250	223	164	81	134	53
21	72	119	108	153	225	386	251	210	154	82	134	52
22	69	141	106	146	230	431	244	198	145	81	106	49
23	67	162	110	145	232	472	236	161	144	78	88	49
24	65	165	120	167	238	448	233	163	145	95	82	47
25	81	166	127	196	246	412	224	164	142	86	74	49
26	103	162	132	217	254	374	216	185	138	80	69	49
27	134	151	135	231	264	340	215	179	135	78	66	49
28	141	142	139	241	271	301	214	170	122	75	65	49
29	122	138	142	251	---	252	211	163	122	77	63	47
30	116	133	149	257	---	254	207	160	124	74	61	46
31	111	---	157	260	---	253	---	160	---	90	60	---
TOTAL	2441	4234	3849	5289	6266	10510	7156	7372	5104	2983	2541	1677
MEAN	78.7	141	124	171	224	339	239	238	170	96.2	82.0	55.9
MAX	141	166	157	260	271	472	281	411	318	121	134	66
MIN	62	112	106	133	201	252	207	160	122	74	60	46
CFSM	.70	1.26	1.11	1.52	2.00	3.03	2.13	2.12	1.52	.86	.73	.50
IN.	.81	1.41	1.28	1.76	2.08	3.49	2.38	2.45	1.70	.99	.84	.56

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 1998, BY WATER YEAR (WY)

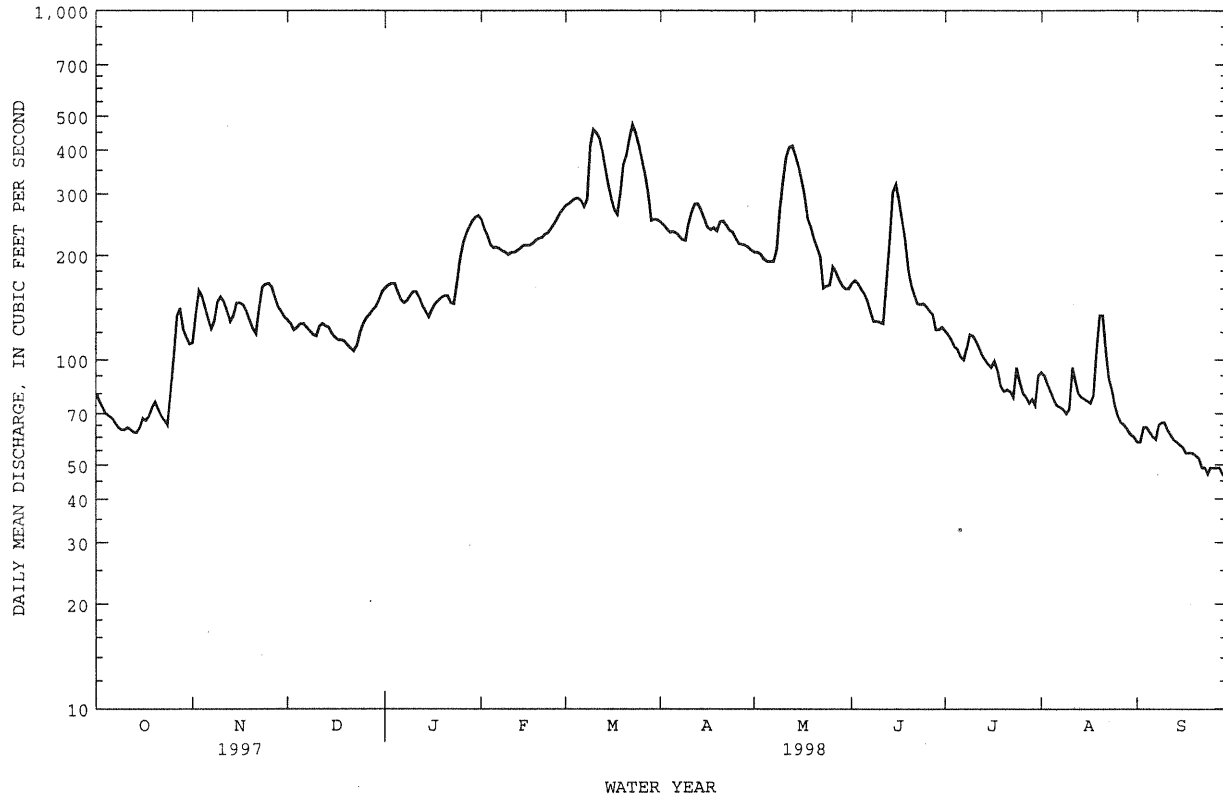
MEAN	113	140	168	191	202	232	227	191	147	123	125	120
MAX	266	330	385	380	418	427	437	387	291	333	327	591
(WY)	1990	1973	1973	1936	1939	1979	1984	1958	1979	1975	1958	1940
MIN	48.6	46.7	57.1	64.7	95.7	97.2	90.9	79.5	57.7	35.6	34.6	40.6
(WY)	1966	1966	1966	1966	1981	1981	1966	1977	1966	1966	1966	1965

MAURICE RIVER BASIN

01411500 MAURICE RIVER AT NORMA, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1933 - 1998	
ANNUAL TOTAL	64014		59422		165	
ANNUAL MEAN	175		163		253	
HIGHEST ANNUAL MEAN					67.4	
LOWEST ANNUAL MEAN					23	
HIGHEST DAILY MEAN	472	Aug 23	472	Mar 23	5260	Sep 2 1940
LOWEST DAILY MEAN	59	Jul 23	46	Sep 30	23	Sep 8 1964
ANNUAL SEVEN-DAY MINIMUM	63	Oct 8	48	Sep 24	23	Sep 7 1966
INSTANTANEOUS PEAK FLOW			478	Mar 23	7360a	Sep 2 1940
INSTANTANEOUS PEAK STAGE			3.62	Mar 23	8.72	Sep 2 1940
INSTANTANEOUS LOW FLOW			46	Sep 22	23	Sep 8 1964
ANNUAL RUNOFF (CFSM)	1.57		1.45		1.47	
ANNUAL RUNOFF (INCHES)	21.26		19.74		19.97	
10 PERCENT EXCEEDS	309		281		282	
50 PERCENT EXCEEDS	147		142		144	
90 PERCENT EXCEEDS	71		64		69	

a From rating curve extended above 3,000 ft³/s highest since 1867.



01434000 DELAWARE RIVER AT PORT JERVIS, NY

LOCATION.--Lat 41°22'14", long 74°41'52", Pike County, PA, Hydrologic Unit 02040104, on right bank 250 ft downstream from bridge (on U.S. Highways 6 and 209) between Port Jervis, N.Y. and Matamoras, PA, 1.2 mi upstream from Neversink River, and 6.5 mi downstream from Mongaup River.

DRAINAGE AREA.--3,070 mi².

PERIOD OF RECORD.--October 1904 to current year.

REVISED RECORDS.--WSP 1031: 1905-36. WDR NY-71-1: 1970. WDR NY-82-1: Drainage area. WDR NY-86-1: 1979-80. WDR NJ-97-1: 1996

GAGE.--Water-stage recorder. Datum of gage is 415.35 ft above sea level. October 1904 to August 13, 1928, non-recording gage at bridge 250 ft upstream at present datum; operated by U.S. Weather Service prior to June 20, 1914.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by Lake Wallenpaupack and by Toronto, Cliff Lake, and Swinging Bridge Reservoirs (see Reservoirs in Delaware River Basin) and smaller reservoirs. Large diurnal fluctuations at medium and low flows caused by powerplants on tributary streams. Subsequent to September 1954, entire flow from 371 mi² of drainage area controlled by Pepacton Reservoir, and subsequent to October 1963, entire flow from 454 mi² of drainage area controlled by Cannonsville Reservoir (see Reservoirs in Delaware River Basin). Part of flow from these reservoirs diverted for New York City municipal supply. Remainder of flow (except for conservation releases and spill) impounded for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master. Telephone and satellite gage-height telemeters at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to current degree of regulation, 233,000 ft³/s, Aug. 19, 1955, gage height, 23.91 ft, from floodmarks in gage house, from rating curve extended above 89,000 ft³/s, on basis of slope-area measurement of peak flow; maximum discharge since current degree of regulation, 134,000 ft³/s, Jan. 20, 1996, gage height, 18.37 ft; maximum gage height, 26.6 ft, Feb. 12, 1981 (ice jam), from floodmarks; minimum observed discharge, 175 ft³/s, Sept. 23, 1908, gage height, 0.6 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--The U.S. Weather Bureau reported a discharge of 205,000 ft³/s, Oct. 10, 1903, gage height, 23.1 ft, from rating curve extended above 70,000 ft³/s, by velocity-area studies; maximum gage height, 25.5 ft, Mar. 8, 1904 (ice jam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41,400 ft³/s, Jan. 9, gage height, 10.14 ft; minimum, 944 ft³/s, Sept. 11, gage height, 1.81 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1590	1350	4670	e2800	2650	10000	9820	5860	4980	17100	1570	1650
2	1810	1370	5750	2530	2930	14300	15100	5200	4730	13600	1620	1570
3	2090	1650	4720	2950	3300	13600	14200	5530	7010	10700	1740	1710
4	1480	2470	3960	2960	3370	11700	11700	9650	6430	8440	1610	1770
5	1490	2030	3740	6200	3330	10100	10100	10500	4670	6930	1650	1730
6	1610	1710	3860	11500	3400	8790	8150	10400	3560	6920	1500	1650
7	2440	1540	3360	16200	2960	7880	7390	11000	2810	5810	1730	1800
8	2280	1510	3120	22700	2220	7190	7150	10200	2790	4660	1790	1600
9	1600	1510	3040	36200	2610	10400	7720	9170	2720	8320	1790	1230
10	1570	2710	2550	27700	2980	27900	16400	12900	3150	13500	1690	1160
11	1550	3150	2400	16700	2850	26300	15100	26300	3170	11400	1780	1330
12	1480	2420	2570	12100	4290	18200	11600	26800	3790	8620	1620	1620
13	1680	2030	2180	9760	7280	14200	10100	20900	7460	7110	1860	1830
14	1630	1980	2040	8330	e5800	12100	8930	16200	12000	6230	1650	1630
15	1830	1930	1940	6810	4300	10500	8440	13200	14000	4800	1820	1920
16	1610	1900	1770	8050	4490	9160	7920	10400	18500	4170	1760	1780
17	1660	1760	2130	10100	4850	8000	7090	8350	17000	3850	1870	1790
18	1580	1620	1800	8220	5230	7680	6450	7650	17500	3060	1890	1750
19	1690	1520	1810	7020	7240	8910	5830	6980	15000	2530	2040	1470
20	1610	1490	1760	6210	8840	9950	14100	6070	12600	2860	1670	1850
21	1770	1460	1770	5830	7550	10100	17200	5370	10700	2880	1680	1720
22	1630	1570	1720	5060	6220	12000	14300	4310	8450	2900	1590	1910
23	1690	2620	1670	4770	6010	10900	13000	3480	7750	2620	1530	1830
24	1630	3380	1730	4810	6990	9590	11800	2820	6460	2220	1600	1900
25	1850	3060	1910	5200	8160	9030	8720	2600	5790	2030	1790	1790
26	1590	2590	2610	4590	7840	8030	7100	3350	5080	1580	2060	1820
27	1680	2380	3190	4380	7650	10500	8340	3690	3930	1500	1530	1800
28	1370	2760	3080	4210	7080	12500	7930	3070	3470	1840	2140	1650
29	1300	2840	3170	4000	---	12700	7010	2740	3190	1830	1620	2140
30	1440	2800	3480	4030	---	11900	6440	2400	3900	1800	1620	1650
31	1350	---	e3200	3280	---	10600	---	2480	---	1710	1650	---
TOTAL	51580	63110	86700	275200	142420	364710	305130	269570	222590	173520	53460	51050
MEAN	1664	2104	2797	8877	5086	11760	10170	8696	7420	5597	1725	1702
MAX	2440	3380	5750	36200	8840	27900	17200	26800	18500	17100	2140	2140
MIN	1300	1350	1670	2530	2220	7190	5830	2400	2720	1500	1500	1160

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998, BY WATER YEAR (WY)

	MEAN	3023	4212	5275	4905	5166	8060	9536	6181	3834	2738	2232	2396
MAX	10440	10310	17280	12980	13730	17520	23650	12670	6680	12650	6680	4513	7928
(WY)	1978	1973	1997	1996	1976	1977	1993	1984	1972	1973	1969	1967	1987
MIN	1001	884	1866	1216	1601	2583	2954	1890	993	699	963	1144	1144
(WY)	1965	1965	1965	1981	1980	1981	1985	1995	1965	1965	1965	1965	1965

e Estimated

DELAWARE RIVER BASIN

01434000 DELAWARE RIVER AT PORT JERVIS, NY--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1964 - 1998	
ANNUAL TOTAL	1431420		2059040			
ANNUAL MEAN	3922		5641		4792	
HIGHEST ANNUAL MEAN					7216	1973
LOWEST ANNUAL MEAN					2028	1965
HIGHEST DAILY MEAN	17300	Apr 1	36200	Jan 9	95200	Jan 20 1996
LOWEST DAILY MEAN	1210	Sep 6	1160	Sep 10	385	Jul 6 1965
ANNUAL SEVEN-DAY MINIMUM	1390	Sep 4	1400	Oct 28	432	Jul 1 1965
10 PERCENT EXCEEDS	8330		12300		10400	
50 PERCENT EXCEEDS	2390		3300		2870	
90 PERCENT EXCEEDS	1510		1610		1500	

LOCATION.--Lat 41°26'28", long 74°36'08", Orange County, Hydrologic Unit 02040104, on right bank just upstream from highway bridge on Graham Road, 0.5 mi downstream from Basher Kill, 0.8 mi southeast of Godeffroy, 1.7 mi south of Cuddebackville, and 8.5 mi upstream from 0.5 mi

PERIOD OF RECORD.--July 1937 to current year. Gauge heights and discharge measurements, August to October 1903 and August 1909 to April 1914, and twice-daily figures of discharge for January 1911 to December 1912 (which do not represent daily mean discharges because of diurnal fluctuation) are published in WSP 97, 261, 321, 351, and 381. August to October 1903, published as "Navesink River at Godeffroy, NY."

GAGE.--Water-stage recorder. Datum of gage is 459.66 ft above sea level (levels by Corps of Engineers). Prior to Apr. 30, 1914, nonrecording gages at same site (August to October 1903 at datum 0.98 ft higher).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to regulation, 24,500 ft³/s, Nov. 26, 1950, gage height, 11.79 ft; maximum discharge since regulation, 33,000 ft³/s, Aug. 19, 1955, gage height, 12.49 ft, from rating curve extended above 11,000 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge observed, no flow July 21, 22, 28, 1911, result of regulation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	163	648	e285	378	883	485	446	555	2590	129	104
2	101	734	523	e290	360	832	859	559	392	1040	124	90
3	75	617	439	299	352	735	665	775	755	729	118	97
4	70	409	421	345	354	660	600	886	537	603	115	88
5	68	326	414	564	387	600	545	807	425	552	118	83
6	67	288	397	857	381	551	497	982	360	488	132	80
7	63	264	364	1310	359	514	461	894	317	426	137	86
8	59	261	339	2220	336	496	436	796	293	405	134	110
9	60	569	318	2590	318	978	525	860	272	450	130	91
10	66	608	306	1770	314	2160	1390	2510	251	385	125	84
11	60	483	310	1330	308	1320	928	4310	237	334	151	85
12	59	427	297	1080	599	1010	767	3960	332	296	131	85
13	82	380	288	913	732	855	683	2400	933	267	112	82
14	82	370	271	792	603	771	614	1850	3890	247	109	79
15	95	355	e230	679	e490	700	594	1330	5980	259	111	80
16	83	323	e230	716	e430	633	615	1010	4670	257	119	99
17	71	299	e220	686	e450	579	546	821	3240	230	117	94
18	68	279	e210	614	667	576	513	703	2570	207	120	73
19	75	298	e210	559	896	793	484	603	1800	196	122	69
20	78	272	e200	520	863	866	1300	540	1140	212	113	68
21	74	264	e190	480	775	864	975	473	991	237	108	85
22	86	335	e160	443	699	809	739	418	799	223	108	160
23	86	470	213	430	645	714	655	379	688	209	106	115
24	75	409	216	511	733	663	608	339	605	199	106	97
25	93	367	271	577	835	627	526	330	530	176	102	91
26	117	337	397	506	782	605	509	379	465	152	107	90
27	144	351	383	466	781	628	625	321	409	144	107	95
28	211	346	347	440	753	609	516	290	358	139	119	143
29	184	333	306	411	---	542	468	273	319	139	126	123
30	155	351	e295	412	---	502	438	323	1020	140	123	102
31	124	---	e290	400	---	463	---	298	---	132	110	---
TOTAL	2847	11288	9703	23495	15580	23538	19566	30865	35133	12063	3689	2828
MEAN	91.8	376	313	758	556	759	652	996	1171	389	119	94.3
MAX	211	734	648	2590	896	2160	1390	4310	5980	2590	151	160
MIN	59	163	160	285	308	463	436	273	237	132	102	68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

MEAN	299	386	447	376	414	685	844	550	381	238	223	213
MAX	2033	1094	1227	1053	981	1370	2080	1392	1722	652	1327	705
(WY)	1956	1956	1974	1979	1976	1977	1993	1989	1972	1972	1955	1960
MIN	91.8	86.3	119	72.6	118	297	248	180	111	54.2	76.0	71.1
(WY)	1998	1966	1981	1981	1980	1981	1985	1962	1957	1966	1968	1972

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1954 - 1998
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ANNUAL TOTAL	125111		190595			
ANNUAL MEAN	343		522		421	
HIGHEST ANNUAL MEAN					704	1956
LOWEST ANNUAL MEAN					215	1965
HIGHEST DAILY MEAN	1800	Mar 31	5980	Jun 15	15900	Aug 19 1955
LOWEST DAILY MEAN	59	Oct 8	59	Oct 8	32	Aug 17 1965
ANNUAL SEVEN-DAY MINIMUM	62	Oct 6		Oct 6	38	Aug 11 1965
10 PERCENT EXCEEDS	640		895		878	
50 PERCENT EXCEEDS	290		367		272	
90 PERCENT EXCEEDS	95		90		107	

e Estimated

DELAWARE RIVER BASIN

01438500 DELAWARE RIVER AT MONTAGUE, NJ

LOCATION.--Lat 41°18'33", long 74°47'44", Pike County, PA, Hydrologic Unit 02040104, on right bank 1,500 ft upstream from toll bridge (on U.S. Route 206) between Montague, NJ and Milford, PA, 0.8 mi downstream from Sawkill Creek, and at river mile 246.3.

DRAINAGE AREA.--3,480 mi².

PERIOD OF RECORD.--March 1936 to September 1939 (gage heights only, published as "at Milford, PA"). October 1939 to current year. Monthly discharge only for some periods, published in WSP 1302.

REVISED RECORDS.--WDR-NJ-81-2: 1980.

GAGE.--Water-stage recorder. Datum of gage is 369.93 ft above sea level. Prior to Feb. 9, 1940, nonrecording gage on upstream side of left span of subsequently dismantled bridge at present site at datum 70 ft lower.

REMARKS.--Records good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack, Cliff Lake, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, and Neversink Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversion from Pepacton, Cannonsville, and Neversink Reservoirs (see Delaware River basin, diversions). Several measurements of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of October 10, 1903, reached a stage of 35.5 ft, from floodmark, present datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1670	1510	5130	3980	3350	10900	10500	6700	6670	17900	1840	1750
2	1740	1930	6570	3330	3570	15100	15600	6330	5780	14800	1820	1730
3	2550	2210	5400	3710	3980	14500	15300	6870	7960	11400	2010	1830
4	1700	2960	4630	3480	4060	12500	12500	10700	7640	9290	1900	1940
5	1650	2520	4370	6290	4080	11000	10900	11600	5660	7680	1830	1940
6	1640	2070	4490	10900	4130	9760	9140	11700	4440	7710	1780	1880
7	2630	1840	3990	15900	3690	8860	8250	12100	3470	6450	1980	2000
8	2530	1770	3630	23600	2840	8170	7970	11400	3190	5420	2080	1990
9	2000	2040	3560	39100	3150	10900	8440	10600	3350	8120	2020	1530
10	1660	3190	3110	31200	3600	28200	17300	15100	3490	13400	2000	1370
11	1650	3890	2900	19400	3460	29000	17000	30600	3640	11500	2060	1530
12	1610	3090	2940	13600	5430	20400	12800	32100	4170	8980	1910	1660
13	1750	2560	2750	11000	8630	15800	11200	24900	7930	7460	2080	2120
14	1810	2420	2450	9530	7680	13300	10100	19100	14700	6630	1940	1900
15	1950	2460	2240	7990	5380	11500	9470	15200	20300	5320	2030	2070
16	1850	2340	2170	8750	5260	10300	9020	12000	23900	4590	2010	1890
17	1750	2170	2440	10800	5780	9040	8180	9840	21500	4370	2120	1840
18	1740	1990	2240	9230	6420	8690	7510	8810	20700	3570	2170	1880
19	1770	1870	2060	8010	8660	9940	6780	8090	17800	3000	2300	1500
20	1750	1820	2130	7110	10200	11100	14200	7050	14400	3160	1970	1890
21	1870	1820	2120	6660	8950	11200	18700	6320	12200	3320	1910	1810
22	1750	1930	1890	5780	7500	12900	15400	5130	9790	3440	1830	2100
23	1790	3010	2260	5540	7160	11900	13800	4280	8870	3020	1760	1860
24	1780	3980	2110	5660	8330	10700	12400	3500	7530	2780	1840	2030
25	1950	3650	2300	6180	9590	10100	9910	3180	6760	2460	2030	1870
26	1800	3140	3040	5590	9200	9150	8070	3820	5950	1940	2240	1860
27	1920	2870	3750	5130	9000	11100	9220	4330	4790	1720	1740	1870
28	1580	3170	3730	4960	8470	12900	8910	3640	4170	2130	2150	1790
29	1410	3320	3560	4780	---	13200	7960	3310	3740	2250	1800	2180
30	1620	3270	4100	4740	---	12500	7280	3020	4280	2060	1710	1860
31	1480	---	4080	4250	---	11200	---	2920	---	2070	1790	---
TOTAL	56350	76810	102140	306180	171550	395810	333810	314240	268770	187940	60650	55470
MEAN	1818	2560	3295	9877	6127	12770	11130	10140	8959	6063	1956	1849
MAX	2630	3980	6570	39100	10200	29000	18700	32100	23900	17900	2300	2180
MIN	1410	1510	1890	3330	2840	8170	6780	2920	3190	1720	1710	1370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

	MEAN	3337	5169	6255	5914	5980	9999	11980	7452	4396	3086	2595	2637
MAX	15690	11760	18830	15600	15120	24480	31560	16090	15200	11220	14230	9167	
(WY)	1956	1952	1997	1996	1976	1945	1940	1943	1972	1945	1955	1960	
MIN	807	995	1968	1318	1748	3191	3322	2215	1214	864	715	892	
(WY)	1942	1965	1965	1981	1980	1981	1985	1965	1965	1954	1954	1941	

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

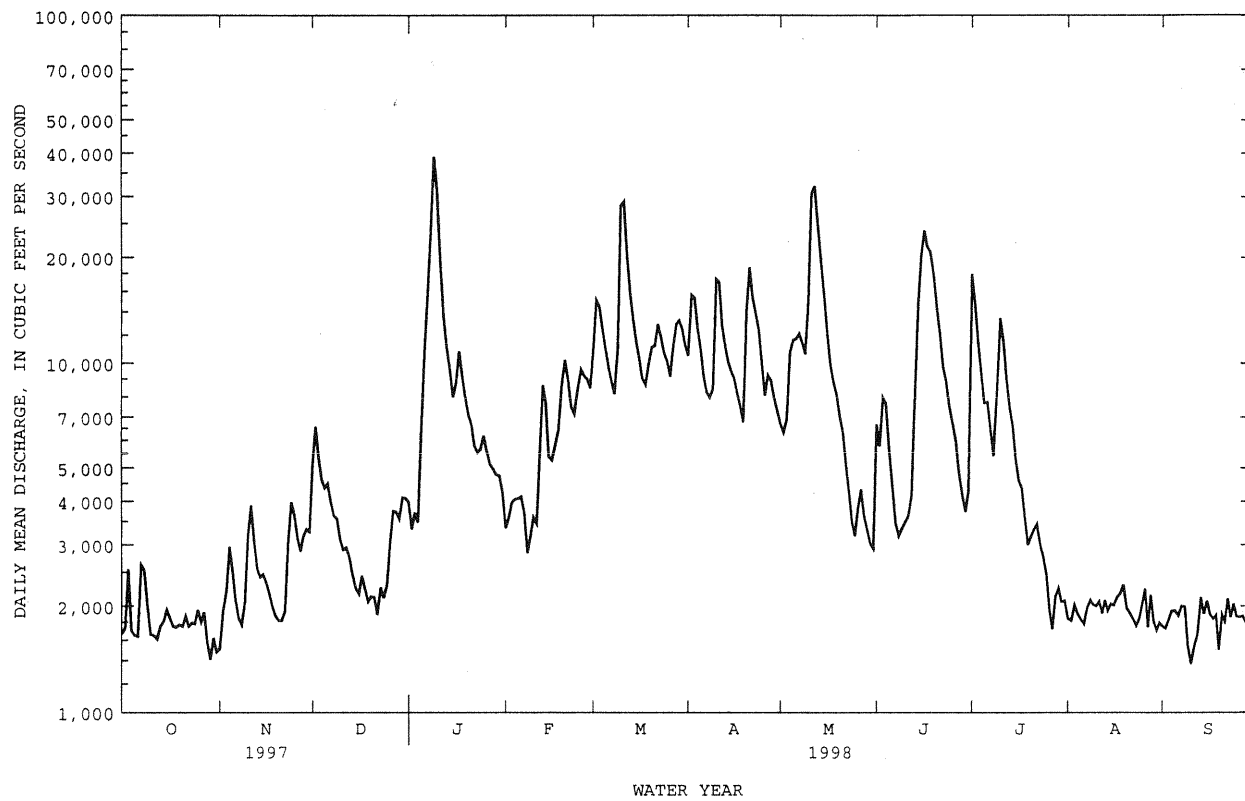
FOR 1998 WATER YEAR

WATER YEARS 1940 - 1998

ANNUAL TOTAL	1614960	2329720	
ANNUAL MEAN	4425	6383	5728
HIGHEST ANNUAL MEAN			8621
LOWEST ANNUAL MEAN			2309
HIGHEST DAILY MEAN	19300	39100	187000
LOWEST DAILY MEAN	1410	1370	412
ANNUAL SEVEN-DAY MINIMUM	1580	1620	565
INSTANTANEOUS PEAK FLOW		43800	250000a
INSTANTANEOUS PEAK STAGE		14.93	35.15
INSTANTANEOUS LOW FLOW		1150	382
10 PERCENT EXCEEDS	9280	13300	12100
50 PERCENT EXCEEDS	2860	3980	3450
90 PERCENT EXCEEDS	1670	1800	1600

a From rating curve extended above 90,000 ft³/sec on basis of flood-routing study.

01438500 DELAWARE RIVER AT MONTAGUE, NJ--Continued



01440000 FLAT BROOK NEAR FLATBROOKVILLE, NJ

LOCATION.--Lat 41°06'24", long 74°57'09", Sussex County, Hydrologic Unit 02040104, on right bank 1.0 mi upstream from Flatbrookville, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--64.0 mi².

PERIOD OF RECORD.--July 1923 to current year

REVISED RECORDS.--WSP 1432: 1924(M), 1928(M), 1929, 1930(M), 1932, 1933(M), 1936, 1938(M), 1939-40, 1949(M), 1952-53(M).
WDR-NJ-80-2: 1970(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Aug. 19, 1929. Datum of gage is 347.73 ft above sea level. Prior to Jan. 6, 1926, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow occasionally regulated by ponds above station. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 10	0930	939	4.26	Jun 15	0345	694	3.78
Apr 10	1345	1,030	4.43	Jun 16	2045	982	4.34
May 11	1300	*1,040	*4.45				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	18	72	93	100	271	166	140	254	109	21	12
2	13	47	73	99	95	240	277	236	168	83	19	12
3	12	60	58	83	94	207	208	464	138	67	17	13
4	12	43	53	96	95	183	177	375	116	59	17	15
5	12	34	52	142	137	164	159	301	90	56	16	13
6	11	29	52	149	147	152	148	321	78	52	15	12
7	11	25	48	150	127	139	138	295	71	48	15	12
8	11	25	46	243	113	134	131	257	68	47	15	21
9	10	33	43	408	103	405	140	325	66	58	13	21
10	11	47	42	274	99	828	795	652	61	52	14	17
11	9.8	40	44	205	98	442	563	961	57	48	18	15
12	10	34	43	167	385	312	351	794	81	44	17	13
13	9.3	30	42	148	386	257	284	516	192	43	15	12
14	10	33	41	130	261	236	238	374	379	35	14	12
15	11	37	37	115	201	218	215	303	549	33	14	11
16	13	36	37	141	172	197	202	254	722	32	14	11
17	15	34	35	137	160	178	184	220	539	32	14	11
18	13	33	35	125	249	179	168	194	288	34	23	11
19	12	31	35	112	315	322	164	171	206	36	21	10
20	12	29	34	105	280	313	411	153	163	32	18	9.7
21	12	28	34	97	245	270	290	141	133	31	16	9.7
22	11	48	31	90	208	290	222	124	114	30	15	9.7
23	11	89	35	92	184	241	198	114	109	29	14	9.7
24	12	73	38	188	289	237	183	107	109	28	13	9.7
25	14	60	76	194	362	236	165	102	95	25	13	9.7
26	19	53	122	153	280	230	161	102	85	23	22	9.7
27	23	50	100	132	244	229	234	95	82	22	27	10
28	29	48	85	121	218	215	181	86	75	21	19	9.9
29	23	46	73	116	---	191	155	83	68	21	16	9.7
30	19	44	127	113	---	172	143	132	71	21	14	9.4
31	16	---	131	107	---	160	---	98	---	22	13	---
TOTAL	420.1	1237	1774	4525	5647	7848	7051	8490	5227	1273	512	360.9
MEAN	13.6	41.2	57.2	146	202	253	235	274	174	41.1	16.5	12.0
MAX	29	89	131	408	386	828	795	961	722	109	27	21
MIN	9.3	18	31	83	94	134	131	83	57	21	13	9.4
CF5M	.21	.64	.89	2.28	3.15	3.96	3.67	4.28	2.72	.64	.26	.19
IN.	.24	.72	1.03	2.63	3.28	4.56	4.10	4.93	3.04	.74	.30	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

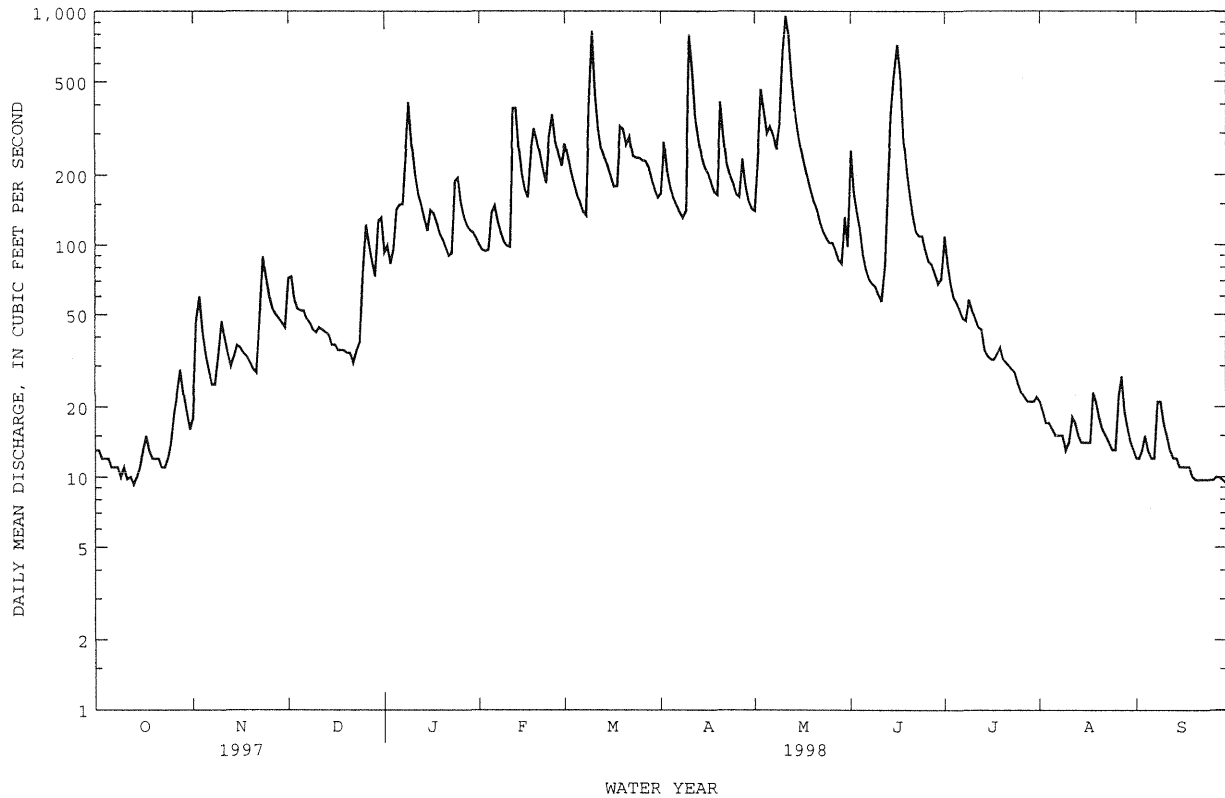
	MEAN	MAX	(WY)	MIN	(WY)							
MEAN	56.7	98.9	124	123	135	205	207	144	87.9	57.0	51.0	46.7
MAX	306	292	412	367	275	513	570	372	334	333	386	258
(WY)	1956	1928	1997	1979	1951	1936	1983	1989	1972	1928	1955	1933
MIN	9.57	12.2	20.6	24.5	37.3	82.0	65.9	44.0	23.7	13.1	9.30	7.01
(WY)	1964	1965	1947	1981	1940	1985	1946	1941	1965	1966	1995	1964

01440000 FLAT BROOK NEAR FLATBROOKVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998	
ANNUAL TOTAL	29119.5		44365.0		111	
ANNUAL MEAN	79.8		122		210	
HIGHEST ANNUAL MEAN					43.4	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	447	Apr 4	961	May 11	6310	Aug 19 1955
LOWEST DAILY MEAN	8.8	Aug 12	9.3	Oct 13	4.1	Sep 11 1966
ANNUAL SEVEN-DAY MINIMUM	9.9	Aug 7	9.7	Sep 20	5.3	Sep 6 1995
INSTANTANEOUS PEAK FLOW			1040	May 11	9560a	Aug 19 1955
INSTANTANEOUS PEAK STAGE			4.45	May 11	12.58b	Aug 19 1955
INSTANTANEOUS LOW FLOW			8.4	Oct 13	3.6	Sep 25 1964
ANNUAL RUNOFF (CFSM)	1.25		1.90		1.74	
ANNUAL RUNOFF (INCHES)	16.93		25.79		23.61	
10 PERCENT EXCEEDS	164		282		238	
50 PERCENT EXCEEDS	52		75		72	
90 PERCENT EXCEEDS	13		12		17	

a From rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow.

b From high-water mark in gage house



01443280 EAST BRANCH PAULINS KILL NEAR LAFAYETTE, NJ

LOCATION.--Lat 41°04'34", long 74°41'45", Sussex County, Hydrologic Unit 02020007, on right downstream wingwall of bridge on Garrison Road, 0.8 mi upstream from mouth, and 1.6 mi south of Lafayette.

DRAINAGE AREA.--13.0 mi².

PERIOD OF RECORD.--August 1992 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 555.40 ft above sea level (levels from American Geodetic Survey Co. benchmark).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Possible regulation from ponds and golf courses upstream. A significant portion of the base flow is the result of pumpage from a limestone quarry into a tributary approximately 1.5 mi upstream from gage.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 75 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb 25	0615	79	3.72	Jun 15	0500	131	4.40
Apr 10	1645	104	4.08	Jun 16	1430	112	4.18
May 11	1330	*143	*4.54				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	e20	e11	29	19	43	27	27	42	21	9.9	10
2	8.0	e26	e10	30	21	38	60	39	36	20	9.6	11
3	8.0	e28	e10	17	21	32	47	48	24	18	9.3	14
4	7.9	e22	e10	19	21	29	35	40	21	17	9.0	11
5	e8.0	e14	10	20	27	27	29	36	20	15	8.9	10
6	e7.5	e12	10	19	30	25	28	37	19	14	8.9	10
7	e8.0	e12	9.5	20	26	24	26	56	18	14	8.7	14
8	e8.5	e12	8.9	35	24	24	24	46	18	15	7.8	23
9	e8.0	e13	8.7	42	22	49	28	52	17	14	6.7	16
10	e8.0	e13	9.0	30	21	62	87	86	16	14	7.6	14
11	e7.0	e12	9.4	24	21	41	86	138	16	13	13	14
12	e7.0	e11	9.7	22	35	31	59	132	19	12	9.9	12
13	e8.0	e10	9.7	20	37	28	48	107	34	12	8.9	15
14	e11	e11	9.7	18	28	27	42	84	76	12	9.1	8.5
15	e10	e12	9.3	18	22	29	42	68	114	11	10	9.0
16	e9.5	e11	9.2	22	23	27	42	58	101	11	8.5	9.6
17	e9.0	e9.6	9.3	22	23	24	37	50	102	11	9.7	9.4
18	e8.0	e9.3	9.6	21	33	27	33	45	71	11	12	9.3
19	e7.0	e9.0	9.5	20	40	48	32	41	50	11	12	9.3
20	e7.0	e9.2	9.3	20	36	54	52	37	39	11	10	13
21	e7.0	e9.0	9.3	18	31	44	45	34	32	11	9.4	9.5
22	e6.5	e11	9.0	17	27	46	36	30	28	11	9.3	7.8
23	e6.5	e12	9.9	18	25	41	32	27	26	11	9.5	8.6
24	e7.5	e12	11	35	50	38	31	26	25	11	9.6	8.8
25	e11	e12	18	34	74	32	29	26	24	10	9.1	8.9
26	e15	e11	21	27	54	31	31	26	22	10	27	14
27	e17	e8.5	17	23	43	29	43	24	21	9.8	24	13
28	e15	e9.4	15	22	38	27	35	22	20	9.2	15	7.7
29	e13	e9.7	14	20	---	26	29	22	20	10	13	4.4
30	e12	e9.5	25	20	---	25	27	26	20	9.4	12	6.6
31	e11	---	25	20	---	24	---	23	---	10	11	---
TOTAL	285.6	380.2	366.0	722	872	1052	1202	1513	1091	389.4	338.4	331.4
MEAN	9.21	12.7	11.8	23.3	31.1	33.9	40.1	48.8	36.4	12.6	10.9	11.0
MAX	17	28	25	42	74	62	87	138	114	21	27	23
MIN	6.5	8.5	8.7	17	19	24	24	22	16	9.2	6.7	4.4
CFSM	.71	.98	.91	1.79	2.40	2.61	3.08	3.76	2.80	.97	.84	.85
IN.	.82	1.09	1.05	2.07	2.50	3.01	3.44	4.33	3.12	1.12	.97	.95

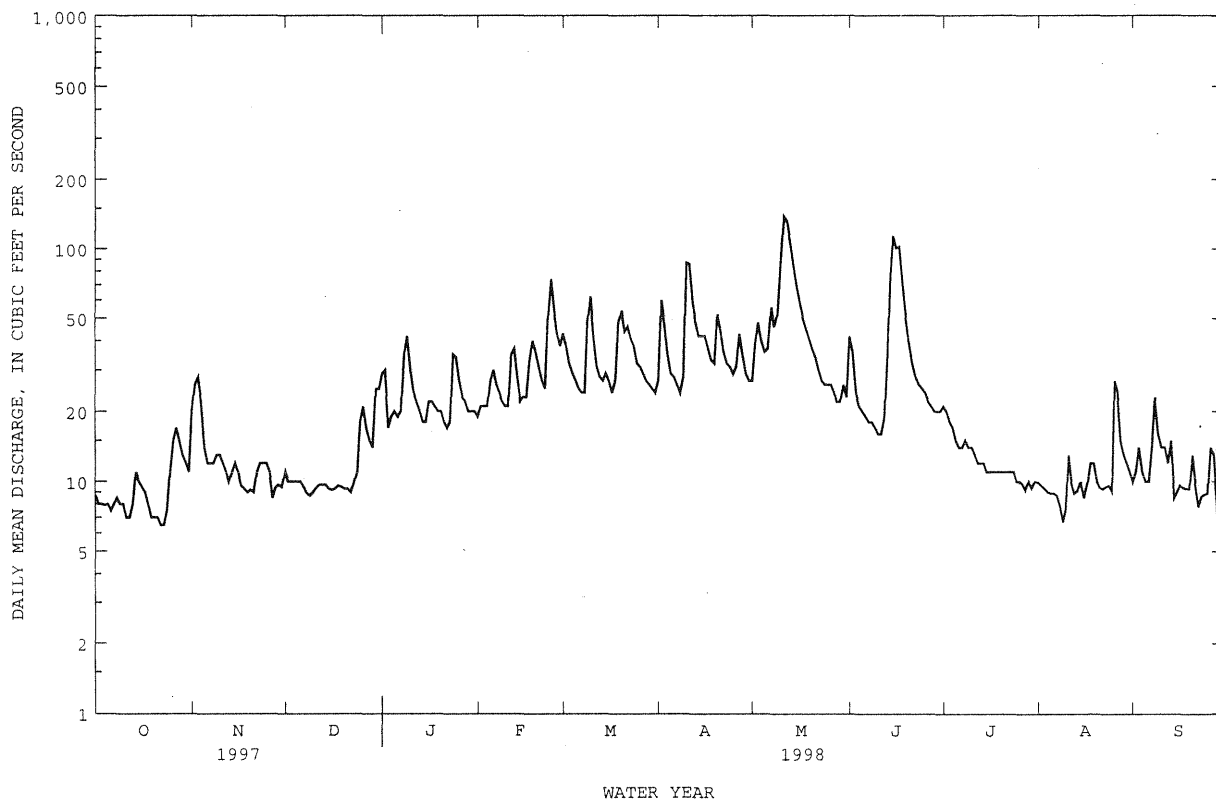
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1998, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998
MEAN	16.1	20.5	28.0	27.7	25.6	40.6	41.9
MAX	33.2	34.3	63.4	41.1	32.5	58.5	64.3
(WY)	1997	1996	1997	1996	1996	1993	1998
MIN	8.52	12.6	11.8	17.0	17.4	25.5	17.5
(WY)	1993	1995	1998	1994	1995	1997	1995

01443280 EAST BRANCH PAULINS KILL NEAR LAFAYETTE, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1992 - 1998	
ANNUAL TOTAL	6519.6		8543.0			
ANNUAL MEAN	17.9		23.4		23.4	
HIGHEST ANNUAL MEAN					27.2	
LOWEST ANNUAL MEAN					15.6	
HIGHEST DAILY MEAN	87	Apr 1	138	May 11	160	Oct 20 1996
LOWEST DAILY MEAN	6.4	Jul 1	4.4	Sep 29	4.4	Sep 29 1998
ANNUAL SEVEN-DAY MINIMUM	7.1	Oct 18	7.1	Oct 18	5.8	Aug 20 1995
INSTANTANEOUS PEAK FLOW			143	May 11	275	Jan 20 1996
INSTANTANEOUS PEAK STAGE			4.54	May 11	5.81a	Jan 20 1996
INSTANTANEOUS LOW FLOW			2.9	Sep 29	2.9	Sep 29 1998
ANNUAL RUNOFF (CFSM)	1.38		1.80		1.80	
ANNUAL RUNOFF (INCHES)	18.67		24.46		24.48	
10 PERCENT EXCEEDS	30		43		45	
50 PERCENT EXCEEDS	14		18		17	
90 PERCENT EXCEEDS	8.0		8.9		8.4	

a From crest-stage gage.
e Estimated.



01443500 PAULINS KILL AT BLAIRSTOWN, NJ

LOCATION.--Lat 40°58'44", long 74°57'15", Warren County, Hydrologic Unit 02040105, on right bank 1,200 ft upstream from bridge on State Highway 94 in Blairstown, 1,400 ft upstream from Blairs Creek, and 10 mi upstream from mouth. Water-quality samples collected at bridge 1,200 ft downstream from gage at high flows.

DRAINAGE AREA. -- 126 mi².

PERIOD OF RECORD.--October 1921 to September 1976, October 1977 to current year.

REVISED RECORDS.--WSP 971: 1942. WSP 1382: 1952-53 (M).

GAGE.--Water-stage recorder and concrete control (Aug. 1, 1931, to Aug. 3, 1941, concrete control at site 280 ft, downstream). Datum of gage is 335.86 ft above sea level. Prior to May 24, 1922, nonrecording gage and May 24, 1922 to July 31, 1931, water-stage recorder, at site of former highway bridge 1,300 ft downstream at different datum. Aug. 1, 1931 to July 28, 1939, water-stage recorder at site 100 ft downstream at present datum.

REMARKS.--Records fair except for those above 200 ft³/s. Diurnal fluctuations caused by unknown source and flow regulated slightly by Swartswood Lake. Several measurements of water temperature, other than those published, were made during the year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 10	0415	1,020	4.16	May 11	1330	*1,250	*4.75
Apr 10	1415	1,140	4.47				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	65	71	177	192	370	245	221	216	116	37	39
2	26	163	66	167	180	346	376	298	202	105	34	38
3	24	156	70	138	174	301	336	392	167	94	32	45
4	24	142	77	144	174	272	285	374	140	85	31	46
5	24	71	77	191	221	252	256	359	126	85	30	37
6	23	64	77	192	237	233	233	376	112	80	30	31
7	24	62	75	195	229	219	219	377	102	74	29	33
8	26	62	74	339	215	220	209	367	96	72	28	75
9	25	63	72	540	200	527	225	438	93	72	27	72
10	25	57	71	416	191	944	901	756	87	70	26	54
11	23	55	72	326	186	666	787	1170	86	64	31	43
12	20	53	70	275	403	474	574	1200	121	59	34	40
13	23	51	65	245	412	390	444	943	264	55	30	36
14	33	55	38	222	329	356	380	725	398	53	27	34
15	32	56	56	201	272	333	357	558	461	52	28	34
16	29	57	77	229	242	301	331	450	487	51	27	31
17	29	55	63	226	233	272	298	384	439	51	28	31
18	28	55	56	212	298	270	275	334	368	53	42	29
19	25	53	55	199	374	447	264	291	294	49	66	28
20	23	53	55	194	356	494	440	264	244	45	50	27
21	21	52	55	182	323	453	384	241	213	47	38	28
22	20	61	53	167	289	464	316	223	185	51	33	33
23	20	65	57	173	269	412	282	206	169	48	31	32
24	19	74	58	281	414	398	258	192	163	46	29	27
25	31	103	87	331	619	361	239	184	149	42	27	27
26	38	91	102	285	494	328	237	182	134	40	127	29
27	47	57	100	253	402	308	310	171	124	37	138	29
28	49	67	98	234	355	288	268	159	112	36	86	33
29	41	67	97	216	---	271	233	150	103	37	59	26
30	35	66	143	210	---	253	223	181	106	40	49	24
31	32	---	172	203	---	235	---	164	---	39	43	---
TOTAL	867	2151	2359	7363	8283	11458	10185	12330	5961	1848	1327	1091
MEAN	28.0	71.7	76.1	238	296	370	340	398	199	59.6	42.8	36.4
MAX	49	163	172	540	619	944	901	1200	487	116	138	75
MIN	19	51	38	138	174	219	209	150	86	36	26	24
CFSM	.22	.57	.60	1.89	2.35	2.93	2.69	3.16	1.58	.47	.34	.29
IN.	.26	.64	.70	2.17	2.45	3.38	3.01	3.64	1.76	.55	.39	.33

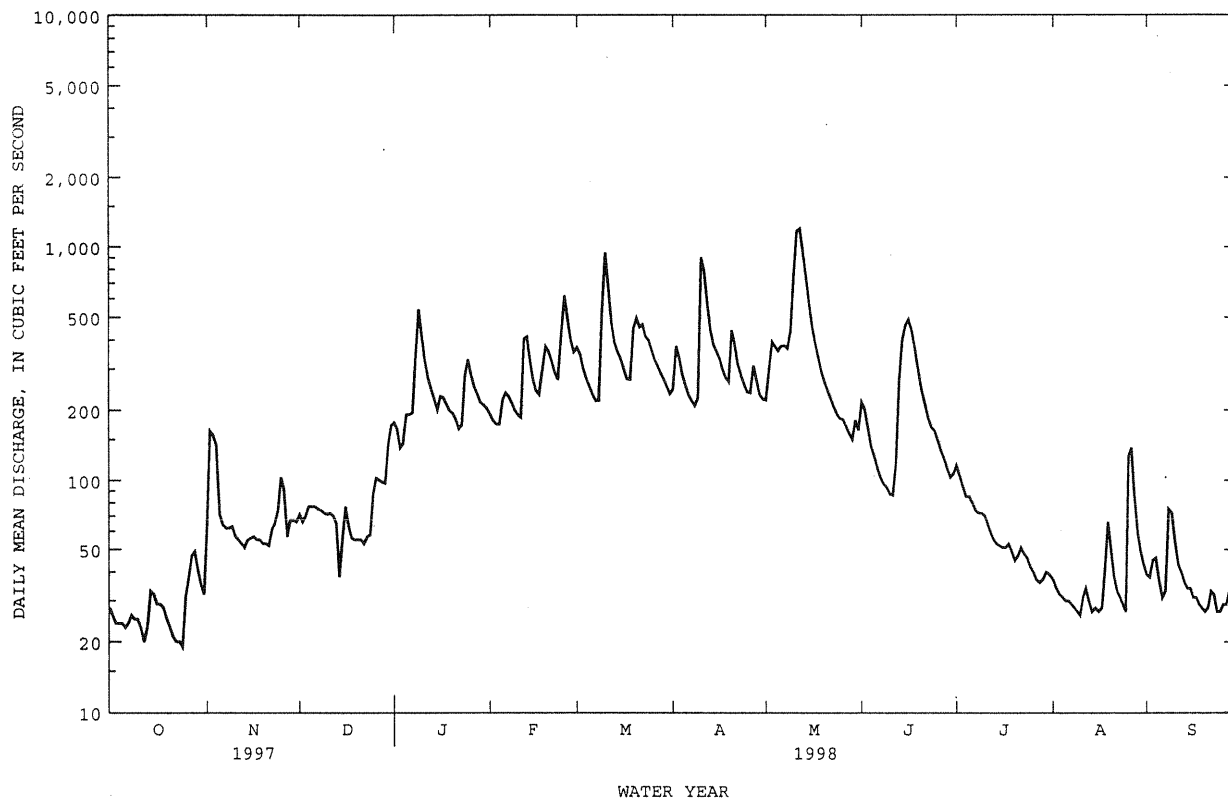
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

MEAN	109	169	216	224	250	372	340	226	152	116	104	104
MAX	634	479	862	712	516	963	930	650	690	527	663	626
(WY)	1956	1933	1997	1979	1951	1936	1983	1989	1972	1945	1955	1933
MIN	20.5	22.1	39.5	50.5	67.4	139	106	54.6	41.0	19.4	19.6	18.2
(WY)	1964	1965	1947	1981	1940	1965	1985	1941	1965	1955	1932	1964

01443500 PAULINS KILL AT BLAIRSTOWN, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	55822		65223		198	
ANNUAL MEAN	153		179		362	
HIGHEST ANNUAL MEAN					67.4	
LOWEST ANNUAL MEAN					5950	
HIGHEST DAILY MEAN	1010	Apr 4	1200	May 12	5.0	Aug 19 1955
LOWEST DAILY MEAN	19	Oct 24	19	Oct 24	12	Aug 13 1930
ANNUAL SEVEN-DAY MINIMUM	22	Oct 18	22	Oct 18	8750	Jul 31 1955
INSTANTANEOUS PEAK FLOW			1250	May 11	11.12a	Aug 19 1955
INSTANTANEOUS PEAK STAGE			4.75	May 11	2.8	Nov 1 1922
INSTANTANEOUS LOW FLOW			18	Oct 24	1.57	
ANNUAL RUNOFF (CFSM)	1.21		1.42		21.36	
ANNUAL RUNOFF (INCHES)	16.48		19.26		414	
10 PERCENT EXCEEDS	318		391		133	
50 PERCENT EXCEEDS	81		106		35	
90 PERCENT EXCEEDS	28		29			

a From high-water mark in gage house.



01443900 YARDS CREEK NEAR BLAIRSTOWN, NJ

LOCATION.--Lat 40°58'51", long 75°02'25", Warren County, Hydrologic Unit 02040105, on left bank 100 ft upstream from bridge on Hainesburg-Mount Vernon Road, 1.4 mi downstream from Yards Creek Reservoir, 2.2 mi northeast of Hainesburg, 4.2 mi west of Blairstown, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--5.34 mi².

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR NJ-77-2: 1976. WDR NJ-79-2: 1977(m). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 606.8 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by the JPU Generation Corp., at Yards Creek Reservoir 1.4 mi above station. Several measurements of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.3	1.8	3.3	16	21	23	8.3	5.1	e6.5	3.4	1.8
2	2.1	2.3	1.4	3.0	16	20	30	9.6	3.7	e6.0	3.3	2.2
3	2.1	1.4	2.2	3.4	12	20	35	8.3	3.6	e5.0	3.2	1.7
4	2.1	1.3	2.6	3.3	7.4	12	21	8.1	3.4	e5.0	2.8	1.3
5	2.0	1.4	2.5	2.5	9.1	7.5	20	8.9	3.3	e5.0	2.0	.35
6	1.6	1.6	2.2	2.2	7.4	7.3	14	18	3.3	e5.0	2.0	.23
7	1.1	1.7	2.0	2.8	5.7	7.2	8.9	35	3.2	e4.5	2.0	.48
8	1.2	2.4	1.9	8.0	5.5	7.9	8.8	45	3.0	e4.5	2.0	1.6
9	1.4	2.7	2.2	6.6	5.3	23	15	38	2.5	e4.5	2.0	2.9
10	1.8	1.4	2.4	4.8	5.4	29	39	40	2.6	e4.5	2.5	2.6
11	2.0	1.9	2.4	3.9	5.4	25	44	97	2.7	e4.0	2.3	2.2
12	1.7	2.6	2.4	3.3	14	24	41	133	5.8	e4.0	2.0	2.1
13	1.5	2.3	2.4	3.2	18	22	30	79	11	e3.5	2.0	2.1
14	1.8	3.3	2.2	2.9	23	22	22	45	7.7	e3.5	2.1	2.2
15	2.1	2.9	2.0	3.1	22	20	22	24	13	e3.5	2.0	2.3
16	2.2	3.1	2.2	5.4	18	19	22	8.6	38	e3.5	2.0	2.2
17	2.1	5.1	2.4	3.9	19	21	16	7.8	50	e3.5	2.2	2.3
18	2.1	3.5	2.2	3.3	25	22	9.2	7.5	26	e3.5	2.2	2.3
19	2.1	1.8	1.5	11	24	25	9.6	7.4	7.2	e3.5	2.0	2.2
20	2.0	1.6	2.0	22	23	22	19	7.1	5.5	e3.5	1.8	2.1
21	1.9	1.0	2.0	22	22	23	23	6.9	5.3	e3.5	1.9	2.0
22	1.7	2.1	1.1	22	21	21	22	6.2	5.4	e3.5	1.9	2.4
23	1.3	1.4	2.1	26	41	21	16	5.5	e5.5	3.2	1.8	2.2
24	1.4	.93	2.1	25	57	23	9.2	5.3	e5.6	3.3	1.7	2.3
25	3.1	.89	5.0	22	43	23	8.9	5.2	e5.0	3.3	1.8	2.5
26	2.3	.99	3.3	21	42	22	10	5.0	e4.5	3.3	3.2	2.4
27	3.0	.92	3.1	22	31	21	13	4.5	e4.5	3.2	2.0	1.9
28	2.2	.89	2.8	22	22	21	18	3.7	e4.5	3.3	2.0	e2.0
29	2.1	.86	2.8	22	---	19	13	3.6	e4.5	3.5	1.9	e2.0
30	1.8	1.1	6.5	20	---	19	8.4	3.9	e5.0	3.4	1.8	e2.0
31	6.1	---	3.8	17	---	19	---	3.8	---	3.6	1.8	---
TOTAL	63.9	57.68	77.5	342.9	560.2	608.9	591.0	689.2	250.4	123.6	67.6	58.86
MEAN	2.06	1.92	2.50	11.1	20.0	19.6	19.7	22.2	8.35	3.99	2.18	1.96
MAX	6.1	5.1	6.5	26	57	29	44	133	50	6.5	3.4	2.9
MIN	1.1	.86	1.1	2.2	5.3	7.2	8.4	3.6	2.5	3.2	1.7	.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1998, BY WATER YEAR (WY)

	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	1992	1993	1994	1995	1996	1997	1998
MEAN	6.16	8.42	14.4	14.7	14.8	17.9	18.3	14.1	8.63	4.98	4.55	4.54																				
MAX	33.6	26.3	48.4	51.0	36.4	50.1	55.3	33.7	35.2	19.9	21.6	27.0																				
(WY)	1990	1996	1997	1979	1979	1977	1983	1989	1972	1984	1969	1987																				
MIN	.97	1.20	.91	1.66	2.24	6.99	4.43	1.58	1.00	.89	.65	.58																				
(WY)	1981	1967	1981	1981	1985	1973	1981	1970	1980	1980	1980	1980																				

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

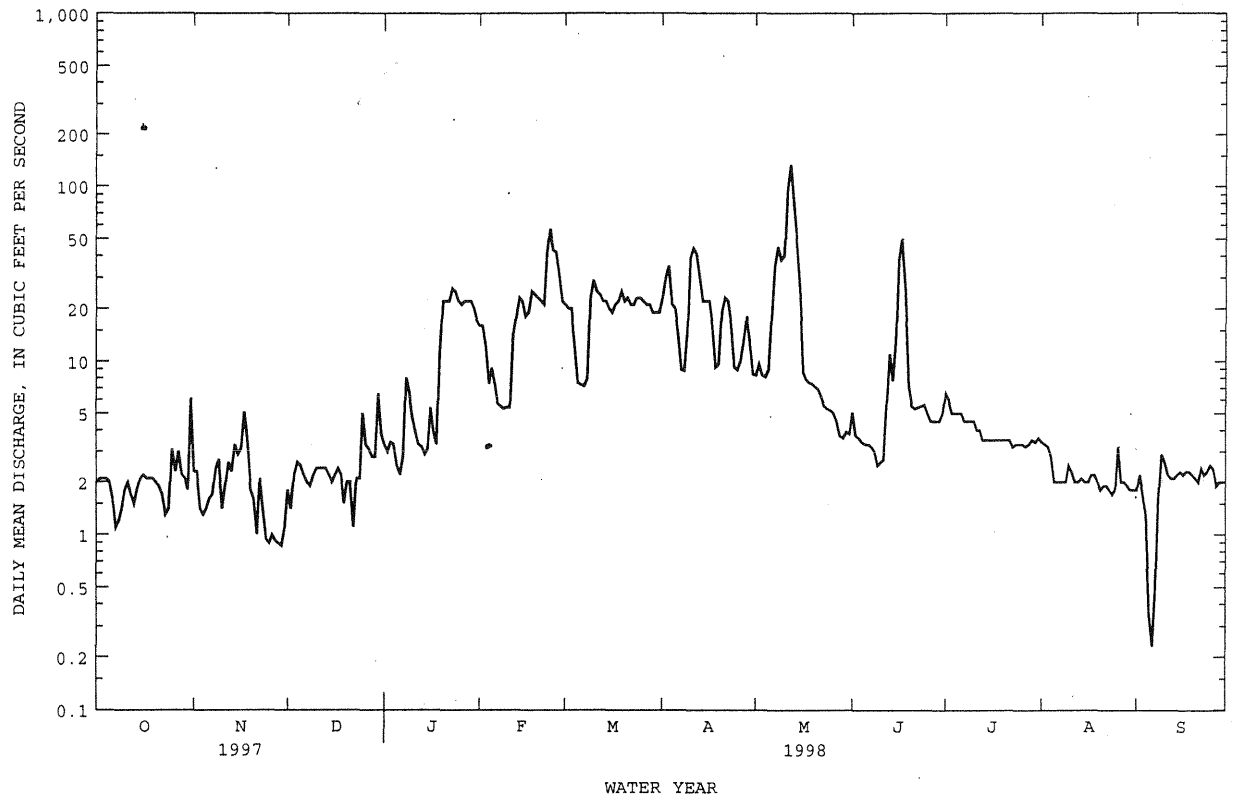
FOR 1998 WATER YEAR

WATER YEARS 1967 - 1998

ANNUAL TOTAL	2490.58	3491.74	
ANNUAL MEAN	6.82	9.57	10.9
HIGHEST ANNUAL MEAN			16.1
LOWEST ANNUAL MEAN			3.17
HIGHEST DAILY MEAN	50	133	225
LOWEST DAILY MEAN	.86	.23	.02
ANNUAL SEVEN-DAY MINIMUM	.94	.94	.46
INSTANTANEOUS PEAK FLOW		152	583
INSTANTANEOUS PEAK STAGE		3.08	3.92
INSTANTANEOUS LOW FLOW		.00	.00
10 PERCENT EXCEEDS	20	23	24
50 PERCENT EXCEEDS	3.1	3.5	4.9
90 PERCENT EXCEEDS	1.7	1.8	1.2

e Estimated

01443900 YARDS CREEK NEAR BLAIRSTOWN, NJ--Continued



01445500 PEQUEST RIVER AT PEQUEST, NJ

LOCATION.--Lat 40°49'50", long 74°58'43", Warren County, Hydrologic Unit 02040105, on right bank at Pequest, 100 ft upstream from abandoned Lehigh and Hudson River Railway bridge, and 300 ft downstream from Furnace Brook.

DRAINAGE AREA. --106 mi².

PERIOD OF RECORD.--October 1921 to current year. Monthly discharge only for October 1921, published in WSP 1302.

REVISED RECORDS.--WSP 1902: 1940(M), 1945, 1955(M), 1957, 1959(M).

GAGE.--Water-stage recorder. Concrete control since Sept. 29, 1929. Datum of gage is 398.78 ft above sea level. Prior to June 22, 1926, nonrecording gage at site 10 ft upstream at same datum.

REMARKS.--Records good. Several measurements of water temperature were made during the year. Some regulation from unknown sources upstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 8	2045	662	3.15	Apr 10	0815	1,020	3.95
Mar 9	1915	720	3.29	May 12	0700	*1,160	*4.25
Apr 2	0630	741	3.34				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	42	58	99	149	294	223	200	187	122	44	33
2	31	70	59	114	141	275	616	341	186	113	42	35
3	31	75	53	108	136	255	394	381	157	98	40	50
4	32	61	50	126	135	233	325	330	138	90	38	36
5	32	51	48	128	201	214	288	307	129	86	37	34
6	32	44	49	121	212	197	246	323	121	82	36	32
7	31	49	48	129	187	188	222	351	114	93	34	33
8	33	53	45	382	166	187	208	337	109	97	34	67
9	32	56	43	416	146	510	242	447	107	84	34	47
10	31	54	44	277	138	534	923	807	103	75	34	40
11	29	50	47	205	134	383	663	977	101	68	39	37
12	30	46	48	170	297	295	497	1120	132	64	35	35
13	31	42	47	155	257	258	396	955	278	62	33	33
14	30	45	48	142	210	248	350	780	384	58	33	32
15	30	53	45	129	178	244	337	633	369	57	33	31
16	36	58	44	171	157	228	315	508	344	57	35	31
17	36	53	44	169	154	211	295	416	381	59	39	32
18	34	49	44	170	239	211	275	374	286	56	55	31
19	32	47	43	156	295	351	258	328	255	56	45	30
20	32	48	44	152	258	350	381	305	212	55	38	29
21	32	45	44	140	225	353	332	279	183	50	35	30
22	32	56	41	127	203	372	282	244	161	49	35	32
23	31	68	52	147	190	346	247	223	151	49	34	33
24	29	62	60	351	490	332	228	208	147	53	33	31
25	35	55	131	297	497	286	211	199	142	47	32	29
26	39	50	135	227	365	260	224	198	129	46	65	31
27	46	49	105	194	302	244	344	184	123	45	65	30
28	44	47	88	179	270	236	274	171	116	43	45	29
29	40	46	81	168	---	228	227	161	111	42	40	27
30	37	46	239	167	---	208	207	161	110	44	37	27
31	34	---	183	161	---	192	---	157	---	46	35	---
TOTAL	1036	1570	2110	5677	6332	8723	10030	12405	5466	2046	1214	1027
MEAN	33.4	52.3	68.1	183	226	281	334	400	182	66.0	39.2	34.2
MAX	46	75	239	416	497	534	923	1120	384	122	65	67
MIN	29	42	41	99	134	187	207	157	101	42	32	27
CFSM	.32	.49	.64	1.73	2.13	2.65	3.15	3.78	1.72	.62	.37	.32
IN.	.36	.55	.74	1.99	2.22	3.06	3.52	4.35	1.92	.72	.43	.33

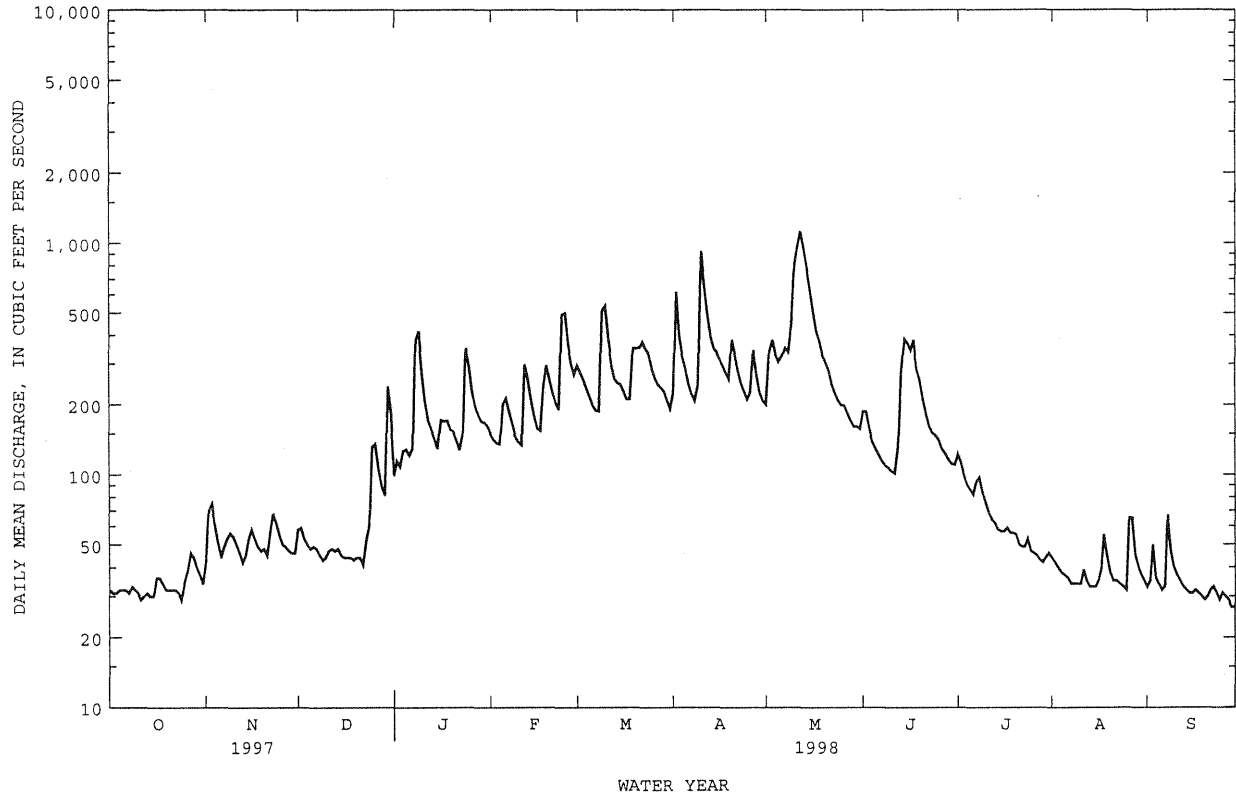
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

MEAN	88.6	130	166	173	198	279	265	188	129	104	90.2	87.5
MAX	391	409	714	627	372	750	720	430	556	487	409	354
(WY)	1990	1928	1997	1979	1939	1936	1983	1989	1972	1945	1928	1989
MIN	18.0	21.4	27.0	33.9	60.8	93.8	76.9	55.7	35.0	19.0	15.1	16.6
(WY)	1965	1966	1966	1966	1940	1965	1985	1965	1965	1965	1965	1964

01445500 PEQUEST RIVER AT PEQUEST, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	47263		57636		158	
ANNUAL MEAN	129		158		285	
HIGHEST ANNUAL MEAN					45.8	
LOWEST ANNUAL MEAN					2040	
HIGHEST DAILY MEAN	595	Apr 2	1120	May 12	12	Jan 25 1979
LOWEST DAILY MEAN	29	Oct 11	27	Sep 29	13	Aug 18 1965
ANNUAL SEVEN-DAY MINIMUM	30	Oct 9	29	Sep 24	13	Aug 15 1965
INSTANTANEOUS PEAK FLOW			1160	May 12	2130	Jan 25 1979
INSTANTANEOUS PEAK STAGE			4.25	May 12	5.97a	Jan 25 1979
INSTANTANEOUS LOW FLOW			26	Sep 29	12	Aug 17 1965
ANNUAL RUNOFF (CFSM)	1.22		1.49		1.49	
ANNUAL RUNOFF (INCHES)	16.59		20.23		20.25	
10 PERCENT EXCEEDS	262		348		330	
50 PERCENT EXCEEDS	81		108		112	
90 PERCENT EXCEEDS	34		32		36	

a From high-water mark.



01446500 DELAWARE RIVER AT BELVIDERE, NJ

LOCATION.--Lat 40°49'36", long 75°05'02", Warren County, Hydrologic Unit 02040105, on left bank at Belvidere, 800 ft downstream from Pequest River, and at river mile 197.7.

DRAINAGE AREA.--4,535 mi².

PERIOD OF RECORD.--October 1922 to current year.

REVISED RECORDS.--WSP 781: 1933(M). WSP 951: 1940-41, Drainage area. WSP 1432: 1923, 1924(M).

GAGE.--Water-stage recorder. Datum of gage 226.43 ft above sea level. Prior to Jan. 1, 1929, nonrecording gage at site 200 ft upstream at same datum.

REMARKS.--Records good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lake Wallenpaupack, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, and Neversink Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversions from Pepacton, Cannonsville, and Neversink Reservoirs (see Delaware River basin, diversions). Satellite telemeter and National Weather Service gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 10, 1903, reached a stage of 28.6 ft, from floodmark, discharge, 220,000 ft³/s, from rating curve extended above 170,000 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2160	1950	5030	5550	6230	13600	14400	10000	7020	12400	2420	2120
2	2090	2760	7850	4370	5590	18600	17300	10500	9250	20000	2180	2180
3	2340	3520	7500	5300	6070	19900	21000	10600	8180	14600	2160	2220
4	2600	3510	6550	5480	6280	17600	17500	12300	10600	11900	2300	2190
5	1960	3910	5940	6290	7330	15500	15200	15700	8610	10000	2190	2230
6	1910	3210	5820	11900	7650	13900	13500	15900	6710	9100	2140	2160
7	2050	2810	5680	17900	7340	12500	11600	16900	5330	8320	2020	2130
8	2950	2620	5030	27000	6170	11600	10800	16600	4640	7380	2240	2610
9	2750	2740	4790	45900	5370	14500	11100	16500	4660	6570	2320	2310
10	2100	3090	4640	46900	5880	34200	20100	20400	4370	13000	2360	1810
11	1900	4640	4160	30300	5930	44000	27000	39200	4810	14300	2390	1580
12	1890	4520	3930	20600	8710	31100	19900	49400	5690	11700	2380	1720
13	1830	3720	4120	16200	12300	23100	16400	40000	9420	9280	2170	1900
14	2060	3390	3580	14100	13500	19300	15200	29800	16500	8250	2360	2270
15	2120	3430	3340	12400	10700	17000	13900	23700	24700	7030	2170	2070
16	2350	3270	3190	11700	8490	15200	13000	19300	27900	5900	2300	2340
17	2100	3130	3050	13900	9010	13400	12300	15600	28600	5420	2340	2240
18	2070	2900	3380	13800	10800	12600	11300	13500	24500	5000	2600	2190
19	2010	2700	2990	11800	12700	14100	10300	12500	22600	4040	2590	2160
20	2080	2590	2990	10700	15000	15900	15200	11200	18500	3590	2620	1770
21	2040	2540	2940	9620	14800	15900	25000	10000	15500	3910	2210	2200
22	2150	2710	2830	8780	12700	17500	21500	8690	13400	4040	2150	2220
23	2010	3370	2800	8420	11200	17200	18800	7500	11400	3940	2050	2450
24	2090	4820	2940	9970	13500	15900	17000	6260	10400	3670	1950	2220
25	2230	5280	3710	10400	15700	14600	15200	5550	9100	3090	2010	2340
26	2490	4740	4570	9780	14800	13900	12000	5400	8140	2850	2690	2220
27	2370	4210	5320	8580	14200	14200	12800	6230	7300	2360	2900	2210
28	2460	3980	5720	8200	13600	16400	13400	5920	5900	2190	2230	2190
29	2040	4450	5230	7930	---	17200	11700	5250	5320	2560	2630	2060
30	1830	4370	6520	7510	---	16600	10700	5140	5100	2580	2190	2510
31	1980	---	6700	7410	---	15400	---	4560	---	2510	2100	---
TOTAL	67010	104880	142840	428690	281550	552400	465100	470100	344150	221480	71360	64820
MEAN	2162	3496	4608	13830	10060	17820	15500	15160	11470	7145	2302	2161
MAX	2950	5280	7850	46900	15700	44000	27000	49400	28600	20000	2900	2610
MIN	1830	1950	2800	4370	5370	11600	10300	4560	4370	2190	1950	1580

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1998, BY WATER YEAR (WY)

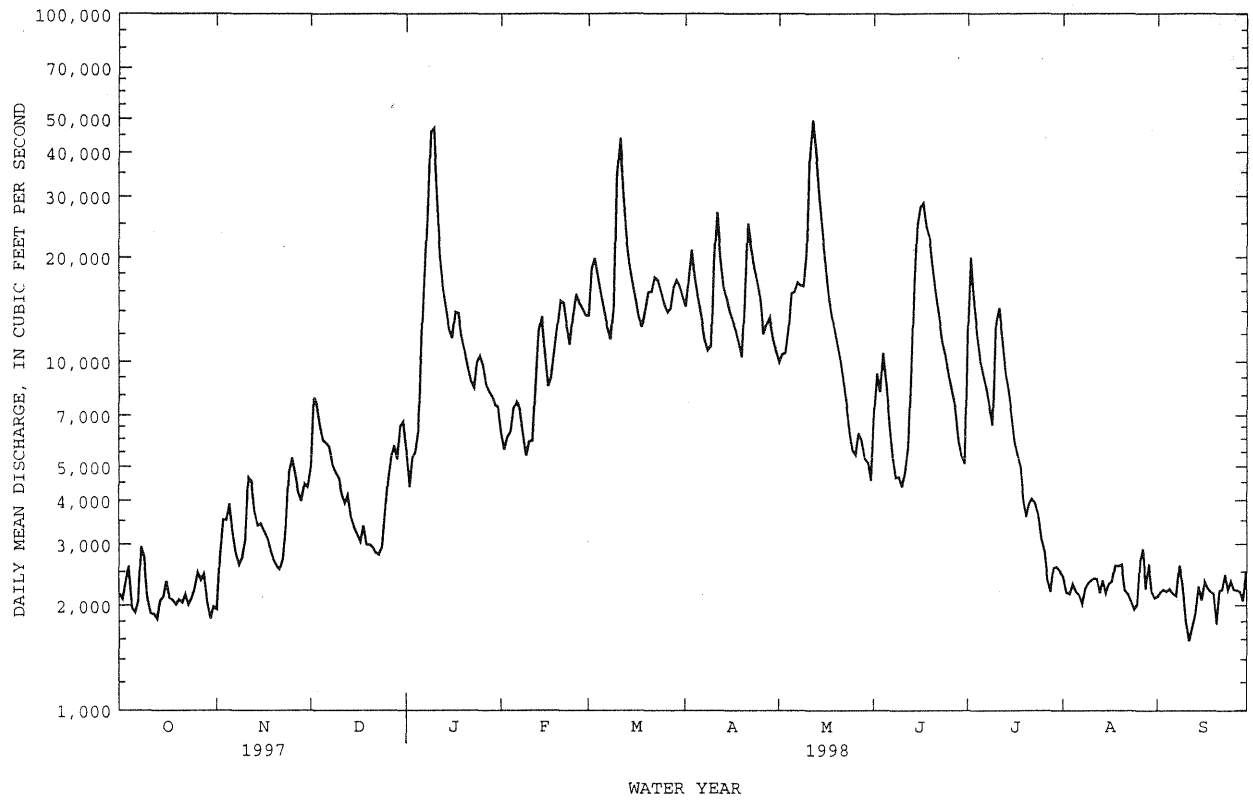
	MEAN	2162	3496	4608	13830	10060	17820	15500	15160	11470	7145	2302	2161
MAX	19570	21140	27730	21020	19930	42520	40720	21470	22280	16840	19260	13940	
(WY)	1956	1928	1997	1996	1976	1936	1940	1989	1972	1928	1955	1938	
MIN	1055	1226	1481	1683	2452	5243	4512	3261	1590	1017	881	1199	
(WY)	1942	1965	1923	1981	1980	1981	1985	1965	1965	1965	1954	1941	

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1923 - 1998
ANNUAL TOTAL	2230190	3214380	
ANNUAL MEAN	6110	8807	7867
HIGHEST ANNUAL MEAN			14130
LOWEST ANNUAL MEAN			2990
HIGHEST DAILY MEAN	25300	Apr 5	184000
LOWEST DAILY MEAN	1560	Sep 7	610
ANNUAL SEVEN-DAY MINIMUM	1830	Sep 4	782
INSTANTANEOUS PEAK FLOW			273000a
INSTANTANEOUS PEAK STAGE			30.21b
INSTANTANEOUS LOW FLOW			609
10 PERCENT EXCEEDS	13200	17500	16600
50 PERCENT EXCEEDS	4350	5900	5020
90 PERCENT EXCEEDS	2050	2150	1940

a From rating curve extended above 170,000 ft³/s on basis of flood-routing study.

b From high-water mark in gage house.

01446500 DELAWARE RIVER AT BELVIDERE, NJ--Continued



01454700 LEHIGH RIVER AT GLENDON, PA

LOCATION.--Lat 40°40'09", long 75°14'12", Northampton County, Hydrologic Unit 02040106, on right bank 140 ft upstream from highway bridge in Hugh Moore Parkway at Glendon, 2.3 mi upstream from mouth, and 2.0 mi southwest of Easton.

DRAINAGE AREA.--1,359 mi².

PERIOD OF RECORD.--October 1966 to current year.

REVISED RECORDS.--WDR PA-72-1: 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 164.30 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Francis E. Walter Reservoir (station 01447780), Penn Forest Reservoir (station 01449400), Wild Creek Reservoir (station 01449700), and since February 1971, by Beltzville Lake (station 01449790) about 60 mi upstream. Flows above 10,000 ft³/s may be affected by backwater from the Delaware River. Several measurements of water temperature were made during the year. Satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	978	972	1880	2040	2820	5580	4040	3700	2130	1740	857	716
2	911	1460	2230	1980	2680	6030	4860	3730	2330	1780	750	894
3	895	1650	2130	1960	2480	5890	4290	3640	2490	1710	724	1110
4	874	1660	1910	1900	2430	5380	4000	3490	1960	1590	717	890
5	948	1740	1760	1950	4050	4650	3790	3320	1630	1510	707	744
6	841	1580	1730	2440	5040	4160	3600	3490	1470	1310	699	668
7	795	1490	1650	3230	4490	3820	3180	3230	1570	1230	740	720
8	796	1390	1600	6490	4020	3750	2810	3620	1360	e1460	752	954
9	788	1390	1550	10900	3700	6570	3210	5450	1350	1620	711	928
10	776	1420	1600	9810	3440	11700	9180	6620	1360	1370	891	809
11	726	1400	1600	8200	3070	11600	7800	8480	1360	1250	1170	980
12	723	1430	1490	6280	5050	9010	6660	10700	2430	1310	863	908
13	718	1310	1470	e4800	4880	7030	5940	9780	5230	1150	733	754
14	722	1420	1400	4210	4830	5640	5170	8070	6610	1080	740	730
15	798	1500	1390	3790	4530	5120	4700	6700	5330	1070	746	675
16	822	1400	1360	4670	3940	4720	4260	5560	5020	1030	705	606
17	783	1350	1330	4570	3780	4130	3910	4740	4290	1020	878	714
18	829	1270	1300	4450	4940	3900	3650	4100	4260	980	1050	715
19	788	1170	1270	4190	5470	5110	3610	3550	4350	1030	1070	662
20	731	1100	1240	3970	5870	4890	6960	3340	3560	947	843	887
21	700	1080	1190	3430	5480	6760	7690	3080	2720	952	748	699
22	655	1250	1160	3010	5000	7840	7010	2760	3220	990	731	653
23	706	1520	1340	3780	4900	6960	e5780	2580	2730	972	1310	673
24	741	1580	1390	6080	7610	6680	e4710	2460	2570	922	918	655
25	927	1730	2280	5350	8060	5810	e4180	2390	2290	893	764	630
26	911	1710	2650	4590	7120	5350	e3950	2320	2130	928	999	706
27	1070	1720	2380	4200	5930	4950	e5100	2190	1960	847	1000	724
28	1010	1680	2330	4000	5460	4540	e4490	2060	2050	803	808	711
29	913	1620	2340	3750	---	4280	e4040	2000	1880	902	730	649
30	888	1510	3390	3330	---	4080	3840	2080	1690	935	686	587
31	823	---	2880	3060	---	3890	---	2060	---	1030	675	---
TOTAL	25586	43502	55220	136410	131070	179820	146410	131290	83330	36361	25715	22751
MEAN	825	1450	1781	4400	4681	5801	4880	4235	2778	1173	830	758
MAX	1070	1740	3390	10900	8060	11700	9180	10700	6610	1780	1310	1110
MIN	655	972	1160	1900	2430	3750	2810	2000	1350	803	675	587

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1998, BY WATER YEAR (WY)

	1983	2783	3532	3127	3299	4334	4558	3500	2555	1894	1492	1668
MEAN	5272	5438	9593	8414	5385	8344	10810	8542	7607	4641	4179	7920
MAX (WY)	1977	1971	1997	1996	1976	1977	1993	1989	1972	1984	1969	1987
MIN	771	835	633	405	1278	1805	1639	1502	1104	811	711	660
(WY)	1981	1985	1981	1981	1980	1981	1985	1995	1987	1991	1980	1983

e Estimated.

01454700 LEHIGH RIVER AT GLENDON, PA--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1967 - 1998	
ANNUAL TOTAL	751269		1017465			
ANNUAL MEAN	2058		2788		2891	
HIGHEST ANNUAL MEAN					3997	1984
LOWEST ANNUAL MEAN					1594	1985
HIGHEST DAILY MEAN	6440	Jan 25	11700	Mar 10	44300	Jun 23 1972
LOWEST DAILY MEAN	655	Aug 9, Oct 22	587	Sep 30	330	Jan 31 1981a
ANNUAL SEVEN-DAY MINIMUM	699	Aug 7	666	Sep 24	349	Jan 26 1981
INSTANTANEOUS PEAK FLOW			12600	Mar 11	b60600	Jun 23 1972
INSTANTANEOUS PEAK STAGE			13.19	Mar 11	24.86	Jun 23 1972
10 PERCENT EXCEEDS	3680		5830		5730	
50 PERCENT EXCEEDS	1740		1880		2100	
90 PERCENT EXCEEDS	824		731		891	

a Also Feb. 1, 1981.

b From rating curve extended above 36,000 ft³/s.

DELAWARE RIVER BASIN

01457000 MUSCONETCONG RIVER NEAR BLOOMSBURY, NJ

LOCATION.--Lat 40 40'20", long 75 03'40", Warren County, Hydrologic Unit 02040105, on right bank just downstream from bridge on Limekiln Road (Person Road), 1.5 mi southwest of Bloomsbury, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--141 mi².

PERIOD OF RECORD.--July 1903 to March 1907, July 1921 to current year.

REVISED RECORDS.--WSP 1051: 1944-45. WSP 1382: 1904-06, 1922, 1923-29(M), 1931(M), 1933-34(M), 1936(M), 1940, 1942(M), 1944-45(M), 1951-52(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Sept. 29, 1932. Datum of gage is 274.83 ft above sea level. July 1903 to Mar. 31, 1907, nonrecording gage at bridge 15 ft upstream at different datum. July 26 to Sept. 12, 1921, nonrecording gage at bridge at present datum.

REMARKS.--Records good. Flow occasionally regulated by Lake Hopatcong (see Delaware River basin, reservoirs in). Several measurements of water temperature, other than those published, were made during the year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 10	0445	1,080	3.76	Jun 13	1900	1,010	3.65
May 12	0630	*1,880	*4.84				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	129	118	203	190	411	263	296	263	204	99	76
2	152	234	116	183	186	337	501	440	254	201	95	86
3	156	228	108	166	174	304	399	480	233	179	90	100
4	167	189	111	166	167	277	336	451	214	166	86	76
5	180	182	121	175	227	257	301	420	205	158	81	79
6	193	170	114	174	224	243	277	501	195	147	82	76
7	192	142	109	181	198	229	263	627	182	139	83	77
8	205	108	124	301	183	228	247	638	178	139	85	117
9	211	113	128	348	171	484	288	739	170	139	81	101
10	211	124	128	295	166	453	867	990	165	133	81	92
11	207	127	136	248	170	358	716	1300	165	126	91	82
12	208	116	130	214	262	310	609	1680	231	122	90	84
13	210	110	129	198	257	282	540	1430	473	118	95	78
14	201	124	125	184	245	273	490	1150	577	113	84	76
15	205	137	123	171	237	270	468	933	609	111	79	75
16	207	123	120	253	232	259	438	785	562	112	78	76
17	199	112	118	227	240	246	416	680	590	109	85	80
18	209	106	114	203	368	246	400	582	497	107	127	81
19	204	103	99	188	374	391	388	521	451	106	130	76
20	194	102	97	180	345	387	489	459	418	106	98	72
21	200	102	97	170	325	385	433	417	407	105	84	71
22	195	123	94	161	312	400	386	375	354	101	78	73
23	215	124	109	217	321	366	361	344	312	103	87	75
24	200	118	102	389	549	334	337	317	288	106	79	65
25	173	110	179	354	626	311	307	319	245	102	76	69
26	128	108	170	311	534	296	316	298	218	98	108	72
27	134	106	147	275	470	286	420	280	205	95	95	68
28	128	103	135	263	439	275	361	266	190	94	93	70
29	126	101	136	243	---	266	328	252	180	92	83	69
30	133	104	396	228	---	257	307	254	188	97	79	67
31	119	---	267	206	---	252	---	248	---	102	76	---
TOTAL	5618	3878	4200	7075	8192	9673	12252	18472	9219	3830	2758	2359
MEAN	181	129	135	228	293	312	408	596	307	124	89.0	78.6
MAX	215	234	396	389	626	484	867	1680	609	204	130	117
MIN	119	101	94	161	166	228	247	248	165	92	76	65

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1998, BY WATER YEAR (WY)

	178	232	272	267	279	347	357	278	199	162	149	157
MEAN	178	232	272	267	279	347	357	278	199	162	149	157
MAX	770	701	980	924	582	935	1027	680	843	659	583	454
(WY)	1904	1928	1997	1979	1973	1936	1983	1989	1972	1975	1928	1960
MIN	41.2	61.2	57.3	73.7	99.4	127	103	98.1	56.8	38.1	38.5	37.3
(WY)	1964	1966	1966	1977	1923	1965	1985	1965	1965	1965	1965	1965

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

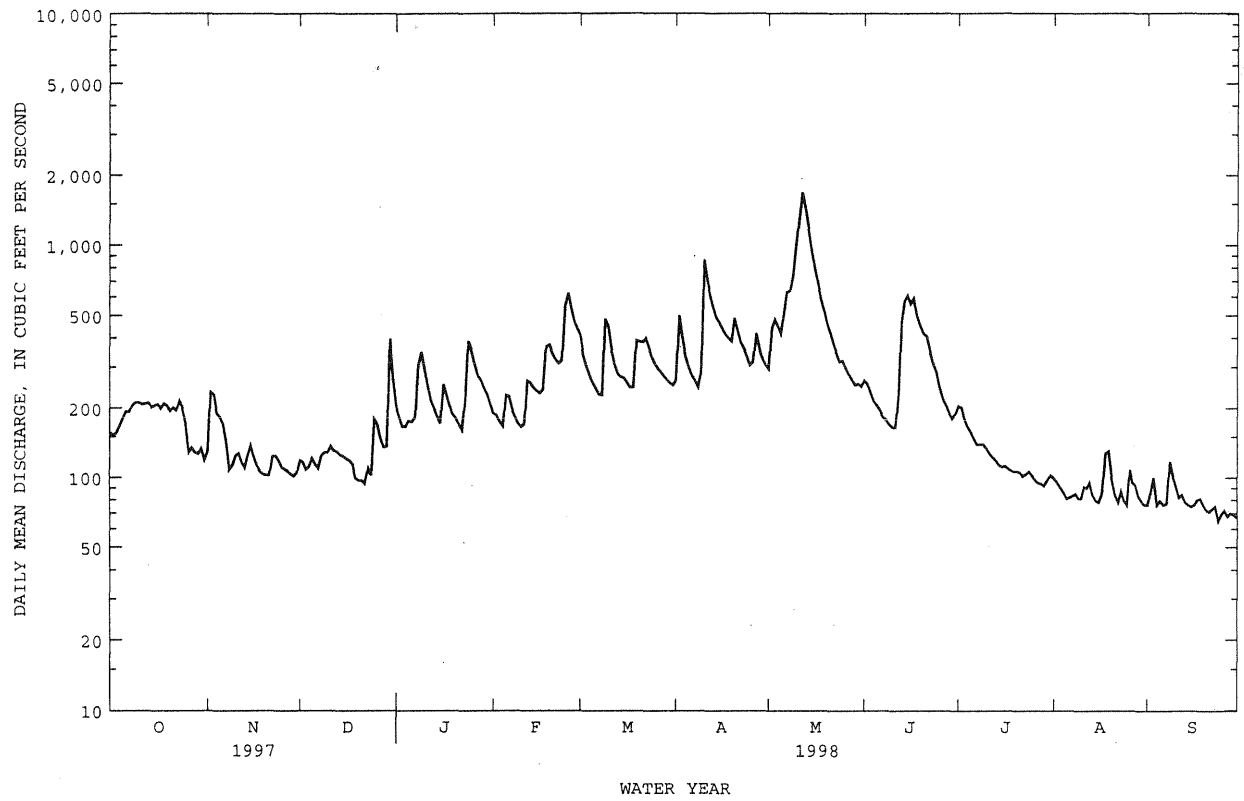
WATER YEARS 1904 - 1998

ANNUAL TOTAL	81566	87526	
ANNUAL MEAN	223	240	
HIGHEST ANNUAL MEAN			240
LOWEST ANNUAL MEAN			425
HIGHEST DAILY MEAN	589	Apr 4	1680
LOWEST DAILY MEAN	76	Aug 10	65
ANNUAL SEVEN-DAY MINIMUM	78	Aug 10	69
INSTANTANEOUS PEAK FLOW			1880
INSTANTANEOUS PEAK STAGE			4.84
INSTANTANEOUS LOW FLOW			64
10 PERCENT EXCEEDS	382		452
50 PERCENT EXCEEDS	201		188
90 PERCENT EXCEEDS	102		83

a From rating curve extended 1,800 ft³/s on basis of slope-area measurement at gage height 6.95 ft.

b From floodmark

01457000 MUSCONETCONG RIVER NEAR BLOOMSBURY, NJ--Continued



01460440 DELAWARE AND RARITAN CANAL AT PORT MERCER, NJ

LOCATION.--Lat 40°18'16", long 74°41'08", Mercer County, Hydrologic Unit 02040105, on right bank, 300 ft upstream from bridge on Province Line (Quaker Bridge) Road at Port Mercer, 2.2 mi east of Lawrenceville, and 3.5 mi southwest of Princeton.

PERIOD OF RECORD.--August 1990 to current year. Miscellaneous measurements made 1923, 1937-38, 1942-43, 1945, 1981, 1987-90.

GAGE.--Water-stage recorder and ultrasonic velocity meter. Datum of gage is sea level.

REMARKS.--Records good except for period of negative flow, which are poor. The canal diverts water from the Delaware River at Raven Rock and discharges into Raritan River at New Brunswick. Reverse flow (denoted by a negative symbol) can occur during periods of heavy precipitation due to waste gate operation upstream and inflow into canal downstream from gage. Gage is located at the drainage divide between the Delaware and Raritan River Basins. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	149	112	109	132	133	123	145	129	158	148	151
2	153	113	111	119	133	134	107	125	133	159	147	150
3	154	126	112	118	134	131	130	136	139	158	152	151
4	156	140	126	119	137	130	133	142	139	150	152	151
5	147	147	131	122	128	131	134	140	140	148	150	151
6	145	147	129	122	124	135	134	141	143	149	150	148
7	144	146	130	118	137	136	136	141	142	148	155	147
8	145	144	129	98	137	137	139	117	145	146	154	141
9	152	144	126	121	135	87	130	67	144	147	154	148
10	154	138	127	53	135	117	38	54	146	151	155	157
11	152	137	127	32	138	124	121	85	143	150	155	160
12	153	136	124	31	100	126	130	61	146	152	154	159
13	154	139	123	95	136	130	132	129	112	150	154	158
14	157	135	123	140	135	131	134	133	133	150	152	156
15	154	123	122	142	135	134	137	130	140	151	152	157
16	156	123	122	121	136	138	137	142	141	153	153	156
17	154	124	122	134	138	137	137	139	139	148	145	152
18	154	133	122	132	98	140	135	133	147	146	153	156
19	152	130	121	133	133	48	138	138	146	145	151	154
20	151	120	122	134	130	113	130	138	146	148	150	156
21	151	113	123	135	130	79	133	137	125	148	153	153
22	151	120	122	138	133	106	138	138	140	150	152	147
23	152	116	119	97	136	119	137	139	145	149	151	151
24	152	113	116	44	64	125	135	139	142	150	148	152
25	159	110	103	107	94	134	140	136	142	150	150	156
26	158	113	103	115	125	133	134	136	144	150	158	158
27	133	118	113	131	130	135	125	137	152	150	138	155
28	142	111	119	142	134	135	133	140	148	151	152	155
29	142	111	119	131	---	136	135	136	148	148	149	158
30	145	112	44	130	---	134	144	139	154	151	150	160
31	147	---	102	133	---	133	---	137	---	148	151	---
TOTAL	4671	3831	3644	3496	3557	3861	3889	3950	4233	4652	4688	4604
MEAN	151	128	118	113	127	125	130	127	141	150	151	153
MAX	159	149	131	142	138	140	144	145	154	159	158	160
MIN	133	110	44	31	64	48	38	54	112	145	138	141

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1998, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	134	130	125	126	130	122	130	141	142	145	142
MAX	155	151	143	143	143	148	147	150	156	154	155
(WY)	1991	1991	1996	1997	1995	1997	1997	1993	1993	1992	1992
MIN	115	108	103	103	99.5	91.4	95.8	127	120	123	114
(WY)	1992	1992	1992	1992	1992	1992	1992	1998	1996	1996	1996

SUMMARY STATISTICS

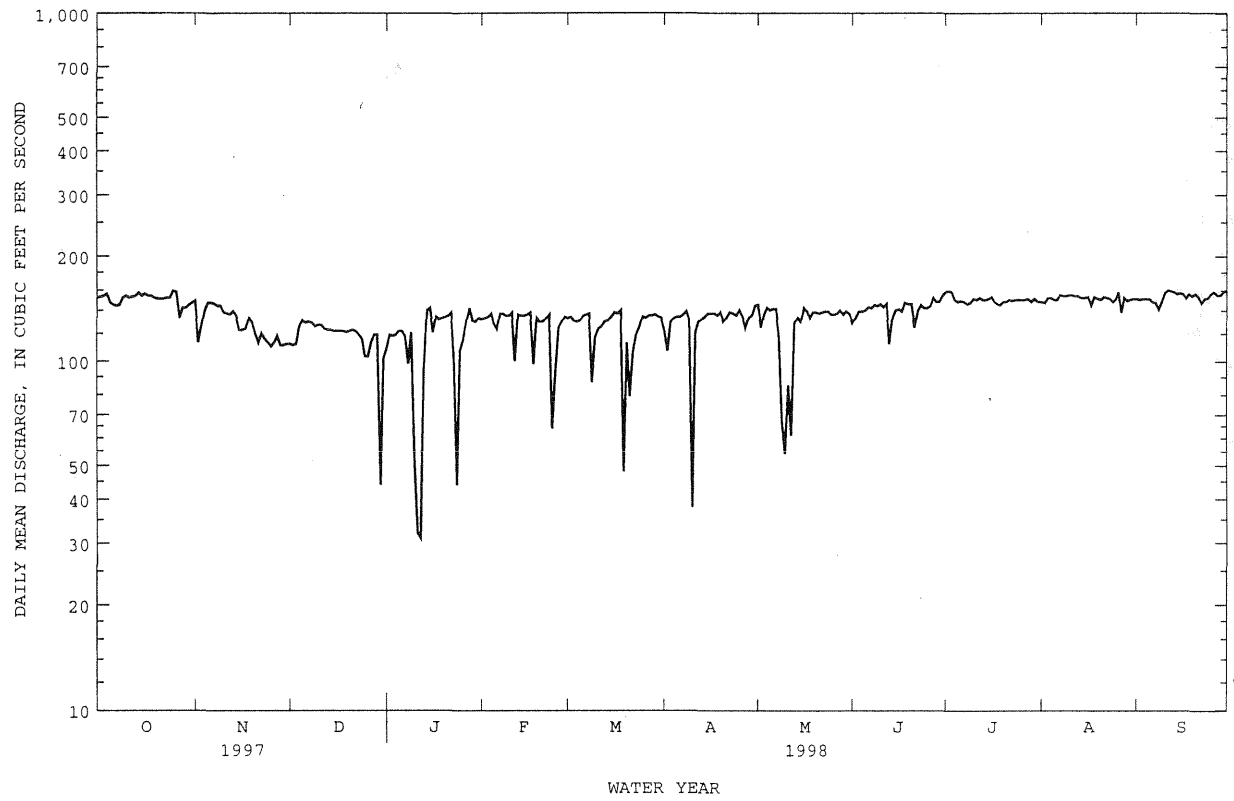
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1990 - 1998

ANNUAL TOTAL	51952	49076	
ANNUAL MEAN	142	134	134
HIGHEST ANNUAL MEAN			143
LOWEST ANNUAL MEAN			120
HIGHEST DAILY MEAN	160	160	222
LOWEST DAILY MEAN	44	31	-97
ANNUAL SEVEN-DAY MINIMUM	100	78	67
INSTANTANEOUS PEAK FLOW		329	---
INSTANTANEOUS PEAK STAGE		55.65	---
INSTANTANEOUS LOW FLOW		-74	-563
10 PERCENT EXCEEDS	154	154	154
50 PERCENT EXCEEDS	147	138	140
90 PERCENT EXCEEDS	122	113	105

01460440 DELAWARE AND RARITAN CANAL AT PORT MERCER, NJ--Continued



01463500 DELAWARE RIVER AT TRENTON, NJ

LOCATION.--Lat 40°13'18", long 74°46'42", Mercer County, Hydrologic Unit 02040105, on left bank 450 ft upstream from Calhoun Street Bridge at Trenton, 0.5 mi upstream from Assunpink Creek, and at mile 134.5.

DRAINAGE AREA. --6,780 mi².

PERIOD OF RECORD.--February 1913 to current year. October 1912 to February 1913 monthly discharge only, published in WSP 1302.
Gage- height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 951: Drainage area. WSP 1302: 1913-20. WSP 1382: 1924, 1928.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Sept. 30, 1965, at datum 7.77 ft higher. Feb. 24, 1913 to Oct. 2, 1928, nonrecording gage on downstream side of highway bridge at site 450 ft downstream.

REMARKS.--Records good. Diurnal fluctuations at medium and low flow caused by powerplants on tributary streams. Flow regulated by Lakes Wallenpaupack and Hopatcong, and by Pepacton, Cannonsville, Swinging Bridge, Toronto, Cliff Lake, Neversink, Wild Creek, and Merrill Creek Reservoirs (see Delaware River basin, reservoirs in) and smaller reservoirs. Diversion from Pepacton, Cannonsville, and Neversink Reservoirs. Diversion to Bradshaw and Merrill Creek Reservoirs and to Delaware and Raritan Canal (see Delaware River basin, diversions). Water diverted just above station by borough of Morrisville, PA, and city of Trenton for municipal supply (see Delaware River basin, diversions). Satellite gage height and water-quality parameter telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 11, 1903, reached an elevation of about 28.5 ft above sea level, discharge estimated, 295,000 ft³/s. Maximum elevation since 1957, 30.6 ft above sea level, Mar. 8, 1904, from floodmark, due to ice jam.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 10	1230	63,900	15.24	May 12	1600	*69,500	*15.67
Mar 11	1545	59,100	14.86				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3240	3340	6380	10500	11400	20500	20000	15400	7930	7610	3670	2790
2	3220	4270	8010	8550	9890	23000	27000	16200	11500	21100	3380	2890
3	3130	5250	10800	7510	9180	27150	27200	16500	12000	18900	3030	3360
4	3350	5610	9630	8390	9650	26000	25400	16300	12200	15500	2920	3490
5	3670	5650	8570	8270	11600	22600	21600	19000	12500	13200	3060	3130
6	3130	5900	8080	10300	15600	20100	19200	22600	10300	11200	2960	3030
7	2940	5120	7940	18300	14100	18000	16900	25400	8710	10900	2860	2940
8	2990	4630	7590	29100	12900	16800	15400	25800	7300	9910	2830	3350
9	3830	4320	6940	49400	10900	24000	15100	32600	6610	9400	3000	3670
10	3680	4480	6790	60200	9990	38900	33200	34900	6710	9800	3100	3360
11	3170	4850	6850	45900	10400	56100	39200	46300	6370	16300	3610	2820
12	2750	6490	6220	32400	13100	47000	32800	66800	7620	14900	3670	2710
13	2770	6100	5900	24500	17700	35400	26600	59400	11800	12500	3300	2750
14	2790	5500	6020	20300	19400	28600	23000	45700	23100	10400	2980	2660
15	2950	5670	5400	17800	18100	24900	20900	36400	29100	9530	3120	3070
16	3160	5480	5130	18600	15200	22100	19400	30000	33000	8210	3020	2810
17	3280	5120	4930	19100	13400	19700	18100	25200	35900	7200	3230	2980
18	3180	4840	4770	20100	17600	17800	17000	21000	31300	6760	3610	3110
19	3100	4510	5040	18000	20000	23100	15900	18300	29700	6170	3840	2940
20	3060	4190	4570	16400	21600	24300	19200	16900	25700	5290	3740	2940
21	2970	4020	4540	15000	22700	26000	30500	15400	20900	4790	3510	2770
22	2960	4480	4440	13600	20200	29000	32300	13900	18400	5110	3090	2960
23	2940	4820	4540	15000	18100	28100	27500	12200	16000	5230	3070	2920
24	2940	5540	4820	23800	25400	25500	24400	11100	14900	5060	3550	3210
25	3150	7240	6410	19200	28900	23100	21700	9820	13200	4700	2950	2890
26	3520	7360	8640	17400	26000	21300	18600	9250	11900	4160	3120	3080
27	3960	6760	8510	15500	22900	19800	20100	8930	10600	3950	4120	3000
28	3780	6260	8890	14100	21100	21500	19600	9480	9750	3330	4050	2970
29	3660	6120	9180	13700	---	23000	18000	8780	8430	3100	3260	2910
30	3180	6430	14000	12900	---	22400	16300	8350	7780	3560	3390	2780
31	2930	---	12700	12100	---	21000	---	8180	---	3730	3000	---
TOTAL	99380	160350	222230	615920	467010	797100	682100	706090	461210	271500	102040	90290
MEAN	3206	5345	7169	19870	1							

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 1998, BY WATER YEAR (WY)

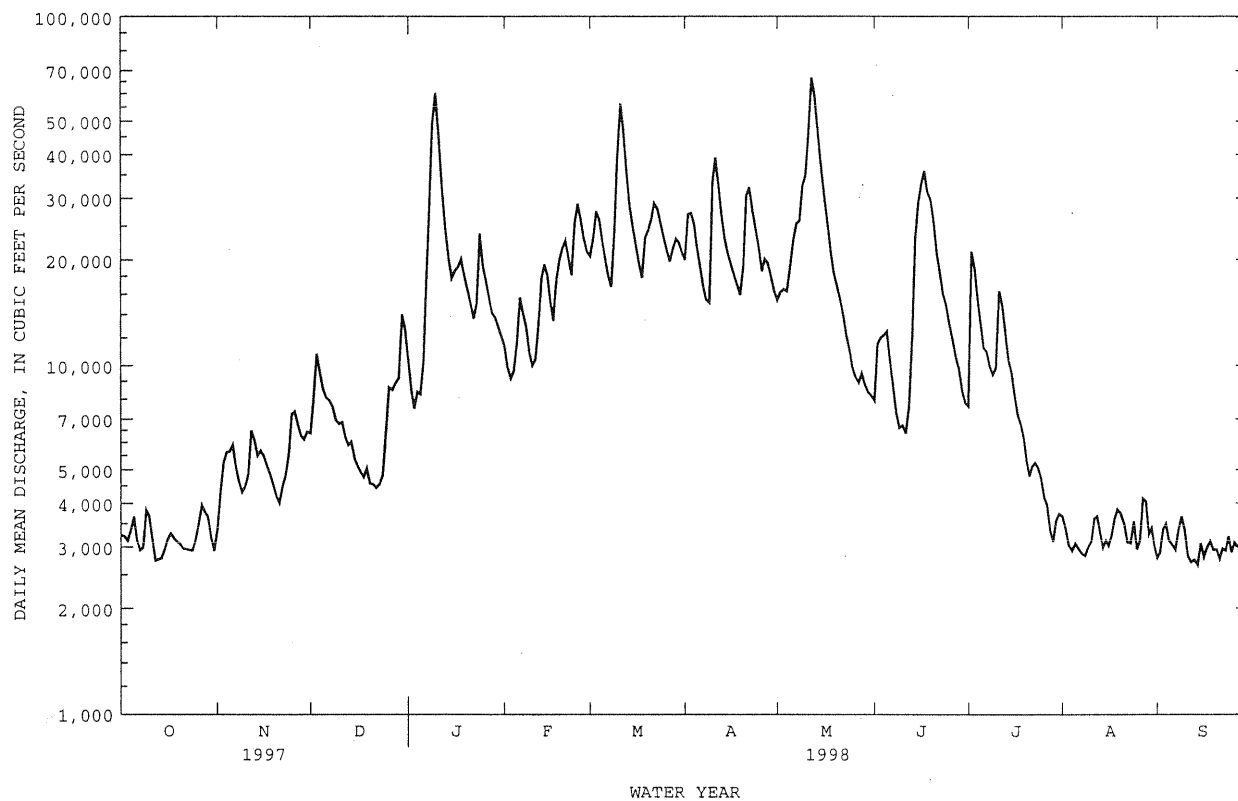
MEAN	6879	10580	12750	12540	12860	20660	22420	14230	9055	7089	5903	5716
MAX	28710	27340	42860	34950	27550	60840	52680	31690	33460	25720	30290	22490
(WY)	1956	1928	1997	1979	1951	1936	1940	1989	1972	1928	1955	1933
MIN	1632	1868	2037	2539	3500	7715	6828	5074	2572	1548	1808	1762
(WY)	1942	1915	1923	1981	1920	1981	1985	1995	1965	1965	1965	1932

01463500 DELAWARE RIVER AT TRENTON, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1913 - 1998	
ANNUAL TOTAL	3402990		4675220		11710	
ANNUAL MEAN	9323		12810		19810	
HIGHEST ANNUAL MEAN					4708	
LOWEST ANNUAL MEAN					1928	
HIGHEST DAILY MEAN	35000	Apr 2	66800	May 12	279000	Aug 20 1955
LOWEST DAILY MEAN	2590	Sep 8	2660	Sep 14	1240	Oct 31 1914
ANNUAL SEVEN-DAY MINIMUM	2870	Aug 10	2830	Sep 11	1310	Oct 31 1914
INSTANTANEOUS PEAK FLOW			69500	May 12	329000a	Aug 20 1955
INSTANTANEOUS PEAK STAGE			15.67	May 12	28.60b	Aug 20 1955
INSTANTANEOUS LOW FLOW			2460	Sep 14	1180	Oct 31 1963
10 PERCENT EXCEEDS	18500		26200		24700	
50 PERCENT EXCEEDS	6870		9180		7950	
90 PERCENT EXCEEDS	3170		3000		3020	

a From rating curve extended above 230,000 ft³/s, maximum flow since 1692.

b From high-water mark in gage house.



01463620 ASSUNPINK CREEK NEAR CLARKSVILLE, NJ

LOCATION.--Lat 40°16'11", long 74°40'20", Mercer County, Hydrologic Unit 02040105, on left bank 250 ft upstream from bridge on Quaker Bridge Road, 0.7 mi downstream from dam at Lake Mercer, 1.9 mi south of Clarksville, 2.0 mi upstream from Shipetaukin Creek, and 7.6 mi upstream from mouth.

DRAINAGE AREA.--34.3 mi².

PERIOD OF RECORD.--Occasional low-flow measurements water years 1963-67. October 1972 to September 1981, March 1992 to September 1995, growing season, April to October, only 1996-current year.

GAGE.--Water-stage recorder. Datum of gage is 49.28 ft above sea level.

REMARKS.--Records fair. Regulation from flood-control dams and ponds upstream. Diversions for irrigation upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 28, 1971, reached a stage of 10.9 ft, discharge, 1,500 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	---	---	---	---	---	55	43	41	30	9.8	15
2	8.5	---	---	---	---	---	56	58	48	29	9.5	13
3	8.1	---	---	---	---	---	53	65	43	27	9.4	14
4	8.0	---	---	---	---	---	49	63	37	26	9.1	13
5	7.9	---	---	---	---	---	45	57	32	28	8.9	11
6	7.7	---	---	---	---	---	42	54	29	28	8.3	9.5
7	7.7	---	---	---	---	---	40	53	26	26	8.0	8.8
8	7.3	---	---	---	---	---	39	67	24	25	7.7	11
9	7.0	---	---	---	---	---	43	159	23	27	7.5	9.8
10	7.0	---	---	---	---	---	138	271	23	27	7.3	9.1
11	6.8	---	---	---	---	---	163	286	23	25	8.5	8.7
12	6.5	---	---	---	---	---	138	298	28	23	8.5	8.6
13	6.5	---	---	---	---	---	105	287	38	22	8.1	8.3
14	6.5	---	---	---	---	---	84	283	60	21	7.6	7.7
15	7.3	---	---	---	---	---	71	275	78	20	7.4	7.3
16	7.7	---	---	---	---	---	63	255	80	19	7.1	7.2
17	7.7	---	---	---	---	---	59	199	72	18	9.7	7.9
18	7.8	---	---	---	---	---	58	132	61	17	16	8.0
19	8.1	---	---	---	---	---	54	98	51	16	15	7.8
20	8.3	---	---	---	---	---	64	81	48	16	15	7.7
21	8.3	---	---	---	---	---	67	69	147	15	14	7.6
22	8.0	---	---	---	---	---	62	59	130	13	14	8.9
23	7.6	---	---	---	---	---	55	52	90	12	14	8.6
24	7.5	---	---	---	---	---	57	46	70	12	13	7.9
25	11	---	---	---	---	---	54	43	56	10	12	7.7
26	14	---	---	---	---	---	51	43	47	9.5	14	7.7
27	19	---	---	---	---	---	64	42	41	8.6	66	7.9
28	19	---	---	---	---	---	63	38	36	8.3	53	7.8
29	19	---	---	---	---	---	53	35	33	8.2	31	7.3
30	18	---	---	---	---	---	47	34	31	8.0	22	7.2
31	18	---	---	---	---	---	---	32	---	9.4	18	---
TOTAL	300.6	---	---	---	---	---	1992	3577	1546	584.0	459.4	272.0
MEAN	9.70	---	---	---	---	---	66.4	115	51.5	18.8	14.8	9.07
MAX	19	---	---	---	---	---	163	298	147	30	66	15
MIN	6.5	---	---	---	---	---	39	32	23	8.0	7.1	7.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1998, BY WATER YEAR (WY)

	MEAN	37.8	43.2a	80.0a	78.6a	70.8a	83.9a	67.7	48.8	41.5	31.9	28.7	28.4
MAX	93.8	112a	151a	151a	136a	204a	115	115	90.9	142	77.4	96.9	
(WY)	1997	1973	1997	1979	1994	1994	1973	1998	1996	1975	1994	1975	
MIN	9.70	19.2a	20.9a	12.9a	30.7a	33.8a	23.7	16.0	11.9	6.54	11.0	8.08	
(WY)	1998	1995	1981	1981	1980	1981	1995	1992	1995	1995	1995	1992	

SUMMARY STATISTICS

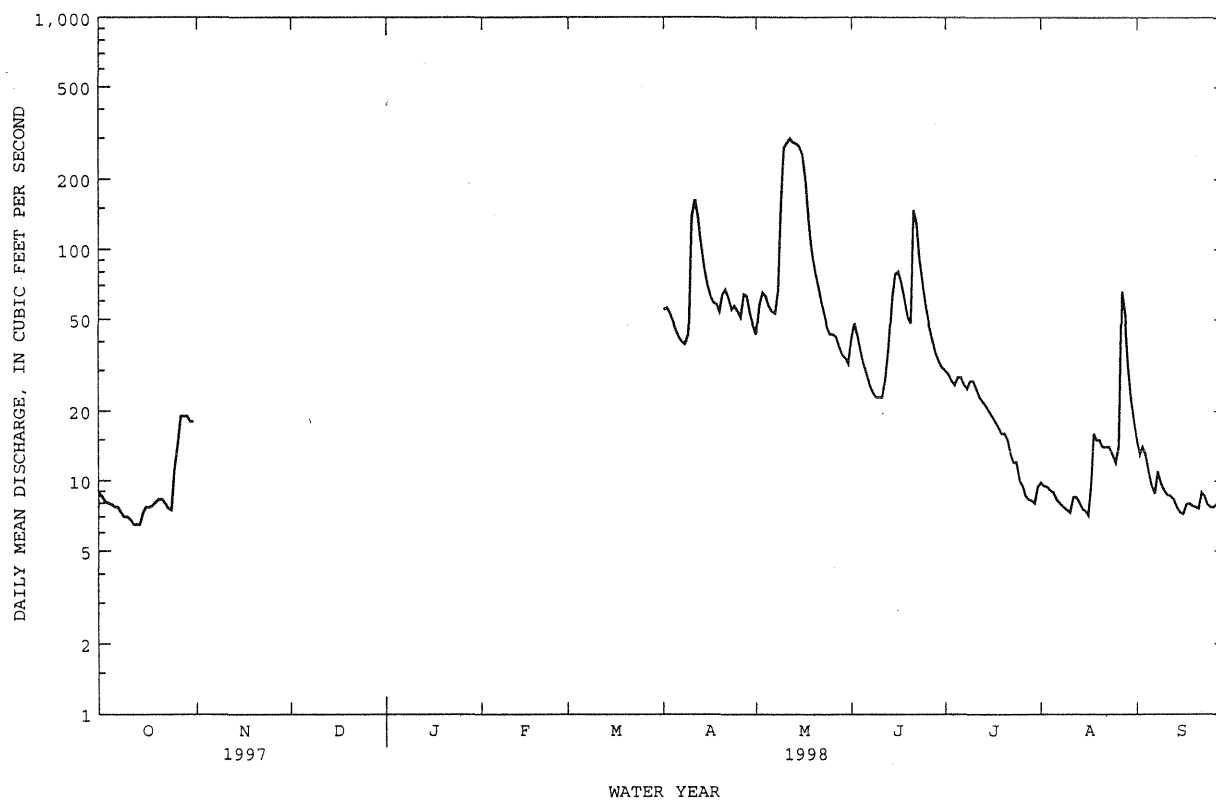
Oct 1997 and Apr to Sept 1998

WATER YEARS 1973 - 1998

ANNUAL MEAN		52.1a	
HIGHEST ANNUAL MEAN		74.7a	1994
LOWEST ANNUAL MEAN		24.6a	1995
HIGHEST DAILY MEAN	163	Apr 11	
LOWEST DAILY MEAN	7.1	Aug 16	
INSTANTANEOUS PEAK FLOW	313	May 12	
INSTANTANEOUS PEAK STAGE	6.38	May 12	
INSTANTANEOUS LOW FLOW	6.5	Oct 12	
			Feb 26 1979
			Sep 6 1995
			Jul 21 1975
			Jul 21 1975
			Sep 6 1995

a Water year 1975-1995.

01463620 ASSUNPINK CREEK NEAR CLARKSVILLE, NJ--Continued



01464000 ASSUNPINK CREEK AT TRENTON, NJ

LOCATION.--Lat 40°13'27", long 74°44'58", Mercer County, Hydrologic Unit 02040105, on left bank 20 ft upstream from bridge on Chambers Street (Lincoln Avenue) in Trenton, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--90.6 mi².

PERIOD OF RECORD.--August 1923 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since July 10, 1932. Datum of gage is 24.76 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records good. Records include water diverted from outside the basin since February 1954 for municipal supply which returns to Assunpink Creek through Ewing-Lawrence Sewerage Authority Treatment Plant, 2.4 mi above station (records given herein). In addition there is an average inflow of about 2.0 ft³/s from industrial use of water that originates outside the basin. Some diversion for irrigation in headwater area during summer months. Flow regulated by several flood-control reservoirs upstream from gage since mid-1970's. Several measurements of water temperature were made during the year. National Weather Service gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	0115	1,310	6.84	Mar 21	1030	1,040	6.10
Jan 23	2215	*1,740	*7.86	Apr 10	0130	1,430	7.14
Feb 24	0230	1,190	6.53	May 12	0345	1,300	6.81
Mar 19	1130	1,420	7.11				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	145	48	287	154	258	209	148	258	68	40	35
2	25	172	45	223	137	213	450	378	145	58	33	44
3	25	114	43	173	127	274	260	255	110	56	30	70
4	24	78	53	139	122	226	216	200	91	111	26	39
5	24	62	48	116	246	190	177	174	79	120	24	32
6	23	58	44	105	194	164	152	170	72	84	23	29
7	23	51	42	254	154	146	135	160	67	73	22	37
8	23	47	41	380	139	207	130	435	63	137	21	101
9	24	57	40	288	127	666	342	811	59	108	21	46
10	24	49	48	217	116	559	932	892	57	74	25	32
11	22	46	67	163	120	444	553	927	58	63	44	28
12	21	44	58	132	314	349	414	935	232	57	31	26
13	22	40	53	113	194	268	332	609	287	55	25	25
14	23	81	49	99	161	221	261	556	246	51	24	25
15	30	81	45	116	136	189	223	492	201	48	24	24
16	32	60	44	311	120	161	191	441	170	46	23	24
17	29	52	43	205	157	142	215	514	158	47	155	28
18	28	46	42	189	397	165	186	363	125	49	85	28
19	28	44	41	166	306	882	185	272	110	49	48	26
20	27	43	40	141	258	627	302	224	131	46	37	25
21	26	44	39	120	216	781	208	197	315	43	32	25
22	24	255	40	107	179	718	173	165	257	39	31	52
23	24	120	155	599	264	558	163	144	204	36	37	37
24	23	85	87	909	837	447	172	128	145	36	36	29
25	102	71	362	641	632	352	147	208	109	31	33	27
26	63	65	214	456	438	276	180	155	91	30	158	26
27	164	58	158	344	368	226	343	121	76	30	306	25
28	59	53	154	301	314	205	206	107	65	28	115	24
29	44	51	269	247	---	188	157	99	60	28	65	22
30	39	48	748	205	---	171	134	105	79	28	48	21
31	36	---	430	177	---	158	---	93	---	47	41	---
TOTAL	1108	2220	3590	7923	6927	10431	7748	10478	4120	1776	1663	1012
MEAN	35.7	74.0	116	256	247	336	258	338	137	57.3	53.6	33.7
MAX	164	255	748	909	837	882	932	935	315	137	306	101
MIN	21	40	39	99	116	142	130	93	57	28	21	21
(I)	11.4	12.3	13.1	17.9	19.9	23.1	21.4	23.2	15.4	13.1	11.4	12.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1998, BY WATER YEAR (WY)

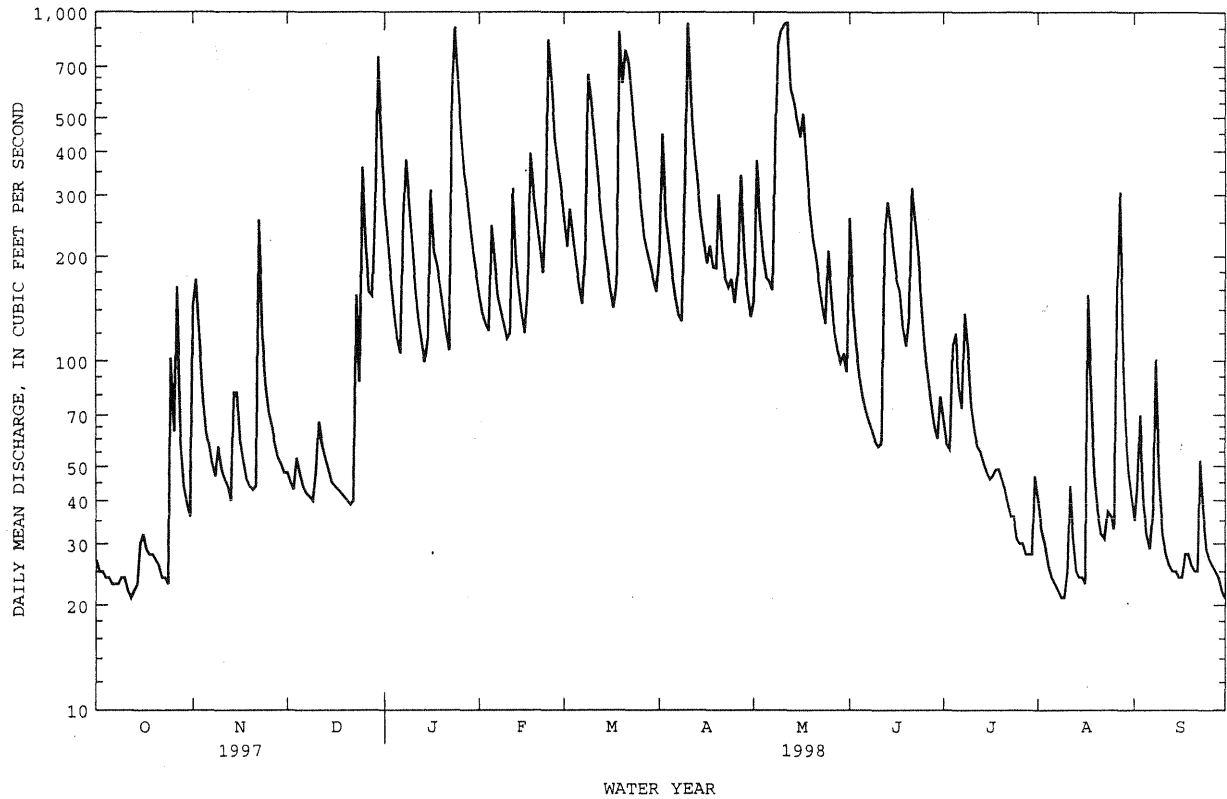
	MEAN	81.1	115	149	168	186	212	182	133	101	101	91.6	89.0
MAX	328	331	501	498	395	554	494	340	371	545	355	327	
(WY)	1997	1973	1997	1979	1939	1994	1983	1989	1996	1975	1971	1938	
MIN	19.1	27.6	42.1	44.2	52.0	76.7	65.2	40.0	25.9	17.2	17.3	15.8	
(WY)	1931	1932	1944	1981	1934	1985	1963	1941	1942	1955	1966	1943	

01464000 ASSUNPINK CREEK AT TRENTON, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1924 - 1998	
ANNUAL TOTAL	49788		58996		134	
ANNUAL MEAN	136		162		233	
HIGHEST ANNUAL MEAN					69.2	
LOWEST ANNUAL MEAN					4.0	
HIGHEST DAILY MEAN	748	Dec 30	935	May 12	4050	Jul 21 1975
LOWEST DAILY MEAN	21	Oct 12	21	Oct 12	9.6	Jul 21 1929
ANNUAL SEVEN-DAY MINIMUM	23	Oct 7	23	Oct 7	5450	Aug 25 1944
INSTANTANEOUS PEAK FLOW			1740	Jan 23	14.61	Jul 21 1975
INSTANTANEOUS PEAK STAGE			7.86	Jan 23	1.0	Jul 21 1975
INSTANTANEOUS LOW FLOW			16	Sep 30	274	Aug 21 1931
10 PERCENT EXCEEDS	314		365		88	
50 PERCENT EXCEEDS	95		108		33	
90 PERCENT EXCEEDS	29		26			

a From high-water mark in gage house.

(I) Inflow from outside basin, equivalent in cubic feet per second, 2.4 mi. upstream of station through plant of Ewing-Lawrence Sewerage Authority.



01464500 CROSSWICKS CREEK AT EXTONTVILLE, NJ

LOCATION.--Lat 40°08'15", long 74°36'02", Mercer County, Hydrologic Unit 02040201, on right bank upstream from highway bridge in Extontville, 0.5 mi upstream from Pleasant Run, and 0.7 mi downstream from Mercer-Monmouth County line.

DRAINAGE AREA.--81.5 mi².

PERIOD OF RECORD.--August 1940 to October 1951, October 1952 to current year.

REVISED RECORDS.--WDR NJ-79-2: 1971(M). WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 24.94 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated occasionally by lakes above station. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 30	2130	1,070	8.22	Mar 20	0900	874	7.50
Jan 24	1330	1,720	9.66	Mar 22	0600	944	7.78
Feb 24	2100	1,240	8.67	Apr 10	2100	857	7.43
Mar 9	2315	1,500	9.21	May 10	0930	*1,920	*10.04

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	69	66	288	142	177	136	129	e135	e67	152	25
2	30	192	65	185	129	153	147	224	e184	82	71	25
3	29	217	60	149	122	195	150	243	e97	55	49	55
4	29	176	64	129	116	226	146	220	e84	53	40	45
5	27	136	74	114	150	171	143	182	e72	84	33	32
6	28	97	67	103	216	145	141	191	e66	74	30	27
7	26	78	58	139	167	133	136	192	e60	63	30	26
8	25	72	55	420	144	140	132	247	e56	66	28	52
9	23	97	53	366	127	837	152	745	e54	99	28	48
10	24	120	55	219	115	1080	630	1750	e52	78	28	31
11	25	82	72	161	107	478	557	1370	e52	67	42	28
12	24	68	75	132	304	264	268	1160	e114	58	41	27
13	23	62	68	115	315	190	196	775	e263	51	32	25
14	25	87	61	102	193	171	161	398	e220	47	28	24
15	30	143	56	95	156	156	147	261	e238	45	28	24
16	38	119	54	320	133	142	141	201	e146	44	27	24
17	37	90	53	298	132	133	155	182	e132	44	53	25
18	36	74	52	191	407	134	185	193	e123	44	183	27
19	34	65	51	163	383	359	185	154	e92	41	93	26
20	32	64	51	137	247	781	253	135	e92	39	63	24
21	29	61	50	118	198	607	237	e133	e138	36	45	24
22	26	222	49	105	163	862	185	e124	e148	34	39	25
23	27	271	131	198	157	510	171	e107	e129	33	45	37
24	26	159	177	1400	891	296	207	e96	e95	33	44	28
25	81	121	198	790	904	222	195	e114	e86	33	36	24
26	130	96	220	395	454	196	170	e108	e86	30	31	25
27	145	84	145	242	267	183	194	e96	e115	28	33	25
28	111	73	150	216	203	169	180	e86	e84	27	36	24
29	65	69	162	263	---	153	152	e81	e67	27	29	21
30	54	65	797	194	---	141	138	e87	e72	27	29	22
31	50	---	686	163	---	139	---	e89	---	149	27	---
TOTAL	1326	3329	3975	7910	7042	9543	5990	10073	3352	1658	1473	875
MEAN	42.8	111	128	255	252	308	200	325	112	53.5	47.5	29.2
MAX	145	271	797	1400	904	1080	630	1750	263	149	183	55
MIN	23	61	49	95	107	133	132	81	52	27	27	21
CFSM	.52	1.36	1.57	3.13	3.09	3.78	2.45	3.99	1.37	.66	.58	.36
IN.	.61	1.52	1.81	3.61	3.21	4.36	2.73	4.60	1.53	.76	.67	.40

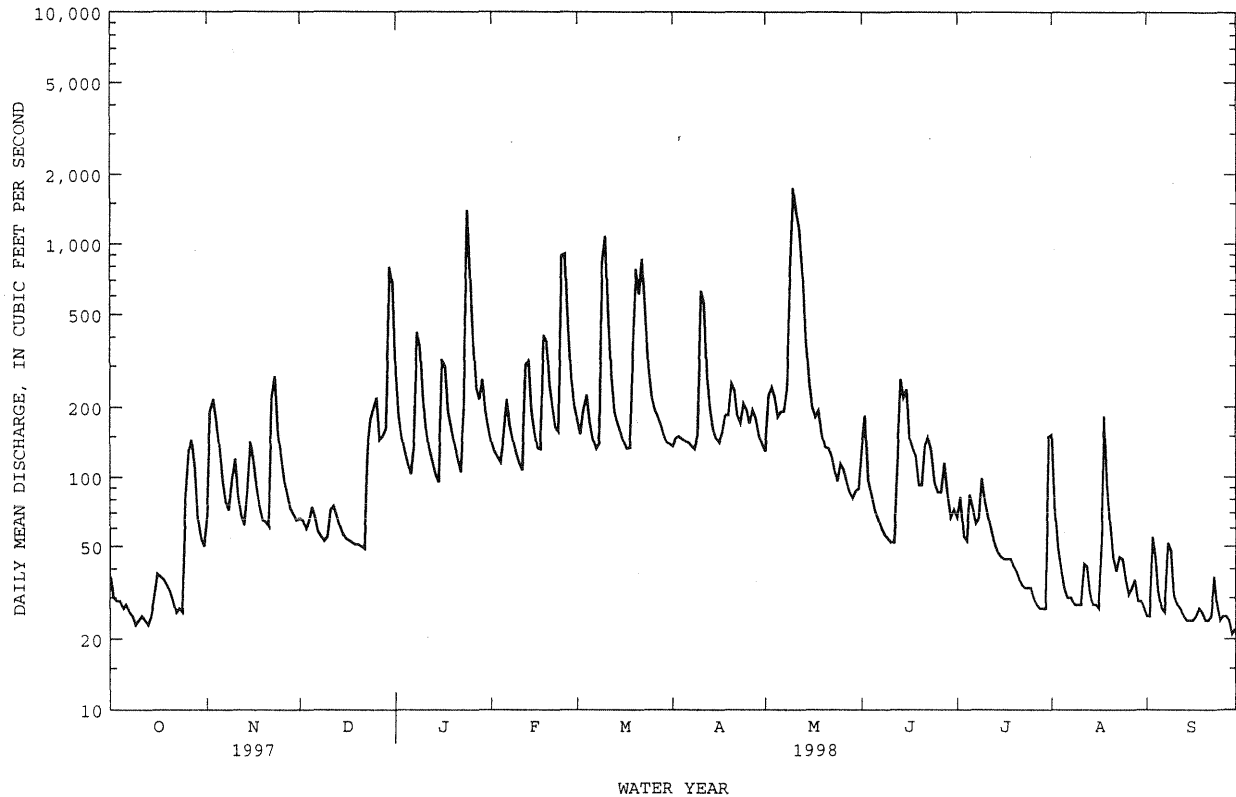
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1998, BY WATER YEAR (WY)

MEAN	89.4	129	162	177	181	203	175	135	97.6	101	93.5	87.3
MAX	231	406	392	452	416	476	388	325	251	390	299	284
(WY)	1997	1973	1997	1978	1979	1994	1983	1998	1968	1989	1971	1971
MIN	32.9	36.7	46.2	62.1	82.9	86.1	68.4	60.8	39.8	25.8	25.4	28.3
(WY)	1966	1966	1966	1981	1992	1985	1985	1955	1965	1955	1966	1995

01464500 CROSSWICKS CREEK AT EXTONVILLE, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1940 - 1998	
ANNUAL TOTAL	47520		56546		135	
ANNUAL MEAN	130		155		225	
HIGHEST ANNUAL MEAN					69.9	
LOWEST ANNUAL MEAN					1978	
HIGHEST DAILY MEAN	797	Dec 30	1750	May 10	3930	Aug 28 1971
LOWEST DAILY MEAN	19	Jul 21	21	Sep 29	11	Sep 3 1995
ANNUAL SEVEN-DAY MINIMUM	23	Jul 15	24	Oct 8	12	Sep 3 1995
INSTANTANEOUS PEAK FLOW			1920	May 10	4860	Sep 1 1978
INSTANTANEOUS PEAK STAGE			10.04	May 10	14.18	Sep 1 1978
INSTANTANEOUS LOW FLOW			19	Oct 9	10	Sep 3 1995
ANNUAL RUNOFF (CFSM)	1.60		1.90		1.66	
ANNUAL RUNOFF (INCHES)	21.69		25.81		22.57	
10 PERCENT EXCEEDS	223		267		251	
50 PERCENT EXCEEDS	99		102		93	
90 PERCENT EXCEEDS	29		27		41	

e Estimated



DELAWARE RIVER BASIN

01464598 DELAWARE RIVER AT BURLINGTON, NJ

LOCATION.--Lat 40°04'42", long 74°52'28", Burlington County, Hydrologic Unit 02040201, on left bank at the intake canal of the Public Service Electric and Gas Company, 0.3 mi downstream from Burlington-Bristol Bridge, 1.4 mi downstream from Assiscunk Creek, and at river mile 117.54.

DRAINAGE AREA.--7,160 mi².

PERIOD OF RECORD.--July 1964 to current year. March 1921 to July 1926, January 1931 to November 1939, August 1951 to June 1954, July 1957 to June 1964, in files of Philadelphia District Corps of Engineers.

REVISED RECORDS.--WDR NJ-76-1: 1973(m).

GAGE.--Water-stage recorder. Datum of gage is 12.90 ft below sea level. Prior to May 20, 1971, water-stage recorder at site 0.7 mi upstream at same datum. Gage-height record converted to elevation above or below (-) sea level for publication.

REMARKS.--Summaries for months with short periods of no gage-height record have been estimated with little or no loss of accuracy unless otherwise noted. Some periods cannot be estimated and are noted by dash (---) lines. Gage height satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation recorded, 8.78 ft, Dec. 11, 1992; minimum recorded, -6.86 ft, Nov. 21, 1989.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 10.8 ft, Aug. 20, 1955, from high-water mark at site 1.4 mi upstream; minimum, -9.1 ft, Dec. 31, 1962, at present site.

EXTREMES FOR CURRENT YEAR.--Maximum elevation recorded, 8.02 ft, May 13; minimum recorded, -4.55 ft, Dec. 31.

Summaries of tide elevations during current year are as follows:

		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Maximum	Elevation	6.25	6.63	6.38	7.29	7.59	7.48	7.03	8.02	6.73	6.31	6.12	6.38
high tide	Date	19	2	25	29	6	9	24	13	16	10	13	5
Minimum	Elevation	-3.08	-4.07	-4.55	-4.32	-2.58	-2.94	-2.59	-2.66	-3.34	-2.85	-3.18	-2.93
low tide	Date	1,29	27	31	1	13	15	18	30	8	22	19	10
Mean high tide		5.13	5.02	4.82	5.48	5.71	5.64	5.83	6.10	5.68	5.49	5.41	5.18
Mean water level		1.63	1.57	1.35	2.06	2.32	2.12	2.30	2.55	2.03	1.81	1.67	1.63
Mean low tide		-2.21	-2.19	-2.42	-1.68	-1.38	-1.59	-1.56	-1.34	-1.93	-2.18	-2.36	-2.18

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ
(Hydrologic bench-mark station)

LOCATION.--Lat 39°53'05", long 74°30'20", Burlington County, Hydrologic Unit 02040202, on right bank in Lebanon State Forest, 25 ft upstream from Butterworth Road Bridge, 3.4 mi upstream from confluence with Cooper Branch, and 7.0 mi southeast of Browns Mills.

DRAINAGE AREA.--2.35 mi².

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1962, published as "McDonald Branch in Lebanon State Forest".

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 117.73 ft above sea level (levels from New Jersey Geological Survey bench mark).

REMARKS.--Records fair. Gage-height record is collected above concrete control and discharge record, which includes leakage around control, is measured at site 785 ft downstream. Several measurements of water temperature, other than those published, were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7.0 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 9	1945	13	1.93	May 10	0930	*20	*2.04
May 7	1045	8.4	1.77				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.1	1.1	1.4	2.0	2.6	3.0	2.7	4.4	2.7	2.1	1.3
2	1.0	1.2	1.0	1.5	1.9	2.5	3.0	3.2	4.1	2.6	1.8	1.4
3	1.0	1.2	1.0	1.5	1.9	2.7	2.9	3.2	4.0	2.5	1.7	1.4
4	1.0	1.1	1.1	1.5	1.9	2.6	2.9	3.1	3.8	2.5	1.6	1.4
5	1.0	1.0	1.1	1.5	2.0	2.6	2.8	2.9	3.7	2.6	1.6	1.3
6	1.0	1.0	1.1	1.5	2.0	2.5	2.7	4.2	3.6	2.5	1.5	1.3
7	1.0	1.0	1.1	1.5	2.0	2.5	2.7	7.5	3.5	2.4	1.5	1.3
8	.98	1.0	1.1	1.6	2.1	2.7	2.7	7.1	3.4	2.4	1.5	1.4
9	.98	1.1	1.1	1.6	2.0	9.2	3.1	14	3.3	2.5	1.5	1.3
10	.98	1.0	1.1	1.5	1.9	9.2	4.4	18	3.3	2.4	1.5	1.3
11	.97	.99	1.1	1.5	1.9	5.1	3.9	15	3.3	2.4	1.6	1.3
12	.96	.98	1.1	1.5	2.3	4.0	3.4	15	4.0	2.3	1.5	1.3
13	.97	.97	1.1	1.5	2.1	3.6	3.1	13	4.1	2.2	1.5	1.3
14	.99	1.1	1.1	1.4	2.2	3.4	2.9	9.0	5.7	2.2	1.5	1.3
15	1.0	1.1	1.1	1.4	2.1	3.3	2.8	7.8	4.9	2.1	1.5	1.3
16	1.0	1.0	1.0	1.7	2.0	3.2	2.7	7.1	4.0	2.1	1.5	1.2
17	1.0	1.0	1.0	1.6	2.0	3.1	3.0	7.1	3.6	2.1	1.7	1.3
18	.98	.99	1.1	1.5	2.6	3.1	3.2	6.8	3.4	2.1	2.0	1.3
19	.97	.99	1.1	1.5	2.5	4.5	3.1	6.3	3.3	2.0	1.8	1.2
20	.96	1.0	1.1	1.5	2.5	5.8	3.1	6.1	3.3	2.0	1.6	1.2
21	.96	1.0	1.1	1.5	2.3	6.1	3.0	5.9	3.5	2.0	1.5	1.2
22	.95	1.3	1.1	1.5	2.2	6.3	2.8	5.5	3.3	1.9	1.5	1.3
23	.96	1.1	1.3	1.9	2.4	5.0	2.9	5.3	3.3	1.9	1.5	1.2
24	.96	1.1	1.2	2.8	4.3	4.3	3.1	5.0	3.2	1.8	1.5	1.2
25	1.3	1.0	1.3	4.0	5.3	3.8	2.9	5.0	3.1	1.8	1.4	1.2
26	1.1	1.0	1.2	2.9	3.8	3.5	2.8	4.9	3.2	1.8	1.4	1.2
27	1.2	1.0	1.2	2.4	3.1	3.4	2.9	4.7	3.4	1.7	1.4	1.2
28	1.1	1.0	1.2	2.3	2.8	3.3	2.8	4.5	3.0	1.7	1.4	1.2
29	1.0	1.0	1.4	2.2	---	3.2	2.7	4.4	2.9	1.7	1.4	1.1
30	.99	1.0	1.8	2.2	---	3.1	2.6	4.3	2.8	1.7	1.4	1.2
31	.98	---	1.5	2.1	---	3.1	---	4.2	---	2.2	1.4	---
TOTAL	31.24	31.32	35.9	56.0	68.1	123.3	89.9	212.8	108.4	66.8	48.3	38.1
MEAN	1.01	1.04	1.16	1.81	2.43	3.98	3.00	6.86	3.61	2.15	1.56	1.27
MAX	1.3	1.3	1.8	4.0	5.3	9.2	4.4	18	5.7	2.7	2.1	1.4
MIN	.95	.97	1.0	1.4	1.9	2.5	2.6	2.7	2.8	1.7	1.4	1.1
CFSM	.43	.44	.49	.77	1.03	1.69	1.28	2.92	1.54	.92	.66	.54
IN.	.49	.50	.57	.89	1.08	1.95	1.42	3.37	1.72	1.06	.76	.60

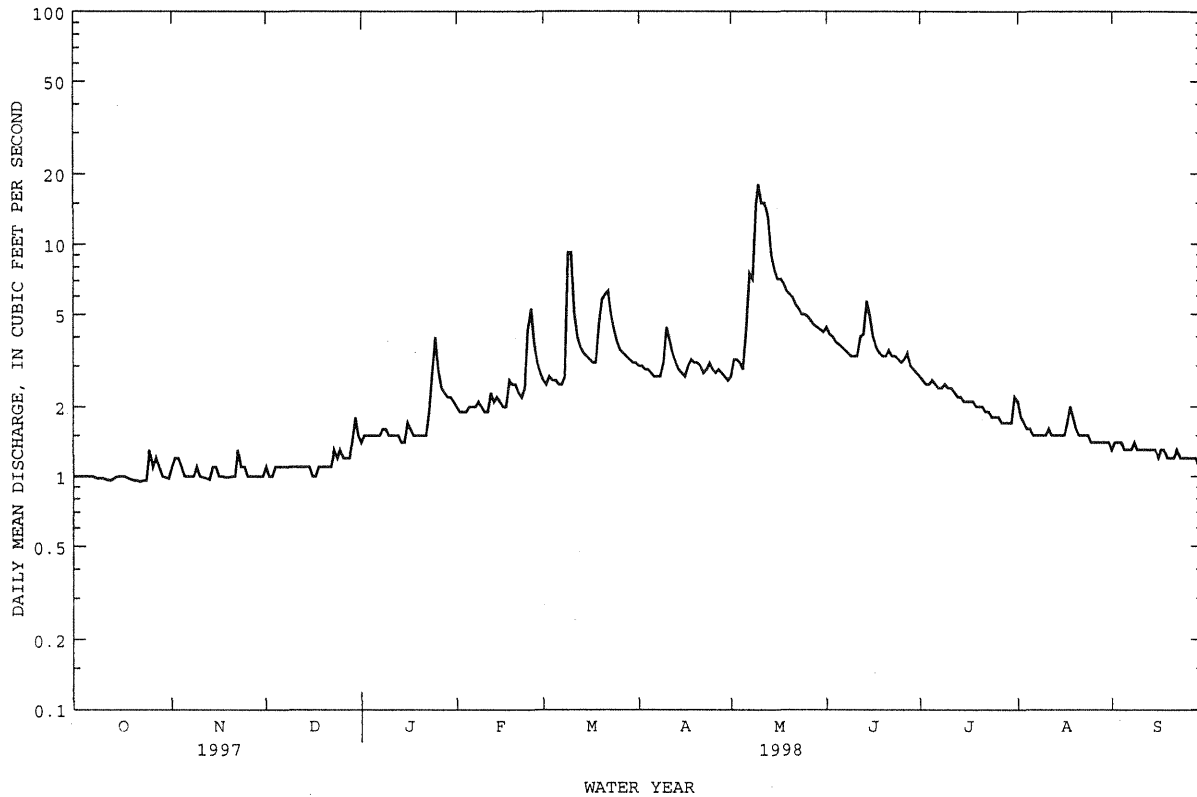
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1998, BY WATER YEAR (WY)

	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
MEAN	1.58	1.73	2.08	2.31	2.43	2.92	2.95	2.71	2.21	1.88	1.84	1.65
MAX	4.45	4.82	5.75	4.78	5.69	5.67	5.74	6.86	5.35	4.15	5.65	4.31
(WY)	1959	1973	1973	1973	1973	1979	1984	1998	1979	1958	1958	1958
MIN	.80	.95	1.00	.98	1.13	1.25	1.24	1.17	1.05	1.00	.91	.71
(WY)	1996	1986	1966	1981	1989	1966	1985	1995	1995	1977	1995	1995

DELAWARE RIVER BASIN

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ--Continued
(Hydrologic bench-mark station)

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR	FOR 1998 WATER YEAR	WATER YEARS 1954 - 1998
ANNUAL TOTAL	687.26	910.16	
ANNUAL MEAN	1.88	2.49	2.19
HIGHEST ANNUAL MEAN			3.85
HIGHEST DAILY MEAN			1.17
LOWEST ANNUAL MEAN			1.17
HIGHEST DAILY MEAN	5.3 Apr 1	18 May 10	20 Feb 28 1958
LOWEST DAILY MEAN	.95 Oct 22	.95 Oct 22	.50 Oct 13 1995
ANNUAL SEVEN-DAY MINIMUM	.96 Oct 18	.96 Oct 18	.58 Oct 8 1995
INSTANTANEOUS PEAK FLOW		20 May 10	35 Aug 25 1958
INSTANTANEOUS PEAK STAGE		2.04 May 10	2.33 Aug 25 1958
INSTANTANEOUS LOW FLOW		.94 Oct 8	.49 Oct 13 1995
ANNUAL RUNOFF (CFSM)	.80	1.06	.93
ANNUAL RUNOFF (INCHES)	10.88	14.41	12.66
10 PERCENT EXCEEDS	3.0	4.3	3.7
50 PERCENT EXCEEDS	1.5	1.9	1.9
90 PERCENT EXCEEDS	1.0	1.0	1.1



01466900 GREENWOOD BRANCH AT NEW LISBON, NJ

LOCATION.--Lat 39°57'22", long 74°37'41", Burlington County, Hydrologic Unit 02040202, at bridge on Fourmile Rd. (State Route 646) in New Lisbon, 0.5 mi. upstream from mouth, 0.7 mi south of State Route 530.

DRAINAGE AREA.--77.9 mi².

PERIOD OF RECORD.--Occasional miscellaneous discharge measurements, water years 1954, 1973. May 1998 to September 1998.

GAGE.--Water-stage recorder. Datum of gage is 50.0 ft above sea level (from topographic map).

REMARKS.--Records good except for estimated daily discharges, which are fair. Water diverted for water supply to Fort Dix Army Base just upstream from gage. Several measurements of water temperature, other than those published, were made during the year. Satellite rain-gage and gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	e108	78	55	31
2	---	---	---	---	---	---	---	---	105	74	45	31
3	---	---	---	---	---	---	---	---	104	68	38	34
4	---	---	---	---	---	---	---	---	101	63	35	33
5	---	---	---	---	---	---	---	---	94	65	34	32
6	---	---	---	---	---	---	---	---	88	66	33	31
7	---	---	---	---	---	---	---	---	84	61	33	31
8	---	---	---	---	---	---	---	---	83	61	33	35
9	---	---	---	---	---	---	---	---	80	64	32	32
10	---	---	---	---	---	---	---	---	77	66	32	31
11	---	---	---	---	---	---	---	a940	73	62	37	32
12	---	---	---	---	---	---	---	---	74	56	36	32
13	---	---	---	---	---	---	---	---	88	52	34	32
14	---	---	---	---	---	---	---	---	105	47	33	32
15	---	---	---	---	---	---	---	---	124	45	32	31
16	---	---	---	---	---	---	---	---	142	44	32	31
17	---	---	---	---	---	---	---	---	137	43	35	31
18	---	---	---	---	---	---	---	a267	123	42	66	32
19	---	---	---	---	---	---	---	---	116	40	68	31
20	---	---	---	---	---	---	---	---	101	42	53	30
21	---	---	---	---	---	---	---	---	91	41	44	29
22	---	---	---	---	---	---	---	---	89	37	40	31
23	---	---	---	---	---	---	---	---	88	34	39	32
24	---	---	---	---	---	---	---	---	92	33	36	31
25	---	---	---	---	---	---	---	---	93	31	34	31
26	---	---	---	---	---	---	---	---	88	30	34	31
27	---	---	---	---	---	---	---	---	89	30	43	31
28	---	---	---	---	---	---	---	---	92	29	38	30
29	---	---	---	---	---	---	---	---	88	30	40	29
30	---	---	---	---	---	---	---	---	82	29	40	29
31	---	---	---	---	---	---	---	---	---	48	35	---
TOTAL	---	---	---	---	---	---	---	---	2899	1511	1219	939
MEAN	---	---	---	---	---	---	---	---	96.6	48.7	39.3	31.3
MAX	---	---	---	---	---	---	---	---	142	78	68	35
MIN	---	---	---	---	---	---	---	---	73	29	32	29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 1998, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	---	---	---	96.6	48.7	39.3	31.3
MAX	---	---	---	---	---	---	---	---	96.6	48.7	39.3	31.3
(WY)	---	---	---	---	---	---	---	---	1998	1998	1998	1998
MIN	---	---	---	---	---	---	---	---	96.6	48.7	39.3	31.3
(WY)	---	---	---	---	---	---	---	---	1998	1998	1998	1998

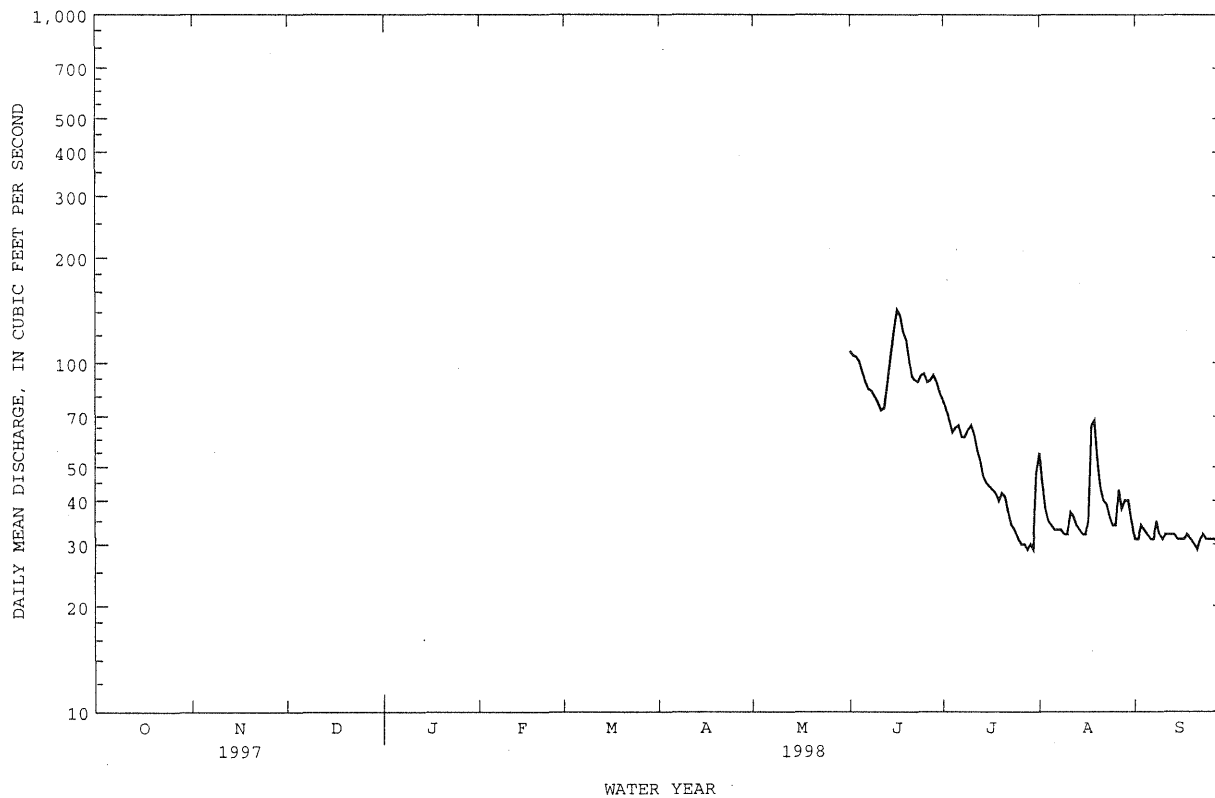
01466900 GREENWOOD BRANCH AT NEW LISBON, NJ--Continued

SUMMARY STATISTICS

FOR MAY TO SEP 1998

HIGHEST DAILY MEAN	142	Jun 16
LOWEST DAILY MEAN	29	Jul 28
ANNUAL SEVEN-DAY MINIMUM	30	Jul 24
INSTANTANEOUS PEAK FLOW	940a	May 11
INSTANTANEOUS PEAK STAGE	7.78a	May 11
INSTANTANEOUS LOW FLOW	28	Sep 1

a Observed by field personnel before gage established..
e Estimated



LOCATION.--Lat 39°58'10", long 74°41'05", Burlington County, Hydrologic Unit 02040202, on right bank at downstream side of bridge on Hanover Street in Pemberton, 12 mi upstream from confluence with South Branch Rancocas Creek.

PERIOD OF RECORD.--September 1921 to current year.

REVISED RECORDS.--WSP 1302: 1922-23. WSP 1382: 1933. WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder above concrete dams. Datum of gage is 31.19 ft above sea level. Prior to June 9, 1923, nonrecording gage and June 9, 1923 to Aug. 9, 1951, water-stage recorder at site 600 ft downstream at datum 6.54 ft lower.

REMARKS.--Records good. Flow regulated occasionally by cranberry bogs and ponds above station. Water diverted for water supply at Fort Dix army base upstream from gage. Several measurements of water temperature, other than those published, were made during the year. Gage- height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 10	1715	782	2.69	May 11	0830	*1,490	*3.60
Mar 22	1330	695	2.57				

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	105	104	309	230	330	282	187	211	151	113	44
2	64	120	94	258	207	302	289	227	214	138	86	51
3	63	123	93	226	210	302	253	256	211	115	72	65
4	58	139	95	206	205	298	210	284	200	123	66	62
5	57	150	92	190	203	278	206	291	183	130	62	57
6	55	125	84	173	213	252	191	293	169	127	61	52
7	55	122	80	171	197	232	184	321	159	120	60	49
8	60	118	77	203	191	231	187	441	155	121	63	59
9	67	116	78	213	181	479	228	669	149	134	57	54
10	64	110	81	205	173	744	356	1160	142	131	57	50
11	56	105	79	188	175	734	419	1460	139	120	66	49
12	54	101	77	170	234	593	361	1370	167	109	59	49
13	52	93	77	159	233	446	313	1180	196	104	55	49
14	52	102	76	147	246	366	289	943	256	97	55	49
15	54	111	71	143	223	317	267	701	302	89	54	49
16	59	111	70	189	196	287	265	509	344	88	54	49
17	55	106	70	196	193	277	268	472	312	88	64	49
18	54	100	70	206	268	270	240	427	233	83	102	49
19	52	97	69	197	301	355	210	377	241	78	108	49
20	53	93	68	184	305	465	281	337	205	79	80	48
21	52	92	68	168	275	581	283	320	196	79	69	46
22	51	135	61	153	242	680	272	303	185	72	67	48
23	49	137	87	224	252	628	241	276	185	69	61	51
24	50	143	93	415	441	506	244	244	194	73	56	47
25	72	142	124	547	545	423	241	251	188	69	53	46
26	74	155	123	491	523	350	224	264	185	65	66	49
27	84	140	125	376	439	311	230	262	198	61	100	49
28	77	122	126	329	372	290	221	251	189	61	90	46
29	84	109	145	315	---	269	208	230	180	64	49	44
30	107	106	260	302	---	262	192	215	174	64	50	44
31	109	---	287	267	---	280	---	199	---	125	48	---
TOTAL	1945	3528	3104	7520	7473	12138	7655	14720	6062	3027	2103	1502
MEAN	62.7	118	100	243	267	392	255	475	202	97.6	67.8	50.1
MAX	109	155	287	547	545	744	419	1460	344	151	113	65
MIN	49	92	61	143	173	231	184	187	139	61	48	44
CFSM	.53	1.00	.85	2.06	2.26	3.32	2.16	4.02	1.71	.83	.57	.42
IN.	.61	1.11	.98	2.37	2.36	3.83	2.41	4.64	1.91	.95	.66	.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1998, BY WATER YEAR (WY)

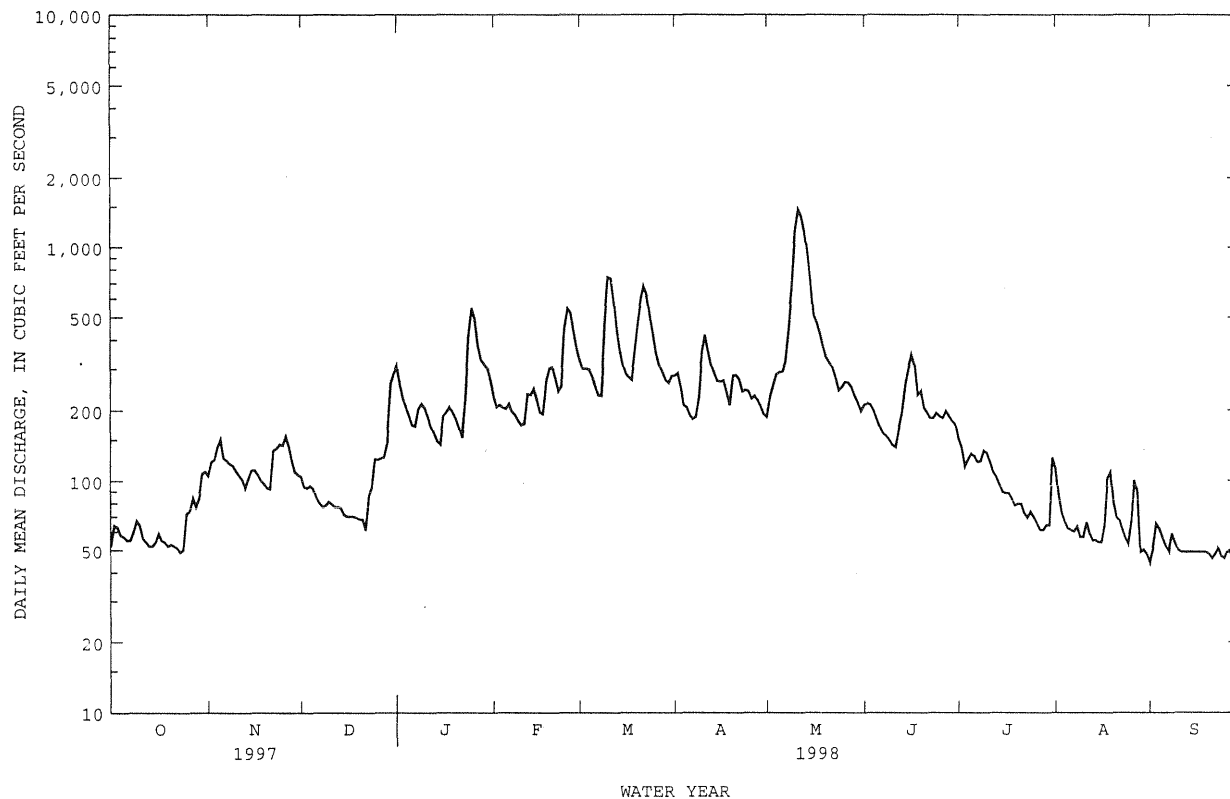
MEAN	119	151	174	200	216	249	239	198	143	123	132	115
MAX	365	430	434	479	445	472	475	475	297	401	426	341
(WY)	1928	1973	1973	1979	1939	1994	1984	1998	1968	1938	1958	1971
MIN	38.7	45.7	54.4	62.1	92.2	105	85.4	72.0	54.1	44.1	35.6	36.5
(WY)	1923	1923	1966	1981	1931	1985	1985	1992	1995	1957	1995	1995

DELAWARE RIVER BASIN

01467000 NORTH BRANCH RANOCAS CREEK AT PEMBERTON, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1922 - 1998	
ANNUAL TOTAL	58328		70777		171	
ANNUAL MEAN	160		194		286	1978
HIGHEST ANNUAL MEAN					92.3	1995
LOWEST ANNUAL MEAN					1690	Aug 21 1939
HIGHEST DAILY MEAN	471	Apr 2	1460	May 11	9.0	Sep 29 1932
LOWEST DAILY MEAN	49	Sep 28	44	Sep 1	27	Oct 2 1922
ANNUAL SEVEN-DAY MINIMUM	52	Oct 18	46	Sep 24	1730	Aug 21 1939
INSTANTANEOUS PEAK FLOW			1490	May 11	10.77a	Aug 21 1939
INSTANTANEOUS PEAK STAGE			3.60	May 11	9.0	Sep 29 1932
INSTANTANEOUS LOW FLOW			39	Sep 1	1.45	
ANNUAL RUNOFF (CFSM)	1.35		1.64		19.72	
ANNUAL RUNOFF (INCHES)	18.39		22.31		313	
10 PERCENT EXCEEDS	308		355		141	
50 PERCENT EXCEEDS	124		147		62	
90 PERCENT EXCEEDS	57		53			

a From high-water mark, site and datum then in use.



01467081 SOUTH BRANCH PENNSAUKEN CREEK AT CHERRY HILL, NJ

LOCATION.--Lat 39°56'30", long 75°00'05", Camden County, Hydrologic Unit 02040202, on left bank on downstream wingwall of bridge on Mill Road in Cherry Hill, 1.1 mi south of Maple Shade and 3.8 mi upstream from confluence with the North Branch Pennsauken Creek.

DRAINAGE AREA.--8.98 mi².

PERIOD OF RECORD.--October 1967 to September 1976, October 1977 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area. WDR NJ-90-1: 1968 (P), 1970 (P), 1971 (P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 8.12 ft above sea level.

REMARKS.--Records fair. Diurnal fluctuations from unknown source. Several measurements of water temperature, other than those published, were made during the year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 23	2015	*352	*7.65	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	52	17	10	8.9	12	10	9.2	36	13	15	4.0
2	3.5	35	12	8.6	8.3	9.5	18	23	7.4	11	8.3	5.4
3	3.9	12	6.2	8.8	8.1	44	10	13	6.4	8.1	6.6	9.4
4	3.7	4.9	15	8.2	9.1	18	9.7	8.2	5.7	14	6.5	4.9
5	3.9	6.1	9.2	7.7	39	12	9.4	12	5.5	28	5.8	4.8
6	3.8	5.1	6.0	7.5	27	11	9.6	11	5.4	9.1	5.5	4.2
7	4.0	6.9	5.3	37	12	11	9.3	10	5.1	8.5	5.6	4.1
8	3.8	8.5	5.2	50	10	41	12	90	5.0	35	5.2	18
9	4.2	36	5.0	14	8.9	135	58	128	5.4	22	5.1	4.4
10	6.3	10	13	7.7	8.2	29	77	75	5.2	10	8.0	3.9
11	4.4	7.1	24	6.5	9.6	17	17	86	5.0	7.9	34	3.5
12	4.2	6.4	12	6.3	60	14	12	64	92	6.9	7.2	3.3
13	4.4	8.0	6.9	8.4	15	12	9.6	28	21	6.6	5.7	3.0
14	4.8	37	5.6	8.4	10	12	9.1	15	36	6.5	5.3	3.1
15	12	25	4.8	18	8.6	11	8.6	12	12	6.6	4.7	3.1
16	25	9.2	4.4	71	7.9	10	8.1	10	8.6	6.5	4.6	3.6
17	7.0	6.8	4.7	14	34	10	21	9.0	15	23	10	13
18	5.7	5.1	4.2	9.1	73	20	18	8.2	6.9	29	18	5.4
19	5.9	4.6	4.2	7.7	20	111	16	7.6	5.6	7.8	10	4.1
20	8.7	4.6	4.3	6.7	13	32	30	7.3	5.3	6.6	5.7	4.0
21	7.3	8.0	4.1	6.3	10	80	10	6.8	4.8	6.5	5.0	3.7
22	8.9	83	4.8	5.7	9.2	44	8.6	6.2	4.9	5.9	4.4	7.0
23	9.1	12	64	133	54	23	13	5.9	6.0	5.7	4.5	5.4
24	11	7.1	18	125	94	17	17	5.6	5.5	8.5	4.1	4.1
25	61	8.1	77	37	31	14	8.1	6.7	4.7	5.5	4.1	4.3
26	22	7.3	19	17	15	13	11	6.5	54	4.8	4.1	4.3
27	55	9.5	22	12	12	12	21	5.6	45	4.7	7.5	4.2
28	14	11	35	37	11	12	8.4	5.5	9.5	5.0	4.7	4.1
29	8.6	14	43	24	---	11	7.2	5.5	7.9	5.0	4.1	4.0
30	6.8	8.8	88	13	---	10	7.0	8.3	15	4.7	3.9	3.7
31	4.8	---	18	10	---	9.9	---	5.1	---	92	3.7	---
TOTAL	331.8	459.1	561.9	735.6	626.8	817.4	483.7	694.2	451.8	414.4	226.9	154.0
MEAN	10.7	15.3	18.1	23.7	22.4	26.4	16.1	22.4	15.1	13.4	7.32	5.13
MAX	61	83	88	133	94	135	77	128	92	92	34	18
MIN	3.5	4.6	4.1	5.7	7.9	9.5	7.0	5.1	4.7	4.7	3.7	3.0
CFSM	1.19	1.70	2.02	2.64	2.49	2.94	1.80	2.49	1.68	1.49	.82	.57
IN.	1.37	1.90	2.33	3.05	2.60	3.39	2.00	2.88	1.87	1.72	.94	.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1998, BY WATER YEAR (WY)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MEAN	13.5	17.4	22.7	22.9	20.2	23.9	22.1	19.3	15.1	17.8	16.2	13.6																			
MAX	26.0	48.8	60.4	50.5	44.7	46.5	49.8	47.0	33.4	46.5	58.2	38.8																			
(WY)	1990	1973	1997	1979	1994	1983	1989	1989	1989	1989	1978	1975																			
MIN	5.83	6.99	7.05	6.55	9.19	9.29	8.08	8.24	6.50	6.92	4.17	4.71																			
(WY)	1995	1977	1981	1981	1968	1985	1985	1993	1995	1982	1995	1968																			

SUMMARY STATISTICS

FOR 1997 CALENDAR YEAR

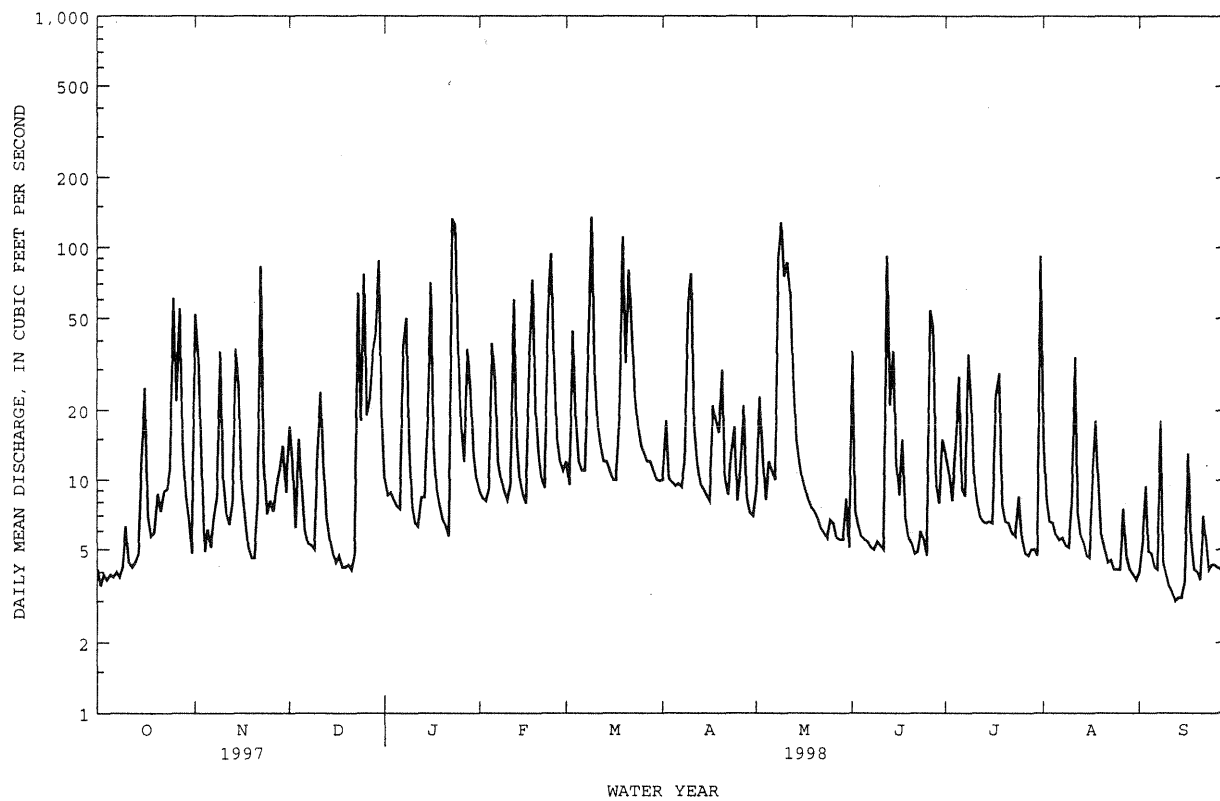
FOR 1998 WATER YEAR

WATER YEARS 1968 - 1998

ANNUAL TOTAL	6390.2	5957.6	
ANNUAL MEAN	17.5	16.3	
HIGHEST ANNUAL MEAN			18.8
LOWEST ANNUAL MEAN			27.3
HIGHEST DAILY MEAN	154	Jan 25	135
LOWEST DAILY MEAN	3.4	Jul 20	3.0
ANNUAL SEVEN-DAY MINIMUM	3.7	Jul 15	3.4
INSTANTANEOUS PEAK FLOW			352
INSTANTANEOUS PEAK STAGE			7.65
INSTANTANEOUS LOW FLOW			1.9
ANNUAL RUNOFF (CFSM)	1.95		1.82
ANNUAL RUNOFF (INCHES)	26.47		24.68
10 PERCENT EXCEEDS	42		37
50 PERCENT EXCEEDS	9.2		8.6
90 PERCENT EXCEEDS	4.3		4.2
			1500
			11.63a
			1.8
			2.09
			28.43
			36
			9.7
			5.0

a From high-water marks.

01467081 SOUTH BRANCH PENNSAUKEN CREEK AT CHERRY HILL, NJ--Continued



LOCATION.--Lat 39°54'11", long 75°01'19", Camden County, Hydrologic Unit 02040202, on right bank of Wallworth Lake in Pennypacker Park, 200 ft upstream from bridge on State Highway 41 (Kings Highway) in Haddonfield, 0.6 mi upstream from North Branch Cooper River, and 7.7 mi upstream from mouth.

GAGE. . Water-stage recorder above concrete dam. Datum of gage is 9.29 ft above sea level.

REMARKS:--Records good. Bypass gates were installed on both ends of the dam in August 1987. No gate openings this year. Occasional regulation at low flow from Kirkwood Lake, other small lakes and wastewater treatment plants (prior to summer 1987). Several measurements of water temperature were made during the year. Gage-height telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 23	2115	*548	*2.79	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	44	14	17	17	21	19	16	65	13	33	7.0
2	6.5	36	11	14	16	20	26	35	18	11	14	7.8
3	6.3	23	11	14	15	53	18	27	14	10	11	21
4	6.1	13	17	13	16	32	17	19	12	13	9.8	9.0
5	6.1	10	12	15	50	23	15	18	11	19	9.2	8.3
6	6.1	9.2	11	14	33	20	14	27	11	10	8.9	7.8
7	6.1	11	10	27	20	20	14	21	10	8.9	8.6	7.7
8	6.0	16	10	42	17	62	15	169	10	37	8.5	22
9	6.1	41	10	22	16	240	86	222	10	23	8.2	9.5
10	6.0	16	14	15	15	51	117	134	10	18	12	8.6
11	5.6	11	22	15	18	27	32	150	10	11	44	7.7
12	5.7	10	14	14	85	22	21	113	131	9.7	13	7.4
13	6.2	9.5	12	13	28	20	17	53	43	8.8	9.9	7.1
14	6.4	34	11	13	20	20	17	33	76	8.5	8.8	7.2
15	9.0	28	10	20	17	19	16	26	27	8.4	8.7	7.3
16	13	16	10	82	16	18	16	21	19	8.5	8.2	7.2
17	8.8	12	10	26	48	17	38	19	25	9.4	13	18
18	7.9	11	10	18	100	27	35	18	15	10	38	9.5
19	8.8	11	10	15	35	169	30	17	13	8.5	38	9.3
20	7.9	10	10	14	25	53	51	16	12	8.3	12	8.6
21	7.0	12	10	13	21	129	24	16	25	8.3	9.2	8.0
22	6.7	95	10	13	20	68	20	14	30	8.3	8.2	10
23	6.4	28	58	178	84	34	23	13	15	8.2	7.9	7.9
24	6.4	16	21	170	166	24	28	13	14	9.5	7.8	7.4
25	66	12	73	53	54	20	18	15	13	8.2	7.8	7.3
26	33	11	25	27	27	20	18	15	65	8.0	7.4	7.8
27	51	11	24	20	22	20	34	14	38	7.9	8.0	7.6
28	16	12	36	51	22	19	17	13	15	7.8	7.5	7.3
29	11	12	50	35	---	19	15	14	13	7.5	7.2	7.3
30	9.4	11	101	22	---	19	14	21	14	7.6	7.4	7.3
31	9.0	---	29	18	---	19	---	14	---	160	7.4	---
TOTAL	363.6	591.7	676	1023	1023	1325	825	1316	784	495.3	402.6	275.9
MEAN	11.7	19.7	21.8	33.0	36.5	42.7	27.5	42.5	26.1	16.0	13.0	9.20
MAX	66	95	101	178	166	240	117	222	131	160	44	22
MIN	5.6	9.2	10	13	15	17	14	13	10	7.5	7.2	7.0
CFSM	.69	1.16	1.28	1.94	2.15	2.51	1.62	2.50	1.54	.94	.76	.54
IN.	.80	1.29	1.48	2.24	2.24	2.90	1.81	2.88	1.72	1.08	1.88	.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1998, BY WATER YEAR (WY)

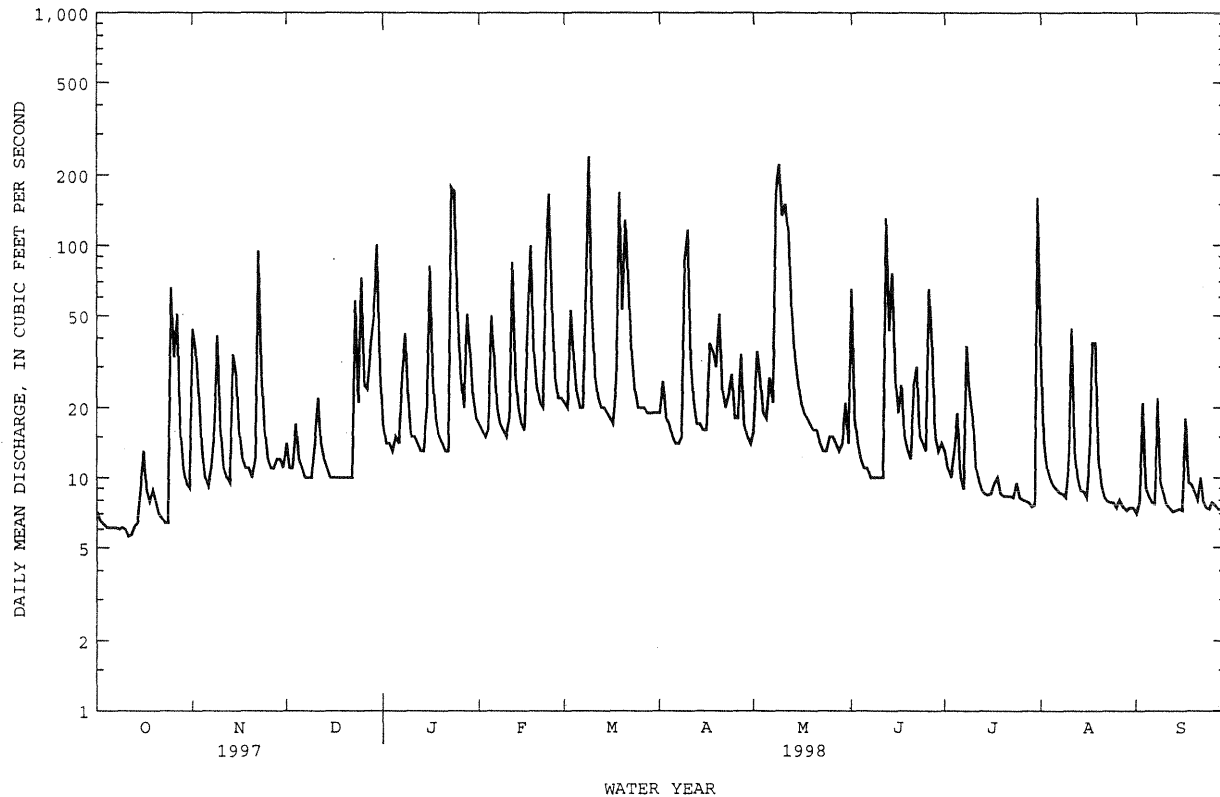
MEAN	26.6	31.3	38.4	39.1	37.1	42.4	41.0	36.5	28.8	31.5	29.2	25.5
MAX	46.8	79.6	85.3	97.8	76.1	78.9	99.4	66.7	54.9	66.8	97.6	65.8
(WY)	1976	1973	1997	1978	1979	1984	1983	1983	1972	1975	1971	1975
MIN	9.26	11.0	14.3	14.6	18.9	23.2	15.1	14.2	10.9	12.9	7.79	7.97
(WY)	1966	1992	1966	1992	1992	1981	1992	1965	1988	1993	1966	1997

DELAWARE RIVER BASIN

01467150 COOPER RIVER AT HADDONFIELD, NJ--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1964 - 1998	
ANNUAL TOTAL	8862.0		9101.1		33.9	
ANNUAL MEAN	24.3		24.9		50.6	
HIGHEST ANNUAL MEAN					19.2	
LOWEST ANNUAL MEAN					1.2	
HIGHEST DAILY MEAN	216	Jan 25	240	Mar 9	1510	Aug 28 1971
LOWEST DAILY MEAN	5.6	Oct 11	5.6	Oct 11	1.2	Jun 27 1964
ANNUAL SEVEN-DAY MINIMUM	5.9	Oct 6	5.9	Oct 6	5.6	Aug 24 1966
INSTANTANEOUS PEAK FLOW			548	Jan 23	3300	Aug 28 1971
INSTANTANEOUS PEAK STAGE			2.79	Jan 23	5.46	Aug 28 1971
INSTANTANEOUS LOW FLOW			5.4	Oct 11	.80a	Nov 13 1972
ANNUAL RUNOFF (CFSM)	1.43		1.47		2.00	
ANNUAL RUNOFF (INCHES)	19.39		19.92		27.13	
10 PERCENT EXCEEDS	44		51		58	
50 PERCENT EXCEEDS	16		15		22	
90 PERCENT EXCEEDS	7.3		7.6		12	

a Regulation from unknown source.



LOCATION.--Lat 39°58'04", long 75°11'20", Philadelphia County, Hydrologic Unit 02040203, on right bank 150 ft upstream from Fairmont Dam, 1,500 ft upstream from bridge on Spring Garden Street in Philadelphia, and 8.7 mi upstream from mouth.

PERIOD OF RECORD.--October 1931 to current year. Records for January 1898 to December 1912, published in WSP 35, 48, 65, 82, 97, 125, 166, 202, 214, 261, 301, and 381 have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder, crest-stage gage, and concrete control. Datum of gage is 5.74 ft above sea level. Prior to Nov. 25, 1956, water-stage recorder at site on right bank just upstream from Fairmont Dam at same datum. Nov. 26, 1956, to Oct. 6, 1966, water-stage recorder at site on left bank 40 ft upstream from Fairmont Dam at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Still Creek Reservoir (station 01469200) since February 1933, Blue Marsh Lake (station 01470870) since April 1979, Green Lane Reservoir (station 01472200) since December 1956 and to some extent by Lake Ontelaunee. Records of discharge do not include diversion above station by city of Philadelphia for municipal water supply. Satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 4, 1869 reached a stage of 17.0 ft, discharge, about 135,000 ft³/s. Flood of Mar. 1, 1902 reached a stage of 14.8 ft, discharge, about 98,000 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 18,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 24	0315	*19,700	*8.81	Apr. 10	0815	18,300	8.64
Apr. 2	0545	18,200	8.63	May 12	1315	18,900	8.71

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	881	1280	1150	2410	3360	4690	4290	3250	2790	2550	1180	764
2	782	1880	1260	1700	3070	4410	12600	3600	2770	2430	944	740
3	720	1770	1320	1650	2800	4600	5130	4100	2870	2080	886	927
4	737	1450	1300	1790	2560	5360	3890	3710	2750	1920	814	1080
5	972	1190	1220	1580	4020	4180	3390	3750	2020	1690	781	948
6	998	1070	1420	1520	7430	3690	3130	5230	1830	1580	769	795
7	953	1030	1170	1950	5630	3360	2940	5370	1890	1420	724	746
8	927	1230	1140	4410	4600	3400	2850	6370	1650	1950	858	1380
9	794	1700	1060	9540	4000	11300	3540	12000	1540	3640	804	974
10	665	1740	1070	8450	3600	13100	14700	12300	1510	2870	840	891
11	650	1440	1220	6360	3260	10400	8800	13300	1450	2250	1320	745
12	749	1330	1290	5100	7220	7830	6460	17000	2970	1690	1510	970
13	797	1200	1360	3890	6440	6040	5310	13600	5630	1540	1160	970
14	775	1360	1150	3100	4610	5070	4500	9940	9770	1400	930	971
15	921	1980	1120	2740	3890	4470	4010	7510	6480	1310	965	914
16	1030	1730	1040	5750	3510	4000	3760	6060	4690	1300	968	723
17	870	1430	1000	5230	3420	3600	3470	5220	4070	1280	1260	699
18	863	1290	960	4520	5710	3410	3320	4680	3380	1500	2400	674
19	901	1220	939	4420	6580	8590	3190	4160	2810	1200	1990	676
20	793	1150	913	3800	5520	7590	5650	3750	2370	1170	1630	661
21	701	1070	915	3650	4730	11800	6510	3430	2260	1090	1260	668
22	661	1970	938	3230	4200	11500	5430	3210	2170	1050	1100	708
23	632	1950	1240	5500	4010	8940	4690	2990	2150	1010	995	694
24	641	1560	1290	14000	9160	7250	4070	2790	2370	1100	1300	567
25	1010	1330	2640	7980	11500	6150	3650	2700	5480	1040	1480	612
26	1160	1270	3150	6420	8250	5400	3370	2870	4540	984	1980	611
27	1670	1110	2310	5310	6260	4750	6820	2580	4510	1010	2130	587
28	1390	1140	2310	5040	5200	4210	5130	2490	3380	967	1290	605
29	1050	1100	2300	5510	---	3850	3960	2200	3040	944	986	536
30	914	1100	5340	4230	---	3570	3420	2200	2860	893	850	562
31	810	---	3720	3740	---	3230	---	2170	---	1080	848	---
TOTAL	27417	42070	49255	144520	144540	189740	151980	174530	98000	47938	36952	23398
MEAN	884	1402	1589	4662	5162	6121	5066	5630	3267	1546	1192	780
MAX	1670	1980	5340	14000	11500	13100	14700	17000	9770	3640	2400	1380
MIN	632	1030	913	1520	256							

MEAN	1390	2352	3206	3377	3647	4865	4288	3145	2118	1645	1384	1382
MAX	5624	6272	11150	11400	8136	13320	11620	9943	11640	6434	7980	4863
(WY)	1997	1973	1997	1979	1939	1936	1983	1989	1972	1984	1933	1960
MIN	89.4	223	444	340	647	1552	1237	693	261	116	140	117
(WY)	1942	1932	1981	1981	1934	1981	1985	1965	1965	1966	1966	1932

SCHUYLKILL RIVER BASIN

01474500 SCHUYLKILL RIVER AT PHILADELPHIA, PA--Continued

SUMMARY STATISTICS	FOR 1997 CALENDAR YEAR		FOR 1998 WATER YEAR		WATER YEARS 1932 - 1998	
ANNUAL TOTAL	829457		1130340			
ANNUAL MEAN	2272		3097		2729	
HIGHEST ANNUAL MEAN					4791	1984
LOWEST ANNUAL MEAN					1014	1965
HIGHEST DAILY MEAN	16000	Jan 25	17000	May 12	93400	Jun 23 1972
LOWEST DAILY MEAN	627	Jul 19	536	Sep 29	.60	Sep 2 1966
ANNUAL SEVEN-DAY MINIMUM	680	Jul 15	583	Sep 24	24	Sep 28 1941
INSTANTANEOUS PEAK FLOW			19700	Jan 24	103000	Jun 23 1972
INSTANTANEOUS PEAK STAGE			8.81	Jan 24	14.65	Jun 23 1972
INSTANTANEOUS LOW FLOW			382	Sep 30	.00	Sep 2 1966
10 PERCENT EXCEEDS	4170		6430		5890	
50 PERCENT EXCEEDS	1630		2080		1670	
90 PERCENT EXCEEDS	796		796		429	

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ

LOCATION.--Lat 39°44'28", long 75°15'33", Gloucester County, Hydrologic Unit 02040202, on right bank 25 ft downstream from County Bridge Route 607 on Gibbstown-Harrisonville Road (Tomlin Station Road), 1.8 mi west of Mullica Hill, and 2.8 mi east of Swedesboro.

DRAINAGE AREA.--26.9 mi².

PERIOD OF RECORD.--May 1966 to current year.

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level. Prior to July 28, 1969, at datum 7.96 ft higher. July 28, 1969 to Sept. 30, 1969, at datum 5.96 ft higher.

REMARKS.--Records fair. Several measurements of water temperature, other than those published, were made during the year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 24	0530	*436	*11.97	Jun 14	0615	339	11.40

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	34	23	32	32	36	35	28	32	19	23	13
2	13	35	22	29	31	35	36	31	23	18	16	14
3	13	26	21	29	30	67	33	32	20	17	15	22
4	13	20	25	28	31	74	33	30	19	17	14	14
5	13	18	25	26	38	44	33	28	20	17	14	13
6	12	18	23	25	36	37	32	27	19	16	13	13
7	12	20	22	27	31	34	31	28	18	16	13	13
8	12	38	22	40	30	51	31	90	19	27	13	42
9	12	37	23	32	28	194	48	144	19	25	13	15
10	12	26	26	26	27	83	96	106	18	20	15	12
11	12	22	35	24	28	48	50	92	19	17	25	11
12	12	20	29	23	62	40	39	119	99	16	15	11
13	13	20	27	23	39	37	35	85	82	15	14	11
14	13	32	26	22	31	36	34	50	216	14	13	11
15	13	33	24	25	29	34	33	42	53	15	13	11
16	16	25	24	62	28	32	31	36	38	15	13	11
17	14	22	25	40	31	28	56	33	33	15	14	21
18	15	20	25	31	51	33	75	30	27	15	16	12
19	15	20	25	28	54	140	41	29	24	14	17	12
20	16	20	25	27	51	93	70	27	22	14	15	11
21	14	20	25	25	49	138	44	27	21	14	14	11
22	14	64	24	24	48	92	37	25	21	15	13	15
23	14	37	50	73	47	60	35	23	23	14	13	12
24	14	27	34	269	69	50	35	23	23	14	13	11
25	47	24	63	77	79	45	31	23	21	13	13	11
26	31	23	41	50	57	43	30	23	29	13	13	12
27	43	22	36	42	50	41	39	22	33	13	13	11
28	24	22	46	54	39	39	32	21	23	13	13	11
29	19	22	44	57	---	38	29	21	20	13	13	11
30	17	21	90	43	---	36	28	31	21	13	13	11
31	16	---	47	36	---	35	---	23	---	82	13	---
TOTAL	517	788	997	1349	1156	1793	1212	1349	1055	559	448	409
MEAN	16.7	26.3	32.2	43.5	41.3	57.8	40.4	43.5	35.2	18.0	14.5	13.6
MAX	47	64	90	269	79	194	96	144	216	82	25	42
MIN	12	18	21	22	27	28	28	21	18	13	13	11
CFSM	.62	.98	1.20	1.62	1.53	2.15	1.50	1.62	1.31	.67	.54	.51
IN.	.71	1.09	1.38	1.87	1.60	2.48	1.68	1.87	1.46	.77	.62	.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1998, BY WATER YEAR (WY)

	MEAN	28.4	34.6	46.8	51.6	49.7	55.3	53.4	42.0	34.0	31.7	29.3	24.8
MAX	65.2	93.9	144	123	115	132	134	72.6	77.7	112	121	71.9	
(WY)	1990	1973	1997	1978	1979	1994	1983	1989	1975	1975	1967	1971	
MIN	13.0	18.0	18.8	20.7	23.6	22.7	21.3	15.9	10.7	6.01	5.89	11.7	
(WY)	1993	1975	1981	1981	1992	1981	1985	1977	1966	1966	1966	1968	

SUMMARY STATISTICS

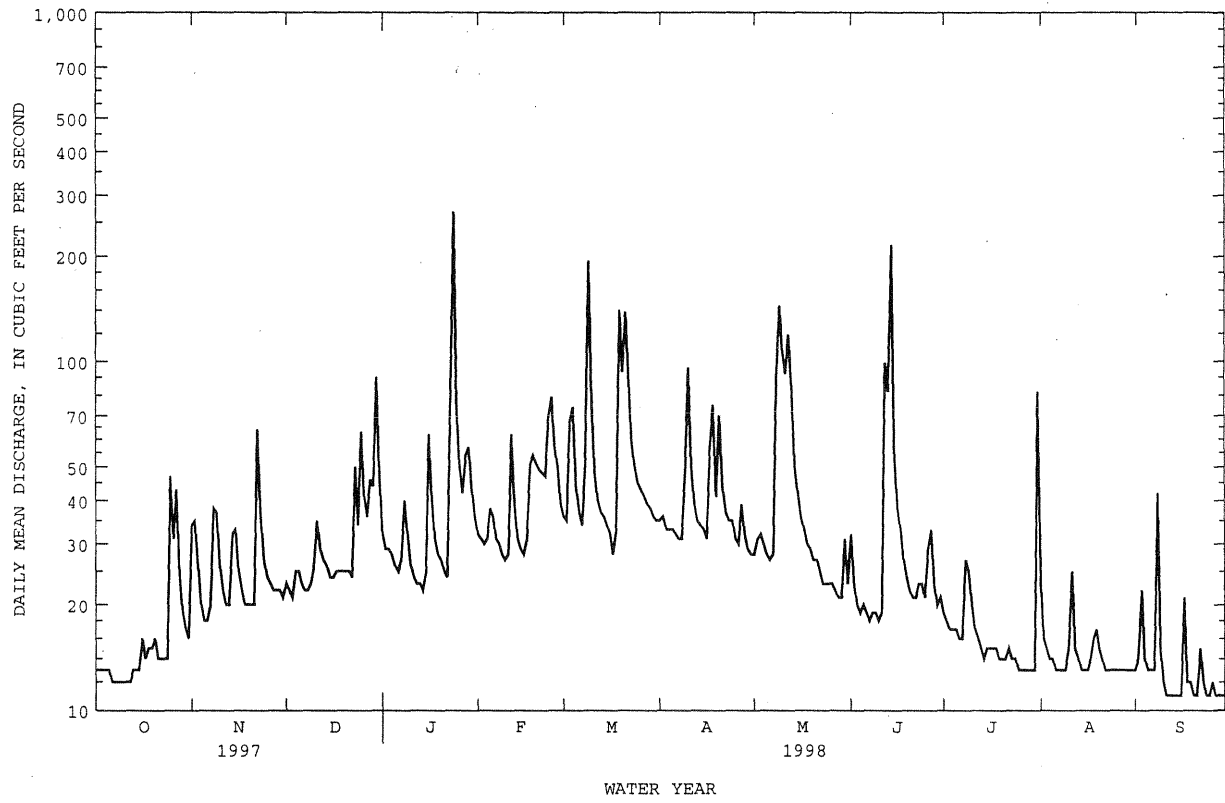
FOR 1997 CALENDAR YEAR

FOR 1998 WATER YEAR

WATER YEARS 1966 - 1998

ANNUAL TOTAL	12851	11632	
ANNUAL MEAN	35.2	31.9	40.3
HIGHEST ANNUAL MEAN			64.7
LOWEST ANNUAL MEAN			22.5
HIGHEST DAILY MEAN	146	Feb 5	269
LOWEST DAILY MEAN	11	Jul 18	11
ANNUAL SEVEN-DAY MINIMUM	12	Oct 6	11
INSTANTANEOUS PEAK FLOW			436
INSTANTANEOUS PEAK STAGE			11.97
INSTANTANEOUS LOW FLOW			10
ANNUAL RUNOFF (CFSM)	1.31	1.18	1.50
ANNUAL RUNOFF (INCHES)	17.77	16.09	20.37
10 PERCENT EXCEEDS	61	54	66
50 PERCENT EXCEEDS	27	25	29
90 PERCENT EXCEEDS	13	13	14

a Present datum



RESERVOIRS IN DELAWARE RIVER BASIN

- 01416900 PEPACTON RESERVOIR.--Lat 42°04'38", long 74°58'04", Delaware County, Hydrologic Unit 02040102, near release chamber at Downsview Dam on East Branch Delaware River, and 1.6 mi east of Downsview. DRAINAGE AREA, 372 mi². PERIOD OF RECORD, September 1954 to current year. REVISED RECORDS, WDR NY-90-1: Drainage area. GAGE, water-stage recorder. Datum of gage is sea level (levels by Board of Water Supply, City of New York).
- Reservoir is formed by an earthfill rockfaced dam. Storage began Sept. 15, 1954. Usable capacity 140,190 mil gal between minimum operating level, elevation, 1,152.0 ft and crest of spillway, elevation, 1,280.0 ft. Capacity: at crest of spillway 149,799 mil gal; at minimum operating level, 9,609 mil gal; at sill of diversion tunnel, elevation, 1,143.0 ft, 6,098 mil gal; in dead storage below release outlet, elevation, 1,126.50 ft, 1,898 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through East Delaware Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin (see elsewhere in this section), for water supply to City of New York; for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Jan. 6, 1955. Records provided by New York City Department of Environmental Protection.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 154,027 mil gal, Apr. 5, 1960, elevation, 1,282.27 ft; minimum observed (after first filling), 9,575 mil gal, Dec. 26, 1964, elevation, 1,151.92 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 152,343 mil gal, June 16, elevation, 1,281.37 ft; minimum observed, 73,262 mil gal, Nov. 8, elevation, 1,229.81 ft.
- 01424997 CANNONVILLE RESERVOIR.--Lat 42°03'46", long 75°22'29", Delaware County, Hydrologic Unit 02040101, in emergency gate tower at Cannonville Dam on West Branch Delaware River, and 1.8 mi southeast of Stilesville. DRAINAGE AREA, 454 mi². PERIOD OF RECORD, October 1963 to current year. REVISED RECORDS, WDR NY-71-1: 1966. GAGE, water-stage recorder. Datum of gage is sea level (levels by Board of Water Supply, City of New York).
- Reservoir is formed by an earthfill rockfaced dam. Storage began Sept. 30, 1963. Usable capacity 95,706 mil gal between minimum operating level, elevation, 1,040.0 ft and crest of spillway, elevation, 1,150.0 ft. Capacity, at crest of spillway, 98,618 mil gal; at minimum operating level, 2,912 mil gal; at mouth of inlet channel to diversion tunnel, elevation, 1,035.0 ft, 1,892 mil gal; in dead storage below release outlet elevation, 1,020.5 ft, 328 mil gal. Figures given herein represent total contents. Impounded water is diverted for New York City water supply via West Delaware Tunnel to Rondout Reservoir in Hudson River basin (see elsewhere in this section); is released in Delaware River for downstream low flow augmentation, as directed by the Delaware River Master; and is released for conservation flow in the Delaware River. No diversion prior to January 29, 1964. Records provided by New York City Department of Environmental Protection.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 109,617 mil gal, Mar. 16, 1986, elevation, 1,156.73 ft; minimum observed (after first filling), 11,901 mil gal, Nov. 7, 1968, elevation, 1,066.24 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 103,688 mil gal, Mar. 11, elevation, 1,153.15 ft; minimum observed, 26,092 mil gal, Nov. 1, elevation, 1,088.45 ft.
- 01428900 PROMPTON RESERVOIR.--Lat 41°35'18", long 75°19'39", Wayne County, Hydrologic Unit 02040103, at dam on West Branch Lackawaxen River, 0.3 mi north of Prompton, 0.4 mi upstream from highway bridge, and 0.5 mi upstream from Van Auker Creek. DRAINAGE AREA, 59.6 mi². PERIOD OF RECORD, December 1960 to current year. GAGE, data collection platform (U.S. Army Corps of Engineers datum).
- REMARKS.--Reservoir formed by an earth and rockfill dam with ungated bedrock spillway at elevation 1,205.00 ft. Storage began July 1960. Capacity at elevation 1,205.00 ft is 51,700 acre-ft. Ordinary minimum (conservation) pool is 1,125.00 ft, capacity, 3,420 acre-ft. Reservoir is used for flood control and recreation. Figures given herein represent total contents. Regulation is accomplished by discharge through an ungated tunnel.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,170 acre-ft, June 29, 1973, elevation, 1,138.40 ft; minimum (after first filling), 2,500 acre-ft, June 5, 1991, elevation, 1,121.46 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,820 acre-ft, Jan. 9, elevation, 1,129.72 ft; minimum contents, 2,970 acre-ft, Oct. 24, 25, elevation, 1,123.10 ft.
- 01429400 GENERAL EDGAR JADWIN RESERVOIR.--Lat 41°36'44", long 75°15'55", Wayne County, Hydrologic Unit 02040103, at dam on Dyberry Creek, 0.4 mi upstream from unnamed tributary, 2.4 mi north of Honesdale, and 2.9 mi upstream from mouth. DRAINAGE AREA, 64.5 mi². PERIOD OF RECORD, October 1959 to current year. GAGE, data collection platform (U.S. Army Corps of Engineers datum).
- REMARKS.--Reservoir formed by an earth and rockfill dam with ungated concrete spillway at elevation 1,053.00 ft. Storage began October 1959. Capacity at elevation of 1,053.00 ft is 24,500 acre-ft. Reservoir is used for flood control. Figures given herein represent total contents. Regulation is accomplished by discharge through an ungated tunnel. Since Oct. 1, 1996, pool elevations below 990 ft NGVD are not recorded.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,520 acre-ft, June 19, 1973, elevation, 1,017.40 ft; minimum contents, no storage many times.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 834 acre-ft, Mar. 10, elevation, 992.34 ft; minimum contents, no storage many times.
- 01431700 LAKE WALLENPAUPACK.--Lat 41°27'35", long 75°11'10", Wayne County, Hydrologic Unit 02040103, at dam on Wallenpaupack Creek at Wilsonville, 1.2 mi south of Hawley, and 1.5 mi upstream from mouth. DRAINAGE AREA, 228 mi². PERIOD OF RECORD, January 1926 to current year. GAGE, vertical staff. Datum of gage is sea level (levels by Pennsylvania Power and Light Co.).
- REMARKS.--Lake formed by concrete gravity-type and earthfill dam, with concrete spillway in two sections at elevation 1,176.00 ft. Spillway equipped with 14 ft high roller gate on each section. Storage began Nov. 3, 1925; water in reservoir first reached minimum pool elevation January 1926. Total capacity at elevation 1,190.00 ft (top of gates), is 209,300 acre-ft, of which 108,900 acre-ft, above elevation 1,170.00 ft (minimum pool), is controlled storage. Prior to 1984, minimum pool elevation was 1,160.00 ft. Reservoir is used for generation of hydroelectric power. Figures given herein represent usable contents. Records prior to 1984 included additional usable contents of 48,900 acre-ft.
- COOPERATION.--Records provided by Pennsylvania Power and Light Co.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 129,300 acre-ft, Aug. 19-21, 1955, elevation, 1,193.45 ft; minimum (after first filling), 12,280 acre-ft (old minimum pool), Mar. 28, 1958, elevation, 1,162.60 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 92,400 acre-ft, June 6, elevation, 1,187.3 ft; minimum contents, 36,950 acre-ft, Oct. 22, elevation 1,177.5 ft.
- 01433000 SWINGING BRIDGE RESERVOIR.--Lat 41°34'21", long 74°47'00", Sullivan County, Hydrologic Unit 02040104, at dam on Mongaup River, and 1.8 mi northwest of Fowlersville. DRAINAGE AREA, 116 mi², excluding Cliff Lake, Lebanon Lake, and Toronto Reservoir. PERIOD OF RECORD, January 1930 to current year. REVISED RECORDS, WSP 1552: 1951-54. WDR NY-86-1: 1985. WDR NY-90-1: Drainage area. GAGE, nonrecording gage, daily readings at 0900. Datum of gage is sea level (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,010 ft.
- Reservoir is formed by an earthfill dam. Storage began Jan. 19, 1930. Usable capacity, 1,436.6 mil ft³ between elevations 1,010.0 ft, minimum operating pool, and 1,071.2 ft, top of flashboards. Capacity below elevation 1,010.0 ft, minimum operating pool, about 212.7 mil ft³. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,010.0 ft. Water is received from Cliff Lake, Lebanon Lake, and Toronto Reservoir. Records provided by Orange and Rockland Utilities, Inc.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,461.6 mil ft³, Mar. 14, 1977, elevation, 1,071.8 ft; minimum observed (after first filling), -141.4 mil ft³, Dec. 2, 1938, elevation, 987.5 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 1,387.3 mil ft³, May 11, elevation, 1,070.0 ft; minimum observed, 912.2 mil ft³, Oct. 30, 31, Nov. 1, elevation, 1,057.1 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

- 01433100 TORONTO RESERVOIR.--Lat 41°37'15", long 74°49'55", Sullivan County, Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi southeast of village of Black Lake. DRAINAGE AREA, 22.9 mi². PERIOD OF RECORD, January 1926 to current year. REVISED RECORDS, WSP 1552: 1951-54. WSP 1702: 1959 (M). WDR NY-85-1: 1984. WDR NY-86-1: 1985. WDR NY-90-1: Drainage area. GAGE, nonrecording gage, daily readings at 0900. Datum of gage is sea level (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,165.0 ft.
- Reservoir is formed by an earthfill dam completed July 24, 1926. Storage began Jan. 13, 1926. Usable capacity 1,098.2 mil ft³ between elevations 1,165.0 ft, minimum operating pool, and 1,220.0 ft, top of permanent flashboards. Capacity below elevation 1,165.0 ft, minimum operating pool, about 26.8 mil ft³. Reservoir is used for storage of water for power. Figures given herein represent contents above 1,165.0 ft. Records provided by Orange and Rockland Utilities, Inc.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,171.2 mil ft³, July 20, 1945, elevation, 1,222.0 ft; minimum observed (after first filling), -26.8 mil ft³, Nov. 15, 1928, elevation, 1,144.5 ft.
- EXTREMES OF CURRENT YEAR.--Maximum contents observed, 974.7 mil ft³, July 15, elevation, 1,216.4 ft; minimum observed, 67.6 mil ft³, Nov. 24, elevation, 1,174.9 ft.
- 01433200 CLIFF LAKE.--Lat 41°35'00", long 74°47'40", Sullivan County Hydrologic Unit 02040104, at dam on Black Lake Creek, and 2.5 mi northwest of Fowlersville. DRAINAGE AREA, 6.46 mi², excluding area above Toronto Reservoir. PERIOD OF RECORD, January 1939 to current year. REVISED RECORDS, WSP 1552: 1951-54. WDR NY-75-1: 1974(m). WDR NY-86-1: 1985. GAGE, nonrecording gage, daily readings at 0900. Datum of gage is sea level (levels by Orange and Rockland Utilities, Inc.). All capacity figures given herein are based on zero storage at minimum operating pool level, 1,043.3 ft.
- Reservoir is formed by a concrete gravity-type dam. Storage began Jan. 6, 1939. Usable capacity, 136.06 mil ft³ between elevations 1,043.3 ft, minimum operating pool, and 1,072.0 ft, top of permanent flashboards. Capacity below elevation 1,043.3 ft, minimum operating pool, about 6.54 mil ft³. Reservoir is used for storage of water for power. Water is received from Toronto and Lebanon Lake reservoirs and is discharged through a tunnel into Swinging Bridge Reservoir. Figures given herein represent contents above 1,043.3 ft. Records provided by Orange and Rockland Utilities, Inc.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145.44 mil ft³, July 30, 31, 1945, elevation, 1,073.1 ft; minimum observed (after first filling), about -6.54 mil ft³, Mar. 16, 1963, elevation, 1,038.0 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 118.88 mil ft³, May 13, 15, elevation, 1,069.9 ft; minimum observed, 41.08 mil ft³, Oct. 29, 31, elevation, 1,057.3 ft.
- 01435900 NEVERSINK RESERVOIR.--Lat 41°49'27", long 74°38'20", Sullivan County, Hydrologic Unit 02040104, at a gatehouse at Neversink Dam on Neversink River, and 2 mi southwest of Neversink. DRAINAGE AREA, 92.5 mi². PERIOD OF RECORD, June 1953 to current year. REVISED RECORDS, WDR NY-85-1: Drainage area. GAGE, nonrecording gage read daily at 0900. Datum of gage is sea level (levels by Board of Water Supply, City of New York).
- Reservoir is formed by an earthfill rockfaced dam. Storage began June 2, 1953. Usable capacity 34,941 mil gal between minimum operating level, elevation, 1,319.0 ft and crest of spillway, elevation, 1,440.0 ft. Capacity at crest of spillway 37,146 mil gal; at minimum operating level, 2,205 mil gal; dead storage below diversion sill and outlet sill, elevation 1,314.0 ft, 1,680 mil gal. Figures given herein represent total contents. Reservoir impounds water for diversion through Neversink-Grahamsville Tunnel to Rondout Reservoir on Rondout Creek, in Hudson River basin, for water supply of City of New York (see elsewhere in this section); for release during periods of low flow in the lower Delaware River basin, as directed by the Delaware River Master; and for conservation release. No diversion prior to Dec. 3, 1953. Records provided by New York City Department of Environmental Protection.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 37,983 mil gal, Apr. 17, 1993, elevation, 1,441.68 ft; minimum observed (after first filling), 1,985 mil gal, Nov. 25, 1964, elevation, 1,316.98 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 37,783 mil gal, June 15, elevation, 1,441.28 ft; minimum observed, 13,074 mil gal, Nov. 1, elevation, 1,376.52 ft.
- 01447780 FRANCIS E. WALTER RESERVOIR.--Lat 41°06'45", long 75°43'15", Luzerne County, Hydrologic Unit 02040106, at dam on Lehigh River, 2,200 ft downstream from Bear Creek, and 5.0 mi northeast of White Haven. DRAINAGE AREA, 289 mi². PERIOD OF RECORD, February 1961 to current year. GAGE, water-stage recorder (U.S. Army Corps of Engineers datum).
- REMARKS.--Reservoir formed by an earthfill embankment covered with a rock shell, with concrete spillway at elevation 1,450.0 ft. Storage began Feb. 17, 1961; reservoir first reached conservation pool in June 1961. Total capacity (elevation 1,450.0 ft) is 110,700 acre-ft of which 108,700 acre-ft is controlled storage above elevation 1,300.0 ft, (conservation pool). Dead storage is 2,000 acre-ft. Flow regulated by three gates and low-flow by-pass system. Reservoir is used for flood control and recreation. Satellite telemetry at station.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 62,100 acre-ft, Sept. 28, 1985, elevation, 1,417.08 ft; minimum contents (after establishment of conservation pool), 980 acre-ft, July 6, 1982, elevation, 1,287.70 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,550 acre-ft, June 16, elevation, 1,332.27 ft; minimum contents, 1,510 acre-ft, Jan. 20, elevation, 1,296.26 ft.
- 01449400 PENN FOREST RESERVOIR.--Lat 40°55'45", long 75°33'45", Carbon County, Hydrologic Unit 02040106, at dam on Wild Creek, 0.7 mi upstream from hatchery, 2.6 mi upstream from Wild Creek Dam, 4.4 mi upstream from mouth, and 10.0 mi northeast of Palmerton. DRAINAGE AREA, 16.5 mi². PERIOD OF RECORD, October 1958 to current year. GAGE, water-stage recorder. Datum of gage is sea level (levels by city of Bethlehem).
- REMARKS.--Reservoir formed by an earthfill dam with ungated concrete spillway at elevation 1,000.00 ft (capacity, 19,980 acre-ft). Storage began October 1958. Reservoir is used for municipal water supply. Regulation by valves on pipe through dam. Figures given herein represent total contents and include diversion since October 1969 from Tunkhannock Creek Basin to Wild Creek Basin. Reservoir out of service all year.
- COOPERATION.--Records provided by city of Bethlehem.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 20,800 acre-ft, Apr. 16, 1983, elevation, 1,001.69 ft; minimum contents, 0 acre-ft, many days during 1996 and 1997 water years, elevation, 890.60 ft.
- EXTREMES FOR CURRENT YEAR.--No contents all year.
- 01449700 WILD CREEK RESERVOIR.--Lat 40°53'50", long 75°33'50", Carbon County, Hydrologic Unit 02040106, at dam on Wild Creek, 1.6 mi upstream from mouth, 2.4 mi south of hatchery, and 7.5 mi northeast of Palmerton. DRAINAGE AREA, 22.2 mi². PERIOD OF RECORD, January 1941 to current year. GAGE, nonrecording gage. Datum of gage is sea level (levels by city of Bethlehem).
- REMARKS.--Reservoir formed by earthfill dam with concrete ungated spillway at elevation 820.00 ft. Storage began January 27, 1941; reservoir first reached minimum contents pool elevation in February 1941. Total capacity at elevation 820.00 ft is 12,500 acre-ft of which 12,000 acre-ft is controlled storage. Reservoir is used for municipal water supply. Regulation by valves on pipe through dam. Figures given herein represent usable contents and include diversion since October 1969 from Tunkhannock Creek Basin to Wild Creek Basin.
- COOPERATION.--Records provided by city of Bethlehem.
- EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 12,880 acre-ft, May 23, 1942, elevation, 822.93 ft; minimum contents (after first filling), 2,680 acre-ft, Nov. 15, 1966, elevation, 774.10 ft.
- EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,200 acre-ft, Mar. 10, elevation, 820.66 ft; minimum contents 7,300 acre-ft, Dec. 24, elevation 801.21 ft.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

- 01449790 BELTZVILLE LAKE.--Lat 40°50'56", long 75°38'19", Carbon County, Hydrologic Unit 02040106, at dam on Pohopoco Creek, 0.4 mi upstream from gaging station on Pohopoco Creek, 0.6 mi upstream from Sawmill Run, and 2.3 mi northeast of Parryville. DRAINAGE AREA, 96.3 mi². PERIOD OF RECORD, February 1971 to current year. GAGE, water-stage recorder (U.S. Army Corps of Engineers datum).
 REMARKS.--Lake formed by an earth and rockfill dam with ungated, partially lined spillway at an elevation of 651.00 ft. Storage began Feb. 8, 1971. Capacity at elevation 651.00 ft is 68,300 acre-ft. Ordinary minimum contents (conservation) pool elevation is 628.00 ft, capacity, 41,250 acre-ft. Dead storage is 1,390 acre-ft. Lake is used for recreation, flood control, low-flow augmentation, and water supply. Figures given herein represent total contents. Regulation is accomplished by a multi-level water-quality outlet system, and two flood-control gates.
 EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 49,730 acre-ft, Jan. 29, 1976, elevation, 636.30 ft; minimum contents, 15,110 acre-ft, Mar. 31, 1983, elevation, 588.79 ft.
 EXTREMES FOR CURRENT YEAR.--Maximum contents, 43,060 acre-ft, June 15, elevation, 629.86 ft; minimum contents, 37,120 acre-ft, Sept. 30, elevation, 623.49 ft.
- 01455221 MERRILL CREEK RESERVOIR.--Lat 40°43'42", long 75°06'11", Warren County, Hydrologic Unit 02040105, at dam on Merrill Creek in Harmony Township, 4.5 mi northeast of Phillipsburg, and 2.8 mi upstream from mouth. DRAINAGE AREA, 3.13 mi². PERIOD OF RECORD, March 1988 to current year. GAGE, measurement from reference point. Datum of gage is sea level.
 REMARKS.--Reservoir formed by zoned, compacted, earth-rockfill dam constructed in November 1987. Storage began March 1988. Total capacity at spillway elevation, 16,617,000,000 gal, elevation 929.0 ft. Useable capacity, 15,6654,000,000 gal. Reservoir used for storage of water pumped from the Delaware River through a 57-inch diameter pipe 17,000 ft long. Releases are made into the Delaware River through the same pipe. Reservoir is used to augment low flow in the Delaware River. Conservation release of 3 ft³/s made to Merrill Creek.
 COOPERATION.--Records provided by the Merrill Creek Reservoir Project.
 EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,710,000,000 gal, Jan. 15, 1990, elevation, 923.3 ft; minimum (after first filling), 14,076,000,000 gal, Jan. 23, 1992, elevation 910.40 ft.
 EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,596,000,000 gal, May 17, elevation 922.79 ft; minimum, 16,064,000,000 gal, Dec. 22, elevation 920.26 ft.
- 01455400 LAKE HOPATCONG.--Lat 40°55'00", long 74°39'50", Morris County, Hydrologic Unit 02040105, in gatehouse of Lake Hopatcong Dam on Musconetcong River at Landing. DRAINAGE AREA, 25.3 mi². PERIOD OF RECORD, February 1887 to current year. Monthend contents only prior to October 1950, published in WSP 1302. REVISED RECORDS, WDR NJ-82-2: Drainage area; WDR NJ-83-2: Corrections 1981 (m/m). GAGE, staff gage. Prior to June 24, 1928, daily readings obtained by measuring from high-water mark to water surface converted to gage height, present datum. Datum of gage is 914.57 ft sea level.
 REMARKS.--Lake is formed by concrete spillway and earthfill dam completed about 1828. Crest of spillway was lowered 0.11 ft in 1925. Usable capacity, 7,459,000,000 gal between (gage height -2.6 ft, sills of gates and 9.00 ft, crest of spillway). Flow regulated by four gates (3 by 5 ft), also by one 24-inch pipe with gate valve to recreation fountain 250 ft downstream from dam. Dead storage, about 8,117,000,000 gal. Figures given herein represent usable capacity. Lake used for recreation.
 COOPERATION.--Records provided by New Jersey Department of Environmental Protection.
 EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,777,000,000 gal, August 19, 1955, gage height, 10.55 ft; minimum, 1,525,000,000 gal, Dec. 29, 1960, gage height, 0.65 ft.
 EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,340,000,000 gal, May 12, gage height, 10.04 ft; minimum, 3,575,000,000 gal, Oct. 30 and Nov. 13, gage height, 3.96 ft.
- 01459350 NOCKAMIXON RESERVOIR.--Lat 40°28'13", long 75°11'10", Bucks County, Hydrologic Unit 02040105, at dam on Tohickon Creek, 6.2 mi upstream from gaging station on Tohickon Creek, 1.3 mi east of Ottsville, and 2.9 mi upstream from Mink Run. DRAINAGE AREA.-- 73.3 mi². PERIOD OF RECORD.--December 1973 to current year. GAGE.--Water stage recorder. Datum of gage is sea level (levels by Pennsylvania Department of Environmental Protection).
 REMARKS.--Reservoir formed by earthfill dam with concrete spillway at elevation 395.0 ft. Storage began December 1973. Total capacity is 66,500 acre-ft at elevation 410 ft. Reservoir is used primarily for recreation, but can be used for water supply and flood control.
 COOPERATION.--Records furnished by Pennsylvania Department of Environmental Protection.
 EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,380 acre-ft, Jan. 20, 1979, elevation, 397.85 ft; minimum contents (after first filling), 15,900 acre-ft, around Dec. 31, 1975, elevation, 372.78 ft.
 EXTREMES FOR CURRENT YEAR.--Maximum contents 43,400 acre-ft, May 11, elevation, 397.20 ft; minimum contents, 37,820 acre-ft, Sept. 27-30, elevation, 394.30 ft.
- 01469200 STILL CREEK RESERVOIR.--Lat 40°51'25", long 75°59'30", Schuylkill County, Hydrologic Unit 02040106, at dam on Still Creek, 1.0 mi upstream from mouth, and 2.3 mi north of Hometown. DRAINAGE AREA, 7.19 mi². PERIOD OF RECORD, January 1933 to current year. GAGE, nonrecording gage. Datum of gage is sea level (levels by Panther Valley Water Co.).
 REMARKS.--Reservoir formed by earthfill dam with ungated concrete spillway at elevation 1,182.00 ft. Storage began February 1933. Capacity at elevation 1,182.00 ft is 8,290 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation by valves on pipe through dam.
 COOPERATION.--Records provided by the borough of Tamaqua.
 EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,570 acre-ft, Oct. 15, 1955, elevation, 1,182.92 ft, but may have been greater during 1950 or 1951 water years; minimum contents (after first filling), 588 acre-ft, Dec. 8, 1944, elevation, 1,136.70 ft.
 EXTREMES FOR CURRENT YEAR.--Maximum contents, 8,340 acre-ft, Apr. 30, elevation, 1,182.2 ft; minimum contents, 7,820 acre-ft, Sept. 30, elevation, 1,180.3 ft.
- 01470870 BLUE MARSH LAKE.--Lat 40°22'45", long 76°01'59", Berks County, Hydrologic Unit 02040203, at dam on Tulpehocken Creek, 0.8 mi upstream from gaging station on Tulpehocken Creek (station 01470960), 1.0 mi northeast of Blue Marsh, 1.9 mi upstream from Rebers Bridge, and 5.1 mi southeast of Bernville. DRAINAGE AREA, 175 mi². PERIOD OF RECORD, April 1979 to current year. GAGE, water-stage recorder (U.S. Army Corps of Engineers datum).
 REMARKS.--Lake formed by earthfill dam with ungated concrete spillway at elevation 307.00 ft. Storage began April 23, 1979. Capacity at elevation 307.00 ft is 50,000 acre-ft. Dead storage is 3,000 acre-ft. Lake is used for flood control, water supply, and recreation. Figures herein represent total contents. Satellite telemetry at station.
 COOPERATION.--Records provided by U.S. Army Corps of Engineers.
 EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 39,480 acre-ft, Apr. 17, 1983, elevation, 301.65 ft; minimum contents (after first filling), 13,150 acre-ft, Mar. 18, 1994, elevation, 279.88 ft.
 EXTREMES FOR CURRENT YEAR.--Maximum contents, 24,880 acre-ft, June 27, elevation, 291.68 ft; minimum contents, 16,580 acre-ft, Jan. 12, elevation, 283.90.

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

01472200 GREEN LANE RESERVOIR.--Lat 40°20'30", long 75°28'45", Montgomery County, Hydrologic Unit 02040203, at dam on Perkiomen Creek, 0.4 mi west of Green Lane, and 2.1 mi upstream from Unami Creek. DRAINAGE AREA, 70.9 mi². PERIOD OF RECORD, December 1956 to current year. GAGE, water-stage recorder. Datum of gage is sea level (levels by Philadelphia Suburban Water Co.).

REMARKS.--Reservoir formed by concrete, gravity-type dam with ungated spillway at elevation 286.00 ft. Storage began December 21, 1956. Capacity at elevation 286.00 ft is 13,430 acre-ft. Reservoir is used for municipal water supply. Figures given herein represent total contents. Regulation by valves on pipe through dam.

COOPERATION.--Records provided by Philadelphia Suburban Water Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 17,030 acre-ft, June 23, 1972, elevation, 290.05 ft; minimum contents (after first filling), 1,270 acre-ft, Aug. 25, 1957, elevation, 251.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,160 acre-ft, May 12, elevation, 286.83 ft; minimum contents, 11,140 acre-ft, Sept. 30, elevation, 283.15 ft.

01480399 CHAMBERS LAKE RESERVOIR.--40°01'40", long 75°51'03", Chester County, Hydrologic Unit 02040205, at Hibernia Dam on Birch Run, 0.6 mi upstream from gaging station on Birch Run (station 01480400), 0.9 mi upstream from mouth, and 1.4 mi northwest of Wagontown. DRAINAGE AREA, 4.5 mi². PERIOD OF RECORD, May 1997 to current year. GAGE, non-recording gage. Manual measurement from top of concrete riser at upstream flank of Hibernia Dam. Datum of gage is sea level (levels by Chester County Water Resources Authority, Chester County Parks and Recreation Department).

REMARKS.--Reservoir formed by earthfill dam with principle spillway at elevation 587.5 ft and dam crest at elevation 596.5 ft. Normal elevation 580 ft, capacity 1,226 acre feet. Reservoir is used for water supply, flood control, and recreation. Figures given herein represent total contents.

COOPERATION.--Records provided by Chester County Water Resources Authority, in cooperation with City of Coatesville Authority and Chester County Parks and Recreation Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,226 acre-ft, May 30, 1997, elevation, 580.1 ft; minimum contents, 1,080 acre-ft, Sept. 30, 1997, elevation, 578.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,240 acre-ft, March 9, elevation, 580.67 ft; minimum contents, 880 acre-ft, Dec. 23, 24 elevation, 575.83 ft.

01480684 MARSH CREEK RESERVOIR.--Lat 40°03'24", long 75°43'06", Chester County, Hydrologic Unit 02040205, on right bank at dam on Marsh Creek, 0.3 mi upstream from mouth, and 3.2 mi north of Downingtown. DRAINAGE AREA, 20.1 mi². PERIOD OF RECORD, November 1973 to current year. GAGE, Water-stage recorder. Datum of gage is sea level (levels by Pennsylvania Department of Environmental Protection).

REMARKS.--Reservoir formed by earthfill dam with concrete spillway at elevation 359.5 ft. Storage began November 1973. Total capacity, 22,190 acre-ft, elevation 373 ft. Reservoir is used for water supply, flood control, and recreation. Figures given herein represent contents above lowest gate sill at elevation 289.5 ft.

COOPERATION.--Records provided by Pennsylvania Department of Environmental Protection.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,380 acre-ft, Jan. 25, 1979, elevation, 363.49 ft; minimum contents (after first filling), 10,410 acre-ft, Mar. 3, 1976, elevation, 351.75 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,370 acre-ft, Apr. 2, elevation, 361.65 ft; minimum contents, 12,880 acre-ft, Feb. 4, elevation, 356.94 ft.

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)*	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)*	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01416900 Pepacton Reservoir				01424997 Cannonsville Reservoir			01428900 Prompton Reservoir		
Sept. 30.....	1,245.63	93,880	--	1,107.58	43,846	--	1,123.40	3,050	--
Oct. 31.....	1,230.74	74,385	-973	1,088.45	26,092	-886	1,123.49	3,080	+0.5
Nov. 30.....	1,231.17	74,908	+27.0	1,098.08	34,401	+429	1,125.82	3,730	+10.9
Dec. 31.....	1,234.48	79,008	+205	1,107.40	43,657	+462	1,125.31	3,590	-2.3
CAL YR 1997	-	-	-303	-	-	-243	--	--	-0.3
Jan. 31.....	1,257.62	111,694	+1,631	1,143.78	89,249	+2,276	1,125.37	3,600	+0.2
Feb. 28.....	1,259.69	114,961	+181	1,150.94	100,130	+601	1,126.35	3,880	+5.0
Mar. 31.....	1,275.88	142,310	+1,365	1,151.99	101,821	+84.4	1,126.24	3,850	-0.5
Apr. 30.....	1,280.25	150,262	+410	1,151.19	100,533	-66.4	1,125.48	3,630	-3.7
May 31.....	1,279.79	149,413	-42.4	1,149.68	98,131	-120	1,124.95	3,490	-2.3
June 30.....	1,280.33	150,410	+51.4	1,151.32	100,742	+135	1,127.29	4,140	+10.9
July 31.....	1,277.15	144,595	-290	1,147.06	94,145	-329	1,123.98	3,210	-15.1
Aug. 31.....	1,269.03	130,344	-711	1,128.89	68,842	-1,263	1,123.35	3,040	-2.8
Sept. 30.....	1,261.03	117,101	-683	1,115.94	53,046	-815	1,123.47	3,070	+0.5
WTR YR 1998	-	-	+98.4	-	-	+39.0	--	--	0
Date	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (million ft ³)	Change in contents (equiv- alent in ft ³ /s)
01429400 General Edgar Jadwin Reservoir				01431700 Lake Wallenpaupack			01433000 Swinging Bridge Reservoir		
Sept. 30.....	--	0	--	1,178.7	43,810	--	1,060.0	1,010.3	--
Oct. 31.....	--	0	0	1,177.7	38,010	-94.3	1,057.1	912.2	-36.6
Nov. 30.....	--	0	0	1,180.5	54,970	+285	1,066.2	1,237.0	+125
Dec. 31.....	--	0	0	1,182.8	66,740	+191	1,064.3	1,165.1	-26.8
CAL YR 1997	--	--	0	--	--	-1.6	-	-	-2.0
Jan. 31.....	--	0	0	1,182.9	67,300	+9.1	1,065.2	1,198.9	+12.6
Feb. 28.....	--	0	0	1,183.9	73,210	+106	1,063.3	1,128.1	-29.2
Mar. 31.....	--	0	0	1,183.7	71,990	-19.8	1,066.4	1,244.7	+43.5
Apr. 30.....	--	0	0	1,185.2	81,290	+156	1,066.3	1,240.9	-1.5
May 31.....	--	0	0	1,186.2	86,400	+83.1	1,064.4	1,168.9	-26.9
June 30.....	--	0	0	1,184.7	78,310	-136	1,069.2	1,355.0	+71.8
July 31.....	--	0	0	1,182.1	62,910	-250	1,060.6	1,031.3	-121
Aug. 31.....	--	0	0	1,181.6	60,320	-42.1	1,062.6	1,102.6	+26.6
Sept. 30.....	--	0	0	1,180.0	52,700	-128	1,058.3	952.2	-58.0
WTR YR 1998	--	--	0	--	--	+12.3	--	--	-1.8

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)†	Contents (million ft ³)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (million ft ³)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)*	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)
01433100 Toronto Reservoir				01433200 Cliff Lake			01435900 Neversink Reservoir		
Sept. 30.....	1,183.8	191.9	-	1,060.4	56.12	-	1,391.26	17,411	-
Oct. 31.....	1,177.6	100.1	-34.3	1,057.3	41.08	-5.6	1,376.52	13,074	-216
Nov. 30.....	1,175.1	69.8	-11.7	1,065.8	88.94	+18.5	1,393.35	18,088	+259
Dec. 31.....	1,178.7	114.8	+16.8	1,064.3	79.18	-3.6	1,396.94	19,284	+59.7
CAL YR 1997	-	-	-31.4	-	-	-0.7	-	-	-71.7
Jan. 31.....	1,190.3	304.2	+70.7	1,066.0	90.26	+4.1	1,418.71	27,505	+410
Feb. 28.....	1,194.1	380.5	+31.5	1,063.3	72.92	-7.2	1,416.19	26,472	-57.1
Mar. 31.....	1,202.2	571.6	+71.4	1,067.1	97.88	+9.3	1,430.37	32,569	+304
Apr. 30.....	1,208.0	725.2	+59.3	1,066.6	94.40	-1.3	1,435.22	34,829	+117
May 31.....	1,212.9	864.8	+52.1	1,065.0	83.66	-4.0	1,439.00	36,653	+91.0
June 30.....	1,215.3	938.9	+28.6	1,069.1	112.64	+11.2	1,439.52	36,910	+13.3
July 31.....	1,212.4	850.1	-33.2	1,065.7	88.28	-9.1	1,436.35	35,368	-77.0
Aug. 31.....	1,197.0	444.9	-151	1,067.2	98.60	+3.8	1,423.98	29,733	-281
Sept. 30.....	1,190.0	298.5	-56.5	1,060.1	54.50	-17.0	1,403.03	21,422	-429
WTR YR 1998	-	-	+3.4	-	-	-0.1	-	-	+17.0
Date	Elevation (feet)*	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01447780 Francis E. Walter Lake				01449400 Penn Forest Reservoir			01449700 Wild Creek Reservoir		
Sept. 30.....	1,302.93	2,060	--	--	0	--	809.28	9,150	--
Oct. 31.....	1,301.32	1,910	-2.4	--	0	0	804.10	7,960	-19.4
Nov. 30.....	1,302.60	2,030	+2.0	--	0	0	802.06	7,490	-7.9
Dec. 31.....	1,299.44	1,750	-4.6	--	0	0	802.21	7,530	+0.7
CAL YR 1997	--	--	-0.3	--	--	0	--	--	-6.3
Jan. 31.....	1,300.80	1,860	+1.8	--	0	0	818.41	11,640	+66.8
Feb. 28.....	1,303.71	2,130	+4.9	--	0	0	820.28	12,080	+7.9
Mar. 31.....	1,302.17	1,990	-2.3	--	0	0	820.11	12,030	-0.8
Apr. 30.....	1,300.75	1,860	-2.2	--	0	0	820.02	12,010	-0.3
May 31.....	1,301.36	1,920	+1.0	--	0	0	820.09	12,030	+0.3
June 30.....	1,302.29	2,000	+1.3	--	0	0	820.04	12,010	-0.3
July 31.....	1,300.51	1,840	-2.6	--	0	0	818.16	11,570	-7.2
Aug. 31.....	1,301.81	1,960	+2.0	--	0	0	814.87	10,660	-14.8
Sept. 30.....	1,300.54	1,840	-2.0	--	0	0	811.33	9,690	-16.3
WTR YR 1998	--	--	-0.3	--	--	0	--	--	+0.7
Date	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (million gallons)	Change in contents (equiv- alent in ft ³ /s)
01449790 Beltzville Lake				01455221 Merrill Creek Reser- voir			01455400 Lake Hopatcong		
Sept. 30.....	628.15	41,390	--	921.44	16,312	--	6.70	5,599	--
Oct. 31.....	627.83	41,090	- 4.9	920.85	16,187	-6.2	3.98	3,589	-100.3
Nov. 30.....	628.19	41,430	+ 5.7	920.55	16,124	-3.2	4.02	3,617	+1.4
Dec. 31.....	627.91	41,160	- 4.4	920.44	16,101	-1.1	4.80	4,168	+27.5
CAL YR 1997	--	--	- 0.1			-2.0			-8.1
Jan. 31.....	628.05	41,300	+ 2.3	920.66	16,147	+2.3	6.62	5,537	+68.3
Feb. 28.....	628.18	41,420	+ 2.2	920.98	16,215	+3.8	7.08	5,897	+19.9
Mar. 31.....	628.02	41,270	- 2.4	921.34	16,290	+3.7	8.72	7,227	+66.4
Apr. 30.....	627.94	41,190	- 1.3	922.05	16,440	+7.7	9.34	7,745	+26.7
May 31.....	628.20	41,440	+ 4.1	922.65	16,567	+6.3	9.24	7,661	-4.2
June 30.....	628.10	41,340	- 1.7	922.52	16,539	-1.4	9.18	7,610	-2.6
July 31.....	627.04	40,340	-16.3	921.98	16,425	-5.7	8.78	7,276	-16.7
Aug. 31.....	626.30	39,630	-11.5	921.47	16,317	-5.4	8.34	6,914	-18.1
Sept. 30.....	623.49	37,120	-42.2	920.87	16,191	-6.5	7.88	6,539	-19.3
WTR YR 1998	--	--	- 5.9			-5			+4.0

DELAWARE RIVER BASIN

RESERVOIRS IN DELAWARE RIVER BASIN--Continued

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

Date	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01459350 Nockamixon Reservoir				01469200 Still Creek Reservoir			01470870 Blue Marsh Lake		
Sept. 30.....	394.20	39,080	--	1,181.5	8,150	--	289.60	22,440	--
Oct. 31.....	394.20	39,080	0	1,180.8	7,960	-3.1	285.19	17,810	-75.3
Nov. 30.....	394.40	39,350	+4.5	1,180.7	7,930	-0.5	285.26	17,870	+1.0
Dec. 31.....	394.60	39,630	+4.6	1,180.7	7,930	0	285.01	17,630	-3.9
CAL YR 1997	--	--	-0.8	--	--	-0.7	--	--	0
Jan. 31.....	394.90	40,060	+7.0	1,182.2	8,340	+6.7	285.02	17,640	+0.2
Feb. 28.....	395.00	40,200	+2.5	1,182.2	8,340	0	285.14	17,760	+2.2
Mar. 31.....	395.30	40,620	+6.8	1,182.2	8,340	0	286.19	18,790	+16.8
Apr. 30.....	395.90	41,460	+14.1	1,182.2	8,340	0	290.01	22,910	+69.2
May 31.....	395.10	40,340	-18.2	1,182.2	8,340	0	290.19	23,110	+3.3
June 30.....	395.20	40,480	+2.4	1,182.1	8,320	-0.3	290.29	23,230	+2.0
July 31.....	394.80	39,920	-9.1	1,182.0	8,290	-0.5	290.04	22,940	-4.7
Aug. 31.....	393.80	38,520	-22.8	1,180.9	7,990	-4.9	287.73	20,390	-41.5
Sept. 30.....	393.30	37,820	-11.8	1,180.3	7,820	-2.9	285.47	18,080	-38.8
WTR YR 1998	--	--	-1.7	--	--	-0.5	--	--	-6.0
Date	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)	Elevation (feet)†	Contents (acre- feet)	Change in contents (equiv- alent in ft ³ /s)
01472200 Green Lane Reservoir				01480399 Chambers Lake Reser- voir			01480684 Marsh Creek Reservoir		
Sept. 30.....	285.22	12,740	--	578.58	1,080	--	359.43	14,150	--
Oct. 31.....	284.48	12,130	-9.9	576.71	940	-2.3	358.85	13,830	-5.2
Nov. 30.....	284.22	11,920	-3.5	576.54	928	-0.2	357.68	13,250	-9.7
Dec. 31.....	285.88	13,320	+22.8	576.33	913	-0.2	357.57	13,190	-1.0
CAL YR 1997	--	--	-0.3	--	--	--	--	--	+0.9
Jan. 31.....	286.07	13,490	+2.8	580.17	1,190	+4.5	357.56	13,190	0
Feb. 28.....	286.11	13,530	+0.7	580.21	1,200	+0.2	359.18	14,010	+14.8
Mar. 31.....	286.05	13,480	-0.8	579.08	1,120	-1.3	360.10	14,510	+8.1
Apr. 30.....	286.07	13,490	+0.2	576.83	948	-2.9	360.12	14,520	+0.2
May 31.....	286.00	13,430	-1.0	577.58	1,010	+1.0	360.15	14,540	+0.3
June 30.....	285.95	13,390	-0.7	578.21	1,060	+0.8	360.30	14,620	+1.3
July 31.....	285.26	12,770	-10.1	578.08	1,050	-0.2	360.00	14,460	-2.6
Aug. 31.....	284.78	12,370	-6.5	577.42	994	-0.9	359.91	14,410	-0.8
Sept. 30.....	283.15	11,140	-20.7	575.92	884	-1.8	359.28	14,060	-5.9
WTR YR 1998	--	--	-2.2	--	--	-0.3	--	--	-0.1

DIVERSIONS AND WITHDRAWALS

WITHDRAWALS FROM THE DELAWARE RIVER BASIN

01415200 Diversion from Pepacton Reservoir (see preceding pages) on East Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Jan. 6, 1955. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

REVISED RECORDS, WDR NY-71-1: 1970. WDR NY-81-1: 1980.

014239000 Diversion from Cannonsville Reservoir (see preceding pages) on West Branch Delaware River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Jan. 29, 1964. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

REVISED RECORDS, WDR NY-81-1: 1980.

01435800 Diversion from Neversink Reservoir (see preceding pages) on Neversink River to Rondout Reservoir on Rondout Creek, in Hudson River basin, for municipal supply of City of New York. No diversion prior to Dec. 3, 1953. Records provided by Bureau of Water Resources Development and Department of Environmental Protection, City of New York.

REVISED RECORDS, WDR NY-82-1: 1976, 1977.

01436520 Village of Woodridge, NY, diverts water from East Pond Reservoir, tributary to Neversink River, for municipal supply outside of basin. Village of Woodridge has estimated that this year virtually all the withdrawal from East Pond Reservoir was returned to the Neversink River.

01437360 Diversion from Bear Swamp Reservoir, NY, tributary to Neversink River, by the New York State Training School, Otisville, NY, for water supply outside of basin. Records provided by Delaware River Basin Commission. No more diversion as of June 10, 1998; plant closed down.

01447750 Diversion from Bear Creek, PA, tributary to Lehigh River, by Pennsylvania American Water Company for water supply outside of basin. Records provided by Delaware River Basin Commission.

01448830 Diversion from Hazle Creek Watershed by Hazleton Joint Sewerage Authority for municipal water supply. Waste effluent from the municipal water system is released to the Susquehanna River. Records provided by Delaware River Basin Commission.

01460440 Diversion by Delaware and Raritan Canal from Delaware River at Raven Rock, for municipal and industrial use. Water is discharged into the Raritan River at New Brunswick. Records of discharge are collected on the Delaware and Raritan Canal at Port Mercer since Aug. 1, 1990 (see station 01460440). Prior to Aug. 1, 1990, records of discharge were collected at Kingston.

DIVERSION, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

MONTH	WITHDRAWALS BY CITY OF NEW YORK		
	01415200 Pepacton Reservoir	01423900 Cannonsville Reservoir	01435800 Neversink Reservoir
October	699	281	257
November	600	0.0	81.6
December	327	134	82.5
CAL YR 1997	605	182	249
January	283	0.0	140
February	372	42.0	228
March	234	76.4	190
April	150	0.0	259
May	284	105	242
June	399	244	143
July	637	324	202
August	690	390	259
September	696	0.0	411
WTR YR 1998	448	135	207

MISCELLANEOUS WITHDRAWALS FROM BASIN, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

MONTH	01437360 Bear Swamp Reservoir	01447750 Bear Creek	01448830 Hazle Creek	01460440 Delaware and Raritan Canal
October .....	.52	0	8.19	151
November .....	.44	0	7.58	128
December .....	.43	0	8.73	118
CAL YR 1997	.42	0	6.82	142
January .....	.45	0	5.80	113
February .....	.39	0	5.26	127
March .....	.38	0	5.38	125
April .....	.34	0	5.10	130
May .....	.33	0	5.32	127
June .....	.11	0	6.55	141
July	0	0	7.60	150
August	0	0	9.35	151
September	0	0	9.29	153
WTR YR 1998	.28	0	7.01	134

DIVERSIONS WITHIN THE DELAWARE RIVER BASIN

- 01446572 Diversion from Delaware River at Brainards, NJ to Merrill Creek Reservoir for storage to augment low flow in the Delaware River. There is a conservation release of 3 ft³/s to lower Merrill Creek, which eventually reaches the Delaware River. Releases other than the conservation release are designated by a minus (-) sign. Records provided by Merrill Creek Reservoir Project.
- 01459005 Diversion from the Delaware River at Point Pleasant, PA by Philadelphia Electric Company to Bradshaw Reservoir on the East Branch Perkiomen Creek, tributary to Schuylkill River, to supplement flow to Limerick Power Station. Diversion began August 1989. Records provided by the Delaware River Basin Commission.
- 01463480 Diversion from the Delaware River at the Morrisville Filtration Plant, by the Borough of Morrisville, PA for municipal supply. The water withdrawn at this site is returned to the basin after treatment, only slightly diminished by consumptive uses and losses in transmission. Records provided by the Borough of Morrisville, PA.
- 01463490 Diversion from the Delaware River just above the Trenton gaging station by the city of Trenton, NJ for municipal supply. The water being withdrawn is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the City of Trenton. REVISED RECORDS.--WDR NJ-82-2: Station number.
- 01466899 Diversion from the Delaware River just above New Lisbon gaging station by Fort Dix, NJ, for municipal supply. The water being withdrawn at this intake is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the Fort Dix Directorate of Public Works. Diversions started in 1935.
- 01467030 Diversion from the Delaware River at the Torresdale Intake, by the City of Philadelphia, PA for municipal supply. The water being withdrawn at this intake is returned to the basin after treatment only slightly diminished by consumptive uses and losses in transmission. Records provided by the Delaware River Basin Commission.
- 01474500 Diversion from the Schuylkill River at the Belmont and Queen Lane Intakes, by the City of Philadelphia, PA for municipal supply. The water being withdrawn at these intakes is returned after treatment within the Delaware River basin only slightly diminished by consumptive uses and losses in transmission. Records provided by the Delaware River Basin Commission.

WITHDRAWALS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

MONTH	01446572 Merrill Creek Reservoir		01459005 Point Pleasant		01463480 Borough of Morrisville	01463490 City of Trenton
	Current (1998)	Revised 1997	Current (1998)	Revised 1997		
October.....	0	0	83.4	43.7	4.32	44.0
November.....	0	0	46.6	31.7	3.57	42.4
December.....	0	-12.0	30.4	11.0	3.90	40.9
CAL YR 1997	-.12	-1.88	20.5	48.9	4.20	43.6
January.....	0	0	12.4	11.0	3.54	38.8
February.....	0	0	11.3	17.9	3.52	39.5
March.....	0	0	11.9	11.4	3.66	37.4
April.....	0	-1.39	13.0	24.4	3.63	38.9
May.....	0	0	38.2	70.4	3.64	40.8
June.....	-2.58	0	63.2	69.4	3.92	44.1
July.....	0	0	92.5	82.2	3.92	49.7
August.....	0	0	93.1	80.5	4.25	50.8
September.....	0	0	88.5	84.3	4.05	46.4
WTR YR 1998	-.21	-1.12	48.7	44.8	3.83	42.8

WITHDRAWALS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998--Continued

MONTH	City of Philadelphia			
	01466899 Greenwood Branch	01467030 Delaware River Torresdale	01474500 Schuylkill River Belmont	Queen Lane
October.....	1.79	282	74.3	117
November.....	1.39	287	73.3	107
December.....	1.53	282	71.8	117
CAL YR 1997	---	286	73.8	121
January.....	1.24	283	73.1	109
February.....	1.97	284	75.5	103
March.....	1.53	268	69.5	114
April.....	1.57	267	68.9	111
May.....	1.64	292	62.9	112
June.....	1.85	287	70.5	133
July.....	2.12	290	75.5	152
August.....	2.03	291	73.2	145
September.....	1.76	271	73.7	143
WTR YR 1998	1.70	282	71.8	122

DIVERSIONS AND WITHDRAWALS--Continued

DIVERSIONS IMPORTED INTO BASIN

01367630 Water diverted from Morris Lake, tributary to the Wallkill River (Hudson River basin), by the Newton Water and Sewer Authority for municipal use. After use the water is released into the Paulins Kill (Delaware River basin). Records provided by the Delaware River Basin Commission.

01578420 Water diverted from West Branch Octoraro Creek (Susquehanna River basin) at the McCray Plant of the Coatesville Water Authority (formerly Octoraro Water Co.) for municipal use. After use the water is released into the Delaware River basin. Records provided by the Delaware River Basin Commission.

01578450 Water diverted from Octoraro Lake (Susquehanna River basin) by Chester Water Authority for municipal use. After use the water is released into the Delaware River basin. Records provided by the Delaware River Basin Commission.

DIVERSIONS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998--Continued

MONTH	OCTORARO CREEK		
	01367630 Morris Lake	01578420 Coatesville Water Authority	01578450 Chester Water Authority
October	1.50	2.16	55.6
November	1.52	2.02	53.3
December	2.01	1.90	51.8
CAL YR 1997	1.51	1.68	53.2
January	1.63	1.62	49.6
February	1.37	1.58	47.9
March	1.41	1.43	46.8
April	1.47	1.45	47.9
May	1.47	1.60	51.3
June	1.24	1.76	54.1
July	1.10	1.90	57.7
August	1.55	1.66	60.3
September	1.50	1.86	59.6
WTR YR 1998	1.48	1.74	53.0

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 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.

CREST-STAGE PARTIAL-RECORD STATIONS

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower stages may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined. The gage heights are heights on the upstream side of the bridge, above the dam or at the discontinued continuous-record gaging station unless otherwise noted.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
HACKENSACK RIVER BASIN								
Pascack Brook at Montvale, NJ (01377360)	Lat 40°59'11", long 74°01'57, Bergen County, Hydrologic Unit 02030103, 250 ft upstream from bridge on Grand Avenue at entrance to fire station, 800 ft west of Montvale Memorial School, and 1,300 ft upstream from Silver Lake. Drainage area is 13.2 mi ² .	1998	4-10-98	3.70	a	4-10-98	3.70	a
Woodcliff Lake at Hillsdale, NJ (01377450)	Lat 41°00'46", long 74°02'58", Bergen County, Hydrologic Unit 02030103, at dam on Pascack Brook, 0.7 mi north of Hillsdale, and 1.5 mi north of Westwood. Datum of gage is 0.00 ft above sea level. Drainage area is 20.2 mi ² .	1998	5-10-98	95.82	a	5-10-98	95.82	a
Pascack Brook at Woodcliff Lake outlet, at Hillsdale, NJ (01377451)	Lat 41°00'41", long 74°02'54, Bergen County, Hydrologic Unit 02030103, 700 ft downstream from spillway of Woodcliff Lake, 0.7 mi north of Hillsdale, and 1.5 mi northwest of Westwood. Drainage area is 20.2 mi ² .	1998	5-10-98	5.88	a	5-10-98	5.88	a
Pascack Brook at Hillsdale, NJ (01377460)	Lat 41°00'06", long 74°02'36, Bergen County, Hydrologic Unit 02030103, at bridge on Patterson Street, 0.5 mi north of Westwood, and 1.1 mi downstream from Woodcliff Lake. Drainage area is 20.7 mi ² .	1998	5-10-98	10.80	a	5-10-98	10.80	a
Musquapsink Brook at Westwood, NJ (01377490)	Lat 40°59'11", long 74°02'03, Bergen County, Hydrologic Unit 02030103, at dam on Bogert Pond near east end of Mill Street, and 0.2 mi west of tracks of New Jersey and New York Railroad. Prior to 1998 located at dam at Bogert Pond. Drainage area is 6.53 mi ² .	1966-86, 1998	4-10-98	3.03	a	11-08-77	2.09c	460
Metzler Brook at Englewood, NJ (01378590)	Lat 40°54'29", long 73°59'13", Bergen County, Hydrologic Unit 02030103, at bridge on Lantana Avenue in Englewood, and 1.6 mi upstream from mouth. Datum of gage is 43.10 ft above sea level. Drainage area is 1.54 mi ² .	1965-98	3-09-98	2.03b	167	11-08-77	2.84bd	470

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
PASSAIC RIVER BASIN								
Passaic River near Bernardsville, NJ (01378690)	Lat 40°44'03", long 74°32'26", Somerset County, Hydrologic Unit 02030103, at bridge on U.S. Route 202, 1.8 mi north-east of Bernardsville, and 3.0 mi upstream from Great Brook. Datum of gage is 238.07 ft above sea level. Drainage area is 8.83 mi ² .	1968-76†, 1977-98	12-30-97	12.86b	196	8-28-71	18.56b	3,850
Mahwah River near Suffern, NY (01387450)	Lat 41°08'27", long 74°07'01", Rockland County, NY, Hydrologic Unit 02030103, on left bank 13 ft upstream from bridge on U.S. Route 202, 4.8 mi upstream from mouth, and 2.5 mi northeast of Suffern. Datum of gage is 321.57 ft above sea level. Drainage area is 12.3 mi ² .	1959-95† 1996-98	5-11-98	4.59	351	11-08-77	9.91	1,840
Pond Brook at Oakland, NJ *(01387880)	Lat 41°01'36", long 74°14'04", Bergen County, Hydrologic Unit 02030103, at bridge on Interstate 287/NJ Route 208 in Oakland, 0.2 mi upstream from former site at Franklin Avenue (prior to October 1975), 0.6 mi upstream from mouth, and 1.5 mi northwest of Franklin Lakes. Datum of gage is 276.97 ft above sea level. Drainage area is 6.76 mi ² .	1968-71, 1976-98	6-14-98	2.27	446	5-29-68	11.64c	1,300c
Passaic River below Pompton River, at Two Bridges, NJ (01389005)	Lat 40°53'47", long 74°16'10", Passaic County, Hydrologic Unit 02030103, on right bank, in Two Bridges and 400 ft downstream from the Pompton River. Datum of gage is 155.00 ft above sea level. Drainage area is 734 mi ² .	1989-98	5-13-98	11.31	a	5-18-89	12.65	a
Preakness (Singac) Brook near Preakness, NJ (01389030)	Lat 40°56'55", long 74°13'25", Passaic County, Hydrologic Unit 02030103, at bridge on Ratzer Road, 1.0 mi north of Preakness, and 2.0 mi upstream from Naachpunkt Brook. Datum of gage is 230.8 ft above sea level. Drainage area is 3.24 mi ² .	1979-98	6-14-98	4.23	645	5-16-90	6.32b	1,570
Passaic River above Beatties Dam, at Little Falls, NJ (01389492)	Lat 40°53'04", long 74°14'05", Passaic County, Hydrologic Unit 02030103, at Little Falls, 100 ft upstream of Beatties Dam, 600 ft upstream from bridge on Union Boulevard and 1.5 mi upstream from Peckman River. Datum of gage is 150.00 ft above sea level. Drainage area is 762 mi ² .	1984, 1991-98†	5-12-98	11.66	a	4-07-84	14.0	a
Peckman River at Ozone Avenue, at Verona, NJ (01389534)	Lat 40°50'42", long 74°14'09", Passaic County, Hydrologic Unit 02030103, at bridge on Ozone Avenue in Verona, 4.0 mi west of Clifton and 1.0 mi southwest of Cedar Grove Reservoir. Datum of gage is 300.08 ft above sea level. Drainage area is 4.45 mi ² .	1945, 1979-98	4-02-98	3.49b	754	7-23-45	---	3,800e
Molly Ann Brook at North Haledon, NJ (01389765)	Lat 40°57'11", long 74°11'07", Passaic County, Hydrologic Unit 02030103, at bridge on Overlook Avenue in North Haledon, 1.5 mi west of Hawthorne and 0.5 mi upstream from Oldham Pond Dam. Datum of gage is 209.68 ft above sea level. Drainage area is 3.89 mi ² .	1945, 1979-98	6-14-98	6.44	488	7-23-45	---	3,100f

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
PASSAIC RIVER BASIN--Continued								
Fleischer Brook at Market Street, at Elmwood Park, NJ (01389900)	Lat 40°53'57", long 74°06'54", Bergen County, Hydrologic Unit 02030103, at culvert on Market Street in Elmwood Park (formerly East Paterson), and 2.0 mi upstream from mouth. Datum of gage is 33.83 ft above sea level. (Prior to 1995 at datum 1.48 ft higher.) Drainage area is 1.37 mi ² .	1967-98	4-10-98	2.35	780	7-08-96	2.82	1,600
Saddle River at Upper Saddle River, NJ *(01390450)	Lat 41°03'32", long 74°05'44", Bergen County, Hydrologic Unit 02030103, at culvert on Lake Street in Upper Saddle River, and 1.3 mi downstream from Pine Brook. Datum of gage is 186.11 ft above sea level. Drainage area is 10.9 mi ² .	1966-98	4-10-98	3.36b	574	11-08-77	5.25bd	4,150
Hohokus Brook at Allendale, NJ (01390810)	Lat 41°01'37", long 74°08'44", Bergen County, Hydrologic Unit 02030103, at bridge on Brookside Avenue in Allendale and 0.2 mi downstream from Valentine Brook. Datum of gage is 277.46 ft above sea level. Drainage area is 9.11 mi ² .	1969-98	6-14-98	4.87	282	11-08-77	8.28	1,380
Ramsey Brook at Allendale, NJ (01390900)	Lat 41°01'44", long 74°08'07", Bergen County, Hydrologic Unit 02030103, at bridge on Brookside Avenue in Allendale and 0.6 mi upstream from Hohokus Brook. Datum of gage is 270.79 ft above sea level. Drainage area is 2.55 mi ² .	1975-98	4-10-98	2.43b	106	11-08-77	5.39b	980
Hohokus Brook at Ho-Ho-Kus, NJ (01391000)	Lat 40°59'52", long 74°06'48", Bergen County, Hydrologic Unit 02030103, on left bank 500 ft upstream from bridge on Maple Avenue in Ho-Ho-Kus, and 3.5 mi upstream from mouth. Drainage area is 16.4 mi ² .	1954-73†, 1977-96†, 1997-98	6-14-98	2.71	606	11-08-77	7.06	3,700
Third River at Bloomfield, NJ (01392170)	Lat 40°47'59", long 74°11'18", Essex County, Hydrologic Unit 02030103, on downstream left wingwall of bridge on entrance ramp at Interchange 148 to the Garden State Parkway in Bloomfield 0.6 mi west of Nutley, and 5.1 mi upstream from Passaic River. Drainage area is 7.71 mi ² .	1988-98	6-14-98	4.47b	420	10-19-96	7.34b	990
RAHWAY RIVER BASIN								
East Branch Rahway River at Maplewood, NJ (01393890)	Lat 40°44'06", long 74°16'14". Essex County, Hydrologic Unit 02030104, on bridge on Jefferson Avenue in Maplewood, 1,100 ft west of Fielding School, and 2.5 mi upstream of confluence of West Branch River and East Branch Rahway River. Drainage area is 5.11 mi.	1998	9-08-98	7.11	a	9-08-98	7.11	a
East Branch Rahway River at Millburn Avenue, at Millburn, NJ (01393895)	Lat 40°22'11", Essex County Hydrologic Unit 02030104, at bridge on Millburn Avenue at Millburn, 0.9 mi east of Millburn, and 1.5 mi upstream of confluence with West Branch Rahway River. Drainage area is 7.09 mi ² .	1998	9-08-98	8.82	a	9-08-98	8.82	a

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
RAHWAY RIVER BASIN--Continued								
West Branch Rahway River at Millburn, NJ (01394000)	Lat 40°43'51", long 74°18'26", Essex County, Hydrologic Unit 02030104, on left bank 100 ft upstream from Diamond Mill Pond dam, 1,000 ft upstream from Glen Avenue in Millburn, and 1.9 mi upstream from confluence with East Branch. Drainage area is 7.10 mi ² .	1940-50†, 1973, 1998	6-14-98	6.90	a	8-02-73	177.44p	2,270
RARITAN RIVER BASIN								
Alpaugh Brook at Hampton, NJ (01396570)	Lat 40°42'13", long 74°56'52", Hunterdon County, Hydrologic Unit 02030105, at culvert on State Route 31 at Hampton, 0.1 mi upstream of mouth, 0.6 mi north of Glen Gardner. Drainage area is 0.41 mi ² .	1995-98	4-09-98	<1.13h	<37i	10-19-96	2.83	105
Walnut Brook near Flemington, NJ (01397500)	Lat 40°30'55", long 74°52'52", Hunterdon County, Hydrologic Unit 02030105, 1.2 mi northwest of Flemington, and 2.3 mi upstream from mouth. Datum of gage is 267.33 ft above sea level. Drainage area is 2.24 mi ² .	1936-61†, 1963-98	4-10-98	3.09	454	8-28-71	4.61	1,570
Back Brook tributary near Ringoes, NJ (01398045)	Lat 40°25'41", long 74°49'52", Hunterdon County, Hydrologic Unit 02030105, at right upstream wingwall of bridge on Wertsville Road, 2.1 mi east of Ringoes, 1.3 mi upstream from Back Brook, and 2.3 mi southwest of Wertsville. Datum of gage is 161.6 ft above sea level. Drainage area is 1.98 mi ² .	1978-88†, 1989-98	12-30-97	<2.84h	<468i	8-03-79	5.05	1,290
South Branch River near Neshanic Station, NJ (01398095)	Lat 40°31'40", long 74°43'18", Somerset County, Hydrologic Unit 02030105, at bridge Opie (River) Road, 0.6 mi downstream of Pleasant Run, 1.0 mi northeast of Neshanic Station, and 2.3 mi southwest of South Branch. Drainage area is 260 mi ² .	1998	4-10-98	10.11	a	4-10-98	10.11	a
South Branch Raritan River at South Branch, NJ (01398102)	Lat 40°32'48", long 74°41'48", Somerset County, Hydrologic Unit 02030105, at bridge on Studdiford Drive (South Branch Road) in South Branch, and 2.0 mi north of Flagtown. Drainage area is 265 mi ² .	1998	4-10-98	9.96	a	4-10-98	9.96	a
Axle Brook near Pottersville, NJ (01399525)	Lat 40°41'40", long 74°43'05", Somerset County, Hydrologic Unit 02030105, on right upstream wingwall of bridge on Black River Road, 1.3 mi, south of Pottersville, and 0.3 mi upstream from mouth. Datum of gage is 172.74 ft above sea level. Drainage area is 1.22 mi ² .	1977-88†, 1989-98	4-09-98	3.18	238	7-26-88	6.13	914
North Branch Raritan River at North Branch, NJ (01399830)	Lat 40°36'00", long 74°40'27", Somerset County, Hydrologic Unit 02030105, on right bank 5 ft upstream from bridge on State Highway 28 in North Branch, 0.1 mi south of River Brook, and 3.6 mi upstream from confluence with South Branch Raritan River. Datum of gage is 56.94 ft above sea level. Drainage area is 174 mi ² .	1977-81†, 1982-95, 1997-98	12-04-90r 4-10-98	11.39r 11.14	6,200r a	7-07-84	19.31	27,300

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
North Branch Raritan River at South Branch, NJ (01400010)	Lat 40°33'24", long 74°41'19", Somerset County, Hydrologic Unit 02030105, at bridge on Old York Road, 0.8 mi north-east of South Branch, and 500 ft upstream from confluence with South Branch Raritan River. Datum of gage is 46.03 ft. Drainage area is 190 mi ² .	1993-98	4-10-96	8.55	a	10-19-96	15.60	a
Peters Brook at Mercer Street, at Somerville, NJ (01400360)	Lat 40°34'30", long 74°37'07", Somerset County, Hydrologic Unit 02030105, on the left bank on the downstream side of the bridge on Mercer Street in Somerville, 0.4 mi downstream from Macs Brook and 0.6 mi upstream from Ross Brook. Datum of gage is 42.51 ft above sea level. Drainage area is 7.37 mi ² .	1991-98	12-29-97	6.04	a	10-19-96	9.54b	a
Millstone River at Southfield Road, near Grovers Mill, NJ (01400630)	Lat 40°18'12", long 74°34'33", Mercer County, Hydrologic Unit 02030105, at bridge on Southfield Road, 0.2 mi south-east at Grovers Mill, 3.5 mi southwest of Cranbury, and 3.0 mi upstream of Bear Brook. Datum of gage is 62.63 ft above sea level. Drainage area is 41.0 mi ² .	1971, 1975, 1979-98	5-10-98	5.17b	636	12-11-92c	7.22c	1,400c
Millstone River at Plainsboro, NJ (01400730)	Lat 40°19'27", long 74°36'51", Mercer County, Hydrologic Unit 02030105, on left bank 30 ft upstream from railroad bridge on AMTRAK (former Penn Central) mainline, 100 ft downstream from Cranbury Brook, 0.2 mi upstream from Bear Brook, and 0.9 mi southwest of Plainsboro. Datum of gage is 53.41 ft above sea level. Drainage area is 65.8 mi ² .	1965-75†, 1976-87, 1987-89†, 1990-98	5-09-98	4.56	1,180	7-21-75	8.96	3,970
Bear Brook at Route 535, near Locust Corner, NJ (01400775)	Lat 40°16'41", long 74°34'39", Mercer County, Hydrologic Unit 02030105, at bridge on State Route 535, 0.9 mi south-west of Locust Corner, 2.0 mi east of Hightstown, and 4.2 mi above mouth. Datum of gage is 73.75 ft above sea level. Drainage area is 6.69 mi ² .	1971, 1975, 1979-98	8-26-98	5.27b	345	6-10-89	7.95db	1,550
Bear Brook at Route 571, near Grovers Mill, NJ (01400795)	Lat 40°17'41", long 74°35'34", Mercer County, Hydrologic Unit 02030105, at bridge on Route 571 (Princeton-Hightstown Road), 1.2 mi upstream of Grovers Mill Pond, 1.4 mi east of Princeton Junction, and 2.9 mi west of U.S. Route 130 and Hightstown. Datum of gage is 62.48 ft above sea level. Drainage area is 9.28 mi ² .	1986-98	8-26-98	8.72	246	6-10-89	11.90	1,320
Baldwins Creek at Pennington, NJ *(01400930)	Lat 40°20'18", long 74°47'50", Mercer County, Hydrologic Unit 02030105, at bridge on State Route 31, 0.8 mi north of Pennington, and 0.9 mi upstream from Baldwin Lake dam. Datum of gage is 161.69 ft above sea level. Drainage area is 1.99 mi ² .	1960-98	4-01-98	5.03	354	8-27-71	8.46r	1,260
Hart Brook near Pennington, NJ (01400950)	Lat 40°19'17", long 74°45'38", Mercer County, Hydrologic Unit 02030105, at culvert on Federal City Road, 1.6 mi upstream of mouth, and 1.7 mi southeast of Pennington. Datum of gage after July 1, 1975 is 163.32 ft above sea level. Drainage area is 0.57 mi ² .	1968-98	4-01-98	2.94	92	7-14-87	5.27d	470

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
Duck Pond Run near Princeton Junction, NJ (01401160)	Lat 40°17'47", long 74°38'47", Mercer County, Hydrologic Unit 02030105, on right bank upstream from bridge on Clarksville Road, 1.5 mi southwest of Princeton Junction, and 4.0 mi south of Princeton. Datum of gage is 72.50 ft above sea level. Drainage area is 1.81 mi ² .	1980-98	2-24-98	3.83	74	6-10-89	6.68	275
Millstone River at Carnegie Lake, at Princeton, NJ (01401301)	Lat 40°22'11", long 74°37'15", Middlesex County, Hydrologic Unit 02030105, at right end of Carnegie Lake dam, 2.5 mi northeast of Princeton. Datum of gage is 50.00 ft above sea level. Drainage area is 159 mi ² .	1971, 1973-74†, 1977-87, 1988-89†, 1990-98	5-11-98	4.31	3,690	8-28-71	7.09	13,000
Rock Brook near Blawenburg, NJ (01401595)	Lat 40°25'47", long 74°41'05", Somerset County, Hydrologic Unit 02030105, at bridge on Burnt Hill Road, 0.7 mi upstream from mouth, 1.0 mi northeast of Blawenburg, and 2.8 mi northwest of Rocky Hill. Datum of gage is 63.45 ft above sea level. Drainage area is 9.03 mi ² .	1967-98	4-10-98	4.87b	1,130	8-28-71	10.00b	4,530
Beden Brook near Rocky Hill, NJ (01401600)	Lat 40°24'52", long 74°39'02", Somerset County, Hydrologic Unit 02030105, at bridge on U.S. Route 206, 0.7 mi upstream from Pike Run, 1.2 mi northwest of Rocky Hill, and 4.6 mi north of Princeton. Datum of gage is 38.09 ft above sea level. Drainage area is 27.0 mi ² , revised.	1967-98	4-02-98	9.20b	3,210	8-28-71	16.83b	12,100
Six Mile Run near Middlebush, NJ (01401870)	Lat 40°28'12", long 74°32'42", Somerset County, Hydrologic Unit 02030105, at bridge on South Middlebush Road, 1.6 mi upstream from mouth, and 2.1 mi south of Middlebush. Datum of gage is 39.91 ft above sea level. Drainage area is 10.7 mi ² .	1966-98	10-19-96 4-02-98	10.15 7.59	4,750r 970	7-14-75	11.77	10,200
Middle Brook at Bound Brook, NJ (01403200)	Lat 40°33'38", long 74°32'56", Middlesex County, Hydrologic Unit 02030105, at bridge on Talmadge Avenue at Bound Brook, 0.6 mi downstream from bridge on State Route 28, and 0.5 mi upstream from mouth. Datum of gage is 21.53 ft above sea level. Drainage area is 17.2 mi ² .	1993-98	1-24-98	7.93b	a	10-20-96	13.00bm	a
Blue Brook at Seeleys Pond Dam, near Berkeley Heights, NJ (01403395)	Lat 40°40'02", long 74°24'13", Union County, Hydrologic Unit 02030105, on wall on right bank, upstream from Seeleys Pond dam, 300 ft from mouth, 1.0 mi north of Scotch Plains, 1.0 mi west of Mountainside, and 4.5 mi southeast of Berkeley Heights. Datum of gage is 202.05 ft above sea level. Drainage area is 3.59 mi ² .	1927, 1969, 1973, 1981-98	4-01-98	4.47	160	8-02-73	7.55	2,080
Green Brook at Plainfield, NJ (01403500)	Lat 40°36'53", Long 74°25'55", Union County, Hydrologic Unit 02030105, on left bank at bridge on Sycamore Avenue in Plainfield and 1.0 mi upstream from Stony Brook. Datum of gage is 70.37 ft above sea level. Drainage area is 9.75 mi ² .	1938-84†, 1985-98	4-01-98	3.72b	921	7-23-38	5.82b	2,890

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
RARITAN RIVER BASIN--Continued								
Stony Brook at North Plainfield, NJ (01403570)	Lat 40°37'19", long 74°26'11, Somerset County, Hydrologic Unit 02030105, at bridge on Green Brook Road, in North Plainfield, 100 ft downstream of Crab Brook, and 1.4 mi upstream of mouth. Datum of gage is 71.59 ft above sea level. Drainage area is 6.88 mi ² .	1938, 1975-82, 1991-98	4-02-98	4.6n	a	7-23-38 11-28-93	10.00 6.10d	a 1,620
Green Brook at Rock Avenue, at Plainfield, NJ (01403600)	Lat 40°36'07", long 74°27'28", Somerset County, Hydrologic Unit 02030105, at bridge on Rock Avenue in Plainfield, 0.3 mi north of West Front Street, and 0.6 mi south of U.S. Route 22. Datum of gage is 45.70 ft above sea level. Drainage area is 18.2 mi ² .	1972-79, 1992-98	4-02-98	6.25b	a	10-19-96 8-02-73	11.40b 10.65b	a 10,400
Bound Brook at Middlesex, NJ (01403900)	Lat 40°35'06", long 74°30'29", Somerset County, Hydrologic Unit 02030105, at bridge on Sebrings Mill Road, 0.4 mi downstream of mouth of Green Brook, and 2.3 mi upstream of mouth. Datum of gage is 26.52 ft above sea level. Drainage area is 48.4 mi ² .	1972-77†, 1992-95, 1996-98†	4-02-98	7.11b	1,380	8-02-73	41.18g	7,000
SHREWSBURY RIVER BASIN								
Big Brook near Marlboro, NJ (01407290)	Lat 40°19'10", long 74°12'52", Monmouth County, Hydrologic Unit 02030104, downstream side of bridge on Hillsdale Road, 1.7 mi east of Marlboro, and 3.0 mi northwest of Colts Neck. Drainage area is 6.42 mi ² .	1980-98	3-09-98	8.38b	1,220	09-20-89	10.16b	1,370
MANASQUAN RIVER BASIN								
Mingamahone Brook at Farmingdale, NJ *(01408015)	Lat 40°11'38", long 74°09'42", Monmouth County, Hydrologic Unit 02040301, at bridge on Belmar Road in Farmingdale, and 3.0 mi upstream from mouth. Datum of gage is 48.64 ft above sea level. Drainage area is 6.20 mi ² .	1969-98	3-09-98	5.80	240	7-21-75	7.31	425
GREAT EGG HARBOR RIVER BASIN								
Deep Run at U.S. Route 40, at Landisville, NJ (01411120)	Lat 39°30'41", long 74°55'15", Atlantic County, Hydrologic Unit 02040302, downstream left bank of culvert on U.S. Route 40, 0.2 mi upstream of Pennsylvania-Reading-Seashore railroad tracks, 0.3 mi southeast of Buena, and 1.1 mi northwest of Pancoast Lake. Drainage area is 0.33 mi ² .	1997-98	3-09-98	2.12b	19	8-23-97	2.83	20
Deep Run tributary at NJ Route 54, at Landisville, NJ (01411122)	Lat 39°31'20", long 74°55'13", Atlantic County, Hydrologic Unit 02040302, upstream right bank of culvert on State Route 54, 0.4 mi southwest of Pancoast Road, 0.6 mi southeast of Landisville, and 1.0 mi northeast of Pancoast Lake. Drainage area is 1.18 mi ² .	1997-98	3-09-98	2.58	30	8-23-97	4.18	140

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
COHANSEY RIVER BASIN								
West Branch Cohansey River at Seeley, NJ (01412500)	Lat 39°29'06", long 75°15'33", Cumberland County, Hydrologic Unit 02040206, on right bank 15 ft upstream from county bridge on County Highway 31 at Seeley, 450 ft upstream from mouth, and 4.1 mi northwest of Bridgeton. Datum of gage is 42.23 ft above sea level. Drainage area is 2.58 mi ² .	1952-67†, 1968-98	5-12-98	<2.08h	<50i	6-20-83	11.17	885
DELAWARE RIVER BASIN								
Lapahannock Creek at Ridge Road, at Roxburg, NJ (01446564)	Lat 40°46'06", long 75°06'11", Warren County, Hydrologic Unit 02040105, at bridge on Ridge Road, 0.2 mi south of unnamed pond and 0.8 mi east of State Route 519 at Roxburg. Drainage area is 0.86 mi ² .	1995-98	7-18-95 5-12-98	5.15 5.10	106r 103	1-19-96	8.10	285
Delaware River at Riegelsville, NJ (01457500)	Lat 40°35'36", long 75°11'17", Warren County, Hydrologic Unit 02040105, just upstream of suspension bridge at Riegelsville, 600 ft upstream from Musconetcong River (flow of which is included in the records for this station since Oct. 1, 1931). Datum of gage is 125.12 ft above sea level. Drainage area is 6,328 mi ² .	1906-71†, 1972-98	5-12-98	15.41	63,100	8-19-55	38.85	340,000
Delaware River tributary at Byram, NJ (01459010)	Lat 40°25'23", long 75°03'42", Hunterdon County, Hydrologic Unit 02040105, at culvert on State Route 29, south of Byram, 0.1 mi east of the Delaware River, and 0.9 mi north of Bulls Island. Datum of gage is 69.7 ft above sea level. Drainage area is 1.23 mi ² .	1945, 1955, 1995-98	4-09-96	<7.36bh	116	7-09-45 8-20-55	18.4 28.37k	2,900 a
Moore's Creek tributary at Valley Road, near Lambertville, NJ (01462197)	Lat 40°20'12", long 74°54'59", Mercer County, Hydrologic Unit 02040105, at culvert on Valley Road, 2.3 mi south of Lambertville, 0.3 mi east of Belle Mountain, and 0.7 mi upstream of mouth. Drainage area is 0.73 mi ² .	1989, 1995-98	4-09-98	2.26	206	8-15-89	--	1,150j
Shabakunk Creek tributary at Texas Avenue, near Lawrenceville, NJ (01463812)	Lat 40°15'36", long 74°43'38", Mercer County, Hydrologic Unit 02040105, at bridge on Texas Avenue, Lawrenceville, 600 ft west of Brunswick Pike, and 0.2 mi north of Colonial Lake. Drainage area is 0.27 mi ² .	1995-98	6-12-96 10-19-96 8-26-98	4.45br 4.07b 3.97b	a a a	6-12-96	4.45br	a
Stony Ford Brook at New Egypt, NJ (01464405)	Lat 40°04'21", long 74°31'00", Ocean County, Hydrologic Unit 02040201, at bridge on Lakewood Road, 0.7 mi northwest of New Egypt, and 0.9 mi upstream from mouth. Drainage area is 0.99 mi ² .	1979, 1995-98	1-24-98	5.25	47	8-31-79	--	340
Crosswicks Creek tributary at U.S. Route 206, near Bordentown, NJ (01464524)	Lat 40°10'15", long 74°41'59", Burlington County, Hydrologic Unit 02040201, at culvert on U.S. Route 206, 0.4 mi south of Sylvan Glen, and 1.9 mi northeast of Bordentown. Drainage area is 0.43 mi ² .	1995-98	1-24-98	1.63	37	1-20-96	2.56	62

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
DELAWARE RIVER BASIN--Continued								
Thorton Creek at Bordentown, NJ (01464525)	Lat 40°08'50", long 74°41'46", Burlington County, Hydrologic Unit 02040201, upstream side of abandoned dam, 50 ft upstream of Thorton Lane, 0.4 mi upstream of unnamed pond, 0.9 mi east of Bordentown post office, and 2.5 mi west of Crosswicks. Drainage area is 0.84 mi ² .	1976-77†, 1995-98	1-24-98	1.43	52	10-19-96	3.86	191
Crafts Creek at Route 68, at Georgetown, NJ (01464533)	Lat 40°04'37", long 74°39'48", Burlington County, Hydrologic Unit 02040201, at culvert on State Route 68, 0.5 mi west of Georgetown, 0.7 mi downstream of unnamed pond, and 3.1 mi east of Columbus. Drainage area is 0.58 mi ² .	1995-98	1-23-98	3.57	26	1-19-96	4.27	39
Crafts Creek at Columbus, NJ (01464538)	Lat 40°04'44", long 74°43'07", Burlington County, Hydrologic Unit 02040201, at bridge on Columbus-Mansfield road, 0.4 mi north of Columbus, and 6.0 mi north-east of Mount Holly. Datum of gage is 33.71 ft above sea level. Drainage area is 5.38 mi ² .	1978-98	1-24-98	5.06	121	7-06-89	10.25b	880
Newton Creek at Collingswood, NJ *(01467305)	Lat 39°54'30", long 75°03'13", Camden County, Hydrologic Unit 02040202, at bridge on Park Avenue in Collingswood, 0.3 mi east of Cuthbert Avenue. Datum of gage is 18.74 ft above sea level. Drainage area is 1.33 mi ² .	1964-98	5-08-98	2.47	112	7-14-94	6.82	328
South Branch Newton Creek at Haddon Heights, NJ (01467317)	Lat 39°52'45", long 75°04'26", Camden County, Hydrologic Unit 02040202, at bridge on 13th Avenue in Haddon Heights, and 2.6 mi south of Collingswood. Datum of gage is 23.34 ft above sea level. Drainage area is 0.63 mi ² .	1964-98	7-31-98	2.28	69	9-01-78	4.62	295
Gravelly Run at Somerdale, NJ (01467357)	Lat 39°46'17", long 75°01'49", Camden County, Hydrologic Unit 02040202, upstream left bank at culvert, on Warwick Road in Somerdale 0.8 mi south of Evesham Road, 0.8 mi north of Sterling High School, and 1.25 mi upstream of mouth, where it feeds Otter Brook. Drainage area is 0.35 mi ² .	1997-98	7-31-98	3.84	a	7-31-98	3.84	a
Bees Branch at Hurffville, NJ (01475017)	Lat 39°46'17", long 75°06'21", Gloucester County, Hydrologic Unit 02040202, upstream right bank at culvert, on State Route 47, 0.4 mi south of Barnsboro Road, 0.6 mi north of Hurffville, and 0.8 mi southwest of headwater at unnamed lake. Drainage area is 0.43 mi ² .	1997-98	1-23-98	2.50	23	12-14-96	4.93	71
Plank Run at Glassboro, NJ (01475033)	Lat 39°42'54", long 75°08'25", Gloucester County, Hydrologic Unit 02040202, upstream right bank at culvert, on State Route 322. 0.4 mi southwest of intersection with State Route 55, 0.6 mi west of Glassboro, and 0.7 mi south of Alcyon Lake. Drainage area is 0.71 mi ² .	1997-98	6-14-98	1.64	21	10-19-96	2.21	28

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1998 maximum			Period of record maximum		
			Date	Gage Height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
DELAWARE RIVER BASIN--Continued								
Miery Run near Ewan, NJ (01477102)	Lat 39°42'52", Long 75°11'41", Gloucester County, Hydrologic Unit 02040202, downstream left bank at culvert on County Route 623, 0.3 mi southeast of mouth of Raccoon Creek, 1.2 mi northwest of Ewan, and 1.5 mi southeast of intersection with U.S. Route 322. Drainage area is 0.73 mi ² .	1997-98	6-14-98	1.14	17	12-14-96	2.31	80
Raccoon Creek tributary No. 3 near Mullica Hill, NJ (01477123)	Lat 39°44'47", long 75°16'05", Gloucester County, Hydrologic Unit 02040202, downstream left bank of culvert, on Mullica Hill Road, 0.3 mi upstream of mouth, 2.0 mi east of Swedesboro, and 2.3 mi northwest of Mullica Hill. Drainage area is 0.47 mi ² .	1997-98	6-14-98	--	16	10-19-96	1.10	22

Also a low-flow partial-record station.
 Operated as a continuous-record gaging station.
 Discharge not determined.
 Downstream side of bridge.
 Recorded at previous site.
 Not the maximum gage height for period of record.
 Determined at Bradford Avenue, 0.2 mi downstream of gage, adjusted for change in drainage area.
 Determined at Squaw Lake Dam, 0.2 mi upstream of gage.
 Gage height (NGVD 1929) from previous site location approximately 150 ft upstream of current site.

- h Peak gage height for the period was less than minimum recordable gage height indicated.
- i Peak discharge for the period was less than the minimum recordable discharge.
- j Determined at site 0.1 mi downstream (USGS station number 01462198, drainage area 0.80 mi²), adjusted for change in drainage area.
- k Due to backwater from Delaware River.
- m Due to backwater from Raritan River.
- n Estimated.
- p Elevation above mean sea level.
- r Revised.

Low-flow partial-record stations

Measurements of streamflow in New Jersey 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 1998

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
HUDSON RIVER BASIN						
01367770	Wallkill River near Sussex, NJ	Lat 41°11'38", long 74°34'32", Sussex County, Hydrologic Unit 02020007, at bridge on Glenwood Road, 0.6 mi upstream from Papakating Creek, 1.7 mi southwest of Independence Corner, and 2.0 mi southeast of Sussex.	60.8	1977-82, 1985, 1987-98	2-17-98	128
					5-21-98	147
					8-19-98	40
PASSAIC RIVER BASIN						
01379525	Canoe Brook near Millburn, NJ	Lat 40°44'55", long 74°20'14", Essex County, Hydrologic Unit 02030103, at bridge on Parsonage Hill Road, 0.2 mi downstream from Taylor Lake, 1.0 mi upstream from New Jersey-American Water Company pumping station, and 1.4 mi northwest of Millburn.	10.2	1989-98	10-14-97	.45
					7-28-98	.65
01381550	Malapardis Brook at Whippany, NJ	Lat 40°49'22", long 74°25'08", Morris County, Hydrologic Unit 02030103, at bridge on Parsippany Road at Whippany, 400 ft upstream from mouth, and 2.2 mi south of Parsippany.	5.07	1989-98	10-14-97	1.3
					7-28-98	1.8
01382000	Passaic River at Two Bridges, NJ	Lat 40°53'50", long 74°16'23", Essex County, Hydrologic Unit 02030103, at bridge on Two Bridges Road, just upstream from confluence with Pompton River, 0.3 mi northeast of Two Bridges, and 2.6 mi northwest of Little Falls.	361	1963-68, 1983-84, 1986-93, 1995-98	7-15-98	137
					9-01-98	109
01382550	Pequannock River tributary at Kinnelon, NJ	Lat 41°00'12", long 74°22'08", Morris County, Hydrologic Unit 02030103, at culvert on Kinnelon Road, at Kinnelon, 300 ft upstream from Maple Lake and 1.0 mi west of Butler.	1.18	1992-98	10-24-97	.16
					7-13-98	.31
01382700	Stone House Brook at Kinnelon, NJ	Lat 40°59'17", long 74°23'10", Morris County, Hydrologic Unit 02030103, at culvert on Kinnelon Road at Kinnelon, 200 ft downstream from dam on unnamed pond, and 0.3 mi upstream from Butler Reservoir.	3.45	1992-98	10-24-97	.41
01387490	Masonicus Brook at West Mahwah, NJ	Lat 41°05'53", long 74°08'57", Bergen County, Hydrologic Unit 02030103, at bridge on Eastview Avenue, at West Mahwah, 0.3 mi downstream from Winters Pond and 0.4 mi upstream from mouth.	3.84	1982-83, 1992-98	10-24-97	1.4
					7-13-98	1.9
01388700	Beaver Dam Brook at Lincoln Park, NJ	Lat 40°55'29", long 74°18'10", Morris County, Hydrologic Unit 02030103, at bridge on Park Avenue, at Lincoln Park, 0.6 mi downstream from East Ditch and 0.7 mi upstream from mouth.	12.3	1992-98	10-23-97 7-13-98	.81 3.1
01389100	Singac Brook at Singac, NJ	Lat 40°53'57", long 74°15'57", Passaic County, Hydrologic Unit 02030103, at bridge on Fairfield Road, between Interstate 80 and U.S. Route 46, 60 ft upstream from mouth, 1.2 mi northwest of Singac, and 1.8 mi northwest of Little Falls.	11.1	1963-67, 1983-84, 1986-98	10-23-97	14
					7-15-98	21

Discharge measurements made at low-flow partial-record stations during water year 1998--Continued

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01389140	Deepavaal Brook at Two Bridges, NJ	Lat 40°53'14", long 74°16'00", Essex County, Hydrologic Unit 02030103, at bridge on Little Falls Road, 400 ft upstream from Passaic River, and 0.8 mi southeast of Two Bridges.	7.59	1970, 1983-84, 1988-98	10-23-97 7-13-98	0.84 1.5
01389534	Peckman River at Ozone Avenue at Verona, NJ	Lat 40°50'42", long 74°14'09", Passaic County, Hydrologic Unit 02030103, at bridge on Ozone Avenue in Verona, 4.0 mi west of Clifton and 1.0 mi southwest of Cedar Grove Reservoir.	4.45	1998	9-25-98	3.2
01389765	Molly Ann Brook at North Haledon, NJ	Lat 40°57'11", long 74°11'07", Passaic County, Hydrologic Unit 02030103, Overlook Avenue in North Haledon, 1.5 mi west of Hawthorne and 0.5 mi upstream from Oldham Pond Dam.	3.89	1998	9-25-98	.08
01390900	Ramsey Brook at Allendale, NJ	Lat 41°01'44", long 74°08'07", Bergen County, Hydrologic Unit 02030103, at bridge on Brookside Avenue in Allendale and 0.6 mi upstream from Hohokus Brook. Datum of gage is 270.79 ft above sea level. Drainage area is 2.55 mi ² .	2.55	1998	4-10-98 6-23-98	33 1.3
ELIZABETH RIVER BASIN						
01393350	West Branch Elizabeth River near Union, NJ	Lat 40°41'32", long 74°14'38", Union County, Hydrologic Unit 02030104, at bridge on Vauxhall Road, 0.3 mi upstream from mouth, 1.4 mi east of Union, and 2.3 mi northwest of Elizabeth.	2.53	1989-98	10-14-97	.50
RAHWAY RIVER BASIN						
01394000	West Branch Rahway River at Millburn, NJ	Lat 40°43'51", long 74°18'26", Essex County, Hydrologic Unit 02030104, on left bank 100 ft upstream from Diamond Mill Pond Dam, 1,000 ft upstream from Glen Avenue in Millburn, and 1.9 mi upstream from confluence with East Branch.	7.10	1939-50a, 1998	7-28-98	.91
01394400	Van Winkle Brook at Springfield, NJ	Lat 40°42'12", long 74°18'15", Union County, Hydrologic Unit 02030104, at railroad bridge in Springfield, 0.4 mi upstream from bridge on Mountain Avenue, and 2.3 mi west of Union.	4.85	1989-98	10-14-97 7-28-98	.60 .88
01394600	Nomahegan Brook near Mountainside, NJ	Lat 40°40'42", long 74°19'54", Union County, Hydrologic Unit 02030104, at bridge on Springfield Avenue, 0.2 mi downstream from Echo Lake, 1.1 mi upstream from mouth, and 1.4 mi northeast of Mountainside.	3.76	1989-98	10-14-97 7-28-98	2.2 2.2
RARITAN RIVER BASIN						
01396220	Stony Brook at Naughtright, NJ	Lat 40°48'11", long 74°45'07", Morris County, Hydrologic Unit 02040105, at bridge on Naughtright Road, 0.6 mi northwest of Naughtright, 0.7 mi upstream from mouth, and 1.9 mi northeast of Long Valley.	3.34	1963-67, 1973, 1991-98	10-14-97	.40
01396240	Electric Brook at Long Valley, NJ	Lat 40°47'23", long 74°46'36", Morris County, Hydrologic Unit 02030105, at bridge on Fairview Avenue at Long Valley, 0.3 mi upstream from mouth, and 0.8 mi downstream from Camp Washington Pond.	3.17	1991-98	10-14-97 7-14-98	.41 1.0

Discharge measurements made at low-flow partial-record stations during water year 1998--Continued

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued						
01396865	Sidney Brook at Grandin, NJ	Lat 40°37'10", long 74°56'15", Hunterdon County, Hydrologic Unit 02030105, at bridge on State Route 513 (Grandin Road) in Grandin, 1.3 mi upstream from mouth, 1.8 mi southwest of Clinton, and 2.7 mi northeast of Pittstown.	4.71	1997-98	10-14-97	.69
					7-23-98	1.6
					9-15-98	1.9
01399190	Lamington (Black) River at Succasunna, NJ	Lat 40°51'03", long 74°38'02", Morris County, Hydrologic Unit 02030105, bridge on Righter Road, 0.7 mi south of Succasunna, and 0.4 mi upstream from Succasunna Brook.	7.37	1977-87a, 1988-98	10-02-97	1.7
					10-14-97	1.7
					4-29-98	14
					7-23-98	3.4
01399200	Lamington (Black) River near Ironia, NJ	Lat 40°50'07", long 74°38'40", Morris County, Hydrologic Unit 02030105, at bridge on Ironia Road, 1.0 mi downstream from Succasunna Brook, and 1.3 mi northwest of Ironia.	10.9	1964-72, 1976-87a, 1988-98	10-02-97	3.9
					10-14-97	3.4
					4-29-98	21
					7-23-98	5.6
					9-01-98	2.8
01399295	Tanners Brook near Milltown, NJ	Lat 40°47'17", long 74°43'33", Morris County, Hydrologic Unit 02030105, at bridge on Tanners Brook Road, 0.2 mi upstream from mouth, 0.6 mi north of Milltown, and 1.5 mi west of Chester.	2.78	1991-98	10-14-97	.57
					7-23-98	1.5
01399300	Lamington River at Milltown, NJ	Lat 40°47'13", long 74°43'13", Morris County, Hydrologic Unit 02030105, at bridge on New Furnace Road, 0.1 mi downstream from Tanners Brook, and 0.6 mi north of Milltown.	23.2	1988-98	10-14-97	7.0
					7-23-98	10
WHALE POND BROOK BASIN						
01407618	Whale Pond Brook near Oakhurst, NJ	Lat 40°16'35", long 74°00'12", Monmouth County, Hydrologic Unit 02030104, at bridge on Norwood Avenue, 0.6 mi upstream from Lake Takanassee, and 0.8 mi northeast of Oakhurst.	6.20	1989-98	10-14-97	3.4
POPLAR BROOK BASIN						
01407628	Poplar Brook near Deal, NJ	Lat 40°15'24", long 74°00'42", Monmouth County, Hydrologic Unit 02030104, at bridge on Monmouth Road, 0.7 mi west of Deal, 1.0 mi south of Oakhurst, and 1.3 mi upstream from mouth.	2.49	1989-98	10-14-97	2.1
HARVEY (HOG SWAMP) BROOK BASIN						
01407636	Harvey (Hog Swamp) Brook at West Allenhurst, NJ	Lat 40°14'36", long 74°00'52", Monmouth County, Hydrologic Unit 02030104, at culvert on Monmouth Road at West Allenhurst, 0.7 mi west of Deal, and 1.6 mi upstream from dam on Deal Lake.	1.99	1989-98	10-14-97	.88
SHARK RIVER BASIN						
01407755	Jumping Brook above reservoir, near Neptune City, NJ	Lat 40°12'30", long 74°04'12", Monmouth County, Hydrologic Unit 02030104, at bridge on State Route 33, 0.25 mi upstream from Jumping Brook Reservoir, and 2.3 mi west of Neptune City.	5.58	1989-98	10-14-97 7-27-98	0 1.8
POLLY POND BROOK BASIN						
01407780	Polly Pond Brook at South Belmar, NJ	Lat 40°10'00", long 74°01'41", Monmouth County, Hydrologic Unit 02030104, at culvert on F Street at South Belmar, 50 ft upstream from Lake Como, and 0.6 mi upstream from mouth.	.99	1989-98	10-14-97 7-27-98	0 .64

Discharge measurements made at low-flow partial-record stations during water year 1998--Continued

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
WRECK POND BROOK BASIN						
01407806	Hannabrand Brook at Old Mill Road, near Spring Lake Heights, NJ	Lat 40°08'29", long 74°03'43", Monmouth County, Hydrologic Unit 02030104, at bridge on Old Mill Road, 300 ft upstream from mouth, and 1.0 mi southwest of Spring Lake Heights.	3.13	1989-98	10-14-97	2.2
					7-27-98	4.3
TOMS RIVER BASIN						
01408592	Wrangel Brook at Mule Road near Toms River, NJ	Lat 39°57'39", long 74°13'42", Ocean County, Hydrologic Unit 02040301, at bridge on Mule Road in Berkeley Township, 0.5 mi upstream from mouth, and 1.7 mi west of Toms River.	19.5	1993-98	7-27-98	25
01408620	Davenport Branch near Dover Forge, NJ	Lat 39°56'29", long 74°17'49", Ocean County, Hydrologic Unit 02040301, at bridge on Pinewald Road (State Route 530), 2.2 mi north of Dover Forge, 2.3 mi east of Keswick Grove, and 3.0 mi northeast of Cedar Crest.	7.41	1977	11-10-97	9.8
					12-30-97	31
					2-05-98	14
					3-31-98	30
					5-12-98	54
					7-09-98	10
					7-27-98	7.4
8-25-98	22					
MULLICA RIVER BASIN						
01409375	Mullica River near Atco, NJ	Lat 39°47'08", long 74°51'38", Camden County, Hydrologic Unit 02040301, on left bank of small lake 50 ft downstream from bridge on Jackson-Medford Road, 0.7 mi north of intersection of State Route 534 with Jackson-Medford Road, and 1.6 mi east of Atco.	3.22	1974-85b, 1991-98	12-04-97	.95
					3-16-98	3.2
					6-19-98	3.0
					7-30-98	.29
01409383	Mullica River at Jackson Road, near Indian Mills, NJ	Lat 39°46'40", long 74°48'01", Burlington County, Hydrologic Unit 02040301, at bridge on Jackson Road (State Route 534), 0.5 mi downstream from Alquatka Branch, 3.2 mi west of Indian Mills, and approximately 3.3 mi east of Jackson.	16.8	1977-78, 1995-98	11-07-97	13
					1-21-98	25
					3-30-98	28
					5-29-98	7.9
					7-14-98	1.6
0140940050	Mullica River at Constable Bridge, near Batsto, NJ	Lat 39°39'33", long 74°39'33", Burlington County, Hydrologic Unit 02040301, at Constable Bridge on unnamed road, 1.0 mi upstream from Sleeper Branch, 1.2 mi northwest of Batsto, and 1.6 mi northeast of Nescochague Lake.	47.0	1995-98	11-07-97	80
					1-21-98	134
					3-30-98	269
					5-29-98	100
					7-14-98	50
9-15-98	22					
01409401	Hays Mill Creek at Atco, NJ	Lat 39°45'32", long 74°53'02", Camden County, Hydrologic Unit 02040301, at bridge on U.S. Route 30, at outlet of Atco Lake in Atco, and 3.3 mi southeast of Berlin.	3.80	1979, 1991-98	12-04-97	2.1
					3-16-98	4.1
					6-19-98	3.7
					7-30-98	1.4
01409402	Hays Mill Creek near Chesilhurst, NJ	Lat 39°45'02", long 74°50'28", Camden County, Hydrologic Unit 02040301, at bridge on Tremont Avenue in Wharton State Forest, 0.3 mi northeast of Burnt Mill Road and 2.0 mi northeast of Chesilhurst.	7.13	1974-77b, 1991-98	12-04-97	9.0
					3-16-98	14
					6-19-98	8.4
					7-30-98	6.6
0140940250	Cooper Branch near Chesilhurst, NJ	Lat 39°44'44", long 74°50'25", Camden County, Hydrologic Unit 02040301, at bridge on Burnt Mill Road, 700 ft upstream from mouth, 1.6 mi northeast of Waterford Works, and 2.8 mi southeast of Atco.	1.93	1991-98	12-04-97	2.2
					3-16-98	6.2
					6-19-98	.72
					7-30-98	0
0140940310	Wildcat Branch near Chesilhurst, NJ	Lat 39°44'20", long 74°49'58", Camden County, Hydrologic Unit 02040301, at bridge on Burnt Mill Road, 0.1 mi downstream from outlet of Beaverdam Lake, 1.4 mi northeast of Waterford Works, and 1.9 mi east of Chesilhurst.	2.27	1991-98	12-04-97	2.9
					3-16-98	5.9
					6-19-98	3.9
					7-30-98	.94

Discharge measurements made at low-flow partial-record stations during water year 1998--Continued

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
MULLICA RIVER BASIN--Continued						
0140940365	Sleeper Branch Diversion (Saltars Ditch) near Atsion, NJ	Lat 39°43'48", long 74°46'09", Camden County, Hydrologic Unit 02040301, at bridge on Burnt House Road, 600 ft downstream from Sleeper Branch, and 2.3 mi west of Atsion.	---	1991-98	12-04-97	1.7
					3-16-98	5.6
					6-19-98	3.0
					7-30-98	.28
0140940370	Sleeper Branch near Atsion, NJ	Lat 39°43'42", long 74°46'12", Camden County, Hydrologic Unit 02040301, at bridge on Burnt House Road, 500 ft downstream from Sleeper Branch Diversion (Saltars Ditch) and 2.3 mi west of Atsion.	16.1	1991-98	12-04-97	17.3
					3-16-98	32
					5-20-98	28
					6-19-98	21
					7-30-98	9.7
0140940480	Clark Branch near Atsion, NJ	Lat 39°42'53", long 74°46'25", Camden County, Hydrologic Unit 02040301, at abandoned railroad bridge, 0.2 mi downstream from Price Branch and 2.8 mi west of Atsion.	6.42	1991-98	12-04-97	2.0
					3-16-98	10
					6-19-98	4.7
					7-30-98	0
01409408	Pump Branch near Waterford Works, NJ	Lat 39°41'59", long 74°50'40", Camden County, Hydrologic Unit 02040301, at bridge on Old Whitehorse Pike, 0.5 mi downstream from lake at Camp Ha-Lu-Wa-Sa, and 1.6 mi south of Waterford Works.	9.78	1991-98	12-04-97	8.8
					3-16-98	14
					6-19-98	14
					7-30-98	4.7
0140940950	Blue Anchor Brook at Elm, NJ	Lat 39°40'11", long 74°50'06", Camden County, Hydrologic Unit 02040301, at bridge on U.S. Route 30 (Whitehorse Pike) at Elm, at outlet of unnamed lake, and 1.4 mi upstream from confluence with Pump Branch.	4.86	1991-98	12-04-97	2.6
					12-08-97	2.0
					3-05-98	7.2
					3-16-98	6.2
					5-27-98	8.7
					6-19-98	4.8
					7-30-98	2.8
					8-20-98	2.3
0140940970	Albertson Branch near Elm, NJ	Lat 39°41'34", long 74°48'24", Camden County, Hydrologic Unit 02040301, at bridge on Fleming Pike, 0.4 mi downstream from confluence of Blue Anchor Brook and Pump Branch, and 1.6 mi northeast of Elm.	17.1	1991-98	12-04-97	17
					3-16-98	31
					5-20-98	32
					6-19-98	23
					7-30-98	11
0140941050	Great Swamp Branch at Elm, NJ	Lat 39°40'18", long 74°49'33", Camden County, Hydrologic Unit 02040301, at bridge on U.S. Route 30, 0.5 mi southeast of Elm, 1.5 mi north of Rosedale, and 2.4 mi northeast of Winslow.	2.83	1991-98	12-04-97	.44
					3-16-98	3.4
					6-19-98	3.4
					7-30-98	.52
0140941070	Great Swamp Branch below U.S. Route 206, near Hammonton, NJ	Lat 39°41'04", long 74°45'48", Atlantic County, Hydrologic Unit 02040301, 1.0 mi north of Hammonton Municipal Airport, 2.3 mi upstream from mouth, 2.5 mi south of Parkdale, and 3.9 mi northeast of Hammonton.	8.07	1995-98	11-07-97	8.2
					1-21-98	9.2
					3-30-98	24
					5-19-98	13
					5-29-98	12
					7-14-98	2.5
				9-15-98	.95	
01409411	Nescochague Creek at Pleasant Mills, NJ	Lat 39°38'37", long 74°39'48", Atlantic County, Hydrologic Unit 02040301, at bridge on sand road in Pleasant Mills, 0.2 mi upstream from Mullica River, and 0.6 mi west of Batsto.	43.7	1977-78, 1995-98	11-07-97	51
					1-21-98	65
					3-30-98	94
					5-29-98	61
					7-14-98	30
					9-15-98	16
01409432	Batsto River at Hampton Furnace, NJ	Lat 39°46'15", long 74°40'48", Burlington County, Hydrologic Unit 02040301, 0.1 mi northeast of Hampton Furnace, 0.5 mi upstream from Skit Branch, and 3.8 mi southeast of Indian Mills.	13.7	1995-98	11-07-97	13
					1-21-98	22
					3-30-98	31
					5-29-98	21
					7-14-98	11
					9-15-98	7.1
01409439	Skit Branch at Hampton Furnace, NJ	Lat 39°46'01", long 74°40'40", Burlington County, Hydrologic Unit 02040301, at Hampton Furnace, 0.2 mi upstream from mouth, 2.5 mi south of Hampton Gate, and 3.9 mi southeast of Indian Mills.	10.8	1995-98	11-07-97	10
					1-21-98	18
					3-30-98	20
					5-19-98	35
					5-29-98	18
					7-14-98	9.5
				9-15-98	4.4	

Discharge measurements made at low-flow partial-record stations during water year 1998--Continued

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
MULLICA RIVER BASIN--Continued						
01409455	Springers Brook near Hampton Furnace, NJ	Lat 39°45'19", long 74°41'47", Burlington County, Hydrologic Unit 02040301, at bridge on Hampton Road, 1.3 mi southwest of Hampton Furnace, 1.7 mi downstream from Bard Branch, and 3.7 mi southeast of Indian Mills.	18.3	1977-78, 1995-98	11-07-97	22
					1-21-98	22
					3-30-98	32
					5-29-98	22
					9-14-98	8.5
					9-15-98	.12
01409470	Batsto River at Quaker Bridge, NJ	Lat 39°42'34", long 74°40'00", Burlington County, Hydrologic Unit 02040301, at Quaker Bridge on sand road, 1.1 mi southeast of Lower Forge, approximately 2.3 mi upstream from Penn Swamp Brook, and 4.7 mi north of Batsto.	55.7	1976-78, 1995-98	11-07-97	80
					1-28-98	100
					3-30-98	135
					5-29-98	101
					7-14-98	53
					9-15-98	29
01409750	West Branch Wading River above Tulpehocken Creek, near Jenkins, NJ	Lat 39°42'56", long 74°33'41", Burlington County, Hydrologic Unit 02040301, 0.3 mi upstream from Tulpehocken Creek, 2.0 mi northwest of Jenkins, and 3.2 mi north of Maxwell.	50.6	1995-98	11-07-97	43
					1-21-98	51
					3-30-98	86
					5-29-98	73
					7-14-98	26
					9-15-98	19
01409780	Tulpehocken Creek near Jenkins, NJ	Lat 39°42'51", long 74°33'58", Burlington County, Hydrologic Unit 02040301, at bridge on Maxwell-Friendship Road, 0.2 mi upstream from mouth, 2.3 mi northwest of Jenkins, and 2.8 mi east of Jemima Mount.	21.8	1977-78, 1995-98	11-07-97	20
					1-21-98	27
					3-30-98	36
					5-29-98	22
					7-14-98	11
					9-15-98	5.0
GREAT EGG HARBOR RIVER BASIN						
01411170	Great Egg Harbor River at Mays Landing, NJ	Lat 39°27'13", long 74°44'04" Atlantic County, Hydrologic Unit 02040302, at bridge on State Route 559, at outlet of Lake Lenape, and 0.4 mi west of intersection of State Route 50 with U.S Route 40 in Mays Landing.	205	1988-93, 1995-98	10-23-97 7-14-98	52 350
01411220	South River near Belcoville, NJ	Lat 39°26'25", long 74°45'21" Atlantic County, Hydrologic Unit 02040302, at bridge on Walkers Forge Road, 1.1 mi west of Belcoville, and 3.7 mi upstream from mouth.	20.4	1994-98	10-22-97 7-14-98	16 14
MAURICE RIVER BASIN						
01411650	Muddy Run near Elmer, NJ	Lat 39°36'48", long 75°11'21" Salem County, Hydrologic Unit 02040206, at bridge on Friendship Church Road, 1.6 mi north of Elmer and 1.8 mi upstream from Elmer Lake.	4.94	1994-98	10-21-97 7-14-98	2.1 2.6
01411680	Palatine Branch at Palatine, NJ	Lat 39°33'25", long 75°10'28" Salem County, Hydrologic Unit 02040206, at bridge on Elmer-Palatine Road at Palatine, 0.6 mi upstream from Palatine Lake and 2.5 mi south of Elmer.	5.39	1994-98	10-21-97 7-14-98	1.9 7.0
01411850	Mill Creek near Millville, NJ	Lat 39°25'33", long 75°05'11" Cumberland County, Hydrologic Unit 02040206, at bridge on dirt road, 1.2 mi upstream from mouth, and 3.3 mi northwest of Millville.	15.1	1973-79, 1993, 1995-98	10-21-97	6.4
DELAWARE RIVER BASIN						
01443510	Blairs Creek at Blairstown, NJ	Lat 40°59'12", long 74°57'35", Warren County, Hydrologic Unit 02040105, at bridge on Mill Brook Road, at Blairstown, 300 ft upstream from Blair Lake, 0.4 mi upstream from mouth, and 1.2 mi east of Jacksonburg.	13.1	1989-98	10-14-97 9-29-98	1.3 1.3

Discharge measurements made at low-flow partial-record stations during water year 1998--Continued

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
01445200	Bear Creek near Johnsonburg, NJ	Lat 40°56'35", long 74°52'31", Warren County, Hydrologic Unit 02040105, at bridge on Bear Creek Road, 1.8 mi upstream from Trout Brook, and 1.5 mi south of Johnsonburg.	12.9	1940-42, 1987-98	10-14-97 9-29-98	2.5 3.2
01445490	Furnace Brook at Oxford, NJ	Lat 40°48'15", long 74°59'42" Warren County, Hydrologic Unit 02040105, at bridge on State Route 31 in Oxford, 2.4 mi upstream from mouth and 3.2 mi north of Washington.	4.29	1965-69b, 1971-72b, 1994-98	10-14-97 8-04-98	4.0 3.8
01445520	Mountain Lake Brook near Pequest, NJ	Lat 40°51'11", long 74°59'09", Warren County, Hydrologic Unit 02040105, at bridge on Lake Drive South, at outlet of Mountain Lake, 1.5 mi north of Pequest and 1.7 mi upstream from mouth.	4.35	1991-98	10-14-97 7-14-98	.22 0
01446520	Pophandusing Brook at Belvidere, NJ	Lat 40°49'14", long 75°04'37", Warren County, Hydrologic Unit 02040105, at bridge on Knowlton Street, at Belvidere, 0.5 mi upstream from mouth, and 1.8 mi west of Hazen.	5.36	1991-98	10-17-97 8-04-98	.37 .48
01446568	Buckhorn Creek at Hutchinson Road, at Hutchinson, NJ	Lat 40°46'18", long 75°07'53", Warren County, Hydrologic Unit 02040105, at bridge on Hutchinson Road at Hutchinson, 50 ft upstream from unnamed tributary, and 800 ft upstream from mouth.	8.38	1991-98	10-14-97	.75
01455100	Lopatcong Creek at Phillipsburg, NJ	Lat 40°40'38", long 75°10'13", Warren County, Hydrologic Unit 02040105, at bridge on Alternate U.S. Route 22 in Phillipsburg, 100 ft upstream from railroad bridge of CONRAIL, and 3,000 ft above mouth.	14.2	1958-64, 1991-98	10-14-97 7-14-98	8.6 13
01456080	Mine Brook near Hackettstown, NJ	Lat 40°49'58", long 74°49'23", Morris County, Hydrologic Unit 02040105, at bridge on State Route 517 (Schooleys Mountain Road), 600 ft upstream from mouth, and 1.0 mi south of Hackettstown.	4.96	1991-98	10-14-97 7-14-98	.19 .28
01456210	Hances Brook near Beattystown, NJ	Lat 40°48'17", long 74°51'38", Warren County, Hydrologic Unit 02040105, at bridge on State Route 57, 600 ft upstream from mouth, and 1.1 mi southwest of Beattystown.	4.13	1991-98	10-14-97 7-14-98	1.0 1.7
01467130	Cooper River at Kirkwood, NJ	Lat 39°50'11", long 75°00'06", Camden County, Hydrologic Unit 02040202, at outlet of Kirkwood Lake in Kirkwood, 100 ft east of railroad tracks of CONRAIL, and 1.0 mi north of Laurel Springs.	5.10	1964-72, 1988-98	10-21-97	2.4
01467140	Cooper River at Lawnside, NJ	Lat 39°52'14", long 75°00'59", Camden County, Hydrologic Unit 02040202, on right bank at Melrose Avenue at Lawnside, 300 ft downstream from former Lawnside sewage treatment plant, and 2.0 mi upstream from New Jersey Turnpike.	12.7	1964-72, 1988-98	10-21-97	6.0
01467160	North Branch Cooper River near Marlton, NJ	Lat 39°53'20", long 74°58'08", Burlington County, Hydrologic Unit 02040202, at bridge on Springdale Road, 2.5 mi west of Marlton, and 5.7 mi southwest of Moorestown.	5.34	1965-69, 1971, 1988-98	10-21-97 8-06-98	2.1 .11
01467180	North Branch Cooper River at Ellisburg, NJ	Lat 39°54'27", long 75°00'42", Camden County, Hydrologic Unit 02040202, at bridge on Brace Road, 0.4 mi south of Ellisburg, and 0.9 mi upstream from confluence with Cooper River.	10.5	1964-69, 1971-72, 1977, 1988-98	10-21-97	4.4

Discharge measurements made at low-flow partial-record stations during water year 1998--Continued

Station No.	Station Name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
01467330	South Branch Big Timber Creek at Blackwood, NJ	Lat 39°48'17", long 75°04'33" Camden County, Hydrologic Unit 02040202, at bridge on Lower Landing Road at Blackwood, 3.1 mi southwest of Lindenwold and 3.0 mi from mouth.	19.1	1964-72, 1994-98	10-14-97 8-03-98	18 3.0
01475020	Mantua Creek at Sewell, NJ	Lat 39°46'22", long 75°08'10", Gloucester County, Hydrologic Unit 02040202, at bridge on Wenonah-Pitman Road, 0.5 mi below Bees Branch, and 0.6 mi east of Sewell.	14.7	1966-72, 1994-98	10-14-97 8-03-98	9.3 10
01477130	Basgalore Creek at Russell Mill Road, near Swedesboro, NJ	Lat 39°44'14", long 75°17'00" Gloucester County, Hydrologic Unit 02040202, at bridge on Russell Mill Road, 0.8 mi above mouth, and 1.7 mi east-southeast of Swedesboro.	3.30	1957c, 1966c, 1994-98	10-14-97 8-03-98	2.3 2.8
01482510	Nichomus Run near Woodstown, NJ	Lat 39°38'22", long 75°20'59" Salem County, Hydrologic Unit 02040206, at bridge on State Route 45, 1.4 mi southwest of Woodstown, and 1.7 mi above mouth.	3.76	1966-74, 1994-98	10-14-97 8-03-98	0 0.38
01482900	Cool Run near Alloway, NJ	Lat 39°34'43", long 75°18'36" Salem County, Hydrologic Unit 02040206, at highway bridge on Stockton-Pleasant Hill Road, 0.5 mi above mouth, 3.0 mi northeast of Alloway, and 3.3 mi southwest of Daretown.	4.92	1959-63, 1994-98	10-14-97 8-03-98	3.8 2.7
01482950	Cedar Brook near Alloway, NJ	Lat 39°33'31", long 75°20'22" Salem County, Hydrologic Unit 02040206, at highway bridge on secondary road, 400 ft downstream from outlet of Sycamore Lake (at Remsterville), 1.3 mi east of Alloway, and 5.3 mi southwest of Daretown.	3.76	1959-63, 1994-98	10-14-97 8-03-98	1.9 2.0

* Active crest-stage partial-record station.

a Operated as a continuous-record gaging station by U.S. Geological Survey.

b Operated as a crest-stage partial-record station.

c Published as Raccoon Creek tributary.

d Not previously published.

e Estimated.

DISCHARGE MEASUREMENTS AT MISCELLANEOUS SITES

Measurements of streamflow at points other than gaging stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
HUDSON RIVER BASIN						
01367625 Wallkill River	Rondout Creek	Lat 41°02'20", long 74°37'48", Sussex County, Hydrologic Unit 02020007, 0.4 mi north- east of Sparta, 1.2 mi downstream from out- let of Lake Mohawk, and 1.8 mi east of Fox Hollow Lake.	5.88	---	2-18-98	22
					5-21-98	21
					8-19-98	2.1
01367770 Wallkill River	Rondout Creek	Lat 41°11'38", long 74°34'32", Sussex County, Hydrologic Unit 02020007, at bridge on Glenwood Road, 0.6 mi upstream from Papakating Creek, 1.7 mi southwest of Independence Corner, and 2.0 mi southeast of Sussex.	60.8	1977-82, 1985, 1987-97	2-17-98	128
					5-21-98	147
					8-19-98	40
01367860 Papakating Creek	Wallkill River	Lat 41°11'39", long 74°37'17", Sussex County, Hydrologic Unit 02020007, at bridge on State Route 565 (Sussex Road) in Lewis- burg, 0.9 mi upstream from Clove Brook, 1.5 mi southwest of Sussex, and 3.5 mi northwest of Hamburg.	36.7	---	2-18-98	119
					5-21-98	44
					8-19-98	6.6
01368820 Double Kill	Wawayanda Creek	Lat 41°11'13", long 74°25'13", Sussex County, Hydrologic Unit 02020007, 0.4 mi down- stream from Wawayanda Lake, 3.5 mi east of Vernon, and 4.6 mi upstream from Wawayanda Creek.	6.46	---	2-17-98	15
					5-21-98	14
					8-19-98	.65
HACKENSACK RIVER BASIN						
01378560 Coles Brook	Hackensack River	Lat 40°54'40", long 74°02'26", Bergen County, Hydrologic Unit 02030103, at bridge on Main Street in Hackensack, 0.8 mi above mouth, and 1.9 mi northwest of Teaneck.	7.00	1965-72	2-03-98	4.8
					5-09-98	104
					5-18-98	6.4
					8-19-98	.81
PASSAIC RIVER BASIN						
01378780 Primrose Brook	Great Brook	Lat 40°45'54", long 74°31'48", Morris County, Hydrologic Unit 02030103, at bridge on Camp Trail Road in Morristown National Historic Park, 20 ft downstream from unnamed tributary, 500 ft west of Mount Kemble, and 2.4 mi northeast of Bernards- ville.	1.07	---	11-18-97	2.4
					2-25-98	3.7
					5-19-98	3.3
					8-04-98	.45
01379200 Dead River	Passaic River	Lat 40°38'56", long 74°31'26", Morris County, Hydrologic Unit 02030103, at bridge on King George Road (Spur State Route 527), 100 ft upstream from mouth, 2.0 mi south of Millington, and 4.2 mi south of Basking Ridge.	20.8	1973-75, 1986-89	11-19-97	11
					2-25-98	157
					4-15-98	48
					5-09-98	282
					6-04-98	11
					6-23-98	15
					8-05-98	5.7
					8-11-98	9.7
					9-22-98	11
01379340 Passaic River	Newark Bay	Lat 40°41'22", long 74°26'24", Union County, Hydrologic Unit 02030103, at bridge on Snyder Avenue at Berkeley Heights, and 2.2 mi west of New Providence.	89.5	1968, 1987-89	7-15-97	22
					9-01-98	12
01379530 Canoe Brook	Passaic River	Lat 40°45'21", long 74°21'43", Essex County, Hydrologic Unit 02030103, just down- stream from New Jersey-American Water Company pumping station, 0.5 mi upstream from mouth, and 2.0 mi north of Summit.	11.0	1933-60b, 1961-97c	10-30-97	1.8
					4-01-98	5.9
					5-18-98	6.7
					7-07-98	1.7
					8-19-98	3.0

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01379680 Rockaway River	Passaic River	Lat 40°57'14", long 74°34'17", Morris County, Hydrologic Unit 02030103, adja- cent to Taylor Road, 0.2 mi downstream from bridge on Berkshire Valley Road, 2.1 mi northeast of Berkshire Valley, and 2.3 mi downstream from Longwood Lake.	22.1	---	10-01-97	8.3
01379700 Rockaway River	Passaic River	Lat 40°55'51", long 74°35'42", Morris County, Hydrologic Unit 02030103, on left bank 60 ft downstream from bridge on Berkshire Valley Road in Berkshire Valley, 2.7 mi upstream from Stephens Brook, and 3.8 mi northwest of Dover.	24.4	1960-72, 1985-96a, 1997	10-07-97 4-15-98 6-23-98 8-11-98 9-22-98	11 124 74 35 6.4
01379853 Rockaway River	Passaic River	Lat 40°53'47", long 74°16'10", Morris County, Hydrologic Unit 02030103, at bridge on Blackwell Street in Dover, 1.1 mi downstream from Jackson Brook, and 1.5 mi southwest of Rockaway.	54.7	---	4-15-98 6-23-98 8-11-98 9-22-98	224 145 47 16
01380100 Beaver Brook	Rockaway River	Lat 40°54'08", long 74°30'06", Morris County, Hydrologic Unit 02030103, at bridge on Gill Road in Rockaway, 0.2 mi upstream from mouth.	22.2	1963-64, 1984-86, 1997	10-07-97 11-13-97 2-09-98 8-06-98	4.2 20 46 2.2
01381290 Whippany River tributary No. 1	Whippany River	Lat 40°47'13", long 74°32'41", Morris County, Hydrologic Unit 02030103, on wooden walk bridge, 0.5 mi upstream from Sunrise Lake, 1.2 mi southeast of Brook- side, and 0.9 mi northwest of Sugar Loaf Mountain.	.20	1994, 1996-97	6-12-98	.54
01381295 Whippany River	Rockaway River	Lat 40°47'23", long 74°32'38", Morris County, Hydrologic Unit 02030103, adja- cent to State Route 24, 0.5 mi downstream from bridge on Tingley Road, and 1.4 mi east of Brookside.	8.29	1997	10-01-97	4.7
01381499 Whippany River tributary No. 3	Whippany River	Lat 40°46'59", long 74°27'59", Morris County, Hydrologic Unit 02030103, at cul- vert on Lafayette Avenue exit ramp from Interstate 287 in Morristown, 1,000 ft upstream from mouth, and 1.7 mi southeast of Morris Plains.	.56	1996-97	3-09-98 5-08-98 5-09-98 6-12-98	21 9.7 21 7.1
01381505 Whippany River tributary No. 4	Whippany River	Lat 40°48'50", long 74°27'52", Morris County, Hydrologic Unit 02030103, just south of its intersection at culvert on Horse Hill Road, 0.3 mi northeast of Hanover Avenue, 0.8 mi upstream from mouth, 0.9 mi southwest of Cedar Knolls, and 0.9 mi north of Morristown.	.47	1996-97	5-09-98 6-12-98	6.1 .88
01381510 Whippany River tributary No. 5	Whippany River	Lat 40°49'07", long 74°26'54", Morris County, Hydrologic Unit 02030103, at cul- vert on Boulevard Road, in Cedar Knoll, just north of intersection with Cedar Knolls Road, 0.2 mi upstream from mouth, and 3.8 mi northeast of Morristown.	.06	1996-97	5-09-98 5-09-98 6-12-98	1.8 1.6 .19
01382450 Macopin River	Pequannock River	Lat 41°01'33", long 74°24'31", Passaic County, Hydrologic Unit 02030103, at bridge on State Route 23 near Green Pond Junction, 0.2 mi upstream from mouth, and 2.0 mi south of Pequannock.	5.25	1970-73	2-10-98 5-06-98 5-09-98 8-11-98	9.5 25 52 4.0

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
PASSAIC RIVER BASIN--Continued						
01382800 Pequannock River	Pompton River	Lat 40°59'55", long 74°17'54", Passaic County, Hydrologic Unit 02030103, at bridge on Paterson-Hamburg Turnpike in Riverdale, 0.6 mi upstream from Wanaque River, and 2.8 mi upstream from confluence with Ramapo River.	83.9	1963, 1980-83, 1981-82, 1993-97	10-02-97	33
					4-16-98	254
					6-24-98	79
					8-12-98	13
					9-23-98	13
01387041 Wanaque River	Pequannock River	Lat 40°59'33", long 74°17'26", Passaic County, Hydrologic Unit 02030103, at foot- bridge in Edwin Place Park, 0.5 mi upstream from mouth and 0.6 mi southwest of Pompton Lakes.	107	---	4-16-98	235
					6-24-98	38
					8-12-98	21
					9-23-98	18
01388100 Ramapo River	Pequannock River	Lat 40°59'08", long 74°17'26", Passaic County, Hydrologic Unit 02030103, at bridge on Dawes Highway in Pompton, 0.8 mi south of Pompton Lakes, and 1.5 mi upstream from confluence with Pequannock River.	160	---	4-16-98	475
					6-24-98	346
					8-12-98	81
					9-23-98	47
01389005 Passaic River	Newark Bay	Lat 40°53'47", long 74°16'10", Passaic County, Hydrologic Unit 02030103, in Two Bridges, 400 ft downstream from the Pomp- ton River.	734	1991, 1996-97	10-23-97	159
					7-15-98	246
					9-01-98	189
01389110 Passaic River	Newark Bay	Lat 40°53'32", long 74°15'58", Passaic County, Hydrologic Unit 02030103, at bridge on U.S. Route 46 at Singac, and 0.6 mi downstream from Pompton River.	745	1996-97	10-23-97	173
					7-15-98	267
					9-01-98	207
01389492 Passaic River	Newark Bay	Lat 40°53'04", long 74°14'05", Passaic County, Hydrologic Unit 02030103, at Beatties Dam at Little Falls, 600 ft upstream from Union Boulevard, and 1.5 mi upstream from Peckman River.	762	1991-95, 1997	9-23-98	40
01389802 Passaic River	Newark Bay	Lat 40°54'57", long 74°10'55", Passaic County, Hydrologic Unit 02030103, just upstream from Passaic Falls (Great Falls) in Paterson and 1.5 mi downstream from Peckman River. Note.-- flow over falls, not through hydroelectric plant.	779	1987-89, 1991-95, 1997	7-28-98	172
					9-25-98	115
01391100 Hohokus Brook	Passaic River	Lat 40°57'21", long 74°06'04", Bergen County, Hydrologic Unit 02030103, at Paramus, 300 ft upstream from mouth, 0.8 mi southeast of Glen Rock, 1.5 mi north of Fair Lawn, 1.5 mi northeast of Paramus, and 2.7 mi southeast of Ho-Ho-Kus.	20.2	---	4-23-98	62
					6-25-98	45
					8-13-98	21
					9-24-98	18
RAHWAY RIVER BASIN						
01393895 East Branch Rahway River	Rahway River	Lat 40°43'22", long 74°17'07", Essex County, Hydrologic Unit 02030104, at bridge on Millburn Avenue, 0.9 mi east of Millburn, and 1.5 i upstream from confluence with West Branch Rahway River.	7.09	----	7-28-98	2.4
RARITAN RIVER BASIN						
01396550 Spruce Run River	South Branch Raritan River	Lat 40°43'29", long 74°54'34", Hunterdon County, Hydrologic Unit 02030105, at bridge on Newport Road, 1.2 mi northwest of Woodglen, and 6.4 mi upstream from Spruce Run Reservoir.	5.67	----	2-12-98	23
					5-07-98	26
					5-09-98	66
					9-03-98	2.3
01396855 Sidney Brook	South Branch Raritan River	Lat 40°37'11", long 74°56'15", Hunterdon County, Hydrologic Unit 02030105, at Bridge on Race Street in Grandin, 1.5 mi upstream from mouth, and 2.0 mi southeast of Hensfoot.	3.31	1996-97	10-14-97	1.4

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
RARITAN RIVER BASIN--Continued						
01398102 South Branch Raritan River	Raritan River	Lat 40°32'48", long 74°41'48", Somerset County, Hydrologic Unit 02030105, at bridge on Studdiford Drive at South Branch, 0.8 mi upstream from mouth, and 2.7 mi southeast of Readington.	265	1976-83	3-09-98 5-09-98 5-14-98 8-12-98	3510 3710 1370 181
01399780 Lamington River	North Branch Raritan River	Lat 40°38'09", long 74°41'13", Somerset County, Hydrologic Unit 02030105, at bridge on Walsh Road at Burnt Mills, 0.2 mi upstream from North Branch Raritan River, and 4.4 mi southwest of Far Hills.	100	1963, 1973, 1975-78, 1981-97	2-03-98 5-09-98 5-14-98 8-02-98	168 925 892 43
01400640 Millstone River	Raritan River	Lat 40°18'48", long 74°35'22", Mercer County, Hydrologic Unit 02030105, at bridge on Cranbury Neck Road, 1.0 mi east of Grovers Mill, 1.8 mi upstream from Cran- bury Brook, and 1.8 mi east of Princeton Junction.	42.6	1959-65, 1971, 1986-87, 1992-93, 1995	5-12-98	590
01400650 Millstone River	Raritan River	Lat 40°19'19", long 74°36'31", Mercer County Hydrologic Unit 02030105, at bridge on Millstone Road in Grovers Mill, 0.3 mi upstream from Cranbury Brook, and 2.7 mi north of Dutch Neck.	43.4	----	5-20-98	70
01401400 Heathcote Brook	Millstone River	Lat 40°22'10", long 74°36'59", Middlesex County, Hydrologic Unit 02030105, at bridge on Mapleton Road, at abandoned railroad bridge, 0.3 mi south of Kingston, and 0.4 mi upstream from mouth.	9.00	1971-72, 1979-84, 1989-92	3-03-98 5-12-98 6-03-98 6-24-98	21 102 8.0 2.7
01401600 Beden Brook	Millstone River	Lat 40°24'52", long 74°39'02", Somerset County, Hydrologic Unit 02030105, at bridge on U.S. Route 206 at State Route 533, 0.7 mi upstream from Pike Run, 1.2 mi northwest of Rocky Hill, and 4.6 mi north of Princeton.	27.0	1959-65, 1971, 1986-87, 1992-93, 1995	4-10-98	565
01403385 Bound Brook	Raritan River	Lat 40°34'51", long 74°29'58", Middlesex County, Hydrologic Unit 02030105, at bridge on State Route 28, 0.3 mi upstream from Green Brook, 0.9 mi northeast of Mid- dlesex, 2.4 mi west of the intersection of State Route 28 and Washington Avenue in Dunellen.	23.9	----	2-19-98 5-19-98 8-05-98	102 18 3.6
01405340 Manalapan Brook	South River	Lat 40°17'46", long 74°23'53", Middlesex County, Hydrologic Unit 02030105, at bridge on Federal Road, 2.0 mi west of Englishtown, 2.6 mi north of Manalapan, and 3.0 mi downstream from Still House Brook.	20.9	1979-81, 1982, 1986-95, 1997	3-12-98 5-20-98 8-13-98	42 39 8.9
01405435 Cedar Brook	Manalapan Brook	Lat 40°23'26", long 74°23'31", Middlesex County, Hydrologic Unit 02030105, 50 ft upstream from mouth in Spotswood, and 4.3 mi south of South River.	3.85	1943, 1949-50, 1957-87d, 1987, 1989-91, 1993-97	11-12-97 1-24-98 9-01-98	4.8 39 8.9
MANASQUAN RIVER BASIN						
01407868 Long Brook	Manasquan River	Lat 39°12'33", long 74°15'49", Monmouth County, Hydrologic Unit 02040301, at bridge on Strickland Road, 0.3 mi west of intersection with U.S. Route 9, and 0.6 mi upstream from mouth.	1.90	----	11-20-97 2-24-98 5-20-98 8-13-98	.50 .40 3.7 2.3

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
MANASQUAN RIVER BASIN--Continued						
01408009 Mingamahone Brook	Manasquan River	Lat 39°12'45", long 74°10'07", Monmouth County, Hydrologic Unit 02040301, at bridge on Cranberry Bog Road, 0.6 mi upstream from Branch Mingamahone Brook, and 1.7 mi west of Earle.	3.32	1971-74	11-20-97 3-03-98 6-03-98 9-01-98	6.0 12 5.6 1.3
METEDECONK RIVER BASIN						
01408100 North Branch Metedeconk River	Metedeconk River	Lat 06°35'14", long 74°13'10", Ocean County, Hydrologic Unit 02040301, at highway bridge on U.S. Route 9, 0.3 mi north of County Line Road in Lakewood, and 3.6 mi upstream from Muddy Ford Brook.	19.4	1959-63, 1966	3-09-98 5-20-98 8-18-98	443 36 96
TOMS RIVER BASIN						
01408728 Long Swamp Creek	Toms River	Lat 39°57'14", long 74°11'19", Ocean County, Hydrologic Unit 02040301, at bridge on Washington Street in Dover Township at Toms River, and 0.3 mi upstream from mouth.	6.53	1994-96	11-10-97 12-30-97 2-05-98 3-31-98 5-12-98 5-28-98 7-09-98 8-25-98	2.5 16 19 6.3 37 6.0 4.8 2.4
CEDAR CREEK BASIN						
01408830 Cedar Creek	Barnegat Bay	Lat 39°53'50", long 74°19'00", Ocean County, Hydrologic Unit 02040301, at bridge on Whiting-Lacey Road in Cedar Crest, 0.2 mi downstream from outlet of Bamber Lake, and 3.7 mi southeast of Keswick Grove.	20.1	1977-78	8-09-98 6-01-98 9-03-98	134 66 36
MULLICA RIVER BASIN						
01409387 Mullica River	Great Bay	Lat 39°44'25", long 74°43'37", Burlington County, Hydrologic Unit 02040301, at bridge on U.S. Route 206 in Atsion, at out- let of Atsion Lake, and 0.2 mi upstream from Wesickaman Creek.	26.7	1976-96	12-10-97 3-19-98 5-28-98 9-03-98	28 85 37 11
01409416 Hammonton Creek	Mullica River	Lat 39°38'02", long 74°43'05", Atlantic County, Hydrologic Unit 02040301, at bridge on Chestnut Road, 0.4 mi south of Wescoatville, and 1.6 mi upstream from Norton Branch.	9.57	1974, 1978-81, 1983, 1985-97	12-09-97 3-17-98 5-28-98 8-26-98	12 24 15 5.0
01409790 Little Hauken Run	West Branch Wading River	Lat 39°42'58", long 74°32'08", Burlington County, Hydrologic Unit 02040301, at bridge on State Route 563, 1.4 mi upstream from mouth, and 1.5 mi north of Jenkins.	14.4	----	5-18-98	25
01409815 West Branch Wading River	Wading River	Lat 39°40'30", long 74°32'28", Burlington County, Hydrologic Unit 02040301, at bridge on State Highway 563 in Maxwell, 1.6 mi southeast of Washington, 1.8 mi southwest of Jenkins, and 2.2 mi upstream from confluence with Oswego River.	85.9	1976-93	11-25-97 3-17-98 6-02-98 8-26-98	134 258 145 43
GREAT EGG HARBOR RIVER BASIN						
01411035 Hospitality Branch	Great Egg Harbor River	Lat 39°38'36", long 74°58'40", Gloucester County, Hydrologic Unit 02040302, at bridge on Blue Bell Road, 1.2 mi upstream from Timber Lakes, and 2.0 mi west of Cecil.	4.51	----	12-03-97 3-19-98 5-09-98 6-04-98 9-02-98	2.3 19 19 5.0 .37

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
GREAT EGG HARBOR RIVER BASIN-- Continued						
01411110 Great Egg Harbor River	Great Egg Harbor Bay	Lat 39°30'50", long 74°46'47", Atlantic County, Hydrologic Unit 02040302, at bridge on U.S. Route 322 in Weymouth, 0.5 mi upstream from Deep Run, and 20.9 mi upstream from mouth.	154	1978-81, 1985-97	12-03-97	149
					5-28-98	210
					9-02-98	63
01411196 Babcock Creek	Great Egg Harbor River	Lat 39°28'08", long 74°41'34", Atlantic County, Hydrologic Unit 02040302, at bridge on U.S. Route 322, 1.1 mi east of intersection of U.S. Route 50, 2.2 mi north- east of Mays Landing, and 2.8 mi upstream from Watering Race Branch.	16.3	---	12-01-97	24
					3-09-98	450
					5-27-98	22
					9-01-98	38
FISHING CREEK BASIN						
01411400 Fishing Creek	Delaware Bay	Lat 39°01'39", long 75°53'48", Cape May County, Hydrologic Unit 02040206, at bridge on State Route 47 at Wildwood pumping station, and 1.4 mi northwest of Rio Grande.	2.29	1965-72, 1990-92	3-17-98	3.9
					6-10-98	.30
DENNIS CREEK BASIN						
01411440 Old Robins Branch	Dennis Creek	Lat 39°11'50", long 75°52'10", Cape May County, Hydrologic Unit 02040206, at cul- vert on Beaver Causeway in Belleplain State Forest, 1.0 mi west of North Dennis, 1.9 mi upstream from mouth, and 4.4 mi southwest of Woodbine.	2.96	----	3-17-98	4.9
					8-25-98	0
					8-31-98	0
MAURICE RIVER BASIN						
01411466 Indian Branch	Scotland Run	Lat 39°35'27", long 75°03'36", Gloucester County, Hydrologic Unit 02040206, at bridge on U.S. Route 47 (Delsea Drive), 0.4 mi upstream from Malaga Lake, and 1.4 mi north of Malaga.	6.50	----	3-11-98	25
					5-09-98	27
					6-04-98	7.5
					8-27-98	3.0
01411955 Gravelly Run	Buckshutem Creek	Lat 39°20'14", long 75°03'04", Cumberland County, Hydrologic Unit 02040206, 0.3 mi upstream from mouth, 1.1 mi west of com- munity of Laurel Lake, and 2.5 mi southeast of Millville Municipal Airport.	3.19	----	3-18-98	5.3
					6-10-98	3.8
					8-25-98	.47
COHANSEY RIVER BASIN						
01412800 Cohansey River	Delaware Bay	Lat 39°28'21", long 75°15'21", Cumberland County, Hydrologic Unit 02040206, on right bank just downstream from bridge on Silver Lake Road, 0.6 mi south of Seeley, 2.6 mi east of Shiloh, 4.1 mi north of Bridgeton, and 22.5 mi upstream from mouth.	28.0	1975-97	3-11-98	42
					6-02-98	28
					8-27-98	19
DELAWARE RIVER BASIN						
01442760 Dunnfield Creek	Delaware River	Lat 40°58'14", long 75°07'35", Warren County, Hydrologic Unit 02040104, 1,300 ft upstream from mouth, and Delaware River, 0.6 mi northwest of Arrow Island, and 0.6 mi southeast of Delaware Water Gap Toll Bridge on Interstate 80.	3.56	----	2-10-98	9.4
					5-18-98	11
					8-06-98	.42
01446400 Pequest River	Delaware River	Lat 40°49'45", long 75°04'44", Warren County, Hydrologic Unit 02040105, at bridge on State Route 519, in Belvidere, and 1,400 ft upstream from mouth.	157	1950-53, 1977-82, 1984-97	10-07-97	37
					1-22-98	196
					5-04-98	464
					8-10-98	45

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
01457400 Musconetcong River	Delaware River	Lat 40°35'32", long 75°11'20", Warren County, Hydrologic Unit 02040105, at bridge on County Route 627, at Riegelsville, 0.2 mi north of Mount Joy, and 0.2 mi upstream from mouth.	156	1940-55, 1973, 1977, 1987-97	5-12-98 8-12-98	1,650 122
01458570 Nishisakawick Creek	Delaware Bay	Lat 40°32'32", long 75°02'49", Hunterdon County, Hydrologic Unit 02040105, 1.3 mi north of Frenchtown, 2.1 mi upstream from mouth, and 3.1 mi southeast of Milford.	10.1	----	3-02-98 5-19-98 8-13-98	43 19 .95
01460398 Delaware and Raritan Canal tributary	Delaware and Raritan Canal	Lat 40°15'02", long 74°49'50", Mercer County Hydrologic Unit 02040105, at Wil- burtha, just upstream from mouth, 0.8 mi northwest of mouth of Gold Run, 1.9 mi southwest of Mercer County Airport	.29	1996-97	9-29-98	0
01462930 Villa Victoria Brook	Delaware River	Lat 40°15'27", long 74°50'30", Mercer County, Hydrologic Unit 02040105, 0.9 mi south of Scudders Falls, 0.2 mi upstream from dam, 1.4 mi northwest of mouth of Gold Run, and 1.9 mi southwest of Mercer County Airport.	1.10	1995-97	9-29-98	.16
01463100 Gold Run	Delaware River	Lat 40°15'20", long 74°48'30", Mercer County, Hydrologic Unit 02040105, 0.9 mi south- east of West Trenton, 1.1 mi northeast of Wilburtha, 1.2 mi northeast of mouth of Gold Run, and 1.4 mi south of Mercer County Airport.	.93	1996-97	9-30-98	.08
01463120 Gold Run tributary No. 2	Gold Run	Lat 40°15'19", long 74°48'30", Mercer County, Hydrologic Unit 02040105, 15 ft upstream from confluence with Gold Run, 0.9 mi southeast of West Trenton, 1.1 mi northeast of Wilburtha, and 1.4 mi south of Mercer County Airport.	.11	1996-97	9-30-98	.01
01463150 Gold Run	Delaware River	Lat 40°15'00", long 74°48'55", Mercer County, Hydrologic Unit 02040105, at bridge on Sullivan Way, 0.7 mi northeast of mouth of Gold Run, 0.7 mi east of Wilburtha, and 1.2 mi southeast of West Trenton.	1.36	1996-97	9-30-98	.10
01463180 Gold Run tributary No. 1	Gold Run	Lat 40°14'55", long 74°48'55", Mercer County, Hydrologic Unit 02040105, 0.6 mi north- east of mouth of Gold Run, 0.7 mi east of Wilburtha, and 1.2 mi southeast of West Trenton.	.39	1996-97	9-30-98	0
01463200 Gold Run	Delaware River	Lat 40°14'41", long 74°49'14", Mercer County, Hydrologic Unit 02040105, 80 ft upstream from culvert under Delaware and Raritan Canal, 0.5 mi southeast of Wilburtha, 1.5 mi southwest of Fernwood, and 0.3 mi northwest of Trenton.	1.98	1994, 1996-97	9-30-98	.28
01463780 West Branch Shabakunk Creek	Shabakunk Creek	Lat 40°15'03", long 74°46'53", Mercer County, Hydrologic Unit 02040105, at bridge on Olden Avenue, 1.7 mi south of Ewingville, and 2.3 mi southeast of West Trenton.	2.74	1997	9-29-98	.15
01463850 Miry Run	Assunpink Creek	Lat 40°14'50", long 74°41'14", Mercer County, Hydrologic Unit 02040105, at bridge on State Route 533 (Quaker Bridge Road), 2.1 mi upstream of Assunpink Creek, 0.7 mi north of Mercerville, and 3.8 mi northwest of Robbinsville.	10.7	----	2-12-98 5-19-98 5-13-98	19 9.8 .39

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
01464020 Assunpink Creek	Delaware River	Lat 40°13'01", long 74°46'04", Mercer County, Hydrologic Unit 02040105, at bridge on Peace Street, 0.1 mi upstream from Delaware River, and 0.7 mi southeast of Calhoun Street Bridge.	91.4	1963, 1966	2-04-98 5-09-98 5-13-98	119 692 585
01464504 Crosswicks Creek	Delaware River	Lat 40°10'02", long 74°40'40", Mercer County, Hydrologic Unit 02040201, at bridge on Groveville Road (Main Street) in Groveville, 1.2 mi upstream from Doctors Creek, and 2.2 mi northeast of Bordentown.	98.0	----	3-09-98 5-09-98 5-13-98 8-17-98	787 670 972 35
01464515 Doctors Creek	Crosswicks Creek	Lat 40°10'37", long 74°35'57", Monmouth County, Hydrologic Unit 02040201, at bridge on Breza Road in Allentown, and 0.8 mi downstream from Conines Millpond.	17.4	1966, 1968-95	2-04-98 5-09-98 6-01-98 8-17-98	26 146 39 3.9
01464583 North Branch Barkers Brook	Barkers Creek	Lat 40°01'58", long 74°40'12", Burlington County, Hydrologic Unit 02040201, at bridge on Juliustown-Georgetown Road (State Route 663), 1.3 mi east of Jobstown, 1.3 mi north of Juliustown, and 1.9 mi upstream from mouth.	1.72	----	3-04-98 5-09-98 5-26-98 8-18-98	2.9 72 1.2 .46
01465893 Little Creek	Southwest Branch Rancocas Creek	Lat 39°53'54", long 74°47'19", Burlington County, Hydrologic Unit 02040202, at bridge on State Route 70 in Chairville, 250 ft east of Skeet Road, 1.9 mi east of Med- ford, 4.6 mi south of Lumberton, and 4.7 mi upstream from mouth.	6.32	----	3-19-98 5-11-98 5-27-98 8-20-98	30 74 6.2 1.5
01467006 North Branch Rancocas Creek	Rancocas Creek	Lat 39°59'22", long 74°47'06", Burlington County, Hydrologic Unit 02040202, at bridge on Pine Street in Mount Holly.	140	----	12-15-97 3-12-98 6-09-98 8-27-98	98 784 171 106
01467359 North Branch Big Timber Creek	Big Timber Creek	Lat 39°50'04", long 75°04'02", Camden County, Hydrologic Unit 02040202, at bridge on Chews Landing-Clementon Road (State Route 683), 0.7 mi south of Glen- dora, 1.8 mi upstream from South Branch Big Timber Creek, and 2.5 mi north of Blackwood.	18.8	----	12-15-97 6-09-98 8-27-98	18 38 52
01475031 Chestnut Branch	Mantua Creek	Lat 39°42'32", long 75°06'58", Gloucester County, Hydrologic Unit 02040202, 0.3 mi north of Glassboro, 1.4 mi upstream from the mouth of Plank Run, and 1.5 mi south of Pitman.	.36	1995-96	8-20-98 9-17-98	.22 .23
01475032 Chestnut Branch	Mantua Creek	Lat 39°42'38", long 75°07'18", Gloucester County, Hydrologic Unit 02040202, 0.7 mi northwest of Glassboro, 1.0 mi upstream from mouth, and 1.4 mi south of Pitman.	.47	1995-96	8-20-98 9-17-98	.39 .46
0147503330 Plank Run	Chestnut Branch	Lat 39°43'01", long 75°08'14", Gloucester County, Hydrologic Unit 02040202, 0.1 mi upstream from Chestnut Branch, 1.0 mi south of Pitman, and 1.5 mi northwest of Glassboro.	.96	1995-96	8-20-98 9-17-98	1.2 1.2
01475034 Lost Lake Run	Chestnut Branch	Lat 39°43'26", long 75°07'38", Gloucester County, Hydrologic Unit 02040202, 0.4 mi south of Pitman, 0.7 mi upstream from Chestnut Branch, and 1.5 mi north of Glass- boro.	.33	1995-96	8-20-98 9-17-98	0 .11

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1998

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
DELAWARE RIVER BASIN--Continued						
0147503450 Cabin Run	Chestnut Branch	Lat 39°43'41", long 75°08'35", Gloucester County, Hydrologic Unit 02040202, 0.1 mi upstream from mouth and Alcyon Lake, 1.0 mi west of Pitman, and 1.3 mi east of Rich- wood.	.51	1995-96	8-20-98 9-17-98	.12 .30
01482500 Salem River	Delaware River	Lat 39°38'36", long 75°19'52", Salem County, Hydrologic Unit 02040206, at Memorial Lake Dam at Woodstown, 0.2 mi upstream from small brook, and 0.3 mi downstream from CONRAIL railroad bridge.	14.6	1940-1985, 1986-1997	12-09-97	7.0

- a Operated as continuous-recording gaging station.
- b Discharge records published in reports of the New Jersey Department of Environmental Protection.
- c Discharge records on file in U.S. Geological Survey Office, West Trenton, New Jersey.
- d Operated as continuous gaging station by Duhernal Water Company.
- e Not previously published.
- f Revised.

The following table contains annual maximum elevations for tidal crest-stage stations. The information is obtained from a crest-stage gage or a water-stage recorder located at each site. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. All stages are elevations above mean sea level unless otherwise noted. Only the maximum elevation is given. Information on some other high elevations may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum elevation has been determined.

Maximum elevation at tidal crest-stage partial-record stations

Station name and number	Location	Period of record	Water year 1998 maximum		Period of record maximum	
			Date	Elevation (ft)	Date	Elevation (ft)
Hackensack River at New Milford, NJ (01378500)	Lat 40°56'52", long 74°01'34", Bergen County, Hydrologic Unit 02030103, on right bank approx. 50 ft downstream from New Milford gaging station, on dam wing wall 10 ft downstream from dam.	1997-98	7-23-98	3.78	7-23-98	3.78
Elizabeth River at Linden, NJ (01393510)	Lat 40°38'50", long 74°12'19", Union County, Hydrologic Unit 02030104, on concrete right wingwell, upstream of bridge on Atlantic Avenue, just east of Mattano Park, and 0.8 mi east of Bayway Circle.	1998	2-24-98	5.80	2-24-98	5.80
Rahway River at Lawrence Street, at Rahway, NJ (01396035)	Lat 40°35'56", long 74°16'09", Union County, Hydrologic Unit 02030104, on upstream left abutment of bridge on Lawrence Street in Rahway, 1,400 ft downstream of South Branch Rahway River, and 1.6 mi south of Linden.	1997-98	10-19-96a 2-24-98	6.85a 8.57	10-19-96	8.57
Raritan River at Perth Amboy, NJ (01406700)	Lat 40°30'31", long 74°17'30", Middlesex County, Hydrologic Unit 02030105, on upstream left bridge pier of Victory Bridge on State Route 35 in Perth Amboy, 0.5 mi downstream from Garden State Parkway bridge, and 1.5 mi upstream from mouth.	1938, 1944, 1950, 1953, 1955, 1960, 1967-70†, 1980-98	2-24-98	6.75	12-11-92	10.4
Luppatatong Creek at Keyport, NJ (01407030)	Lat 40°26'08", long 74°12'27", Monmouth County, Hydrologic Unit 02030104, on left bank upstream side of Front Street Bridge in Keyport, 0.1 mi upstream from mouth, and 2.0 mi northwest of Matawan.	1944, 1950, 1960, 1980-98	11-14-97	6.96	9-12-60	10.3
Branchport Creek at Oceanport, NJ (01407590)	Lat 40°19'12", long 74°00'12", Monmouth County, Hydrologic Unit 02030104, on wooden piling at right bank bulkhead, just upstream from bridge on Monmouth Boulevard, and 1.2 mi north of Long Branch.	1997-98	10-19-96a 2-24-98	5.11ab >5.0b	2-24-98	5.11b
Metedeconk River at Laurelton, NJ (01408155)	Lat 40°03'58", long 74°08'01", Ocean County, Hydrologic Unit 02040301, on downstream right wingwall of the bridge on NJ State Route 70, just downstream of Forge Pond, at Laurelton.	1997-98	8-21-97c 3-09-98	4.08c 3.73	2-24-98	4.08
Toms River at Toms River, NJ (01408700)	Lat 39°57'02", long 74°11'58", Ocean County, Hydrologic Unit 02040301, on fourth piling at the left bank bulkhead, downstream from bridge on South Main Street.	1997-98	10-19-96a 3-09-98	3.76a 3.87	10-19-96	3.87
Manahawkin Bay near Manahawkin, NJ (01409145)	Lat 39°40'13", long 74°12'54", Ocean County, Hydrologic Unit 02040301, at west end of bridge on State Route 72 over Manahawkin Bay, 2.5 mi northwest of Ship Bottom, and 3.1 mi southeast of Manahawkin.	1965-98	2-06-98	4.70	12-11-92	6.02
Little Egg Harbor at Beach Haven, NJ (01409285)	Lat 39°33'10", long 74°15'07", Ocean County, Hydrologic Unit 02040301, in Beach Haven at U.S. Coast Guard station, 6.0 mi east of Tuckerton and 7.4 mi southwest of Ship Bottom.	1979-98	2-06-98	5.60	12-11-92	6.93

ELEVATIONS AT TIDAL CREST-STAGE STATIONS

Maximum elevation at tidal crest-stage partial-record stations--Continued

Station name and number	Location	Period of record	Water year 1998 maximum		Period of record maximum	
			Date	Elevation (ft)	Date	Elevation (ft)
Batsto River at Pleasant Mills, NJ (01409510)	Lat 39°37'55", long 74°38'40", Ocean County, Hydrologic Unit 02040301, on right bank, 1.0 mi southeast of Pleasant Mills, and 0.5 mi upstream from mouth.	1958-98†	2-05-98	5.90	3-07-62	7.2
Mullica River near Port Republic, NJ (01410100)	Lat 39°33'12", long 74°27'46", Atlantic County, Hydrologic Unit 02040301, on right bank on bulkhead piling at south end of U.S. Route 9 and Garden State Parkway bridge over Mullica River, 2.8 mi northeast of Port Republic, and 2.8 mi south of New Gretna.	1962, 1965-98	2-05-98	6.17	3-06-62	7.9
Absecon Creek at Absecon, NJ (01410500)	Lat 39°25'45", long 74°31'16", Atlantic County, Hydrologic Unit 02040302, on right abutment of bridge on Mill Road, 50 ft downstream of former gaging station, 1.0 mi west of Absecon, and 3.4 mi upstream from mouth.	1923-29†, 1933-38†, 1946-84†, 1985-98	2-05-98	5.18	3-29-84	7.77
Beach Thorofare at Atlantic City, NJ (01410570)	Lat 39°21'56", long 74°26'44", Atlantic County, Hydrologic Unit 02040302, on west abutment south side of AMTRAK railroad swivel bridge in Atlantic City, 0.5 mi northeast of Bader Field airport, and 2.7 mi northeast of Ventnor City.	1944, 1950, 1960, 1962, 1978†, 1969-98	10-19-96ab 2-05-98	5.61a 6.44	3-06-62	8.3
Great Egg Harbor at U.S. 40, at Mays Landing, NJ (01411175)	Lat 39°26'55", long 74°43'38", Atlantic County, Hydrologic Unit 02040302, at Cape May Landing river access parking lot on the south side of River Drive and intersection of Faragut Road, in Mays Landing, 0.1 mi downstream of bridge on U.S. Route 40.	1997-98	8-22-97a 2-05-98	5.49a 6.21	2-05-98	6.21
Tuckahoe River at Head of River, NJ (01411300)	Lat 39°18'25", long 74°49'15", Cape May County, Hydrologic Unit 02040302, downstream right abutment of highway bridge on State Route 49, 0.2 mi upstream from McNeals Branch, 0.4 mi southeast of Head of River, and 3.7 mi west of Tuckahoe.	1979-98†	2-05-98	6.74	12-11-92	7.01
Great Egg Harbor Bay at Beesleys Point, NJ (01411315)	Lat 39°17'16", long 74°37'41", Cape May County, Hydrologic Unit 02040302, on upstream side of earth filled pier at Tuckahoe Inn, 250 ft east of U.S. Route 9 toll bridge over Great Egg Harbor Bay at Beesleys Point, 2 mi southwest of Somers Point.	1963-78†, 1979-81, 1997-98	8-22-97a 2-05-98	2.40a 4.02	3-29-84	7.02
Great Egg Harbor Bay at Ocean City, NJ (01411320)	Lat 39°17'03", long 74°34'41", Cape May County, Hydrologic Unit 02040302, on bulkhead at west end of 7th Street (prior to October 1974, gage was located at 5th Street), Ocean City, and 2.5 mi southeast of Somers Point.	1965-98	11-14-97	7.25	12-11-92	7.89
Lakes Bay at Pleasantville, NJ (01411325)	Lat 39°22'54", long 74°31'08", Atlantic County, Hydrologic Unit 02040302, on west shore of Lakes Bay, at east end of East Bayview Avenue, on pier on south side of road, in Pleasantville and 5.2 mi west of Atlantic City.	1997-98	2-05-98	5.97	2-05-98	5.97
Strathmere Bay at Strathmere, NJ (01411335)	Lat 39°12'04", long 74°39'19", Cape May County, Hydrologic Unit 02040302, on right bank upstream side of Corsons Inlet Bridge, NJ Route 636, 3.9 mi north of Sea Isle City, and 5.5 mi south of Ocean City.	1997-98	12-13-96ab 2-05-98b	6.47a 5.07	2-05-98	6.47b

Maximum elevation at tidal crest-stage partial-record stations--Continued

Station name and number	Location	Period of record	Water year 1998 maximum		Period of record maximum	
			Date	Elevation (ft)	Date	Elevation (ft)
Great Channel at Stone Harbor, NJ (01411360)	Lat 39°03'26", long 74°45'53", Cape May County, Hydrologic Unit 02040302, on County pier near east end of bridge at west end of Borough of Stone Harbor, 3.7 mi southeast of Cape May Court House, and 3.9 mi southwest of Avalon.	1965-98	2-05-98	6.42	3-29-84	7.33
Grassy Sound Channel at Nummy Island, near North Wildwood, NJ (01411370)	Lat 39°01'43", long 74°48'05", Cape May County, Hydrologic Unit 02040302, on pier at Dad's Place Marina at the south end of bridge from Nummy Island, 1.1 mi northwest of North Wildwood, and 1.0 mi west of Hereford Inlet.	1993-96†, 1997-98	2-05-98	8.19	2-05-98	8.19
Maurice River at Millville, NJ (01411900)	Lat 39°23'43", long 75°02'27", Cumberland County, Hydrologic Unit 02040206, at State Route 49 Bridge on downstream concrete wall at left bank bridge abutment, approx. 0.4 mi south of Broad Street, and approx. 300 ft west of intersection with High Street.	1997-98	8-22-97a 2-05-98	4.47ab 4.53b	8-22-97	4.53b
Cohansey River at Bridgeton, NJ (01413015)	Lat 39°25'45", long 75°14'13", Cumberland County, Hydrologic Unit 02040206, at County Bridge #8-1 (Commerce Street) on upstream concrete wall at right bank bridge abutment, approx. 700 ft north of the Broad Street (State Route 49) Bridge.	1997-98	12-13-96a 2-05-98	6.38a 5.98	2-05-98	6.38
Cohansey River at Greenwich, NJ (01413038)	Lat 39°23'02", long 75°20'58", Cumberland County, Hydrologic Unit 02040206, at Greenwich Pier, 0.7 mi southwest of Greenwich, and 5.8 mi southwest of Shiloh.	1951, 1979-98	2-05-98	5.64	11-25-50	8.8
Delaware River at Marine Terminal, NJ (01464040)	Lat 40°11'21", long 74°45'22", Mercer County, Hydrologic Unit 02040201, on downstream left bank concrete wall near Trenton Marine Center on Lamberton Road, approx. 0.2 mi south of the intersection with State Route 29.	1921-46†, 1951-55†, 1957-92†, 1997-98	10-19-96a 5-13-98	7.62a 7.76	8-20-55	17.9
Delaware River at Chester, PA (01477050)	Lat 39°49'52", long 75°19'58", Gloucester County, Hydrologic Unit 02040202, on left bank on floodgate at mouth of Repaupo Creek 2.2 mi northeast of Bridgeport, 5.5 mi north of Swedesboro, and at mile 84.00, prior to October 1980 located at Reynolds Aluminum Company pier in Chester, PA at mile 82.30.	1972-77†, 1979-85, 1997-98	2-05-98	6.70	2-26-79	7.53
Salem River at Salem NJ, (01482650)	Lat 39°34'40", long 75°28'37", Salem County, Hydrologic Unit 02040206, on downstream left bank side of bridge on State Route 49 at Salem.	1997-98	2-05-98	5.53	12-13-96	5.01
Alloway Creek at Hancocks Bridge, NJ (01483050)	Lat 39°30'31", long 75°27'39", Salem County, Hydrologic Unit 02040206, on left bank at downstream side of bridge on Locust Island Road (County Route 658) in Hancocks Bridge, 3.7 mi southwest from Quinton, and 4.0 mi south of Salem.	1980-85, 1993, 1997-98	2-05-98	6.05	12-11-93	7.57

† Operated as a continuous-record gaging station.

a Not previously published.

b Elevation is to North American Datum of 1988 not National Geodetic Vertical Datum of 1929.

c Probably was exceeded on Oct. 19, 1996 when gage failed to record.

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