

# Water Resources Data New Jersey Water Year 2003

Volume 3. Water-Quality Data



Water-Data Report NJ-03-3

**U.S. Department of the Interior  
U.S. Geological Survey**



**Prepared in cooperation with the  
New Jersey Department of  
Environmental Protection and with  
other agencies**

# CALENDAR FOR WATER YEAR 2003

2002

---

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		1	2	3	4	5						1	2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31			24	25	26	27	28	29	30	29	30	31				

---

2003

---

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4							1							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28		23	24	25	26	27	28	29
														30	31					

---

APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4					1	2	3	1	2	3	4	5	6	7
6	7	8	9	10	11	12	4	5	6	7	8	9	10	8	9	10	11	12	13	14
13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
27	28	29	30				25	26	27	28	29	30	31	29	30					

---

JULY							AUGUST							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4						1	2		1	2	3	4	5	6
6	7	8	9	10	11	12	3	4	5	6	7	8	9	7	8	9	10	11	12	13
13	14	15	16	17	18	19	10	11	12	13	14	15	16	14	15	16	17	18	19	20
20	21	22	23	24	25	26	17	18	19	20	21	22	23	21	22	23	24	25	26	27
27	28	29	30	31			24	25	26	27	28	29	30	28	29	30				

31

# Water Resources Data New Jersey Water Year 2003

## Volume 3. Water-Quality Data

By Michael J. DeLuca, Heidi L. Hoppe, Heather A. Heckathorn, Melissa L. Riskin,  
Bonnie J. Gray, Emma-Lynn Melvin, Nicholas A. Liu

Water-Data Report NJ-03-3



Prepared in cooperation with the New Jersey Department of Environmental Protection and with other agencies



**U.S. Department of the Interior**  
**U.S. Geological Survey**

**U.S. Department of the Interior**

Gale A. Norton, Secretary

**U.S. Geological Survey**

Charles G. Groat, Director

Information about the USGS, New Jersey District is available on the Internet at <http://nj.usgs.gov/>

Information about all USGS reports and products is available by calling 1-888-ASK-USGS or on the Internet via the World Wide Web at <http://www.usgs.gov/>

Additional earth science information is available by accessing the USGS home page at <http://www.usgs.gov/>

U.S. Geological Survey  
Mountain View Office Park  
810 Bear Tavern Road, Suite 206  
West Trenton, NJ 08628-1099  
(609) 771-3900

## PREFACE

This volume of the annual hydrologic data report of New Jersey is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of water quality provide the hydrologic information needed by state, local, and federal agencies, and the private sector for developing and managing our Nation's land and water resources.

Hydrologic data for New Jersey are contained in 3 volumes:

- Volume 1. Surface-Water Data
- Volume 2. Ground-Water Data
- Volume 3. Water-Quality Data

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines. The following individuals contributed significantly to the completion of the report.

J. Gibs

R.D. Schopp

Word processing of the report was done by H.L. Hoppe and H.A. Heckathorn. W.H. Ellis, G.L. Simpson, and D.K. Sun drafted the illustrations.

The data were collected, computed, and processed by the following personnel:

G.A. Brown	R.E. Hickman	A.R. Protz	P.E. Stackelberg
G.L. Centinaro	G.K. Holzer	T.J. Reed	G.C. Steckrodt
J.F. Dudek	W.D. Jones	K.M. Romanok	J.J. Trainor
J.M. Fischer	T.M. Moffett	J.C. Shvanda	A.F. Watson
K.L. Hibbs	B.S. Painter	A.B. Spehar	B.T. White

Some data were collected by the following N.J. Department of Environmental Protection personnel:

A. Altieri	R. Fenton	C. Kunz	J. Specht
P. Burt	J. Janda	R. Maruska	

This report was prepared in cooperation with the State of New Jersey and with other agencies under the general supervision of Robert G. Reiser, Chief of the Hydrologic Data Assessment Program; under the general supervision of David A. Stedfast, Associate District Chief; Richard H. Kropp, District Chief, New Jersey; and Catherine L. Hill, Regional Hydrologist, Northeastern Region.

# REPORT DOCUMENTATION PAGE

*Form Approved*  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE May 2004	3. REPORT TYPE AND DATES COVERED Annual--Oct. 1, 2002 to Sept. 30, 2003
4. TITLE AND SUBTITLE Water Resources Data-New Jersey, Water Year 2003, Volume 3 Water-Quality Data		5. FUNDING NUMBERS
6. AUTHOR(S) Michael J. DeLuca, Heidi L. Hoppe, Heather A. Heckathorn, Melissa L. Riskin, Bonnie J. Gray, Emma-Lynnn Melvin, Nicholas A. Liu		8. PERFORMING ORGANIZATION REPORT NUMBER USGS-WRD-NJ-03-3
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Geological Survey, Water Resources Division Mountain View Office Park 810 Bear Tavern Road, Suite 206 West Trenton, NJ 08628		10. SPONSORING / MONITORING AGENCY REPORT NUMBER USGS-WRD-NJ-03-3
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Geological Survey, Water Resources Division Mountain View Office Park 810 Bear Tavern Road, Suite 206 West Trenton, NJ 08628		11. SUPPLEMENTARY NOTES Prepared in cooperation with the New Jersey Department of Environmental Protection and with other agencies.
12a. DISTRIBUTION / AVAILABILITY STATEMENT No restriction on distribution. This report can be purchased from the National Technical Information Services, Springfield, Virginia 22161.		12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) Water-resources data for the 2003 water year for New Jersey are presented in three volumes, and consists of records of stage, discharge, and water-quality of streams; stage and contents of lakes and reservoirs; and water levels and water-quality of ground water. Volume 3 contains a summary of surface- and ground-water hydrologic conditions for the 2003 water year, a listing of current water-resources projects in New Jersey, a bibliography of water-related reports, articles, and fact sheets for New Jersey completed by the Geological Survey in recent years, water-quality records of chemical analyses from 123 continuing-record surface-water stations, 35 ground-water sites, records of daily statistics of temperature and other physical measurements from 20 continuous-recording stations, and 5 special-study sites consisting of 2 surface-water sites, 1 spring site, and 240 ground-water sites. Locations of water-quality stations are shown in figures 21-25. Locations of special-study sites are shown in figures 49-53. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating federal, state, and local agencies in New Jersey.		
14. SUBJECT TERMS New Jersey, hydrologic conditions, hydrologic data, surface-water analysis, ground-water analysis, streambed-material analysis, suspended-sediment concentration, continuing-record station, continuous-recording station, special-study site.		15. NUMBER OF PAGES 684
17. SECURITY CLASSIFICATION OF REPORT Unclassified		16. PRICE CODE
18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT

# CONTENTS

	Page
Preface.....	iii
Water-quality stations, in downstream order, for which records are published in this volume .....	viii
Discontinued continuous water-quality stations .....	xii
Introduction.....	1
Cooperation.....	2
Summary of hydrologic conditions.....	3
Yearly trend of precipitation, stream discharge, and physical water-quality characteristics monitored at several index stations .....	3
Ambient Stream Monitoring Network .....	3
Distribution of selected constituents in filtered and unfiltered surface water from stations in the ASMN .....	4
Distribution, detection frequency, and concentration of recoverable trace elements in whole water and bed sediment, nutrients and organic compounds in bed sediment, volatile organic compounds in whole water, and pesticides in filtered samples from selected stations in the ASMN.....	5
Ambient Stream Monitoring Network Reconnaissance Study .....	18
Ambient Ground-Water-Quality Network .....	18
Distribution, detection frequency, and concentration of selected constituents in filtered samples from 35 sites in the AGWQN .....	18
Concentration and detection frequency of selected organic constituents in filtered samples from 35 sites in the AGWQN .....	26
Downstream order and station number .....	26
Numbering system for wells and miscellaneous sites .....	27
Special networks and programs .....	27
Local networks and programs .....	28
Explanation of water-quality records.....	30
Collection and Examination of Data.....	30
Water Analysis.....	30
Classification of records .....	30
Accuracy of the records .....	31
Arrangement of records .....	31
On-site measurements and sample collection.....	31
Water temperature.....	31
Sediment .....	32
Laboratory measurements.....	32
Analyses of pesticides in surface-water and ground-water samples (schedule 2001) .....	32
Analyses of waste water compounds in groundwater (schedule 1433) .....	34
Data presentation .....	36
Remark Codes.....	37
Water-quality control data.....	37
Blank samples .....	37
Reference samples .....	38
Replicate samples .....	38
Spike samples .....	39
Access to USGS water data .....	39
Current water-resources projects in New Jersey.....	39
Water-related reports for New Jersey completed by the Geological Survey in recent years .....	40
Water-related articles for New Jersey completed by the Geological Survey in recent years.....	43
Water-related fact sheets for New Jersey completed by the Geological Survey in recent years.....	44
Definition of terms.....	44
Techniques of Water-Resources Investigations of the U.S. Geological Survey.....	63
Surface-water-quality station records .....	76
Ground-water-quality site records .....	550
Water-quality at special-study sites.....	586
Morristown National Historical Park.....	586
Confined aquifer flow and chemistry: Piney Point and basal Kirkwood Sands .....	604
Trace-element chemistry: Kirkwood-Cohansey aquifer system .....	612
Radium sampling of water from the Kirkwood-Cohansey aquifer system and of backwash brine from ion-exchange treatment systems.....	647
Chloride distribution in major artesian aquifers of the New Jersey Coastal Plain .....	660
Index .....	663

# ILLUSTRATIONS

Figure 1. Monthly precipitation for water year 2003 and mean monthly precipitation for 1895-2002 .....	6
2. Monthly mean discharge at index gaging stations .....	7
3. Monthly mean specific conductance at Delaware River at Trenton, New Jersey .....	8
4. Monthly mean water temperature at Delaware River at Trenton, New Jersey .....	8
5. Monthly medians of daily maximum and minimum dissolved oxygen concentrations at Delaware River at Trenton, New Jersey .....	9
6. Distribution of physical characteristics of, and constituent concentrations in, samples from 112 stations in the Ambient Stream Monitoring Network.....	10
7. Concentration and detection frequency of whole-water-recoverable trace elements detected in samples from 48 stations in the Ambient Stream Monitoring Network.....	12
8. Concentration and detection frequency of nutrients detected in bed sediment samples from 22 stations in the Ambient Stream Monitoring Network.....	13
9. Concentration and detection frequency of trace elements detected in bed sediment samples from 22 stations in the Ambient Stream Monitoring Network.....	13
10. Concentration and detection frequency of selected polycyclic aromatic hydrocarbons detected in bed sediment samples from 22 stations in the Ambient Stream Monitoring Network .....	14
11. Concentration and detection frequency of selected volatile organic compounds detected in samples from 48 stations in the Ambient Stream Monitoring Network.....	15
12. Concentration and detection frequency of selected pesticides detected in filtered samples from 48 stations in the Ambient Stream Monitoring Network.....	16
13. Field characteristics and constituent concentrations in surface water at selected stations in the Ambient Stream Monitoring Network during July, August, or September, 2003 .....	17
14. Trilinear diagram showing the distribution of major ions in filtered samples from four sites in undeveloped land-use areas in the Ambient Ground-Water-Quality Network.....	20
15. Trilinear diagram showing the distribution of major ions in filtered samples from sixteen sites in agriculture land-use areas in the Ambient Ground-Water-Quality Network.....	21
16. Trilinear diagram showing the distribution of major ions in filtered samples from fifteen sites in urban land-use areas in the Ambient Ground-Water-Quality Network.....	22
17. Concentration and detection frequency of selected constituents in samples from 35 sites in the Ambient Ground-Water-Quality Network.....	23
18. Concentration and detection frequency of trace elements detected in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network .....	24
19. Concentration and detection frequency of selected pesticides detected in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network .....	25
20. System for numbering wells and miscellaneous sites (latitude and longitude).....	27
21. Locations and types of surface-water-quality stations.....	68
22. Location of background surface-water-quality stations in the Ambient Stream Monitoring Network .....	70
23. Location of sites in the Ambient Ground-Water-Quality Network.....	71
24. Location of stations in the Long Island-New Jersey National Water-Quality Assessment Program, surface-water low-intensity-phase network.....	72
25. Location of stations in the Delaware River National Water-Quality Assessment Program, surface-water fixed station network.....	73
26. Counties in New Jersey.....	74
27. Cataloging units and codes in New Jersey .....	75
28. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01367625 Wallkill River at Sparta .....	78
29. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01367770 Wallkill River at Sussex.....	81
30. Physical characteristics and concentrations of constituents measured at 01388000 Ramapo River at Pompton Lakes .....	144
31. Cross sectional water-quality measurements with recorded monitor values, at Ramapo River at Pompton Lakes, May 15, 2003 .....	146
32. Cross sectional water-quality measurements with recorded monitor values, at Ramapo River at Pompton Lakes, August 21, 2003 .....	147
33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges .....	177
34. Cross sectional water-quality measurements with recorded monitor values, at Passaic River below Pompton River, at Two Bridges, August 21, 2003 .....	185
35. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01396660 Mulhockaway Creek at Van Syckel .....	224
36. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01398000 Neshanic River at Reaville.....	227
37. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01400500 Raritan River at Manville.....	247
38. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01403300 Raritan River at Queens Bridge, at Bound Brook.....	262
39. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01443250 Paulins Kill at Warbasse Junction Road, near Lafayette .....	379
40. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01445160 Bear Brook at Dark Moon Road, near Johnsonburg .....	384
41. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01445900 Honey Run near Hope .....	385
42. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01455120 Pohatcong Creek at Janes Chapel Road, at Mount Bethel .....	392
43. Physical characteristics and concentrations of constituents measured at 01463500 Delaware River at Trenton.....	440



## ILLUSTRATIONS--Continued

44. Cross sectional water-quality measurements with recorded monitor values, at Delaware River at Trenton, September 15, 2003 .....	442
45. Cross sectional water-quality measurements with recorded monitor values, at Delaware River at Trenton, September 30, 2003 .....	443
46. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01464529 Bacons Creek near Mansfield Square .....	463
47. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01464578 Annaricken Brook near Jobstown .....	468
48. Location of sites in the Ambient Ground-Water-Quality Network.....	550
49. Location of water sampling sites, Morristown National Historical Park, Jockey Hollow area, New Jersey .....	586
50. Location of water samples from the Piney Point aquifer, 1997-2002 .....	604
51. Location of wells sampled for trace elements and mercury, 1996-2001 .....	612
52. Location of water samples and ancillary samples from the Kirkwood-Cohansey aquifer system .....	647
53. Location of sites sampled for the Saltwater Monitoring Network, Monmouth County, New Jersey .....	660

## TABLES

Table 1. Detection frequency of selected organic compounds in bed sediment samples from 22 stations in the Ambient Stream Monitoring Network .....	14
2. Concentration of volatile organic compounds detected only once in samples from 48 stations in the Ambient Stream Monitoring Network .....	15
3. Detection frequency of selected pesticides in filtered samples from 48 stations in the Ambient Stream Monitoring Network .....	16
4. Concentration of pesticides detected only once in filtered samples from 48 stations in the Ambient Stream Monitoring Network .....	16
5. Hydrogeologic unit and land use at 35 wells sampled as part of U.S. Geological Survey-N.J. Department of Environmental Protection (cooperative) Ambient Ground-Water-Quality Network .....	19
6. Detection frequency of volatile organic compounds detected in samples from 35 sites in the Ambient Ground-Water-Quality Network .....	25
7. Detection frequency of selected pesticides in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network .....	25
8. Concentration of pesticides detected only once in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network .....	25

# WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

Note.--Data for miscellaneous sites for surface- and ground-water quality are published in separate sections of the data report.

[Letter after station name designates type of data: (c) general chemical, (m) microbiological, (s) suspended sediment, (t) continuous physical measurements, (w) whole-water-recoverable metals, (v) volatile organic compounds, (p) pesticide, (h) bed material, (WMA #) NJDEP watershed management area]

## (WMA 2 - WALLKILL RIVER & TRIBUTARIES)

### HUDSON RIVER BASIN

#### Rondout Creek:

Wallkill River at Sparta (cms) .....	01367625 .....	76
Wallkill River near Sussex (cms) .....	01367770 .....	79
Papakating Creek at Pelletstown (cms) .....	01367800 .....	82

#### Clove Brook:

Clove Brook tributary at Rose Morrow Road, near Colesville (cmswvph) .....	01367880 .....	84
Wallkill River near Unionville, NY (cms) .....	01368000 .....	89

#### Pochuck Creek:

#### Wawayanda Creek:

Double Kill at Wawayanda (cmswvph) .....	01368820 .....	91
--	----------------	----

## (WMA 5 - HUDSON RIVER, HACKENSACK RIVER, SADDLE RIVER)

### HUDSON RIVER BASIN

Hudson River South of Hastings-on-Hudson, NY (t) [site not within WMA 5] .....	01376304 .....	96
--	----------------	----

### HACKENSACK RIVER BASIN

Hackensack River at Rivervale (cms) .....	01377000 .....	100
Dorotockeys Run at Harrington Park (cmswvp) .....	01378475 .....	102
Coles Brook at Hackensack (cms) .....	01378560 .....	106

## (WMA 6 - UPPER PASSAIC RIVER, NEW RIVER, WHIPPANY RIVER, ROCKAWAY RIVER)

### PASSAIC RIVER BASIN

#### Great Brook:

Primrose Brook at Morristown National Historical Park (cmswvp) .....	01378780 .....	108
--	----------------	-----

#### Passaic River:

Dead River near Millington (cms) .....	01379200 .....	112
--	----------------	-----

#### Rockaway River:

Mill Brook at Randolph (cmswvph) .....	01379870 .....	114
Beaver Brook at Rockaway (cms) .....	01380100 .....	119
Whippany River at Ridgedale Avenue, at Morristown (cmswvp) .....	01381498 .....	121
Whippany River near Pine Brook (cms) .....	01381800 .....	125

Passaic River at Two Bridges (cms) .....	01382000 .....	127
--	----------------	-----

## (WMA 3 - UPPER TO MID-PASSAIC RIVER)

Pequannock River at Macopin Intake Dam (cms) .....	01382500 .....	129
--	----------------	-----

#### Belcher Creek (head of Pequannock River):

Green Brook near West Milford (cmswvp) .....	01382960 .....	131
--	----------------	-----

Ramapo River near Mahwah (cms) .....	01387500 .....	135
--------------------------------------	----------------	-----

Ramapo River at Pompton Lakes (t) .....	01388000 .....	137
---	----------------	-----

Ramapo River at Pompton Plains (cms) .....	01388500 .....	148
--	----------------	-----

Beaver Dam Brook at Ryerson Road, at Lincoln Park (cms) .....	01388720 .....	150
---	----------------	-----

Passaic River below Pompton River, at Two Bridges (t) .....	01389005 .....	152
---	----------------	-----

Passaic River at Little Falls (cms) .....	01389500 .....	186
---	----------------	-----

Saddle River at Old Stone Church Road, at Upper Saddle River (cmswvph) .....	01390400 .....	188
--	----------------	-----

#### Hohokus Brook:

Valentine Brook at Allendale (cmswvph) .....	01390800 .....	193
--	----------------	-----

Saddle River at Lodi (cms) .....	01391500 .....	197
----------------------------------	----------------	-----

## (WMA 7 - NEWARK BAY, ARTHUR KILL, KILL VAN KULL, RAHWAY RIVER, ELIZABETH RIVER, MORSES CREEK, UPPER NEW YORK HARBOR)

### RAHWAY RIVER BASIN

Rahway River at Morris Avenue, at Springfield (cmswvph) .....	01394200 .....	199
---	----------------	-----

Rahway River near Springfield (cms) .....	01394500 .....	203
---	----------------	-----

Rahway River at Rahway (cms) .....	01395000 .....	205
------------------------------------	----------------	-----

#### Robinsons Branch:

Robinsons Branch tributary 2 at Westfield (cmswvp) .....	01395700 .....	207
--	----------------	-----

# WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

## (WMA 8 - NORTH AND SOUTH BRANCHES OF THE RARITAN RIVER, LAMINGTON RIVER)

### RARITAN RIVER BASIN

#### South Branch Raritan River:

Spruce Run at Newport (cmswvp) .....	01396550	211
Spruce Run near Glen Gardner (cswvph) .....	01396588	215
Mulhockaway Creek at Van Syckel (cmswvph) .....	01396660	219
Neshanic River at Reaville (cms) .....	01398000	225
Furmans Brook at Furmans Corner (cmswvph) .....	01398060	228
Pleasant Run at Neshanic Station (cmswvp) .....	01398090	233

South Branch Raritan River at South Branch (cms) .....	01398102	237
--	----------	-----

#### North Branch Raritan River:

Lamington (Black) River near Ironia (cmswvph) .....	01399200	239
Lamington River at Burnt Mills (cms) .....	01399780	243

North Branch Raritan River near Raritan (cms) .....	01400000	245
---	----------	-----

Raritan River at Manville (t) .....	01400500	247
-------------------------------------	----------	-----

## (WMA 10 - MILLSTONE RIVER, STONY BROOK)

#### Raritan River:

Millstone River near Grovers Mill (cms) .....	01400640	248
Bear Brook at Cranbury Road, at Princeton Junction (cmswvph) .....	01400808	250
Heathcote Brook at Kingston (cms) .....	01401400	255
Millstone River at Blackwells Mills (cms) .....	01402000	257

## (WMA 9 - RARITAN RIVER MAINSTEM, MATCHAPONIX BROOK, SOUTH RIVER)

Raritan River at Queens Bridge, at Bound Brook (csp) .....	01403300	259
--	----------	-----

Bound Brook at Route 28, at Middlesex (cms) .....	01403385	263
---	----------	-----

Bound Brook at Middlesex (csp) .....	01403900	265
--------------------------------------	----------	-----

Lawrence Brook at Riva Avenue, at Milltown (cmswvp) .....	01405003	268
---	----------	-----

#### South River:

##### Matchaponix Brook (head of South River):

McGellairds Brook at Englishtown (cmswvph) .....	01405180	272
--	----------	-----

Manalapan Brook at Federal Road, near Manalapan (cms) .....	01405340	276
---	----------	-----

## (WMA 12 - RARITAN BAY & TRIBUTARIES)

### SHREWSBURY RIVER BASIN

#### Navesink River (head of Shrewsbury River):

##### Swimming River:

Hop Brook at Willow Brook Road, near Holmdel (cmswvph) .....	01407210	278
--	----------	-----

### SHARK RIVER BASIN

#### Shark River:

Jumping Brook near Neptune City (cms) .....	01407760	282
---	----------	-----

### MANASQUAN RIVER BASIN

Manasquan River at West Farms (cmswvp) .....	01407900	284
--	----------	-----

Manasquan River at Squankum (cms) .....	01408000	288
---	----------	-----

Mingamahone Brook near Earle (cms) .....	01408009	290
--	----------	-----

## (WMA 13 - ATLANTIC OCEAN & TRIBUTARIES - MANASQUAN RIVER, METEDECONK RIVER, TOMS RIVER, BARNEGAT BAY, FORKED RIVER)

### METEDECONK RIVER BASIN

North Branch Metedeconk River at Lakewood (cms) .....	01408100	292
---	----------	-----

Haystack Brook near Southard (cmswvph) .....	01408110	294
--	----------	-----

### TOMS RIVER BASIN

#### Toms River:

##### Union Branch:

Manapaqua Branch at Lakehurst (cmswvp) .....	01408460	299
--	----------	-----

Toms River near Toms River (cms) .....	01408500	303
--	----------	-----

### CEDAR CREEK BASIN

Cedar Creek at Cedar Crest (cms) .....	01408830	305
--	----------	-----

### FORKED RIVER BASIN

#### North Branch Forked River:

Long Branch near Wells Mills (cmswvp) .....	01409030	307
---	----------	-----

## (WMA 14 - ATLANTIC OCEAN & TRIBUTARIES - TUCKERTON CREEK, LITTLE EGG HARBOR)

# WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

## MULLICA RIVER BASIN

Mullica River at outlet of Atsion Lake, at Atsion (cms) .....	01409387 .....	310
Nescochague Creek:		
Albertson Branch (head of Nescochague Creek):		
Great Swamp Branch:		
Blue Anchor Brook At Elm (cms) .....	0140940950 .....	312
Cedar Brook at Columbia Road, at Hammonton (cmswvp) .....	0140941075 .....	314
Hammonton Creek at Wescoatville (cms) .....	01409416 .....	318
Batsto River at Batsto (cms) .....	01409500 .....	320
Landing Creek:		
Indian Cabin Creek at Fifth Avenue, near Elwood (cmswvp) .....	01409601 .....	322
Wading River:		
West Branch Wading River at Maxwell (cms) .....	01409815 .....	326
Bass River:		
East Branch Bass River near New Gretna (cms) .....	01410150 .....	328

## **(WMA 15 - ATLANTIC OCEAN & TRIBUTARIES - GREAT EGG HARBOR RIVER)**

### ABSECON CREEK BASIN

South Branch Absecon Creek near Pomona (cmswvp) .....	01410455 .....	330
---	----------------	-----

### GREAT EGG HARBOR RIVER BASIN

Great Egg Harbor River:		
Squankum Branch at Malaga Road, near Williamstown (cmswvp) .....	01410865 .....	334
Hospitality Branch at Blue Bell Road, near Cecil (cms) .....	01411035 .....	338
Great Egg Harbor River at Weymouth (cms) .....	01411110 .....	340
Babcock Creek near Mays Landing (cms) .....	01411196 .....	342

## **(WMA 16 - DELAWARE BAY (PART OF ZONE 6) & TRIBUTARIES)**

### FISHING CREEK BASIN

Fishing Creek at Rio Grande (cms) .....	01411400 .....	344
---	----------------	-----

### DENNIS CREEK BASIN

Old Robbins Branch near North Dennis (cmswvph) .....	01411440 .....	346
--	----------------	-----

### WEST CREEK BASIN

West Creek near Leesburg (cmswvp) .....	01411444 .....	350
---	----------------	-----

## **(WMA 17 - DELAWARE BAY (PART OF ZONE 6) & TRIBUTARIES)**

### MAURICE RIVER BASIN

Scotland Run:		
Indian Branch near Malaga (cms) .....	01411466 .....	354
Maurice River at Norma (cms) .....	01411500 .....	356
Buckshutem Creek:		
Gravelly Run at Laurel Lake (cmswvph) .....	01411955 .....	358
Menantico Creek at Route 49, at Millville (cmswvph) .....	01412005 .....	363

### COHANSEY RIVER BASIN

Cohansey River at Seely (cms) .....	01412800 .....	367
-------------------------------------	----------------	-----

## **(WMA 1 - UPPER DELAWARE (ZONE 1C, ZONE 1D, AND THE UPPER PART OF ZONE 1E) & TRIBUTARIES)**

### DELAWARE RIVER BASIN

Delaware River at Montague (cms) .....	01438500 .....	369
Flat Brook near Flatbrookville (cms) .....	01440000 .....	371
Dunnfield Creek at Dunnfield (cmswvp) .....	01442760 .....	373
Delaware River at Portland, PA (cms) .....	01443000 .....	377
Paulins Kill at Warbasse Junction Road, near Lafayette (t) .....	01443250 .....	379
Paulins Kill at Blairstown (cms) .....	01443500 .....	380
Pequest River:		
Bear Brook at Dark Moon Road, near Johnsonburg (cms) .....	01445160 .....	382
Honey Run near Hope (t) .....	01445900 .....	385
Pequest River at Belvidere (cms) .....	01446400 .....	386
Pohatcong Creek at Janes Chapel Road, at Mount Bethel (cmswvph) .....	01455120 .....	388
Musconetcong River at Riegelsville (cmswvph) .....	01457400 .....	393

## **(WMA 11 - UPPER DELAWARE & TRIBUTARIES - LOCKATONG, ALEXAUKEN CREEK, ASSUNPINK CREEK)**

Delaware River at Riegelsville (cms) .....	01457500 .....	397
Harihokake Creek at Hartpence Road, near Mount Pleasant (cmswvp) .....	01458300 .....	399

## WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

Nishisakawick Creek near Frenchtown (cms) .....	01458570 .....	403
Copper Creek near Frenchtown (cmswvp) .....	01458710 .....	405
Delaware River below Tohickon Creek, at Point Pleasant, PA (t) [site not within WMA 11] .....	01460200 .....	409
Lockatong Creek at Route 12, at Baptistown (cmswvp) .....	01460860 .....	416
Delaware River at Lumberville, PA (cms) .....	01461000 .....	420
Delaware River at Trenton (cmstwp) .....	01463500 .....	422
Assunpink Creek at Edinburg (cmswvph) .....	01463610 .....	444
Miry Run at Route 533, at Mercerville (cms) .....	01463850 .....	448
Assunpink Creek at Peace Street, at Trenton (cms) .....	01464020 .....	450
<b>(WMA 20 - LOWER DELAWARE (UPPER PART OF ZONE 2) &amp; TRIBUTARIES)</b>		
Crosswicks Creek:		
South Run near Cookstown (cmswvph) .....	01464280 .....	452
Crosswicks Creek at Groveville Road, at Groveville (cms) .....	01464504 .....	457
Doctors Creek at Allentown (cms) .....	01464515 .....	459
Blacks Creek at Chesterfield (cms) .....	01464527 .....	461
Bacons Creek near Mansfield Square (t) .....	01464529 .....	463
Blacks Creek at Fieldsboro (cmswvp) .....	01464532 .....	464
Assiscunk Creek:		
Anniricken Brook near Jobstown (t) .....	01464578 .....	468
Neshaminy Creek:		
Little Neshaminy Creek at Valley Road, near Neshaminy, PA (csp) [site not within WMA 20] .....	01464907 .....	469
<b>(WMA 19 - LOWER DELAWARE (LOWER PART OF ZONE 2 AND UPPER PART OF ZONE 3) &amp; TRIBUTARIES)</b>		
<b><u>RANCOCAS CREEK BASIN</u></b>		
South Branch Rancocas Creek:		
Friendship Branch:		
Burrs Mill Brook:		
South Branch Burrs Mill Brook near Hedger House (cmswvp) .....	01465808 .....	472
South Branch Rancocas Creek at Retreat (cmswvp) .....	01465835 .....	476
Southwest Branch Rancocas Creek at Elmwood Road, at Pine Grove (cmswvp) .....	01465857 .....	480
Little Creek at Chairville (cms) .....	01465893 .....	484
North Branch Rancocas Creek:		
Ong Run at Browns Mills (cmswvph) .....	01465965 .....	486
Greenwood Branch:		
McDonalds Branch (head of Bisphams Mill Creek) in Lebanon State Forest (cmswvp) ..	01466500 .....	490
Greenwood Branch at New Lisbon (cms) .....	01466900 .....	494
North Branch Rancocas Creek at Iron Works Park, at Mount Holly (cms) .....	01467005 .....	496
Cooper River at Haddonfield (cms) .....	01467150 .....	498
Delaware River at Benjamin Franklin Bridge, at Philadelphia, PA (t) [site not within WMA 19] .....	01467200 .....	500
Newton Creek at West Collingswood (cmswvp) .....	01467312 .....	508
<b>(WMA 18 - LOWER DELAWARE (LOWER PART OF ZONE 3, ZONE 4, ZONE 5, AND PART OF ZONE 6) &amp; TRIBUTARIES)</b>		
Big Timber Creek:		
North Branch Big Timber Creek at Glendora (cms) .....	01467359 .....	512
Schuylkill River:		
French Creek near Phoenixville, PA (csp) [site not within WMA 18] .....	01472157 .....	514
Schuylkill River at Philadelphia, PA (csp) [site not within WMA 18] .....	01474500 .....	517
Mantua Creek at Mantua Avenue, at Wenonah (cmswvp) .....	01475042 .....	520
Delaware River at Chester, PA (t) [site not within WMA 18] .....	01477050 .....	524
Raccoon Creek near Swedesboro (cms) .....	01477120 .....	533
Oldmans Creek at Jessups Mill (cmswvph) .....	01477440 .....	535
Salem River at Woodstown (cms) .....	01482500 .....	539
Delaware River at Reedy Island Jetty, DE (t) [site not within WMA 18] .....	01482800 .....	541

## DISCONTINUED CONTINUOUS WATER-QUALITY STATIONS

The following stations have been discontinued as continuous water-quality stations. Daily records of temperature, specific conductance, pH, dissolved oxygen or sediment were collected and published for the period of record shown for each station.

Station name	Station number	Drainage area (mi <sup>2</sup> )	Type of record	Period of record (water years)
Passaic River at Millington, NJ	01379000	55.4	Temp	1997-98
Passaic River near Chatham, NJ	01379500	100	Sed	1964-68
			Temp	1967-68
Rockaway River at Longwood Valley, NJ	01379680	22.1	Temp	1997-98
Green Pond Brook at Picatinny Arsenal, NJ	01379773	7.65	Temp, SC, DO, pH	1984-86
Green Pond Brook at Wharton, NJ	01379790*	12.6	Temp, SC, DO, pH	1984-85
Passaic River at Two Bridges, NJ	01382000	361	Temp,	1963-74
			SC, DO, pH	1969-74
Wanaque River at Wanaque, NJ	01387000	90.4	Temp	1964-80
Ramapo River near Mahwah, NJ	01387500	120	Sed	1964-65
Pompton River near Two Bridges, NJ	01389000	372	Temp, SC, DO, pH	1969-74
Passaic River at Little Falls, NJ	01389500	762	Sed	1964-65
			Temp, SC	1981-86
Saddle River at Ridgewood, NJ	01390500	21.6	Temp	1997-98
Rahway River at Morris Avenue, at Springfield, NJ	01394200	25.5	Temp	1997-98
South Branch Raritan River near High Bridge, NJ	01396500	65.3	Temp	1961-79
			SC	1969-79
Mulhockaway Creek at Van Syckel, NJ	01396660	11.8	Temp	1997-98
Spruce Run at Clinton, NJ	01396800	41.3	Temp	1969, 1971-80
South Branch Raritan River at Stanton, NJ	01397000	147	Temp, SC	1969-79
			Sed	1960-63
Neshanic River at Reaville, NJ	01398000	25.7	Temp	1997-98
South Branch Rockaway Creek, at Whitehouse, NJ	01399690	13.2	Temp, SC	1977-78
			Sed	1977
Rockaway Creek at Whitehouse, NJ	01399700	37.0	Temp, SC	1977-78
Raritan River near Manville, NJ	01400510	497	Temp, SC, DO, pH	1968-74
Baldwins Creek at Baldwin Lake, near Pennington, NJ	01400932	2.52	Temp	1963-66
			Sed	1963-69
Stony Brook at Princeton, NJ	01401000	44.5	Temp	1957-70, 1997-98
			Sed	1960-70
Beden Brook near Rocky Hill, NJ	01401600	27.0	Temp	1997-98
Millstone River near Manville, NJ	01402900	287	Temp, SC, DO, pH	1968-74
Raritan River at Queens Bridge, at Bound Brook, NJ	01403300	804	Temp	1997-98
Bound Brook at Middlesex, NJ	01403900	48.4	Temp, SC	1996-98
Raritan River near South Bound Brook, NJ	01404100	874	Temp, SC, DO, pH	1969-77
Manasquan River at Squankum, NJ	01408000	44.0	Temp, SC, DO, pH	1969-74
Toms River near Toms River, NJ	01408500	123	Temp,	1964-66, 1975-81
			SC	1975-81
Oyster Creek near Brookville, NJ	01409095	7.00	Temp, DO	1975-76
			SC, pH	1975-77
West Branch Wading River near Jenkins, NJ	01409810	84.1	Temp, SC	1978-81
Great Egg Harbor River at Sicklerville, NJ	01410784	15.1	Temp, SC	1996-98
Great Egg Harbor River trib. at Sicklerville, NJ	01410787	1.64	Sed	1974-78
Fourmile Branch at New Brooklyn, NJ	01410810	7.74	Sed	1974-78
Great Egg Harbor River at Folsom, NJ	01411000	57.0	Temp	1961-75, 1977-80
			SC	1969-75, 1977-80
			Sed	1966-70, 1979
Delaware Bay at Ship John Shoal Lighthouse, NJ	01412350	--	Temp	1970-86
Maurice River at Norma, NJ	01411500	112	Temp	1967-68, 1980-87,
				1993-94
			SC	1980-87, 1993-94

**DISCONTINUED CONTINUOUS WATER-QUALITY STATIONS--Continued**

Station name	Station number	Drainage area (mi <sup>2</sup> )	Type of record	Period of record (water years)
			pH	1993-94
			Sed	1965-68
Delaware River at Port Jervis, NY	01434000	3,076	Temp	1957-60, 1973-94 1999-2001
Delaware River at Montague, NJ	01438500	3,480	Temp	1956-57
			SC, pH	1956-73
Delaware River at Dingmans Ferry, PA	01439000	3,542	Temp, SC, pH	1950-53
Delaware River near East Stroudsburg, PA	01440090	3,830	Temp, SC, DO	1966-78
			pH	1972-78
Delaware River at Dunnfield, NJ	01442750	4,150	Temp	1967-76
			Sed	1964-76
Delaware River near Richmond, PA	01444800	4,378	Temp	1944-47, 1962-63
			SC	1962-63
Delaware River at Easton, PA	01446700	4,636	Temp, SC, DO, pH	1967-77
Jordan Creek near Schnecksville, PA	01451800	53.0	Temp	1999, 2001
Delaware and Raritan Canal Feeder at Raven Rock, NJ	01460300	--	Temp, SC, Turb	1998-99
Delaware and Raritan Canal Feeder at Lower Ferry Road at Trenton, NJ	01460400	--	Temp, SC, Turb	1998-99
Delaware and Raritan Canal Feeder at Port Mercer, NJ	01460440	--	Temp, SC, Turb	1998-99
Delaware and Raritan Canal Feeder at Griggstown, NJ	01460530	--	Temp, SC, Turb	1998-99
Delaware and Raritan Canal Feeder at Ten Mile Lock near Manville, NJ	01460565	--	Temp, SC, Turb	1998-99
Delaware and Raritan Canal Feeder at New Brunswick, NJ	01460600	--	Temp, SC, Turb	1998-99
Delaware River at Trenton, NJ	01463500	6,780	Sed	1949-82
Delaware River at Marine Terminal, at Trenton, NJ	01464040	6,870	Temp, SC	1973-76
Crosswicks Creek near Extonville, NJ	01464500	81.5	Temp	1967-70
			Sed	1965-70
Delaware River at Bristol, PA	01464600	7,163	Temp	1954-75, 1979-80
			DO	1961-75, 1978-80
			SC, pH	1967-75, 1978-80
Little Neshaminy Creek at Valley Road, near Neshaminy, PA	01464907	26.8	Temp	1999, 2001
McDonalds Branch in Lebanon State Forest, NJ	01466500	2.35	Temp	1960-92
			SC	1968-92
			pH, DO	1984-92
Rancocas Creek at Willingboro, NJ	01467016	327	Temp, SC,	1969-74
			DO	1970-72
			pH	1970-74
Delaware River at Torresdale Intake, at Philadelphia, PA	01467030	7,781	Temp	1956-57, 1960-81
			DO	1961-81
			SC	1963-81
			pH	1968-81
Delaware River at Palmyra, NJ	01467060	7,850	Sed	1962-64
Delaware River at Lehigh Avenue, at Philadelphia, PA	01467100	7,935	Temp, SC, DO, pH	1949-68
Cooper River at Haddonfield, NJ	01467150	17.0	Temp	1968-69, 1999-2001
			Sed	1968-69
Delaware River at Wharton Street, at Philadelphia, PA	01467300	7998	Temp, SC, DO, pH	1949-68
Delaware River at League Island, at Philadelphia, PA	01467400	8059	Temp, SC, DO, pH	1949-68
French Creek near Phoenixville, PA	01472157	59.1	Temp	1999-2001
Schuylkill River at Philadelphia, PA	01474500	1893	SC	1999
			Temp	1999-2001
Delaware River at Eddystone, PA	01476200	10190	Temp, SC, DO, pH	1949-68
Raccoon Creek near Swedesboro, NJ	01477120	26.9	Temp	1966-73, 1999-2001
			Sed	1966-69
Delaware River at Marcus Hook, PA	01477200	10360	Temp, SC, DO, pH	1949-77

**DISCONTINUED CONTINUOUS WATER-QUALITY STATIONS--Continued**

Station name	Station number	Drainage area (mi <sup>2</sup> )	Type of record	Period of record (water years)
Delaware River at Delaware Memorial Bridge, at Wilmington, DE	01482100	11,030	Temp	1956-81
			SC	1963-81
			DO	1962-81
			pH	1968-81

\* Unpublished records are available in the files of the District office.

Type of record: Temp (water temperature); SC (specific conductance); DO (dissolved oxygen); pH; Sed (sediment concentration); -- (not determined)



## 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, contents, and water quality in lakes and reservoirs; and water levels and water quality in ground-water wells. This volume contains water-quality records, containing various chemical analyses from 123 continuing-record surface-water stations and 35 ground-water sites. Locations of these stations are shown in figures 21-25. Additional water-quality data were collected at 5 special-study sites that are not part of the systematic data collection program. The special-study sites include 2 surface-water sites, 1 spring site, and 240 ground-water sites. Locations of these sites are shown in figures 49-53. 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 with the 1998 water year, the format has changed to include surface-water discharge records in Volume 1, ground-water level records in Volume 2, and surface- 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-03-3." 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, Bradley M. Campbell, Commissioner

North Jersey District Water Supply Commission, Michael Barnes, General Manager

Passaic Valley Water Commission, Joseph A. Bella, Executive Director

Delaware River Basin Commission, Carol R. Collier, Executive Director

New Jersey Water Supply Authority, Henry Patterson, Executive Director

The New Jersey Department of Environmental Protection aided in collecting records.

Organizations that supplied data are acknowledged in station descriptions.

## SUMMARY OF HYDROLOGIC CONDITIONS

### Yearly Trend of Precipitation, Stream Discharge, and Physical Water-Quality Characteristics Monitored at Several Index Stations

The drought New Jersey has been experiencing for more than four water years has diminished. The State received a total of 59.09 inches of precipitation during the 2003 water year (October 2002 to September 2003), making it the fifth wettest water year since 1896. This was quite a reversal from the third driest water year experienced in 2002. Precipitation was above the 1895-2002 mean for 8 months during the 2003 water year (fig. 1) (Statewide Monthly Precipitation 1895-2003, Climate Data, N.J. State Climatologist, Rutgers University; accessed at <http://climate.rutgers.edu/stateclim/data/index.html>). The monthly total for June (8.61 inches) was the highest for any June since 1896. During 4 additional months, surpluses greater than 1.5 inches occurred. January, April, May, and July had below average precipitation; however, no deficit greater than 0.65 inches occurred. Overall, precipitation was 14.35 inches (32 percent) above average during the 2003 water year. Streamflow was near or above normal throughout much of the year. Monthly mean discharge values for June and September set new maximum monthly mean values for the period of record at index stations Folsom and Trenton, respectively (fig. 2). All three index stations recorded above normal streamflow during the last one-third of the water year.

The precipitation and streamflow surpluses during water year 2003 and their diluting effects on solute concentrations are evident in the plot of monthly mean values of specific conductance (SC) at the continuous water-quality monitoring station on the Delaware River at Trenton (fig. 3). Monthly mean SC values, an indicator of solute concentrations, were below long-term (1968-2002) monthly mean values during 5 months. The correlation between streamflow and SC is less significant than that between precipitation and SC during winter months because even small precipitation events can carry salt used to deice roads, sidewalks, and parking lots into streams and result in higher solute concentrations. Therefore, when monthly mean SC values are expected to be low during high flow in winter months, the opposite is observed. During water year 2003, no long-term extremes for the period of record were exceeded.

Water year 2003 was the 29<sup>th</sup> coldest year since 1896 with an average ambient temperature of 51.5 °F (28.6 °C), 0.6 °F (0.3 °C) below the long-term (1968-2002) mean for the State (Statewide Monthly Precipitation 1895-2003, Climate Data). Monthly mean ambient temperatures during 8 months were at or below the long-term mean. Monthly mean water temperature values measured at the Delaware River at Trenton were below the long-term mean monthly values every month during water year 2003 (fig. 4). The monthly mean value for June established a new minimum for the period of record of 17.7 °C, 1.1 °C lower than the previous June minimum.

Dissolved oxygen (DO) concentrations generally exhibit an inverse relation to water temperature. As water temperature decreases, oxygen concentration increases; as water temperature increases, oxygen concentration decreases. DO, therefore, varies seasonally; yearly maximums occur in winter, and yearly minimums occur in summer. As expected, the highest monthly median of daily maximum DO concentrations, 16.0 milligrams per liter (mg/L), occurred in February when the monthly mean water temperature was at its lowest, 1.0 °C (fig. 5). The lowest monthly median of daily minimum DO concentrations, 7.4 mg/L, and the highest monthly mean water temperature, 24.6 °C, occurred in July. During water year 2003, no monthly medians of DO minimums and maximums exceeded long-term extremes for the period of record.

### Ambient Stream Monitoring Network

The United States Geological Survey (USGS), in cooperation with the New Jersey Department of Environmental Protection (NJDEP), operates the cooperative Ambient Stream Monitoring Network (ASMN), which is designed to determine statewide water-quality status and trends, measure water quality near the downstream end of each NJDEP Watershed Management Area (WMA), define background water quality in each of the four physiographic provinces of New Jersey, and measure nonpoint source contributions from major land-use areas and atmospheric deposition.

The ASMN consists of 116 stations located throughout the 20 WMAs. Four stations are located on the Delaware River main stem—the border between New Jersey and Pennsylvania—and are excluded from the following statistical plots of the ASMN data. The remaining 112 stations are segregated into 4 distinct types that together are used to define the surface-water quality in the State. Six background stations are located on reaches of streams that remain relatively unaffected by human activity, in order to develop a baseline water-quality database. Twenty-three Watershed Integrator (WI) stations are located near the farthest downstream point, not affected by tide, in one of the large drainage basins in each WMA, except 5, 9, and 16. The WI stations provide information on large drainage areas that integrate the effects of different types of land use and point and nonpoint contributions to surface-water quality within each WMA. Land Use Indicator (LUI) stations are used to monitor the effects of the dominant land use in each WMA and provide data on nonpoint source loading of contaminants to streams. Of the 43 LUI stations, 15 are designated undeveloped, 9 agriculture, 13 urban, and 6 mixed. Forty-two statewide status (SS) stations, at least two in each WMA, are chosen randomly to obtain a statistical basis that can be used to estimate values of water-quality indicators statewide. Individual tables of chemical constituents are located in the Surface-Water-Quality Station Records section of this report. In water year 2003, two of the SS stations were co-located at existing WI or LUI stations. Water-column samples were collected at each station to assess water-quality constituents that can be used as environmental indicators statewide. In addition to the regularly scheduled samples, a Watershed Reconnaissance study is devised annually according to specific project needs. The purpose of the Watershed Reconnaissance study in water year 2003 was to assess 3-day diurnal physical measurements and constituent concentrations at 12 network stations. This is discussed further in “Ambient Stream Monitoring Network Reconnaissance Study” in this summary.

## Distribution of Selected Constituents in Filtered and Unfiltered Surface Water from Stations in the ASMN

Physical characteristics and concentrations of total and filtered nutrients, filtered common ions, filtered organic carbon, and biochemical oxygen demand were determined in samples from 112 stations in the ASMN. Samples were collected at each station four times a year during the periods November to December, February to March, May to June, and August to September. The analyzing laboratory used two different methods and reporting conventions for establishing the minimum concentration above which a quantitative measurement could be made. These reporting conventions were laboratory reporting level (LRL) and minimum reporting level (MRL). LRL was computed as twice the long-term method detection level (LT-MDL). Values reported less than the LRL or MRL were included in each distribution as a value equal to the LT-MDL or one-half the MRL, respectively. Values reported as “E”—estimated to be greater than the LT-MDL but less than the LRL—were included in the plots. Refer to the Definition of Terms section of this report for further explanation of these reporting conventions.

The plots in figure 6 illustrate the relation between land use and water quality. Streams that drain urban and agricultural areas seem to be negatively affected by wastewater discharges and overland runoff, respectively. In contrast, streams that drain background areas have the highest DO concentrations and streams that drain background and undeveloped areas have the lowest concentrations of most other constituents, except DOC. The lowest median DO concentration, 74 percent of saturation; the highest median total dissolved solids (TDS) concentration, 234 mg/L; the highest median ammonia concentration, 0.10 mg/L; and the highest median chlorophyll a concentration, 0.5 µg/L, occurred at urban LUI stations. In contrast, the highest median DO concentration, 95.8 percent of saturation; the lowest median TDS concentration, 61 mg/L; the lowest median ammonia concentration, 0.015 mg/L; and the lowest median chlorophyll a concentration, 0.5 µg/L, occurred at background stations. The highest median BOD concentration, 1.3 mg/L; the highest median turbidity, 8.1 NTU; and the highest median nitrite plus nitrate concentration, 1.49 mg/L, occurred at agriculture LUI stations. In contrast, the lowest median BOD concentration, 0.50 mg/L, and the lowest nitrite plus nitrate concentration, 0.065 mg/L, occurred at undeveloped stations; the lowest turbidity, 0.75 NTU, occurred at background stations. Dissolved organic carbon (DOC) is a heterogeneous mixture of many organic materials, mostly high molecular weight organic acids that result from the oxidation of organic matter. Organic matter can originate from anthropogenic or natural sources. Streams in urban areas have been found to have high levels of organic carbon caused by nutrient enrichment. Streams in undeveloped areas have been found to have high levels caused by naturally occurring organic matter. The highest median concentration of DOC, 9.2 mg/L, occurred at undeveloped stations; the lowest median concentration occurred at agriculture LUI stations.

## Distribution, Detection Frequency, and Concentration of Recoverable Trace Elements in Whole Water and Bed Sediment, Nutrients and Organic Compounds in Bed Sediment, Volatile Organic Compounds in Whole Water, and Pesticides in Filtered Samples from Selected Stations in the ASMN

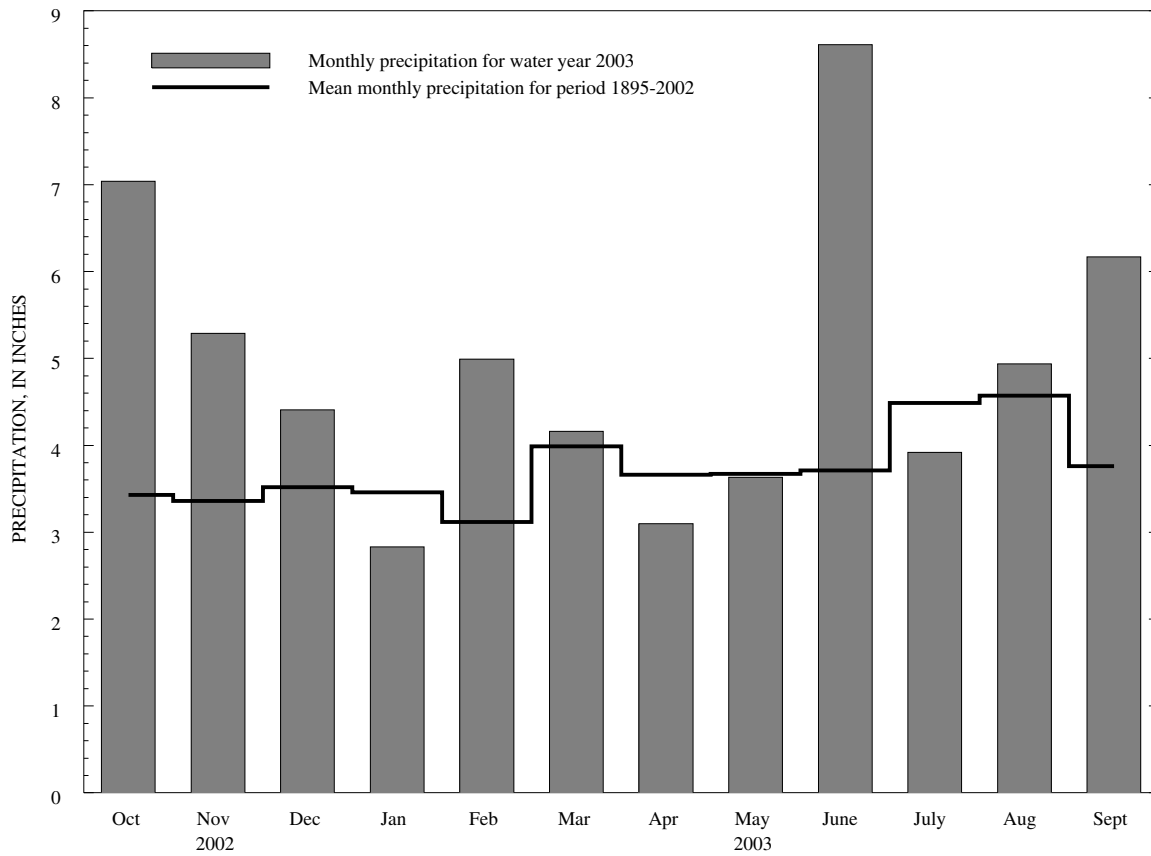
Water samples for analysis of trace elements, volatile organic compounds (VOCs), and pesticides were collected during the period when the constituents were most likely to have been detected, during August and September, February and March, and May and June, respectively. Samples of bed sediment were collected in low-water conditions during August and September. For ease of discussion, only those constituents detected in one or more samples are shown in the figures or tables on pages 12 through 16. A detected constituent is one whose value is reported to be greater than or equal to the laboratory LRL or MRL. Values reported by the analyzing laboratory as “<”—less than the LRL or MRL—were considered to be not detected and were excluded from the plots. Values reported as “E”—estimated below the LRL or MRL—were included in the plots. Refer to the Definition of Terms section of this report for more information about MRLs and LRLs.

Samples for the analysis of whole-water-recoverable trace elements were collected at 6 background stations to develop a baseline with which to compare the water quality at other stations and at 42 SS stations to provide a general overview of water quality statewide and of the aerial distribution of these compounds. All 15 trace elements analyzed in samples at the USGS National Water Quality Laboratory were detected in one or more samples and, therefore, were included in figure 7. Barium, boron, iron, lead, manganese, and nickel were detected in 100 percent of the samples, and copper, selenium, and zinc were detected in all but one of the samples. Chromium, mercury, and silver had the lowest percentages of detection, 33, 27, and 2, respectively. Arsenic, chromium, mercury, and silver were not detected at any background station. In general, median concentrations were smaller in samples from background stations, which are located on reaches of streams that remain relatively unaffected by human activity.

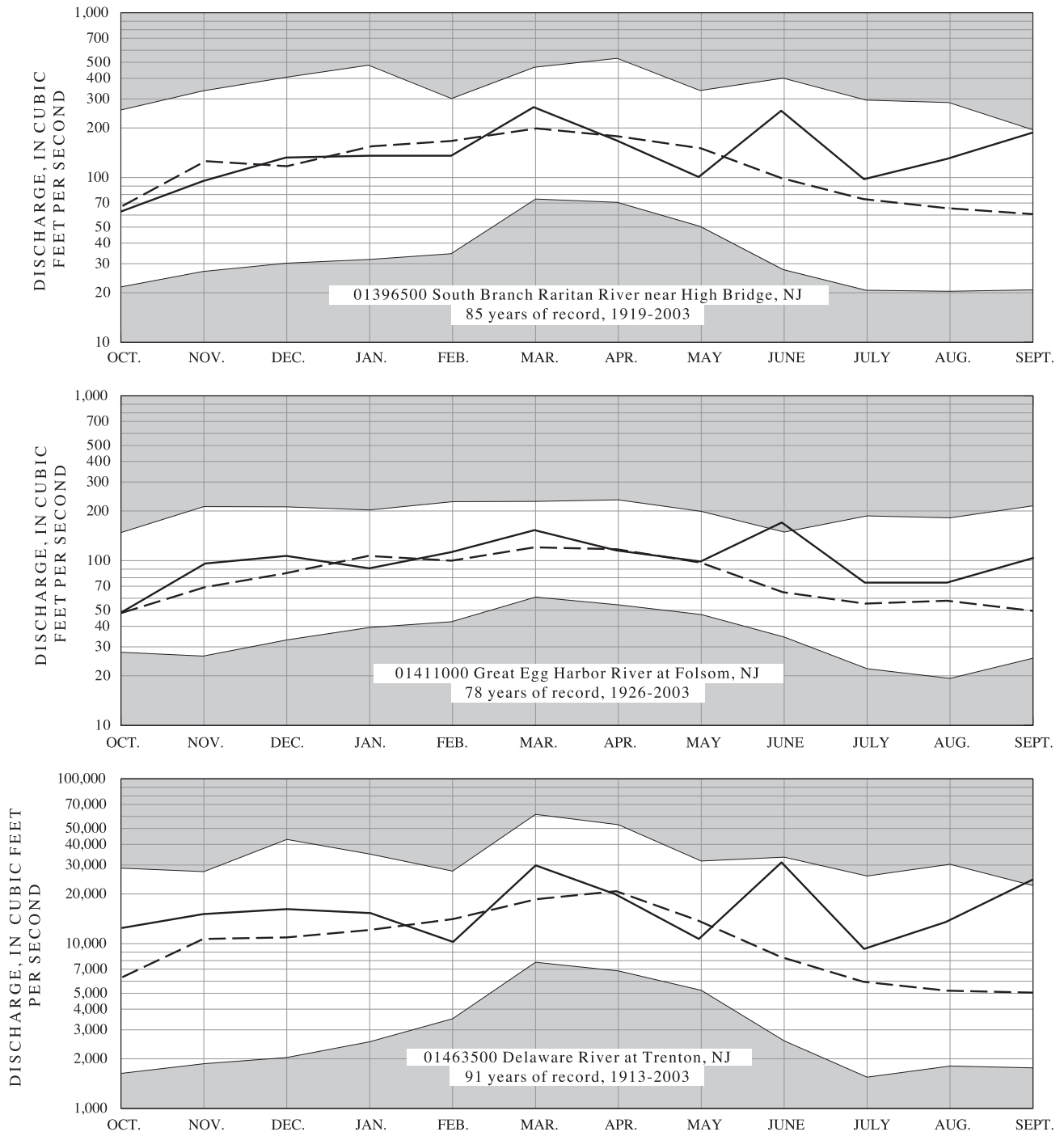
Bed-sediment samples for the analysis of nutrients, trace elements, polycyclic aromatic hydrocarbons (PAHs), and total polychlorinated biphenyls (PCBs) were collected at 2 background and 20 SS stations. Two of the six background stations are sampled for bed sediment each year and are resampled every third year. In water year 2003, 20 of the 46 SS stations were selected for sampling on the basis of the availability of bed sediment. Ammonia plus organic nitrogen, phosphorus, and total carbon were detected in all samples (fig. 8). Selenium was the only element in the laboratory schedule not detected in any sample. Cadmium, cobalt, iron, lead, and nickel were detected in 100 percent of the samples (fig. 9). Arsenic and mercury had the lowest percentages of detection, 23 and 9, respectively. Mercury, the only element not detected at either of the background stations, was detected at only two of the SS stations. Of the 30 PAHs and PCBs in the laboratory schedule, only those compounds with surface-water-quality standards are presented in the figure and table. Pyrene was the most frequently detected compound at 91 percent of the stations (fig. 10). Dibenz(a,h)anthracene was the least detected compound at 45 percent of the stations. Four compounds were not detected at either of the background stations, and seven compounds were detected at only one of the background stations. PCBs were detected at estimated concentrations at nine of the SS stations and at none of the background stations (table 1).

Samples from 6 background and 42 SS stations were analyzed for 34 VOCs. Seven compounds were detected in more than one sample (fig. 11), and four compounds were detected only once (table 2). The most frequently detected VOCs in 48 samples were methyl tertiary butyl ether (MTBE), in 54 percent of samples; chloroform, in 21 percent; and tetrachloroethylene, in 17 percent. Chloroform and toluene were the only two compounds detected in samples from background stations.

Filtered samples from 6 background and 42 SS stations were analyzed for 52 pesticides by use of laboratory schedule 2001. Only compounds detected in one or more samples are included in figure 12 and tables 3 and 4. Refer to “Laboratory Measurements” in the Explanation of Water-Quality Records section of this report for the complete list of compounds and the LRL for each compound. Twenty-four pesticides were detected in low concentrations and were widely distributed throughout the State. All 24 compounds were detected at one or more SS stations, but only five compounds were detected at background stations. Seven of the detected compounds were insecticides—Azinphos-methyl, Carbaryl, Carbofuran, Diazinon, Dieldrin, Malathion, and cis-Permethrin. The remaining



**Figure 1.** Monthly precipitation for water year 2003 and mean monthly precipitation for 1895-2002.  
[Mean monthly and monthly precipitation are spatially weighted averages of several dozen stations throughout the State]



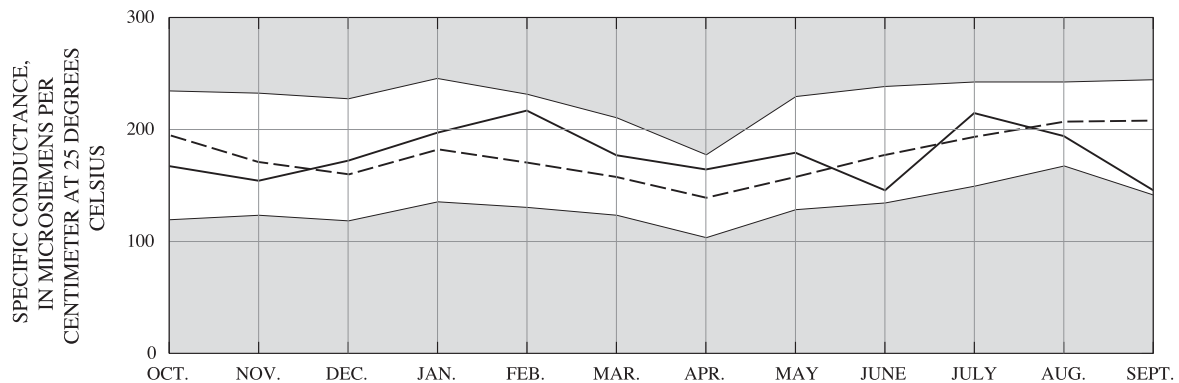
EXPLANATION

UNSHADED AREA--Indicates range between highest and lowest mean discharge recorded for the month, prior to 2003 water year

BROKEN LINE--Indicates normal discharge (median of the monthly means) for the standard reference period, 1971-2000

SOLID LINE--Indicates observed monthly mean discharge for the 2003 water year

Figure 2. Monthly mean discharge at index gaging stations, water year 2003.



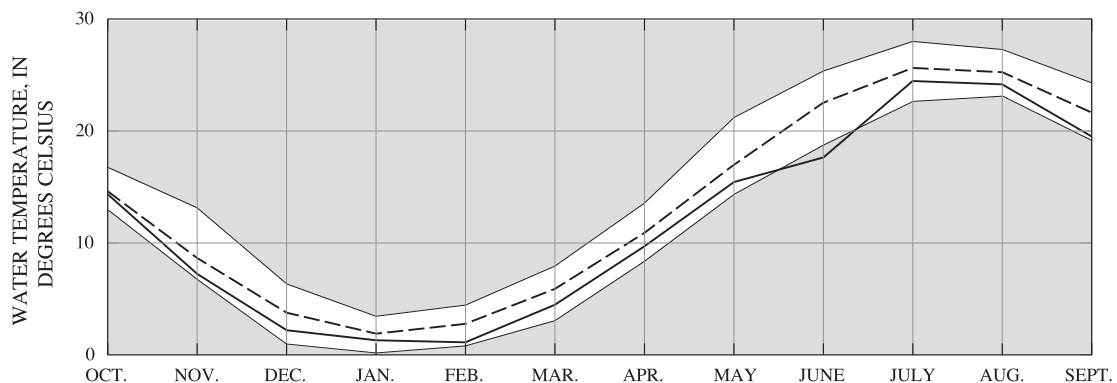
## EXPLANATION

UNSHADED AREA--Indicates the range between the highest monthly mean values and the lowest monthly mean values, water years 1968-2002.

SOLID LINE--Indicates the monthly mean values for water year 2003.

BROKEN LINE--Indicates the mean monthly values for water years 1968-2002.

**Figure 3.** Monthly mean specific conductance at Delaware River at Trenton, New Jersey, water year 2003.



## EXPLANATION

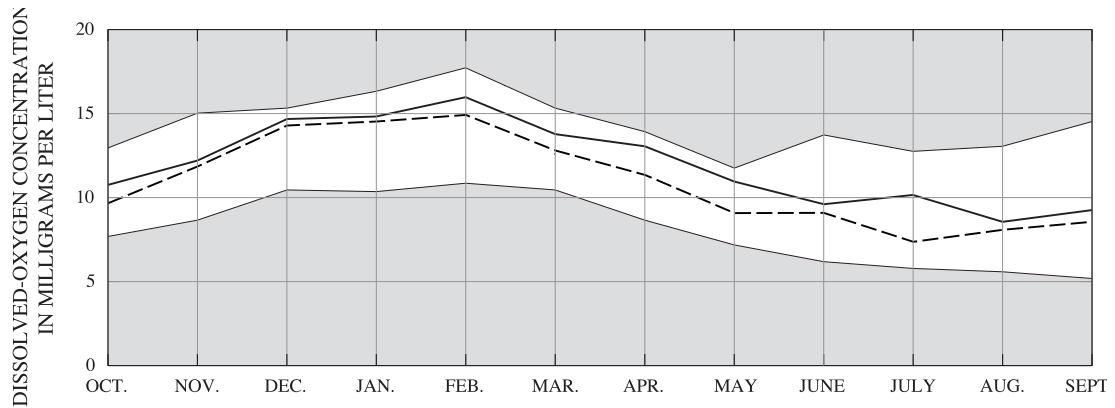
UNSHADED AREA--Indicates the range between the highest monthly mean values and the lowest monthly mean values, water years 1968-2002.

SOLID LINE--Indicates the monthly mean values for water year 2003.

BROKEN LINE--Indicates the mean monthly values for water years 1968-2002.

**Figure 4.** Monthly mean water temperature at Delaware River at Trenton, New Jersey, water year 2003.





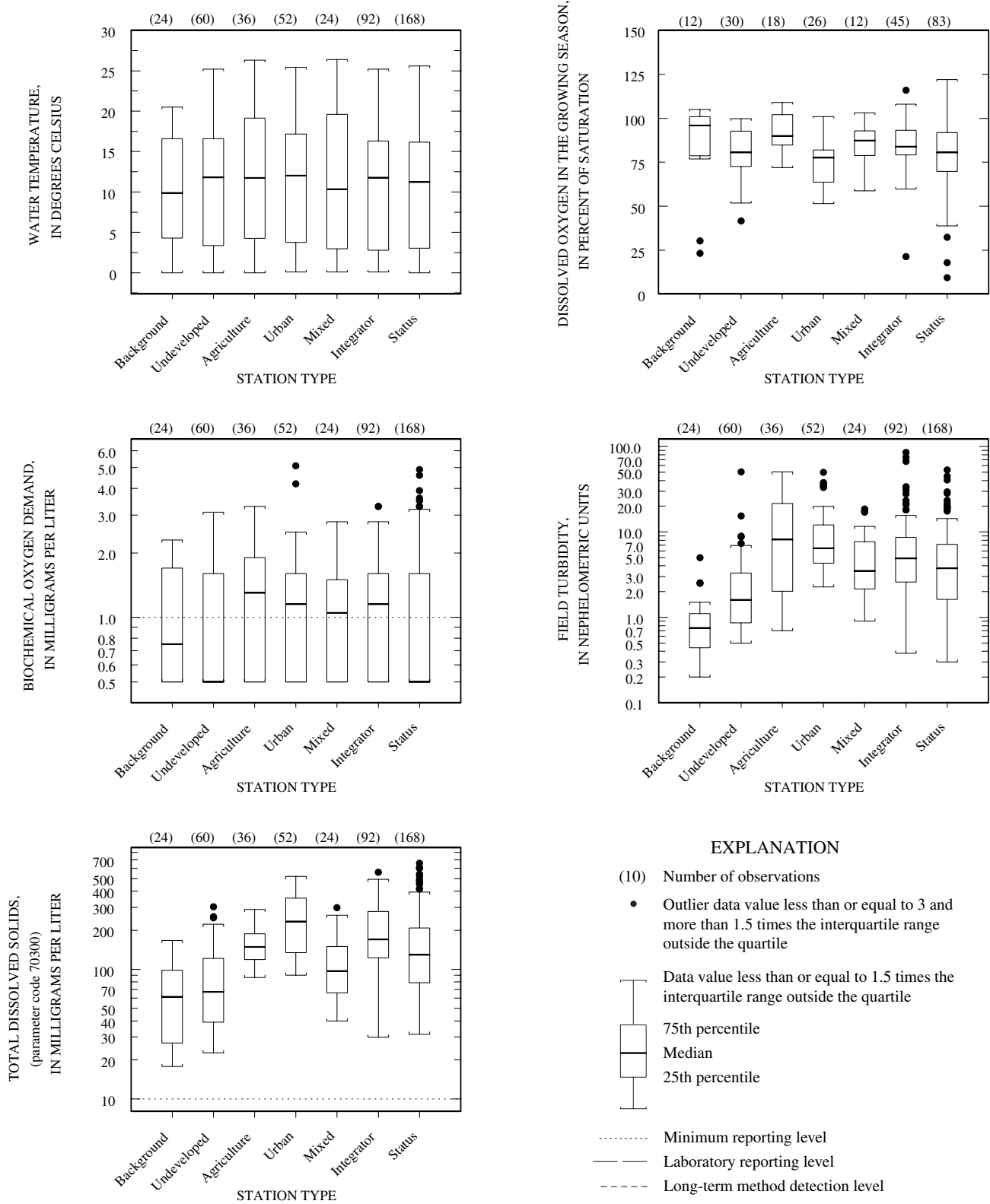
EXPLANATION

UNSHADED AREA--Indicates the range between the highest monthly median of daily maximum values and the lowest monthly median of daily minimum values, water years 1968-2002.

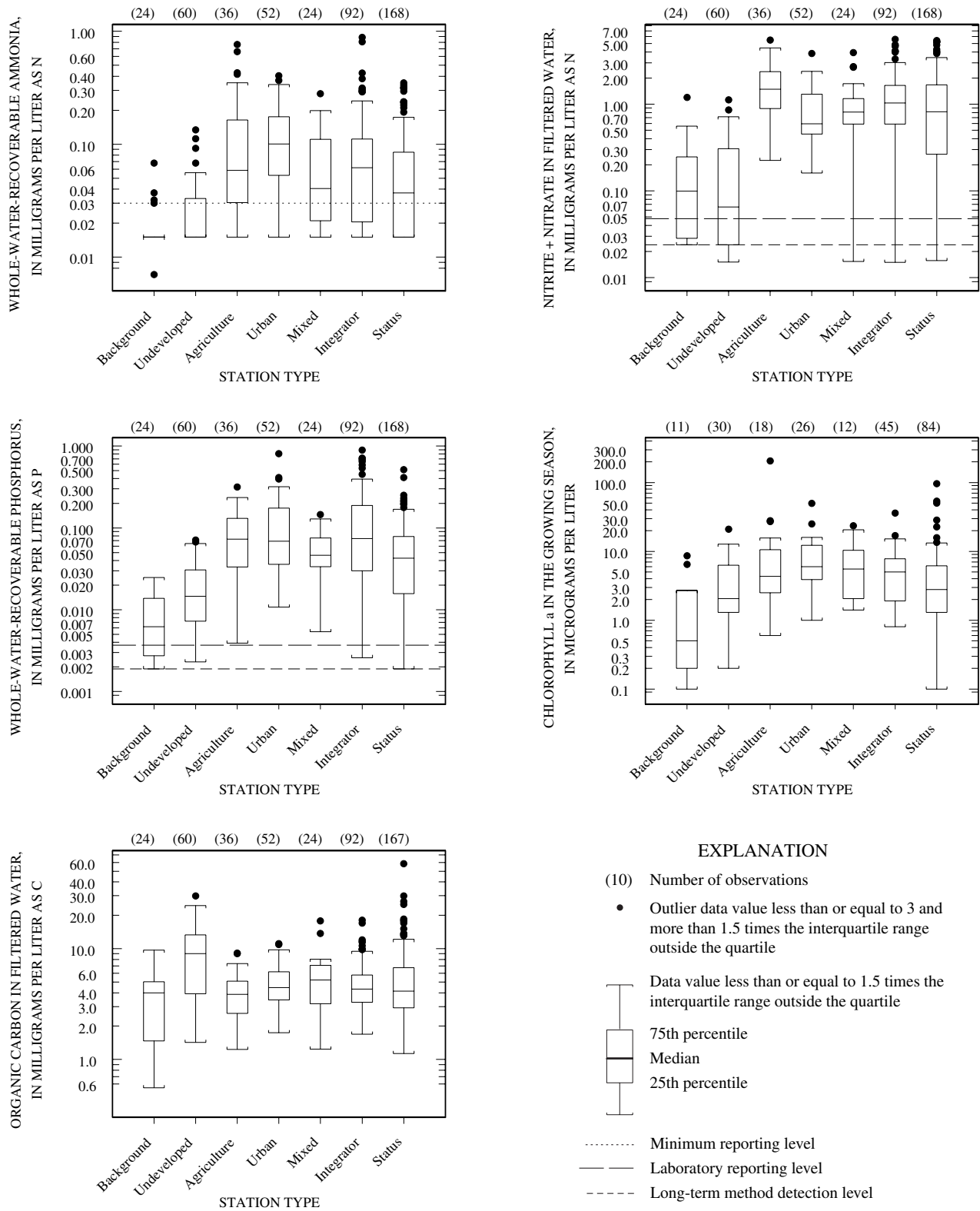
SOLID LINE--Indicates the monthly median of daily maximum values for water year 2003.

BROKEN LINE--Indicates the monthly median of daily minimum values for water year 2003.

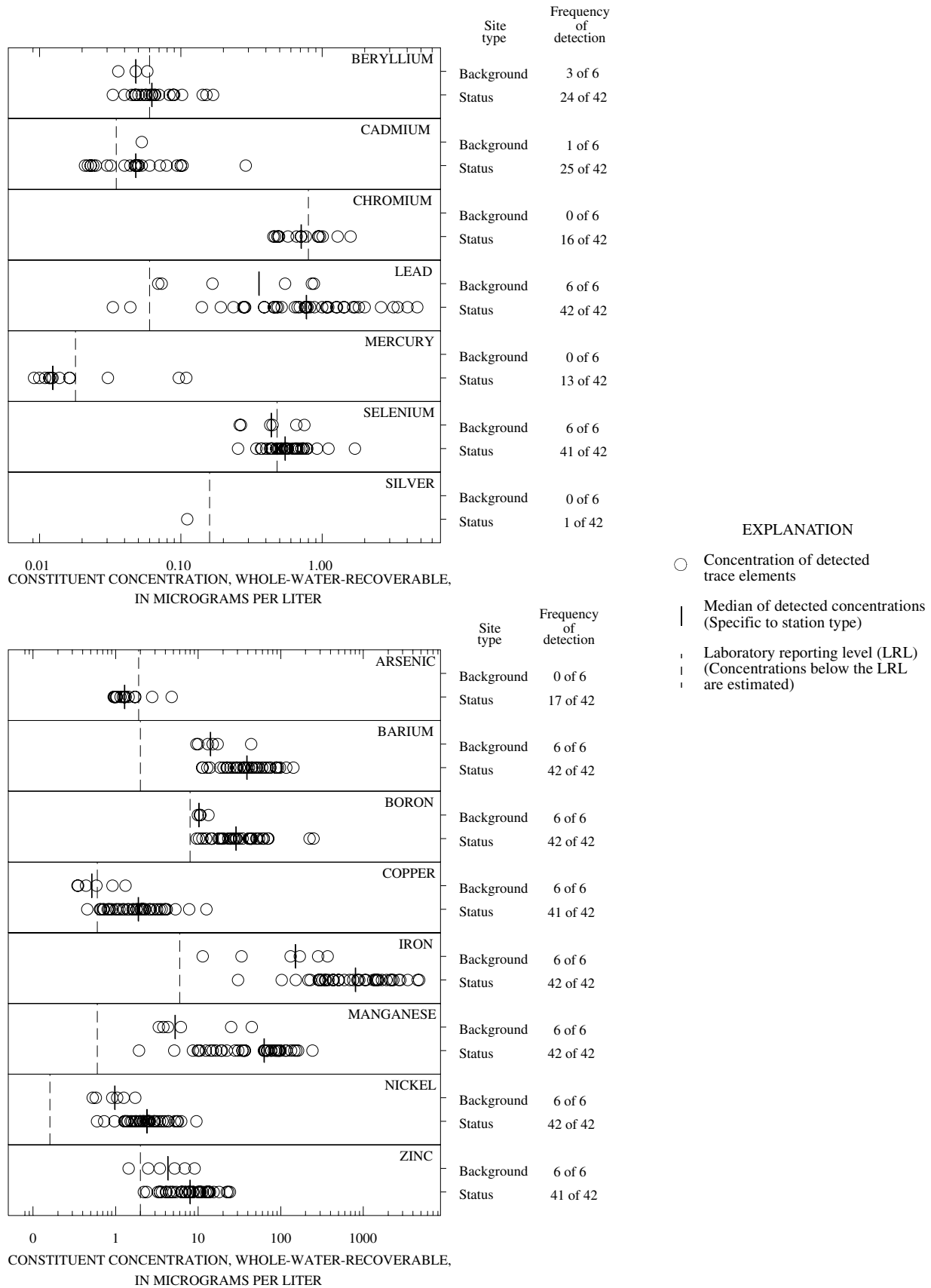
**Figure 5.** Monthly medians of daily maximum and minimum dissolved oxygen concentrations at Delaware River at Trenton, New Jersey, water year 2003.



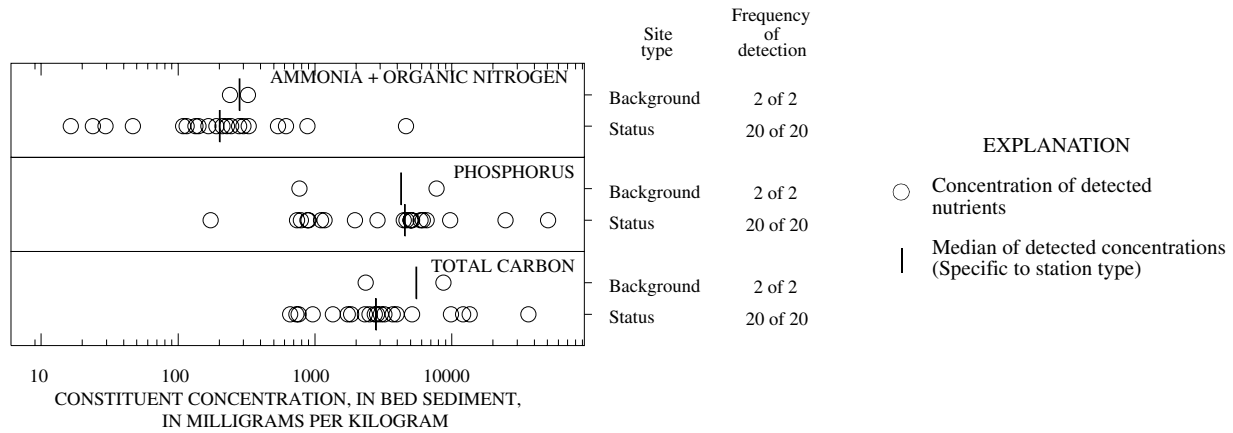
**Figure 6.** Distribution of physical characteristics of, and constituent concentrations in, samples from 112 stations in the Ambient Stream Monitoring Network, water year 2003. [Two of the status stations are collocated at other station types; data are included in both distributions. “Less-than” values are shown as equal to the long-term method detection level or one-half the minimum reporting level; excludes data from Delaware River main stem stations 01438500, 01443000, 01457500, and 01461000]



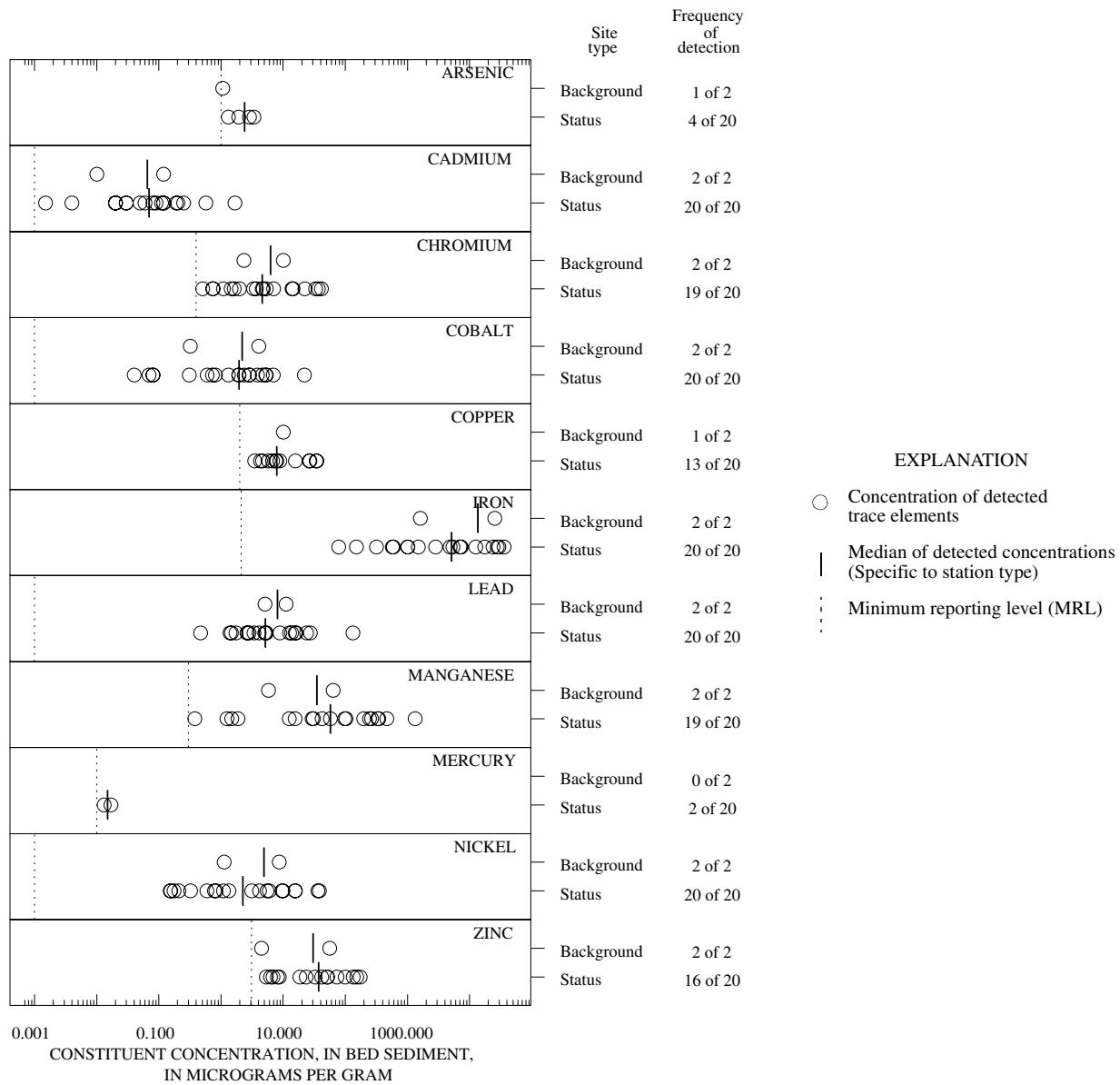
**Figure 6.** Distribution of physical characteristics of, and constituent concentrations in, samples from 112 stations in the Ambient Stream Monitoring Network, water year 2003--continued.  
 [Two of the status stations are collocated at other station types; data are included in both distributions. "Less-than" values are shown as equal to the long-term method detection level or one-half the minimum reporting level; excludes data from Delaware River main stem stations 01438500, 01443000, 01457500, and 01461000]



**Figure 7.** Concentration and detection frequency of whole-water-recoverable trace elements detected in samples from 48 stations in the Ambient Stream Monitoring Network, water year 2003. [Constituents whose values were reported by the laboratory as less than the LRL are considered to be not detected]

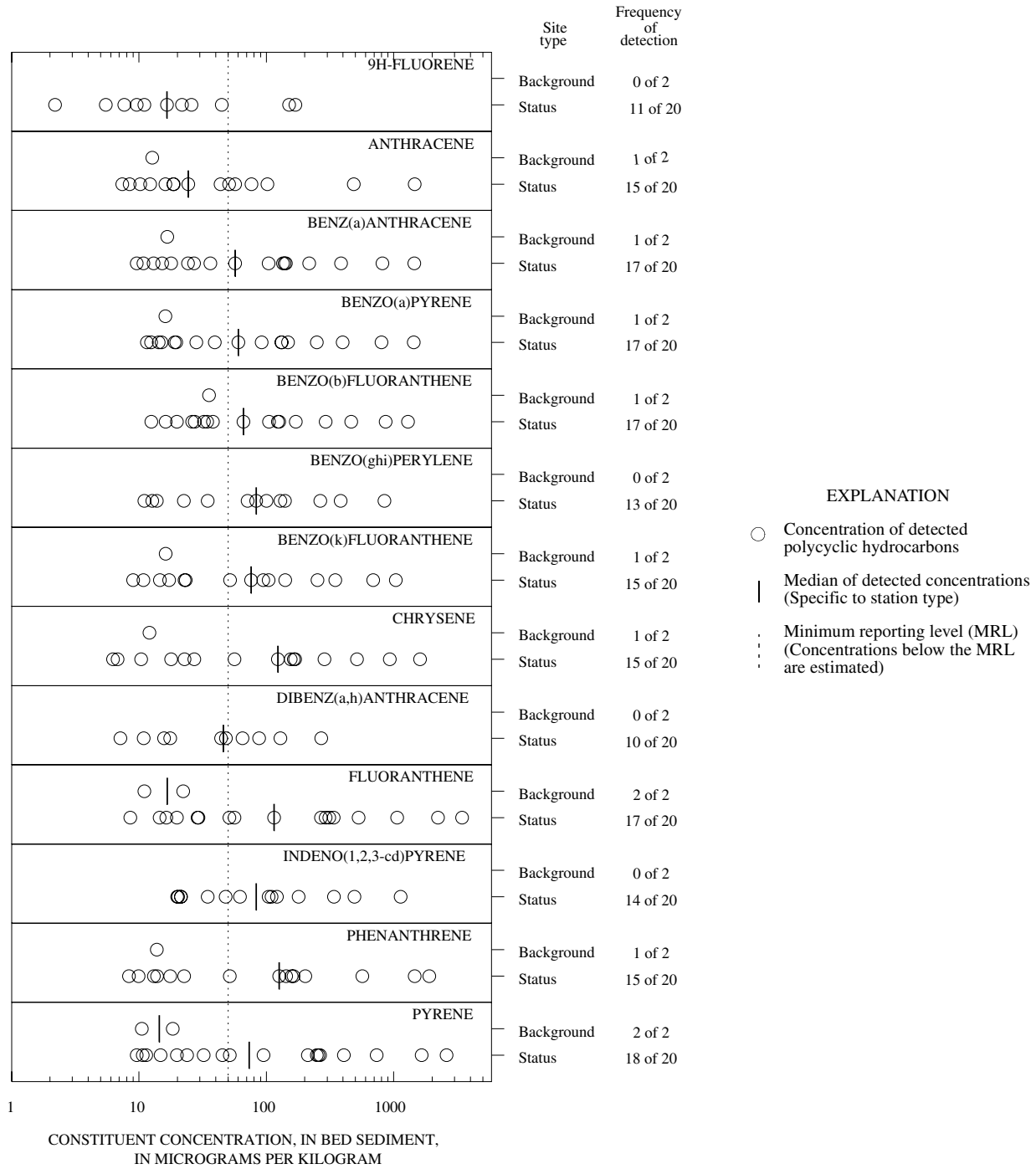


**Figure 8.** Concentration and detection frequency of nutrients detected in bed-sediment samples from 22 stations in the Ambient Stream Monitoring Network, water year 2003.



**Figure 9.** Concentration and detection frequency of trace elements detected in bed-sediment samples from 22 stations in the Ambient Stream Monitoring Network, water year 2003.

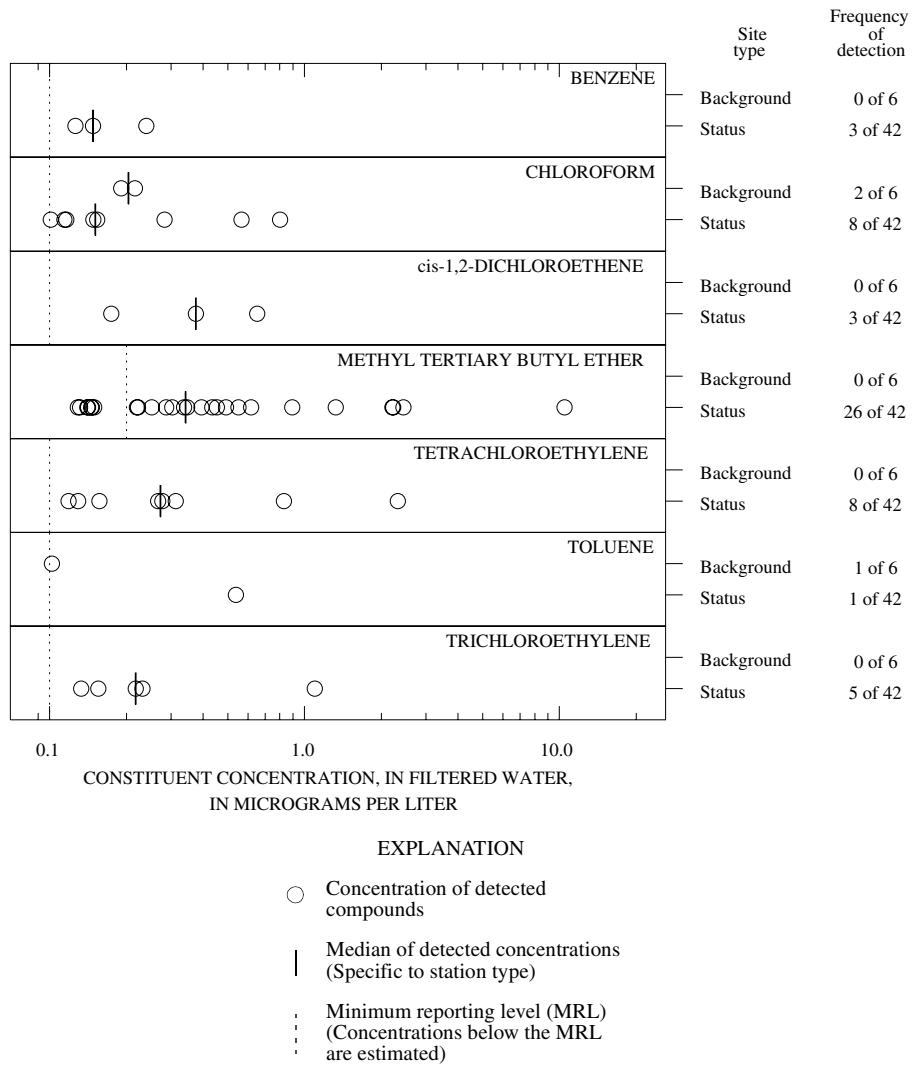
[Constituents whose values were reported by the laboratory as less than the MRL are considered to be not detected]



**Figure 10.** Concentration and detection frequency of selected polycyclic aromatic hydrocarbons detected in bed-sediment samples from 22 stations in the Ambient Stream Monitoring Network, water year 2003. [Constituents whose values were reported by the laboratory as less than the MRL are considered to be not detected]

**Table 1.** Detection frequency of selected organic compounds in bed-sediment samples from 22 stations in the Ambient Stream Monitoring Network, water year 2003 [All values are estimated due to poor recovery or poor precision]

CONSTITUENT	STATEWIDE STATUS	BACKGROUND
TOTAL POLYCHLORINATED BIPHENYLS (PCBs)	9 of 20	0 of 2

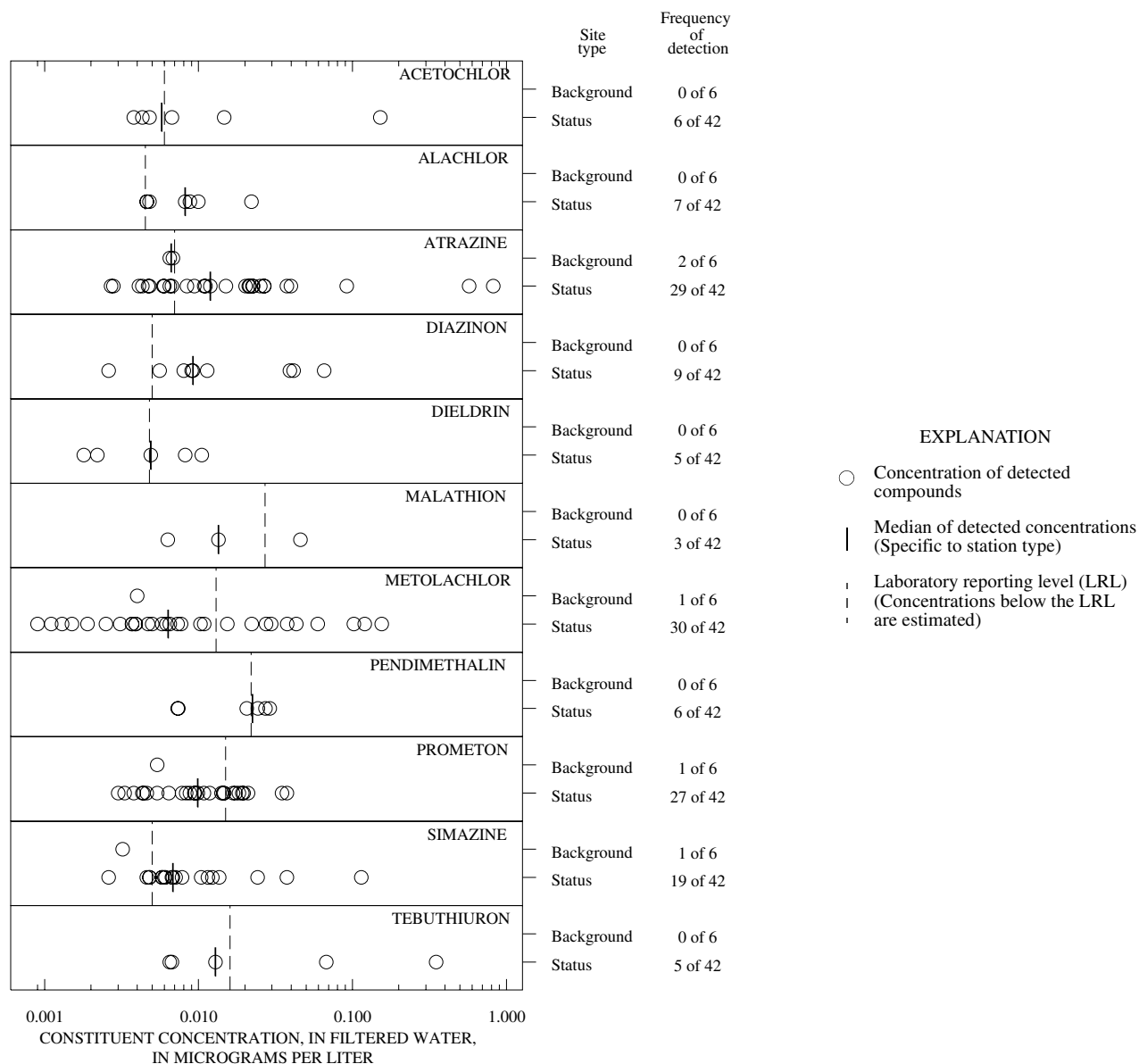


**Figure 11.** Concentration and detection frequency of selected volatile organic compounds detected in samples from 48 stations in the Ambient Stream Monitoring Network, water year 2003.

[Constituents whose values were reported by the laboratory as less than the MRL are considered to be not detected]

**Table 2.** Concentration of volatile organic compounds detected only once in samples from 48 stations in the Ambient Stream Monitoring Network, water year 2003  
[SS, statewide status]

CONSTITUENT	CONCENTRATION (micrograms per liter)	STATION TYPE
1,1,1-TRICHLOROETHANE	0.4	SS
1,1-DICHLOROETHANE	0.2	SS
BROMODICHLOROMETHANE	0.2	SS
ETHYL ETHER	0.1	SS



**Figure 12.** Concentration and detection frequency of selected pesticides detected in filtered samples from 48 stations in the Ambient Stream Monitoring Network, water year 2003.

[Constituents whose values were reported by the laboratory as less than the MRL or LRL are considered to be not detected]

**Table 3.** Detection frequency of selected pesticides in filtered samples from 48 stations in the Ambient Stream Monitoring Network, water year 2003

[All values are estimated due to poor recovery or poor precision; CIAT, 2-Chloro-4-isopropylamino-6-amino-s-triazine]

CONSTITUENT	STATEWIDE STATUS	BACKGROUND
AZINPHOS-METHYL	3 of 42	0 of 6
BENFLURALIN	3 of 42	0 of 6
CARBARYL	19 of 42	0 of 6
CARBOFURAN	4 of 42	0 of 6
CIAT	22 of 42	2 of 6
TERBACIL	5 of 42	0 of 6
TRIFLURALIN	6 of 42	0 of 6

**Table 4.** Concentration of pesticides detected only once in filtered samples from 48 stations in the Ambient Stream Monitoring Network, water year 2003 [SS, statewide status; E, estimated]

CONSTITUENT	CONCENTRATION (micrograms per liter)	STATION TYPE
BUTYLATE	0.002	SS
DACTHAL	E0.002	SS
EPTC	E0.002	SS
METRIBUZIN	0.006	SS
NAPROPAMIDE	E0.004	SS
cis-PERMATHRIN	E0.005	SS



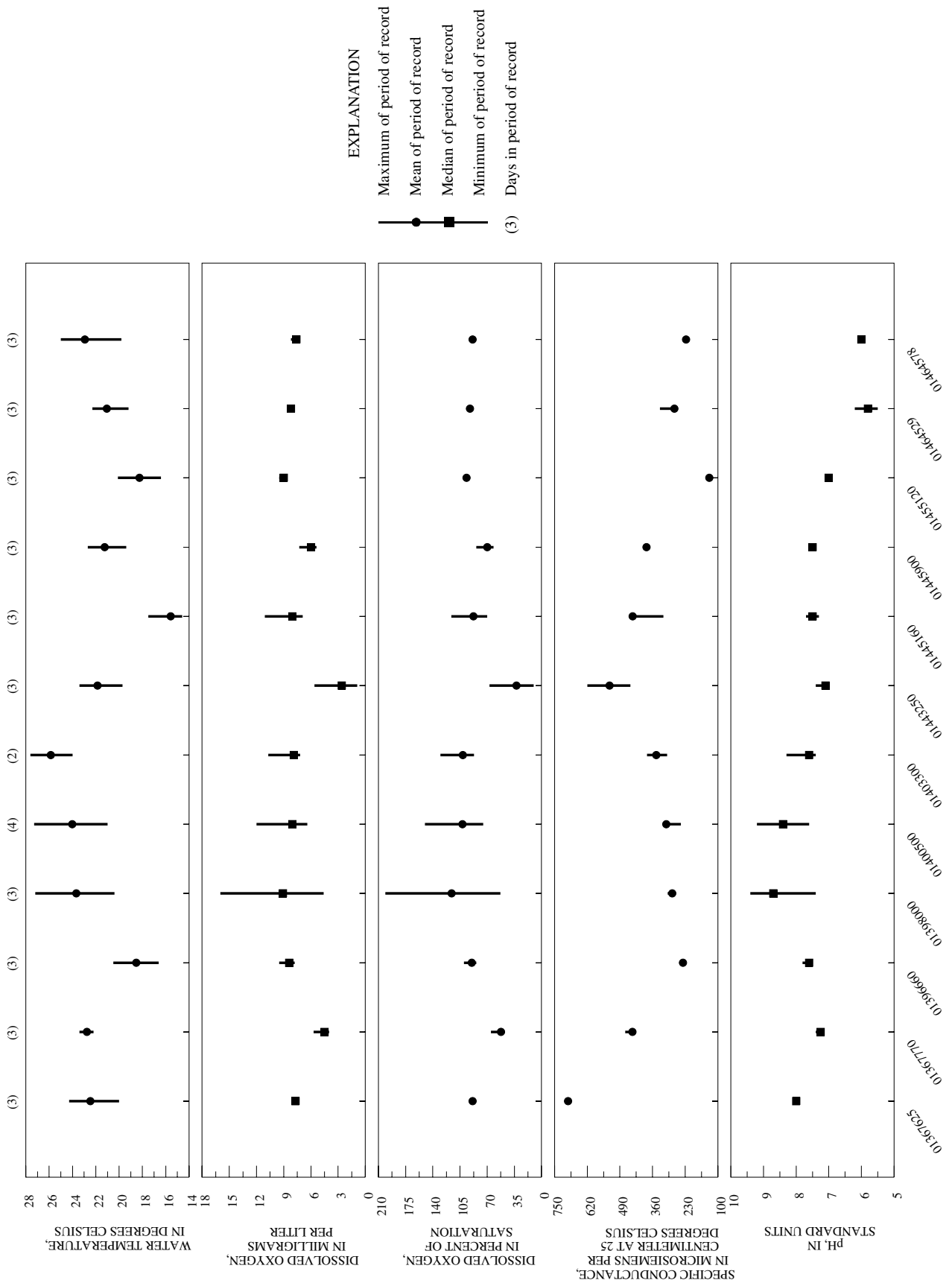


Figure 13. Field characteristics and constituent concentrations in surface water at selected stations in the Ambient Stream Monitoring Network during July, August, or September 2003.

compounds were herbicides. The most frequently detected pesticides in 48 samples were Metolachlor, in 67 percent of samples; Atrazine, in 65 percent; and Prometon, in 58 percent. The five compounds detected at background stations are commonly used herbicides.

### **Ambient Stream Monitoring Network Reconnaissance Study**

The water year 2003 reconnaissance study continuously monitored water temperature, DO concentration, DO percent of saturation, specific conductance, and pH at 12 network stations during summer baseflow conditions. In-situ multi-constituent sensors, or monitors, recorded the occurrence and magnitude of diurnal variations that could not be observed when instantaneous samples were collected during quarterly station visits. Instantaneous values generally were collected between the hours of 8 a.m. and 2 p.m. The monitors were deployed for a 3-day period at each station during July, August, or September. Statistical summaries for the periods of record for all stations are shown in figure 13; graphs of hourly values for each of the stations are included in the Surface-Water-Quality Station Records section of this report (figs. 25-26, 32-39, and 43-44).

Reconnaissance stations were selected on the basis of previous occurrences of DO supersaturation (greater than 120 percent of saturation) or DO undersaturation (less than 60 percent of saturation). Three stations—01398000, 0140500, and 01403300—recorded maximum dissolved oxygen above 120 percent of saturation—201, 150, and 130, respectively. Three stations—01367770, 01398000, and 01443250—recorded minimum values below 60 percent of saturation—47, 53, and 10, respectively. The greatest diurnal variance of water temperature, dissolved oxygen, and pH occurred at stations 01398000 and 01400500.

### **Ambient Ground-Water-Quality Network**

The USGS, in cooperation with the NJDEP, operates the cooperative Ambient Ground-Water-Quality Network (AGWQN), which is designed to assess the status of ground-water quality by examining the concentrations of various constituents that can be used as environmental indicators, assess long-term water-quality trends, determine the effects of land use on shallow ground-water quality, identify threats from nonpoint sources of contamination, and identify emerging or new environmental issues of concern to the public. The network consists of 150 shallow ground-water wells distributed throughout New Jersey within three land-use types. Sixty wells are located in agricultural areas, 60 in urban/suburban areas, and 30 in undeveloped areas within New Jersey's five watershed management regions (WMRs)—the Passaic, the Raritan, the Upper Delaware, the Lower Delaware, and the Atlantic Coastal. These five WMRs are further divided into 20 watershed-management areas (WMAs).

Thirty-five shallow wells were sampled in water year 2003. Four wells are located in the Passaic WMR in WMAs 3 and 6. Twenty-one are located in the Raritan WMR in WMAs 7-10. Nine are located in the Upper Delaware WMR in WMAs 1 and 11. One is located in the Lower Delaware WMR in WMA 20. The wells have 2-inch polyvinyl-chloride casings; range in depth from 17 to 208 feet; and represent 3 land-use types, 6 water-chemistry types, and 10 hydrogeologic units (table 5). Samples from the wells were analyzed for physical characteristics, major ions, nutrients, trace elements, organic constituents, and gross alpha and beta radioactivity. A summary of the water chemistry of the 35 wells is listed in table 5. Individual tables of chemical constituents are located in the Ground-Water-Quality Site Records section of this report.

### **Distribution, Detection Frequency, and Concentration of Selected Constituents in Filtered Samples from 35 Sites in the AGWQN**

Field measurements were made of physical and chemical characteristics of water samples from 35 wells in the AGWQN. Analyses then were conducted to determine concentrations of major ions, filtered nutrients, organic carbon, trace elements, VOCs, and pesticides. The effect of land use on the proportions of the major ions in water samples from the wells can be observed in the data presented in the trilinear (Piper) diagrams (figs. 14-16). The diagrams depict major cations (calcium, sodium, magnesium, potassium) and anions (bicarbonate, chloride, sulfate,

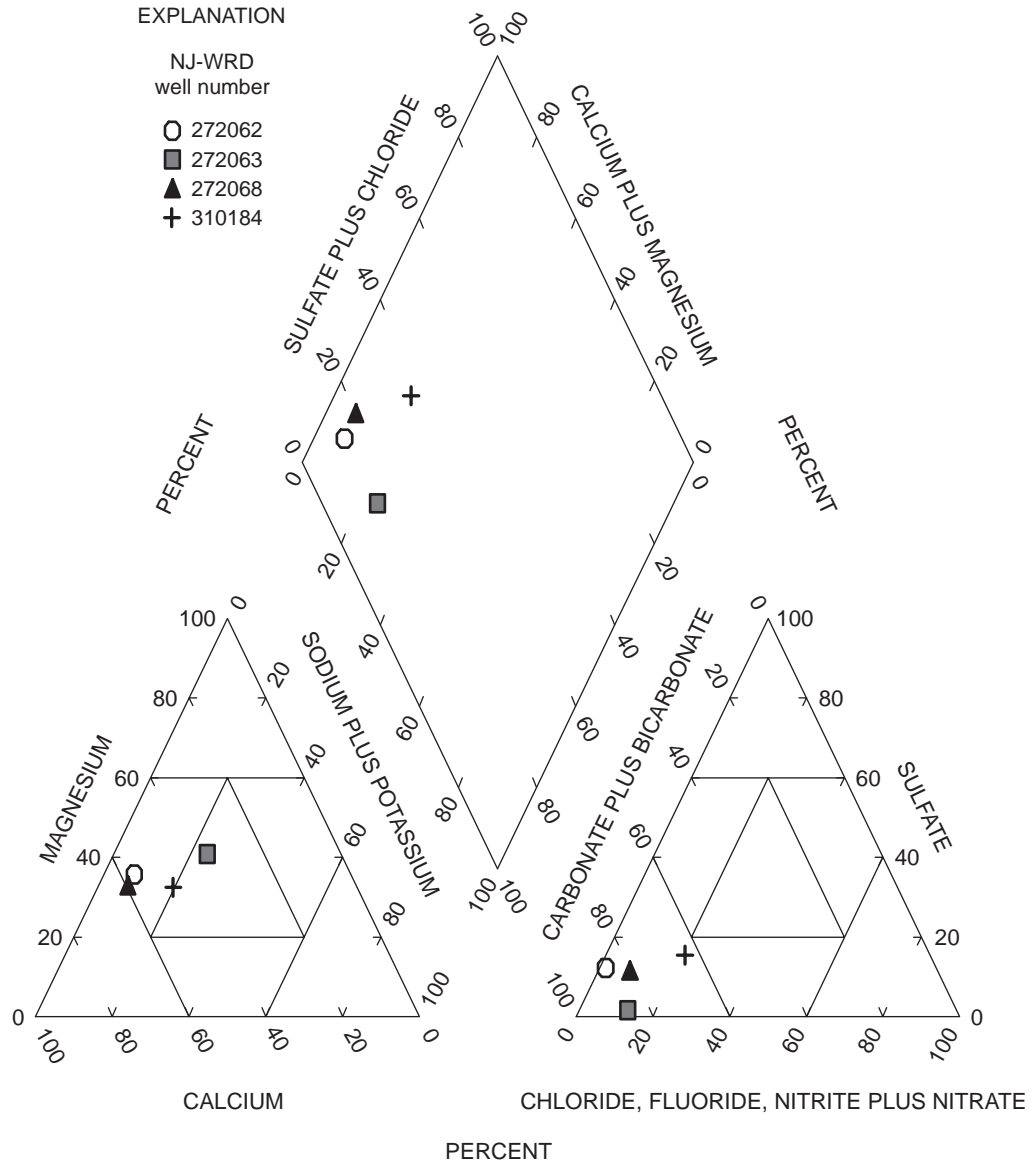
**Table 5.** Hydrogeologic unit and land use at 35 wells sampled as part of U.S. Geological Survey-N.J. Department of Environmental Protection (cooperative) Ambient Ground-Water-Quality Network, water year 2003.

[WMA, Watershed Management Area; VOCs, volatile organic compounds; mg/L, milligrams per liter; NO<sub>2</sub>+NO<sub>3</sub>, nitrite plus nitrate; <, less than; ft bls, feet below land surface; 112SFDF, Stratified Drift; 211EGLS, Englishtown Formation; 211ODBG, Old Bridge Sand Member Of Magoyth Formation; 227PSSC, Passaic Formation; 231LCKG, Lockatong Formation; 360KTTN, Kittatinny Limestone; 400PCMB, Precambrian Eranthem; 111HPPM, Undifferentiated Holocene, Pleistocene, and Miocene; 364KKBG, Jacksonburg Limestone; 371ALNN, Allentown Dolomite; ---, data not available.]

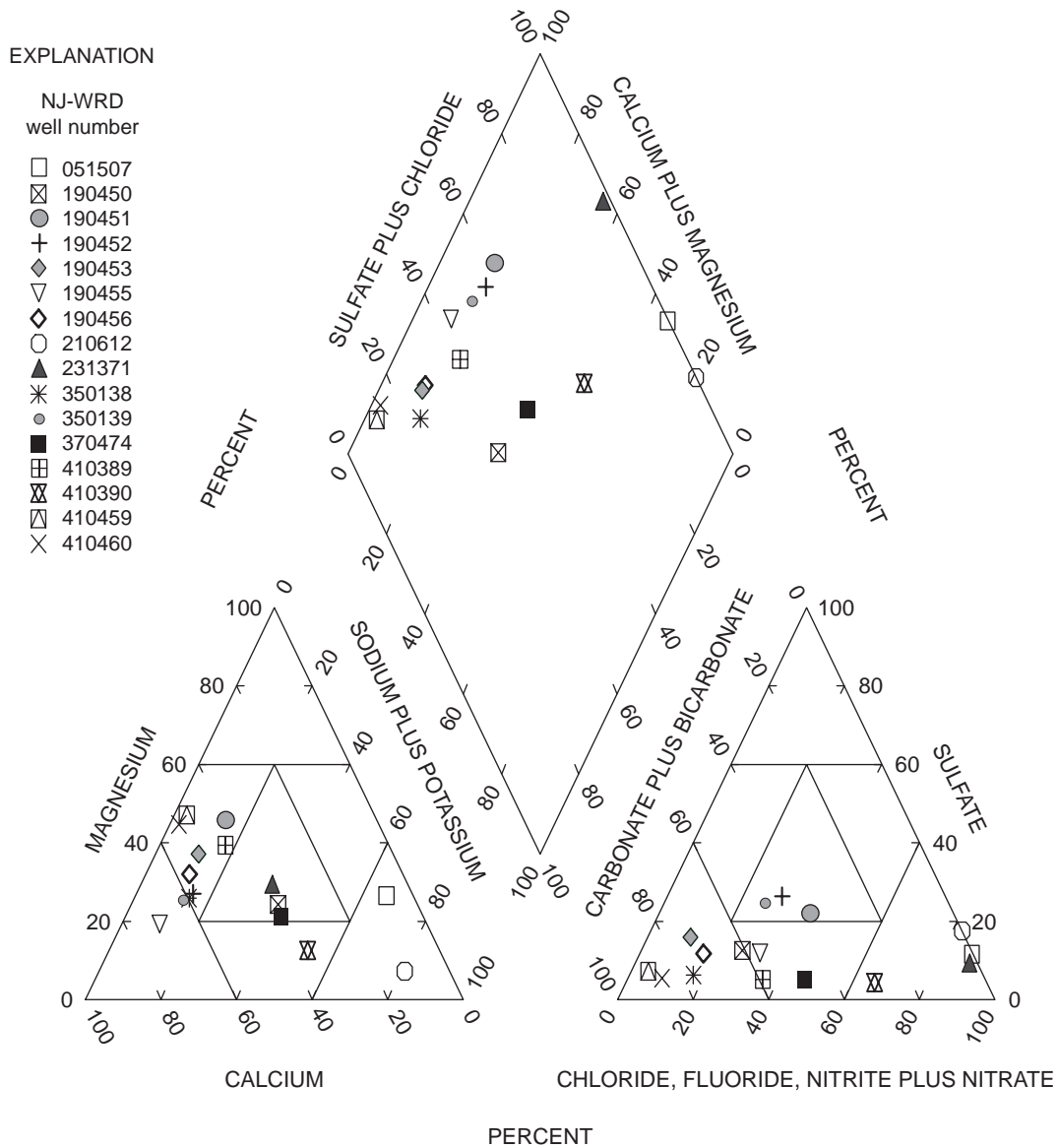
NJ-WRD well number	WMA number	Hydrogeologic unit aquifer code	Predominant land use <sup>1</sup>	Water type (dominant cation-anion)	Dissolved oxygen (mg/L)	Nitrogen		Total dissolved solids (mg/L)	Number of pesticides detected <sup>2</sup>	Number of VOCs detected <sup>2</sup>	Number of trace elements detected <sup>2</sup>	Well depth (ft bls)
						NO <sub>2</sub> +NO <sub>3</sub> dissolved (mg/L)	NO <sub>2</sub> +NO <sub>3</sub> dissolved (mg/L)					
410389	1	371ALNN	Agricultural	Calcium-bicarbonate	9.0	11.16	301	6	2	9	158.0	
190450	11	227PSSC	Agricultural	Sodium-bicarbonate	0.2	3.41	250	0	0	7	208.0	
410390	1	364KKBG	Agricultural	Sodium-chloride	8.8	4.81	938	5	0	11	76.0	
350138	8	227PSSC	Agricultural	Calcium-bicarbonate	0.9	2.43	200	1	0	11	36.0	
410459	1	371ALNN	Agricultural	Calcium-bicarbonate	4.3	0.66	331	2	0	8	100.0	
410460	1	112SFDF	Agricultural	Calcium-bicarbonate	11.0	4.20	225	4	0	6	52.0	
190453	8	231LCKG	Agricultural	Calcium-bicarbonate	2.0	1.77	167	0	0	8	60.0	
190452	8	227PSSC	Agricultural	Calcium-bicarbonate	6.9	5.79	285	5	0	7	119.0	
190455	8	227PSSC	Agricultural	Calcium-bicarbonate	2.0	8.84	290	2	1	9	41.0	
231371	10	111HPPM	Agricultural	Calcium-chloride	1.4	16.50	310	3	3	12	23.0	
370474	1	112SFDF	Agricultural	Sodium-bicarbonate	8.6	24.24	645	4	0	7	22.0	
350139	10	227PSSC	Agricultural	Calcium-bicarbonate	4.6	7.67	222	2	0	6	40.0	
51507	20	211EGLS	Agricultural	Sodium-chloride	1.0	0.21	430	0	0	11	24.0	
190451	8	400PCMB	Agricultural	Magnesium-bicarbonate	4.1	9.18	269	2	0	7	37.0	
210612	11	111HPPM	Agricultural	Sodium-chloride	0.8	0.59	651	0	1	12	27.5	
190456	8	227PSSC	Agricultural	Calcium-bicarbonate	2.4	4.26	172	2	0	6	37.0	
272068	6	112SFDF	Undeveloped	Calcium-bicarbonate	6.7	E.038	100	0	2	5	55.0	
272062	6	112SFDF	Undeveloped	Calcium-bicarbonate	0.6	E.031	368	0	0	7	20.0	
310184	3	112SFDF	Undeveloped	Calcium-bicarbonate	3.4	0.14	126	0	0	8	29.0	
272063	8	112SFDF	Undeveloped	Magnesium-bicarbonate	4.0	E.046	41	0	0	7	30.0	
231366	9	211ODBG	Urban	Sodium-chloride	---	<.060	132	0	0	12	55.0	
231367	7	227PSSC	Urban	Calcium-bicarbonate	1.8	<.060	237	0	0	9	27.0	
350142	8	227PSSC	Urban	Calcium-chloride	4.2	5.69	800	0	0	8	76.5	
410461	1	360KTTN	Urban	Magnesium-bicarbonate	6.8	4.28	245	3	2	8	160.0	
231368	9	211ODBG	Urban	Calcium-sulfate	8.7	3.24	56	0	0	11	37.8	
272060	8	112SFDF	Urban	Calcium-chloride	2.8	0.65	426	0	4	10	25.0	
231365	9	211ODBG	Urban	Sodium-chloride	0.5	<.060	322	0	0	10	37.0	
390500	7	227PSSC	Urban	Calcium-bicarbonate	0.3	0.55	225	4	2	10	17.0	
272061	6	112SFDF	Urban	Sodium-chloride	0.6	0.14	820	1	14	8	26.0	
231370	9	227PSSC	Urban	Calcium-chloride	5.4	<.060	415	2	2	9	51.0	
210609	10	227PSSC	Urban	Calcium-bicarbonate	3.8	0.13	302	1	0	10	35.0	
390501	9	112SFDF	Urban	Calcium-bicarbonate	4.0	4.12	455	0	2	8	23.0	
231369	9	227PSSC	Urban	Calcium-bicarbonate	3.0	2.47	238	0	0	7	27.5	
190454	11	227PSSC	Urban	Sodium-chloride	6.8	3.41	266	2	1	8	22.5	
130184	7	227PSSC	Urban	Calcium-chloride	1.6	7.44	1170	1	4	8	36.5	

<sup>1</sup> Land use based on New Jersey geographic information system (New Jersey Department of Environmental Protection, 1996).

<sup>2</sup> Includes compounds with estimated concentrations, defined as positive detections of a compound, but measured as less than the laboratory's reporting levels.



**Figure 14.** Trilinear diagram showing the distribution of major ions in filtered samples from four sites in undeveloped land-use areas in the Ambient Ground-Water-Quality Network, water year 2003.

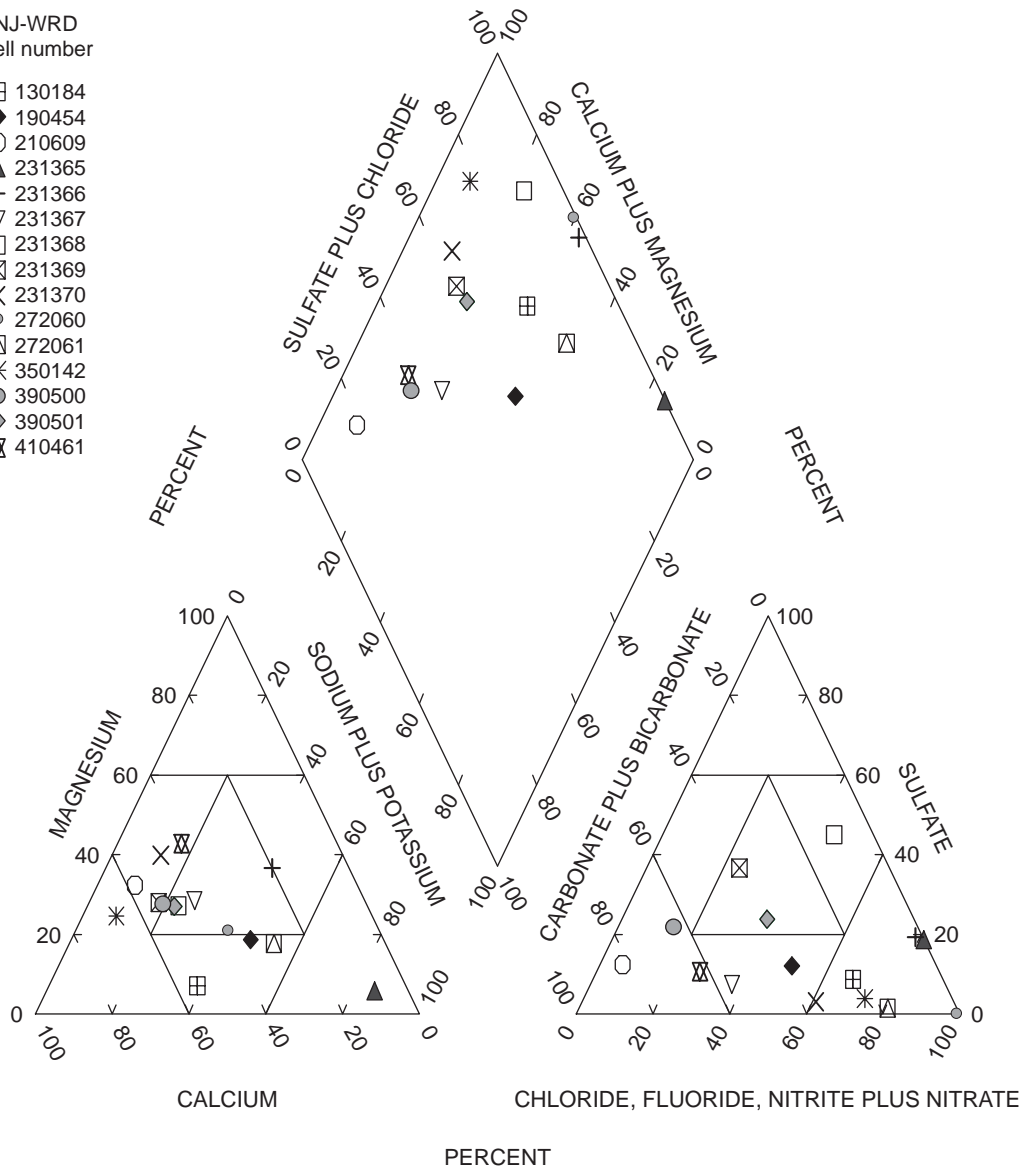


**Figure 15.** Trilinear diagram showing the distribution of major ions in filtered samples from 16 sites in agriculture land-use areas in the Ambient Ground-Water-Quality Network, water year 2003.

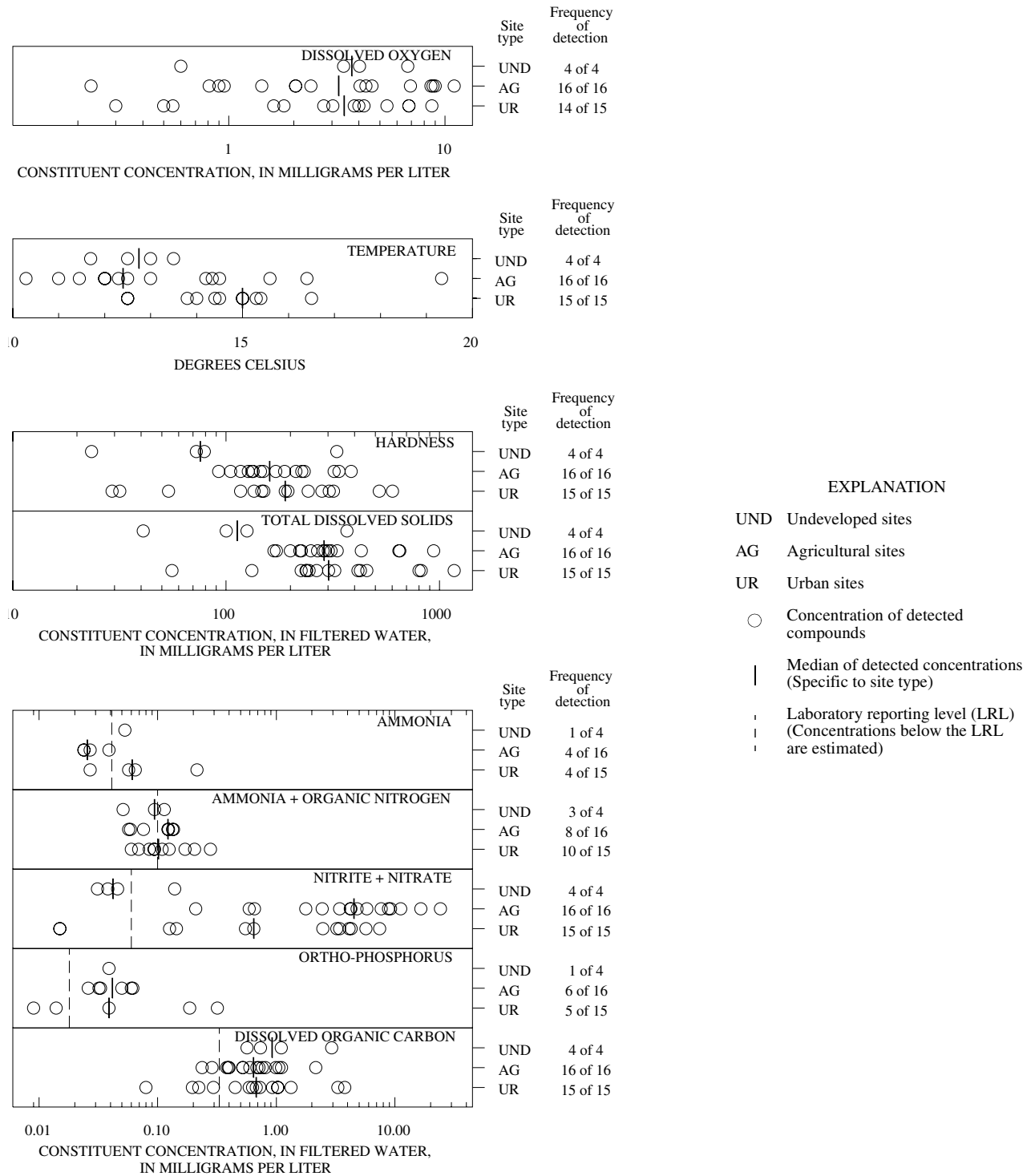
EXPLANATION

NJ-WRD  
well number

- ⊞ 130184
- ◆ 190454
- 210609
- ▲ 231365
- ⊕ 231366
- ▽ 231367
- 231368
- ⊠ 231369
- × 231370
- 272061
- ⊞ 272061
- \* 350142
- 390500
- ◆ 390501
- ⊠ 410461

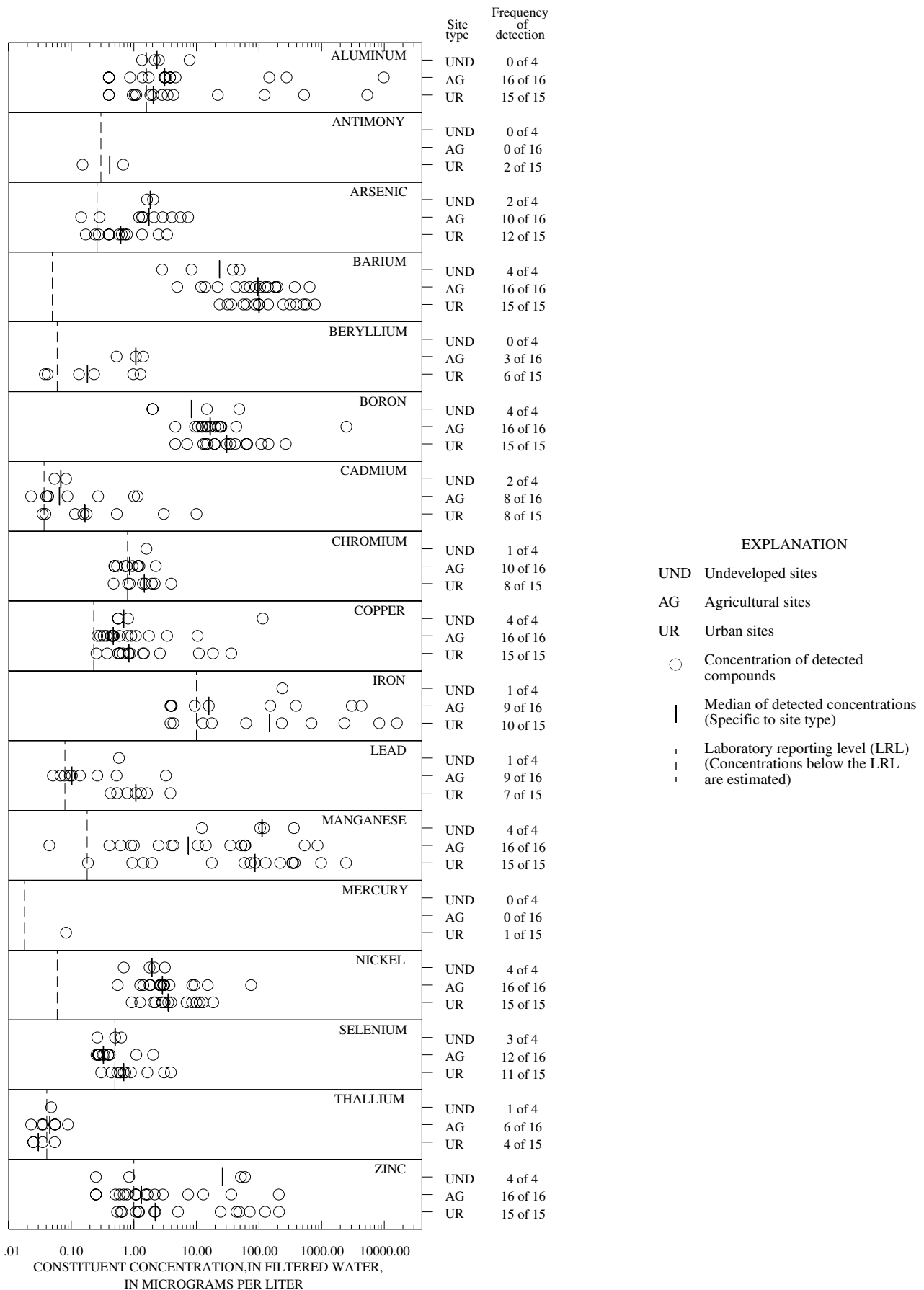


**Figure 16.** Trilinear diagram showing the distribution of major ions in filtered samples from 15 sites in urban land-use areas in the Ambient Ground-Water-Quality Network, water year 2003.



**Figure 17.** Concentration and detection frequency of selected constituents in samples from 35 sites in the Ambient Ground-Water-Quality Network, water year 2003.

[Constituents whose values were reported by the laboratory as less than the LRL are considered to be not detected]



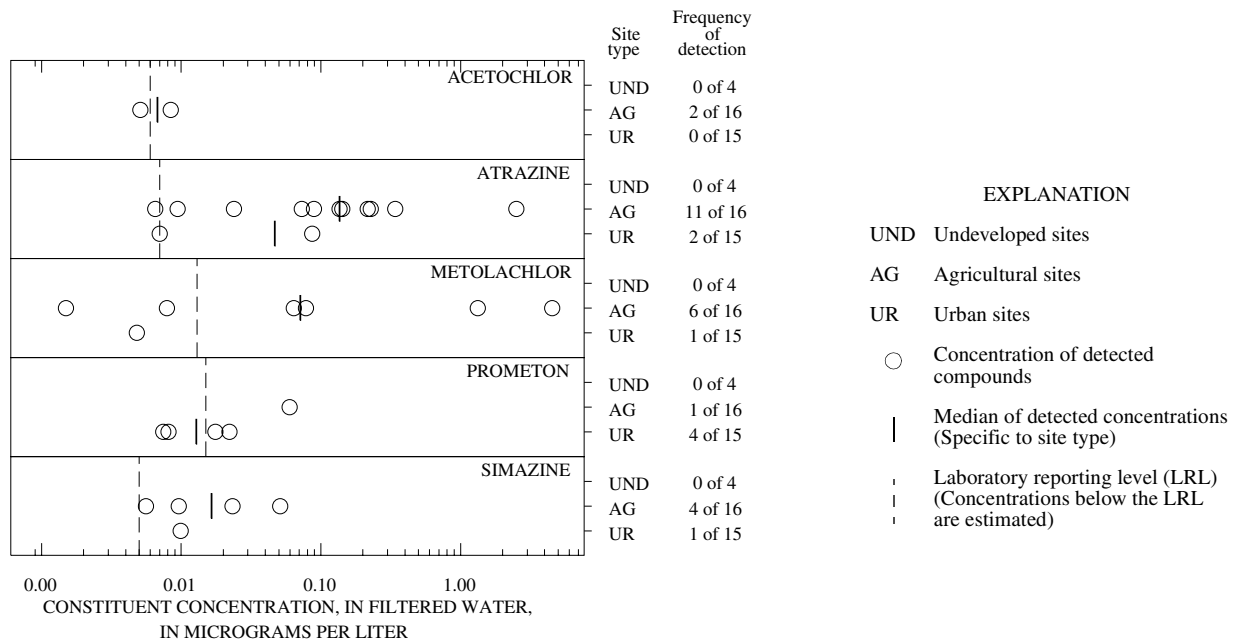
**Figure 18.** Concentration and detection frequency of trace elements detected in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network, water year 2003.

[Constituents whose values were reported by the laboratory as less than the LRL are considered to be not detected]



**Table 6.** Detection frequency of volatile organic compounds detected in samples from 35 sites in the Ambient Ground-Water-Quality Network, water year 2003 [UND, undeveloped; AG, agriculture; UR, urban]

CONSTITUENT	SITE TYPE		
	UND	AG	UR
1,1,1-TRICHLOROETHANE	0 of 4	0 of 16	1 of 15
1,1-DICHLOROETHANE	0 of 4	0 of 16	1 of 15
BENZENE	0 of 4	0 of 16	1 of 15
BROMODICHLOROMETHANE	0 of 4	0 of 16	2 of 15
cis-1,2-DICHLOROETHENE	0 of 4	0 of 16	2 of 15
ETHYLBENZENE	0 of 4	0 of 16	1 of 15
m-XYLENE PLUS p-XYLENE	1 of 4	0 of 16	1 of 15
o-XYLENE	0 of 4	0 of 16	1 of 15
METHYL TERT-BUTYL ETHER	1 of 4	3 of 16	5 of 15
TETRACHLOROETHENE	0 of 4	0 of 16	2 of 15
TRICHLOROETHENE	0 of 4	1 of 16	2 of 15
TRICHLOROFLUOROMETHANE	0 of 4	0 of 16	1 of 15
TRICHLOROMETHANE	1 of 4	0 of 16	4 of 15



**Figure 19.** Concentration and detection frequency of selected pesticides detected in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network, water year 2003. [Constituents whose values were reported by the laboratory as less than the LRL are considered to be not detected]

**Table 7.** Detection frequency of selected pesticides in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network, water year 2003 [All values are estimated due to poor recovery or poor precision; CIAT, 2-Chloro-4-isopropylamino-6-amino-s-triazine; UND, undeveloped; AG, agriculture; UR, urban]

CONSTITUENT	SITE TYPE		
	UND	AG	UR
CIAT	0 of 4	12 of 16	1 of 15

**Table 8.** Concentration of pesticides detected only once in filtered samples from 35 sites in the Ambient Ground-Water-Quality Network, water year 2003 [AG, agriculture; UR, urban; E, estimated]

CONSTITUENT	CONCENTRATION (micrograms per liter)	SITE TYPE
ALACHLOR	0.270	AG
CYANAZINE	0.045	AG
DESULFINYLFIPIRONIL	0.007	UR
DIAZINON	0.014	UR
DIELDRIN	0.037	UR
DESULFINYLFIPIRONIL-AMIDE	E.005	UR
FIPIRONILSULFIDE	E.004	UR
FIPIRONILSULFONE	E.006	UR

fluoride, nitrate) as percentages of milliequivalents in the two base triangles. The total cations and anions in milliequivalents are set to equal 100 percent. The individual points then are projected to the quadrilateral along parallel lines following the magnesium and sulfate axes. The relative proportions of major ions in an individual sample can be inferred by the position of the well symbol in the diagram. Similarity or dissimilarity between samples can be inferred from the clustering or scattering of symbols in the diagram.

Concentrations and frequencies of detection are summarized in scatter plots and tables on pages 23-25. Values reported by the analyzing laboratory as “<”—less than the LRL—were considered to be not detected and were excluded from the plots. Values reported as “E”—estimated below the LRL—were included in the plots. Refer to the Definition of Terms section of this report for further explanation of these reporting conventions. Samples from wells in undeveloped areas have the lowest median concentrations of hardness, TDS, nitrite plus nitrate, barium, and boron and the highest median concentrations of DOC and zinc (figs. 17-18). Samples from wells in urban areas have the highest median concentrations of boron, cadmium, chromium, iron, nickel, and selenium. Samples from wells in agriculture areas have the highest median concentrations of nitrite plus nitrate, and aluminum. Barium, boron, copper, manganese, nickel, and zinc were detected in 100 percent of the samples. Mercury and antimony were the least frequently detected trace elements, 3 and 6 percent, respectively, and both were detected only in samples from wells in urban areas.

### **Concentration and Detection Frequency of Selected Organic Constituents in Filtered Samples from 35 Sites in the AGWQN**

Samples from 35 wells were analyzed for 34 VOCs. Only those detected in one or more samples are listed in table 6. Samples from wells in urban areas had the most detections; samples from undeveloped areas had the fewest. The most frequently detected VOCs in samples from wells located in all land-use areas were Methyl tert-butyl ether, 26 percent; trichloromethane, 14; and trichloroethene, 9.

Filtered samples from 35 wells were analyzed for 52 pesticides by use of USGS National Water Quality Laboratory schedule 2001. Only pesticides detected in one or more samples are included in figure 19 or tables 7 and 8. Refer to “Laboratory Measurements” in the Explanation of Water-Quality Records section of this report for the complete list of those pesticides and the LRL for each compound. Fourteen pesticide compounds were detected in samples from the 35 wells. The most frequently detected pesticides in samples from wells located in all land-use areas were the herbicides Atrazine and 2-Chloro-4-isopropylamino-6-amino-s-triazine (CIAT)—a degradation product of Atrazine—in 23 percent each; Metolachlor, in 20 percent; and Prometon and Simazine, in 14 percent each. Insecticides were present in samples from only three urban wells. Diazinon and Dieldrin were detected once each in separate wells. Fipronil and several of its degradation products were detected in the third well.

## **DOWNSTREAM ORDER AND STATION NUMBER**

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

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, 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 composed of both types of stations. Gaps are

consecutive. The complete 8-digit (or 10-digit) number for each station such as 01396500, which appears just to the left of the station name, includes a 2-digit part number "01" plus the 6-digit (or 8-digit) downstream order number "396500." In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

## NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as "01," "02," and so forth, would be assigned as one would for wells (see fig. 20). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

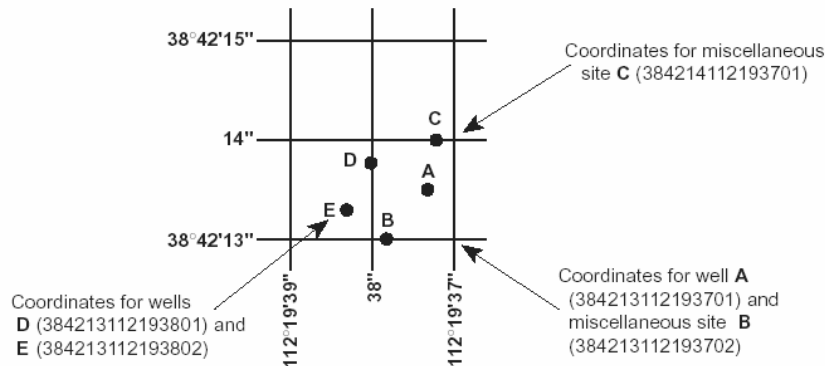


Figure 20. System for numbering wells and miscellaneous sites (latitude and longitude).

## SPECIAL NETWORKS AND PROGRAMS

**Hydrologic Benchmark Network** is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from <http://water.usgs.gov/hbn/>.

**National Stream-Quality Accounting Network (NASQAN)** is a network of sites used to monitor the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of 5 stations could be implemented on the Yukon River. 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

(NAWQA) Program; (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. Additional information about the NASQAN Program may be accessed from <http://water.usgs.gov/nasqan/>.

**The National Atmospheric Deposition Program/National Trends Network (NADP/NTN)** is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from <http://bqs.usgs.gov/acidrain/>.

**The USGS National Water-Quality Assessment (NAWQA) Program** 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; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 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 is 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 water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

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

**The USGS National Streamflow Information Program (NSIP)** is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from <http://water.usgs.gov/nsip/>.

## LOCAL NETWORKS AND PROGRAMS

**The Ambient Stream Monitoring Network (ASMN) and Ambient Ground Water Quality Network (AGWQN)** are USGS/New Jersey Department of Environmental Protection (NJDEP) cooperative networks designed to meet the expanding need for surface- and ground-water-quality data in the State of New Jersey. The major objectives of the networks are to (1) support the National Environmental Performance Partnership System agreement (a program set up to control long-term environmental planning) and the watershed-management process; (2) to work synergistically with the NJDEP Ambient Biomonitoring Network, and atmospheric, ground-water, and coastal water-quality networks; (3) determine statewide water-quality status and trends; (4) measure water-quality near the downstream end of each Watershed Management Area (WMA); (5) define background water quality in each of the

four physiographic provinces of New Jersey; (6) measure nonpoint source contributions from major landuse areas, atmospheric deposition, and ground-water; (7) facilitate response of state and local water-management officials to emerging or watershed-specific water-quality issues.

The Ambient Stream Monitoring Network consists of 116 stations located in 20 WMA's (fig. 21). These stations are segregated into five distinct types that together are used to define the surface-water-quality in the State. Background stations are located on reaches of streams that have remained relatively unaffected by human activity, to develop a baseline water-quality data base (fig. 22). Data from these stations are used in the development of water-quality standards and initiatives. Watershed Integrator stations are located near the furthest downstream point possible in each WMA to provide information on the combined water-quality effects within each WMA. Land Use Indicator stations are used to monitor the effects of the dominant land use in each WMA and provide data on nonpoint-source loading of contaminants to streams. Statewide Status stations are chosen randomly each year within the 20 WMA's to obtain a statistical basis that can be used to estimate water-quality indicators statewide. Five stations are located on the Delaware Main Stem—the border between New Jersey and Pennsylvania. Watershed Reconnaissance stations are also selected annually on the basis of specific project needs, determined by a committee of USGS and NJDEP personnel.

The stream-monitoring network is sampled in four periods throughout the water year: November to December, February to March, May to June, and August to September. Samples for the analyses of nutrients, major ions, biochemical oxygen demand, and suspended solids are collected for the entire network each sampling period. Samples for the analysis of water-column volatile organic compounds during February and March, filtered organic pesticides during May and June, and whole-water-recoverable trace elements during August and September are collected at all Statewide Status and Background stations. Samples for the analyses of trace elements and polycyclic aromatic hydrocarbons in streambed sediments are also collected in August and September at 20 Statewide Status stations and 2 Background stations. Samples for the analyses of fecal coliform, *E. coli*, and enterococcus bacteria are collected synoptically—5 times in a 30-day period during the summer.

The Ambient Ground-Water-Quality Network is a long-term monitoring network with goals to assess the status of ground-water quality by examining the concentrations of various constituents that can be used as environmental indicators, assess water-quality trends by examining data collected on a 5-year cycle, determine the effects of land use on shallow ground-water quality, identify threats from nonpoint sources of contamination, and identify emerging or new environmental issues of concern to the public. The ground-water network consists of 150 wells distributed throughout the State of New Jersey within three land-use types. Sixty wells are located in agricultural areas, 60 in urban/suburban areas, and 30 in undeveloped areas. These areas are located throughout New Jersey's five Watershed Management Regions (WMR), which are further divided into 20 watershed-management areas (WMA) (fig. 23). The Passaic Region encompasses WMAs 3-6; the Lower Delaware Region, WMAs 17-20; the Raritan Region, WMAs 7-10; the Upper Delaware Region, WMAs 1, 2, and 11; and, the Atlantic Coastal Region, WMAs 12-16.

**The Long Island-New Jersey Coastal Plain (LINJ)** and **The Delaware River Basin (DELR)** are two NAWQA study units currently operating in the New Jersey District. The LINJ study unit conducted intensive sampling from 1996 through 1998 and the DELR study unit from 1999 through 2001. Both study units are currently in low-intensity phases. The LINJ study unit is slated to resume intensive sampling starting in 2006 and the DELR study unit in 2010. LINJ-NAWQA fixed stations published in this report are: Raritan River at Queens Bridge, at Bound Brook, NJ (01403300) and Bound Brook at Middlesex, NJ (01403900) (fig. 24). DELR-NAWQA fixed stations published in this report are: Delaware River at Trenton, NJ (01463500); Little Neshaminy Creek at Valley Rd. near Neshaminy, PA (01464907); French Creek near Phoenixville, PA (01472157); and Schuylkill River at Philadelphia, PA (01474500) (fig. 25).

One **Hydrological Benchmark Network** station is currently operating in New Jersey—McDonald's Branch in Lebanon State Forest, 01466500. In addition to the sampling requirements of the ASMN, the station is sampled several times a year during periods of shanging stage for analysis of physical parameters, major cations and anions, nutrients, and aluminum.

## EXPLANATION OF WATER-QUALITY RECORDS

### Collection and Examination of Data

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report involve a variety of types of data and measurement frequencies.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

### Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRI). A list of TWRIs is provided in this report.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross-section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

### Classification of Records

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

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently.

## Accuracy of the Records

Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value did not exceed recalibration criteria were considered to be reliable and were not adjusted. Differences between sensor responses documented during cleaning or verification of sensor calibration that exceeded the recalibration criteria indicated the need for sensor recalibration and adjustment of the recorded data for the period between inspections. Continuous-record water-quality data for periods for which the differences between the sensor's response and a known value exceeded the maximum allowable limits were considered to be unreliable and were not published.

Measured physical property	Recalibration criteria	Maximum allowable limits
Water temperature	$\pm 0.2$ °C	$\pm 1.5$ °C
Specific conductance	the greater of $\pm 5$ uS/cm or 3% of the measured value	$\pm 25\%$
Dissolved oxygen	the greater of $\pm 0.3$ mg/L or 5% of the measured value	the greater of $\pm 1.5$ mg/L or 25% of the measured value
pH	$\pm 0.3$ units	$\pm 1.5$ units
Turbidity	the greater of $\pm 2$ NTU or 5% of the measured value	$\pm 25\%$

## Arrangement of Records

Water-quality records from continuing-record and continuous-recording stations are listed in downstream order immediately after the "Introduction." Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the continuing-record stations.

## On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. These TWRIs are listed in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

## Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

## Sediment

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

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

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

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

## Laboratory Measurements

Analyses of surface-water samples for biochemical oxygen demand (BOD), indicator bacteria, hexavalent chromium, total suspended solids, chlorophyll *a*, and selected nutrients, and of bed-sediment samples for total ammonia plus organic nitrogen and total phosphorus, are conducted locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Names of cooperating laboratories are listed in the station records. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These methods are consistent with ASTM standards and generally follow ISO standards.

### Analyses of pesticides in surface-water and ground-water samples (schedule 2001)

Selected water samples from ASMN, AGWQN, and NAWQA study sites were analyzed for pesticides by use of NWQL schedule 2001. This table lists the pesticides on the schedule, the unit of measure (micrograms per liter, ug/L), the USGS National Water Information System parameter code, and the reporting level. Only pesticides measured at or above the minimum reporting level for one or more samples are listed in the water-quality tables.

**SCHEDULE DESCRIPTION.**--Pesticides in filtered water extracted on C-18 Solid Phase Extraction (SPE) cartridge and analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).

**SAMPLE REQUIREMENTS.**--1 liter of water filtered through 0.7-micron glass-fiber depth filter, chilled at 4°C (packed in ice).

**CONTAINER REQUIREMENTS.**--1 liter baked amber glass bottle (GCC) from NWQL.

**PCODE.**--The USGS/EPA parameter code.

**COMMON NAME.**--Common or trade name(s) for constituent.



LRL.--Laboratory reporting level.

PCode	Common Name	LRL (ug/L)
82660	2,6-Diethylaniline	0.006
04040	2-Chloro-4-isopropylamino-6-amino-s-triazine	0.006
49260	Acetochlor	0.006
46342	Alachlor	0.0045
39632	Atrazine	0.007
82686	Azinphos-methyl	0.05
82673	Benfluralin	0.010
04028	Butylate	0.002
82680	Carbaryl	0.041
82674	Carbofuran	0.020
38933	Chlorpyrifos	0.005
04041	Cyanazine	0.018
82682	Dacthal	0.0030
62170	Desulfinylfipronil	0.012
62169	Desulfinylfipronil amide	0.029
39572	Diazinon	0.005
39381	Dieldrin	0.0048
82677	Disulfoton	0.021
82668	EPTC	0.0020
82663	Ethalfuralin	0.009
82672	Ethoprophos	0.005
62166	Fipronil	0.007
62167	Fipronil sulfide	0.005
62168	Fipronil sulfone	0.024
04095	Fonofos	0.0027
39341	Lindane	0.0040
82666	Linuron	0.035
39532	Malathion	0.027
39415	Metolachlor	0.013
82630	Metribuzin	0.006
82671	Molinate	0.0016
82684	Napropamide	0.007
39542	Parathion	0.010
82667	Parathion-methyl	0.006
82669	Pebulate	0.0041
82683	Pendimethalin	0.022
82664	Phorate	0.011
04037	Prometon	0.015
04024	Propachlor	0.010
82679	Propanil	0.011
82685	Propargite	0.023
82676	Propyzamide	0.0041
04035	Simazine	0.005
82670	Tebuthiuron	0.016
82665	Terbacil	0.034
82675	Terbufos	0.017

PCode	Common Name	LRL (ug/L)
82681	Thiobencarb	0.0048
82678	Tri-allate	0.0023
82661	Trifluralin	0.009
34253	alpha-HCH	0.0046
82687	cis-Permethrin	0.006
34653	p,p'-DDE	0.0025

### Analyses of waste water compounds in groundwater (schedule 1433)

Selected water samples from Radium Sampling of Water From The Kirkwood-Cohansey Aquifer System and of Backwash brine From Ion-Exchange Treatment Systems, and Morristown National Historical Park study sites were analyzed for waste water compounds by use of schedule 1433. This table lists the waste water compounds on the schedule, the unit of measure (micrograms per liter, ug/L), the U.S. Geological Survey National Water Information System parameter code, and the reporting level. Only waste water compounds that routinely cannot be detected in sampling equipment blanks are listed in the water-quality table.

**SCHEDULE DESCRIPTION.**--Wastewater compounds after filtration through glass fiber filter (0.7-micron nominal pore size), extracted on solid-phase extraction (SPE) cartridge with polystyrene-divinylbenzene resin extractant within polypropylene housing, eluted with a 4:1 mixture of dichloromethane and diethyl ether, and analyzed by Gas Chromatography/Mass Spectrometry (GC/MS).

**SAMPLE REQUIREMENTS.**--1 liter of water collected. Chill sample and maintain at 4° C, ship immediately.

**CONTAINER REQUIREMENTS.**--1 L Glass bottle, amber bottle baked at 450° C by laboratory.

**PCODE.**--The USGS/EPA parameter code.

**COMMON NAME.**--Common or trade name(s) for constituent.

**LRL.**--Laboratory reporting level.

PCode	Common Name	LRL (ug/L)
62005	Cotinine	5.0
62052	Ethynyl estradiol	1.0
62063	5-Methyl-1H-benzotriazole	2.0
62066	Anthraquinone	0.5
62064	Acetophenone	0.5
62065	Acetyl hexamethyl tetrahydronaphthalene (AHTN)	0.5
34221	Anthracene	0.5
34572	1,4-Dichlorobenzene	0.5
34248	Benzo[a]pyrene	0.5
62067	Benzophenone	0.5
4029	Bromacil	0.5
34288	Bromoform	0.5
62059	3-tert-Butyl-4-hydroxy anisole (BHA)	5.0
50305	Caffeine	0.5
99584	Caffeine-C13	0.1
62070	Camphor	0.5

PCode	Common Name	LRL (ug/L)
82680	Carbaryl	1.0
62071	Carbazole	0.5
38933	Chlorpyrifos	2.0
62072	Cholesterol	0.5
62057	3-beta-Coprostanol	2.0
62078	Fluoranthene	0.1
99583	Bisphenol	0.1
99585	Decafluorobiphenyl	0.1
62082	N,N-diethyl-meta-toluamide (DEET)	0.5
39572	Diazinon	0.5
38775	Dichlorvos	5.0
62069	Bisphenol	1.0
62074	Equilenin	5.0
62053	17-beta-Estradiol	5.0
62484	Estrone	1.0
62091	Triethyl citrate (ethyl citrate)	0.5
34476	Tetrachloroethylene	0.5
34377	Fluoranthene	0.5
62075	Hexadychlorohexamethylcyclopentabenzopyran (HHCb)	0.5
62076	Indole	0.5
62077	Isoborneol	0.5
34409	Isophorone	0.5
62079	Isoquinoline	0.5
62073	d-Limonene	0.5
62080	Menthol	0.5
50359	Metalaxyl	0.5
39415	Metolachlor	0.5
34443	Naphthalene	0.5
62054	1-Methylnaphthalene	0.5
62055	2,6-Dimethylnaphthalene	0.5
62056	2-Methylnaphthalene	0.5
62083	Nonylphenol, diethoxy	5.0
61705	Octylphenol, diethoxy	1.0
61706	Octylphenol, monoethoxy-	1.0
62084	p-Cresol	1.0
62060	4-Cumylphenol	1.0
62085	para-Nonylphenol (total)	5.0
62061	4-n-Octylphenol	1.0
62062	4-tert-Octylphenol	1.0
34462	Phenanthrene	0.5
34466	Phenol	
34459	Pentachlorophenol	2.0
62089	Tributyl phosphate	0.5
62092	Triphenyl phosphate	0.5
62093	Tri(2-butoxyethyl)phosphate	0.5
62087	Tri(2-chloroethyl)phosphate	0.5
04037	Prometon	0.5

PCode	Common Name	LRL (ug/L)
34470	Pyrene	0.5
62081	Methyl salicylate	0.5
62058	3-Methyl-1(H)-indole (Skatole)	1.0
62068	beta-Sitosterol	2.0
62086	beta-Stigmastanol	2.0
62090	Triclosan	1.0
62088	Tris(dichlorisopropyl)phosphate	0.5

## Data Presentation

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

The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

**LOCATION.**—Location information 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 time periods for which published water-quality records for the station are available. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

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

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

**COOPERATION.**—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

**EXTREMES.**—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

**REVISIONS.**—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system,

NWISWeb (<http://waterdata.usgs.gov/nwis>). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

## Remark Codes

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

Printed Output	Remark
E or e	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.

## Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of "E." These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District office are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

## Blank samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to

contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

**Ambient blank**—A blank solution that is put in the same type of bottle used for an environmental sample, kept with the set of sample bottles before sample collection, and opened at the site and exposed to the ambient conditions.

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

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

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

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

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

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

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

## Reference samples

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

## Replicate samples

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

**Concurrent samples**—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

**Sequential samples**—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

**Split sample**—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

## Spike samples

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

## ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from <http://water.usgs.gov>.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (See address that is shown on the back of the title page of this report.)

## 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.

- Assessment of Current Ground-Water and Surface-Water Conditions within the NJ-NY Highlands Area
- Delaware River Basin National Water Quality Assessment
- Development of Database, Models, and Determination of Vulnerability of Public Supply Wells and Surface-Water Intakes in New Jersey for Chemicals of Concern to Support Source Water Assessment Program
- Determination of the hydrologic and ecological effects of ground-water diversions from the Kirkwood-Cohansey aquifer system in the Pinelands Area
- Determining Impacts on Special Protection Waters in the Delaware Water Gap National recreation Area
- Distribution of MTBE and Related Volatile Organic Compounds in Lakes in Northern NJ and Investigation of Lake-Well Interactions
- Distribution of Radium and Related Radionuclides in Coastal-Plain Aquifers
- Effects of Land Use, Septic Systems, and Sewering on the Distribution of Nitrate in Shallow Ground Water
- EPA Technical Assistance Program
- Evaluation of Bacterial Contamination in Surface and Ground Water in Morristown National Historical Park
- Flood Characteristics of New Jersey Streams
- Flow Characteristics and Basis for Development of Ecological Goals for New Jersey Streams
- Geohydrology of the Naval Air Warfare Center, West Trenton, New Jersey
- Ground-Water Data Collection Network
- Ground-Water Levels and Chloride Concentrations in Major Aquifers of the Coastal Plain
- Ground-Water Supply Availability in Southern Ocean County
- Head of Tide Sampling Program for the New Jersey Harbor Toxic Contaminant Assessment Reduction Program
- Hydrogeologic Investigation to Ensure Sustainable Water Supply for Cape May County
- Hydrogeologic Support to McGuire Air Force Base, Burlington County, New Jersey

Investigation of Hydrogeology and Volatile Organic Compound Contamination in Fair Lawn, New Jersey  
 Investigation of Hydrogeology and Volatile Organic Compound Contamination in the Pohatcong Valley, New Jersey  
 Investigation of Potential Threats to Water Supply from the Potomac-Raritan-Magothy Aquifer in Salem and Western Gloucester Counties, New Jersey  
 Lower Delaware Non-Point Source  
 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  
 Natural Radionuclide Occurrence in Principal New Jersey Aquifers  
 New Jersey Drought Monitoring System  
 New Jersey-Long Island National Water Quality Assessment  
 New Jersey Tide Telemetry System  
 Occurrence and Distribution of Trace Level Organics in Waste Water and Streams  
 Pascack Brook Flood Warning System  
 Passaic Flood Warning System  
 Passaic River Basin Flow Model  
 Program to Maintain and Update Ground-Water Models to Evaluate Continued Water-Supply Development  
 Quality of Water Data Collection Network  
 Quantification of Radium Mass Loading and Radioactivity in the Shallow Aquifer from the Water-Softening-Treatment Backwash Waste Stream that is Discharged to Septic Systems  
 Rahway Flood Warning System  
 Refinement of a Data Model for Watershed Water Transfer Analysis, Phase 2  
 Small Watershed Flood Data Collection  
 Somerset County Flood-Information System  
 Surface Water Data Collection Network  
 Vulnerability Assessment of the Kirkwood-Cohansey Aquifer System to Radium, Mercury, and Trace Metals  
 Water Budget Analysis of Confined Aquifers for Water-Supply Planning and Regulation  
 Water Budgets and Ground-water Availability in the Delaware River Basin  
 Water-Quality Characteristics of Upper-Delaware Watershed

## **WATER-RELATED REPORTS FOR NEW JERSEY COMPLETED BY THE GEOLOGICAL SURVEY IN RECENT YEARS**

- Ayers, M.A., Kennen, J.G., and Stackelberg, P.E., 2000, Water quality in the Long Island-New Jersey Coastal drainages, New York and New Jersey, 1996-98:
- Baehr, A.L., Kauffman, L.J., Perkins, K., Nolan, B.T., 2003, Estimating spatial variability of recharge in southern New Jersey from unsaturated-zone measurements: U.S. Geological Survey Water-Resources Investigations Report 02-4288, 31 p.
- Baehr, A.L., and Reilly, T.J., 2001, Water quality and occurrence of Methyl tert-butyl ether (MTBE) and other fuel-related compounds in lakes and ground water at lakeside communities in Sussex and Morris Counties, New Jersey, 1998-1999: U.S. Geological Survey Water-Resources Investigations Report 01-4149, 86 p.
- Barringer, J.L., Barringer, T.H., Lacombe, P.J., and Holmes, C.W., 2001, Arsenic in soils and sediments adjacent to Birch Swamp Brook in the vicinity of Texas Road (downstream from the Imperial Oil Company Superfund site), Monmouth County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 00-4185, 111 p.



- Barringer, J.L., and MacLeod, C.L., 2001, Relation of mercury to other chemical constituents in ground water in the Kirkwood-Cohansey aquifer system, New Jersey Coastal Plain, and mechanisms for mobilization of mercury from sediments to ground water: U.S. Geological Survey: Water-Resources Investigations Report 00-4230, 162 p.
- Barringer, T.H., Reiser, R.G., and Price, C.V., 2000, Use of low-flow trend and transfer-function models to determine relation of low flows to regional urbanization and precipitation, Rahway River Basin, New Jersey, 1940-91: U.S. Geological Survey Open-File Report 99-257, 24 p.
- Brown, G.A., Pustay, E.A., Gibs, Jacob, 2003, Methods for quality assurance review of water-quality data in New Jersey: U.S. Geological Survey Open-File Report 02-383, variously paged.
- Chang, M., Tasker, G., and Nieswand, S., 2001, Model simulation of the Manasquan water-supply system in Monmouth County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 01-4172, 51 p.
- Charles, E.G., Storck, D.A., and Clawges, R.M., 2001, Hydrology of the unconfined aquifer system, Maurice River area: Maurice and Cohansey River basins, New Jersey, 1994-95: U.S. Geological Survey Water-Resources Investigations Report 01-4229, 5 sheets.
- DeLuca, M.J., Hoppe, H.L., Heckathorn, H.A., Gray, B.J., Riskin, M.L., 2003, Water resources data for New Jersey - water year 2002, volume 3. Water-quality data: U.S. Geological Survey Water-Data Report NJ-02-3, 462 p.
- DeLuca, M.J., Hoppe, H.L., Doyle, H.A., and Gray, B.J., 2002, Water resources data for New Jersey-water year 2001, Volume 3. Water-quality data: U.S. Geological Survey Water-Data Report NJ-01-3, 580 p.
- DeLuca, M.J., Mattes, G.L., Burns, H.L., Thomas, A.M., Gray, B.J., and Doyle, H.A., 2001, Water-resources data for New Jersey - water year 2000, Volume 3, Water-quality data: U.S. Geological Survey Water-Data Report NJ-00-3, 618 p.
- DeLuca, M.J., Romanok, K.M., Riskin, M.L., Mattes, G.L., Thomas, A.M., and Gray, B.J., 2000, Water-resources data for New Jersey - water year 1999, Volume 3, Water-quality data: U.S. Geological Survey Water-Data Report NJ-99-3, 517 p.
- Focazio, J.J., Szabo, Z., Kraemer, T.F., Mullin, A.H., Barringer, T.H., and dePaul, V.T., 2001, Occurrence of selected radionuclides in ground water used for drinking water in the United States: A reconnaissance survey, 1998: U.S. Geological Survey Water-Resources Investigations Report 00-4273, 39 p.
- Gibs, J., Gray, B.J., Rice, D.E., Tessler, S., and Barringer, T.H., 2001, Water quality of the Delaware and Raritan Canal, New Jersey, 1998-99: U.S. Geological Survey Water Resources Investigations Report 01-4072, 67 p.
- Gordon, A.D., 2003, Simulation of the ground-water flow system in 1992, and simulated effects of projected ground-water withdrawals in 2020 in the New Jersey Coastal Plain: U.S. Geological Survey Water-Resources Investigations Report 03-4000, 61 p.
- Gordon, A.D., 2002, Simulation of transient ground-water flow in the valley-fill aquifers of the upper Rockaway River Basin, Morris County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 01-4174, 41 p.
- Hunchak-Kariouk, K., 2002, Comparisons of water quality during various streamflow conditions in five streams in northern New Jersey, 1982-97: U.S. Geological Survey Water-Resources Investigations Report 01-4249, 50 p.
- Jacobsen, E., 2000, Ground-water quality, water levels, and precipitation at the biosolids study site, Lakehurst Naval Air Engineering Station, New Jersey, 1995-97: U.S. Geological Survey Open-File Report 00-197, 61 p.
- Jones, W.D., and Esralew, R.A., 2003, Water resources data for New Jersey - water year 2002, volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-02-2, 226 p.
- Jones, W.D., and Edwards, R.W., 2002, Water resources data for New Jersey-water year 2001, Volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-01-2, 232 p.

- Jones, W.D., 2001, Water resources data for New Jersey-water year 2000, Volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-00-2, 233 p.
- Jones, W.D., 2000, Water-resources data for New Jersey - water year 1999, Volume 2. Ground-water data: U.S. Geological Survey Water-Data Report NJ-99-2, 233 p.
- Kauffman, L.J., Baehr, A.L., Ayers, M.A., and Stackelberg, P.E., 2001, Effects of land use and travel time on the distribution of nitrate in the Kirkwood-Cohansey aquifer system in southern New Jersey: U.S. Geological Survey Water-Resources Investigations Report 01-4117, 58 p.
- Kennen, J.G., and Ayers, M.A., 2002, Relation of environmental characteristics to the composition of aquatic assemblages along a gradient of urban land use in New Jersey, 1996-98: U.S. Geological Survey Water-Resources Investigations Report 02-4069, 77 p.
- Lacombe, P.J., 2002, Ground-water levels and potentiometric surfaces, Naval Air Warfare Center, West Trenton, New Jersey, 2000: U.S. Geological Survey Water-Resources Investigations Report 01-4197, 48 p.
- Lacombe, P.J., and Carleton, G.B., 2002, Hydrogeologic framework, availability of water supplies, and saltwater intrusion, Cape May County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 01-4246, 165 p.
- Lacombe, P.J., and Rosman, R., 2001, Water levels in, extent of freshwater in, and water withdrawals from ten confined aquifers, New Jersey and Delaware Coastal Plain, 1998: U.S. Geological Survey Water-Resources Investigations Report 00-4143, 10 sheets.
- Lacombe, P.J., 2000, Hydrogeologic framework, water levels, and trichloroethylene contamination, Naval Air Warfare Center, West Trenton, New Jersey, 1993-97: U.S. Geological Survey Water-Resources Investigations Report 98-4167, 139 p.
- Lewis-Brown, J.C., and Rice, D.E., 2002, Simulated ground-water flow, Naval Air Warfare Center, West Trenton, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 02-4019, 44 p.
- Lewis-Brown, J.C., dePaul, V., 2000, Ground-water flow and distribution of volatile organic compounds, Rutgers University Busch Campus and vicinity, Piscataway Township, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 99-4256, 72 p.
- Long, G.R., Chang, M., Kennen, J.G., 2000, Trace elements and organochlorine compounds in bed sediment and fish tissue at selected sites in New Jersey streams--Sources and effects: U.S. Geological Survey Water-Resources Investigations Report 99-4235, 29 p.
- McAuley, S.D., Barringer, J.L., Paulachok, G.N., Clark, J.S., Zapecza, O.S., 2001, Ground-water flow and quality in the Atlantic City 800-foot sand, New Jersey: New Jersey Department of Environmental Protection Geological Survey Report GSR 41, 86 p.
- Reed, T.J., White, B.T., Centinaro, G.L., Dudek, J.F., Spehar, A.B., Protz, A.R., Shvanda, J.C., Watson, A.F., and Holzer, G.K., 2003, Water resources data for New Jersey - water year 2002, volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-02-1, 364 p.
- Reed, T.J., White, B.T., Centinaro, G.L., Dudek, J.F., Corcino, V., Spehar, A.B., and Protz, A.R., 2002, Water resources data for New Jersey-water year 2001, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-01-1, 297 p.
- Reed, T.J., Centinaro, G.L., Dudek, J.F., Corcino, V., and Steckroath, G.C., 2001, Water resources data for New Jersey-water year 2000, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-00-1, 233 p.
- Reed, T.J., Centinaro, G.L., Dudek, J.F., Corcino, V., and Steckroath, G.C., 2000, Water-resources data for New Jersey - water year 1999, Volume 1. Surface-water data: U.S. Geological Survey Water-Data Report NJ-99-1, 293 p.
- Reiser, R.G., and Schopp, R.D., 2002, Sparta, New Jersey, flood of August 11-14, 2000: U.S. Geological Survey Water-Resources Investigations Report 02-4099, 95 p.

- Spitz, F.J., 2001, Method and computer programs to improve pathline resolution near weak sinks representing wells in MODFLOW and MODPATH ground-water-flow simulations: U.S. Geological Survey Open-File Report 00-392, 51 p.
- Spitz, F.J., Nicholson, R.S., and Pope, D.A., 2001, A nested rediscrretization method to improve pathline resolution by eliminating weak sinks representing wells: *Ground Water* vol. 39, no. 5, p. 778-785. Geological Survey Open-File Report 01-406, 74 p.
- Spitz, F.J., and Nicholson, R.S., 2001, Simulated effects of alternative pumping strategies on ground-water-flow patterns and areas contributing recharge to selected wells near Kenvil, Morris County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 01-4180, 32 p.
- Stackelberg, P.E., Kauffman, L.J., Baehr, A.L., and Ayers, M.A., 2000, Comparison of nitrate, pesticides, and volatile organic compounds in samples from monitoring and public-supply wells, Kirkwood-Cohansey aquifer system, southern New Jersey: U.S. Geological Survey Water-Resources Investigations Report 00-4123, 78 p.
- Storck, D.A., and Nawyn, J.P., 2001, Reconstruction of streamflow records in the Passaic and Hackensack River Basins, New Jersey and New York, water years 1993-96: U.S. Geological Survey Water-Resources Investigations Report 01-4078, 95 p.
- Walker, R.L., 2001, Effects of pumping on ground-water flow near water-supply wells in the Lower Potomac-Raritan-Magothy aquifer, Pennsauken Township, Camden County, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 00-4012, 12 p.
- Watt, M.K., Kane, A.C., Charles, E.G., Storck, D.A., 2003, Hydrology of the unconfined aquifer system, Rancocas Creek area: Rancocas, Crosswicks, Assunpink, Assiscunk, Blacks, and Crafts Creek Basins, New Jersey: U.S. Geological Survey Water-Resources Investigations Report 02-4280, 5 sheets.
- Watt, M.K., 2001, A hydrologic primer for New Jersey watershed management: U.S. Geological Survey Water-Resources Investigations Report 00-4140, 116 p.

## **WATER-RELATED ARTICLES FOR NEW JERSEY COMPLETED BY THE GEOLOGICAL SURVEY IN RECENT YEARS**

- Gibs, J., Szabo, Z., Ivahnenko, T., and Wilde, F.D., 2000, Change in field turbidity and trace element concentrations during well purging: *Ground Water*, v. 38, no. 4, p. 577-588.
- Imbrigiotta, T.E., 2002, Comparison of dialysis membrane diffusion samplers and two purging methods in bedrock wells, in Gavaskar, A.R., and Chen, A.S.C., eds., *Remediation of chlorinated and recalcitrant compounds: Proceedings of the Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds*, Monterey, Calif.
- Ivahnenko, T., Szabo, Z., and Gibs, J., 2001, Changes in sample collection and analytical techniques and effects on retrospective comparability of low-level concentrations of trace elements in ground water: *Water Resources*, v. 35, no. 15, p. 3611-3624.
- Long, G.R., Ayers, M.A., Callender, E., VanMetre, P.C., 2003, Trends in chemical concentration in sediment cores from three lakes in New Jersey and one lake on Long Island, New York: U.S. Geological Survey Water-Resources Investigations Report 02-4272, 32 p. (Published on the New Jersey District web site only.)
- Olsen, M.L., and DeWild, J.F., 1999, Techniques for the collection and species-specific analysis of low levels of mercury in water, sediment, and biota: U.S. Geological Survey Water-Resources Investigations Report 99-4018B, p. 191-199.
- Spitz, F.J., Nicholson, R.S., and Pope, D.A., 2001, A nested rediscrretization method to improve pathline resolution by eliminating weak sinks representing wells: *Ground Water* vol. 39, no. 5, p. 778-785.

- Szabo, Z., Oden, J.H., Gibs, J., Rice, D.E., and Ding, Y., 2002, Variation in aluminum, iron, and particle concentrations in oxic ground-water samples by use of tangential-flow ultrafiltration with low-flow sampling, in Jensen, J.L., and Burggraf, L.W., eds., Chemical and biological early warning monitoring for water, food, and ground: Proceedings of SPIE, November 1-2, 2001, v. 4575, p. 42-61.
- Szabo, Zoltan, Focazio, M.J., Landmeyer, J.E., Senior, L.A., Ayotte, J.D., dePaul, V.T., Oden, T.D., and Kozar, M.D., 2001, Naturally occurring radionuclides in ground water in the Appalachian Physiographic Province: Initial results of targeted reconnaissance surveys and application to regional assessment, in Adams, D.B., Burke, Katrina, Hemingway, Bruce, Keay, Jeff, and Yurewicz, Michael, comp., U.S. Geological Survey Appalachian region integrated science workshop proceedings, Gatlinburg, Tennessee, October 22-26, 2001: U.S. Geological Survey Open-File Report 01-406, 74 p.
- Szabo, Zoltan, Rice, D.E., Plummer, L.N., Busenburgh, Eurybades, Drenkard, Stefan, and Schlosser, Peter, 1996, Age dating of shallow groundwater with chlorofluorocarbons, tritium/helium-3, and flow path analysis, southern New Jersey coastal plain: Water Resources Research, v. 32, no. 4, p. 1023-1038.

## WATER-RELATED FACT SHEETS FOR NEW JERSEY COMPLETED BY THE GEOLOGICAL SURVEY IN RECENT YEARS

- Jones, W.D., Navoy, A.S., Pope, D.A., 2002, Real-time ground-water-level monitoring in New Jersey, 2001: U.S. Geological Survey Fact Sheet FS-011-02, unpaginated.
- Reiser, R.G., and Schopp, R.D., 2001, Sparta, New Jersey, flood of August 11-14, 2000: U.S. Geological Survey Fact Sheet FS-104-01, unpaginated.
- Reiser, R.G., 2002, Quality of water in tributaries to the upper Delaware River, New Jersey, water years 1985-2001: U.S. Geological Survey Fact Sheet FS-090-02, unpaginated.
- Reiser, R.G., Watson, K.M., Chang, M., Nieswand, S.P., 2002, Surface-water data and statistics from U.S. Geological Survey data-collection networks in New Jersey on the World Wide Web: U.S. Geological Survey Fact Sheet FS-109-02, unpaginated.
- Schopp, R.D., Stedfast, D.A., and Navoy, A.S., 2003, Real-time surface-water monitoring in New Jersey, 2003: U.S. Geological Survey Fact Sheet, FS-048-03, unpaginated.

## DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from <http://water.usgs.gov/glossaries.html>.

**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. This term designates titration of an “unfiltered” sample (formerly reported as alkalinity).

**Acre-foot (AC-FT, acre-ft)** is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also “Annual runoff”)

**Adenosine triphosphate (ATP)** is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP 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.

**Adjusted discharge** is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

**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. (See also “Biomass” and “Dry weight”)

**Alkalinity** is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a “filtered” sample.

**Annual runoff** is the total quantity of water that is discharged (“runs off”) from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

**Annual 7-day minimum** is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. 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.)

**Aroclor** is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

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

**Ash mass** is the mass or amount of residue present after the residue from a dry-mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter ( $\text{g}/\text{m}^3$ ), and periphyton and benthic organisms in grams per square meter ( $\text{g}/\text{m}^2$ ). (See also “Biomass” and “Dry mass”)

**Aspect** is the direction toward which a slope faces with respect to the compass.

**Bacteria** are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas 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.

**Bankfull stage**, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

**Base discharge** (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also “Peak flow”)

**Base flow** is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced stream-flows. Natural base flow is sustained largely by ground-water discharge.

**Bed material** is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also “Bedload” and “Sediment”)

**Bedload** is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

**Bedload discharge** (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also “Bedload,” “Dry weight,” “Sediment,” and “Suspended-sediment discharge”)

**Benthic organisms** are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. 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 mass per unit area or volume of habitat.

**Biomass pigment ratio** is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

**Blue-green algae** (*Cyanophyta*) are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ( $\mu\text{m}^3/\text{mL}$ ). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/cm<sup>2</sup>) or biovolume per square centimeter ( $\mu\text{m}^3/\text{cm}^2$ ). (See also “Phytoplankton” and “Periphyton”)

**Bottom material** (See “Bed material”)

**Bulk electrical conductivity** is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

**Canadian Geodetic Vertical Datum 1928** is a geodetic datum derived from a general adjustment of Canada’s first order level network in 1928.

**Cell volume** (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume ( $\mu\text{m}^3$ ) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric

solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } \frac{4}{3} \pi r^3 \quad \text{cone } \frac{1}{3} \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi ( $\pi$ ) is the ratio of the circumference to the diameter of a circle;  $\pi = 3.14159\dots$

From cell volume, total algal biomass expressed as biovolume ( $\mu\text{m}^3/\text{mL}$ ) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

**Cells/volume** refers to the number of cells of any organism that 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 volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

**Cfs-day** (See “Cubic foot per second-day”)

**Channel bars**, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

**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. [See also “Biochemical oxygen demand (BOD)”]

***Clostridium perfringens*** (*C. perfringens*) is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also “Bacteria”)

**Coliphages** are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

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

**Confined aquifer** is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

**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.

**Continuous-record station** is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

**Control** designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

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

**Cubic foot per second** (CFS,  $\text{ft}^3/\text{s}$ ) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or

0.02832 cubic meters per second. The term “second-foot” sometimes is used synonymously with “cubic foot per second” but is now obsolete.

**Cubic foot per second-day** (CFS-DAY, Cfs-day, [(ft<sup>3</sup>/s)/d]) 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, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

**Cubic foot per second per square mile** [CFSM, (ft<sup>3</sup>/s)/mi<sup>2</sup>] 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. (See also “Annual runoff”)

**Daily mean suspended-sediment concentration** is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also “Sediment” and “Suspended-sediment concentration”)

**Daily record station** is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

**Data collection platform** (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

**Data logger** is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

**Datum** is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Vertical Datum of 1929,” and “North American Vertical Datum of 1988”)

**Diatoms** (*Bacillariophyta*) are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ( $\mu\text{m}^3/\text{mL}$ ). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/cm<sup>2</sup>) or biovolume per square centimeter ( $\mu\text{m}^3/\text{cm}^2$ ). (See also “Phytoplankton” and “Periphyton”)

**Diel** is of or pertaining to a 24-hour period of time; a regular daily cycle.

**Discharge**, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

**Dissolved** refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of “dissolved” constituent concentrations are made on sample water that has been filtered.

**Dissolved oxygen** (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water



to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

**Dissolved solids concentration** in water is the quantity of dissolved material in a sample of water. It 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, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L CaCO<sub>3</sub>) can be converted to carbonate concentration by multiplying by 0.60.

**Diversity index (H)** (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = - \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where  $n_i$  is the number of individuals per taxon,  $n$  is the total number of individuals, and  $s$  is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

**Drainage area** of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

**Drainage basin** is a part of the Earth’s surface that contains a drainage system with a common outlet for its surface runoff. (See “Drainage area”)

**Dry mass** refers to the mass of residue present after drying in an oven at 105 °C, 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. (See also “Ash mass,” “Biomass,” and “Wet mass”)

**Dry weight** refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also “Wet weight”)

**Embeddedness** is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

**Enterococcus bacteria** commonly are found in the feces of humans and other warmblooded 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 that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus avium*, and their variants. (See also “Bacteria”)

**EPT Index** is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

**Escherichia coli** (*E. coli*) are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing

for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

**Estimated (E) value** of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

**Euglenoids** (*Euglenophyta*) are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

**Extractable organic halides** (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. 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 streambed sediment.

**Fecal coliform bacteria** are present in the intestines or feces of warmblooded animals. They often are 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. (See also “Bacteria”)

**Fecal streptococcal bacteria** are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that 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. (See also “Bacteria”)

**Fire algae** (*Pyrrophyta*) are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

**Flow-duration percentiles** are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

**Gage datum** is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

**Gage height** (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

**Gage values** are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

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

**Gas chromatography/flame ionization detector (GC/FID)** is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

**Geomorphic channel units**, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

**Green algae** (*Chlorophyta*) are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating “moss” in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ( $\mu\text{m}^3/\text{mL}$ ). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm<sup>2</sup>) or biovolume per square centimeter ( $\mu\text{m}^3/\text{cm}^2$ ). (See also “Phytoplankton” and “Periphyton”)

**Habitat**, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

**Habitat quality index** is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

**Hardness** of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate (CaCO<sub>3</sub>).

**High tide** is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA Web site: <http://www.co-ops.nos.noaa.gov/tideglos.html>

**Hilsenhoff’s Biotic Index (HBI)** is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = \frac{\sum (n)(a)}{N},$$

where  $n$  is the number of individuals of each taxon,  $a$  is the tolerance value of each taxon, and  $N$  is the total number of organisms in the sample.

**Horizontal datum** (See “Datum”)

**Hydrologic index stations** referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

**Hydrologic unit** is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

**Inch** (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also “Annual runoff”)

**Instantaneous discharge** is the discharge at a particular instant of time. (See also “Discharge”)

**International Boundary Commission Survey Datum** refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

**Island**, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

**Laboratory reporting level (LRL)** generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a “less than” (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term ‘non-detection value’ (NDV).

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

**Latent heat flux** (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

**Light-attenuation coefficient**, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L} \quad ,$$

where  $I_o$  is the source light intensity,  $I$  is the light intensity at length  $L$  (in meters) from the source,  $\lambda$  is the light-attenuation coefficient, and  $e$  is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_o} \quad .$$

**Lipid** is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

**Long-term method detection level (LT-MDL)** is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

**Low tide** is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA Web site:*

*<http://www.co-ops.nos.noaa.gov/tideglos.html>*

**Macrophytes** are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

**Mean concentration of suspended sediment** (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

**Mean discharge** (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

**Mean high or low tide** is the average of all high or low tides, respectively, over a specific period.

**Mean sea level** is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

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

**Megahertz** is a unit of frequency. One megahertz equals one million cycles per second.

**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.

**Method detection limit** (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

**Method of Cubatures** is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

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

**Micrograms per gram** (UG/G,  $\mu\text{g/g}$ ) 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 kilogram** (UG/KG,  $\mu\text{g/kg}$ ) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

**Micrograms per liter** (UG/L,  $\mu\text{g/L}$ ) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

**Microsiemens per centimeter** (US/CM,  $\mu\text{S/cm}$ ) 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 water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

**Minimum reporting level (MRL)** is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

**Miscellaneous site, miscellaneous station, or miscellaneous sampling site** is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

**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. MPN 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.

**Nanograms per liter (NG/L, ng/L)** is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

**National Geodetic Vertical Datum of 1929 (NGVD 29)** is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called “Sea Level Datum of 1929” or “mean sea level.” Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. *See NOAA Web site: <http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88>* (See “North American Vertical Datum of 1988”)

**Natural substrate** refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also “Substrate”)

**Nekton** are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

**Nephelometric turbidity unit (NTU)** is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

**North American Datum of 1927 (NAD 27)** is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

**North American Datum of 1983 (NAD 83)** is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

**North American Vertical Datum of 1988 (NAVD 88)** is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

**Open or screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

**Organic carbon (OC)** is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

**Organic mass** or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also “Ash mass,” “Biomass,” and “Dry mass”)

**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<sup>2</sup>), 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.

**Organochlorine compounds** are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

**Parameter code** is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

**Partial-record station** is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

**Particle size** is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) 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**, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, 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.

**Peak flow (peak stage)** is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded

value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

**Percent composition or percent of total** 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, weight, mass, or volume.

**Percent shading** is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

**Periodic-record station** is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

**Periphyton** is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

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

**pH** of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

**Phytoplankton** is the plant part of the plankton. They usually are 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 commonly are known as algae. (See also "Plankton")

**Picocurie (PC, pCi)** is one-trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 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. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

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

**Polychlorinated naphthalenes (PCNs)** are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

**Pool**, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

**Primary productivity** is a measure of the rate at which new organic matter is formed and accumulated through photo-synthetic 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 (carbon method) by the plants.



**Primary productivity (carbon method)** is expressed as milligrams of carbon per area per unit time [ $\text{mg C}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg C}/(\text{m}^3/\text{time})$ ] for phytoplankton. The carbon method defines 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 with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also “Primary productivity”)

**Primary productivity (oxygen method)** is expressed as milligrams of oxygen per area per unit time [ $\text{mg O}/(\text{m}^2/\text{time})$ ] for periphyton and macrophytes or per volume [ $\text{mg O}/(\text{m}^3/\text{time})$ ] for phytoplankton. The oxygen method defines 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. (See also “Primary productivity”)

**Radioisotopes** are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

**Reach**, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

**Recoverable from bed (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. (See also “Bed material”)

**Recurrence interval**, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms “return period” and “recurrence interval” do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ( $7Q_{10}$ ) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the  $7Q_{10}$  occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the  $7Q_{10}$ .

**Replicate samples** are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

**Return period** (See “Recurrence interval”)

**Riffle**, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

**River mileage** is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

**Run**, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

**Runoff** is the quantity of water that is discharged (“runs off”) from a drainage basin during a given time period. Run-off data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also “Annual runoff”)

**Sea level**, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

**Sediment** is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as “fluvial sediment.” Sediment 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 affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

**Sensible heat flux** (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

**Seven-day, 10-year low flow** ( $7Q_{10}$ ) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the  $7Q_{10}$  is 10 years; the chance that the annual 7-day minimum flow will be less than the  $7Q_{10}$  is 10 percent in any given year. (See also “Annual 7-day minimum” and “Recurrence interval”)

**Shelves**, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

**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. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

**Soil heat flux** (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

**Soil-water content** is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

**Specific electrical conductance (conductivity)** is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water 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.

**Stable isotope ratio** (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

**Stage** (See “Gage height”)

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

**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.

**Substrate embeddedness class** is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

**Surface area of a lake** is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

**Surficial bed material** is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

**Surrogate** is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

**Suspended** (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is defined operationally as 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 suspended water-sediment sample that is retained on a 0.45-micrometer 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 directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also “Suspended”)

**Suspended sediment** is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also “Sediment”)

**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 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and

the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also “Sediment” and “Suspended sediment”)

**Suspended-sediment discharge** (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft<sup>3</sup>/s) x 0.0027. (See also “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

**Suspended-sediment load** is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also “Sediment”)

**Suspended solids, total residue at 105 °C concentration** is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

**Suspended, total** is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. 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 directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also “Suspended”)

**Synoptic studies** are 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.

**Taxa (Species) richness** is the number of species (taxa) present in a defined area or sampling unit.

**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

**Thalweg** is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

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

**Time-weighted average** is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

**Tons per acre-foot** (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (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, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

**Total** is the amount of a given constituent in a representative whole-water (unfiltered) 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 at least 95 percent of the constituent in the sample.)

**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 warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that 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 milliliters of sample. (See also "Bacteria")

**Total discharge** is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

**Total in bottom material** is the amount of a given constituent in a representative sample of bottom material. 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 judge when the results should be reported as "total in bottom material."

**Total length** (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

**Total load** refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

**Total organism count** is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

**Total recoverable** is the amount of a given constituent in a whole-water sample after a 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 for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

**Total sediment discharge** is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also "Bedload," "Bedload discharge," "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

**Total sediment load** or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

**Transect**, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

**Turbidity** is the reduction in the transparency of a solution because of the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to USEPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

**Ultraviolet (UV) absorbance (absorption)** at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

**Unconfined aquifer** is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

**Vertical datum** (See “Datum”)

**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 human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are 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.

**Water table** is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

**Water-table aquifer** is an unconfined aquifer within which the water table is found.

**Water year** in USGS 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, 2002, is called the “2002 water year.”

**Watershed** (See “Drainage basin”)

**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.

**Wet mass** is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

**Wet weight** refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

**WSP** is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

**Zooplankton** is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are 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. (See also “Plankton”)

## **TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY**

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, 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.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at <http://water.usgs.gov/pubs/twri/>. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the “U.S. Geological Survey Techniques of Water-Resources Investigations.” Products can then be ordered by telephone, or online at <http://www.usgs.gov/sales.html>, or by FAX to (303)236-469 of an order form available online at <http://mac.usgs.gov/isb/pubs/forms/>. Prepayment by major credit card or by a check or money order payable to the “U.S. Geological Survey” is required.

### **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, chap. D1. 1975. 65 p.

1–D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI book 1, chap. D2. 1976. 24 p.

### **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, chap. D1. 1974. 116 p.

2–D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS–TWRI book 2, chap. D2. 1988. 86 p.

## Section E. Subsurface Geophysical Methods

2–E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS–TWRI book 2, chap. E1. 1971. 126 p.

2–E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS–TWRI book 2, chap. E2. 1990. 150 p.

## Section F. Drilling and Sampling Methods

2–F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS–TWRI book 2, chap. F1. 1989. 97 p.

## Book 3. Applications of Hydraulics

### Section A. Surface-Water Techniques

3–A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.

3–A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS–TWRI book 3, chap. A2. 1967. 12 p.

3–A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 p.

3–A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS–TWRI book 3, chap. A4. 1967. 44 p.

3–A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS–TWRI book 3, chap. A5. 1967. 29 p.

3–A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 p.

3–A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 p.

3–A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A8. 1969. 65 p.

3–A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 p.

3–A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A10. 1984. 59 p.

3–A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 p.

3–A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 p.

3–A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 p.

3–A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI book 3, chap. A14. 1983. 46 p.

3–A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI book 3, chap. A15. 1984. 48 p.

3–A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI book 3, chap. A16. 1985. 52 p.

3–A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS–TWRI book 3, chap. A17. 1985. 38 p.



- 3–A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI book 3, chap. A18. 1989. 52 p.
- 3–A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A19. 1990. 31 p.
- 3–A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 p.
- 3–A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS–TWRI book 3, chap. A21. 1995. 56 p.

## Section B. Ground-Water Techniques

- 3–B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 p.
- 3–B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 p.
- 3–B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI book 3, chap. B3. 1980. 106 p.
- 3–B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS–TWRI book 3, chap. B4. 1990. 232 p.
- 3–B4. *Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS–TWRI book 3, chap. B4. 1993. 8 p.
- 3–B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI book 3, chap. B5. 1987. 15 p.
- 3–B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI book 3, chap. B6. 1987. 28 p.
- 3–B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS–TWRI book 3, chap. B7. 1992. 190 p.
- 3–B8. *System and boundary conceptualization in ground-water flow simulation*, by T.E. Reilly: USGS–TWRI book 3, chap. B8. 2001. 29 p.

## Section C. Sedimentation and Erosion Techniques

- 3–C1. *Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI book 3, chap. C1. 1970. 55 p.
- 3–C2. *Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 p.
- 3–C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 p.

## Book 4. Hydrologic Analysis and Interpretation

### Section A. Statistical Analysis

- 4–A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.
- 4–A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 p.
- 4–A3. *Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at <http://water.usgs.gov/pubs/twri/twri4a3/>. (Accessed August 30, 2002.)

### Section B. Surface Water

- 4–B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI book 4, chap. B1. 1972. 18 p.
- 4–B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI book 4, chap. B2. 1973. 20 p.
- 4–B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS–TWRI book 4, chap. B3. 1973. 15 p.

## Section D. Interrelated Phases of the Hydrologic Cycle

4–D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

## Book 5. Laboratory Analysis

### Section A. Water Analysis

5–A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.

5–A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.

5–A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI book 5, chap. A3. 1987. 80 p.

5–A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.

5–A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI book 5, chap. A5. 1977. 95 p.

5–A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS–TWRI book 5, chap. A6. 1982. 181 p.

### Section C. Sediment Analysis

5–C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

## Book 6. Modeling Techniques

### Section A. Ground Water

6–A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI book 6, chap. A1. 1988. 586 p.

6–A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS–TWRI book 6, chap. A2. 1991. 68 p.

6–A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS–TWRI book 6, chap. A3. 1993. 136 p.

6–A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS–TWRI book 6, chap. A4. 1992. 108 p.

6–A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak: USGS–TWRI book 6, chap. A5. 1993. 243 p.

6–A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI book 6, chap. A6. 1996. 125 p.

6–A7. *User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002. 77 p.

## **Book 7. Automated Data Processing and Computations**

### **Section C. Computer Programs**

7–C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI book 7, chap. C1. 1976. 116 p.

7–C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI book 7, chap. C2. 1978. 90 p.

7–C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

## **Book 8. Instrumentation**

### **Section A. Instruments for Measurement of Water Level**

8–A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.

8–A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

### **Section B. Instruments for Measurement of Discharge**

8–B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

## **Book 9. Handbooks for Water-Resources Investigations**

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

9–A1. *National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.

9–A2. *National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.

9–A3. *National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.

9–A4. *National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.

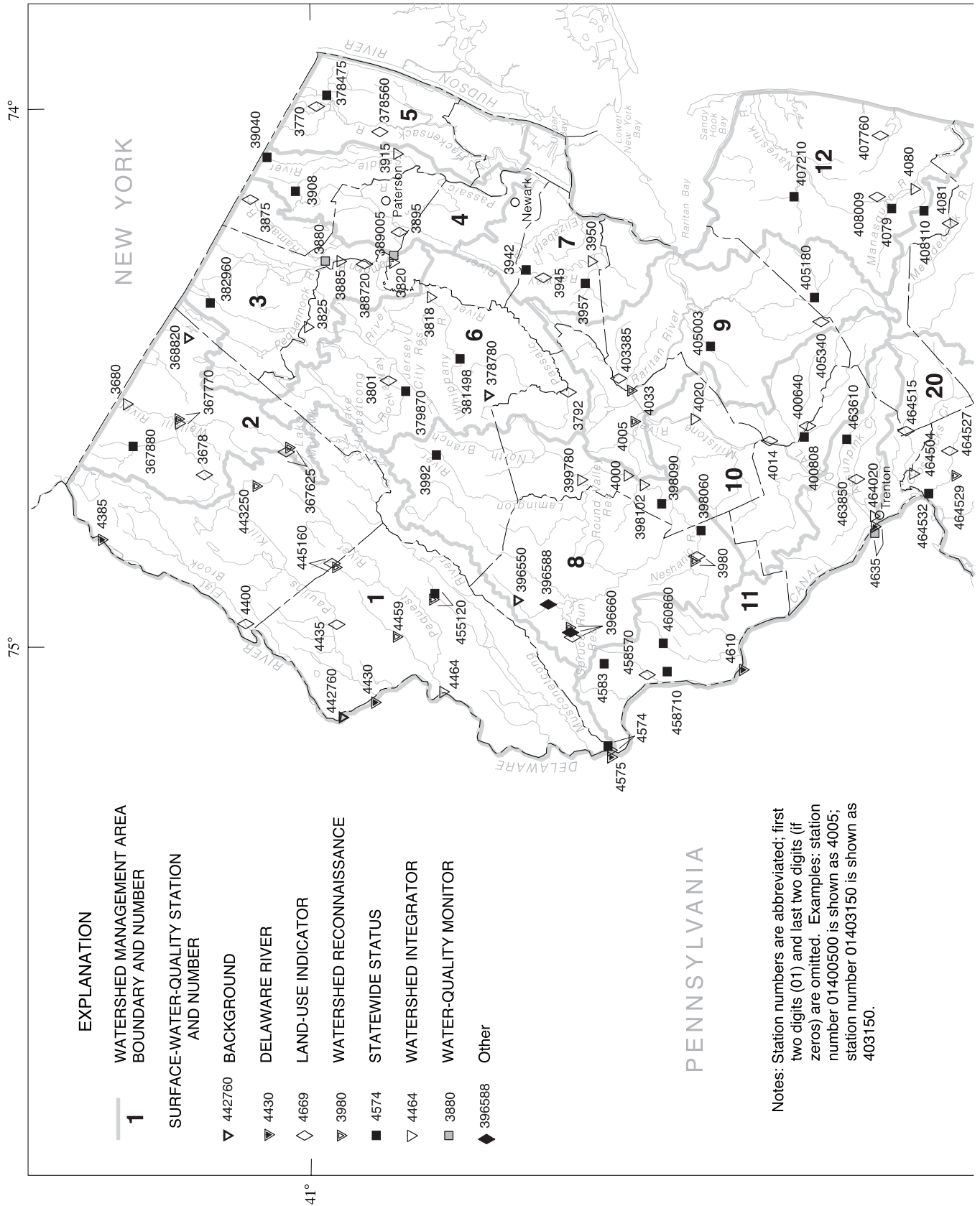
9–A5. *National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999. 149 p.

9–A6. *National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.

9–A7. *National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.

9–A8. *National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.

9–A9. *National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.



**EXPLANATION**

- 1** WATERSHED MANAGEMENT AREA BOUNDARY AND NUMBER
- SURFACE-WATER-QUALITY STATION AND NUMBER
  - ▽ 442760 BACKGROUND
  - ▽ 4430 DELAWARE RIVER
  - ◇ 4669 LAND-USE INDICATOR
  - ▽ 3980 WATERSHED RECONNAISSANCE
  - 4574 STATEWIDE STATUS
  - ▽ 4464 WATERSHED INTEGRATOR
  - 3880 WATER-QUALITY MONITOR
  - ◆ 396588 Other

PENNSYLVANIA

Notes: Station numbers are abbreviated; first two digits (01) and last two digits (if zero) are omitted. Examples: station number 01400500 is shown as 4005; station number 01403150 is shown as 403150.

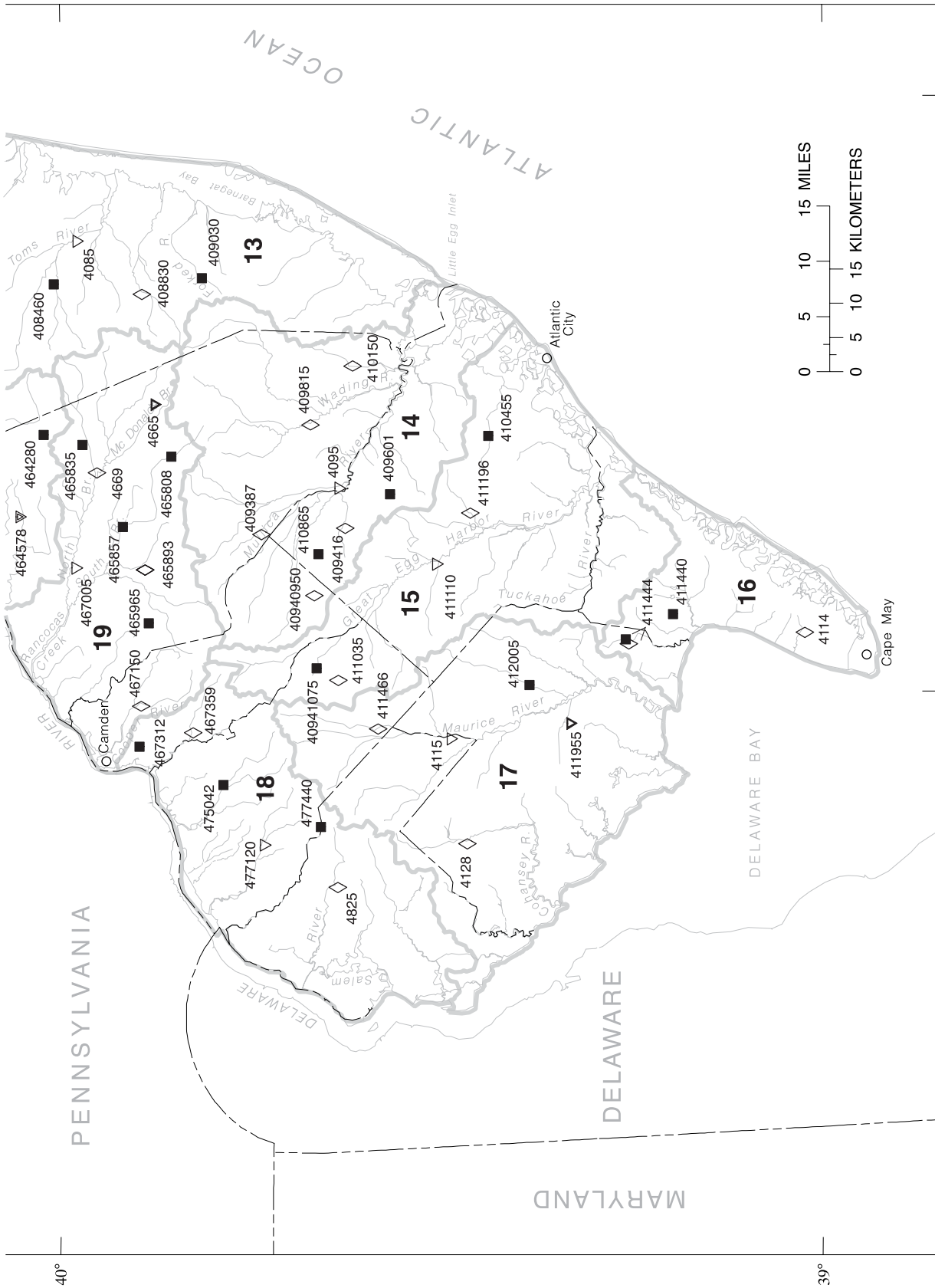
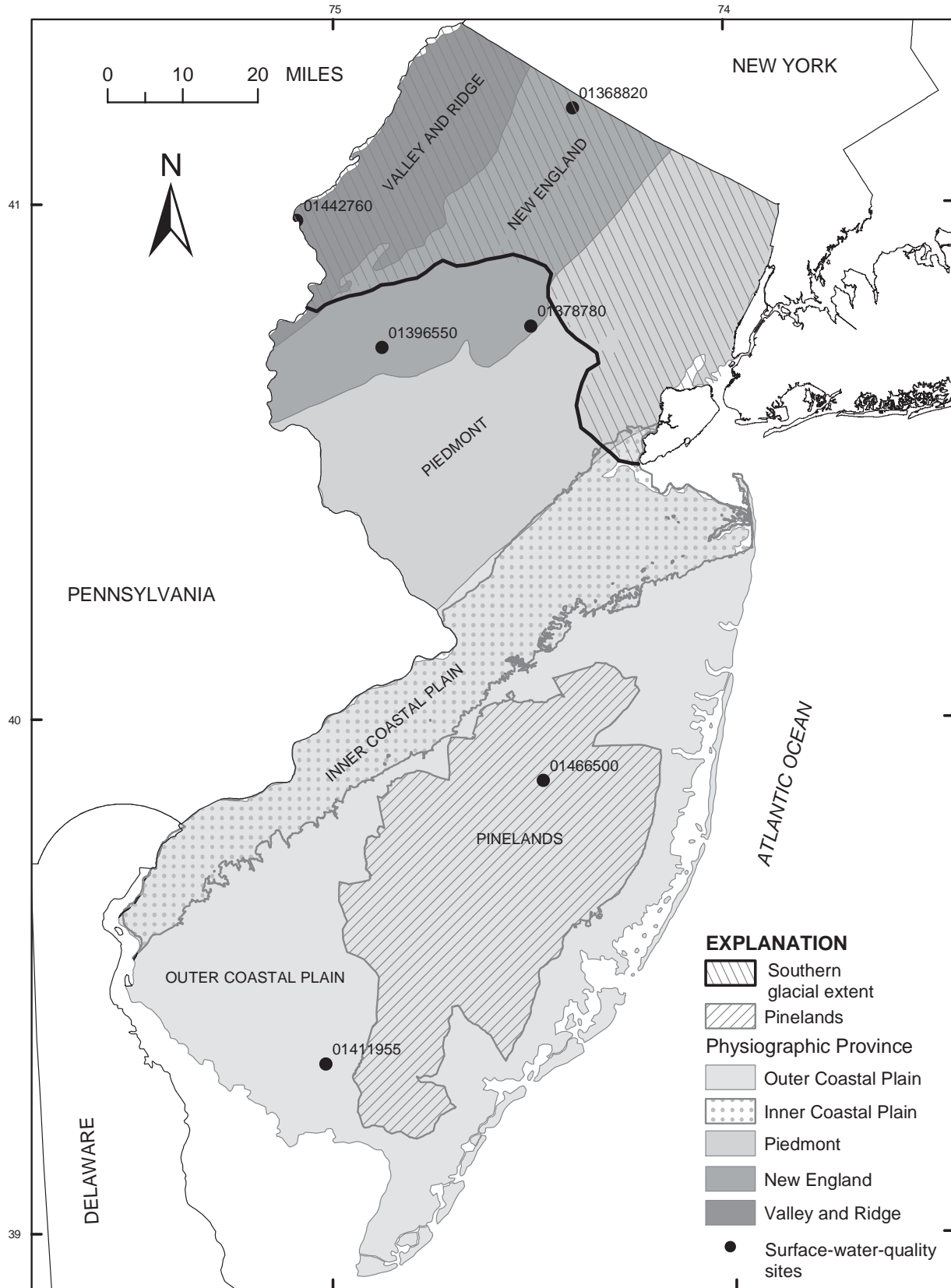
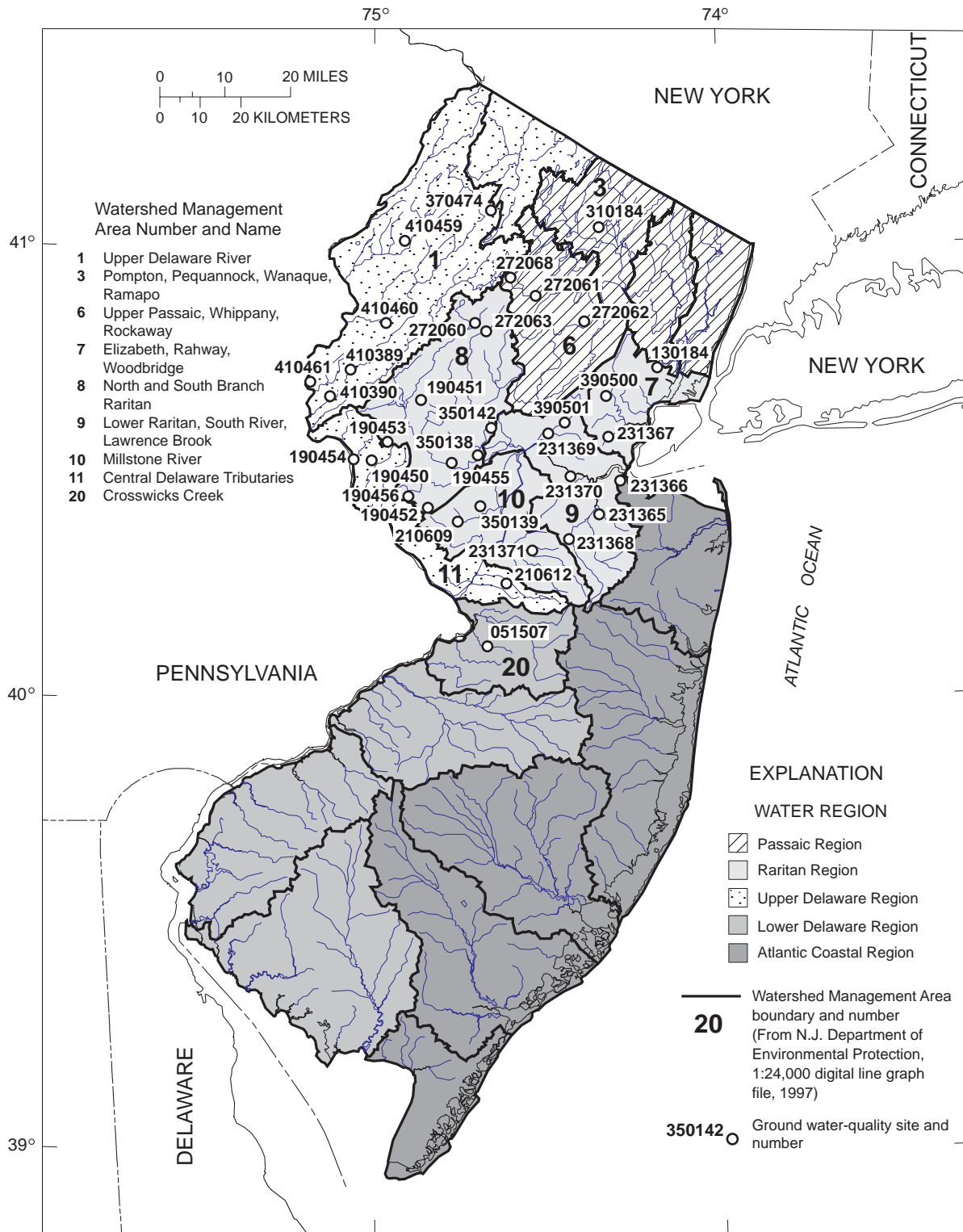


Figure 21. Locations and types of surface-water-quality stations.



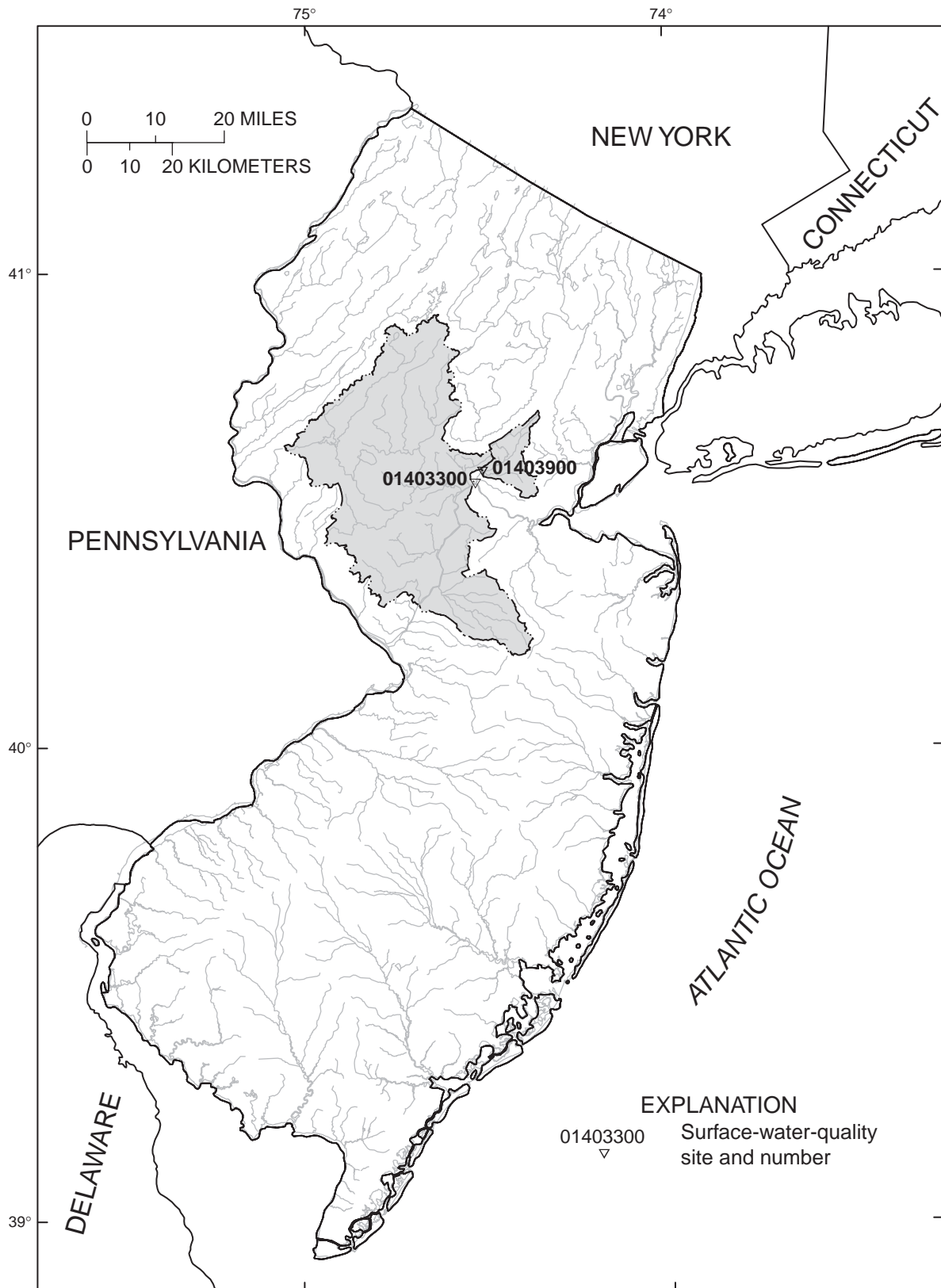
Base from U.S. Geological Survey digital line graph files, 1:24,000

**Figure 22.** Location of background surface-water-quality stations in the Ambient Stream Monitoring Network, water year 2003.



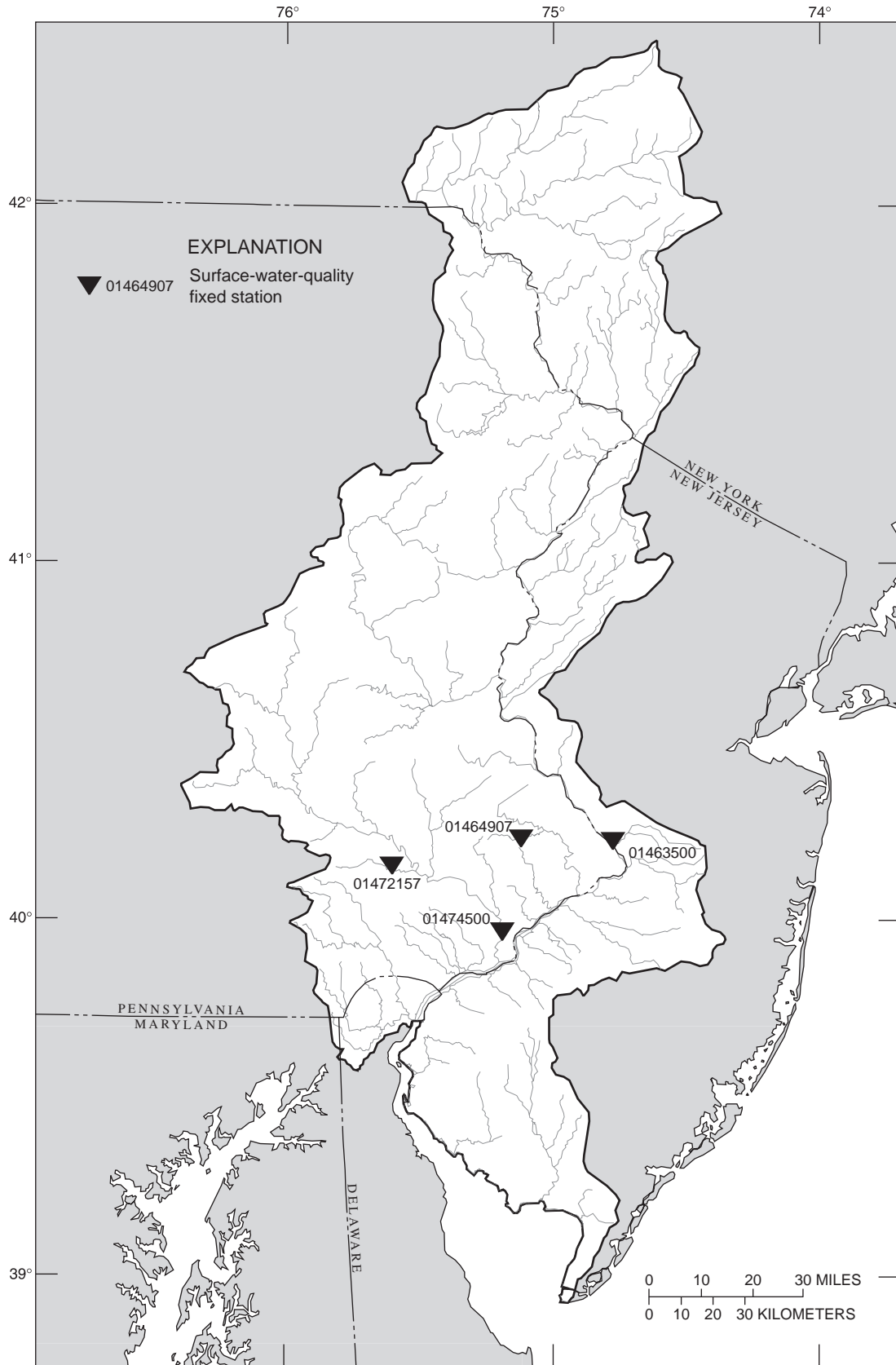
Base from U.S. Geological Survey digital line graph files, 1:24,000

**Figure 23.** Location of sites in the Ambient Ground-Water-Quality Network, water year 2003.



**Figure 24.** Location of stations in the Long Island-New Jersey National Water-Quality Assessment Program, surface-water low-intensity-phase network, water year 2003.





**Figure 25.** Location of stations in the Delaware River National Water-Quality Assessment Program, surface-water fixed station network, water year 2003.

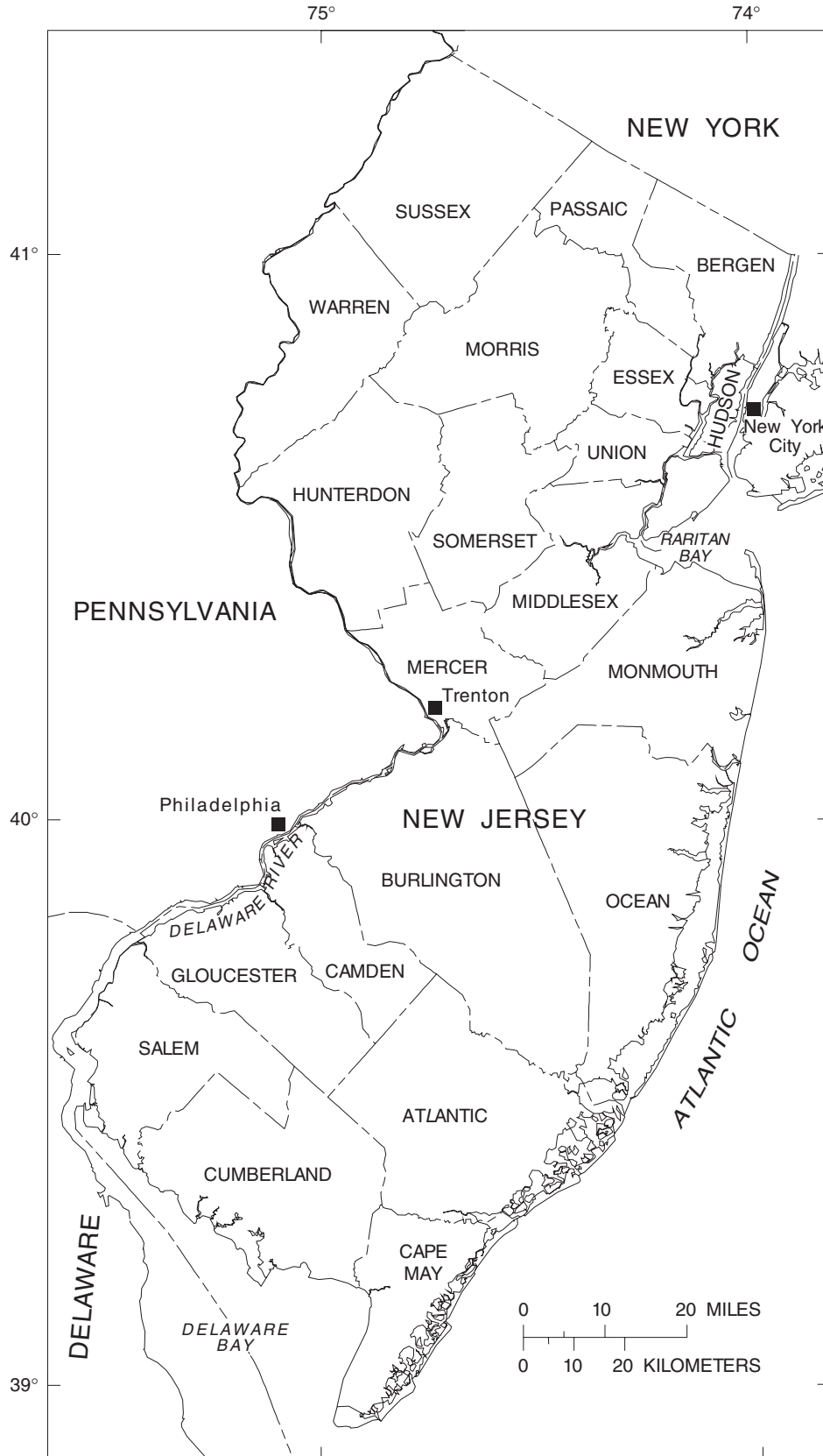
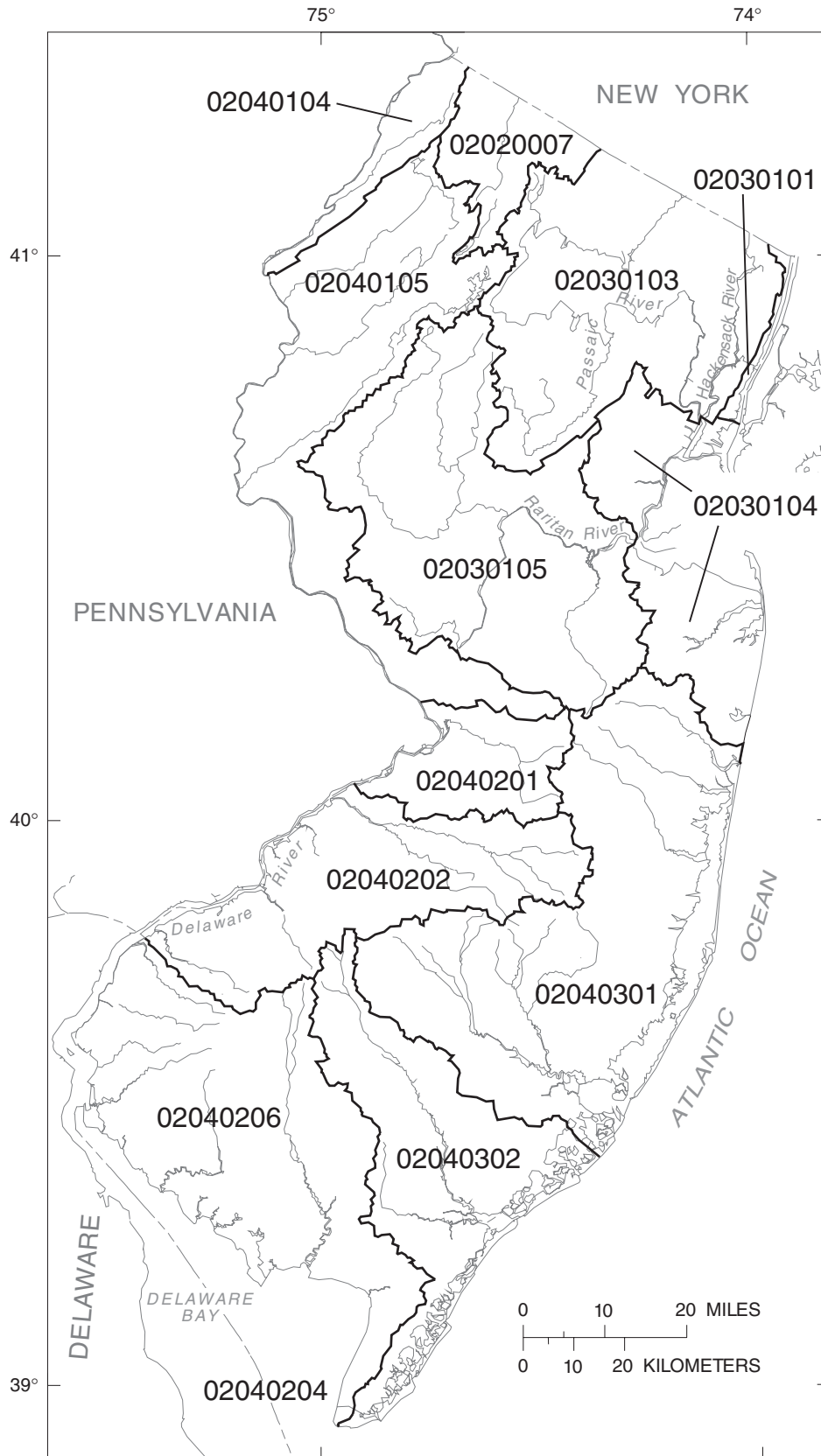


Figure 26. Counties in New Jersey.



**Figure 27.** Cataloging units and codes in New Jersey. (Modified from Seaber and others, 1987)

## 01367625 WALLKILL RIVER AT SPARTA, NJ

LOCATION.--Lat 41°02'25", long 74°37'47", Sussex County, Hydrologic Unit 02020007, 0.4 mi northeast of Sparta, 1.2 mi downstream of outlet of Lake Mohawk, and 1.8 mi east of Fox Hollow Lake.

DRAINAGE AREA.--5.88 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). Measurements made to verify calibration of continuous-record water-quality sensors met the recalibration criteria; therefore, the data were not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report.

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator and Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 2.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1100	4.6	2.8	0.080	0.059	747	12.7	107	7.4	700	7.0	7.0	200
MAR 03...	1220	20	3.8	0.073	0.054	752	12.8	96	7.9	784	-7.0	2.7	170
MAY 19...	1310	5.8	3.1	0.057	0.041	760	9.8	101	8.1	784	29.0	16.8	190
AUG 13...	0950	34	12	0.107	0.079	750	7.9	96	8.0	622	26.5	25.4	160

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 05...	47.3	20.0	1.54	64.8	137	127	<0.17	5.7	16.2	367	380	<1	0.33
MAR 03...	41.3	16.2	1.50	80.7	136	155	<0.17	4.6	15.8	399	412	<1	0.31
MAY 19...	46.2	18.8	1.69	73.4	132	151	<0.17	4.3	16.7	394	423	7	0.36
AUG 13...	38.7	15.5	1.68	59.3	116	114	<0.17	4.2	11.0	315	368	14	0.37

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 05...	<0.030	0.032	0.47	0.012	<0.020	0.10	0.011	0.024	0.80	0.91	0.9	<0.1	0.8
MAR 03...	0.078	0.067	0.46	0.005	<0.020	0.08	0.007	0.024	0.77	0.85	0.6	<0.1	0.6
MAY 19...	<0.030	<0.030	0.58	0.017	0.023	0.10	0.023	0.046	0.94	1.0	0.8	<0.1	0.8
AUG 13...	0.060	0.062	0.16	0.007	0.020	0.48	0.016	0.063	0.54	1.0	3.9	<0.1	3.9

01367625 WALLKILL RIVER AT SPARTA, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 05...	3.6	E1.3	--	24
MAR 03...	3.3	<1.0	--	15
MAY 19...	2.4	E1.3	5.10	19
AUG 13...	4.4	2.5	49.8	28

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

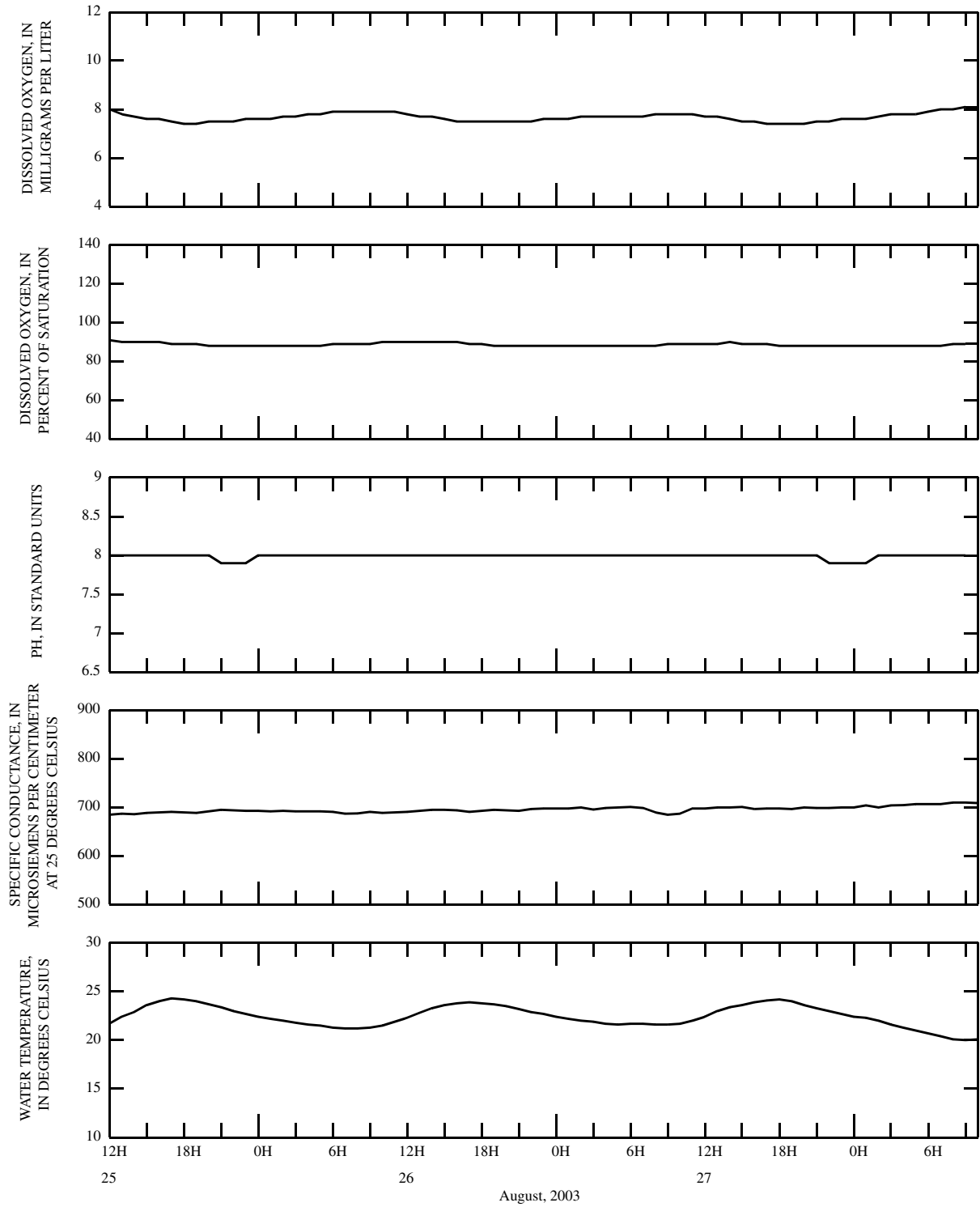
Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG 13...	1220	190	<100	70	SEP 03...	1145	650	400	1,300
20...	1130	140	800	300	10...	1230	60	100	230
27...	1235	140	700	800					

Remark codes used in this table:  
 < -- Less than

HUDSON RIVER BASIN

01367625 WALLKILL RIVER AT SPARTA, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003



**Figure 28.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01367625 Wallkill River at Sparta, water year 2003.

## 01367770 WALLKILL RIVER NEAR SUSSEX, NJ

LOCATION.--Lat 41°11'38", long 74°34'31", 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.

DRAINAGE AREA.--60.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). Measurements made to verify calibration of continuous-record water-quality sensors met the recalibration criteria; therefore, the data were not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report.

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator and Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 2.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1240	36	1.6	0.141	0.108	747	12.1	99	7.7	621	7.5	6.0	220
FEB 05...	1200	97	3.5	0.102	0.079	750	13.9	99	7.9	631	3.0	0.7	210
MAY 22...	1100	57	2.4	0.128	0.097	758	8.3	82	7.8	598	12.5	14.3	210
AUG 27...	1240	38	1.7	0.129	0.098	748	8.5	98	7.7	675	30.0	21.4	260

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 05...	51.9	21.3	2.35	42.6	163	80.1	<0.17	8.0	27.2	339	351	5	0.38
FEB 05...	49.0	20.4	1.81	42.9	157	84.7	<0.17	7.2	20.6	326	342	1	0.32
MAY 22...	49.8	20.8	1.67	42.2	168	79.3	<0.17	5.8	14.2	318	329	2	0.43
AUG 27...	58.4	26.7	2.58	44.0	215	80.1	<0.17	9.3	14.6	370	366	7	0.40

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 05...	<0.030	<0.030	1.69	<0.003	<0.020	<0.02	0.018	0.030	2.1	--	0.6	<0.1	0.6
FEB 05...	0.051	0.032	1.06	0.069	<0.020	0.04	0.012	0.026	1.4	1.4	0.4	<0.1	0.4
MAY 22...	<0.030	<0.030	0.85	0.010	--	0.03	0.022	0.036	1.3	1.3	0.4	<0.1	0.4
AUG 27...	0.036	0.045	1.24	0.009	0.031	<0.02	0.041	0.050	1.6	--	0.2	<0.1	0.2

HUDSON RIVER BASIN

01367770 WALLKILL RIVER NEAR SUSSEX, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 05...	5.0	E1.2	--	36
FEB 05...	3.3	E1.0	--	15
MAY 22...	3.7	E2.0	3.50	19
AUG 27...	3.6	<1.0	1.20	32

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

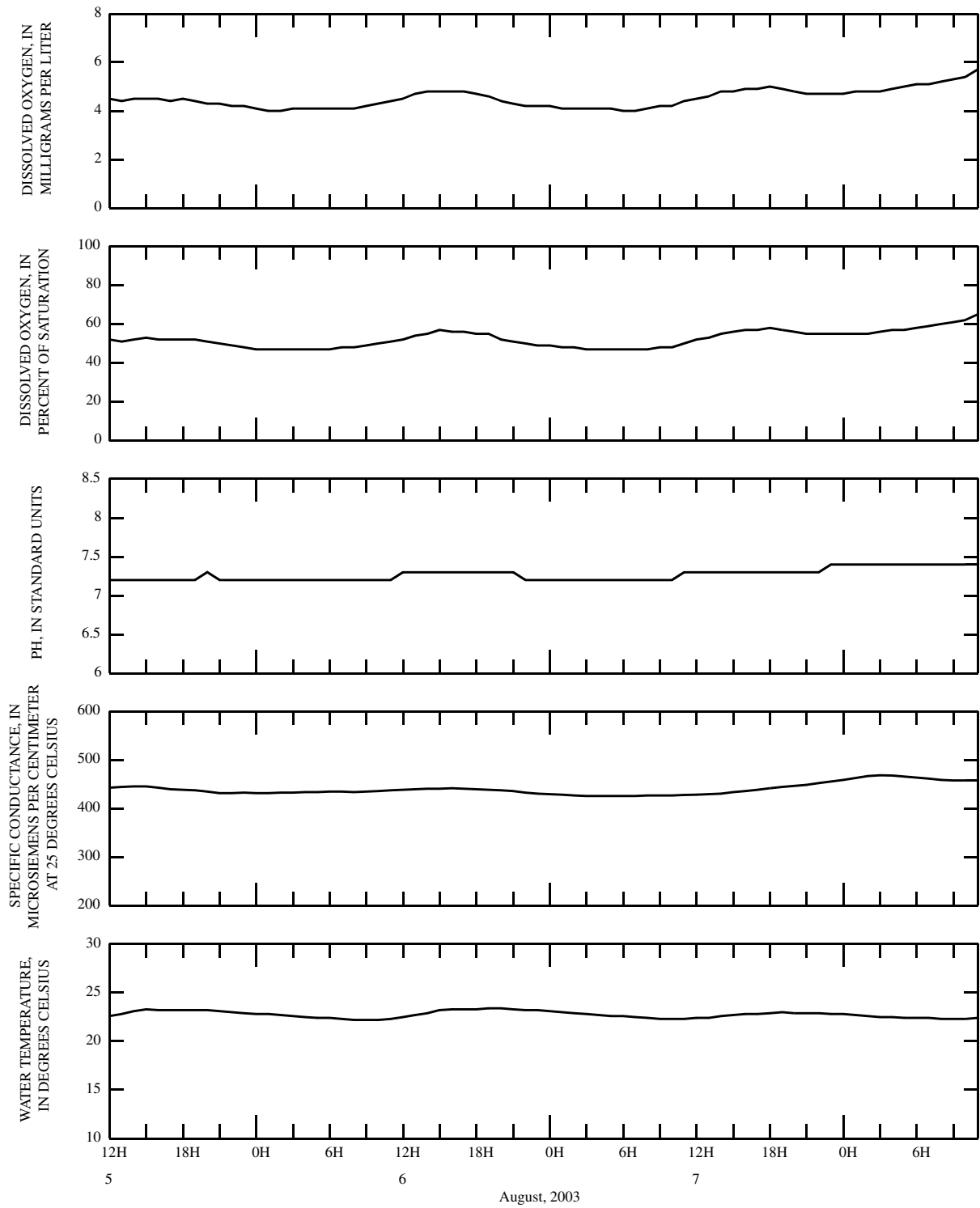
Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG 13...	1120	380	<100	170	SEP 03...	1055	740	100	400
20...	1107	270	<100	70	10...	1116	80	<100	230
27...	1145	40	300	300					

Remark codes used in this table:  
 < -- Less than



01367770 WALLKILL RIVER NEAR SUSSEX, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003



**Figure 29.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01367770 Wallkill River at Sussex, water year 2003.

## 01367800 PAPAKATING CREEK AT PELLETTOWN, NJ

LOCATION.--Lat 41°09'45", long 74°40'30", Sussex County, Hydrologic Unit 02020007, at bridge on County Route 565 in Pellettown, 1.5 mi southeast of Wykertown, and 4.8 mi upstream of confluence with West Branch.

DRAINAGE AREA.--15.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1959-63, 1999 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 2.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1340	7.0	0.9	0.132	0.098	747	14.4	117	7.8	419	8.0	5.5	130
MAR 03...	1000	138	5.2	0.139	0.107	752	13.2	92	6.4	295	-7.0	0.0	71
MAY 19...	1040	6.8	2.2	0.143	0.107	760	11.1	102	7.7	405	21.0	11.7	140
AUG 27...	1330	6.6	2.1	0.157	0.119	730	9.4	109	7.9	436	28.5	20.3	170

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 05...	42.5	6.06	1.83	24.1	E65	53.9	<0.17	7.4	47.7	--	259	1	0.25
MAR 03...	22.5	3.59	1.74	22.8	42	47.1	<0.17	6.1	18.5	152	168	3	0.35
MAY 19...	45.2	6.08	1.24	25.1	95	49.0	<0.17	6.8	21.0	217	242	9	0.36
AUG 27...	56.0	7.58	1.74	23.8	121	46.4	<0.17	10.8	19.1	244	264	1	0.34

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 05...	<0.030	<0.030	0.57	<0.003	<0.020	0.07	0.011	0.014	0.82	0.89	0.2	<0.1	0.2
MAR 03...	0.056	0.058	0.88	0.005	0.023	0.06	0.024	0.040	1.2	1.3	1.1	<0.1	1.1
MAY 19...	<0.030	<0.030	1.30	0.014	<0.020	0.03	0.018	0.027	1.7	1.7	0.2	<0.1	0.2
AUG 27...	0.024	0.028	1.46	0.006	<0.020	0.04	0.018	0.033	1.8	1.8	0.3	<0.1	0.3

01367800 PAPA KATING CREEK AT PELLETTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 05...	4.6	E1.1	--	E8.6
MAR 03...	3.9	<1.0	--	<13
MAY 19...	3.7	<1.1	2.70	13
AUG 27...	4.0	<1.0	1.30	15

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG					SEP				
13...	1145	260	200	230	03...	1115	1,380	1,100	800
20...	1126	330	<100	1,100	10...	1133	130	<100	700
27...	1210	240	500	260					

Remark codes used in this table:  
 < -- Less than

## 01367880 CLOVE BROOK TRIBUTARY AT ROSE MORROW ROAD, NEAR COLESVILLE, NJ

LOCATION.--Lat 41°15'41", long 74°37'26", Sussex County, Hydrologic Unit 02020007, on bridge at Rose Morrow Road, 0.2 mi upstream of Clove Brook, 1.6 mi southeast of Colesville, and 2.2 mi northeast of Libertyville.

DRAINAGE AREA.--4.46 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 2.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 14...	1100	7.0	0.140	0.107	751	10.1	82	7.3	280	8.0	6.0	94	30.4
MAR 11...	1100	5.0	0.066	0.050	755	12.8	89	7.1	247	0.0	0.3	68	21.4
MAY 07...	1100	5.5	0.118	0.091	747	11.3	108	7.4	251	19.0	12.4	79	25.4
AUG 14...	0930	11	0.233	0.178	756	6.6	71	7.2	280	25.0	18.7	100	29.5

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 14...	4.42	2.79	14.0	51	29.2	<0.17	7.9	28.8	154	158	11	0.34	0.040
MAR 11...	3.44	2.00	15.1	31	36.9	<0.17	6.9	16.5	129	149	7	0.27	0.067
MAY 07...	3.83	1.66	14.2	51	31.5	<0.17	5.5	15.8	133	141	7	0.29	<0.030
AUG 14...	4.57	4.52	15.3	67	29.1	<0.17	9.9	14.6	160	178	20	1.8	0.078

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 14...	0.041	1.33	0.007	0.053	0.07	0.062	0.098	1.7	1.7	0.5	<0.1	0.5	3.9
MAR 11...	0.073	1.88	0.006	0.033	0.08	0.028	0.050	2.1	2.2	0.5	<0.1	0.5	2.3
MAY 07...	<0.030	0.92	0.006	0.046	0.08	0.048	0.089	1.2	1.3	0.5	<0.1	0.5	2.9
AUG 14...	0.098	1.68	0.016	0.127	0.11	0.143	0.23	3.4	3.5	1.0	<0.1	1.0	7.2

01367880 CLOVE BROOK TRIBUTARY AT ROSE MORROW ROAD, NEAR COLESVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	2.0	--	17
MAR 11...	E1.3	--	<13
MAY 07...	<1.0	10.4	18
AUG 14...	E1.1	2.60	37

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 14...	0930	--	--	--	--	--	E1	12.9	<0.06	29	<0.04	E.5	2.3
14...	0930	6.86	4,600	51,000	36	2.1	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 14...	850	0.67	134	<0.02	2.60	E.4	<0.16	3	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	1	0.250	14	7.0	26

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, ug/kg (49405)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	17,000	16	350	<0.01	16	<1	100	<75	E19	<75	E14	E27	E15

## 01367880 CLOVE BROOK TRIBUTARY AT ROSE MORROW ROAD, NEAR COLESVILLE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphthalene bed sed <2 mm, wsv nat ug/kg (49948)	2-Methylanthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flourene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace-naphthene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace-naphthylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthracene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]anthracene, bed sed <2 mm, wsv nat ug/kg (49436)	Benzo[a]pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo[b]fluoranthene, bed sed <2 mm, ug/kg (49458)	Benzo[ghi]perylene, bed sed <2 mm, ug/kg (49408)	Benzo[k]fluoranthene, bed sed <2 mm, ug/kg (49397)
AUG 14... 14...	-- E70	-- <75	-- E21	-- E26	-- E26	-- E16	-- E24	-- E44	-- 100	-- 92	-- 100	-- 83	-- 76

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chrysene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo[a,h]anthracene, bed sed <2 mm, wsv nat field, ug/kg (49461)	Fluoranthene, bed sed <2 mm, wsv nat field, ug/kg (49466)	Indeno[1,2,3-cd]pyrene, bed sed <2 mm, wsv nat field, ug/kg (49390)	Iso-phorone, bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphthalene, bed sed <2 mm, wsv nat field, ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenanthridine, bed sed <2 mm, wsv nat field, ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sediment, dry svd percent <.063mm (80164)	Bed sediment falldia dst wat percent <.002mm (80294)
AUG 14... 14...	-- 120	-- E65	-- 270	-- E62	-- <75	-- <75	-- E6	-- E180	-- 160	-- <75	-- 210	-- 55	-- 11

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sediment, falldia dst wat percent <.004mm (80157)	Bed sediment, falldia dst wat percent <.008mm (80293)	Bed sediment, falldia dst wat percent <.016mm (80282)	Bed sediment, falldia dst wat percent <.031mm (80283)
AUG 14... 14...	-- 18	-- 22	-- 30	-- 41

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Dichloroethane, water unfltrd ug/L (34496)	1,1-Dichloroethane, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water unfltrd ug/L (34541)	1,3-Dichlorobenzene, water unfltrd ug/L (34566)	1,4-Dichlorobenzene, water unfltrd ug/L (34571)	Benzene, water unfltrd ug/L (34030)	Bromodichloromethane, water unfltrd ug/L (32101)	Chlorobenzene, water unfltrd ug/L (34301)
MAR 11... 11...	1100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chloro-di-fluoromethane, water unfltrd ug/L (34668)	Di-chloromethane, water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 11... 11...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

01367880 CLOVE BROOK TRIBUTARY AT ROSE MORROW ROAD, NEAR COLESVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 11...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:

< -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 07...	1100	<0.006	E.007	<0.006	<0.004	<0.005	0.008	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 07...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.001	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 07...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:

< -- Less than

E -- Estimated value

01367880 CLOVE BROOK TRIBUTARY AT ROSE MORROW ROAD, NEAR COLESVILLE, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
AUG					SEP				
13...	1058	660	27	>16000	03...	1040	4,600	7,600	16,000
20...	1049	2,000	7,100	>16000	10...	1102	550	3,500	9,000
27...	1120	1,200	10,000	16,000					

Remark codes used in this table:

&gt; -- Greater than



## 01368000 WALLKILL RIVER NEAR UNIONVILLE, NY

LOCATION.--Lat 41°15'36", long 74°32'56", Sussex County, New Jersey, Hydrologic Unit 02020007, at bridge on Quarryville-Milton Road, 2.0 mi south of New York-New Jersey State line, 3.0 mi south of Unionville.

DRAINAGE AREA.--140 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963-78, 1991-97, 2001 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 2.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 06...	0910	103	3.9	0.183	0.140	738	10.3	86	8.0	489	6.0	6.0	170
FEB 05...	0930	223	8.5	0.100	0.076	749	13.1	92	7.7	529	-2.0	0.1	160
MAY 19...	1320	97	11	0.165	0.125	738	9.2	96	7.6	506	28.0	15.8	160
AUG 27...	1040	59	11	0.193	0.146	748	7.2	83	7.2	582	28.0	21.6	190

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 06...	45.0	14.0	2.30	33.4	E106	62.2	<0.17	8.0	39.1	--	292	5	0.35
FEB 05...	41.1	13.0	1.88	39.5	105	76.5	<0.17	6.8	23.1	271	288	13	0.36
MAY 19...	41.5	14.2	1.54	33.2	136	67.4	<0.17	4.6	17.4	265	276	17	0.40
AUG 27...	48.0	17.7	2.42	35.4	168	71.2	<0.17	8.7	16.5	307	322	13	0.47

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 06...	<0.030	<0.030	1.01	<0.003	E.025	0.04	0.023	0.038	1.4	1.4	0.4	<0.1	0.4
FEB 05...	0.055	0.041	1.29	0.026	0.023	0.06	0.019	0.040	1.7	1.7	0.4	<0.1	0.4
MAY 19...	<0.030	<0.030	0.74	0.009	<0.020	0.10	0.021	0.052	1.1	1.2	1.0	<0.1	1.0
AUG 27...	0.049	0.051	1.33	0.011	0.024	0.10	0.032	0.066	1.8	1.9	0.7	<0.1	0.7

HUDSON RIVER BASIN

01368000 WALLKILL RIVER NEAR UNIONVILLE, NY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 06...	7.2	E1.1	--	26
FEB 05...	3.1	E1.4	--	15
MAY 19...	4.3	E1.4	4.50	14
AUG 27...	4.9	<1.0	8.40	30

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG 13...	1030	110	400	300	SEP 03...	1023	5,600	5,600	9,000
20...	1027	120	<100	300	10...	1034	20	<100	300
27...	1100	20	300	130					

Remark codes used in this table:  
 < -- Less than

01368820 DOUBLE KILL AT WAWAYANDA, NJ

LOCATION.--Lat 41°11'13", long 74°25'12", Sussex County, Hydrologic Unit 02020007, 1,500 ft east of Wawayanda, 0.4 mi downstream of Wawayanda Lake, 3.5 mi east of Vernon, and 4.6 mi upstream of Wawayanda Creek.

DRAINAGE AREA.--6.46 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Background, New Jersey Department of Environmental Protection Watershed Management Area 2.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1700	3.9	0.7	0.143	0.105	747	11.9	98	7.8	265	8.0	6.0	69
MAR 04...	1000	21	0.8	0.132	0.098	737	12.8	93	7.6	280	-0.5	1.0	72
MAY 19...	1130	3.3	1.0	0.131	0.096	738	9.6	101	7.4	305	23.0	16.6	72
AUG 27...	1110	0.23	0.9	0.164	0.122	730	7.2	84	7.4	277	25.0	20.5	71

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 05...	17.3	6.15	0.89	23.1	E47	46.1	<0.17	3.0	10.5	--	154	3	0.33
MAR 04...	18.4	6.29	0.93	24.6	60	47.3	<0.17	3.6	11.2	149	157	1	0.30
MAY 19...	18.3	6.38	0.84	28.5	50	53.8	<0.17	0.6	9.6	148	167	4	0.32
AUG 27...	18.6	6.03	0.57	23.9	57	45.2	<0.17	4.8	4.9	139	158	1	0.29

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 05...	<0.030	<0.030	<0.05	<0.003	<0.020	0.05	0.006	0.013	--	--	0.6	<0.1	0.6
MAR 04...	<0.030	<0.030	0.13	<0.003	<0.020	0.03	0.004	0.010	0.43	0.46	<0.1	<0.1	<0.1
MAY 19...	<0.030	<0.030	<0.05	<0.003	<0.020	0.04	0.008	0.015	--	--	0.3	<0.1	0.3
AUG 27...	<0.020	0.030	0.19	<0.003	<0.020	<0.02	0.016	0.022	0.48	--	0.2	<0.1	0.2

## HUDSON RIVER BASIN

01368820 DOUBLE KILL AT WAWAYANDA, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcrtd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 05...	5.4	<1.0	--	15
MAR 04...	4.0	<1.0	--	E8.5
MAY 19...	4.4	<1.0	2.30	E11
AUG 27...	4.7	<1.0	0.500	13

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed total, mg/kg (00668)	Total carbon, bed total, g/kg (00693)	Inorganic carbon, bed total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)
AUG 27...	1109	Field Blank	--	--	--	--	--	--	--	--	--
27...	1110	Environmental	--	--	--	--	--	<2	9.5	<0.06	13
27...	1110	Bed material	7.21	320	7,700	8.7	<0.2	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cadmium water, unfltrd recover -able, ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd recover -able, ug/L (01147)
AUG 27...	--	--	<0.2	--	--	<0.08	--	--	<0.02	--	<0.06	--	--
27...	<0.04	<0.8	--	E.6	130	--	0.07	44.6	--	<0.02	--	1.25	0.7
27...	--	--	--	--	--	--	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)
AUG 27...	--	M	--	--	--	--	--	--	--	--	--	--	--
27...	<0.16	--	E1	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	1	0.120	10	4.0	10	25,000	11	64	<0.01	8.7

01368820 DOUBLE KILL AT WAWAYANDA, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, bed sediment total, ug/g (01148)	Zinc, bed sediment recoverable, ug/g (01093)	1,2-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sediment <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sediment <2 mm, ug/kg (49410)	1-Methylpyrene, bed sediment <2 mm, wsv nat ug/kg (49388)	236Tri-methylnaphthalene, bed sediment <2 mm, ug/kg (49405)	2,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49406)	2-Ethyl-naphthalene, bed sediment <2 mm, wsv nat ug/kg (49948)	2-Methyl-anthracene, bed sediment <2 mm, ug/kg (49435)	Cyclopenta-phenanthrene, bed sediment <2 mm, ug/kg (49411)	9H-Fluorene, bed sediment <2 mm, wsv nat ug/kg (49399)
AUG 27...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	<1	56	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Acenaphthene, bed sediment <2 mm, wsv nat ug/kg (49429)	Acenaphthylene, bed sediment <2 mm, wsv nat ug/kg (49428)	Anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]-anthracene, bed sediment <2 mm, wsv nat ug/kg (49436)	Benzo[a]-pyrene, bed sediment <2 mm, wsv nat ug/kg (49389)	Benzo[b]-fluoranthene, bed sediment <2 mm, ug/kg (49458)	Benzo[ghi]-perylene, bed sediment <2 mm, ug/kg (49408)	Benzo[k]-fluoranthene, bed sediment <2 mm, ug/kg (49397)	Chrysene, bed sediment <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthracene, bed sediment <2 mm, ug/kg (49461)	Fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49466)	Indeno[1,2,3-cd]pyrene, bed sediment <2 mm, ug/kg (49390)	Iso-phorone, bed sediment <2 mm, wsv nat field, ug/kg (49400)
AUG 27...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	<50	E14	E13	E17	E16	E36	<50	E16	E12	<50	E22	<50	<50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Naphthalene, bed sediment <2 mm, wsv nat ug/kg (49402)	PCBs, bed sediment ug/kg (39519)	p-Cresol, bed sediment <2 mm, wsv nat field, ug/kg (49451)	Phenanthrene, bed sediment <2 mm, wsv nat field, ug/kg (49409)	Phenanthrene, bed sediment <2 mm, wsv nat field, ug/kg (49393)	Pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49387)	Bed sediment, dry sved, percent <.063mm (80164)	Bed sediment, falldia, percent <.002mm (80294)	Bed sediment, falldia, percent <.004mm (80157)	Bed sediment, falldia, percent <.008mm (80293)	Bed sediment, falldia, percent <.016mm (80282)	Bed sediment, falldia, percent <.031mm (80283)
AUG 27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	E7	<5	<50	E14	<50	E18	8.8	1.6	2.4	3.4	4.9	6.7

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113, water unfltrd ug/L (77652)	1,1-Dichloroethane, water unfltrd ug/L (34496)	1,1-Dichloroethene, water unfltrd ug/L (34501)	1,2-Dichlorobenzene, water unfltrd ug/L (34536)	1,2-Dichloroethane, water unfltrd ug/L (32103)	1,2-Dichloropropane, water unfltrd ug/L (34541)	1,3-Dichlorobenzene, water unfltrd ug/L (34566)	1,4-Dichlorobenzene, water unfltrd ug/L (34571)	Benzene, water unfltrd ug/L (34030)	Bromodichloromethane, water unfltrd ug/L (32101)	Chlorobenzene, water unfltrd ug/L (34301)
MAR 04...	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water unfltrd ug/L (32105)	Di-chlorodifluoromethane, water unfltrd ug/L (34668)	Di-chloromethane, water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

01368820 DOUBLE KILL AT WAWAYANDA, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 04...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 19...	1130	<0.006	E.004	<0.006	<0.004	<0.005	E.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 19...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.004	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 19...	<0.022	E.01	E.003	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

01368820 DOUBLE KILL AT WAWAYANDA, NJ—Continued

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG					SEP				
13...	0950	190	200	170	03...	0935	190	<100	230
20...	0940	40	<100	130	10...	1000	100	<100	60
27...	1030	200	<100	130					

Remark codes used in this table:

< -- Less than

## 01376304 HUDSON RIVER SOUTH OF HASTINGS-ON-HUDSON, NY

PERIOD OF RECORD.--May 1992 to current year.

CHEMICAL DATA: 1993 (c), 1994 (d), 1995 (b).

PESTICIDE DATA: 1994 (a).

ORGANIC DATA: OC--1993 (c), 1994 (d), 1995 (b).

NUTRIENT DATA: 1993 (c), 1994 (d), 1995 (b).

BIOLOGICAL DATA: Phytoplankton--1993 (a).

SEDIMENT DATA: 1993-94 (c), 1995 (b).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1992 to current year.

WATER TEMPERATURE: May 1992 to current year.

INSTRUMENTATION.--Water-quality monitor provides 15-minute-interval readings.

REMARKS.--Satellite and telephone temperature and specific conductance telemeter at station. Interruption of record was due to malfunction of recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum (water years 1992-97, 1999-2003), 31,100  $\mu\text{S}/\text{cm}$ , Dec. 11, 1992; minimum (water years 1992-97, 1999-2003), 76  $\mu\text{S}/\text{cm}$ , Jan. 30, 31, 1996.

WATER TEMPERATURE: Maximum, 29.5°C, Aug. 2, 4, 2002; minimum, 0.0°C on many days during winter periods, except 1998-99, 2002.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 30,400  $\mu\text{S}/\text{cm}$ , Feb. 17; minimum, 207  $\mu\text{S}/\text{cm}$ , Apr. 2, 3.

WATER TEMPERATURE: Maximum, 28.5°C, Aug. 22; minimum, 0.0°C on many days during winter period.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23,600	16,800	19,100	18,100	10,700	13,800	9,520	4,180	6,430	16,300	7,190	10,000
2	24,300	15,900	19,100	17,400	11,200	14,300	8,750	3,500	5,410	11,900	6,660	8,980
3	24,800	18,500	20,800	18,300	12,500	14,800	6,720	2,800	4,200	15,300	6,400	8,930
4	26,900	20,300	23,100	20,100	12,800	15,600	12,500	2,530	5,110	9,330	4,580	6,400
5	25,700	19,700	22,100	19,600	12,000	15,000	14,500	2,540	6,880	8,140	3,370	5,190
6	25,200	18,000	21,100	22,500	12,700	15,800	17,200	5,060	8,370	7,280	1,910	4,300
7	26,500	19,700	22,000	16,000	11,200	13,000	13,100	3,600	7,350	5,220	1,440	2,830
8	25,200	18,600	21,200	18,400	11,100	14,000	9,820	2,940	5,830	4,250	1,880	2,850
9	25,200	19,000	21,600	14,100	9,570	11,500	10,900	2,610	4,760	5,160	1,750	3,310
10	25,700	19,100	21,800	17,300	10,300	12,300	12,300	3,610	6,150	6,160	2,420	4,030
11	26,400	19,600	21,900	14,100	9,520	11,500	13,800	4,030	8,490	5,430	1,990	2,850
12	26,100	18,700	21,600	13,100	9,080	10,900	16,300	5,950	9,240	4,660	1,850	3,140
13	22,900	17,200	19,800	14,200	9,340	11,500	20,600	4,990	10,400	7,580	2,620	4,550
14	19,500	15,700	16,900	14,900	8,480	10,700	19,000	6,420	11,500	11,500	3,860	6,920
15	21,900	16,100	18,700	12,300	7,410	9,450	12,400	6,590	9,770	15,900	6,590	9,260
16	22,900	17,300	20,400	16,200	8,060	10,800	14,200	9,370	11,300	14,500	5,930	9,730
17	20,500	15,300	17,100	17,500	10,200	13,700	14,700	9,900	12,500	18,300	9,050	12,500
18	17,800	14,300	16,300	13,000	8,220	9,440	16,300	12,000	13,700	22,400	10,200	14,700
19	18,300	14,600	16,600	12,500	7,480	9,520	18,200	12,200	13,900	22,400	13,200	15,900
20	17,000	14,300	15,500	12,800	8,190	9,850	20,200	12,300	14,700	17,100	11,200	14,100
21	16,600	14,000	15,200	11,000	6,560	8,460	16,700	9,580	11,800	15,600	10,900	12,600
22	16,900	13,700	14,900	11,000	5,380	7,140	11,800	8,240	9,720	14,100	10,000	11,800
23	15,900	12,500	14,000	7,100	1,800	3,630	9,720	6,840	8,250	14,400	9,470	10,900
24	16,900	12,600	14,100	3,140	1,310	2,320	8,280	5,910	7,120	16,600	10,400	13,400
25	17,100	12,800	14,400	4,270	1,220	2,080	16,300	6,400	9,470	21,200	11,700	14,700
26	22,700	12,500	16,400	6,800	1,510	3,340	8,340	4,320	5,780	18,900	12,500	14,900
27	15,100	10,600	12,900	8,750	3,230	5,370	11,600	4,210	7,200	17,100	11,900	14,500
28	14,100	9,760	11,900	8,920	3,110	5,220	11,000	4,480	7,400	20,900	11,800	15,200
29	15,100	9,350	12,300	14,800	3,420	6,550	13,700	4,910	8,070	21,800	12,900	15,400
30	15,900	9,700	13,300	11,200	6,000	8,040	13,700	5,460	9,170	21,800	12,900	15,600
31	18,600	10,700	13,900	---	---	---	17,800	7,240	10,800	22,800	12,800	16,000
MONTH	26,900	9,350	17,700	22,500	1,220	9,990	20,600	2,530	8,730	22,800	1,440	9,850





## HUDSON RIVER BASIN

01376304 HUDSON RIVER SOUTH OF HASTINGS-ON-HUDSON, NY—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	22.0	21.0	21.5	13.0	12.0	12.5	6.5	5.5	6.0	3.5	2.5	3.0
2	23.0	21.5	22.0	12.5	12.0	12.5	6.0	5.0	5.5	3.0	2.5	3.0
3	22.5	22.0	22.0	12.5	11.5	12.0	5.5	4.0	4.5	3.0	2.5	2.5
4	22.0	21.5	21.5	12.5	11.5	12.0	5.5	3.5	4.5	2.5	2.0	2.0
5	22.5	21.5	22.0	12.0	11.5	11.5	5.5	3.5	4.0	2.5	1.5	2.0
6	22.0	21.5	21.5	12.0	11.0	11.5	5.0	3.5	4.0	2.0	1.5	2.0
7	22.0	21.0	21.5	11.0	10.5	11.0	4.5	2.5	3.5	2.0	1.0	1.5
8	21.5	20.5	21.0	11.0	10.0	10.5	4.0	3.0	3.5	1.5	1.0	1.5
9	21.0	20.0	20.5	11.0	10.5	10.5	4.0	2.5	3.0	1.5	1.0	1.5
10	20.5	20.0	20.0	11.0	10.5	10.5	3.5	2.0	2.5	2.0	1.5	1.5
11	20.0	19.5	20.0	11.5	11.0	11.0	3.5	2.5	3.0	1.5	1.0	1.0
12	19.5	19.0	19.5	11.5	11.0	11.5	4.0	3.0	3.5	1.0	0.5	1.0
13	19.0	18.5	19.0	11.5	11.0	11.0	5.0	3.5	4.0	1.0	0.5	0.5
14	19.0	18.5	19.0	11.5	11.0	11.0	5.0	4.0	4.5	1.5	0.0	0.5
15	18.5	17.5	18.5	11.5	11.0	11.0	4.5	4.0	4.5	1.5	0.0	0.5
16	18.5	17.0	18.0	11.5	11.0	11.0	4.5	4.0	4.5	1.0	0.0	0.5
17	18.0	17.0	17.5	11.0	10.0	10.5	4.0	3.5	3.5	1.5	0.0	0.5
18	18.0	17.0	17.5	10.5	9.5	10.0	4.0	3.0	3.5	2.0	0.0	0.5
19	17.5	16.5	17.0	10.5	9.5	10.0	4.0	3.0	3.5	1.5	0.0	0.5
20	17.0	16.5	17.0	10.0	9.5	10.0	4.5	3.5	4.0	0.5	0.0	0.0
21	17.0	16.5	16.5	10.0	9.5	9.5	4.0	3.5	3.5	0.0	0.0	0.0
22	16.5	16.0	16.0	10.0	9.5	9.5	3.5	3.5	3.5	0.0	0.0	0.0
23	16.0	15.5	16.0	9.5	8.0	9.0	3.5	3.5	3.5	0.0	0.0	0.0
24	15.5	15.0	15.5	8.5	7.5	8.0	3.5	3.0	3.5	0.0	0.0	0.0
25	15.5	14.5	15.0	8.5	7.5	8.0	3.5	2.5	3.0	0.0	0.0	0.0
26	15.5	14.5	15.0	8.5	7.5	7.5	2.5	2.0	2.5	0.0	0.0	0.0
27	15.0	14.5	14.5	8.0	7.0	7.5	3.0	2.0	2.5	0.0	0.0	0.0
28	14.5	14.0	14.5	7.5	6.0	6.5	2.5	2.0	2.5	0.0	0.0	0.0
29	14.5	13.5	14.0	7.5	5.5	6.0	3.0	2.0	2.5	0.0	0.0	0.0
30	14.0	13.0	13.5	7.0	6.0	6.5	3.0	2.0	2.5	0.0	0.0	0.0
31	13.5	12.0	13.0	---	---	---	3.5	2.5	3.0	0.0	0.0	0.0
MONTH	23.0	12.0	18.1	13.0	5.5	10.0	6.5	2.0	3.6	3.5	0.0	0.8
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	0.0	0.0	0.0	1.0	0.5	1.0	6.0	5.0	5.5	12.0	10.5	11.0
2	0.0	0.0	0.0	1.0	1.0	1.0	6.0	5.0	5.5	13.0	11.0	11.5
3	0.0	0.0	0.0	1.0	0.5	1.0	6.0	5.5	5.5	12.5	11.5	12.0
4	0.0	0.0	0.0	1.0	0.5	0.5	6.0	5.5	6.0	12.5	11.5	12.0
5	0.5	0.0	0.0	1.5	1.0	1.0	6.0	5.5	6.0	12.5	12.0	12.0
6	0.0	0.0	0.0	1.0	0.5	1.0	6.5	5.5	6.0	12.5	12.0	12.0
7	0.0	0.0	0.0	1.5	0.0	0.5	6.0	5.5	5.5	14.0	12.0	12.5
8	0.5	0.0	0.0	2.0	0.5	1.0	5.5	5.0	5.5	13.5	12.5	13.0
9	0.0	0.0	0.0	2.0	1.0	1.5	5.5	5.5	5.5	14.0	12.5	13.5
10	0.5	0.0	0.0	1.5	1.0	1.5	6.0	5.0	5.5	15.0	13.0	14.0
11	0.5	0.0	0.0	1.5	0.5	1.0	6.0	5.5	6.0	14.5	13.0	14.0
12	0.5	0.0	0.0	2.5	1.0	1.5	7.5	5.5	6.5	14.5	12.5	13.5
13	0.5	0.0	0.0	2.0	2.0	2.0	7.5	6.0	7.0	13.5	13.0	13.5
14	0.0	0.0	0.0	2.5	1.5	2.0	8.5	6.5	7.5	14.0	13.0	13.5
15	0.5	0.0	0.0	3.0	1.5	2.5	8.5	7.0	7.5	14.0	13.5	14.0
16	0.0	0.0	0.0	4.0	2.0	3.0	9.0	7.5	8.5	14.5	13.5	14.0
17	0.0	0.0	0.0	4.5	2.5	3.5	8.5	8.0	8.5	15.0	13.5	14.5
18	0.0	0.0	0.0	4.0	3.0	3.5	8.5	8.0	8.5	15.0	14.0	14.5
19	0.0	0.0	0.0	4.0	3.5	4.0	8.5	8.0	8.5	15.5	14.0	15.0
20	0.0	0.0	0.0	4.0	3.5	4.0	9.0	8.5	8.5	17.0	14.5	15.5
21	0.0	0.0	0.0	4.0	3.5	4.0	10.0	8.5	9.0	15.5	15.0	15.5
22	0.0	0.0	0.0	4.0	3.5	3.5	9.5	9.0	9.0	15.5	15.0	15.0
23	0.5	0.0	0.0	4.0	3.0	3.5	9.0	8.5	9.0	15.5	14.5	15.0
24	0.5	0.0	0.0	3.5	2.5	3.0	9.0	8.0	8.5	15.0	14.5	14.5
25	0.5	0.0	0.0	4.0	3.0	3.5	10.0	8.5	9.5	15.5	14.5	15.0
26	0.5	0.0	0.0	5.5	3.5	4.5	10.0	9.0	9.5	15.5	14.5	15.0
27	0.5	0.0	0.5	6.5	4.5	5.5	10.5	9.0	9.5	17.0	14.5	15.5
28	1.0	0.0	0.5	6.5	5.0	5.5	11.5	9.5	10.5	17.0	15.0	16.0
29	---	---	---	6.5	5.0	6.0	11.0	10.5	11.0	18.0	15.5	16.5
30	---	---	---	7.0	6.0	6.5	12.0	10.5	11.0	18.0	16.0	17.0
31	---	---	---	6.5	6.0	6.0	---	---	---	17.0	16.0	16.5
MONTH	1.0	0.0	0.0	7.0	0.0	2.9	12.0	5.0	7.7	18.0	10.5	14.1



## 01377000 HACKENSACK RIVER AT RIVERVALE, NJ

LOCATION.--Lat 40°59'57", long 73°59'21", Bergen County, Hydrologic Unit 02030103, 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962, 1964 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 5.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 19...	0715	32	9.5	0.227	0.174	754	8.3	68	7.7	386	0.0	6.5	110
FEB 25...	0900	94	4.2	0.140	0.105	772	14.3	104	8.0	671	-2.6	2.6	130
MAY 14...	0715	45	4.7	0.114	0.084	744	6.7	66	7.5	617	8.0	13.5	130
AUG 27...	0900	63	6.3	0.139	0.100	759	5.3	64	7.7	457	24.2	24.3	120

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium water, fltrd, mg/L (00925)	Potassium water, fltrd, mg/L (00935)	Sodium water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 19...	34.5	6.47	2.03	28.1	E78	49.9	<0.17	8.4	17.2	--	215	7	0.42
FEB 25...	41.3	7.08	2.06	77.7	E98	136	<0.17	4.7	16.4	--	357	5	0.47
MAY 14...	40.0	7.15	2.00	70.1	84	122	<0.17	3.3	15.1	312	345	7	0.51
AUG 27...	37.4	6.82	1.95	44.2	85	81.9	<0.17	7.4	10.9	243	271	11	0.56

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 19...	<0.030	<0.030	0.58	0.004	<0.020	0.44	0.016	0.077	1.0	1.4	2.2	<0.1	2.2
FEB 25...	0.125	0.140	0.61	0.009	0.026	0.09	0.014	0.033	1.1	1.2	0.7	<0.1	0.7
MAY 14...	0.133	0.165	0.46	0.015	<0.020	0.09	0.019	0.043	0.97	1.1	0.6	<0.1	0.6
AUG 27...	0.129	0.115	0.35	0.041	0.023	0.17	0.034	0.069	0.91	1.1	1.3	<0.1	1.2

01377000 HACKENSACK RIVER AT RIVERVALE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 19...	6.8	E1.6	--	54
FEB 25...	4.8	E1.9	--	50
MAY 14...	4.2	<1.1	11.7	41
AUG 27...	5.5	E1.3	11.1	57

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 30...	1123	100	200	80	JUL 14...	1127	150	<100	220
JUL 07...	1124	250	200	230	JUL 21...	1137	90	11,000	40
					JUL 28...	1057	120	<100	300

Remark codes used in this table:

&lt; -- Less than

## 01378475 DOROTOCKEYS RUN AT HARRINGTON PARK, NJ

LOCATION.--Lat 40°59'14", long 73°58'29", Bergen County, Hydrologic Unit 02030103, at bridge on Tappan Road, 0.3 mi east of Harrington Park, 0.4 mi upstream of Oradell Reservoir, and 1.3 mi southwest of Cloister.

DRAINAGE AREA.--4.10 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to September 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 5.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 12...	1030	12	0.369	0.297	764	11.9	86	7.2	490	10.0	2.0	91	27.6
FEB 05...	1030	8.2	0.099	0.074	760	13.4	99	7.6	1,080	5.5	2.5	250	77.9
MAY 29...	1030	7.2	0.170	0.129	753	7.5	74	7.7	597	24.5	14.1	200	61.9
SEP 02...	1030	40	0.228	0.171	766	7.7	81	7.6	251	16.0	17.8	84	25.9

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 12...	5.47	2.59	58.1	E51	104	<0.17	6.3	12.3	--	275	9	0.50	0.104
FEB 05...	14.5	2.03	111	157	218	<0.17	12.6	25.3	564	601	6	0.31	<0.030
MAY 29...	11.6	2.31	33.1	162	72.4	<0.17	16.5	21.7	325	368	2	0.67	0.217
SEP 02...	4.76	2.38	14.0	60	26.4	<0.17	6.8	12.7	134	150	56	0.95	0.141

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 12...	0.094	0.77	0.006	0.101	0.15	0.111	0.150	1.3	1.4	1.1	<0.1	1.1	9.9
FEB 05...	0.032	1.96	0.017	0.023	0.07	0.011	0.035	2.3	2.3	0.6	<0.1	0.6	3.5
MAY 29...	0.238	1.70	0.081	0.036	0.08	0.043	0.085	2.4	2.5	0.7	<0.1	0.7	5.0
SEP 02...	0.130	0.96	0.031	0.076	0.25	0.093	0.20	1.9	2.1	2.3	<0.1	2.3	6.8



## 01378475 DOROTOCKEYS RUN AT HARRINGTON PARK, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	
FEB 05...		0.3	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 29...	1030	<0.006	E.003	<0.006	<0.004	<0.005	E.006	<0.050	E.005	<0.002	E.111	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Napropamide, water, fltrd 0.7u GF ug/L (82684)
MAY 29...	<0.003	<0.004	0.009	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	E.006	E.001	<0.006	<0.007

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 29...	<0.022	E.01	0.006	<0.02	<0.034	E.003

Remark codes used in this table:  
< -- Less than  
E -- Estimated value



01378475 DOROTOCKEYS RUN AT HARRINGTON PARK, NJ—Continued

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
30...	1130	1,260	700	700	14...	1134	880	<100	700
JUL					21...	1144	370	1,100	500
07...	1131	320	600	1,100	28...	1103	720	1,200	3,000

Remark codes used in this table:  
 < -- Less than

## 01378560 COLES BROOK AT HACKENSACK, NJ

LOCATION.--Lat 40°54'40", long 74°02'25", Bergen County, Hydrologic Unit 02030103, at bridge on Main Street in Hackensack, 0.8 mi above mouth, and 1.9 mi northwest of Teaneck.

DRAINAGE AREA.--7.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962, 1965, 1967, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 5.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 14...	1050	4.0	4.3	0.420	0.348	763	8.4	72	7.4	401	7.5	8.5	140
FEB 03...	1040	3.4	4.7	0.057	0.041	760	13.1	98	7.6	977	7.5	2.8	240
MAY 29...	1050	5.4	4.7	0.137	0.103	754	7.7	77	7.5	664	19.2	15.1	190
AUG 06...	1150	19	14	0.202	0.155	759	6.9	80	6.8	188	26.0	22.4	54

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 14...	42.8	8.95	3.51	24.0	107	51.7	<0.17	10.6	17.5	225	259	7	0.49
FEB 03...	73.9	14.4	2.08	87.5	145	183	<0.17	12.7	27.7	498	520	<1	0.31
MAY 29...	58.9	11.1	2.47	43.5	136	104	<0.17	14.3	23.5	346	383	2	0.54
AUG 06...	16.9	2.86	2.11	12.2	38	22.1	<0.17	5.4	10.9	100	112	10	0.58

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 14...	<0.030	<0.030	0.23	<0.003	0.074	0.15	0.100	0.156	0.72	0.88	0.8	<0.1	0.8
FEB 03...	0.101	0.108	2.16	0.025	0.022	0.05	0.007	0.028	2.5	2.5	0.4	<0.1	0.4
MAY 29...	0.215	0.193	1.42	0.068	0.020	0.77	0.026	0.069	2.0	2.7	5.5	<0.1	5.5
AUG 06...	0.195	0.202	0.92	0.028	0.077	0.11	0.072	0.130	1.5	1.6	1.0	<0.1	1.0

01378560 COLES BROOK AT HACKENSACK, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	11.1	4.2	--	35
FEB 03...	2.2	E1.1	--	36
MAY 29...	4.1	<1.0	4.70	40
AUG 06...	6.0	E1.5	2.60	24

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 07...	1103	360	500	3,000	AUG 05...	1215	5,300	11,000	>16000
JUL 14...	1101	480	1,100	1,300					
JUL 21...	1116	5,000	11,000	>16000					
JUL 28...	1036	1,200	500	5,000					

Remark codes used in this table:  
 > -- Greater than

## 01378780 PRIMROSE BROOK AT MORRISTOWN NATIONAL HISTORICAL PARK, NJ

LOCATION.--Lat 40°45'54", long 74°31'47", Morris County, Hydrologic Unit 02030103, at bridge on Camp Trail Road in Morristown National Historical Park, 20 ft downstream of unnamed tributary, 500 ft west of Mount Kemble, and 2.4 mi northeast of Bernardsville.

DRAINAGE AREA.--1.07 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Surface-Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). Additional data for this site are presented in "Morristown National Historical Park" in the Water-Quality at Special-Study Sites section of this report.

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Background, New Jersey Department of Environmental Protection Watershed Management Area 6.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 16...	1110	1.4	0.8	0.063	0.049	741	12.1	97	7.5	98	2.0	5.0	33
MAR 04...	1310	1.3	0.7	0.042	0.033	737	12.9	97	7.5	97	4.0	2.3	34
MAY 20...	1310	1.3	2.5	0.043	0.035	756	10.0	95	7.2	118	--	13.0	41
AUG 26...	1030	0.98	5.0	0.055	0.044	749	9.2	96	6.8	136	21.0	16.6	45

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium water, fltrd, mg/L (00925)	Potassium water, fltrd, mg/L (00935)	Sodium, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 16...	8.26	3.11	0.64	4.01	E26	3.44	<0.17	21.6	13.7	--	81	<1	E.10
MAR 04...	8.26	3.23	0.54	4.25	32	4.54	<0.17	20.5	14.1	76	77	<1	E.09
MAY 20...	10.2	3.72	0.71	5.54	30	5.89	<0.17	24.1	14.6	85	91	3	0.12
AUG 26...	11.0	4.32	0.72	6.04	37	7.86	<0.17	26.2	13.7	94	105	15	0.10

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
DEC 16...	<0.030	<0.030	0.15	<0.003	<0.020	<0.02	E.002	0.007	--	--	<0.1	<0.1	<0.1
MAR 04...	<0.030	<0.030	0.30	<0.003	<0.020	<0.02	E.003	0.005	--	--	<0.1	<0.1	<0.1
MAY 20...	<0.030	<0.030	0.36	<0.030	<0.020	0.05	0.009	0.016	0.49	0.54	0.6	<0.1	0.6
AUG 26...	<0.020	<0.020	0.37	<0.003	<0.020	0.05	0.013	0.025	0.47	0.52	1.0	<0.1	1.0



01378780 PRIMROSE BROOK AT MORRISTOWN NATIONAL HISTORICAL PARK, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 04...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Surface-Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 20...	1310	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Napropamide, water, fltrd 0.7u GF ug/L (82684)
MAY 20...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 20...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

01378780 PRIMROSE BROOK AT MORRISTOWN NATIONAL HISTORICAL PARK, NJ—Continued

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
07...	1205	20	100	20	04...	1147	130	1,500	300
14...	1155	<10	<100	40					
21...	1152	200	<100	40					
28...	1150	40	<100	40					

Remark codes used in this table:

< -- Less than

## 01379200 DEAD RIVER NEAR MILLINGTON, NJ

LOCATION.--Lat 40°38'56", long 74°31'25", Morris County, Hydrologic Unit 02030103, at bridge on King George Road (Spur County Route 527), 100 ft upstream from mouth, 2.0 mi south of Millington, and 4.2 mi south of Basking Ridge.

DRAINAGE AREA.--20.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962, 1963-65, 1967, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 6.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 14...	0920	37	12	0.345	0.275	757	8.3	71	8.4	318	11.5	8.5	88
MAR 10...	1040	81	7.1	0.143	0.113	751	11.9	85	7.1	618	-0.5	0.8	110
MAY 12...	1030	13	17	0.108	0.083	745	6.2	63	7.0	610	18.0	14.7	150
SEP 03...	1150	59	50	0.169	0.128	761	7.8	82	7.0	343	22.5	17.6	85

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 14...	21.8	8.11	2.61	26.7	57	43.3	<0.17	15.7	24.4	184	205	11	0.44
MAR 10...	28.5	10.3	1.85	78.3	30	166	<0.17	10.1	14.2	333	343	8	0.30
MAY 12...	38.8	13.7	3.93	54.3	--	108	<0.17	14.8	32.2	--	344	30	0.62
SEP 03...	22.4	7.14	2.26	27.1	62	51.5	<0.17	13.1	20.1	188	210	54	0.35

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 14...	<0.030	<0.030	1.46	<0.003	0.239	0.12	0.25	0.29	1.9	2.0	0.6	<0.1	0.6
MAR 10...	0.048	0.052	1.10	0.005	0.105	0.06	0.11	0.13	1.4	1.5	0.4	<0.1	0.4
MAY 12...	0.160	0.188	2.40	0.026	0.624	0.07	0.63	0.81	3.0	3.1	0.7	<0.1	0.7
SEP 03...	0.068	0.081	1.34	0.007	0.208	0.20	0.22	0.32	1.7	1.9	1.8	<0.1	1.8



01379200 DEAD RIVER NEAR MILLINGTON, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	8.4	2.1	--	142
MAR 10...	3.7	<1.1	--	71
MAY 12...	3.6	<1.0	9.40	183
SEP 03...	4.5	E1.8	5.10	136

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1009	140	400	500	JUN 04...	1030	6,100	23,000	>16000
MAY 14...	1026	50	500	800					
MAY 21...	1039	110	800	230					
MAY 28...	0750	800	720	1,300					

Remark codes used in this table:  
 > -- Greater than

## 01379870 MILL BROOK AT RANDOLPH, NJ

LOCATION.--Lat 40°52'43", long 74°31'31", Morris County, Hydrologic Unit 02030103, at bridge on Palmer Road, 0.1 mi upstream of mouth, 0.4 mi east of Randolph, and 1.9 mi east of Dover.

DRAINAGE AREA.--4.84 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 6.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 20...	1030	1.2	0.130	0.102	753	10.7	86	7.0	295	11.0	5.5	76	17.7
FEB 13...	1100	0.8	0.040	0.032	747	14.1	99	7.2	604	-1.5	0.3	110	24.6
MAY 13...	1130	1.5	0.075	0.059	741	10.8	102	7.3	394	16.5	11.3	94	21.9
AUG 06...	1045	45	0.244	0.190	746	7.6	85	7.1	190	24.5	19.9	42	10.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 20...	7.65	1.48	21.6	E33	55.0	<0.17	14.8	11.6	--	173	5	0.20	0.030
FEB 13...	10.8	1.42	64.7	E39	150	<0.17	17.1	12.0	--	330	4	E.06	<0.030
MAY 13...	9.50	1.54	33.2	34	87.4	<0.17	14.8	9.9	206	245	4	0.12	<0.030
AUG 06...	3.87	1.45	16.7	24	36.0	<0.17	10.0	6.7	102	136	42	0.34	0.034

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 20...	<0.030	1.23	<0.003	<0.020	0.03	0.005	0.012	1.4	1.4	<0.1	<0.1	<0.1	3.5
FEB 13...	<0.030	2.09	<0.003	0.034	<0.02	E.003	0.005	--	--	<0.1	<0.1	<0.1	1.1
MAY 13...	<0.030	1.58	<0.003	<0.020	<0.02	E.004	0.010	1.7	--	0.2	<0.1	0.2	2.0
AUG 06...	0.065	0.60	0.006	0.025	0.23	0.016	0.101	0.94	1.2	2.9	<0.1	2.9	6.0



## 01379870 MILL BROOK AT RANDOLPH, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphthalene bed sed <2 mm, wsv nat ug/kg (49948)	2-Methylanthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flour-ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace-naphth-ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace-naphth-ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, wsv nat ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo-[b]-fluor-anthene, bed sed <2 mm, wsv nat ug/kg (49458)	Benzo-[ghi]-peryl-ene, bed sed <2 mm, ug/kg (49408)	Benzo-[k]-fluor-anthene, bed sed <2 mm, ug/kg (49397)
AUG 06... 06...	-- <50	-- <50	-- <50	-- <50	-- <50	-- <50	-- 51	-- 76	-- 140	-- 130	-- 120	-- E130	-- 95

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, wsv nat ug/kg (49461)	Fluor-anthene bed sed <2 mm, wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm, wsv nat ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm, wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thri-dine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd sve dia percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 06... 06...	-- 160	-- <50	-- 290	-- 120	-- <50	-- <50	-- E12	-- <50	-- 140	-- <50	-- 260	-- 8.4	-- 1.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 06... 06...	-- 1.6	-- 1.9	-- 2.8	-- 4.5

Remark codes used in this table:

< -- Less than  
E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene, water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane, water unfltrd ug/L (34541)	1,3-Di-chloro-benzene, water unfltrd ug/L (34566)	1,4-Di-chloro-benzene, water unfltrd ug/L (34571)	Benzene, water unfltrd ug/L (34030)	Bromo-di-chloro-methane, water unfltrd ug/L (32101)	Chloro-benzene, water unfltrd ug/L (34301)
FEB 13...	1100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane, water, unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane, wat unf ug/L (34668)	Di-chloro-methane, water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta-+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 13...	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.5

01379870 MILL BROOK AT RANDOLPH, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 13...	0.3	<0.2	<0.1	<0.1	<0.2	0.2	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 13...	1130	<0.006	E.006	<0.006	<0.004	<0.005	E.006	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 13...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.006	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 13...	<0.022	M	E.003	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

## PASSAIC RIVER BASIN

01379870 MILL BROOK AT RANDOLPH, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
07...	1115	20	400	202	04...	1100	2,600	11,000	9,000
14...	1110	60	200	230					
21...	1105	610	500	600					
28...	1110	490	800	2,400					

## 01380100 BEAVER BROOK AT ROCKAWAY, NJ

LOCATION.--Lat 40°54'08", long 74°30'05", Morris County, Hydrologic Unit 02030103, at bridge on Gill Road in Rockaway, and 0.2 mi above mouth.

DRAINAGE AREA.--22.7 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 6.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 06...	1140	28	3.7	0.147	0.113	738	10.7	90	8.0	229	9.0	6.5	64
FEB 06...	1120	30	2.6	0.104	0.080	758	13.9	96	6.9	287	-2.0	0.0	70
MAY 20...	1030	12	4.4	0.142	0.112	756	8.5	86	6.9	188	24.0	15.8	47
AUG 13...	1200	85	4.3	0.227	0.174	755	6.7	79	6.7	153	29.5	23.4	41

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 06...	16.2	5.75	1.40	18.2	E37	34.0	<0.17	6.9	16.2	--	140	3	0.26
FEB 06...	18.1	5.99	1.43	26.6	38	46.5	<0.17	8.2	18.7	150	162	4	0.22
MAY 20...	11.6	4.29	0.79	15.1	27	30.8	<0.17	7.5	9.0	96	122	4	0.36
AUG 13...	10.7	3.40	0.88	14.3	26	22.7	<0.17	8.7	8.0	85	106	6	0.33

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 06...	<0.030	<0.030	0.15	<0.003	0.021	0.04	0.011	0.028	0.41	0.45	0.5	<0.1	0.5
FEB 06...	0.033	<0.030	0.31	<0.003	<0.020	0.05	0.006	0.015	0.54	0.58	0.3	<0.1	0.3
MAY 20...	0.035	0.050	0.18	0.007	<0.020	0.05	0.014	0.048	0.48	0.53	0.4	<0.1	0.4
AUG 13...	0.035	0.030	0.09	<0.003	0.032	0.06	0.020	0.042	0.42	0.47	0.7	<0.1	0.7

## PASSAIC RIVER BASIN

01380100 BEAVER BROOK AT ROCKAWAY, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 06...	5.2	<1.0	--	16
FEB 06...	2.9	<1.0	--	13
MAY 20...	3.2	E2.1	1.90	E11
AUG 13...	5.7	<1.0	3.80	18

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1050	70	<100	140	JUN 04...	1050	5,800	2,600	230
MAY 14...	1050	80	<100	500					
MAY 21...	1050	520	500	270					
MAY 28...	1055	560	300	500					

Remark codes used in this table:

&lt; -- Less than



01381498 WHIPPANY RIVER AT RIDGEDALE AVENUE, AT MORRISTOWN, NJ

LOCATION.--Lat 40°48'04", long 74°27'57", Morris County, Hydrologic Unit 02030103, at bridge on Ridgedale Avenue, 0.8 mi northeast of Morristown, 1.3 mi downstream of Lake Pocahontas, and 1.8 mi southeast of Morris Plains.

DRAINAGE AREA.--27.7 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 6.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 12...	1030	2.2	0.101	0.080	758	9.3	88	7.5	479	12.0	12.5	140	35.5
FEB 03...	1045	1.8	0.045	0.037	754	15.8	117	7.9	532	10.0	2.4	130	31.7
MAY 07...	1115	2.5	0.073	0.057	752	12.5	122	8.2	456	27.0	13.6	120	30.5
AUG 21...	1145	3.1	0.080	0.062	756	9.0	106	7.8	473	30.5	23.1	160	39.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 12...	12.3	3.20	32.2	E74	83.7	<0.17	17.7	20.9	--	268	5	0.31	0.042
FEB 03...	11.3	2.53	46.8	56	111	<0.17	16.0	17.8	279	284	8	0.32	0.127
MAY 07...	10.9	2.37	37.8	57	94.9	<0.17	13.9	16.5	247	281	3	0.26	<0.030
AUG 21...	14.1	3.07	36.8	66	94.6	<0.17	17.3	16.7	269	299	10	0.27	0.045

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 12...	0.053	1.33	0.024	0.098	0.11	0.120	0.168	1.6	1.8	0.6	<0.1	0.6	3.5
FEB 03...	0.145	1.83	0.181	0.078	0.06	0.077	0.105	2.1	2.2	0.3	<0.1	0.3	1.9
MAY 07...	<0.030	1.34	0.019	0.029	0.08	0.030	0.056	1.6	1.7	0.4	<0.1	0.4	2.3
AUG 21...	0.040	1.48	0.022	0.104	0.06	0.122	0.177	1.7	1.8	0.5	<0.1	0.5	2.6



01381498 WHIPPANY RIVER AT RIDGEDALE AVENUE, AT MORRISTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 03...	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloroethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	
FEB 03...		0.1	<0.2	<0.1	<0.1	<0.2	1.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 07...	1115	<0.006	<0.006	<0.006	<0.004	<0.005	E.005	<0.050	<0.010	<0.002	E.007	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 07...	<0.003	0.009	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.026	<0.027	E.001	<0.006	<0.007

## PASSAIC RIVER BASIN

01381498 WHIPPANY RIVER AT RIDGEDALE AVENUE, AT MORRISTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
MAY 07...	<0.022	E.01	0.006	<0.02	<0.034	<0.009

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
07...	1145	40	<100	130	04...	1130	4,200	16,000	16,000
14...	1135	40	100	130					
21...	1135	630	400	500					
28...	1134	340	800	1,700					

Remark codes used in this table:

&lt; -- Less than

## 01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ

LOCATION.--Lat 40°50'42", long 74°20'50", Morris County, Hydrologic Unit 02030103, at site of former bridge on Edwards Road, 200 ft downstream from bridge on 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 6.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	1100	E170	4.8	0.447	0.347	758	7.3	58	6.9	285	11.0	5.5	79
FEB 04...	1030	35	6.6	0.063	0.048	742	11.2	88	7.7	698	5.5	4.0	160
MAY 07...	1030	88	5.6	0.202	0.154	756	8.3	81	7.4	596	23.5	13.5	150
AUG 14...	1000	E265	8.1	0.631	0.495	766	1.8	21	6.9	283	30.0	24.0	85

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	20.7	6.70	2.36	21.9	E44	39.0	<0.17	9.6	23.7	--	181	8	0.62
FEB 04...	42.1	14.2	3.67	66.0	77	139	<0.17	12.9	26.1	363	373	3	0.34
MAY 07...	37.9	12.8	3.03	57.9	79	122	<0.17	11.0	20.2	321	368	6	0.50
AUG 14...	23.7	6.19	2.71	25.8	56	45.1	<0.17	11.0	8.8	159	189	10	0.89

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 21...	<0.030	0.043	0.86	0.008	0.070	0.15	0.07	0.10	1.5	1.6	0.6	<0.1	0.6
FEB 04...	0.064	0.064	2.95	0.101	0.144	0.10	0.13	0.21	3.3	3.4	0.7	<0.1	0.7
MAY 07...	0.091	0.081	1.80	0.060	0.087	0.12	0.09	0.17	2.3	2.4	0.8	<0.1	0.8
AUG 14...	0.102	0.112	0.38	0.009	0.106	0.15	0.13	0.28	1.3	1.4	1.4	<0.1	1.4

## PASSAIC RIVER BASIN

01381800 WHIPPANY RIVER NEAR PINE BROOK, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	9.8	<1.0	--	51
FEB 04...	2.5	E1.2	--	70
MAY 07...	4.9	E1.1	14.2	67
AUG 14...	11.7	<1.0	3.30	54

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1030	20	<100	80	JUN 04...	1028	6,600	21,000	>16000
MAY 14...	1035	10	200	300					
MAY 21...	1028	140	500	>2400					
MAY 28...	1034	650	800	2,200					

Remark codes used in this table:

&lt; -- Less than

## 01382000 PASSAIC RIVER AT TWO BRIDGES, NJ

LOCATION.--Lat 40°53'50", long 74°16'22", Passaic County, Hydrologic Unit 02030103, at bridge on Two Bridges Road in Two Bridges, and 50 ft upstream from Pompton River.

DRAINAGE AREA.--361 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1969 to September 1974.

pH: June 1969 to September 1974.

WATER TEMPERATURE: October 1962 to May 1969 (once daily), June 1969 to September 1974.

DISSOLVED OXYGEN: June 1969 to September 1974.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 6.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 07...	0940	353	5.9	0.179	0.137	755	8.6	74	7.3	586	8.0	8.5	150
FEB 13...	1000	199	4.0	0.096	0.072	760	15.3	107	7.6	985	-2.0	0.6	170
MAY 06...	1210	324	7.1	0.209	0.157	756	7.5	73	7.2	588	12.5	13.7	130
AUG 06...	1010	1020	23	0.237	0.181	755	5.9	71	7.0	313	23.5	24.2	84

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 07...	38.8	13.5	5.13	51.7	E83	95.1	<0.17	14.6	40.3	--	344	4	0.59
FEB 13...	45.2	15.0	4.92	120	E88	234	<0.17	12.5	36.0	--	560	2	0.56
MAY 06...	33.9	11.9	3.36	60.0	75	111	<0.17	8.8	23.1	307	316	12	0.57
AUG 06...	21.5	7.43	1.92	27.5	48	54.4	<0.17	10.6	15.8	174	180	32	0.51

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 07...	0.079	0.080	4.10	0.031	0.791	0.10	0.82	0.90	4.7	4.8	0.7	<0.1	0.7
FEB 13...	0.117	0.107	4.04	0.048	0.574	0.09	0.59	0.71	4.6	4.7	0.6	<0.1	0.5
MAY 06...	0.115	0.109	1.96	0.042	0.273	0.13	0.27	0.39	2.5	2.7	0.9	<0.1	0.9
AUG 06...	0.088	0.123	1.07	0.023	0.253	0.22	0.24	0.36	1.6	1.8	2.1	<0.1	2.1

## PASSIAC RIVER BASIN

01382000 PASSAIC RIVER AT TWO BRIDGES, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	6.3	<1.3	--	145
FEB 13...	3.8	E1.7	--	117
MAY 06...	5.5	E1.4	15.2	103
AUG 06...	6.1	<1.0	7.00	58

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	0922	20	200	230	JUN 04...	0930	240	5,000	3,000
14...	0941	<10	200	170					
21...	0947	<10	<100	<20					
28...	0701	650	2,500	3,000					

Remark codes used in this table:

&lt; -- Less than



## 01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ

LOCATION.--Lat 41°01'05", long 74°24'06", Passaic County, Hydrologic Unit 02030103, at culvert on 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1924, 1962-69, 1973-79, 1991 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 3.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 03...	1000	4.0	0.4	0.044	0.033	754	14.1	99	7.6	247	-7.0	0.5	50
FEB 06...	1000	9.1	1.5	0.132	0.100	756	14.3	100	7.6	283	-1.1	0.5	58
MAY 20...	1000	8.2	1.3	0.126	0.095	755	8.2	83	7.3	207	23.5	15.4	47
AUG 27...	1000	4.8	1.2	0.160	0.123	745	7.8	91	7.4	227	26.0	21.7	54

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 03...	12.7	4.44	0.42	23.5	30	39.0	<0.17	10.6	13.8	124	134	2	0.13
FEB 06...	14.5	5.36	0.93	26.4	--	52.1	<0.17	8.7	13.0	--	158	3	0.25
MAY 20...	11.7	4.23	0.81	19.0	27	36.0	<0.17	5.6	10.1	104	121	2	0.24
AUG 27...	13.4	4.93	0.80	18.4	39	36.1	<0.17	6.8	8.8	114	134	3	0.76

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
DEC 03...	<0.030	<0.030	0.40	<0.003	0.031	<0.02	E.003	0.005	0.53	--	<0.1	<0.1	<0.1
FEB 06...	0.046	<0.030	0.67	0.003	<0.020	0.07	0.010	0.018	0.92	0.99	0.3	<0.1	0.3
MAY 20...	<0.030	<0.030	0.17	<0.003	<0.020	0.08	0.006	0.018	0.40	0.48	0.5	<0.1	0.5
AUG 27...	0.029	0.026	0.22	<0.003	<0.020	0.03	0.017	0.019	0.98	1.0	0.3	<0.1	0.2

## PASSAIC RIVER BASIN

01382500 PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 03...	1.7	<1.0	--	16
FEB 06...	3.5	E1.5	--	E13
MAY 20...	3.5	<1.0	7.60	E12
AUG 27...	4.1	<1.0	1.50	14

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1000	50	<100	80	AUG 11...	1020	20	<100	70
AUG 04...	1000	310	500	700	AUG 18...	1020	20	<100	40
					AUG 25...	1015	20	<100	60

Remark codes used in this table:

&lt; -- Less than

## 01382960 GREEN BROOK NEAR WEST MILFORD, NJ

LOCATION.--Lat 41°09'09", long 74°21'33", Passaic County, Hydrologic Unit 02030103, at bridge on Union Valley Road (County Route 513), 847 ft upstream of confluence with Cooley Brook, 1.7 mi northeast of West Milford, and 1.7 mi east of Moe.

DRAINAGE AREA.--2.03 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to September 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). Diversions from Upper Greenwood Lake (Hudson River Basin) included in flow.

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 3.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 12...	1000	0.9	0.074	0.055	746	13.2	99	7.9	252	11.0	2.5	27	6.61
MAR 13...	1000	0.6	0.051	0.037	744	14.6	111	8.3	156	6.2	3.1	19	4.75
MAY 15...	0900	0.4	0.058	0.042	750	10.9	99	7.3	112	22.0	10.2	19	4.76
SEP 03...	1000	2.8	0.153	0.114	748	8.2	85	7.5	143	21.4	16.2	26	6.55

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 12...	2.46	0.47	35.8	E37	62.3	<0.17	3.7	8.5	--	128	2	0.11	<0.030
MAR 13...	1.78	0.30	20.1	6	35.9	<0.17	4.0	8.6	80	86	1	E.08	<0.030
MAY 15...	1.79	0.42	13.5	9	23.7	<0.17	3.3	8.1	61	68	3	0.10	<0.030
SEP 03...	2.26	0.59	13.6	19	23.3	<0.17	3.6	5.4	67	76	6	0.22	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 12...	0.046	0.20	<0.003	<0.020	<0.02	<0.004	E.003	0.31	--	0.2	<0.1	0.2	2.7
MAR 13...	<0.030	0.12	<0.003	<0.020	<0.02	E.002	E.003	--	--	<0.1	<0.1	<0.1	1.8
MAY 15...	<0.030	E.04	<0.003	<0.020	0.02	E.002	E.003	--	E.17	<0.1	<0.1	<0.1	1.9
SEP 03...	<0.020	0.08	<0.003	<0.020	0.03	0.005	0.016	0.30	0.33	0.4	<0.1	0.4	4.7



01382960 GREEN BROOK NEAR WEST MILFORD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 13...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloroethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 13...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 15...	0900	<0.006	E.003	<0.006	<0.004	<0.005	E.003	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Napropamide, water, fltrd 0.7u GF ug/L (82684)
MAY 15...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 15...	<0.022	M	<0.005	E.01	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

## PASSAIC RIVER BASIN

01382960 GREEN BROOK NEAR WEST MILFORD, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
28...	1029	60	<100	20	11...	1045	40	200	20
AUG					18...	1040	20	<100	<20
04...	1025	330	<100	230	25...	1040	20	<100	<20

Remark codes used in this table:

&lt; -- Less than

## 01387500 RAMAPO RIVER NEAR MAHWAH, NJ

LOCATION.--Lat 41°05'53", long 74°09'46", Bergen County, Hydrologic Unit 02030103, 350 ft downstream from bridge on 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: February 1964 to June 1965.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Mixed Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 3.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO <sub>3</sub> (00900)
NOV 18...	0715	1,840	17	0.211	0.166	737	10.3	87	7.3	173	4.0	6.5	37
FEB 26...	1100	349	2.0	0.095	0.072	768	15.2	104	7.5	417	-1.0	0.3	65
MAY 06...	0715	181	1.7	0.088	0.066	744	9.2	86	7.4	411	7.0	11.1	90
AUG 20...	1015	70	2.2	0.109	0.083	760	7.4	86	7.7	479	27.0	22.3	120

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO <sub>3</sub> (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 18...	10.1	2.90	1.27	15.9	E23	25.1	<0.17	6.0	11.6	--	105	31	0.32
FEB 26...	18.2	4.72	1.01	47.0	37	90.1	<0.17	7.2	12.7	206	213	1	0.33
MAY 06...	24.6	6.87	1.28	41.3	56	75.6	<0.17	3.9	13.1	203	213	2	0.24
AUG 20...	32.1	8.81	1.66	41.9	79	85.8	<0.17	8.4	13.8	245	261	10	0.35

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 18...	0.041	0.037	0.37	0.008	0.038	0.31	0.06	0.12	0.69	1.0	3.2	<0.1	3.2
FEB 26...	0.144	0.126	0.62	0.012	0.052	0.07	<0.05	0.07	0.95	1.0	0.5	<0.1	0.5
MAY 06...	<0.030	<0.030	0.74	0.008	0.051	0.10	0.06	0.07	0.99	1.1	0.5	<0.1	0.4
AUG 20...	0.028	0.027	1.03	0.007	0.107	0.08	0.11	0.15	1.4	1.5	0.5	<0.1	0.5

## PASSAIC RIVER BASIN

01387500 RAMAPO RIVER NEAR MAHWAH, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 18...	5.8	2.3	--	14
FEB 26...	3.4	<1.0	--	16
MAY 06...	3.2	E1.3	10.6	30
AUG 20...	3.4	<1.0	10.1	43

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 30...	0948	150	300	220	JUL 14...	0943	270	600	1,700
JUL 07...	0940	450	1,100	1,700	JUL 21...	0953	4,400	100	16,000
					JUL 28...	0947	540	1,000	16,000



## 01388000 RAMAPO RIVER AT POMPTON LAKES, NJ

LOCATION.--Lat 40°59'33", long 74°16'43", Passaic County, Hydrologic Unit 02030103, in Pompton Lakes, at bridge on Paterson-Hamburg Turnpike, 2.0 mi upstream from mouth, and 450 ft downstream from dam.

DRAINAGE AREA.--160 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1923, 1962-67, 1982, 1987 to current year.

NUTRIENT AND INORGANIC CHEMICAL DATA: Water years 1923, 1962-67, 1982, 1987-96.

PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: April 1989 to current year.

DISSOLVED OXYGEN PERCENT SATURATION: October 2001 to current year.

SPECIFIC CONDUCTANCE: April 1989 to current year.

WATER TEMPERATURE: April 1989 to current year.

INSTRUMENTATION.--Water-quality monitor since April 1989, pumping system, data recorded hourly.

REMARKS.--Stage is measured on right end of dam at pumping station, 450 ft upstream from bridge. Nutrient and inorganic chemical data from 1987-96 was collected at the same location (above dam); data from earlier years was probably collected at bridge, 450 ft below dam. Interruptions in the daily record were due to instrument or pumping system malfunction. The calibration of water-quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated. Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:

DISSOLVED OXYGEN: Oct. 16 to Dec. 30, Jan. 30 to Feb. 13, Mar. 20 to June 9, Aug. 28 to Sept. 17.

EXTREMES FOR PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: Maximum, 15.6 mg/L, Jan. 22, 23, 30, 2003; minimum, 4.5 mg/L, Aug. 4, 1999.

DISSOLVED OXYGEN PERCENT OF SATURATION: Maximum, 126, Feb. 24, 25, 2002; minimum, 66, Oct. 1, 2001.

SPECIFIC CONDUCTANCE: Maximum, 842 µS/cm, Jan. 18, 1999; minimum, 88 µS/cm, Sept. 7, 1999.

WATER TEMPERATURE: Maximum, 31.5 °C, July 5, 1999; minimum, 0.0 °C, on several days during winters.

EXTREMES FOR CURRENT YEAR.--

DISSOLVED OXYGEN: Maximum, 15.6 mg/L, Jan. 22, 23, 30; minimum, 6.8 mg/L, Oct. 5.

DISSOLVED OXYGEN PERCENT OF SATURATION: Maximum, 111, Jan. 22, 23, 30; minimum, 77, Oct. 5, 6.

SPECIFIC CONDUCTANCE: Maximum, 828 µS/cm, Feb. 23; minimum, 189 µS/cm, Nov. 19.

WATER TEMPERATURE: Maximum, 28.3°C, July 7, 8; minimum, 0.1°C, Feb. 24, 25.

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	11.6	11.2	11.4	13.5	12.8	13.2	13.4	13.2	13.3
2	9.3	8.0	8.9	11.8	11.3	11.5	13.6	13.2	13.4	13.9	13.2	13.5
3	8.0	7.1	7.6	12.0	11.4	11.7	14.3	13.6	14.0	14.2	13.9	14.1
4	7.7	7.1	7.5	11.9	11.6	11.7	14.6	14.2	14.4	14.3	14.2	14.2
5	7.7	6.8	7.4	12.0	11.4	11.7	14.3	14.0	14.2	14.3	14.1	14.2
6	7.9	6.9	7.3	11.4	11.1	11.2	14.4	13.8	14.1	14.1	13.9	14.0
7	7.9	7.1	7.5	11.5	11.1	11.3	14.5	14.2	14.4	14.0	13.8	13.9
8	8.3	7.4	7.8	11.6	11.0	11.3	14.6	14.2	14.5	13.8	13.7	13.8
9	8.6	7.5	8.0	11.4	10.9	11.1	14.9	14.5	14.7	13.7	13.6	13.7
10	8.4	7.9	8.2	11.1	10.4	10.8	14.7	14.2	14.5	13.6	13.5	13.6
11	9.5	8.2	9.0	10.5	10.3	10.4	14.7	14.5	14.6	14.0	13.6	13.9
12	9.8	9.5	9.7	10.6	10.3	10.4	15.3	14.7	15.0	14.5	14.0	14.3
13	10.0	9.8	9.9	10.6	10.4	10.5	15.2	14.8	15.1	14.4	14.3	14.4
14	10.1	9.9	10	10.6	10.4	10.5	14.8	14.3	14.5	14.8	14.3	14.5
15	10.3	9.9	10.2	10.7	10.3	10.4	14.3	14.3	14.3	14.6	14.5	14.5
16	10.3	9.6	10	10.5	10.3	10.4	14.4	14.1	14.2	14.6	14.5	14.6
17	10.2	9.9	10.1	11.2	10.4	10.8	14.8	14.4	14.6	14.7	14.4	14.5
18	10.4	10.1	10.3	11.5	10.7	11.1	14.9	14.7	14.8	14.8	14.7	14.7
19	10.3	10.1	10.2	11.4	10.8	11.2	14.8	14.4	14.7	14.8	14.7	14.7
20	10.3	10.1	10.2	11.6	11.2	11.4	14.4	14.1	14.2	14.9	14.6	14.7
21	10.4	10.1	10.3	11.5	10.9	11.2	14.1	13.7	13.9	15.0	14.8	14.9
22	10.7	10.3	10.5	11.0	9.9	10.6	14.0	13.6	13.8	15.6	14.8	15.2
23	10.7	10.3	10.5	10.3	9.8	10.1	13.8	13.6	13.7	15.6	14.7	15.0
24	10.8	10.5	10.6	10.6	10.2	10.4	13.9	13.7	13.8	15.1	14.8	15.0
25	10.8	10.5	10.7	10.7	10.4	10.7	13.8	13.5	13.6	15.2	14.8	15.0
26	10.6	10.5	10.5	11.1	10.7	11.0	14.3	13.8	14.1	15.0	14.9	14.9
27	10.8	10.5	10.6	11.5	11.0	11.2	14.5	14.2	14.3	15.3	14.9	15.1
28	10.7	10.4	10.6	12.0	11.4	11.7	14.3	14.0	14.1	15.4	15.0	15.1
29	11.0	10.6	10.9	12.5	12.0	12.3	14.0	13.9	13.9	15.2	15.0	15.1
30	11.2	10.9	11.1	12.8	12.3	12.6	14.0	13.6	13.8	15.6	15.2	15.4
31	11.7	11.0	11.2	---	---	---	13.6	13.4	13.5	15.4	15.2	15.3
MONTH	11.7	6.8	9.6	12.8	9.8	11.1	15.3	12.8	14.2	15.6	13.2	14.5



## 01388000 RAMAPO RIVER AT POMPTON LAKES, NJ—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	98	94	96	100	97	99	100	99	100
2	102	89	97	99	95	97	100	97	99	102	100	101
3	90	81	85	100	95	97	102	99	101	102	100	101
4	86	80	83	98	95	96	104	100	102	101	100	100
5	85	77	82	98	94	96	102	100	101	101	101	101
6	89	77	82	94	92	93	103	99	101	101	100	101
7	86	78	81	95	92	93	104	101	103	101	100	100
8	91	79	84	96	91	93	105	102	104	100	99	99
9	92	80	85	94	91	92	107	104	106	100	98	99
10	88	83	86	94	89	91	105	102	104	101	100	100
11	98	86	93	91	89	89	106	104	105	102	101	102
12	99	97	98	93	89	91	108	106	107	103	102	102
13	101	99	99	93	91	92	108	106	107	103	102	102
14	101	97	99	92	90	91	107	105	106	105	102	103
15	102	97	100	93	89	91	107	106	107	104	103	103
16	100	93	97	91	89	90	108	106	107	105	104	104
17	97	95	96	93	88	90	108	106	107	104	103	104
18	98	95	97	94	88	91	108	106	107	105	104	104
19	96	94	95	92	88	91	107	105	106	105	104	104
20	96	93	94	94	91	93	105	104	104	105	103	104
21	97	94	95	94	89	92	105	103	104	106	104	105
22	98	94	96	90	82	87	105	103	104	111	104	107
23	97	94	96	85	81	84	104	103	104	111	104	107
24	99	95	97	86	83	85	104	103	104	108	105	107
25	97	94	96	87	85	86	103	99	101	109	107	108
26	95	94	94	90	87	89	103	100	102	108	107	107
27	96	94	95	92	89	90	103	102	103	109	106	108
28	96	93	95	94	90	92	102	101	102	110	107	108
29	97	94	96	96	93	94	102	101	101	109	107	108
30	97	95	96	97	93	95	102	100	101	111	108	109
31	100	94	96	---	---	---	100	99	100	109	107	108
MONTH	102	77	93	100	81	92	108	97	104	111	98	104
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	107	105	107	106	105	105	105	102	103	105	102	103
2	107	105	106	105	103	104	104	103	104	104	102	103
3	108	106	106	105	103	104	105	103	104	105	102	103
4	106	105	105	105	104	105	105	103	104	105	101	103
5	108	105	106	104	104	104	104	102	102	104	101	103
6	109	106	107	104	103	104	105	102	104	104	101	102
7	107	104	105	105	104	104	105	103	105	106	101	103
8	107	105	106	105	104	104	104	103	103	104	101	102
9	107	104	105	105	103	104	104	102	103	103	100	101
10	105	102	103	105	104	105	104	102	103	103	100	101
11	105	102	104	106	104	105	104	101	103	101	98	100
12	105	102	103	105	105	105	104	101	102	100	98	99
13	104	102	103	106	104	105	104	103	104	100	98	99
14	104	102	103	106	104	105	106	104	105	102	98	100
15	106	103	104	106	105	105	105	102	104	105	99	102
16	106	102	104	106	105	106	105	102	103	104	101	102
17	103	101	102	106	104	105	104	103	104	105	100	102
18	104	101	102	106	104	105	105	103	104	106	100	103
19	104	102	103	106	104	105	105	103	104	105	100	102
20	104	102	103	105	103	104	106	103	104	105	98	102
21	104	102	102	105	103	104	105	102	104	101	98	99
22	102	100	101	105	103	104	103	102	102	100	98	99
23	102	100	101	105	103	104	103	101	102	100	98	99
24	103	102	103	106	103	105	104	101	103	98	97	98
25	104	103	104	105	104	105	105	102	103	99	96	98
26	106	104	105	105	104	105	103	102	102	99	96	98
27	106	105	105	106	104	105	105	102	103	103	98	101
28	106	105	105	107	105	106	105	102	103	102	100	101
29	---	---	---	106	104	105	104	102	103	102	101	101
30	---	---	---	105	103	104	106	102	104	101	100	101
31	---	---	---	105	102	103	---	---	---	102	100	101
MONTH	109	100	104	107	102	105	106	101	103	106	96	101



## 01388000 RAMAPO RIVER AT POMPTON LAKES, NJ—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	480	467	474	396	391	394	357	343	352	485	472	479
2	475	455	470	398	395	397	361	355	359	475	329	412
3	459	454	456	398	396	397	377	361	372	348	303	316
4	454	447	450	402	398	400	377	374	376	478	348	411
5	487	453	474	402	400	401	383	377	381	543	478	523
6	478	470	474	409	398	402	398	383	390	535	519	522
7	488	478	486	417	409	415	400	397	398	548	524	538
8	489	487	488	420	416	419	414	400	407	551	547	549
9	495	489	492	427	419	423	437	414	425	559	549	554
10	496	495	496	435	426	429	442	436	439	590	555	571
11	496	481	489	442	434	437	446	437	443	606	590	601
12	498	459	486	441	437	440	557	446	482	604	601	602
13	459	377	406	445	437	441	589	517	559	601	590	596
14	394	382	389	446	439	443	523	479	513	590	580	585
15	401	392	396	440	434	437	479	375	421	580	554	568
16	404	401	403	434	421	429	375	318	348	554	545	550
17	402	362	386	421	265	367	323	303	311	545	536	539
18	362	329	342	265	191	216	318	306	312	539	534	536
19	329	316	323	201	189	194	322	318	321	542	537	538
20	320	303	310	214	201	208	328	322	325	552	542	545
21	318	307	312	229	214	222	326	319	322	559	552	555
22	309	306	307	248	229	238	319	307	313	562	558	559
23	315	309	312	253	247	251	308	300	304	566	561	562
24	321	315	318	252	248	249	302	300	301	571	565	568
25	326	321	324	259	252	254	325	302	309	576	571	574
26	339	325	330	270	259	263	348	325	335	581	576	578
27	367	339	355	289	269	277	388	348	369	586	581	583
28	377	367	373	306	289	294	431	388	408	591	586	588
29	382	377	380	327	306	317	462	431	447	590	588	589
30	384	380	382	343	326	333	482	461	473	593	590	591
31	391	384	389	---	---	---	486	482	484	593	592	593
MONTH	498	303	402	446	189	346	589	300	387	606	303	544
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	594	592	593	429	426	427	305	293	298	446	441	444
2	592	588	590	432	420	426	317	304	311	447	440	443
3	588	583	586	446	417	436	329	317	325	444	439	442
4	584	581	582	448	432	443	342	329	336	440	434	438
5	581	577	578	448	425	436	351	342	347	435	423	431
6	579	577	578	446	418	431	363	351	356	423	417	421
7	597	577	585	462	437	446	373	363	366	417	411	414
8	609	597	600	497	462	476	406	373	391	413	407	409
9	629	609	616	512	497	500	500	406	443	414	409	411
10	660	629	641	551	512	533	557	500	538	417	410	412
11	702	660	688	557	550	554	572	557	569	413	407	410
12	711	702	709	555	536	547	565	489	527	415	406	409
13	723	711	719	536	504	519	489	421	455	408	403	405
14	733	723	729	504	499	502	421	394	406	406	401	403
15	754	730	747	508	500	505	395	381	385	402	398	401
16	758	735	756	507	497	502	386	379	382	401	399	400
17	760	757	758	504	445	484	384	381	383	403	399	401
18	760	752	756	445	307	373	391	384	388	401	398	399
19	753	746	751	307	250	273	402	390	396	407	399	402
20	746	734	739	255	247	249	416	401	408	416	405	409
21	735	715	726	281	255	267	426	415	421	416	412	414
22	716	696	705	256	220	236	432	425	427	425	414	420
23	828	695	753	235	220	225	439	430	435	428	425	426
24	795	637	703	255	235	244	448	438	445	435	428	432
25	637	549	594	277	255	265	448	445	446	445	434	440
26	549	492	514	292	276	285	452	445	447	448	441	443
27	492	456	471	314	290	303	455	452	454	448	421	434
28	456	429	441	326	314	319	458	455	457	421	393	403
29	---	---	---	333	326	330	457	448	453	393	361	379
30	---	---	---	333	304	318	450	445	448	361	336	346
31	---	---	---	304	293	298	---	---	---	336	327	332
MONTH	828	429	650	557	220	392	572	293	415	448	327	412



## 01388000 RAMAPO RIVER AT POMPTON LAKES, NJ—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	19.3	18.4	18.8	8.3	7.8	8.0	3.6	2.8	3.2	3.5	3.0	3.3
2	20.4	19.2	19.7	7.8	7.4	7.6	2.9	2.5	2.6	3.6	2.4	3.2
3	21.9	20.1	20.9	7.4	7.0	7.2	2.5	1.2	1.8	2.4	0.9	1.7
4	21.6	20.2	20.8	7.0	6.7	6.9	1.3	1.0	1.1	1.2	0.8	1.0
5	21.4	19.8	20.4	7.2	6.5	6.8	1.7	1.2	1.5	1.6	1.1	1.3
6	21.1	20.1	20.6	7.2	6.9	7.1	1.7	1.5	1.6	2.1	1.6	1.8
7	20.1	19.0	19.4	7.1	6.8	6.9	1.6	1.4	1.5	2.0	1.8	1.9
8	19.6	18.5	18.9	7.0	6.6	6.8	1.7	1.5	1.6	1.9	1.7	1.8
9	18.6	17.8	18.1	7.4	6.9	7.1	1.7	1.5	1.6	2.5	1.9	2.1
10	17.8	17.4	17.6	8.6	7.4	7.8	1.8	1.6	1.7	2.9	2.4	2.6
11	17.4	16.5	17.0	9.2	8.5	8.8	1.9	1.7	1.8	2.8	2.1	2.4
12	16.5	15.7	16.2	9.5	9.1	9.3	1.9	1.1	1.3	2.1	1.3	1.5
13	15.7	15.4	15.5	9.5	9.0	9.3	1.6	1.2	1.4	1.5	1.3	1.4
14	15.4	14.5	15.0	9.2	8.8	9.0	2.9	1.6	2.2	1.4	1.1	1.3
15	14.9	13.9	14.3	9.2	9.0	9.1	3.3	2.9	3.1	1.5	1.3	1.4
16	14.1	13.4	13.9	9.2	8.5	8.9	3.4	2.9	3.3	1.7	1.4	1.5
17	13.4	12.6	12.8	8.5	7.0	7.7	2.9	2.1	2.4	1.5	1.2	1.4
18	12.7	12.1	12.4	7.0	6.5	6.8	2.1	1.7	1.9	1.2	1.0	1.1
19	12.3	11.9	12.1	6.5	6.2	6.3	2.1	1.7	1.9	1.2	1.1	1.1
20	12.3	11.6	11.9	6.6	6.1	6.4	2.9	2.1	2.4	1.1	1.0	1.1
21	12.2	11.7	11.9	6.6	6.4	6.5	3.7	2.9	3.3	1.2	0.9	1.0
22	11.7	11.1	11.4	7.1	6.6	6.9	3.6	3.3	3.5	1.3	1.0	1.1
23	11.5	11.0	11.2	7.1	6.7	6.9	3.6	3.4	3.5	1.5	1.0	1.2
24	11.2	10.8	11.0	6.7	6.3	6.5	3.6	3.2	3.3	1.6	1.2	1.4
25	10.9	10.5	10.7	6.5	6.1	6.3	3.2	2.1	2.8	1.8	1.5	1.6
26	10.6	10.5	10.5	6.5	6.1	6.3	2.1	1.6	1.8	1.7	1.5	1.6
27	10.6	10.2	10.4	6.5	5.5	6.1	1.8	1.4	1.6	1.5	1.2	1.4
28	10.5	10.1	10.3	5.5	4.8	5.0	2.0	1.5	1.7	1.6	1.3	1.5
29	10.1	9.4	9.7	4.8	3.8	4.2	2.3	2.0	2.1	1.6	1.3	1.5
30	9.4	8.6	9.0	3.8	3.6	3.7	2.5	2.2	2.3	1.3	1.1	1.2
31	8.6	8.2	8.4	---	---	---	3.0	2.5	2.7	1.2	1.1	1.1
MONTH	21.9	8.2	14.5	9.5	3.6	7.1	3.7	1.0	2.2	3.6	0.8	1.6
	FEBRUARY			MARCH			APRIL			MAY		
1	1.1	1.0	1.1	1.2	0.7	0.9	7.9	6.2	6.8	16.1	15.0	15.3
2	1.3	1.0	1.2	1.5	1.2	1.3	7.1	5.9	6.4	17.5	15.9	16.5
3	1.8	1.2	1.5	1.4	1.1	1.3	7.8	6.8	7.3	17.1	16.2	16.6
4	1.9	1.7	1.8	1.1	0.9	1.0	7.9	7.5	7.8	16.5	15.5	16.0
5	2.2	1.8	2.0	1.2	0.8	1.0	7.5	6.8	7.1	15.5	14.8	15.2
6	2.6	2.2	2.4	1.5	1.2	1.4	6.9	6.2	6.6	14.8	13.9	14.4
7	2.6	2.2	2.4	1.3	0.9	1.0	6.9	5.5	6.4	16.3	13.7	14.6
8	2.2	1.8	2.0	1.4	0.8	1.0	5.5	4.9	5.0	16.0	14.6	15.6
9	1.8	1.5	1.7	2.3	1.4	1.8	5.0	4.7	4.8	15.3	14.2	14.7
10	1.5	1.4	1.5	2.4	2.1	2.3	5.9	4.5	5.1	15.6	15.0	15.2
11	1.4	1.0	1.2	2.4	2.1	2.2	6.1	5.8	5.9	16.1	15.6	15.8
12	1.2	1.0	1.1	2.2	2.1	2.1	8.1	6.0	7.0	15.8	15.1	15.5
13	1.1	0.9	1.0	2.6	2.2	2.5	9.5	7.9	8.7	15.4	14.7	15.0
14	1.1	0.8	0.9	2.9	2.4	2.6	10.3	9.1	9.6	15.1	14.4	14.7
15	1.1	0.8	0.9	3.4	2.9	3.2	11.8	10.0	10.7	16.3	14.4	14.9
16	0.8	0.6	0.7	4.3	3.3	3.8	14.5	11.7	12.7	15.5	14.8	15.1
17	0.7	0.6	0.6	5.3	4.3	4.8	13.5	12.1	12.7	16.2	14.4	15.0
18	1.0	0.7	0.8	5.2	4.6	4.9	12.1	10.9	11.3	16.7	14.3	15.3
19	1.0	0.8	0.9	4.7	3.9	4.3	11.7	10.7	11.1	17.7	15.3	16.3
20	0.9	0.6	0.8	4.2	3.7	3.8	12.2	11.4	11.7	17.5	16.3	16.9
21	0.7	0.5	0.6	5.2	3.7	4.3	12.4	11.8	12.1	18.0	17.2	17.6
22	1.0	0.6	0.7	6.7	5.1	5.9	13.0	12.2	12.5	17.6	16.1	16.8
23	0.8	0.2	0.4	7.3	6.0	6.6	12.9	11.4	12.2	16.1	15.3	15.6
24	0.2	0.1	0.1	7.6	6.4	7.0	11.6	10.5	11.0	15.3	14.8	15.0
25	0.3	0.1	0.2	8.2	7.0	7.6	12.4	11.0	11.6	14.8	14.5	14.6
26	0.4	0.2	0.3	8.9	7.9	8.4	12.7	12.4	12.6	14.5	14.2	14.4
27	0.4	0.2	0.3	9.4	8.2	8.8	14.0	12.1	13.1	15.0	13.8	14.4
28	0.7	0.4	0.5	9.8	8.8	9.3	14.7	13.3	13.7	15.6	14.4	14.8
29	---	---	---	10.7	9.7	10.1	15.6	14.3	14.9	17.1	15.0	15.8
30	---	---	---	10.5	9.2	10.0	15.6	14.6	14.9	17.6	16.1	16.7
31	---	---	---	9.2	7.9	8.3	---	---	---	17.6	17.0	17.2
MONTH	2.6	0.1	1.1	10.7	0.7	4.3	15.6	4.5	9.8	18.0	13.7	15.5

01388000 RAMAPO RIVER AT POMPTON LAKES, NJ—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	JUNE			JULY			AUGUST			SEPTEMBER		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	17.0	15.1	16.2	26.0	22.9	24.2	25.4	25.1	25.3	24.5	22.9	23.5
2	15.9	14.4	15.1	23.9	22.6	23.1	26.2	25.0	25.3	22.9	21.5	22.3
3	15.3	14.9	15.1	25.1	22.8	23.9	26.2	24.6	25.6	21.5	20.3	20.8
4	15.1	14.2	14.7	24.9	23.1	23.8	26.6	25.6	26.0	20.3	20.0	20.1
5	14.6	13.9	14.2	25.8	23.4	24.5	25.6	24.5	25.0	21.7	19.8	20.7
6	16.1	14.1	15.1	27.8	25.8	26.7	24.8	24.0	24.4	22.3	20.5	21.3
7	16.0	15.4	15.7	28.3	26.1	26.9	24.4	23.7	24.0	22.7	20.4	21.5
8	15.6	15.2	15.4	28.3	26.4	27.2	24.0	23.6	23.8	22.3	20.7	21.5
9	17.0	15.2	16.1	26.9	25.4	26.3	23.8	23.3	23.6	22.6	21.1	21.6
10	18.3	16.6	17.4	25.4	24.0	24.6	24.1	23.4	23.7	23.3	20.7	22.0
11	18.9	18.1	18.3	24.0	23.1	23.6	24.1	23.7	23.9	23.3	21.6	22.4
12	19.8	18.5	19.0	23.5	22.9	23.1	24.5	23.7	24.0	22.2	21.4	21.8
13	19.2	18.0	18.7	25.7	23.3	24.4	25.2	24.4	24.6	21.7	21.3	21.4
14	18.9	17.6	18.2	25.1	23.8	24.5	27.4	24.7	25.8	22.6	21.2	21.7
15	19.7	18.2	18.9	24.7	23.4	23.9	27.6	24.9	26.1	22.2	21.4	21.9
16	19.6	18.7	19.1	23.8	23.2	23.5	25.9	25.2	25.4	22.9	21.9	22.3
17	19.5	19.1	19.3	26.6	23.8	25.1	26.4	25.3	25.7	22.7	21.6	22.1
18	19.3	18.6	19.0	26.1	24.8	25.1	26.6	24.7	25.4	21.9	20.9	21.3
19	18.6	17.8	18.2	26.1	24.1	25.1	25.5	24.3	24.8	21.5	20.8	21.2
20	18.5	17.9	18.3	25.4	24.5	24.9	27.0	24.4	25.5	21.6	21.2	21.4
21	17.9	17.1	17.6	25.4	23.6	24.5	25.7	25.0	25.3	22.7	21.1	21.8
22	17.1	16.5	16.7	25.1	23.7	24.4	26.5	24.3	25.3	21.7	20.8	21.1
23	18.6	16.3	17.4	23.9	22.5	23.1	26.9	25.8	26.3	20.9	20.2	20.7
24	20.4	18.2	19.2	24.0	22.7	23.1	25.8	24.7	25.2	20.2	19.3	19.6
25	22.8	20.1	21.9	26.5	23.5	24.9	24.7	24.2	24.4	19.5	18.9	19.1
26	24.2	21.5	22.7	25.2	23.8	24.3	24.8	24.1	24.4	19.4	18.9	19.1
27	26.0	23.0	24.2	25.2	24.0	24.8	26.0	24.1	25.0	19.1	18.8	18.9
28	24.9	23.2	24.0	27.3	24.9	26.1	26.2	24.6	25.4	19.4	18.9	19.2
29	24.1	23.5	23.8	27.8	26.0	26.7	25.5	24.6	24.8	18.9	18.0	18.5
30	25.2	23.5	24.2	26.5	25.0	25.7	25.5	24.3	24.9	18.0	17.2	17.5
31	---	---	---	26.7	24.7	25.6	25.7	24.1	24.8	---	---	---
MONTH	26.0	13.9	18.5	28.3	22.5	24.8	27.6	23.3	25.0	24.5	17.2	20.9
YEAR	28.3	0.1	12.2									

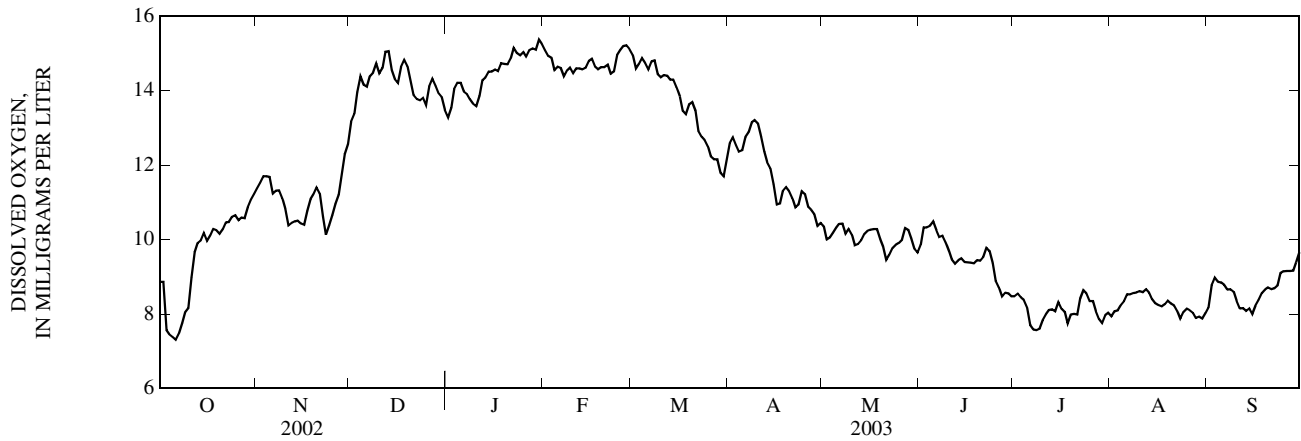


Figure 30. Physical characteristics and concentrations of constituents measured at 01388000 Ramapo River at Pompton Lakes, water year 2003.



01388000 RAMAPO RIVER AT POMPTON LAKES, NJ—Continued

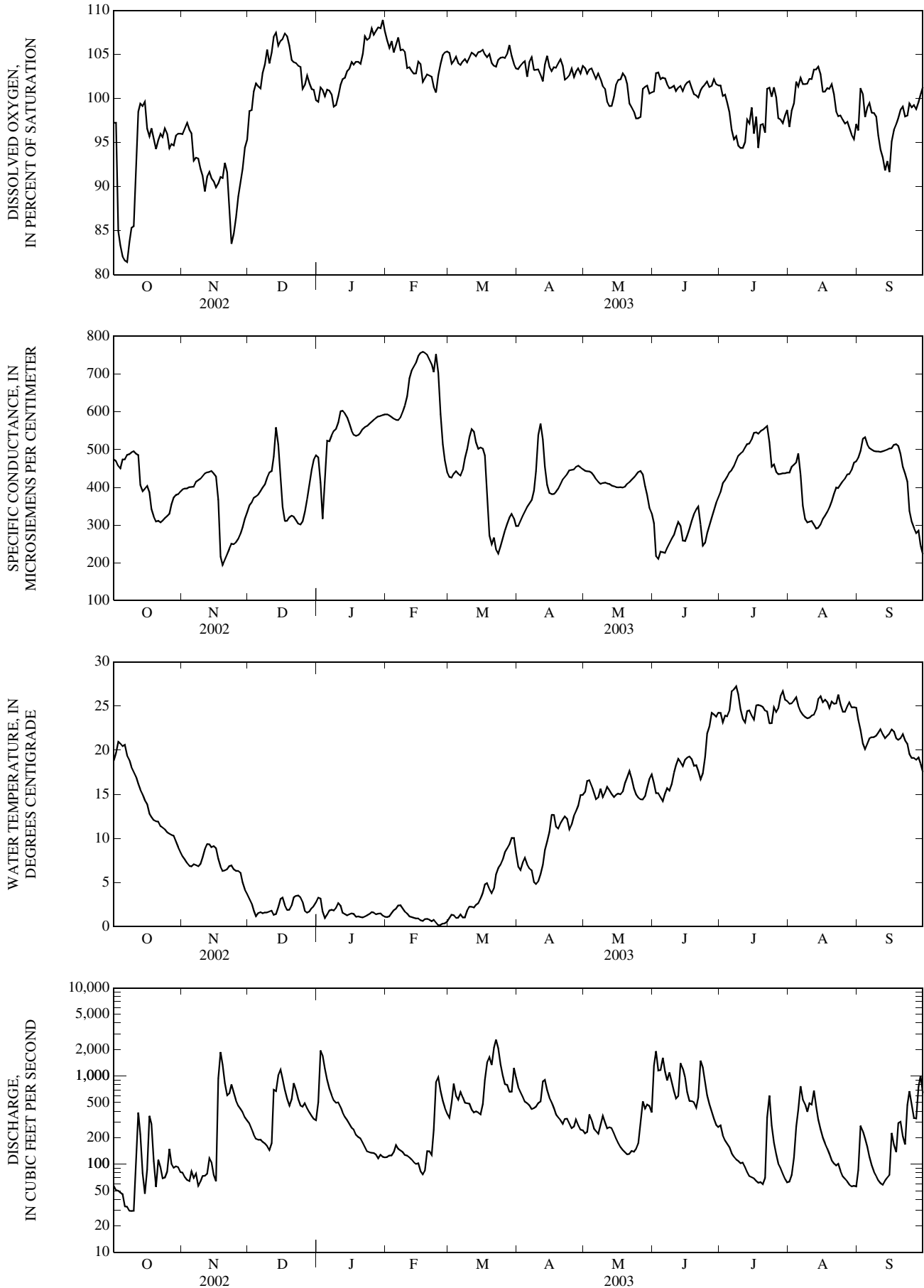
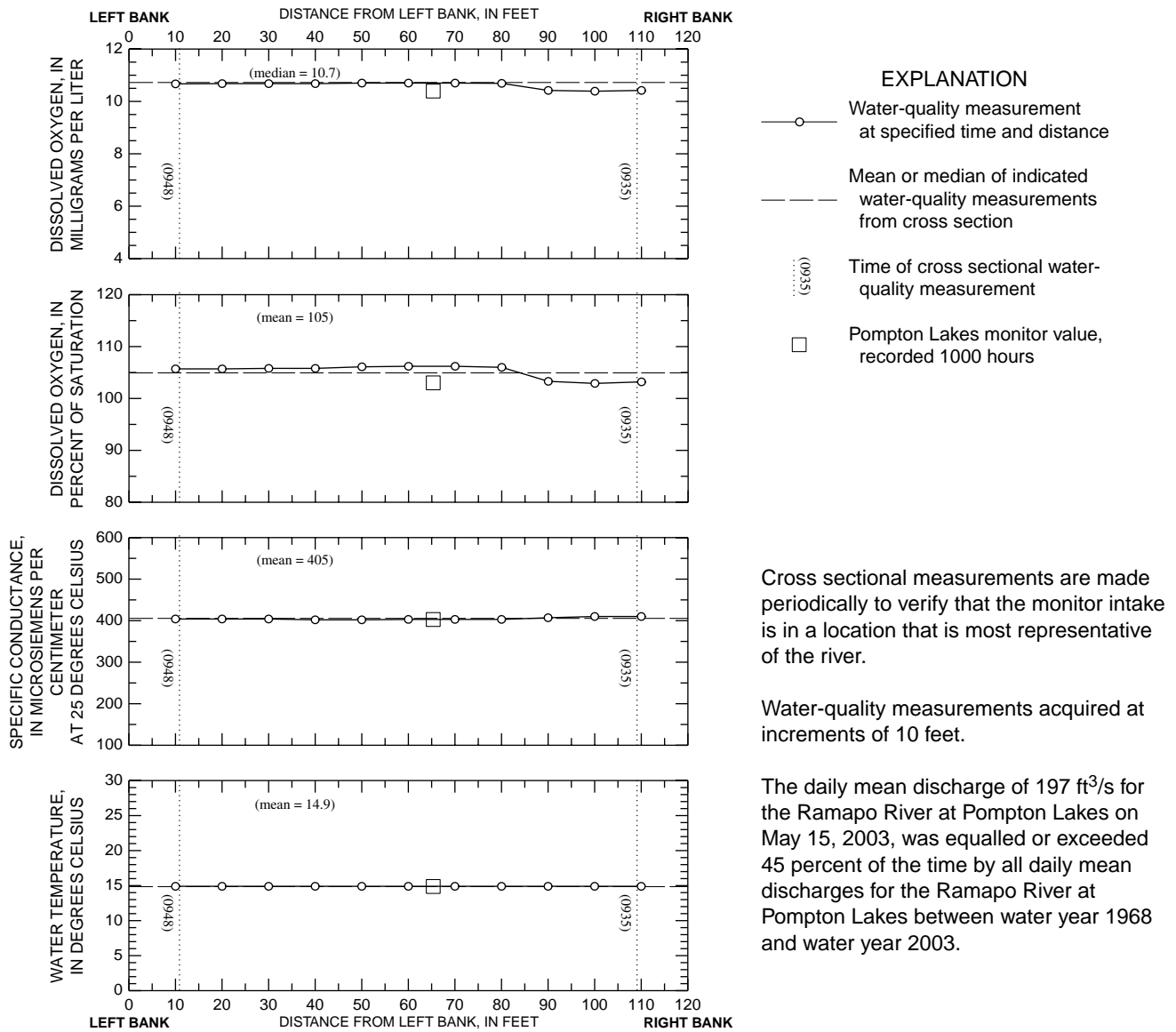
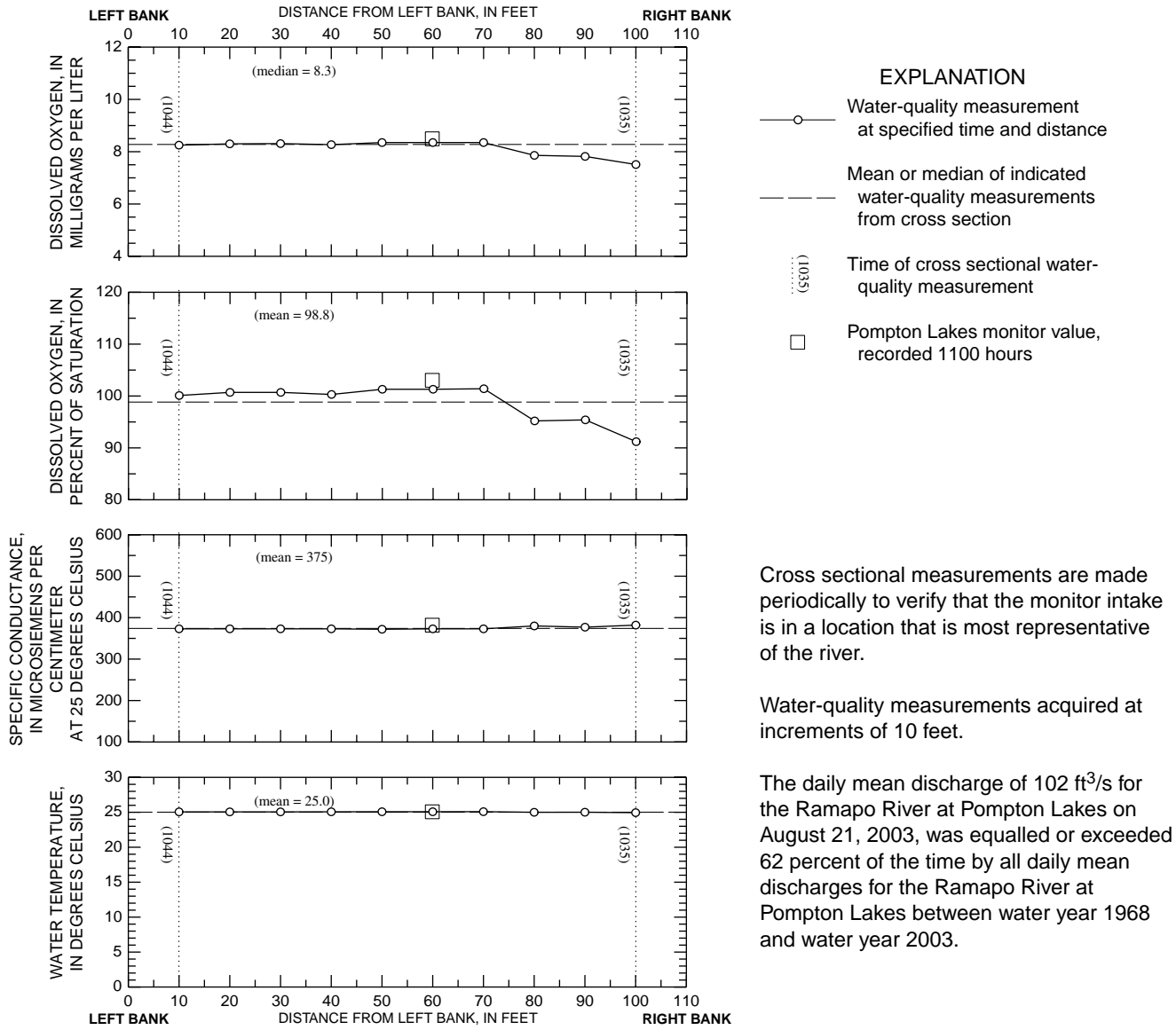


Figure 30. Physical characteristics and concentrations of constituents measured at 01388000 Ramapo River at Pompton Lakes, water year 2003--continued.



**Figure 31.** Cross sectional water-quality measurements with recorded monitor values, at Ramapo River at Pompton Lakes, May 15, 2003.

01388000 RAMAPO RIVER AT POMPTON LAKES, NJ—Continued



**Figure 32.** Cross sectional water-quality measurements with recorded monitor values, at Ramapo River at Pompton Lakes, August 21, 2003.

Cross sectional measurements are made periodically to verify that the monitor intake is in a location that is most representative of the river.

Water-quality measurements acquired at increments of 10 feet.

The daily mean discharge of 102 ft<sup>3</sup>/s for the Ramapo River at Pompton Lakes on August 21, 2003, was equalled or exceeded 62 percent of the time by all daily mean discharges for the Ramapo River at Pompton Lakes between water year 1968 and water year 2003.

## 01388500 POMPTON RIVER AT POMPTON PLAINS, NJ

LOCATION.--Lat 40°58'09", long 74°16'55", Passaic County, Hydrologic Unit 02030103, at Passaic Valley Water Commission pumping station, 100 ft upstream from bridge on Jackson Avenue (Pompton Plains Cross Road), 800 ft below confluence of Pequannock and Ramapo Rivers, and 0.7 mi east of Pompton Plains.

DRAINAGE AREA.--355 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962-69, 1971-75, 1979-80, 1992, 1994, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 3.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 06...	1015	153	3.1	0.089	0.068	744	9.2	81	7.5	402	10.5	8.5	97
FEB 26...	1000	762	3.0	0.095	0.072	770	14.7	101	7.3	488	-2.0	0.6	72
MAY 08...	1000	437	4.5	0.086	0.064	752	8.7	89	7.3	391	16.5	15.8	91
AUG 28...	0930	117	2.4	0.092	0.070	761	6.5	75	7.4	418	26.0	22.7	110

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 06...	26.9	7.33	2.05	32.2	60	64.3	<0.17	8.0	22.5	--	218	5	0.26
FEB 26...	20.1	5.20	1.84	59.2	39	110	<0.17	7.0	13.7	244	253	1	0.37
MAY 08...	24.9	7.01	1.69	38.0	54	71.8	<0.17	3.7	15.5	198	236	5	0.32
AUG 28...	29.8	8.30	1.85	35.5	67	72.5	<0.17	6.5	18.5	218	246	1	0.50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 06...	0.032	<0.030	1.35	0.018	--	0.15	0.023	0.064	1.6	1.8	0.8	<0.1	0.8
FEB 26...	0.183	0.204	0.75	0.013	0.040	0.06	0.031	0.049	1.1	1.2	0.4	<0.1	0.4
MAY 08...	<0.030	<0.030	0.74	0.018	<0.020	0.22	0.009	0.056	1.1	1.3	1.3	<0.1	1.3
AUG 28...	0.041	0.046	0.96	0.009	<0.020	0.11	0.025	0.037	1.5	1.6	0.9	<0.1	0.9

01388500 POMPTON RIVER AT POMPTON PLAINS, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 06...	3.7	E1.0	--	46
FEB 26...	3.2	E1.6	--	20
MAY 08...	3.3	2.3	35.9	40
AUG 28...	3.2	<1.0	7.60	49

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1104	1,420	1,100	700	AUG 11...	1120	190	400	1,100
AUG 04...	1100	1,900	1,800	3,000	AUG 18...	1115	110	400	300
					AUG 25...	1110	50	100	80

## 01388720 BEAVER DAM BROOK AT RYERSON ROAD, AT LINCOLN PARK, NJ

LOCATION.--Lat 40°55'35", long 74°17'34", Morris County, Hydrologic Unit 02030103, at bridge on Ryerson Road in Lincoln Park, 700 ft north of intersection of Ryerson Road and Park Avenue, and 0.3 mi upstream of mouth.

DRAINAGE AREA.-- 13.1 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 2001 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 3.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 07...	1230	9.6	4.9	0.310	0.240	757	8.6	73	7.0	369	8.0	8.0	110
FEB 13...	1200	5.8	6.8	0.223	0.174	760	12.6	87	7.2	512	0.0	0.5	140
MAY 06...	1030	10	4.7	0.205	0.154	756	8.9	80	6.4	447	11.5	10.0	130
AUG 06...	1250	72	20	0.494	0.378	755	7.0	80	6.8	259	24.5	21.4	74

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 07...	31.9	8.53	2.18	25.3	64	48.5	<0.17	12.8	36.2	205	218	5	0.39
FEB 13...	38.2	10.1	1.49	46.5	--	94.1	<0.17	13.4	35.1	--	309	2	0.37
MAY 06...	37.4	9.98	1.64	32.8	--	66.7	<0.17	10.8	27.8	--	249	6	0.38
AUG 06...	21.5	4.96	2.26	18.2	47	31.9	<0.17	10.6	20.1	141	173	23	0.74

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 07...	<0.030	0.035	0.24	0.005	0.034	0.10	0.018	0.040	0.63	0.73	0.4	<0.1	0.4
FEB 13...	0.160	0.144	0.50	0.004	--	0.03	0.009	0.025	0.87	0.91	0.2	<0.1	0.2
MAY 06...	0.085	0.091	0.55	0.012	0.020	0.07	0.008	0.027	0.93	1.0	0.4	<0.1	0.4
AUG 06...	0.107	0.148	0.74	0.021	0.073	0.19	0.079	0.164	1.5	1.7	2.1	<0.1	2.1

01388720 BEAVER DAM BROOK AT RYERSON ROAD, AT LINCOLN PARK, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	8.4	E1.6	--	51
FEB 13...	4.1	E1.2	--	37
MAY 06...	4.9	<1.0	4.50	52
AUG 06...	10.9	<1.0	5.30	48

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1005	320	<100	2,400	JUN 04...	1000	7,200	11,000	16,000
MAY 14...	1005	470	400	700					
MAY 21...	1000	150	1,200	5,000					
MAY 28...	1005	490	800	900					

Remark codes used in this table:  
 < -- Less than

## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ

LOCATION.--Lat 40°53'47", long 74°16'09", Passaic County, Hydrologic Unit 02030103, 400 ft downstream from the Pompton River in Two Bridges, and 1.4 mi northwest of Little Falls.

DRAINAGE AREA.--734 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1987 to current year.

NUTRIENT AND INORGANIC CHEMICAL DATA: Water years 1987-96.

PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: August 1989 to current year. Unpublished fragmentary water-quality records for the period March to July 1989 are available at the U.S. Geological Survey office in West Trenton, N.J.

DISSOLVED OXYGEN PERCENT SATURATION: October 2001 to current year.

SPECIFIC CONDUCTANCE: August 1989 to current year.

WATER TEMPERATURE: August 1989 to current year.

INSTRUMENTATION.--Water-quality monitor(s) since March 1989, pumping system, data recorded hourly. Multiple-point monitoring is necessary at this site because of poor mixing below the confluence with the Pompton River. Three intakes, left, middle, and right, are positioned at 70, 160, and 220 ft, respectively, from the edge of the monitor house on the left bank (looking downstream).

Three monitors, water pumped continuously.--Water years 1989-99.

One monitor, water pumped sequentially.--Water years 2000 to current year.

REMARKS.--The station is 400 ft downstream from the confluence of the Pompton River with the left bank of the Passaic River. One water-quality sensor (monitor) measures the characteristics of water pumped sequentially from three separate intakes. The station is impacted by occasional diversion of water from the Pompton River 750 ft upstream from its junction with the left bank of the Passaic River, which is 400 ft upstream from the station. Interruptions in the daily record were due to instrument or pumping-system malfunction. The calibration of water quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated. Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:

DISSOLVED OXYGEN: Nov. 18 to Dec. 10, Dec. 13 to Dec. 30, Feb. 26 to Mar. 20, May 15 to May 27, June 25 to July 10, Aug. 31 to Sept. 3.

EXTREMES FOR PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: Maximum, 20.0 mg/L (measuring limit of instrument) from left and right intakes, on many days during July- September, 1999, from right and middle on July 25, 2001; minimum, 1.1 mg/L from left and middle intakes, Apr. 20, 2002.

DISSOLVED OXYGEN PERCENT OF SATURATION: Maximum, 253 from right intake, Aug. 19, 2002; minimum, 12 from left and middle intakes, Apr. 20, 2002.

SPECIFIC CONDUCTANCE: Maximum, 2,910  $\mu$ S/cm from middle intake, Jan. 16, 1999; minimum, 101  $\mu$ S/cm from right intake, Sept. 19, 20, 1999.

WATER TEMPERATURE: Maximum, 31.5°C from left intake, July 7, 1999; minimum, 0.0°C from left, middle, and right intakes, on many days during winters.

EXTREMES FOR CURRENT YEAR.--

DISSOLVED OXYGEN: Maximum, 17.4 mg/L, Feb. 16 from right intake; minimum, 2.6 mg/L, June 28 from middle intake.

DISSOLVED OXYGEN PERCENT OF SATURATION: Maximum, 136, Apr. 19 from left intake; minimum, 30, June 28 from middle intake.

SPECIFIC CONDUCTANCE: Maximum, 1,200  $\mu$ S/cm, Feb. 23 from right intake; minimum, 200  $\mu$ S/cm, Nov. 19 from left intake.

WATER TEMPERATURE: Maximum, 26.7°C, July 7, 8 from right intake; minimum, 0.0°C, Feb. 16, 17 from left intake.



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

DISSOLVED OXYGEN FROM LEFT INTAKE, IN MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.2	6.1	6.5	10.2	8.5	9.1	13.8	13.0	13.4	13.7	13.1	13.3
2	7.6	5.9	6.6	10.5	8.9	9.4	14.3	13.8	14.0	13.9	13.1	13.5
3	7.8	5.6	6.4	10.6	8.8	9.5	15.0	14.1	14.4	14.3	13.9	14.2
4	6.1	5.2	5.7	11.0	8.9	9.6	15.7	15.0	15.3	14.4	14.2	14.3
5	6.9	5.2	5.8	11.5	8.9	9.8	15.7	15.4	15.6	14.4	14.1	14.2
6	7.6	5.3	6.1	10.4	8.7	9.1	15.6	15.4	15.5	14.2	14.0	14.1
7	7.6	5.6	6.3	9.1	8.0	8.5	15.8	15.4	15.6	14.3	13.8	14.0
8	8.2	5.7	6.9	9.3	8.0	8.5	15.8	15.6	15.7	14.1	13.8	13.9
9	8.6	6.4	7.3	9.6	8.1	8.6	16.3	15.6	15.9	13.8	13.5	13.6
10	7.6	6.9	7.2	9.5	8.2	8.7	---	---	---	13.9	13.4	13.6
11	8.0	7.5	7.8	9.1	7.8	8.5	---	---	---	14.3	13.5	13.9
12	8.2	7.8	8.0	8.1	6.9	7.6	---	---	---	14.6	14.0	14.3
13	7.9	5.8	7.0	7.9	7.5	7.7	---	---	---	14.7	14.3	14.5
14	5.8	5.4	5.5	9.2	7.9	8.6	13.1	12.6	12.7	14.8	14.2	14.5
15	6.1	5.5	5.7	9.4	9.2	9.3	12.8	12.5	12.7	14.8	14.4	14.6
16	---	---	---	9.4	8.9	9.1	12.6	12.4	12.5	14.9	14.3	14.6
17	8.6	6.3	7.7	10.7	9.0	10.1	13.0	12.5	12.8	14.8	14.3	14.5
18	8.7	7.0	8.2	11.3	10.7	11.0	13.3	12.9	13.1	15.0	14.3	14.7
19	7.0	6.4	6.5	11.5	11.3	11.4	13.2	12.9	13.1	15.0	14.5	14.8
20	6.8	6.5	6.7	11.4	11.3	11.4	12.9	12.0	12.4	15.0	14.3	14.6
21	7.0	6.6	6.8	11.4	11.2	11.3	12.8	12.1	12.6	15.1	14.4	14.7
22	8.6	6.8	7.5	11.3	10.9	11.1	12.9	12.5	12.7	15.1	14.5	14.9
23	8.2	7.3	7.6	11.7	10.9	11.3	12.9	12.5	12.7	15.3	14.6	15.0
24	8.6	7.6	8.0	12.0	11.7	11.8	13.2	12.6	12.9	15.3	14.7	15.0
25	8.4	7.6	8.1	12.2	11.9	12.0	13.1	12.7	12.8	15.3	14.6	15.0
26	8.4	8.0	8.3	12.3	12.0	12.1	13.9	12.8	13.4	15.4	14.5	14.8
27	8.3	7.9	8.0	12.4	12.0	12.1	14.1	13.7	13.9	15.2	14.3	14.8
28	8.2	7.6	7.8	13.2	12.4	12.8	14.1	13.7	13.9	15.5	15.2	15.4
29	8.5	7.6	8.0	13.4	13.1	13.2	14.1	13.7	13.9	15.8	14.8	15.1
30	8.7	7.8	8.1	13.3	13.1	13.2	14.3	13.6	13.9	15.4	14.8	15.1
31	10.6	8.0	8.9	---	---	---	14.2	13.6	13.8	15.6	14.5	14.9
MONTH	10.6	5.2	7.2	13.4	6.9	10.2	16.3	12.0	13.7	15.8	13.1	14.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.8	14.0	14.3	14.7	13.8	14.2	12.4	11.5	11.9	11.5	9.1	10.3
2	14.9	14.1	14.5	14.4	13.4	13.6	12.9	11.9	12.3	10.9	8.9	10
3	15.2	14.7	14.9	14.5	13.3	13.9	12.9	11.6	12.2	11.5	8.1	9.8
4	15.5	13.6	14.3	14.8	13.9	14.3	12.2	11.5	11.9	11.5	8.7	10.1
5	15.5	13.3	14.2	14.2	13.6	13.9	12.6	11.8	12.2	11.0	9.2	10.3
6	15.7	14.4	15.2	14.0	13.2	13.6	13.9	12.1	12.9	10.8	9.1	10.1
7	15.9	14.6	15.1	14.8	13.7	14.2	13.6	12.3	12.9	12.1	9.7	11.0
8	15.7	14.6	15.1	14.6	13.5	14.0	14.4	12.9	13.6	11.1	8.3	9.1
9	15.9	15.0	15.4	14.1	13.1	13.6	13.9	12.9	13.4	10.7	8.7	9.8
10	16.1	14.7	15.2	14.4	12.8	13.6	15.0	12.8	13.8	10.9	9.0	10
11	15.5	14.6	15.1	14.6	13.2	13.8	13.5	12.3	12.9	10.2	8.7	9.1
12	16.1	15.2	15.6	14.6	13.0	13.7	13.0	11.9	12.5	10.1	8.3	9.2
13	16.0	15.1	15.6	13.9	12.6	13.3	13.6	11.9	12.7	10.6	8.9	9.8
14	16.3	15.2	15.8	14.8	12.5	13.6	14.0	11.9	12.8	11.0	9.2	10.2
15	17.0	15.2	16.0	14.6	12.7	13.6	13.9	11.7	12.7	10.7	9.3	10.1
16	17.2	15.8	16.4	14.3	12.1	13.1	13.8	11.1	12.3	10.1	8.7	9.5
17	16.0	13.5	15.3	13.6	11.7	12.5	13.2	10.4	11.9	10.5	8.8	9.7
18	13.9	13.1	13.5	12.9	11.9	12.3	14.0	11.5	12.7	10.6	8.9	9.7
19	15.2	13.5	14.4	13.1	12.2	12.7	14.8	11.9	13.3	10.9	9.0	9.9
20	15.7	14.4	15.1	12.8	12.1	12.6	14.0	10.8	12.5	10.2	8.7	9.4
21	15.8	14.2	15.2	12.1	11.5	11.8	13.2	10.3	11.9	9.2	7.2	8.0
22	15.8	13.6	14.2	11.6	11.3	11.5	12.1	10.0	11.1	7.4	7.1	7.3
23	14.0	13.6	13.8	12.8	11.3	11.6	12.5	9.7	11.1	7.9	7.2	7.6
24	14.8	14.0	14.5	12.2	11.7	11.9	13.7	10.4	12.1	8.1	7.7	7.9
25	15.0	14.4	14.7	12.1	11.4	11.8	13.7	10.4	12.2	8.3	7.9	8.1
26	15.2	14.4	14.8	11.9	11.2	11.6	12.7	9.7	10.3	8.7	7.8	8.2
27	15.0	14.4	14.7	12.1	11.2	11.5	13.1	9.4	11.3	---	---	---
28	14.9	14.0	14.5	12.1	11.2	11.6	13.0	9.5	11.4	---	---	---
29	---	---	---	11.6	10.5	11.2	11.8	9.3	10.7	---	---	---
30	---	---	---	11.3	10.3	10.9	12.4	9.3	11.0	---	---	---
31	---	---	---	12.2	11.2	11.6	---	---	---	---	---	---
MONTH	17.2	13.1	14.9	14.8	10.3	12.8	15.0	9.3	12.2	12.1	7.1	9.4



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

DISSOLVED OXYGEN FROM MIDDLE INTAKE, IN MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	7.0	6.3	6.5	9.4	8.7	9.0	11.0	10.2	10.5	13.2	11.7	12.3
2	7.2	6.0	6.5	9.8	8.9	9.2	12.4	10.9	11.7	14.0	13.2	13.6
3	7.1	5.6	6.2	9.8	9.0	9.3	13.4	12.3	12.8	14.3	14.0	14.2
4	6.0	5.3	5.7	10.1	9.0	9.4	14.8	13.3	14.1	14.2	12.9	13.7
5	6.4	5.2	5.7	10.4	9.0	9.5	15.0	14.6	14.8	12.9	11.8	12.2
6	6.8	5.4	6.0	9.8	8.8	9.1	15.0	14.8	14.9	12.0	11.7	11.8
7	6.9	5.7	6.2	8.9	8.1	8.4	15.0	14.8	14.9	12.0	11.7	11.8
8	7.6	5.8	6.7	8.8	8.1	8.4	15.1	14.8	15.0	12.0	11.8	11.9
9	7.9	6.4	7.1	8.9	8.2	8.5	15.5	15.0	15.2	11.8	11.6	11.7
10	7.7	7.0	7.3	8.8	7.9	8.3	---	---	---	11.8	11.5	11.6
11	7.7	7.5	7.6	7.9	6.8	7.4	---	---	---	12.4	11.8	12.0
12	7.7	6.7	7.3	7.4	6.3	6.7	---	---	---	12.8	12.4	12.6
13	6.7	5.8	6.2	7.1	5.2	5.7	---	---	---	12.9	12.8	12.8
14	5.8	5.4	5.5	6.1	5.3	5.8	12.6	12.4	12.5	13.0	12.7	12.9
15	5.8	5.5	5.6	6.6	5.8	6.2	12.5	12.1	12.4	13.2	12.7	12.9
16	---	---	---	7.0	6.5	6.7	12.2	10.6	11.4	13.8	13.0	13.4
17	6.5	6.1	6.4	10.7	7.0	9.8	10.7	10.3	10.4	14.1	13.6	13.8
18	6.5	6.4	6.5	11.3	10.7	11.1	10.4	10.3	10.4	14.6	13.8	14.2
19	6.6	6.4	6.5	11.6	11.1	11.4	10.6	10.4	10.5	14.6	13.8	14.2
20	6.8	6.5	6.7	11.1	8.7	10.2	10.9	10.5	10.6	14.6	14.0	14.3
21	7.0	6.6	6.8	8.8	7.6	8.1	11.5	10.9	11.2	14.8	14.0	14.3
22	7.5	6.8	7.2	8.6	7.7	8.1	11.3	10.6	11.0	14.8	14.1	14.5
23	7.9	7.3	7.6	9.2	8.3	8.8	10.6	10.4	10.5	14.9	13.8	14.4
24	8.3	7.7	8.0	8.8	8.1	8.4	10.7	10.5	10.6	14.7	13.8	14.4
25	8.5	7.8	8.1	8.3	8.0	8.2	11.0	10.7	10.8	15.1	14.3	14.7
26	8.4	8.1	8.3	8.2	8.0	8.0	11.5	11.0	11.3	15.1	14.3	14.6
27	8.2	7.9	8.1	8.8	8.1	8.4	11.8	11.5	11.6	14.7	13.5	14.2
28	8.0	7.7	7.8	9.7	8.8	9.3	11.8	11.6	11.8	14.8	13.0	13.9
29	8.2	7.7	7.9	10.2	9.7	10.0	11.9	11.7	11.8	14.9	14.4	14.6
30	8.4	7.9	8.1	10.2	10.1	10.1	12.2	11.8	12.0	14.8	13.9	14.5
31	9.8	8.1	8.8	---	---	---	12.1	11.8	12.0	14.9	14.2	14.4
MONTH	9.8	5.2	7.0	11.6	5.2	8.6	15.5	10.2	12.1	15.1	11.5	13.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	14.3	13.7	14.0	11.6	11.4	11.5	12.1	11.3	11.7	10.4	8.7	9.7
2	14.3	13.5	14.0	12.5	11.2	11.6	12.9	10.9	11.8	10.2	8.3	9.4
3	14.7	13.8	14.3	13.3	12.4	12.9	12.9	11.3	12.1	10.6	7.8	9.2
4	14.8	13.5	14.0	12.8	12.4	12.5	12.6	11.1	11.5	10.5	7.7	9.1
5	14.5	13.2	13.8	12.4	12.1	12.2	11.4	10.6	11.0	10.3	8.5	9.5
6	14.7	13.9	14.3	12.4	11.9	12.2	12.8	11.1	11.9	10.4	8.9	9.7
7	15.0	14.5	14.7	12.3	12.0	12.1	12.8	12.5	12.6	11.0	9.5	10.4
8	15.1	14.6	14.9	12.1	11.9	12.0	14.0	12.5	13.1	10.4	8.3	9.0
9	15.4	14.9	15.2	12.1	11.8	12.0	13.5	12.9	13.2	10.2	8.3	9.3
10	15.5	14.6	15.0	12.4	11.9	12.1	14.2	12.8	13.5	9.9	8.4	9.2
11	15.4	14.6	15.0	12.9	12.4	12.6	13.4	12.7	13.1	9.3	8.2	8.5
12	15.6	14.9	15.3	13.0	12.6	12.8	13.2	12.1	12.6	9.8	8.0	8.9
13	16.1	15.1	15.4	12.9	12.6	12.8	13.4	12.0	12.6	10.3	8.6	9.5
14	16.2	14.8	15.6	12.9	12.5	12.7	12.8	11.5	12.1	10.5	8.9	9.8
15	16.9	15.4	16.1	13.2	12.8	13.0	12.6	10.7	11.6	10.5	9.1	9.9
16	17.1	15.8	16.4	13.1	12.6	12.9	12.5	10.0	11.2	10.0	8.7	9.2
17	16.1	14.3	15.6	13.4	12.1	12.6	11.4	10.0	10.5	9.4	8.3	8.9
18	15.3	14.0	14.6	13.0	11.9	12.4	11.4	10.0	10.5	9.5	8.3	8.9
19	14.6	13.2	14.0	13.1	12.2	12.8	12.6	11.4	12.1	10.6	8.4	9.5
20	14.9	13.3	14.3	12.8	12.1	12.6	12.4	11.1	11.9	9.9	8.3	9.3
21	15.4	14.3	14.9	12.1	11.6	11.9	12.0	10.3	11.3	8.4	6.7	7.6
22	15.2	13.5	14.2	11.7	11.1	11.5	11.2	9.8	10.5	6.7	6.1	6.5
23	14.0	13.5	13.7	12.6	10.9	11.5	11.7	9.2	10.5	6.7	6.2	6.5
24	14.6	14.0	14.3	11.8	11.1	11.4	12.9	9.9	11.5	7.1	6.7	7.0
25	14.1	13.0	13.6	11.5	10.6	11.1	12.6	10.2	11.6	7.2	6.9	7.0
26	13.0	12.5	12.8	11.3	10.1	10.7	11.8	9.6	10.2	8.7	7.1	8.0
27	12.5	11.9	12.2	11.8	10.0	10.9	10.9	8.7	9.9	---	---	---
28	11.9	11.6	11.7	12.1	10.3	11.1	11.2	8.9	10.2	---	---	---
29	---	---	---	11.3	10.0	10.6	10.8	8.8	9.9	---	---	---
30	---	---	---	11.4	10.3	10.9	11.3	8.5	10.1	---	---	---
31	---	---	---	12.3	11.0	11.6	---	---	---	---	---	---
MONTH	17.1	11.6	14.4	13.4	10.0	12.0	14.2	8.5	11.5	11.0	6.1	8.8



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

DISSOLVED OXYGEN FROM RIGHT INTAKE, IN MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	6.9	6.3	6.5	9.5	8.7	9.1	10.6	9.9	10.2	11.8	11.6	11.7
2	7.2	6.1	6.5	10.0	9.0	9.4	11.7	10.6	11.1	12.7	11.8	12.2
3	7.1	5.7	6.3	10.0	9.0	9.4	12.6	11.7	12.1	12.7	11.8	12.2
4	6.1	5.3	5.7	10.2	9.1	9.5	13.6	12.6	13.0	12.0	11.7	11.8
5	6.4	5.3	5.7	10.4	9.1	9.6	14.0	13.6	13.8	11.7	11.5	11.6
6	6.7	5.4	6.0	9.9	9.0	9.3	14.2	13.9	14.1	11.7	11.5	11.6
7	7.0	5.7	6.2	9.1	8.2	8.5	14.2	13.9	14.1	11.9	11.6	11.8
8	7.4	5.8	6.7	8.7	8.2	8.5	14.4	13.9	14.2	11.9	11.8	11.9
9	7.9	6.4	7.2	8.8	8.3	8.6	14.4	14.3	14.3	11.8	11.6	11.7
10	7.7	7.0	7.3	8.8	8.1	8.4	---	---	---	11.7	11.4	11.6
11	7.8	7.5	7.6	8.1	6.9	7.5	---	---	---	12.4	11.7	12.0
12	7.7	6.8	7.4	6.9	5.9	6.4	---	---	---	12.8	12.4	12.6
13	6.8	5.9	6.3	5.9	5.2	5.5	---	---	---	12.9	12.8	12.8
14	5.9	5.5	5.6	6.2	5.4	5.9	11.9	11.0	11.5	13.1	12.7	12.9
15	5.8	5.6	5.7	6.7	5.9	6.3	11.0	10.3	10.6	13.1	12.7	12.9
16	---	---	---	7.1	6.7	6.8	10.3	9.9	10.0	13.4	12.9	13.1
17	6.5	6.2	6.4	8.7	7.1	7.8	10.3	9.9	10.1	13.5	13.2	13.3
18	6.6	6.4	6.5	9.4	8.7	9.1	10.4	10.3	10.4	13.8	13.4	13.5
19	6.6	6.4	6.6	8.7	7.2	7.9	10.8	10.4	10.6	13.8	13.6	13.7
20	6.8	6.6	6.7	7.2	6.9	7.0	10.6	10.4	10.6	13.7	13.3	13.6
21	7.0	6.7	6.9	7.4	6.9	7.2	10.4	10.0	10.2	13.8	13.4	13.6
22	7.4	6.9	7.2	7.7	7.4	7.6	10.4	10.2	10.4	14.0	13.5	13.8
23	8.0	7.4	7.7	7.7	7.4	7.5	10.5	10.4	10.4	14.2	13.5	13.9
24	8.4	7.7	8.1	8.0	7.7	7.9	10.8	10.5	10.6	14.3	13.5	13.9
25	8.5	7.7	8.2	8.2	8.0	8.1	11.0	10.8	10.9	14.2	13.5	13.8
26	8.5	8.1	8.3	8.2	8.0	8.1	11.5	11.0	11.1	13.9	13.3	13.6
27	8.2	8.0	8.1	8.8	8.2	8.5	11.8	11.5	11.6	13.8	13.2	13.5
28	8.1	7.7	7.9	9.8	8.8	9.3	11.9	11.6	11.8	13.8	13.1	13.5
29	8.2	7.7	8.0	10.3	9.8	10.1	12.0	11.8	11.9	14.1	13.4	13.8
30	8.6	8.0	8.2	10.2	10.0	10.1	12.2	11.9	12.0	13.9	13.4	13.7
31	9.7	8.2	8.8	---	---	---	12.0	11.7	11.9	13.5	13.1	13.4
MONTH	9.7	5.3	7.0	10.4	5.2	8.2	14.4	9.9	11.6	14.3	11.4	12.9
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	13.5	13.0	13.2	11.7	11.5	11.6	11.7	10.2	11.0	10.2	8.4	9.4
2	13.2	12.6	12.9	11.5	11.3	11.4	13.2	10.2	11.4	9.6	8.0	8.8
3	13.5	12.7	13.0	12.0	11.2	11.6	13.3	10.9	12.0	8.8	5.7	7.2
4	13.7	12.8	13.1	12.5	12.0	12.3	12.8	10.6	11.3	8.2	5.6	7.0
5	13.7	12.7	13.1	12.4	12.1	12.2	10.9	10.0	10.4	8.9	7.0	7.9
6	14.0	13.0	13.6	12.1	11.6	11.8	12.4	10.8	11.3	9.0	7.8	8.4
7	14.6	13.9	14.3	12.1	11.6	11.8	12.6	12.3	12.5	9.1	8.5	8.8
8	15.1	14.1	14.6	12.2	12.0	12.0	13.0	12.2	12.7	8.9	7.6	8.1
9	15.4	14.3	14.8	12.1	11.9	12.0	13.4	12.6	13.0	7.7	6.4	6.8
10	15.3	14.4	14.8	12.4	12.0	12.1	13.4	12.6	13.0	7.7	6.8	7.3
11	15.5	14.3	14.8	12.9	12.4	12.7	13.9	12.4	13.2	7.7	7.1	7.4
12	15.6	14.3	14.9	13.1	12.7	12.9	12.5	12.1	12.3	7.5	6.7	7.0
13	16.0	14.6	15.3	13.0	12.6	12.9	12.4	11.1	11.8	7.5	6.8	7.0
14	16.4	14.9	15.7	12.9	12.6	12.8	12.0	10.2	11.1	7.9	7.3	7.5
15	17.2	15.6	16.3	13.2	12.9	13.1	12.4	10.1	11.2	7.9	7.6	7.8
16	17.4	16.1	16.6	13.2	12.7	13.0	12.2	9.8	11.0	7.8	7.5	7.7
17	16.8	15.5	16.1	12.8	12.2	12.5	11.5	9.7	10.4	7.6	7.1	7.4
18	16.0	15.1	15.7	12.3	12.0	12.1	11.4	10.1	10.5	8.0	7.3	7.7
19	15.1	12.7	14.0	12.1	11.6	11.9	12.6	11.4	12.1	8.1	7.6	7.9
20	14.7	13.0	14.2	12.0	10.7	11.1	12.5	11.1	12.0	8.1	7.2	7.7
21	15.6	14.5	14.9	---	---	---	12.0	10.1	11.2	7.4	6.0	6.8
22	15.5	13.9	14.8	---	---	---	11.2	9.4	10.3	6.0	5.5	5.8
23	14.2	12.7	13.1	---	---	---	10.4	8.9	9.6	5.8	5.3	5.6
24	13.3	12.9	13.1	---	---	---	11.3	8.9	10.2	6.8	5.8	6.4
25	13.4	13.1	13.3	10.2	8.5	9.5	11.8	9.9	10.9	6.9	6.7	6.8
26	13.1	12.6	12.9	10.6	9.1	9.9	10.9	9.4	10.0	7.2	6.8	7.0
27	12.6	12.0	12.3	11.6	8.7	10.1	9.5	8.2	8.9	---	---	---
28	12.0	11.7	11.9	12.3	9.2	10.7	10.7	8.7	9.7	---	---	---
29	---	---	---	11.2	9.3	10.2	10.4	8.5	9.4	---	---	---
30	---	---	---	10.0	8.2	8.8	10.7	8.1	9.4	---	---	---
31	---	---	---	11.7	8.1	9.6	---	---	---	---	---	---
MONTH	17.4	11.7	14.2	13.2	8.1	11.6	13.9	8.1	11.1	10.2	5.3	7.4



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

DISSOLVED OXYGEN FROM LEFT INTAKE, IN PERCENT OF SATURATION  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	79	65	70	89	71	77	105	100	102	105	100	102
2	85	64	72	89	74	78	107	103	105	104	99	102
3	88	62	71	89	72	78	109	104	106	104	102	103
4	67	58	63	92	73	79	113	106	109	104	101	102
5	80	58	65	97	73	81	113	109	111	104	102	103
6	87	58	68	88	74	77	113	109	111	104	102	103
7	85	60	68	79	68	73	114	109	112	104	101	102
8	90	60	73	79	68	72	115	111	113	103	100	101
9	91	66	75	83	68	73	116	112	114	102	99	101
10	78	71	74	84	71	76	---	---	---	105	100	102
11	80	76	78	84	72	78	---	---	---	105	99	102
12	83	79	81	75	64	70	---	---	---	106	100	103
13	80	58	71	71	68	70	---	---	---	105	101	104
14	58	52	55	81	70	76	97	94	95	106	100	103
15	59	53	54	84	81	82	97	94	96	106	102	103
16	---	---	---	83	78	80	96	93	95	106	100	103
17	82	59	73	90	78	85	96	93	94	106	101	103
18	83	65	78	94	89	91	97	94	95	105	99	102
19	65	59	60	94	93	94	98	95	96	105	100	103
20	63	60	61	94	93	93	96	92	94	105	99	103
21	65	61	63	95	92	94	97	93	95	105	99	103
22	80	62	69	94	92	93	99	95	97	106	100	104
23	76	66	69	96	91	94	99	95	97	106	101	104
24	79	68	73	99	96	97	101	95	98	106	101	104
25	75	68	72	101	97	99	100	93	96	107	101	105
26	76	71	74	102	98	100	102	93	98	107	101	103
27	76	72	73	101	98	99	104	100	102	106	99	103
28	75	69	71	103	98	101	104	100	102	109	105	107
29	76	68	71	104	100	102	105	100	102	110	103	105
30	76	68	71	104	101	102	107	100	103	108	103	106
31	95	68	77	---	---	---	107	102	104	111	104	106
MONTH	95	52	70	104	64	85	116	92	102	111	99	103
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	106	101	103	106	99	103	101	94	97	116	90	104
2	109	102	105	105	97	99	108	96	101	112	91	103
3	113	107	110	105	96	100	109	97	103	120	82	102
4	116	102	107	108	97	102	102	97	100	116	87	102
5	113	97	104	104	97	100	103	97	100	108	90	101
6	114	102	109	100	96	97	116	98	106	105	88	97
7	115	104	109	107	96	101	110	101	105	123	93	110
8	112	103	108	109	96	102	113	101	107	114	84	92
9	114	106	111	106	96	101	110	101	106	108	87	98
10	116	106	110	106	93	100	122	100	110	111	89	100
11	111	103	107	108	95	101	110	100	105	104	87	92
12	114	108	110	111	96	103	111	99	104	102	83	93
13	112	106	110	105	95	100	118	101	109	106	88	97
14	115	107	111	113	92	102	124	102	111	110	90	100
15	120	105	111	115	95	104	127	102	114	107	90	100
16	119	109	113	115	92	103	132	102	116	102	86	95
17	110	93	105	109	92	99	121	99	110	106	86	96
18	97	91	94	104	94	98	124	102	112	108	87	97
19	105	94	100	103	96	99	136	104	120	113	89	100
20	109	100	105	99	93	96	132	98	116	106	89	98
21	110	98	106	93	91	92	124	95	111	97	74	83
22	110	95	100	94	90	92	115	92	104	75	71	74
23	99	95	97	106	91	94	116	90	104	79	72	76
24	103	98	101	101	96	98	127	93	110	79	76	78
25	107	100	103	101	95	97	130	94	113	82	77	79
26	107	99	103	100	94	97	121	91	97	84	76	80
27	107	100	103	103	93	98	128	88	108	---	---	---
28	107	99	103	105	95	100	131	91	113	---	---	---
29	---	---	---	102	94	98	119	92	107	---	---	---
30	---	---	---	97	93	95	126	91	110	---	---	---
31	---	---	---	103	94	98	---	---	---	---	---	---
MONTH	120	91	106	115	90	99	136	88	108	123	71	94





## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

DISSOLVED OXYGEN FROM MIDDLE INTAKE, IN PERCENT OF SATURATION  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	76	67	70	81	73	77	84	78	81	102	89	94
2	80	65	71	83	75	78	94	83	89	105	101	103
3	79	62	69	82	74	77	99	93	96	105	101	104
4	66	59	63	84	74	78	107	97	102	102	93	98
5	73	58	63	87	75	79	107	105	106	93	85	88
6	76	59	66	83	75	77	109	106	108	87	84	85
7	77	62	67	76	69	73	109	106	108	85	84	85
8	83	62	72	75	69	71	110	106	109	85	83	84
9	83	67	75	76	69	72	112	108	110	86	83	85
10	78	72	75	77	70	72	---	---	---	88	84	86
11	78	76	77	71	63	68	---	---	---	89	86	87
12	77	68	74	68	60	63	---	---	---	91	88	89
13	68	58	63	66	48	53	---	---	---	91	90	91
14	58	53	55	55	49	53	95	92	94	92	90	90
15	55	53	54	59	51	55	96	93	94	93	89	91
16	---	---	---	61	58	59	93	80	87	98	90	94
17	61	57	60	90	61	82	80	74	76	100	96	98
18	61	60	61	94	90	92	74	73	73	102	95	99
19	62	59	60	95	92	94	76	74	75	103	95	99
20	63	60	62	92	71	84	82	76	78	103	98	101
21	65	61	63	72	63	66	88	82	85	103	97	100
22	69	63	66	72	63	67	86	80	83	103	97	101
23	73	66	69	77	70	73	80	78	79	103	95	100
24	76	69	72	72	66	68	80	79	79	103	95	100
25	76	70	72	67	65	66	80	79	80	106	99	103
26	76	72	75	67	65	65	83	80	81	106	100	102
27	75	72	74	70	66	68	86	83	85	103	93	99
28	73	70	71	75	70	73	86	84	86	103	89	97
29	73	69	71	78	74	76	88	85	87	104	100	102
30	74	69	71	79	77	78	90	86	89	105	96	102
31	86	70	76	---	---	---	92	89	90	105	101	102
MONTH	86	53	68	95	48	72	112	73	89	106	83	95
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	102	98	100	81	79	80	99	93	96	106	86	98
2	104	96	100	90	79	83	110	88	98	107	85	98
3	109	99	105	95	89	92	113	96	104	111	80	95
4	111	101	105	90	86	88	110	94	98	106	78	92
5	108	97	102	88	85	86	94	88	91	101	84	94
6	107	100	104	87	85	86	107	90	98	101	86	94
7	108	103	105	87	83	84	105	101	104	111	91	103
8	109	103	106	87	83	85	110	99	103	106	84	91
9	111	105	108	89	85	87	107	101	104	103	83	93
10	111	104	108	89	86	88	116	101	108	101	83	93
11	111	103	106	93	88	90	110	104	107	95	83	86
12	112	105	108	96	91	93	112	101	105	99	80	90
13	114	105	108	97	94	95	117	102	109	102	85	94
14	115	102	109	97	92	95	117	100	108	105	87	97
15	118	106	111	102	95	99	123	96	107	105	89	98
16	119	109	113	104	99	101	127	96	111	101	86	92
17	111	99	107	108	97	101	115	97	102	94	82	88
18	105	97	101	105	95	99	101	90	95	96	82	89
19	101	91	97	103	97	100	116	100	108	109	84	96
20	103	92	99	100	93	97	118	104	111	104	86	97
21	108	99	104	94	91	93	115	97	106	87	69	79
22	106	96	100	95	91	93	107	92	99	69	62	67
23	99	95	97	105	89	94	110	86	98	67	62	65
24	102	98	100	98	92	95	120	89	106	70	66	68
25	98	90	95	99	90	94	120	93	108	70	67	69
26	90	86	88	100	87	94	113	90	96	84	69	77
27	86	83	84	105	87	96	106	82	95	---	---	---
28	83	81	82	110	90	99	113	85	100	---	---	---
29	---	---	---	103	91	97	109	87	99	---	---	---
30	---	---	---	98	93	96	115	84	101	---	---	---
31	---	---	---	104	93	97	---	---	---	---	---	---
MONTH	119	81	102	110	79	93	127	82	102	111	62	89



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

DISSOLVED OXYGEN FROM RIGHT INTAKE, IN PERCENT OF SATURATION  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	74	67	70	82	73	77	81	76	79	91	88	89
2	80	66	71	85	76	79	89	81	84	96	90	93
3	79	63	70	84	75	78	93	88	90	96	85	90
4	67	59	63	85	75	79	98	93	95	86	83	84
5	73	59	64	87	76	79	99	98	99	83	82	83
6	74	59	66	84	76	78	102	99	101	85	82	83
7	78	62	68	77	70	73	102	100	102	85	83	84
8	80	62	72	73	70	72	104	101	103	85	83	84
9	83	67	75	75	70	73	104	102	104	86	84	85
10	78	72	75	77	71	73	---	---	---	87	84	85
11	79	76	77	72	64	69	---	---	---	88	86	87
12	78	69	75	64	55	60	---	---	---	90	88	89
13	69	59	64	55	48	52	---	---	---	91	90	91
14	59	53	56	56	50	54	89	83	86	92	89	91
15	55	54	55	60	52	56	83	79	81	93	89	91
16	---	---	---	62	59	60	79	75	77	94	89	92
17	61	58	60	73	62	67	75	74	74	95	92	93
18	62	60	61	79	72	76	75	74	74	95	92	93
19	62	60	61	72	59	64	78	74	76	95	94	94
20	63	61	62	59	56	57	80	77	78	95	92	93
21	65	61	63	61	56	59	79	77	78	95	92	94
22	68	63	66	64	61	63	79	77	78	97	93	95
23	73	67	70	63	61	62	79	79	79	98	93	96
24	77	69	73	65	63	64	81	79	80	99	93	96
25	76	69	73	66	65	66	81	80	80	99	93	95
26	76	72	75	67	65	66	83	79	81	96	92	94
27	75	73	74	70	67	69	87	83	85	95	91	93
28	74	70	72	75	70	73	87	85	86	95	90	93
29	73	70	72	79	75	77	88	86	87	97	92	95
30	75	70	72	79	77	78	90	87	89	96	92	94
31	85	71	76	---	---	---	91	89	90	93	90	92
MONTH	85	53	68	87	48	68	104	74	86	99	82	91
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	94	90	92	82	81	81	97	84	91	105	84	96
2	93	88	91	82	79	80	115	83	95	100	82	92
3	98	90	94	84	79	82	118	94	105	93	60	76
4	103	95	98	88	84	86	113	90	98	84	58	72
5	103	95	98	87	86	86	90	83	87	88	69	78
6	101	96	98	86	81	83	104	88	94	87	75	82
7	104	98	101	85	80	82	106	100	104	90	85	86
8	107	99	102	88	84	85	102	97	100	90	77	82
9	109	100	104	89	85	87	106	99	103	79	65	70
10	109	102	105	90	86	88	109	99	104	79	68	74
11	111	101	105	93	88	91	114	101	108	79	72	75
12	111	101	105	97	91	94	107	100	102	77	68	72
13	113	101	107	97	94	96	110	97	104	75	68	71
14	115	103	109	97	93	95	113	91	101	79	73	75
15	120	108	113	102	96	99	122	92	105	---	---	---
16	121	111	115	104	100	102	126	95	109	79	75	77
17	116	107	111	103	101	102	118	95	101	76	71	74
18	110	104	108	102	100	101	101	91	95	81	73	77
19	104	88	97	102	96	98	115	101	108	84	77	80
20	101	90	98	99	85	89	118	104	111	85	75	80
21	108	100	102	---	---	---	115	95	106	78	62	71
22	107	97	103	---	---	---	107	90	98	62	56	60
23	100	90	93	---	---	---	99	84	91	57	53	56
24	93	90	92	---	---	---	107	82	95	66	57	62
25	94	91	92	---	---	---	113	90	102	67	65	66
26	91	87	89	97	81	90	105	90	96	71	66	69
27	87	83	85	108	77	92	93	77	86	---	---	---
28	84	82	83	115	83	98	108	83	96	---	---	---
29	---	---	---	104	86	96	106	84	95	---	---	---
30	---	---	---	95	76	82	110	81	96	---	---	---
31	---	---	---	102	70	83	---	---	---	---	---	---
MONTH	121	82	100	115	70	90	126	77	100	105	53	75



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

SPECIFIC CONDUCTANCE FROM LEFT INTAKE, IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	480	414	447	571	512	549	347	332	341	499	422	475
2	557	480	532	587	556	577	358	345	352	423	354	401
3	632	549	592	604	566	588	366	353	360	477	332	378
4	673	608	636	627	590	612	374	362	369	522	468	493
5	718	673	694	629	592	612	375	368	372	498	480	485
6	755	706	732	649	602	624	407	365	383	530	489	511
7	750	704	725	646	472	563	430	407	421	503	487	492
8	741	683	712	485	460	476	422	407	414	511	483	496
9	771	738	752	492	479	485	412	400	407	512	501	504
10	771	740	759	519	450	499	---	---	---	506	493	501
11	751	268	485	499	436	470	---	---	---	511	491	502
12	399	275	351	514	416	461	---	---	---	514	507	510
13	397	233	320	416	365	383	---	---	---	516	493	506
14	248	234	243	401	378	390	507	444	463	516	503	510
15	287	248	257	413	395	406	453	384	417	511	505	509
16	---	---	---	412	402	408	384	344	363	511	500	505
17	368	288	337	403	259	318	344	320	331	523	494	505
18	369	326	358	289	203	231	327	317	322	522	500	512
19	336	317	328	217	200	207	337	324	332	501	489	495
20	358	333	346	235	217	227	339	311	329	498	492	494
21	392	349	365	249	233	242	319	309	317	502	493	497
22	433	375	392	249	244	248	323	319	321	514	501	507
23	482	433	462	258	244	252	322	319	321	522	509	515
24	541	482	522	264	256	261	321	316	319	521	513	516
25	592	527	557	271	263	268	471	319	381	518	503	510
26	617	572	594	281	270	276	489	427	456	505	496	500
27	613	389	457	319	279	300	487	411	445	514	499	507
28	421	373	394	322	311	315	425	410	417	531	512	522
29	442	421	430	321	309	315	443	418	433	532	522	526
30	469	441	450	335	319	330	455	442	449	530	518	523
31	523	469	504	---	---	---	473	455	465	533	515	523
MONTH	771	233	491	649	200	396	507	309	381	533	332	498
	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	534	526	530	446	433	439	290	279	284	443	432	437
2	534	522	528	482	417	437	295	290	293	445	437	442
3	534	526	531	430	403	414	306	295	300	443	437	440
4	546	526	533	431	423	426	313	304	310	444	436	440
5	567	546	556	444	427	432	321	313	318	445	439	442
6	555	538	545	428	399	413	320	317	319	441	433	438
7	556	527	533	516	418	447	457	318	344	437	429	434
8	626	556	597	520	458	486	520	403	468	431	414	422
9	653	575	617	508	488	500	416	388	401	421	411	417
10	577	561	569	498	482	486	442	409	426	428	418	423
11	630	564	607	500	486	494	457	437	444	422	416	419
12	649	617	634	503	494	499	444	393	418	417	407	412
13	638	619	630	545	490	499	394	366	381	410	398	404
14	739	608	623	545	474	503	367	344	353	406	398	402
15	1,020	739	969	477	470	473	347	339	343	408	401	405
16	989	945	967	471	440	464	346	341	344	421	406	414
17	945	643	805	440	412	433	352	343	346	428	416	422
18	667	636	650	412	310	367	360	349	356	430	419	424
19	664	611	629	310	251	275	367	358	363	431	418	425
20	656	635	641	262	246	250	376	363	372	433	420	428
21	678	632	651	262	241	247	390	375	384	439	426	434
22	755	636	690	241	220	230	404	389	397	440	431	436
23	715	622	660	225	217	220	410	396	406	446	433	441
24	689	618	659	238	223	229	401	390	394	443	433	439
25	618	546	577	263	229	242	423	399	408	435	422	430
26	546	489	517	277	263	271	439	420	432	433	360	400
27	489	464	477	281	267	274	441	432	438	---	---	---
28	464	445	455	291	276	283	440	434	436	---	---	---
29	---	---	---	305	285	297	441	433	438	---	---	---
30	---	---	---	292	273	287	440	436	438	---	---	---
31	---	---	---	288	276	281	---	---	---	---	---	---
MONTH	1,020	445	621	545	217	374	520	279	378	446	360	426



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

SPECIFIC CONDUCTANCE FROM MIDDLE INTAKE, IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	481	418	449	575	512	550	428	413	419	555	431	524
2	558	481	532	588	556	577	425	406	413	431	357	406
3	635	550	596	605	567	589	424	409	417	467	334	377
4	678	611	640	629	590	613	434	404	424	506	447	475
5	722	678	698	630	593	613	428	413	420	610	486	541
6	758	707	735	650	600	625	446	415	430	685	602	656
7	750	706	726	648	470	562	492	446	465	688	672	682
8	745	684	714	487	461	478	520	491	503	704	673	692
9	774	739	755	494	478	486	532	467	513	724	702	711
10	774	744	761	524	494	513	---	---	---	746	721	733
11	763	380	664	559	506	541	---	---	---	750	737	745
12	380	236	285	584	468	540	---	---	---	743	705	724
13	238	222	229	580	431	531	---	---	---	706	672	688
14	249	233	243	431	377	401	525	452	471	672	655	662
15	264	249	255	408	369	390	459	397	428	670	647	657
16	---	---	---	414	387	400	407	389	396	647	596	625
17	305	279	296	414	267	327	417	398	410	597	571	582
18	314	295	306	291	206	234	423	413	420	605	543	570
19	337	314	328	221	202	210	422	418	421	663	550	593
20	359	334	347	238	221	231	419	375	406	564	540	554
21	393	350	366	251	237	246	376	350	362	585	536	565
22	435	391	402	257	251	254	359	351	354	610	536	575
23	486	435	463	263	255	259	353	350	352	710	555	631
24	541	486	524	267	261	265	359	352	355	719	575	629
25	594	528	557	273	266	268	377	359	366	590	532	561
26	621	569	595	287	272	279	546	377	454	544	525	534
27	613	389	457	301	287	293	688	542	612	707	533	609
28	423	373	395	424	301	359	712	688	701	757	591	678
29	443	422	431	426	408	418	701	645	670	616	576	593
30	474	443	451	418	401	409	645	588	615	673	584	615
31	524	474	506	---	---	---	588	554	569	623	584	602
MONTH	774	222	490	650	202	415	712	350	458	757	334	606
	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	621	597	608	649	636	644	357	298	326	525	507	514
2	643	596	620	636	502	595	369	338	354	528	476	502
3	642	588	609	516	478	496	390	354	371	498	465	482
4	621	579	600	549	504	538	398	371	389	502	467	485
5	660	594	633	561	535	553	405	385	396	498	484	493
6	706	654	679	553	522	533	406	384	396	493	480	487
7	679	620	649	608	524	559	451	392	416	507	483	496
8	716	665	691	716	607	655	510	451	473	500	447	463
9	730	676	701	779	716	744	607	510	565	473	453	460
10	751	692	731	818	779	804	588	541	561	489	459	474
11	799	744	772	814	775	800	593	488	557	485	459	475
12	787	738	763	775	693	738	494	402	440	464	434	447
13	877	736	797	693	660	674	420	391	401	448	427	436
14	1,050	728	873	740	651	681	436	390	414	455	433	440
15	1,030	986	1,020	740	664	703	459	425	445	464	431	444
16	986	946	967	664	546	629	466	452	460	513	437	467
17	946	670	831	549	421	487	490	458	475	526	496	507
18	866	705	804	421	321	376	500	486	494	538	508	525
19	897	778	851	321	258	282	508	494	501	565	458	494
20	788	727	750	275	250	263	513	501	506	538	455	469
21	787	704	756	283	244	253	514	503	509	561	503	528
22	842	731	779	259	226	240	511	479	492	605	548	578
23	750	632	690	273	226	243	492	451	476	598	562	582
24	698	617	664	306	238	271	459	446	452	636	558	592
25	617	584	594	342	283	305	507	452	480	638	552	594
26	654	604	632	352	323	336	509	492	501	555	379	456
27	668	654	664	349	323	333	513	502	507	---	---	---
28	664	649	659	367	329	350	517	499	509	---	---	---
29	---	---	---	381	314	365	512	499	505	---	---	---
30	---	---	---	315	291	298	520	500	509	---	---	---
31	---	---	---	307	290	298	---	---	---	---	---	---
MONTH	1,050	579	728	818	226	485	607	298	463	638	379	496





## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

SPECIFIC CONDUCTANCE FROM RIGHT INTAKE, IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	480	416	447	572	512	548	443	422	430	559	509	548
2	557	480	531	586	556	577	442	423	431	520	395	470
3	632	548	592	605	567	589	459	439	447	423	395	407
4	671	608	637	628	590	612	488	459	473	470	391	415
5	719	671	694	630	592	613	499	472	485	629	470	555
6	756	704	732	650	599	624	508	493	501	697	629	674
7	749	703	724	646	471	562	565	491	512	698	695	697
8	742	682	712	486	461	477	654	565	605	709	695	701
9	772	738	752	493	478	485	684	647	669	735	708	720
10	772	741	759	523	493	512	---	---	---	765	735	752
11	758	378	660	558	505	540	---	---	---	766	754	763
12	378	235	283	589	542	570	---	---	---	754	715	735
13	238	222	229	602	430	555	---	---	---	715	681	696
14	248	234	243	430	375	399	536	488	499	688	662	675
15	264	248	255	407	367	389	488	448	469	688	672	679
16	---	---	---	412	387	399	448	419	428	675	662	669
17	306	280	296	412	335	378	420	418	419	676	649	658
18	314	296	307	335	232	252	423	418	421	683	663	671
19	336	314	327	232	224	226	423	418	421	731	678	709
20	358	334	346	233	227	230	419	400	411	748	730	740
21	392	349	365	249	233	244	403	379	390	737	709	722
22	433	391	403	255	249	252	379	356	366	734	700	712
23	482	433	462	262	254	258	357	353	355	748	724	733
24	541	482	522	265	261	264	360	353	356	762	742	750
25	593	527	556	271	264	267	372	360	365	777	755	763
26	620	559	592	286	271	278	551	372	455	782	748	762
27	613	389	458	299	285	292	699	549	621	766	736	750
28	422	373	394	427	299	360	721	699	712	759	737	749
29	443	421	430	429	410	421	707	652	677	773	748	764
30	470	443	450	423	404	413	652	594	621	779	768	774
31	524	470	505	---	---	---	594	559	574	778	744	763
MONTH	772	222	489	650	224	420	721	353	486	782	391	683
	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	774	744	758	649	635	643	394	391	392	563	542	550
2	777	744	761	635	599	620	404	392	398	567	555	561
3	773	738	752	635	570	598	417	404	411	580	493	548
4	771	738	752	570	552	558	427	417	423	570	503	552
5	773	745	758	566	553	560	434	427	431	581	562	572
6	829	758	785	579	555	569	444	433	439	607	581	593
7	807	764	778	614	560	578	447	439	444	618	595	605
8	807	741	773	719	614	661	588	447	477	615	592	602
9	856	750	792	792	719	751	763	588	724	607	568	584
10	965	856	919	828	792	816	784	714	749	569	557	563
11	966	911	939	821	779	808	714	632	681	568	553	560
12	927	892	909	779	698	740	632	548	586	578	564	569
13	1,020	927	998	698	663	677	548	499	517	591	566	578
14	1,070	1,020	1,040	746	655	685	499	476	485	598	566	578
15	1,030	987	1,020	742	666	706	479	475	477	611	582	596
16	987	946	967	666	599	640	489	479	484	628	598	607
17	946	846	913	599	541	574	493	489	492	639	612	620
18	936	892	920	541	489	520	501	493	498	641	624	633
19	923	831	902	490	425	466	513	500	507	653	631	638
20	831	792	801	465	418	450	523	510	516	656	632	646
21	903	820	843	---	---	---	533	521	527	688	647	676
22	1,000	903	939	---	---	---	540	526	532	707	672	694
23	1,200	859	975	---	---	---	547	531	538	708	660	684
24	859	597	709	---	---	---	548	535	542	684	667	678
25	609	583	593	---	---	---	562	541	550	680	582	635
26	653	609	634	394	388	392	567	549	557	588	526	563
27	668	653	663	398	387	391	556	540	549	---	---	---
28	663	649	659	412	398	405	541	529	534	---	---	---
29	---	---	---	420	410	416	546	527	533	---	---	---
30	---	---	---	410	383	403	553	539	546	---	---	---
31	---	---	---	399	386	396	---	---	---	---	---	---
MONTH	1,200	583	830	828	383	578	784	391	518	708	493	603



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

TEMPERATURE FROM LEFT INTAKE, IN DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	19.5	17.7	18.3	9.1	7.4	8.0	4.6	3.6	4.1	4.2	3.9	4.0
2	20.9	18.0	19.6	8.3	7.1	7.6	3.6	3.0	3.2	3.9	3.1	3.6
3	21.3	19.2	20.4	7.8	6.7	7.2	3.4	2.1	2.6	3.1	1.6	2.3
4	20.6	19.9	20.2	7.5	6.3	7.0	2.1	1.2	1.5	1.9	1.2	1.5
5	22.5	19.5	20.8	7.8	6.4	7.2	1.6	0.9	1.3	2.1	1.8	1.9
6	21.6	19.3	20.0	8.3	7.4	7.8	2.2	0.9	1.6	2.6	2.1	2.4
7	20.7	18.1	19.4	9.1	7.9	8.6	2.1	1.3	1.7	2.5	2.1	2.3
8	20.0	16.9	18.2	8.4	7.6	7.9	2.2	1.3	1.8	2.6	1.9	2.2
9	18.2	16.8	17.2	8.7	7.7	8.1	2.1	1.3	1.6	3.2	2.6	2.9
10	17.0	15.9	16.5	10.5	8.2	9.5	---	---	---	3.4	3.0	3.2
11	15.9	15.4	15.6	12.0	10.1	11.2	---	---	---	3.1	2.1	2.5
12	16.1	15.5	16.0	12.1	11.2	11.7	---	---	---	2.1	1.5	1.8
13	16.0	15.2	15.8	11.2	10.3	10.8	---	---	---	1.8	1.2	1.5
14	15.4	13.6	14.8	10.3	9.4	9.7	3.3	2.6	3.1	1.6	1.0	1.4
15	13.7	12.8	13.3	10.1	9.3	9.7	3.9	3.3	3.6	1.5	1.0	1.2
16	---	---	---	9.9	9.1	9.6	3.9	3.3	3.8	1.4	0.7	1.1
17	13.3	12.3	12.8	9.1	7.1	7.8	3.3	2.3	2.8	1.7	1.1	1.4
18	13.3	12.2	12.8	7.6	7.1	7.3	2.3	1.8	2.1	1.2	0.2	0.6
19	12.2	11.5	11.8	7.1	6.6	6.8	3.1	1.9	2.4	0.9	0.2	0.5
20	12.0	11.2	11.6	7.1	6.5	6.8	4.6	3.0	3.7	1.2	0.5	0.8
21	12.0	11.1	11.6	7.3	6.6	6.9	4.2	3.4	3.7	0.9	0.2	0.6
22	12.0	10.8	11.4	7.8	7.3	7.6	4.1	3.6	3.8	1.0	0.2	0.5
23	12.0	10.3	11.1	7.7	6.8	7.3	4.2	3.9	4.0	1.0	0.1	0.5
24	11.9	10.1	10.7	7.0	6.5	6.8	3.9	3.6	3.8	1.1	0.1	0.5
25	10.5	9.9	10.1	7.0	6.4	6.7	3.8	2.2	3.2	1.2	0.3	0.7
26	11.1	10.1	10.5	7.1	6.7	6.9	2.4	1.9	2.2	0.9	0.5	0.7
27	11.5	10.9	11.2	7.0	5.9	6.5	2.6	2.1	2.4	1.1	0.3	0.7
28	11.2	10.7	11.0	5.9	4.7	5.1	2.6	2.1	2.4	0.8	0.2	0.5
29	10.9	9.8	10.2	4.7	4.1	4.3	2.9	2.3	2.6	0.9	0.4	0.6
30	9.8	8.6	9.3	4.7	4.2	4.4	3.3	2.5	2.9	1.5	0.5	1.0
31	10.4	7.8	8.9	---	---	---	4.0	3.3	3.6	1.6	1.1	1.3
MONTH	22.5	7.8	14.4	12.1	4.1	7.8	4.6	0.9	2.8	4.2	0.1	1.5
	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1.9	1.5	1.7	2.1	1.6	1.9	7.6	6.2	6.6	16.5	14.6	15.4
2	2.4	1.7	2.0	2.4	2.0	2.2	7.9	5.9	6.8	17.4	16.1	16.8
3	3.2	2.0	2.6	2.2	1.1	1.6	8.3	7.2	7.7	17.4	15.8	16.7
4	3.5	3.0	3.3	2.2	0.7	1.4	8.3	7.1	7.6	16.5	15.1	15.6
5	3.0	2.1	2.4	2.6	1.6	2.0	7.1	6.5	6.7	15.4	14.2	14.5
6	2.1	1.3	1.8	2.5	1.0	1.6	7.3	6.0	6.7	14.2	13.5	13.8
7	2.1	1.5	1.7	2.1	0.6	1.3	7.2	5.2	6.2	16.4	13.5	14.9
8	2.1	1.0	1.5	3.1	1.4	2.2	5.2	4.8	5.0	16.4	15.4	15.7
9	2.0	1.1	1.6	3.5	2.3	3.0	5.3	5.1	5.2	15.6	15.1	15.3
10	1.9	1.7	1.8	3.2	1.8	2.4	6.8	4.9	5.8	16.2	14.6	15.4
11	1.7	0.9	1.4	2.9	1.6	2.2	6.8	6.3	6.4	16.1	15.5	15.7
12	1.7	0.8	1.2	3.8	2.5	3.1	8.7	6.3	7.3	15.7	15.1	15.4
13	1.7	0.6	0.9	3.7	3.1	3.4	9.6	7.6	8.6	15.4	14.5	14.8
14	1.8	0.4	1.0	3.8	2.4	3.1	10.1	8.3	9.2	15.1	14.1	14.7
15	1.1	0.1	0.5	5.1	3.1	4.0	11.9	9.3	10.4	15.6	14.0	14.9
16	0.4	0.0	0.2	6.1	3.9	4.9	13.5	11.5	12.4	15.7	14.8	15.2
17	0.3	0.0	0.1	6.0	4.8	5.5	13.4	10.5	12.0	15.7	14.2	14.9
18	0.6	0.3	0.4	6.0	4.9	5.5	10.5	9.7	9.9	16.2	14.4	15.3
19	0.6	0.2	0.4	5.5	4.3	4.7	11.7	9.4	10.5	17.0	14.5	15.8
20	1.0	0.2	0.5	4.6	4.1	4.2	12.6	11.0	11.8	18.1	16.1	17.1
21	1.0	0.2	0.6	5.6	4.1	4.7	12.3	11.3	12.0	17.7	16.2	17.0
22	1.3	0.7	0.9	6.6	5.0	5.8	12.9	11.5	12.2	16.2	15.5	15.8
23	1.2	0.6	0.9	7.1	5.7	6.4	12.7	11.1	12.0	15.5	14.7	15.1
24	0.7	0.2	0.5	7.4	5.9	6.6	11.9	10.1	11.1	14.7	14.4	14.5
25	1.3	0.3	0.8	7.7	6.2	7.0	13.1	10.9	12.0	14.5	14.1	14.3
26	0.9	0.2	0.6	8.3	6.9	7.5	13.0	12.2	12.5	14.5	13.8	14.1
27	1.4	0.4	0.9	9.0	7.3	8.0	14.3	12.1	13.2	---	---	---
28	1.9	1.1	1.5	9.5	8.0	8.7	15.7	13.4	14.6	---	---	---
29	---	---	---	10.4	8.9	9.4	15.5	14.5	15.0	---	---	---
30	---	---	---	10.7	8.1	9.2	16.0	14.1	15.2	---	---	---
31	---	---	---	8.1	7.1	7.6	---	---	---	---	---	---
MONTH	3.5	0.0	1.2	10.7	0.6	4.6	16.0	4.8	9.8	18.1	13.5	15.3



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

TEMPERATURE FROM MIDDLE INTAKE, IN DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.2	17.8	18.3	8.8	7.7	8.2	4.3	4.0	4.1	4.4	3.6	4.1
2	20.3	18.2	19.5	8.2	7.4	7.8	4.0	3.4	3.6	4.1	3.2	3.8
3	20.9	19.3	20.3	7.7	7.0	7.4	3.7	2.6	3.0	3.2	1.8	2.4
4	20.6	20.0	20.3	7.6	6.6	7.2	2.6	1.8	2.0	1.8	1.4	1.6
5	21.7	19.8	20.7	7.6	6.7	7.3	1.9	1.3	1.6	1.8	1.5	1.6
6	20.8	19.5	20.0	8.4	7.5	7.9	2.3	1.3	1.8	2.1	1.6	1.8
7	20.3	18.5	19.5	9.0	8.1	8.7	2.1	1.6	1.9	1.9	1.1	1.5
8	19.6	17.3	18.3	8.5	7.7	8.0	2.3	1.6	2.0	1.5	0.8	1.1
9	17.8	17.0	17.2	8.4	7.9	8.1	2.2	1.6	1.9	2.6	1.5	2.0
10	17.0	16.0	16.5	9.8	8.4	9.3	---	---	---	2.9	2.5	2.7
11	16.1	15.5	15.9	11.7	9.8	11.1	---	---	---	2.7	1.5	2.0
12	15.9	15.5	15.7	12.7	11.7	12.1	---	---	---	1.5	1.0	1.2
13	15.9	15.3	15.7	12.5	11.5	12.1	---	---	---	1.2	0.8	1.0
14	15.4	13.8	14.8	11.5	10.3	10.7	3.5	2.7	3.3	1.1	0.8	1.0
15	13.8	12.9	13.4	10.3	9.6	10	4.0	3.4	3.8	1.1	0.7	1.0
16	---	---	---	10.0	9.4	9.7	4.0	3.3	3.8	1.2	0.5	0.9
17	12.7	12.3	12.5	9.4	7.4	8.1	3.3	1.5	2.2	1.6	0.9	1.2
18	12.6	12.1	12.3	7.7	7.2	7.4	1.5	1.0	1.2	1.2	0.3	0.7
19	12.1	11.7	11.9	7.2	6.7	6.9	1.8	1.0	1.3	0.9	0.2	0.6
20	12.0	11.4	11.7	7.0	6.6	6.8	3.6	1.8	2.7	1.3	0.6	0.9
21	12.0	11.3	11.7	6.9	6.5	6.7	3.9	3.5	3.7	1.0	0.4	0.7
22	11.8	11.0	11.4	7.7	6.9	7.3	3.7	3.4	3.6	1.0	0.2	0.6
23	11.5	10.6	11.1	7.7	6.8	7.3	3.7	3.5	3.6	0.9	0.1	0.5
24	11.4	10.3	10.8	6.8	6.3	6.4	3.5	3.1	3.2	1.0	0.1	0.5
25	10.5	10.1	10.3	6.5	6.0	6.2	3.1	2.0	2.6	1.3	0.4	0.8
26	11.2	10.2	10.6	6.7	6.4	6.6	2.0	1.7	1.9	1.0	0.6	0.8
27	11.5	11.0	11.3	6.7	5.6	6.2	2.3	1.9	2.1	1.0	0.2	0.6
28	11.3	10.8	11.1	5.6	4.2	4.9	2.4	2.1	2.3	0.7	0.1	0.4
29	11.0	10.0	10.3	4.2	3.7	3.9	2.6	2.2	2.4	0.9	0.4	0.7
30	10.0	8.9	9.4	4.4	3.7	4.1	2.9	2.3	2.6	1.2	0.4	0.8
31	9.7	8.1	8.9	---	---	---	3.7	2.8	3.3	1.3	0.9	1.1
MONTH	21.7	8.1	14.4	12.7	3.7	7.8	4.3	1.0	2.6	4.4	0.1	1.3
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	1.7	1.2	1.4	0.9	0.6	0.8	7.8	6.3	6.8	16.9	14.9	15.8
2	2.0	1.2	1.7	1.9	0.9	1.3	8.7	6.0	7.1	17.6	16.3	17.0
3	2.9	1.7	2.4	1.8	1.1	1.4	9.4	8.0	8.6	17.5	16.3	17.0
4	3.6	2.9	3.3	1.1	0.4	0.8	9.4	7.9	8.6	16.9	15.4	15.8
5	3.1	2.4	2.8	1.6	0.9	1.2	7.9	6.8	7.2	15.6	14.3	14.6
6	2.4	1.7	2.0	1.5	0.6	1.2	7.6	6.4	7.0	14.3	13.5	13.8
7	1.9	1.3	1.6	1.0	0.2	0.6	7.5	5.7	6.9	16.2	13.5	14.8
8	1.8	0.9	1.3	1.8	0.7	1.3	5.7	5.0	5.2	16.2	15.5	15.8
9	1.8	1.0	1.3	2.6	1.6	2.1	5.4	5.0	5.2	15.8	15.3	15.6
10	1.7	1.4	1.6	2.3	1.6	2.0	6.7	5.1	5.9	16.3	14.8	15.6
11	1.8	1.0	1.4	1.8	1.1	1.5	6.7	6.5	6.6	16.2	15.7	15.9
12	1.7	0.7	1.2	2.7	1.7	2.1	8.7	6.5	7.4	15.8	15.3	15.6
13	1.4	0.6	0.9	3.2	2.7	3.0	9.9	7.7	8.7	15.4	14.6	14.9
14	1.3	0.2	0.8	3.4	2.6	3.0	11.5	8.9	10.0	15.1	14.2	14.7
15	0.8	0.2	0.4	4.3	3.0	3.7	14.0	10.4	11.9	15.6	14.2	15.0
16	0.5	0.1	0.3	5.8	4.1	4.9	16.3	13.4	14.6	15.7	14.8	15.2
17	0.4	0.1	0.2	6.2	5.4	5.8	15.7	12.2	14.0	15.6	14.5	15.0
18	0.4	0.2	0.3	6.1	5.0	5.6	12.2	9.9	10.7	15.9	14.7	15.3
19	0.3	0.1	0.2	5.6	4.4	4.8	11.4	9.6	10.5	16.7	14.8	15.8
20	0.7	0.2	0.4	4.8	4.2	4.3	13.1	11.1	12.1	17.8	16.1	17.0
21	0.8	0.2	0.5	5.6	4.2	4.7	13.3	12.0	12.7	17.4	16.6	17.1
22	1.6	0.4	0.9	6.8	5.1	5.9	13.3	12.1	12.7	16.6	15.7	16.2
23	1.4	0.8	1.2	7.4	5.9	6.7	13.0	11.5	12.4	15.7	14.7	15.2
24	0.8	0.4	0.6	8.3	6.4	7.3	12.1	10.6	11.4	14.7	14.2	14.4
25	1.0	0.3	0.6	9.5	7.2	8.3	13.4	11.0	12.2	14.3	14.1	14.2
26	0.4	0.1	0.2	10.3	8.5	9.3	13.3	12.5	12.8	14.3	13.9	14.1
27	0.5	0.1	0.3	10.6	8.6	9.5	14.2	12.5	13.4	---	---	---
28	0.9	0.3	0.6	11.2	9.1	10.1	15.9	13.2	14.6	---	---	---
29	---	---	---	11.6	10.5	10.9	15.9	14.7	15.3	---	---	---
30	---	---	---	10.9	8.2	9.4	16.3	14.6	15.6	---	---	---
31	---	---	---	8.2	7.2	7.8	---	---	---	---	---	---
MONTH	3.6	0.1	1.1	11.6	0.2	4.6	16.3	5.0	10.3	17.8	13.5	15.4



## 01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

TEMPERATURE FROM RIGHT INTAKE, IN DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	18.9	17.8	18.2	8.7	7.6	8.1	4.2	4.0	4.1	4.4	3.6	4.0
2	20.1	18.1	19.4	8.2	7.4	7.8	4.0	3.5	3.7	4.2	3.6	4.0
3	20.7	19.3	20.3	7.8	7.0	7.4	3.7	2.8	3.1	3.6	1.7	2.8
4	20.6	19.9	20.2	7.7	6.6	7.2	2.8	1.8	2.1	1.7	1.2	1.4
5	21.4	19.8	20.6	7.6	6.7	7.2	1.9	1.2	1.6	1.7	1.3	1.5
6	20.4	19.5	19.9	8.4	7.6	8.0	1.8	1.3	1.6	1.9	1.5	1.7
7	20.2	18.4	19.4	8.8	8.1	8.6	2.0	1.6	1.8	1.8	1.0	1.4
8	19.2	17.2	18.2	8.5	7.8	8.0	2.1	1.7	1.9	1.5	0.8	1.1
9	17.8	17.0	17.2	8.3	7.9	8.1	2.1	1.5	1.9	2.6	1.5	2.0
10	17.0	16.0	16.6	9.8	8.3	9.3	---	---	---	2.9	2.4	2.6
11	16.1	15.5	15.9	11.7	9.8	11.1	---	---	---	2.7	1.4	2.0
12	15.9	15.5	15.7	12.7	11.7	12.3	---	---	---	1.4	1.0	1.1
13	15.9	15.3	15.7	12.7	11.5	12.3	---	---	---	1.2	0.8	1.0
14	15.3	13.8	14.9	11.5	10.3	10.7	3.3	2.5	2.9	1.1	0.8	1.0
15	13.8	13.0	13.4	10.3	9.6	10	3.8	3.3	3.6	1.1	0.7	0.9
16	---	---	---	10.1	9.4	9.7	3.8	3.1	3.7	0.8	0.4	0.6
17	12.7	12.3	12.5	9.4	7.9	8.5	3.1	1.5	2.1	1.0	0.4	0.7
18	12.6	12.1	12.3	7.9	7.2	7.4	1.5	1.0	1.2	0.7	0.1	0.3
19	12.2	11.7	11.9	7.2	6.5	6.7	1.9	1.0	1.3	0.4	0.2	0.2
20	12.1	11.4	11.7	6.6	6.2	6.4	3.3	1.9	2.6	0.4	0.1	0.2
21	12.0	11.3	11.7	6.9	6.4	6.6	3.9	3.3	3.6	0.3	0.1	0.2
22	11.8	11.0	11.3	7.6	6.9	7.3	3.6	3.3	3.4	0.4	0.1	0.2
23	11.5	10.5	11.1	7.5	6.7	7.2	3.6	3.5	3.5	0.4	0.1	0.2
24	11.1	10.3	10.8	6.7	6.1	6.3	3.5	3.0	3.2	0.4	0.1	0.2
25	10.5	10.1	10.3	6.5	5.9	6.2	3.1	2.0	2.6	0.5	0.2	0.3
26	11.2	10.2	10.6	6.7	6.4	6.6	2.0	1.7	1.8	0.3	0.2	0.2
27	11.5	11.0	11.3	6.7	5.6	6.2	2.3	1.9	2.1	0.3	0.1	0.2
28	11.3	10.8	11.1	5.6	4.2	4.9	2.4	2.1	2.2	0.4	0.1	0.2
29	11.1	10.0	10.3	4.2	3.8	3.9	2.6	2.2	2.4	0.3	0.2	0.2
30	10.0	8.8	9.4	4.3	3.7	4.0	2.8	2.3	2.6	0.4	0.1	0.2
31	9.4	8.1	8.8	---	---	---	3.7	2.8	3.2	0.3	0.2	0.3
MONTH	21.4	8.1	14.4	12.7	3.7	7.8	4.2	1.0	2.6	4.4	0.1	1.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	0.5	0.3	0.4	0.9	0.6	0.8	8.5	6.4	7.0	17.1	15.1	16.1
2	1.0	0.5	0.8	1.3	0.9	1.1	9.2	6.1	7.3	18.1	16.4	17.3
3	2.4	1.0	1.7	1.4	0.8	1.1	10.0	8.5	9.1	18.4	17.1	17.9
4	3.5	2.4	3.1	1.1	0.4	0.7	9.8	8.2	9.1	17.8	15.9	16.4
5	3.4	2.7	3.1	1.4	0.9	1.2	8.2	7.0	7.5	16.0	14.3	14.8
6	2.7	1.5	1.9	1.4	0.5	1.1	7.8	6.6	7.1	14.6	13.6	14.0
7	1.7	0.9	1.2	0.9	0.1	0.5	7.7	5.9	7.2	15.8	13.5	14.5
8	1.1	0.6	0.9	1.8	0.7	1.2	5.9	4.9	5.2	16.6	15.7	16.1
9	1.2	0.6	0.8	2.6	1.6	2.1	5.3	4.9	5.1	16.6	16.1	16.3
10	1.4	0.8	1.2	2.2	1.6	1.9	6.5	5.1	5.8	16.6	15.3	16.0
11	1.6	0.9	1.2	1.8	1.1	1.5	6.9	6.3	6.7	16.6	15.9	16.2
12	1.3	0.4	1.0	2.7	1.7	2.1	8.8	6.5	7.4	16.4	16.1	16.2
13	1.0	0.3	0.6	3.2	2.7	3.0	11.5	8.8	9.8	16.1	15.4	15.6
14	0.9	0.2	0.5	3.4	2.6	3.0	12.4	9.9	11.0	15.5	14.9	15.1
15	0.7	0.3	0.4	4.3	3.0	3.7	14.6	10.9	12.4	---	---	---
16	0.5	0.2	0.3	5.7	4.1	4.9	16.8	13.8	15.1	15.6	15.2	15.3
17	0.2	0.1	0.2	7.2	5.6	6.5	16.4	12.3	14.3	15.7	15.0	15.2
18	0.2	0.2	0.2	8.0	7.1	7.5	12.3	9.9	10.7	15.9	14.9	15.3
19	0.2	0.2	0.2	7.8	6.8	7.2	11.3	9.6	10.4	16.9	15.2	16.0
20	0.3	0.2	0.2	6.9	5.4	6.0	13.1	11.1	12.1	18.1	16.0	17.1
21	0.4	0.1	0.2	---	---	---	13.5	12.0	12.8	17.9	17.0	17.5
22	0.9	0.2	0.4	---	---	---	13.7	12.3	13.0	17.1	15.9	16.6
23	1.3	0.9	1.2	---	---	---	13.3	12.4	12.8	15.9	14.7	15.2
24	1.0	0.5	0.7	---	---	---	12.6	11.3	12.1	14.7	14.1	14.4
25	0.8	0.2	0.5	---	---	---	13.7	11.1	12.4	14.2	14.0	14.1
26	0.4	0.1	0.2	11.6	10.1	10.9	13.6	12.6	13.1	14.4	14.0	14.2
27	0.6	0.1	0.3	12.2	10.1	11.2	14.2	12.7	13.5	---	---	---
28	0.9	0.3	0.6	12.4	10.6	11.5	16.0	13.1	14.6	---	---	---
29	---	---	---	13.0	11.7	12.2	16.4	14.7	15.6	---	---	---
30	---	---	---	12.9	10.3	11.8	16.6	14.9	15.9	---	---	---
31	---	---	---	10.3	8.3	8.9	---	---	---	---	---	---
MONTH	3.5	0.1	0.9	13.0	0.1	4.8	16.8	4.9	10.5	18.4	13.5	15.7





01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

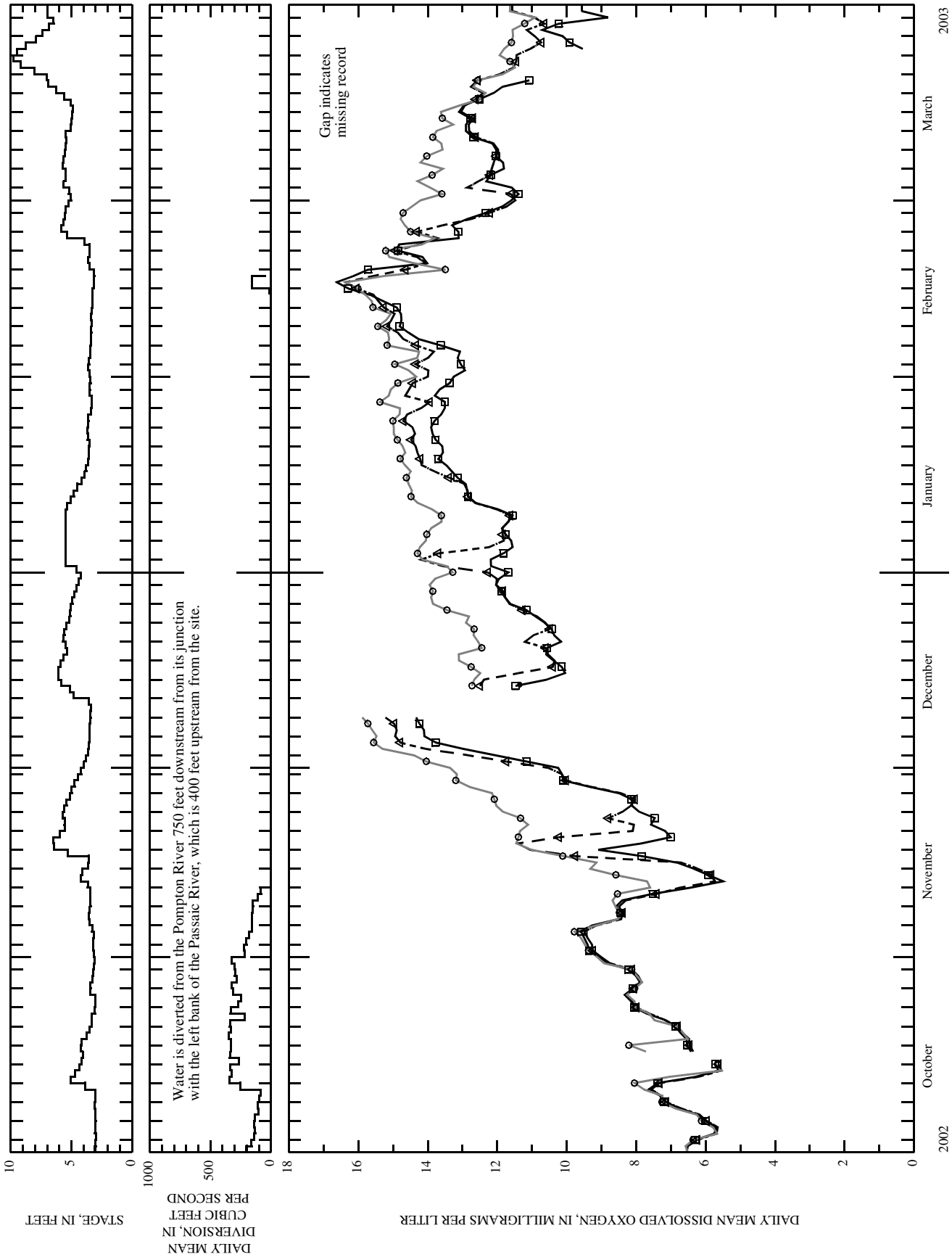


Figure 33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003.

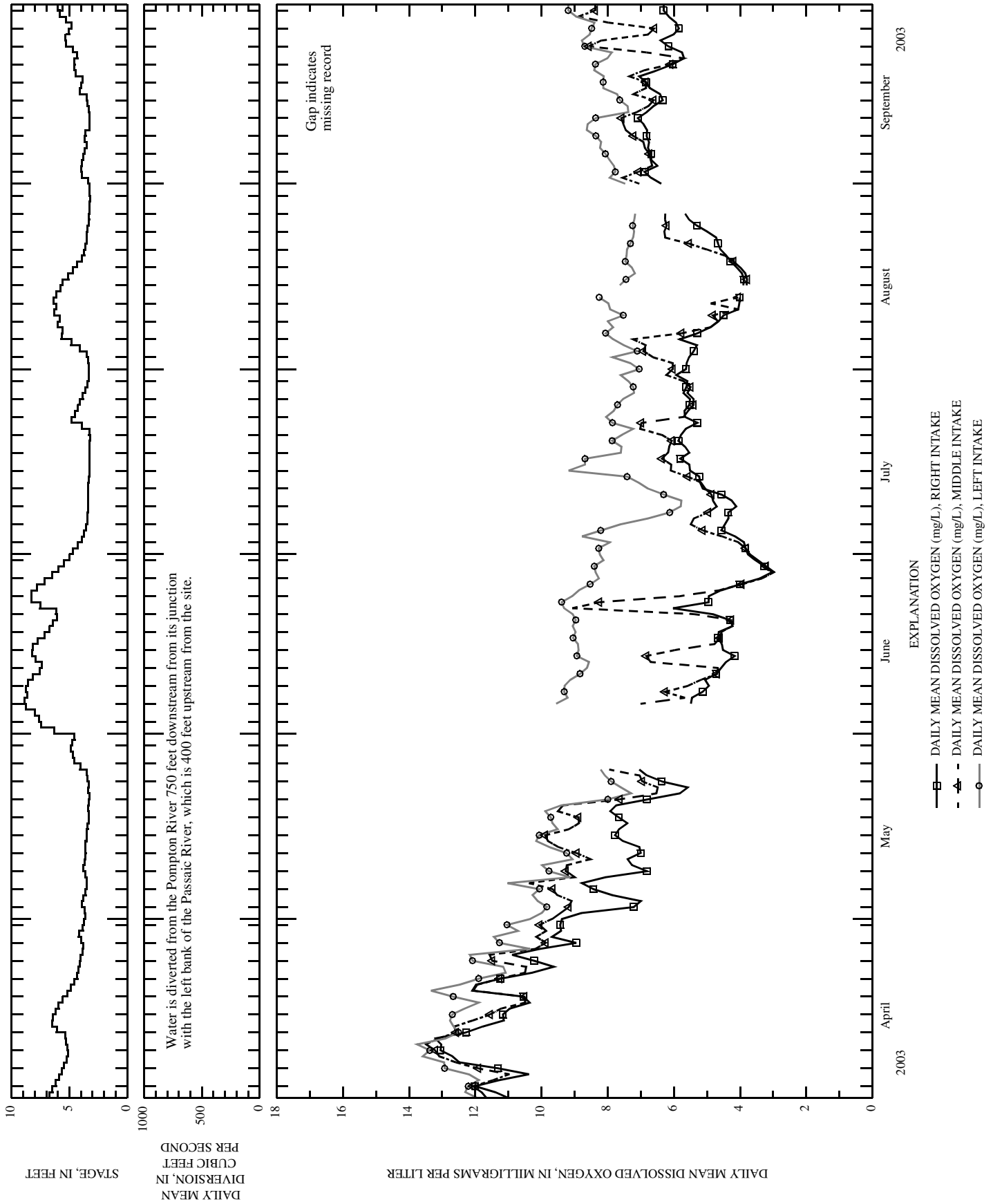


Figure 33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003--continued.

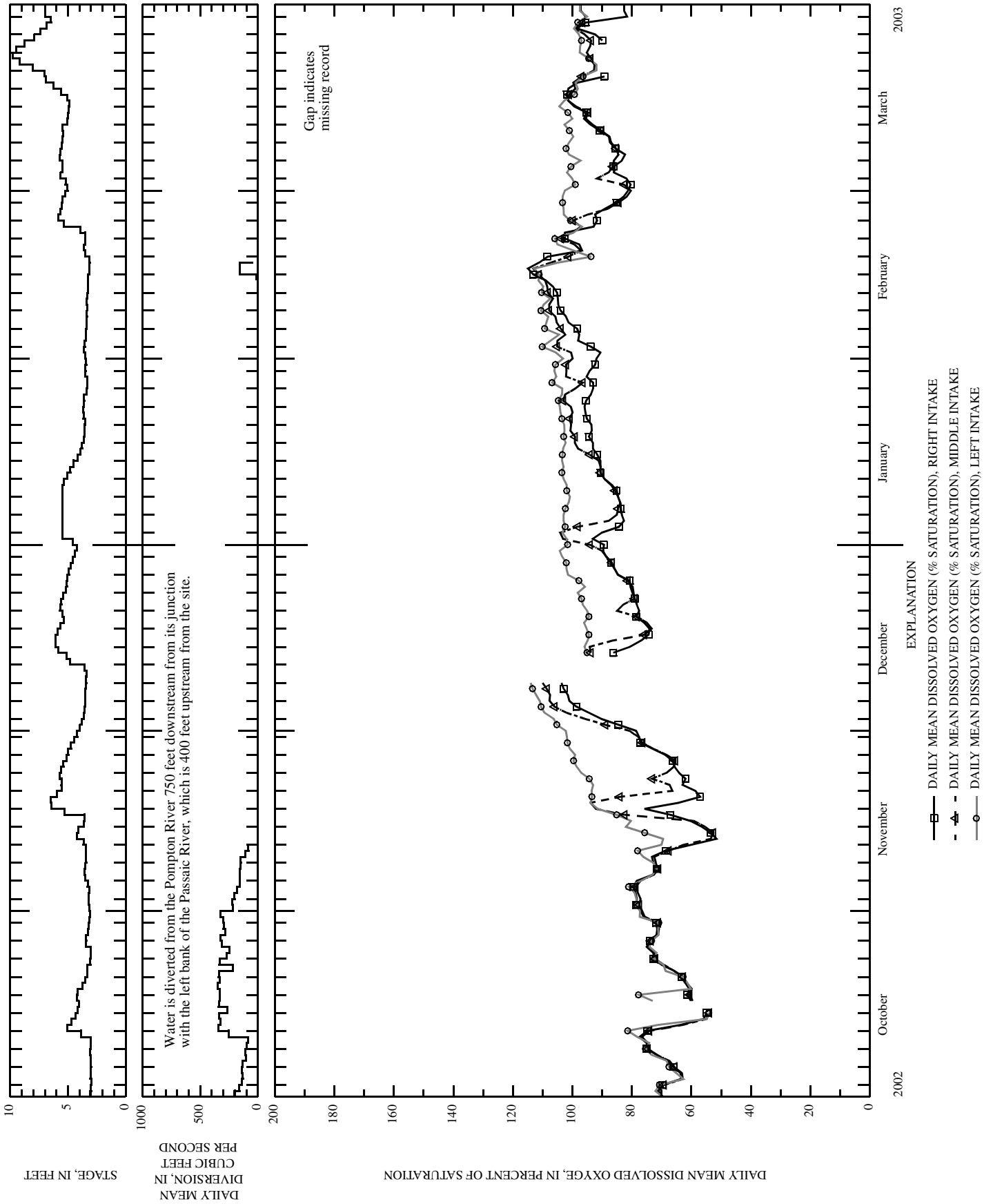


Figure 33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003--continued.

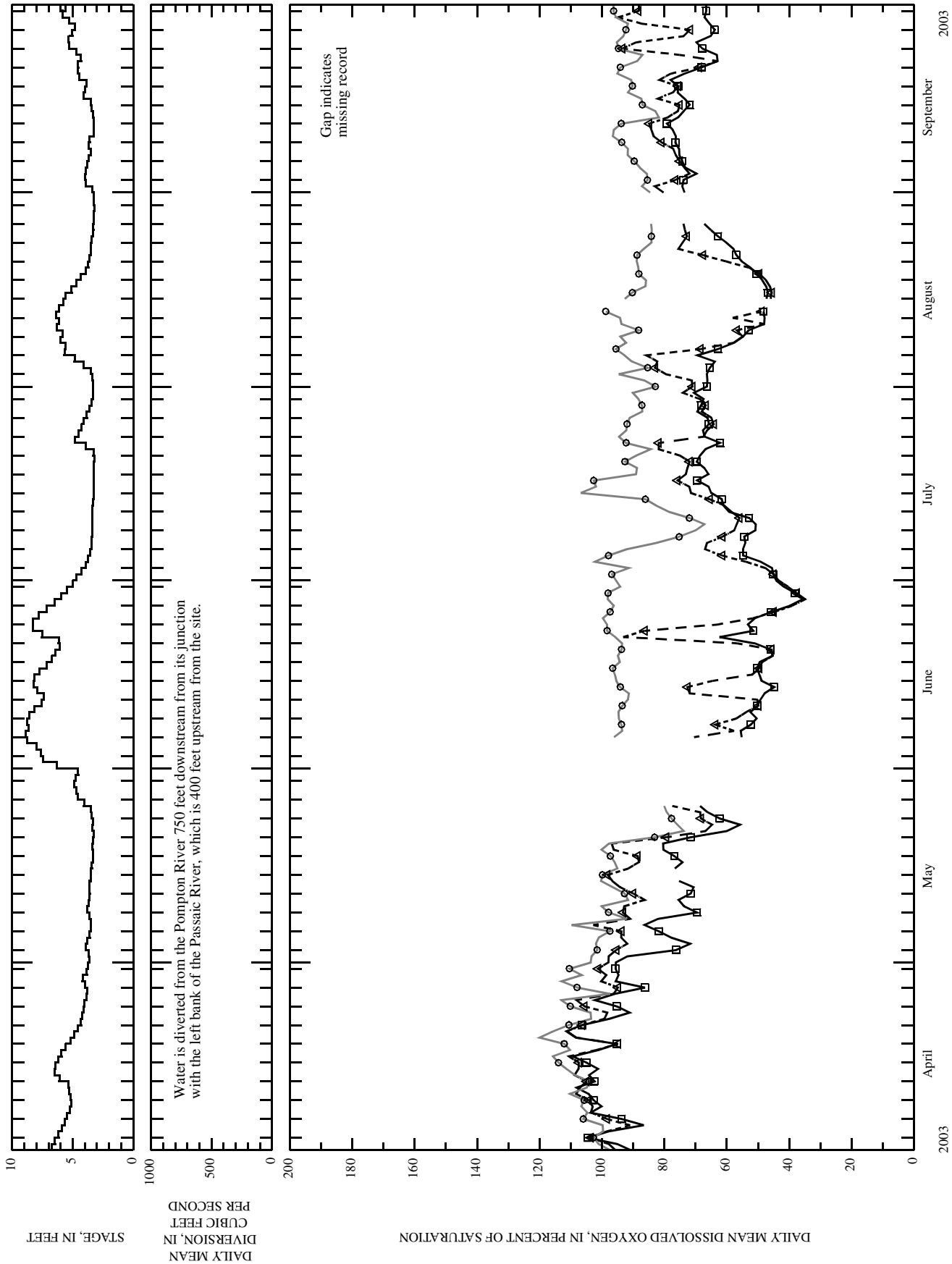


Figure 33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003-- continued.

01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

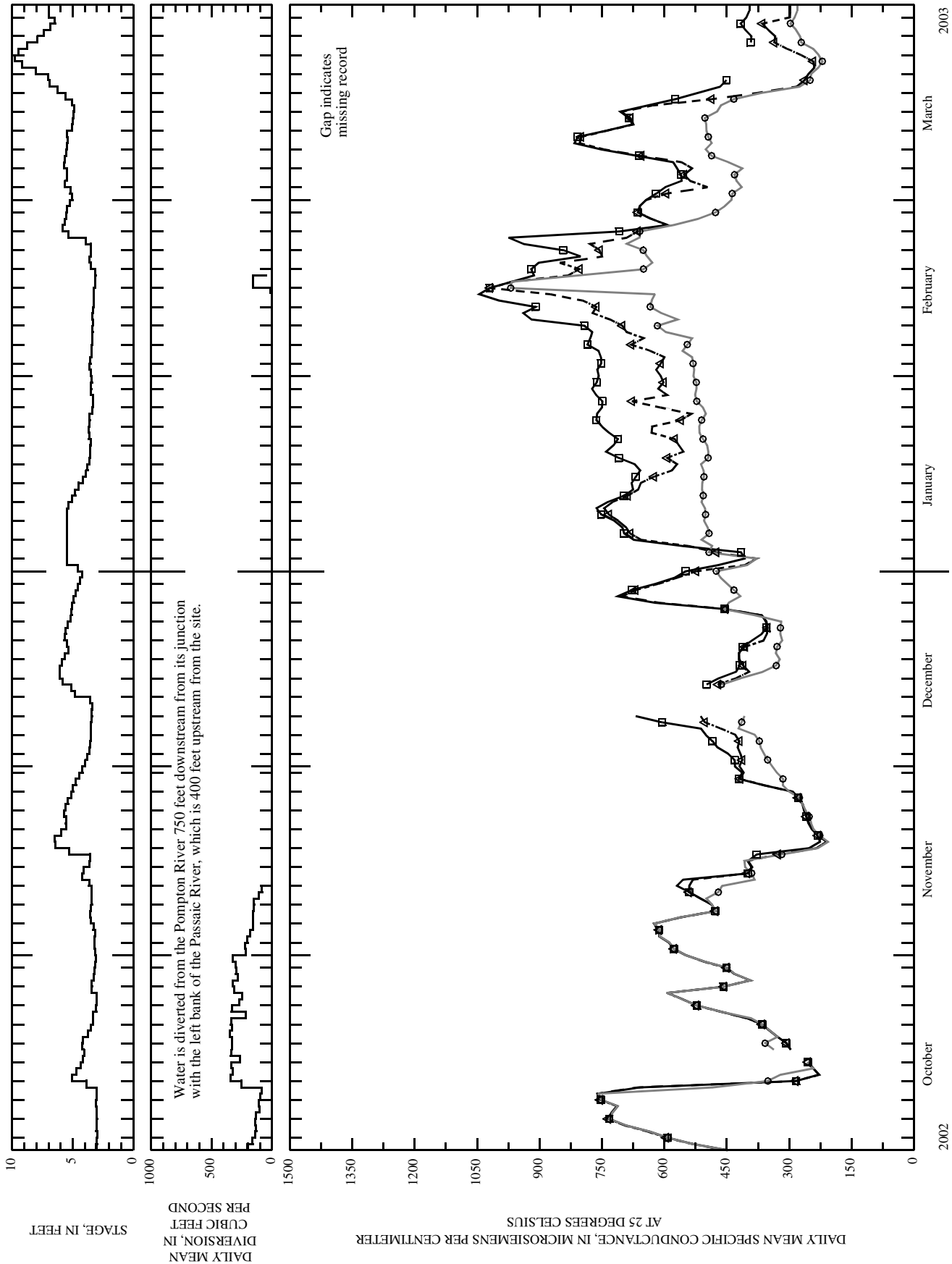
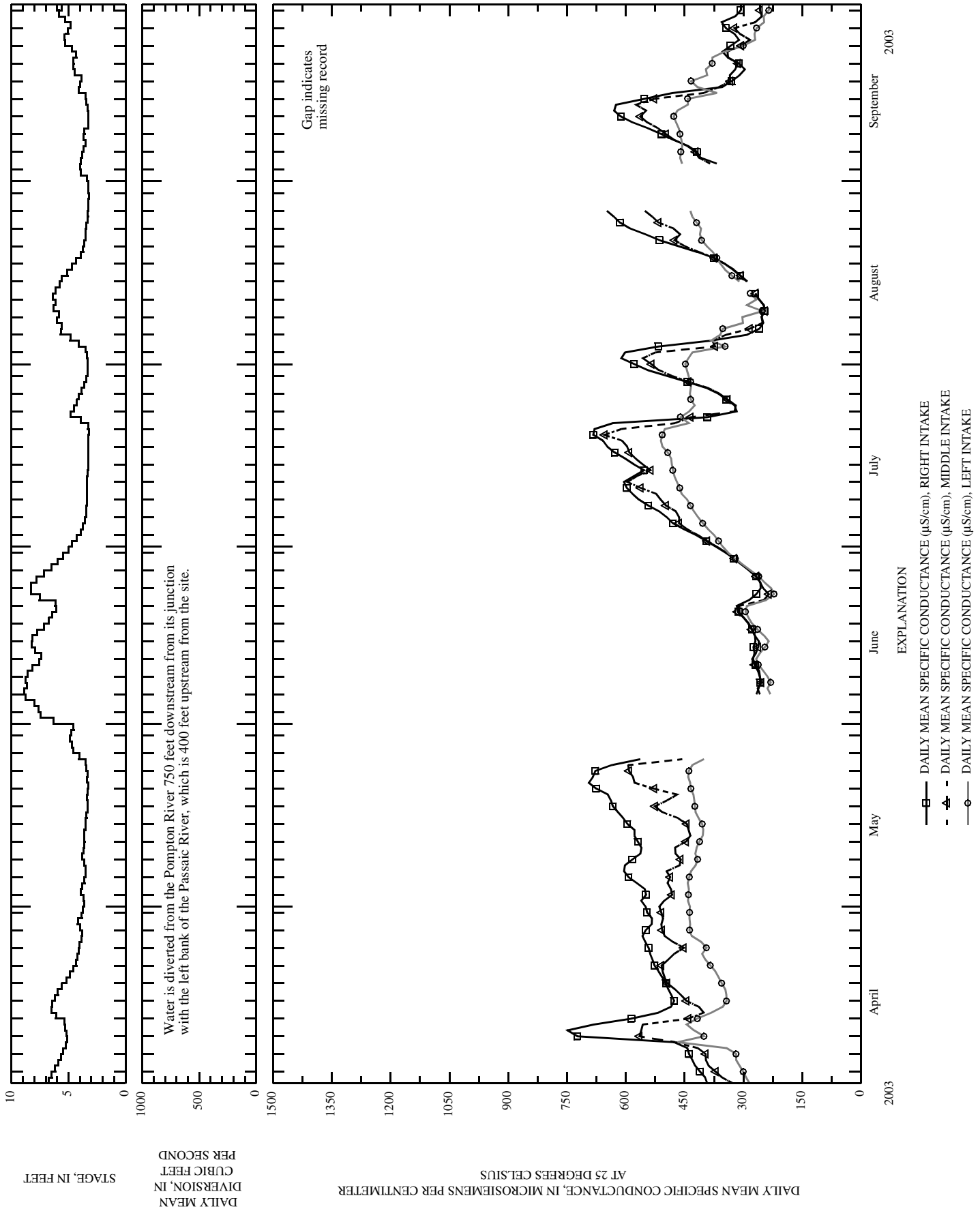


Figure 33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003--continued.



**Figure 33.** Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003--continued.

01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued

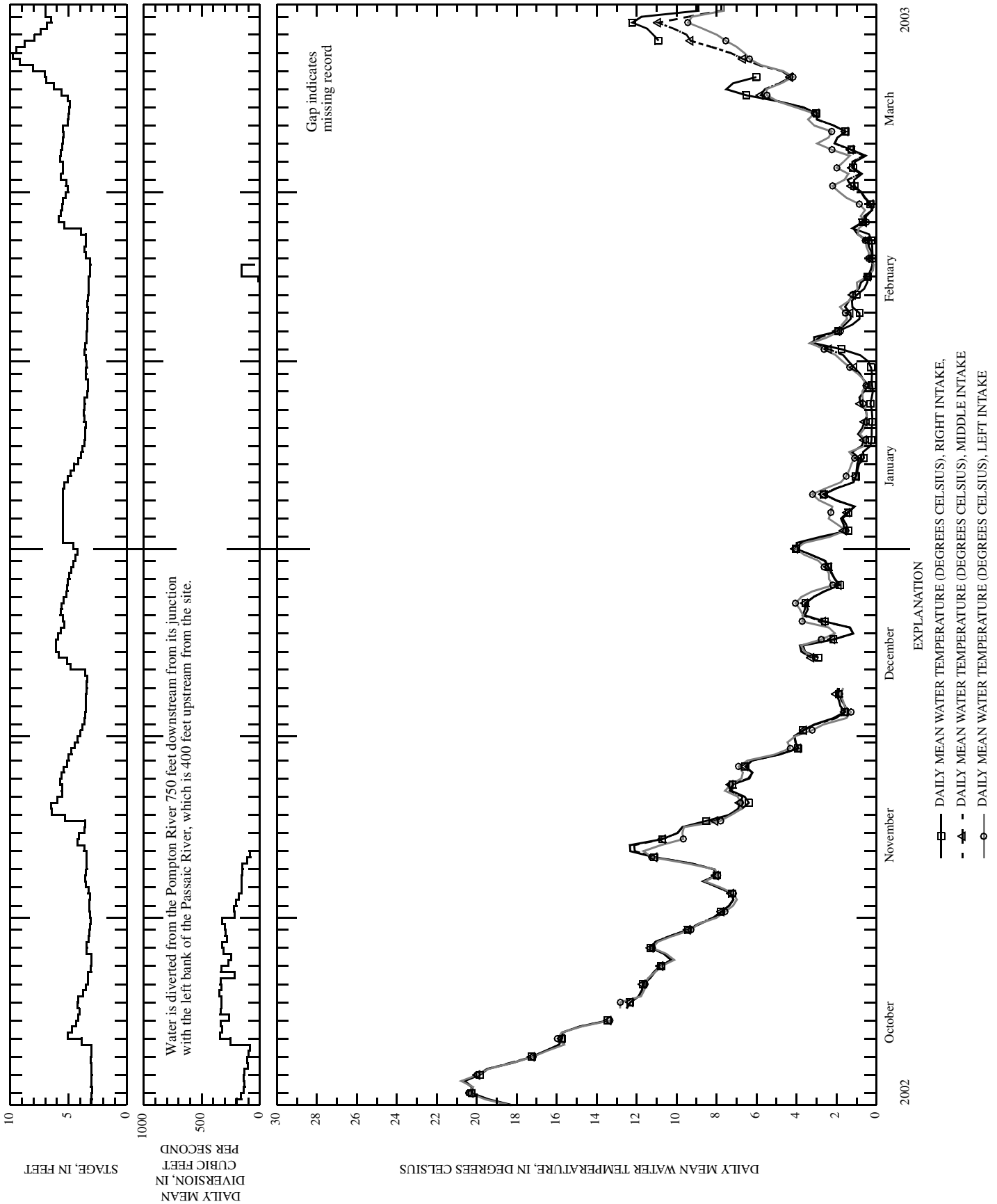


Figure 33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003--continued.

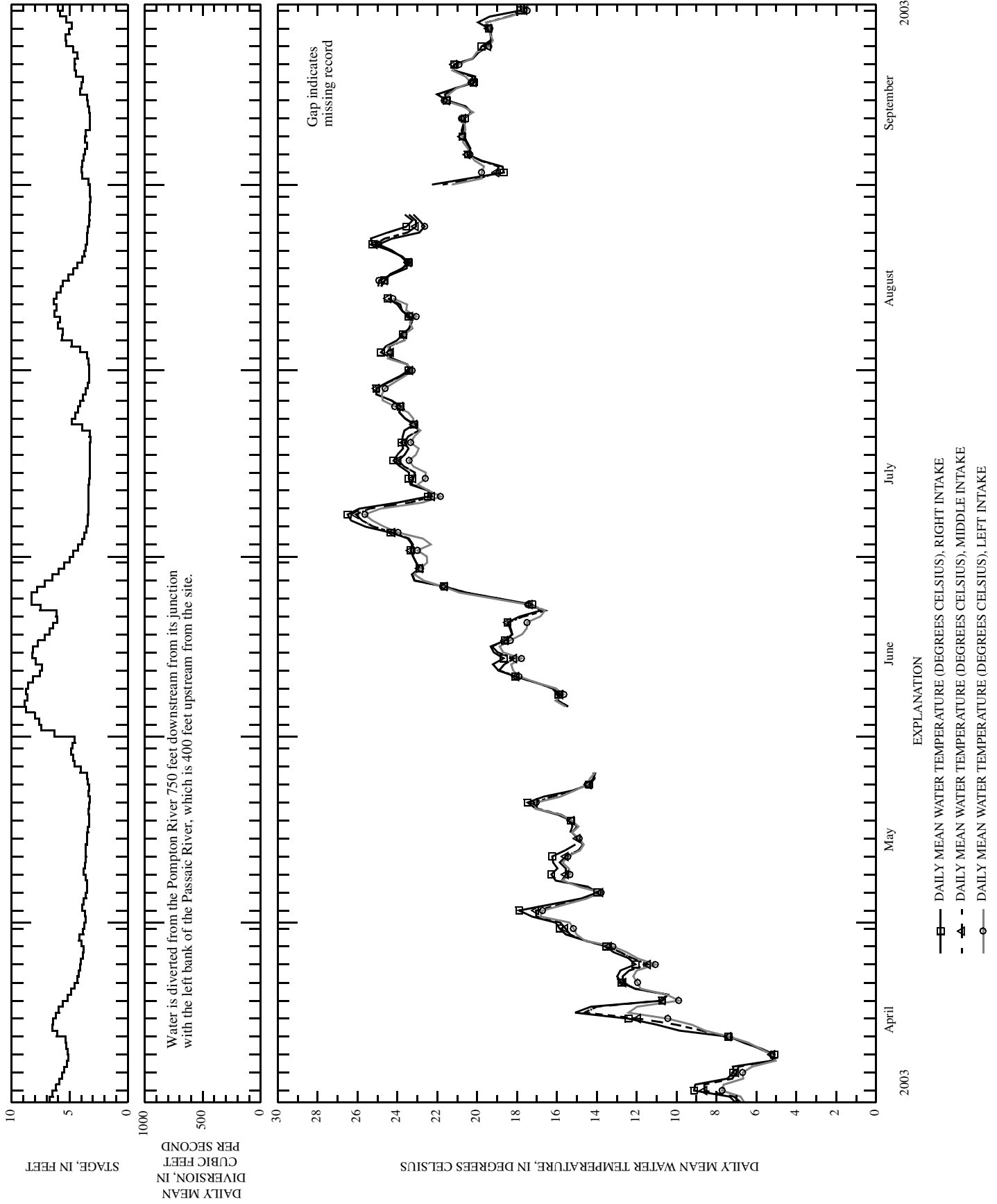
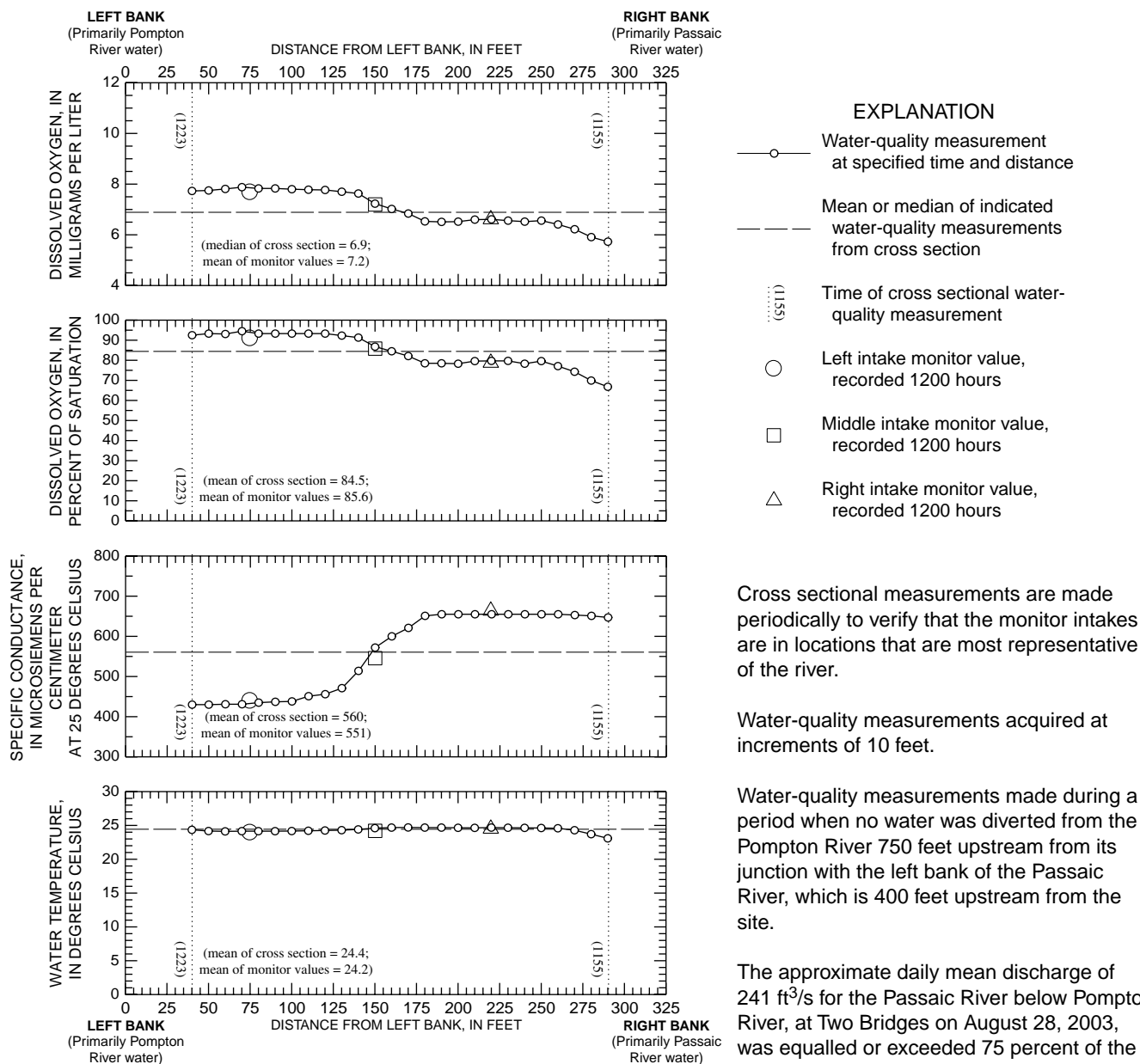


Figure 33. Physical characteristics, concentrations of constituents, stage, and daily diversion measured at 01389005 Passaic River below Pompton River, at Two Bridges, water year 2003--continued.



01389005 PASSAIC RIVER BELOW POMPTON RIVER, AT TWO BRIDGES, NJ—Continued



**Figure 34.** Cross sectional water-quality measurements with recorded monitor values, at Passaic River below Pompton River, at Two Bridges, August 21, 2003.

## 01389500 PASSAIC RIVER AT LITTLE FALLS, NJ

LOCATION.--Lat 40°53'05", long 74°13'34", Passaic County, Hydrologic Unit 02030103, 0.6 mi downstream from Beatties Dam in Little Falls, and 1.0 mi upstream from Peckman River.

DRAINAGE AREA.--762 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963-96, 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to November 1986.

WATER TEMPERATURE: Water years 1963 to 1980 (once daily), September 1980 to November 1986.

DISSOLVED OXYGEN: October 1970 to September 1980 (once daily).

SUSPENDED-SEDIMENT DISCHARGE: August 1963 to July 1965.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 4.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 04...	1000	682	3.5	0.178	0.136	771	11.7	84	7.6	456	4.5	2.0	110
FEB 06...	1000	489	3.3	0.081	0.061	770	12.9	93	7.7	701	-5.0	1.9	150
MAY 07...	1000	637	5.5	0.149	0.112	759	8.9	86	7.6	547	17.8	13.6	120
AUG 12...	0900	2,950	9.2	0.314	0.242	766	7.0	83	7.2	266	23.1	24.1	71

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 04...	28.0	8.94	2.55	39.5	62	73.9	<0.17	12.1	25.9	237	250	8	0.44
FEB 06...	38.7	12.2	3.76	69.6	76	131	<0.17	10.9	29.3	360	380	3	0.42
MAY 07...	32.4	10.3	3.04	53.4	72	101	<0.17	7.6	21.1	281	309	5	0.42
AUG 12...	19.0	5.64	2.15	25.7	48	42.9	<0.17	10.2	11.1	149	179	15	0.54

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
DEC 04...	0.126	0.141	1.87	0.015	0.227	0.07	0.23	0.27	2.3	2.4	0.4	<0.1	0.4
FEB 06...	0.070	0.065	3.84	0.027	0.387	0.10	0.38	0.41	4.3	4.4	0.5	<0.1	0.5
MAY 07...	0.073	0.083	1.75	0.022	0.231	0.17	0.23	0.30	2.2	2.3	0.9	<0.1	0.9
AUG 12...	0.051	0.057	0.60	0.014	0.178	0.15	0.14	0.23	1.1	1.3	1.2	<0.1	1.2

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 04...	5.0	E1.4	--	82
FEB 06...	3.0	E1.6	--	107
MAY 07...	4.4	E1.6	25.0	86
AUG 12...	7.4	<1.0	9.00	58

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1126	110	500	300	AUG 11...	1140	300	200	5,000
AUG 04...	1120	790	1,400	1,300	AUG 18...	1135	100	300	2,200
					AUG 25...	1130	110	300	500

## 01390400 SADDLE RIVER AT OLD STONE CHURCH ROAD, AT UPPER SADDLE RIVER, NJ

LOCATION.--Lat 41°04'16", long 74°05'18", Bergen County, Hydrologic Unit 02030103, at bridge on Old Stone Church Road, 0.6 mi downstream of Penners Lake, 1.0 mi north of Upper Saddle River, and 3.7 mi southeast of Mahwah.

DRAINAGE AREA.--6.32 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 4.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 26...	0715	0.4	0.104	0.079	747	10.9	91	8.1	560	-2.0	6.5	180	52.5
MAR 12...	0730	1.0	0.058	0.044	757	15.1	115	8.2	909	0.5	3.5	190	57.6
MAY 08...	0715	6.5	0.148	0.111	742	9.0	89	7.9	606	15.0	13.8	140	43.2
AUG 06...	0900	14	0.237	0.182	752	8.7	98	7.8	321	25.4	20.6	83	25.8

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents (70301)	Residue on evap. at 180degC wat flt (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 26...	10.9	1.60	38.2	E121	78.0	<0.17	9.5	18.0	--	297	2	0.18	<0.030
MAR 12...	11.2	1.51	104	111	199	<0.17	6.1	19.1	473	493	<1	0.14	<0.030
MAY 08...	8.42	1.81	60.2	98	111	<0.17	5.4	13.2	308	355	10	0.32	0.036
AUG 06...	4.55	1.87	28.5	69	52.2	<0.17	7.6	8.5	175	205	15	0.52	0.066

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 26...	0.077	1.52	0.003	0.039	<0.02	0.026	0.029	1.7	--	0.2	<0.1	0.2	3.2
MAR 12...	<0.030	1.67	0.004	0.022	0.08	0.007	0.016	1.8	1.9	0.3	<0.1	0.3	2.0
MAY 08...	0.097	1.21	0.024	<0.020	0.33	0.011	0.013	1.5	1.9	2.5	<0.1	2.5	4.3
AUG 06...	0.102	0.91	0.016	--	0.19	0.063	0.120	1.4	1.6	2.0	<0.1	2.0	6.6

01390400 SADDLE RIVER AT OLD STONE CHURCH ROAD, AT UPPER SADDLE RIVER, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro-phyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 26...	E1.6	--	42
MAR 12...	E1.2	--	34
MAY 08...	3.3	22.6	34
AUG 06...	E1.7	4.00	37

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos-phorus, bed total, mg/kg (00668)	Total carbon, bed total, g/kg (00693)	Inor-ganic carbon, bed total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll-ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)
AUG 06...	0859	Field Blank	--	--	--	--	--	--	--	--	--
06...	0900	Environmental	--	--	--	--	--	E1	35.5	<0.06	42
06...	0900	Bed material	7.26	190	5,900	3.0	<0.2	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cadmium water, unfltrd recover -able, ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, unfltrd recover -able, ug/L (01147)
AUG 06...	--	--	<0.2	--	--	<0.08	--	--	<0.02	--	<0.06	--	--
06...	<0.04	E.7	--	4.0	690	--	3.19	68.5	--	E.01	--	2.19	0.6
06...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom-ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan-ese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)
AUG 06...	--	<1	--	--	--	--	--	--	--	--	--	--	--
06...	E.11	--	11	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	<1	0.050	5.4	2.4	7	7,000	5.2	260	<0.01	5.5

## 01390400 SADDLE RIVER AT OLD STONE CHURCH ROAD, AT UPPER SADDLE RIVER, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, bed sediment total, ug/g (01148)	Zinc, bed sediment recoverable, ug/g (01093)	1,2-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sediment <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sediment <2 mm, ug/kg (49410)	1-Methylpyrene, bed sediment <2 mm, wsv nat ug/kg (49388)	1-236Trimethylnaphthalene, bed sediment <2 mm, ug/kg (49405)	2,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49406)	2-Ethyl-naphthalene, bed sediment <2 mm, wsv nat ug/kg (49948)	2-Methylanthracene, bed sediment <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sediment <2 mm, ug/kg (49411)	9H-Flour-ene, bed sediment <2 mm, wsv nat ug/kg (49399)
AUG 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	<1	33	<50	E10	E13	71	67	E3	E12	E7	57	190	150

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Acenaphthene, bed sediment <2 mm, wsv nat ug/kg (49429)	Acenaphthylene, bed sediment <2 mm, wsv nat ug/kg (49428)	Anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]anthracene, bed sediment <2 mm, wsv nat ug/kg (49436)	Benzo[a]pyrene, bed sediment <2 mm, wsv nat ug/kg (49389)	Benzo[b]fluoranthene, bed sediment <2 mm, wsv nat ug/kg (49458)	Benzo[ghi]perylene, bed sediment <2 mm, wsv nat ug/kg (49408)	Benzo[k]fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49397)	Chrysene, bed sediment <2 mm, wsv nat field, ug/kg (49450)	Dibenzo[a,h]anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49461)	Fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49466)	Indeno[1,2,3-cd]pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49390)	Iso-phorone, bed sediment <2 mm, wsv nat field, ug/kg (49400)
AUG 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	110	53	1,500	820	800	860	E380	690	930	130	2,200	490	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Naphthalene, bed sediment <2 mm, wsv nat ug/kg (49402)	PCBs, bed sediment ug/kg (39519)	p-Cresol, bed sediment <2 mm, wsv nat field, ug/kg (49451)	Phenanthrene, bed sediment <2 mm, wsv nat field, ug/kg (49409)	Phenanthridine, bed sediment <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49387)	Bed sediment, dry svediment, percent <.063mm (80164)	Bed sediment, falldia, percent <.002mm (80294)	Bed sediment, falldia, percent <.004mm (80157)	Bed sediment, falldia, percent <.008mm (80293)	Bed sediment, falldia, percent <.016mm (80282)	Bed sediment, falldia, percent <.031mm (80283)
AUG 06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	E11	E7	<50	1,500	E31	1,700	1.2	0.2	0.3	0.4	0.5	0.7

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113, water, unfltrd ug/L (77652)	1,1-Dichloroethane, water, unfltrd ug/L (34496)	1,1-Dichloroethane, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water, unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water, unfltrd ug/L (34541)	1,3-Dichlorobenzene, water, unfltrd ug/L (34566)	1,4-Dichlorobenzene, water, unfltrd ug/L (34571)	Benzene, water, unfltrd ug/L (34030)	Bromodichloromethane, water, unfltrd ug/L (32101)	Chlorobenzene, water, unfltrd ug/L (34301)
MAR 12...	0730	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chloro-difluoromethane, water, unfltrd ug/L (34668)	Di-chloromethane, water, unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water, unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 12...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

01390400 SADDLE RIVER AT OLD STONE CHURCH ROAD, AT UPPER SADDLE RIVER, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 12...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 08...	0715	<0.006	E.011	<0.006	<0.004	<0.005	0.021	<0.050	<0.010	<0.002	E.070	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 08...	<0.003	<0.004	0.011	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	0.046	E.006	<0.006	<0.007	

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 08...	<0.025	E.01	0.010	<0.02	<0.034	E.002

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

01390400 SADDLE RIVER AT OLD STONE CHURCH ROAD, AT UPPER SADDLE RIVER, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
30...	1006	100	<100	40	14...	1000	180	200	230
JUL					21...	1015	4,500	8,000	>16000
07...	0958	6,300	1,200	>16000	28...	1000	320	600	300

Remark codes used in this table:

- < -- Less than
- > -- Greater than



## 01390800 VALENTINE BROOK AT ALLENDALE, NJ

LOCATION.--Lat 41°01'53", long 74°09'09", Bergen County, Hydrologic Unit 02030103, at bridge on Forest Road, 0.5 mi upstream of mouth, 1.4 mi southwest of Allendale, and 2.3 mi northwest of Waldwick.

DRAINAGE AREA.--2.48 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963, 1965, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 4.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 20...	0715	2.0	0.229	0.180	744	9.6	81	7.6	740	-2.0	7.0	200	58.1
MAR 11...	1000	2.8	0.114	0.086	761	13.8	98	7.8	1,180	-1.5	1.0	240	70.0
MAY 07...	0715	1.4	0.108	0.081	740	8.3	76	7.7	1,040	8.0	9.9	250	72.5
AUG 13...	1100	1.6	0.200	0.151	760	7.5	82	7.6	792	27.5	20.1	230	64.0

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 20...	14.2	2.34	57.6	E125	133	<0.17	13.8	24.4	310	415	5	0.30	<0.030
MAR 11...	15.5	2.31	137	125	273	<0.17	12.0	26.1	618	656	7	0.26	<0.030
MAY 07...	17.6	2.48	98.2	154	212	<0.17	9.8	22.6	534	606	3	0.35	<0.030
AUG 13...	16.0	2.58	80.1	129	161	<0.17	15.2	18.7	440	485	3	0.36	0.075

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 20...	<0.030	1.15	0.009	0.029	0.09	0.029	0.044	1.5	1.6	0.6	<0.1	0.6	5.9
MAR 11...	0.049	1.58	0.012	0.024	0.06	0.012	0.034	1.8	1.9	0.4	<0.1	0.4	3.2
MAY 07...	<0.030	1.35	0.019	<0.020	0.04	0.010	0.029	1.7	1.7	0.3	<0.1	0.3	3.6
AUG 13...	0.081	1.13	0.018	0.039	0.03	0.038	0.060	1.5	1.5	0.3	<0.1	0.3	5.1

01390800 VALENTINE BROOK AT ALLENDALE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 20...	E1.6	--	43
MAR 11...	<1.0	--	33
MAY 07...	<1.0	13.2	42
AUG 13...	<1.0	3.80	48

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos- phorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inor- ganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll- ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 13...	1100	--	--	--	--	--	<2	64.5	<0.06	44	<0.04	<0.8	3.6
13...	1100	7.40	120	6,200	3.9	0.6	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan- ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom- ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 13...	290	0.49	118	<0.02	3.17	0.5	<0.16	4	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	<1	0.080	7.1	2.9	9	

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan- ese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selen- ium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49403)	1,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49404)	1Methyl -9H- fluor- ene, bed sed <2 mm, ug/kg (49398)	1- Methyl- phenan- threne, bed sed <2 mm, ug/kg (49410)	1- Methyl- pyrene, bed sed wsv nat ug/kg (49388)	236Tri- methyl- naphth- alene, bed sed <2 mm, ug/kg (49405)
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	7,300	8.8	250	<0.01	6.0	<1	51	<50	E11	E13	E34	E33	E10	

01390800 VALENTINE BROOK AT ALLENDALE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphthalene bed sed <2 mm, wsv nat ug/kg (49948)	2-Methylanthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flour-ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace-naphth-ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace-naphth-ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, wsv nat ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo-[b]-fluor-anthene, bed sed <2 mm, wsv nat ug/kg (49458)	Benzo-[ghi]-peryl-ene, bed sed <2 mm, wsv nat ug/kg (49408)	Benzo-[k]-fluor-anthene, bed sed <2 mm, wsv nat ug/kg (49397)
AUG 13... 13...	-- E12	-- <50	-- E24	-- 74	-- E45	-- E27	-- E18	-- 100	-- 380	-- 400	-- 460	-- 260	-- 350

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, wsv nat ug/kg (49461)	Fluor-anthene, bed sed <2 mm, wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm, wsv nat ug/kg (49390)	Iso-phorone, bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm, wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thri-dine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd sve dia percent <.063mm (80164)
AUG 13... 13...	-- 520	-- 88	-- 1,100	-- 340	-- <50	-- <50	-- E2	-- <50	-- 570	-- E23	-- 740	-- 0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113, water, unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene, water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane, water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene, water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene, water, unfltrd ug/L (34571)	Benzene, water, unfltrd ug/L (34030)	Bromo-di-chloro-methane, water, unfltrd ug/L (32101)	Chloro-benzene, water, unfltrd ug/L (34301)
MAR 11...	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane, water, unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane, water, unfltrd ug/L (34668)	Di-chloro-methane, water, unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water, unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 11...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.4

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane, water, unfltrd ug/L (32102)	Toluene, water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane, water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane, water, unfltrd ug/L (34488)	Tri-chloro-methane, water, unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
MAR 11...	0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

01390800 VALENTINE BROOK AT ALLENDALE, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 07...	0715	<0.006	<0.006	<0.006	<0.004	<0.005	E.004	<0.050	<0.010	<0.002	E.005	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipro-nil amide, wat flt 0.7u GF (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 07...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 07...	<0.022	E.01	E.005	<0.02	<0.034	E.002

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN 30...	1022	490	1,000	800	JUL 14...	1017	640	1,100	1,300
JUL 07...	1016	40,800	54,000	>16000	JUL 21...	1032	6,700	12,000	>16000
					JUL 28...	0926	2,800	800	2,400

Remark codes used in this table:  
 > -- Greater than

01391500 SADDLE RIVER AT LODI, NJ

LOCATION.--Lat 40°53'25", long 74°04'50", Bergen County, Hydrologic Unit 02030103, 560 ft upstream from bridge on Outwater Lane in Lodi and 3.2 mi upstream from mouth. Water-quality samples collected at bridge on Outwater Lane at high flows.

DRAINAGE AREA.--54.6 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	0715	91	2.8	0.171	0.132	750	8.6	75	7.5	733	3.0	8.5	190
FEB 26...	1000	103	4.3	0.120	0.093	776	12.3	86	7.5	953	-3.2	1.2	190
MAY 13...	0715	81	2.7	0.112	0.086	739	6.1	60	7.5	855	10.0	12.9	220
AUG 13...	0900	129	8.8	0.192	0.145	768	7.0	80	7.7	508	25.2	22.0	160

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium water, fltrd, mg/L (00925)	Potassium water, fltrd, mg/L (00935)	Sodium water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	54.5	13.6	4.60	55.4	E120	110	<0.17	12.1	28.0	--	399	12	0.83
FEB 26...	54.8	12.6	3.51	107	117	194	<0.17	11.0	23.4	493	494	6	1.3
MAY 13...	61.8	15.7	4.64	75.8	127	147	<0.17	10.8	23.4	439	469	12	1.4
AUG 13...	47.0	11.2	3.62	53.8	103	102	<0.17	12.6	19.0	326	354	19	0.55

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 21...	0.398	0.422	4.84	0.103	0.594	0.17	0.64	0.70	5.7	5.8	1.2	<0.1	1.2
FEB 26...	0.809	0.883	3.30	0.100	0.339	0.09	0.35	0.40	4.6	4.7	0.7	<0.1	0.7
MAY 13...	0.692	0.810	4.67	0.222	0.606	0.13	0.60	0.68	6.1	6.2	1.1	<0.1	1.0
AUG 13...	0.086	0.097	3.02	0.061	--	0.14	0.36	0.45	3.6	3.7	1.1	<0.1	1.1

## PASSAIC RIVER BASIN

01391500 SADDLE RIVER AT LODI, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcrtd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	5.0	E1.7	--	80
FEB 26...	4.0	E1.2	--	67
MAY 13...	4.2	3.3	6.80	87
AUG 13...	5.3	E1.1	11.2	78

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 30...	1053	480	700	1,100	JUL 14...	1046	900	1,500	1,300
JUL 07...	1046	300	1,100	260	JUL 21...	1103	8,700	16,000	2,400
					JUL 28...	1025	1,000	1,300	3,000

01394200 RAHWAY RIVER AT MORRIS AVENUE, AT SPRINGFIELD, NJ

LOCATION.--Lat 40°42'28", long 74°18'07", Union County, Hydrologic Unit 02030104, at bridge on Morris Avenue (State Route 82), 0.7 mi east of Springfield, 1.2 mi south of Millburn, and 4.2 mi upstream from Nomahegan Brook.

DRAINAGE AREA.--25.5 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 7.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 19...	0900	3.8	0.182	0.140	768	10.2	83	7.7	414	12.0	7.0	130	37.1
FEB 26...	1000	4.3	0.100	0.076	770	11.0	75	7.9	862	-1.3	0.1	170	52.4
MAY 14...	1000	3.6	0.067	0.051	756	7.6	--	7.5	--	14.3	12.4	210	63.1
AUG 28...	0900	4.7	0.076	0.058	762	4.6	51	7.2	658	22.7	20.2	230	70.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 19...	8.28	2.20	35.3	E74	69.9	<0.17	13.2	24.2	--	268	8	0.37	0.035
FEB 26...	10.5	2.30	126	85	234	<0.17	13.3	25.6	523	542	4	0.33	0.107
MAY 14...	12.9	2.55	81.0	164	182	<0.17	13.7	28.6	487	520	6	0.33	0.131
AUG 28...	14.1	2.73	61.3	118	143	<0.17	13.9	30.3	411	467	4	0.34	0.138

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 19...	0.043	1.34	0.009	0.038	0.17	0.042	0.081	1.7	1.9	0.8	<0.1	0.8	5.3
FEB 26...	0.101	1.66	0.011	0.043	0.07	0.030	0.063	2.0	2.1	0.5	<0.1	0.5	3.2
MAY 14...	0.113	1.22	<0.003	0.023	0.12	0.021	0.082	1.6	1.7	0.5	<0.1	0.5	2.4
AUG 28...	0.134	1.02	0.026	0.023	0.11	0.025	0.025	1.4	1.5	0.7	<0.1	0.7	2.7

01394200 RAHWAY RIVER AT MORRIS AVENUE, AT SPRINGFIELD, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 19...	E1.3	--	52
FEB 26...	E1.8	--	47
MAY 14...	<1.0	10.1	61
AUG 28...	E1.1	4.90	77

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos- phorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inor- ganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll- ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 28...	0900	--	--	--	--	--	<2	142	<0.06	71	E.03	0.9	3.4
28...	0900	6.93	330	4,400	12	0.7	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan- ese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom- ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 28...	500	3.42	242	0.03	3.69	0.7	<0.16	8	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	<1	0.570	22	5.4	34

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan- ese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selen- ium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49403)	1,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49404)	1Methyl -9H- fluore- ne, bed sed <2 mm, ug/kg (49398)	1- Methyl- phenan- threne, bed sed <2 mm, ug/kg (49410)	1- Methyl- pyrene, bed sed <2 mm, wsv nat ug/kg (49388)	236Tri- methyl- naphth- alene, bed sed <2 mm, ug/kg (49405)
AUG 28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	7,000	130	98	0.02	10	<1	150	<50	<50	<50	140	110	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphth- alene bed sed <2 mm wsv nat ug/kg (49948)	2- Methyl- anthra- cene, bed sed <2 mm, ug/kg (49435)	Cyclo- penta- phenan- threne, bed sed <2 mm, ug/kg (49411)	9H- Flour- ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace- naphth- ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace- naphth- ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra- cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo- [a]- anthra- cene, bed sed <2 mm, ug/kg (49436)	Benzo- [a]- pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo- [b]- fluor- anthene bed sed <2 mm ug/kg (49458)	Benzo- [ghi]- peryl- ene, bed sed <2 mm, ug/kg (49408)	Benzo- [k]- fluor- anthene bed sed <2 mm ug/kg (49397)
AUG 28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	<50	<50	100	270	170	110	160	490	1,400	1,400	1,300	840	1,000



01394200 RAHWAY RIVER AT MORRIS AVENUE, AT SPRINGFIELD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm, ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm, wsv nat field, ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat field, ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 28... 28...	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,600	270	3,400	1,100	<50	<50	E21	<50	1,900	52	2,600	1.5	0.3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 28... 28...	--	--	--	--
	0.3	0.4	0.5	0.9

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 26...	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 26...	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	1.3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)	
FEB 26...		0.8	<0.2	<0.1	<0.1	<0.2	0.2	<0.2	0.2	<0.2

Remark codes used in this table:  
 < -- Less than

01394200 RAHWAY RIVER AT MORRIS AVENUE, AT SPRINGFIELD, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 14...	1000	<0.006	E.005	<0.006	<0.004	<0.005	E.007	<0.050	<0.010	<0.002	E.013	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 14...		<0.003	<0.004	<0.007	0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027	E.004	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 14...	<0.022	0.02	0.011	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN 11...	0942	210	6,000	5,000	JUL 02...	1050	780	1,600	5,000
18...	1055	5,600	13,000	16,000	09...	1050	3,000	1,500	16,000
25...	0955	400	2,400	1,700					

01394500 RAHWAY RIVER NEAR SPRINGFIELD

LOCATION.--Lat 40°41'15", long 74°18'42", Union County, Hydrologic Unit 02030104, downstream from bridge on eastbound U.S. Highway 22, 100 ft downstream from Pope Brook, and 1.5 mi south of Springfield.

DRAINAGE AREA.--25.5 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1978 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 7.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	1045	22	2.3	0.121	0.092	761	9.6	81	7.6	556	9.0	8.0	170
MAR 04...	1045	31	4.0	0.108	0.082	768	13.2	92	7.5	884	1.0	0.9	150
MAY 15...	1045	14	3.3	0.078	0.059	764	6.4	60	7.5	825	18.5	13.0	220
AUG 28...	1015	8.6	3.6	0.070	0.054	762	5.6	62	7.6	742	24.0	20.3	250

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	50.9	10.7	2.05	40.2	E104	85.1	<0.17	16.3	29.1	--	324	6	0.29
MAR 04...	46.1	9.27	2.11	103	87	208	<0.17	12.1	23.8	464	479	9	0.30
MAY 15...	67.0	13.5	2.53	72.8	114	159	<0.17	14.2	30.4	434	476	7	0.45
AUG 28...	75.1	14.7	2.48	55.8	130	129	0.17	13.9	31.2	407	462	2	0.23

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 21...	0.047	0.049	1.45	0.012	0.041	0.06	0.036	0.069	1.7	1.8	0.5	<0.1	0.5
MAR 04...	0.070	0.090	1.50	0.008	0.030	0.06	0.025	0.054	1.8	1.9	0.3	<0.1	0.3
MAY 15...	0.162	0.220	1.27	0.044	0.041	0.07	0.041	0.088	1.7	1.8	0.5	<0.1	0.5
AUG 28...	0.036	0.029	1.32	0.010	0.039	0.05	0.039	0.069	1.6	1.6	0.5	<0.1	0.5

## RAHWAY RIVER BASIN

01394500 RAHWAY RIVER NEAR SPRINGFIELD—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	3.9	E1.3	--	79
MAR 04...	3.1	<1.0	--	45
MAY 15...	2.5	<1.0	7.60	69
AUG 28...	2.3	<1.0	3.90	73

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 11...	0920	230	1,700	800	JUL 02...	1020	530	100	80
18...	1025	9,300	8,100	9,000	09...	1030	300	500	1,700
25...	0945	380	900	5,000					

01395000 RAHWAY RIVER AT RAHWAY, NJ

LOCATION.--Lat 40°37'08", long 74°17'00", Union County, Hydrologic Unit 02030104, at St. Georges Avenue bridge in Rahway and 0.9 mi upstream from Robinsons Branch.

DRAINAGE AREA.--40.9 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1923-24, 1952, 1962, 1967-70, 1979 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 7.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 03...	0715	19	4.6	0.115	0.088	750	10.6	79	7.8	645	-7.0	2.5	190
MAR 05...	1030	114	18	0.124	0.095	757	12.5	93	7.6	756	3.5	2.8	130
MAY 15...	0715	20	4.9	0.099	0.074	751	6.8	67	7.7	742	8.0	13.9	210
SEP 04...	1045	44	9.8	0.145	0.108	758	7.4	80	7.6	322	23.0	18.9	89

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 03...	58.4	10.7	1.84	49.0	E118	97.8	<0.17	16.2	37.1	--	357	11	0.37
MAR 05...	40.4	7.59	2.14	91.3	67	170	<0.17	10.1	24.5	391	428	14	0.35
MAY 15...	66.0	12.0	2.33	62.6	128	122	<0.17	12.7	34.7	393	425	8	0.56
SEP 04...	28.1	4.62	1.79	21.9	59	45.3	<0.17	7.8	18.5	168	193	9	0.40

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
DEC 03...	0.072	0.071	1.23	0.008	0.051	0.07	0.040	0.100	1.6	1.7	0.6	<0.1	0.6
MAR 05...	0.094	0.091	1.21	0.016	0.028	0.16	0.029	0.091	1.6	1.7	1.3	<0.1	1.3
MAY 15...	0.237	0.242	0.91	0.064	0.042	0.12	0.043	0.106	1.5	1.6	0.8	<0.1	0.8
SEP 04...	0.133	0.138	0.87	0.021	0.061	0.12	0.066	0.120	1.3	1.4	1.3	<0.1	1.3

## RAHWAY RIVER BASIN

01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 03...	3.5	<1.1	--	82
MAR 05...	3.7	<1.1	--	43
MAY 15...	3.2	E1.3	10.7	77
SEP 04...	3.9	E1.1	5.00	48

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 11...	1036	220	400	300	JUL 02...	0950	120	100	930
18...	0940	4,000	3,800	9,000	09...	0955	210	600	500
25...	1103	179	600	600					

01395700 ROBINSONS BRANCH TRIBUTARY 2 AT WESTFIELD, NJ

LOCATION.--Lat 40°37'30", long 74°19'40", Union County, Hydrologic Unit 02030104, at bridge on County Route 606 (Lamberts Mill Road), 550 upstream of mouth and Middlesex Reservoir, 2.3 mi southeast of Westfield, and 2.8 mi northwest of Rahway.

DRAINAGE AREA.-- 1.93 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to August 2003.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. Environmental Protection Agency, Region II, Division of Environmental Science and Assessment.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 7.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd, uS/cm 25 degC (00095)	Temperature, air, deg C (00020)
DEC											
03...	0830	Environmental	1.4	0.096	0.073	768	9.0	63	8.0	458	5.0
03...	0830	Split Replicate	--	--	--	--	--	--	--	--	--
03...	0831	Concurrent Replicate	--	--	--	--	--	--	--	--	--
FEB											
04...	0830	Environmental	23	0.058	0.043	746	9.8	73	8.0	546	7.5
04...	0830	Split Replicate	--	--	--	--	--	--	--	--	--
04...	0831	Concurrent Replicate	--	--	--	--	--	--	--	--	--
MAY											
28...	1000	Environmental	1.6	0.129	0.097	756	7.7	75	7.9	448	17.1
28...	1000	Split Replicate	--	--	--	--	--	--	--	--	--
28...	1001	Concurrent Replicate	--	--	--	--	--	--	--	--	--
AUG											
05...	1000	Environmental	3.5	0.117	0.085	758	4.6	54	7.5	475	24.9
05...	1000	Split Replicate	--	--	--	--	--	--	--	--	--
05...	1001	Concurrent Replicate	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd, fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue, water, sum of constituents, mg/L (70301)	Residue on evap. at 180degC, wat flt mg/L (70300)
DEC													
03...	1.0	170	54.2	8.75	2.67	28.2	E111	54.8	<0.17	14.8	39.6	--	285
03...	--	160	50.0	8.20	3.10	27.0	110	47.0	<0.10	--	41.0	251	E410
03...	--	160	50.0	8.30	3.00	27.0	110	48.0	<0.10	--	41.0	252	E420
FEB													
04...	2.0	170	51.7	9.22	2.53	53.9	89	107	<0.17	10.9	35.7	335	333
04...	--	150	47.0	8.70	2.80	53.0	89	110	<0.10	--	39.0	323	350
04...	--	150	47.0	8.70	2.80	53.0	89	110	<0.10	--	39.0	323	340
MAY													
28...	14.1	160	49.4	7.88	3.58	31.9	101	59.6	<0.17	13.5	32.4	267	286
28...	--	150	47.0	7.50	3.70	32.0	100	62.0	0.06	--	33.0	253	300
28...	--	150	47.0	7.50	3.70	32.0	100	62.0	0.06	--	31.0	251	320
AUG													
05...	22.8	170	54.5	7.92	3.26	34.6	115	70.5	<0.17	14.1	31.0	289	357
05...	--	170	54.0	8.50	3.40	34.0	120	73.0	0.07	--	30.0	279	170
05...	--	170	55.0	8.50	3.50	35.0	120	73.0	0.06	--	30.0	281	170

01395700 ROBINSONS BRANCH TRIBUTARY 2 AT WESTFIELD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd, mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Ortho-phosphate, water, unfltrd, mg/L as P (70507)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)
DEC 03...	6	0.27	--	0.049	<0.030	1.95	0.010	0.067	--	0.04	0.048	0.064	2.2
03...	<10	0.28	0.23	<0.050	<0.050	1.90	<0.050	0.066	0.08	--	0.120	0.060	2.2
03...	<10	0.28	0.23	<0.050	<0.050	1.90	<0.050	0.057	0.05	--	0.057	<0.050	2.2
FEB 04...	19	0.32	--	0.144	0.149	2.31	0.013	0.027	--	0.07	0.020	0.094	2.6
04...	30	0.26	0.30	0.087	0.110	2.00	0.012	<0.010	0.05	--	<0.025	0.083	2.3
04...	49	0.29	0.24	0.088	0.100	2.00	0.014	<0.010	0.05	--	<0.025	0.087	2.3
MAY 28...	1	0.56	--	0.057	0.074	1.83	0.033	0.048	--	<0.02	0.061	0.095	2.4
28...	<10	<0.10	--	0.093	0.096	1.70	<0.050	0.051	0.07	--	0.073	0.110	--
28...	<10	<0.10	0.24	0.096	0.094	1.70	<0.050	0.052	0.06	--	0.068	0.130	--
AUG 05...	2	0.25	--	0.051	0.061	0.97	0.012	0.123	--	0.06	0.111	0.162	1.2
05...	<10	0.48	0.48	<0.050	<0.050	0.910	0.012	0.110	0.13	--	0.090	0.140	1.4
05...	<10	0.44	0.51	<0.050	<0.050	0.910	0.013	0.084	0.13	--	0.098	0.140	1.4

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Total nitrogen, water, unfltrd, mg/L (00600)	Total carbon, suspnd, sedimnt total, mg/L (00694)	Inorganic carbon, suspnd, sedimnt total, mg/L (00688)	Organic carbon, suspnd, sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd, 5 day, 20 degC, mg/L (00310)	Chlorophyll a fluorometric method, corrctd, ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 03...	2.3	0.2	<0.1	0.2	3.3	<1.0	--	61
03...	2.1	--	--	--	3.4	--	--	50
03...	2.1	--	--	--	3.4	--	--	60
FEB 04...	2.7	0.6	<0.1	0.6	2.4	<1.1	--	44
04...	2.3	--	--	--	2.6	--	--	40
04...	2.2	--	--	--	2.6	--	--	40
MAY 28...	--	0.1	<0.1	0.1	3.9	<1.0	1.60	65
28...	--	--	--	--	4.4	--	--	70
28...	1.9	--	--	--	4.2	--	--	60
AUG 05...	1.3	0.3	<0.1	0.3	3.7	E1.5	1.30	63
05...	1.4	--	--	--	3.3	--	--	60
05...	1.4	--	--	--	4.1	--	--	60

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Arsenic water unfltrd, ug/L (01002)	Barium, water, unfltrd recover, ug/L (01007)	Beryllium, water, unfltrd recover, ug/L (01012)	Boron, water, unfltrd recover, ug/L (01022)	Cadmium water, unfltrd, ug/L (01027)	Chromium, water, unfltrd recover, ug/L (01034)	Copper, water, unfltrd recover, ug/L (01042)	Iron, water, unfltrd recover, ug/L (01045)	Lead, water, unfltrd recover, ug/L (01051)	Manganese, water, unfltrd recover, ug/L (01055)	Mercury water, unfltrd recover, ug/L (71900)	Nickel, water, unfltrd recover, ug/L (01067)
AUG 05...	1000	M	92.5	<0.06	62	<0.04	<0.8	2.6	300	0.48	162	<0.02	2.88



01395700 ROBINSONS BRANCH TRIBUTARY 2 AT WESTFIELD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover-able, ug/L (01077)	Zinc, water, unfltrd recover-able, ug/L (01092)
AUG 05...	0.7	<0.16	6

Remark codes used in this table:  
 < -- Less than  
 M-- Presence verified, not quantified

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Dichloroethane, water unfltrd ug/L (34496)	1,1-Dichloroethene, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane water unfltrd ug/L (34541)	1,3-Dichlorobenzene water unfltrd ug/L (34566)	1,4-Dichlorobenzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromodichloromethane water unfltrd ug/L (32101)	Chlorobenzene water unfltrd ug/L (34301)
FEB 04...	0830	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	0.2	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 04...		<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 04...	0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.3	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd, 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd, 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 28...	1000	<0.006	E.005	0.007	<0.007	<0.005	0.027	<0.050	E.004	<0.002	E.019	<0.020	<0.006

RAHWAY RIVER BASIN

01395700 ROBINSONS BRANCH TRIBUTARY 2 AT WESTFIELD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide, water, fltrd, ug/L (62167)	Fipronil sulfone, water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Napropamide, water, fltrd 0.7u GF ug/L (82684)
MAY 28...	<0.003	E.002	0.009	E.002	<0.002	<0.009	E.003	0.006	E.026	<0.027	E.004	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Prometon, water, fltrd, ug/L (04037)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron, water, fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Tri-fluralin, water, fltrd 0.7u GF ug/L (82661)
MAY 28...	E.021	E.01	0.007	<0.02	<0.034	E.003

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN 11...	1110	500	1,800	500	JUL 02...	0930	860	4,200	9,000
18...	0915	9,700	8,000	3,000	09...	0930	580	2,100	400
25...	1045	620	1,900	2,200					

01396550 SPRUCE RUN AT NEWPORT, NJ

LOCATION.--Lat 40°43'29", long 74°54'33", 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.

DRAINAGE AREA.--5.67 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Background, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 12...	1210	3.2	2.5	0.124	0.097	748	10.3	95	7.4	138	9.5	11.0	46
FEB 06...	1210	7.0	1.5	0.063	0.049	763	14.7	101	7.0	145	0.0	0.0	40
MAY 07...	1040	6.3	1.1	0.071	0.054	745	11.0	105	7.3	135	13.0	12.3	42
AUG 18...	1030	9.7	1.4	0.174	0.133	745	9.1	99	7.3	143	22.0	18.6	45

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 12...	10.6	4.66	1.19	6.75	E34	9.89	<0.17	16.0	14.7	--	94	8	0.16
FEB 06...	9.03	4.17	0.88	8.40	21	15.6	<0.17	15.1	13.5	84	99	<1	0.13
MAY 07...	9.68	4.26	0.81	7.79	29	14.0	<0.17	9.5	12.8	78	86	1	0.17
AUG 18...	10.1	4.67	0.98	7.24	35	12.9	<0.17	15.6	9.5	84	98	6	0.24

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 12...	<0.030	0.037	0.14	<0.003	<0.020	0.05	0.005	0.015	0.30	0.35	0.2	<0.1	0.2
FEB 06...	<0.030	<0.030	1.19	<0.003	0.021	0.03	0.005	0.007	1.3	1.4	0.1	<0.1	0.1
MAY 07...	<0.030	<0.030	0.44	<0.003	<0.020	0.06	E.003	0.009	0.61	0.67	0.4	<0.1	0.4
AUG 18...	<0.020	<0.020	0.56	<0.003	<0.020	<0.02	0.014	0.018	0.80	--	<0.1	<0.1	<0.1



01396550 SPRUCE RUN AT NEWPORT, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 06...	<0.1	<0.2	0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 07...	1040	<0.006	E.011	<0.006	<0.004	<0.005	E.006	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 07...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

## RARITAN RIVER BASIN

01396550 SPRUCE RUN AT NEWPORT, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
MAY 07...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
11...	0840	420	2,200	300	02...	0830	230	<100	70
18...	0840	750	100	1,300	09...	0835	460	400	1,700
25...	0835	60	<100	40					

Remark codes used in this table:

&lt; -- Less than

01396588 SPRUCE RUN NEAR GLEN GARDNER, NJ

LOCATION.--Lat 40°40'41", long 74°55'06", Hunterdon County, Hydrologic Unit 02030105, at site 800 ft downstream from Rocky Run, 0.3 mi above Van Syckel Road bridge, 1.5 mi northwest of High Bridge, and 1.6 mi southeast of Glen Gardner.

DRAINAGE AREA.--15.3 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1979-97, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Samples collected with cooperation from The New Jersey Water Supply Authority.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 12...	0940	7.6	0.6	0.072	0.056	757	10.6	97	7.4	226	11.0	11.0	71
FEB 06...	0950	9.6	0.8	0.041	0.032	763	15.2	104	7.6	231	-2.5	0.0	63
MAY 07...	1200	19	1.8	0.048	0.037	745	11.3	113	8.6	203	18.0	14.4	60
AUG 21...	1000	20	1.4	0.070	0.053	755	9.7	104	7.3	212	25.0	18.4	67

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 12...	17.3	6.86	1.70	12.6	E45	24.5	<0.17	17.2	19.7	--	141	0.12	<0.050
FEB 06...	15.1	6.08	1.26	15.2	29	33.3	<0.17	16.4	17.1	130	139	E.08	<0.050
MAY 07...	14.3	5.90	1.31	13.7	35	28.4	<0.17	10.5	16.0	115	128	0.14	<0.050
AUG 21...	16.4	6.37	1.65	13.4	43	25.7	<0.17	17.5	15.9	129	142	0.11	<0.049

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Boron, water, fltrd, ug/L (01020)
NOV 12...	0.74	E.004	<0.02	0.05	0.006	0.010	0.87	0.92	0.3	<0.1	0.3	2.7	16
FEB 06...	1.84	<0.008	<0.02	0.03	0.005	0.007	--	1.9	<0.1	<0.1	<0.1	1.3	E9.5
MAY 07...	0.90	<0.008	<0.02	0.06	0.004	0.013	1.0	1.1	0.6	<0.1	0.6	1.6	E10
AUG 21...	1.56	<0.008	<0.18	<0.02	0.013	0.019	1.7	--	<0.1	<0.1	<0.1	1.9	15

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 12...	1	0.02
FEB 06...	1	0.03
MAY 07...	5	0.28
AUG 21...	5	0.30

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 21...	1000	--	--	--	--	--	<2	26.3	<0.06	12	<0.04	<0.8	1.3
21...	1000	6.93	670	5,600	3.6	<0.2	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd recover -able, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 21...	190	0.29	15.4	<0.02	1.08	0.6	<0.16	2	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	<1	0.100	15	5.5	13

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, ug/kg (49405)
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	12,000	15	230	<0.01	5.7	<1	41	<50	E12	E11	E14	E22	E12

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl-naphthalene, bed sed <2 mm, wsv nat ug/kg (49948)	2-Methyl-anthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flourene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace-naphthene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace-naphthylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo-[b]-fluor-anthene, bed sed <2 mm, ug/kg (49458)	Benzo-[ghi]-perylene, bed sed <2 mm, ug/kg (49408)	Benzo-[k]-fluor-anthene, bed sed <2 mm, ug/kg (49397)
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	E16	<50	E17	E13	E13	E8	E32	E28	68	67	74	55	59



01396588 SPRUCE RUN NEAR GLEN GARDNER, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 21... 21...	-- 75	-- E40	-- 110	-- 58	-- <50	-- <50	-- <5	-- <50	-- 54	-- <50	-- 110	-- 4.6	-- 0.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 21... 21...	-- 1.4	-- 1.7	-- 2.4	-- 3.4

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 06...	0950	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 06...	<0.1	<0.2	0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

01396588 SPRUCE RUN NEAR GLEN GARDNER, NJ—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, ug/L (82686)	Ben-flur-alin, water, fltrd, ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, ug/L (82680)	Carbo-furan, water, fltrd, ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 07...	1200	<0.006	E.019	<0.006	<0.004	<0.005	0.015	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd, 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd, 0.7u GF (82684)
MAY 07...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.003	<0.006	<0.007

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd, ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd, ug/L (82670)	Terba-cil, water, fltrd, ug/L (82665)	Tri-flur-alin, water, fltrd, ug/L (82661)
MAY 07...	<0.022	M	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:

< -- Less than

E -- Estimated value

M-- Presence verified, not quantified

01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ

LOCATION.--Lat 40°38'51", long 74°58'08", Hunterdon County, Hydrologic Unit 02030105, at bridge on Jutland Road, 0.2 mi south of Van Syckel, and 0.3 mi upstream from Spruce Run Reservoir, 0.8 mi north of Perryville.

DRAINAGE AREA.--11.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1997 to August 1998.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). The calibration of water-quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated. Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:  
DISSOLVED OXYGEN: Jul. 14 to Jul. 17.

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection with support from The New Jersey Water Supply Authority. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator and Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 07...	1045	8.8	1.0	0.074	0.057	756	11.6	98	7.9	242	7.0	8.0	84
FEB 05...	1030	14	1.6	0.043	0.033	755	14.4	104	7.9	363	-1.0	1.7	88
MAY 08...	1045	39	1.6	0.059	0.044	753	10.1	99	7.8	244	16.5	13.7	75
AUG 05...	1030	24	3.4	0.113	0.085	752	8.3	93	7.7	231	27.5	19.9	78

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat fltrd mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 07...	21.4	7.48	1.62	13.2	63	24.1	<0.17	13.6	16.4	138	142	1	0.14
FEB 05...	23.0	7.48	1.24	33.4	46	66.6	<0.17	13.0	15.4	193	200	3	0.11
MAY 08...	19.6	6.45	1.28	15.6	51	32.4	<0.17	12.0	13.8	135	148	3	0.16
AUG 05...	21.2	6.11	1.64	15.5	57	26.0	<0.17	15.2	11.7	135	148	2	0.21





01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloroethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 05...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the "Surface-Water-Quality Records" section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 08...	1045	<0.006	E.011	0.007	0.008	<0.005	0.015	<0.050	<0.010	<0.002	E.006	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 08...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.004	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 08...	<0.022	M	E.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ—Continued

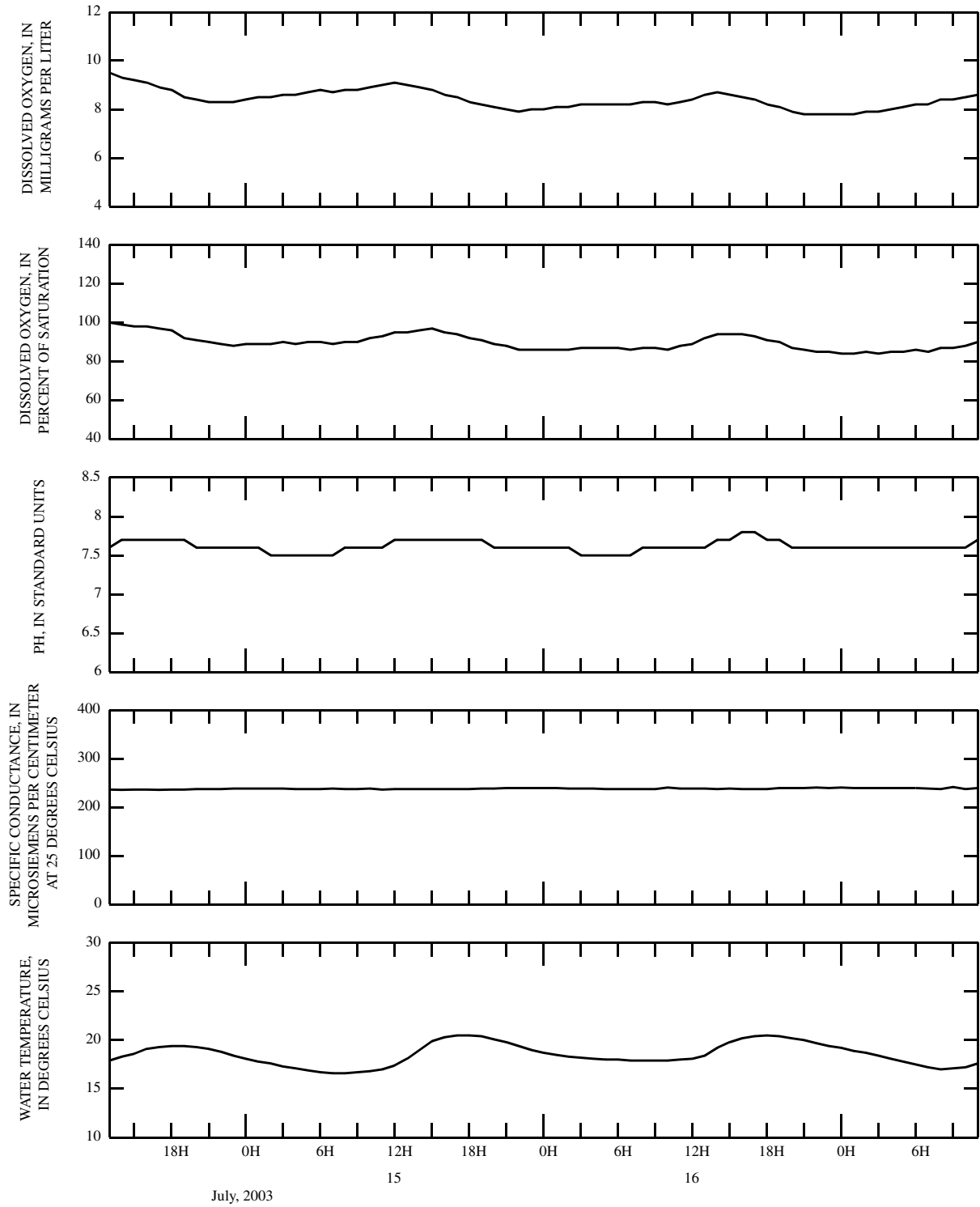
WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
11...	0925	450	1,000	40	02...	0900	350	300	130
18...	0800	2,000	700	500	09...	0930	300	1,000	1,300
25...	0900	70	<100	<20					

Remark codes used in this table:  
 < -- Less than



**Figure 35.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01396660 Mulhockaway Creek at Van Syckel, water year 2003.



01398000 NESHANIC RIVER AT REAVILLE, NJ

LOCATION.--Lat 40°28'18", long 74°49'41", Hunterdon County, Hydrologic Unit 02030105, at 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1957, 1962, 1979 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1997 to August 1998.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). The calibration of water-quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated.

Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:

DISSOLVED OXYGEN: Jul. 14 to Jul. 17.

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator and Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 07...	1000	33	5.7	0.138	0.107	760	10.8	90	7.7	263	7.5	7.5	89
MAR 11...	1000	47	7.6	0.074	0.057	768	13.7	94	7.6	359	-4.2	0.4	79
MAY 13...	1000	8.0	1.9	0.082	0.065	752	10.2	98	8.0	340	14.4	12.7	110
SEP 04...	0900	17	10	0.155	0.118	756	7.8	86	7.7	308	23.6	19.3	110

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 07...	22.5	7.85	2.50	13.6	E57	19.1	<0.17	10.5	27.5	--	151	<1	0.32
MAR 11...	20.5	6.86	1.90	34.4	38	64.4	<0.17	9.6	19.8	187	201	2	0.24
MAY 13...	27.7	9.70	1.92	22.3	76	36.3	<0.17	6.2	28.7	182	193	4	0.27
SEP 04...	27.9	10.1	2.93	17.6	76	26.9	<0.17	12.0	27.1	176	186	16	0.43

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 07...	<0.030	<0.030	2.02	<0.003	0.070	0.07	0.06	0.07	2.3	2.4	0.3	<0.1	0.3
MAR 11...	<0.030	0.047	1.57	0.004	0.049	0.05	0.05	0.07	1.8	1.9	0.3	<0.1	0.3
MAY 13...	<0.030	0.038	0.78	0.026	0.022	<0.02	<0.05	0.05	1.0	--	0.2	<0.1	0.2
SEP 04...	0.062	0.071	1.26	0.008	0.084	0.06	0.09	0.18	1.7	1.8	0.5	<0.1	0.5

## RARITAN RIVER BASIN

01398000 NESHANIC RIVER AT REAVILLE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	4.3	<1.0	--	32
MAR 11...	2.4	E1.9	--	14
MAY 13...	2.8	E1.5	1.80	38
SEP 04...	4.3	<1.0	4.90	40

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

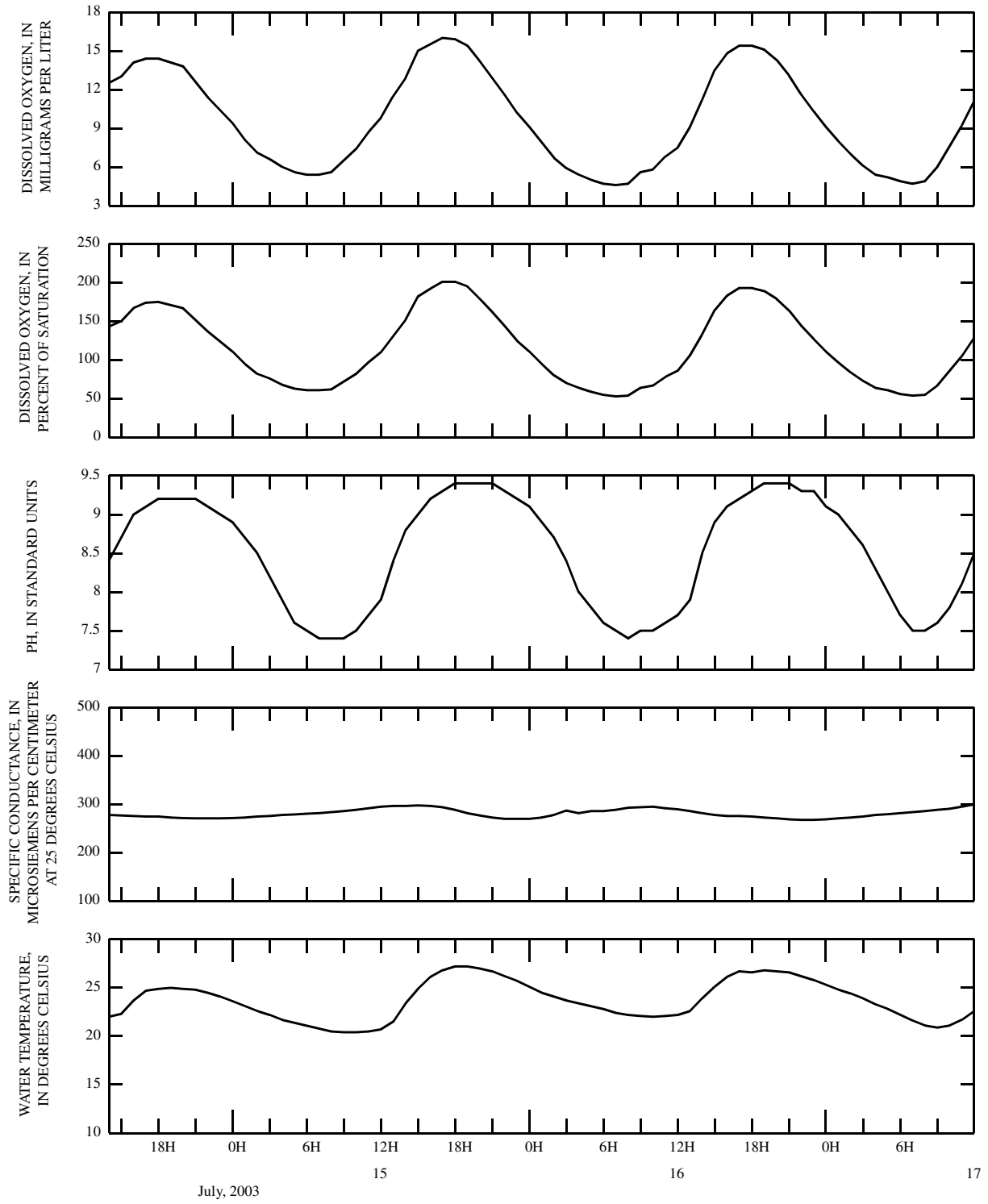
## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 11...	1045	90	1,000	110	JUL 02...	1015	200	310	700
18...	1100	1,130	400	700	09...	1030	370	800	500
25...	1015	290	<100	40					

Remark codes used in this table:

&lt; -- Less than

01398000 NESHANIC RIVER AT REAVILLE, NJ—Continued



**Figure 36.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01398000 Neshanic River at Reaville, water year 2003.

## 01398060 FURMANS BROOK AT FURMANS CORNER, NJ

LOCATION.--Lat 40°27'50", long 74°47'09", Hunterdon County, Hydrologic Unit 02030105, at bridge on Welisewitz Road, 0.3 mi north of Furmans Corner, 0.3 mi upstream of mouth, and 1.9 mi southeast of Reaville.

DRAINAGE AREA.-- 5.00 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 8.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 07...	0930	1.1	0.083	0.063	760	11.9	101	7.3	174	8.0	8.0	60	14.6
FEB 06...	1015	0.9	0.033	0.025	770	16.8	114	7.6	243	1.5	0.2	75	18.3
JUN 02...	1030	3.9	0.107	0.082	758	10.3	98	7.2	115	17.5	12.9	37	9.14
AUG 19...	0905	0.8	0.070	0.053	765	8.0	87	7.5	193	23.5	19.2	71	17.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 07...	5.77	2.02	7.18	E40	8.87	<0.17	10.8	18.2	--	104	1	0.22	<0.030
FEB 06...	7.13	1.64	12.1	40	26.6	<0.17	8.6	19.5	127	137	<1	0.12	<0.030
JUN 02...	3.46	1.42	6.36	26	7.28	<0.17	11.3	12.9	71	85	4	0.22	<0.030
AUG 19...	6.67	2.30	9.97	58	11.9	<0.17	9.0	15.4	110	113	3	0.19	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 07...	<0.030	1.95	<0.003	0.039	<0.02	E.04	E.03	2.2	--	0.2	<0.1	0.2	3.3
FEB 06...	<0.030	2.11	<0.003	0.027	0.05	0.009	0.011	2.2	2.3	0.2	<0.1	0.2	1.3
JUN 02...	<0.030	0.92	<0.003	0.027	0.04	0.027	0.038	1.1	1.2	0.3	<0.1	0.3	3.2
AUG 19...	<0.020	0.64	<0.003	0.041	<0.02	0.025	0.029	0.83	--	0.1	<0.1	0.1	2.8

01398060 FURMANS BROOK AT FURMANS CORNER, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro-phyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	E1.6	--	18
FEB 06...	<1.0	--	E11
JUN 02...	<1.0	5.50	14
AUG 19...	<1.0	0.500	26

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos-phorus, bed total, mg/kg (00668)	Total carbon, bed total, g/kg (00693)	Inor-ganic carbon, bed total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll-ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)
AUG 19...	0904	Field Blank	--	--	--	--	--	--	--	--	--
19...	0905	Environmental	--	--	--	--	--	5	35.6	<0.06	29
19...	0905	Bed material	7.13	540	5,100	2.8	0.2	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cadmium water, unfltrd recover -able, ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, unfltrd recover -able, ug/L (01147)
AUG 19...	--	--	<0.2	--	--	<0.08	--	--	<0.02	--	<0.06	--	--
19...	<0.04	<0.8	--	1.2	150	--	E.03	10.6	--	<0.02	--	2.36	<0.5
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom-ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan-ese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)
AUG 19...	--	<1	--	--	--	--	--	--	--	--	--	--	--
19...	<0.16	--	2	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	2	0.190	37	22	35	28,000	28	1,300	<0.01	36

## 01398060 FURMANS BROOK AT FURMANS CORNER, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, bed sediment total, ug/g (01148)	Zinc, bed sediment recoverable, ug/g (01093)	1,2-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sediment <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sediment <2 mm, ug/kg (49410)	1-Methylpyrene, bed sediment <2 mm, wsv nat ug/kg (49388)	236Tri-methylnaphthalene, bed sediment <2 mm, ug/kg (49405)	2,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49406)	2-Ethyl-naphthalene, bed sediment <2 mm, wsv nat ug/kg (49948)	2-Methyl-anthracene, bed sediment <2 mm, ug/kg (49435)	Cyclopenta-phenanthrene, bed sediment <2 mm, ug/kg (49411)	9H-Fluorene, bed sediment <2 mm, wsv nat ug/kg (49399)
AUG 19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<1	130	<50	<50	<50	<50	<50	<50	E12	<50	<50	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Acenaphthene, bed sediment <2 mm, wsv nat ug/kg (49429)	Acenaphthylene, bed sediment <2 mm, wsv nat ug/kg (49428)	Anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]anthracene, bed sediment <2 mm, wsv nat ug/kg (49436)	Benzo[a]pyrene, bed sediment <2 mm, wsv nat ug/kg (49389)	Benzo[b]fluoranthene, bed sediment <2 mm, wsv nat ug/kg (49458)	Benzo[ghi]perylene, bed sediment <2 mm, wsv nat ug/kg (49408)	Benzo[k]fluoranthene, bed sediment <2 mm, wsv nat ug/kg (49397)	Chrysene, bed sediment <2 mm, wsv nat field, ug/kg (49450)	Dibenzo[a,h]anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49461)	Fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49466)	Indeno[1,2,3-cd]pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49390)	Iso-phorone, bed sediment <2 mm, wsv nat field, ug/kg (49400)
AUG 19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	<50	E9	E8	E13	E12	E27	<50	E11	E7	<50	E16	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Naphthalene, bed sediment <2 mm, wsv nat ug/kg (49402)	PCBs, bed sediment ug/kg (39519)	p-Cresol, bed sediment <2 mm, wsv nat field, ug/kg (49451)	Phenanthrene, bed sediment <2 mm, wsv nat field, ug/kg (49409)	Phenanthridine, bed sediment <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49387)	Bed sediment, dry svediment, percent <.063mm (80164)	Bed sediment, faldia, percent <.002mm (80294)	Bed sediment, faldia, percent <.004mm (80157)	Bed sediment, faldia, percent <.008mm (80293)	Bed sediment, faldia, percent <.016mm (80282)	Bed sediment, faldia, percent <.031mm (80283)
AUG 19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	<50	<5	<50	E8	<50	E15	12	2.1	3.3	5.1	7.0	12

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113, water, unfltrd ug/L (77652)	1,1-Dichloroethane, water, unfltrd ug/L (34496)	1,1-Dichloroethane, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water, unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water, unfltrd ug/L (34541)	1,3-Dichlorobenzene, water, unfltrd ug/L (34566)	1,4-Dichlorobenzene, water, unfltrd ug/L (34571)	Benzene, water, unfltrd ug/L (34030)	Bromodichloromethane, water, unfltrd ug/L (32101)	Chlorobenzene, water, unfltrd ug/L (34301)
FEB 06...	1015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chloro-di-fluoromethane, water, unfltrd ug/L (34668)	Di-chloromethane, water, unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water, unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

01398060 FURMANS BROOK AT FURMANS CORNER, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 06...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
JUN 02...	1030	<0.006	E.100	<0.006	0.022	<0.005	0.573	<0.050	<0.010	<0.002	E.004	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
JUN 02...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.120	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
JUN 02...	<0.022	<0.01	0.024	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## RARITAN RIVER BASIN

01398060 FURMANS BROOK AT FURMANS CORNER, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
11...	1120	90	900	230	02...	1045	330	500	<20
18...	0945	750	300	800	09...	1048	330	500	800
25...	1055	280	<100	20					

Remark codes used in this table:

&lt; -- Less than



01398090 PLEASANT RUN AT NESHANIC STATION, NJ

LOCATION.--Lat 40°31'11", long 74°44'07", Somerset County, Hydrologic Unit 02030105, at bridge on South Branch Road, 0.6 mi upstream of mouth, 0.8 mi north of Neshanic Station, and 2.6 mi west of Flagtown.

DRAINAGE AREA.-- 10.8 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 21...	1000	3.2	0.071	0.054	762	11.4	93	7.0	199	6.0	6.5	63	15.9
FEB 27...	0930	3.9	0.057	0.043	768	13.9	95	7.2	265	-1.5	0.3	70	17.8
MAY 15...	0930	8.2	0.056	0.043	763	10.1	92	7.2	278	16.0	11.0	93	24.1
AUG 19...	1000	6.0	0.118	0.091	767	8.6	93	7.5	248	24.5	19.6	75	19.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 21...	5.66	1.62	11.0	E40	12.9	<0.17	12.6	22.3	--	127	7	0.20	<0.030
FEB 27...	6.29	1.73	19.7	37	38.8	<0.17	10.4	20.1	146	146	1	0.21	0.056
MAY 15...	7.99	1.89	16.8	53	30.4	<0.17	8.0	33.3	157	171	19	0.41	<0.030
AUG 19...	6.65	2.25	13.7	56	21.7	<0.17	10.9	22.3	134	152	8	0.34	<0.020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 21...	<0.030	2.25	0.003	0.070	<0.02	0.068	0.077	2.5	--	0.2	<0.1	0.2	2.4
FEB 27...	0.056	1.97	<0.003	0.062	0.02	0.050	0.060	2.2	2.2	0.2	<0.1	0.2	2.1
MAY 15...	<0.030	0.61	0.010	0.033	0.08	0.032	0.054	1.0	1.1	0.7	<0.1	0.7	2.3
AUG 19...	<0.020	0.78	0.003	0.099	0.05	0.076	0.093	1.1	1.2	0.4	<0.1	0.4	4.0



01398090 PLEASANT RUN AT NESHANIC STATION, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 27...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.4

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 27...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 15...	0930	<0.006	E.027	E.004	<0.004	<0.005	0.025	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 15...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.004	<0.006	<0.007

## RARITAN RIVER BASIN

01398090 PLEASANT RUN AT NESHANIC STATION, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 15...	<0.022	E.01	E.005	<0.02	<0.034	<0.009

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
07...	1206	20	<100	800	04...	1245	14,000	19,000	160,000
14...	1159	110	200	1,300					
21...	1216	980	4,600	3,000					
28...	0941	500	1,700	1,700					

Remark codes used in this table:

&lt; -- Less than

01398102 SOUTH BRANCH RARITAN RIVER AT SOUTH BRANCH, NJ

LOCATION.--Lat 40°32'48", long 74°41'47", 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.

DRAINAGE AREA.--265 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976-83, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.-- Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 14...	1030	467	8.1	0.142	0.111	757	11.7	101	7.4	247	11.5	8.5	86
FEB 05...	1040	340	3.1	0.045	0.036	756	14.8	103	7.5	360	2.0	0.1	100
MAY 19...	1200	103	3.2	0.069	0.053	770	9.5	93	7.5	347	23.5	15.0	110
AUG 13...	1220	550	16	0.160	0.123	768	8.5	102	7.7	212	33.0	24.8	69

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 14...	21.1	8.06	2.71	13.3	59	19.9	<0.17	11.6	20.5	143	150	10	0.32
FEB 05...	24.8	9.78	1.71	27.8	63	49.0	<0.17	8.2	20.2	188	194	4	0.24
MAY 19...	26.5	10.4	2.18	20.8	74	40.1	<0.17	6.7	21.6	179	184	5	0.41
AUG 13...	16.9	6.39	1.99	14.3	48	24.1	<0.17	9.4	11.8	117	137	22	0.36

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sediment total, mg/L (00694)	Inorganic carbon, suspnd sediment total, mg/L (00688)	Organic carbon, suspnd sediment total, mg/L (00689)
NOV 14...	<0.030	<0.030	2.18	0.006	0.080	0.07	0.087	0.112	2.5	2.6	0.3	<0.1	0.3
FEB 05...	0.031	<0.030	2.04	0.013	0.023	0.08	0.013	0.033	2.3	2.4	0.7	<0.1	0.7
MAY 19...	0.035	0.044	1.38	0.029	0.075	0.09	0.086	0.106	1.8	1.9	0.6	<0.1	0.6
AUG 13...	0.031	0.046	0.73	0.008	0.050	0.10	0.042	0.088	1.1	1.2	0.9	<0.1	0.9

## RARITAN RIVER BASIN

01398102 SOUTH BRANCH RARITAN RIVER AT SOUTH BRANCH, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	3.8	E1.4	--	33
FEB 05...	1.8	<1.0	--	24
MAY 19...	2.7	E1.6	3.70	29
AUG 13...	4.6	<1.0	6.80	25

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1137	60	<100	20	JUN 04...	1200	12,000	27,000	>16000
MAY 14...	1145	170	800	1,300					
MAY 21...	1151	100	200	230					
MAY 28...	0926	390	1,600	3,000					

Remark codes used in this table:

&lt; -- Less than

01399200 LAMINGTON (BLACK) RIVER NEAR IRONIA, NJ

LOCATION.--Lat 40°50'07", long 74°38'39", Morris County, Hydrologic Unit 02030105, at bridge on Ironia Road, 1.2 mi downstream of Succasunna Brook, 1.3 mi northwest of Ironia, and 4.5 mi northeast of Chester.

DRAINAGE AREA.--10.9 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1964,1965,1967,1968, 1970, 1976-1991, 2001, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.-- Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 26...	1030	1.3	0.139	0.105	750	9.8	80	7.4	445	6.0	6.0	110	26.9
FEB 25...	1100	3.6	0.138	0.105	753	10.7	78	7.3	547	0.0	1.8	100	25.2
JUN 04...	1130	5.6	0.377	0.289	742	7.3	71	7.1	315	14.0	12.9	73	17.9
AUG 12...	1100	2.6	0.510	0.393	748	4.2	49	7.0	336	25.5	22.4	84	23.0

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 26...	10.3	3.39	39.4	E65	79.1	<0.17	10.7	16.5	--	245	2	0.41	<0.030
FEB 25...	9.25	2.61	62.6	63	115	<0.17	9.0	14.6	283	291	9	0.40	0.123
JUN 04...	6.79	2.03	32.0	46	58.2	<0.17	7.6	9.8	167	204	12	0.55	0.077
AUG 12...	6.58	2.44	33.3	60	60.9	<0.17	11.0	8.9	184	213	1	0.70	0.069

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 26...	<0.030	2.17	0.013	0.036	0.11	0.029	0.072	2.6	2.7	0.6	<0.1	0.6	4.3
FEB 25...	0.130	1.45	0.015	0.029	0.22	0.020	0.076	1.9	2.1	1.3	<0.1	1.3	4.4
JUN 04...	0.084	1.21	0.017	<0.020	0.19	0.021	0.103	1.8	1.9	1.8	<0.1	1.8	7.8
AUG 12...	0.069	0.53	0.015	0.021	0.06	0.041	0.069	1.2	1.3	0.6	<0.1	0.6	10.7

## 01399200 LAMINGTON (BLACK) RIVER NEAR IRONIA, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 26...	<1.0	--	73
FEB 25...	<1.0	--	40
JUN 04...	E1.2	8.80	33
AUG 12...	<1.0	2.30	37

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos- phorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inor- ganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll- ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 12...	1100	--	--	--	--	--	<2	27.1	<0.06	31	<0.04	<0.8	3.2
12...	1100	7.00	880	5,000	2.3	<0.2	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan- ese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, unfltrd recover -able, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom- ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 12...	760	1.26	113	E.01	3.96	0.5	<0.16	9	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	<1	0.030	3.3	2.8	6

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan- ese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selen- ium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49403)	1,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49404)	1Methyl -9H- fluore- ne, bed sed <2 mm, ug/kg (49398)	1- Methyl- phenan- threne, bed sed <2 mm, ug/kg (49410)	1- Methyl- pyrene, bed sed <2 mm, wsv nat ug/kg (49388)	236Tri- methyl- naphth- alene, bed sed <2 mm, ug/kg (49405)
AUG 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	4,900	5.0	100	<0.01	3.1	<1	23	<50	<50	<50	<50	E10	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphth- alene bed sed <2 mm wsv nat ug/kg (49948)	2- Methyl- anthra- cene, bed sed <2 mm, ug/kg (49435)	Cyclo- penta- phenan- threne, bed sed <2 mm, ug/kg (49411)	9H- Flour- ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace- naphth- ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace- naphth- ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra- cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo- [a]- anthra- cene, bed sed <2 mm, ug/kg (49436)	Benzo- [a]- pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo- [b]- fluor- anthene bed sed <2 mm ug/kg (49458)	Benzo- [ghi]- peryl- ene, bed sed <2 mm, ug/kg (49408)	Benzo- [k]- fluor- anthene bed sed <2 mm ug/kg (49397)
AUG 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	E6	<50	E15	<50	<50	<50	E13	E16	E36	E39	E38	E22	E23



01399200 LAMINGTON (BLACK) RIVER NEAR IRONIA, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat field, ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 12... 12...	-- E23	-- E16	-- 56	-- E35	-- <50	-- <50	-- <5	-- <50	-- E18	-- <50	-- 52	-- 4.4	-- 1.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 12... 12...	-- 1.7	-- 1.9	-- 2.4	-- 3.1

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 25...	1100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 25...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 25...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

## 01399200 LAMINGTON (BLACK) RIVER NEAR IRONIA, NJ—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Surface-Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, ug/L (82686)	Ben-flur-alin, water, fltrd, ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, ug/L (82680)	Carbo-furan, water, fltrd, ug/L (82674)	cis-Per-methrin, water, fltrd, ug/L (82687)
JUN 04...	1130	<0.006	E.004	<0.006	<0.004	<0.005	0.009	<0.050	<0.010	<0.002	E.007	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd, 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd, 0.7u GF (82668)	Desulf-inyl fipro-nil amide, wat flt, ug/L (62169)	Fipro-nil sulfide, water, fltrd, ug/L (62167)	Fipro-nil sulfone, water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd, 0.7u GF (82684)
JUN 04...		<0.003	<0.004	E.003	<0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027	E.007	<0.006	<0.007

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Pendi-meth-alin, water, fltrd, 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron, water, fltrd, ug/L (82670)	Terba-cil, water, fltrd, ug/L (82665)	Tri-flur-alin, water, fltrd, ug/L (82661)
JUN 04...		<0.022	E.01	E.005	<0.02	<0.034	<0.009

Remark codes used in this table:

< -- Less than  
E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1240	20	<100	20	JUN 04...	1215	820	3,600	340
MAY 14...	1220	10	<100	20					
MAY 21...	1225	260	100	130					
MAY 28...	1225	1,900	<100	270					

Remark codes used in this table:

< -- Less than

01399780 LAMINGTON RIVER AT BURNT MILLS, NJ

LOCATION.--Lat 40°38'04", long 74°41'12", Somerset County, Hydrologic Unit 02030105, at bridge on Burnt Mills Road in Burnt Mills, 1,400 ft upstream from mouth, and 2.4 mi southwest of Greater Cross Roads.

DRAINAGE AREA.--100 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1964, 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 14...	1120	120	8.4	0.213	0.165	762	12.3	103	7.8	236	7.0	7.5	78
MAR 12...	1100	207	3.7	0.083	0.064	762	14.9	107	7.4	287	6.5	1.9	68
MAY 19...	0950	81	2.4	0.115	0.088	770	10.8	98	7.2	307	18.5	11.5	91
AUG 18...	1320	122	18	0.282	0.219	760	9.9	116	7.7	254	26.0	22.9	79

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 14...	19.4	7.09	2.55	14.1	52	26.1	<0.17	12.7	19.9	136	151	7	0.38
MAR 12...	16.8	6.30	1.61	26.7	39	48.1	<0.17	10.2	14.2	152	157	<1	0.21
MAY 19...	22.0	8.65	1.68	20.6	63	40.3	<0.17	10.1	14.6	161	175	5	0.31
AUG 18...	20.0	6.93	2.03	14.0	60	31.6	<0.17	15.2	9.9	139	159	11	0.41

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 14...	<0.030	<0.030	0.64	0.004	0.059	0.12	0.067	0.090	1.0	1.1	0.5	<0.1	0.5
MAR 12...	<0.030	<0.030	1.07	<0.003	0.035	0.04	0.020	0.030	1.3	1.3	0.2	<0.1	0.2
MAY 19...	<0.030	<0.030	1.16	0.017	0.053	0.06	0.057	0.082	1.5	1.5	0.5	<0.1	0.5
AUG 18...	0.022	0.030	0.76	0.004	0.057	0.07	0.066	0.105	1.2	1.2	0.6	<0.1	0.6

## RARITAN RIVER BASIN

01399780 LAMINGTON RIVER AT BURNT MILLS, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	5.5	E1.4	--	39
MAR 12...	2.4	<1.0	--	26
MAY 19...	3.2	E2.1	8.30	24
AUG 18...	6.6	2.8	2.80	32

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1037	10	<100	20	JUN 04...	1100	6,000	15,000	>16000
MAY 14...	1048	20	100	260					
MAY 21...	1102	230	300	800					
MAY 28...	0817	1,200	500	800					

Remark codes used in this table:

&lt; -- Less than

01400000 NORTH BRANCH RARITAN RIVER NEAR RARITAN, NJ

LOCATION.--Lat 40°34'14", long 74°40'45", Somerset County, Hydrologic Unit 02030105, 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1923-25, 1960-76, 1978-80, 1997 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 8.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 04...	1030	76	2.4	0.100	0.076	775	13.1	88	7.7	325	-2.0	0.1	100
FEB 24...	1030	1,400	31	0.186	0.149	766	12.8	93	7.5	254	-1.0	2.6	42
MAY 29...	1015	313	13	0.166	0.128	752	8.8	87	7.4	284	19.5	14.2	74
AUG 27...	0900	106	2.5	0.106	0.082	756	6.6	76	7.8	323	26.5	22.0	100

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 04...	25.2	9.35	1.94	20.4	61	41.4	<0.17	13.2	24.0	178	185	7	0.23
FEB 24...	10.5	3.72	2.64	26.5	20	53.4	<0.17	5.5	9.1	127	136	20	0.48
MAY 29...	18.1	6.90	1.55	19.9	51	41.0	<0.17	12.8	14.5	150	174	6	0.37
AUG 27...	25.2	10.1	1.84	18.7	74	40.9	<0.17	5.5	15.6	166	191	5	0.22

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
DEC 04...	<0.030	<0.030	1.34	0.004	0.052	0.03	E.04	0.05	1.6	1.6	0.3	<0.1	0.3
FEB 24...	0.139	0.130	0.72	0.008	0.066	0.13	0.05	0.11	1.2	1.3	0.8	<0.1	0.8
MAY 29...	0.040	0.047	0.94	0.018	0.034	0.09	<0.05	0.07	1.3	1.4	0.6	<0.1	0.6
AUG 27...	0.020	<0.020	0.74	0.007	<0.020	0.05	0.008	0.016	0.96	1.0	0.3	<0.1	0.2

## RARITAN RIVER BASIN

01400000 NORTH BRANCH RARITAN RIVER NEAR RARITAN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 04...	3.1	E1.4	--	49
FEB 24...	5.1	3.3	--	17
MAY 29...	4.0	<1.0	5.30	40
AUG 27...	3.2	E1.0	7.80	52

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1108	10	<100	170	JUN 04...	1130	8,600	17,000	>16000
MAY 14...	1115	10	<100	230					
MAY 21...	1130	110	100	300					
MAY 28...	0859	520	900	1,100					

Remark codes used in this table:

&lt; -- Less than

01400500 RARITAN RIVER AT MANVILLE, NJ

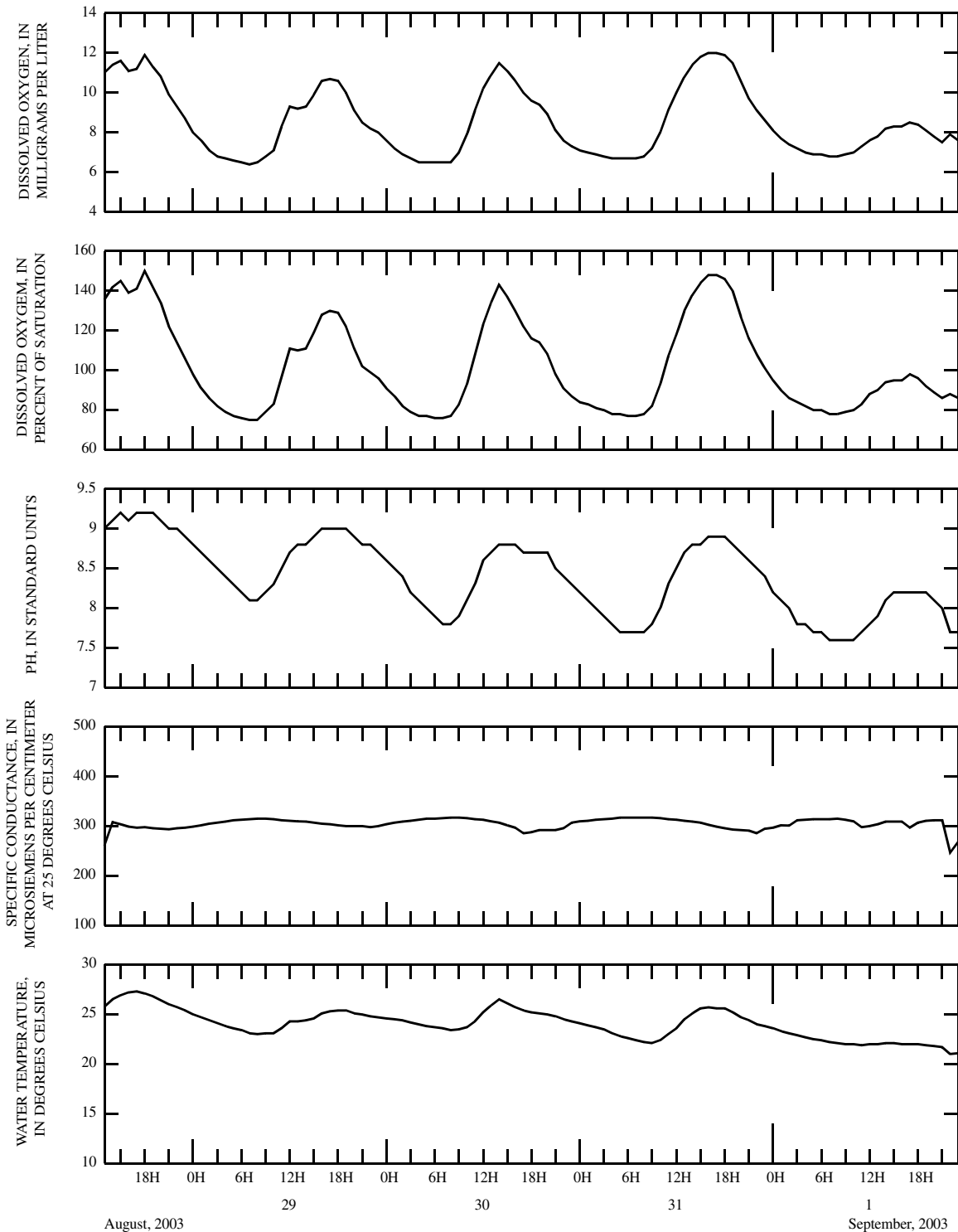
LOCATION.--Lat 40°33'18", long 74°35'01", Somerset County, Hydrologic Unit 02030105, 0.4 mi northeast of Sparta, at bridge on North Main Street (Finderne Avenue) at Manville, and 1.4 mi upstream from Millstone River.

DRAINAGE AREA.--490 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1923-25, 1959, 1962-73, 1976-97.

REMARKS.--Measurements made to verify calibration of continuous-record water-quality sensors met the recalibration criteria; therefore, the data were not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 10.



**Figure 37.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01400500 Raritan River at Manville, water year 2003.

## 01400640 MILLSTONE RIVER NEAR GROVERS MILL, NJ

LOCATION.--Lat 40°18'48", long 74°35'21", Mercer County, Hydrologic Unit 02030105, at bridge on Cranbury Road near Grovers Mill, 1.4 mi southeast of Plainsboro and 2.0 mi upstream from Cranbury Brook.

DRAINAGE AREA.--43.4 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1999 to current year. Station location was 01400650 during water years 1976-95, 1997-98.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. Environmental Protection Agency, Region II, Division of Environmental Science and Assessment.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 10.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)
DEC											
03...	0850	Environmental	53	8.9	0.066	0.051	766	12.4	92	7.4	253
03...	0850	Split Replicate	--	8.8	--	--	--	--	--	--	--
03...	0851	Concurrent Replicate	--	9.0	--	--	--	--	--	--	--
MAR											
03...	1040	Environmental	E700	28	0.156	0.123	763	12.7	87	6.4	278
MAY											
28...	0930	Environmental	E150	17	0.228	0.179	757	7.3	72	6.3	180
28...	0930	Split Replicate	--	--	--	--	--	--	--	--	--
28...	0931	Concurrent Replicate	--	17	--	--	--	--	--	--	--
SEP											
09...	0950	Environmental	24	3.4	0.144	0.112	765	7.8	85	6.7	257

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)
DEC													
03...	-1.0	3.0	66	14.6	7.09	4.00	17.3	14	31.6	<0.17	10.9	34.7	144
03...	--	--	62	14.0	6.60	4.50	16.0	14	35.0	0.15	--	35.0	133
03...	--	--	62	14.0	6.60	4.50	16.0	14	35.0	0.15	--	35.0	133
MAR													
03...	--	0.4	31	7.42	3.11	2.75	37.8	8	69.3	<0.17	4.2	13.2	147
MAY													
28...	17.0	14.3	38	8.59	4.04	<0.16	16.0	10	27.2	<0.17	7.1	18.0	--
28...	--	--	36	8.30	3.60	3.10	15.0	9	29.0	0.12	--	16.0	87
28...	--	--	36	8.30	3.70	3.10	15.0	9	29.0	0.12	--	16.0	87
SEP													
09...	19.0	19.6	54	11.8	5.93	4.74	19.4	22	36.0	0.25	10.0	23.2	--



01400640 MILLSTONE RIVER NEAR GROVERS MILL, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd, mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Ortho-phosphate, water, unfltrd, mg/L as P (70507)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)
DEC 03...	149	16	0.40	--	0.133	0.125	3.33	0.006	0.053	--	0.07	0.032	0.119
03...	--	14	0.38	0.51	0.110	0.120	3.00	<0.050	0.051	0.07	--	<0.050	0.099
03...	--	<10	0.47	0.42	0.110	0.110	2.90	<0.050	0.065	0.07	--	<0.050	0.094
MAR 03...	160	6	0.45	--	0.135	0.139	0.95	0.014	0.029	--	0.12	0.032	0.135
MAY 28...	117	12	0.51	--	0.038	0.059	1.52	0.018	0.023	--	0.14	0.031	0.137
28...	120	<10	0.11	0.33	0.089	0.100	1.40	<0.050	0.040	0.04	--	<0.050	0.130
28...	120	<10	0.10	0.26	0.089	0.100	1.40	<0.050	0.024	0.03	--	<0.050	0.120
SEP 09...	147	2	0.38	--	0.022	0.026	3.53	0.007	--	--	0.03	0.073	0.107

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd, mg/L (00600)	Total carbon, suspnd sedimnt, total, mg/L (00694)	Inorganic carbon, suspnd sedimnt, total, mg/L (00688)	Organic carbon, suspnd sedimnt, total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 03...	3.7	3.8	0.6	<0.1	0.5	2.8	2.6	--	54
03...	3.4	3.5	--	--	--	3.0	--	--	50
03...	3.4	3.3	--	--	--	2.8	--	--	50
MAR 03...	1.4	1.5	1.1	<0.1	1.1	3.8	E1.9	--	E11
MAY 28...	2.0	2.2	1.3	<0.1	1.3	5.1	E1.7	10.6	25
28...	1.5	1.7	--	--	--	6.0	--	--	20
28...	1.5	1.7	--	--	--	6.0	--	--	20
SEP 09...	3.9	3.9	0.2	<0.1	0.2	3.6	E1.4	0.600	62

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 23...	0940	--	1,500	3,000	AUG 06...	0940	10,200	1,700	3,000
30...	0939	120	200	110	13...	0940	150	300	500
					20...	0945	70	<100	40

Remark codes used in this table:  
 < -- Less than

## 01400808 BEAR BROOK AT CRANBURY ROAD, AT PRINCETON JUNCTION, NJ

LOCATION.--Lat 40°19'05", long 74°36'44", Mercer County, Hydrologic Unit 02030105, at bridge on Cranbury Road, 0.4 mi east of Princeton Junction, 0.7 mi upstream of Millstone River, and 3.2 mi southeast of Princeton.

DRAINAGE AREA.-- 12.03 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 10.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 25...	1100	18	0.307	0.244	762	9.9	82	6.7	143	11.5	7.0	34	8.03
FEB 10...	0800	4.7	0.058	0.045	755	11.2	83	6.5	661	0.0	2.5	61	14.3
MAY 20...	1100	3.8	0.111	0.086	768	8.7	87	7.0	234	21.5	15.6	50	10.8
AUG 13...	0930	2.6	0.263	0.203	766	5.7	68	6.7	146	28.5	24.0	34	7.94

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 25...	3.46	3.23	9.71	16	16.6	<0.17	6.6	12.6	75	89	15	0.60	0.155
FEB 10...	6.17	3.63	93.0	15	165	<0.17	7.9	14.9	330	344	2	0.54	0.282
MAY 20...	5.65	3.12	20.9	20	39.3	<0.17	1.8	12.5	117	137	7	0.39	0.042
AUG 13...	3.47	3.06	12.4	23	21.0	<0.17	4.7	8.2	77	93	6	0.51	0.073

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 25...	0.160	1.05	0.013	0.031	0.17	0.033	0.095	1.6	1.8	1.2	<0.1	1.2	6.7
FEB 10...	0.318	3.41	0.032	<0.020	0.12	0.008	0.036	4.0	4.1	0.7	<0.1	0.7	1.8
MAY 20...	0.041	2.49	0.034	<0.020	0.06	0.019	0.038	2.9	3.0	0.4	<0.1	0.4	2.7
AUG 13...	0.054	0.48	0.030	0.034	0.04	0.038	0.071	1.0	1.0	0.4	<0.1	0.4	5.7

01400808 BEAR BROOK AT CRANBURY ROAD, AT PRINCETON JUNCTION, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro-phyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 25...	<1.1	--	23
FEB 10...	<1.0	--	14
MAY 20...	<1.0	2.00	15
AUG 13...	<1.0	1.10	24

Remark codes used in this table:  
< -- Less than

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 13...	0930	--	--	--	--	--	E1	88.5	E.05	25	<0.04	<0.8	1.7
13...	0930	6.31	130	1,100	3.2	<0.2	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 13...	890	0.79	94.8	<0.02	1.58	E.5	<0.16	4	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	<1	0.030	1.5	0.820	<2	

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, ug/kg (49405)
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	1,000	4.1	31	<0.01	0.781	<1	6.2	<50	E5	<50	<50	<50	E12	<50

01400808 BEAR BROOK AT CRANBURY ROAD, AT PRINCETON JUNCTION, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphthalene bed sed <2 mm, wsv nat ug/kg (49948)	2-Methylanthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flour-ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace-naphth-ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace-naphth-ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo-[b]-flour-anthene, bed sed <2 mm, ug/kg (49458)	Benzo-[ghi]-peryl-ene, bed sed <2 mm, ug/kg (49408)	Benzo-[k]-flour-anthene, bed sed <2 mm, ug/kg (49397)
AUG 13... 13...	-- E5	-- <50	-- E14	-- <50	-- E5	-- <50	-- E16	-- E19	-- 57	-- 60	-- 66	-- E35	-- 52

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Flour-anthene bed sed <2 mm, wsv nat field, ug/kg (49466)	Indeno-[1,2,-3-cd]-pyrene, bed sed <2 mm, ug/kg (49390)	Iso-phorone bed sed <2 mm, field, ug/kg (49400)	Naphth-alene, bed sed <2 mm, wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, field, ug/kg (49409)	Phenan-thri-dine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd sve dia percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 13... 13...	-- 56	-- E18	-- 120	-- E48	-- <50	-- <50	-- <5	-- <50	-- 52	-- E5	-- 95	-- 1.4	-- 0.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 13... 13...	-- 0.7	-- 0.8	-- 1.0	-- 1.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene, water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane, water unfltrd ug/L (34541)	1,3-Di-chloro-benzene, water unfltrd ug/L (34566)	1,4-Di-chloro-benzene, water unfltrd ug/L (34571)	Benzene, water unfltrd ug/L (34030)	Bromo-di-chloro-methane, water unfltrd ug/L (32101)	Chloro-benzene, water unfltrd ug/L (34301)
FEB 10...	0800	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane, water, unfltrd ug/L (32105)	Di-chloro-di-flouro-methane, wat unf ug/L (34668)	Di-chloro-methane, water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta-+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 10...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	2.2

01400808 BEAR BROOK AT CRANBURY ROAD, AT PRINCETON JUNCTION, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 10...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 20...	1100	<0.006	E.012	<0.006	0.008	<0.005	0.023	<0.050	<0.010	<0.002	E.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 20...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.059	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 20...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## RARITAN RIVER BASIN

01400808 BEAR BROOK AT CRANBURY ROAD, AT PRINCETON JUNCTION, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
<b>MAY</b>					<b>JUN</b>				
07...	0800	40	100	220	04...	0745	1,700	50,000	9,000
14...	0745	20	300	80					
21...	1115	380	<100	170					
28...	0905	990	2,400	1,700					

Remark codes used in this table:

&lt; -- Less than

01401400 HEATHCOTE BROOK AT KINGSTON, NJ

LOCATION.--Lat 40°22'10", long 74°36'58", Middlesex County, Hydrologic Unit 02030105, at bridge on Mapleton Road, 0.3 mi south of Kingston, and 0.4 mi upstream from mouth.

DRAINAGE AREA.--9.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976-82, 1998 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. Environmental Protection Agency, Region II, Division of Environmental Science and Assessment.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Mixed Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 10.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)
NOV 07...	0840	Environmental	8.4	6.2	0.238	0.185	758	10.8	92	6.8	213
FEB 04...	0930	Environmental	4.5	2.4	0.064	0.050	746	12.5	94	6.6	539
04...	0930	<i>Split Replicate</i>	--	--	--	--	--	--	--	--	--
04...	0931	<i>Concurrent Replicate</i>	--	--	--	--	--	--	--	--	--
MAY 28...	0910	Environmental	21	12	0.353	0.275	754	9.3	90	6.5	235
28...	0910	<i>Split Replicate</i>	--	--	--	--	--	--	--	--	--
28...	0911	<i>Concurrent Replicate</i>	--	--	--	--	--	--	--	--	--
AUG 05...	0900	Environmental	2.9	2.8	0.141	0.107	757	7.6	84	7.8	275
05...	0900	<i>Split Replicate</i>	--	--	--	--	--	--	--	--	--
05...	0901	<i>Concurrent Replicate</i>	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)
NOV 07...	7.0	8.0	59	13.7	5.91	2.72	17.6	29	24.9	<0.17	12.1	31.7	130
FEB 04...	5.0	2.5	98	22.7	10.0	2.66	65.4	28	122	<0.17	13.2	30.1	295
04...	--	--	92	21.0	9.60	2.90	66.0	29	120	<0.10	--	32.0	279
04...	--	--	92	21.0	9.60	2.90	65.0	28	130	<0.10	--	32.0	287
MAY 28...	16.5	13.2	58	13.4	5.91	2.31	19.9	23	34.8	<0.17	12.0	22.7	129
28...	--	--	56	13.0	5.60	2.40	19.0	23	36.0	0.08	--	21.0	114
28...	--	--	53	12.0	5.50	2.40	19.0	24	37.0	0.09	--	21.0	115
AUG 05...	26.5	19.9	71	16.6	7.20	2.98	22.3	36	44.7	<0.17	13.6	13.1	159
05...	--	--	75	17.0	8.00	3.40	23.0	36	45.0	0.07	--	13.0	147
05...	--	--	75	17.0	8.00	3.40	23.0	37	45.0	0.07	--	13.0	148

01401400 HEATHCOTE BROOK AT KINGSTON, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd, mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Ortho-phosphate, water, unfltrd, mg/L as P (70507)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)
NOV 07...	143	<1	0.37	--	<0.030	<0.030	0.98	<0.003	0.032	--	0.03	0.018	0.035
FEB 04...	298	<1	0.17	--	0.033	0.030	2.71	0.003	<0.020	--	<0.02	0.005	0.014
04... 300	300	3	<0.10	0.12	<0.050	<0.100	2.20	<0.010	<0.010	<0.01	--	<0.025	<0.050
04... 310	310	4	<0.10	0.19	<0.050	<0.100	2.30	<0.010	<0.010	<0.01	--	<0.025	<0.050
MAY 28...	156	3	0.48	--	<0.030	<0.030	0.86	0.007	<0.020	--	0.08	0.021	0.055
28... 160	160	<10	0.21	0.15	<0.050	<0.050	0.790	<0.050	0.021	0.03	--	<0.050	0.062
28... 150	150	<10	--	0.12	<0.050	0.063	0.780	<0.050	0.022	0.03	--	<0.050	0.072
AUG 05...	--	1	0.26	--	0.021	0.050	3.93	0.007	0.033	--	0.03	0.021	0.039
05... 220	220	<10	0.43	0.48	<0.050	<0.050	3.50	<0.010	0.022	0.02	--	<0.050	<0.050
05... 220	220	<10	0.43	0.44	<0.050	<0.050	3.60	<0.010	0.020	0.02	--	<0.050	<0.050

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd, mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, correctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	1.3	1.4	0.4	<0.1	0.4	6.8	E1.5	--	40
FEB 04...	2.9	--	0.2	<0.1	0.2	1.9	E1.5	--	22
04... 300	--	2.3	--	--	--	2.3	--	--	20
04... 310	--	2.5	--	--	--	2.3	--	--	20
MAY 28...	1.3	1.4	0.7	<0.1	0.7	7.6	E1.4	1.70	30
28... 160	1.0	0.94	--	--	--	8.2	--	--	30
28... 150	--	0.90	--	--	--	8.0	--	--	30
AUG 05...	4.2	4.2	0.2	<0.1	0.2	3.5	2.0	1.40	33
05... 220	3.9	4.0	--	--	--	3.1	--	--	30
05... 220	4.0	4.0	--	--	--	3.1	--	--	30

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, ECbroth MPN/100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, ECbroth MPN/100 mL (31615)
JUL 23...	0920	--	1,200	5,000	AUG 06...	1008	10,500	5,400	2,200
30...	0920	360	200	260	13...	0920	380	600	700
					20...	0920	350	<100	300

Remark codes used in this table:  
 < -- Less than



01402000 MILLSTONE RIVER AT BLACKWELLS MILLS, NJ

LOCATION.--Lat 40°28'30", long 74°34'33", Somerset County, Hydrologic Unit 02030105, at highway bridge at Blackwells Mills, and 0.3 mi downstream from Six Mile Run.

DRAINAGE AREA.--258 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962-69, 1973, 1976-80, 1991 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. Environmental Protection Agency, Region II, Division of Environmental Science and Assessment.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 10.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)
DEC											
03...	0900	Environmental	228	5.8	0.132	0.103	769	11.3	82	7.8	275
03...	0900	Split Replicate	--	--	--	--	--	--	--	--	--
03...	0901	Concurrent Replicate	--	--	--	--	--	--	--	--	--
FEB											
04...	0900	Environmental	145	4.8	0.059	0.045	749	11.5	87	7.6	472
04...	0900	Split Replicate	--	--	--	--	--	--	--	--	--
04...	0901	Concurrent Replicate	--	--	--	--	--	--	--	--	--
MAY											
28...	0900	Environmental	1,000	34	0.268	0.211	758	8.5	83	7.1	210
28...	0900	Split Replicate	--	--	--	--	--	--	--	--	--
28...	0901	Concurrent Replicate	--	--	--	--	--	--	--	--	--
AUG											
05...	0900	Environmental	228	75	0.236	0.184	760	5.1		6.9	--
05...	0900	Split Replicate	--	--	--	--	--	--	--	--	--
05...	0901	Concurrent Replicate	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue, water, fltrd, sum of constituents mg/L (70301)
DEC													
03...	5.0	2.5	74	16.9	7.73	3.03	18.5	35	29.7	<0.17	12.4	28.8	150
03...	--	--	70	16.0	7.20	3.50	18.0	33	33.0	0.13	--	30.0	139
03...	--	--	70	16.0	7.20	3.50	18.0	36	33.0	0.13	--	30.0	141
FEB													
04...	7.0	3.0	98	22.0	10.6	4.28	46.7	39	81.6	0.18	11.4	32.6	252
04...	--	--	94	21.0	10.0	4.50	45.0	40	86.0	0.13	--	35.0	242
04...	--	--	94	21.0	10.0	4.50	45.0	41	86.0	0.13	--	35.0	243
MAY													
28...	16.5	14.2	50	11.8	4.90	2.43	19.4	24	32.2	<0.17	7.7	14.6	113
28...	--	--	46	11.0	4.50	2.80	19.0	25	34.0	0.10	--	12.0	104
28...	--	--	46	11.0	4.60	2.80	19.0	25	34.0	0.10	--	12.0	104
AUG													
05...	25.0	25.2	56	12.3	6.04	3.35	17.1	33	27.2	0.17	5.3	19.6	119
05...	--	--	59	13.0	6.50	3.70	17.0	34	28.0	0.16	--	19.0	115
05...	--	--	60	13.0	6.60	3.80	18.0	33	28.0	0.16	--	19.0	115

01402000 MILLSTONE RIVER AT BLACKWELLS MILLS, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd, mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Ortho-phosphate, water, unfltrd, mg/L as P (70507)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)
DEC													
03...	164	6	0.38	--	0.072	0.087	2.63	0.007	0.133	--	0.08	0.12	0.16
03...	E110	<10	0.41	0.20	0.066	0.078	2.50	<0.050	0.160	0.15	--	0.130	--
03...	E110	<10	0.26	0.46	0.065	0.073	2.50	<0.050	0.130	0.15	--	0.130	0.150
FEB													
04...	246	4	0.66	--	0.417	0.427	4.09	0.040	0.253	--	0.09	0.22	0.25
04...	240	6	0.66	0.44	0.360	0.380	3.50	0.032	0.250	0.25	--	0.210	0.270
04...	260	11	0.42	0.55	0.380	0.370	3.50	0.036	0.250	0.26	--	0.200	0.270
MAY													
28...	138	25	0.55	--	0.079	0.084	1.29	0.021	0.065	--	0.20	0.07	0.19
28...	150	24	0.20	0.28	0.130	0.150	1.20	<0.050	0.056	0.11	--	0.067	0.170
28...	140	26	0.29	0.36	0.130	0.150	1.20	<0.050	0.056	0.18	--	0.074	0.160
AUG													
05...	151	29	0.51	--	0.069	0.079	1.61	0.011	0.154	--	0.27	0.14	0.23
05...	260	36	0.69	E.87	0.063	0.110	1.50	0.017	0.130	0.21	--	0.120	0.230
05...	260	35	0.60	0.70	0.060	0.083	1.40	0.015	0.130	0.19	--	0.120	0.230

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd, mg/L (00600)	Total carbon, suspnd, total, mg/L (00694)	Inorganic carbon, suspnd, total, mg/L (00688)	Organic carbon, suspnd, total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrtcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC									
03...	3.0	3.1	0.5	<0.1	0.5	3.5	E1.5	--	61
03...	2.9	2.7	--	--	--	3.4	--	--	50
03...	2.8	3.0	--	--	--	3.7	--	--	50
FEB									
04...	4.8	4.8	0.5	<0.1	0.5	2.2	E1.6	--	58
04...	4.2	3.9	--	--	--	3.0	--	--	60
04...	3.9	4.0	--	--	--	2.8	--	--	60
MAY									
28...	1.8	2.0	1.6	<0.1	1.6	5.8	E1.3	6.20	34
28...	1.4	1.5	--	--	--	6.2	--	--	30
28...	1.5	1.6	--	--	--	6.8	--	--	30
AUG									
05...	2.1	2.4	1.6	<0.1	1.6	6.0	E1.1	7.80	67
05...	2.2	--	--	--	--	6.5	--	--	70
05...	2.0	2.1	--	--	--	5.6	--	--	70

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
07...	1315	<10	<100	40	04...	1330	13,400	2,000	16,000
14...	1338	70	<100	500					
21...	1315	280	600	300					
28...	1020	740	2,300	3,000					

Remark codes used in this table:  
 < -- Less than

01403300 RARITAN RIVER AT QUEENS BRIDGE, AT BOUND BROOK, NJ

LOCATION.--Lat 40°33'34", long 74°31'40", Somerset County, Hydrologic Unit 02030105, at Queens Bridge on Main street in Bound Brook, 1.7 mi upstream from Fieldsville Dam.

DRAINAGE AREA.--804 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1964-69, 1971-73, 1978, 1981 to current year. Published as "at Bound Brook" (station 01403000) 1964-66, and as "below Calco Dam at Bound Brook" (station 01403060) 1967-69.

REMARKS.--Discrete chemical records collected as part of the Long Island-New Jersey National Water-Quality Assessment Program (LINJ NAWQA). Continuous records collected as part of the Ambient Stream Monitoring Network. Instantaneous discharges are determined at Raritan River below Calco Dam at Bound Brook (station 01403060). For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Site is in New Jersey Department of Environmental Protection Watershed Management Area 9. The calibration of water-quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated. Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:  
DISSOLVED OXYGEN: Jul. 28 to Jul. 31.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)
NOV 04...	0939	Field Blank	--	--	--	--	--	--	--	--	--
NOV 04...	0940	Environmental	366	--	764	13.3	109	7.3	298	7.0	7.0
DEC 09...	1000	Environmental	318	--	770	14.7	102	8.1	496	-3.0	1.0
JAN 09...	1030	Environmental	1,810	--	757	14.9	113	7.1	451	--	3.5
MAR 12...	1000	Environmental	1,590	9.0	760	13.4	101	6.8	356	7.0	3.5
APR 16...	1030	Environmental	1,350	4.5	755	11.7	115	8.4	280	25.5	14.4
MAY 06...	0940	Environmental	380	3.3	764	8.9	87	6.7	338	12.5	14.3
JUN 10...	1000	Environmental	2,470	28	759	9.2	97	7.3	232	24.5	17.6
JUL 09...	0940	Environmental	318	4.0	757	7.9	98	7.1	374	26.5	26.2
SEP 09...	0910	Environmental	252	4.5	768	8.4	93	7.2	356	20.0	20.8

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Sulfate, water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 04...	--	--	<0.20	<0.2	<0.10	<0.04	<0.06	<0.008	<0.02	E.003	--	--
NOV 04...	46	57	30.3	33.2	0.41	E.02	2.49	0.011	0.13	0.194	3	3.1
DEC 09...	46	56	66.1	34.1	0.48	0.17	3.25	0.015	0.19	0.26	4	3.4
JAN 09...	40	47	118	24.0	0.51	0.08	2.06	0.022	0.07	0.107	6	30
MAR 12...	30	37	74.0	19.2	0.56	0.19	1.49	0.010	0.05	0.107	7	29
APR 16...	36	43	49.0	21.6	0.44	E.03	1.23	0.011	0.05	0.104	13	49
MAY 06...	50	62	55.6	30.4	0.72	0.04	1.95	0.022	0.17	0.26	8	8.6
JUN 10...	40	49	28.9	16.8	0.48	<0.04	1.37	0.015	0.04	0.130	17	111
JUL 09...	59	72	45.2	28.1	0.54	<0.04	1.87	0.013	0.20	0.28	4	3.2
SEP 09...	56	68	47.4	36.7	0.49	<0.04	2.50	0.016	0.29	0.37	3	2.0

Remark codes used in this table:  
< -- Less than  
E -- Estimated value

## 01403300 RARITAN RIVER AT QUEENS BRIDGE, AT BOUND BROOK, NJ—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)
NOV 04...	0940	Environmental	<0.006	E.025	<0.006	<0.004	<0.005	0.022	<0.050	<0.010	<0.002
DEC 09...	1000	Environmental	<0.006	E.017	<0.006	<0.004	<0.005	0.016	<0.050	<0.010	<0.002
JAN 09...	1030	Environmental	<0.006	E.015	<0.006	<0.004	<0.005	0.014	<0.050	<0.010	<0.002
MAR 12...	1000	Environmental	<0.006	E.012	<0.006	<0.004	<0.005	0.012	<0.050	<0.010	<0.002
APR 16...	1030	Environmental	<0.006	E.017	<0.006	<0.004	<0.005	0.015	<0.050	<0.010	<0.002
MAY 06...	0940	Environmental	<0.006	E.010	<0.006	<0.004	<0.005	0.024	<0.050	<0.010	<0.002
JUN 10...	1000	Environmental	<0.006	E.048	0.024	0.007	<0.005	0.339	<0.050	<0.010	<0.002
JUL 09...	0939	Field Blank	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002
JUL 09...	0940	Environmental	<0.006	E.022	<0.006	<0.004	<0.005	0.045	<0.050	<0.010	<0.002
SEP 09...	0910	Environmental	<0.006	E.009	<0.006	<0.004	<0.005	0.021	<0.050	<0.010	<0.002

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)
NOV 04...	E.010	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
DEC 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027
JAN 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
MAR 12...	E.010	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.006	<0.027
APR 16...	<0.041	<0.020	<0.006	<0.003	<0.004	E.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.006	<0.027
MAY 06...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.006	<0.027
JUN 10...	E.027	E.018	<0.006	<0.003	<0.004	0.010	<0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027
JUL 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JUL 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
SEP 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027

## 01403300 RARITAN RIVER AT QUEENS BRIDGE, AT BOUND BROOK, NJ—Continued

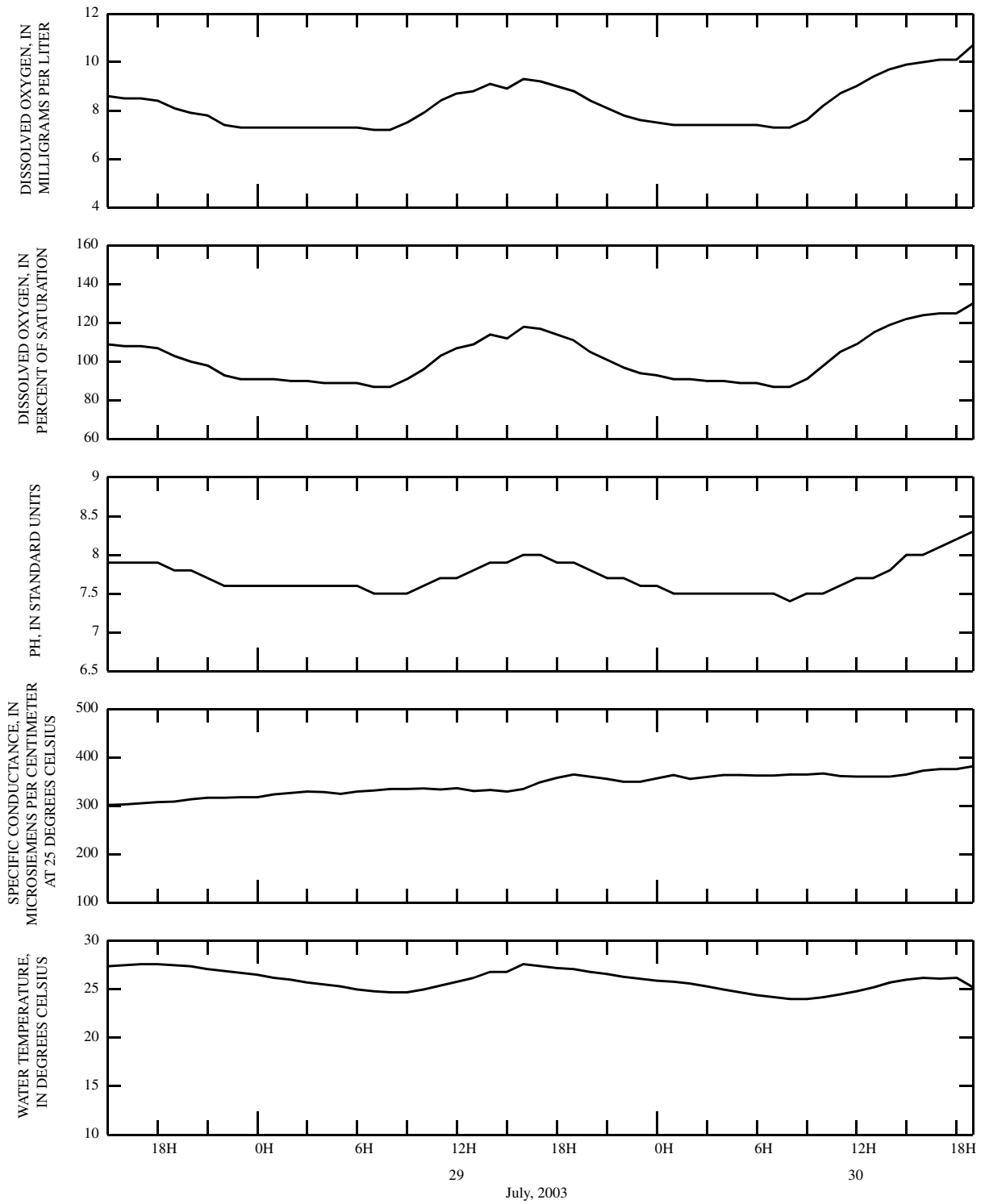
## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
NOV 04...	0.016	<0.006	<0.007	<0.022	E.01	<0.005	<0.02	<0.034	<0.009
DEC 09...	0.019	<0.006	<0.007	<0.022	E.01	<0.005	<0.02	<0.034	<0.009
JAN 09...	E.012	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
MAR 12...	0.016	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
APR 16...	0.013	<0.006	<0.007	0.024	E.01	0.006	<0.02	<0.034	<0.009
MAY 06...	0.016	<0.006	<0.007	<0.022	0.09	0.030	<0.02	<0.034	<0.009
JUN 10...	0.146	E.005	<0.007	<0.022	E.01	0.021	<0.02	<0.034	<0.009
JUL 09...	<0.013	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
09...	0.024	<0.006	<0.007	<0.022	E.01	<0.005	<0.02	<0.034	<0.009
SEP 09...	0.020	<0.006	<0.007	<0.022	0.02	0.008	<0.02	<0.034	<0.009

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value



**Figure 38.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01403300 Raritan River at Queens Bridge, at Bound Brook, water year 2003.

01403385 BOUND BROOK AT ROUTE 28, AT MIDDLESEX, NJ

LOCATION.--Lat 40°34'51", long 74°29'57", Middlesex County, Hydrologic Unit 02030105, at bridge on State Route 28, 0.3 mi upstream from Green Brook, 0.9 mi northeast of Middlesex, and 2.4 mi west of the intersection of State Route 28 and Washington Avenue in Dunellen.

DRAINAGE AREA.--23.9 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 13...	1100	117	34	0.316	0.256	761	8.0	73	7.4	227	10.0	11.5	76
FEB 05...	0930	17	7.5	0.072	0.052	756	13.4	95	6.6	819	3.0	0.9	210
MAY 12...	1300	8.4	7.9	0.162	0.119	750	7.2	75	7.1	592	21.0	16.2	190
AUG 13...	1040	19	4.3	0.234	0.174	768	5.9	72	7.2	390	28.5	25.2	140

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 13...	22.7	4.78	2.77	13.1	E56	20.2	<0.17	7.3	20.8	--	141	24	0.34
FEB 05...	61.9	12.9	2.58	74.4	108	142	<0.17	11.3	61.0	437	459	<1	0.46
MAY 12...	56.2	12.1	2.90	37.0	117	74.7	<0.17	11.0	54.6	323	351	2	0.75
AUG 13...	41.4	8.03	2.88	26.1	92	39.5	<0.17	14.2	31.9	224	251	6	0.54

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 13...	<0.030	<0.030	0.46	0.013	0.068	0.28	0.074	0.168	0.79	1.1	3.0	<0.1	3.0
FEB 05...	0.210	0.219	1.44	0.028	<0.020	0.07	0.009	0.047	1.9	2.0	0.7	<0.1	0.7
MAY 12...	0.402	0.404	0.81	0.073	0.031	0.07	0.025	0.113	1.6	1.6	0.8	<0.1	0.7
AUG 13...	0.166	0.178	0.97	0.032	0.077	0.03	0.060	0.132	1.5	1.5	0.3	<0.1	0.3

## RARITAN RIVER BASIN

01403385 BOUND BROOK AT ROUTE 28, AT MIDDLESEX, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 13...	9.7	5.1	--	74
FEB 05...	2.8	<1.0	--	108
MAY 12...	4.9	<1.0	15.2	130
AUG 13...	6.2	<1.0	1.00	157

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 23...	1000	<10	10,000	>16000	AUG 06...	1005	20,000	12,000	16,000
JUL 30...	1017	480	700	500	AUG 13...	0955	300	700	300
					AUG 20...	1005	280	200	220

Remark codes used in this table:

&lt; -- Less than

&gt; -- Greater than



01403900 BOUND BROOK AT MIDDLESEX, NJ

LOCATION.--Lat 40°35'06", long 74°30'29", Somerset County, Hydrologic Unit 02030105, at 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1996-98, 2001 to current year.

REMARKS.--Data collected as part of the Long Island-New Jersey National Water-Quality Assessment Program (LINJ NAWQA). For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Site is in New Jersey Department of Environmental Protection Watershed Management Area 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)
NOV 04...	1300	Environmental	20	--	764	11.2	92	7.2	458	9.0	7.0
NOV 04...	1301	Split Replicate	--	--	--	--	--	--	--	--	--
DEC 09...	1210	Environmental	23	--	770	13.7	96	7.6	972	5.0	1.0
JAN 09...	1250	Environmental	77	--	757	14.0	109	7.0	1,240	--	4.5
MAR 12...	1210	Environmental	66	5.1	760	13.6	106	7.0	676	4.0	4.5
APR 15...	1100	Environmental	79	4.2	761	12.8	123	7.4	536	23.5	13.3
MAY 06...	1130	Environmental	26	6.0	764	9.5	89	7.3	526	13.5	12.3
JUN 10...	1220	Environmental	88	7.7	759	8.5	89	7.2	411	29.0	17.6
JUL 09...	1140	Environmental	19	5.2	757	7.3	87	7.3	540	32.0	23.6
SEP 09...	1000	Environmental	14	3.0	768	7.6	82	7.4	490	22.5	19.0

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 04...	88	107	48.3	52.0	0.44	0.08	1.06	E.007	E.02	0.052	3	0.16
NOV 04...	89	108	48.7	53.0	0.33	0.07	1.17	0.008	E.01	0.052	2	--
DEC 09...	91	111	188	47.7	0.39	0.20	1.49	0.012	E.01	0.058	5	0.31
JAN 09...	71	84	354	41.2	0.28	0.11	1.47	0.008	E.01	0.039	4	0.81
MAR 12...	58	70	147	34.9	0.29	0.07	1.27	0.008	<0.02	0.040	5	0.86
APR 15...	68	82	98.8	35.8	0.32	E.04	1.10	0.015	<0.02	0.044	6	1.3
MAY 06...	85	103	84.0	37.7	0.48	0.07	0.57	0.021	<0.02	0.058	8	0.60
JUN 10...	68	82	58.7	30.3	0.48	0.08	1.18	0.022	E.01	0.078	7	1.7
JUL 09...	98	119	73.7	46.3	0.38	<0.04	1.13	0.028	E.01	0.072	3	0.15
SEP 09...	98	119	58.0	46.9	0.34	<0.04	1.07	0.016	E.02	0.066	2	0.08

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## 01403900 BOUND BROOK AT MIDDLESEX, NJ—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)
NOV 04...	1300	Environmental	<0.006	E.006	<0.006	<0.004	<0.005	0.007	<0.050	<0.010	<0.002
NOV 04...	1301	Split Replicate	<0.006	E.006	<0.006	<0.004	<0.005	0.007	<0.050	<0.010	<0.002
DEC 09...	1210	Environmental	<0.006	E.008	<0.006	<0.004	<0.005	0.008	<0.050	<0.010	<0.002
JAN 09...	1250	Environmental	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002
MAR 12...	1210	Environmental	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002
APR 15...	1100	Environmental	<0.006	E.005	<0.006	<0.004	<0.005	E.005	<0.050	<0.010	<0.002
MAY 06...	1130	Environmental	<0.006	<0.006	0.018	<0.004	<0.005	0.018	<0.050	<0.010	<0.002
MAY 06...	1131	Split Replicate	<0.006	<0.006	0.016	<0.004	<0.005	0.016	<0.050	<0.010	<0.002
JUN 10...	1220	Environmental	<0.006	E.009	<0.006	<0.004	<0.005	0.083	<0.050	<0.010	<0.002
JUL 09...	1139	Field Blank	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002
JUL 09...	1140	Environmental	<0.006	E.006	<0.006	<0.004	<0.005	0.015	<0.050	<0.010	<0.002
SEP 09...	1000	Environmental	<0.006	E.003	<0.006	<0.004	<0.005	0.008	<0.050	<0.010	<0.002

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)
NOV 04...	<0.041	<0.020	<0.006	<0.003	<0.004	0.014	<0.005	<0.002	<0.009	<0.005	<0.005	E.013	<0.027
NOV 04...	<0.041	<0.020	<0.006	<0.003	<0.004	0.018	<0.005	<0.002	<0.009	<0.005	<0.005	<0.015	<0.027
DEC 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.006	<0.027
JAN 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.011	<0.027
MAR 12...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.010	<0.027
APR 15...	E.008	<0.020	<0.006	<0.003	<0.004	E.004	<0.005	<0.002	<0.009	<0.005	<0.005	E.009	<0.027
MAY 06...	E.016	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
MAY 06...	E.015	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JUN 10...	E.062	<0.020	<0.006	<0.003	<0.004	0.007	E.004	<0.002	<0.009	<0.005	<0.005	E.016	<0.027
JUL 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JUL 09...	<0.041	<0.020	<0.006	<0.003	<0.004	0.020	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
SEP 09...	<0.041	<0.020	<0.006	<0.003	<0.004	0.006	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027

01403900 BOUND BROOK AT MIDDLESEX, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Napropamide, water, fltrd, 0.7u GF ug/L (82684)	Pendimethalin, water, fltrd, 0.7u GF ug/L (82683)	Prometon, water, fltrd, ug/L (04037)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd, 0.7u GF ug/L (82670)	Terbacil, water, fltrd, 0.7u GF ug/L (82665)	Tri-fluralin, water, fltrd, 0.7u GF ug/L (82661)
NOV									
04...	E.005	<0.006	<0.007	<0.022	0.02	<0.005	0.02	<0.075	<0.009
04...	<0.013	<0.006	<0.007	<0.022	0.02	<0.005	E.02	<0.034	<0.009
DEC									
09...	<0.013	<0.006	<0.007	<0.022	E.01	0.006	<0.02	<0.034	<0.009
JAN									
09...	<0.013	<0.006	<0.007	<0.022	E.01	<0.005	<0.02	<0.034	<0.009
MAR									
12...	<0.013	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
APR									
15...	E.003	<0.006	<0.007	E.014	0.03	E.005	E.01	<0.034	<0.009
MAY									
06...	<0.013	<0.006	<0.007	<0.022	0.02	<0.005	<0.02	<0.034	<0.009
06...	<0.013	<0.006	<0.007	<0.022	0.03	<0.005	<0.02	<0.034	<0.009
JUN									
10...	0.030	<0.006	<0.007	E.008	0.02	E.005	E.02	<0.034	<0.009
JUL									
09...	<0.013	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
09...	E.008	<0.006	<0.007	<0.022	0.02	<0.005	<0.02	<0.034	<0.009
SEP									
09...	E.007	<0.006	<0.007	<0.022	0.02	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:

- < -- Less than
- E -- Estimated value

## 01405003 LAWRENCE BROOK AT RIVA AVENUE, AT MILLTOWN, NJ

LOCATION.--Lat 40°26'55", long 74°26'46", Middlesex County, Hydrologic Unit 02030105, at bridge on Riva Avenue, 0.5 mi downstream of Farrington Lake, 0.5 mi west of Milltown, and 3.3 mi south of New Brunswick.

DRAINAGE AREA.--36.1 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 9.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 19...	1000	7.4	0.248	0.195	771	10.8	91	7.4	188	5.1	8.5	38	9.21
MAR 12...	1000	11	0.209	0.161	765	12.6	94	7.3	479	5.2	3.0	38	9.47
MAY 08...	1000	2.7	0.190	0.143	760	7.9	83	7.3	331	18.2	17.8	45	10.7
AUG 07...	0900	7.9	0.309	0.238	760	7.0	86	7.3	197	25.0	25.5	41	9.48

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 19...	3.65	2.55	16.5	E21	28.3	<0.17	7.5	13.9	--	104	7	0.44	0.071
MAR 12...	3.49	2.24	67.4	10	122	<0.17	6.2	11.2	231	251	4	0.32	0.057
MAY 08...	4.43	2.38	42.2	18	73.4	<0.17	4.9	14.0	165	189	1	0.33	<0.030
AUG 07...	4.11	2.17	20.2	20	37.6	<0.17	2.7	10.0	100	111	8	0.72	0.026

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 19...	0.057	0.51	0.011	<0.020	0.11	0.017	0.051	0.94	1.1	0.6	<0.1	0.6	5.6
MAR 12...	0.077	0.62	0.004	<0.020	0.08	0.012	0.044	0.94	1.0	0.6	<0.1	0.6	4.9
MAY 08...	0.041	0.53	0.008	<0.020	0.09	0.008	0.028	0.86	0.95	0.4	<0.1	0.4	5.0
AUG 07...	0.036	0.26	0.010	<0.020	0.25	0.019	0.074	0.98	1.2	1.5	<0.1	1.5	8.0



## 01405003 LAWRENCE BROOK AT RIVA AVENUE, AT MILLTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 12...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	2.4

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 12...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 08...	1000	<0.006	E.006	<0.006	<0.004	<0.005	0.012	<0.050	<0.010	<0.002	E.020	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 08...	<0.003	<0.004	0.006	<0.005	<0.002	<0.009	<0.005	<0.005	E.003	<0.027	E.006	<0.006	<0.007

01405003 LAWRENCE BROOK AT RIVA AVENUE, AT MILLTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 08...	<0.022	E.01	0.008	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
23...	0915	--	5,700	9,000	06...	0940	8,600	1,800	2,400
30...	0940	210	<100	40	13...	0935	70	200	80
					20...	1000	270	<100	230

Remark codes used in this table:  
 < -- Less than

## 01405180 MCGELLAIRDS BROOK AT ENGLISHTOWN, NJ

LOCATION.--Lat 40°18'06", long 74°21'25", Monmouth County, Hydrologic Unit 02030105, at bridge on Main Street (County Route 527), 0.3 mi north of Englishtown, 0.5 mi upstream from mouth, and 1.9 mi northwest of Tennent.

DRAINAGE AREA.--14.9 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 9.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 13...	0915	19	0.209	0.167	760	8.0	73	6.4	192	11.0	11.1	49	14.6
FEB 05...	1015	8.0	0.051	0.043	760	13.3	95	6.4	746	3.5	1.2	84	24.9
MAY 06...	1200	8.6	0.056	0.041	761	10.3	94	6.7	307	13.5	11.2	67	19.1
AUG 07...	1045	11	0.178	0.140	760	7.6	86	6.9	232	26.5	21.8	63	18.0

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 13...	3.13	4.03	10.5	E8	17.2	<0.17	8.1	40.3	--	126	30	0.30	<0.030
FEB 05...	5.24	3.51	97.2	5	178	<0.17	10.1	44.1	371	394	9	0.45	0.306
MAY 06...	4.60	3.14	27.2	10	52.0	0.18	9.6	41.1	165	188	8	0.29	0.087
AUG 07...	4.37	3.12	18.9	19	35.1	0.18	11.4	29.2	134	150	4	0.49	0.152

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 13...	<0.030	0.48	0.006	<0.020	0.25	0.017	0.21	0.78	1.0	2.7	<0.1	2.7	6.9
FEB 05...	0.310	1.00	0.015	<0.020	0.13	<0.004	0.043	1.4	1.6	0.8	<0.1	0.8	1.8
MAY 06...	0.074	0.61	0.009	<0.020	0.12	E.003	0.047	0.90	1.0	0.9	<0.1	0.9	2.3
AUG 07...	0.173	0.50	0.013	<0.020	0.06	0.018	0.086	0.99	1.0	0.7	<0.1	0.7	4.0



01405180 MCGELLAIRDS BROOK AT ENGLISHTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 13...	E1.9	--	39
FEB 05...	E2.0	--	28
MAY 06...	<1.0	8.00	41
AUG 07...	<1.0	2.30	52

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 07...	1045	--	--	--	--	--	E1	29.4	E.04	52	E.02	<0.8	1.6
07...	1200	6.30	280	9,700	5.1	<0.2	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd recover -able, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 07...	2,310	0.39	154	<0.02	5.69	0.5	<0.16	11	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	3	0.090	4.8	2.0	8

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, wsv nat field, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat field, ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49405)
AUG 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	24,000	14	58	<0.01	4.2	<1	42	<50	<50	<50	E4	E17	<50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49406)	2-Ethyl-naphthalene, bed sed <2 mm, wsv nat field, ug/kg (49948)	2-Methyl-anthracene, bed sed <2 mm, wsv nat field, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49411)	9H-Flourene, bed sed <2 mm, wsv nat field, ug/kg (49399)	Ace-naphthene, bed sed <2 mm, wsv nat field, ug/kg (49429)	Ace-naphthylene, bed sed <2 mm, wsv nat field, ug/kg (49428)	Anthracene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]-anthracene, bed sed <2 mm, wsv nat field, ug/kg (49436)	Benzo[a]-pyrene, bed sed <2 mm, wsv nat field, ug/kg (49389)	Benzo[b]-fluoranthene, bed sed <2 mm, wsv nat field, ug/kg (49458)	Benzo[ghi]-perylene, bed sed <2 mm, wsv nat field, ug/kg (49408)	Benzo[k]-fluoranthene, bed sed <2 mm, wsv nat field, ug/kg (49397)
AUG 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	<50	<50	E18	E8	E8	<50	E10	E24	140	150	170	E71	140

## 01405180 MCGELLAIRDS BROOK AT ENGLISHTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm wsv nat field, ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat field, ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat field, ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 07... 07...	-- 170	-- <50	-- 340	-- 100	-- <50	-- E9	-- E5	-- E19	-- 130	-- E10	-- 260	-- 1.7	-- 0.7

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 07... 07...	-- 1.0	-- 1.0	-- 1.3	-- 1.6

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 05...	1015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.9

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 05...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

01405180 MCGELLAIRDS BROOK AT ENGLISHTOWN, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 06...	1200	<0.006	<0.006	0.015	<0.004	<0.005	0.011	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 06...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.010	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 06...	<0.022	0.02	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL 02...	1111	490	100	300	JUL 17...	1055	520	200	500
10...	1050	5,700	12,000	>16000	24...	1105	570	800	5,000
					31...	1126	540	500	800

Remark codes used in this table:

## 01405340 MANALAPAN BROOK AT FEDERAL ROAD, NEAR MANALAPAN, NJ

LOCATION.--Lat 40°17'46", long 74°23'52", Middlesex County, Hydrologic Unit 02030105, at bridge on Federal Road, 2.6 mi north of Manalapan, 3.1 mi southwest of Matchaponix, 3.3 mi downstream from Still House Brook, and 4.1 mi northeast of Applegarth.

DRAINAGE AREA.--20.9 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. Environmental Protection Agency, Region II, Division of Environmental Science and Assessment.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Mixed Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 9.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)
DEC 03...	0930	Environmental	15	6.2	0.025	0.019	767	13.9	100	5.5	242
03...	0930	Split Replicate	--	--	--	--	--	--	--	--	--
03...	0931	Concurrent Replicate	--	--	--	--	--	--	--	--	--
FEB 06...	0900	Environmental	21	9.2	0.023	0.019	768	14.4	98	4.8	250
MAY 14...	0950	Environmental	19	7.9	0.064	0.050	758	9.9	95	5.9	215
AUG 12...	1220	Environmental	27	18	0.339	0.278	761	7.8	91	6.1	202

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)
DEC 03...	-3.0	2.0	47	11.3	4.64	2.76	16.5	--	35.9	0.19	13.4	44.1	--
03...	--	--	45	11.0	4.30	3.30	16.0	<1	38.0	0.18	--	40.0	--
03...	--	--	45	11.0	4.30	3.20	16.0	<1	37.0	0.18	--	40.0	--
FEB 06...	0.5	0.1	44	10.1	4.47	2.72	22.0	2	49.2	0.17	11.0	32.6	139
MAY 14...	15.0	13.0	41	9.55	4.13	2.71	19.5	4	39.3	0.17	8.9	24.5	115
AUG 12...	27.0	22.8	40	9.66	3.97	3.13	17.6	9	35.2	0.2	11.5	18.6	109

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia, water, fltrd, mg/L as N (00608)	Ammonia, water, unfltrd, mg/L as N (00610)	Nitrite + nitrate, water, fltrd, mg/L as N (00631)	Nitrite, water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Orthophosphate, water, unfltrd, mg/L as P (70507)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)
DEC 03...	139	10	0.30	--	0.172	0.148	0.95	0.003	0.059	--	0.07	<0.004	0.042
03...	--	<10	0.21	0.31	0.150	0.150	0.810	<0.050	0.027	0.03	--	<0.050	<0.050
03...	--	<10	0.33	0.20	0.140	0.150	0.820	<0.050	0.028	0.04	--	<0.050	<0.050
FEB 06...	143	17	0.33	--	0.193	0.194	1.18	0.004	<0.020	--	0.11	<0.004	0.073
MAY 14...	129	7	0.23	--	0.091	0.074	0.85	0.005	<0.020	--	0.10	<0.004	0.059
AUG 12...	126	10	0.40	--	0.153	0.198	0.67	0.009	<0.020	--	0.16	0.015	0.120

01405340 MANALAPAN BROOK AT FEDERAL ROAD, NEAR MANALAPAN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd, mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC, mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC									
03...	1.3	1.3	0.8	<0.1	0.8	1.6	E1.1	--	23
03...	1.0	1.1	--	--	--	1.6	--	--	20
03...	1.1	1.0	--	--	--	1.5	--	--	20
FEB									
06...	1.5	1.6	1.5	<0.1	1.5	1.2	<1.0	--	14
MAY									
14...	1.1	1.2	1.2	<0.1	1.2	2.1	E1.8	6.20	E12
AUG									
12...	1.1	1.2	1.9	<0.1	1.9	5.3	<1.0	4.90	31

Remark codes used in this table:

- < -- Less than
- E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
23...	0915	<10	8,000	16,000	06...	0900	18,000	6,000	>16000
30...	0900	310	<100	170	13...	0900	290	100	170
					20...	0920	470	<100	500

Remark codes used in this table:

- < -- Less than

## 01407210 HOP BROOK AT WILLOW BROOK ROAD, NEAR HOLMDEL, NJ

LOCATION.--Lat 40°19'47", long 74°10'20", Monmouth County, Hydrologic Unit 02030104, at bridge on Willow Brook Road, 0.3 mi upstream from mouth and Swimming River Reservoir, 1.2 mi southeast of Holmdel, and 2.7 mi west of Lincroft.

DRAINAGE AREA.--6.37 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 12.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 14...	1000	4.9	0.109	0.086	765	10.1	84	7.6	300	10.0	7.5	92	30.2
FEB 05...	1000	10	0.046	0.036	762	13.4	97	7.3	777	3.5	2.0	100	33.5
MAY 06...	1000	3.0	0.050	0.038	763	10.5	94	7.6	352	16.0	10.4	93	29.9
AUG 12...	0800	7.4	0.101	0.080	764	8.0	88	7.2	315	23.2	20.0	100	34.6

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 14...	3.89	3.55	18.0	41	35.6	0.21	11.9	41.2	171	176	9	0.16	<0.030
FEB 05...	5.02	3.17	101	35	178	0.20	11.3	40.8	400	419	15	0.21	0.074
MAY 06...	4.46	2.57	28.5	40	53.6	0.21	10.3	36.0	193	227	3	0.15	<0.030
AUG 12...	4.38	3.11	22.1	51	43.2	0.24	15.2	30.9	189	211	8	0.20	0.037

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 14...	<0.030	0.42	<0.003	0.023	0.09	0.024	0.073	0.59	0.68	0.5	<0.1	0.5	3.0
FEB 05...	0.107	1.26	0.005	<0.020	0.09	0.005	0.067	1.5	1.6	0.7	<0.1	0.7	1.4
MAY 06...	<0.030	0.89	0.004	0.025	0.06	0.010	0.043	1.0	1.1	0.2	<0.1	0.2	1.8
AUG 12...	0.046	0.90	0.007	0.036	0.09	0.025	0.095	1.1	1.2	0.8	<0.1	0.8	3.8

01407210 HOP BROOK AT WILLOW BROOK ROAD, NEAR HOLMDEL, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	<1.0	--	41
FEB 05...	E1.3	--	31
MAY 06...	2.2	5.10	36
AUG 12...	<1.0	3.00	49

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos- phorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inor- ganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll- ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 12...	0800	--	--	--	--	--	E1	29.7	<0.06	44	E.02	<0.8	1.4
12...	0800	6.95	170	25,000	1.7	<0.2	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan- ese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, unfltrd recover -able, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom- ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 12...	1,450	0.45	36.6	<0.02	4.39	0.5	<0.16	23	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	3	0.120	33	3.9	8

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan- ese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selen- ium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49403)	1,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49404)	1Methyl -9H- fluore- ne, bed sed <2 mm, ug/kg (49398)	1- Methyl- phenan- threne, bed sed <2 mm, ug/kg (49410)	1- Methyl- pyrene, bed sed <2 mm, wsv nat ug/kg (49388)	236Tri- methyl- naphth- alene, bed sed <2 mm, ug/kg (49405)
AUG 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	29,000	16	200	<0.01	9.6	<1	73	<50	<50	<50	<50	E6	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphth- alene bed sed <2 mm wsv nat ug/kg (49948)	2- Methyl- anthra- cene, bed sed <2 mm, ug/kg (49435)	Cyclo- penta- phenan- threne, bed sed <2 mm, ug/kg (49411)	9H- Flour- ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace- naphth- ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace- naphth- ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra- cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo- [a]- anthra- cene, bed sed <2 mm, ug/kg (49436)	Benzo- [a]- pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo- [b]- fluor- anthene bed sed <2 mm ug/kg (49458)	Benzo- [ghi]- peryl- ene, bed sed <2 mm, ug/kg (49408)	Benzo- [k]- fluor- anthene bed sed <2 mm ug/kg (49397)
AUG 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<50	<50	E10	<50	<50	<50	E8	E7	E18	E19	E20	E13	E9

01407210 HOP BROOK AT WILLOW BROOK ROAD, NEAR HOLMDEL, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry- sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo -[a,h]- anthra- cene, bed sed <2 mm, ug/kg (49461)	Fluor- anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno- [1,2,- 3-cd]- pyrene, bed sed <2 mm ug/kg (49390)	Iso- phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth- alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p- Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan- threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan- thri- dine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi- ment, dry svd sve dia percent <.063mm (80164)
AUG 12... 12...	-- E6	-- E11	-- E29	-- E21	-- <50	-- <50	-- <5	-- <50	-- E14	-- <50	-- E24	-- 0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di- chloro- ethane, water, unfltrd ug/L (34496)	1,1-Di- chloro- ethane, water, unfltrd ug/L (34501)	1,2-Di- chloro- benzene water, unfltrd ug/L (34536)	1,2-Di- chloro- ethane, water, unfltrd ug/L (32103)	1,2-Di- chloro- propane water, unfltrd ug/L (34541)	1,3-Di- chloro- benzene water, unfltrd ug/L (34566)	1,4-Di- chloro- benzene water, unfltrd ug/L (34571)	Bromo- di- chloro- methane water unfltrd ug/L (32101)	Chloro- benzene water unfltrd ug/L (34301)
FEB 05...	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis- 1,2-Di- chloro- ethene, water, unfltrd ug/L (77093)	Di- bromo- chloro- methane water unfltrd ug/L (32105)	Di- chloro- di- fluoro- methane water unfltrd ug/L (34668)	Di- chloro- methane water unfltrd ug/L (34423)	Di- ethyl ether, water, unfltrd ug/L (81576)	Diiso- propyl ether, water, unfltrd ug/L (81577)	Ethyl- benzene water, unfltrd ug/L (34371)	Methyl tert- pentyl ether, water, unfltrd ug/L (50005)	meta- + para- Xylene, water, unfltrd ug/L (85795)	o- Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra- chloro- ethene, water, unfltrd ug/L (34475)	Tetra- chloro- methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans- 1,2-Di- chloro- ethene, water, unfltrd ug/L (34546)	Tri- bromo- methane water unfltrd ug/L (32104)	Tri- chloro- ethene, water, unfltrd ug/L (39180)	Tri- chloro- fluoro- methane water unfltrd ug/L (34488)	Tri- chloro- methane water unfltrd ug/L (32106)	Vinyl chlor- ide, water, unfltrd ug/L (39175)
FEB 05...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value



01407210 HOP BROOK AT WILLOW BROOK ROAD, NEAR HOLMDEL, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 06...	1000	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 06...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.015	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 06...		<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth MPN/ 100 mL (31615)
JUL 02...	0930	350	200	500	JUL 17...	0950	500	300	2,200
10...	1012	6,300	7,100	>16000	24...	0945	3,400	1,000	1,300
					31...	1030	460	400	500

Remark codes used in this table:

## 01407760 JUMPING BROOK NEAR NEPTUNE CITY, NJ

LOCATION.--Lat 40°12'13", long 74°03'56", Monmouth County, Hydrologic Unit 02030104, 60 ft downstream from dam on Jumping Brook Reservoir, 0.8 mi upstream from mouth, and 1.4 mi west of Neptune City.

DRAINAGE AREA.--6.46 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 2001 to August 2002.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 12.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	1000	7.1	15	0.209	0.163	764	10.6	88	6.7	172	10.0	7.5	37
FEB 10...	1015	4.7	3.3	0.060	0.048	759	12.9	93	6.5	663	5.0	1.7	54
MAY 14...	1115	4.7	6.5	0.117	0.091	759	9.9	93	6.7	314	17.5	12.5	45
AUG 21...	0845	3.1	15	0.223	0.172	765	7.0	78	6.6	233	25.5	20.4	37

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	10.4	2.57	2.75	12.8	E8	22.6	<0.17	7.1	26.5	--	105	15	0.31
FEB 10...	15.8	3.41	3.99	93.9	9	161	<0.17	8.3	28.7	323	343	4	0.35
MAY 14...	13.1	2.93	2.90	38.9	11	64.9	<0.17	7.8	25.4	165	184	5	0.27
AUG 21...	10.7	2.62	3.52	26.1	13	43.9	<0.17	8.6	22.3	127	144	7	0.32

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 21...	0.106	0.112	0.47	0.005	<0.020	0.09	0.008	0.043	0.79	0.87	1.6	<0.1	1.6
FEB 10...	0.233	0.248	0.54	<0.003	<0.020	0.03	<0.004	0.011	0.89	0.92	0.4	<0.1	0.4
MAY 14...	0.056	0.093	0.45	<0.003	<0.020	0.06	<0.004	0.019	0.72	0.78	0.9	<0.1	0.9
AUG 21...	0.098	0.089	0.42	0.006	<0.020	0.07	0.004	0.028	0.74	0.81	1.0	<0.1	1.0

01407760 JUMPING BROOK NEAR NEPTUNE CITY, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	4.9	<1.0	--	23
FEB 10...	1.7	E1.4	--	25
MAY 14...	3.2	E1.0	3.00	26
AUG 21...	5.2	E1.2	1.40	36

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 02...	0950	240	100	500	JUL 17...	1015	260	200	500
10...	1035	560	700	9,000	24...	1030	560	300	300
					31...	1055	140	200	300

## 01407900 MANASQUAN RIVER AT WEST FARMS, NJ

LOCATION.--Lat 40°11'34", long 74°11'43", Monmouth County, Hydrologic Unit 02040301, at bridge on West Farms Road, 0.4 mi east of West Farms, 1.5 mi downstream from Yellow Brook, and 1.5 mi west of Farmingdale.

DRAINAGE AREA.--33.5 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1959-1964, 1967, 1973, 1974, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 12.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 12...	1000	53	0.088	0.069	764	11.3	84	6.2	331	7.1	3.0	51	15.5
MAR 04...	0900	20	0.059	0.050	770	12.5	88	5.5	298	-6.5	1.5	54	16.1
MAY 14...	0900	10	0.032	0.025	758	9.1	85	7.1	264	13.8	12.0	76	24.1
AUG 28...	0800	22	0.041	0.033	765	7.7	80	7.3	260	22.7	17.5	95	31.7

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 12...	3.00	3.78	36.1	E4	62.2	<0.17	8.1	31.1	--	167	54	0.33	0.117
MAR 04...	3.25	2.91	29.1	8	50.9	<0.17	11.1	35.8	157	172	22	0.23	0.117
MAY 14...	3.75	3.00	14.0	25	31.9	<0.17	15.5	38.5	148	171	10	E.08	<0.030
AUG 28...	3.80	3.23	10.4	45	25.9	<0.17	16.3	35.1	155	167	7	0.12	<0.030

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 12...	0.103	0.92	0.006	<0.020	0.33	E.004	0.25	1.3	1.6	4.6	<0.1	4.6	3.2
MAR 04...	0.105	0.66	<0.003	<0.020	0.23	<0.004	0.102	0.89	1.1	2.2	<0.1	2.2	1.6
MAY 14...	<0.030	0.46	<0.003	<0.020	0.04	E.003	0.039	--	E.58	0.3	<0.1	0.3	1.5
AUG 28...	<0.030	0.27	<0.003	<0.020	0.07	0.004	0.058	0.39	0.46	0.7	<0.1	0.7	1.7



## 01407900 MANASQUAN RIVER AT WEST FARMS, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.6

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoromethane water unfltrd ug/L (34488)	Tri-chloromethane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 04...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected by the analyses in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 14...	0900	<0.006	<0.006	<0.006	0.005	<0.005	E.004	<0.050	<0.010	<0.002	E.026	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 14...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.005	<0.006	<0.007

01407900 MANASQUAN RIVER AT WEST FARMS, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF (82683)	Prometon, water, fltrd, ug/L (04037)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terbacil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 14...	E.007	0.02	<0.005	<0.02	<0.034	E.003

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL 02...	1045	140	<100	700	JUL 17...	1105	260	1,500	9,000
10...	0909	210	500	2,400	24...	1110	600	400	1,300
					31...	1130	980	1,900	1,700

Remark codes used in this table:  
 < -- Less than

01408000 MANASQUAN RIVER AT SQUANKUM, NJ

LOCATION.--Lat 40°09'41", Long 74°09'17", Monmouth County, Hydrologic Unit 02040301, 50 ft upstream from northbound bridge on County Highway 547 (Squankum Park Road) in Squankum, and 0.4 mi downstream from Marsh Bog Brook.

DRAINAGE AREA.--44.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963-81, 1991 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1969 to September 1974.

pH: July 1969 to September 1974.

WATER TEMPERATURE: July 1969 to September 1974.

DISSOLVED OXYGEN: August 1969 to September 1974.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 12.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	0900	78	9.8	0.102	0.085	762	10.0	83	6.8	243	8.5	7.5	70
FEB 27...	1000	105	13	0.101	0.083	770	12.3	88	6.5	275	-6.5	2.1	53
MAY 22...	1000	66	67	0.074	0.055	766	9.0	85	7.0	239	11.8	12.9	65
SEP 03...	0900	60	21	0.214	0.169	766	7.9	82	7.5	200	20.7	17.7	61

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	21.8	3.83	3.47	10.5	E9	23.6	<0.17	14.7	53.0	--	151	18	0.14
FEB 27...	15.9	3.09	2.86	23.6	9	43.7	<0.17	11.2	35.8	144	150	10	0.29
MAY 22...	21.0	3.17	3.00	14.6	24	29.4	<0.17	12.8	31.3	132	160	35	0.22
SEP 03...	20.1	2.61	3.31	9.99	30	21.0	<0.17	11.3	24.3	112	130	8	0.36

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, mg/L as N (00631)	Nitrite water, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 21...	0.077	0.094	0.58	0.003	<0.020	0.07	E.002	0.051	0.72	0.80	0.8	<0.1	0.8
FEB 27...	0.077	0.097	0.59	<0.003	0.026	0.08	E.003	0.075	0.89	0.97	1.5	<0.1	1.5
MAY 22...	<0.030	<0.030	0.47	0.006	<0.020	0.28	0.004	0.195	0.69	0.97	3.1	<0.1	3.1
SEP 03...	0.089	0.069	0.37	<0.003	<0.020	0.15	0.016	0.105	0.73	0.88	1.7	<0.1	1.7



01408000 MANASQUAN RIVER AT SQUANKUM, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	2.1	E1.7	--	34
FEB 27...	2.1	<1.0	--	21
MAY 22...	2.5	2.7	16.9	24
SEP 03...	4.7	E1.7	3.40	28

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 02...	0947	140	200	300	JUL 17...	1008	220	100	500
10...	0930	220	400	300	24...	0950	1,300	500	800
					31...	1016	370	400	500

## 01408009 MINGAMAHONE BROOK NEAR EARLE, NJ

LOCATION.--Lat 40°12'45", long 74°10'06", 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.

DRAINAGE AREA.--3.32 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1971-74, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 12.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 12...	0920	2.2	7.3	0.216	0.177	763	8.6	80	6.8	123	14.0	12.0	32
FEB 06...	1110	5.6	6.9	0.056	0.046	768	11.9	84	5.7	123	0.5	1.6	28
MAY 12...	0950	4.9	15	0.156	0.126	749	8.7	85	6.1	117	19.5	13.7	27
AUG 12...	1010	4.8	50	1.22	0.983	761	6.6	73	5.3	116	24.0	20.2	28

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 12...	9.71	1.85	1.73	6.37	E7	11.3	<0.17	14.0	23.6	--	87	17	0.39
FEB 06...	8.41	1.69	1.72	6.94	6	12.4	<0.17	13.0	21.0	69	88	11	E.06
MAY 12...	8.64	1.39	1.72	6.35	8	12.3	<0.17	13.2	19.0	68	85	7	E.08
AUG 12...	8.93	1.43	1.55	6.30	9	11.6	<0.17	14.3	12.4	76	109	24	0.65

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 12...	<0.030	0.033	<0.05	<0.003	<0.020	0.06	E.003	0.036	--	2.1	<0.1	2.1	4.6
FEB 06...	<0.030	<0.030	0.07	<0.003	<0.020	0.06	<0.004	0.030	E.19	1.5	<0.1	1.5	1.4
MAY 12...	<0.030	<0.030	<0.05	<0.003	<0.020	0.04	<0.004	0.035	--	1.4	<0.1	1.4	2.9
AUG 12...	0.122	0.134	<0.05	0.004	<0.020	0.25	0.035	0.064	--	7.8	<0.1	7.8	16.4

01408009 MINGAMAHONE BROOK NEAR EARLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 12...	E1.2	--	26	--
FEB 06...	<1.0	--	E13	--
MAY 12...	<1.0	1.00	15	--
AUG 12...	E1.3	0.400	24	13,700

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL 02...	0930	20	<100	80	JUL 17...	0955	50	100	170
10...	0920	80	200	300	24...	0940	30	400	800
					31...	0925	60	300	170

Remark codes used in this table:  
 < -- Less than

## 01408100 NORTH BRANCH METEDECONK RIVER AT LAKEWOOD, NJ

LOCATION.--Lat 40°06'35", long 74°13'09", 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.

DRAINAGE AREA.--19.4 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1959-63, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 13.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 12...	1020	30	6.1	0.196	0.152	763	7.7	74	6.6	152	14.0	13.5	36
FEB 24...	1030	166	5.8	0.327	0.252	763	13.3	91	4.2	144	5.5	0.1	16
MAY 12...	1120	23	4.6	0.277	0.214	749	9.5	97	6.5	166	23.0	15.9	29
AUG 20...	0900	14	13	0.390	0.311	765	7.5	82	6.0	182	23.5	20.0	33

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 12...	11.3	1.97	2.41	11.0	E8	18.4	<0.17	8.3	26.0	--	100	8	0.23
FEB 24...	4.55	1.05	1.53	16.2	3	30.5	<0.17	3.3	10.2	71	90	1	0.39
MAY 12...	8.84	1.66	2.21	16.4	11	29.3	<0.17	6.3	13.9	88	107	<1	0.30
AUG 20...	10.2	1.92	2.77	17.7	17	30.7	<0.17	9.4	11.8	98	120	4	0.31

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sediment total, mg/L (00694)	Inorganic carbon, suspnd sediment total, mg/L (00688)	Organic carbon, suspnd sediment total, mg/L (00689)
NOV 12...	<0.030	<0.030	0.16	<0.003	<0.020	0.12	0.008	0.030	0.39	0.51	1.3	<0.1	1.3
FEB 24...	0.102	0.052	0.37	<0.003	0.021	0.08	0.013	0.035	0.76	0.84	0.7	<0.1	0.7
MAY 12...	0.041	0.042	0.62	0.004	<0.020	0.06	0.007	0.036	0.92	0.97	1.2	<0.1	1.2
AUG 20...	E.060	0.084	0.66	0.003	<0.020	0.04	0.022	0.068	0.97	1.0	0.7	<0.1	0.7

01408100 NORTH BRANCH METEDECONK RIVER AT LAKEWOOD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 12...	6.4	<1.0	--	31
FEB 24...	7.4	E1.2	--	E13
MAY 12...	6.1	<1.0	6.70	20
AUG 20...	7.0	<1.0	1.80	33

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	1045	220	<100	1,300	JUN 04...	1100	4,500	1,500	1,700
MAY 14...	1100	50	200	220					
MAY 21...	1110	140	<100	80					
MAY 28...	1100	340	200	2,200					

Remark codes used in this table:  
 < -- Less than

## 01408110 HAYSTACK BROOK NEAR SOUTHARD, NJ

LOCATION.--Lat 40°08'47", long 74°11'58", Monmouth County, Hydrologic Unit 02040301, at bridge on Maxim-Southard Road, 1.2 mi east of Candlewood, 1.5 mi northeast of Southard, and 3.0 mi upstream of Dicks Brook.

DRAINAGE AREA.--1.77 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 13.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 13...	0900	3.6	0.728	0.586	760	5.1	47	6.2	86	11.0	11.5	20	5.37
FEB 06...	1000	4.1	0.165	0.130	770	11.6	83	7.4	215	6.5	1.8	30	8.37
MAY 07...	0900	4.0	0.303	0.234	760	9.4	87	6.8	191	15.7	11.5	29	8.32
AUG 14...	0900	14	0.410	0.322	768	6.9	78	6.7	199	31.2	21.6	44	13.9

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 13...	1.50	1.86	7.74	E6	12.3	<0.17	6.2	10.0	--	86	5	0.44	0.040
FEB 06...	2.10	2.11	25.5	8	46.0	<0.17	7.9	13.7	116	129	4	0.28	0.113
MAY 07...	1.90	2.11	23.2	9	40.8	<0.17	6.3	11.7	104	121	1	0.39	0.085
AUG 14...	2.31	2.91	25.3	14	39.9	<0.17	8.3	10.6	115	130	6	0.54	0.157

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 13...	<0.030	0.14	<0.003	0.037	0.10	0.038	0.061	0.58	0.68	0.9	<0.1	0.9	17.0
FEB 06...	0.103	1.12	<0.003	<0.020	0.09	0.005	0.015	1.4	1.5	0.4	<0.1	0.4	3.7
MAY 07...	0.086	0.81	<0.003	<0.020	0.10	0.012	0.028	1.2	1.3	0.5	<0.1	0.5	6.8
AUG 14...	0.159	0.88	0.006	0.025	0.16	0.024	0.065	1.4	1.6	1.1	<0.1	1.1	9.1

01408110 HAYSTACK BROOK NEAR SOUTHARD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcrtd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 13...	3.5	--	29	--
FEB 06...	<1.0	--	23	--
MAY 07...	<1.0	4.60	31	--
AUG 14...	E1.9	0.200	44	926

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed total, mg/kg (00668)	Total carbon, bed total, g/kg (00693)	Inorganic carbon, bed total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)
AUG 14...	0859	Field Blank	--	--	--	--	--	--	--	--	--
14...	0900	Environmental	--	--	--	--	--	<2	50.4	0.07	42
14...	0900	Bed material	5.92	50	2,000	0.8	<0.2	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cadmium water, unfltrd recover -able, ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd recover -able, ug/L (01147)
AUG 14...	--	--	<0.2	--	--	<0.08	--	--	<0.02	--	<0.06	--	--
14...	0.10	0.9	--	2.0	2,200	--	0.64	34.6	--	E.01	--	2.14	0.6
14...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)
AUG 14...	--	<1	--	--	--	--	--	--	--	--	--	--	--
14...	<0.16	--	12	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	<1	0.020	0.7	0.080	<2	570	1.7	1.5	<0.01	0.211

## 01408110 HAYSTACK BROOK NEAR SOUTHARD, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover-able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat ug/kg (49388)	1-236Trimethylnaphthalene, bed sed <2 mm, ug/kg (49405)	2,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphthalene, bed sed <2 mm, wsv nat ug/kg (49948)	2-Methylanthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flour-ene, bed sed <2 mm, wsv nat ug/kg (49399)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<1	<3.1	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Acenaphthene, bed sed <2 mm, wsv nat ug/kg (49429)	Acenaphthylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthracene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]anthracene, bed sed <2 mm, wsv nat ug/kg (49436)	Benzo[a]pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo[b]fluoranthene, bed sed <2 mm, ug/kg (49458)	Benzo[ghi]perylene, bed sed <2 mm, ug/kg (49408)	Benzo[k]fluoranthene, bed sed <2 mm, ug/kg (49397)	Chrysene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo[a,h]anthracene, bed sed <2 mm, wsv nat field, ug/kg (49461)	Fluoranthene, bed sed <2 mm, wsv nat field, ug/kg (49466)	Indeno[1,2,3-cd]pyrene, bed sed <2 mm, ug/kg (49390)	Iso-phorone, bed sed <2 mm, wsv nat field, ug/kg (49400)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<50	<50	<50	E11	E14	E16	E11	<50	<50	<50	E14	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Naphthalene, bed sed <2 mm, wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenanthridine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sediment, dry svd sve dia percent <.063mm (80164)
AUG 14...	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--
14...	<50	<5	<50	<50	<50	E11	0.2

Remark codes used in this table:

< -- Less than  
E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113, water, unfltrd ug/L (77652)	1,1-Dichloroethane, water, unfltrd ug/L (34496)	1,1-Dichloroethane, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water, unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water, unfltrd ug/L (34541)	1,3-Dichlorobenzene, water, unfltrd ug/L (34566)	1,4-Dichlorobenzene, water, unfltrd ug/L (34571)	Benzene, water, unfltrd ug/L (34030)	Bromodichloromethane, water, unfltrd ug/L (32101)	Chlorobenzene, water, unfltrd ug/L (34301)
FEB 06...	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chloro-di-fluoromethane, water, unfltrd ug/L (34668)	Di-chloromethane, water, unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water, unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2



01408110 HAYSTACK BROOK NEAR SOUTHARD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 06...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 07...	0900	<0.006	<0.006	<0.006	<0.004	<0.005	E.006	<0.050	E.006	<0.002	E.016	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 07...	<0.003	<0.004	0.065	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 07...	0.027	0.02	0.006	<0.02	<0.034	E.001

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## METEDECONK RIVER BASIN

01408110 HAYSTACK BROOK NEAR SOUTHARD, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL					JUL				
02...	1030	410	<100	500	17...	1055	630	100	300
10...	0929	270	500	300	24...	1055	6,200	1,300	700
					31...	1120	2,900	200	9,000

Remark codes used in this table:

&lt; -- Less than

## 01408460 MANAPAUQUA BRANCH AT LAKEHURST, NJ

LOCATION.--Lat 40°00'44", long 74°18'09", Ocean County, Hydrologic Unit 02040301, at bridge on State Route 70, 0.3 mi upstream of the mouth, 0.8 mi east of Lakehurst, and 1.7 mi southwest of Ridgeway.

DRAINAGE AREA.--6.32 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1960-1964, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 13.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 20...	0900	5.5	0.293	0.231	769	8.2	68	5.4	55	7.1	7.5	8	1.85
MAR 05...	0900	4.4	0.301	0.238	756	10.4	82	5.7	52	6.2	4.9	7	1.83
MAY 15...	0900	7.6	0.228	0.179	766	7.5	69	5.8	57	13.5	12.1	8	1.94
AUG 26...	0800	18	0.162	0.127	761	5.8	63	5.9	62	23.9	19.1	8	2.01

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 20...	0.702	0.91	4.73	<2	7.31	<0.17	4.1	6.2	--	36	9	0.32	0.101
MAR 05...	0.611	0.60	4.78	--	7.07	<0.17	3.0	5.0	--	37	2	0.26	0.055
MAY 15...	0.690	0.80	5.85	4	8.92	<0.17	2.9	4.7	29	35	8	0.34	0.069
AUG 26...	0.714	0.74	7.35	4	10.7	<0.17	4.5	4.3	33	43	20	0.28	0.137

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 20...	0.109	0.17	<0.003	<0.020	0.08	0.009	0.027	0.49	0.57	1.1	<0.1	1.1	5.9
MAR 05...	0.072	0.13	0.003	<0.020	0.09	0.014	0.030	0.40	0.49	0.8	<0.1	0.8	5.3
MAY 15...	0.103	0.13	<0.003	<0.020	0.23	0.014	0.038	0.47	0.71	2.7	<0.1	2.7	4.6
AUG 26...	0.118	0.14	<0.003	<0.020	0.16	0.004	0.037	0.42	0.58	2.7	<0.1	2.7	3.8



## 01408460 MANAPQUA BRANCH AT LAKEHURST, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	
MAR 05...		0.3	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected by the analyses in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 15...	0900	<0.006	<0.006	<0.006	<0.004	<0.005	E.003	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 15...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

TOMS RIVER BASIN

01408460 MANAPQUA BRANCH AT LAKEHURST, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 15...	<0.022	0.04	<0.005	0.35	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
07...	1015	10	<100	20	04...	1030	710	2,900	800
14...	1030	20	<100	40					
21...	1040	60	<100	80					
28...	1030	180	100	220					

Remark codes used in this table:  
 < -- Less than

## 01408500 TOMS RIVER NEAR TOMS RIVER, NJ

LOCATION.--Lat 39°59'11", long 74°13'24", Ocean County, Hydrologic Unit 02040301, at bridge on County Route 527 (Oak Ridge Parkway), 1.9 mi downstream from Union Branch, and 2.6 mi northwest of community of Toms River.

DRAINAGE AREA.--123 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1974 to September 1981.

WATER TEMPERATURE: November 1963 to May 1966, November 1974 to September 1981.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 13.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 11...	0800	158	1.4	0.239	0.186	765	11.5	86	5.8	100	2.0	3.5	14
FEB 13...	0900	166	2.0	0.189	0.147	763	12.3	87	6.1	112	-7.5	1.2	14
MAY 29...	0900	409	2.4	0.631	0.493	755	8.1	80	4.7	80	19.2	14.0	10
AUG 21...	0800	121	5.8	0.482	0.384	765	7.6	84	6.0	105	23.5	20.5	16

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 11...	3.03	1.44	1.39	9.38	3	13.9	<0.17	5.7	11.4	51	64	4	0.46
FEB 13...	3.02	1.47	1.28	12.1	E2	19.1	<0.17	5.4	11.6	--	68	6	0.40
MAY 29...	2.35	0.967	0.87	7.83	<2	12.2	<0.17	4.0	8.7	--	67	3	0.46
AUG 21...	3.38	1.73	1.73	13.2	3	17.2	<0.17	6.1	9.1	58	75	7	0.65

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
DEC 11...	0.299	0.300	0.58	<0.003	0.022	<0.02	0.005	0.013	1.0	--	0.5	<0.1	0.5
FEB 13...	0.291	0.291	0.63	<0.003	<0.020	0.04	0.005	0.010	1.0	1.1	0.5	<0.1	0.5
MAY 29...	0.078	0.106	0.17	<0.003	<0.020	0.05	0.009	0.019	0.63	0.67	0.6	<0.1	0.6
AUG 21...	0.281	0.293	0.75	0.014	<0.020	0.11	0.021	0.043	1.4	1.5	1.8	0.2	1.7

## TOMS RIVER BASIN

01408500 TOMS RIVER NEAR TOMS RIVER, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 11...	5.8	<1.1	--	16
FEB 13...	3.9	E2.0	--	E11
MAY 29...	12.0	<1.0	1.20	18
AUG 21...	7.8	<1.0	1.30	25

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	0950	20	<100	20	JUN 04...	1005	490	1,600	1,100
14...	1015	60	<100	70					
21...	1020	90	<100	20					
28...	1015	280	1,200	1,300					

Remark codes used in this table:

&lt; -- Less than



## 01408830 CEDAR CREEK AT CEDAR CREST, NJ

LOCATION.--Lat 39°53'50", long 74°18'59", 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.

DRAINAGE AREA.--20.1 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1977-78, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 13.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 25...	1150	49	0.9	0.452	0.356	764	11.7	96	4.0	44	14.5	7.0	5
FEB 24...	0910	96	1.4	0.457	0.359	763	13.0	92	3.3	45	3.0	1.3	4
MAY 14...	1250	36	0.7	0.208	0.166	758	9.6	93	4.6	31	18.0	13.9	3
AUG 25...	1150	29	0.7	0.172	0.138	762	8.4	97	4.9	25	33.5	22.3	3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 25...	0.88	0.691	0.27	2.58	--	4.33	<0.17	5.4	5.9	35	3	0.20	<0.030
FEB 24...	0.72	0.547	0.44	2.05	--	3.55	<0.17	3.4	5.7	38	1	0.22	<0.030
MAY 14...	0.57	0.410	0.28	2.38	<2	4.31	<0.17	3.4	3.3	25	4	0.10	<0.030
AUG 25...	0.56	0.355	0.27	2.35	<2	4.25	<0.17	3.9	2.1	23	5	0.10	0.031

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 25...	<0.030	<0.05	<0.003	<0.020	0.03	0.004	E.003	--	--	0.3	<0.1	0.3	9.6
FEB 24...	<0.030	0.08	<0.003	0.023	0.03	E.002	0.006	0.30	0.34	0.4	<0.1	0.4	9.0
MAY 14...	<0.030	<0.05	<0.003	<0.020	<0.02	<0.004	E.004	--	--	0.3	<0.1	0.3	4.1
AUG 25...	0.032	<0.05	<0.003	<0.020	0.03	<0.004	0.004	--	--	0.4	<0.1	0.4	3.8

CEDAR CREEK BASIN

01408830 CEDAR CREEK AT CEDAR CREST, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 25...	<1.0	--	E9.2
FEB 24...	E1.6	--	<13
MAY 14...	<1.0	1.30	<13
AUG 25...	E1.1	0.800	12

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
07...	0920	<10	<100	<20	04...	0935	20	300	70
14...	0945	<10	<100	<20					
21...	0940	10	<100	<20					
28...	0930	<10	<100	40					

Remark codes used in this table:  
 < -- Less than

01409030 LONG BRANCH NEAR WELLS MILLS, NJ

LOCATION.--Lat 39°49'02", long 74°17'35", Ocean County, Hydrologic Unit 02040301, at bridge on Bryant Road, 0.7 mi upstream of mouth, 1.8 mi northwest of Wells Mills, and 2.6 mi north of Brookville.

DRAINAGE AREA.-- 1.69 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to September 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, unfltrd, mg/L (00915)
DEC 17...	1045	0.8	0.454	0.349	768	10.1	74	4.0	78	2.0	3.0	7	0.93
MAR 11...	1100	0.6	0.317	0.242	767	11.3	80	4.2	63	6.5	1.5	5	0.66
JUN 03...	1100	0.3	0.408	0.313	761	7.0	68	4.3	75	20.5	13.8	6	0.90
SEP 03...	1115	0.7	0.306	0.234	763	3.9	43	4.0	122	20.5	19.9	11	1.78

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)
DEC 17...	1.03	0.50	4.68	6.32	<0.17	4.7	11.3	49	<1	0.29	<0.030	<0.030	0.07
MAR 11...	0.726	0.52	3.64	5.70	<0.17	3.8	10.6	31	<1	0.20	<0.030	<0.030	0.18
JUN 03...	0.844	0.60	5.62	7.74	<0.17	2.3	11.2	41	<1	0.49	<0.030	0.056	<0.05
SEP 03...	1.47	1.03	10.7	13.0	<0.17	4.4	27.9	68	3	0.32	0.088	0.087	E.03

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 17...	<0.003	<0.020	<0.02	E.003	E.004	0.35	0.1	<0.1	0.1	11.2	E1.2	--	26
MAR 11...	<0.003	<0.020	<0.02	E.002	E.003	0.38	<0.1	<0.1	<0.1	7.4	<1.0	--	20
JUN 03...	<0.003	<0.020	<0.02	E.002	0.005	--	0.1	<0.1	0.1	9.0	<1.0	1.50	59
SEP 03...	<0.003	<0.020	<0.02	E.003	0.006	--	0.3	<0.1	0.3	7.4	3.0	0.900	192

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)	Beryllium, water, unfltrd recover-able, ug/L (01012)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, unfltrd recover-able, ug/L (01067)
SEP 03...	1115	<2	44.2	0.14	223	0.08	<0.8	0.9	430	0.77	15.0	<0.02	2.50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover-able, ug/L (01077)	Zinc, water, unfltrd recover-able, ug/L (01092)
SEP 03...	E.5	<0.16	10

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Dichloroethane, water unfltrd ug/L (34496)	1,1-Dichloroethene, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene water unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane water unfltrd ug/L (34541)	1,3-Dichlorobenzene water unfltrd ug/L (34566)	1,4-Dichlorobenzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromodichloromethane water unfltrd ug/L (32101)	Chlorobenzene water unfltrd ug/L (34301)
MAR 11...	1100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chlorodifluoromethane water unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 11...		<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloroethane, water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 11...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.6	<0.2

Remark codes used in this table:  
 < -- Less than

01409030 LONG BRANCH NEAR WELLS MILLS, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, ug/L (82686)	Ben-flur-alin, water, fltrd, ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, ug/L (82680)	Carbo-furan, water, fltrd, ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
JUN 03...	1100	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd, 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd, 0.7u GF (82684)
JUN 03...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd, 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd, ug/L (82670)	Terba-cil, water, fltrd, ug/L (82665)	Tri-flur-alin, water, fltrd, ug/L (82661)
JUN 03...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, ECbroth MPN/100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, ECbroth water, MPN/100 mL (31615)
MAY 07...	0815	<10	<100	<20	JUN 04...	0825	170	11,000	500
MAY 14...	0830	<10	<100	<20					
MAY 21...	0820	<10	<100	<20					
MAY 28...	0820	<10	<100	<20					

Remark codes used in this table:  
< -- Less than

## 01409387 MULLICA RIVER AT OUTLET OF ATSION LAKE, AT ATSION, NJ

LOCATION.--Lat 39°44'25", long 74°43'36", Burlington County, Hydrologic Unit 02040301, at bridge on U.S. Route 206 in Atsion, at outlet of Atsion Lake, and 0.2 mi upstream from Wesickaman Creek.

DRAINAGE AREA.--26.7 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 26...	1020	71	1.1	0.727	0.590	767	11.6	94	3.7	84	7.5	6.5	8
MAR 11...	1040	127	0.7	0.463	0.346	762	12.5	94	4.1	73	1.5	3.3	6
MAY 08...	1050	37	1.3	0.296	0.222	757	9.4	96	4.4	57	18.0	15.6	6
AUG 11...	1150	57	8.8	0.705	0.558	758	6.8	80	4.0	47	24.5	23.0	6

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 26...	1.76	0.995	0.85	3.53	--	5.62	<0.17	4.0	15.3	49	3	0.27	<0.030
MAR 11...	1.22	0.698	0.74	3.50	--	6.96	<0.17	3.0	9.6	42	<1	0.27	<0.030
MAY 08...	1.31	0.698	0.75	4.21	--	7.49	<0.17	1.8	7.2	33	2	0.17	<0.030
AUG 11...	1.20	0.626	0.87	4.06	<2	7.17	<0.17	6.8	3.6	40	14	0.41	0.085

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 26...	0.044	E.04	<0.003	<0.020	0.02	E.003	0.006	--	E.34	0.3	<0.1	0.3	10.4
MAR 11...	<0.030	0.09	<0.003	<0.020	0.02	0.004	0.005	0.36	0.39	0.1	<0.1	0.1	10.9
MAY 08...	<0.030	0.06	<0.003	<0.020	0.04	<0.004	0.006	0.23	0.27	0.6	<0.1	0.6	6.3
AUG 11...	0.092	0.08	<0.003	<0.020	0.34	0.005	0.017	0.49	0.83	8.5	<0.1	8.5	10.7

01409387 MULLICA RIVER AT OUTLET OF ATSION LAKE, AT ATSION, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 26...	<1.0	--	19	--
MAR 11...	<1.0	--	E9.0	--
MAY 08...	<1.0	6.40	17	--
AUG 11...	<1.0	2.80	13	1,730

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1025	20	<100	<20	AUG 11...	1130	20	<100	36
AUG 04...	0950	10	<100	40	18...	0935	50	<100	20
					25...	0925	<10	<100	20

Remark codes used in this table:

&lt; -- Less than

## 0140940950 BLUE ANCHOR BROOK AT ELM, NJ

LOCATION.--Lat 39°41'17", long 74°50'05", Camden County, Hydrologic Unit 02040301, at bridge on U.S. Route 30 at Elm, at outlet of Winslow Lake, and 1.4 mi upstream from confluence with Pump Branch.

DRAINAGE AREA.--4.86 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1991 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Mixed Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 06...	1350	1.8	2.1	0.138	0.110	744	10.9	98	6.6	66	12.0	9.5	12
FEB 24...	1110	12	7.5	0.117	0.091	765	12.1	89	6.3	122	6.5	2.7	12
MAY 08...	0940	5.9	3.6	0.316	0.249	757	9.3	102	6.4	91	17.5	19.3	16
AUG 11...	1010	4.3	2.2	0.446	0.356	758	8.3	103	6.9	88	24.0	26.4	13

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 06...	2.66	1.37	1.29	6.28	E7	8.05	<0.17	1.4	6.5	--	40	<1	0.26
FEB 24...	2.84	1.27	1.12	15.4	6	26.5	<0.17	2.4	6.0	62	68	2	0.20
MAY 08...	3.56	1.78	1.76	9.35	12	13.6	<0.17	0.7	6.8	45	67	4	0.36
AUG 11...	2.75	1.52	1.73	11.2	13	14.5	<0.17	0.3	3.7	45	53	1	0.47

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 06...	<0.030	<0.030	0.17	<0.003	<0.020	0.09	0.012	0.024	0.42	0.51	0.5	<0.1	0.5
FEB 24...	0.036	0.031	0.66	<0.003	0.021	0.06	0.009	0.029	0.86	0.92	0.6	<0.1	0.6
MAY 08...	<0.030	0.036	0.15	0.004	<0.020	0.20	0.013	0.042	0.52	0.72	1.7	<0.1	1.7
AUG 11...	0.027	0.047	<0.05	<0.003	--	0.09	0.022	0.042	--	--	0.7	<0.1	0.7



0140940950 BLUE ANCHOR BROOK AT ELM, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 06...	3.1	2.0	--	E9.7	--
FEB 24...	2.7	E1.3	--	E6.8	--
MAY 08...	5.4	2.8	23.7	22	--
AUG 11...	8.0	E1.5	20.5	15	1,120

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

M-- Presence verified, not quantified

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN 02...	1130	30	<100	80	JUN 16...	1040	<10	<100	40
09...	1030	20	200	<20	23...	1009	<10	<100	20
					30...	1035	10	<100	<20

Remark codes used in this table:

&lt; -- Less than

## 0140941075 CEDAR BROOK AT COLUMBIA ROAD, AT HAMMONTON, NJ

LOCATION.--Lat 39°39'53", long 74°45'56", Atlantic County, Hydrologic Unit 02040301, on bridge at Columbia Road, 2.3 mi upstream of mouth, 2.7 mi northeast of Hammonton, and 3.0 mi northwest of Wescoatville.

DRAINAGE AREA.-- 3.57 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and total suspended solids was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 13...	1030	11	0.407	0.327	760	4.5	42	6.4	117	10.5	12.1	34	8.64
FEB 13...	1045	4.7	0.057	0.042	762	11.1	82	6.4	529	-6.7	2.5	61	15.3
MAY 06...	1045	1.3	0.104	0.077	760	8.3	77	6.5	212	12.5	12.0	54	13.4
AUG 06...	1030	4.2	0.246	0.179	759	4.8	55	6.7	150	29.5	21.8	43	10.7

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 13...	3.03	3.14	6.09	E17	11.1	<0.17	4.2	12.8	--	83	6	0.34	<0.030
FEB 13...	5.59	5.89	70.3	E12	126	<0.17	5.9	27.7	--	282	9	0.27	0.064
MAY 06...	5.06	4.75	12.1	16	26.5	<0.17	4.2	23.8	113	130	3	0.23	<0.030
AUG 06...	3.93	3.25	8.97	20	17.3	<0.17	4.2	14.4	81	100	<1	0.38	0.028

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 13...	<0.030	0.63	<0.003	0.044	0.16	0.048	0.109	0.98	1.1	1.1	<0.1	1.1	9.9
FEB 13...	0.060	3.98	--	0.025	0.10	E.003	0.022	4.3	4.4	1.4	<0.1	1.4	2.0
MAY 06...	<0.030	3.12	0.005	<0.020	0.04	0.005	0.013	3.4	3.4	0.2	<0.1	0.2	3.0
AUG 06...	<0.020	1.44	0.006	--	0.05	0.024	0.048	1.8	1.9	0.5	<0.1	0.5	6.2



0140941075 CEDAR BROOK AT COLUMBIA ROAD, AT HAMMONTON, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 13...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	0.1	2.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 13...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected by the analyses in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 06...	1045	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	E.005	E.010	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 06...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.027	<0.006	<0.007

0140941075 CEDAR BROOK AT COLUMBIA ROAD, AT HAMMONTON, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
MAY 06...	<0.022	0.02	<0.005	<0.02	E.244	<0.009

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
12...	1050	8	5	13	07...	1125	1,350	350	710
19...	1110	920	720	890	10...	1100	7,200	2,600	2,500
26...	1120	127	180	167					

## 01409416 HAMMONTON CREEK AT WESCOATVILLE, NJ

LOCATION.--Lat 39°38'02", long 74°43'04", Atlantic County, Hydrologic Unit 02040301, at bridge on Chestnut Road in Wescoatville, 1.1 mi southwest of Nesco, 1.7 mi upstream from Norton Branch, and 3.8 mi southwest of Batsto.

DRAINAGE AREA.--9.57 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and total suspended solids was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

REVISIONS.--WDR NJ-83-1: Drainage area.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Mixed Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 25...	1420	18	1.5	0.162	0.124	764	9.5	81	5.7	120	18.0	8.5	32
FEB 24...	1210	121	7.5	0.234	0.181	765	12.2	86	5.0	80	7.0	1.0	15
JUN 05...	1210	41	5.8	0.363	0.284	758	7.3	73	5.8	102	20.7	14.9	26
AUG 20...	1230	13	3.3	0.244	0.191	766	7.9	89	5.8	110	31.0	21.1	25

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 25...	7.17	3.30	4.93	7.52	6	13.2	<0.17	6.6	17.0	75	80	4	0.29
FEB 24...	3.32	1.72	2.50	5.25	2	10.5	<0.17	2.9	9.4	44	53	2	0.32
JUN 05...	5.99	2.71	4.37	6.69	4	11.9	<0.17	4.7	15.5	62	88	6	0.64
AUG 20...	5.72	2.55	3.56	8.69	12	15.5	<0.17	6.3	9.0	62	77	8	0.28

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 25...	0.036	<0.030	2.66	<0.003	0.034	<0.02	<0.05	0.05	2.9	--	0.2	<0.1	0.2
FEB 24...	0.048	0.046	1.56	0.005	0.054	0.07	<0.05	0.08	1.9	1.9	0.7	<0.1	0.7
JUN 05...	0.280	0.281	1.72	0.006	0.044	0.11	0.05	0.13	2.4	2.5	1.2	<0.1	1.2
AUG 20...	0.032	0.035	0.74	0.004	0.044	0.09	E.05	0.11	1.0	1.1	0.5	<0.1	0.5

01409416 HAMMONTON CREEK AT WESCOATVILLE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 25...	4.3	<1.0	--	34
FEB 24...	5.5	<1.0	--	16
JUN 05...	7.1	E1.0	6.20	26
AUG 20...	5.2	<1.0	2.90	36

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 12...	1100	147	90	113	JUL 07...	1140	1,670	83	310
19...	1120	530	690	1,420	10...	1120	9,900	6,500	9,200
26...	1140	460	300	380					

## 01409500 BATSTO RIVER AT BATSTO, NJ

LOCATION.--Lat 39°38'30", long 74°39'01", Burlington County, Hydrologic Unit 02040301, at bridge on County Highway 542 at Batsto, and 1.0 mi upstream from mouth.

DRAINAGE AREA.--67.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1925, 1956, 1962-63, 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 04...	0930	99	0.7	0.171	0.125	776	11.3	80	5.2	66	-5.0	2.0	10
FEB 25...	1015	492	2.3	0.378	0.283	772	13.4	92	4.4	60	1.5	0.6	8
MAY 22...	0930	103	2.1	0.231	0.178	766	8.2	79	5.4	43	13.0	14.2	8
AUG 19...	0930	82	6.6	0.384	0.302	768	7.0	80	5.8	39	24.0	21.9	8

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 04...	2.06	1.16	0.79	3.06	--	5.61	<0.17	5.7	12.5	--	30	6	0.16
FEB 25...	1.62	0.875	0.78	2.61	--	4.02	<0.17	3.4	9.7	--	40	5	0.29
MAY 22...	1.59	0.907	0.84	3.35	2	6.42	<0.17	3.2	5.0	23	43	2	0.17
AUG 19...	1.64	0.949	0.89	3.13	3	5.95	<0.17	5.7	3.0	24	42	7	0.26

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
DEC 04...	<0.030	0.066	0.13	<0.003	<0.020	0.02	<0.004	E.003	0.29	0.32	0.2	<0.1	0.2
FEB 25...	0.030	0.045	0.22	<0.003	<0.020	0.06	0.004	0.013	0.51	0.57	0.8	<0.1	0.8
MAY 22...	<0.030	<0.030	0.08	<0.003	<0.020	0.07	0.004	0.011	0.26	0.33	1.2	<0.1	1.2
AUG 19...	<0.020	<0.020	0.07	<0.003	<0.020	0.10	0.004	0.014	0.32	0.42	1.9	<0.1	1.9



01409500 BATSTO RIVER AT BATSTO, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 04...	4.7	E1.9	--	<13
FEB 25...	9.9	<1.0	--	14
MAY 22...	4.3	E1.6	1.30	<13
AUG 19...	7.6	<1.0	1.60	12

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1205	190	<100	170	AUG 11...	1010	10	<100	90
AUG 04...	1100	110	<100	40	AUG 18...	1115	280	300	2,400
					AUG 25...	1120	30	<100	20

Remark codes used in this table:

&lt; -- Less than

## 01409601 INDIAN CABIN CREEK AT FIFTH AVENUE, NEAR ELWOOD, NJ

LOCATION.--Lat 39°34'15", long 74°39'51". Atlantic County, Hydrologic Unit 02040301, at bridge on Fifth Avenue, 2.8 mi east of Elwood, 3.1 mi north of Egg Harbor City, and 3.7 mi upstream of Egg Harbor City Lake.

DRAINAGE AREA.-- 1.89 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and total suspended solids was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 11...	1000	0.3	0.359	0.269	762	6.9	51	3.7	108	5.0	3.0	5	0.55
FEB 24...	1015	1.0	0.625	0.472	768	11.3	78	4.1	66	2.5	0.4	4	0.48
JUN 10...	1030	0.4	0.864	0.662	762	3.3	32	4.0	61	25.0	15.0	3	0.38
AUG 28...	1115	0.5	0.545	0.421	765	0.9	9	4.0	61	27.5	19.8	3	0.30

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)
DEC 11...	0.918	0.21	2.74	4.92	<0.17	6.5	18.0	53	1	0.23	<0.030	0.037	<0.05
FEB 24...	0.589	0.52	1.80	2.89	<0.17	3.7	12.2	46	<1	0.38	<0.030	<0.030	0.08
JUN 10...	0.394	E.15	1.98	3.10	<0.17	4.0	7.8	48	3	0.34	<0.030	<0.030	<0.05
AUG 28...	0.448	E.10	2.40	4.98	<0.17	7.8	7.7	48	1	0.32	0.025	0.028	<0.05

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, correctd ug/L (32209)
DEC 11...	<0.003	0.021	<0.02	<0.004	0.004	--	--	<0.1	<0.1	<0.1	9.8	<1.0	--
FEB 24...	<0.003	<0.020	0.03	E.003	0.008	0.46	0.49	0.2	<0.1	0.2	15.1	<1.0	--
JUN 10...	<0.003	<0.020	<0.02	E.002	0.005	--	--	0.1	<0.1	0.1	18.4	<1.0	0.100
AUG 28...	<0.003	<0.020	<0.02	0.004	0.005	--	--	0.3	<0.1	0.3	11.9	<1.0	0.100

01409601 INDIAN CABIN CREEK AT FIFTH AVENUE, NEAR ELWOOD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Aluminum, water, fltrd, ug/L (01106)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
DEC 11...	647	E9.1	<10
FEB 24...	--	E9.6	--
JUN 10...	--	15	--
AUG 28...	357	15	349

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover-able, ug/L (01007)	Beryllium, water, unfltrd recover-able, ug/L (01012)	Boron, water, unfltrd recover-able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover-able, ug/L (01034)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, unfltrd recover-able, ug/L (01051)	Manganese, water, unfltrd recover-able, ug/L (01055)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, unfltrd recover-able, ug/L (01067)
AUG 28...	1115	<2	22.7	0.10	11	0.04	<0.8	<0.6	350	1.10	5.1	<0.02	2.56

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover-able, ug/L (01077)	Zinc, water, unfltrd recover-able, ug/L (01092)
AUG 28...	0.6	<0.16	8

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Dichloroethane, water unfltrd ug/L (34496)	1,1-Dichloroethene, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water unfltrd ug/L (34541)	1,3-Dichlorobenzene, water unfltrd ug/L (34566)	1,4-Dichlorobenzene, water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromodichloromethane, water unfltrd ug/L (32101)	Chlorobenzene, water unfltrd ug/L (34301)
FEB 24...	1015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chloro-di-fluoromethane, water unfltrd ug/L (34668)	Di-chloromethane, water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 24...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

01409601 INDIAN CABIN CREEK AT FIFTH AVENUE, NEAR ELWOOD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 24...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
JUN 10...	1030	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
JUN 10...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
JUN 10...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than

01409601 INDIAN CABIN CREEK AT FIFTH AVENUE, NEAR ELWOOD, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
12...	1130	330	240	210	07...	1155	155	<3	3
19...	1140	33	65	50	10...	1142	2,500	3,400	3,400
26...	1205	<3	<3	13					

Remark codes used in this table:

&lt; -- Less than

## 01409815 WEST BRANCH WADING RIVER AT MAXWELL, NJ

LOCATION.--Lat 39°40'30", long 74°32'27", Burlington County, Hydrologic Unit 02040301, at bridge on County 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.

DRAINAGE AREA.--85.9 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976-93, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 25...	1140	191	1.8	0.442	0.339	764	11.0	88	4.1	61	3.0	6.0	4
FEB 24...	1000	577	3.0	0.407	0.310	768	12.9	88	3.7	54	6.5	0.0	3
JUN 05...	0940	272	3.5	0.598	0.467	758	8.1	80	4.2	42	16.5	14.5	3
AUG 20...	0950	77	6.8	0.413	0.331	767	7.8	85	4.0	36	27.5	19.8	3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)
NOV 25...	0.77	0.559	0.85	2.60	4.38	<0.17	4.9	10.2	41	3	0.23	<0.030	<0.030
FEB 24...	0.63	0.419	0.59	2.25	4.21	<0.17	3.4	8.9	38	<1	0.24	<0.030	<0.030
JUN 05...	0.52	0.337	0.57	2.35	4.08	<0.17	3.6	5.5	32	8	0.23	0.031	0.033
AUG 20...	0.62	0.355	0.82	2.33	4.34	<0.17	6.1	4.3	29	15	0.17	0.044	0.056

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, fltrd, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)
NOV 25...	<0.05	<0.003	<0.020	0.10	0.008	0.016	--	--	0.4	<0.1	0.4	10.0	<1.0
FEB 24...	0.07	<0.003	0.022	0.07	0.008	0.020	0.31	0.37	0.8	<0.1	0.8	9.0	E1.4
JUN 05...	<0.05	<0.003	<0.020	0.10	0.010	0.042	--	--	1.6	<0.1	1.6	10.5	<1.0
AUG 20...	<0.05	<0.003	<0.020	0.18	E.003	0.067	--	--	4.4	<0.1	4.4	7.1	<1.0

01409815 WEST BRANCH WADING RIVER AT MAXWELL, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 25...	--	E13
FEB 24...	--	E6.1
JUN 05...	1.30	E14
AUG 20...	1.30	14

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1205	190	<100	170	AUG 11...	0940	40	<100	130
AUG 04...	1035	40	<100	20	18...	1050	30	<100	40
					25...	1050	50	<100	<20

Remark codes used in this table:

&lt; -- Less than

## 01410150 EAST BRANCH BASS RIVER NEAR NEW GRETN, NJ

LOCATION.--Lat 39°37'23", long 74°26'29", Burlington County, Hydrologic Unit 02040301, at 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.

DRAINAGE AREA.--8.11 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Management Area 14.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 17...	1000	19	0.7	0.330	0.256	768	9.6	73	4.7	57	0.0	4.0	4
MAR 04...	0930	26	0.8	0.311	0.244	769	11.6	82	4.5	52	1.5	1.8	4
MAY 29...	1000	18	0.8	0.348	0.274	754	7.2	70	4.3	51	20.5	13.3	3
AUG 21...	1000	15	0.8	0.267	0.212	765	5.9	63	4.5	37	29.5	18.5	3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)
DEC 17...	0.58	0.732	0.50	3.18	4.47	<0.17	6.4	7.8	38	1	0.17	<0.030	0.038
MAR 04...	0.52	0.605	0.45	3.16	5.36	<0.17	5.4	7.5	33	3	0.21	<0.030	<0.030
MAY 29...	0.48	0.523	0.34	3.50	6.03	<0.17	4.8	5.1	33	1	0.16	<0.030	<0.030
AUG 21...	0.39	0.495	0.44	2.91	5.22	<0.17	7.1	3.5	31	5	0.12	<0.020	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, fltrd, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, correctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 17...	<0.05	<0.003	<0.020	0.06	<0.004	E.003	0.2	<0.1	0.2	7.5	E1.8	--	E10
MAR 04...	<0.05	<0.003	<0.030	0.03	E.002	E.002	0.2	<0.1	0.2	6.3	E1.2	--	<13
MAY 29...	<0.05	<0.003	<0.020	0.03	E.003	E.003	0.4	<0.1	0.4	7.0	<1.0	1.50	11
AUG 21...	<0.05	<0.003	<0.020	<0.02	<0.004	E.003	0.3	<0.1	0.2	4.9	<1.0	0.200	14

Remark codes used in this table:

< -- Less than

E -- Estimated value



01410150 EAST BRANCH BASS RIVER NEAR NEW GRETN, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
28...	1235	20	<100	170	11...	1040	<10	<100	<20
AUG					18...	1150	<10	<100	20
04...	1135	10	<100	20	25...	1145	<10	<100	<20

Remark codes used in this table:

&lt; -- Less than

## 01410455 SOUTH BRANCH ABSECON CREEK NEAR POMONA, NJ

LOCATION.--Lat 39°26'23", long 74°33'58", Atlantic County, Hydrologic Unit 02040302, at bridge on Atlantic Avenue, 0.2 mi upstream from Atlantic City Reservoirs, 2.7 mi south of Pomona, and 3.8 mi west of Absecon.

DRAINAGE AREA.--5.73 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 1998, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and total suspended solids was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 15.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 12...	0730	4.9	0.468	0.363	746	8.0	69	4.6	81	5.0	8.0	13	2.12
MAR 04...	0915	1.4	0.188	0.143	766	12.1	95	4.6	77	2.7	5.4	9	1.32
JUN 03...	0715	1.4	0.155	0.121	750	7.4	70	5.2	63	15.0	12.3	9	1.39
SEP 10...	1000	0.4	0.053	0.038	770	8.2	79	4.8	57	16.7	14.1	8	0.99

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 12...	1.79	0.92	6.76	<2	10.8	<0.17	6.5	9.1	--	58	5	0.29	<0.030
MAR 04...	1.50	0.67	6.72	<2	12.0	<0.17	6.5	8.7	--	50	4	0.15	<0.030
JUN 03...	1.41	0.83	6.42	2	11.3	<0.17	6.0	4.6	35	38	3	0.16	<0.030
SEP 10...	1.31	0.80	5.91	<2	11.1	<0.17	7.1	3.8	--	33	1	<0.10	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 12...	0.037	0.32	<0.003	<0.020	<0.02	<0.004	0.012	0.61	--	0.5	<0.1	0.5	11.6
MAR 04...	<0.030	0.34	<0.003	<0.020	<0.02	<0.004	E.002	0.49	--	<0.1	<0.1	<0.1	4.8
JUN 03...	<0.030	0.30	<0.003	<0.020	0.04	E.003	0.007	0.46	0.50	0.3	<0.1	0.3	3.7
SEP 10...	<0.020	0.37	<0.003	<0.020	0.07	E.002	E.004	--	--	0.3	<0.1	0.3	1.8



ABSECON CREEK BASIN

01410455 SOUTH BRANCH ABSECON CREEK NEAR POMONA, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
MAR 04...	<0.1	<0.2	<0.1	<0.1	<0.2	0.2	<0.2	0.8	<0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water, fltrd 0.7u GF (82687)
JUN 03...	0715	<0.006	E.006	<0.006	<0.004	<0.005	0.020	<0.050	<0.010	<0.002	<0.041	<0.020	E.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipron- nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipron- nil amide, wat flt ug/L (62169)	Fipron- nil sulfide water, fltrd, ug/L (62167)	Fipron- nil sulfone water, fltrd, ug/L (62168)	Fipron- nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop- amide, water, fltrd 0.7u GF (82684)
JUN 03...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
JUN 03...	<0.022	0.02	<0.005	E.01	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

01410455 SOUTH BRANCH ABSECON CREEK NEAR POMONA, NJ—Continued

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
12...	0935	93	33	43	07...	1000	43	43	77
19...	0950	130	90	170	10...	1000	3,200	470	1,070
26...	1000	5	5	25					

## 01410865 SQUANKUM BRANCH AT MALAGA ROAD, NEAR WILLIAMSTOWN, NJ

LOCATION.--Lat 39°40'04", long 74°57'38", Gloucester County, Hydrologic Unit 02040302, at bridge on Malaga Road, 1.2 mi upstream from Hedges Branch, 2.0 mi southeast of Williamstown, and 2.1 mi southwest of New Brooklyn.

DRAINAGE AREA.--3.02 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1974-1978, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 15.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 07...	0930	3.7	0.857	0.673	759	7.3	64	6.0	92	8.0	9.5	20	4.82
FEB 13...	0930	3.2	0.211	0.159	760	10.4	76	5.5	190	-4.5	2.3	26	5.68
MAY 01...	0930	0.9	0.292	0.222	759	7.5	70	6.0	140	15.0	12.1	25	5.79
AUG 12...	1000	1.6	0.403	0.310	759	5.1	54	6.3	151	27.0	17.7	31	8.17

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 07...	2.01	1.08	8.38	13	6.21	<0.17	4.6	11.2	49	80	<1	0.56	<0.030
FEB 13...	2.89	1.44	22.3	E8	38.3	<0.17	6.0	9.3	--	107	7	0.23	<0.030
MAY 01...	2.54	1.44	15.0	11	21.6	<0.17	5.0	10.3	74	88	1	0.28	<0.030
AUG 12...	2.51	1.94	15.1	17	22.3	<0.17	7.1	9.5	82	96	<1	0.41	0.056

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 07...	<0.030	0.64	0.005	0.036	0.06	0.030	0.040	1.2	1.3	0.6	<0.1	0.6	17.7
FEB 13...	0.034	1.70	<0.003	0.023	--	0.008	0.020	1.9	2.4	0.9	<0.1	0.9	4.9
MAY 01...	<0.030	1.27	<0.003	0.022	0.04	0.012	0.017	1.6	1.6	0.1	<0.1	<0.1	6.4
AUG 12...	0.054	1.24	0.005	0.028	0.05	0.025	0.040	1.6	1.7	0.5	<0.1	0.5	8.2

01410865 SQUANKUM BRANCH AT MALAGA ROAD, NEAR WILLIAMSTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	<1.0	--	27
FEB 13...	<1.0	--	23
MAY 01...	<1.0	1.60	27
AUG 12...	E1.9	0.200	30

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover- able, ug/L (01007)	Beryll- ium, water, unfltrd recover- able, ug/L (01012)	Boron, water, unfltrd recover- able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd recover- able, ug/L (01034)	Copper, water, unfltrd recover- able, ug/L (01042)	Iron, water, unfltrd recover- able, ug/L (01045)	Lead, water, unfltrd recover- able, ug/L (01051)	Mangan- ese, water, unfltrd recover- able, ug/L (01055)	Mercury water, unfltrd recover- able, ug/L (71900)	Nickel, water, unfltrd recover- able, ug/L (01067)
AUG 12...	1000	<2	75.2	0.06	24	0.07	<0.8	1.9	380	1.43	36.1	0.11	2.43

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selen- ium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover- able, ug/L (01077)	Zinc, water, unfltrd recover- able, ug/L (01092)
AUG 12...	0.8	<0.16	22

Remark codes used in this table:

&lt; -- Less than

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di- chloro- ethane, water unfltrd ug/L (34496)	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)	1,2-Di- chloro- benzene water unfltrd ug/L (34536)	1,2-Di- chloro- ethane, water, unfltrd ug/L (32103)	1,2-Di- chloro- propane water unfltrd ug/L (34541)	1,3-Di- chloro- benzene water unfltrd ug/L (34566)	1,4-Di- chloro- benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo- di- chloro- methane water unfltrd ug/L (32101)	Chloro- benzene water unfltrd ug/L (34301)
FEB 13...	0930	0.4	<0.1	<0.1	0.2	<0.1	<0.2	<0.1	<0.1	<0.1	0.1	<0.1	<0.1

## 01410865 SQUANKUM BRANCH AT MALAGA ROAD, NEAR WILLIAMSTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 13...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	10.5

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 13...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 01...	0930	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 01...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.002	<0.006	<0.007



01410865 SQUANKUM BRANCH AT MALAGA ROAD, NEAR WILLIAMSTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
MAY 01...	<0.022	0.03	0.007	<0.02	<0.034	<0.009

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
09...	1030	110	<100	20	06...	1110	2,900	1,200	1,700
16...	1055	100	100	40					
23...	1055	--	700	1,300					
30...	1100	180	<100	70					

Remark codes used in this table:

&lt; -- Less than

## 01411035 HOSPITALITY BRANCH AT BLUE BELL ROAD, NEAR CECIL, NJ

LOCATION.--Lat 39°38'36", long 74°58'39", Gloucester County, Hydrologic Unit 02040302, at bridge on Blue Bell Road, 1.2 mi upstream of Timber Lakes and 2.0 mi west of Cecil.

DRAINAGE AREA.--4.51 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Mixed Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 15.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 25...	1140	1.9	0.9	0.307	0.235	763	9.2	77	4.9	84	17.0	7.5	21
MAR 05...	1100	11	1.2	0.350	0.267	750	11.1	84	4.2	73	12.0	3.2	16
MAY 13...	1130	5.8	2.9	0.893	0.711	748	7.4	73	5.5	60	15.0	14.0	15
AUG 12...	1130	6.0	17	1.09	0.866	762	5.2	59	5.8	62	28.0	21.6	18

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 25...	4.45	2.51	1.54	3.54	2	6.27	<0.17	8.0	15.5	48	62	5	0.26
MAR 05...	3.42	1.85	1.67	3.67	--	7.08	<0.17	5.1	13.5	--	56	<1	0.26
MAY 13...	3.39	1.70	1.89	4.17	6	7.58	<0.17	4.6	6.3	36	70	4	0.59
AUG 12...	4.04	1.92	1.86	4.04	9	7.26	<0.17	7.8	3.5	39	64	7	0.79

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 25...	<0.030	<0.030	1.14	<0.003	<0.020	0.04	0.012	0.016	1.4	1.4	0.2	<0.1	0.2
MAR 05...	<0.030	0.044	0.77	0.004	<0.020	0.03	0.010	0.005	1.0	1.1	0.2	<0.1	0.2
MAY 13...	0.097	0.095	0.56	0.004	<0.020	0.08	0.013	0.032	1.2	1.2	1.2	<0.1	1.2
AUG 12...	0.165	0.198	0.37	0.006	<0.020	0.17	0.014	0.038	1.2	1.3	2.8	<0.1	2.8

01411035 HOSPITALITY BRANCH AT BLUE BELL ROAD, NEAR CECIL, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 25...	7.1	<1.0	--	19	--
MAR 05...	7.5	<1.0	--	E12	--
MAY 13...	13.8	<1.0	2.40	14	--
AUG 12...	17.8	<1.0	1.40	13	1,530

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 09...	1020	630	1,300	600	AUG 06...	1100	280	800	500
JUL 16...	1045	460	200	130					
JUL 23...	1045	--	1,100	1,400					
JUL 30...	1050	170	200	130					

## 01411110 GREAT EGG HARBOR RIVER AT WEYMOUTH, NJ

LOCATION.--Lat 39°30'50", long 74°46'46", 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.

DRAINAGE AREA.--154 mi<sup>2</sup>.

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

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and total suspended solids was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 15.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 06...	1140	158	5.3	0.246	0.188	747	9.9	88	4.5	70	12.0	9.5	11
FEB 25...	1100	514	2.3	0.447	0.339	767	12.9	90	3.7	102	6.0	0.9	11
MAY 14...	1040	208	2.7	0.647	0.506	755	9.0	88	5.1	62	19.5	14.2	10
AUG 19...	1040	208	4.0	1.01	0.798	766	7.5	84	5.3	61	30.0	21.2	11

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium water, fltrd, mg/L (00925)	Potassium water, fltrd, mg/L (00935)	Sodium water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 06...	2.28	1.37	1.17	5.11	<2	7.64	<0.17	7.0	11.3	--	51	9	0.24
FEB 25...	2.28	1.40	1.24	8.14	--	15.2	<0.17	4.7	9.3	--	67	3	0.33
MAY 14...	2.16	1.18	1.23	6.06	3	10.0	<0.17	4.7	5.6	34	59	9	0.40
AUG 19...	2.20	1.23	1.31	5.72	3	10.0	<0.17	7.8	3.7	36	73	7	0.66

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 06...	<0.030	<0.030	0.36	<0.003	0.022	0.05	0.009	0.026	0.60	0.65	1.2	<0.1	1.2
FEB 25...	0.046	0.057	0.37	0.003	<0.020	0.06	0.008	0.019	0.69	0.76	1.4	<0.1	1.4
MAY 14...	0.037	0.052	0.32	<0.003	<0.020	0.08	0.007	0.025	0.72	0.80	1.2	<0.1	1.2
AUG 19...	0.049	0.060	0.21	0.004	0.025	0.11	0.018	0.040	0.87	0.98	1.6	<0.1	1.6

## 01411110 GREAT EGG HARBOR RIVER AT WEYMOUTH, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 06...	7.3	E1.9	--	28	--
FEB 25...	9.8	<1.0	--	19	--
MAY 14...	11.5	<1.0	1.90	27	--
AUG 19...	18.0	<1.0	1.50	26	1,070

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
12...	1020	50	30	20	07...	1105	113	83	113
19...	1045	65	93	117	10...	1037	791	590	736
26...	1040	15	10	50					

## 01411196 BABCOCK CREEK NEAR MAYS LANDING, NJ

LOCATION.--Lat 39°28'08", long 74°41'33", Atlantic County, Hydrologic Unit 02040302, at bridge on U.S. Route 322, 1.1 mi east from intersection of U.S. Route 50, 2.2 mi northeast of Mays Landing, and 2.8 mi upstream from Watering Race Branch.

DRAINAGE AREA.--16.3 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1965, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and total suspended solids was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 15.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 06...	0930	34	8.9	0.349	0.275	748	8.5	78	4.8	45	11.5	10.5	9
FEB 25...	0950	74	2.0	0.609	0.460	767	12.0	84	3.1	150	5.0	1.2	12
MAY 14...	0950	15	0.8	0.424	0.327	755	8.5	79	4.0	82	16.5	11.8	8
AUG 19...	0950	9.7	1.0	0.483	0.379	766	7.7	79	4.2	57	27.0	16.8	7

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 06...	1.93	1.09	0.73	2.94	E2	4.97	<0.17	4.3	6.3	35	7	0.23	<0.030
FEB 25...	2.37	1.54	0.77	12.2	--	23.3	<0.17	4.6	12.1	82	3	0.43	0.037
MAY 14...	1.58	1.05	0.86	6.52	--	12.8	<0.17	5.2	7.3	53	4	0.22	<0.030
AUG 19...	1.20	0.927	0.68	4.22	<2	9.22	<0.17	9.0	3.9	49	2	0.35	0.040

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 06...	<0.030	0.30	<0.003	--	0.06	0.015	0.028	0.53	0.59	1.1	<0.1	1.1	10.1
FEB 25...	0.043	0.23	<0.003	0.020	0.06	0.007	0.015	0.67	0.73	0.8	<0.1	0.8	15.0
MAY 14...	<0.030	0.43	<0.003	<0.020	<0.02	0.004	0.007	0.65	--	<0.1	<0.1	<0.1	8.7
AUG 19...	0.047	0.53	<0.003	<0.020	0.03	0.014	0.016	0.88	0.91	0.3	<0.1	0.3	9.8

01411196 BABCOCK CREEK NEAR MAYS LANDING, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 06...	E2.1	--	E6.4
FEB 25...	E1.2	--	18
MAY 14...	2.7	2.40	<13
AUG 19...	<1.0	0.400	12

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
12...	0952	40	55	100	07...	1040	45	67	110
19...	1025	67	330	310	10...	1025	982	1,400	1,440
26...	1015	25	5	13					

## 01411400 FISHING CREEK AT RIO GRANDE, NJ

LOCATION.--Lat 39°01'39", long 74°53'47", Cape May County, Hydrologic Unit 02040206, at bridge on State Route 47 at Wildwood Pumping Station, and 1.4 mi northwest of Rio Grande.

DRAINAGE AREA.--2.29 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 1965, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and total suspended solids was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 16.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1050	0.76	0.9	0.611	0.465	767	9.6	82	6.2	224	11.0	8.5	69
MAR 12...	1020	3.4	0.9	0.724	0.561	765	10.9	87	6.3	134	6.5	5.7	31
MAY 22...	0950	2.7	1.3	0.965	0.758	764	8.9	91	6.1	127	14.0	16.4	33
SEP 03...	1000	1.3	2.0	1.20	0.938	763	4.3	53	6.5	137	24.5	25.2	37

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium water, fltrd, mg/L (00925)	Potassium water, fltrd, mg/L (00935)	Sodium water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 05...	18.1	5.69	1.49	13.5	12	19.8	<0.17	7.7	54.5	128	175	3	0.55
MAR 12...	7.65	2.80	1.30	11.4	12	19.2	<0.17	5.6	15.8	73	107	<1	0.44
MAY 22...	8.37	2.95	1.56	11.9	16	20.6	<0.17	3.9	10.0	70	107	2	0.60
SEP 03...	10.2	2.75	1.46	10.2	22	19.4	<0.17	13.5	7.3	78	142	5	0.90

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 05...	<0.030	<0.030	E.03	<0.003	<0.020	0.05	0.010	0.019	--	E.62	0.3	<0.1	0.3
MAR 12...	<0.030	<0.030	0.43	0.004	0.023	0.04	0.005	0.010	0.87	0.91	0.2	<0.1	0.2
MAY 22...	<0.030	<0.030	0.19	0.007	<0.020	0.04	0.006	0.012	0.79	0.83	0.5	<0.1	0.5
SEP 03...	0.116	0.112	E.03	0.010	<0.020	0.14	0.017	0.038	--	E1.1	0.9	<0.1	0.9



## 01411400 FISHING CREEK AT RIO GRANDE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 05...	17.6	E1.4	--	25
MAR 12...	15.3	<1.0	--	30
MAY 22...	18.3	<1.0	4.00	26
SEP 03...	23.1	2.1	21.0	30

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 12...	0800	23	20	13	JUL 07...	1223	28	10	40
19...	0830	50	65	30	10...	0730	82	27	9
26...	0818	30	10	53					

## 01411440 OLD ROBBINS BRANCH NEAR NORTH DENNIS, NJ

LOCATION.--Lat 39°11'50", long 74°52'09", Cape May County, Hydrologic Unit 02040206, at culvert on Beaver Causeway Road (Old Robins Trail) in Belleplain State Forest, 0.8 mi west of North Dennis, 2.2 mi upstream of mouth, and 4.2 mi southwest of Woodbine.

DRAINAGE AREA.--2.96 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, and total phosphorus in bed sediment was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Environmental Protection, Bureau of Marine Water Monitoring Laboratory. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide status, New Jersey Department of Environmental Protection Watershed Management Area 16.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 04...	0715	0.6	0.344	0.249	757	8.5	59	4.3	131	-7.0	0.4	15	2.17
MAR 11...	0900	0.5	0.403	0.296	771	8.0	55	4.4	80	-2.0	0.2	8	1.29
MAY 28...	0945	0.4	0.387	0.292	747	4.5	43	3.8	82	13.0	12.4	7	1.25
AUG 14...	1000	1.6	1.50	1.16	770	1.5	18	4.2	134	27.5	23.5	10	1.17

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd, mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)
DEC 04...	2.27	1.00	9.87	16.8	<0.17	9.0	18.0	79	8	0.24	0.050	0.053	<0.05
MAR 11...	1.04	0.64	4.79	8.57	<0.17	6.1	11.5	51	1	0.25	<0.030	<0.030	<0.05
MAY 28...	0.951	0.41	6.39	12.0	<0.17	8.2	7.6	56	1	0.22	<0.030	<0.030	<0.05
AUG 14...	1.71	1.49	15.9	30.6	<0.17	12.0	3.6	123	5	0.73	0.136	0.131	<0.05

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, correctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 04...	<0.003	0.020	<0.02	E.003	E.002	0.2	<0.1	0.2	9.5	<1.0	--	20
MAR 11...	<0.003	<0.020	0.03	E.004	0.005	0.1	<0.1	0.1	10.2	<1.0	--	16
MAY 28...	<0.003	<0.020	<0.02	E.002	0.004	<0.1	<0.1	<0.1	9.1	<1.0	0.900	19
AUG 14...	0.003	<0.020	0.14	0.007	0.016	2.9	<0.1	2.9	26.6	<1.0	0.700	22

Remark codes used in this table:

< -- Less than

E -- Estimated value

## 01411440 OLD ROBBINS BRANCH NEAR NORTH DENNIS, NJ—Continued

## WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos- phorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inor- ganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll- ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 14...	1000	--	--	--	--	--	M	31.9	0.09	25	<0.04	E.6	0.8
14...	1000	4.10	20	170	1.8	<0.2	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan- ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen- ium, water, unfltrd total, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom- ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 14...	2,680	2.00	19.4	<0.02	2.55	0.8	<0.16	8	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	<1	0.002	<0.4	0.040	<2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan- ese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selen- ium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49403)	1,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49404)	1Methyl -9H- fluore- ne, bed sed <2 mm, ug/kg (49398)	1- Methyl- phenan- threne, bed sed <2 mm, ug/kg (49410)	1- Methyl- pyrene, bed sed <2 mm, ug/kg (49388)	236Tri- methyl- naphth- alene, bed sed <2 mm, ug/kg (49405)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	78	0.470	0.4	<0.01	0.153	<1	<3.1	<50	<50	<50	<50	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49406)	2-Ethyl naphth- alene bed sed <2 mm wsv nat ug/kg (49948)	2- Methyl- anthra- cene, bed sed <2 mm, ug/kg (49435)	Cyclo- penta- phenan- threne, bed sed <2 mm, ug/kg (49411)	9H- Flou- rene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace- naphth- ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace- naphth- ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra- cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo- [a]- anthra- cene, bed sed <2 mm, ug/kg (49436)	Benzo- [a]- pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo- [b]- fluor- anthene bed sed <2 mm, ug/kg (49458)	Benzo- [ghi]- peryl- ene, bed sed <2 mm, ug/kg (49408)	Benzo- [k]- fluor- anthene bed sed <2 mm, ug/kg (49397)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry- sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo- -[a,h]- anthra- cene, bed sed <2 mm, ug/kg (49461)	Fluor- anthene bed sed <2 mm, wsv nat field, ug/kg (49466)	Indeno- [1,2,- 3-cd]- pyrene, bed sed <2 mm, ug/kg (49390)	Iso- phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth- alene, bed sed <2 mm, wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p- Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan- threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan- thri- dine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi- ment, dry svd sve dia percent <.063mm (80164)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	<50	<50	<50	<50	<50	<50	<5	E14	<50	<50	<50	0.1

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

M -- Presence verified, not quantified

## 01411440 OLD ROBBINS BRANCH NEAR NORTH DENNIS, NJ—Continued

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Dichloroethane, water unfltrd ug/L (34496)	1,1-Dichloroethene, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water, unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water, unfltrd ug/L (34541)	1,3-Dichlorobenzene, water, unfltrd ug/L (34566)	1,4-Dichlorobenzene, water, unfltrd ug/L (34571)	Benzene, water, unfltrd ug/L (34030)	Bromochloromethane, water, unfltrd ug/L (32101)	Chlorobenzene, water, unfltrd ug/L (34301)
MAR 11...	0900	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chlorodifluoromethane, water, unfltrd ug/L (34668)	Di-chloromethane, water, unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water, unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 11...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane, water, unfltrd ug/L (32102)	Toluene, water, unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane, water, unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoromethane, water, unfltrd ug/L (34488)	Tri-chloromethane, water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 11...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.1	<0.2	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline, water, fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, 0.7u GF (82686)	Ben-flur-alin, water, fltrd, 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, 0.7u GF (82680)	Carbo-furan, water, fltrd, 0.7u GF (82674)	cis-Per-methrin, water, fltrd, 0.7u GF (82687)
MAY 28...	0945	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water, fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd, 0.7u GF (82668)	Desulf-inyl fipronil amide, water, fltrd, ug/L (62169)	Fipronil sulfide, water, fltrd, ug/L (62167)	Fipronil sulfone, water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd, 0.7u GF (82684)
MAY 28...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007	

01411440 OLD ROBBINS BRANCH NEAR NORTH DENNIS, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
MAY 28...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:

&lt; -- Less than

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
12...	0800	310	460	570	07...	1205	3	87	260
19...	0745	117	340	167	10...	0820	609	45	100
26...	0655	97	25	97					

## 01411444 WEST CREEK NEAR LEESBURG, NJ

LOCATION.--Lat 39°15'36", long 74°54'41", Cumberland County, Hydrologic Unit 02040206, at bridge on County Route 550, 1.5 mi upstream of Hands Millpond, 2.4 mi south of Halberton, and 4.0 mi east of Leesburg.

DRAINAGE AREA.--6.64 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1999 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator and Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 16.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO <sub>3</sub> (00900)
NOV 05...	1250	0.36	1.9	0.404	0.300	765	9.2	77	3.9	83	--	8.0	10
FEB 25...	1200	28	0.8	0.570	0.424	770	12.2	85	4.0	73	1.0	1.1	4
MAY 22...	1120	6.7	1.6	0.546	0.424	764	7.8	75	4.0	49	14.0	14.1	4
SEP 03...	1250	34	2.0	0.803	0.635	763	5.1	60	4.1	40	25.5	23.5	3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)
NOV 05...	1.19	1.58	0.64	3.85	5.81	<0.17	11.8	14.1	64	3	0.26	<0.030	<0.030
FEB 25...	0.56	0.705	0.82	2.35	3.01	<0.17	5.7	10.0	49	1	1.1	0.033	<0.030
MAY 22...	0.54	0.596	0.66	2.72	5.53	<0.17	6.5	5.0	41	3	0.29	<0.030	<0.030
SEP 03...	0.35	0.427	0.76	2.64	5.33	<0.17	10.6	6.5	50	6	0.38	0.023	0.035

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)
NOV 05...	<0.05	<0.003	<0.020	0.06	<0.004	0.007	--	--	1.2	<0.1	1.2	11.5	E1.2
FEB 25...	0.05	<0.003	0.024	0.04	E.002	0.007	1.1	1.1	0.3	<0.1	0.3	13.6	<1.0
MAY 22...	<0.05	<0.003	<0.020	0.04	E.003	0.008	--	--	0.6	<0.1	0.6	11.4	<1.0
SEP 03...	<0.05	0.003	<0.020	0.05	0.005	0.011	--	--	0.8	<0.1	0.8	13.7	E1.4



01411444 WEST CREEK NEAR LEESBURG, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 25...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 25...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 22...	1120	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 22...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.003	<0.006	<0.007



01411444 WEST CREEK NEAR LEESBURG, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 22...	<0.022	<0.01	E.007	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
AUG					SEP				
06...	1015	20	<100	<20	03...	0938	500	<100	<20
18...	0945	10	<100	<20					
20...	0955	<10	<100	<20					
27...	1005	10	<100	20					

Remark codes used in this table:  
 < -- Less than

01411466 INDIAN BRANCH NEAR MALAGA, NJ

LOCATION.--Lat 39°35'27", long 75°03'35", Gloucester County, Hydrologic Unit 02040206, at bridge on U.S. Route 47 (Delsea Drive), 0.4 mi upstream of Malaga Lake, and 1.4 mi north of Malaga.

DRAINAGE AREA.--6.50 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 17.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 25...	1010	7.3	0.7	0.728	0.552	762	8.6	70	3.7	93	15.0	6.5	11
MAR 05...	0940	19	0.6	0.658	0.502	750	10.4	80	3.3	76	12.0	3.4	9
MAY 13...	0950	13	0.6	0.935	0.726	748	5.3	52	3.7	63	15.5	13.3	7
AUG 12...	1000	11	0.8	1.64	1.29	762	3.8	42	4.1	60	23.1	19.7	8

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 25...	1.75	1.49	0.73	3.26	--	5.38	<0.17	8.3	12.6	70	2	0.44	<0.030
MAR 05...	1.50	1.16	0.85	2.92	<2	5.13	<0.17	5.9	11.5	57	1	0.37	<0.030
MAY 13...	1.24	0.939	0.86	3.08	--	6.41	<0.17	5.6	7.1	59	1	0.46	<0.030
AUG 12...	1.42	0.995	0.86	3.33	--	6.53	<0.17	8.0	4.4	74	1	0.84	0.036

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 25...	<0.030	0.34	E.003	--	0.03	0.006	0.007	0.78	0.81	0.2	<0.1	0.2	17.0
MAR 05...	0.030	0.50	0.004	<0.020	0.03	0.004	0.016	0.88	0.90	0.3	<0.1	0.3	13.1
MAY 13...	0.037	0.35	<0.003	<0.020	<0.02	0.005	0.008	0.81	--	0.2	<0.1	0.2	17.9
AUG 12...	0.033	0.21	0.004	<0.020	0.03	0.011	0.013	1.0	1.1	0.2	<0.1	0.2	30.0

01411466 INDIAN BRANCH NEAR MALAGA, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 25...	<1.0	--	19	--
MAR 05...	<1.0	--	15	--
MAY 13...	<1.0	1.60	13	--
AUG 12...	<1.0	0.400	13	1,330

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
09...	1005	<10	<100	40	06...	1045	180	500	230
16...	1030	30	200	20					
23...	1030	--	700	1,100					
30...	1035	20	200	40					

Remark codes used in this table:

&lt; -- Less than

## 01411500 MAURICE RIVER AT NORMA, NJ

LOCATION.--Lat 39°29'44", long 75°04'37", Salem County, Hydrologic Unit 02040206, at bridge on Almond Road (County Route 540) in Norma, 0.8 mi downstream from Blackwater Branch, and 2.9 mi west of Vineland.

DRAINAGE AREA.--112.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1953, 1962-63, 1965 to September 1997, December 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 17.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 13...	1000	146	1.7	0.402	0.319	762	7.3	68	6.2	105	8.0	12.0	25
FEB 10...	1000	143	1.9	0.185	0.141	758	11.8	88	6.1	116	1.4	2.8	23
MAY 21...	1000	166	2.2	0.500	0.389	764	7.6	75	6.3	99	12.8	15.1	22
AUG 19...	0900	178	5.2	0.956	0.753	765	5.8	67	6.3	90	23.4	22.3	20

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium water, fltrd, mg/L (00925)	Potassium water, fltrd, mg/L (00935)	Sodium water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 13...	5.40	2.92	3.18	7.31	E6	12.8	<0.17	6.6	15.2	--	82	3	0.33
FEB 10...	4.62	2.78	1.78	8.40	5	13.8	<0.17	6.6	10.9	61	71	3	0.24
MAY 21...	4.69	2.55	2.07	7.62	7	13.0	<0.17	4.9	7.8	54	80	3	0.49
AUG 19...	4.15	2.37	2.20	7.13	10	12.7	<0.17	8.1	4.5	52	88	5	0.86

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 13...	<0.030	0.048	0.97	<0.003	<0.020	0.05	0.005	0.014	1.3	1.4	0.5	<0.1	0.5
FEB 10...	0.030	0.036	1.93	<0.003	<0.020	0.04	0.006	0.010	2.2	2.2	0.3	<0.1	0.3
MAY 21...	<0.030	0.054	1.50	0.003	<0.020	0.07	0.010	0.018	2.0	2.0	0.7	<0.1	0.7
AUG 19...	0.066	0.065	0.87	0.007	<0.020	0.19	0.020	0.040	1.7	1.9	2.0	<0.1	1.9

01411500 MAURICE RIVER AT NORMA, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 13...	10.7	E1.2	--	95	--
FEB 10...	4.4	<1.0	--	25	--
MAY 21...	9.4	<1.0	1.00	32	--
AUG 19...	17.0	<1.0	1.90	30	1,080

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG 06...	1057	490	<100	800	SEP 03...	1015	100	200	110
18...	1155	110	100	20					
20...	1030	60	<100	110					
27...	1040	90	<100	<20					

Remark codes used in this table:

&lt; -- Less than

## 01411955 GRAVELLY RUN AT LAUREL LAKE, NJ

LOCATION.--Lat 39°20'14", long 75°03'03", Cumberland County, Hydrologic Unit 02040206, at culvert on Battle Lane, 0.3 mi upstream from mouth and Buckshutem Creek, 1.1 mi west of community of Laurel Lake, and 2.5 mi southeast of Millville Municipal Airport.

DRAINAGE AREA.--3.19 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Background, New Jersey Department of Environmental Protection Watershed Management Area 17.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1520	0.71	0.6	0.150	0.119	765	9.3	79	4.2	36	8.5	8.5	6
FEB 25...	1120	4.4	1.1	0.374	0.281	771	12.6	92	3.9	59	5.0	2.7	6
MAY 22...	1240	1.4	0.7	0.170	0.134	764	8.6	80	4.5	28	14.0	12.5	4
AUG 21...	1130	0.69	0.8	0.187	0.151	764	7.3	77	4.2	26	28.0	18.1	3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 05...	0.80	0.867	0.44	2.49	<2	4.16	<0.17	7.7	4.8	26	2	E.10	<0.030
FEB 25...	0.82	0.881	0.53	2.96	--	4.52	<0.17	5.4	8.5	46	<1	0.23	<0.030
MAY 22...	0.52	0.540	0.52	2.29	<2	4.39	<0.17	5.6	2.7	27	1	0.11	<0.030
AUG 21...	0.56	0.479	0.42	2.21	<2	4.22	<0.17	7.5	1.5	32	7	0.17	0.036

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 05...	<0.030	0.10	<0.003	<0.020	<0.02	<0.004	E.003	--	--	<0.1	<0.1	<0.1	4.1
FEB 25...	<0.030	0.10	0.003	0.024	<0.02	E.002	0.005	0.33	--	0.3	<0.1	0.3	8.7
MAY 22...	<0.030	0.09	<0.003	<0.020	<0.02	<0.004	E.003	0.20	--	0.2	<0.1	0.2	4.0
AUG 21...	0.032	0.14	<0.003	<0.020	0.03	0.005	0.007	0.30	0.33	0.3	<0.1	0.3	3.4

01411955 GRAVELLY RUN AT LAUREL LAKE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro-phyll a fluorometric method, corrtcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 05...	E1.9	--	E9.0
FEB 25...	E2.0	--	16
MAY 22...	2.3	6.50	E9.9
AUG 21...	E1.7	0.200	14

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos-phorus, bed total, mg/kg (00668)	Total carbon, bed total, g/kg (00693)	Inor-ganic carbon, bed total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll-ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)
AUG 21...	1128	Sampler Blank	--	--	--	--	--	--	--	--	--
21...	1129	Field Blank	--	--	--	--	--	--	--	--	--
21...	1130	Environmental	--	--	--	--	--	<2	15.0	E.06	10
21...	1130	Bed material	3.98	240	770	2.3	<0.2	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cadmium water, unfltrd recover -able, ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, unfltrd recover -able, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, unfltrd recover -able, ug/L (01147)
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	<0.2	--	--	<0.08	--	--	<0.02	--	<0.06	--	--
21...	<0.04	<0.8	--	E.3	170	--	0.87	3.3	--	<0.02	--	0.53	E.4
21...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom-ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan-ese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)
AUG 21...	--	<1	--	--	--	--	--	--	--	--	--	--	--
21...	--	2	--	--	--	--	--	--	--	--	--	--	--
21...	<0.16	--	5	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	<1	0.010	2.4	0.320	<2	1,600	5.1	5.8	<0.01	1.1

## 01411955 GRAVELLY RUN AT LAUREL LAKE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, bed sediment total, ug/g (01148)	Zinc, bed sediment recoverable, ug/g (01093)	1,2-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sediment <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sediment <2 mm, ug/kg (49410)	1-Methylpyrene, bed sediment <2 mm, wsv nat ug/kg (49388)	1-236Tri-methylnaphthalene, bed sediment <2 mm, ug/kg (49405)	2,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49406)	2-Ethyl-naphthalene, bed sediment <2 mm, wsv nat ug/kg (49948)	2-Methyl-anthracene, bed sediment <2 mm, ug/kg (49435)	Cyclopenta-phenanthrene, bed sediment <2 mm, ug/kg (49411)	9H-Fluorene, bed sediment <2 mm, wsv nat ug/kg (49399)
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<1	4.5	<50	<50	<50	<50	<50	<50	E13	<50	<50	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ace-naphthene, bed sediment <2 mm, wsv nat ug/kg (49429)	Ace-naphthylene, bed sediment <2 mm, wsv nat ug/kg (49428)	Anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]-anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49436)	Benzo[a]-pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49389)	Benzo[b]-fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49458)	Benzo[ghi]-perylene, bed sediment <2 mm, wsv nat field, ug/kg (49408)	Benzo[k]-fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49397)	Chrysene, bed sediment <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49461)	Fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49466)	Indeno[1,2,3-cd]-pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49390)	Iso-phorone, bed sediment <2 mm, wsv nat field, ug/kg (49400)
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	E11	<50	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Naphthalene, bed sediment <2 mm, wsv nat ug/kg (49402)	PCBs, bed sediment ug/kg (39519)	p-Cresol, bed sediment <2 mm, wsv nat field, ug/kg (49451)	Phenanthrene, bed sediment <2 mm, wsv nat field, ug/kg (49409)	Phenanthrene, bed sediment <2 mm, wsv nat field, ug/kg (49393)	Pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49387)	Bed sediment, dry svedia percent <.063mm (80164)	Bed sediment, falldia dst wat percent <.002mm (80294)	Bed sediment, falldia dst wat percent <.004mm (80157)	Bed sediment, falldia dst wat percent <.008mm (80293)	Bed sediment, falldia dst wat percent <.016mm (80282)	Bed sediment, falldia dst wat percent <.031mm (80283)
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
21...	<50	<5	<50	<50	<50	E10	9.3	2.8	3.5	4.6	6.3	8.1

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113, water, unfltrd ug/L (77652)	1,1-Dichloroethane, water, unfltrd ug/L (34496)	1,1-Dichloroethane, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water, unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water, unfltrd ug/L (34541)	1,3-Dichlorobenzene, water, unfltrd ug/L (34566)	1,4-Dichlorobenzene, water, unfltrd ug/L (34571)	Benzene, water, unfltrd ug/L (34030)	Bromodichloromethane, water, unfltrd ug/L (32101)	Chlorobenzene, water, unfltrd ug/L (34301)
FEB 25...	1120	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chloro-difluoromethane, water, unfltrd ug/L (34668)	Di-chloromethane, water, unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water, unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 25...		<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2



01411955 GRAVELLY RUN AT LAUREL LAKE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 25...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.2	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 22...	1240	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 22...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 22...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## MAURICE RIVER BASIN

01411955 GRAVELLY RUN AT LAUREL LAKE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
AUG					SEP				
06...	0940	220	<100	110	03...	0914	230	<100	170
19...	1120	110	100	130					
20...	0935	50	<100	40					
27...	0935	110	<100	20					

Remark codes used in this table:

&lt; -- Less than

## 01412005 MENANTICO CREEK AT ROUTE 49, AT MILLVILLE, NJ

LOCATION.--Lat 39°23'11", long 74°59'21", Cumberland County, Hydrologic Unit 02040206, at bridge on State Route 49, 1.1 mi upstream of Menantico Ponds, 2.8 mi east of Millville, and 4.5 mi west of Cumberland.

DRAINAGE AREA.-- 26.32 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to September 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 17.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 04...	1000	2.6	0.121	0.092	772	11.6	85	7.0	143	4.7	3.1	46	10.4
MAR 06...	1030	4.4	0.295	0.225	752	10.3	84	6.5	161	8.5	6.1	46	10.2
MAY 20...	1000	3.4	0.155	0.119	768	7.2	66	6.5	149	22.4	11.9	42	9.50
AUG 26...	0900	1.8	0.165	0.129	760	7.2	76	6.8	147	23.3	18.1	50	11.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 04...	4.93	4.25	5.39	5	12.6	<0.17	10.5	20.0	94	101	9	0.25	0.035
MAR 06...	4.87	4.77	8.40	4	18.5	<0.17	6.6	19.1	99	113	4	0.42	<0.030
MAY 20...	4.34	4.33	5.48	6	13.2	<0.17	9.0	15.0	88	108	4	0.32	<0.030
AUG 26...	5.42	5.07	6.12	11	14.5	<0.17	9.1	14.5	95	93	11	0.33	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 04...	0.062	5.24	0.005	0.032	0.03	0.010	0.037	5.5	5.5	0.4	<0.1	0.4	3.4
MAR 06...	<0.030	5.38	0.004	0.025	0.13	0.021	0.055	5.8	5.9	0.7	<0.1	0.7	6.6
MAY 20...	<0.030	5.22	0.006	<0.020	0.12	0.015	0.049	5.5	5.7	0.7	<0.1	0.7	3.6
AUG 26...	<0.020	5.17	0.006	<0.020	0.05	0.017	0.036	5.5	5.6	0.2	<0.1	0.1	3.8



01412005 MENANTICO CREEK AT ROUTE 49, AT MILLVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thri-dine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd sve dia percent <.063mm (80164)
AUG 26...	--	--	--	--	--	--	--	--	--	--	--	--
26...	<50	<50	<50	<50	<50	<50	<5	<50	<50	<50	E11	<1.0

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
MAR 06...	1030	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane water unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
MAR 06...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected by the analyses in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd ug/L (04040)	Aceto-chlor, water, fltrd ug/L (49260)	Ala-chlor, water, fltrd ug/L (46342)	alpha-HCH, water, fltrd ug/L (34253)	Atra-zine, water, fltrd ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd ug/L (04028)	Carbo-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 20...	1000	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	E.029	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd ug/L (62170)	Diazi-non, water, fltrd ug/L (39572)	Diel-drin, water, fltrd ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd ug/L (62167)	Fipro-nil sulfone water, fltrd ug/L (62168)	Fipro-nil, water, fltrd ug/L (62166)	Mala-thion, water, fltrd ug/L (39532)	Metola-chlor, water, fltrd ug/L (39415)	Metri-buzin, water, fltrd ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 20...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.022	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd ug/L (04037)	Sima-zine, water, fltrd ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 20...		<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
AUG 06...	1040	590	100	500	SEP 03...	0955	410	200	1,100
AUG 19...	1150	210	100	300					
AUG 20...	1015	240	<100	20					
AUG 27...	1020	140	100	20					

Remark codes used in this table:  
 < -- Less than

## 01412800 COHANSEY RIVER AT SEELEY, NJ

LOCATION.--Lat 39°28'21", long 75°15'20", Cumberland County, Hydrologic Unit 02040206, at 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.

DRAINAGE AREA.--28.0 mi<sup>2</sup>.

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

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 17.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	1100	27	23	0.239	0.190	761	10.0	86	6.2	208	12.0	8.5	61
FEB 26...	1000	70	21	0.192	0.149	772	13.0	93	5.6	152	0.0	2.0	38
MAY 20...	1110	27	4.2	0.097	0.076	769	9.7	94	6.4	219	23.0	14.4	65
SEP 08...	1000	37	8.2	0.183	0.141	762	8.1	87	6.5	216	24.5	19.0	56

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	12.4	7.34	6.44	10.7	E14	22.6	<0.17	8.5	35.1	--	136	18	0.49
FEB 26...	7.51	4.69	4.95	6.60	E10	14.0	<0.17	5.6	19.7	--	86	14	0.47
MAY 20...	12.9	7.95	4.86	9.84	14	23.2	<0.17	8.6	26.2	127	151	3	0.31
SEP 08...	10.9	7.01	6.63	10.2	20	23.0	<0.17	7.1	22.2	119	121	7	0.35

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 21...	0.090	0.087	3.16	0.018	0.024	0.07	0.022	0.104	3.6	3.7	0.7	<0.1	0.7
FEB 26...	0.159	0.164	2.66	0.010	0.032	0.14	0.023	0.127	3.1	3.3	1.2	<0.1	1.2
MAY 20...	0.036	0.415	5.49	0.019	<0.020	0.07	0.007	0.030	5.8	5.9	0.6	<0.1	0.6
SEP 08...	0.058	0.057	4.43	0.015	<0.020	0.08	0.015	0.071	4.8	4.9	0.8	<0.1	0.8

## COHANSEY RIVER BASIN

01412800 COHANSEY RIVER AT SEELEY, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	5.4	E1.1	--	23
FEB 26...	5.2	E1.9	--	17
MAY 20...	2.4	<1.0	2.80	18
SEP 08...	4.3	E1.0	2.50	21

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG 06...	1120	50	<100	40	SEP 03...	1045	10	<100	20
18...	1135	50	<100	70					
20...	1055	20	<100	20					
27...	1100	160	<100	<20					

Remark codes used in this table:

&lt; -- Less than



01438500 DELAWARE RIVER AT MONTAGUE, NJ

LOCATION.--Lat 41°18'33", long 74°47'43", Pike County, PA, Hydrologic Unit 02040104, at tollbridge (on U.S. Route 206) between Montague, NJ and Milford, PA, 1.1 mi downstream from Sawkill Creek, and at river mile 246.0.

DRAINAGE AREA.--3,480 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1956-73, 1976-78, July 1991 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.-- Delaware River Main Stem, New Jersey Department of Environmental Protection Watershed Management Area 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 19...	1230	14,000	4.6	0.146	0.112	758	12.2	97	6.7	71	3.0	5.5	17
MAR 12...	1230	3,740	1.2	0.067	0.051	753	13.2	95	7.2	112	7.0	1.3	23
JUN 09...	1200	10,100	3.5	0.118	0.090	748	9.7	98	7.2	80	22.0	15.2	19
SEP 03...	1130	27,300	49	0.219	0.168	756	8.5	88	7.1	62	19.0	16.5	17

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium water, fltrd, mg/L (00925)	Potassium water, fltrd, mg/L (00935)	Sodium water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 19...	5.13	1.09	0.75	5.13	E10	7.63	<0.17	3.5	7.2	--	44	7	0.27
MAR 12...	6.95	1.42	0.64	9.17	13	17.3	<0.17	2.7	8.4	56	65	1	0.14
JUN 09...	5.79	1.18	0.67	6.42	12	10.3	<0.17	2.8	6.6	42	46	6	0.17
SEP 03...	5.35	0.910	1.12	4.24	12	6.79	<0.17	3.1	5.3	35	54	63	0.30

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 19...	0.030	<0.030	0.17	<0.003	<0.020	0.08	0.012	0.030	0.44	0.53	0.7	<0.1	0.7
MAR 12...	<0.030	<0.030	0.34	<0.003	<0.020	0.05	0.006	0.010	0.48	0.53	0.3	<0.1	0.3
JUN 09...	<0.030	<0.030	0.18	<0.003	<0.020	0.06	0.011	0.029	0.35	0.41	0.6	<0.1	0.6
SEP 03...	0.022	0.033	0.18	<0.003	<0.020	0.37	0.024	0.132	0.49	0.86	3.3	<0.1	3.3

## DELAWARE RIVER BASIN

01438500 DELAWARE RIVER AT MONTAGUE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 19...	3.9	E1.1	--	<13
MAR 12...	2.4	E1.8	--	E6.2
JUN 09...	3.0	E1.9	3.10	10
SEP 03...	5.8	E1.9	10.2	11

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0840	<10	<100	<20	JUN 05...	0845	50	700	<20
22...	0900	10	<100	220	12...	0815	320	100	<20
29...	0810	1,400	<100	<20					

Remark codes used in this table:

&lt; -- Less than

01440000 FLAT BROOK NEAR FLATBROOKVILLE, NJ

LOCATION.--Lat 41°06'24", long 74°57'08", Sussex County, Hydrologic Unit 02040104, 1.0 mi upstream from Flatbrookville, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--64.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1923-24, 1956-57, 1959-80, 1993, 1995, 1997 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 13...	1045	84	0.7	0.091	0.070	754	10.1	90	7.9	191	9.0	10.0	71
FEB 06...	1100	53	1.4	0.064	0.050	763	14.2	97	7.7	217	-5.0	0.0	73
MAY 13...	1045	65	0.9	0.073	0.056	744	10.3	99	7.8	233	15.0	12.3	86
AUG 26...	1100	38	0.5	0.061	0.048	751	9.3	100	7.8	246	25.5	18.2	110

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 13...	20.5	4.79	0.69	8.92	E58	13.6	<0.17	3.7	13.2	--	107	5	0.11
FEB 06...	21.6	4.74	0.60	12.2	57	20.5	<0.17	5.4	12.4	113	121	1	0.11
MAY 13...	25.2	5.56	0.56	11.7	69	20.3	<0.17	3.4	12.6	121	129	2	0.11
AUG 26...	30.4	7.33	0.60	10.7	83	17.3	<0.17	2.7	12.6	132	141	7	0.11

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 13...	<0.030	<0.030	<0.05	<0.003	<0.020	0.05	0.005	0.010	--	--	0.2	<0.1	0.2
FEB 06...	<0.030	<0.030	0.20	<0.003	<0.020	0.02	0.005	0.009	0.32	0.34	<0.1	<0.1	<0.1
MAY 13...	<0.030	<0.030	0.07	<0.003	<0.020	<0.02	0.004	0.009	0.18	--	<0.1	<0.1	<0.1
AUG 26...	<0.020	<0.020	<0.05	<0.003	<0.020	0.02	E.004	0.006	--	--	<0.1	<0.1	<0.1

## DELAWARE RIVER BASIN

01440000 FLAT BROOK NEAR FLATBROOKVILLE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 13...	3.0	3.1	--	<13
FEB 06...	1.8	E1.7	--	<13
MAY 13...	2.6	<1.0	2.00	E10
AUG 26...	2.0	E1.7	0.600	9.5

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0940	30	<100	<20	JUN 05...	0955	50	600	40
22...	0935	70	200	300	12...	0911	160	600	800
29...	0905	50	600	1,100					

Remark codes used in this table:

&lt; -- Less than

01442760 DUNNFIELD CREEK AT DUNNFIELD, NJ

LOCATION.--Lat 40°58'14", long 75°07'34", Warren County, Hydrologic Unit 02040104, at footbridge in Delaware Water Gap National Recreation Area 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.

DRAINAGE AREA.--3.56 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E.coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Background, New Jersey Department of Environmental Protection Watershed Management Area 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1030	5.5	0.4	0.023	0.017	759	12.1	99	7.6	31	10.5	6.5	11
FEB 13...	1110	3.6	0.4	0.012	0.009	753	14.5	101	7.1	36	-2.0	0.2	12
MAY 05...	1040	4.4	0.2	0.015	0.011	753	11.5	101	5.7	32	15.0	9.3	12
AUG 20...	1300	5.4	0.5	0.030	0.022	763	9.8	101	6.7	33	28.0	16.7	12

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 05...	2.71	1.03	0.34	0.82	5	1.16	<0.17	4.5	7.8	21	18	1	<0.10
FEB 13...	2.91	1.11	0.31	0.81	E6	1.46	<0.17	4.6	8.9	--	27	3	<0.10
MAY 05...	2.94	1.07	0.40	0.82	6	1.13	<0.17	4.1	8.0	22	27	9	<0.10
AUG 20...	3.17	1.10	0.45	0.69	5	1.09	<0.17	5.0	7.0	21	30	5	E.06

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)
NOV 05...	<0.030	<0.030	<0.05	<0.003	--	0.03	<0.004	E.003	<0.1	<0.1	<0.1	1.1	<1.0
FEB 13...	<0.030	<0.030	0.05	<0.003	0.026	<0.02	<0.004	<0.004	<0.1	<0.1	<0.1	0.6	1.0
MAY 05...	<0.030	<0.030	<0.05	<0.003	<0.020	<0.02	<0.004	<0.004	<0.1	<0.1	<0.1	0.8	<1.0
AUG 20...	<0.020	<0.020	E.04	<0.003	<0.020	<0.02	E.003	0.004	<0.1	<0.1	<0.1	1.2	<1.0



01442760 DUNNFIELD CREEK AT DUNNFIELD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 13...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 13...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 05...	1040	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 05...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 05...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

## DELAWARE RIVER BASIN

01442760 DUNNFIELD CREEK AT DUNNFIELD, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
MAY					JUN				
15...	0900	<10	<100	<20	05...	0855	20	<100	<20
22...	1000	20	<100	<20	12...	0915	80	<100	40
29...	0830	<10	<100	<20					

Remark codes used in this table:

&lt; -- Less than



01443000 DELAWARE RIVER AT PORTLAND, PA

LOCATION.--Lat 40°55'26", long 75°05'46", Northampton County, Hydrologic Unit 02040105, at footbridge connecting Portland, PA and Columbia, NJ, 0.5 mi upstream from Paulins Kill, and at river mile 207.5.

DRAINAGE AREA.--4,165 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Delaware River Main Stem, New Jersey Department of Environmental Protection Watershed Management Area 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 05...	1410	3,970	0.7	0.100	0.075	758	12.6	102	7.4	92	18.0	6.0	24
MAR 04...	0950	7,350	1.3	0.064	0.049	757	15.0	103	6.0	116	1.0	0.1	26
MAY 05...	1250	9,640	2.5	0.060	0.044	753	--	--	6.7	78	17.0	14.3	21
AUG 11...	1220	11,500	6.8	0.160	0.123	752	8.0	95	7.3	88	24.7	23.6	26

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 05...	7.29	1.52	0.65	6.32	17	10.2	<0.17	3.0	9.1	49	60	3	0.15
MAR 04...	7.72	1.67	0.60	8.95	19	16.7	<0.17	2.9	8.7	60	68	4	0.14
MAY 05...	6.35	1.32	0.66	6.18	15	9.85	<0.17	1.6	7.1	43	54	4	0.16
AUG 11...	8.10	1.38	0.71	6.02	19	8.72	<0.17	3.6	6.7	47	48	8	0.24

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 05...	<0.030	<0.030	0.17	<0.003	<0.020	0.05	0.011	0.016	0.33	0.37	<0.1	<0.1	<0.1
MAR 04...	<0.030	<0.030	0.35	<0.003	<0.020	0.05	0.005	0.013	0.50	0.55	0.2	<0.1	0.2
MAY 05...	<0.030	<0.030	0.23	0.003	<0.020	0.09	0.006	0.017	0.39	0.48	0.5	<0.1	0.5
AUG 11...	<0.020	0.041	0.18	<0.003	<0.020	0.09	0.023	0.038	0.42	0.51	0.9	<0.1	0.8

## DELAWARE RIVER BASIN

01443000 DELAWARE RIVER AT PORTLAND, PA—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 05...	3.2	<1.0	--	E6.4
MAR 04...	1.9	E2.0	--	<13
MAY 05...	2.1	E1.4	--	<13
AUG 11...	4.4	<1.0	1.50	11

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0925	90	<100	20	JUN 05...	0915	120	500	80
22...	1030	60	<100	<20	12...	0930	600	200	500
29...	0845	110	<100	130					

Remark codes used in this table:

&lt; -- Less than

01443250 PAULINS KILL AT WARBASSE JUNCTION ROAD, NEAR LAFAYETTE, NJ

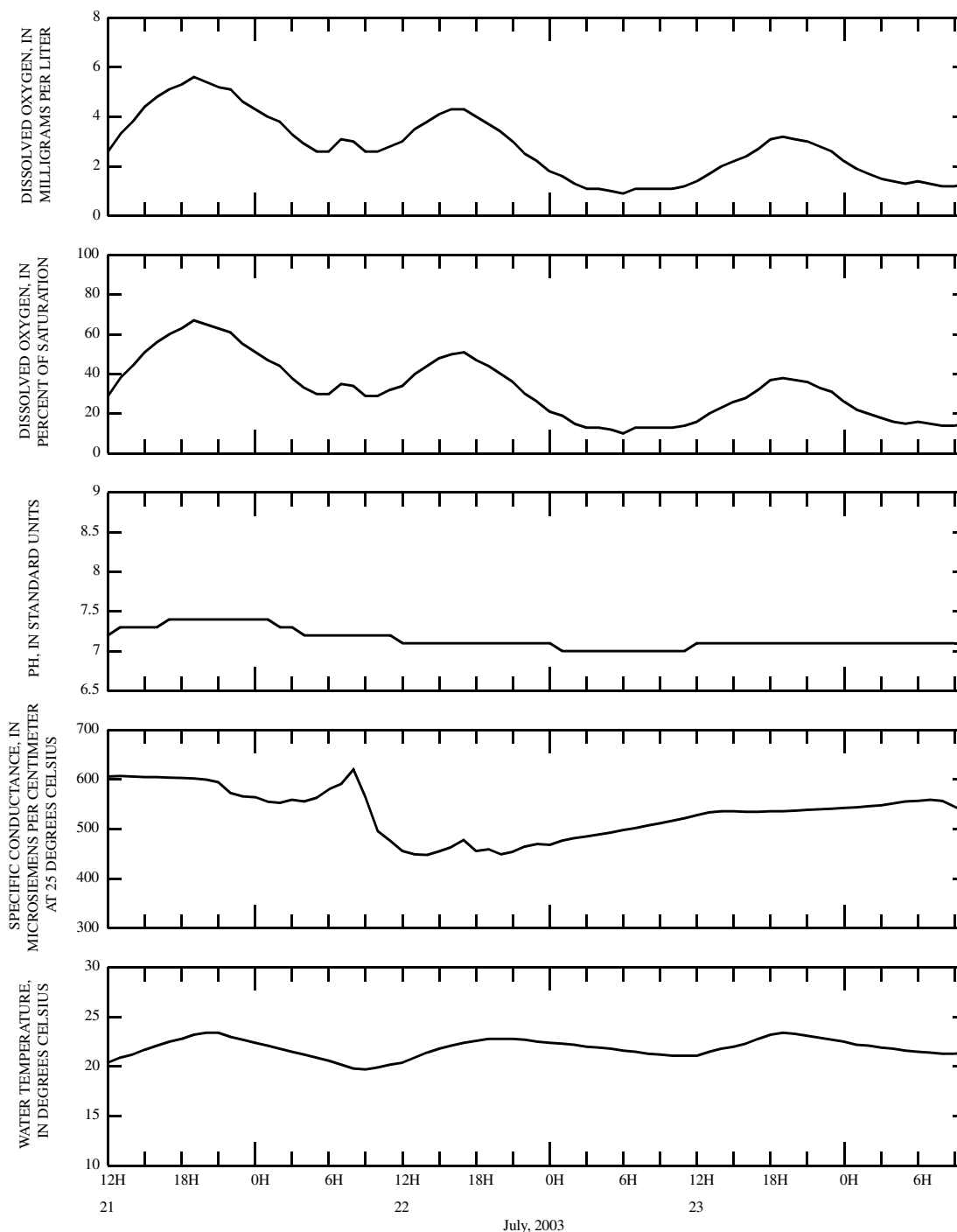
LOCATION.--Lat 41°05'08", long 74°41'58", Sussex County, Hydrologic Unit 02040104, at bridge on Warbasse Junction Road (County Route 663) at Warbasse, 0.9 mi southwest of Lafayette, and 1.3 mi east of unnamed pond.

DRAINAGE AREA.--11.4 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 2001 to current year.

REMARKS.--The calibration of water-quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated. Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:  
DISSOLVED OXYGEN: Jul. 21 to Jul. 24.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 1.



**Figure 39.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01443250 Paulins Kill at Warbasse Junction Road, near Lafayette, water year 2003.

## 01443500 PAULINS KILL AT BLAIRSTOWN, NJ

LOCATION.--Lat 40°58'51", long 74°57'13", Warren County, Hydrologic Unit 02040105, 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1921, 1925, 1957-60, 1962-63, 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E.coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 1.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 17...	1045	388	3.2	0.155	0.117	762	13.5	95	7.6	394	-1.0	1.0	120
MAR 12...	1100	247	1.9	0.116	0.087	754	14.0	104	7.7	470	5.5	2.6	140
MAY 20...	1045	87	6.4	0.107	0.080	760	9.6	98	7.9	522	24.0	16.3	190
SEP 02...	1045	171	5.5	0.148	0.112	757	8.7	92	8.0	454	16.5	18.0	170

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 17...	31.7	10.7	1.47	31.1	E86	54.2	<0.17	5.6	20.3	--	222	1	0.30
MAR 12...	36.3	12.3	1.21	35.7	105	68.0	<0.17	3.8	19.0	243	254	6	0.23
MAY 20...	47.1	17.7	1.45	30.9	152	59.4	<0.17	3.3	19.4	274	303	7	0.31
SEP 02...	42.0	15.5	1.62	26.0	139	48.7	<0.17	6.0	15.3	241	250	9	0.29

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
DEC 17...	0.051	<0.030	0.72	<0.003	<0.020	0.06	0.014	0.029	1.0	1.1	0.3	<0.1	0.3
MAR 12...	<0.030	<0.030	0.85	0.006	0.021	0.05	0.006	0.017	1.1	1.1	0.2	<0.1	0.2
MAY 20...	<0.030	<0.030	0.67	0.011	<0.020	0.12	0.019	0.048	0.98	1.1	0.8	<0.1	0.8
SEP 02...	0.037	0.038	0.60	0.004	<0.020	0.09	0.020	0.046	0.89	0.98	0.6	<0.1	0.6

01443500 PAULINS KILL AT BLAIRSTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 17...	4.6	E1.6	--	14
MAR 12...	3.6	<1.0	--	E9.2
MAY 20...	3.0	E1.1	7.90	E12
SEP 02...	4.2	E1.7	9.90	16

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0830	10	<100	130	JUN 05...	0825	380	1,900	800
MAY 22...	0925	160	200	110	JUN 12...	0845	1,600	2,600	16,000
MAY 29...	0800	180	100	500					

Remark codes used in this table:  
 < -- Less than

01445160 BEAR BROOK AT DARK MOON ROAD, NEAR JOHNSONBURG, NJ

LOCATION.--Lat 40°58'30", long 74°50'56", Warren County, Hydrologic Unit 02040105, at bridge on Dark Moon Road, 1.3 mi northeast of Johnsonburg, 0.4 mi northeast of CONRAIL railroad tunnel, and 0.5 mi northwest of Francis Lake.

DRAINAGE AREA.--5.10 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 2001 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). The calibration of water-quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated. Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:  
DISSOLVED OXYGEN: Jul. 21 to Jul. 24.

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E.coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator and Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area I.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 12...	1110	1.7	0.7	0.027	0.020	750	10.3	107	7.8	491	16.5	16.5	230
FEB 04...	1110	3.3	1.2	0.058	0.044	733	10.2	86	7.6	492	8.5	6.5	230
MAY 13...	1000	4.7	1.5	0.106	0.081	738	9.6	92	7.5	444	12.5	11.7	200
AUG 11...	1000	32	1.4	0.229	0.175	747	6.9	80	7.4	319	34.5	21.4	130

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 12...	55.8	21.8	1.45	16.0	E177	28.3	<0.17	8.0	24.0	--	290	6	E.08
FEB 04...	56.0	21.9	1.67	14.5	195	24.0	<0.17	6.2	24.6	274	282	3	0.17
MAY 13...	47.2	18.8	1.31	15.2	170	27.6	<0.17	4.4	18.3	239	248	5	0.26
AUG 11...	33.6	11.4	1.69	17.6	105	29.1	<0.17	8.9	11.1	177	191	3	0.44

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 12...	<0.030	0.049	1.51	0.004	<0.020	0.05	E.003	0.004	--	E1.6	0.4	<0.1	0.4
FEB 04...	<0.030	0.033	1.78	0.006	<0.020	0.04	0.006	0.012	1.9	2.0	0.3	<0.1	0.3
MAY 13...	--	<0.030	0.89	<0.003	<0.020	0.04	0.010	0.021	1.2	1.2	0.5	<0.1	0.5
AUG 11...	0.021	0.047	0.23	<0.003	0.044	0.06	0.046	0.054	0.67	0.72	0.5	<0.1	0.5

01445160 BEAR BROOK AT DARK MOON ROAD, NEAR JOHNSONBURG, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 12...	1.3	E1.8	--	14
FEB 04...	2.0	<1.0	--	E9.2
MAY 13...	3.2	<1.0	3.70	E12
AUG 11...	6.2	<1.0	3.80	16

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

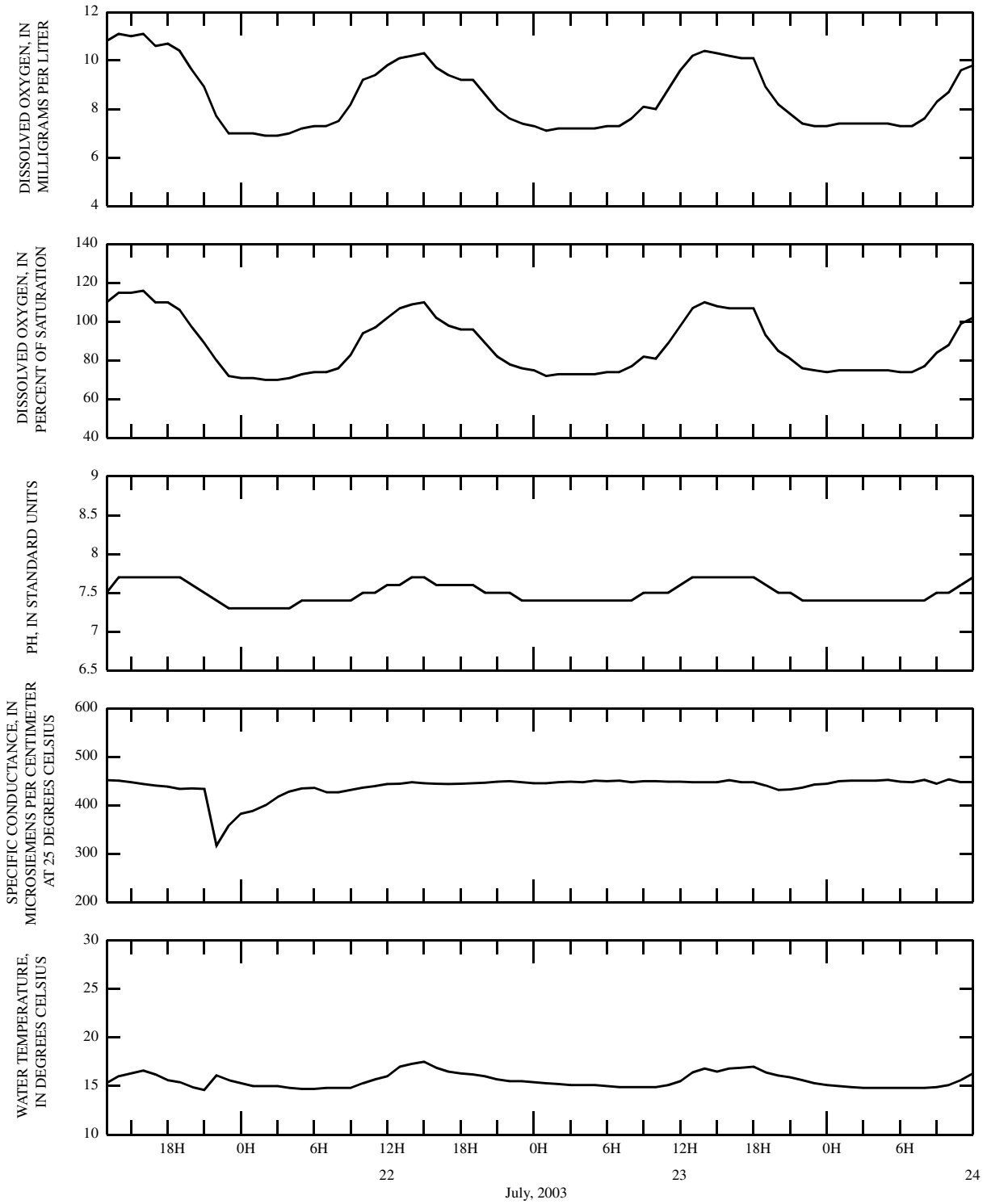
WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0810	60	<100	110	JUN 05...	0810	160	<100	500
MAY 22...	0855	50	<100	20	JUN 12...	0830	560	100	800
MAY 29...	0745	120	<100	210					

Remark codes used in this table:  
 < -- Less than



**Figure 40.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01445160 Bear Brook at Dark Moon Road, near Johnsonburg, water year 2003.



01445900 HONEY RUN NEAR HOPE, NJ

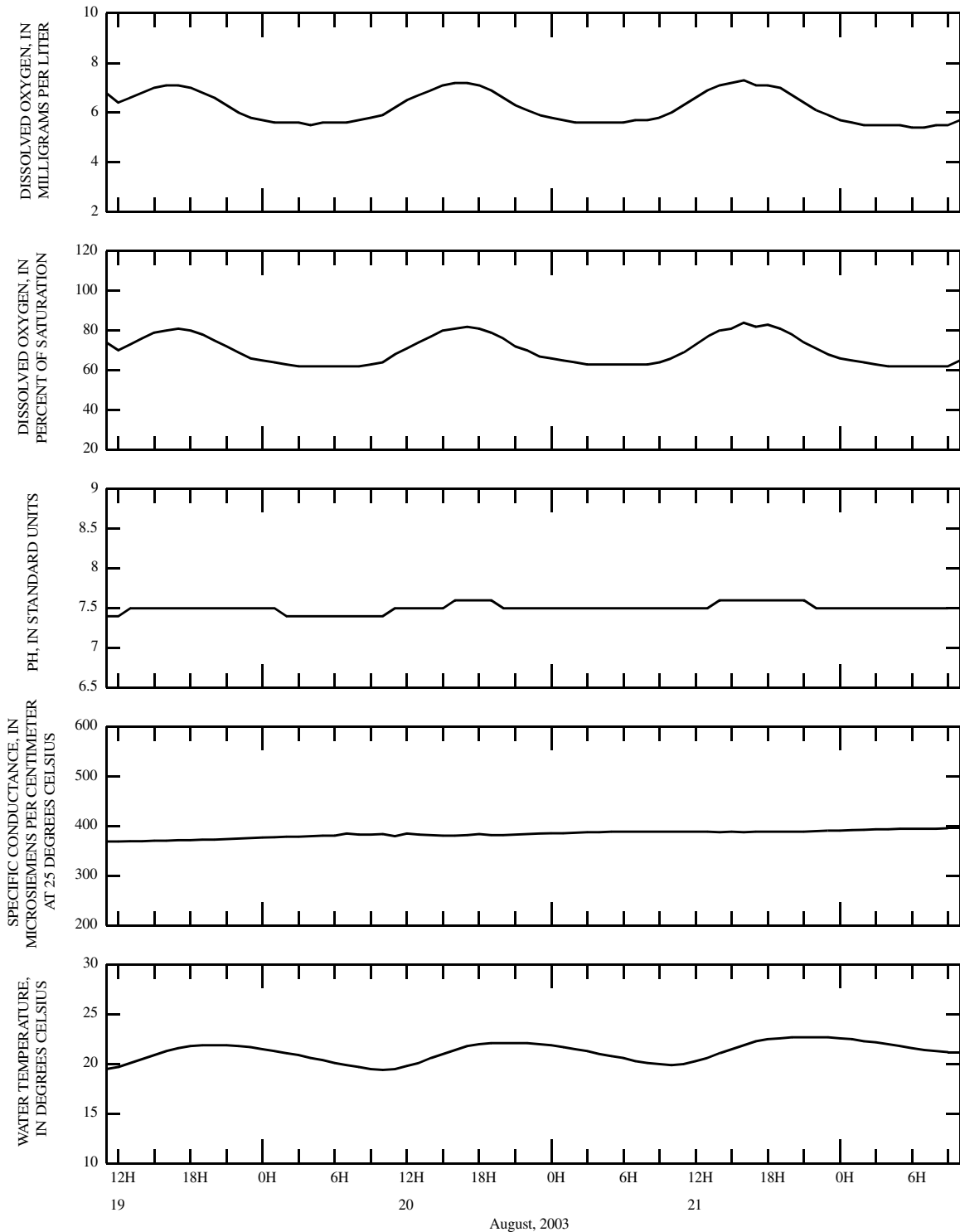
LOCATION.--Lat 40°53'33", long 74°58'42", Warren County, Hydrologic Unit 02040105, at bridge on County Route 519 1.0 mi east of Swayzes Mills, 1.4 mi southwest of Hope, and 1.6 mi downstream of Hope Pond.

DRAINAGE AREA.--10.2 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 2001-02.

REMARKS.--Measurements made to verify calibration of continuous-record water-quality sensors met the recalibration criteria; therefore, the data were not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 1.



**Figure 41.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01445900 Honey Run near Hope, water year 2003.

## 01446400 PEQUEST RIVER AT BELVIDERE, NJ

LOCATION.--Lat 40°49'45", long 75°04'43", Warren County, Hydrologic Unit 02040105, at bridge on County Route 619 in Belvidere, and 0.3 mi upstream from mouth.

DRAINAGE AREA.--158 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1957, 1962, 1976-82, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 1.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 26...	1050	260	4.6	0.185	0.139	761	12.7	101	8.4	448	8.5	5.5	210
MAR 04...	1100	318	4.5	0.144	0.109	757	15.9	112	8.1	469	6.0	0.9	180
MAY 13...	1230	200	5.3	0.155	0.118	738	10.8	108	8.4	516	14.5	13.8	220
SEP 04...	1100	246	4.2	0.193	0.144	750	9.6	101	8.2	486	22.5	16.8	210

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 26...	48.8	20.6	1.64	19.1	164	35.7	<0.17	8.1	31.5	269	282	5	0.43
MAR 04...	44.3	17.7	1.70	20.6	180	40.9	<0.17	6.3	23.6	269	256	9	0.43
MAY 13...	51.1	22.5	1.52	21.2	185	41.7	<0.17	6.6	19.6	280	298	12	0.37
SEP 04...	48.6	21.6	1.93	17.6	186	37.2	<0.17	9.9	18.3	272	292	8	0.37

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sediment total, mg/L (00694)	Inorganic carbon, suspnd sediment total, mg/L (00688)	Organic carbon, suspnd sediment total, mg/L (00689)
NOV 26...	0.035	0.035	1.12	0.009	0.037	0.07	0.029	0.050	1.6	1.6	0.6	<0.1	0.6
MAR 04...	0.093	0.093	1.22	0.009	0.036	0.11	0.033	0.063	1.6	1.8	0.9	<0.1	0.9
MAY 13...	0.045	0.047	1.06	0.020	0.047	0.14	0.045	0.080	1.4	1.6	1.3	<0.1	1.3
SEP 04...	0.033	0.035	1.09	0.015	0.043	0.10	0.050	0.071	1.5	1.6	0.9	<0.1	0.9

01446400 PEQUEST RIVER AT BELVIDERE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 26...	5.0	E1.7	--	16
MAR 04...	4.1	<1.0	--	<13
MAY 13...	4.2	<1.0	--	16
SEP 04...	5.2	<1.0	7.40	17

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0950	80	<100	500	JUN 05...	1000	490	500	1,100
MAY 22...	0945	120	600	1,300	JUN 12...	0945	6,500	4,900	>16000
MAY 29...	1010	280	400	300					

Remark codes used in this table:  
 < -- Less than

## 01455120 POHATCONG CREEK AT JANES CHAPEL ROAD, AT MOUNT BETHEL, NJ

LOCATION.--Lat 40°50'19", long 74°54'00", Warren County, Hydrologic Unit 02040105, at bridge on Janes Chapel Road, 0.8 mi north of Mount Bethel, 3.9 mi west of Hackettstown, and 5.7 mi upstream of Willever Lake.

DRAINAGE AREA.--1.80 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). Measurements made to verify calibration of continuous-record water-quality sensors met the recalibration criteria; therefore, the data were not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report.

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status and Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 1.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 07...	1030	0.9	0.102	0.080	743	11.2	92	7.3	121	9.0	6.0	39	8.65
FEB 26...	1030	1.9	0.059	0.045	752	13.2	92	7.2	145	-4.0	0.0	35	7.72
MAY 14...	1000	1.3	0.064	0.049	740	10.6	100	7.4	134	15.0	11.2	37	8.34
AUG 13...	1000	3.4	0.156	0.119	748	8.3	91	7.1	116	26.0	18.7	36	8.26

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 07...	4.28	1.11	6.17	E27	11.0	<0.17	14.8	9.0	--	75	2	0.13	<0.030
FEB 26...	3.80	0.99	10.6	18	23.0	<0.17	12.3	9.2	--	86	1	0.13	<0.030
MAY 14...	4.04	0.99	7.75	22	17.5	<0.17	12.9	8.8	76	96	4	E.07	<0.030
AUG 13...	3.71	1.00	7.26	22	14.1	<0.17	14.1	7.8	--	76	5	0.22	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt mg/L (00694)	Inorganic carbon, suspnd sedimnt mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 07...	<0.030	0.32	<0.003	--	0.03	E.003	0.005	0.45	0.48	<0.1	<0.1	<0.1	3.5
FEB 26...	<0.030	0.92	<0.003	--	<0.02	0.004	0.008	1.0	--	<0.1	<0.1	<0.1	2.0
MAY 14...	<0.030	0.56	<0.003	0.009	<0.02	E.002	0.006	E.63	--	<0.1	<0.1	<0.1	1.9
AUG 13...	<0.020	0.55	<0.003	--	0.03	0.009	0.016	0.77	0.80	0.3	<0.1	0.3	4.0

01455120 POHATCONG CREEK AT JANES CHAPEL ROAD, AT MOUNT BETHEL, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	E1.1	--	<13
FEB 26...	<1.0	--	E6.1
MAY 14...	<1.0	2.30	<13
AUG 13...	<1.0	0.900	8.7

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 13...	1000	--	--	--	--	--	<2	18.5	0.06	E7	<0.04	<0.8	1.1
13...	1000	6.53	110	4,700	1.4	<0.2	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd recover -able, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 13...	290	0.28	16.6	<0.02	0.73	E.4	<0.16	2	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	<1	0.060	3.7	1.9	3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, wsv nat field, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat field, ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49405)
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	5,400	3.4	42	<0.01	1.4	<1	19	<50	<50	<50	<50	E6	<50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49406)	2-Ethyl-naphthalene, bed sed <2 mm, wsv nat field, ug/kg (49948)	2-Methyl-anthracene, bed sed <2 mm, wsv nat field, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49411)	9H-Flourene, bed sed <2 mm, wsv nat field, ug/kg (49399)	Ace-naphthene, bed sed <2 mm, wsv nat field, ug/kg (49429)	Ace-naphthylene, bed sed <2 mm, wsv nat field, ug/kg (49428)	Anthracene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthracene, bed sed <2 mm, wsv nat field, ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat field, ug/kg (49389)	Benzo-[b]-fluor-anthene, bed sed <2 mm, wsv nat field, ug/kg (49458)	Benzo-[ghi]-perylene, bed sed <2 mm, wsv nat field, ug/kg (49408)	Benzo-[k]-fluor-anthene, bed sed <2 mm, wsv nat field, ug/kg (49397)
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	<50	<50	E10	<50	<50	<50	E6	<50	E10	E12	E12	<50	<50

## 01455120 POHATCONG CREEK AT JANES CHAPEL ROAD, AT MOUNT BETHEL, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 13... 13...	-- <50	-- <50	-- E9	-- <50	-- <50	-- <50	-- <5	-- <50	-- <50	-- <50	-- E10	-- 0.6	-- 0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 13... 13...	-- 0.2	-- 0.2	-- 0.3	-- 0.5

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 26...	1030	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 26...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 26...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

01455120 POHATCONG CREEK AT JANES CHAPEL ROAD, AT MOUNT BETHEL, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 14...	1000	<0.006	E.034	<0.006	<0.004	<0.005	0.011	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 14...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.005	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 14...	<0.022	M	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

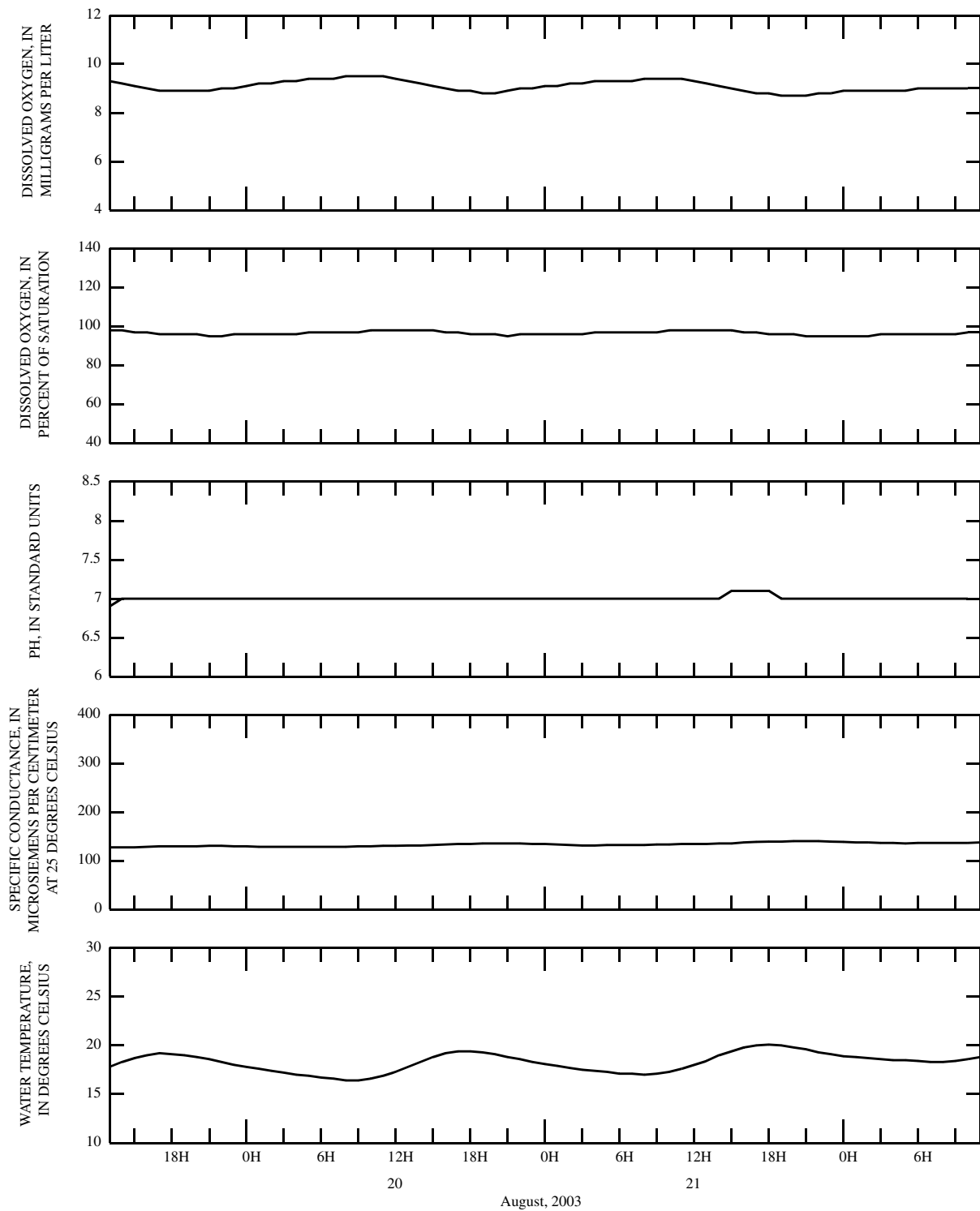
WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	1020	10	<100	<20	JUN 05...	1015	130	<100	80
22...	1000	80	200	40	12...	1010	2,000	1,300	1,700
29...	1025	100	<100	40					

Remark codes used in this table:  
 < -- Less than

01455120 POHATCONG CREEK AT JANES CHAPEL ROAD, AT MOUNT BETHEL, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003



**Figure 42.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01455120 Pohatcong Creek at Janes Chapel Road, at Mount Bethel, water year 2003.



01457400 MUSCONETCONG RIVER AT RIEGELSVILLE, NJ

LOCATION.--Lat 40°35'32", long 75°11'19", revised, Warren County, Hydrologic Unit 02040105, at bridge on Riegelsville-Milford Road (County Route 627) in Riegelsville, 0.2 mi north of Mount Joy, and 0.2 mi upstream from mouth.

DRAINAGE AREA.--156 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1962, 1976 to current year.

REMARKS.--Water-quality samples do not include Riegelsville Paper Company bypass flow. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator and Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 07...	1150	183	3.2	0.080	0.063	759	12.9	108	8.2	428	9.0	7.5	150
FEB 03...	1030	157	1.7	0.036	0.027	754	14.3	110	7.4	456	7.0	3.9	160
MAY 05...	1050	238	2.3	0.062	0.048	763	11.2	107	8.2	441	14.5	13.1	150
AUG 20...	0950	307	5.6	0.087	0.066	763	9.3	101	8.0	410	27.0	19.3	160

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 07...	33.0	16.2	2.04	27.4	111	51.3	<0.17	7.4	19.9	233	235	7	0.27
FEB 03...	35.3	17.4	1.91	27.3	123	54.8	<0.17	8.7	18.4	251	260	1	0.99
MAY 05...	34.1	16.3	1.49	30.0	111	58.0	<0.17	3.7	16.5	234	243	3	0.80
AUG 20...	36.5	16.3	1.95	25.0	104	48.7	<0.17	10.5	14.0	225	240	12	0.48

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sediment total, mg/L (00694)	Inorganic carbon, suspnd sediment total, mg/L (00688)	Organic carbon, suspnd sediment total, mg/L (00689)
NOV 07...	<0.030	<0.030	2.04	0.004	0.033	0.11	0.025	0.046	2.3	2.4	1.1	<0.1	1.1
FEB 03...	<0.030	<0.030	2.98	0.008	0.021	0.06	0.015	0.025	4.0	4.0	0.5	<0.1	0.5
MAY 05...	0.044	0.032	1.68	0.010	<0.020	0.13	0.008	0.023	2.5	2.6	0.9	<0.1	0.8
AUG 20...	0.055	0.052	2.09	0.009	0.026	0.10	0.028	0.052	2.6	2.7	0.9	<0.1	0.8

## 01457400 MUSCONETCONG RIVER AT RIEGELSVILLE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcrtd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	3.3	<1.0	--	26
FEB 03...	1.8	2.1	--	16
MAY 05...	2.2	<1.0	13.5	14
AUG 20...	2.6	<1.0	1.90	23

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 20...	0950	--	--	--	--	--	<2	22.4	<0.06	20	E.02	<0.8	2.1
20...	0950	7.25	610	6,500	9.8	1.1	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 20...	340	1.07	27.9	<0.02	1.77	0.7	<0.16	5	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	<1	0.110	14	5.2	16

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, vsv nat ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, ug/kg (49405)
AUG 20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	12,000	13	330	0.01	38	<1	51	<50	E13	E13	E22	E27	E12

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl-naphthalene, bed sed <2 mm, vsv nat ug/kg (49948)	2-Methylanthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flour-ene, bed sed <2 mm, vsv nat ug/kg (49399)	Ace-naphth-ene, bed sed <2 mm, vsv nat ug/kg (49429)	Ace-naphth-ylene, bed sed <2 mm, vsv nat ug/kg (49428)	Anthra-cene, bed sed <2 mm, vsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, vsv nat ug/kg (49389)	Benzo-[b]-fluor-anthene, bed sed <2 mm, ug/kg (49458)	Benzo-[ghi]-peryl-ene, bed sed <2 mm, ug/kg (49408)	Benzo-[k]-fluor-anthene, bed sed <2 mm, ug/kg (49397)
AUG 20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	E19	E11	E22	E29	E22	E13	E36	57	140	130	130	100	100

01457400 MUSCONETCONG RIVER AT RIEGELSVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat field, ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 20... 20...	-- 160	-- E48	-- 310	-- 110	-- <50	-- E9	-- E2	-- <50	-- 160	-- <50	-- 250	-- 8.5	-- 1.6

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 20... 20...	-- 2.3	-- 2.7	-- 3.9	-- 5.6

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 03...	1030	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 03...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 03...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

01457400 MUSCONETCONG RIVER AT RIEGELSVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 05...	1050	<0.006	E.037	<0.006	<0.004	<0.005	0.040	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 05...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.038	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 05...		<0.022	E.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0915	50	<100	170	JUN 05...	0915	440	1,000	500
22...	0905	150	100	700	12...	0915	1,800	2,100	5,000
29...	0940	220	500	700					

Remark codes used in this table:  
 < -- Less than

01457500 DELAWARE RIVER AT RIEGELSVILLE, NJ

LOCATION.--Lat 40°35'40", long 75°11'24", Warren County, Hydrologic Unit 02040105, at suspension bridge at Riegelsville, 600 ft upstream from Musconetcong River, and at river mile 174.8. Water-quality samples are collected from the bridge and are unaffected by the flow of the Musconetcong River.

DRAINAGE AREA.--6,328 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1934, 1943, 1950, 1960-79, 1991 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570). The flow of the Musconetcong River is included in the instantaneous discharge, cfs (00061).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Delaware River Main Stem, New Jersey Department of Environmental Protection Watershed Management Area 11.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 03...	1030	9,820	1.3	0.086	0.066	768	12.2	88	7.7	150	-5.0	2.0	46
FEB 03...	1030	7,110	1.1	0.056	0.042	757	13.4	98	7.7	197	4.0	1.9	64
MAY 08...	1030	11,000	2.6	0.048	0.035	756	9.0	89	7.6	157	18.0	14.3	49
SEP 10...	1045	12,200	4.2	0.099	0.075	765	8.3	89	7.6	138	19.5	19.3	49

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 03...	12.1	3.92	0.87	8.45	30	13.2	<0.17	4.2	13.8	78	86	6	0.16
FEB 03...	16.5	5.47	1.17	11.9	41	18.2	<0.17	3.7	16.3	103	110	<1	0.17
MAY 08...	12.7	4.18	1.05	8.93	34	14.2	<0.17	2.2	13.1	80	92	3	0.17
SEP 10...	13.6	3.76	1.07	7.63	32	11.6	<0.17	3.6	11.9	75	80	6	0.19

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
DEC 03...	<0.030	0.030	0.79	<0.003	0.044	0.04	0.036	0.041	0.95	0.99	0.2	<0.1	0.2
FEB 03...	<0.030	<0.030	1.10	0.007	0.034	0.06	0.032	0.041	1.3	1.3	0.2	<0.1	0.2
MAY 08...	<0.030	<0.030	0.66	0.005	0.027	0.09	0.026	0.044	0.83	0.93	0.6	<0.1	0.6
SEP 10...	<0.020	<0.020	0.55	0.003	0.023	0.09	0.030	0.048	0.74	0.84	0.6	<0.1	0.6

DELAWARE RIVER BASIN

01457500 DELAWARE RIVER AT RIEGELSVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 03...	2.6	2.0	--	13
FEB 03...	2.0	E1.5	--	E12
MAY 08...	2.1	E1.1	10.1	E8.9
SEP 10...	2.9	<1.0	3.40	12

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 15...	0900	<10	<100	80	JUN 05...	0855	330	1,000	500
MAY 22...	0900	40	100	20	JUN 12...	0910	2,500	1,300	3,000
MAY 29...	0930	370	100	800					

Remark codes used in this table:  
 < -- Less than

01458300 HARIHOKAKE CREEK AT HARTPENGE ROAD, NEAR MOUNT PLEASANT, NJ

LOCATION.--Lat 40°36'01", long 75°01'51", Hunterdon County, Hydrologic Unit 02040105, at bridge on Hartpence Road, 1.7 mi northeast of Mount Pleasant, 4.0 mi northeast of Milford, and 6.8 mi upstream from mouth.

DRAINAGE AREA.-- 0.98 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 11.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 12...	1000	6.4	0.134	0.107	754	9.8	90	7.5	99	11.0	11.0	37	11.8
FEB 05...	1030	0.8	0.044	0.034	751	14.1	99	7.5	82	-2.5	0.4	28	8.88
MAY 22...	1000	4.6	0.064	0.050	756	10.2	95	7.5	87	14.0	11.9	31	9.59
AUG 06...	0945	14	0.213	0.163	746	8.5	94	7.1	68	23.0	19.4	25	7.57

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 12...	1.94	1.79	3.05	E29	6.36	<0.17	9.5	7.2	--	71	8	0.17	<0.030
FEB 05...	1.47	0.63	3.17	18	6.03	<0.17	8.1	7.4	48	59	<1	0.12	<0.030
MAY 22...	1.59	0.77	3.18	22	6.46	<0.17	8.6	6.3	51	67	2	0.19	<0.030
AUG 06...	1.47	1.00	2.38	16	4.72	<0.17	7.8	6.1	42	54	12	0.36	<0.020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 12...	<0.030	<0.05	<0.003	0.021	0.08	0.021	0.043	--	--	0.7	<0.1	0.7	5.4
FEB 05...	<0.030	0.38	<0.003	<0.020	<0.02	0.005	0.009	0.50	--	<0.1	<0.1	<0.1	1.4
MAY 22...	<0.030	0.29	<0.003	<0.020	0.02	0.018	0.030	0.48	0.50	0.2	<0.1	0.2	1.6
AUG 06...	0.053	0.22	0.001	0.028	0.11	0.024	0.053	0.58	0.69	1.0	<0.1	1.0	5.8





01458300 HARIHOKAKE CREEK AT HARTPENICE ROAD, NEAR MOUNT PLEASANT, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloro-methane unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 05...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected by the analyses in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 22...	1000	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 22...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

01458300 HARIHOKAKE CREEK AT HARTPENCE ROAD, NEAR MOUNT PLEASANT, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683) ug/L	Prome-ton, water, fltrd, (04037) ug/L	Sima-zine, water, fltrd, (04035) ug/L	Tebu-thiuron water fltrd (82670) ug/L	Terba-cil, water, fltrd (82665) ug/L	Tri-flur-alin, water, fltrd (82661) ug/L
MAY 22...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
11...	1015	130	900	300	02...	0930	350	<100	170
18...	1015	1,900	500	800	09...	1000	300	<100	93
25...	0920	230	200	40					

Remark codes used in this table:  
< -- Less than

01458570 NISHISAKAWICK CREEK NEAR FRENCHTOWN, NJ

LOCATION.--Lat 40°32'32", long 75°02'48", Hunterdon County, Hydrologic Unit 02040105, 1.3 mi north of Frenchtown, 2.1 mi upstream from Delaware River, and 3.1 mi southeast of Milford.

DRAINAGE AREA.--10.1 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 11.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 06...	1140	17	3.0	0.083	0.065	744	11.9	103	7.6	187	11.5	8.0	63
FEB 03...	1320	6.7	0.7	0.033	0.026	754	15.7	109	7.8	175	9.5	0.2	53
MAY 05...	1240	8.8	1.1	0.051	0.039	763	11.8	108	8.6	173	14.5	11.8	58
AUG 21...	1330	7.1	1.0	0.062	0.047	755	9.1	104	7.5	176	28.0	21.6	58

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 06...	15.6	5.80	1.90	9.27	43	13.5	<0.17	10.6	17.7	111	118	2	0.20
FEB 03...	13.4	4.83	1.22	8.95	33	14.7	<0.17	10.8	13.0	99	106	<1	0.14
MAY 05...	14.7	5.09	1.27	9.76	43	15.6	<0.17	3.0	12.2	93	102	<1	0.18
AUG 21...	14.8	4.99	1.75	9.48	43	13.4	<0.17	12.4	12.7	104	113	3	0.16

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 06...	<0.030	<0.030	2.36	<0.003	0.039	<0.02	0.028	0.034	2.6	--	0.3	<0.1	0.2
FEB 03...	<0.030	<0.030	2.75	0.006	0.024	<0.02	0.015	0.018	2.9	--	0.2	<0.1	0.2
MAY 05...	<0.030	0.083	1.30	0.009	<0.020	0.05	0.010	0.015	1.5	1.5	0.3	<0.1	0.3
AUG 21...	0.032	0.022	1.88	<0.003	0.038	<0.02	0.040	0.046	2.0	--	0.2	<0.1	0.2

## DELAWARE RIVER BASIN

01458570 NISHISAKAWICK CREEK NEAR FRENCHTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 06...	3.0	<1.0	--	32
FEB 03...	1.2	<1.0	--	14
MAY 05...	1.9	E1.3	7.00	20
AUG 21...	1.9	2.3	1.80	31

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 11...	1002	150	300	130	JUL 02...	1010	210	<100	80
JUN 18...	1014	1,500	1,700	1,300	JUL 09...	1030	310	<100	220
JUN 25...	1050	140	<100	230					

Remark codes used in this table:

&lt; -- Less than

01458710 COPPER CREEK NEAR FRENCHTOWN, NJ

LOCATION.--Lat 40°30'39", long 75°02'42", Hunterdon County, Hydrologic Unit 02040105, at bridge on Horseshoe Bend Road, 1.4 mi upstream from the mouth, 1.4 mi southeast of Frenchtown, and 2.2 mi west of Baptistown.

DRAINAGE AREA.--2.52 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 2000, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 11.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 19...	1000	1.8	0.092	0.070	767	11.7	97	7.5	165	7.0	7.6	58	13.6
FEB 04...	1000	1.1	0.034	0.025	742	13.4	96	7.5	190	5.0	0.4	62	14.5
MAY 21...	1000	1.7	0.053	0.041	762	9.7	91	7.6	204	15.0	12.8	68	16.4
AUG 12...	1000	1.5	0.120	0.091	760	8.7	94	7.4	192	24.5	18.9	70	17.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 19...	5.76	2.05	6.32	E32	6.95	<0.17	11.3	18.8	--	113	3	0.27	<0.030
FEB 04...	6.24	1.65	8.75	27	15.4	<0.17	8.4	22.0	107	112	3	0.15	<0.030
MAY 21...	6.69	2.30	9.96	41	16.2	<0.17	9.2	22.7	114	121	3	0.16	<0.030
AUG 12...	6.47	2.80	9.23	50	9.22	<0.17	13.8	18.0	117	121	1	0.31	<0.020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 19...	<0.030	3.44	<0.003	0.076	0.06	0.082	0.087	3.7	3.8	0.3	<0.1	0.3	3.1
FEB 04...	<0.030	3.16	<0.003	0.065	<0.02	0.064	0.070	3.3	--	<0.1	<0.1	<0.1	1.5
MAY 21...	<0.030	1.36	0.003	0.079	0.03	0.083	0.092	1.5	1.6	0.2	<0.1	0.2	2.0
AUG 12...	<0.020	2.21	<0.003	0.116	0.03	0.127	0.128	2.5	2.5	<0.1	<0.1	<0.1	3.9



01458710 COPPER CREEK NEAR FRENCHTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 04...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected by the analyses in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 21...	1000	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 21...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

## DELAWARE RIVER BASIN

01458710 COPPER CREEK NEAR FRENCHTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
MAY 21...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
11...	1019	40	300	80	02...	1035	130	100	80
18...	1032	4,700	2,400	3,000	09...	1045	360	<100	80
25...	1110	70	100	220					

Remark codes used in this table:  
< -- Less than



01460200 DELAWARE RIVER BELOW TOHICKON CREEK AT POINT PLEASANT, PA

LOCATION.--Lat 40°25'06", long 75°03'42", Bucks County, Hydrologic Unit 02040105, on right bank at Forest Park Water Company pump station, 0.2 mi downstream from Tohickon Creek and 0.4 mi southeast of Point Pleasant.

DRAINAGE AREA.--6,570 mi<sup>2</sup>.

PERIOD OF RECORD.--May 2000 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 2000 to current year.

pH: May 2000 to current year.

WATER TEMPERATURE: May 2000 to current year.

DISSOLVED OXYGEN: May 2000 to current year.

INSTRUMENTATION.--Probes interfaced with a data collection platform with 30-minute recording interval. Satellite and landline telemetry at station.

REMARKS.--Specific conductance and pH records rated good except for period Oct. 30 to Apr. 27, which is poor. Dissolved oxygen record rated fair except for period Apr. 23 to May 8, which is poor. Water temperature record rated good. Other interruptions in the record due to intermittent pumping. (See Distributary from Bradshaw Reservoir, station 01472618).

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 298 microsiemens, Dec. 12, 2002; minimum recorded, 77 microsiemens, Sept. 5, 6, 2003.

pH: Maximum recorded, 9.6, Apr. 25, 30, May 3, 2003; minimum recorded, 6.9, Oct. 18, 2002, Jan. 7, 2003.

WATER TEMPERATURE: Maximum, 32.5°C, Aug. 9, 2001; minimum, 2.0°C, Jan. 19-21, 2002.

DISSOLVED OXYGEN: Maximum, 15.5 mg/L, Nov. 25, 2000; minimum, 6.1 mg/L, Aug. 11, 2001.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 298 microsiemens, Dec. 12; minimum recorded, 77 microsiemens, Sept. 5, 6.

pH: Maximum recorded, 9.6, Apr. 25, 30, May 3; minimum recorded, 6.9, Oct. 18, Jan. 7

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	174	168	171	168	158	161	158	147	149	171	167	169
2	191	174	184	175	163	169	158	146	149	175	168	170
3	213	191	199	174	165	168	153	147	149	169	146	157
4	218	213	216	169	166	167	153	149	151	170	146	161
5	227	218	224	169	166	168	160	149	155	173	162	168
6	231	222	225	181	168	176	170	156	165	166	160	162
7	236	214	227	189	180	182	177	166	173	182	162	170
8	214	195	202	183	167	179	186	172	178	174	168	171
9	203	196	198	170	164	166	187	179	183	179	169	174
10	208	203	206	165	162	164	191	182	186	190	175	178
11	207	206	207	168	163	164	198	183	190	187	178	181
12	226	171	199	168	164	166	298	194	206	186	179	182
13	171	142	154	182	166	174	270	228	243	190	180	182
14	142	134	136	178	161	170	232	190	218	190	184	186
15	141	133	135	163	144	150	195	167	181	191	186	188
16	142	139	140	145	141	143	171	161	164	204	188	195
17	158	130	145	147	141	143	162	154	158	205	199	201
18	130	102	112	147	131	143	158	152	155	215	200	207
19	106	102	103	131	116	124	165	156	159	226	211	217
20	118	106	112	119	115	116	166	156	164	221	212	218
21	125	118	122	121	114	116	175	161	168	---	---	---
22	135	123	127	128	120	124	169	141	155	---	---	---
23	143	133	136	135	127	131	149	138	140	---	---	---
24	148	140	144	131	123	127	144	139	143	---	---	---
25	157	148	153	124	121	122	142	137	140	---	---	---
26	170	156	161	127	123	125	178	141	168	---	---	---
27	171	160	165	135	126	128	175	167	170	---	---	---
28	166	144	150	143	135	140	172	162	165	205	197	201
29	148	142	144	145	141	142	165	159	161	209	200	204
30	154	148	151	157	142	144	164	160	162	222	201	214
31	163	152	156	---	---	---	168	159	161	216	207	212
MONTH	236	102	165	189	114	150	298	137	168	226	146	186



01460200 DELAWARE RIVER BELOW TOHICKON CREEK, AT POINT PLEASANT, PA—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.5	7.4	7.6	7.5	7.3	7.4	7.4	7.3	7.3	7.5	7.4	7.5
2	8.6	7.3	7.7	7.5	7.3	7.5	7.4	7.3	7.4	7.5	7.4	7.5
3	8.6	7.3	7.8	7.5	7.3	7.4	7.5	7.3	7.4	7.4	7.1	7.3
4	7.7	7.4	7.5	7.6	7.4	7.5	7.5	7.3	7.4	7.2	7.0	7.1
5	8.4	7.4	7.7	7.6	7.4	7.5	7.5	7.4	7.4	7.2	7.1	7.2
6	8.5	7.4	7.7	7.6	7.4	7.4	7.6	7.3	7.4	7.2	7.1	7.2
7	8.5	7.5	7.8	7.7	7.4	7.5	7.6	7.4	7.5	7.3	6.9	7.1
8	8.6	7.5	7.8	7.6	7.4	7.5	7.6	7.4	7.5	7.1	7.0	7.0
9	8.4	7.5	7.7	7.6	7.4	7.4	7.7	7.5	7.5	7.1	7.0	7.0
10	8.0	7.5	7.6	7.6	7.4	7.4	7.6	7.5	7.6	7.1	7.0	7.1
11	7.6	7.5	7.5	7.6	7.3	7.4	---	---	---	7.2	7.1	7.1
12	7.5	7.2	7.4	7.4	7.3	7.4	---	---	---	7.2	7.1	7.2
13	7.2	7.1	7.2	7.5	7.2	7.3	---	---	---	7.2	7.1	7.1
14	7.1	7.0	7.1	7.6	7.3	7.4	---	---	---	7.2	7.1	7.2
15	7.2	7.0	7.1	7.4	7.2	7.3	---	---	---	7.3	7.2	7.2
16	7.3	7.1	7.2	7.4	7.3	7.3	---	---	---	7.3	7.2	7.2
17	7.3	7.1	7.2	7.3	7.2	7.3	7.2	7.1	7.2	7.3	7.2	7.2
18	7.2	6.9	7.0	7.3	7.2	7.3	7.3	7.2	7.2	7.4	7.2	7.3
19	7.0	7.0	7.0	7.2	7.1	7.2	7.2	7.1	7.2	7.3	7.2	7.3
20	7.1	7.0	7.0	7.2	7.0	7.1	7.3	7.2	7.2	7.2	7.1	7.1
21	7.2	7.1	7.1	7.2	7.1	7.1	7.4	7.2	7.3	---	---	---
22	7.3	7.1	7.2	7.2	7.1	7.2	7.3	7.2	7.3	---	---	---
23	7.3	7.2	7.2	7.3	7.2	7.2	7.3	7.2	7.2	---	---	---
24	7.4	7.2	7.3	7.3	7.2	7.2	7.3	7.2	7.3	---	---	---
25	7.3	7.2	7.3	7.3	7.2	7.2	7.3	7.2	7.3	---	---	---
26	7.4	7.2	7.3	7.3	7.2	7.2	7.4	7.3	7.3	---	---	---
27	7.4	7.3	7.3	7.3	7.2	7.3	7.5	7.3	7.4	---	---	---
28	7.4	7.3	7.3	7.3	7.2	7.3	7.5	7.4	7.4	7.6	7.3	7.5
29	7.4	7.3	7.3	7.4	7.3	7.3	7.5	7.4	7.4	7.7	7.3	7.3
30	7.4	7.2	7.3	7.4	7.2	7.3	7.6	7.4	7.5	7.8	7.4	7.5
31	7.4	7.2	7.3	---	---	---	7.6	7.4	7.5	7.7	7.5	7.6
MAX	8.6	7.5	7.8	7.7	7.4	7.5	7.7	7.5	7.6	7.8	7.5	7.6
MIN	7.0	6.9	7.0	7.2	7.0	7.1	7.2	7.1	7.2	7.1	6.9	7.0

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.7	7.4	7.4	8.0	7.4	7.4	7.4	7.3	7.3	9.5	7.8	8.5
2	7.9	7.4	7.4	7.7	7.4	7.5	7.4	7.3	7.3	9.5	7.8	8.6
3	7.9	7.5	7.8	8.0	7.6	7.7	7.4	7.2	7.4	9.6	7.8	8.6
4	7.8	7.4	7.5	7.9	7.6	7.8	7.4	7.4	7.4	9.1	7.8	8.2
5	8.1	7.5	7.5	8.4	7.6	7.7	7.4	7.4	7.4	8.2	7.6	7.8
6	7.9	7.5	7.7	8.1	7.6	7.7	7.5	7.3	7.4	8.1	7.6	7.7
7	7.9	7.4	7.5	8.2	7.6	7.6	7.5	7.4	7.4	8.3	7.7	7.8
8	8.1	7.4	7.6	8.8	7.7	8.4	7.5	7.4	7.4	8.0	7.6	7.8
9	8.2	7.5	7.7	8.7	7.7	7.7	7.5	7.4	7.5	8.4	7.5	7.8
10	8.1	7.6	7.7	7.8	7.7	7.8	7.6	7.4	7.5	8.5	7.6	7.9
11	8.0	7.4	7.5	8.6	7.7	7.8	7.6	7.5	7.5	8.3	7.6	7.8
12	8.5	7.6	7.7	8.7	7.8	8.3	7.5	7.5	7.5	8.1	7.7	7.8
13	8.4	7.6	8.2	8.4	7.8	7.9	7.6	7.5	7.5	8.0	7.6	7.8
14	8.2	7.6	8.1	8.6	7.7	8.3	---	---	---	7.8	7.7	7.8
15	8.5	7.6	7.7	8.5	7.7	7.8	---	---	---	7.8	7.6	7.7
16	8.3	7.7	8.2	9.0	7.8	8.7	---	---	---	7.8	7.7	7.7
17	8.2	7.6	8.0	8.9	7.7	7.8	---	---	---	7.8	7.7	7.7
18	8.6	7.4	7.9	7.8	7.5	7.7	7.9	7.6	7.7	7.9	7.7	7.8
19	8.5	7.5	7.9	7.6	7.3	7.4	7.9	7.6	7.8	8.0	7.8	7.9
20	8.5	7.5	7.9	7.3	7.1	7.2	7.9	7.6	7.8	8.2	7.9	8.0
21	8.6	7.4	7.8	7.2	7.1	7.1	8.5	7.7	7.8	7.9	7.7	7.8
22	---	---	---	7.2	7.1	7.1	8.4	7.8	8.1	8.0	7.7	7.8
23	---	---	---	7.1	7.0	7.0	9.0	7.7	7.8	8.0	7.8	7.8
24	---	---	---	7.2	7.0	7.2	9.3	8.0	8.1	8.0	7.8	7.8
25	7.4	7.1	7.2	7.3	7.2	7.2	9.6	8.3	9.2	7.9	7.8	7.8
26	7.4	7.1	7.3	7.4	7.2	7.3	9.5	8.0	8.4	7.8	7.6	7.6
27	7.6	7.2	7.2	7.3	7.2	7.3	9.5	7.8	8.8	7.8	7.6	7.7
28	8.0	7.3	7.6	7.3	7.2	7.3	9.5	7.9	8.8	7.7	7.5	7.6
29	---	---	---	7.4	7.2	7.3	9.4	7.9	8.6	7.6	7.5	7.6
30	---	---	---	7.4	7.3	7.4	9.6	7.8	8.8	7.6	7.4	7.5
31	---	---	---	7.4	7.3	7.3	---	---	---	7.7	7.6	7.6
MAX	8.6	7.7	8.2	9.0	7.8	8.7	9.6	8.3	9.2	9.6	7.9	8.6
MIN	7.4	7.1	7.2	7.1	7.0	7.0	7.4	7.2	7.3	7.6	7.4	7.5



01460200 DELAWARE RIVER BELOW TOHICKON CREEK, AT POINT PLEASANT, PA—Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	17.5	15.0	16.0
2	---	---	---	---	---	---	---	---	---	18.5	16.5	17.0
3	---	---	---	---	---	---	---	---	---	19.0	16.5	17.5
4	---	---	---	---	---	---	---	---	---	17.5	16.5	17.0
5	---	---	---	---	---	---	---	---	---	16.5	14.5	15.5
6	---	---	---	---	---	---	---	---	---	14.5	14.0	14.0
7	---	---	---	---	---	---	---	---	---	16.0	13.5	14.5
8	---	---	---	---	---	---	---	---	---	15.5	15.0	15.0
9	---	---	---	---	---	---	---	---	---	15.5	15.0	15.0
10	---	---	---	---	---	---	---	---	---	16.0	15.0	15.5
11	---	---	---	---	---	---	---	---	---	17.0	15.5	16.0
12	---	---	---	---	---	---	---	---	---	16.5	15.5	16.0
13	---	---	---	---	---	---	---	---	---	16.0	15.0	15.5
14	---	---	---	---	---	---	---	---	---	15.5	14.5	15.0
15	---	---	---	---	---	---	---	---	---	15.0	14.0	14.5
16	---	---	---	---	---	---	---	---	---	15.0	14.0	14.5
17	---	---	---	---	---	---	---	---	---	15.5	14.0	14.5
18	---	---	---	---	---	---	---	---	---	15.5	14.0	15.0
19	---	---	---	---	---	---	---	---	---	18.0	14.0	16.0
20	---	---	---	---	---	---	---	---	---	19.5	15.5	17.5
21	---	---	---	---	---	---	---	---	---	18.0	17.0	17.5
22	---	---	---	---	---	---	---	---	---	17.5	16.5	17.0
23	---	---	---	---	---	---	---	---	---	16.5	15.5	16.0
24	---	---	---	---	---	---	---	---	---	16.0	15.5	15.5
25	---	---	---	---	---	---	---	---	---	15.5	15.0	15.5
26	---	---	---	---	---	---	---	---	---	15.0	14.5	15.0
27	---	---	---	---	---	---	---	---	---	15.5	---	---
28	---	---	---	---	---	---	16.0	13.0	14.5	16.0	---	---
29	---	---	---	---	---	---	16.0	14.5	15.0	17.5	15.5	16.5
30	---	---	---	---	---	---	17.0	14.5	15.5	18.5	16.5	17.5
31	---	---	---	---	---	---	---	---	---	18.0	17.5	18.0
MONTH	---	---	---	---	---	---	17.0	13.0	15.0	19.5	13.5	15.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.5	16.0	---	23.5	21.5	22.5	25.5	24.5	25.0	23.0	21.5	22.5
2	16.0	15.0	---	24.0	22.0	23.0	26.5	24.0	25.0	21.5	---	21.0
3	---	15.0	---	23.5	22.5	23.0	26.5	25.0	25.5	---	19.0	---
4	---	---	---	25.0	22.5	23.5	26.0	25.0	25.5	19.0	18.0	18.5
5	15.0	14.0	---	26.5	23.5	25.0	25.5	24.5	25.0	19.0	18.0	18.5
6	16.5	15.0	15.5	27.5	24.5	25.5	23.5	23.0	23.0	19.0	18.0	18.5
7	---	---	---	27.5	25.0	26.0	23.0	23.0	23.0	20.0	18.5	19.5
8	16.0	15.5	15.5	27.5	25.5	26.5	24.0	23.0	23.5	21.0	19.5	20.0
9	16.5	15.5	16.0	27.0	25.5	26.0	24.0	22.5	23.5	21.5	20.0	20.5
10	---	16.5	17.0	25.5	23.5	24.5	24.0	23.0	23.5	22.0	20.0	20.5
11	18.5	17.5	18.0	24.5	22.5	23.5	24.5	23.5	24.0	22.0	20.0	21.0
12	19.0	18.0	18.5	24.5	22.0	23.5	24.0	23.5	24.0	22.5	20.5	21.0
13	19.0	18.5	18.5	25.0	22.0	23.5	24.5	23.5	24.0	21.0	20.5	20.5
14	19.0	---	---	25.0	22.5	23.5	24.5	23.5	24.0	22.5	20.5	21.5
15	19.5	18.5	19.0	25.5	22.5	24.0	25.5	24.0	24.5	22.0	21.5	21.5
16	19.5	18.5	19.0	25.5	23.5	24.5	25.0	24.0	24.5	22.0	20.5	21.5
17	19.5	18.5	19.0	27.0	23.5	25.0	25.0	23.5	24.0	21.0	20.0	20.5
18	19.0	18.5	19.0	25.5	24.0	24.5	24.5	23.0	23.5	20.0	19.5	20.0
19	---	---	18.5	26.5	23.5	24.5	25.0	23.0	24.0	20.5	---	---
20	---	---	---	26.5	23.0	24.5	25.5	23.0	24.0	21.0	---	20.5
21	---	16.5	---	26.5	24.0	25.0	26.0	23.5	24.5	21.0	20.0	20.5
22	16.5	16.0	16.0	25.0	23.5	24.0	27.0	24.5	25.5	20.5	20.0	20.0
23	17.0	---	16.5	24.0	22.5	23.5	26.5	24.5	25.5	20.0	---	---
24	19.0	17.0	18.0	25.0	23.0	24.0	26.0	23.0	24.5	19.5	18.0	19.0
25	20.0	18.5	19.0	25.5	23.0	24.5	25.5	23.0	24.0	18.0	17.5	18.0
26	---	20.0	20.0	26.0	23.5	24.5	25.0	23.0	24.0	18.0	18.0	18.0
27	22.0	21.0	21.5	27.0	24.5	25.5	25.5	23.5	24.5	19.0	18.0	18.5
28	23.0	---	22.5	26.5	25.0	25.5	26.0	23.5	24.5	19.0	18.5	19.0
29	23.0	22.0	22.5	27.5	24.5	25.5	24.5	23.0	24.0	18.5	17.5	18.0
30	23.0	22.0	22.5	27.0	24.5	25.5	25.5	23.5	24.0	17.5	16.5	17.0
31	---	---	---	26.5	24.5	25.5	25.0	22.0	23.5	---	---	---
MONTH	23.0	14.0	18.7	27.5	21.5	24.5	27.0	22.0	24.2	23.0	16.5	19.8

## DELAWARE RIVER BASIN

01460200 DELAWARE RIVER BELOW TOHICKON CREEK, AT POINT PLEASANT, PA—Continued

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	9.8	8.6	9.3	---	---	---	---	---	---	---	---	---
2	9.8	8.3	8.9	---	---	---	---	---	---	---	---	---
3	9.8	8.0	8.7	---	---	---	---	---	---	---	---	---
4	8.7	7.9	8.2	---	---	---	---	---	---	---	---	---
5	9.3	7.7	8.5	---	---	---	---	---	---	---	---	---
6	9.7	8.0	8.7	---	---	---	---	---	---	---	---	---
7	10.0	8.1	8.8	---	---	---	---	---	---	---	---	---
8	10.1	8.5	9.2	---	---	---	---	---	---	---	---	---
9	10.3	8.7	9.3	---	---	---	---	---	---	---	---	---
10	9.7	8.6	9.1	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	9.4	---	---	---	---	---	---	---	---	---	---	---
13	9.5	9.4	9.4	---	---	---	---	---	---	---	---	---
14	9.6	9.4	9.5	---	---	---	---	---	---	---	---	---
15	9.8	9.6	9.7	---	---	---	---	---	---	---	---	---
16	9.8	9.5	9.7	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	10.3	7.7	9.1	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	14.8	11.3	12.8
2	---	---	---	---	---	---	---	---	---	14.7	11.3	12.9
3	---	---	---	---	---	---	---	---	---	14.4	10.9	12.4
4	---	---	---	---	---	---	---	---	---	12.4	10.6	11.5
5	---	---	---	---	---	---	---	---	---	11.3	10.4	11.0
6	---	---	---	---	---	---	---	---	---	10.9	10.2	10.5
7	---	---	---	---	---	---	---	---	---	10.9	9.9	10.4
8	---	---	---	---	---	---	---	---	---	10.1	9.3	9.7
9	---	---	---	---	---	---	---	---	---	10.3	9.1	9.7
10	---	---	---	---	---	---	---	---	---	10.6	9.1	9.8
11	---	---	---	---	---	---	---	---	---	10.2	9.0	9.5
12	---	---	---	---	---	---	---	---	---	10.0	8.6	9.3
13	---	---	---	---	---	---	---	---	---	10.0	8.8	9.4
14	---	---	---	---	---	---	---	---	---	10.0	9.1	9.5
15	---	---	---	---	---	---	---	---	---	10.0	9.4	9.7
16	---	---	---	---	---	---	---	---	---	10.2	9.3	9.8
17	---	---	---	---	---	---	---	---	---	10.2	9.6	9.9
18	---	---	---	---	---	---	---	---	---	10.2	9.4	9.8
19	---	---	---	---	---	---	---	---	---	10.0	9.6	9.8
20	---	---	---	---	---	---	---	---	---	9.7	9.2	9.5
21	---	---	---	---	---	---	---	---	---	9.3	8.9	9.1
22	---	---	---	---	---	---	---	---	---	9.4	8.8	9.1
23	---	---	---	---	---	---	---	---	---	9.7	9.1	9.4
24	---	---	---	---	---	---	---	---	---	9.8	9.3	9.5
25	---	---	---	---	---	---	---	---	---	9.9	9.4	9.6
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	15.2	11.6	13.3	---	---	---
29	---	---	---	---	---	---	14.2	11.3	12.6	9.6	9.1	9.3
30	---	---	---	---	---	---	15.1	11.4	13.1	9.2	8.9	9.1
31	---	---	---	---	---	---	---	---	---	8.9	8.7	8.8
MONTH	---	---	---	---	---	---	15.2	11.3	13.0	14.8	8.6	10.0

01460200 DELAWARE RIVER BELOW TOHICKON CREEK, AT POINT PLEASANT, PA—Continued

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.9	8.5	8.7	8.8	8.4	8.6	8.2	7.4	7.8	---	---	---
2	9.2	8.8	---	9.1	8.3	8.6	8.6	7.2	7.8	---	---	---
3	9.5	---	9.4	9.1	8.2	8.6	8.4	7.2	7.7	---	---	---
4	---	9.5	---	9.6	8.1	8.8	7.8	6.9	7.3	8.8	8.6	8.7
5	---	---	---	10.2	8.0	8.9	---	6.8	---	8.9	8.7	8.8
6	9.6	9.2	9.4	10.8	7.8	9.1	7.3	7.1	7.3	8.9	8.7	8.8
7	---	---	---	11.4	7.5	9.1	---	---	---	8.7	8.7	8.7
8	---	9.1	---	11.3	7.3	9.1	7.5	7.3	7.4	8.8	8.6	8.7
9	9.3	---	9.1	11.1	7.2	8.6	---	---	---	9.0	8.6	8.8
10	9.0	8.8	8.9	9.2	7.3	8.0	---	---	---	9.1	8.7	8.9
11	8.8	8.6	8.7	10.4	7.4	8.6	---	---	---	9.3	8.8	9.0
12	8.6	8.3	8.5	10.5	7.7	9.1	---	---	---	9.5	8.7	9.1
13	8.5	8.3	8.4	10.3	7.7	9.0	---	---	---	9.4	8.6	9.0
14	8.5	---	---	9.8	7.6	8.7	---	---	---	9.5	8.6	9.0
15	8.5	8.3	8.4	9.7	7.7	8.6	---	---	---	---	---	---
16	8.5	8.3	8.4	9.2	7.4	8.2	---	---	---	---	---	---
17	8.6	8.4	8.5	9.3	7.2	8.2	---	---	---	8.8	8.6	8.8
18	8.7	8.4	8.5	8.7	7.1	7.8	---	---	---	8.9	8.8	8.9
19	8.9	8.5	8.7	8.8	6.9	7.8	---	---	---	---	---	---
20	---	---	---	8.4	6.8	7.6	---	---	---	8.9	8.7	8.8
21	---	---	---	8.1	6.5	7.3	---	---	---	9.1	8.8	8.9
22	9.2	9.1	9.2	---	---	---	---	---	---	9.1	8.7	8.9
23	9.2	9.0	9.1	---	---	---	---	---	---	---	---	---
24	9.0	8.7	8.9	---	---	---	---	---	---	8.5	8.1	8.4
25	8.8	8.5	8.7	7.3	6.4	6.9	---	---	---	8.6	8.5	8.6
26	8.6	8.4	8.5	7.9	7.0	7.6	---	---	---	8.7	8.6	8.7
27	8.4	8.0	8.3	7.9	7.1	7.5	---	---	---	8.7	8.6	8.6
28	8.4	8.2	8.3	8.1	6.9	7.4	---	---	---	8.6	8.5	8.5
29	8.5	8.2	8.4	8.7	7.2	7.8	---	---	---	8.8	8.5	8.7
30	8.7	8.2	8.5	8.9	7.5	8.1	---	---	---	9.1	8.8	8.9
31	---	---	---	9.0	7.5	8.1	---	---	---	---	---	---
MONTH	9.6	8.0	8.7	11.4	6.4	8.3	8.6	6.8	7.5	9.5	8.1	8.8

## 01460860 LOCKATONG CREEK AT ROUTE 12, AT BAPTISTOWN, NJ

LOCATION.--Lat 40°31'01", long 74°59'30", Hunterdon County, Hydrologic Unit 02040105, at bridge on State Route 12, 0.8 mi east of Baptistown, 1.7 mi northwest of Point Breeze, and 4.5 mi upstream of Muddy Run.

DRAINAGE AREA.--8.46 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 11.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 07...	0900	7.4	0.198	0.155	746	10.3	85	7.8	159	9.1	6.2	57	12.6
FEB 25...	1000	8.0	0.229	0.183	758	15.8	109	7.1	105	0.4	0.0	22	4.85
MAY 22...	1000	4.8	0.118	0.093	754	7.4	72	7.8	192	15.1	13.5	66	14.9
AUG 12...	1000	4.1	0.260	0.200	750	7.9	89	7.7	165	24.6	20.8	62	14.8

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 07...	6.09	2.26	9.35	33	11.8	<0.17	11.6	21.4	102	111	1	0.38	<0.030
FEB 25...	2.33	2.37	8.51	12	14.9	<0.17	4.7	7.6	56	69	8	0.43	0.084
MAY 22...	7.11	1.79	13.0	44	17.2	<0.17	10.5	19.5	119	129	3	0.36	<0.030
AUG 12...	6.05	2.29	9.05	40	11.0	<0.17	14.4	14.7	107	119	1	0.49	<0.020

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 07...	<0.030	1.69	0.006	0.031	0.06	0.023	0.048	2.1	2.1	0.5	<0.1	0.5	5.7
FEB 25...	0.099	0.69	0.005	0.064	0.13	0.062	0.086	1.1	1.2	0.5	<0.1	0.5	6.8
MAY 22...	<0.030	2.09	0.028	<0.020	0.09	0.014	0.039	2.5	2.5	0.6	<0.1	0.6	3.2
AUG 12...	<0.020	2.44	0.006	0.035	0.10	0.045	0.067	2.9	3.0	0.5	<0.1	0.4	6.7





## 01460860 LOCKATONG CREEK AT ROUTE 12, AT BAPTISTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 25...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 25...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 22...	1000	<0.006	E.018	<0.006	<0.004	<0.005	0.022	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 22...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.011	<0.006	<0.007

01460860 LOCKATONG CREEK AT ROUTE 12, AT BAPTISTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 22...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN					JUL				
11...	1038	130	500	1,300	02...	1100	120	100	230
18...	1048	7,400	12,000	>16000	09...	1110	170	200	230
25...	1124	120	200	300					

Remark codes used in this table:

## 01461000 DELAWARE RIVER AT LUMBERVILLE, PA

LOCATION.--Lat 40°24'27", long 75°02'16", Bucks County, Hydrologic Unit 02040105, at pedestrian bridge at Lumberville, 1.4 mi upstream from Lockatong Creek, and at river mile 155.4.

DRAINAGE AREA.--6,598 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Delaware River Main Stem, New Jersey Department of Environmental Protection Watershed Management Area 11.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 26...	1000	16,500	2.4	0.111	0.086	766	11.5	92	8.2	128	7.0	6.0	43
FEB 13...	0900	6,090	--	0.062	0.048	760	13.9	101	8.5	208	-2.1	2.0	68
MAY 08...	1000	11,300	1.8	0.055	0.041	756	9.8	97	7.8	150	17.7	14.5	53
AUG 21...	1000	9,060	4.2	0.097	0.074	760	8.2	96	7.9	199	22.8	23.0	74

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 26...	11.2	3.58	0.92	8.49	27	12.4	<0.17	4.6	12.2	--	76	3	0.43
FEB 13...	17.4	6.01	1.22	14.5	E51	26.6	<0.17	3.1	17.3	--	126	3	0.20
MAY 08...	13.6	4.64	1.07	9.65	38	16.2	<0.17	1.9	13.0	86	101	5	0.18
AUG 21...	20.0	5.91	1.33	10.6	51	18.1	<0.17	5.0	14.9	111	119	12	0.21

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd total, mg/L (00694)	Inorganic carbon, suspnd total, mg/L (00688)	Organic carbon, suspnd total, mg/L (00689)
NOV 26...	0.037	0.131	--	<0.003	0.032	0.05	0.021	0.035	--	0.48	0.4	<0.1	0.4
FEB 13...	<0.030	<0.030	1.08	0.007	0.038	0.10	0.033	0.040	1.3	1.4	0.3	<0.1	0.3
MAY 08...	<0.030	<0.030	0.69	0.007	<0.020	0.10	0.013	0.037	0.87	0.97	0.4	<0.1	0.4
AUG 21...	0.020	<0.020	1.01	<0.003	0.040	0.11	0.043	0.058	1.2	1.3	0.7	<0.1	0.7

01461000 DELAWARE RIVER AT LUMBERVILLE, PA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 26...	3.2	<1.0	--	14
FEB 13...	2.1	E1.1	--	E7.5
MAY 08...	2.1	E1.5	13.4	16
AUG 21...	3.1	E1.2	1.60	20

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 11...	0924	40	400	40	JUL 02...	0940	30	<100	70
JUN 18...	0935	130	300	220	JUL 09...	0955	30	<100	40
JUN 25...	1010	330	600	1,100					

Remark codes used in this table:  
 < -- Less than

## 01463500 DELAWARE RIVER AT TRENTON, NJ

LOCATION.--Lat 40°13'18", long 74°46'41", Mercer County, Hydrologic Unit 02040105, at Calhoun Street Bridge at Trenton, 0.5 mi upstream from Assunpink Creek, and at river mile 134.5.

DRAINAGE AREA.--6,780 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1945 to current year.

## PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: October 1962 to current year. Recorded as once daily during 1979.

DISSOLVED OXYGEN PERCENT SATURATION: October 2001 to current year.

pH: June 1968 to current year. Recorded as once daily during 1979.

SPECIFIC CONDUCTANCE: October 1963 to current year. Recorded as once daily during years 1964 to 1968, 1979.

SUSPENDED SEDIMENT DISCHARGE: September 1949 to September 1981.

WATER TEMPERATURE: October 1944 to current year. Recorded as once daily during years 1945 to 1953, 1962, 1964, 1979.

TURBIDITY: November 2000 to current year.

## INSTRUMENTATION.--

TEMPERATURE MONITOR (in-situ system, max-min recorded): October 1953 to September 1961.

TEMPERATURE / DISSOLVED-OXYGEN MONITOR (in-situ system):

October 1962 to September 1965: max-min recorded (only dissolved-oxygen concentration recorded during water year 1964).

October 1965 to May 1968: measurements recorded hourly.

WATER-QUALITY MONITOR (continuous pumping system, measurements recorded hourly):

June 1968 to August 1975: water withdrawn from raw-water intake within Trenton Water Filtration Plant, Trenton, NJ.

November 1975 to November 1978: water withdrawn from river outside Trenton Water Filtration Plant, Trenton, NJ.

December 1979 to September 1986: water withdrawn from raw-water intake within Trenton Water Filtration Plant, Trenton, NJ.

WATER-QUALITY MONITOR (in-situ system, measurements recorded hourly):

October 1986 to September 1995: probes located inside raw-water intake of Trenton Water Filtration Plant, Trenton, NJ.

October 1995 to current year: monitor located inside raw-water intake of Morrisville Water Filtration Plant, Morrisville, PA,

1600 feet upstream from the gage house.

REMARKS.--Additional nutrient samples on Dec. 4 at 0931, Mar. 6 at 0931, June 5 at 1021, and Sept. 4 at 0901 were collected to fulfill the requirements of the Ambient Stream Monitoring Network. For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Unpublished records of suspended-sediment discharge for the period Oct. 1, 1981, to Mar. 31, 1982, are available at the U.S. Geological Survey Office in West Trenton, NJ. Beginning October, 1999, pH daily value tables reported maximum, minimum and median values. Continuous turbidity-record values less than 2 were below the instrument detection level. Missing continuous water-quality records are the result of instrument malfunction or interruption of flow through the filtration plant. The calibration of water-quality sensors is verified by regular inspections. Cleaning or recalibration is needed occasionally as a result of sensor fouling or drift. When a sensor is recalibrated, the continuous-record water-quality data for the period between inspections are adjusted to account for the difference between the sensor's response and a known value. The adjustment may be constant over the period or may be prorated. Continuous-record water-quality data for periods for which the difference between the sensor's response and a known value does not exceed recalibration criteria are considered to be reliable and are not adjusted. Recalibration criteria are listed in "Accuracy of the Records" in the Explanation of Water-Quality Records section of this report. Data from the following periods were adjusted:

DISSOLVED OXYGEN: Oct. 16 to Feb. 12, Feb. 27 to Mar. 13, Mar. 25 to Apr. 25, May 5 to May 23, May 28 to July 1, July 7 to Aug. 18, Sept. 2-15.

pH: Sept. 2-15.

WATER TEMPERATURE: Jan. 15 to Feb. 27, Apr. 2 to May 13.

TURBIDITY: Oct. 1-16, May 21-23, May 26-28, June 2-3, July 1-8, July 16 to Aug. 4.

COOPERATION.--Samples were collected as part of the Delaware River Basin National Water-Quality Assessment Program (NAWQA) with cooperation from the Delaware River Basin Commission. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, and dissolved hexavalent chromium on Dec. 4 at 0932, Mar. 6 at 0932, June 5 at 1022, and Sept. 4 at 0902; and fecal coliform, E. coli, and enterococcus bacteria collected synoptically during the summer months was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Delaware River Main Stem, New Jersey Department of Environmental Protection Watershed Management Area 11.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: Maximum, 20.0 mg/L, Feb. 11, 1989; minimum, 4.0 mg/L, Nov. 9, 1972, Sept. 9, 1995.

DISSOLVED OXYGEN PERCENT OF SATURATION: Maximum, 151, Aug. 12, 2002; minimum, 64, Sept. 3, 2003.

pH: Maximum, 10.3 units, Aug. 9, 10, 1983; minimum 5.3 units, June 22, 1972.

SPECIFIC CONDUCTANCE: Maximum, 468  $\mu$ S/cm, Jan. 11, 1999; minimum, 63  $\mu$ S/cm, July 7, 1984.

WATER TEMPERATURE: Maximum, 34.0°C, June 18, 1957; minimum -0.6°C, on many days during winter months in water years 1954-57.

TURBIDITY: Maximum, 460 NTU, May 19, 2000; minimum, <2.0 NTU, on many days in water years 2000-03.

## EXTREMES FOR CURRENT YEAR.--

DISSOLVED OXYGEN: Maximum, 17.1 mg/L, Feb. 19; minimum, 5.8 mg/L, Sept. 3.

DISSOLVED OXYGEN PERCENT OF SATURATION: Maximum, 147, Apr. 28; minimum, 64, Sept. 3.

pH: Maximum, 9.4 units, Apr. 28; minimum, 6.2 units, Sept. 5, 6.

SPECIFIC CONDUCTANCE: Maximum, 305  $\mu$ S/cm, Dec. 13; minimum, 77  $\mu$ S/cm, Sept. 6.

WATER TEMPERATURE: Maximum, 27.3°C, July 8; minimum, -0.1°C, on several days during January and February.

TURBIDITY: Maximum, 200 NTU, July 23; minimum, <2.0 NTU, on many days.



## 01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti- tuents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Phos- phorus, water, fltrd, mg/L (00666)
NOV													
01...	--	<0.2	--	--	--	<0.10	<0.04	--	<0.06	<0.008	<0.02	--	--
01...	--	16.6	--	--	--	0.24	<0.04	--	0.94	E.006	0.03	--	--
DEC													
04...	4.5	14.1	85	95	--	0.18	<0.04	--	0.86	<0.008	0.02	<0.02	--
04...	--	--	--	--	0.14	--	--	--	0.84	--	--	--	0.032
04...	--	--	--	--	--	--	0.044	0.038	--	<0.003	0.034	--	--
JAN													
08...	--	13.6	--	--	--	0.19	E.03	--	0.98	<0.008	E.02	--	--
MAR													
06...	4.0	14.0	103	114	--	0.42	E.04	--	0.98	0.008	0.02	0.14	--
06...	--	--	--	--	0.26	--	--	--	0.97	--	--	--	0.036
06...	--	--	--	--	--	--	0.039	0.038	--	0.008	0.036	--	--
APR													
10...	--	12.3	--	--	--	0.27	0.05	--	0.72	E.004	E.01	--	--
MAY													
08...	--	12.8	--	--	--	0.33	<0.04	--	0.57	E.006	<0.02	--	--
JUN													
05...	4.7	10.6	70	86	--	0.49	<0.04	--	0.73	E.006	--	0.26	--
05...	--	--	--	--	0.27	--	--	--	0.68	--	--	--	0.032
05...	--	--	--	--	--	--	0.043	0.044	--	0.005	0.027	--	--
JUL													
02...	--	14.1	--	--	--	0.25	<0.04	--	0.71	0.010	<0.02	--	--
SEP													
04...	3.4	9.0	61	72	--	0.70	E.02	--	0.47	<0.008	0.02	0.51	--
04...	--	--	--	--	0.28	--	--	--	0.46	--	--	--	0.032
04...	--	--	--	--	--	--	0.042	0.049	--	<0.003	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phos- phorus, water, unfltrd mg/L (00665)	Total nitro- gen, water, fltrd, mg/L (00602)	Total nitro- gen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	COD, high level, water, unfltrd mg/L (00340)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Sus- pended sedi- ment concen- tration mg/L (80154)	Sus- pended sedi- ment load, tons/d (80155)
NOV												
01...	E.003	--	--	--	--	--	--	--	--	--	--	--
01...	0.058	--	1.2	--	--	--	--	--	--	--	3	73
DEC												
04...	0.039	--	1.1	0.2	<0.1	0.2	2.7	--	<10	--	4	106
04...	--	0.98	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	E1.8	--	--	--	--
JAN												
08...	0.032	--	1.2	--	--	--	--	--	--	--	3	184
MAR												
06...	0.076	--	1.4	0.8	<0.1	0.8	2.7	--	20	--	13	606
06...	--	1.2	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	<1.0	--	--	--	--
APR												
10...	0.032	--	0.98	--	--	--	--	--	--	--	5	356
MAY												
08...	0.042	--	0.90	--	--	--	--	--	--	--	6	204
JUN												
05...	0.089	--	1.2	3.0	<0.1	3.0	3.7	--	20	--	37	3,970
05...	--	0.95	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	E1.2	--	--	--	--
JUL												
02...	0.046	--	0.96	--	--	--	--	--	--	--	6	222
SEP												
04...	0.138	--	1.2	5.3	<0.1	5.3	4.4	--	30	23.4	63	6,020
04...	--	0.74	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	<1.2	--	--	--	--

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value





## 01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane water unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
DEC 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2
MAR 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1
JUN 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1
SEP 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
DEC 04...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2
MAR 06...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2
JUN 05...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2
SEP 04...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN PESTICIDE ANALYSES

Pesticides in filtered water were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only schedule-2001 compounds detected in one or more surface-water samples are included in the following table. Pesticides in unfiltered water were determined using laboratory schedule 1608. All schedule-1608 compounds are included in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Aldrin, water, unfltrd ug/L (39330)	alpha-Endo-sulfan, water, unfltrd ug/L (34361)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH, water, unfltrd ug/L (39337)	Aroclor 1016 + 1242, water, unfltrd ug/L (81648)
NOV 01...	0920	Environmental	<0.006	E.014	<0.006	<0.004	--	--	<0.005	--	--
DEC 04...	0930	Environmental	<0.006	E.012	<0.006	<0.004	<0.04	<0.1	<0.005	<0.03	<0.1
JAN 08...	0940	Environmental	<0.006	E.012	<0.006	<0.004	--	--	<0.005	--	--
MAR 06...	0930	Environmental	<0.006	E.018	<0.006	<0.004	<0.04	<0.1	<0.005	<0.03	<0.1
APR 10...	1040	Environmental	<0.006	E.009	<0.006	<0.004	--	--	<0.005	--	--
MAY 08...	0920	Environmental	<0.006	E.011	<0.006	<0.004	--	--	<0.005	--	--
	0921	Split Replicate	<0.006	E.010	<0.006	<0.004	--	--	<0.005	--	--
JUN 05...	1020	Environmental	<0.006	E.029	0.017	0.005	<0.20	<0.5	<0.005	<0.15	<0.5
JUL 02...	0915	Environmental	<0.006	E.017	<0.006	<0.004	--	--	<0.005	--	--
SEP 04...	0900	Environmental	<0.006	E.006	<0.006	<0.004	<0.04	<0.1	<0.005	<0.03	<0.1

01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Aroclor 1221, water, unfltrd ug/L (39488)	Aroclor 1232, water, unfltrd ug/L (39492)	Aroclor 1248, water, unfltrd ug/L (39500)	Aroclor 1254, water, unfltrd ug/L (39504)	Aroclor 1260, water, unfltrd ug/L (39508)	Atrazine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, unfltrd ug/L (34356)	beta-HCH, water, unfltrd ug/L (39338)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)
NOV 01...	--	--	--	--	--	0.022	<0.050	<0.010	--	--	<0.002	<0.041	<0.020
DEC 04...	<1	<0.1	<0.1	<0.1	<0.1	0.013	<0.050	<0.010	<0.04	<0.03	<0.002	<0.041	<0.020
JAN 08...	--	--	--	--	--	0.012	<0.050	<0.010	--	--	<0.002	<0.041	<0.020
MAR 06...	<1	<0.1	<0.1	<0.1	<0.1	0.017	<0.050	<0.010	<0.04	<0.03	<0.002	<0.041	<0.020
APR 10...	--	--	--	--	--	0.010	<0.050	<0.010	--	--	<0.002	<0.041	<0.020
MAY 08...	--	--	--	--	--	0.012	<0.050	<0.010	--	--	<0.002	<0.041	<0.020
MAY 08...	--	--	--	--	--	0.012	<0.050	<0.010	--	--	<0.002	<0.041	<0.020
JUN 05...	<5	<0.5	<0.5	<0.5	<0.5	0.215	<0.050	<0.010	<0.20	<0.15	<0.002	E.009	<0.020
JUL 02...	--	--	--	--	--	0.026	<0.050	<0.010	--	--	<0.002	<0.041	<0.020
SEP 04...	<1	<0.1	<0.1	<0.1	<0.1	0.007	<0.050	<0.010	--	<0.03	<0.002	<0.041	<0.020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chlor-dane, technical, water, unfltrd ug/L (39350)	cis-Chlor-dane, water, unfltrd ug/L (39062)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	DCPA, water fltrd 0.7u GF ug/L (82682)	delta-HCH, water, unfltrd ug/L (34259)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Diel-drin, water, unfltrd ug/L (39380)	Endo-sulfan sulfate water unfltrd ug/L (34351)	Endrin alde-hyde, water, unfltrd ug/L (34366)	Endrin, water, unfltrd ug/L (39390)	EPTC, water, fltrd 0.7u GF ug/L (82668)
NOV 01...	--	--	<0.006	<0.003	--	<0.004	<0.005	<0.005	--	--	--	--	<0.002
DEC 04...	<0.1	<0.1	<0.006	<0.003	<0.09	<0.004	<0.005	<0.005	<0.02	<0.6	<0.2	<0.06	<0.002
JAN 08...	--	--	<0.006	<0.003	--	<0.004	<0.005	<0.005	--	--	--	--	<0.002
MAR 06...	<0.1	<0.1	<0.006	<0.003	<0.09	<0.004	<0.005	<0.005	<0.02	<0.6	<0.2	<0.06	<0.002
APR 10...	--	--	<0.006	<0.003	--	<0.004	<0.005	<0.005	--	--	--	--	<0.002
MAY 08...	--	--	<0.006	<0.003	--	<0.004	<0.005	<0.005	--	--	--	--	<0.002
MAY 08...	--	--	<0.006	<0.003	--	<0.004	<0.005	<0.005	--	--	--	--	<0.002
JUN 05...	<0.5	<0.5	<0.006	<0.003	<0.45	<0.004	<0.005	<0.005	<0.10	<3.0	<1.0	<0.30	<0.002
JUL 02...	--	--	<0.006	<0.003	--	<0.004	<0.005	<0.005	--	--	--	--	<0.002
SEP 04...	<0.1	<0.1	<0.006	<0.003	--	<0.004	<0.005	<0.005	<0.20	--	<3.0	<0.42	<0.002

## 01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Desulf- inyl- fipronil amide, wat flt ug/L (62169)	Fipro- nil sulfide water, fltrd, ug/L (62167)	Fipro- nil sulfone water, fltrd, ug/L (62168)	Fipro- nil, water, fltrd, ug/L (62166)	Hepta- chlor epoxide water unfltrd ug/L (39420)	Hepta- chlor, water, unfltrd ug/L (39410)	Lindane water, unfltrd ug/L (39340)	Mala- thion, water, fltrd, ug/L (39532)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	p,p'- DDD, water, unfltrd ug/L (39310)	p,p'- DDE, water, unfltrd ug/L (39320)
NOV 01...	<0.009	<0.005	<0.005	<0.007	--	--	--	<0.027	E.009	<0.006	<0.007	--	--
DEC 04...	<0.009	<0.005	<0.005	<0.007	<0.8	<0.03	<0.03	<0.027	E.003	<0.006	<0.007	<0.1	<0.04
JAN 08...	<0.009	<0.005	<0.005	<0.007	--	--	--	<0.027	E.006	<0.006	<0.007	--	--
MAR 06...	<0.009	<0.005	<0.005	<0.007	<0.8	<0.03	<0.03	<0.027	E.009	<0.006	<0.007	<0.1	<0.04
APR 10...	<0.009	<0.005	<0.005	<0.007	--	--	--	<0.027	E.009	<0.006	<0.007	--	--
MAY 08...	<0.009	<0.005	<0.005	<0.007	--	--	--	<0.027	E.004	<0.006	<0.007	--	--
MAY 08...	<0.009	<0.005	<0.005	<0.007	--	--	--	<0.027	E.004	<0.006	<0.007	--	--
JUN 05...	<0.009	<0.005	<0.005	<0.007	<4.0	<0.15	<0.15	<0.027	0.099	<0.006	<0.007	<0.5	<0.20
JUL 02...	<0.009	<0.005	<0.005	<0.007	--	--	--	<0.027	E.007	<0.006	<0.007	--	--
SEP 04...	<0.009	<0.005	<0.005	<0.007	<0.8	<0.03	<0.03	<0.027	E.004	<0.006	<0.007	<0.1	<0.04

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	p,p'- DDT, water, unfltrd ug/L (39300)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Toxa- phene, water, unfltrd ug/L (39400)	trans- Chlor- dane, water, unfltrd ug/L (39065)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
NOV 01...	--	<0.022	<0.01	<0.005	<0.02	<0.034	--	--	<0.009
DEC 04...	<0.1	<0.022	M	<0.005	<0.02	<0.034	<2	<0.1	<0.009
JAN 08...	--	<0.022	<0.01	<0.005	<0.02	<0.034	--	--	<0.009
MAR 06...	<0.1	<0.022	<0.01	<0.005	<0.02	<0.034	<2	<0.1	<0.009
APR 10...	--	<0.022	<0.01	<0.005	<0.02	<0.034	--	--	<0.009
MAY 08...	--	<0.022	E.01	0.007	<0.02	<0.034	--	--	<0.009
MAY 08...	--	<0.022	E.01	0.007	<0.02	<0.034	--	--	<0.009
JUN 05...	<0.5	<0.022	E.01	0.015	<0.02	<0.034	<10	<0.5	<0.009
JUL 02...	--	<0.022	E.01	0.013	<0.02	<0.034	--	--	<0.009
SEP 04...	<0.1	<0.022	E.01	E.005	<0.02	<0.034	<2	<0.1	<0.009

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

M -- Presence verified, not quantified

01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, ECbroth water, MPN/100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coliform, ECbroth water, MPN/100 mL (31615)
MAY					JUNE				
07...	0935	<10	<100	80	04...	0910	610	2500	300
14...	0935	<10	100	140					
21	1045	20	<100	<20					
28	1050	220	500	500					

Remark codes used in this table:  
< -- Less than

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	10.7	8.5	9.5	12.5	11.9	12.2	14.2	13.7	14.0	14.4	13.9	14.1
2	10.6	8.3	9.4	12.3	11.9	12.1	14.2	13.6	13.9	13.9	13.8	13.9
3	10.8	7.9	9.2	12.4	12.0	12.2	14.2	13.6	13.9	14.3	13.9	14.0
4	8.8	7.6	8.2	12.4	12.1	12.3	14.7	14.2	14.4	14.6	14.3	14.4
5	10.5	7.5	8.8	12.4	12.1	12.3	14.8	14.5	14.6	14.7	14.4	14.6
6	10.5	7.9	9.1	12.2	11.9	12.0	14.9	14.7	14.8	14.6	14.4	14.5
7	10.2	8.0	9.1	12.1	11.7	11.9	15.1	14.8	14.9	14.6	14.3	14.4
8	11.0	8.3	9.5	12.0	11.6	11.7	15.1	14.9	15.0	14.4	14.1	14.3
9	10.8	8.7	9.7	11.8	11.4	11.6	---	---	---	14.2	13.9	14.1
10	10.1	8.7	9.4	---	---	---	15.5	15.2	15.3	14.0	13.7	13.9
11	9.7	8.8	9.3	---	---	---	15.3	15.0	15.2	14.2	13.3	13.9
12	9.3	8.7	9.1	---	---	---	15.0	14.6	14.8	---	---	---
13	9.5	9.3	9.5	---	---	---	14.7	14.4	14.6	---	---	---
14	9.6	9.5	9.6	---	---	---	14.4	13.8	14.0	14.8	14.4	14.6
15	9.9	9.6	9.7	---	---	---	13.9	13.8	13.8	14.8	14.4	14.6
16	10.0	9.7	9.8	10.9	10.7	10.8	13.9	13.8	13.9	15.0	14.6	14.8
17	10.5	9.9	10.3	11.2	10.9	11.0	14.6	13.9	14.2	15.0	14.6	14.8
18	10.7	10.4	10.6	11.5	11.0	11.3	15.2	14.6	14.9	15.2	14.8	15.0
19	10.9	10.7	10.8	11.9	11.5	11.8	15.2	15.0	15.1	15.2	14.9	15.1
20	11.1	10.8	11.0	12.2	11.9	12.1	15.0	14.0	14.6	15.2	14.9	15.1
21	11.4	11.1	11.2	12.2	11.9	12.1	14.0	13.8	13.8	15.2	14.9	15.1
22	11.7	11.3	11.5	12.0	11.7	11.9	14.2	13.8	14.1	15.4	14.9	15.2
23	11.9	11.4	11.6	12.2	11.7	12.0	14.4	14.2	14.3	15.5	15.2	15.3
24	12.0	11.6	11.8	12.5	11.7	12.2	14.6	14.3	14.5	15.4	15.3	15.3
25	12.2	11.8	12.0	12.8	12.3	12.6	14.4	14.2	14.3	15.3	15.2	15.2
26	12.0	11.8	11.9	12.8	12.5	12.6	14.9	14.3	14.7	15.2	14.9	15.1
27	12.1	11.7	11.9	12.8	12.3	12.6	15.3	14.9	15.1	15.1	14.7	14.9
28	12.3	11.9	12.1	13.3	12.8	13.1	15.2	14.8	15.0	15.1	15.0	15.1
29	12.2	11.9	12.1	13.7	13.3	13.5	15.0	14.7	14.8	15.1	14.8	14.9
30	12.4	12.0	12.2	13.8	13.5	13.6	15.0	14.6	14.8	14.9	14.7	14.8
31	12.7	12.3	12.5	---	---	---	14.7	14.4	14.6	14.7	14.2	14.4
MONTH	12.7	7.5	10.4	13.8	10.7	12.1	15.5	13.6	14.5	15.5	13.3	14.7



01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, PERCENT OF SATURATION  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	120	92	104	108	100	104	106	101	104	108	105	106
2	121	90	105	104	100	102	104	100	102	106	104	105
3	125	88	105	104	99	102	102	98	100	105	103	105
4	100	86	92	103	100	101	104	100	102	106	104	105
5	121	84	101	103	98	101	103	101	102	107	104	105
6	118	87	102	102	98	100	105	101	103	106	104	105
7	115	88	101	102	97	98	105	101	103	106	104	105
8	120	89	103	101	96	98	106	102	104	105	102	103
9	113	91	102	100	95	97	---	---	---	105	101	103
10	106	91	98	---	---	---	---	---	---	104	101	103
11	100	91	96	---	---	---	---	---	---	105	97	102
12	95	89	92	---	---	---	106	103	105	---	---	---
13	95	93	94	---	---	---	106	104	105	---	---	---
14	95	94	94	---	---	---	105	103	104	103	99	101
15	96	93	94	---	---	---	106	103	104	---	---	---
16	96	93	94	95	93	94	105	104	104	---	---	---
17	99	94	97	94	92	93	107	104	106	---	---	---
18	99	97	98	96	92	94	110	106	108	---	---	---
19	100	97	99	97	95	96	109	106	108	---	---	---
20	102	98	100	99	97	98	108	105	107	---	---	---
21	105	101	102	99	97	98	105	104	104	---	---	---
22	107	102	105	98	96	97	107	104	106	106	102	104
23	109	102	105	99	94	97	108	105	106	106	104	105
24	107	103	106	102	94	98	108	105	107	105	105	105
25	108	105	107	103	99	101	107	103	105	105	104	104
26	108	105	106	104	100	101	108	104	106	104	102	103
27	109	104	106	103	99	101	110	107	108	103	100	102
28	109	105	107	104	100	102	110	106	108	103	103	103
29	107	104	106	104	101	102	110	106	108	103	101	102
30	106	103	105	104	101	102	110	106	108	102	100	101
31	109	104	106	---	---	---	110	106	108	100	97	98
MONTH	125	84	101	108	92	99	110	98	105	---	---	---
DAY	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	98	94	95	112	106	109	102	100	101	130	93	108
2	100	96	98	110	103	106	104	99	101	131	92	111
3	111	96	103	106	101	104	105	101	103	131	86	108
4	108	104	106	110	101	105	103	102	102	122	90	104
5	114	103	108	110	101	106	103	101	102	104	86	94
6	115	105	110	105	99	101	108	102	105	104	87	95
7	113	106	110	107	98	103	---	---	---	123	93	106
8	115	106	110	113	101	107	108	105	106	106	88	95
9	116	106	111	115	101	107	108	106	107	104	87	96
10	113	107	109	104	97	100	109	106	108	111	96	101
11	115	103	109	106	97	102	108	106	106	114	95	101
12	115	104	109	113	99	106	109	104	106	113	95	102
13	114	103	109	108	97	103	110	104	107	102	90	96
14	120	106	111	103	92	98	112	104	108	104	86	95
15	117	106	112	109	94	101	112	104	108	106	90	98
16	114	107	111	112	95	103	114	103	108	105	93	100
17	112	108	110	107	93	100	106	100	104	110	95	102
18	117	107	110	96	89	93	110	101	105	110	96	103
19	117	111	114	93	87	90	123	100	110	117	98	107
20	121	109	114	96	90	94	127	103	114	118	99	108
21	123	108	115	97	94	96	129	103	115	---	---	---
22	114	104	108	96	94	95	128	99	112	---	---	---
23	112	101	103	---	---	---	125	99	111	---	---	---
24	107	101	104	---	---	---	144	101	119	---	---	---
25	110	104	107	---	---	---	142	103	120	---	---	---
26	112	105	109	110	107	109	116	96	104	---	---	---
27	112	106	109	111	107	109	146	93	116	---	---	---
28	115	105	110	111	108	109	147	102	122	---	---	---
29	---	---	---	109	106	107	121	93	108	101	92	96
30	---	---	---	106	102	103	131	91	110	102	91	96
31	---	---	---	103	101	102	---	---	---	95	90	93
MONTH	123	94	108	115	87	102	147	91	109	---	---	---





01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	8.6	7.5	7.9	7.8	7.5	7.7	7.6	7.5	7.6	7.7	7.6	7.7
2	8.7	7.5	8.0	7.8	7.7	7.7	7.6	7.5	7.6	7.7	7.6	7.6
3	8.7	7.5	8.1	7.8	7.7	7.8	7.6	7.6	7.6	7.6	7.5	7.5
4	8.1	7.5	7.7	7.8	7.7	7.8	7.6	7.6	7.6	7.5	7.4	7.5
5	8.6	7.5	8.0	7.9	7.7	7.8	7.6	7.5	7.6	7.6	7.5	7.5
6	8.6	7.6	8.1	7.9	7.8	7.8	7.6	7.6	7.6	7.6	7.5	7.6
7	8.5	7.6	8.1	7.9	7.8	7.8	7.6	7.6	7.6	7.7	7.6	7.7
8	8.7	7.7	8.2	7.9	7.8	7.8	7.7	7.6	7.6	7.7	7.6	7.7
9	8.6	7.8	8.2	7.9	7.7	7.8	---	---	---	7.7	7.6	7.7
10	8.2	7.7	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.8	7.7	7.7
11	7.9	7.6	7.8	7.7	7.6	7.7	7.7	7.7	7.7	7.8	7.7	7.7
12	7.7	7.4	7.5	7.7	7.6	7.6	7.7	7.6	7.6	---	---	---
13	7.5	7.3	7.4	7.6	7.6	7.6	7.6	7.6	7.6	---	---	---
14	7.3	7.3	7.3	7.8	7.6	7.7	7.6	7.5	7.5	7.9	7.8	7.8
15	7.3	7.2	7.2	7.7	7.4	7.6	7.5	7.5	7.5	7.9	7.8	7.9
16	7.4	7.2	7.4	7.4	7.3	7.3	7.5	7.5	7.5	8.0	7.8	7.9
17	7.5	7.4	7.5	7.4	7.2	7.3	7.5	7.5	7.5	8.0	7.8	7.9
18	7.4	7.2	7.3	7.3	7.3	7.3	7.6	7.5	7.5	8.0	7.9	7.9
19	7.2	7.2	7.2	7.3	7.2	7.2	7.6	7.5	7.6	8.0	7.9	8.0
20	7.3	7.2	7.3	7.2	7.2	7.2	7.6	7.6	7.6	8.0	7.9	8.0
21	7.5	7.3	7.4	7.2	7.2	7.2	7.6	7.5	7.6	8.0	8.0	8.0
22	7.4	7.4	7.4	7.3	7.2	7.2	7.6	7.5	7.5	8.1	8.0	8.0
23	7.5	7.4	7.5	7.4	7.2	7.3	7.5	7.5	7.5	8.1	7.9	8.0
24	7.6	7.5	7.5	7.4	7.2	7.3	7.6	7.5	7.5	8.1	8.0	8.0
25	7.6	7.5	7.6	7.3	7.2	7.3	7.6	7.5	7.5	8.0	8.0	8.0
26	7.7	7.6	7.6	7.3	7.3	7.3	7.6	7.5	7.6	8.0	8.0	8.0
27	7.7	7.6	7.6	7.4	7.3	7.4	7.7	7.6	7.6	8.0	8.0	8.0
28	7.7	7.6	7.6	7.5	7.4	7.4	7.7	7.6	7.6	8.0	8.0	8.0
29	7.6	7.6	7.6	7.5	7.4	7.5	7.7	7.6	7.7	8.0	8.0	8.0
30	7.7	7.6	7.6	7.5	7.4	7.4	7.7	7.6	7.7	8.1	8.0	8.0
31	7.7	7.6	7.7	---	---	---	7.7	7.6	7.7	8.1	8.0	8.0
MAX	8.7	7.8	8.2	7.9	7.8	7.8	7.7	7.7	7.7	8.1	8.0	8.0
MIN	7.2	7.2	7.2	7.2	7.2	7.2	7.5	7.5	7.5	7.5	7.4	7.5
	FEBRUARY			MARCH			APRIL			MAY		
1	8.0	7.9	8.0	8.1	7.7	7.9	7.5	7.4	7.4	9.1	8.2	8.9
2	8.1	7.8	8.0	8.0	7.6	7.8	7.4	7.3	7.4	9.1	8.6	8.8
3	8.1	7.8	8.0	7.8	7.5	7.7	7.4	7.4	7.4	9.2	8.2	8.8
4	8.0	7.8	7.9	8.0	7.6	7.7	7.4	7.4	7.4	8.9	8.3	8.8
5	8.2	7.8	7.9	8.0	7.6	7.9	7.5	7.4	7.4	8.6	7.6	7.8
6	8.2	7.9	8.0	7.9	7.5	7.6	7.5	7.4	7.5	7.8	7.3	7.5
7	8.1	7.8	7.9	7.9	7.5	7.7	---	---	---	8.7	7.6	7.9
8	8.2	7.8	7.9	8.3	7.7	7.9	7.6	7.5	7.5	8.5	7.2	7.7
9	8.2	7.8	8.0	8.6	7.8	8.2	7.6	7.5	7.5	7.8	7.4	7.6
10	8.2	7.8	8.0	8.3	7.6	7.7	7.7	7.6	7.6	8.1	7.4	7.8
11	8.4	7.8	8.0	8.0	7.7	7.8	7.7	7.6	7.6	8.2	7.6	7.8
12	8.5	8.0	8.2	8.5	7.8	8.0	7.7	7.6	7.6	8.3	7.8	7.9
13	8.6	8.1	8.3	8.5	7.9	8.2	7.8	7.6	7.6	8.4	7.6	8.0
14	8.7	8.1	8.4	8.2	7.7	8.0	7.8	7.6	7.7	8.3	7.8	8.0
15	8.7	8.2	8.5	8.5	7.6	8.2	7.9	7.5	7.7	8.0	7.8	7.9
16	8.6	8.3	8.4	8.8	7.8	8.4	8.1	7.6	7.8	8.1	7.6	7.8
17	8.3	8.0	8.1	8.8	7.8	8.4	8.0	7.6	7.8	8.1	7.7	7.9
18	8.6	7.9	8.0	8.3	7.6	7.8	8.1	7.6	7.8	8.2	7.7	7.9
19	8.7	8.3	8.5	7.6	7.3	7.4	8.6	7.6	7.9	8.2	7.8	7.9
20	8.8	8.3	8.5	7.4	7.2	7.2	8.8	7.9	8.5	8.3	7.7	7.9
21	8.8	8.4	8.6	7.3	7.2	7.3	9.0	8.1	8.7	7.8	7.6	7.7
22	8.6	7.7	8.1	7.3	7.2	7.2	8.9	8.0	8.7	7.8	7.6	7.7
23	7.7	7.5	7.5	---	---	---	9.0	8.0	8.7	8.0	7.6	7.7
24	7.6	7.4	7.5	---	---	---	9.3	8.2	8.6	8.0	7.8	7.9
25	7.7	7.5	7.5	---	---	---	9.3	8.7	9.1	8.0	7.8	7.9
26	7.8	7.5	7.7	7.3	7.2	7.3	9.2	8.6	8.8	8.0	7.8	7.9
27	7.8	7.6	7.7	7.3	7.3	7.3	9.3	8.1	8.8	7.9	7.7	7.9
28	8.2	7.6	7.8	7.4	7.3	7.4	9.4	8.9	9.2	7.8	7.5	7.6
29	---	---	---	7.4	7.4	7.4	9.2	8.4	8.9	7.7	7.5	7.6
30	---	---	---	7.5	7.4	7.4	9.2	8.3	8.9	7.7	7.4	7.5
31	---	---	---	7.4	7.4	7.4	---	---	---	7.6	7.4	7.5
MAX	8.8	8.4	8.6	8.8	7.9	8.4	9.4	8.9	9.2	9.2	8.6	8.9
MIN	7.6	7.4	7.5	7.3	7.2	7.2	7.4	7.3	7.4	7.6	7.2	7.5

## DELAWARE RIVER BASIN

01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

PH. WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	7.5	7.4	7.4	8.1	7.5	7.8	7.6	7.2	7.5	8.5	7.6	8.0
2	7.5	7.2	7.2	8.4	7.7	7.9	7.7	7.2	7.4	7.6	7.1	7.4
3	7.2	7.0	7.2	8.2	7.7	7.9	7.8	7.4	7.6	7.3	6.9	7.1
4	7.3	7.2	7.2	8.5	7.8	8.1	7.7	7.4	7.5	6.9	6.4	6.6
5	7.4	7.3	7.3	8.5	8.1	8.2	7.4	7.1	7.2	6.5	6.2	6.5
6	7.4	7.3	7.4	8.6	8.1	8.3	7.1	7.0	7.0	6.4	6.2	6.3
7	7.4	7.3	7.4	8.5	8.3	8.5	7.1	7.0	7.1	6.4	6.3	6.4
8	7.4	7.4	7.4	8.6	8.2	8.4	7.1	7.0	7.0	6.7	6.3	6.5
9	7.4	7.4	7.4	8.4	8.2	8.4	7.1	7.0	7.1	6.9	6.6	6.7
10	7.5	7.3	7.4	8.2	7.5	7.8	7.1	7.0	7.0	7.1	6.7	6.8
11	7.5	7.4	7.4	8.3	7.3	7.7	7.2	7.1	7.1	7.4	6.8	7.2
12	7.5	7.3	7.4	---	---	---	7.2	7.1	7.2	7.6	7.1	7.3
13	7.5	7.4	7.4	8.6	7.9	8.3	7.1	7.0	7.1	7.3	7.1	7.2
14	7.4	7.3	7.4	8.3	7.6	8.1	7.0	6.8	7.0	7.6	7.1	7.3
15	7.5	7.3	7.4	8.4	7.6	8.1	6.9	6.8	6.9	7.5	7.1	7.3
16	7.5	7.3	7.4	8.3	7.6	8.1	7.0	6.9	7.0	7.5	7.2	7.3
17	7.5	7.4	7.5	8.4	7.6	8.1	7.2	7.0	7.1	7.2	6.9	6.9
18	7.6	7.5	7.5	8.3	7.8	8.1	7.2	7.0	7.1	6.9	6.8	6.8
19	7.6	7.5	7.6	8.4	7.5	8.0	7.3	7.0	7.1	6.9	6.8	6.9
20	7.6	7.5	7.6	8.4	7.6	8.1	7.5	7.2	7.3	7.0	6.9	7.0
21	7.6	7.5	7.6	8.2	7.4	7.9	7.6	7.3	7.4	7.1	7.0	7.0
22	7.5	7.4	7.5	7.9	7.0	7.5	7.6	7.4	7.5	7.1	7.0	7.1
23	7.5	7.4	7.4	7.1	7.0	7.0	7.9	7.4	7.6	7.1	6.9	7.0
24	7.4	7.4	7.4	7.2	7.0	7.1	8.0	7.6	7.8	7.0	6.7	6.8
25	7.4	7.2	7.4	7.3	7.1	7.2	8.3	7.8	8.0	6.7	6.4	6.4
26	7.5	7.4	7.4	7.3	7.0	7.1	8.3	8.0	8.2	6.7	6.4	6.5
27	7.5	7.2	7.4	7.6	7.1	7.2	8.4	8.0	8.2	6.8	6.6	6.7
28	7.6	7.4	7.5	7.7	7.1	7.2	8.5	8.0	8.2	6.8	6.7	6.8
29	7.8	7.5	7.6	7.9	7.2	7.6	8.6	8.2	8.4	6.9	6.8	6.9
30	8.0	7.5	7.7	8.1	7.3	7.6	8.6	8.1	8.4	6.9	6.6	6.9
31	---	---	---	8.0	7.5	7.7	8.6	7.8	8.3	---	---	---
MAX	8.0	7.5	7.7	8.6	8.3	8.5	8.6	8.2	8.4	8.5	7.6	8.0
MIN	7.2	7.0	7.2	7.1	7.0	7.0	6.9	6.8	6.9	6.4	6.2	6.3
YEAR	MAX			MAXIMUM 9.4	MINIMUM 6.4							
	MIN			MAXIMUM 8.9	MINIMUM 6.2							
	MEDIAN			MAXIMUM 9.2	MINIMUM 6.3							

01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	194	176	183	168	162	165	157	151	154	175	168	173
2	179	176	177	169	167	168	159	155	157	182	162	172
3	195	179	187	173	169	171	158	157	157	178	151	164
4	210	194	200	174	170	173	159	157	158	174	152	163
5	222	209	216	173	171	172	162	157	159	188	167	177
6	230	221	225	182	172	177	177	162	168	177	166	169
7	232	225	228	188	179	184	183	176	178	183	170	175
8	234	223	230	188	183	186	193	181	185	182	178	180
9	223	206	214	183	169	174	---	---	---	184	178	181
10	206	203	204	170	167	169	198	194	195	188	182	185
11	206	200	203	169	167	168	202	192	197	189	184	186
12	225	198	210	172	167	169	245	199	210	---	---	---
13	198	156	175	177	172	175	305	236	263	---	---	---
14	156	140	146	181	173	178	236	190	209	195	188	192
15	142	140	141	173	151	162	200	181	192	---	---	---
16	145	141	143	152	148	150	181	168	174	---	---	---
17	159	142	151	152	134	144	168	160	163	---	---	---
18	147	106	124	158	147	155	162	157	159	215	200	210
19	107	104	106	147	123	132	165	160	163	233	204	222
20	117	107	110	124	118	120	172	164	168	---	---	---
21	124	117	121	122	119	121	179	156	171	---	---	---
22	130	123	126	133	120	127	176	152	162	230	216	226
23	140	130	135	137	131	134	152	143	146	229	215	225
24	146	140	143	139	129	134	149	146	147	236	225	231
25	155	146	151	129	126	127	149	141	144	236	225	230
26	166	154	158	132	127	130	183	148	167	228	221	224
27	175	166	170	136	130	132	180	172	176	221	217	218
28	169	153	162	145	136	142	181	170	174	218	212	215
29	153	148	150	150	145	148	171	165	168	213	206	211
30	157	147	152	153	148	152	170	165	168	225	205	215
31	164	157	160	---	---	---	168	165	167	226	210	218
MONTH	234	104	168	188	118	155	305	141	173	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	221	210	216	200	193	197	124	121	122	174	169	172
2	212	208	210	193	186	190	131	123	127	177	171	174
3	212	209	211	205	178	189	137	131	134	182	176	179
4	214	205	209	211	201	207	138	135	136	181	168	178
5	213	207	209	201	192	199	140	136	138	168	147	155
6	225	213	219	195	188	191	143	140	141	151	146	148
7	224	210	215	216	195	210	---	---	---	157	149	153
8	214	205	208	229	215	223	152	138	144	165	155	160
9	211	203	205	229	208	221	162	152	158	173	161	167
10	216	210	213	214	197	206	169	162	165	179	173	176
11	220	213	216	219	209	215	169	166	168	183	177	179
12	221	215	218	215	209	213	171	167	169	188	182	185
13	221	216	218	212	210	211	167	162	164	196	186	190
14	225	218	222	217	208	211	162	158	159	196	186	193
15	228	223	225	235	213	224	161	156	158	188	172	178
16	232	221	229	214	208	211	162	158	160	179	175	177
17	236	212	229	210	203	207	164	161	163	180	174	176
18	230	220	227	203	181	195	170	164	168	190	174	178
19	233	218	223	181	140	158	173	170	172	189	178	183
20	238	230	235	140	114	124	176	172	174	187	179	184
21	231	218	225	134	114	126	180	174	178	193	181	188
22	229	216	222	129	104	116	185	180	183	201	187	193
23	241	206	219	---	---	---	191	184	187	206	189	198
24	243	231	235	---	---	---	190	184	187	210	189	202
25	231	222	226	---	---	---	188	184	187	216	195	204
26	222	206	214	118	112	116	191	185	188	212	192	201
27	207	194	201	123	118	120	197	191	195	208	187	197
28	196	194	195	123	120	121	198	194	196	201	175	187
29	---	---	---	128	121	124	195	168	181	177	173	175
30	---	---	---	135	126	131	172	167	169	178	167	172
31	---	---	---	133	122	128	---	---	---	173	169	172
MONTH	243	194	218	235	104	178	198	121	165	216	146	180



01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	20.7	18.8	19.8	8.7	7.8	8.1	3.1	2.5	2.8	3.6	3.2	3.4
2	21.8	19.4	20.6	8.1	7.3	7.8	2.5	2.1	2.4	3.8	3.5	3.7
3	22.7	20.6	21.6	7.5	7.0	7.3	2.5	1.3	1.9	3.5	2.5	3.0
4	22.2	20.8	21.2	7.2	6.8	7.0	1.3	0.9	1.1	2.5	1.9	2.1
5	22.4	20.7	21.5	7.1	6.4	6.8	1.1	0.1	0.5	2.0	1.8	1.9
6	21.6	20.0	20.7	7.6	7.0	7.3	1.1	0.1	0.5	2.3	1.9	2.1
7	21.1	19.6	20.3	7.7	6.9	7.2	0.6	0.0	0.3	2.2	1.9	2.1
8	20.0	18.2	19.0	7.8	6.9	7.3	0.8	0.1	0.5	2.2	1.8	2.0
9	18.6	17.2	17.6	8.2	7.4	7.8	---	---	---	2.7	1.9	2.3
10	17.5	17.1	17.3	9.3	8.0	8.7	---	---	---	3.1	2.4	2.8
11	17.1	16.5	16.7	10.7	9.3	10.2	---	---	---	3.1	2.1	2.5
12	16.7	15.6	16.1	10.5	10.1	10.4	2.0	0.7	1.3	---	---	---
13	15.6	14.9	15.1	10.4	9.8	10.2	2.3	1.8	2.0	---	---	---
14	15.1	14.4	14.7	10.1	9.3	9.7	3.2	2.3	2.9	0.8	0.2	0.5
15	14.4	13.3	13.7	9.7	9.2	9.5	3.8	3.2	3.5	---	---	---
16	13.8	12.8	13.3	9.3	8.5	8.9	3.7	3.3	3.5	---	---	---
17	12.8	12.1	12.5	8.5	7.5	7.9	3.3	2.5	2.8	---	---	---
18	12.5	11.6	12.0	7.7	7.0	7.4	2.5	1.5	1.8	---	---	---
19	11.6	11.1	11.3	7.0	6.4	6.6	1.7	1.2	1.4	---	---	---
20	11.6	10.9	11.2	6.4	6.0	6.2	3.3	1.7	2.4	---	---	---
21	11.5	10.5	11.1	6.5	5.9	6.2	3.7	3.3	3.5	---	---	---
22	11.4	10.4	11.0	6.7	6.3	6.5	3.6	3.2	3.4	0.0	-0.1	-0.1
23	11.2	10.5	10.9	6.6	6.1	6.3	3.3	2.9	3.0	-0.1	-0.1	-0.1
24	10.7	10.0	10.3	6.4	5.8	6.1	3.0	2.3	2.6	-0.1	-0.1	-0.1
25	10.1	9.8	10	6.2	5.5	5.9	2.9	2.2	2.5	-0.1	-0.1	-0.1
26	10.6	9.8	10.2	6.3	5.7	6.0	2.2	1.6	1.9	-0.1	-0.1	-0.1
27	10.5	9.9	10.2	6.3	5.4	5.8	1.9	1.5	1.7	-0.1	-0.1	-0.1
28	10.1	9.7	9.9	5.4	4.4	4.8	2.0	1.6	1.8	-0.1	-0.1	-0.1
29	9.8	9.1	9.4	4.4	3.4	3.7	2.5	1.9	2.2	-0.1	-0.1	-0.1
30	9.1	8.2	8.7	3.4	3.1	3.3	2.7	2.0	2.3	-0.1	-0.1	-0.1
31	8.7	8.0	8.3	---	---	---	3.3	2.7	3.0	-0.1	-0.1	-0.1
MONTH	22.7	8.0	14.4	10.7	3.1	7.2	3.8	0.0	2.1	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	0.6	-0.1	0.0	2.5	2.2	2.4	6.6	5.3	5.8	16.9	15.1	16.0
2	1.5	0.6	1.1	2.9	2.4	2.6	6.4	4.9	5.7	18.0	16.6	17.3
3	2.5	1.2	1.8	2.6	1.6	2.1	7.5	6.0	6.6	17.9	16.7	17.3
4	3.0	2.5	2.8	2.3	1.2	1.9	7.4	6.8	7.1	17.5	16.4	17.0
5	2.6	1.8	2.3	2.9	2.0	2.5	6.8	6.3	6.5	17.0	14.7	15.6
6	1.8	1.0	1.4	3.0	2.0	2.5	6.8	5.7	6.3	14.7	13.9	14.1
7	1.1	0.6	0.8	2.4	1.4	1.9	---	---	---	15.5	13.4	14.4
8	1.5	0.6	1.0	3.4	1.9	2.6	4.7	4.4	4.5	15.6	14.6	15.1
9	1.3	0.2	0.7	4.5	3.1	3.8	4.4	4.2	4.3	14.8	14.4	14.6
10	1.0	0.8	0.9	4.1	2.7	3.2	5.3	4.2	4.7	15.3	14.5	14.9
11	1.3	0.2	0.8	3.1	2.0	2.5	5.8	5.2	5.4	16.3	15.2	15.7
12	1.4	0.5	0.9	3.2	2.2	2.7	8.0	5.8	6.8	16.6	15.7	16.2
13	0.9	0.1	0.4	3.8	3.0	3.3	9.6	7.7	8.5	15.7	14.6	15.1
14	1.1	0.0	0.4	3.8	2.8	3.3	10.6	8.9	9.7	14.8	14.3	14.5
15	0.9	0.4	0.7	4.5	3.0	3.8	12.1	9.9	10.9	14.5	13.9	14.2
16	0.4	0.0	0.0	5.9	4.1	4.9	13.9	11.5	12.6	14.1	13.7	13.9
17	0.0	0.0	0.0	6.7	5.6	6.2	13.8	11.8	12.7	14.6	13.5	13.9
18	0.0	0.0	0.0	7.5	6.1	6.9	11.8	10.4	10.9	14.3	13.8	14.0
19	0.0	0.0	0.0	7.4	4.9	6.2	11.8	10.0	10.9	16.6	13.6	15.0
20	1.3	0.0	0.4	4.9	3.5	3.9	12.2	10.6	11.5	18.0	15.8	16.8
21	2.2	0.9	1.6	4.4	3.6	3.9	12.6	11.3	12.1	17.5	16.7	17.2
22	2.6	2.0	2.4	5.5	4.4	5.0	13.3	12.0	12.7	16.7	15.9	16.4
23	2.1	1.5	1.9	---	---	---	12.9	11.6	12.1	15.9	15.2	15.6
24	1.5	1.0	1.2	---	---	---	12.6	10.8	11.7	15.3	15.0	15.1
25	1.7	0.7	1.2	---	---	---	13.1	11.4	12.3	15.0	14.9	15.0
26	1.5	0.7	1.1	7.5	6.4	6.9	13.0	12.4	12.6	14.9	14.2	14.6
27	1.3	0.5	1.0	7.8	6.9	7.3	14.6	12.3	13.3	15.0	13.9	14.5
28	2.4	1.0	1.7	8.0	7.2	7.6	15.3	13.4	14.3	15.9	14.5	15.1
29	---	---	---	8.7	7.6	8.1	15.4	14.2	14.9	17.3	15.1	16.2
30	---	---	---	8.6	7.9	8.4	16.2	14.5	15.3	18.5	16.4	17.4
31	---	---	---	7.9	6.6	7.4	---	---	---	18.3	17.5	17.8
MONTH	3.0	-0.1	1.0	8.7	1.2	4.4	16.2	4.2	9.7	18.5	13.4	15.5



01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	3.3	<2.0	<2.0	4.1	<2.0	2.1	2.2	<2.0	<2.0	17	<2.0	<2.0
2	<2.0	<2.0	<2.0	2.7	<2.0	2.0	<2.0	<2.0	<2.0	62	17	36
3	<2.0	<2.0	<2.0	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	33	5.6	18
4	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	8.8	4.3	6.1
5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.5	2.6	3.6
6	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	4.4	<2.0	<2.0
7	<2.0	<2.0	<2.0	4.3	<2.0	2.0	<2.0	<2.0	<2.0	2.5	<2.0	<2.0
8	<2.0	<2.0	<2.0	3.1	<2.0	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	<2.0
9	<2.0	<2.0	<2.0	2.2	<2.0	<2.0	---	---	---	<2.0	<2.0	<2.0
10	<2.0	<2.0	<2.0	68	<2.0	9.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
11	3.9	<2.0	<2.0	68	<2.0	13	2.6	<2.0	<2.0	<2.0	<2.0	<2.0
12	64	3.9	26	2.3	<2.0	<2.0	18	2.5	12	---	---	---
13	46	25	35	6.5	2.3	5.1	15	9.1	12	---	---	---
14	26	13	19	7.4	3.0	4.0	21	8.0	14	<2.0	<2.0	<2.0
15	18	10	14	4.6	3.0	3.9	15	8.0	11	<2.0	<2.0	<2.0
16	13	2.3	7.3	6.7	2.1	3.3	14	4.8	8.3	<2.0	<2.0	<2.0
17	32	3.2	12	110	2.9	41	7.9	3.3	5.7	<2.0	<2.0	<2.0
18	43	19	31	41	20	32	5.6	2.0	3.5	<2.0	<2.0	<2.0
19	31	15	20	28	10	18	2.9	<2.0	<2.0	<2.0	<2.0	<2.0
20	24	9.3	14	17	9.2	12	56	<2.0	5.1	<2.0	<2.0	<2.0
21	12	4.1	8.1	12	2.4	5.2	160	21	55	<2.0	<2.0	<2.0
22	9.9	4.9	6.0	3.7	<2.0	<2.0	22	7.9	13	<2.0	<2.0	<2.0
23	5.5	2.7	4.0	7.1	<2.0	2.7	10	2.5	5.8	<2.0	<2.0	<2.0
24	4.6	2.2	3.0	4.2	<2.0	2.0	7.1	3.8	5.4	<2.0	<2.0	<2.0
25	3.7	2.2	2.8	4.4	<2.0	2.3	6.0	2.4	3.8	<2.0	<2.0	<2.0
26	4.7	<2.0	2.7	3.4	<2.0	<2.0	5.4	2.7	3.8	<2.0	<2.0	<2.0
27	8.4	3.6	5.4	3.5	<2.0	<2.0	4.0	<2.0	2.5	<2.0	<2.0	<2.0
28	6.7	2.6	4.7	3.1	<2.0	<2.0	2.2	<2.0	<2.0	<2.0	<2.0	<2.0
29	6.5	<2.0	2.7	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
30	4.4	<2.0	3.1	2.6	<2.0	<2.0	2.3	<2.0	<2.0	<2.0	<2.0	<2.0
31	3.7	<2.0	2.5	---	---	---	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
MONTH	64	<2.0	7.4	110	<2.0	6.0	160	<2.0	6.0	62	<2.0	2.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	<2.0	<2.0	<2.0	4.8	<2.0	3.1	18	10	13	5.1	<2.0	2.7
2	<2.0	<2.0	<2.0	19	<2.0	5.5	10	7.5	8.8	4.2	<2.0	<2.0
3	<2.0	<2.0	<2.0	26	14	18	9.9	5.7	7.4	6.0	<2.0	2.5
4	<2.0	<2.0	<2.0	16	10	13	7.6	4.4	5.8	7.4	2.0	3.4
5	<2.0	<2.0	<2.0	14	6.3	8.8	6.9	4.6	5.6	6.4	<2.0	3.4
6	<2.0	<2.0	<2.0	23	12	16	7.7	4.8	5.6	3.6	<2.0	<2.0
7	2.8	<2.0	<2.0	15	9.0	11	---	---	---	2.8	<2.0	<2.0
8	2.2	<2.0	<2.0	9.8	6.1	7.6	15	2.1	3.2	2.8	<2.0	2.2
9	<2.0	<2.0	<2.0	16	4.6	7.7	3.6	<2.0	2.7	2.7	<2.0	2.0
10	<2.0	<2.0	<2.0	30	14	22	6.0	3.1	4.2	3.7	<2.0	2.2
11	<2.0	<2.0	<2.0	17	10	12	4.6	2.2	3.1	2.5	<2.0	<2.0
12	<2.0	<2.0	<2.0	11	3.2	6.6	9.3	4.2	5.7	4.1	<2.0	2.1
13	<2.0	<2.0	<2.0	4.6	2.8	3.6	8.2	2.8	4.4	2.9	<2.0	<2.0
14	<2.0	<2.0	<2.0	18	2.8	9.4	4.9	2.1	3.3	3.6	<2.0	<2.0
15	<2.0	<2.0	<2.0	11	7.6	9.2	3.8	<2.0	2.6	3.9	<2.0	<2.0
16	<2.0	<2.0	<2.0	10	5.5	8.0	6.6	2.1	3.0	2.7	<2.0	<2.0
17	<2.0	<2.0	<2.0	7.5	4.4	5.6	3.6	<2.0	2.0	3.4	<2.0	<2.0
18	<2.0	<2.0	<2.0	27	6.1	12	3.4	<2.0	2.2	2.7	<2.0	<2.0
19	---	---	---	26	9.7	16	6.2	<2.0	2.2	3.1	<2.0	2.1
20	<2.0	<2.0	<2.0	49	15	24	2.4	<2.0	<2.0	5.3	2.3	3.7
21	<2.0	<2.0	<2.0	110	30	48	2.2	<2.0	<2.0	4.9	<2.0	2.4
22	18	<2.0	3.6	---	---	---	2.2	<2.0	<2.0	5.3	<2.0	2.3
23	25	12	15	---	---	---	2.6	<2.0	2.1	4.8	<2.0	<2.0
24	20	13	17	---	---	---	2.4	<2.0	2.0	<2.0	<2.0	<2.0
25	13	6.0	8.7	---	---	---	2.9	<2.0	<2.0	<2.0	<2.0	<2.0
26	6.0	3.5	4.7	13	8.0	11	<2.0	<2.0	<2.0	29	<2.0	3.8
27	6.5	3.5	4.6	11	7.6	9.2	2.3	<2.0	<2.0	29	4.3	11
28	4.9	2.7	3.8	12	6.7	8.9	2.3	<2.0	<2.0	11	<2.0	4.7
29	---	---	---	9.1	6.3	7.9	4.2	<2.0	2.2	9.2	<2.0	4.2
30	---	---	---	15	8.5	11	5.1	<2.0	2.6	8.5	<2.0	2.9
31	---	---	---	17	10	13	---	---	---	5.9	2.0	3.5
MONTH	25	<2.0	2.6	110	<2.0	12	18	<2.0	3.6	29	<2.0	2.5

01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

TURBIDITY, WATER, UNFILTERED, FIELD, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED  
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	---	---	---	5.6	<2.0	2.6	---	---	---	---	---	---
2	---	---	---	3.2	<2.0	<2.0	---	---	---	---	---	---
3	---	---	---	3.0	<2.0	<2.0	---	---	---	19	<2.0	6.2
4	100	9.3	40	3.0	<2.0	<2.0	---	---	---	35	5.6	17
5	37	13	22	<2.0	<2.0	<2.0	---	---	---	69	11	21
6	24	6.7	12	---	---	---	---	---	---	130	27	62
7	24	3.3	9.0	---	---	---	---	---	---	42	14	23
8	32	13	21	---	---	---	---	---	---	20	12	15
9	27	4.6	13	2.5	<2.0	<2.0	---	---	---	26	11	14
10	13	2.2	5.9	3.4	<2.0	<2.0	---	---	---	29	11	15
11	10	<2.0	6.3	3.0	<2.0	<2.0	---	---	---	19	10	13
12	48	<2.0	9.5	31	<2.0	3.0	---	---	---	13	9.9	12
13	86	12	33	<2.0	<2.0	<2.0	---	---	---	31	9.8	12
14	85	19	37	<2.0	<2.0	<2.0	---	---	---	14	9.6	11
15	32	5.5	21	<2.0	<2.0	<2.0	---	---	---	16	4.3	9.7
16	33	2.5	17	6.2	<2.0	<2.0	---	---	---	47	3.2	24
17	31	<2.0	16	22	<2.0	<2.0	---	---	---	40	8.9	19
18	15	<2.0	6.0	<2.0	<2.0	<2.0	---	---	---	26	6.2	15
19	12	<2.0	5.6	7.9	<2.0	<2.0	---	---	---	39	6.1	16
20	21	<2.0	8.9	66	<2.0	3.9	---	---	---	20	8.2	15
21	190	15	61	5.6	<2.0	<2.0	---	---	---	16	4.9	7.8
22	120	15	39	35	<2.0	12	---	---	---	13	5.5	8.3
23	55	11	25	200	18	83	---	---	---	72	3.9	17
24	26	5.4	14	68	9.0	30	---	---	---	150	27	65
25	21	2.6	9.3	25	3.8	9.1	---	---	---	70	18	36
26	14	2.4	7.1	7.6	2.5	4.8	---	---	---	48	16	25
27	11	<2.0	6.3	---	---	---	---	---	---	18	10	15
28	35	<2.0	6.4	---	---	---	---	---	---	130	11	34
29	9.0	<2.0	4.4	---	---	---	---	---	---	35	15	23
30	6.5	<2.0	2.1	---	---	---	---	---	---	23	4.7	13
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	190	<2.0	17	---	---	---	---	---	---	150	<2.0	20
YEAR	200	<2.0	7.8									

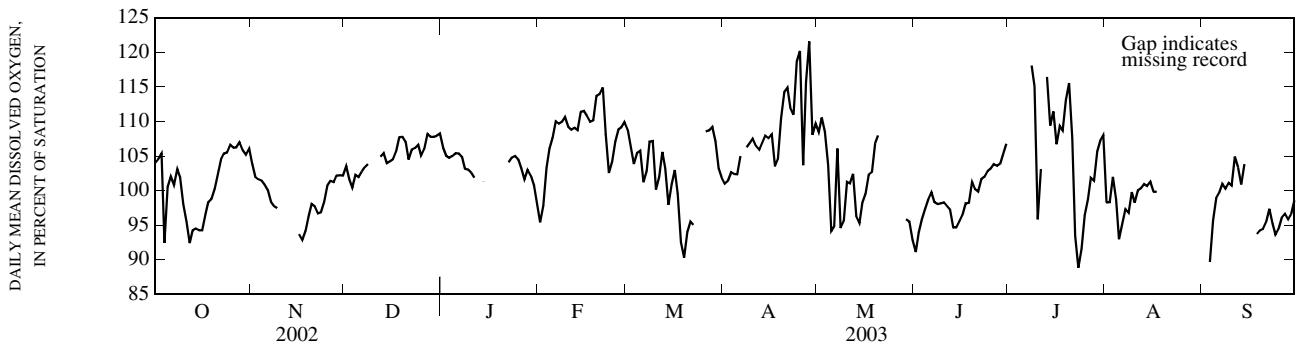
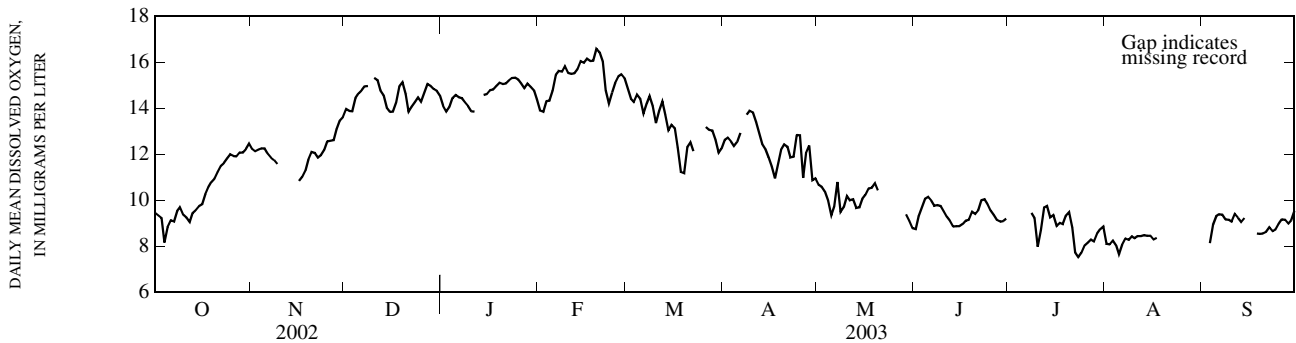
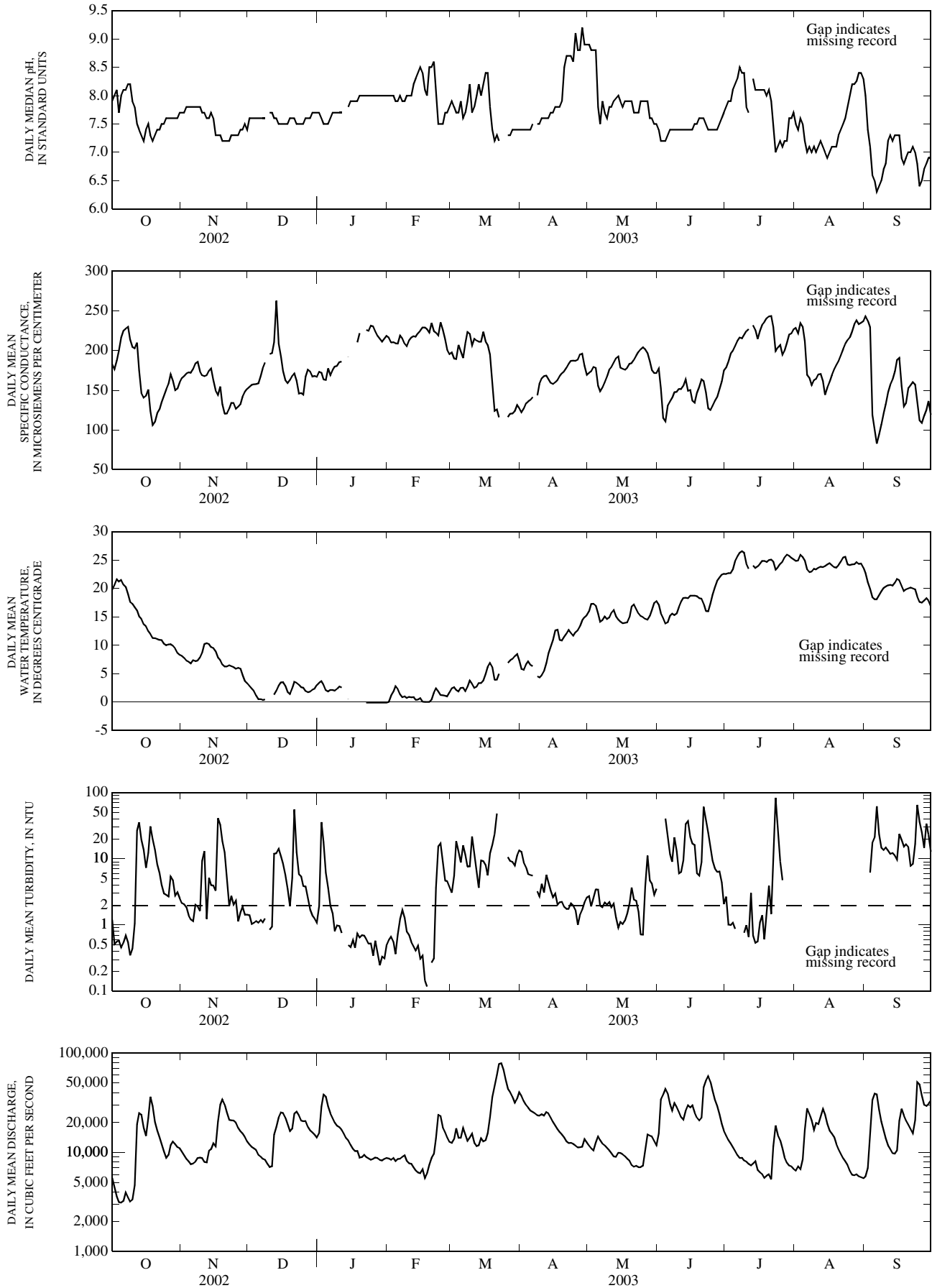


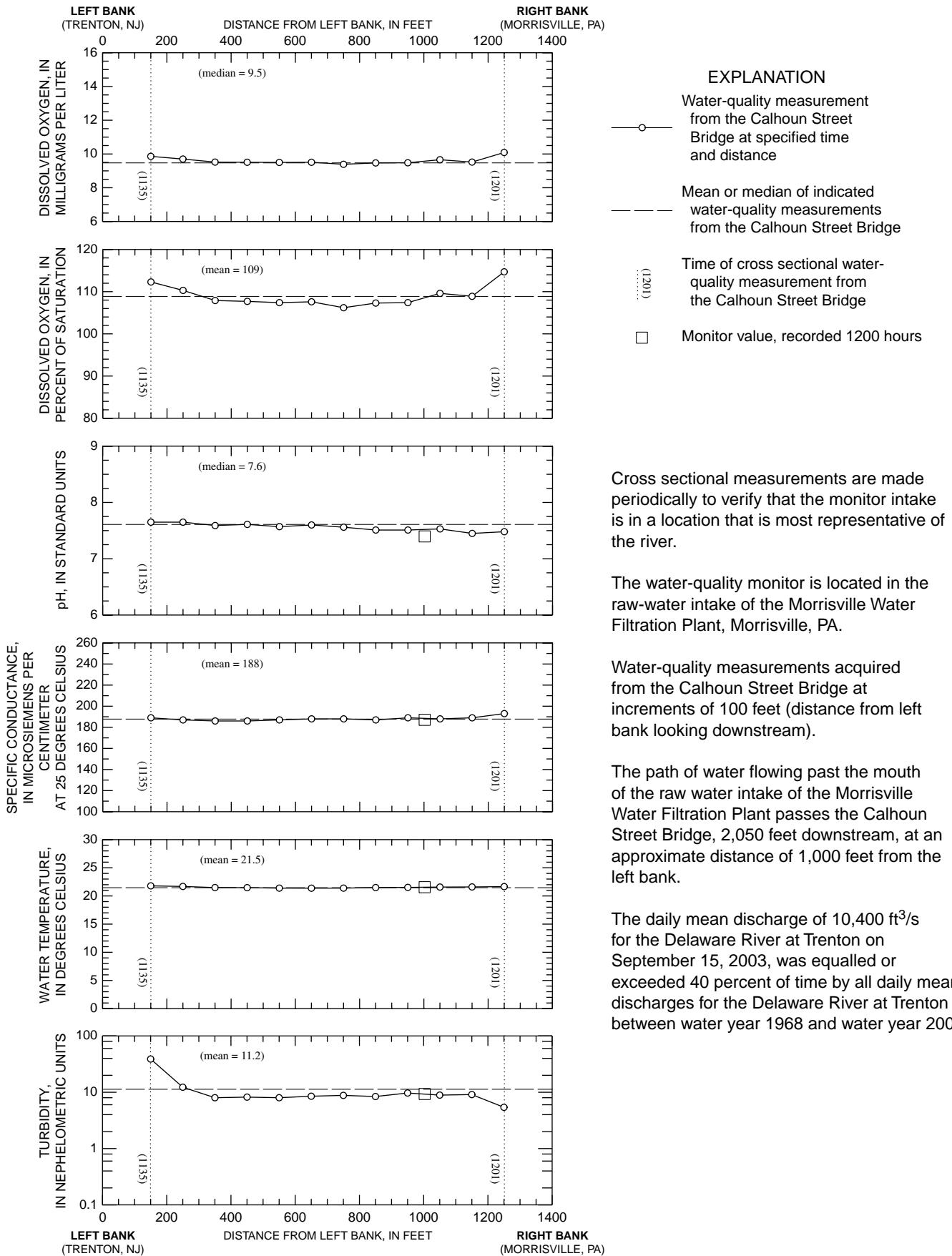
Figure 43. Physical characteristics and concentrations of constituents measured at 01463500 Delaware River at Trenton, water year 2003.



01463500 DELAWARE RIVER AT TRENTON, NJ—Continued



**Figure 43.** Physical characteristics and concentrations of constituents measured at 01463500 Delaware River at Trenton, water year 2003--continued. [--- instrument detection level; turbidity less than 2.0 NTU are approximate]



**Figure 44.** Cross sectional water-quality measurements with recorded monitor values, at Delaware River at Trenton, September 15, 2003.

01463500 DELAWARE RIVER AT TRENTON, NJ—Continued

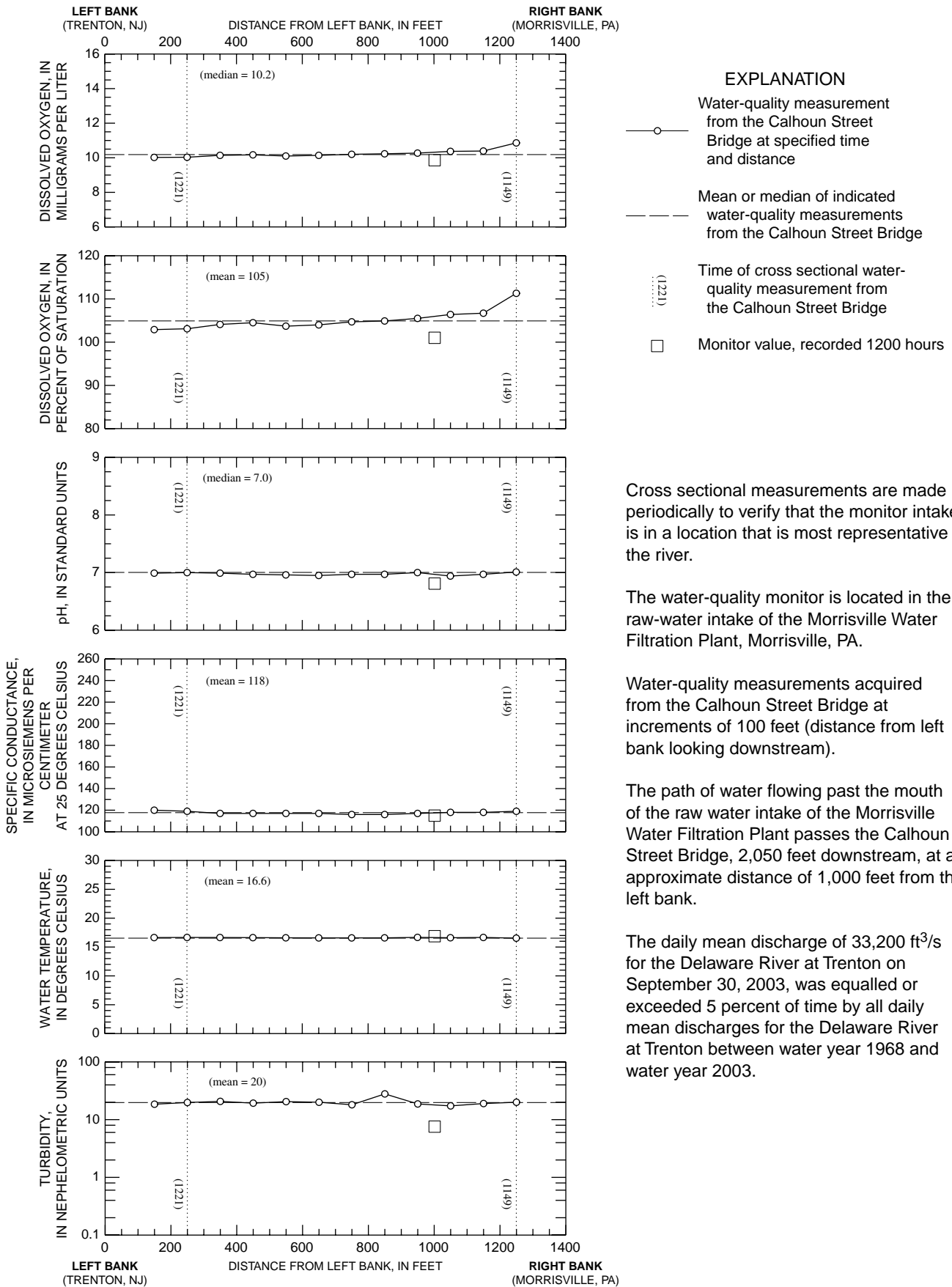


Figure 45. Cross sectional water-quality measurements with recorded monitor values, at Delaware River at Trenton, September 30, 2003.

## 01463610 ASSUNPINK CREEK AT EDINBURG, NJ

LOCATION.--Lat 40°15'28", long 74°37'04", Mercer County, Hydrologic Unit 02040105, 0.1 mi west of Edinburg, 0.7 mi upstream of Bridgeroom Run, and 1.7 miles south of Dutch Neck.

DRAINAGE AREA.--25.0 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to September 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 11.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 12...	1000	1.7	0.104	0.080	763	8.0	76	6.5	172	11.0	13.0	44	9.96
FEB 26...	1100	14	0.141	0.110	772	11.7	80	6.2	132	-4.5	0.6	24	5.32
MAY 15...	0945	8.4	0.244	0.197	764	8.3	80	6.7	164	17.0	13.6	46	10.1
AUG 12...	0930	5.9	0.259	0.198	764	6.0	72	6.7	139	24.5	24.0	37	8.59

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 12...	4.73	3.35	9.71	E10	20.4	<0.17	5.1	26.8	--	99	3	0.25	<0.030
FEB 26...	2.69	2.60	9.81	3	19.8	<0.17	5.6	15.4	67	74	5	0.47	0.183
MAY 15...	4.98	2.44	10.9	15	23.2	<0.17	4.0	18.6	89	86	2	0.56	0.200
AUG 12...	3.85	2.72	9.34	20	19.4	<0.17	7.7	11.0	76	83	2	0.45	0.040

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 12...	0.054	0.70	0.004	<0.020	0.06	0.009	0.023	0.95	1.0	0.3	<0.1	0.3	4.1
FEB 26...	0.193	0.78	0.007	0.034	0.18	0.024	0.090	1.2	1.4	1.5	<0.1	1.5	4.3
MAY 15...	0.211	1.15	0.045	0.021	0.09	0.017	0.075	1.7	1.8	0.9	<0.1	0.8	4.1
AUG 12...	0.040	0.21	0.003	0.039	0.08	0.014	0.062	0.65	0.73	0.7	<0.1	0.7	6.4

01463610 ASSUNPINK CREEK AT EDINBURG, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcrtd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 12...	<1.0	--	21
FEB 26...	E1.1	--	16
MAY 15...	<1.0	2.60	14
AUG 12...	E1.2	1.80	25

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 12...	0930	--	--	--	--	--	E2	36.9	E.05	19	<0.04	<0.8	0.7
12...	0930	6.28	140	2,900	3.7	<0.2	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd recover -able, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 12...	1,400	0.28	64.9	<0.02	2.29	0.5	<0.16	4	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	<1	0.020	4.6	0.730	5

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, wsv nat field, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat field, ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49405)
AUG 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	2,800	2.8	16	<0.01	1.1	<1	8.1	<50	<50	<50	E3	E6	<50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49406)	2-Ethyl-naphthalene, bed sed <2 mm, wsv nat field, ug/kg (49948)	2-Methyl-anthracene, bed sed <2 mm, wsv nat field, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49411)	9H-Flourene, bed sed <2 mm, wsv nat field, ug/kg (49399)	Ace-naphthene, bed sed <2 mm, wsv nat field, ug/kg (49429)	Ace-naphthylene, bed sed <2 mm, wsv nat field, ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat field, ug/kg (49389)	Benzo-[b]-fluor-anthene, bed sed <2 mm, wsv nat field, ug/kg (49458)	Benzo-[ghi]-perylene, bed sed <2 mm, wsv nat field, ug/kg (49408)	Benzo-[k]-fluor-anthene, bed sed <2 mm, wsv nat field, ug/kg (49397)
AUG 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	<50	<50	E7	E2	E2	<50	E9	E12	E27	E28	E26	E14	E23

## 01463610 ASSUNPINK CREEK AT EDINBURG, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 12... 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
	E27	E7	E51	E20	<50	E3	<5	<50	E23	E2	E45	1.5	0.5

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 12... 12...	--	--	--	--
	0.6	0.7	0.9	1.1

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 26...	1100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 26...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 26...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

01463610 ASSUNPINK CREEK AT EDINBURG, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, ug/L (82686)	Ben-flur-alin, water, fltrd, ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, ug/L (82680)	Carbo-furan, water, fltrd, ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 15...	0945	<0.006	E.025	0.152	0.005	<0.005	0.820	<0.050	<0.010	<0.002	E.118	E.016	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd, 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd, 0.7u GF (82684)
MAY 15...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.102	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Pendi-meth-alin, water, fltrd, 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd, ug/L (82670)	Terba-cil, water, fltrd, ug/L (82665)	Tri-flur-alin, water, fltrd, ug/L (82661)
MAY 15...		<0.022	M	0.114	<0.02	E.080	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	0815	110	100	110	JUN 04...	0800	4,600	48,000	>16000
MAY 14...	0810	50	100	20					
MAY 21...	0930	120	300	130					
MAY 28...	0925	380	600	1,300					

Remark codes used in this table:  
 > -- Greater than

## 01463850 MIRY RUN AT ROUTE 533, AT MERCERVILLE, NJ

LOCATION.--Lat 40°14'50", long 74°41'13", Mercer County, Hydrologic Unit 02040105, at bridge on County Route 533 (Quaker Bridge Road), 0.7 mi north of Mercerville, 2.1 mi upstream of Assunpink Creek, and 3.8 mi northwest of Robbinsville.

DRAINAGE AREA.--10.7 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. Environmental Protection Agency, Region II, Division of Environmental Science and Assessment.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 11.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)
NOV 07...	1010	Environmental	10	7.4	0.215	0.166	758	11.1	93	6.9	151
FEB 04...	0900	Environmental	2.1	4.1	0.143	0.111	744	10.6	83	6.0	319
04...	0900	<i>Split Replicate</i>	--	--	--	--	--	--	--	--	--
04...	0901	<i>Concurrent Replicate</i>	--	--	--	--	--	--	--	--	--
MAY 08...	0920	Environmental	5.0	5.3	0.228	0.173	755	5.4	56	6.4	213
AUG 05...	0850	Environmental	2.6	6.1	0.249	0.189	759	4.4	51	6.3	188
05...	0850	<i>Split Replicate</i>	--	--	--	--	--	--	--	--	--
05...	0851	<i>Concurrent Replicate</i>	--	--	--	--	--	--	--	--	--

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO <sub>3</sub> (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO <sub>3</sub> (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)
NOV 07...	7.0	7.5	43	10.1	4.23	3.64	9.91	E19	16.5	<0.17	5.0	20.8	--
FEB 04...	5.5	4.0	64	15.6	6.06	3.17	30.5	23	57.7	<0.17	6.4	24.9	167
04...	--	--	61	15.0	5.70	3.40	31.0	24	60.0	<0.10	--	26.0	163
04...	--	--	61	15.0	5.80	3.50	31.0	24	59.0	<0.10	--	26.0	162
MAY 08...	17.0	16.7	43	10.7	3.96	2.57	17.9	25	34.2	<0.17	2.4	15.9	106
AUG 05...	27.0	23.4	45	11.0	4.26	2.83	15.9	24	29.3	<0.17	3.7	13.9	99
05...	--	--	46	11.0	4.50	3.20	16.0	26	30.0	0.10	--	13.0	97
05...	--	--	46	11.0	4.40	3.10	15.0	25	30.0	0.10	--	13.0	95



01463850 MIRY RUN AT ROUTE 533, AT MERCERVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd, mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd, mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Ortho-phosphate, water, unfltrd, mg/L as P (70507)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd, mg/L (00665)
NOV 07...	96	2	0.45	--	0.060	0.101	0.70	0.004	<0.020	--	0.22	0.017	0.061
FEB 04...	174	4	0.55	--	0.147	0.178	1.94	0.014	<0.020	--	0.19	0.013	0.048
04...	160	6	0.38	0.70	0.140	0.170	1.70	0.016	<0.010	<0.01	--	<0.025	0.035
04...	170	10	0.41	0.78	0.150	0.150	1.70	0.021	<0.010	<0.01	--	<0.025	0.034
MAY 08...	123	2	0.67	--	0.251	0.288	0.80	0.030	<0.020	--	0.15	0.015	0.060
AUG 05...	132	6	0.55	--	0.109	0.104	0.83	0.013	0.037	--	0.16	0.022	0.071
05...	180	<10	0.60	0.86	0.096	0.096	0.780	0.015	0.013	0.02	--	<0.050	0.067
05...	180	<10	0.63	0.89	0.100	0.098	0.780	0.014	0.014	0.02	--	<0.050	0.056

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd, mg/L (00600)	Total carbon, suspnd sedimnt, total, mg/L (00694)	Inorganic carbon, suspnd sedimnt, total, mg/L (00688)	Organic carbon, suspnd sedimnt, total, mg/L (00689)	Organic carbon, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 07...	1.1	1.4	1.4	<0.1	1.4	6.6	E1.8	--	28
FEB 04...	2.5	2.7	1.2	<0.1	1.1	3.7	E2.3	--	24
04...	2.1	2.4	--	--	--	4.2	--	--	20
04...	2.1	2.5	--	--	--	4.4	--	--	20
MAY 08...	1.5	1.6	0.9	<0.1	0.9	5.6	<1.0	12.9	30
AUG 05...	1.4	1.6	1.1	<0.1	1.1	5.9	<1.0	13.5	33
05...	1.4	1.6	--	--	--	5.9	--	--	30
05...	1.4	1.7	--	--	--	6.1	--	--	30

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	0835	240	200	110	JUN 04...	0815	4,600	240,000	>16000
14...	0825	220	200	300					
21...	0945	470	700	300					
28...	0940	1,040	2,000	2,400					

Remark codes used in this table:

## 01464020 ASSUNPINK CREEK AT PEACE STREET, AT TRENTON, NJ

LOCATION.--Lat 40°13'02", long 74°46'07", Mercer County, Hydrologic Unit 02040105, at bridge on Peace Street in Trenton, 0.3 mi northwest of Trent House, and 0.7 mi southeast of Trenton Filtration Plant.

DRAINAGE AREA.--91.4 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963, 1976-78, 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 11.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 26...	0910	148	7.1	0.191	0.149	768	11.9	100	7.1	245	8.5	8.0	70
FEB 10...	1320	78	5.1	0.089	0.068	754	12.8	100	7.0	515	-1.0	4.5	94
MAY 20...	1110	58	6.0	0.123	0.094	765	8.9	89	7.1	415	23.5	15.2	110
AUG 20...	1240	69	5.5	0.167	0.125	765	8.3	97	7.1	349	29.5	23.3	100

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 26...	16.1	7.21	3.55	16.2	34	28.8	<0.17	9.2	25.8	136	144	6	0.45
FEB 10...	23.6	8.43	4.06	52.6	33	101	0.22	9.0	30.1	271	285	7	0.50
MAY 20...	24.8	12.1	4.40	30.0	54	57.3	0.26	8.1	29.4	225	261	6	0.68
AUG 20...	24.4	10.1	4.32	25.3	47	44.4	0.25	7.8	22.9	187	205	6	0.65

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 26...	0.055	0.074	1.89	0.004	0.176	0.06	0.18	0.22	2.3	2.4	0.6	<0.1	0.6
FEB 10...	0.115	0.112	4.73	0.014	0.430	0.18	0.42	0.53	5.2	5.4	1.2	<0.1	1.1
MAY 20...	0.091	0.077	5.56	0.054	0.485	0.16	0.54	0.65	6.2	6.4	1.2	<0.1	1.2
AUG 20...	0.127	0.125	4.00	0.020	0.494	0.07	0.47	0.59	4.6	4.7	0.6	<0.1	0.6

01464020 ASSUNPINK CREEK AT PEACE STREET, AT TRENTON, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 26...	5.2	2.0	--	53
FEB 10...	3.0	E1.8	--	64
MAY 20...	4.3	E1.6	7.40	85
AUG 20...	4.9	E1.6	8.40	82

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	0940	130	<100	700	JUN 04...	0930	4,600	12,000	16,000
MAY 14...	0950	150	400	500					
MAY 21...	1100	450	1,600	1,300					
MAY 28...	1105	580	2,100	2,200					

Remark codes used in this table:  
 < -- Less than

## 01464280 SOUTH RUN NEAR COOKSTOWN, NJ

LOCATION.--Lat 40°01'38", long 74°33'36", Burlington County, Hydrologic Unit 02040201, at bridge on Browns Mills-Cookstown Road, 1.5 mi south of Cookstown, 2.3 mi upstream from mouth, and 3.1 mi east of Wrightstown.

DRAINAGE AREA.--6.06 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 20.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 26...	0900	5.5	0.128	0.099	768	9.1	76	6.8	237	8.0	8.0	80	24.5
FEB 10...	0845	5.7	0.168	0.140	759	10.0	74	7.0	348	5.1	2.5	77	23.9
MAY 28...	0900	20	0.197	0.153	757	7.4	73	6.7	208	18.5	14.2	59	17.9
AUG 14...	0930	9.1	0.185	0.142	767	6.8	79	7.1	234	30.0	22.5	83	25.8

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 26...	4.55	2.46	11.5	43	18.4	<0.17	9.5	32.3	131	142	5	0.56	0.361
FEB 10...	4.08	4.20	32.3	50	49.3	0.20	8.9	28.7	183	197	8	0.55	0.312
MAY 28...	3.42	2.48	14.5	26	22.9	<0.17	7.2	22.3	108	129	9	0.59	0.248
AUG 14...	4.46	2.85	14.7	46	23.4	<0.17	8.8	23.3	133	139	6	0.48	0.222

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 26...	0.351	0.42	0.010	<0.020	0.02	0.006	0.024	0.97	1.0	0.4	<0.1	0.4	3.3
FEB 10...	0.333	0.29	0.006	<0.020	0.05	0.004	0.026	0.84	0.89	0.5	<0.1	0.5	--
MAY 28...	0.237	0.28	0.012	<0.020	0.13	0.012	0.054	0.87	1.0	1.1	<0.1	1.1	5.3
AUG 14...	0.233	0.42	0.022	<0.020	0.08	0.007	0.037	0.90	0.98	0.7	<0.1	0.7	4.9

01464280 SOUTH RUN NEAR COOKSTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro-phyll a fluorometric method, corrcrtd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 26...	<1.0	--	41
FEB 10...	4.6	--	30
MAY 28...	E1.6	6.90	34
AUG 14...	E1.4	3.50	50

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phos-phorus, bed total, mg/kg (00668)	Total carbon, bed total, g/kg (00693)	Inor-ganic carbon, bed total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryll-ium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)
AUG 14...	0929	Field Blank	--	--	--	--	--	--	--	--	--
14...	0930	Environmental	--	--	--	--	--	<2	45.5	0.17	41
14...	0930	Bed material	6.54	210	1,200	0.7	<0.2	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cadmium water, unfltrd recover -able, ug/L (01027)	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selen-ium, water, unfltrd recover -able, ug/L (01147)
AUG 14...	--	--	<0.2	--	--	<0.08	--	--	<0.02	--	<0.06	--	--
14...	0.10	E.5	--	1.4	1,690	--	0.52	62.5	--	<0.02	--	2.49	0.6
14...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chrom-ium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Mangan-ese, bed sedimnt recover -able, ug/g (01053)	Mercury bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)
AUG 14...	--	<1	--	--	--	--	--	--	--	--	--	--	--
14...	<0.16	--	18	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	<1	1.7	1.1	0.310	<2	590	2.6	1.9	<0.01	0.326

## 01464280 SOUTH RUN NEAR COOKSTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, bed sediment total, ug/g (01148)	Zinc, bed sediment recoverable, ug/g (01093)	1,2-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49404)	1Methyl-9H-fluorene, bed sediment <2 mm, ug/kg (49398)	1-Methylphenanthrene, bed sediment <2 mm, ug/kg (49410)	1-Methylpyrene, bed sediment wsv nat ug/kg (49388)	1-236Trimethylnaphthalene, bed sediment <2 mm, ug/kg (49405)	2,6-Dimethylnaphthalene, bed sediment <2 mm, ug/kg (49406)	2-Ethyl-naphthalene, bed sediment <2 mm, ug/kg (49948)	2-Methylanthracene, bed sediment <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sediment <2 mm, ug/kg (49411)	9H-Flour-ene, bed sediment <2 mm, wsv nat ug/kg (49399)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<1	6.9	<50	<50	<50	<50	E12	<50	E13	<50	E10	<50	E10

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Acenaphthene, bed sediment <2 mm, wsv nat ug/kg (49429)	Acenaphthylene, bed sediment <2 mm, wsv nat ug/kg (49428)	Anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49434)	Benzo[a]anthracene, bed sediment <2 mm, wsv nat ug/kg (49436)	Benzo[a]pyrene, bed sediment <2 mm, wsv nat ug/kg (49389)	Benzo[b]fluoranthene, bed sediment <2 mm, wsv nat ug/kg (49458)	Benzo[ghi]perylene, bed sediment <2 mm, wsv nat ug/kg (49408)	Benzo[k]fluoranthene, bed sediment <2 mm, wsv nat ug/kg (49397)	Chrysene, bed sediment wsv nat field, ug/kg (49450)	Dibenzo[a,h]anthracene, bed sediment <2 mm, wsv nat field, ug/kg (49461)	Fluoranthene, bed sediment <2 mm, wsv nat field, ug/kg (49466)	Indeno[1,2,3-cd]pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49390)	Iso-phorone, bed sediment <2 mm, wsv nat field, ug/kg (49400)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	<50	E11	E10	E15	E15	E32	<50	E15	E10	<50	E20	E21	<50

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Naphthalene, bed sediment <2 mm, wsv nat ug/kg (49402)	PCBs, bed sediment ug/kg (39519)	p-Cresol, bed sediment <2 mm, wsv nat field, ug/kg (49451)	Phenanthrene, bed sediment <2 mm, wsv nat field, ug/kg (49409)	Phenanthridine, bed sediment <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sediment <2 mm, wsv nat field, ug/kg (49387)	Bed sediment, dry svedia percent <.063mm (80164)	Bed sediment, falldia percent <.002mm (80294)	Bed sediment, falldia percent <.004mm (80157)	Bed sediment, falldia percent <.008mm (80293)	Bed sediment, falldia percent <.016mm (80282)	Bed sediment, falldia percent <.031mm (80283)
AUG 14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	<50	E1	<50	E10	<50	E20	0.5	0.1	0.1	0.2	0.2	0.3

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Trichloroethane, water, unfltrd ug/L (34506)	CFC-113, water, unfltrd ug/L (77652)	1,1-Dichloroethane, water, unfltrd ug/L (34496)	1,1-Dichloroethane, water, unfltrd ug/L (34501)	1,2-Dichlorobenzene, water, unfltrd ug/L (34536)	1,2-Dichloroethane, water, unfltrd ug/L (32103)	1,2-Dichloropropane, water, unfltrd ug/L (34541)	1,3-Dichlorobenzene, water, unfltrd ug/L (34566)	1,4-Dichlorobenzene, water, unfltrd ug/L (34571)	Benzene, water, unfltrd ug/L (34030)	Bromodichloromethane, water, unfltrd ug/L (32101)	Chlorobenzene, water, unfltrd ug/L (34301)
FEB 10...	0845	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	0.2	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane, water, unfltrd ug/L (32105)	Di-chloro-di-fluoromethane, water, unfltrd ug/L (34668)	Di-chloromethane, water, unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene, water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene, water, unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 10...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.2

01464280 SOUTH RUN NEAR COOKSTOWN, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water, unfltrd ug/L (32102)	Toluene water, unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water, unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water, unfltrd ug/L (34488)	Tri-chloro-methane water, unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 10...	<0.1	<0.2	<0.1	<0.1	<0.2	0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 28...	0900	<0.006	E.003	<0.006	<0.004	<0.005	0.015	<0.050	<0.010	<0.002	E.010	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 28...	<0.003	<0.004	<0.005	0.008	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.003	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 28...	<0.022	M	<0.005	0.07	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

## DELAWARE RIVER BASIN

01464280 SOUTH RUN NEAR COOKSTOWN, NJ—Continued

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
28...	1035	490	600	500	11...	1010	360	300	2,200
AUG					18...	1005	10,600	3,500	9,000
04...	1010	860	500	1,700	25...	0955	240	100	170



01464504 CROSSWICKS CREEK AT GROVEVILLE ROAD, AT GROVEVILLE, NJ

LOCATION.--Lat 40°10'02", long 74°40'39", Mercer County, Hydrologic Unit 02040201, at bridge on Groveville Road (Main Street) in Groveville, 1.2 mi upstream of Doctors Creek, and 2.2 mi northeast of Bordentown.

DRAINAGE AREA.--98.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 1998 to current year.

REMARKS.--Site is at head of tide, infrequently affected, but sampled at low tide. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 19...	1200	409	33	0.240	0.191	769	10.0	82	6.7	134	10.0	7.0	42
MAR 05...	1240	458	85	0.196	0.156	755	12.0	88	7.1	134	10.5	2.3	30
MAY 29...	1145	219	21	0.275	0.216	748	8.9	90	6.7	143	22.5	15.2	36
AUG 25...	0920	55	10	0.388	0.312	762	8.1	90	7.1	188	22.0	20.1	67

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 19...	12.1	2.79	3.52	6.13	E12	12.4	<0.17	7.9	26.6	--	94	30	0.28
MAR 05...	8.37	2.24	2.71	10.4	--	20.3	<0.17	5.6	17.7	--	89	77	0.40
MAY 29...	10.3	2.53	2.36	7.82	13	15.4	<0.17	8.5	20.5	78	96	--	0.39
AUG 25...	20.1	4.16	3.29	9.40	30	20.2	<0.17	11.1	21.8	112	131	8	0.39

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 19...	0.033	<0.030	0.51	0.003	0.027	0.18	0.026	0.21	0.79	0.97	1.8	<0.1	1.8
MAR 05...	0.159	0.172	0.60	0.010	<0.020	0.29	0.015	0.26	1.0	1.3	3.2	<0.1	3.2
MAY 29...	0.104	0.107	0.58	0.012	<0.020	0.25	0.022	0.20	0.97	1.2	3.0	<0.1	3.0
AUG 25...	0.107	0.111	0.84	0.020	0.054	0.05	0.056	0.146	1.2	1.3	0.5	<0.1	0.5

01464504 CROSSWICKS CREEK AT GROVEVILLE ROAD, AT GROVEVILLE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 19...	5.4	E1.7	--	25
MAR 05...	4.3	E1.4	--	E11
MAY 29...	5.1	E1.3	6.50	24
AUG 25...	6.7	<1.0	0.800	36

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
MAY 07...	0900	460	<100	500	JUN 04...	0845	1,900	5,000	9,000
14...	0908	<10	100	110					
21...	1025	120	200	500					
28...	1030	990	1,600	1,100					

Remark codes used in this table:

&lt; -- Less than

01464515 DOCTORS CREEK AT ALLENTOWN, NJ

LOCATION.--Lat 40°10'37", long 74°35'56", Monmouth County, Hydrologic Unit 02040201, at bridge on Breza Road in Allentown, and 0.8 mi downstream from Conines Millpond dam.

DRAINAGE AREA.--17.4 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 13...	1250	48	24	0.134	0.107	759	8.9	81	6.3	190	10.5	11.0	55
FEB 10...	1010	15	8.0	0.046	0.040	754	12.9	92	6.5	234	-1.0	1.2	57
JUN 11...	1040	26	13	0.180	0.144	760	7.9	87	6.5	181	25.5	20.2	48
AUG 18...	1200	22	19	0.218	0.174	761	6.8	81	7.0	193	26.0	24.3	51

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 13...	14.0	4.90	4.67	9.68	E18	23.2	<0.17	9.3	28.5	--	124	9	0.70
FEB 10...	13.9	5.44	3.40	14.4	17	33.2	<0.17	10.0	24.8	122	133	6	0.87
JUN 11...	11.6	4.66	3.02	11.0	19	23.3	<0.17	8.0	18.7	97	118	10	0.53
AUG 18...	12.1	5.08	3.60	9.89	30	24.2	0.20	9.2	14.5	99	118	8	0.72

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 13...	0.173	0.163	0.55	0.011	0.021	0.17	0.012	0.110	1.2	1.4	1.3	<0.1	1.3
FEB 10...	0.653	0.661	1.40	0.018	<0.020	0.18	E.003	0.055	2.3	2.5	1.3	<0.1	1.3
JUN 11...	0.263	0.430	1.17	0.028	<0.020	0.12	0.011	0.081	1.7	1.8	0.8	<0.1	0.8
AUG 18...	0.378	0.350	0.40	0.019	<0.020	0.21	0.017	0.090	1.1	1.3	1.4	<0.1	1.4

## DELAWARE RIVER BASIN

01464515 DOCTORS CREEK AT ALLENTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 13...	3.7	E1.3	--	25
FEB 10...	1.6	E1.3	--	15
JUN 11...	3.7	2.2	8.20	24
AUG 18...	5.0	E1.1	27.8	30

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 02...	1024	70	100	230	JUL 17...	1133	180	<100	800
10...	1000	3,500	1,300	5,000	24...	1025	900	200	1,100
					31...	1046	140	400	500

Remark codes used in this table:

&lt; -- Less than

01464527 BLACKS CREEK AT CHESTERFIELD, NJ

LOCATION.--Lat 40°06'34", long 74°38'30", Burlington County, Hydrologic Unit 02040201, at bridge on Chesterfield-Georgetown Road, 0.4 mi south of Chesterfield, 2.2 mi north of Georgetown, and 2.4 mi upstream of Bacons Run.

DRAINAGE AREA.--8.91 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 2001 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E.coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 20.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 20...	1210	7.6	32	0.190	0.153	766	10.7	89	6.6	197	14.0	7.5	65
FEB 10...	1000	7.2	14	0.096	0.082	759	13.5	95	7.1	209	6.5	1.1	65
MAY 20...	0920	7.3	22	0.179	0.145	765	8.5	84	6.8	205	18.0	15.2	66
AUG 18...	1020	17	50	0.320	0.254	761	7.5	88	7.0	178	22.5	23.3	61

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 20...	18.2	4.82	6.33	6.56	E27	20.1	0.25	11.4	25.2	--	134	16	0.54
FEB 10...	18.2	4.82	4.45	7.57	27	20.6	0.30	12.6	24.9	116	131	8	0.42
MAY 20...	18.9	4.54	3.91	8.84	39	20.9	0.39	11.5	19.3	113	141	13	0.39
AUG 18...	17.2	4.48	5.26	6.06	42	15.8	0.35	10.1	10.1	97	119	40	0.53

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 20...	0.220	0.216	2.39	0.016	0.025	0.17	0.009	0.137	2.9	3.1	1.1	<0.1	1.1
FEB 10...	0.253	0.252	1.42	0.016	<0.020	0.13	0.011	0.070	1.8	2.0	1.0	<0.1	1.0
MAY 20...	0.056	0.052	0.39	0.014	<0.020	0.20	0.014	0.126	0.78	0.97	1.3	<0.1	1.3
AUG 18...	0.050	0.059	0.52	0.011	<0.020	0.39	0.025	0.23	1.0	1.4	2.6	<0.1	2.6

## DELAWARE RIVER BASIN

01464527 BLACKS CREEK AT CHESTERFIELD, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 20...	4.3	E2.0	--	39
FEB 10...	1.9	E1.8	--	21
MAY 20...	4.0	E1.1	15.6	28
AUG 18...	7.0	E1.7	27.0	35

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1010	800	200	230	AUG 11...	0940	250	400	500
AUG 04...	0945	460	400	300	AUG 18...	0935	9,300	600	800
					AUG 25...	0930	430	100	130

01464529 BACONS CREEK NEAR MANSFIELD SQUARE, NJ

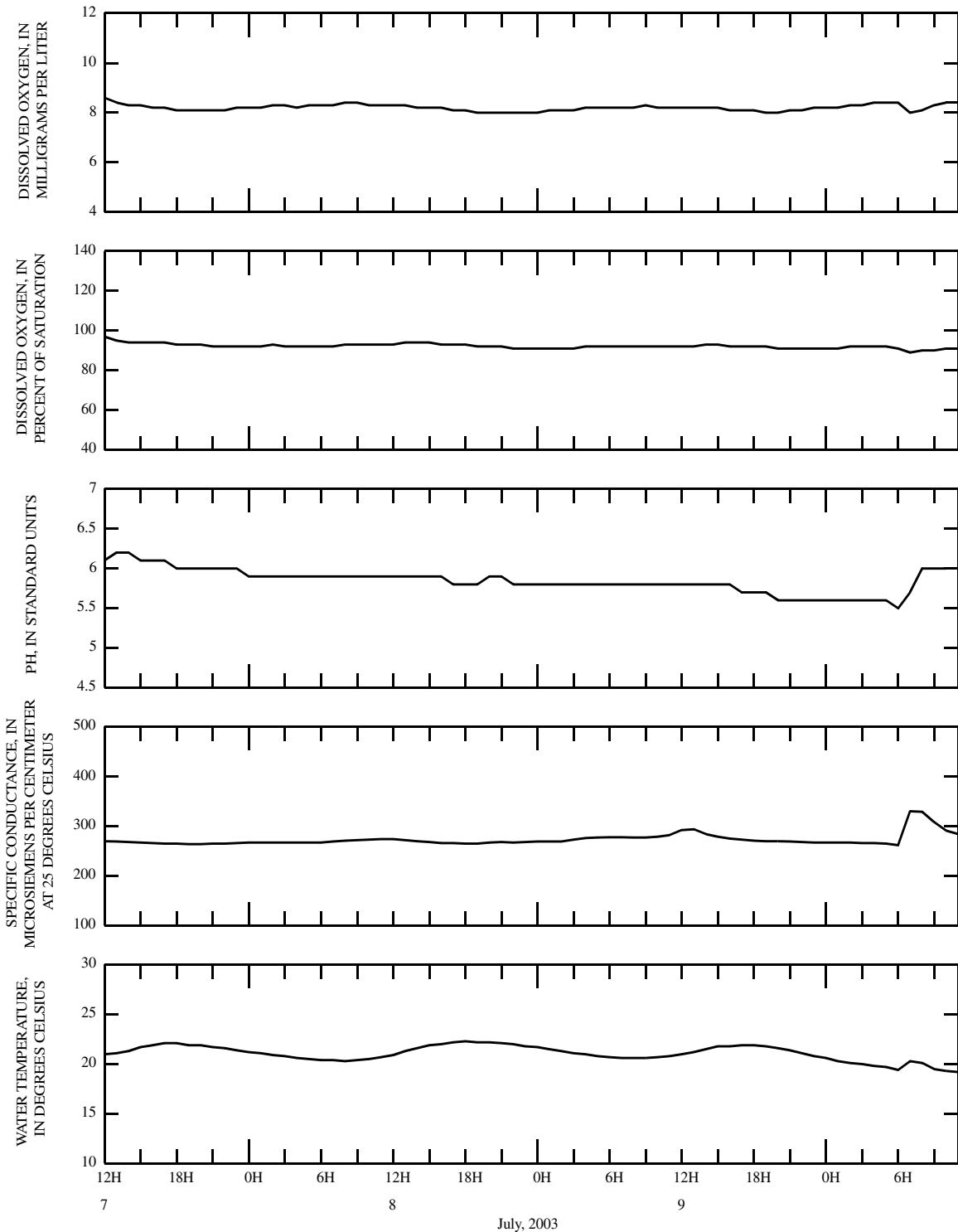
LOCATION.--Lat 40°06'27", long 74°41'05", Burlington County, Hydrologic Unit 02040201, at bridge on White Pine Road, 300 ft upstream from Fern Brook, 1.3 mi southeast of Mansfield Square, and 5.0 mi northeast of Columbus.

DRAINAGE AREA.--4.41 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1999-2000.

REMARKS.--Measurements made to verify calibration of continuous-record water-quality sensors met the recalibration criteria; therefore, the data were not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 20.



**Figure 46.** Reconnaissance Study--Physical characteristics and concentrations of constituents at 01464529 Bacons Creek near Mansfield Square, water year 2003.

## 01464532 BLACKS CREEK AT FIELDSBORO, NJ

LOCATION.--Lat 40°08'31", long 74°43'01", Burlington County, Hydrologic Unit 02040201, at bridge on West Burlington Street, 0.5 mi southwest of Bordertown, 0.7 mi upstream of the mouth, and 0.7 mi northeast of Fieldsboro.

DRAINAGE AREA.-- 23.05 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 20.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 19...	0930	30	0.140	0.112	769	10.6	84	6.8	217	8.0	6.0	63	16.7
MAR 04...	1055	28	0.148	0.123	768	13.7	94	7.0	198	-1.5	0.5	40	9.56
MAY 13...	0900	9.5	0.107	0.085	752	9.2	90	7.0	303	15.0	14.1	67	17.7
AUG 26...	1000	10	0.156	0.127	762	8.2	92	7.2	291	28.0	21.4	74	19.4

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 19...	5.10	5.45	9.11	17	22.2	0.21	12.1	33.5	122	134	19	0.45	0.122
MAR 04...	3.82	3.31	15.1	6	29.0	<0.17	8.0	23.6	102	109	21	0.38	0.137
MAY 13...	5.55	4.96	26.0	28	39.7	0.26	9.1	33.5	169	184	12	0.41	0.050
AUG 26...	6.30	6.06	24.2	35	33.5	0.26	12.3	28.6	171	170	10	0.48	0.087

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 19...	0.127	1.67	0.009	<0.020	0.16	0.011	0.125	2.1	2.3	1.4	<0.1	1.4	3.7
MAR 04...	0.154	1.19	0.007	0.021	0.12	0.015	0.168	1.6	1.7	1.0	<0.1	1.0	2.4
MAY 13...	<0.030	3.39	0.005	0.240	0.28	0.22	0.41	3.8	4.1	1.7	<0.1	1.7	3.1
AUG 26...	0.101	4.04	0.006	0.418	0.10	0.45	0.52	4.5	4.6	0.6	<0.1	0.6	4.1





01464532 BLACKS CREEK AT FIELDSBORO, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 04...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 04...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water, fltrd 0.7u GF (82687)
MAY 13...	0900	<0.006	E.008	<0.006	0.009	<0.005	0.021	<0.050	<0.010	<0.002	E.012	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 13...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.043	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terba-cil, water, fltrd, ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 13...	<0.022	M	0.006	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M -- Presence verified, not quantified

01464532 BLACKS CREEK AT FIELDSBORO, NJ—Continued

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
28...	0900	1,800	1,100	1,700	11...	0915	2,000	1,800	5,000
AUG					18...	0915	1,500	700	500
04...	0930	380	200	700	25...	0905	400	200	300

01464578 ANNARICKEN BROOK NEAR JOBSTOWN, NJ

LOCATION.--Lat 40°03'19", long 74°42'07", Burlington County, Hydrologic Unit 02040201, New Jersey Department of Environmental Protection Watershed Management Area 20, at bridge on Skunk Island Road, 0.1 mi upstream of Assiscunk Creek, 1.4 miles north of Jobstown, and 1.6 mi southeast of Columbus.

DRAINAGE AREA.--2.82 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1997-98.

REMARKS.--Measurements made to verify calibration of continuous-record water-quality sensors met the recalibration criteria; therefore, the data were not adjusted. Recalibration criteria are listed in "Accuracy of Records" in the Explanation of Water-Quality Records section of this report.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Reconnaissance, New Jersey Department of Environmental Protection Watershed Management Area 20.

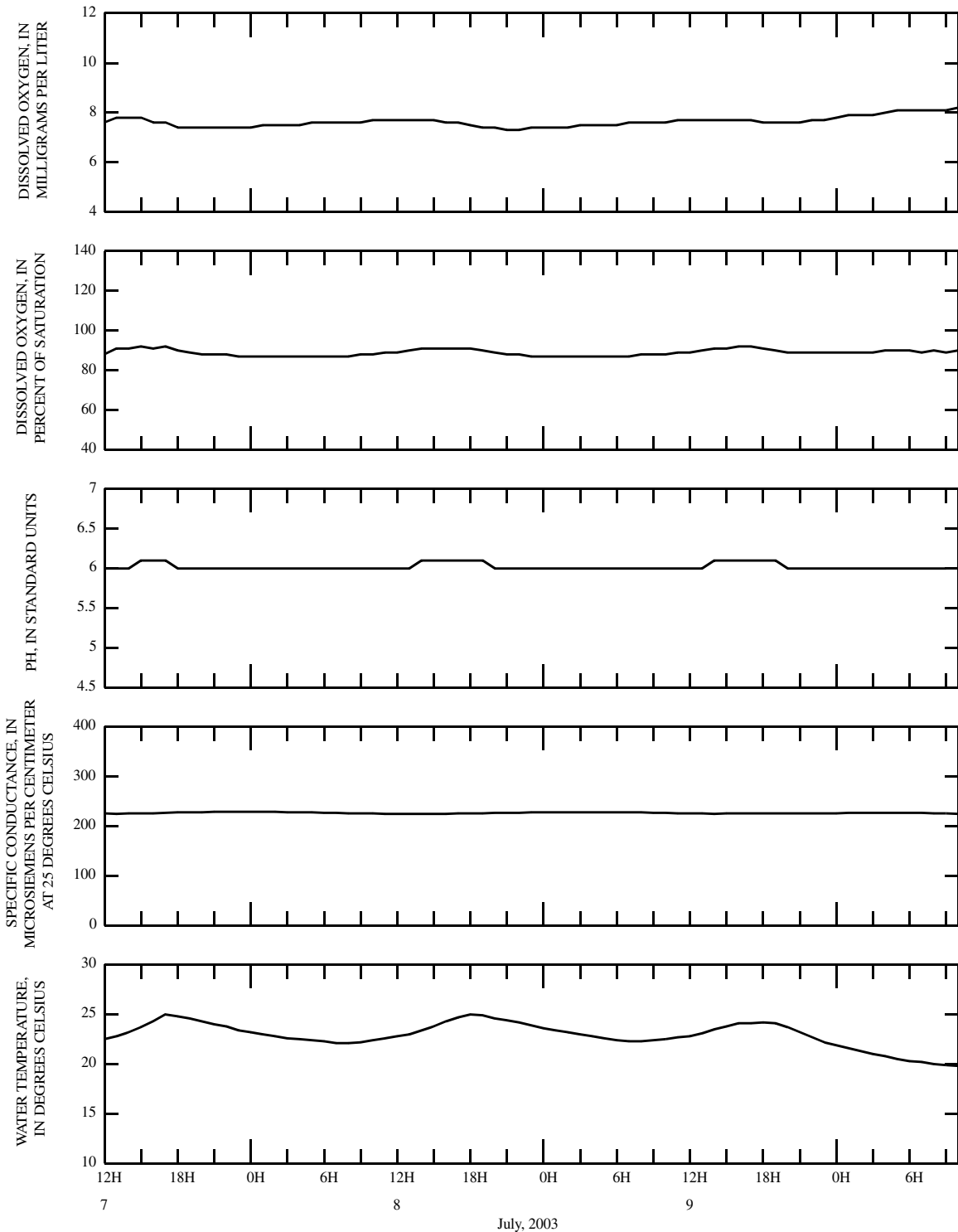


Figure 47. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01464578 Annaricken Brook near Jobstown, water year 2003.

01464907 LITTLE NESHAMINY CREEK AT VALLEY ROAD, NEAR NESHAMINY, PA

LOCATION.--Lat 40°13'45", long 75°07'12", Bucks County, Hydrologic Unit 02040201, at bridge on Valley Road, 1.1 mi east of Neshaminy, PA, 2.0 mi downstream from Park Creek, 3.0 mi downstream from Bradford Dam, and 6.8 mi upstream from confluence with Neshaminy Creek.

DRAINAGE AREA.--26.8 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1998 to current year.

REMARKS.--Data collected as part of the Delaware River Basin National Water-Quality Assessment Program (DELR NAWQA). For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)
NOV 01...	1210	Environmental	27	12	755	12.7	108	8.2	353	--	8.0
01...	1211	<i>Split Replicate</i>	--	--	--	--	--	--	--	--	--
DEC 09...	0950	Environmental	11	--	772	14.9	102	8.0	701	-3.0	0.5
JAN 08...	1320	Environmental	45	--	740	14.3	113	7.9	869	6.0	4.0
MAR 07...	0940	Environmental	100	15	768	14.6	100	7.5	557	-2.0	0.4
APR 08...	0940	Environmental	35	3.4	764	12.9	100	7.4	655	1.5	4.6
MAY 08...	1200	Environmental	40	21	752	7.7	81	7.4	471	18.0	16.8
JUN 06...	1010	Environmental	75	22	755	9.5	97	7.5	369	21.0	15.7
JUL 02...	1230	Environmental	12	--	756	11.6	138	8.1	543	30.5	23.3
SEP 05...	0930	Environmental	38	14	755	8.2	91	7.4	376	21.5	20.0

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 01...	93	113	31.4	38.1	0.55	<0.04	1.58	0.009	0.06	0.167	9	0.69
01...	92	111	32.4	37.9	0.55	<0.04	1.61	0.009	0.06	0.114	9	--
DEC 09...	121	147	96.6	51.4	0.34	E.04	2.56	0.014	0.06	0.104	4	0.12
JAN 08...	82	100	179	39.4	0.27	E.03	2.00	0.029	0.06	0.090	3	0.40
MAR 07...	48	58	126	18.7	0.64	0.22	0.97	0.012	0.03	0.083	13	3.4
APR 08...	93	118	122	37.0	0.63	0.26	1.19	0.070	E.01	0.041	6	0.56
MAY 08...	78	95	72.0	29.0	0.94	0.05	0.81	0.073	0.02	0.134	25	2.7
JUN 06...	88	107	42.0	28.5	0.65	E.02	1.34	0.017	0.04	0.119	18	3.6
JUL 02...	105	125	72.6	38.2	0.39	<0.04	1.54	0.008	0.06	0.089	2	0.06
SEP 05...	76	92	34.2	27.8	0.70	E.03	0.86	0.019	0.07	0.128	13	1.3

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## 01464907 LITTLE NESHAMINY CREEK AT VALLEY ROAD, NEAR NESHAMINY, PA—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)
NOV 01...	1210	Environmental	<0.006	E.008	<0.006	<0.004	<0.005	0.011	<0.050	<0.010	<0.002
DEC 09...	0950	Environmental	<0.006	E.018	<0.006	<0.004	<0.005	0.016	<0.050	<0.010	<0.002
JAN 08...	1320	Environmental	<0.006	E.014	<0.006	<0.004	<0.005	0.015	<0.050	<0.010	<0.002
MAR 07...	0940	Environmental	<0.006	E.007	<0.006	<0.004	<0.005	0.008	<0.050	<0.010	<0.002
APR 08...	0940	Environmental	<0.006	E.014	<0.006	<0.004	<0.005	0.014	<0.050	<0.010	<0.002
MAY 08...	1200	Environmental	<0.006	E.027	0.017	<0.004	<0.005	0.044	<0.050	<0.010	<0.002
JUN 06...	1010	Environmental	<0.006	E.028	0.011	0.009	<0.005	0.182	<0.050	E.007	<0.005
JUL 02...	1200	Field Blank	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002
SEP 02...	1230	Environmental	<0.006	E.031	E.005	<0.008	<0.005	0.045	<0.050	<0.010	<0.002
SEP 05...	0930	Environmental	<0.006	E.007	<0.006	<0.004	<0.005	0.013	<0.050	<0.010	<0.002

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)
NOV 01...	E.033	<0.020	<0.006	<0.003	<0.004	0.016	<0.005	<0.002	<0.009	<0.005	<0.005	E.010	<0.027
DEC 09...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.009	<0.027
JAN 08...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
MAR 07...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
APR 08...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027
MAY 08...	E.012	<0.020	<0.006	E.002	<0.004	0.014	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JUN 06...	E.053	<0.020	<0.006	<0.003	<0.004	0.013	<0.005	<0.002	<0.009	<0.005	<0.005	E.012	<0.027
JUL 02...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
SEP 02...	E.122	<0.020	<0.006	<0.003	E.003	E.007	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
SEP 05...	E.116	<0.020	<0.006	<0.003	<0.004	0.010	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027

01464907 LITTLE NESHAMINY CREEK AT VALLEY ROAD, NEAR NESHAMINY, PA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Napropamide, water, fltrd, 0.7u GF ug/L (82684)	Pendimethalin, water, fltrd, 0.7u GF ug/L (82683)	Prometon, water, fltrd, ug/L (04037)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd, 0.7u GF ug/L (82670)	Terbacil, water, fltrd, 0.7u GF ug/L (82665)	Tri-fluralin, water, fltrd, 0.7u GF ug/L (82661)
NOV 01...	0.036	<0.006	<0.007	<0.022	0.02	<0.010	<0.02	<0.034	<0.009
DEC 09...	E.012	<0.006	<0.007	<0.022	E.01	<0.010	<0.02	<0.034	<0.009
JAN 08...	E.012	<0.006	<0.007	<0.022	E.01	<0.005	<0.02	<0.034	<0.009
MAR 07...	E.012	<0.006	<0.007	<0.022	E.01	<0.005	<0.02	<0.034	E.003
APR 08...	E.008	<0.006	<0.007	<0.022	E.01	<0.010	<0.02	<0.034	<0.009
MAY 08...	0.024	<0.006	<0.007	<0.022	0.02	0.011	<0.02	<0.034	<0.009
JUN 06...	0.050	<0.006	<0.007	E.011	0.05	0.006	<0.02	<0.034	E.009
JUL 02...	<0.013	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
JUL 02...	E.006	<0.006	<0.007	<0.022	E.01	0.009	<0.02	<0.034	<0.009
SEP 05...	0.024	<0.006	<0.007	<0.022	0.09	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:

- < -- Less than
- E -- Estimated value

## 01465808 SOUTH BRANCH BURRS MILL BROOK NEAR HEDGER HOUSE, NJ

LOCATION.--Lat 39°51'34", long 74°35'55", Burlington County, Hydrologic Unit 02040202, at bridge on Sooy Place Road, 0.5 mi upstream of Slab Causeway Branch, 2.7 mi west of Hedger House, and 4.4 mi northwest of Chatsworth.

DRAINAGE AREA.--7.09 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, mg/L (00915)
NOV 26...	1000	1.5	1.01	0.753	768	10.1	--	3.7	--	8.0	6.0	6	0.96
MAR 06...	0930	1.9	0.862	0.651	754	10.7	--	3.8	--	2.0	0.5	3	0.51
MAY 13...	1030	1.9	1.68	1.29	752	6.3	63	3.9	83	16.5	14.6	3	0.51
AUG 27...	1030	3.1	3.29	2.57	758	3.3	39	3.8	81	29.5	23.5	3	0.60

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water fltrd, mg/L as N (00631)
NOV 26...	0.790	0.33	2.37	5.17	<0.17	4.5	21.4	74	3	0.55	<0.030	<0.030	<0.05
MAR 06...	0.360	0.43	1.51	2.77	<0.17	3.0	11.8	57	<1	0.46	0.036	0.055	0.07
MAY 13...	0.357	0.72	1.85	3.91	<0.17	3.7	8.4	79	5	0.72	<0.030	<0.030	<0.05
AUG 27...	0.427	0.39	1.85	4.40	<0.17	7.8	2.5	134	5	1.3	0.041	0.318	<0.05

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sediment total, mg/L (00694)	Inorganic carbon, suspnd sediment total, mg/L (00688)	Organic carbon, suspnd sediment total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, correctd ug/L (32209)
NOV 26...	<0.003	--	0.03	0.004	0.007	--	--	0.7	<0.1	0.7	25.0	<1.0	--
MAR 06...	<0.003	<0.020	0.06	0.004	0.008	0.53	0.59	0.6	<0.1	0.6	18.1	<1.0	--
MAY 13...	0.003	<0.020	0.06	0.007	0.012	--	--	0.8	<0.1	0.8	29.8	E1.8	5.30
AUG 27...	0.010	<0.020	0.09	0.012	0.027	--	--	1.2	0.1	1.1	58.4	<1.0	0.700





## 01465808 SOUTH BRANCH BURRS MILL BROOK NEAR HEDGER HOUSE, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 06...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 13...	1030	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazinon, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Napropamide, water, fltrd 0.7u GF ug/L (82684)
MAY 13...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.004	<0.006	<0.007

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 13...	<0.022	<0.01	<0.005	<0.02	E.089	<0.009

Remark codes used in this table:  
< -- Less than  
E -- Estimated value

01465808 SOUTH BRANCH BURRS MILL BROOK NEAR HEDGER HOUSE, NJ—Continued

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
28...	1110	<10	<100	40	11...	1115	<10	<100	40
AUG					18...	1015	<10	<100	40
04...	0945	<10	<100	40	25...	1015	10	<100	<20

Remark codes used in this table:  
 < -- Less than

## 01465835 SOUTH BRANCH RANCOCAS CREEK AT RETREAT, NJ

LOCATION.--Lat 39°55'23", long 74°43'04", Burlington County, Hydrologic Unit 02040202, at bridge on Ridge Road, 0.3 mi downstream of Friendship Creek, 0.5 mi north of Retreat, and 1.4 mi southwest of Buddtown.

DRAINAGE AREA.--44.1 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1975-1982, 2001 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 14...	0930	1.6	0.530	0.407	765	6.4	54	4.5	110	7.0	8.5	18	4.08
FEB 25...	0900	1.5	0.528	0.403	771	10.7	73	5.1	85	0.5	0.2	11	2.41
MAY 06...	0900	2.0	0.618	0.478	760	6.9	66	4.5	80	9.5	13.2	11	2.34
AUG 21...	0930	7.1	0.708	0.550	765	5.3	64	4.6	60	27.5	24.7	10	2.10

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)
NOV 14...	1.98	2.21	5.91	--	9.81	<0.17	6.6	21.9	77	6	0.39	0.035	0.035
FEB 25...	1.19	1.72	5.51	--	9.58	<0.17	4.3	11.0	61	1	0.35	0.053	0.037
MAY 06...	1.15	1.58	5.78	--	9.52	<0.17	2.9	12.0	61	4	0.44	<0.030	<0.030
AUG 21...	1.15	1.25	4.61	<2	8.24	<0.17	3.6	7.4	55	16	0.41	0.042	0.039

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)
NOV 14...	0.14	<0.003	0.025	0.05	0.026	0.045	0.54	0.59	0.5	<0.1	0.5	13.1	E1.6
FEB 25...	0.21	0.003	0.053	0.05	0.047	0.058	0.56	0.62	0.4	<0.1	0.4	11.6	<1.0
MAY 06...	0.18	0.004	0.042	0.10	0.044	0.069	0.62	0.73	1.0	<0.1	1.0	12.1	<1.0
AUG 21...	<0.05	<0.003	0.028	0.28	0.041	0.169	--	--	3.7	<0.1	3.7	13.3	E1.0

01465835 SOUTH BRANCH RANOCAS CREEK AT RETREAT, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	--	15
FEB 25...	--	E12
MAY 06...	4.30	13
AUG 21...	6.30	21

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 21...	0930	--	--	--	--	--	E2	35.3	0.07	15	0.05	E.7	1.3
21...	0930	5.70	30	790	0.7	<0.2	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 21...	2,120	1.71	22.2	<0.02	1.31	0.6	<0.16	10	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	<1	0.004	0.7	0.080	<2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49403)	1,6-Di- methyl- naphth- alene, bed sed <2 mm, ug/kg (49404)	1Methyl -9H- fluor- ene, bed sed <2 mm, ug/kg (49398)	1- Methyl- phenan- threne, bed sed <2 mm, ug/kg (49410)	1- Methyl- pyrene, bed sed <2 mm, wsv nat ug/kg (49388)	236Tri- methyl- naphth- alene, bed sed <2 mm, ug/kg (49405)
AUG 21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	320	1.4	1.3	<0.01	0.175	<1	<3.1	<50	<50	E10	<50	E15	<50

## 01465835 SOUTH BRANCH RANOCAS CREEK AT RETREAT, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethyl-naphthalene, bed sed <2 mm, ug/kg (49406)	2-Ethyl-naphthalene bed sed <2 mm, wsv nat ug/kg (49948)	2-Methyl-anthracene, bed sed <2 mm, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, ug/kg (49411)	9H-Flour-ene, bed sed <2 mm, wsv nat ug/kg (49399)	Ace-naphth-ene, bed sed <2 mm, wsv nat ug/kg (49429)	Ace-naphth-ylene, bed sed <2 mm, wsv nat ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, wsv nat ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat ug/kg (49389)	Benzo-[b]-fluor-anthene bed sed <2 mm, ug/kg (49458)	Benzo-[ghi]-peryl-ene, bed sed <2 mm, ug/kg (49408)	Benzo-[k]-fluor-anthene bed sed <2 mm, ug/kg (49397)
AUG 21... 21...	-- E13	-- E10	-- E13	-- <50	-- E11	-- <50	-- E18	-- E19	-- E24	-- E20	-- E34	-- <50	-- E17

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm, field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm, ug/kg (49390)	Iso-phorone bed sed <2 mm, field, ug/kg (49400)	Naphth-alene, bed sed <2 mm, wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thri-dine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd sve dia percent <.063mm (80164)
AUG 21... 21...	-- E18	-- <50	-- E29	-- E20	-- <50	-- E7	-- <5	-- <50	-- E13	-- <50	-- E32	-- 0.2

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 25... 25...	0900	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 25... 25...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 25... 25...	<0.1	<0.2	0.5	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:

&lt; -- Less than

01465835 SOUTH BRANCH RANOCAS CREEK AT RETREAT, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd, 0.7u GF (82686)	Ben-flur-alin, water, fltrd, 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd, 0.7u GF (82680)	Carbo-furan, water, fltrd, 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 06...	0900	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	E.019	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd, 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd, 0.7u GF (82684)
MAY 06...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd, 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd, 0.7u GF (82670)	Terba-cil, water, fltrd, 0.7u GF (82665)	Tri-flur-alin, water, fltrd, 0.7u GF (82661)
MAY 06...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1020	1,500	<100	130	AUG 11...	1015	120	300	90
AUG 04...	1050	80	<100	230	AUG 18...	0955	330	200	500
					AUG 25...	1010	260	1,700	9,000

Remark codes used in this table:  
 < -- Less than

## 01465857 SOUTHWEST BRANCH RANOCAS CREEK AT ELMWOOD ROAD, AT PINE GROVE, NJ

LOCATION.--Lat 39°53'23", long 74°53'00", Burlington County, Hydrologic Unit 02040201, at bridge on Elmwood Road, 0.5 mi north of Pine Grove, 1.1 mi east of Heritage Village, and 2.7 mi upstream of Barton Run.

DRAINAGE AREA.--3.58 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 14...	1045	7.4	0.408	0.326	764	8.0	70	7.2	388	15.0	9.5	170	59.1
FEB 06...	1045	6.0	0.103	0.081	772	12.1	84	7.4	764	-1.0	0.8	190	64.1
MAY 01...	1030	5.8	0.079	0.059	762	9.9	95	7.5	463	18.5	13.5	190	64.1
AUG 07...	1030	5.5	0.214	0.160	759	6.2	70	7.5	383	25.5	21.3	160	54.4

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 14...	5.88	5.98	8.38	65	17.4	0.29	21.4	97.5	258	287	8	0.49	<0.030
FEB 06...	6.94	5.96	63.0	74	128	0.35	23.3	83.1	421	453	4	0.34	0.099
MAY 01...	6.42	6.58	15.4	93	39.3	0.44	22.4	72.1	283	305	3	0.20	<0.030
AUG 07...	6.36	6.74	13.1	87	28.1	0.35	27.8	56.0	247	269	2	0.52	0.055

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 14...	<0.030	0.53	0.005	0.090	0.07	0.090	0.22	1.0	1.1	0.7	<0.1	0.7	8.4
FEB 06...	0.124	0.42	0.006	0.033	0.07	0.013	0.102	0.76	0.83	0.5	<0.1	0.5	2.6
MAY 01...	<0.030	E.04	0.003	0.039	0.08	0.015	0.067	--	E.33	0.5	<0.1	0.4	2.9
AUG 07...	0.065	0.40	0.014	0.075	0.05	0.080	0.20	0.92	0.97	0.5	<0.1	0.5	5.9





01465857 SOUTHWEST BRANCH RANOCAS CREEK AT ELMWOOD ROAD, AT PINE GROVE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 06...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 06...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 01...	1030	<0.006	<0.006	<0.006	<0.004	<0.005	E.005	<0.050	<0.010	<0.002	E.009	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 01...	<0.003	<0.004	0.041	E.002	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	E.002	<0.006	<0.007

01465857 SOUTHWEST BRANCH RANOCAS CREEK AT ELMWOOD ROAD, AT PINE GROVE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 01...	0.024	E.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1105	3,800	1,200	1,700	AUG 11...	1010	2,200	800	2,800
AUG 04...	1055	1,700	1,000	1,100	AUG 18...	1050	13,600	6,900	9,000
					AUG 25...	1055	780	<100	500

Remark codes used in this table:  
 < -- Less than

## 01465893 LITTLE CREEK AT CHAIRVILLE, NJ

LOCATION.--Lat 39°53'53", long 74°47'18", Burlington County, Hydrologic Unit 02040202, at bridge on State Route 70 in Chairville, 250 feet east of Skeet Road, and 4.7 mi upstream of Southwest Branch Rancocas Creek.

DRAINAGE AREA.--6.32 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 1998 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 13...	1020	23	1.6	0.921	0.709	762	6.9	63	3.8	105	12.0	11.0	13
MAR 04...	1050	36	1.2	0.696	0.527	768	10.9	74	3.6	85	5.0	0.0	7
MAY 07...	1030	5.4	1.4	0.891	0.686	756	8.7	81	4.2	86	22.5	11.8	8
AUG 19...	0930	3.4	3.0	0.931	0.733	765	7.6	85	4.2	86	23.5	21.1	9

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 13...	2.86	1.41	1.18	5.37	--	7.88	<0.17	6.4	17.1	81	5	0.50	<0.030
MAR 04...	1.43	0.775	0.67	4.38	--	7.81	<0.17	4.5	11.1	62	2	0.32	<0.030
MAY 07...	1.67	0.922	1.03	8.05	<2	14.2	<0.17	3.7	6.7	74	<1	0.42	<0.030
AUG 19...	1.71	1.07	1.12	10.2	<2	17.8	<0.17	6.7	4.0	79	5	0.64	0.071

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 13...	<0.030	<0.05	<0.003	0.024	0.20	0.016	0.025	--	--	0.9	<0.1	0.9	24.4
MAR 04...	<0.030	0.08	<0.003	<0.020	0.04	0.007	0.012	0.40	0.44	0.3	<0.1	0.3	14.4
MAY 07...	<0.030	<0.05	<0.003	<0.020	0.04	0.013	0.025	--	--	0.4	<0.1	0.4	17.1
AUG 19...	0.068	E.04	0.003	<0.020	0.12	0.021	0.038	--	E.80	1.1	<0.1	1.1	16.9

01465893 LITTLE CREEK AT CHAIRVILLE, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Alum- inum, water, fltrd, ug/L (01106)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 13...	3.0	--	--	21	--
MAR 04...	<1.0	--	450	E8.8	442
MAY 07...	E1.3	6.30	--	17	--
AUG 19...	<1.0	2.60	--	18	1,310

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1035	150	<100	40	AUG 11...	1030	150	300	210
					18...	1020	330	200	90
					25...	1030	550	<100	230

Remark codes used in this table:  
 < -- Less than

## 01465965 ONG RUN AT BROWNS MILLS, NJ

LOCATION.--Lat 39°58'35", long 74°34'36", Burlington County, Hydrologic Unit 02040202, at bridge on County Route 667, 0.1 mi upstream of mouth, 0.4 mi northeast of Browns Mills, and 2.3 mi southeast of Pointville.

DRAINAGE AREA.--1.87 mi<sup>2</sup>.

PERIOD OF RECORD.--December 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 11...	0900	1.7	0.110	0.087	764	11.8	86	6.9	128	2.0	2.5	28	5.59
FEB 24...	0900	6.1	0.263	0.204	768	12.1	83	6.6	122	-1.5	0.5	17	3.32
MAY 21...	0900	3.5	0.229	0.182	765	8.5	81	6.5	110	16.0	13.1	26	5.30
AUG 13...	0900	11	0.551	0.438	768	7.1	81	6.7	117	26.5	21.2	30	6.48

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 11...	3.52	1.73	9.09	13	14.8	<0.17	7.5	15.4	66	78	3	0.15	0.041
FEB 24...	2.12	1.39	12.3	5	23.2	<0.17	3.5	9.8	59	75	5	0.19	<0.030
MAY 21...	3.13	1.38	8.94	14	13.7	<0.17	5.9	11.4	59	74	4	0.21	<0.030
AUG 13...	3.25	1.82	10.5	18	15.8	<0.17	6.8	7.7	64	87	7	0.73	0.059

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 11...	0.041	0.26	<0.003	0.021	0.04	0.005	0.010	0.41	0.44	0.4	<0.1	0.4	3.0
FEB 24...	<0.030	0.16	<0.003	<0.020	0.14	0.008	0.025	0.35	0.48	1.9	<0.1	1.9	5.7
MAY 21...	<0.030	0.23	<0.003	<0.020	0.14	0.009	0.027	0.44	0.58	1.5	<0.1	1.5	4.3
AUG 13...	0.088	0.21	0.003	0.029	0.12	0.020	0.039	0.93	1.1	1.8	<0.1	1.8	10.3

01465965 ONG RUN AT BROWNS MILLS, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcrtd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 11...	E1.6	--	20
FEB 24...	E1.4	--	E9.5
MAY 21...	<1.0	8.20	20
AUG 13...	<1.0	3.10	27

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN AND BED-MATERIAL TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	pH bed sedimnt std units (70310)	Ammonia + org-N, bed sed total, mg/kg as N (00626)	Phosphorus, bed sedimnt total, mg/kg (00668)	Total carbon, bed sedimnt total, g/kg (00693)	Inorganic carbon, bed sedimnt total, g/kg (00686)	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover -able, ug/L (01007)	Beryllium, water, unfltrd recover -able, ug/L (01012)	Boron, water, unfltrd recover -able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chromium, water, unfltrd recover -able, ug/L (01034)	Copper, water, unfltrd recover -able, ug/L (01042)
AUG 13...	0900	--	--	--	--	--	<2	47.9	0.08	23	0.09	<0.8	1.1
13...	0900	6.96	240	880	2.7	<0.2	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, unfltrd recover -able, ug/L (01051)	Manganese, water, unfltrd recover -able, ug/L (01055)	Mercury, water, unfltrd recover -able, ug/L (71900)	Nickel, water, unfltrd recover -able, ug/L (01067)	Selenium, water, unfltrd recover -able, ug/L (01147)	Silver, water, unfltrd recover -able, ug/L (01077)	Zinc, water, unfltrd recover -able, ug/L (01092)	Arsenic bed sedimnt total, ug/g (01003)	Cadmium bed sedimnt recover -able, ug/g (01028)	Chromium, bed sedimnt recover -able, ug/g (01029)	Cobalt bed sedimnt recover -able, ug/g (01038)	Copper, bed sedimnt recover -able, ug/g (01043)
AUG 13...	2,810	1.66	83.0	<0.02	1.69	E.4	<0.16	10	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	<1	0.120	2.0	0.600	4

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iron, bed sedimnt total, ug/g (01170)	Lead, bed sedimnt recover -able, ug/g (01052)	Manganese, bed sedimnt recover -able, ug/g (01053)	Mercury, bed sedimnt recover -able, ug/g (71921)	Nickel, bed sedimnt recover -able, ug/g (01068)	Selenium, bed sedimnt total, ug/g (01148)	Zinc, bed sedimnt recover -able, ug/g (01093)	1,2-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49403)	1,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49404)	1Methyl-9H-fluorene, bed sed <2 mm, wsv nat field, ug/kg (49398)	1-Methylphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49410)	1-Methylpyrene, bed sed <2 mm, wsv nat field, ug/kg (49388)	236Tri-methylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49405)
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	1,000	5.4	13	<0.01	0.590	<1	8.6	<50	E5	<50	E8	E23	<50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	2,6-Dimethylnaphthalene, bed sed <2 mm, wsv nat field, ug/kg (49406)	2-Ethyl-naphthalene, bed sed <2 mm, wsv nat field, ug/kg (49948)	2-Methyl-anthracene, bed sed <2 mm, wsv nat field, ug/kg (49435)	Cyclopentaphenanthrene, bed sed <2 mm, wsv nat field, ug/kg (49411)	9H-Flour-ene, bed sed <2 mm, wsv nat field, ug/kg (49399)	Ace-naphth-ene, bed sed <2 mm, wsv nat field, ug/kg (49429)	Ace-naphth-ylene, bed sed <2 mm, wsv nat field, ug/kg (49428)	Anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49434)	Benzo-[a]-anthra-cene, bed sed <2 mm, wsv nat field, ug/kg (49436)	Benzo-[a]-pyrene, bed sed <2 mm, wsv nat field, ug/kg (49389)	Benzo-[b]-fluor-anthene, bed sed <2 mm, wsv nat field, ug/kg (49458)	Benzo-[ghi]-peryl-ene, bed sed <2 mm, wsv nat field, ug/kg (49408)	Benzo-[k]-fluor-anthene, bed sed <2 mm, wsv nat field, ug/kg (49397)
AUG 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	E5	<50	E18	E22	E17	E7	E12	51	220	250	290	E140	250

## 01465965 ONG RUN AT BROWNS MILLS, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 13... 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
	290	E44	530	180	<50	E9	E6	<50	200	E12	410	1.6	0.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 13... 13...	--	--	--	--
	0.3	0.4	0.5	0.7

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

## WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
FEB 24...	0900	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 24...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	E.1

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
FEB 24...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value



01465965 ONG RUN AT BROWNS MILLS, NJ—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 21...	0900	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 21...		<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 21...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, ECbroth MPN/100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/100 mL (31649)	E coli, m-TEC MF, water, col/100 mL (31633)	Fecal coli-form, ECbroth MPN/100 mL (31615)
JUL 28...	1100	920	200	700	AUG 11...	1030	460	300	800
AUG 04...	1030	400	500	800	AUG 18...	1030	1,800	1,200	1,100
					AUG 25...	1015	440	300	500

## 01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ

LOCATION.--Lat 39°53'06", long 74°30'19", Burlington County, Hydrologic Unit 02040202, 25 ft upstream from Butterworth Road Bridge in Lebanon State Forest, 3.4 mi upstream from confluence with Cooper Branch, and 7.0 mi southeast of Browns Mills.

DRAINAGE AREA.--2.35 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1963-96, 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to September 1992.

pH: October 1984 to September 1992.

WATER TEMPERATURE: October 1960 to September 1992.

DISSOLVED OXYGEN: October 1984 to September 1992.

REMARKS.--The samples collected Dec. 12, Feb. 13, May 6, and Aug. 7 were collected as part of the Ambient Stream Monitoring Network; the sample on Sept. 5 was collected as part of the U.S. Geological Survey Hydrologic Benchmark Network. Chemical analyses are from samples collected as water flows over the weir at the gaging station. All discharge record represents flow at a point 785 ft downstream of the gaging station. Discharges at the weir may be about 1 ft<sup>3</sup>/s less than published in Water-Data Report NJ-03-1. For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses on Dec. 12, Feb. 13, May 6, and Aug. 7 were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory. The sample on Sept. 5 was analyzed by the USGS District Water-Quality Laboratory in Troy, New York.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Background, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO <sub>3</sub> (00900)
DEC 12...	1030	1.8	0.5	0.264	0.197	762	8.5	68	4.3	62	5.0	6.0	6
FEB 13...	1015	E1.6	0.2	0.203	0.148	761	9.3	70	4.3	58	-5.0	3.6	4
MAY 06...	1030	2.0	0.3	0.404	0.297	758	3.4	30	4.3	63	13.0	10.4	3
AUG 07...	1030	1.5	0.3	0.358	0.274	756	2.2	23	4.5	40	24.0	16.8	2
SEP 05...	0830	--	--	--	--	--	2.5	--	3.6	60	--	17.5	3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)
DEC 12...	0.78	0.905	0.31	2.35	3.30	<0.17	4.8	12.1	39	2	0.17	0.037	0.068
FEB 13...	0.55	0.568	0.25	1.87	3.59	<0.17	4.8	9.9	24	<1	0.12	<0.030	<0.030
MAY 06...	0.46	0.413	0.08	1.86	3.37	<0.17	3.7	8.1	36	<1	0.20	<0.030	<0.030
AUG 07...	0.36	0.369	<0.16	1.80	3.70	<0.17	4.6	3.1	22	1	0.18	<0.020	<0.020
SEP 05...	0.40	0.40	0.21	1.84	3.6	--	1.76	3.9	--	--	--	--	<0.030



## 01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 13...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
FEB 13...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	0.2	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)
MAY 06...	1030	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)
MAY 06...	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	<0.013	<0.006	<0.007

01466500 MCDONALDS BRANCH IN LEBANON STATE FOREST, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF (82683)	Prometon, water, fltrd ug/L (04037)	Simazine, water, fltrd ug/L (04035)	Tebu-thiuron water fltrd ug/L (82670)	Terbacil, water, fltrd ug/L (82665)	Tri-flur-alin, water, fltrd ug/L (82661)
MAY 06...	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009

Remark codes used in this table:  
< -- Less than

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1130	<10	<100	<20	AUG 11...	1055	<10	<100	<20
AUG 04...	1030	510	100	40	AUG 18...	1055	20	100	40
					AUG 25...	0930	<10	<100	<20

Remark codes used in this table:  
< -- Less than

## 01466900 GREENWOOD BRANCH AT NEW LISBON, NJ

LOCATION.--Lat 39°57'22", long 74°37'40", Burlington County, Hydrologic Unit 02040202, at bridge on Four Mile Road (County Route 646), 0.1 mi south of New Lisbon, and 0.5 mi upstream from mouth.

DRAINAGE AREA.--77.9 mi<sup>2</sup>.

PERIOD OF RECORD.--Water year 2001 to September 2002.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Undeveloped Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 05...	0715	57	1.5	0.318	0.241	750	11.4	85	4.6	69	-2.0	2.5	6
FEB 25...	1030	726	1.8	0.525	0.401	771	12.0	83	4.5	70	-1.0	0.9	5
MAY 29...	0715	187	2.8	0.543	0.422	742	7.0	70	4.4	63	11.0	14.0	4
AUG 20...	1000	60	6.2	0.536	0.423	767	7.1	80	4.6	48	27.5	21.2	5

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 05...	1.18	0.789	0.81	3.82	--	5.98	<0.17	5.5	11.9	36	8	0.21	<0.030
FEB 25...	0.99	0.603	0.75	3.36	--	5.86	<0.17	3.8	9.2	45	3	0.25	<0.030
MAY 29...	0.91	0.515	0.54	3.91	--	6.64	<0.17	4.0	7.5	40	1	0.23	<0.030
AUG 20...	1.05	0.500	0.91	4.10	<2	7.23	<0.17	5.8	5.2	38	6	0.26	0.030

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 05...	<0.030	0.07	<0.003	0.023	0.04	0.011	0.015	0.28	0.33	0.3	<0.1	0.3	7.3
FEB 25...	<0.030	0.06	<0.003	0.029	0.02	0.019	0.031	0.31	0.33	0.3	<0.1	0.3	10.9
MAY 29...	<0.030	<0.05	<0.003	<0.020	0.08	0.007	0.035	--	--	1.1	<0.1	1.1	10.0
AUG 20...	0.041	0.05	<0.003	<0.020	0.25	0.012	0.071	0.32	0.57	5.2	<0.1	5.2	10.7

01466900 GREENWOOD BRANCH AT NEW LISBON, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 05...	2.3	--	E8.6
FEB 25...	2.2	--	E6.4
MAY 29...	<1.0	6.70	12
AUG 20...	<1.0	6.30	16

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero- cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli- form, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	0950	90	<100	110	AUG 11...	1120	60	200	300
AUG 04...	0935	80	<100	220	AUG 18...	0930	320	100	230
					AUG 25...	0900	90	<100	<20

Remark codes used in this table:  
 < -- Less than

## 01467005 NORTH BRANCH RANOCAS CREEK AT IRON WORKS PARK, AT MOUNT HOLLY, NJ

LOCATION.--Lat 39°59'31", long 74°46'57", Burlington County, Hydrologic Unit 02040202, at Iron Works Park footbridge, 0.3 mi north of Saint Andrews Cemetery in Mount Holly, and 0.1 mi downstream from Mill Dam.

DRAINAGE AREA.--140 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year. Published as "at Pine Street" (station 01467006) 1998-99.

REMARKS.--Site is at head of tide; all samples collected at low tide. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E.coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 13...	0850	247	16	0.178	0.138	762	10.4	95	5.8	151	11.5	11.5	35
FEB 27...	0910	585	3.7	0.441	0.341	766	13.5	94	5.0	75	-0.5	0.8	13
MAY 15...	1310	133	6.8	0.344	0.270	767	9.5	92	5.9	114	17.0	14.2	21
AUG 28...	1330	66	11	0.460	0.367	763	8.2	96	6.7	194	28.5	23.1	29

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 13...	10.4	2.25	2.52	11.0	E5	13.6	<0.17	7.2	34.9	--	99	17	0.38
FEB 27...	3.51	1.03	1.35	5.56	2	8.91	<0.17	4.4	13.4	41	57	4	0.39
MAY 15...	5.90	1.41	1.94	10.7	4	14.2	<0.17	5.3	19.9	63	79	9	0.63
AUG 28...	8.45	1.84	3.88	20.3	10	18.4	<0.17	7.8	38.7	108	131	9	0.65

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 13...	0.202	0.192	0.20	0.003	0.028	0.33	0.022	0.24	0.58	0.91	3.8	<0.1	3.8
FEB 27...	0.130	0.139	0.15	<0.003	0.044	0.08	0.033	0.128	0.54	0.62	1.1	<0.1	1.1
MAY 15...	0.336	0.297	0.17	0.018	0.039	0.14	0.031	0.165	0.80	0.94	2.1	<0.1	2.1
AUG 28...	0.309	0.308	0.38	0.022	0.056	0.16	0.057	0.26	1.0	1.2	2.1	<0.1	2.1



01467005 NORTH BRANCH RANOCAS CREEK AT IRON WORKS PARK, AT MOUNT HOLLY, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrcd ug/L (32209)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)
NOV 13...	5.2	E1.5	--	30	--
FEB 27...	9.5	E1.7	--	14	875
MAY 15...	6.5	<1.0	3.40	21	--
AUG 28...	8.0	E1.8	1.90	36	--

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 28...	1155	240	<100	2,400	AUG 11...	1150	4,800	4,300	9,000
AUG 04...	1120	350	700	3,000	AUG 18...	1125	4,800	1,200	5,000
					AUG 25...	1130	240	100	700

Remark codes used in this table:  
 < -- Less than

## 01467150 COOPER RIVER AT HADDONFIELD, NJ

LOCATION.--Lat 39°54'11", long 75°01'17", Camden County, Hydrologic Unit 02040202, at 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.

DRAINAGE AREA.--17.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1968-79, 1991 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: March 1968 to September 1969.

WATER TEMPERATURE: March 1968 to August 1969, recorded once daily; October 1998 to September 2001, recorded hourly.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 19.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	0900	15	12	0.168	0.133	762	9.5	80	7.4	220	11.9	6.2	66
FEB 05...	0900	24	38	0.139	0.113	760	10.0	73	7.2	863	1.4	2.8	77
MAY 01...	0900	12	37	0.110	0.085	764	6.6	66	7.3	285	15.6	15.7	72
AUG 07...	0900	15	35	0.256	0.200	760	4.6	53	6.9	201	23.1	22.6	57

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	18.4	4.83	3.44	11.9	E25	22.7	<0.17	10.9	35.3	--	136	13	0.46
FEB 05...	22.1	5.21	4.75	158	23	262	<0.17	8.2	29.9	506	518	15	0.61
MAY 01...	19.8	5.50	3.84	26.4	29	50.3	0.19	10.0	28.9	--	178	22	0.37
AUG 07...	15.9	4.27	3.02	15.5	32	29.5	<0.17	9.2	16.1	115	129	22	0.60

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 21...	0.180	0.184	0.29	0.008	0.044	0.18	0.040	0.157	0.74	0.93	2.0	<0.1	2.0
FEB 05...	0.367	0.368	0.43	0.015	<0.020	0.22	0.011	0.182	1.0	1.2	2.0	<0.1	2.0
MAY 01...	0.168	0.173	0.18	0.007	--	0.39	0.018	0.31	0.55	0.94	3.0	<0.1	3.0
AUG 07...	0.288	0.338	0.28	0.014	0.133	0.25	0.111	0.40	0.88	1.1	2.0	<0.1	2.0

01467150 COOPER RIVER AT HADDONFIELD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	4.7	E1.8	--	41
FEB 05...	3.4	2.3	--	34
MAY 01...	3.5	<1.0	15.9	41
AUG 07...	6.6	<1.0	12.2	46

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 02...	1030	4,400	3,400	16,000	JUN 16...	0945	440	600	1,700
JUN 09...	0940	1,400	3,300	5,000	JUN 23...	0915	270	700	1,700
					JUN 30...	0940	230	500	800

01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE AT PHILADELPHIA, PA

LOCATION.--Lat 39°57'14", long 75°08'16", Philadelphia County, Hydrologic Unit 02040202, on right bank at river end of pier 12, 150 ft upstream from Ben Franklin bridge, and at Philadelphia.

DRAINAGE AREA.--7,993 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1949 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1963 to current year.

pH: October 1967 to current year.

WATER TEMPERATURE: November 1960 to current year.

DISSOLVED OXYGEN: October 1961 to current year.

INSTRUMENTATION.--Water-quality monitor interfaced with a data collection platform.

REMARKS.--Water temperature, pH, and specific conductance records rated good. Dissolved oxygen record rated fair except for period, Aug. 13 to Sept. 30, which is poor. Prior to July 1988, located on edge of pier 11 about 300 ft downstream of pier 12. Further information on this station is given in U.S. Geological Survey Water-Supply Paper 1809-0. Data collection discontinued during winter months. Other interruptions in the record were due to malfunctions of the pump or recording instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,450 microsiemens, Nov. 20, 1964; minimum, 65 microsiemens, Sept. 15, 1979.

pH: Maximum, 8.7, Oct. 14, 1979; minimum, 4.7, Dec. 29, 1978.

WATER TEMPERATURE: Maximum, 31.0°C, July 13-15, 1966; minimum, 0.0°C, many days during winters.

DISSOLVED OXYGEN: Maximum, 14.1 mg/L, Dec. 14, 1962; minimum, 0.0 mg/L, on many days.

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	414	289	341	182	168	175	174	168	170	---	---	---
2	414	292	332	199	174	185	---	---	---	---	---	---
3	397	292	334	198	182	191	---	---	---	---	---	---
4	430	296	354	200	188	194	---	---	---	---	---	---
5	457	309	374	204	195	199	---	---	---	---	---	---
6	439	292	359	207	193	201	---	---	---	---	---	---
7	470	307	380	201	192	197	---	---	---	---	---	---
8	456	298	369	204	194	199	---	---	---	---	---	---
9	489	312	389	203	196	199	---	---	---	---	---	---
10	500	319	396	204	196	200	---	---	---	---	---	---
11	463	307	382	205	198	201	---	---	---	---	---	---
12	404	280	335	207	200	203	---	---	---	---	---	---
13	333	248	283	204	201	203	---	---	---	---	---	---
14	273	238	249	220	202	210	---	---	---	---	---	---
15	256	234	244	226	215	219	---	---	---	---	---	---
16	253	225	239	223	216	220	---	---	---	---	---	---
17	243	201	225	223	210	218	---	---	---	---	---	---
18	230	171	197	219	201	207	---	---	---	---	---	---
19	194	168	176	206	181	195	---	---	---	---	---	---
20	175	167	171	188	177	181	---	---	---	---	---	---
21	174	158	168	181	169	177	---	---	---	---	---	---
22	173	149	163	178	163	172	---	---	---	---	---	---
23	168	144	156	165	151	157	---	---	---	---	---	---
24	165	142	152	158	152	155	---	---	---	---	---	---
25	162	142	151	162	154	157	---	---	---	---	---	---
26	160	145	152	165	158	161	---	---	---	---	---	---
27	153	145	149	173	164	168	---	---	---	---	---	---
28	153	147	150	172	168	170	---	---	---	---	---	---
29	161	150	154	174	165	170	---	---	---	---	---	---
30	164	157	161	172	166	169	---	---	---	---	---	---
31	175	161	168	---	---	---	---	---	---	---	---	---
MONTH	500	142	253	226	151	188	174	168	170	---	---	---

01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE, AT PHILADELPHIA, PA—Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	160	145	152	226	220	224
2	---	---	---	---	---	---	161	149	154	230	222	227
3	---	---	---	---	---	---	156	145	151	230	220	226
4	---	---	---	---	---	---	153	145	150	233	223	229
5	---	---	---	---	---	---	157	145	151	236	217	228
6	---	---	---	---	---	---	---	151	---	235	215	225
7	---	---	---	---	---	---	---	---	---	235	213	223
8	---	---	---	---	---	---	177	---	---	230	210	220
9	---	---	---	---	---	---	188	168	175	228	212	219
10	---	---	---	---	---	---	183	173	178	226	209	218
11	---	---	---	---	---	---	195	174	184	225	205	216
12	---	---	---	---	---	---	205	183	196	226	207	216
13	---	---	---	---	---	---	---	197	---	226	204	214
14	---	---	---	---	---	---	213	---	---	224	205	215
15	---	---	---	---	---	---	213	202	208	231	207	218
16	---	---	---	---	---	---	210	196	206	232	209	221
17	---	---	---	---	---	---	210	195	203	236	212	223
18	---	---	---	---	---	---	213	196	204	231	215	221
19	---	---	---	---	---	---	210	194	202	232	217	224
20	---	---	---	---	---	---	207	193	201	232	220	225
21	---	---	---	---	---	---	207	195	202	232	222	227
22	---	---	---	---	---	---	208	196	203	231	222	227
23	---	---	---	---	---	---	208	200	205	237	224	231
24	---	---	---	---	---	---	210	203	207	237	227	233
25	---	---	---	---	---	---	214	205	210	239	226	233
26	---	---	---	---	---	---	219	209	214	239	215	227
27	---	---	---	---	---	---	220	212	216	227	215	221
28	---	---	---	---	---	---	221	211	216	229	219	224
29	---	---	---	148	135	142	223	215	220	231	224	228
30	---	---	---	152	144	147	224	217	221	232	225	229
31	---	---	---	151	142	146	---	---	---	231	222	227
MONTH	---	---	---	152	135	145	224	145	193	239	204	224

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	234	214	225	175	166	170	271	244	258	227	218	223
2	226	203	216	179	170	175	268	237	253	230	219	225
3	214	196	204	---	175	---	261	235	248	233	224	229
4	203	160	188	---	---	---	259	236	247	243	228	234
5	163	143	152	---	---	---	254	232	241	249	234	245
6	147	139	143	---	---	---	242	231	236	248	158	214
7	157	144	150	---	---	---	244	235	239	233	133	165
8	163	154	158	215	204	210	243	221	237	186	116	141
9	172	156	165	220	211	216	241	204	226	169	115	134
10	173	165	170	227	217	221	235	192	211	153	116	128
11	178	167	172	230	223	227	223	189	200	138	116	125
12	179	170	175	234	228	231	209	186	194	136	119	127
13	184	173	176	237	232	235	196	184	190	137	123	132
14	182	174	177	240	234	238	194	186	190	137	129	134
15	189	177	182	243	237	241	197	189	192	144	133	137
16	188	182	185	247	240	245	196	191	194	151	141	144
17	188	175	183	255	244	250	198	186	193	179	149	160
18	188	173	180	261	251	256	195	178	188	189	171	179
19	179	167	174	261	254	258	192	178	185	195	172	183
20	177	167	173	263	257	260	189	179	184	199	190	194
21	174	167	171	266	259	263	190	182	186	196	178	188
22	180	172	176	269	261	265	192	184	188	193	169	181
23	180	168	174	271	258	265	195	178	190	191	166	176
24	172	152	163	268	256	261	197	190	193	179	162	169
25	162	148	152	267	258	262	200	194	196	181	160	172
26	154	147	150	273	261	265	204	197	200	171	142	158
27	155	148	151	268	258	264	208	202	205	157	135	146
28	159	151	154	267	252	261	212	205	209	147	129	137
29	158	136	146	271	250	261	219	208	215	136	128	131
30	171	127	150	271	246	261	224	214	219	146	133	139
31	---	---	---	272	243	259	225	217	221	---	---	---
MONTH	234	127	171	273	166	243	271	178	211	249	115	168

## DELAWARE RIVER BASIN

01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE, AT PHILADELPHIA, PA—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.0	6.9	6.9	6.9	6.8	6.8	6.9	6.9	6.9	---	---	---
2	7.0	6.9	6.9	6.9	6.8	6.9	---	---	---	---	---	---
3	6.9	6.9	6.9	6.9	6.9	6.9	---	---	---	---	---	---
4	6.9	6.9	6.9	6.9	6.9	6.9	---	---	---	---	---	---
5	6.9	6.9	6.9	7.0	6.9	6.9	---	---	---	---	---	---
6	6.9	6.9	6.9	6.9	6.9	6.9	---	---	---	---	---	---
7	6.9	6.9	6.9	6.9	6.9	6.9	---	---	---	---	---	---
8	6.9	6.9	6.9	6.9	6.9	6.9	---	---	---	---	---	---
9	6.9	6.9	6.9	6.9	6.9	6.9	---	---	---	---	---	---
10	6.9	6.9	6.9	6.9	6.8	6.9	---	---	---	---	---	---
11	6.9	6.9	6.9	6.9	6.8	6.9	---	---	---	---	---	---
12	6.9	6.9	6.9	6.9	6.8	6.8	---	---	---	---	---	---
13	7.0	6.9	7.0	6.8	6.8	6.8	---	---	---	---	---	---
14	7.0	7.0	7.0	7.0	6.8	6.9	---	---	---	---	---	---
15	7.0	7.0	7.0	7.0	6.9	6.9	---	---	---	---	---	---
16	7.1	7.0	7.0	7.0	6.9	7.0	---	---	---	---	---	---
17	7.1	7.0	7.0	7.0	6.9	7.0	---	---	---	---	---	---
18	7.1	7.0	7.0	7.0	6.9	7.0	---	---	---	---	---	---
19	7.0	7.0	7.0	7.0	6.9	7.0	---	---	---	---	---	---
20	7.0	7.0	7.0	7.0	6.9	6.9	---	---	---	---	---	---
21	7.0	6.9	7.0	6.9	6.9	6.9	---	---	---	---	---	---
22	7.0	6.9	6.9	6.9	6.9	6.9	---	---	---	---	---	---
23	6.9	6.7	6.9	6.9	6.8	6.9	---	---	---	---	---	---
24	6.8	6.7	6.7	6.9	6.8	6.9	---	---	---	---	---	---
25	6.8	6.7	6.7	6.9	6.8	6.8	---	---	---	---	---	---
26	6.7	6.7	6.7	6.8	6.8	6.8	---	---	---	---	---	---
27	6.7	6.6	6.7	6.9	6.8	6.9	---	---	---	---	---	---
28	6.7	6.6	6.6	6.9	6.9	6.9	---	---	---	---	---	---
29	6.7	6.6	6.6	6.9	6.9	6.9	---	---	---	---	---	---
30	6.8	6.6	6.8	6.9	6.9	6.9	---	---	---	---	---	---
31	6.9	6.8	6.8	---	---	---	---	---	---	---	---	---
MAX	7.1	7.0	7.0	7.0	6.9	7.0	6.9	6.9	6.9	---	---	---
MIN	6.7	6.6	6.6	6.8	6.8	6.8	6.9	6.9	6.9	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	7.4	7.4	7.4	7.3	7.2	7.3
2	---	---	---	---	---	---	7.4	7.4	7.4	7.3	7.2	7.2
3	---	---	---	---	---	---	7.4	7.4	7.4	7.3	7.2	7.2
4	---	---	---	---	---	---	7.4	7.4	7.4	7.2	7.1	7.2
5	---	---	---	---	---	---	7.4	7.4	7.4	7.2	7.1	7.1
6	---	---	---	---	---	---	7.4	7.4	7.4	7.3	7.1	7.2
7	---	---	---	---	---	---	---	---	---	7.3	7.2	7.2
8	---	---	---	---	---	---	---	---	---	7.3	7.2	7.2
9	---	---	---	---	---	---	7.5	7.4	7.5	7.2	7.1	7.2
10	---	---	---	---	---	---	7.6	7.5	7.5	7.2	7.0	7.1
11	---	---	---	---	---	---	7.6	7.5	7.5	7.1	7.0	7.1
12	---	---	---	---	---	---	7.5	7.5	7.5	7.2	6.9	7.0
13	---	---	---	---	---	---	7.5	7.5	7.5	7.2	7.1	7.2
14	---	---	---	---	---	---	7.6	7.5	7.5	7.2	7.1	7.2
15	---	---	---	---	---	---	7.5	7.5	7.5	7.3	7.1	7.2
16	---	---	---	---	---	---	7.6	7.5	7.5	7.3	7.2	7.2
17	---	---	---	---	---	---	7.6	7.5	7.5	7.3	7.2	7.2
18	---	---	---	---	---	---	7.6	7.5	7.5	7.3	7.2	7.2
19	---	---	---	---	---	---	7.6	7.5	7.5	7.3	7.1	7.2
20	---	---	---	---	---	---	7.6	7.5	7.5	7.3	7.1	7.2
21	---	---	---	---	---	---	7.5	7.5	7.5	7.3	7.2	7.2
22	---	---	---	---	---	---	7.5	7.3	7.5	7.3	7.2	7.2
23	---	---	---	---	---	---	7.4	7.3	7.3	7.3	7.1	7.2
24	---	---	---	---	---	---	7.4	7.3	7.3	7.3	7.1	7.2
25	---	---	---	---	---	---	7.4	7.3	7.4	7.2	7.1	7.2
26	---	---	---	---	---	---	7.4	7.3	7.3	7.2	7.1	7.2
27	---	---	---	---	---	---	7.4	7.3	7.3	7.3	7.1	7.2
28	---	---	---	---	---	---	7.4	7.3	7.3	7.2	7.2	7.2
29	---	---	---	7.3	7.3	7.3	7.4	7.3	7.3	7.2	7.1	7.2
30	---	---	---	7.4	7.3	7.3	7.4	7.3	7.3	7.2	7.1	7.2
31	---	---	---	7.4	7.3	7.4	---	---	---	7.1	7.1	7.1
MAX	---	---	---	7.4	7.3	7.4	7.6	7.5	7.5	7.3	7.2	7.3
MIN	---	---	---	7.3	7.3	7.3	7.4	7.3	7.3	7.1	6.9	7.0

01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE, AT PHILADELPHIA, PA—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.1	7.0	7.1	7.2	7.1	7.1	7.2	7.1	7.2	7.1	7.0	7.0
2	7.1	7.0	7.1	7.2	7.1	7.1	7.2	7.1	7.2	7.0	6.9	7.0
3	7.2	7.1	7.1	---	---	---	7.2	7.1	7.2	7.0	6.9	6.9
4	7.2	7.1	7.1	---	---	---	7.2	7.1	7.2	7.2	6.9	7.0
5	7.2	7.0	7.1	---	---	---	7.2	7.1	7.1	7.4	7.1	7.2
6	7.1	7.0	7.0	---	---	---	7.2	7.1	7.1	7.4	7.2	7.3
7	7.0	7.0	7.0	---	---	---	7.3	7.1	7.2	7.3	7.0	7.1
8	7.1	7.0	7.0	7.2	7.1	7.1	7.4	7.2	7.2	7.1	6.9	7.0
9	7.1	7.0	7.1	7.2	7.0	7.1	7.3	7.3	7.3	7.0	6.8	6.9
10	7.1	7.0	7.1	7.1	7.0	7.0	7.3	7.2	7.2	7.0	6.8	6.8
11	7.1	7.0	7.1	7.1	6.9	7.0	7.2	7.2	7.2	6.9	6.8	6.8
12	7.1	7.0	7.1	7.1	6.9	7.0	7.2	7.1	7.1	6.8	6.8	6.8
13	7.1	7.0	7.1	7.1	7.0	7.0	7.2	7.1	7.1	6.8	6.8	6.8
14	7.1	7.0	7.1	7.0	7.0	7.0	7.1	7.0	7.1	6.8	6.8	6.8
15	7.1	7.0	7.1	7.1	7.0	7.0	7.2	7.0	7.2	6.9	6.8	6.8
16	7.2	7.0	7.1	7.1	7.0	7.0	7.2	7.1	7.1	6.9	6.8	6.8
17	7.2	7.1	7.1	7.1	7.0	7.0	7.2	7.1	7.2	7.2	6.8	7.0
18	7.2	7.1	7.1	7.1	7.0	7.0	7.2	7.1	7.2	7.2	7.1	7.2
19	7.1	7.1	7.1	7.1	7.0	7.0	7.2	7.1	7.1	7.3	7.1	7.2
20	7.1	7.0	7.0	7.1	7.0	7.0	7.2	7.1	7.1	7.3	7.2	7.2
21	7.1	7.0	7.0	7.1	7.0	7.1	7.2	7.2	7.2	7.2	7.1	7.1
22	7.2	7.1	7.1	7.2	7.0	7.1	7.2	7.1	7.2	7.1	7.0	7.1
23	7.2	7.1	7.1	7.3	7.1	7.1	7.2	7.1	7.1	7.1	6.9	7.0
24	7.1	7.1	7.1	7.2	7.1	7.2	7.2	7.1	7.1	7.1	6.9	7.0
25	7.1	7.0	7.0	7.2	7.1	7.2	7.2	7.1	7.1	7.1	7.0	7.1
26	7.0	7.0	7.0	7.1	7.0	7.1	7.3	7.1	7.2	7.1	7.0	7.1
27	7.0	7.0	7.0	7.1	7.0	7.0	7.2	7.2	7.2	7.1	6.9	7.0
28	7.1	7.0	7.1	7.1	7.0	7.0	7.2	7.1	7.2	7.0	6.9	6.9
29	7.1	7.0	7.1	7.0	7.0	7.0	7.2	7.0	7.1	6.9	6.9	6.9
30	7.2	7.0	7.1	7.2	7.0	7.0	7.1	7.0	7.0	7.0	6.9	7.0
31	---	---	---	7.2	7.1	7.1	7.1	7.0	7.0	---	---	---
MAX	7.2	7.1	7.1	7.3	7.1	7.2	7.4	7.3	7.3	7.4	7.2	7.3
MIN	7.0	7.0	7.0	7.0	6.9	7.0	7.1	7.0	7.0	6.8	6.8	6.8

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	22.5	22.5	22.5	11.0	10.5	11.0	6.5	5.5	6.0	---	---	---
2	23.0	22.5	22.5	11.0	10.5	10.5	---	---	---	---	---	---
3	23.0	22.5	23.0	10.5	10.0	10.0	---	---	---	---	---	---
4	23.0	23.0	23.0	10.0	10.0	10.0	---	---	---	---	---	---
5	23.0	23.0	23.0	10.0	9.5	10.0	---	---	---	---	---	---
6	23.0	22.5	22.5	10.0	9.5	10.0	---	---	---	---	---	---
7	22.5	22.5	22.5	9.5	9.0	9.5	---	---	---	---	---	---
8	22.5	22.0	22.0	9.5	9.0	9.5	---	---	---	---	---	---
9	22.0	21.5	21.5	9.5	9.0	9.5	---	---	---	---	---	---
10	21.5	21.5	21.5	10.0	9.0	9.5	---	---	---	---	---	---
11	21.5	21.0	21.0	10.0	9.5	10.0	---	---	---	---	---	---
12	21.0	20.5	20.5	10.0	10.0	10.0	---	---	---	---	---	---
13	20.5	20.0	20.5	10.5	10.0	10.0	---	---	---	---	---	---
14	20.0	19.5	19.5	10.5	10.0	10.0	---	---	---	---	---	---
15	19.5	18.0	19.0	10.5	10.0	10.0	---	---	---	---	---	---
16	19.0	17.0	18.0	10.0	10.0	10.0	---	---	---	---	---	---
17	18.0	16.0	17.0	10.0	10.0	10.0	---	---	---	---	---	---
18	17.0	15.0	15.5	10.0	10.0	10.0	---	---	---	---	---	---
19	15.0	14.0	14.5	10.0	9.0	9.5	---	---	---	---	---	---
20	14.5	13.5	14.0	9.5	8.5	9.0	---	---	---	---	---	---
21	14.0	13.0	13.5	8.5	8.0	8.0	---	---	---	---	---	---
22	13.5	13.0	13.5	8.5	8.0	8.0	---	---	---	---	---	---
23	13.5	13.0	13.0	8.0	7.0	7.5	---	---	---	---	---	---
24	13.0	12.5	12.5	7.5	7.0	7.0	---	---	---	---	---	---
25	12.5	12.5	12.5	7.5	7.0	7.5	---	---	---	---	---	---
26	12.5	12.5	12.5	7.5	7.0	7.5	---	---	---	---	---	---
27	12.5	12.5	12.5	7.5	7.0	7.5	---	---	---	---	---	---
28	12.5	12.0	12.5	7.0	7.0	7.0	---	---	---	---	---	---
29	12.0	12.0	12.0	7.0	6.5	6.5	---	---	---	---	---	---
30	12.0	11.5	11.5	6.5	6.0	6.5	---	---	---	---	---	---
31	11.5	11.0	11.0	---	---	---	---	---	---	---	---	---
MONTH	23.0	11.0	17.4	11.0	6.0	9.0	6.5	5.5	6.0	---	---	---

## DELAWARE RIVER BASIN

01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE, AT PHILADELPHIA, PA—Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	9.0	8.5	9.0	15.5	14.5	15.0
2	---	---	---	---	---	---	9.0	8.5	8.5	16.0	15.0	15.5
3	---	---	---	---	---	---	9.0	8.0	8.5	16.5	15.5	16.0
4	---	---	---	---	---	---	8.5	7.5	8.0	16.5	16.0	16.0
5	---	---	---	---	---	---	8.0	7.5	7.5	16.5	16.0	16.5
6	---	---	---	---	---	---	7.5	7.5	7.5	16.5	16.0	16.5
7	---	---	---	---	---	---	---	---	---	17.0	16.0	16.5
8	---	---	---	---	---	---	---	---	---	17.0	16.5	17.0
9	---	---	---	---	---	---	7.0	6.5	6.5	17.0	17.0	17.0
10	---	---	---	---	---	---	6.5	6.0	6.5	17.0	17.0	17.0
11	---	---	---	---	---	---	6.5	5.5	6.0	17.5	17.0	17.0
12	---	---	---	---	---	---	6.0	5.5	6.0	17.5	17.0	17.0
13	---	---	---	---	---	---	6.5	6.0	6.0	17.0	16.0	16.5
14	---	---	---	---	---	---	---	---	---	16.5	16.0	16.5
15	---	---	---	---	---	---	9.5	7.5	8.5	16.5	16.0	16.0
16	---	---	---	---	---	---	11.0	8.5	10.0	16.5	15.5	16.0
17	---	---	---	---	---	---	11.0	10.0	10.5	16.0	15.0	15.5
18	---	---	---	---	---	---	11.0	10.0	10.5	15.5	15.0	15.0
19	---	---	---	---	---	---	11.5	10.5	11.0	15.5	15.0	15.5
20	---	---	---	---	---	---	12.5	11.0	11.5	16.0	15.5	15.5
21	---	---	---	---	---	---	12.5	11.5	12.0	16.0	15.5	15.5
22	---	---	---	---	---	---	13.0	12.0	12.5	16.0	15.5	15.5
23	---	---	---	---	---	---	13.0	12.5	12.5	15.5	15.5	15.5
24	---	---	---	---	---	---	12.5	12.5	12.5	15.5	15.5	15.5
25	---	---	---	---	---	---	13.0	12.5	12.5	15.5	15.5	15.5
26	---	---	---	---	---	---	13.0	13.0	13.0	15.5	15.0	15.5
27	---	---	---	---	---	---	13.5	13.0	13.0	15.5	15.0	15.5
28	---	---	---	---	---	---	14.0	13.5	13.5	16.0	15.5	15.5
29	---	---	---	9.5	8.5	9.0	14.5	14.0	14.0	16.5	15.5	16.0
30	---	---	---	9.5	9.0	9.5	15.0	14.0	14.5	17.0	16.0	16.5
31	---	---	---	9.5	9.0	9.0	---	---	---	17.0	16.5	16.5
MONTH	---	---	---	9.5	8.5	9.2	15.0	5.5	10.1	17.5	14.5	16.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.0	16.5	17.0	24.0	22.5	23.5	26.0	25.5	26.0	26.0	25.5	26.0
2	17.5	16.5	17.0	24.0	23.0	23.5	26.0	26.0	26.0	25.5	25.0	25.5
3	18.0	17.0	17.5	---	---	---	26.5	26.0	26.0	25.0	25.0	25.0
4	17.5	16.0	17.0	---	---	---	26.5	26.0	26.5	25.0	24.5	24.5
5	16.0	15.0	15.5	---	---	---	26.5	26.5	26.5	24.5	23.0	24.0
6	15.5	15.0	15.0	---	---	---	26.5	26.5	26.5	24.0	20.0	21.5
7	15.5	15.0	15.0	26.0	---	---	26.5	26.5	26.5	22.5	19.5	20.5
8	16.0	15.5	15.5	26.0	25.5	26.0	26.5	25.5	26.0	21.0	19.5	20.0
9	16.5	15.5	16.0	26.5	26.0	26.0	26.5	25.0	26.0	21.0	20.0	20.0
10	17.5	16.5	17.0	26.0	25.5	26.0	26.0	25.0	25.5	20.5	20.0	20.0
11	17.5	17.0	17.5	26.0	25.5	25.5	25.5	24.5	25.0	20.5	20.0	20.0
12	18.5	17.5	18.0	26.0	25.5	25.5	25.5	24.5	25.0	20.5	20.0	20.5
13	19.5	18.0	19.0	26.0	25.5	26.0	25.5	25.0	25.0	20.5	20.5	20.5
14	20.5	19.0	19.5	26.0	25.5	26.0	25.5	25.0	25.5	21.0	20.5	21.0
15	20.5	20.0	20.5	26.0	25.5	26.0	26.0	25.5	25.5	21.5	21.0	21.5
16	20.5	20.0	20.5	26.0	26.0	26.0	26.0	25.5	25.5	22.0	21.5	21.5
17	20.5	20.0	20.0	26.0	26.0	26.0	26.0	25.5	25.5	22.5	21.5	22.0
18	20.5	20.0	20.0	26.0	26.0	26.0	26.0	25.5	25.5	22.0	22.0	22.0
19	20.5	20.0	20.0	26.0	26.0	26.0	26.0	25.5	25.5	22.0	22.0	22.0
20	20.5	20.0	20.0	26.0	26.0	26.0	26.0	25.5	26.0	22.5	22.0	22.0
21	20.0	19.5	19.5	26.5	26.0	26.0	26.5	26.0	26.0	22.0	21.5	22.0
22	19.5	18.5	19.0	26.5	26.0	26.5	26.5	26.0	26.5	22.0	21.5	21.5
23	18.5	17.5	18.0	26.5	26.0	26.5	26.5	26.0	26.5	22.0	21.5	21.5
24	18.0	17.5	17.5	26.5	26.0	26.0	26.0	26.0	26.0	21.5	21.0	21.5
25	18.5	18.0	18.0	26.5	26.0	26.5	26.0	25.5	26.0	21.0	20.0	21.0
26	20.5	18.5	19.5	26.5	26.0	26.5	26.0	25.5	26.0	21.0	19.5	20.0
27	21.0	19.5	20.5	26.5	26.5	26.5	26.0	25.5	26.0	20.0	19.0	19.5
28	22.0	20.5	21.5	26.5	26.5	26.5	26.0	26.0	26.0	20.0	19.0	19.5
29	23.0	21.5	22.0	26.5	26.0	26.5	26.5	26.0	26.0	19.5	19.0	19.0
30	23.5	22.0	22.5	26.5	26.0	26.0	26.5	26.0	26.0	19.0	19.0	19.0
31	---	---	---	26.0	26.0	26.0	26.0	26.0	26.0	---	---	---
MONTH	23.5	15.0	18.5	26.5	22.5	25.9	26.5	24.5	25.9	26.0	19.0	21.5



01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE, AT PHILADELPHIA, PA—Continued

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	5.5	4.5	4.9	9.6	9.1	9.4	11.6	11.0	11.4	---	---	---
2	5.3	4.6	4.9	9.7	9.4	9.6	---	---	---	---	---	---
3	5.0	4.4	4.7	9.8	9.4	9.6	---	---	---	---	---	---
4	4.9	4.3	4.6	10.0	9.6	9.7	---	---	---	---	---	---
5	4.8	4.2	4.5	10.0	9.6	9.7	---	---	---	---	---	---
6	5.2	4.4	4.8	9.9	9.4	9.6	---	---	---	---	---	---
7	5.2	4.7	4.9	10.2	9.7	9.9	---	---	---	---	---	---
8	5.4	4.8	5.1	10.2	9.7	9.9	---	---	---	---	---	---
9	5.4	5.0	5.2	10.2	9.7	10	---	---	---	---	---	---
10	5.3	5.0	5.2	10.3	9.8	10.0	---	---	---	---	---	---
11	5.5	4.9	5.2	10.2	9.7	9.9	---	---	---	---	---	---
12	5.7	4.8	5.2	9.9	9.5	9.7	---	---	---	---	---	---
13	6.5	5.3	5.9	9.7	9.4	9.5	---	---	---	---	---	---
14	6.4	6.0	6.3	9.8	9.3	9.5	---	---	---	---	---	---
15	7.2	6.3	6.6	9.9	9.4	9.6	---	---	---	---	---	---
16	7.7	6.5	7.1	9.9	9.4	9.7	---	---	---	---	---	---
17	8.2	6.9	7.5	9.7	9.5	9.6	---	---	---	---	---	---
18	8.6	7.4	8.2	9.9	9.4	9.6	---	---	---	---	---	---
19	9.0	8.2	8.6	10.4	9.7	10.1	---	---	---	---	---	---
20	9.1	8.7	8.9	10.5	10.1	10.3	---	---	---	---	---	---
21	9.2	8.8	9.0	10.8	10.3	10.5	---	---	---	---	---	---
22	9.3	8.9	9.1	10.7	10.3	10.5	---	---	---	---	---	---
23	9.2	9.0	9.1	11.1	10.5	10.9	---	---	---	---	---	---
24	9.3	9.0	9.1	11.1	10.8	11.0	---	---	---	---	---	---
25	9.2	8.9	9.1	11.1	10.8	11.0	---	---	---	---	---	---
26	9.1	8.7	8.9	11.0	10.8	10.9	---	---	---	---	---	---
27	9.1	8.7	8.9	10.9	10.5	10.7	---	---	---	---	---	---
28	9.2	8.7	9.0	10.9	10.6	10.8	---	---	---	---	---	---
29	9.3	8.8	9.0	11.2	10.7	10.9	---	---	---	---	---	---
30	9.3	8.9	9.0	11.2	10.8	11.1	---	---	---	---	---	---
31	9.3	9.0	9.2	---	---	---	---	---	---	---	---	---
MONTH	9.3	4.2	7.0	11.2	9.1	10.1	11.6	11.0	11.4	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	10.6	10.5	10.5	10.4	9.8	10.0
2	---	---	---	---	---	---	10.8	10.5	10.6	10.1	9.5	9.7
3	---	---	---	---	---	---	11.1	10.5	10.7	9.8	9.4	9.5
4	---	---	---	---	---	---	11.3	10.6	11.0	9.6	9.0	9.2
5	---	---	---	---	---	---	11.3	10.9	11.1	9.1	8.5	8.7
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	11.5	11.1	11.3	---	---	---
10	---	---	---	---	---	---	11.8	11.4	11.6	---	---	---
11	---	---	---	---	---	---	12.0	11.6	11.8	---	---	---
12	---	---	---	---	---	---	11.9	11.7	11.8	---	---	---
13	---	---	---	---	---	---	---	---	---	7.7	6.4	7.0
14	---	---	---	---	---	---	---	---	---	8.0	6.8	7.4
15	---	---	---	---	---	---	11.3	10.8	11.1	8.5	7.1	7.7
16	---	---	---	---	---	---	10.9	10.4	10.6	8.7	7.3	8.0
17	---	---	---	---	---	---	10.7	10.4	10.5	8.9	7.7	8.2
18	---	---	---	---	---	---	10.6	10.3	10.4	9.1	7.8	8.4
19	---	---	---	---	---	---	10.3	10.1	10.2	9.1	7.6	8.4
20	---	---	---	---	---	---	10.2	9.8	10.0	8.8	7.5	8.3
21	---	---	---	---	---	---	9.9	9.6	9.8	8.7	7.4	8.1
22	---	---	---	---	---	---	9.6	9.4	9.6	8.3	7.1	7.8
23	---	---	---	---	---	---	10.0	9.5	9.8	8.2	7.1	7.7
24	---	---	---	---	---	---	10.5	10.0	10.2	8.2	7.2	7.7
25	---	---	---	---	---	---	10.8	10.3	10.5	8.2	7.1	7.6
26	---	---	---	---	---	---	10.8	10.3	10.5	8.2	7.2	7.8
27	---	---	---	---	---	---	10.7	10.3	10.5	8.3	7.6	7.9
28	---	---	---	---	---	---	10.7	10.4	10.5	8.0	7.7	7.8
29	---	---	---	10.9	10.6	10.7	10.4	10.2	10.3	7.8	7.4	7.6
30	---	---	---	10.6	10.4	10.5	10.5	10.1	10.3	7.7	7.4	7.5
31	---	---	---	10.6	10.5	10.6	---	---	---	7.5	7.2	7.4
MONTH	---	---	---	10.9	10.4	10.6	12.0	9.4	10.6	10.4	6.4	8.1

## DELAWARE RIVER BASIN

01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE, AT PHILADELPHIA, PA—Continued

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.3	6.7	6.9	7.4	6.8	7.2	5.2	4.4	4.6	5.3	4.5	4.8
2	7.6	6.5	7.0	7.3	6.9	7.0	4.8	4.2	4.4	4.9	4.1	4.5
3	7.7	7.0	7.5	---	---	---	5.2	4.1	4.6	4.7	4.1	4.4
4	8.2	7.0	7.7	---	---	---	5.1	4.4	4.7	5.1	4.2	4.6
5	8.9	8.0	8.5	---	---	---	4.8	4.2	4.5	6.0	4.6	5.2
6	8.8	8.3	8.5	---	---	---	5.3	4.1	4.6	7.1	5.1	6.4
7	8.6	8.1	8.4	---	---	---	5.6	4.5	5.1	7.1	6.0	6.8
8	8.6	7.9	8.3	6.9	6.2	6.5	5.8	4.8	5.2	7.0	6.6	6.8
9	8.5	8.1	8.3	6.6	5.8	6.3	5.6	4.7	5.3	7.0	6.5	6.8
10	8.3	8.0	8.2	6.3	5.2	5.8	5.6	4.8	5.2	7.1	6.7	6.9
11	8.2	7.9	8.1	5.7	4.8	5.3	5.7	4.9	5.4	7.2	6.6	6.9
12	8.1	7.8	7.9	5.6	4.7	5.1	5.9	4.9	5.4	7.2	6.6	6.9
13	7.9	7.4	7.7	5.4	4.7	5.0	5.7	5.2	5.5	7.2	6.5	6.7
14	7.8	7.2	7.5	5.4	4.7	4.9	6.0	5.3	5.6	7.0	6.2	6.6
15	7.5	6.9	7.2	5.3	4.7	4.9	6.1	5.4	5.7	7.1	6.0	6.5
16	7.4	6.9	7.2	5.3	4.6	4.8	5.9	5.3	5.6	6.9	5.8	6.2
17	7.4	7.0	7.2	5.1	4.5	4.8	6.0	5.2	5.6	7.5	6.3	6.8
18	7.5	7.0	7.2	5.0	4.4	4.7	6.1	5.3	5.7	7.1	6.7	6.9
19	7.4	6.9	7.1	5.1	4.3	4.7	5.9	5.2	5.6	7.1	6.8	7.0
20	7.3	6.8	7.0	5.0	4.3	4.7	6.0	5.3	5.7	7.1	6.6	6.9
21	7.3	6.7	7.0	5.2	4.5	4.8	6.2	5.3	5.7	6.7	6.4	6.6
22	7.6	7.0	7.4	5.4	4.6	5.0	6.6	5.5	5.9	6.6	6.1	6.4
23	7.9	7.4	7.6	6.3	4.6	5.3	6.7	5.7	6.2	6.3	5.5	6.0
24	8.1	7.6	7.9	6.0	4.9	5.6	7.0	5.8	6.4	6.6	5.6	6.1
25	8.1	7.6	7.9	6.0	5.2	5.5	6.9	5.9	6.4	6.9	6.3	6.6
26	8.0	7.6	7.8	6.0	5.1	5.5	6.5	5.6	6.1	6.5	5.7	6.0
27	7.6	7.2	7.4	5.8	5.1	5.5	5.6	5.0	5.4	6.1	5.5	5.8
28	7.4	7.0	7.2	5.4	4.8	5.1	6.0	4.0	4.9	6.1	5.6	5.8
29	7.2	6.4	6.9	5.2	4.6	4.9	6.0	5.1	5.4	5.6	4.7	5.2
30	7.5	6.5	7.0	5.5	4.5	4.8	5.8	4.9	5.2	6.2	4.7	5.4
31	---	---	---	5.4	4.7	5.0	5.5	4.7	5.0	---	---	---
MONTH	8.9	6.4	7.6	7.4	4.3	5.3	7.0	4.0	5.4	7.5	4.1	6.2

01467200 DELAWARE RIVER AT BENJAMIN FRANKLIN BRIDGE, AT PHILADELPHIA, PA—Continued

CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Loca- tion in X-sect. looking dwnstrm ft from l bank (00009)	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unfl- trd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)
APR 2003									
01...	1222	1028	1028	88	1	10.9	7.5	153	8.6
01...	1224	1028	1028	88	5	10.8	7.5	154	8.6
01...	1226	1028	1028	288	1	10.9	7.4	152	8.7
01...	1228	1028	1028	288	6	10.9	7.4	153	8.7
01...	1229	1028	1028	288	10	10.9	7.4	152	8.7
01...	1230	1028	1028	288	15	10.9	7.4	152	8.7
01...	1231	1028	1028	288	20	10.9	7.4	151	8.7
01...	1232	1028	1028	288	25	10.9	7.4	151	8.7
01...	1233	1028	1028	288	30	10.9	7.4	151	8.7
01...	1240	1028	1028	450	1	10.9	7.4	151	8.7
01...	1241	1028	1028	450	5	10.9	7.5	151	8.7
01...	1242	1028	1028	450	10	11.0	7.5	151	8.7
01...	1243	1028	1028	450	15	10.8	7.5	151	8.7
01...	1244	1028	1028	450	20	10.9	7.5	151	8.7
01...	1245	1028	1028	450	25	10.8	7.5	151	8.7
01...	1246	1028	1028	450	30	10.9	7.5	151	8.7
01...	1255	1028	1028	700	1	10.8	7.5	152	8.8
01...	1256	1028	1028	700	5	10.8	7.5	152	8.8
01...	1257	1028	1028	700	10	10.8	7.5	151	8.8
01...	1258	1028	1028	700	15	10.8	7.5	152	8.8
01...	1259	1028	1028	700	20	10.8	7.5	152	8.8
01...	1300	1028	1028	700	25	10.8	7.5	152	8.8
01...	1301	1028	1028	700	30	10.8	7.5	152	8.8
01...	1308	1028	1028	910	1	10.8	7.5	152	8.8
01...	1309	1028	1028	910	5	10.8	7.5	151	8.8
01...	1310	1028	1028	910	10	10.8	7.5	152	8.8
01...	1311	1028	1028	910	15	10.8	7.5	152	8.8
01...	1312	1028	1028	910	20	10.8	7.5	152	8.8
01...	1313	1028	1028	910	25	10.8	7.5	152	8.8
01...	1314	1028	1028	910	30	10.8	7.5	152	8.8
01...	1315	1028	1028	910	35	10.8	7.5	152	8.8
01...	1316	1028	1028	910	40	10.8	7.5	152	8.8
01...	1325	1028	1028	1150	1	10.8	7.5	152	8.8
01...	1326	1028	1028	1150	5	10.8	7.5	152	8.8
01...	1327	1028	1028	1150	10	10.8	7.5	152	8.8
01...	1328	1028	1028	1150	15	10.8	7.5	152	8.8
01...	1329	1028	1028	1150	20	10.8	7.5	152	8.8
01...	1330	1028	1028	1150	25	10.8	7.5	152	8.8
01...	1331	1028	1028	1150	30	10.8	7.5	152	8.8
01...	1332	1028	1028	1150	35	10.8	7.5	152	8.8
01...	1333	1028	1028	1150	40	10.8	7.5	152	8.8
01...	1337	1028	1028	1370	1	10.8	7.5	153	8.8
01...	1338	1028	1028	1370	5	10.8	7.5	153	8.8
01...	1339	1028	1028	1370	10	10.8	7.5	153	8.8
01...	1340	1028	1028	1370	15	10.8	7.5	153	8.8
01...	1341	1028	1028	1370	20	10.8	7.5	153	8.8
01...	1342	1028	1028	1370	25	10.8	7.5	153	8.8
01...	1343	1028	1028	1370	30	10.8	7.5	154	8.8
01...	1344	1028	1028	1370	35	10.8	7.5	154	8.8
01...	1345	1028	1028	1370	40	10.8	7.5	154	8.8
01...	1346	1028	1028	1370	45	10.8	7.5	154	8.9
01...	1347	1028	1028	1550	1	10.9	7.4	154	8.9
01...	1348	1028	1028	1550	5	10.8	7.5	154	8.8
01...	1349	1028	1028	1550	10	10.8	7.4	154	8.8
01...	1350	1028	1028	1550	15	10.8	7.4	154	8.8
01...	1351	1028	1028	1550	20	10.8	7.5	154	8.8
01...	1352	1028	1028	1550	25	10.8	7.5	154	8.8
01...	1353	1028	1028	1550	30	10.8	7.5	154	8.8
01...	1354	1028	1028	1550	35	10.8	7.5	154	8.8
01...	1355	1028	1028	1550	40	10.8	7.4	154	8.8
01...	1356	1028	1028	1550	45	10.8	7.5	154	8.8
01...	1357	1028	1028	1770	1	10.8	7.4	155	8.8
01...	1358	1028	1028	1770	5	10.8	7.5	155	8.8
01...	1359	1028	1028	1770	10	10.8	7.5	155	8.8
01...	1400	1028	1028	1770	15	10.8	7.5	155	8.8
01...	1401	1028	1028	1770	20	10.8	7.5	155	8.8
01...	1402	1028	1028	1770	25	10.8	7.4	155	8.8
01...	1403	1028	1028	1770	30	10.8	7.5	155	8.8
01...	1404	1028	1028	1770	35	10.8	7.5	155	8.8
01...	1405	1028	1028	1770	40	10.8	7.4	155	8.9
01...	1406	1028	1028	1770	45	10.8	7.4	155	8.9
01...	1407	1028	1028	1770	50	10.8	7.5	155	8.9
01...	1408	1028	1028	2010	1	10.8	7.4	157	8.9
01...	1409	1028	1028	2010	5	10.7	7.4	157	8.9
01...	1410	1028	1028	2010	10	10.7	7.4	157	8.9
01...	1411	1028	1028	2010	15	10.7	7.5	157	8.9
01...	1412	1028	1028	2010	20	10.7	7.5	157	8.9
01...	1413	1028	1028	2010	25	10.7	7.5	157	8.9
01...	1414	1028	1028	2010	30	10.7	7.5	157	8.9
01...	1415	1028	1028	2010	35	10.7	7.4	157	8.9
01...	1416	1028	1028	2010	40	10.7	7.5	157	8.9
01...	1417	1028	1028	2010	45	10.7	7.5	157	8.9
01...	1418	1028	1028	2010	50	10.7	7.5	157	8.9
01...	1419	1028	1028	2160	0	--	--	--	--

## 01467312 NEWTON CREEK AT WEST COLLINGSWOOD, NJ

LOCATION.--Lat 39°54'05", long 75°05'41", Camden County, Hydrologic Unit 02040202, at bridge on State Route 168 (Mount Ephraim Avenue/Black Horse Pike), 0.4 mi southwest of West Collingswood, 1.5 mi east of Gloucester City, 1.9 mi west of Collingswood, and 2.6 mi upstream of Newton Creek.

DRAINAGE AREA.--4.51 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1964, 1965, 1967, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 18.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
DEC 19...	0845	5.8	0.178	0.147	766	8.9	66	7.3	321	5.0	3.0	70	16.4
FEB 19...	1000	4.2	0.059	0.048	770	11.6	105	6.8	324	7.0	11.4	73	16.6
MAY 29...	0900	6.0	0.114	0.091	752	9.5	98	7.7	222	16.2	16.1	55	12.2
AUG 27...	1000	10	0.078	0.059	760	8.2	100	9.0	230	26.8	25.6	65	14.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
DEC 19...	7.02	3.23	27.8	E37	52.0	<0.17	8.8	20.3	--	182	3	0.52	0.243
FEB 19...	7.72	2.77	35.2	E42	66.3	<0.17	10.3	21.0	--	204	3	0.44	0.306
MAY 29...	5.94	2.39	15.5	34	30.9	<0.17	5.2	14.8	112	124	6	0.37	0.056
AUG 27...	7.28	2.74	16.9	42	35.2	<0.17	10.9	13.6	127	141	20	0.47	0.109

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
DEC 19...	0.222	1.37	0.027	<0.020	0.11	0.012	0.048	1.9	2.0	0.7	<0.1	0.7	4.2
FEB 19...	0.295	1.94	0.027	<0.020	0.20	E.003	0.035	2.4	2.6	0.8	<0.1	0.8	1.7
MAY 29...	0.051	1.14	0.034	<0.020	0.32	0.019	0.058	1.5	1.8	1.4	<0.1	1.4	3.0
AUG 27...	0.146	0.27	0.028	<0.020	0.64	0.010	0.080	0.74	1.4	4.7	<0.1	4.5	3.3



## 01467312 NEWTON CREEK AT WEST COLLINGSWOOD, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-difluoromethane wat unfltrd ug/L (34668)	Di-chloromethane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
FEB 19...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.3

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloroethene, water, unfltrd ug/L (34475)	Tetra-chloromethane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloroethene, water, unfltrd ug/L (34546)	Tri-bromomethane water unfltrd ug/L (32104)	Tri-chloroethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	
FEB 19...		2.3	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 29...	0900	<0.006	E.013	<0.006	<0.004	<0.005	0.037	E.006	<0.010	<0.002	<0.041	<0.020	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 29...	<0.003	<0.004	0.039	0.011	<0.002	<0.009	<0.005	<0.005	<0.007	E.013	E.008	<0.006	<0.007

01467312 NEWTON CREEK AT WEST COLLINGSWOOD, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-methalin, water, fltrd 0.7u GF ug/L (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)
MAY 29...	0.029	E.01	0.012	<0.02	<0.034	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUN 02...	0930	2,000	2,700	5,000	JUN 16...	0920	110	400	800
09...	0910	800	11,000	9,000	23...	0850	280	2,300	16,000
					30...	0915	40	300	500

## 01467359 NORTH BRANCH BIG TIMBER CREEK AT GLENDORA, NJ

LOCATION.--Lat 39°50'04", long 75°04'01", Camden County, Hydrologic Unit 02040206, at bridge on Chews Landing-Clementon Road (County Route 683), 0.7 mi south of Glendora, 1.8 mi upstream of South Branch Big Timber Creek, and 2.5 mi north of Blackwood.

DRAINAGE AREA.--18.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1998 to current year.

REMARKS.--Site is tide-affected; all samples collected at low tide. Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Urban Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 18.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 20...	0900	26	9.0	0.157	0.124	769	10.2	81	6.4	180	10.0	6.0	58
MAR 05...	1040	88	33	0.153	0.121	756	12.2	92	7.3	289	6.5	3.5	43
MAY 15...	0950	61	9.4	0.144	0.116	764	8.3	80	6.7	196	--	13.4	55
SEP 08...	0910	81	11	0.200	0.161	762	6.3	68	6.5	173	23.5	19.0	45

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 20...	17.9	3.36	2.67	8.94	E24	15.7	<0.17	9.7	33.1	--	121	27	0.23
MAR 05...	12.8	2.68	2.68	34.7	20	57.6	<0.17	6.2	19.5	151	166	24	0.32
MAY 15...	16.8	3.20	3.03	13.8	31	24.9	<0.17	8.5	21.4	113	129	13	0.35
SEP 08...	13.3	2.90	3.23	11.2	27	19.0	<0.17	9.1	17.6	95	103	11	0.29

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 20...	0.081	0.054	0.36	<0.003	0.032	0.28	0.016	0.24	0.60	0.87	2.4	<0.1	2.4
MAR 05...	0.203	0.141	0.58	0.016	<0.020	0.21	0.013	0.22	0.90	1.1	2.7	<0.1	2.7
MAY 15...	0.069	0.100	0.59	0.021	0.026	0.15	0.019	0.167	0.94	1.1	1.7	<0.1	1.7
SEP 08...	0.075	0.120	0.52	0.011	0.023	0.13	0.024	0.21	0.82	0.95	1.4	<0.1	1.4



01467359 NORTH BRANCH BIG TIMBER CREEK AT GLENDORA, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 20...	3.7	2.5	--	202
MAR 05...	3.4	<1.0	--	182
MAY 15...	2.8	<1.0	4.80	200
SEP 08...	3.5	E1.3	3.30	179

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUN 02...	0845	3,700	500	800	JUN 16...	0855	280	400	230
09...	0840	1,100	2,600	2,400	23...	0827	300	500	1,300
					30...	0850	1,200	900	2,400

## 01472157 FRENCH CREEK NEAR PHOENIXVILLE, PA

LOCATION.--Lat 40°09'05", long 75°36'06", Chester County, PA, Hydrologic Unit 02040203, on right bank 70 ft downstream from two-span county bridge on French Creek Road, 4.5 mi northwest of Phoenixville, and 7.3 mi upstream from mouth.

DRAINAGE AREA.--59.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1968 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1998 to April 1999, June 1999 to August 1999, June 2000 to September 2001.

REMARKS.--Data collected as part of the Delaware River Basin National Water-Quality Assessment Program (DELN NAWQA). For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat fltr inc tit field, mg/L as CaCO <sub>3</sub> (39086)
NOV											
14...	0840	Environmental	80	759	11.6	97	7.3	153	10.5	7.6	34
DEC											
10...	1040	Environmental	93	765	14.4	98	7.4	183	1.5	0.1	--
10...	1041	Split Replicate	--	--	--	--	--	--	--	--	--
JAN											
14...	0950	Environmental	68	761	14.8	102	7.1	169	-4.0	0.0	29
MAR											
11...	1100	Environmental	133	762	14.2	100	7.1	147	10.0	1.1	21
APR											
15...	0820	Environmental	118	757	11.7	105	7.4	145	16.0	10.2	28
MAY											
13...	1030	Environmental	55	749	10.3	101	7.4	156	16.0	13.7	35
JUN											
11...	1310	Environmental	133	753	9.6	102	7.4	143	25.5	17.6	30
JUL											
14...	1120	Environmental	68	760	9.6	104	7.8	152	28.5	19.6	36
SEP											
02...	0840	Environmental	209	755	8.9	97	7.5	136	25.0	19.2	32

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chloride, water, fltrd, mg/L (00940)	Sulfate, water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia, water, fltrd, mg/L as N (00608)	Nitrite + nitrate, water, fltrd, mg/L as N (00631)	Nitrite, water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration, mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV										
14...	10.2	16.4	0.41	<0.04	1.04	E.006	E.01	0.051	5	0.99
DEC										
10...	14.6	15.4	0.14	<0.04	1.99	<0.008	<0.02	0.015	1	0.35
10...	14.1	15.5	0.14	<0.04	1.99	<0.008	<0.02	0.014	1	--
JAN										
14...	14.9	14.4	0.12	<0.04	2.25	<0.008	<0.02	0.016	<1	--
MAR										
11...	15.8	11.9	0.21	<0.04	1.34	E.004	E.02	0.036	4	1.6
APR										
15...	13.0	12.6	--	--	--	--	--	--	2	0.76
MAY										
13...	13.3	11.8	0.23	<0.04	1.20	E.007	E.01	0.034	5	0.80
JUN										
11...	11.8	12.3	--	--	--	--	--	--	8	3.0
JUL										
14...	12.0	11.3	0.17	<0.04	1.42	<0.008	E.01	0.033	3	0.55
SEP										
02...	11.0	10.0	0.52	<0.04	1.15	0.009	0.03	0.161	58	33

Remark codes used in this table:

< -- Less than

E -- Estimated value

## 01472157 FRENCH CREEK NEAR PHOENIXVILLE, PA—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
NOV 14...	0840	Environmental	<0.006	E.017	<0.006	<0.004	<0.005	0.013	<0.050	<0.010	<0.002
JAN 14...	0950	Environmental	<0.006	E.033	<0.006	<0.004	<0.005	0.012	<0.050	<0.010	<0.002
MAR 11...	1100	Environmental	<0.006	E.018	<0.006	<0.004	<0.005	<0.010	<0.050	<0.010	<0.002
APR 15...	0820	Environmental	<0.006	E.025	<0.006	<0.004	<0.005	0.010	<0.050	<0.010	<0.002
MAY 13...	1030	Environmental	<0.006	E.027	<0.006	<0.004	<0.005	0.019	<0.050	<0.010	<0.002
JUN 11...	1309	Field Blank	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007	<0.050	<0.010	<0.002
JUN 11...	1310	Environmental	<0.006	E.034	<0.006	<0.004	<0.005	0.152	<0.050	<0.010	<0.002
JUL 14...	1120	Environmental	<0.006	E.028	<0.006	<0.004	<0.005	0.029	<0.050	<0.010	<0.002
SEP 02...	0840	Environmental	<0.006	E.018	<0.006	<0.004	<0.005	0.016	<0.050	<0.010	<0.002

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl fipronil amide, wat flt ug/L (62169)	Fipronil sulfide water, fltrd, ug/L (62167)	Fipronil sulfone water, fltrd, ug/L (62168)	Fipronil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)
NOV 14...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JAN 14...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
MAR 11...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
APR 15...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	E.005	<0.005	<0.005	<0.007	<0.027
MAY 13...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JUN 11...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JUN 11...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
JUL 14...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
SEP 02...	<0.041	<0.020	<0.006	<0.003	<0.004	0.007	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027

## 01472157 FRENCH CREEK NEAR PHOENIXVILLE, PA—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
NOV 14...	E.009	<0.006	<0.007	<0.022	M	0.019	<0.02	<0.034	<0.009
JAN 14...	E.008	<0.006	<0.007	<0.022	<0.01	0.023	<0.02	<0.034	<0.009
MAR 11...	E.010	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
APR 15...	E.006	<0.006	<0.007	<0.022	0.06	0.077	<0.02	<0.034	<0.009
MAY 13...	E.009	<0.006	<0.007	<0.022	E.01	0.139	<0.02	E.005	<0.009
JUN 11...	<0.013	<0.006	<0.007	<0.022	<0.01	<0.005	<0.02	<0.034	<0.009
JUN 11...	0.048	<0.006	<0.007	<0.022	E.01	0.022	<0.02	<0.034	<0.009
JUL 14...	E.010	<0.006	<0.007	<0.022	<0.01	0.019	<0.02	<0.034	<0.009
SEP 02...	0.016	<0.006	<0.007	<0.022	E.01	0.019	<0.02	<0.034	<0.009

Remark codes used in this table:

< -- Less than

E -- Estimated value

M-- Presence verified, not quantified

01474500 SCHUYLKILL RIVER AT PHILADELPHIA, PA

LOCATION.--Lat 39°58'04", long 75°11'20", Philadelphia County, PA, Hydrologic Unit 02040203, upstream from Fairmount Dam, 1,500 ft upstream from bridge on Spring Garden Street in Philadelphia, and 8.7 mi upstream from mouth.

DRAINAGE AREA.--1,893 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998, revised, 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.

REVISED RECORDS.--WSP 756: Drainage area. WSP 1302: 1936(M). WSP 1432: 1945. See also PERIOD OF RECORD.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1998 to April 1999, July 1999 to September 1999.

WATER TEMPERATURE: September 1998 to September 2001.

REMARKS.--Data collected as part of the Delaware River Basin National Water-Quality Assessment Program (NAWQA). For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat fltr inc tit field, mg/L as CaCO3 (39086)
NOV 21...	1000	Environmental	5,380	760	12.2	103	7.7	294	7.5	7.9	63
DEC 18...	1119	Field Blank	--	--	--	--	--	--	--	--	--
DEC 18...	1120	Environmental	6,340	773	14.1	105	7.6	294	3.0	3.6	53
JAN 16...	1110	Environmental	2,700	767	14.4	102	7.7	375	0.0	1.4	66
MAR 12...	1130	Environmental	4,900	762	13.6	103	7.7	342	9.5	3.7	55
APR 23...	1150	Environmental	3,300	757	10.3	100	8.1	345	19.0	13.4	65
MAY 15...	1120	Environmental	1,570	764	10.1	102	7.7	437	18.0	15.9	76
JUN 05...	1200	Environmental	16,700	755	10.0	98	7.3	210	22.0	13.9	42
JUL 15...	1040	Environmental	1,730	763	9.3	112	8.0	425	27.5	24.4	73
SEP 03...	1130	Environmental	3,560	757	9.1	104	7.8	405	22.5	21.2	77

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chloride, water, fltrd, mg/L (00940)	Sulfate, water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 21...	20.5	32.0	0.54	0.08	3.89	0.026	0.08	0.125	8	118
DEC 18...	<0.20	<0.2	<0.10	<0.04	<0.06	<0.008	<0.02	<0.004	<1	--
DEC 18...	26.0	28.5	0.47	0.14	3.81	0.029	0.07	0.110	6	103
JAN 16...	35.9	40.6	0.51	0.27	4.19	0.085	0.10	0.145	3	21
MAR 12...	40.1	29.6	0.64	0.26	2.81	0.037	0.09	0.141	8	103
APR 23...	32.4	40.8	--	--	--	--	--	--	125	1,110
MAY 15...	41.1	52.7	0.71	0.05	3.09	0.082	0.17	0.28	10	42
JUN 05...	17.4	19.5	--	--	--	--	--	--	107	4,840
JUL 15...	36.4	56.8	0.43	<0.04	3.40	0.031	0.15	0.21	5	22
SEP 03...	36.6	66.0	0.56	0.07	2.42	0.027	0.15	0.22	10	100

Remark codes used in this table:  
 < -- Less than

## 01474500 SCHUYLKILL RIVER AT PHILADELPHIA, PA—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
NOV 21...	1000	Environmental	<0.006	E.030	<0.006	<0.004	<0.005	0.049	<0.050	<0.010	<0.002
JAN 16...	1110	Environmental	<0.006	E.032	<0.006	<0.004	<0.005	0.025	<0.050	<0.010	<0.002
MAR 12...	1130	Environmental	<0.006	E.035	<0.006	<0.004	<0.005	0.024	<0.050	<0.010	<0.002
APR 23...	1150	Environmental	<0.006	E.038	<0.006	<0.004	<0.005	0.031	<0.050	<0.010	<0.002
MAY 15...	1120	Environmental	<0.006	E.035	<0.006	<0.004	<0.005	0.042	<0.050	<0.010	<0.002
MAY 15...	1121	Split Replicate	<0.006	E.035	<0.006	<0.004	<0.005	0.041	<0.050	<0.010	<0.002
JUN 05...	1200	Environmental	<0.006	E.093	0.047	0.008	<0.005	0.865	<0.050	<0.010	<0.002
JUL 15...	1040	Environmental	<0.006	E.038	0.015	<0.004	<0.005	0.129	<0.050	<0.010	<0.002
SEP 03...	1130	Environmental	<0.006	E.036	<0.006	<0.004	<0.005	0.054	<0.050	<0.010	<0.002

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)
NOV 21...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.005	<0.027
JAN 16...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
MAR 12...	<0.041	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
APR 23...	E.008	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	E.005	<0.027
MAY 15...	<0.041	<0.020	<0.006	<0.003	<0.004	0.007	<0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027
MAY 15...	E.008	<0.020	<0.006	<0.003	<0.004	0.006	<0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027
JUN 05...	E.023	<0.020	<0.006	<0.003	<0.004	0.012	<0.005	<0.002	<0.009	<0.005	<0.005	E.005	<0.027
JUL 15...	E.006	<0.020	<0.006	<0.003	<0.004	<0.005	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027
SEP 03...	E.009	<0.020	<0.006	<0.003	<0.004	0.006	<0.005	<0.002	<0.009	<0.005	<0.005	E.007	<0.027

01474500 SCHUYLKILL RIVER AT PHILADELPHIA, PA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)
NOV 21...	0.049	<0.006	<0.007	<0.022	E.01	0.014	E.01	<0.034	<0.009
JAN 16...	0.016	<0.006	<0.007	<0.022	E.01	<0.010	<0.02	<0.034	<0.009
MAR 12...	0.020	<0.006	<0.007	<0.022	<0.01	0.020	<0.02	<0.034	<0.009
APR 23...	0.015	<0.006	<0.007	<0.022	E.01	0.027	<0.02	<0.034	<0.009
MAY 15...	0.021	<0.006	<0.007	<0.022	E.01	0.017	E.01	<0.034	<0.009
15...	0.021	<0.006	<0.007	<0.022	E.01	0.017	<0.02	<0.034	<0.009
JUN 05...	0.489	<0.006	<0.007	E.012	0.01	0.054	E.01	<0.034	<0.009
JUL 15...	0.038	<0.006	<0.007	<0.022	0.03	0.024	E.01	<0.034	<0.009
SEP 03...	0.021	<0.006	<0.007	<0.022	0.03	0.028	E.01	<0.034	<0.009

Remark codes used in this table:

< -- Less than

E -- Estimated value

## 01475042 MANTUA CREEK AT MANTUA AVENUE, AT WENONAH, NJ

LOCATION.--Lat 39°47'27", long 75°09'37", Gloucester County, Hydrologic Unit 02040202, at bridge on Mantua Avenue, 0.1 mi downstream of Chestnut Branch, 0.5 mi west of Wenonah, and 0.5 mi east of Mantua

DRAINAGE AREA.-- 29.2 mi<sup>2</sup>.

PERIOD OF RECORD.--November 2002 to August 2003.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 18.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 14...	1000	4.6	0.174	0.137	762	8.2	71	7.6	249	8.0	9.0	77	23.2
MAR 05...	1000	20	0.148	0.116	754	12.6	96	7.7	252	7.6	3.3	54	15.7
MAY 13...	1000	6.0	0.167	0.131	752	7.8	77	7.5	210	13.2	14.0	64	18.6
AUG 20...	1000	5.3	0.203	0.158	766	6.7	75	7.5	233	22.5	21.2	71	21.2

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 14...	4.73	3.73	14.3	29	17.0	0.20	13.4	56.6	153	159	8	0.26	0.041
MAR 05...	3.59	3.12	26.1	21	40.6	<0.17	8.1	31.0	145	163	11	0.30	0.109
MAY 13...	4.36	3.22	16.9	35	24.9	0.17	11.9	33.1	138	148	9	0.28	0.078
AUG 20...	4.43	3.89	20.4	39	23.0	0.24	15.9	35.3	151	159	7	0.26	0.040

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 14...	0.040	0.55	0.004	0.033	0.12	0.028	0.083	0.81	0.92	0.6	<0.1	0.6	4.7
MAR 05...	0.103	0.95	0.009	<0.020	0.18	0.017	0.107	1.2	1.4	1.4	<0.1	1.4	3.5
MAY 13...	0.080	0.82	0.014	0.028	0.10	0.018	0.094	1.1	1.2	0.9	<0.1	0.8	3.7
AUG 20...	0.041	0.68	0.006	0.031	0.12	0.033	0.098	0.94	1.1	0.6	<0.1	0.5	4.2



01475042 MANTUA CREEK AT MANTUA AVENUE, AT WENONAH, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chloro- phyll a fluoro- metric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 14...	<1.0	--	40
MAR 05...	<1.0	--	25
MAY 13...	E1.6	5.80	36
AUG 20...	<1.0	2.30	52

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN TRACE-ELEMENT ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Arsenic water unfltrd ug/L (01002)	Barium, water, unfltrd recover- able, ug/L (01007)	Beryll- ium, water, unfltrd recover- able, ug/L (01012)	Boron, water, unfltrd recover- able, ug/L (01022)	Cadmium water, unfltrd ug/L (01027)	Chrom- ium, water, unfltrd recover- able, ug/L (01034)	Copper, water, unfltrd recover- able, ug/L (01042)	Iron, water, unfltrd recover- able, ug/L (01045)	Lead, water, unfltrd recover- able, ug/L (01051)	Mangan- ese, water, unfltrd recover- able, ug/L (01055)	Mercury water, unfltrd recover- able, ug/L (71900)	Nickel, water, unfltrd recover- able, ug/L (01067)
AUG 20...	1000	E1	59.8	0.15	51	0.29	E.5	2.6	1,490	0.69	76.8	<0.02	5.54

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selen- ium, water, unfltrd ug/L (01147)	Silver, water, unfltrd recover- able, ug/L (01077)	Zinc, water, unfltrd recover- able, ug/L (01092)
AUG 20...	E.4	<0.16	13

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1- Tri- chloro- ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di- chloro- ethane, water unfltrd ug/L (34496)	1,1-Di- chloro- ethene, water, unfltrd ug/L (34501)	1,2-Di- chloro- benzene water unfltrd ug/L (34536)	1,2-Di- chloro- ethane, water, unfltrd ug/L (32103)	1,2-Di- chloro- propane water unfltrd ug/L (34541)	1,3-Di- chloro- benzene water unfltrd ug/L (34566)	1,4-Di- chloro- benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo- di- chloro- methane water unfltrd ug/L (32101)	Chloro- benzene water unfltrd ug/L (34301)
MAR 05...	1000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	0.1	<0.1	<0.1

## 01475042 MANTUA CREEK AT MANTUA AVENUE, AT WENONAH, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Dichloroethene, water, unfltrd ug/L (77093)	Di-bromochloromethane water unfltrd ug/L (32105)	Di-chloro-di-fluoromethane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diisopropyl ether, water, unfltrd ug/L (81577)	Ethylbenzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	0.6

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)
MAR 05...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
< -- Less than

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Di-ethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 13...	1000	<0.006	E.016	E.005	0.005	<0.005	0.027	E.018	<0.010	<0.002	E.024	E.019	<0.006

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipronil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Malathion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 13...	E.002	<0.004	0.008	<0.005	<0.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.030	<0.006	<0.007

01475042 MANTUA CREEK AT MANTUA AVENUE, AT WENONAH, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 13...	E.007	E.01	0.014	E.01	E.053	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL					AUG				
09...	0905	240	300	500	06...	0940	2,400	700	1,100
16...	0925	1,550	300	2,400					
23...	0930	--	20,000	>16000					
30...	0935	4,500	3,100	5,000					

Remark codes used in this table:

## 01477050 DELAWARE RIVER AT CHESTER, PA

LOCATION.--Lat 39°50'33", long 75°21'28", Delaware County, Hydrologic Unit 02040202, in the pumping house of Kimberly-Clark Paper Company at Chester.

DRAINAGE AREA.--10,300 mi<sup>2</sup>, approximately.

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1963 to current year.

pH: January 1968 to current year.

WATER TEMPERATURES: December 1961 to current year.

DISSOLVED OXYGEN: December 1961 to current year.

INSTRUMENTATION.--Water-quality monitor since December 1961. Probes interfaced with a data collection platform since the 1986 water year.

REMARKS.--Specific conductance, pH, and water temperature records rated good. Dissolved oxygen record rated fair. Data collection discontinued during winter months. Other interruptions in the record were due to malfunctions of the instrumentation. Prior to April 1981 sampling site located at auxiliary tidal-gaging station at the end of Reynolds Aluminum Company pier, 0.5 mi downstream from Chester Creek in Chester (latitude 39°50'12", longitude 75°22'00").

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 5,900 microsiemens, Oct. 7, 1965; minimum, 103 microsiemens, June 2, 1984, Apr. 9, 1987.

pH: Maximum, 8.7, Sept. 13, 14, 1971, Oct. 16, 1979; minimum, 5.5, Dec. 10, 11, 1969.

WATER TEMPERATURE: Maximum, 33.0°C, July 21, 1977, Aug. 3, 1999; minimum, 0.0°C, many days during winters.

DISSOLVED OXYGEN: Maximum, 16.3 mg/L, Mar. 28, 1993; minimum, 0.0 mg/L, on many days.

## SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	2820	1290	1870	231	221	226	---	---	---	---	---	---
2	2630	1250	1760	236	225	230	---	---	---	---	---	---
3	2700	1270	1770	237	226	231	---	---	---	---	---	---
4	2850	1270	1980	236	229	233	---	---	---	---	---	---
5	3530	1480	2190	237	229	233	---	---	---	---	---	---
6	2960	1290	1980	238	230	233	---	---	---	---	---	---
7	3500	1480	2230	238	230	233	---	---	---	---	---	---
8	3220	1430	2090	240	233	237	---	---	---	---	---	---
9	3530	1540	2280	250	234	241	---	---	---	---	---	---
10	3540	1540	2290	251	240	244	---	---	---	---	---	---
11	3260	1410	2180	255	242	248	---	---	---	---	---	---
12	2430	1170	1710	253	245	249	---	---	---	---	---	---
13	1790	880	1290	259	248	251	---	---	---	---	---	---
14	1120	602	818	257	246	251	---	---	---	---	---	---
15	991	520	702	263	250	256	---	---	---	---	---	---
16	875	465	631	268	254	262	---	---	---	---	---	---
17	715	364	498	270	245	259	---	---	---	---	---	---
18	514	319	382	272	252	261	---	---	---	---	---	---
19	380	297	331	269	237	254	---	---	---	---	---	---
20	321	265	291	251	232	240	---	---	---	---	---	---
21	290	251	271	238	231	235	---	---	---	---	---	---
22	277	238	259	237	227	232	---	---	---	---	---	---
23	263	232	249	245	217	228	---	---	---	---	---	---
24	259	229	245	226	215	220	---	---	---	---	---	---
25	254	235	245	224	214	220	---	---	---	---	---	---
26	254	232	243	214	204	209	---	---	---	---	---	---
27	244	220	234	207	198	203	---	---	---	---	---	---
28	234	216	227	203	198	201	---	---	---	---	---	---
29	255	217	227	203	197	199	---	---	---	---	---	---
30	230	220	226	201	195	197	---	---	---	---	---	---
31	230	220	225	---	---	---	---	---	---	---	---	---
MONTH	3540	216	1030	272	195	234	---	---	---	---	---	---

DELAWARE RIVER BASIN

01477050 DELAWARE RIVER AT CHESTER, PA—Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	208	185	196	276	267	272
2	---	---	---	---	---	---	207	191	201	277	269	273
3	---	---	---	---	---	---	214	193	201	283	270	276
4	---	---	---	---	---	---	212	197	205	287	277	282
5	---	---	---	---	---	---	213	202	208	297	280	287
6	---	---	---	---	---	---	214	197	207	294	278	285
7	---	---	---	---	---	---	211	201	206	285	275	281
8	---	---	---	---	---	---	216	201	210	282	274	278
9	---	---	---	---	---	---	223	208	217	290	274	278
10	---	---	---	---	---	---	236	210	223	281	274	277
11	---	---	---	---	---	---	249	211	232	283	275	280
12	---	---	---	---	---	---	264	232	246	291	276	281
13	---	---	---	---	---	---	267	239	253	285	275	280
14	---	---	---	---	---	---	258	245	252	282	277	279
15	---	---	---	---	---	---	250	241	247	---	---	---
16	---	---	---	---	---	---	255	241	246	---	---	---
17	---	---	---	---	---	---	251	243	246	294	285	288
18	---	---	---	---	---	---	257	241	248	296	282	289
19	---	---	---	---	---	---	261	247	253	292	278	285
20	---	---	---	---	---	---	260	249	253	286	272	280
21	---	---	---	---	---	---	257	249	252	282	273	278
22	---	---	---	---	---	---	279	246	257	280	272	277
23	---	---	---	---	---	---	263	254	257	284	274	278
24	---	---	---	---	---	---	263	254	258	282	273	278
25	---	---	---	---	---	---	265	255	260	282	274	277
26	---	---	---	---	---	---	268	256	262	278	247	268
27	---	---	---	190	165	177	268	260	264	276	255	266
28	---	---	---	186	164	175	265	258	262	289	266	280
29	---	---	---	186	166	177	266	259	263	285	272	280
30	---	---	---	195	168	182	281	261	269	285	258	273
31	---	---	---	199	175	189	---	---	---	279	258	269
MONTH	---	---	---	199	164	180	281	185	238	297	247	278

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	282	257	267	209	198	203	309	302	305	255	246	251
2	276	259	263	214	199	206	313	298	307	258	249	254
3	268	254	260	218	200	211	315	298	308	269	252	257
4	262	225	249	225	206	213	318	301	309	272	259	265
5	238	212	228	225	209	217	320	303	311	278	265	270
6	222	196	210	223	211	216	316	298	307	269	260	265
7	213	196	201	235	213	219	317	297	306	266	258	262
8	211	190	198	228	215	222	308	272	291	268	253	261
9	213	190	203	235	219	229	306	267	285	264	253	259
10	211	195	203	242	224	234	293	256	270	264	238	253
11	209	194	201	257	230	240	279	252	265	254	223	245
12	210	195	202	252	230	243	276	252	263	250	229	240
13	217	197	206	276	236	251	265	238	255	255	220	238
14	218	202	210	278	242	257	256	225	242	239	201	229
15	222	204	215	267	248	259	249	225	237	233	199	219
16	222	206	216	270	253	262	244	225	234	259	180	222
17	225	214	220	273	256	265	242	227	235	229	193	214
18	230	213	220	280	263	271	253	225	239	208	181	195
19	230	212	221	288	270	278	243	230	236	222	181	195
20	---	---	---	291	275	283	241	233	236	203	184	190
21	---	---	---	297	278	287	274	230	245	209	190	201
22	---	---	---	298	286	292	251	233	241	220	193	211
23	---	---	---	310	290	298	244	231	238	223	200	213
24	---	---	---	337	297	321	248	235	241	229	208	221
25	---	---	---	335	308	325	245	236	240	227	192	213
26	---	---	---	326	297	316	245	237	240	205	193	198
27	---	---	---	324	304	314	248	236	243	209	191	200
28	---	---	---	323	301	310	260	243	250	213	199	205
29	---	---	---	321	298	310	257	241	247	208	195	200
30	---	---	---	315	299	307	251	242	245	205	188	196
31	---	---	---	309	301	305	258	246	250	---	---	---
MONTH	282	190	221	337	198	263	320	225	262	278	180	228

## DELAWARE RIVER BASIN

## 01477050 DELAWARE RIVER AT CHESTER, PA—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	7.3	7.2	7.3	7.1	7.0	7.1	---	---	---	---	---	---
2	7.3	7.2	7.2	7.2	7.0	7.1	---	---	---	---	---	---
3	7.3	7.1	7.2	7.2	7.0	7.1	---	---	---	---	---	---
4	7.3	7.2	7.2	7.1	7.0	7.1	---	---	---	---	---	---
5	7.3	7.2	7.2	7.1	7.0	7.1	---	---	---	---	---	---
6	7.3	7.2	7.2	7.2	7.0	7.0	---	---	---	---	---	---
7	7.3	7.2	7.3	7.2	7.1	7.2	---	---	---	---	---	---
8	7.3	7.2	7.3	7.2	7.1	7.2	---	---	---	---	---	---
9	7.4	7.2	7.3	7.2	7.1	7.1	---	---	---	---	---	---
10	7.4	7.2	7.3	7.1	7.0	7.0	---	---	---	---	---	---
11	7.4	7.3	7.4	7.0	6.9	7.0	---	---	---	---	---	---
12	7.4	7.2	7.3	7.0	7.0	7.0	---	---	---	---	---	---
13	7.3	7.2	7.2	7.1	7.0	7.1	---	---	---	---	---	---
14	7.2	7.1	7.1	7.2	7.0	7.1	---	---	---	---	---	---
15	7.2	7.2	7.2	7.1	7.0	7.1	---	---	---	---	---	---
16	7.3	7.2	7.3	7.1	7.0	7.1	---	---	---	---	---	---
17	7.3	7.2	7.3	7.2	7.1	7.2	---	---	---	---	---	---
18	7.3	7.2	7.2	7.3	7.1	7.2	---	---	---	---	---	---
19	7.3	7.3	7.3	7.3	7.1	7.2	---	---	---	---	---	---
20	7.3	7.3	7.3	7.1	6.9	7.0	---	---	---	---	---	---
21	7.3	7.2	7.2	7.1	6.9	7.0	---	---	---	---	---	---
22	7.2	7.2	7.2	7.0	7.0	7.0	---	---	---	---	---	---
23	7.2	7.2	7.2	7.2	7.0	7.1	---	---	---	---	---	---
24	7.2	7.2	7.2	7.2	7.0	7.1	---	---	---	---	---	---
25	7.2	7.2	7.2	7.2	6.9	7.0	---	---	---	---	---	---
26	7.2	7.1	7.2	7.0	6.8	7.0	---	---	---	---	---	---
27	7.2	7.0	7.1	7.1	6.9	7.0	---	---	---	---	---	---
28	7.1	7.0	7.1	7.2	6.9	7.0	---	---	---	---	---	---
29	7.1	7.1	7.1	7.1	7.0	7.1	---	---	---	---	---	---
30	7.2	7.1	7.1	7.1	7.0	7.0	---	---	---	---	---	---
31	7.1	7.0	7.1	---	---	---	---	---	---	---	---	---
MAX	7.4	7.3	7.4	7.3	7.1	7.2	---	---	---	---	---	---
MIN	7.1	7.0	7.1	7.0	6.8	7.0	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	---	---	---	---	---	---	7.3	7.3	7.3	7.1	7.1	7.1
2	---	---	---	---	---	---	7.3	7.3	7.3	7.1	7.0	7.1
3	---	---	---	---	---	---	7.3	7.3	7.3	7.1	7.0	7.0
4	---	---	---	---	---	---	7.3	7.3	7.3	7.0	6.9	7.0
5	---	---	---	---	---	---	7.3	7.3	7.3	7.0	6.9	7.0
6	---	---	---	---	---	---	7.3	7.3	7.3	7.2	7.0	7.0
7	---	---	---	---	---	---	7.4	7.3	7.3	7.2	7.1	7.1
8	---	---	---	---	---	---	7.4	7.3	7.4	7.1	7.1	7.1
9	---	---	---	---	---	---	7.4	7.4	7.4	7.1	7.0	7.1
10	---	---	---	---	---	---	7.4	7.4	7.4	7.0	7.0	7.0
11	---	---	---	---	---	---	7.5	7.4	7.5	7.0	7.0	7.0
12	---	---	---	---	---	---	7.5	7.4	7.5	7.0	7.0	7.0
13	---	---	---	---	---	---	7.5	7.4	7.4	7.1	7.0	7.1
14	---	---	---	---	---	---	7.4	7.4	7.4	7.1	7.0	7.1
15	---	---	---	---	---	---	7.4	7.4	7.4	---	---	---
16	---	---	---	---	---	---	7.4	7.3	7.4	---	---	---
17	---	---	---	---	---	---	7.4	7.3	7.4	7.3	7.2	7.3
18	---	---	---	---	---	---	7.4	7.4	7.4	7.2	7.2	7.2
19	---	---	---	---	---	---	7.4	7.4	7.4	7.2	7.1	7.2
20	---	---	---	---	---	---	7.4	7.3	7.3	7.2	7.1	7.1
21	---	---	---	---	---	---	7.3	7.3	7.3	7.1	7.1	7.1
22	---	---	---	---	---	---	7.4	7.2	7.3	7.1	7.1	7.1
23	---	---	---	---	---	---	7.4	7.4	7.4	7.1	7.1	7.1
24	---	---	---	---	---	---	7.5	7.4	7.4	7.1	7.1	7.1
25	---	---	---	---	---	---	7.5	7.4	7.4	7.1	7.1	7.1
26	---	---	---	---	---	---	7.4	7.4	7.4	7.1	7.1	7.1
27	---	---	---	7.2	7.2	7.2	7.4	7.3	7.4	7.1	7.1	7.1
28	---	---	---	7.2	7.2	7.2	7.4	7.3	7.3	7.2	7.1	7.1
29	---	---	---	7.2	7.2	7.2	7.3	7.3	7.3	7.2	7.1	7.1
30	---	---	---	7.2	7.2	7.2	7.3	7.1	7.2	7.2	7.1	7.1
31	---	---	---	7.3	7.2	7.2	---	---	---	7.1	7.1	7.1
MAX	---	---	---	7.3	7.2	7.2	7.5	7.4	7.5	7.3	7.2	7.3
MIN	---	---	---	7.2	7.2	7.2	7.3	7.1	7.2	7.0	6.9	7.0

01477050 DELAWARE RIVER AT CHESTER, PA—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
1	7.1	7.1	7.1	7.2	7.1	7.1	7.2	7.1	7.1	6.9	6.9	6.9
2	7.2	7.1	7.1	7.1	7.1	7.1	7.2	7.1	7.1	7.0	6.9	6.9
3	7.2	7.1	7.2	7.1	7.1	7.1	7.2	7.1	7.1	7.0	6.9	6.9
4	7.2	7.1	7.2	7.1	7.1	7.1	7.2	7.1	7.1	7.0	6.9	6.9
5	7.1	7.1	7.1	7.2	7.1	7.1	7.1	7.1	7.1	6.9	6.9	6.9
6	7.2	7.1	7.1	7.2	7.1	7.2	7.1	7.1	7.1	7.0	6.9	6.9
7	7.1	7.1	7.1	7.3	7.2	7.2	7.1	7.0	7.0	7.0	6.9	7.0
8	7.1	7.1	7.1	7.3	7.2	7.2	7.0	7.0	7.0	7.1	7.0	7.0
9	7.1	7.1	7.1	7.2	7.1	7.2	7.0	7.0	7.0	7.2	7.0	7.1
10	7.1	7.1	7.1	7.2	7.0	7.1	7.0	7.0	7.0	7.1	7.1	7.1
11	7.1	7.0	7.0	7.1	7.0	7.0	7.0	7.0	7.0	7.1	7.0	7.1
12	7.0	6.9	6.9	7.1	7.0	7.0	7.0	7.0	7.0	7.2	7.1	7.1
13	6.9	6.9	6.9	7.1	7.0	7.0	7.1	7.0	7.0	7.2	7.1	7.1
14	7.0	6.9	6.9	7.1	7.0	7.1	7.0	7.0	7.0	7.1	6.9	7.0
15	7.0	6.9	6.9	7.1	7.0	7.1	7.0	6.9	7.0	7.0	6.9	7.0
16	7.1	6.9	7.0	7.1	7.0	7.1	7.0	6.9	6.9	7.0	6.9	6.9
17	7.1	7.0	7.1	7.1	7.0	7.1	7.0	6.9	6.9	7.0	6.9	6.9
18	7.1	7.0	7.0	7.1	7.0	7.1	7.0	6.9	6.9	7.1	6.9	6.9
19	7.0	7.0	7.0	7.1	7.0	7.1	7.0	6.9	7.0	7.3	7.0	7.1
20	7.0	7.0	7.0	7.1	7.0	7.1	7.0	6.9	6.9	7.0	7.0	7.0
21	7.1	7.0	7.0	7.2	7.1	7.1	7.0	6.9	6.9	7.0	6.9	7.0
22	7.0	7.0	7.0	7.2	7.2	7.2	7.0	6.9	7.0	7.0	6.9	7.0
23	7.0	7.0	7.0	7.2	7.1	7.2	7.0	6.9	6.9	7.0	7.0	7.0
24	7.1	7.0	7.1	7.3	7.2	7.2	7.0	6.9	7.0	7.0	7.0	7.0
25	7.1	7.0	7.1	7.2	7.2	7.2	7.1	7.0	7.0	7.0	7.0	7.0
26	7.1	7.0	7.1	7.2	7.1	7.2	7.0	7.0	7.0	7.0	6.9	6.9
27	7.1	7.0	7.0	7.2	7.1	7.1	7.0	7.0	7.0	7.0	6.9	7.0
28	7.1	7.0	7.0	7.2	7.1	7.1	7.0	7.0	7.0	7.0	7.0	7.0
29	7.1	7.0	7.1	7.2	7.1	7.1	7.0	6.9	7.0	7.0	7.0	7.0
30	7.1	7.0	7.1	7.2	7.1	7.2	7.0	6.9	6.9	7.0	6.9	7.0
31	---	---	---	7.2	7.1	7.2	7.0	6.9	6.9	---	---	---
MAX	7.2	7.1	7.2	7.3	7.2	7.2	7.2	7.1	7.1	7.3	7.1	7.1
MIN	6.9	6.9	6.9	7.1	7.0	7.0	7.0	6.9	6.9	6.9	6.9	6.9

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	23.5	23.0	23.0	12.0	11.5	11.5	---	---	---	---	---	---
2	24.0	23.0	23.5	11.5	10.5	11.0	---	---	---	---	---	---
3	24.5	23.5	24.0	11.5	10.5	11.0	---	---	---	---	---	---
4	24.0	23.5	24.0	11.0	10.0	10.5	---	---	---	---	---	---
5	24.5	23.5	24.0	10.5	10.0	10.5	---	---	---	---	---	---
6	24.0	23.0	23.5	10.5	10.5	10.5	---	---	---	---	---	---
7	23.5	23.0	23.0	10.5	10.0	10.5	---	---	---	---	---	---
8	23.0	22.0	22.5	10.5	10.0	10.0	---	---	---	---	---	---
9	22.0	22.0	22.0	10.5	10.0	10.5	---	---	---	---	---	---
10	22.0	21.5	22.0	11.0	10.5	10.5	---	---	---	---	---	---
11	21.5	21.0	21.0	12.0	11.0	11.5	---	---	---	---	---	---
12	21.0	20.5	21.0	11.5	11.0	11.5	---	---	---	---	---	---
13	21.0	20.5	20.5	11.5	11.0	11.5	---	---	---	---	---	---
14	20.5	20.0	20.0	11.5	10.5	11.0	---	---	---	---	---	---
15	20.0	19.0	19.5	11.0	11.0	11.0	---	---	---	---	---	---
16	19.5	18.5	19.0	11.0	11.0	11.0	---	---	---	---	---	---
17	18.5	18.0	18.5	11.0	10.0	10.5	---	---	---	---	---	---
18	18.5	17.5	18.0	10.5	9.5	10.0	---	---	---	---	---	---
19	18.0	16.5	17.0	10.0	9.0	9.5	---	---	---	---	---	---
20	17.0	16.0	16.5	10.0	9.5	9.5	---	---	---	---	---	---
21	16.5	15.5	16.0	10.0	9.5	10.0	---	---	---	---	---	---
22	16.0	15.0	15.5	10.0	9.5	10.0	---	---	---	---	---	---
23	15.5	15.0	15.5	10.0	8.5	9.0	---	---	---	---	---	---
24	15.0	14.5	15.0	9.0	8.5	8.5	---	---	---	---	---	---
25	14.5	14.0	14.5	9.0	8.5	8.5	---	---	---	---	---	---
26	14.5	14.0	14.0	9.0	8.5	8.5	---	---	---	---	---	---
27	14.0	13.5	14.0	8.5	8.0	8.5	---	---	---	---	---	---
28	14.0	13.5	13.5	8.0	7.5	7.5	---	---	---	---	---	---
29	13.5	13.0	13.5	7.5	6.5	7.0	---	---	---	---	---	---
30	13.0	12.0	12.5	7.0	6.5	7.0	---	---	---	---	---	---
31	12.5	11.5	12.0	---	---	---	---	---	---	---	---	---
MONTH	24.5	11.5	18.7	12.0	6.5	9.9	---	---	---	---	---	---

## DELAWARE RIVER BASIN

## 01477050 DELAWARE RIVER AT CHESTER, PA—Continued

## WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	10.5	9.5	10.0	17.0	15.0	16.0
2	---	---	---	---	---	---	10.5	9.5	10.0	18.0	16.0	16.5
3	---	---	---	---	---	---	10.5	10.0	10.0	17.5	16.5	17.0
4	---	---	---	---	---	---	10.5	10.0	10.0	17.5	16.5	17.0
5	---	---	---	---	---	---	10.0	9.5	9.5	17.0	16.0	16.5
6	---	---	---	---	---	---	9.5	9.0	9.5	16.5	16.0	16.5
7	---	---	---	---	---	---	9.5	9.0	9.0	17.5	16.0	16.5
8	---	---	---	---	---	---	9.0	8.0	8.5	17.5	16.5	17.0
9	---	---	---	---	---	---	8.0	7.5	8.0	17.5	16.5	17.0
10	---	---	---	---	---	---	8.0	7.5	7.5	17.5	17.0	17.0
11	---	---	---	---	---	---	7.5	7.5	7.5	18.5	17.0	17.5
12	---	---	---	---	---	---	8.0	7.5	7.5	18.5	17.5	18.0
13	---	---	---	---	---	---	9.0	8.0	8.0	18.0	17.0	17.5
14	---	---	---	---	---	---	9.0	8.0	8.5	18.0	17.0	17.5
15	---	---	---	---	---	---	10.5	8.5	9.0	---	---	---
16	---	---	---	---	---	---	11.0	9.0	10.0	---	---	---
17	---	---	---	---	---	---	10.5	9.5	10.0	16.5	15.5	16.0
18	---	---	---	---	---	---	9.5	9.0	9.5	16.0	15.5	16.0
19	---	---	---	---	---	---	11.0	9.5	10.0	16.5	15.5	16.0
20	---	---	---	---	---	---	11.5	10.0	10.5	17.0	16.0	16.5
21	---	---	---	---	---	---	12.0	10.5	11.5	17.0	16.5	17.0
22	---	---	---	---	---	---	12.5	11.0	12.0	17.0	16.5	16.5
23	---	---	---	---	---	---	12.5	11.5	12.0	16.5	16.5	16.5
24	---	---	---	---	---	---	13.0	12.0	12.5	16.5	16.0	16.5
25	---	---	---	---	---	---	13.5	12.0	12.5	16.5	16.0	16.5
26	---	---	---	---	---	---	13.5	12.5	13.0	16.5	15.5	16.0
27	---	---	---	10.0	8.5	9.0	14.5	13.0	13.5	16.5	15.5	16.0
28	---	---	---	10.0	9.0	9.5	15.5	13.5	14.5	16.5	16.0	16.5
29	---	---	---	10.5	9.5	10.0	16.0	14.5	15.0	17.0	16.0	16.5
30	---	---	---	10.5	9.5	10.0	16.5	15.0	15.5	17.5	16.5	17.0
31	---	---	---	10.5	9.5	10.0	---	---	---	17.5	17.0	17.0
MONTH	---	---	---	10.5	8.5	9.7	16.5	7.5	10.5	18.5	15.0	16.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.5	17.0	17.0	23.5	22.0	23.0	27.0	26.5	26.5	26.5	26.5	26.5
2	17.5	16.5	17.0	24.0	23.0	23.5	27.5	26.5	27.0	26.5	26.0	26.0
3	17.5	17.0	17.0	24.0	23.0	23.5	27.5	27.0	27.0	26.0	25.0	25.5
4	17.0	16.0	16.5	24.5	23.5	24.0	27.5	27.0	27.0	25.5	25.0	25.5
5	17.0	16.5	16.5	25.5	24.0	24.5	27.5	27.0	27.0	25.5	25.0	25.0
6	17.0	16.5	16.5	26.0	24.5	25.0	27.0	26.5	27.0	25.0	24.5	24.5
7	17.0	16.5	16.5	26.5	25.0	25.5	27.0	26.5	26.5	25.0	24.0	24.5
8	16.5	16.0	16.5	26.5	25.5	26.0	27.0	26.0	26.5	24.5	23.5	24.0
9	17.0	16.0	16.5	27.0	26.0	26.5	26.5	26.5	26.5	24.5	23.0	24.0
10	18.0	16.5	17.0	26.5	26.0	26.0	26.5	26.0	26.5	24.0	22.5	23.0
11	18.5	17.0	17.5	26.5	25.5	26.0	27.0	26.5	26.5	23.0	22.0	22.5
12	19.0	18.0	18.5	26.5	25.5	26.0	27.5	26.0	26.5	23.0	21.5	22.5
13	20.0	18.5	19.0	26.5	25.5	26.0	27.5	26.5	26.5	22.5	21.5	22.0
14	20.5	19.0	19.5	26.5	26.0	26.0	27.5	26.5	26.5	22.5	22.0	22.0
15	21.0	20.0	20.5	27.0	26.0	26.5	27.5	26.5	26.5	23.0	22.0	22.5
16	21.0	20.5	20.5	27.0	26.5	26.5	27.0	26.5	26.5	22.5	22.0	22.0
17	21.0	20.5	20.5	27.0	26.5	26.5	27.0	26.5	26.5	22.5	22.0	22.0
18	21.0	20.5	21.0	27.0	26.5	26.5	27.0	26.5	26.5	22.0	21.5	21.5
19	21.5	21.0	21.0	27.0	26.5	26.5	27.0	26.5	26.5	22.0	21.0	21.5
20	21.5	20.5	21.0	27.0	26.5	26.5	27.0	26.5	27.0	22.5	21.5	22.0
21	20.5	19.5	20.0	27.5	26.5	27.0	27.5	27.0	27.0	22.5	22.0	22.5
22	19.5	19.0	19.5	27.5	27.0	27.0	28.0	27.0	27.5	23.0	22.0	22.5
23	20.0	19.0	19.5	27.5	27.0	27.0	28.0	27.0	27.5	23.0	22.5	22.5
24	20.0	19.0	19.5	27.5	26.5	27.0	27.0	26.5	27.0	22.5	22.0	22.0
25	20.0	19.0	19.5	27.5	26.5	26.5	27.0	26.0	26.5	22.5	21.5	22.0
26	21.0	19.5	20.0	27.5	26.5	27.0	27.5	26.5	27.0	22.5	21.5	22.0
27	21.5	20.0	20.5	27.5	26.5	27.0	27.5	26.5	27.0	22.5	21.5	22.0
28	21.5	20.5	21.0	27.5	26.5	27.0	27.5	26.5	27.0	22.0	21.0	21.5
29	22.5	21.0	21.5	27.5	26.5	27.0	28.0	26.5	27.0	21.0	20.0	20.5
30	23.0	21.5	22.5	27.5	26.5	27.0	27.5	27.0	27.0	20.0	19.5	20.0
31	---	---	---	27.0	26.5	26.5	27.0	26.5	27.0	---	---	---
MONTH	23.0	16.0	19.0	27.5	22.0	26.0	28.0	26.0	26.8	26.5	19.5	22.9



01477050 DELAWARE RIVER AT CHESTER, PA—Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	6.6	5.6	6.1	8.6	8.3	8.4	---	---	---	---	---	---
2	6.5	5.6	6.0	9.0	8.4	8.6	---	---	---	---	---	---
3	6.4	5.4	5.8	9.0	8.4	8.8	---	---	---	---	---	---
4	6.4	5.4	6.0	8.9	8.4	8.7	---	---	---	---	---	---
5	6.6	5.5	6.1	8.9	8.5	8.7	---	---	---	---	---	---
6	6.5	5.3	6.0	9.0	8.5	8.7	---	---	---	---	---	---
7	6.6	5.6	6.2	9.1	8.8	8.9	---	---	---	---	---	---
8	6.8	5.8	6.3	9.2	8.8	9.0	---	---	---	---	---	---
9	6.7	5.7	6.2	9.2	8.9	9.0	---	---	---	---	---	---
10	6.6	5.7	6.2	9.0	8.9	8.9	---	---	---	---	---	---
11	6.9	6.0	6.5	9.1	8.9	9.0	---	---	---	---	---	---
12	6.7	5.9	6.4	9.0	8.8	8.9	---	---	---	---	---	---
13	6.3	5.4	5.8	8.9	8.8	8.8	---	---	---	---	---	---
14	5.9	5.4	5.7	8.8	8.6	8.7	---	---	---	---	---	---
15	6.3	5.7	5.9	8.8	8.6	8.7	---	---	---	---	---	---
16	6.8	6.1	6.5	8.9	8.6	8.7	---	---	---	---	---	---
17	6.8	6.6	6.7	9.3	8.8	9.1	---	---	---	---	---	---
18	7.0	6.7	6.8	9.9	9.0	9.5	---	---	---	---	---	---
19	7.4	6.5	7.0	10.0	9.6	9.8	---	---	---	---	---	---
20	7.7	7.1	7.4	9.8	9.6	9.7	---	---	---	---	---	---
21	7.8	7.2	7.5	9.6	9.4	9.5	---	---	---	---	---	---
22	7.9	7.2	7.7	9.6	9.4	9.5	---	---	---	---	---	---
23	8.1	7.4	7.8	10.4	9.4	9.9	---	---	---	---	---	---
24	8.2	7.6	7.9	10.4	10.0	10.2	---	---	---	---	---	---
25	8.3	7.8	8.0	10.5	9.8	10.1	---	---	---	---	---	---
26	8.5	8.0	8.3	10.4	9.6	10.1	---	---	---	---	---	---
27	8.4	8.0	8.2	10.4	9.9	10.1	---	---	---	---	---	---
28	8.2	7.9	8.0	10.5	9.9	10.2	---	---	---	---	---	---
29	8.4	7.8	8.0	10.9	10.1	10.5	---	---	---	---	---	---
30	8.5	8.0	8.2	11.0	10.3	10.6	---	---	---	---	---	---
31	8.4	8.2	8.3	---	---	---	---	---	---	---	---	---
MONTH	8.5	5.3	6.9	11.0	8.3	9.3	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	10.3	10.2	10.2	9.2	7.8	8.7
2	---	---	---	---	---	---	10.2	10.0	10.1	8.9	7.9	8.5
3	---	---	---	---	---	---	10.1	9.8	10	8.6	7.4	8.1
4	---	---	---	---	---	---	10.0	9.7	9.9	8.1	6.1	7.5
5	---	---	---	---	---	---	10.2	9.9	10.0	8.0	6.9	7.6
6	---	---	---	---	---	---	10.3	9.9	10.1	7.8	6.9	7.3
7	---	---	---	---	---	---	10.5	10.1	10.3	7.1	6.5	6.8
8	---	---	---	---	---	---	10.6	10.3	10.5	6.8	6.2	6.5
9	---	---	---	---	---	---	10.7	10.3	10.5	6.5	5.6	6.1
10	---	---	---	---	---	---	10.8	10.6	10.7	5.8	5.2	5.5
11	---	---	---	---	---	---	10.9	10.8	10.8	---	---	---
12	---	---	---	---	---	---	11.0	10.8	10.9	---	---	---
13	---	---	---	---	---	---	11.1	10.9	10.9	---	---	---
14	---	---	---	---	---	---	11.3	10.9	11.0	---	---	---
15	---	---	---	---	---	---	11.2	10.9	11.0	---	---	---
16	---	---	---	---	---	---	11.1	10.7	10.9	---	---	---
17	---	---	---	---	---	---	11.0	10.8	10.9	7.6	7.3	7.5
18	---	---	---	---	---	---	11.0	10.8	10.9	7.5	7.0	7.2
19	---	---	---	---	---	---	10.9	10.6	10.8	7.1	6.8	7.0
20	---	---	---	---	---	---	10.8	10.4	10.6	6.8	6.5	6.7
21	---	---	---	---	---	---	10.6	10.2	10.4	6.5	6.1	6.4
22	---	---	---	---	---	---	10.3	9.6	10	6.3	6.1	6.2
23	---	---	---	---	---	---	9.8	9.5	9.7	6.5	6.2	6.3
24	---	---	---	---	---	---	10.0	9.7	9.8	6.8	6.4	6.7
25	---	---	---	---	---	---	9.9	9.6	9.7	6.8	6.5	6.6
26	---	---	---	---	---	---	9.7	9.4	9.6	7.5	6.5	6.9
27	---	---	---	10.7	10.4	10.5	9.6	9.2	9.4	7.1	6.6	6.9
28	---	---	---	10.6	10.4	10.5	9.5	9.0	9.3	7.3	6.3	6.6
29	---	---	---	10.6	10.3	10.4	9.3	8.9	9.1	7.7	6.8	7.2
30	---	---	---	10.3	10.1	10.2	9.2	8.8	9.0	7.6	7.1	7.2
31	---	---	---	10.3	10.1	10.2	---	---	---	7.2	6.9	7.0
MONTH	---	---	---	10.7	10.1	10.4	11.3	8.8	10.2	9.2	5.2	7.0

## DELAWARE RIVER BASIN

## 01477050 DELAWARE RIVER AT CHESTER, PA—Continued

## OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.3	6.6	6.9	7.6	6.9	7.2	5.5	5.0	5.2	4.7	4.4	4.5
2	7.6	6.8	7.1	7.4	6.9	7.3	5.3	4.8	5.1	4.8	4.4	4.5
3	7.6	7.1	7.2	7.4	6.8	7.1	5.4	4.8	5.1	4.8	4.5	4.6
4	7.4	7.1	7.2	7.3	6.6	6.9	5.4	4.9	5.1	4.6	4.1	4.4
5	7.4	7.1	7.3	7.2	6.7	7.0	5.3	4.9	5.0	4.1	3.7	3.8
6	7.6	7.2	7.4	7.4	6.6	7.0	4.9	4.7	4.8	4.2	3.6	3.8
7	7.6	7.2	7.4	7.9	6.8	7.3	4.8	4.4	4.6	4.7	3.6	4.1
8	7.6	7.4	7.5	7.6	7.0	7.2	4.7	4.3	4.5	5.2	3.9	4.6
9	7.7	7.4	7.5	7.0	6.2	6.5	4.7	4.0	4.2	6.0	4.4	5.2
10	7.6	7.2	7.4	6.4	5.2	5.6	4.9	4.1	4.4	6.0	5.2	5.6
11	7.3	7.0	7.2	5.6	4.8	5.1	5.0	4.2	4.5	6.1	5.5	5.8
12	7.1	6.9	7.0	5.1	4.5	4.8	4.8	4.2	4.5	6.5	5.8	6.1
13	6.9	6.6	6.8	5.2	4.5	4.8	4.5	4.1	4.3	6.5	6.3	6.4
14	6.7	6.4	6.5	4.9	4.3	4.6	4.5	4.1	4.2	6.4	5.8	6.1
15	6.6	6.3	6.4	4.9	4.4	4.6	4.6	3.9	4.2	6.1	5.7	5.8
16	7.0	6.3	6.6	4.9	4.5	4.7	4.6	4.0	4.3	6.2	5.4	5.7
17	7.0	6.6	6.8	4.8	4.5	4.6	4.6	4.1	4.3	5.7	5.4	5.5
18	7.0	6.5	6.7	4.7	4.4	4.5	4.6	4.2	4.4	6.4	5.6	5.9
19	6.5	6.1	6.3	4.8	4.4	4.6	4.7	4.3	4.5	7.4	6.4	7.0
20	6.5	6.0	6.1	4.9	4.5	4.7	4.6	4.4	4.5	6.7	6.2	6.5
21	7.0	6.3	6.6	5.3	4.8	5.0	4.7	4.4	4.6	6.3	5.9	6.1
22	6.6	6.3	6.4	5.4	5.1	5.3	4.8	4.5	4.7	6.0	5.8	5.9
23	7.1	6.5	6.7	5.3	5.0	5.1	4.9	4.5	4.7	6.2	5.8	6.0
24	7.2	6.9	7.0	5.5	4.8	5.0	5.2	4.6	4.8	6.3	5.8	6.0
25	7.2	6.8	7.0	5.5	4.8	5.0	5.4	4.8	5.0	6.4	5.9	6.1
26	7.1	6.8	6.9	5.7	4.8	5.1	5.2	4.9	5.0	6.4	6.0	6.2
27	7.0	6.5	6.8	5.9	5.2	5.4	5.0	4.7	4.9	6.7	6.0	6.2
28	7.0	6.6	6.8	5.5	5.1	5.3	4.9	4.6	4.7	6.5	6.2	6.3
29	7.2	6.6	6.9	5.6	4.9	5.2	4.9	4.2	4.7	6.7	6.3	6.4
30	7.5	6.8	7.1	6.2	4.9	5.4	4.8	4.5	4.7	6.8	6.6	6.6
31	---	---	---	5.9	5.3	5.6	4.8	4.4	4.6	---	---	---
MONTH	7.7	6.0	6.9	7.9	4.3	5.6	5.5	3.9	4.6	7.4	3.6	5.6

01477050 DELAWARE RIVER AT CHESTER, PA—Continued

CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Sample location, cross section ft from rt bank (72103)	Sampling depth, feet (00003)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unfltrd 25 degC (00095)	Temper-ature, water, deg C (00010)
APR 2003									
03...	1021	1028	1028	129	1	10.8	7.3	212	10.0
03...	1022	1028	1028	129	5	10.8	7.3	212	10.0
03...	1024	1028	1028	450	1	10.9	7.3	192	9.7
03...	1025	1028	1028	450	5	10.9	7.3	192	9.7
03...	1026	1028	1028	450	10	10.9	7.3	193	9.7
03...	1027	1028	1028	450	15	10.9	7.3	193	9.7
03...	1028	1028	1028	450	20	10.9	7.3	194	9.7
03...	1029	1028	1028	450	25	10.9	7.3	194	9.7
03...	1030	1028	1028	650	1	11.0	7.3	181	9.4
03...	1031	1028	1028	650	5	11.0	7.3	180	9.4
03...	1032	1028	1028	650	10	11.0	7.4	179	9.4
03...	1033	1028	1028	650	15	11.0	7.3	179	9.4
03...	1034	1028	1028	650	20	11.0	7.4	177	9.4
03...	1035	1028	1028	650	25	11.0	7.4	179	9.4
03...	1036	1028	1028	650	30	11.0	7.4	180	9.4
03...	1037	1028	1028	870	1	11.0	7.4	181	9.4
03...	1038	1028	1028	870	5	11.0	7.4	181	9.4
03...	1039	1028	1028	870	10	10.9	7.4	181	9.4
03...	1040	1028	1028	870	15	10.9	7.4	181	9.4
03...	1041	1028	1028	870	20	10.9	7.4	181	9.4
03...	1042	1028	1028	870	25	10.9	7.4	181	9.4
03...	1043	1028	1028	870	30	10.9	7.4	181	9.4
03...	1044	1028	1028	1130	1	11.0	7.4	171	9.3
03...	1045	1028	1028	1130	5	11.0	7.4	171	9.3
03...	1046	1028	1028	1130	10	11.0	7.4	170	9.3
03...	1047	1028	1028	1130	15	11.0	7.4	170	9.3
03...	1048	1028	1028	1130	20	11.0	7.4	171	9.3
03...	1049	1028	1028	1130	25	11.0	7.4	170	9.3
03...	1050	1028	1028	1130	30	11.0	7.4	171	9.3
03...	1051	1028	1028	1130	35	11.0	7.4	171	9.3
03...	1052	1028	1028	1130	40	11.0	7.4	172	9.3
03...	1053	1028	1028	1130	45	11.0	7.4	171	9.3
03...	1054	1028	1028	1390	1	11.0	7.4	165	9.3
03...	1055	1028	1028	1390	5	11.0	7.4	165	9.3
03...	1056	1028	1028	1390	10	11.0	7.4	165	9.3
03...	1057	1028	1028	1390	15	11.0	7.4	165	9.3
03...	1058	1028	1028	1390	20	11.0	7.4	165	9.3
03...	1059	1028	1028	1390	25	11.0	7.4	166	9.3
03...	1100	1028	1028	1390	30	11.0	7.4	166	9.3
03...	1101	1028	1028	1390	35	11.0	7.4	165	9.3
03...	1102	1028	1028	1390	40	11.0	7.4	166	9.3
03...	1103	1028	1028	1390	45	11.0	7.4	166	9.3
03...	1104	1028	1028	1390	50	11.0	7.4	166	9.3
03...	1105	1028	1028	1650	1	11.0	7.4	187	9.3
03...	1106	1028	1028	1650	5	11.0	7.4	188	9.3
03...	1107	1028	1028	1650	10	11.0	7.4	188	9.3
03...	1108	1028	1028	1650	15	11.0	7.4	187	9.3
03...	1109	1028	1028	1650	20	11.0	7.4	188	9.3
03...	1110	1028	1028	1650	25	11.0	7.4	187	9.3
03...	1111	1028	1028	1650	30	11.0	7.4	187	9.3
03...	1112	1028	1028	1650	35	11.0	7.4	188	9.3
03...	1113	1028	1028	1650	40	11.0	7.4	187	9.3
03...	1114	1028	1028	1650	45	11.0	7.4	187	9.3
03...	1115	1028	1028	1650	50	11.0	7.4	188	9.3
03...	1116	1028	1028	2050	1	11.0	7.4	165	9.4
03...	1117	1028	1028	2050	5	11.0	7.4	165	9.4
03...	1118	1028	1028	2050	10	11.0	7.4	165	9.4
03...	1119	1028	1028	2050	15	11.0	7.4	166	9.4
03...	1120	1028	1028	2050	20	11.0	7.4	165	9.4
03...	1121	1028	1028	2050	25	10.9	7.4	166	9.4
03...	1122	1028	1028	2050	30	10.9	7.4	166	9.4
03...	1123	1028	1028	2050	35	10.9	7.4	167	9.4
03...	1124	1028	1028	2350	1	11.0	7.4	168	9.5
03...	1125	1028	1028	2350	5	11.0	7.4	168	9.5
03...	1126	1028	1028	2350	10	10.9	7.3	168	9.5
03...	1127	1028	1028	2350	15	10.9	7.3	168	9.5
03...	1128	1028	1028	2700	1	10.9	7.3	168	9.5
03...	1129	1028	1028	2700	5	10.9	7.3	168	9.5
03...	1130	1028	1028	2700	10	10.9	7.4	168	9.5
03...	1131	1028	1028	3100	1	10.9	7.4	168	9.5
03...	1132	1028	1028	3100	5	10.9	7.4	168	9.5
03...	1133	1028	1028	3100	10	10.9	7.4	168	9.5
03...	1134	1028	1028	3500	1	10.9	7.4	167	9.5
03...	1135	1028	1028	3500	5	10.9	7.4	168	9.5
03...	1136	1028	1028	3500	10	10.9	7.4	168	9.5
03...	1137	1028	1028	3850	1	10.9	7.4	167	9.5
03...	1138	1028	1028	3850	5	10.9	7.4	167	9.5
03...	1139	1028	1028	3850	10	10.9	7.4	167	9.5
03...	1140	1028	1028	4250	1	11.0	7.4	167	9.5
03...	1141	1028	1028	4250	5	10.9	7.4	167	9.5
03...	1142	1028	1028	4250	10	10.9	7.4	167	9.5
03...	1143	1028	1028	4250	15	11.0	7.4	167	9.5
03...	1144	1028	1028	4600	1	10.9	7.4	168	9.5
03...	1145	1028	1028	4600	5	10.9	7.4	168	9.5
03...	1146	1028	1028	4600	10	11.0	7.4	168	9.5
03...	1147	1028	1028	4860	1	11.0	7.4	168	9.6

## DELAWARE RIVER BASIN

## 01477050 DELAWARE RIVER AT CHESTER, PA—Continued

## CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003--Continued

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Sample loc- ation, cross section ft from rt bank (72103)	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)
APR 2003									
03...	1148	1028	1028	4860	5	11.0	7.4	170	9.6
03...	1149	1028	1028	4860	10	11.0	7.4	170	9.6
03...	1150	1028	1028	4860	15	11.0	7.4	170	9.6
03...	1151	1028	1028	5150	0	--	--	--	--

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ

LOCATION.--Lat 39°44'26", long 75°15'33", Gloucester County, Hydrologic Unit 02040202, at bridge on County 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 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: June 1966 to September 1969.

WATER TEMPERATURE: May 1966 to September 1973, daily maximum-minimum; October 1998 to October 2001, recorded hourly.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E.coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 18.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC 04...	0930	23	4.7	0.104	0.083	775	11.7	82	7.0	284	0.3	1.5	85
MAR 05...	1000	117	28	0.184	0.145	756	12.2	91	6.9	196	7.5	3.2	42
MAY 14...	1000	36	6.7	0.198	0.157	760	8.1	79	7.0	202	18.5	13.6	63
AUG 07...	1000	34	7.6	0.227	0.179	760	6.2	71	7.0	208	25.0	22.1	69

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
DEC 04...	26.8	4.41	3.90	13.9	33	25.4	0.21	11.9	46.2	158	166	9	0.66
MAR 05...	12.1	2.76	3.50	16.2	15	27.2	<0.17	6.2	21.6	104	124	29	0.47
MAY 14...	19.0	3.70	3.52	9.44	26	18.9	<0.17	9.9	26.8	113	124	5	0.71
AUG 07...	20.7	4.15	3.53	9.75	36	19.7	<0.17	9.4	21.8	116	126	1	0.71

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
DEC 04...	0.312	0.315	1.16	0.100	0.044	0.14	0.028	0.092	1.8	2.0	0.8	<0.1	0.8
MAR 05...	0.192	0.175	1.12	0.009	0.030	0.19	0.032	0.190	1.6	1.8	2.7	<0.1	2.7
MAY 14...	0.377	0.380	1.22	0.039	0.060	0.07	0.071	0.137	1.9	2.0	0.5	<0.1	0.5
AUG 07...	0.161	0.161	1.17	0.065	0.051	0.07	0.061	0.134	1.9	1.9	0.7	<0.1	0.7

## DELAWARE RIVER BASIN

01477120 RACCOON CREEK NEAR SWEDESBORO, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
DEC 04...	3.0	E1.6	--	57
MAR 05...	3.7	<1.1	--	29
MAY 14...	4.3	E1.4	1.10	32
AUG 07...	5.5	<1.0	0.800	38

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
JUL 09...	0925	360	6,200	16,000	AUG 06...	1005	480	300	230
16...	0950	380	100	1,400					
23...	0950	--	1,400	1,300					
30...	0955	330	100	210					

01477440 OLDMANS CREEK AT JESSUPS MILL, NJ

LOCATION.--Lat 39°39'44", long 75°13'52", Salem County, Hydrologic Unit 02040202, at bridge on Monroeville Road, 0.1 mi north of Jessups Mill, 0.2 mi upstream of Algokin Lake, 0.7 mi downstream of Kettle Run, and 0.7 mi southeast of Lincoln.

DRAINAGE AREA.--4.15 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 2000, 2003 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Field data and samples for laboratory analyses were provided by the New Jersey Department of Environmental Protection. Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, total ammonia + organic nitrogen in bed sediment, total phosphorus in bed sediment, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Statewide Status, New Jersey Department of Environmental Protection Watershed Management Area 17.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)
NOV 19...	1045	1.6	0.334	0.248	768	9.9	79	6.2	214	10.0	6.0	69	15.2
MAR 05...	1030	5.5	0.248	0.186	755	11.3	86	6.0	157	7.0	3.8	47	10.2
MAY 14...	1000	2.7	0.277	0.211	758	8.8	82	6.5	190	14.5	12.0	61	13.3
AUG 26...	1000	1.8	0.175	0.135	760	7.9	85	7.0	233	24.5	18.6	78	16.7

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)
NOV 19...	7.43	3.66	7.13	E6	19.9	<0.17	8.6	40.1	--	141	8	0.49	<0.030
MAR 05...	5.11	3.02	5.92	--	14.7	<0.17	6.1	22.8	--	99	7	0.38	0.048
MAY 14...	6.67	3.13	6.31	10	18.8	<0.17	6.1	26.4	105	133	5	0.39	<0.030
AUG 26...	8.91	3.82	7.65	19	25.6	<0.17	8.3	28.3	132	147	7	0.30	<0.020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
NOV 19...	<0.030	3.20	<0.003	<0.020	0.07	0.008	0.015	3.7	3.8	0.5	<0.1	0.5	9.4
MAR 05...	0.050	3.83	0.005	<0.020	0.12	0.008	0.030	4.2	4.3	1.4	<0.1	1.4	6.0
MAY 14...	<0.030	4.26	<0.003	<0.020	0.04	0.007	0.015	4.7	4.7	0.4	<0.1	0.4	6.3
AUG 26...	<0.020	4.82	0.003	<0.020	0.04	0.007	0.015	5.1	5.2	0.4	<0.1	0.3	4.2





01477440 OLDMANS CREEK AT JESSUPS MILL, NJ—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chry-sene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo-[a,h]-anthra-cene, bed sed <2 mm, ug/kg (49461)	Fluor-anthene bed sed <2 mm wsv nat field, ug/kg (49466)	Indeno-[1,2,3-cd]-pyrene, bed sed <2 mm ug/kg (49390)	Iso-phorone bed sed <2 mm, wsv nat field, ug/kg (49400)	Naphth-alene, bed sed <2 mm wsv nat ug/kg (49402)	PCBs, bed sedimnt ug/kg (39519)	p-Cresol, bed sed <2 mm, wsv nat field, ug/kg (49451)	Phenan-threne, bed sed <2 mm, wsv nat field, ug/kg (49409)	Phenan-thrine, bed sed <2 mm, wsv nat ug/kg (49393)	Pyrene, bed sed <2 mm, wsv nat field, ug/kg (49387)	Bed sedi-ment, dry svd percent <.063mm (80164)	Bed sedi-ment falldia dst wat percent <.002mm (80294)
AUG 26... 26...	<50 --	<50 --	<50 --	<50 --	<50 --	<50 --	<5 --	<50 --	<50 --	<50 --	<50 --	3.1 --	1.6 --

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Bed sedi-ment, falldia dst wat percent <.004mm (80157)	Bed sedi-ment falldia dst wat percent <.008mm (80293)	Bed sedi-ment, falldia dst wat percent <.016mm (80282)	Bed sedi-ment, falldia dst wat percent <.031mm (80283)
AUG 26... 26...	1.9 --	2.1 --	2.4 --	2.7 --

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN VOLATILE ORGANIC COMPOUND ANALYSES

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water, unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water, unfltrd ug/L (34541)	1,3-Di-chloro-benzene water, unfltrd ug/L (34566)	1,4-Di-chloro-benzene water, unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)
MAR 05...	1030	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water, unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)
MAR 05...	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)
MAR 05...	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.2

Remark codes used in this table:  
 < -- Less than

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more surface-water samples are listed in the following table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	2,6-Diethyl-aniline water fltrd 0.7u GF (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF (82686)	Ben-flur-alin, water, fltrd 0.7u GF (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF (82680)	Carbo-furan, water, fltrd 0.7u GF (82674)	cis-Per-methrin water fltrd 0.7u GF (82687)
MAY 14...	1000	<0.006	E.039	E.004	0.010	<0.005	0.092	E.050	<0.010	0.002	E.011	E.014	<0.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	DCPA, water fltrd 0.7u GF (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	EPTC, water, fltrd 0.7u GF (82668)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Mala-thion, water, fltrd, ug/L (39532)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Naprop-amide, water, fltrd 0.7u GF (82684)
MAY 14...		<0.003	<0.004	<0.005	<0.005	E.002	<0.009	<0.005	<0.005	<0.007	<0.027	0.155	0.006	E.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Pendi-meth-alin, water, fltrd 0.7u GF (82683)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water, fltrd 0.7u GF (82670)	Terba-cil, water, fltrd 0.7u GF (82665)	Tri-flur-alin, water, fltrd 0.7u GF (82661)
MAY 14...		<0.022	E.01	0.037	<0.02	E.013	<0.009

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value

WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Entero-cocci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coli-form, ECbroth water, MPN/ 100 mL (31615)
JUL 09...	0940	250	300	800	AUG 06...	1020	1,020	1,300	3,000
JUL 16...	1005	740	800	2,400					
JUL 23...	1010	--	21,000	>16000					
JUL 30...	1010	690	300	1,300					

Remark codes used in this table:

01482500 SALEM RIVER AT WOODSTOWN, NJ

LOCATION.--Lat 39°38'36", long 75°19'51", Salem County, Hydrologic Unit 02040206, downstream from Memorial Lake Dam at Woodstown, 0.2 mi upstream from small brook, and 0.3 mi downstream from Pennsylvania-Reading Seashore Lines bridge.

DRAINAGE AREA.--14.6 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1973 to current year.

REMARKS.--Total nitrogen (00600) equals the sum of dissolved ammonia plus organic nitrogen (00623), dissolved nitrite plus nitrate nitrogen (00631), and total particulate nitrogen (49570).

COOPERATION.--Determination of dissolved ammonia, total ammonia, dissolved nitrite, dissolved orthophosphate, biochemical oxygen demand, total suspended solids, fecal coliform, E. coli, and enterococcus bacteria was performed by the New Jersey Department of Health and Senior Services, Public Health and Environmental Laboratories, Environmental and Chemical Laboratory Services. Determination of chlorophyll a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring Laboratory.

COOPERATIVE NETWORK SITE DESCRIPTOR.--Agricultural Land Use Indicator, New Jersey Department of Environmental Protection Watershed Management Area 18.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Turbidity, water, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV 21...	1310	21	23	0.364	0.285	759	11.1	95	6.8	245	13.0	8.5	88
FEB 26...	1220	38	29	0.274	0.226	771	14.6	100	6.4	188	-0.1	0.5	53
MAY 20...	1240	14	15	0.216	0.168	769	9.5	100	7.5	258	24.0	18.1	89
AUG 28...	1000	7.1	47	0.265	0.201	763	8.5	106	8.9	271	25.5	26.3	91

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd fixed end pt, lab, mg/L as CaCO3 (90410)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
NOV 21...	19.8	9.28	7.31	8.09	E28	20.9	<0.17	9.4	44.7	--	169	17	0.96
FEB 26...	12.3	5.53	5.47	5.93	19	14.8	<0.17	6.1	23.5	96	117	13	1.7
MAY 20...	20.0	9.56	5.16	8.91	34	23.5	<0.17	7.5	35.1	143	165	14	0.82
AUG 28...	19.7	10.3	6.47	9.04	49	27.2	<0.17	4.4	28.1	136	180	28	0.75

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Particulate nitrogen, susp, water, mg/L (49570)	Phosphorus, water, fltrd, mg/L (00666)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, fltrd, mg/L (00602)	Total nitrogen, water, unfltrd mg/L (00600)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inorganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)
NOV 21...	0.205	0.212	2.32	0.038	0.063	0.20	0.077	0.17	3.3	3.5	1.5	<0.1	1.5
FEB 26...	0.755	0.765	2.30	0.029	0.092	0.28	0.105	0.21	4.0	4.3	1.8	<0.1	1.8
MAY 20...	0.132	0.135	2.83	0.101	0.023	0.25	0.039	0.138	3.6	3.9	1.7	<0.1	1.7
AUG 28...	0.034	0.042	0.33	0.030	0.020	1.85	0.042	0.32	1.1	2.9	8.0	<0.1	8.0

## DELAWARE RIVER BASIN

01482500 SALEM RIVER AT WOODSTOWN, NJ—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic carbon, water, fltrd, mg/L (00681)	BOD, water, unfltrd 5 day, 20 degC mg/L (00310)	Chlorophyll a fluorometric method, corrctd ug/L (32209)	Boron, water, fltrd, ug/L (01020)
NOV 21...	9.1	3.1	--	25
FEB 26...	9.0	3.3	--	16
MAY 20...	5.5	E2.0	8.40	22
AUG 28...	7.3	E2.2	206	29

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

## WATER-COLUMN BACTERIA ANALYSES

Samples were collected synoptically over a 30-day period during the summer.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)	Date	Time	Enterococci, m-E MF, water, col/ 100 mL (31649)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Fecal coliform, ECbroth water, MPN/ 100 mL (31615)
AUG 06...	1145	340	1,300	2,400	SEP 03...	1130	200	200	1,400
13...	1155	120	200	500					
20...	1135	<10	<100	270					
27...	1145	10	<100	<20					

Remark codes used in this table:

&lt; -- Less than

01482800 DELAWARE RIVER AT REEDY ISLAND JETTY, DE

LOCATION.--Lat 39°30'03", long 75°34'07", New Castle County, Delaware, Hydrologic Unit 02040205, on dock on streamward side of jetty about 0.4 mi downstream from Reedy Island near Port Penn.

DRAINAGE AREA.--11,200 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Water year 1997 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1963 to current year.

pH: February 1970 to current year.

WATER TEMPERATURES: February 1970 to current year.

DISSOLVED OXYGEN: February 1970 to current year.

INSTRUMENTATION.--Water-quality monitor since February 1970. Probes interfaced with a data collection platform since the 1986 water year. Probes placed in sit since July 1998.

REMARKS.--Specific conductance and water temperature records rated good. Dissolved oxygen record rated poor, except for periods Mar. 1-8, Apr. 28 to May 11, June 13-29, and July 10 to Aug. 19, which are good. pH records rated good except for period Oct. 27 to Nov. 8, which is fair. Interruptions in the record were due to malfunctions of the equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 35,600 microsiemens, Nov. 15, 1978; minimum, 100 microsiemens, several days in 1969, 1970, 1974 and 1979.

pH: Maximum, 8.9, Mar. 4, 1980; minimum, 5.4, Dec. 31, 1972.

WATER TEMPERATURE: Maximum, 32.5°C, July 23, 1987; minimum, 0.0°C, many days during winters.

DISSOLVED OXYGEN: Maximum, 17.1 mg/L, Dec. 16, 19, 1976; minimum, 0.3 mg/L, Sept. 16, 17, 1971.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 22,000 microsiemens, Oct. 5; minimum, 175 microsiemens, Mar. 31.

pH: Maximum 8.0, Feb. 17-20; minimum, 6.8, June 25-27.

WATER TEMPERATURE: Maximum, 29.0°C, Aug. 22; minimum recorded, 0.0°C, many days during winter.

DISSOLVED OXYGEN: Maximum, 12.9 mg/L, Mar. 9-12; minimum recorded, 3.8 mg/L, Aug. 17.

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT 25° CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	20600	14400	16600	16600	7700	12400	6000	1490	3070	8540	1760	3550
2	19400	14100	15700	15000	7680	10400	8120	1490	2900	8950	1770	3700
3	20100	13800	15600	15200	7490	9980	6940	1420	2330	8200	1660	3900
4	22000	14500	17100	17100	7950	10900	10100	1620	4080	6700	796	2800
5	22000	14800	17400	16300	8020	10800	10500	2200	5040	5340	898	1690
6	19500	14300	16300	16500	8010	11400	12400	3520	6600	4280	924	1440
7	21300	15000	17400	14200	7500	9670	12100	3610	6480	2410	672	1020
8	20800	14600	16700	16400	7460	10800	9540	3510	5050	3840	700	1630
9	20700	15100	17100	12100	6990	8580	8660	2900	4760	4940	720	1990
10	20700	15100	17300	14200	6980	9150	10200	3390	6060	6650	890	3290
11	19700	15400	17200	12500	6720	8940	12500	4000	7230	6840	1590	3120
12	18600	14200	16400	11200	5990	8040	12100	5070	8440	8300	1690	4960
13	20500	13800	16500	13400	6150	9490	10600	3550	6980	11000	3590	7460
14	18200	12100	14300	14700	6290	10500	13000	4240	8540	11600	3210	7560
15	18700	11600	14500	13200	6450	9250	9080	3070	5580	14300	4610	9510
16	19200	12700	15600	13900	6080	8650	9520	2220	4850	13100	5140	8580
17	18700	11300	14500	15900	7330	11300	10100	2580	5320	14800	5450	8790
18	17400	9980	12800	13900	4770	8230	11400	2590	5960	14000	5790	8600
19	17400	8700	12300	6720	3250	4800	10400	3140	5330	15000	6220	9910
20	12700	7970	9630	9110	3030	4350	10000	3050	5280	10600	4600	7670
21	14000	7100	9520	9540	2470	4310	8370	2080	4170	10800	4070	6100
22	14400	6520	9640	10000	2470	4670	5290	1970	2740	9870	3640	6030
23	12300	6690	9130	5810	1630	3060	5650	1360	2420	8320	3230	4930
24	12900	6460	8520	4280	1630	2230	4540	1220	1970	12100	3140	6770
25	14100	6800	9240	5630	1590	2350	8140	1230	3170	15000	6070	11000
26	14500	6850	10200	8520	1580	3300	2900	1060	1580	16900	6240	10300
27	13500	6570	9530	8230	1950	4200	6960	902	2840	13100	4830	9030
28	13500	6100	9040	10200	2000	5250	7260	1110	3030	16100	7610	11300
29	13800	5760	9820	9550	1960	5180	8950	1120	3290	15200	6690	10700
30	15000	7460	11200	8470	2210	4180	9090	1340	3480	16400	8060	10900
31	17800	8740	13100	---	---	---	9350	1760	3790	17400	8740	12000
MONTH	22000	5760	13500	17100	1580	7550	13000	902	4590	17400	672	6460



01482800 DELAWARE RIVER AT REEDY ISLAND JETTY, DE—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.3	7.2	7.3	7.6	7.6	7.6	7.6	7.5	7.5	7.6	7.4	7.4
2	7.2	7.1	7.2	7.7	7.6	7.6	7.6	7.5	7.5	7.6	7.4	7.5
3	7.2	7.1	7.1	7.8	7.6	7.7	7.6	7.5	7.6	7.6	7.4	7.5
4	7.3	7.1	7.2	7.8	7.8	7.8	7.7	7.5	7.6	7.5	7.4	7.5
5	7.3	7.2	7.3	7.8	7.6	7.6	7.7	7.6	7.6	7.5	7.3	7.4
6	7.3	7.2	7.3	7.8	7.6	7.6	7.8	7.6	7.7	7.4	7.3	7.4
7	7.3	7.2	7.2	7.9	7.8	7.9	7.8	7.6	7.7	7.4	7.3	7.4
8	7.3	7.2	7.3	7.9	7.7	7.8	7.7	7.6	7.6	7.5	7.4	7.4
9	7.3	7.3	7.3	7.8	7.7	7.7	7.7	7.6	7.6	7.5	7.4	7.4
10	7.3	7.3	7.3	7.8	7.7	7.7	7.7	7.6	7.6	7.5	7.4	7.4
11	7.3	7.3	7.3	7.8	7.7	7.7	7.8	7.6	7.7	7.6	7.4	7.5
12	7.4	7.3	7.3	7.8	7.7	7.7	7.8	7.6	7.7	7.6	7.5	7.6
13	7.3	7.3	7.3	7.8	7.7	7.8	7.7	7.6	7.6	7.7	7.6	7.6
14	7.4	7.3	7.3	7.8	7.7	7.8	7.8	7.6	7.7	7.7	7.5	7.6
15	7.5	7.3	7.4	7.8	7.7	7.7	7.6	7.4	7.5	7.8	7.6	7.7
16	7.6	7.4	7.5	7.7	7.6	7.7	7.6	7.4	7.4	7.7	7.6	7.6
17	7.6	7.5	7.5	7.8	7.6	7.7	7.6	7.4	7.5	7.8	7.6	7.6
18	7.5	7.5	7.5	7.7	7.5	7.6	7.6	7.3	7.5	7.8	7.6	7.7
19	7.6	7.4	7.5	7.6	7.4	7.5	7.6	7.3	7.4	7.8	7.6	7.7
20	7.5	7.3	7.4	7.6	7.4	7.5	7.6	7.3	7.4	7.7	7.6	7.7
21	7.5	7.3	7.4	7.6	7.3	7.5	7.5	7.3	7.4	7.7	7.6	7.6
22	7.4	7.3	7.4	7.6	7.3	7.4	7.4	7.3	7.3	7.7	7.6	7.6
23	7.4	7.3	7.3	7.5	7.3	7.4	7.4	7.3	7.3	7.9	7.6	7.6
24	7.4	7.3	7.4	7.5	7.3	7.4	7.4	7.3	7.3	7.8	7.6	7.7
25	7.4	7.3	7.4	7.5	7.3	7.4	7.5	7.3	7.4	7.8	7.6	7.7
26	7.4	7.3	7.4	7.6	7.3	7.4	7.6	7.4	7.4	7.8	7.6	7.7
27	7.5	7.3	7.4	7.6	7.4	7.4	7.6	7.4	7.4	7.8	7.6	7.7
28	7.5	7.4	7.4	7.6	7.4	7.5	7.5	7.4	7.4	7.8	7.7	7.7
29	7.6	7.5	7.5	7.6	7.4	7.5	7.6	7.4	7.4	7.8	7.6	7.7
30	7.6	7.5	7.6	7.6	7.4	7.5	7.6	7.4	7.4	7.8	7.7	7.7
31	7.6	7.5	7.5	---	---	---	7.6	7.4	7.4	7.8	7.7	7.7
MAX	7.6	7.5	7.6	7.9	7.8	7.9	7.8	7.6	7.7	7.9	7.7	7.7
MIN	7.2	7.1	7.1	7.5	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.8	7.7	7.7	7.7	7.4	7.5	7.5	7.3	7.3	7.5	7.3	7.3
2	7.8	7.7	7.7	7.6	7.4	7.4	7.4	7.2	7.2	7.5	7.2	7.3
3	7.7	7.6	7.7	7.5	7.3	7.4	7.2	7.1	7.2	7.4	7.3	7.3
4	7.8	7.7	7.7	7.5	7.3	7.4	7.3	7.1	7.2	7.5	7.3	7.3
5	7.8	7.6	7.7	7.4	7.3	7.4	7.3	7.1	7.2	7.4	7.2	7.2
6	7.7	7.6	7.7	7.4	7.3	7.3	7.3	7.1	7.2	7.3	7.1	7.2
7	7.8	7.6	7.7	7.4	7.3	7.3	7.2	7.1	7.2	7.3	7.1	7.2
8	7.8	7.7	7.7	7.5	7.2	7.3	7.3	7.2	7.3	7.3	7.1	7.1
9	7.8	7.7	7.7	7.4	7.2	7.3	7.4	7.2	7.3	7.4	7.1	7.2
10	7.8	7.6	7.7	7.4	7.3	7.3	7.5	7.3	7.5	7.3	7.1	7.1
11	7.8	7.7	7.8	7.5	7.3	7.4	7.6	7.5	7.6	7.4	7.1	7.1
12	7.9	7.7	7.8	7.5	7.3	7.4	7.8	7.5	7.7	7.4	7.1	7.2
13	7.8	7.7	7.8	7.5	7.3	7.4	7.8	7.4	7.6	7.4	7.2	7.3
14	7.9	7.7	7.8	7.7	7.4	7.6	7.7	7.4	7.5	7.6	7.2	7.3
15	7.9	7.7	7.8	7.8	7.4	7.5	7.7	7.4	7.4	7.6	7.3	7.3
16	7.9	7.8	7.8	7.8	7.4	7.5	7.5	7.3	7.4	7.5	7.3	7.4
17	8.0	7.8	7.9	7.8	7.4	7.5	7.6	7.4	7.4	7.6	7.4	7.4
18	8.0	7.8	7.9	7.7	7.4	7.5	7.7	7.4	7.5	7.5	7.3	7.4
19	8.0	7.8	7.9	7.8	7.4	7.5	7.6	7.4	7.5	7.4	7.3	7.3
20	8.0	7.8	7.8	7.6	7.4	7.5	7.6	7.4	7.5	7.4	7.3	7.3
21	7.9	7.8	7.8	7.5	7.3	7.3	7.6	7.4	7.5	7.3	7.3	7.3
22	7.9	7.8	7.8	7.3	7.3	7.3	7.6	7.4	7.4	7.4	7.3	7.3
23	7.9	7.7	7.8	7.3	7.3	7.3	7.6	7.4	7.5	7.4	7.3	7.4
24	7.7	7.6	7.6	7.3	7.3	7.3	7.6	7.4	7.5	7.4	7.3	7.4
25	7.6	7.5	7.6	7.4	7.3	7.3	7.8	7.4	7.5	7.4	7.4	7.4
26	7.7	7.5	7.6	7.4	7.3	7.3	7.8	7.5	7.6	7.5	7.3	7.4
27	7.8	7.5	7.6	7.3	7.3	7.3	7.8	7.4	7.5	7.5	7.3	7.4
28	7.8	7.6	7.6	7.3	7.2	7.3	7.7	7.3	7.5	7.5	7.4	7.4
29	---	---	---	7.3	7.2	7.3	7.6	7.3	7.3	7.5	7.4	7.4
30	---	---	---	7.3	7.2	7.3	7.5	7.3	7.3	7.5	7.4	7.4
31	---	---	---	7.5	7.2	7.3	---	---	---	7.5	7.4	7.4
MAX	8.0	7.8	7.9	7.8	7.4	7.6	7.8	7.5	7.7	7.6	7.4	7.4
MIN	7.6	7.5	7.6	7.3	7.2	7.3	7.2	7.1	7.2	7.3	7.1	7.1

DELAWARE RIVER BASIN

01482800 DELAWARE RIVER AT REEDY ISLAND JETTY, DE—Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.6	7.4	7.5	7.0	6.9	7.0	7.4	7.3	7.3	7.3	7.2	7.3
2	7.6	7.5	7.5	7.1	7.0	7.1	7.4	7.3	7.3	7.3	7.2	7.3
3	7.6	7.4	7.5	7.2	7.1	7.1	7.4	7.3	7.4	7.3	7.2	7.3
4	7.5	7.4	7.5	7.2	7.0	7.1	7.4	7.3	7.4	7.3	7.2	7.3
5	7.5	7.4	7.5	7.2	7.1	7.1	7.4	7.3	7.3	7.3	7.2	7.3
6	7.5	7.4	7.4	7.2	7.1	7.1	7.4	7.3	7.3	7.3	7.2	7.3
7	7.6	7.4	7.4	7.2	7.1	7.2	7.4	7.3	7.3	7.3	7.2	7.2
8	7.5	7.3	7.4	7.2	7.1	7.2	7.4	7.2	7.3	7.3	7.1	7.1
9	7.4	7.3	7.3	7.3	7.3	7.2	7.4	7.3	7.3	7.3	7.2	7.3
10	7.4	7.3	7.3	7.2	7.1	7.2	7.4	7.3	7.4	7.4	7.2	7.3
11	7.3	7.3	7.3	7.2	7.1	7.2	7.4	7.3	7.3	7.3	7.1	7.3
12	7.3	7.2	7.3	7.2	7.1	7.2	7.4	7.3	7.3	7.4	7.2	7.3
13	7.3	7.0	7.3	7.2	7.1	7.2	7.3	7.2	7.3	7.5	7.4	7.4
14	7.1	7.0	7.0	7.2	7.1	7.2	7.3	7.2	7.3	7.4	7.4	7.4
15	7.1	6.9	7.0	7.3	7.1	7.2	7.3	7.2	7.2	7.4	7.4	7.4
16	7.0	7.0	7.0	7.2	7.2	7.2	7.3	7.2	7.2	7.4	7.3	7.3
17	7.1	7.0	7.0	7.3	7.2	7.2	7.3	7.2	7.2	7.4	7.3	7.3
18	7.0	7.0	7.0	7.2	7.2	7.2	7.3	7.2	7.2	7.6	7.3	7.4
19	7.0	7.0	7.0	7.2	7.2	7.2	7.3	7.1	7.2	7.7	7.4	7.6
20	7.0	7.0	7.0	7.3	7.2	7.3	7.4	7.2	7.3	7.4	7.4	7.4
21	7.0	7.0	7.0	7.4	7.3	7.3	7.4	7.2	7.3	7.4	7.3	7.4
22	7.0	6.9	7.0	7.4	7.2	7.3	7.4	7.2	7.3	7.4	7.3	7.4
23	7.0	6.9	6.9	7.4	7.3	7.3	7.4	7.2	7.3	7.4	7.3	7.4
24	7.0	6.9	6.9	7.4	7.2	7.4	7.5	7.3	7.4	7.4	7.2	7.3
25	7.0	6.8	6.9	7.5	7.3	7.4	7.5	7.3	7.3	7.3	7.2	7.3
26	7.0	6.8	6.9	7.5	7.2	7.4	7.4	7.3	7.3	7.3	7.1	7.2
27	7.0	6.8	6.9	7.5	7.3	7.4	7.4	7.2	7.3	7.2	7.1	7.2
28	7.0	6.9	6.9	7.5	7.3	7.4	7.3	7.2	7.3	7.2	7.1	7.2
29	7.0	6.9	7.0	7.4	7.2	7.4	7.4	7.2	7.3	7.3	7.1	7.2
30	7.0	6.9	7.0	7.4	7.3	7.4	7.3	7.2	7.2	7.3	7.1	7.2
31	---	---	---	7.4	7.2	7.3	7.3	7.2	7.3	---	---	---
MAX	7.6	7.5	7.5	7.5	7.3	7.4	7.5	7.3	7.4	7.7	7.4	7.6
MIN	7.0	6.8	6.9	7.0	6.9	7.0	7.3	7.1	7.2	7.2	7.1	7.1
YEAR	MAX		MAXIMUM	8.0	MINIMUM	7.0						
	MIN		MAXIMUM	7.8	MINIMUM	6.8						
	MEDIAN		MAXIMUM	7.9	MINIMUM	6.9						

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	23.0	22.5	22.5	12.5	12.0	12.5	7.5	6.0	7.0	4.0	3.5	4.0
2	23.5	22.5	23.0	12.0	11.5	12.0	7.0	6.0	6.5	4.5	4.0	4.0
3	23.5	23.0	23.0	11.5	11.0	11.5	6.5	5.0	5.5	4.5	4.0	4.0
4	23.5	23.0	23.5	11.5	11.0	11.0	6.0	5.0	5.0	4.5	4.0	4.0
5	24.0	23.5	23.5	11.0	11.0	11.0	5.5	4.5	5.0	4.0	3.5	3.5
6	23.5	22.5	23.0	11.0	10.5	11.0	5.0	4.0	4.5	4.0	3.5	3.5
7	23.0	22.5	23.0	11.0	10.5	10.5	4.5	4.0	4.0	3.5	2.5	3.5
8	22.5	21.0	22.0	10.5	10.0	10.5	4.5	4.0	4.0	3.5	3.0	3.5
9	22.0	21.0	21.5	10.5	10.0	10.5	4.0	3.0	3.5	3.5	3.0	3.5
10	21.5	21.0	21.0	11.5	10.5	11.0	4.0	3.5	3.5	3.5	3.5	3.5
11	21.0	20.5	21.0	11.5	11.0	11.5	4.0	3.5	3.5	3.5	2.5	3.0
12	21.0	20.5	20.5	11.5	11.5	11.5	4.0	3.5	4.0	3.5	2.5	3.0
13	20.5	20.0	20.5	11.5	11.0	11.5	4.0	3.5	4.0	3.0	2.0	2.5
14	20.5	19.0	20.0	11.5	11.0	11.0	4.5	4.0	4.0	3.0	2.0	2.5
15	19.5	18.5	19.0	11.5	11.0	11.5	4.5	4.0	4.0	3.0	2.0	2.5
16	19.0	18.0	18.5	11.5	11.0	11.0	4.5	3.5	4.0	2.5	1.5	2.0
17	18.5	17.5	18.0	11.0	10.5	11.0	4.0	3.5	4.0	2.5	1.5	2.0
18	18.0	17.5	17.5	11.0	10.0	10.5	4.0	3.5	3.5	2.0	0.5	1.5
19	17.5	17.0	17.0	10.0	9.5	10.0	4.0	3.5	3.5	1.5	1.0	1.0
20	17.0	16.5	17.0	10.5	9.5	10.0	4.5	4.0	4.0	1.0	0.5	1.0
21	17.0	16.5	16.5	10.5	9.5	10.0	4.5	4.0	4.0	1.0	0.0	0.5
22	16.5	16.0	16.0	10.5	10.0	10.0	4.0	3.5	4.0	0.5	0.0	0.0
23	16.5	15.5	16.0	10.5	9.0	9.5	4.5	3.5	4.0	0.0	0.0	0.0
24	16.0	15.0	15.5	9.5	8.5	9.0	4.0	3.5	4.0	0.0	0.0	0.0
25	15.5	14.5	15.0	9.5	8.5	9.0	4.5	3.5	4.0	0.0	0.0	0.0
26	15.0	14.5	15.0	9.5	8.5	9.0	3.5	3.0	3.5	0.0	0.0	0.0
27	15.0	14.5	15.0	9.5	8.0	9.0	3.5	3.0	3.5	0.0	0.0	0.0
28	15.0	14.5	14.5	8.5	8.0	8.5	3.5	3.0	3.5	0.0	0.0	0.0
29	14.5	13.5	14.0	8.5	7.5	8.0	4.0	3.0	3.5	0.0	0.0	0.0
30	13.5	12.5	13.0	8.0	7.5	7.5	3.5	3.0	3.5	0.0	0.0	0.0
31	13.0	12.5	12.5	---	---	---	4.0	3.5	3.5	0.0	0.0	0.0
MONTH	24.0	12.5	18.6	12.5	7.5	10.3	7.5	3.0	4.1	4.5	0.0	1.9





## DELAWARE RIVER BASIN

## 01482800 DELAWARE RIVER AT REEDY ISLAND JETTY, DE—Continued

## OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	6.8	6.3	6.6	8.2	7.8	8.0	11.0	10.1	10.6	---	---	---
2	6.8	6.3	6.6	8.3	7.9	8.1	11.5	10.0	10.5	---	---	---
3	6.6	6.2	6.5	8.3	8.0	8.2	10.2	9.7	9.9	---	---	---
4	6.8	6.2	6.5	8.4	8.0	8.3	9.8	9.3	9.5	---	---	---
5	6.6	6.2	6.5	8.5	8.2	8.3	9.4	9.1	9.3	---	---	---
6	6.7	6.4	6.6	8.7	8.3	8.5	9.3	8.9	9.1	10.2	9.2	9.6
7	6.6	6.3	6.5	8.8	8.5	8.6	9.3	8.8	8.9	9.9	8.8	9.3
8	6.8	6.4	6.6	---	---	---	9.1	8.8	8.9	9.7	8.8	9.1
9	6.8	6.4	6.6	---	---	---	9.3	9.0	9.1	9.2	8.7	9.0
10	6.8	6.4	6.6	---	---	---	9.2	8.8	8.9	9.3	8.7	9.1
11	6.8	6.5	6.7	---	---	---	9.2	8.8	9.0	9.4	8.8	9.1
12	6.8	6.6	6.7	---	---	---	9.2	8.5	8.8	9.4	8.8	9.1
13	6.8	6.4	6.7	---	---	---	9.2	8.7	8.9	9.2	8.6	8.9
14	7.1	5.6	6.8	---	---	---	9.2	8.7	8.8	10.7	8.4	9.4
15	7.2	6.7	6.9	---	---	---	9.5	8.8	9.0	8.8	8.2	8.4
16	7.2	6.9	7.0	---	---	---	9.5	9.0	9.2	9.0	7.8	8.3
17	7.2	6.9	7.1	---	---	---	10.0	9.3	9.5	8.6	7.8	8.2
18	7.2	7.0	7.1	---	---	---	9.9	9.1	9.4	8.2	7.8	8.1
19	7.4	7.0	7.2	---	---	---	10.1	9.4	9.7	8.2	7.9	8.1
20	7.3	6.7	7.0	---	---	---	10.4	9.6	9.8	8.4	7.8	8.1
21	7.2	6.6	7.1	---	---	---	10.4	9.8	10.1	9.1	7.7	8.3
22	7.5	7.0	7.3	---	---	---	10.3	9.6	10.0	12.0	6.9	8.5
23	7.8	7.3	7.5	---	---	---	10.4	9.6	9.9	11.7	5.2	9.3
24	8.1	7.6	7.9	---	---	---	11.1	10.0	10.4	11.7	8.5	9.5
25	8.5	8.0	8.2	9.8	9.2	9.5	11.2	10.7	10.9	10.3	8.7	9.3
26	8.7	8.2	8.4	10.2	9.5	9.8	11.9	11.0	11.4	9.2	8.6	8.8
27	8.7	7.6	8.1	10.2	9.7	9.9	12.5	11.4	11.8	10.4	8.6	9.3
28	7.9	7.5	7.8	10.3	9.6	10	---	---	---	9.2	8.4	8.8
29	8.1	7.6	7.9	10.4	9.9	10.1	---	---	---	8.8	8.5	8.6
30	8.2	7.8	8.0	10.6	10.0	10.3	---	---	---	8.7	8.3	8.6
31	8.2	7.8	8.0	---	---	---	---	---	---	8.9	8.3	8.5
MONTH	8.7	5.6	7.1	10.6	7.8	9.0	12.5	8.5	9.7	12.0	5.2	8.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	9.2	8.3	8.5	---	---	---	10.6	8.6	10.1	8.8	8.4	8.6
2	8.5	8.2	8.3	12.8	12.3	12.5	10.4	9.2	9.9	8.6	8.2	8.4
3	---	---	---	12.7	12.3	12.5	9.3	9.1	9.2	8.5	8.1	8.3
4	---	---	---	12.7	12.3	12.5	9.2	9.0	9.1	8.3	8.0	8.1
5	---	---	---	12.6	12.3	12.4	9.2	9.0	9.1	8.2	7.8	8.0
6	---	---	---	12.7	12.3	12.4	9.3	9.0	9.1	8.0	7.6	7.9
7	---	---	---	12.6	12.2	12.4	9.4	9.0	9.3	7.8	7.4	7.6
8	---	---	---	12.7	12.2	12.4	9.7	9.3	9.5	7.5	6.9	7.3
9	---	---	---	12.9	12.3	12.6	10.0	9.5	9.8	7.7	7.0	7.3
10	---	---	---	12.9	12.6	12.7	10.1	9.8	10	7.4	7.0	7.2
11	---	---	---	12.9	12.7	12.8	10.2	10.0	10.1	7.4	6.9	7.1
12	---	---	---	12.9	12.7	12.8	10.2	10.0	10.1	7.6	7.0	7.3
13	---	---	---	12.8	12.5	12.6	10.2	9.6	9.9	8.0	7.3	7.7
14	---	---	---	12.8	12.3	12.5	9.7	9.3	9.5	8.1	7.7	7.9
15	---	---	---	12.5	11.9	12.3	9.4	9.0	9.2	8.3	7.7	8.0
16	---	---	---	12.0	9.8	11.4	9.1	8.7	8.9	8.4	8.0	8.2
17	---	---	---	10.4	8.8	9.7	9.1	8.7	8.9	8.4	8.0	8.2
18	---	---	---	10.5	8.5	9.6	9.0	8.5	8.8	8.3	7.8	8.1
19	---	---	---	10.2	8.4	9.4	8.8	8.4	8.6	8.3	7.7	8.1
20	---	---	---	10.1	8.5	9.4	8.7	8.4	8.6	8.1	7.6	7.9
21	---	---	---	10.9	9.2	10.0	8.8	8.4	8.6	7.9	7.5	7.8
22	---	---	---	11.7	10.7	11.3	8.8	8.4	8.6	8.0	7.6	7.9
23	---	---	---	11.7	11.5	11.6	8.8	8.4	8.6	8.0	7.6	7.8
24	---	---	---	11.7	11.4	11.6	8.9	8.4	8.7	8.0	7.6	7.8
25	---	---	---	11.4	10.9	11.2	9.1	8.5	8.8	8.1	7.6	7.8
26	---	---	---	10.9	10.6	10.7	9.1	8.6	8.8	8.8	7.8	8.1
27	---	---	---	10.7	10.3	10.5	9.1	8.6	8.9	8.8	8.3	8.6
28	---	---	---	10.7	10.0	10.5	9.0	8.6	8.9	8.6	8.1	8.5
29	---	---	---	10.8	10.5	10.6	9.0	8.6	8.8	8.5	8.1	8.3
30	---	---	---	10.8	10.4	10.6	8.9	8.6	8.7	8.4	7.9	8.2
31	---	---	---	10.5	8.6	10.1	---	---	---	8.2	7.8	8.1
MONTH	9.2	8.2	8.4	12.9	8.4	11.5	10.6	8.4	9.2	8.8	6.9	7.9



## DELAWARE RIVER BASIN

## 01482800 DELAWARE RIVER AT REEDY ISLAND JETTY, DE—Continued

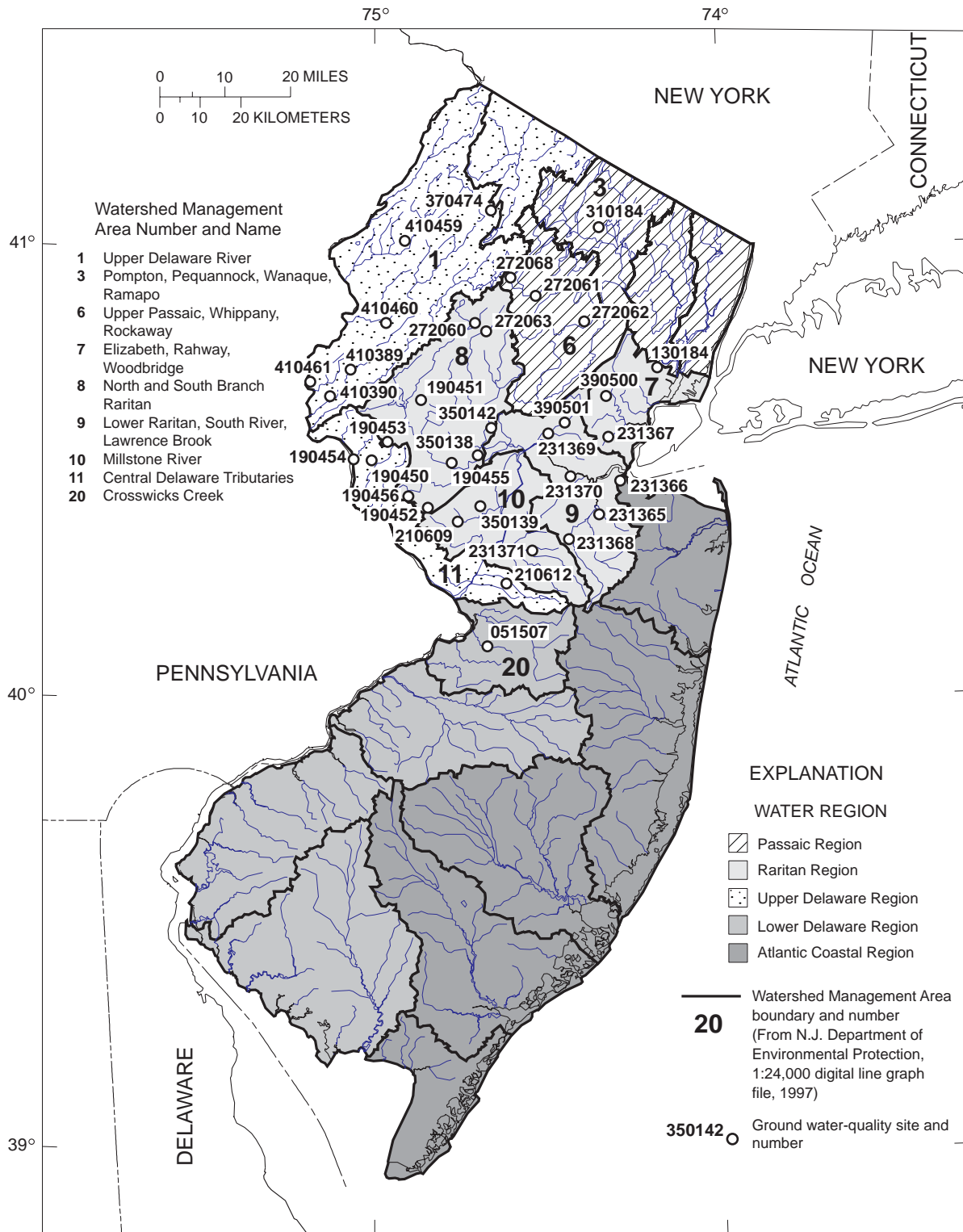
## CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Loca- tion in X-sect. looking dwnstrm ft from l bank (00009)	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)
APR 2003									
02...	1132	1028	1028	330	1	10.5	7.5	2040	9.9
02...	1133	1028	1028	330	5	10.4	7.5	2280	10.1
02...	1134	1028	1028	330	10	10.4	7.5	2300	10.1
02...	1135	1028	1028	800	1	10.5	7.5	1960	9.6
02...	1136	1028	1028	800	5	10.5	7.5	2220	9.3
02...	1137	1028	1028	800	10	10.4	7.5	2320	9.3
02...	1138	1028	1028	800	15	10.3	7.5	2480	9.4
02...	1139	1028	1028	800	20	10.3	7.5	2600	9.9
02...	1140	1028	1028	800	25	10.3	7.5	2600	10.2
02...	1141	1028	1028	800	30	10.3	7.5	2620	10.3
02...	1153	1028	1028	1300	1	10.5	7.5	1750	10.4
02...	1154	1028	1028	1300	5	10.5	7.5	1850	9.0
02...	1155	1028	1028	1300	10	10.5	7.5	2040	8.9
02...	1156	1028	1028	1300	15	10.4	7.5	2270	9.0
02...	1157	1028	1028	1300	20	10.4	7.4	2450	9.0
02...	1158	1028	1028	1300	25	10.3	7.5	2560	9.6
02...	1159	1028	1028	1300	30	10.3	7.5	2610	9.7
02...	1202	1028	1028	1800	1	10.6	7.5	1770	9.2
02...	1203	1028	1028	1800	5	10.5	7.5	1770	9.0
02...	1204	1028	1028	1800	10	10.5	7.5	1910	8.9
02...	1205	1028	1028	1800	15	10.4	7.4	2690	9.2
02...	1206	1028	1028	1800	20	10.4	7.5	2410	9.1
02...	1207	1028	1028	1800	25	10.3	7.5	2830	9.4
02...	1208	1028	1028	1800	30	10.3	7.5	2850	9.5
02...	1209	1028	1028	2300	1	10.4	7.5	1860	9.0
02...	1210	1028	1028	2300	5	10.4	7.5	1880	8.9
02...	1211	1028	1028	2300	10	10.4	7.5	1980	8.9
02...	1212	1028	1028	2300	15	10.4	7.4	2370	8.9
02...	1213	1028	1028	2300	20	10.3	7.4	2840	9.1
02...	1214	1028	1028	2300	25	10.3	7.4	3070	9.5
02...	1215	1028	1028	2300	30	10.3	7.5	3080	9.6
02...	1216	1028	1028	2300	35	10.3	7.5	3100	9.6
02...	1217	1028	1028	2800	1	10.5	7.5	2010	9.1
02...	1218	1028	1028	2800	5	10.5	7.5	2130	9.0
02...	1219	1028	1028	2800	10	10.4	7.5	2190	9.0
02...	1220	1028	1028	2800	15	10.4	7.5	2210	9.0
02...	1221	1028	1028	2800	20	10.4	7.5	2310	9.0
02...	1222	1028	1028	2800	25	10.4	7.5	2600	9.1
02...	1223	1028	1028	2800	30	10.3	7.5	2840	9.3
02...	1224	1028	1028	2800	35	10.3	7.5	2880	9.4
02...	1225	1028	1028	3300	1	10.4	7.5	2150	9.1
02...	1226	1028	1028	3300	5	10.4	7.5	2140	9.0
02...	1227	1028	1028	3300	10	10.4	7.5	2150	8.9
02...	1228	1028	1028	3300	15	10.4	7.5	2400	8.9
02...	1229	1028	1028	3300	20	10.4	7.5	2450	8.9
02...	1230	1028	1028	3300	25	10.4	7.5	2670	9.0
02...	1231	1028	1028	3300	30	10.4	7.5	2830	9.0
02...	1232	1028	1028	3300	35	10.4	7.5	2820	9.0
02...	1233	1028	1028	3300	40	10.4	7.5	2800	9.0
02...	1234	1028	1028	3800	1	10.5	7.5	2470	9.2
02...	1235	1028	1028	3800	5	10.5	7.5	2560	9.2
02...	1236	1028	1028	3800	10	10.5	7.5	2610	9.0
02...	1237	1028	1028	3800	15	10.4	7.5	2750	8.9
02...	1238	1028	1028	3800	20	10.4	7.5	2740	8.9
02...	1239	1028	1028	3800	25	10.4	7.5	2730	8.9
02...	1240	1028	1028	3800	30	10.4	7.5	2740	8.8
02...	1241	1028	1028	3800	35	10.4	7.5	2780	8.8
02...	1242	1028	1028	3800	40	10.4	7.5	2810	8.8
02...	1243	1028	1028	3800	45	10.4	7.5	2870	8.8
02...	1244	1028	1028	4300	1	10.5	7.5	2740	9.0
02...	1245	1028	1028	4300	5	10.4	7.5	2820	8.8
02...	1246	1028	1028	4300	10	10.4	7.5	3000	8.8
02...	1247	1028	1028	4300	15	10.4	7.5	3030	8.8
02...	1248	1028	1028	4300	20	10.4	7.5	3100	8.8
02...	1249	1028	1028	4300	25	10.4	7.5	3180	8.8
02...	1250	1028	1028	4300	30	10.4	7.5	3200	8.8
02...	1251	1028	1028	4300	35	10.4	7.5	3130	8.8
02...	1252	1028	1028	4300	40	10.4	7.5	3150	8.8
02...	1253	1028	1028	4300	45	10.4	7.5	3120	8.8
02...	1254	1028	1028	4300	50	10.4	7.5	3080	8.8
02...	1255	1028	1028	4800	1	10.4	7.5	2800	9.3
02...	1256	1028	1028	4800	5	10.5	7.5	2890	9.1
02...	1257	1028	1028	4800	10	10.4	7.5	2900	8.9
02...	1258	1028	1028	4800	15	10.4	7.5	2920	8.8
02...	1259	1028	1028	4800	20	10.4	7.5	3000	8.8
02...	1300	1028	1028	4800	25	10.4	7.5	3140	8.8
02...	1301	1028	1028	4800	30	10.4	7.5	3160	8.8
02...	1302	1028	1028	4800	35	10.4	7.5	3190	8.8
02...	1303	1028	1028	4800	40	10.4	7.5	3180	8.8
02...	1304	1028	1028	4800	45	10.4	7.5	3190	8.8
02...	1305	1028	1028	5300	1	10.5	7.5	2900	9.8
02...	1306	1028	1028	5300	5	10.5	7.5	2880	9.7
02...	1307	1028	1028	5300	10	10.6	7.5	2820	9.3
02...	1308	1028	1028	5300	15	10.6	7.5	2920	9.2
02...	1309	1028	1028	5300	20	10.5	7.5	2980	9.2
02...	1310	1028	1028	5300	25	10.5	7.5	2960	9.3

01482800 DELAWARE RIVER AT REEDY ISLAND JETTY, DE—Continued

CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003--Continued

Date	Time	Agency col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Loca- tion in X-sect. looking downstrm ft from l bank (00009)	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf µS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)
APR 2003									
02...	1311	1028	1028	5300	30	10.5	7.5	3070	9.3
02...	1312	1028	1028	5300	35	10.5	7.5	3140	9.2
02...	1313	1028	1028	5800	1	10.5	7.5	1510	9.3
02...	1314	1028	1028	5800	5	10.5	7.4	2080	9.1
02...	1315	1028	1028	5800	10	10.5	7.4	2800	9.0
02...	1316	1028	1028	5800	15	10.5	7.4	2920	9.0
02...	1317	1028	1028	5800	20	10.5	7.5	2960	8.9
02...	1318	1028	1028	5800	25	10.5	7.5	2950	9.0
02...	1319	1028	1028	6300	1	10.5	7.5	830	9.4
02...	1320	1028	1028	6300	5	10.5	7.4	1090	9.1
02...	1321	1028	1028	6300	10	10.5	7.3	1770	9.0
02...	1322	1028	1028	6300	15	10.5	7.3	2790	8.9
02...	1323	1028	1028	6300	20	10.5	7.3	2850	8.8
02...	1324	1028	1028	6800	1	10.5	7.5	560	9.4
02...	1325	1028	1028	6800	5	10.6	7.4	1100	9.2
02...	1326	1028	1028	6800	10	10.6	7.3	1760	8.8
02...	1327	1028	1028	6800	15	10.5	7.3	2360	8.8
02...	1328	1028	1028	7300	1	10.4	7.3	520	9.2
02...	1329	1028	1028	7300	5	10.5	7.4	640	8.9
02...	1330	1028	1028	7300	10	10.5	7.3	1300	8.9
02...	1331	1028	1028	7500	0	--	--	--	--



Base from U.S. Geological Survey digital line graph files, 1:24,000

**Figure 48.** Location of sites in the Ambient Ground-Water-Quality Network, water year 2003.

WATERSHED MANAGEMENT AREA 1

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
410390	403951075075301	NJDEP MW93	403951	750752	280	76	56 - 76	364JKBG
410461	404146075112101	NJDEP MW119	404146	751120	316	160	140 - 160	360KTTN
410389	404324075041801	NJDEP MW94	404324	750417	405	158	138 - 158	371ALNN
410460	404937074580501	NJDEP MW105	404937	745804	440	52	42 - 52	112SFDF
410459	410033074544701	NJDEP MW96	410033	745446	495	100	75 - 100	371ALNN
370474	*410433074394001	NJDEP MW111	410433	743939	615	22	17 - 22	112SFDF

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.

AQUIFER UNITS.-- 364JKBG, Jacksonburg Limestone; 360KTTN, Kittatiny Limestone; 371ALNN, Allentown Dolomite; 112SFDF, Stratified Drift.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)
WARREN COUNTY										
NJDEP MW93	403951075075301	12-16-02	1230	0.52	90	10	748	8.8	82	7.0
NJDEP MW119	404146075112101	06-26-03	1310	0.60	180	5.3	752	6.8	69	8.4
NJDEP MW94	404324075041801	12-04-02	1150	0.60	85	0.5	764	9.0	83	8.1
NJDEP MW105	404937074580501	06-25-03	1130	1.0	75	1.5	751	11.0	100	--
NJDEP MW96	410033074544701	06-24-03	1130	2.5	60	5.2	760	4.3	42	6.9
SUSSEX COUNTY										
NJDEP MW111	410433074394001	11-18-02	1015	0.25	35	0.9	744	8.6	84	7.4

MULTIPLE STATION ANALYSES

Local identifier	Date	Specif. conductance, wat unfiltered uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water field, mg/L as CaCO3 (39086)	Bicarbonate, water field, titr., mg/L (00453)	Chloride, water, fltrd, mg/L (00940)
WARREN COUNTY											
NJDEP MW93	12-16-02	1,710	11.0	390	113	24.8	6.42	192	239	291	362
NJDEP MW119	06-26-03	408	15.4	190	36.8	23.5	3.31	15.5	141	170	31.5
NJDEP MW94	12-04-02	520	12.0	230	48.6	26.8	2.01	21.2	157	190	38.5
NJDEP MW105	06-25-03	408	10.3	230	49.0	25.1	1.13	1.91	196	239	3.85
NJDEP MW96	06-24-03	590	14.5	340	69.4	39.9	1.19	4.55	291	355	8.60
SUSSEX COUNTY											
NJDEP MW111	11-18-02	1,090	13.0	320	82.1	28.1	2.35	102	246	299	110

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 1—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)
WARREN COUNTY											
NJDEP MW93	12-16-02	<0.17	7.0	33.0		938	<0.10	<0.04	4.81	<0.008	<0.02
NJDEP MW119	06-26-03	<0.17	13.1	22.5	249	245	<0.10	<0.04	4.28	0.049	<0.02
NJDEP MW94	12-04-02	<0.17	16.1	13.2	309	301	<0.10	E.04	11.2	0.025	<0.02
NJDEP MW105	06-25-03	<0.17	8.5	11.9	237	225	<0.10	<0.04	4.20	<0.008	<0.02
NJDEP MW96	06-24-03	<0.17	5.8	22.8	330	331	E.06	<0.04	0.66	<0.008	<0.02

## SUSSEX COUNTY

NJDEP MW111	11-18-02	<0.17	7.7	25.3		645	0.12	<0.04	24.2	<0.008	<0.02
-------------	----------	-------	-----	------	--	-----	------	-------	------	--------	-------

## MULTIPLE STATION ANALYSES

Local identifier	Date	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)
WARREN COUNTY											
NJDEP MW93	12-16-02	0.6	<2	<0.30	<0.3	139	<0.06	25	0.04	1.0	0.5
NJDEP MW119	06-26-03	E.2	4	<0.30	0.4	31	<0.06	7	<0.04	4.0	0.3
NJDEP MW94	12-04-02	0.4	5	<0.30	<0.3	44	<0.06	12	<0.04	E.8	0.3
NJDEP MW105	06-25-03	0.4	<2	<0.30	<0.3	12	<0.06	11	<0.04	E.5	0.3
NJDEP MW96	06-24-03	0.5	3	<0.30	<0.3	14	<0.06	E5	0.04	1.2	0.4

## SUSSEX COUNTY

NJDEP MW111	11-18-02	0.7	E1	<0.30	<0.3	22	<0.06	23	<0.04	E.5	0.4
-------------	----------	-----	----	-------	------	----	-------	----	-------	-----	-----

## MULTIPLE STATION ANALYSES

Local identifier	Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)
WARREN COUNTY											
NJDEP MW93	12-16-02	<10	0.10	4.3	<0.02	9.31	2.0	0.3	E.03	7	<0.1
NJDEP MW119	06-26-03	E4	<0.08	0.2	<0.02	2.21	0.9	<0.2	<0.04	1	0.4
NJDEP MW94	12-04-02	<10	E.07	14.2	<0.02	3.09	1.1	<0.2	0.09	2	<0.1
NJDEP MW105	06-25-03	<8	<0.08	<0.2	<0.02	1.79	<0.5	<0.2	<0.04	M	<0.1
NJDEP MW96	06-24-03	E4	0.26	0.9	<0.02	2.97	<0.5	<0.2	<0.04	2	<0.1

## SUSSEX COUNTY

NJDEP MW111	11-18-02	<10	<0.08	1.0	<0.02	2.99	E.4	<0.2	<0.04	1	<0.1
-------------	----------	-----	-------	-----	-------	------	-----	------	-------	---	------

## MULTIPLE STATION ANALYSES

Local identifier	Date	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)
WARREN COUNTY											
NJDEP MW93	12-16-02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
NJDEP MW119	06-26-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	0.2
NJDEP MW94	12-04-02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
NJDEP MW105	06-25-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
NJDEP MW96	06-24-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1

## SUSSEX COUNTY

NJDEP MW111	11-18-02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
-------------	----------	------	------	------	------	------	------	------	------	------	------



WATERSHED MANAGEMENT AREA 1—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl-tert-pentyl ether, water, unfltrd ug/L (50005)	meta-+ para-Xylene, water, unfltrd ug/L (85795)
WARREN COUNTY											
NJDEP MW93	12-16-02	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
NJDEP MW119	06-26-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
NJDEP MW94	12-04-02	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
NJDEP MW105	06-25-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
NJDEP MW96	06-24-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2

SUSSEX COUNTY

NJDEP MW111	11-18-02	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
-------------	----------	------	------	------	------	------	------	------	------	------	------

MULTIPLE STATION ANALYSES

Local identifier	Date	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)
WARREN COUNTY											
NJDEP MW93	12-16-02	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
NJDEP MW119	06-26-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
NJDEP MW94	12-04-02	<0.1	<0.1	<0.1	0.2	<0.1	<0.2	<0.1	<0.1	<0.2	1.9
NJDEP MW105	06-25-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
NJDEP MW96	06-24-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1

SUSSEX COUNTY

NJDEP MW111	11-18-02	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
-------------	----------	------	------	------	------	------	------	------	------	------	------

MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	Alpha radio-activity 2-sigma wat flt Th-230, pCi/L (75987)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Beta radio-activity 2-sigma wat flt CS-137, pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
WARREN COUNTY								
NJDEP MW93	12-16-02	<0.2	<0.1	<0.2	8.3	8	6.0	13
NJDEP MW119	06-26-03	<0.2	0.7	<0.2	1.1	M	1.7	5
NJDEP MW94	12-04-02	<0.2	<0.1	<0.2	2.6	M	1.9	4
NJDEP MW105	06-25-03	<0.2	<0.1	<0.2	1.6	2	2.6	2
NJDEP MW96	06-24-03	<0.2	<0.1	<0.2	1.7	M	2.6	4

SUSSEX COUNTY

NJDEP MW111	11-18-02	<0.2	<0.1	<0.2	2.8	M	4.3	8
-------------	----------	------	------	------	-----	---	-----	---

Remark codes used in this table:

- < -- Less than
- E -- Estimated value
- M -- Presence verified, not quantified

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 1—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
WARREN COUNTY										
NJDEP MW93	403951075075301	12-16-02	1230	E.134	<0.006	<0.004	0.216	<0.018	<0.005	<0.005
NJDEP MW119	404146075112101	06-26-03	1310	E.085	<0.006	<0.004	0.086	<0.018	<0.005	<0.005
NJDEP MW94	404324075041801	12-04-02	1150	E.355	E.005	0.270	0.341	<0.018	<0.005	<0.005
NJDEP MW105	404937074580501	06-25-03	1130	E.276	<0.006	<0.004	0.228	<0.018	<0.005	<0.005
NJDEP MW96	410033074544701	06-24-03	1130	E.055	<0.006	<0.004	0.024	<0.018	<0.005	<0.005
SUSSEX COUNTY										
NJDEP MW111	410433074394001	11-18-02	1015	E.946	<0.006	<0.004	2.50	<0.018	<0.005	<0.005

## MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
WARREN COUNTY								
NJDEP MW93	12-16-02	<0.004	<0.009	<0.005	<0.005	E.002	0.06	0.023
NJDEP MW119	06-26-03	<0.004	<0.009	<0.005	<0.005	<0.013	0.02	<0.005
NJDEP MW94	12-04-02	<0.004	<0.009	<0.005	<0.005	4.52	<0.01	0.006
NJDEP MW105	06-25-03	<0.004	<0.009	<0.005	<0.005	E.008	<0.01	0.010
NJDEP MW96	06-24-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
SUSSEX COUNTY								
NJDEP MW111	11-18-02	<0.004	<0.009	<0.005	<0.005	1.33	<0.01	0.051

Remark codes used in this table:

< -- Less than

E -- Estimated value

WATERSHED MANAGEMENT AREA 3

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
310184	*410214074204501	NJDEP MW81	410214	742044	560	29	19 - 29	112SFDF

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.  
 AQUIFER UNITS.--112SFDF, Stratified Drift.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)
PASSAIC COUNTY										
NJDEP MW81	410214074204501	11-20-02	1015	0.25	60	1.6	750	3.4	32	7.0

MULTIPLE STATION ANALYSES

Local identifier	Date	Specif. conductance, wat unfiltered, uS/cm 25 degC (00955)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Bicarbonate, wat fltr incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)
PASSAIC COUNTY											
NJDEP MW81	11-20-02	206	12.5	79	18.8	7.77	3.48	6.84	65	11.6	<0.17

MULTIPLE STATION ANALYSES

Local identifier	Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat fltr mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)
PASSAIC COUNTY											
NJDEP MW81	11-20-02	18.6	12.3	126	E.09	<0.04	0.14	<0.008	<0.02	0.6	2

MULTIPLE STATION ANALYSES

Local identifier	Date	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)
PASSAIC COUNTY											
NJDEP MW81	11-20-02	<0.30	<0.3	39	<0.06	15	0.05	<0.8	0.6	<10	<0.08

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 3—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Manganese, water, fltrd, ug/L (01056)	Mercury, water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)
------------------	------	---------------------------------------	-------------------------------------	------------------------------------	--------------------------------------	------------------------------------	--------------------------------------	----------------------------------	--	------------------------------------	--

## PASSAIC COUNTY

NJDEP MW81	11-20-02	120	<0.02	2.12	E.3	<0.2	0.05	51	<0.1	<0.1	<0.1
------------	----------	-----	-------	------	-----	------	------	----	------	------	------

## MULTIPLE STATION ANALYSES

Local identifier	Date	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)
------------------	------	---	--	---	--	--	--	------------------------------------	--	---	---

## PASSAIC COUNTY

NJDEP MW81	11-20-02	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
------------	----------	------	------	------	------	------	------	------	------	------	------

## MULTIPLE STATION ANALYSES

Local identifier	Date	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unf ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)
------------------	------	--	--	--	---	---	--	---	--	---------------------------------------	------------------------------------

## PASSAIC COUNTY

NJDEP MW81	11-20-02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	E.1	<0.1	<0.1
------------	----------	------	------	------	------	------	------	------	-----	------	------

## MULTIPLE STATION ANALYSES

Local identifier	Date	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)
------------------	------	--	---	--	---	------------------------------------	---	--	--	--	---

## PASSAIC COUNTY

NJDEP MW81	11-20-02	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1
------------	----------	------	------	------	------	------	------	------	------	------	------

## MULTIPLE STATION ANALYSES

Local identifier	Date	Vinyl chloride, water, unfltrd ug/L (39175)	Alpha radio-activty 2-sigma wat flt Th-230, pCi/L (75987)	Alpha radio-activty water, fltrd, Th-230, pCi/L (04126)	Beta radio-activty 2-sigma wat flt CS-137, pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
------------------	------	---	---	---	--	--

## PASSAIC COUNTY

NJDEP MW81	11-20-02	<0.2	0.70	M	1.6	5
------------	----------	------	------	---	-----	---

Remark codes used in this table:

< -- Less than

E -- Estimated value

M-- Presence verified, not quantified

WATERSHED MANAGEMENT AREA 3—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
PASSAIC COUNTY										
NJDEP MW81	410214074204501	11-20-02	1015	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005

MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
PASSAIC COUNTY								
NJDEP MW81	11-20-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005

Remark codes used in this table:  
 < -- Less than

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 6

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
272062	*404944074232401	NJDEP MW79	404944	742323	200	20	15 - 20	112SFDF
272061	*405309074315301	NJDEP MW131	405309	743152	610	26	16 - 26	112SFDF
272068	405537074361401	NJDEP MW83	405537	743614	700	55	45 - 55	112SFDF

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.

AQUIFER UNITS.--112SFDF, Stratified Drift.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Sample type	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)
MORRIS COUNTY									
NJDEP MW79	404944074232401	10-29-02	1030	Environmental	0.25	35	1.8	762	0.6
NJDEP MW131	405309074315301	11-13-02	0945	<i>Ambient Blank</i>	--	--	--	--	--
		11-13-02	1000	Environmental	0.25	35	1.1	745	0.6
NJDEP MW83	405537074361401	09-11-03	1250	Environmental	--	135	65	755	6.7

## MULTIPLE STATION ANALYSES

Local identifier	Date	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)
MORRIS COUNTY											
NJDEP MW79	10-29-02	6	7.8	624	13.0	330	80.8	31.0	1.27	12.2	--
NJDEP MW131	11-13-02	--	--	--	--	--	--	--	--	--	--
	11-13-02	6	6.3	1,540	15.0	320	79.1	29.1	3.12	165	124
NJDEP MW83	09-11-03	65	8.1	146	13.5	73	18.7	6.27	0.43	2.49	61

## MULTIPLE STATION ANALYSES

Local identifier	Date	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MORRIS COUNTY											
NJDEP MW79	10-29-02	328	2.87	0.25	18.7	36.7	--	368	E.05	<0.04	E.03
NJDEP MW131	11-13-02	--	--	--	--	--	--	--	--	--	--
	11-13-02	151	390	<0.17	13.0	9.7	782	820	0.12	0.07	0.14
NJDEP MW83	09-11-03	75	4.07	<0.17	18.0	8.4	95	100	<0.10	<0.04	E.04

WATERSHED MANAGEMENT AREA 6—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic, fltrd, ug/L (01000)	Barium, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, fltrd, ug/L (01020)	Cadmium, water, fltrd, ug/L (01025)
------------------	------	---	--	--	--------------------------------------	--------------------------------------	------------------------------	-----------------------------	---------------------------------------	----------------------------	-------------------------------------

MORRIS COUNTY

NJDEP MW79	10-29-02	<0.008	0.04	1.1	3	<0.30	1.6	49	<0.06	48	<0.04
NJDEP MW131	11-13-02	--	--	--	--	--	--	--	--	--	--
	11-13-02	0.010	<0.02	3.3	E1	<0.30	<0.3	313	E.04	13	<0.04
NJDEP MW83	09-11-03	0.009	<0.02	0.7	8	<0.30	2.0	3	<0.06	<7	<0.04

MULTIPLE STATION ANALYSES

Local identifier	Date	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury, water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)
------------------	------	--------------------------------------	------------------------------------	----------------------------------	----------------------------------	---------------------------------------	-------------------------------------	------------------------------------	--------------------------------------	------------------------------------	--------------------------------------

MORRIS COUNTY

NJDEP MW79	10-29-02	<0.8	0.6	<10	<0.08	364	<0.02	1.79	0.5	<0.2	<0.04
NJDEP MW131	11-13-02	--	--	--	--	--	--	--	--	--	--
	11-13-02	<0.8	0.6	16,000	0.54	2,450	<0.02	2.07	E.3	<0.2	<0.04
NJDEP MW83	09-11-03	1.6	0.8	<8	<0.08	12.3	<0.02	0.69	<0.5	<0.2	<0.04

MULTIPLE STATION ANALYSES

Local identifier	Date	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd, ug/L (34506)	CFC-113, water, unfltrd, ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd, ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd, ug/L (34501)	1,2,3,5-Tetra-methyl-benzene, water, unfltrd, ug/L (50000)	1,2,3-Tri-methyl-benzene, water, unfltrd, ug/L (77221)	1,2,4-Tri-methyl-benzene, water, unfltrd, ug/L (77222)	1,2-Di-chloro-benzene, water, unfltrd, ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd, ug/L (32103)
------------------	------	----------------------------------	---	---------------------------------------	--	--	--	--	--	---	--

MORRIS COUNTY

NJDEP MW79	10-29-02	M	<0.1	<0.1	<0.1	<0.1	--	--	--	<0.1	<0.2
NJDEP MW131	11-13-02	--	<0.1	<0.1	<0.1	<0.1	--	--	--	<0.1	<0.2
	11-13-02	2	<1.00	<1.00	<1.00	<1.00	35.2	3.8	32.3	<1.00	<2.0
NJDEP MW83	09-11-03	<1	<0.1	<0.1	<0.1	<0.1	--	--	--	<0.1	<0.2

MULTIPLE STATION ANALYSES

Local identifier	Date	1,2-Di-chloro-propane, water, unfltrd, ug/L (34541)	1,3-Di-chloro-benzene, water, unfltrd, ug/L (34566)	1,4-Di-chloro-benzene, water, unfltrd, ug/L (34571)	2-Ethyl-toluene, water, unfltrd, ug/L (77220)	4-Iso-propyl-toluene, water, unfltrd, ug/L (77356)	Benzene, water, unfltrd, ug/L (34030)	Bromo-di-chloro-methane, water, unfltrd, ug/L (32101)	Chloro-benzene, water, unfltrd, ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd, ug/L (77093)	Di-bromo-chloro-methane, water, unfltrd, ug/L (32105)
------------------	------	---	---	---	---	--	---------------------------------------	---	--	--	---

MORRIS COUNTY

NJDEP MW79	10-29-02	<0.1	<0.1	<0.1	--	--	<0.1	<0.1	<0.1	<0.1	<0.2
NJDEP MW131	11-13-02	<0.1	<0.1	<0.1	--	--	<0.1	<0.1	<0.1	<0.1	<0.2
	11-13-02	<1.00	<1.00	<1.00	14.1	2.44	1.40	<1.00	<1.00	<1.00	<2.0
NJDEP MW83	09-11-03	<0.1	<0.1	<0.1	--	--	<0.1	<0.1	<0.1	<0.1	<0.2

MULTIPLE STATION ANALYSES

Local identifier	Date	Di-chloro-di-fluoro-methane, water, unfltrd, ug/L (34668)	Di-chloro-methane, water, unfltrd, ug/L (34423)	Di-ethyl ether, water, unfltrd, ug/L (81576)	Diiso-propyl ether, water, unfltrd, ug/L (81577)	Ethyl-benzene, water, unfltrd, ug/L (34371)	Iso-propyl-benzene, water, unfltrd, ug/L (77223)	Methyl tert-pentyl ether, water, unfltrd, ug/L (50005)	meta+ para-Xylene, water, unfltrd, ug/L (85795)	Naphthalene, water, unfltrd, ug/L (34696)	n-Butyl benzene, water, unfltrd, ug/L (77342)
------------------	------	---	---	--	--	---	--	--	---	---	---

MORRIS COUNTY

NJDEP MW79	10-29-02	<0.2	<0.2	<0.2	<0.2	<0.1	--	<0.2	<0.2	--	--
NJDEP MW131	11-13-02	<0.2	<0.2	<0.2	<0.2	<0.1	--	<0.2	<0.2	--	--
	11-13-02	<2.00	<2.0	<2.0	<2.00	38.3	5.75	<2.00	22.2	8.0	6.3
NJDEP MW83	09-11-03	<0.2	<0.2	<0.2	<0.2	<0.1	--	<0.2	<0.2	--	--

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 6—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	n-propyl-benzene water unfltrd ug/L (77224)	o-Xylene, water, unfltrd ug/L (77135)	sec-Butyl-benzene water unfltrd ug/L (77350)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)
MORRIS COUNTY											
NJDEP MW79	10-29-02	--	<0.1	--	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW131	11-13-02	--	<0.1	--	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
	11-13-02	16.9	1.06	6.07	<1.00	<1.00	<2.0	<1.00	<2.00	<1.67	<1.00
NJDEP MW83	09-11-03	--	<0.1	--	<0.1	<0.1	E.1	<0.1	<0.2	<0.1	<0.1

## MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)	Alpha radio-activity 2-sigma wat flt Th-230, pCi/L (75987)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Beta radio-activity 2-sigma wat flt CS-137, pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
MORRIS COUNTY										
NJDEP MW79	10-29-02	<0.2	<0.1	<0.2	<0.1	<0.2	3.0	1	2.2	3
NJDEP MW131	11-13-02	<0.2	<0.1	<0.2	<0.1	<0.2	--	--	--	--
	11-13-02	<2.00	<1.00	<2.00	<1.00	<2.0	7.6	14	4.6	15
NJDEP MW83	09-11-03	<0.2	<0.1	<0.2	0.2	<0.2	0.74	M	1.0	M

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
MORRIS COUNTY										
NJDEP MW79	404944074232401	10-29-02	1030	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW131	405309074315301	11-13-02	1000	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW83	405537074361401	09-11-03	1250	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005

## MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf- inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf- inyl-fipro-nil, amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
MORRIS COUNTY								
NJDEP MW79	10-29-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW131	11-13-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	0.010
NJDEP MW83	09-11-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005

Remark codes used in this table:

< -- Less than

E -- Estimated value

M -- Presence verified, not quantified



WATERSHED MANAGEMENT AREA 7

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
231367	403422074192001	NJDEP MW135	403422	741920	60	27	22 - 27	227PSSC
390500	*403946074193901	NJDEP MW136	403946	741938	95	17	12 - 17	227PSSC
130184	*404332074104201	NJDEP MW140	404332	741042	20	36	26 - 36	227PSSC

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.

AQUIFER UNITS.--227PSSC, Passaic Formation.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Sample type	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)
MIDDLESEX COUNTY									
NJDEP MW135	403422074192001	10-22-02	1010	Environmental	--	55	8.3	768	1.8
UNION COUNTY									
NJDEP MW136	403946074193901	11-12-02	0915	Environmental	0.25	30	0.3	764	0.3
ESSEX COUNTY									
NJDEP MW140	404332074104201	09-09-03 09-09-03	1000 1030	Ambient Blank Environmental	-- 0.50	-- 40	-- 0.9	-- 770	-- 1.6

MULTIPLE STATION ANALYSES

Local identifier	Date	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)
MIDDLESEX COUNTY											
NJDEP MW135	10-22-02	17	6.9	416	14.0	150	35.7	13.9	7.78	20.6	109
UNION COUNTY											
NJDEP MW136	11-12-02	3	6.2	320	15.0	140	35.5	11.3	0.77	14.4	98
ESSEX COUNTY											
NJDEP MW140	09-09-03 09-09-03	-- 17	-- 7.1	-- 1,900	-- 15.3	-- 520	-- 185	-- 14.6	-- 6.86	-- 147	-- 203

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 7—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Bicarbonate, water, titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue, water, fltrd, sum of constituents, mg/L (70301)	Residue, on evap. at 180degC, wat flt, mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia, water, fltrd, mg/L as N (00608)	Nitrite + nitrate, water, fltrd, mg/L as N (00631)
MIDDLESEX COUNTY											
NJDEP MW135	10-22-02	132	50.3	<0.17	25.1	13.7	233	237	E.09	0.06	<0.06
UNION COUNTY											
NJDEP MW136	11-12-02	119	13.9	<0.17	30.8	32.2	201	225	0.20	<0.04	0.55
ESSEX COUNTY											
NJDEP MW140	09-09-03 09-09-03	-- 247	-- 395	-- <0.17	-- 16.4	-- 71.7	-- 992	-- 1,170	-- 0.11	-- <0.04	-- 7.44

## MULTIPLE STATION ANALYSES

Local identifier	Date	Nitrite, water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic, water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium, water, fltrd, ug/L (01025)
MIDDLESEX COUNTY											
NJDEP MW135	10-22-02	<0.008	<0.02	0.9	2	<0.30	0.6	245	<0.06	268	0.16
UNION COUNTY											
NJDEP MW136	11-12-02	0.010	<0.02	3.8	3	<0.30	2.5	101	E.04	15	0.12
ESSEX COUNTY											
NJDEP MW140	09-09-03 09-09-03	-- <0.008	-- <0.18	-- 1.3	-- E1	-- <0.30	-- E.2	-- 87	-- <0.06	-- 65	-- E.04

## MULTIPLE STATION ANALYSES

Local identifier	Date	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury, water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)
MIDDLESEX COUNTY											
NJDEP MW135	10-22-02	2.0	0.6	233	1.31	352	<0.02	2.83	<0.5	<0.2	<0.04
UNION COUNTY											
NJDEP MW136	11-12-02	<0.8	1.5	690	0.79	374	<0.02	12.8	E.4	<0.2	<0.04
ESSEX COUNTY											
NJDEP MW140	09-09-03 09-09-03	-- <0.8	-- 2.6	-- E4	-- <0.08	-- 73.1	-- <0.02	-- 3.12	-- 3.1	-- <0.2	-- <0.04

WATERSHED MANAGEMENT AREA 7—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)
MIDDLESEX COUNTY											
NJDEP MW135	10-22-02	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
UNION COUNTY											
NJDEP MW136	11-12-02	5	<0.1	<0.1	0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
ESSEX COUNTY											
NJDEP MW140	09-09-03 09-09-03	-- 2	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.2 <0.2	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)
MIDDLESEX COUNTY											
NJDEP MW135	10-22-02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
UNION COUNTY											
NJDEP MW136	11-12-02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
ESSEX COUNTY											
NJDEP MW140	09-09-03 09-09-03	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 1.1	<0.2 <0.2	<0.2 <0.2	<0.2 <0.2	<0.2 <0.2	<0.2 <0.2	<0.1 <0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)
MIDDLESEX COUNTY											
NJDEP MW135	10-22-02	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
UNION COUNTY											
NJDEP MW136	11-12-02	<0.2	<0.2	<0.1	<0.1	<0.1	E.1	<0.1	<0.2	<0.1	<0.1
ESSEX COUNTY											
NJDEP MW140	09-09-03 09-09-03	<0.2 <0.2	<0.2 <0.2	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.2 0.2	<0.1 14.1	<0.2 <0.2	<0.1 <0.1	<0.1 <0.1

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 7—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	Alpha radio-activity 2-sigma Th-230, pCi/L (75987)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Beta radio-activity 2-sigma wat flt pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
MIDDLESEX COUNTY										
NJDEP MW135	10-22-02	<0.2	<0.1	<0.2	<0.1	<0.2	1.3	3	3.0	7
UNION COUNTY										
NJDEP MW136	11-12-02	<0.2	<0.1	<0.2	<0.1	<0.2	1.5	3	1.7	5
ESSEX COUNTY										
NJDEP MW140	09-09-03 09-09-03	<0.2 <0.2	<0.1 3.2	<0.2 <0.2	<0.1 2.4	<0.2 <0.2	-- 8.4	-- 2	-- 7.9	-- 13

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
MIDDLESEX COUNTY										
NJDEP MW135	403422074192001	10-22-02	1010	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
UNION COUNTY										
NJDEP MW136	403946074193901	11-12-02	0915	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
ESSEX COUNTY										
NJDEP MW140	404332074104201	09-09-03	1030	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005

## MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipronil, water, fltrd, ug/L (62170)	Desulf-inyl-fipronil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-thon, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
MIDDLESEX COUNTY								
NJDEP MW135	10-22-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
UNION COUNTY								
NJDEP MW136	11-12-02	0.007	E.005	E.004	E.006	<0.013	<0.01	<0.005
ESSEX COUNTY								
NJDEP MW140	09-09-03	<0.004	<0.009	<0.005	<0.005	<0.013	E.01	<0.005

Remark codes used in this table:

< -- Less than

E -- Estimated value

WATERSHED MANAGEMENT AREA 8

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
190452	402501074505001	NJDEP MW106	402500	745050	310	119	94 - 119	227PSSC
190456	*402633074541301	NJDEP MW91	402633	745413	200	37	12 - 37	227PSSC
190455	403100074464101	NJDEP MW107	403100	744641	150	41	21 - 41	227PSSC
190453	403347074575101	NJDEP MW98	403348	745751	540	60	40 - 60	231LCKG
190451	*403921074515901	NJDEP MW101	403921	745159	370	37	17 - 37	400PCMB
350138	403200074420601	NJDEP MW110	403200	744206	60	36	31 - 36	227PSSC
350142	403537074394401	NJDEP MW123	403537	743943	110	76	52 - 76	227PSSC
272063	*404828074403501	NJDEP MW87	404828	744034	695	30	21 - 30	112SFDF
272060	*404936074423101	NJDEP MW124	404936	744230	620	25	15 - 25	112SFDF

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.

AQUIFER UNITS.--227PSSC, Passaic Formation; 231LCKG, Lockatong Formation; 400PCMB, Precambrian Erathem; 112SFDF, Stratified Drift.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Sample type	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)
HUNTERDON COUNTY									
NJDEP MW106	402501074505001	07-01-03	0930	Field Blank	--	--	--	--	--
		07-01-03	1240	Environmental	0.70	90	2.8	756	6.9
NJDEP MW91	402633074541301	09-10-03	1115	Environmental	0.50	90	2.3	766	2.4
NJDEP MW107	403100074464101	06-26-03	1130	Environmental	1.0	55	5.9	755	2.0
NJDEP MW98	403347074575101	07-09-03	1100	Environmental	0.70	60	2.2	753	2.0
NJDEP MW101	403921074515901	06-24-03	1000	Environmental	0.50	60	0.3	753	4.0
SOMERSET COUNTY									
NJDEP MW110	403200074420601	11-04-02	1040	Environmental	0.42	40	8.8	762	0.9
NJDEP MW123	403537074394401	06-30-03	1030	Environmental	0.30	105	2.4	761	4.2
MORRIS COUNTY									
NJDEP MW87	404828074403501	07-08-03	1030	Environmental	0.50	35	2.2	740	4.0
NJDEP MW124	404936074423101	10-22-02	1000	Ambient Blank	--	--	--	--	--
		10-22-02	1015	Environmental	0.50	30	1.1	752	2.8

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 8—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)
HUNTERDON COUNTY											
NJDEP MW106	07-01-03	--	--	--	--	--	<i>E.01</i>	<i>&lt;0.008</i>	--	<i>E.08</i>	--
	07-01-03	71	7.8	429	16.4	190	51.3	14.5	3.20	13.3	92
NJDEP MW91	09-10-03	21	7.1	290	12.3	130	34.3	11.8	0.71	7.61	102
NJDEP MW107	06-26-03	20	7.5	261	14.3	210	66.6	11.0	1.77	9.75	134
NJDEP MW98	07-09-03	19	7.2	275	11.4	130	30.6	13.4	0.87	7.25	112
NJDEP MW101	06-24-03	39	6.5	407	12.5	170	31.9	22.2	1.40	12.3	72
SOMERSET COUNTY											
NJDEP MW110	11-04-02	8	7.8	331	12.0	150	40.4	10.7	2.65	9.68	130
NJDEP MW123	06-30-03	43	7.0	1,400	16.5	600	176	39.2	1.53	25.6	154
MORRIS COUNTY											
NJDEP MW87	07-08-03	38	6.6	57	11.7	23	4.30	3.07	0.58	3.12	26
NJDEP MW124	10-22-02	--	--	--	--	--	--	--	--	--	--
	10-22-02	28	5.2	800	15.0	200	50.9	16.5	4.04	56.1	2

## MULTIPLE STATION ANALYSES

Local identifier	Date	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
HUNTERDON COUNTY											
NJDEP MW106	07-01-03	--	--	--	<i>&lt;0.02</i>	--	--	--	--	--	--
	07-01-03	112	31.1	<0.17	27.6	53.8	276	285	0.12	<0.04	5.79
NJDEP MW91	09-10-03	124	5.93	<0.17	16.7	16.1	173	172	0.13	E.02	4.25
NJDEP MW107	06-26-03	164	30.9	<0.17	16.2	27.1	283	290	<0.10	<0.04	8.84
NJDEP MW98	07-09-03	137	7.65	<0.17	18.7	23.6	178	167	<0.10	<0.04	1.77
NJDEP MW101	06-24-03	87	29.8	<0.17	34.3	39.7	255	269	0.12	<0.04	9.18
SOMERSET COUNTY											
NJDEP MW110	11-04-02	158	13.8	<0.17	20.8	10.1	197	200	<0.10	E.03	2.43
NJDEP MW123	06-30-03	187	336	<0.17	21.1	25.5	743	800	E.09	<0.04	5.69
MORRIS COUNTY											
NJDEP MW87	07-08-03	32	2.25	<0.17	15.1	0.5	45	41	0.11	0.05	E.05
NJDEP MW124	10-22-02	--	--	--	--	--	--	--	--	--	--
	10-22-02	3	225	<0.17	21.2	0.6	--	426	<0.10	<0.04	0.65

WATERSHED MANAGEMENT AREA 8—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)
HUNTERDON COUNTY											
NJDEP MW106	07-01-03	--	--	--	<2	<0.30	<0.3	<0.050	<0.06	<7	<0.04
	07-01-03	0.010	0.03	0.8	<3	<0.30	2.1	5	<0.06	24	<0.04
NJDEP MW91	09-10-03	E.004	0.06	1.1	M	<0.30	2.9	185	<0.06	20	<0.04
NJDEP MW107	06-26-03	0.104	0.03	0.8	4	<0.30	1.4	198	<0.06	15	0.09
NJDEP MW98	07-09-03	<0.008	<0.02	1.1	2	<0.30	4.1	185	<0.06	14	<0.04
NJDEP MW101	06-24-03	<0.008	0.03	0.5	<2	<0.30	<0.3	59	<0.06	13	<0.04
SOMERSET COUNTY											
NJDEP MW110	11-04-02	0.017	0.05	0.4	4	<0.30	5.6	373	<0.06	44	E.02
NJDEP MW123	06-30-03	<0.008	E.01	<0.3	<2	<0.30	0.6	777	<0.06	42	<0.04
MORRIS COUNTY											
NJDEP MW87	07-08-03	<0.008	<0.02	2.9	E1	<0.30	<0.3	8	<0.06	<7	0.08
NJDEP MW124	10-22-02	--	--	--	--	--	--	--	--	--	--
	10-22-02	<0.008	E.01	0.4	22	<0.30	<0.3	516	0.23	E5	0.54

MULTIPLE STATION ANALYSES

Local identifier	Date	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)
HUNTERDON COUNTY											
NJDEP MW106	07-01-03	<0.8	<0.2	<8	<0.08	<0.2	<0.02	<0.06	<0.5	<0.2	<0.04
	07-01-03	E.5	0.5	<8	<0.16	0.6	<0.02	2.62	<0.5	<0.2	<0.04
NJDEP MW91	09-10-03	<0.8	0.9	16	<0.08	59.3	<0.02	0.56	<0.5	<0.2	<0.04
NJDEP MW107	06-26-03	<0.8	1.1	E4	E.08	10.6	<0.02	2.75	E.3	<0.2	<0.04
NJDEP MW98	07-09-03	<0.8	0.5	151	0.10	52.5	<0.02	1.87	E.3	<0.2	<0.04
NJDEP MW101	06-24-03	2.3	0.6	<8	<0.08	2.5	<0.02	3.73	E.3	<0.2	<0.04
SOMERSET COUNTY											
NJDEP MW110	11-04-02	E.7	0.8	E9	E.05	60.9	<0.02	2.63	E.3	<0.2	E.02
NJDEP MW123	06-30-03	0.9	0.6	13	<0.08	2.0	<0.02	7.00	1.6	<0.2	<0.04
MORRIS COUNTY											
NJDEP MW87	07-08-03	<0.8	114	237	0.58	105	<0.02	3.15	0.6	<0.2	<0.04
NJDEP MW124	10-22-02	--	--	--	--	--	--	--	--	--	--
	10-22-02	E.5	0.8	<10	<0.08	339	0.08	8.56	<0.5	<0.2	E.03





WATERSHED MANAGEMENT AREA 8—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta- + para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)
HUNTERDON COUNTY											
NJDEP MW106	07-01-03	--	--	--	--	--	--	--	--	--	--
	07-01-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW91	09-10-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW107	06-26-03	<0.2	<0.2	<0.1	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.1
NJDEP MW98	07-09-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW101	06-24-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
SOMERSET COUNTY											
NJDEP MW110	11-04-02	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW123	06-30-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
MORRIS COUNTY											
NJDEP MW87	07-08-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW124	10-22-02	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
	10-22-02	<0.2	<0.2	<0.1	<0.1	<0.1	1.2	11.1	<0.2	<0.1	<0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)	Alpha radio-activity 2-sigma wat flt Th-230, pCi/L (75987)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Beta radio-activity 2-sigma wat flt CS-137, pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
HUNTERDON COUNTY										
NJDEP MW106	07-01-03	--	--	--	--	--	--	--	--	--
	07-01-03	<0.2	<0.1	<0.2	<0.1	<0.2	2.3	4	2.9	3
NJDEP MW91	09-10-03	<0.2	<0.1	<0.2	<0.1	<0.2	1.2	M	1.2	1
NJDEP MW107	06-26-03	<0.2	<0.1	<0.2	<0.1	<0.2	2.0	1	1.9	5
NJDEP MW98	07-09-03	<0.2	<0.1	<0.2	<0.1	<0.2	1.6	1	1.9	2
NJDEP MW101	06-24-03	<0.2	<0.1	<0.2	<0.1	<0.2	1.1	M	2.8	6
SOMERSET COUNTY										
NJDEP MW110	11-04-02	<0.2	<0.1	<0.2	<0.1	<0.2	1.2	3	2.1	6
NJDEP MW123	06-30-03	<0.2	<0.1	<0.2	<0.1	<0.2	6.6	6	4.9	8
MORRIS COUNTY										
NJDEP MW87	07-08-03	<0.2	<0.1	<0.2	<0.1	<0.2	0.85	1	0.87	1
NJDEP MW124	10-22-02	<0.2	<0.1	<0.2	<0.1	<0.2	--	--	--	--
	10-22-02	<0.2	2.6	<0.2	<0.1	<0.2	3.9	2	3.0	6

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 8—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
HUNTERDON COUNTY										
NJDEP MW106	402501074505001	07-01-03	1240	E.414	0.008	<0.004	0.142	0.045	<0.005	<0.005
NJDEP MW91	402633074541301	09-10-03	1115	E.093	<0.006	<0.004	0.073	<0.018	<0.005	<0.005
NJDEP MW107	403100074464101	06-26-03	1130	E.023	<0.006	<0.004	0.009	<0.018	<0.005	<0.005
NJDEP MW98	403347074575101	07-09-03	1100	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW101	403921074515901	06-24-03	1000	E.113	<0.006	<0.004	0.089	<0.018	<0.005	<0.005
SOMERSET COUNTY										
NJDEP MW110	403200074420601	11-04-02	1040	E.013	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW123	403537074394401	06-30-03	1030	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
MORRIS COUNTY										
NJDEP MW87	404828074403501	07-08-03	1030	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW124	404936074423101	10-22-02	1015	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005

## MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
HUNTERDON COUNTY								
NJDEP MW106	07-01-03	<0.004	<0.009	<0.005	<0.005	0.064	<0.01	<0.005
NJDEP MW91	09-10-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW107	06-26-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW98	07-09-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW101	06-24-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
SOMERSET COUNTY								
NJDEP MW110	11-04-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW123	06-30-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
MORRIS COUNTY								
NJDEP MW87	07-08-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW124	10-22-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005

Remark codes used in this table:

< -- Less than

E -- Estimated value

M -- Presence verified, not quantified

WATERSHED MANAGEMENT AREA 9

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
231368	402046074261901	NJDEP MW126	402046	742618	65	38	33 - 38	211ODBG
231365	*402403074210201	NJDEP MW133	402403	742102	40	37	32 - 37	211ODBG
231366	402831074171901	NJDEP MW134	402831	741718	135	55	50 - 55	211ODBG
231370	*402907074255801	NJDEP MW127	402907	742557	85	51	26 - 51	227PSSC
231369	*403451074294801	NJDEP MW128	403451	742947	40	28	18 - 28	227PSSC
390501	*403617074265601	NJDEP MW129	403617	742655	58	23	13 - 23	112SFDF

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.

AQUIFER UNITS.--211ODBG, Old Bridge Sand Member of Magothy Formation; 227PSSC, Passaic Formation; 112SFDF, Stratified Drift.

REMARKS.--For definition of the type of quality-control data listed under SAMPLE TYPE, refer to "Water-Quality Control Data" in the Explanation of Water-Quality Records section of this report.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Sample type	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)
MIDDLESEX COUNTY									
NJDEP MW126	402046074261901	06-24-03	1100	Environmental	1.0	40	4.0	756	8.7
NJDEP MW133	402403074210201	10-25-02	1300	Equipment Blank	--	--	--	--	--
		10-28-02	1015	Environmental	0.25	45	1.8	765	0.5
NJDEP MW134	402831074171901	10-22-02	1440	Environmental	--	85	3.8	764	--
NJDEP MW127	402907074255801	06-16-03	1030	Environmental	0.50	115	0.2	767	5.4
NJDEP MW128	403451074294801	03-20-03	1000	Environmental	0.50	40	0.4	768	3.0
UNION COUNTY									
NJDEP MW129	403617074265601	01-14-03	1015	Environmental	0.50	--	1.9	764	4.0

MULTIPLE STATION ANALYSES

Local identifier	Date	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)
MIDDLESEX COUNTY											
NJDEP MW126	06-24-03	85	4.5	102	13.8	29	7.52	2.52	1.91	3.03	4
NJDEP MW133	10-25-02	--	--	--	--	--	<0.01	<0.008	--	<0.09	--
	10-28-02	5	4.1	689	14.4	32	7.57	3.10	3.21	83.9	--
NJDEP MW134	10-22-02		4.7	265	15.0	54	7.59	8.42	3.62	16.8	1
NJDEP MW127	06-16-03	53	7.2	720	15.0	280	61.0	31.1	3.48	16.7	113
NJDEP MW128	03-20-03	28	8.2	371	12.5	150	39.6	12.4	1.21	14.5	71
UNION COUNTY											
NJDEP MW129	01-14-03	39	7.1	774	14.5	300	79.1	25.7	1.44	40.1	141

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 9—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MIDDLESEX COUNTY											
NJDEP MW126	06-24-03	5	4.71	<0.17	4.0	18.1	59	56	E.09	<0.04	3.24
NJDEP MW133	10-25-02	--	--	--	<0.13	--	--	--	--	--	--
	10-28-02	--	164	<0.17	5.1	51.3	--	322	0.28	0.21	<0.06
NJDEP MW134	10-22-02	3	61.0	<0.17	11.7	20.3	134	132	0.17	E.03	<0.06
NJDEP MW127	06-16-03	138	135	0.3	27.2	9.3	354	415	<0.10	<0.04	<0.06
NJDEP MW128	03-20-03	85	24.2	0.06	19.3	62.5	227	238	<0.10	<0.04	2.47
UNION COUNTY											
NJDEP MW129	01-14-03	171	87.6	<0.17	18.6	83.2	439	455	<0.10	<0.04	4.12

## MULTIPLE STATION ANALYSES

Local identifier	Date	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)
MIDDLESEX COUNTY											
NJDEP MW126	06-24-03	<0.008	<0.02	0.6	123	<0.30	<0.3	36	0.13	20	10.0
NJDEP MW133	10-25-02	--	--	--	<2	<0.30	<0.3	M	<0.06	<7	<0.04
	10-28-02	<0.008	<0.02	1.0	5,370	<0.30	0.3	23	1.28	31	<0.04
NJDEP MW134	10-22-02	<0.008	<0.02	0.7	526	<0.30	E.2	140	0.98	14	3.02
NJDEP MW127	06-16-03	<0.008	<0.02	E.2	2	0.68	0.4	569	<0.06	19	0.04
NJDEP MW128	03-20-03	<0.008	0.04	E.3	3	<0.30	0.7	99	<0.06	63	<0.04
UNION COUNTY											
NJDEP MW129	01-14-03	<0.008	0.32	0.6	<2	<0.30	0.8	57	<0.06	108	<0.04

## MULTIPLE STATION ANALYSES

Local identifier	Date	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)
MIDDLESEX COUNTY											
NJDEP MW126	06-24-03	1.5	18.4	18	1.08	17.7	<0.02	3.56	0.5	<0.2	0.06
NJDEP MW133	10-25-02	<0.8	E.1	<10	<0.08	0.2	<0.02	<0.06	<0.5	<0.2	E.04
	10-28-02	<0.8	0.8	8,380	0.42	127	<0.02	18.6	0.7	0.3	<0.04
NJDEP MW134	10-22-02	1.4	1.4	2,310	1.62	86.2	<0.02	11.4	<0.5	E.2	E.04
NJDEP MW127	06-16-03	<0.8	36.3	<8	3.85	982	<0.02	10.0	<0.5	<0.2	<0.04
NJDEP MW128	03-20-03	<0.8	0.4	<10	<0.08	0.9	<0.02	0.93	0.6	<0.2	<0.04
UNION COUNTY											
NJDEP MW129	01-14-03	2.2	0.7	63	<0.08	58.5	<0.02	3.95	0.7	<0.2	<0.04

WATERSHED MANAGEMENT AREA 9—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water, unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)
MIDDLESEX COUNTY											
NJDEP MW126	06-24-03	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
NJDEP MW133	10-25-02	<1	--	--	--	--	--	--	--	--	--
	10-28-02	125	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
NJDEP MW134	10-22-02	210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
NJDEP MW127	06-16-03	71	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
NJDEP MW128	03-20-03	M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
UNION COUNTY											
NJDEP MW129	01-14-03	M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene unfltrd ug/L (34371)
MIDDLESEX COUNTY											
NJDEP MW126	06-24-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
NJDEP MW133	10-25-02	--	--	--	--	--	--	--	--	--	--
	10-28-02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
NJDEP MW134	10-22-02	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
NJDEP MW127	06-16-03	<0.1	0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
NJDEP MW128	03-20-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1
UNION COUNTY											
NJDEP MW129	01-14-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)
MIDDLESEX COUNTY											
NJDEP MW126	06-24-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW133	10-25-02	--	--	--	--	--	--	--	--	--	--
	10-28-02	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW134	10-22-02	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
NJDEP MW127	06-16-03	<0.2	<0.2	<0.1	<0.1	<0.1	E.1	<0.1	<0.2	<0.1	<0.1
NJDEP MW128	03-20-03	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1
UNION COUNTY											
NJDEP MW129	01-14-03	<0.2	<0.2	<0.1	<0.1	<0.1	E.2	<0.1	<0.2	<0.1	<0.1

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 9—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	Alpha radio-activity 2-sigma Th-230, pCi/L (75987)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Beta radio-activity 2-sigma wat flt pCi/L (75989)	Gross beta radioac water, fltrd, pCi/L (03515)
MIDDLESEX COUNTY										
NJDEP MW126	06-24-03	<0.2	<0.1	<0.2	<0.1	<0.2	0.88	2	1.1	7
NJDEP MW133	10-25-02	--	--	--	--	--	--	--	--	--
	10-28-02	<0.2	<0.1	<0.2	<0.1	<0.2	4.1	28	2.7	20
NJDEP MW134	10-22-02	<0.2	<0.1	<0.2	<0.1	<0.2	1.8	8	2.1	10
NJDEP MW127	06-16-03	<0.2	<0.1	<0.2	1.7	<0.2	3.0	2	2.4	7
NJDEP MW128	03-20-03	<0.2	<0.1	<0.2	<0.1	<0.2	2.0	2	1.5	3
UNION COUNTY										
NJDEP MW129	01-14-03	<0.2	<0.1	<0.2	0.3	<0.2	2.5	6	2.6	3

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
MIDDLESEX COUNTY										
NJDEP MW126	402046074261901	06-24-03	1100	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW133	402403074210201	10-28-02	1015	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW134	402831074171901	10-22-02	1440	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW127	402907074255801	06-16-03	1030	<0.006	<0.006	<0.004	0.007	<0.018	<0.005	<0.005
NJDEP MW128	403451074294801	03-20-03	1000	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
UNION COUNTY										
NJDEP MW129	403617074265601	01-14-03	1015	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005

## MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
MIDDLESEX COUNTY								
NJDEP MW126	06-24-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW133	10-28-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW134	10-22-02	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW127	06-16-03	<0.004	<0.009	<0.005	<0.005	E.005	<0.01	<0.005
NJDEP MW128	03-20-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
UNION COUNTY								
NJDEP MW129	01-14-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005

Remark codes used in this table:

< -- Less than

E -- Estimated value

M -- Presence verified, not quantified

WATERSHED MANAGEMENT AREA 10

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
231371	401916074324201	NJDEP MW113	401916	743242	90	23	13 - 23	111HPPM
210609	*402310074453801	NJDEP MW120	402310	744537	160	35	10 - 35	227PSSC
350139	*402512074414301	NJDEP MW109	402512	744142	110	40	20 - 40	227PSSC

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.

AQUIFER UNITS.--111HPPM, Undifferentiated Holocene, Pleistocene, Pliocene, and Miocene; 227PSSC, Passaic Formation.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)
MIDDLESEX COUNTY										
NJDEP MW113	401916074324201	09-11-03	1120	0.12	95	7.6	761	1.4	15	4.8
MERCER COUNTY										
NJDEP MW120	402310074453801	01-16-03	1100	3.0	150	4.8	765	3.8	36	7.6
SOMERSET COUNTY										
NJDEP MW109	402512074414301	01-15-03	0930	0.50	35	1.5	762	4.6	43	7.8

MULTIPLE STATION ANALYSES

Local identifier	Date	Specif. conductance, wat unfltrd, uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat fltrd, mg/L as CaCO3 (39086)	Bicarbonate, wat fltrd, titr., mg/L (00453)	Chloride, water, fltrd, mg/L (00940)
MIDDLESEX COUNTY											
NJDEP MW113	09-11-03	350	19.3	100	22.9	11.4	5.66	22.1	4	4	68.5
MERCER COUNTY											
NJDEP MW120	01-16-03	500	12.5	240	62.1	21.0	0.97	11.4	217	263	10.5
SOMERSET COUNTY											
NJDEP MW109	01-15-03	348	12.0	150	42.3	10.6	0.71	10.1	--	92	9.61

MULTIPLE STATION ANALYSES

Local identifier	Date	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents (70301)	Residue on evap. at 180degC wat fltrd, mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)
MIDDLESEX COUNTY											
NJDEP MW113	09-11-03	<0.17	15.7	15.8	243	310	0.14	E.02	16.5	E.004	<0.02
MERCER COUNTY											
NJDEP MW120	01-16-03	<0.17	18.2	31.2	286	302	E.07	<0.04	0.13	<0.008	<0.02
SOMERSET COUNTY											
NJDEP MW109	01-15-03	<0.17	22.8	36.4		222	<0.10	<0.04	7.67	<0.008	0.06

AMBIENT GROUND-WATER-QUALITY NETWORK  
WATERSHED MANAGEMENT AREA 10—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic, water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium, water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)
MIDDLESEX COUNTY											
NJDEP MW113	09-11-03	2.2	146	<0.30	1.2	643	1.08	16	1.01	1.1	1.7
MERCER COUNTY											
NJDEP MW120	01-16-03	1.0	<2	E.15	3.4	395	<0.06	35	0.18	<0.8	11.0
SOMERSET COUNTY											
NJDEP MW109	01-15-03	E.2	3	<0.30	1.4	126	<0.06	25	<0.04	<0.8	0.4

MULTIPLE STATION ANALYSES

Local identifier	Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury, water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)
MIDDLESEX COUNTY											
NJDEP MW113	09-11-03	4,350	0.53	860	<0.02	8.60	E.3	<0.2	0.06	36	<0.1
MERCER COUNTY											
NJDEP MW120	01-16-03	<10	<0.08	219	<0.02	2.88	0.6	<0.2	E.03	1	<0.1
SOMERSET COUNTY											
NJDEP MW109	01-15-03	<10	<0.08	0.4	<0.02	1.27	E.3	<0.2	<0.04	<1	<0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)
MIDDLESEX COUNTY											
NJDEP MW113	09-11-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
MERCER COUNTY											
NJDEP MW120	01-16-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
SOMERSET COUNTY											
NJDEP MW109	01-15-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta- + para-Xylene, water, unfltrd ug/L (85795)
MIDDLESEX COUNTY											
NJDEP MW113	09-11-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
MERCER COUNTY											
NJDEP MW120	01-16-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
SOMERSET COUNTY											
NJDEP MW109	01-15-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2



MULTIPLE STATION ANALYSES

Local identifier	Date	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)
MIDDLESEX COUNTY											
NJDEP MW113	09-11-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
MERCER COUNTY											
NJDEP MW120	01-16-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
SOMERSET COUNTY											
NJDEP MW109	01-15-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chloride, water, unfltrd ug/L (39175)	Alpha radio-activity 2-sigma wat flt pCi/L (75987)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Beta radio-activity 2-sigma wat flt pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
MIDDLESEX COUNTY								
NJDEP MW113	09-11-03	<0.2	<0.1	<0.2	1.6	M	1.4	6
MERCER COUNTY								
NJDEP MW120	01-16-03	<0.2	<0.1	<0.2	2.5	7	1.8	4
SOMERSET COUNTY								
NJDEP MW109	01-15-03	<0.2	<0.1	<0.2	1.3	1	2.0	2

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M-- Presence verified, not quantified

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 10—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
MIDDLESEX COUNTY										
NJDEP MW113	401916074324201	09-11-03	1120	E.064	<0.006	<0.004	0.136	<0.018	<0.005	<0.005
MERCER COUNTY										
NJDEP MW120	402310074453801	01-16-03	1100	<0.006	<0.006	<0.004	<0.007	<0.018	0.014	<0.005
SOMERSET COUNTY										
NJDEP MW109	402512074414301	01-15-03	0930	E.008	<0.006	<0.004	E.006	<0.018	<0.005	<0.005

## MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
MIDDLESEX COUNTY								
NJDEP MW113	09-11-03	<0.004	<0.009	<0.005	<0.005	0.078	<0.01	<0.005
MERCER COUNTY								
NJDEP MW120	01-16-03	<0.004	<0.009	<0.005	<0.005	<0.013	E.01	<0.005
SOMERSET COUNTY								
NJDEP MW109	01-15-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005

Remark codes used in this table:

< -- Less than

E -- Estimated value

WATERSHED MANAGEMENT AREA 11

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
210612	*401454074371401	NJDEP MW112	401454	743714	105	28	18 - 28	111HPPM
190450	403121075003901	NJDEP MW89	403121	750038	505	208	188 - 208	227PSSC
190454	*403129075034701	NJDEP MW118	403129	750347	110	22	12 - 22	227PSSC

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.

AQUIFER UNITS.--111HPPM, Undifferentiated Holocene, Pleistocene, Pliocene, and Miocene; 227PSSC, Passaic Formation.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)
MERCER COUNTY										
NJDEP MW112	401454074371401	09-04-03	0945	0.50	45	0.9	757	0.8	8	3.9
HUNTERDON COUNTY										
NJDEP MW89	403121075003901	06-25-03	1300	0.30	165	2.5	758	0.2	2	8.0
NJDEP MW118	403129075034701	06-25-03	1000	0.50	50	1.1	761	6.8	64	6.5

MULTIPLE STATION ANALYSES

Local identifier	Date	Specif. conductance, wat unfltrd, uS/cm (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium, water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)
MERCER COUNTY											
NJDEP MW112	09-04-03	1,360	14.2	92	23.0	8.47	1.03	180	--	--	341
HUNTERDON COUNTY											
NJDEP MW89	06-25-03	406	15.6	130	30.6	12.2	2.05	35.8	138	146	28.2
NJDEP MW118	06-25-03	478	12.5	120	30.5	10.0	7.20	43.1	80	98	66.9

MULTIPLE STATION ANALYSES

Local identifier	Date	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)
MERCER COUNTY											
NJDEP MW112	09-04-03	<0.17	6.9	98.0	--	651	E.08	<0.04	0.59	<0.008	<0.02
HUNTERDON COUNTY											
NJDEP MW89	06-25-03	0.3	16.2	23.6	239	250	<0.10	<0.04	3.42	0.043	<0.02
NJDEP MW118	06-25-03	<0.17	9.3	24.6	256	266	E.06	<0.04	3.41	<0.008	0.19

AMBIENT GROUND-WATER-QUALITY NETWORK  
WATERSHED MANAGEMENT AREA 11—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Antimony, water, fltrd, ug/L (01095)	Arsenic, water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryllium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium, water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)
MERCER COUNTY											
NJDEP MW112	09-04-03	0.7	9,870	<0.30	E.1	89	1.41	10	0.27	1.2	10.5
HUNTERDON COUNTY											
NJDEP MW89	06-25-03	E.3	3	<0.30	7.4	71	<0.06	2,490	0.04	<0.8	0.3
NJDEP MW118	06-25-03	0.7	M	<0.30	1.4	64	<0.06	142	<0.04	0.8	0.9

## MULTIPLE STATION ANALYSES

Local identifier	Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Manganese, water, fltrd, ug/L (01056)	Mercury, water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thallium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)
MERCER COUNTY											
NJDEP MW112	09-04-03	388	3.29	34.8	<0.02	15.2	E.4	<0.2	0.06	13	<0.1
HUNTERDON COUNTY											
NJDEP MW89	06-25-03	E4	<0.08	4.0	<0.02	1.44	E.4	<0.2	<0.04	<1	<0.1
NJDEP MW118	06-25-03	<8	<0.08	1.4	<0.02	1.27	3.9	<0.2	<0.04	1	<0.1

## MULTIPLE STATION ANALYSES

Local identifier	Date	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water unfltrd ug/L (34501)	1,2-Di-chloro-benzene unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water unfltrd ug/L (32103)	1,2-Di-chloro-propane unfltrd ug/L (34541)	1,3-Di-chloro-benzene unfltrd ug/L (34566)	1,4-Di-chloro-benzene unfltrd ug/L (34571)	Benzene unfltrd ug/L (34030)	Bromo-di-chloro-methane unfltrd ug/L (32101)
MERCER COUNTY											
NJDEP MW112	09-04-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
HUNTERDON COUNTY											
NJDEP MW89	06-25-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
NJDEP MW118	06-25-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1

## MULTIPLE STATION ANALYSES

Local identifier	Date	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unfltrd ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)
MERCER COUNTY											
NJDEP MW112	09-04-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
HUNTERDON COUNTY											
NJDEP MW89	06-25-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2
NJDEP MW118	06-25-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2

AMBIENT GROUND-WATER-QUALITY NETWORK  
WATERSHED MANAGEMENT AREA 11—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)
MERCER COUNTY											
NJDEP MW112	09-04-03	<0.1	<0.1	<0.1	E.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
HUNTERDON COUNTY											
NJDEP MW89	06-25-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1
NJDEP MW118	06-25-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1

MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)	Alpha radio-activty 2-sigma wat flt Th-230, pCi/L (75987)	Alpha radio-activty water, fltrd, Th-230, pCi/L (04126)	Beta radio-activty 2-sigma wat flt CS-137, pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
MERCER COUNTY								
NJDEP MW112	09-04-03	<0.2	<0.1	<0.2	16	122	7.9	83
HUNTERDON COUNTY								
NJDEP MW89	06-25-03	<0.2	<0.1	<0.2	1.9	3	2.5	3
NJDEP MW118	06-25-03	0.9	<0.1	<0.2	1.2	M	3.3	9

Remark codes used in this table:

- < -- Less than
- E -- Estimated value
- M-- Presence verified, not quantified

## AMBIENT GROUND-WATER-QUALITY NETWORK

## WATERSHED MANAGEMENT AREA 11—Continued

## WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
MERCER COUNTY										
NJDEP MW112	401454074371401	09-04-03	0945	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
HUNTERDON COUNTY										
NJDEP MW89	403121075003901	06-25-03	1300	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005
NJDEP MW118	403129075034701	06-25-03	1000	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	0.037

## MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
MERCER COUNTY								
NJDEP MW112	09-04-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
HUNTERDON COUNTY								
NJDEP MW89	06-25-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005
NJDEP MW118	06-25-03	<0.004	<0.009	<0.005	<0.005	<0.013	0.02	<0.005

Remark codes used in this table:

< -- Less than

WATERSHED MANAGEMENT AREA 20

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
051507	*400634074403401	NJDEP MW108	400634	744033	75	24	19 - 24	211EGLS

\* Field data and samples for laboratory analysis were provided by the New Jersey Department of Environmental Protection.  
 AQUIFER UNITS.--211EGLS, Englishtown Formation.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)
BURLINGTON COUNTY										
NJDEP MW108	400634074403401	03-26-03	0845	0.50	45	0.6	754	0.9	9	4.9

MULTIPLE STATION ANALYSES

Local identifier	Date	Specif. conduc-tance, wat unfiltered, uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hard-ness, water, unfiltered mg/L as CaCO3 (00900)	Calcium water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)	Potas-sium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Alka-linity, water filtered field, mg/L as CaCO3 (39086)	Bicar-bonate, water filtered, titr., mg/L (00453)	Chlor-ide, water, filtered, mg/L (00940)
BURLINGTON COUNTY											
NJDEP MW108	03-26-03	866	12.0	120	9.86	22.4	1.97	105	0.0	1	226

MULTIPLE STATION ANALYSES

Local identifier	Date	Fluor-ide, water, filtered, mg/L (00950)	Silica, water, filtered, mg/L (00955)	Sulfate water, filtered, mg/L (00945)	Residue water, filtered, sum of constituents mg/L (70301)	Residue on evap. at 180degC water filtered mg/L (70300)	Ammonia + org-N, water, filtered, mg/L as N (00623)	Ammonia water, filtered, mg/L as N (00608)	Nitrite + nitrate water filtered, mg/L as N (00631)	Nitrite water, filtered, mg/L as N (00613)	Ortho-phos-phate, water, filtered, mg/L as P (00671)
BURLINGTON COUNTY											
NJDEP MW108	03-26-03	0.15	10.5	40.1	422	430	E.06	<0.04	0.21	<0.008	<0.02

MULTIPLE STATION ANALYSES

Local identifier	Date	Organic carbon, water, filtered, mg/L (00681)	Alum-inum, water, filtered, ug/L (01106)	Anti-mony, water, filtered, ug/L (01095)	Arsenic water, filtered, ug/L (01000)	Barium, water, filtered, ug/L (01005)	Beryll-ium, water, filtered, ug/L (01010)	Boron, water, filtered, ug/L (01020)	Cadmium water, filtered, ug/L (01025)	Chrom-ium, water, filtered, ug/L (01030)	Copper, water, filtered, ug/L (01040)
BURLINGTON COUNTY											
NJDEP MW108	03-26-03	1.0	274	<0.30	0.3	105	0.53	17	1.16	<0.8	3.4

AMBIENT GROUND-WATER-QUALITY NETWORK  
WATERSHED MANAGEMENT AREA 20—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Mangan-ese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Thall-ium, water, fltrd, ug/L (01057)	Zinc, water, fltrd, ug/L (01090)	1,1,1-Tri-chloro-ethane, water, unfltrd ug/L (34506)
BURLINGTON COUNTY											
NJDEP MW108	03-26-03	3,040	0.14	535	<0.02	75.2	E.3	<0.2	E.04	209	<0.1

## MULTIPLE STATION ANALYSES

Local identifier	Date	CFC-113 water unfltrd ug/L (77652)	1,1-Di-chloro-ethane, water unfltrd ug/L (34496)	1,1-Di-chloro-ethene, water, unfltrd ug/L (34501)	1,2-Di-chloro-benzene water unfltrd ug/L (34536)	1,2-Di-chloro-ethane, water, unfltrd ug/L (32103)	1,2-Di-chloro-propane water unfltrd ug/L (34541)	1,3-Di-chloro-benzene water unfltrd ug/L (34566)	1,4-Di-chloro-benzene water unfltrd ug/L (34571)	Benzene water unfltrd ug/L (34030)	Bromo-di-chloro-methane water unfltrd ug/L (32101)
BURLINGTON COUNTY											
NJDEP MW108	03-26-03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1

## MULTIPLE STATION ANALYSES

Local identifier	Date	Chloro-benzene water unfltrd ug/L (34301)	cis-1,2-Di-chloro-ethene, water, unfltrd ug/L (77093)	Di-bromo-chloro-methane water unfltrd ug/L (32105)	Di-chloro-di-fluoro-methane wat unf ug/L (34668)	Di-chloro-methane water unfltrd ug/L (34423)	Di-ethyl ether, water, unfltrd ug/L (81576)	Diiso-propyl ether, water, unfltrd ug/L (81577)	Ethyl-benzene water unfltrd ug/L (34371)	Methyl tert-pentyl ether, water, unfltrd ug/L (50005)	meta+ para-Xylene, water, unfltrd ug/L (85795)
BURLINGTON COUNTY											
NJDEP MW108	03-26-03	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2

## MULTIPLE STATION ANALYSES

Local identifier	Date	o-Xylene, water, unfltrd ug/L (77135)	Styrene water unfltrd ug/L (77128)	t-Butyl ethyl ether, water, unfltrd ug/L (50004)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Di-chloro-ethene, water, unfltrd ug/L (34546)	Tri-bromo-methane water unfltrd ug/L (32104)	Tri-chloro-ethene, water, unfltrd ug/L (39180)
BURLINGTON COUNTY											
NJDEP MW108	03-26-03	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1

## MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-chloro-fluoro-methane water unfltrd ug/L (34488)	Tri-chloro-methane water unfltrd ug/L (32106)	Vinyl chlor-ide, water, unfltrd ug/L (39175)	Alpha radio-activty 2-sigma wat flt Th-230, pCi/L (75987)	Alpha radio-activty water, fltrd, Th-230, pCi/L (04126)	Beta radio-activty 2-sigma wat flt CS-137, pCi/L (75989)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)
BURLINGTON COUNTY								
NJDEP MW108	03-26-03	<0.2	<0.1	<0.2	4.1	7	2.7	7

Remark codes used in this table:

< -- Less than

E -- Estimated value



WATERSHED MANAGEMENT AREA 20—Continued

WATER-COLUMN PESTICIDE ANALYSES

The following were determined using laboratory schedule 2001 (listed in its entirety, with laboratory reporting levels, in "Laboratory Measurements" in the Explanation of Water-Quality Records section of this report). Only pesticides detected in one or more ground-water samples are listed in the following table.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	Atra-zine, water, fltrd, ug/L (39632)	Cyana-zine, water, fltrd, ug/L (04041)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)
BURLINGTON COUNTY										
NJDEP MW108	400634074403401	03-26-03	0845	<0.006	<0.006	<0.004	<0.007	<0.018	<0.005	<0.005

MULTIPLE STATION ANALYSES

Local identifier	Date	Desulf-inyl-fipro-nil, water, fltrd, ug/L (62170)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Metola-chlor, water, fltrd, ug/L (39415)	Prome-ton, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)
BURLINGTON COUNTY								
NJDEP MW108	03-26-03	<0.004	<0.009	<0.005	<0.005	<0.013	<0.01	<0.005

Remark codes used in this table:  
 < -- Less than

WATER-QUALITY AT SPECIAL-STUDY SITES  
 MORRISTOWN NATIONAL HISTORICAL PARK

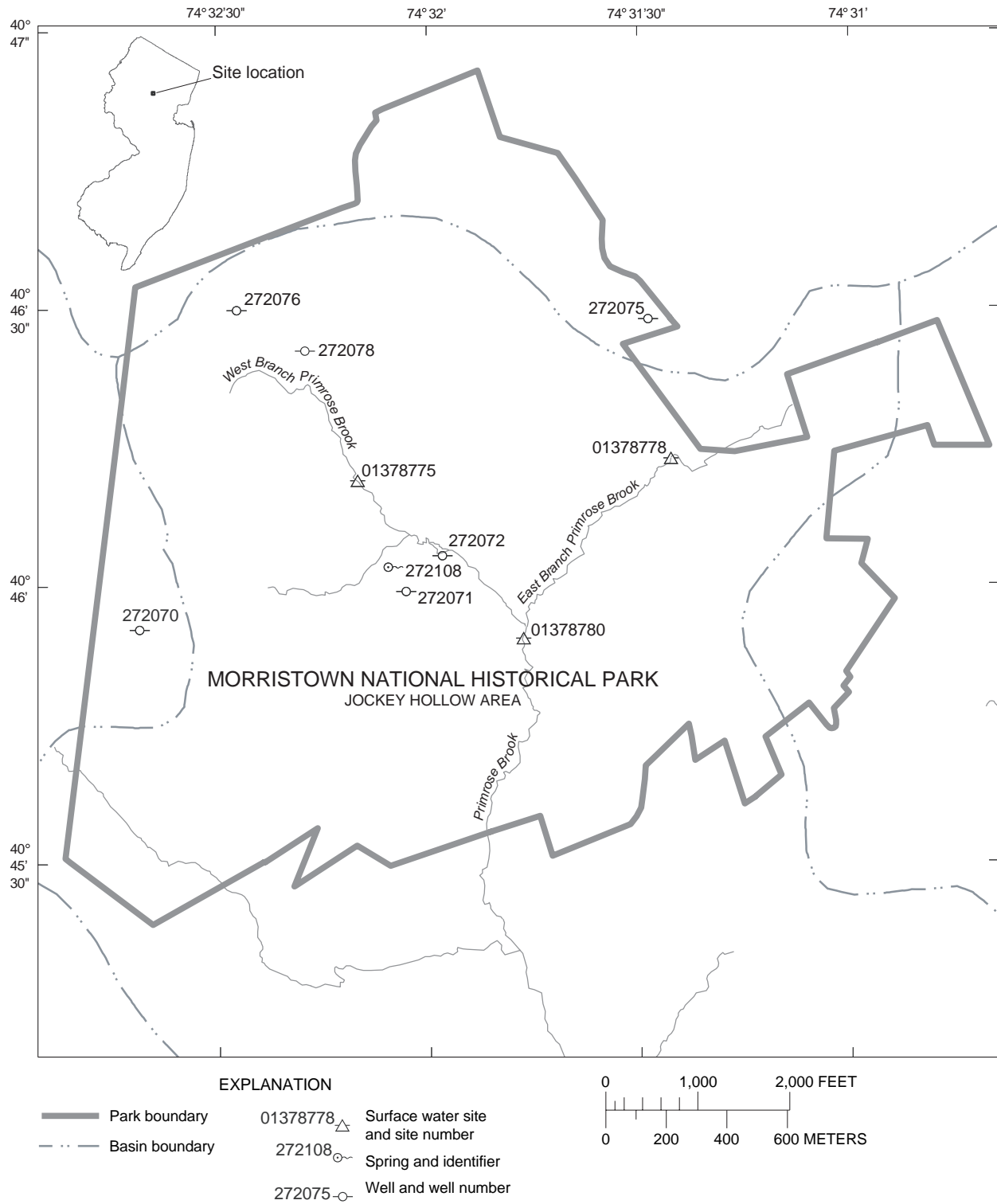


Figure 49. Location of water sampling sites, Morristown National Historical Park, Jockey Hollow area, New Jersey, 2003.

## MORRISTOWN NATIONAL HISTORICAL PARK—Continued

The following tables contain site-information and water-quality data collected from a network of 6 wells, and 3 surface-water sites sampled bi-annually, with the exception of 1 surface-water site sampled quarterly. The sampled wells are completed in fractured gneiss bedrock of Precambrian age in the Highlands Physiographic Province of northern New Jersey. The sampling network was established in cooperation with the National Park Service (NPS) in the Jockey Hollow Unit (JHU) of the Morristown National Historical Park (MNHP). The sampling network establishes baseline water quality against which potential future water quality degradation may be evaluated, and may also be used to determine the source, extent, and transport pathways of sanitary indicator bacteria in surface and shallow ground waters and of the MNHP.

The data collected were used to determine the presence and concentration of, or non-detection of, organic wastewater compounds, transient atmospheric tracers, fecal-indicator bacteria, and naturally occurring inorganic and radioactive constituents and stable isotopes in Primrose Brook and the ground water that flows into Primrose Brook, a Class-One Anti-Degradation headwater stream draining to the Passaic River. The ancillary standard water-quality samples collected for ground water are a subset of those routinely analyzed using standard techniques for physical characteristics, major ions, nutrients, volatile organic compounds (VOCs), pesticides, a selected suite of 16 minor and trace elements, dissolved and particulate organic carbon, total suspended solids, and indicator bacteria counts at surface water sites, including those at Primrose Brook.

A surface water sample collected on May 20, 2003 at the sampling site on the main stem of Primrose Brook (station number 01378780) contained two organic-wastewater compounds. The concentrations of Caffeine and Methyl salicylate were below the laboratory lower reporting limit at which concentration is considered reliable.

Ground-water samples collected from wells located in the MNHP contained three organic-wastewater compounds. The concentrations in ground water of Benzophenone, Methyl salicylate and p-Cresol were below the laboratory lower reporting limit at which concentration is considered reliable. p-Cresol was detected in the three samples collected from the Hand pump well on September 9, 2003, which indicates that the lab was reliably reporting the detection of this compound at very low non-quantifiable concentrations.

In surface-water samples, fecal coliforms, a sanitary indicator microorganism, were present in all samples except for one sample collected in December 2003 from the West Branch of Primrose Brook. Other sanitary indicator microorganisms show a seasonal variation in colony forming unit counts. The highest sanitary indicator microorganism counts occur in samples collected between June and August 2003.

In ground-water samples collected prior to treatment from wells used as a supply for potable water, at least one of the three sanitary indicator microorganisms analyzed for this study was detected in all the untreated water samples. Samples collected from the three observation wells contained counts of total coliforms greater than one except for one sample from one observation well. Fecal coliforms were counted in all samples collected from observation well NPS-trail 2(G5).

High concentrations of radon in water were consistently measured in all wells. The range of concentrations is from 890 to 6,970 Picocuries per liter. Transient atmospheric tracer compounds were detected in all samples of ground water.

## WATER-QUALITY CONTROL DATA

Determinations of wastewater compounds were performed using USGS method number O-1433-01, and the laboratory method detection limits for the target analytes are listed by Zaugg and others, 2002. Determinations of transient atmospheric tracer compounds were made to the detection capability of the currently best available technology (capillary-column gas- chromatography with electron-capture detector as described by Szabo and others, 1996). The field methods used are described in "Techniques of water resources investigations-Book 9-Handbooks for Water Resource Investigations-National field manual for the collection of water-quality data -Chapter A3 Cleaning of equipment for water sampling", edited by F.D. Wilde and others, 1998, "Chapter A4 Collection of water samples" edited by F.D. Wilde and others, 1999, and "Chapter A5 Processing of water samples" edited by F.D. Wilde and others, 1999, and for transient atmospheric tracers by Szabo and others, 1996.

One replicate sample result for a ground-water sample collected at Station number 40463007422701 is shown in the table below.

Personal protection and safety procedures needed at the sampling sites are described in a Site Specific Job Hazard analysis on file at the U.S. Geological Survey office in West Trenton, NJ.

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Instantaneous discharge, cfs (00061)	Drainage area, mi <sup>2</sup> (81024)	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)
WB PRIMROSE BROOK IN MORRISTOWN	01378775	08-26-03	1100	0.24	0.30	1.4	749	9.2	96	7.2
		08-28-03	1400	--	0.30	--	--	--	--	--
		12-16-03	1230	--	0.30	--	751	12.5	101	7.0
EB PRIMROSE BROOK IN MORRISTOWN	01378778	08-26-03	1000	0.18	0.18	3.9	749	9.2	96	7.0
		12-16-03	1330	--	0.18	--	--	11.9	94	6.9
PRIMROSE BK AT MORRISTOWN	01378780	12-16-02	1110	1.4	1.07	0.8	741	12.1	97	7.5
		03-04-03	1310	1.3	1.07	0.7	737	12.9	97	7.5
		03-10-03	0910	--	1.07	--	--	--	--	--
		05-07-03	1205	--	1.07	--	--	--	--	--
		05-14-03	1155	--	1.07	--	--	--	--	--
		05-20-03	1310	1.3	1.07	2.5	756	10.0	95	7.2
		05-21-03	1152	--	1.07	--	--	--	--	--
		05-28-03	1150	--	1.07	--	--	--	--	--
		06-04-03	1147	--	1.07	--	--	--	--	--
		08-26-03	1030	0.98	1.07	5.0	749	9.2	96	6.8
NPS - PRIMROSE TRAIL CTR	404602074320501	12-16-03	1100	3.6	1.07	1.0	751	13.4	104	7.1
		08-28-03	1350	--	--	--	--	--	--	--









## MORRISTOWN NATIONAL HISTORICAL PARK—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Tri-bromo-methane water, fltrd, ug/L (34288)	Tri-butyl phosphate, water, fltrd, ug/L (62089)	Triclosan, water, fltrd, ug/L (62090)	Tri-ethyl citrate water, fltrd, ug/L (62091)	Tri-phenyl phosphate, water, fltrd, ug/L (62092)	Tris(2-butoxy-ethyl) phosphate, wat flt ug/L (62093)	Tris(2-chloro-ethyl) phosphate, wat flt ug/L (62087)	Tris(di-chloro-i-Pr) phosphate, wat flt ug/L (62088)	Di-chloro-vos, water fltrd, ug/L (38775)	Deuterium/Protium ratio, water, unfltrd per mil (82082)	O-18 / O-16 ratio, water, unfltrd per mil (82085)
WB PRIMROSE BROOK	08-26-03	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	-46.60	-7.80
	08-28-03	--	--	--	--	--	--	--	--	--	--	--
	12-16-03	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	--	--
EB PRIMROSE BROOK	08-26-03	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	-46.20	-7.68
	12-16-03	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	--	--
PRIMROSE BK AT MORRISTOWN	12-16-02	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	-52.00	-8.38
	03-04-03	--	--	--	--	--	--	--	--	--	--	--
	03-10-03	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	-53.40	-8.58
	05-07-03	--	--	--	--	--	--	--	--	--	--	--
	05-14-03	--	--	--	--	--	--	--	--	--	--	--
	05-20-03	<0.5	<0.5	<1	<0.5	<0.5	E.1	<0.5	<0.5	<1.00	-45.00	-7.69
	05-21-03	--	--	--	--	--	--	--	--	--	--	--
	05-28-03	--	--	--	--	--	--	--	--	--	--	--
	06-04-03	--	--	--	--	--	--	--	--	--	--	--
	08-26-03	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	-45.90	-7.64
	12-16-03	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1.00	--	--
NPS - PRIMROSE TRAIL	08-28-03	--	--	--	--	--	--	--	--	--	--	--

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

M-- Presence verified, not quantified



MORRISTOWN NATIONAL HISTORICAL PARK—Continued

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
272070	404555074324101	NPS - WICK FARM	404555.3	0743241.1	570	--	150	39 - 150	400PCMB
272071	404559074320301	NPS - QUARTERS 62	404559.4	0743203.2	500	--	97	-	400PCMB
272072	404603074315801	NPS - TRAIL 2 (G5)	404603.2	0743158.0	470	25-48237	10.5	5.5 - 10.5	112SFDF
272076	404630074322701	NPS - HAND PUMP	404629.8	0743227.1	550	--	95	50 - 95	400PCMB
272078	404625074321701	NPS - SOLDIER HUT TRAIL	404625.4	0743217.4	520	--	6	5.5 - 6	112SFDF
272075	404629074312901	NPS - GUERIN HOUSE	404628.7	0743128.6	600	--	255	12 - 255	400PCMB

AQUIFER UNITS.--400PCMB, Precambrian Erathem; 112SFDF, Stratified Drift.

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Sample type	Depth to water level, feet below LSD (72019)	Flow rate, instantaneous gal/min (00059)	Pump or flow period prior to sampling, minutes (72004)	Sampling depth, feet (00003)	Turbidity, water, unfltrd field, NTU (61028)
NPS - WICK FARM	404555074324101	08-26-03	1310	Environmental	--	--	--	--	4.9
		08-26-03	1345	Environmental	--	--	--	--	0.3
		12-16-03	1338	Environmental	--	--	--	--	--
		12-17-03	1145	Environmental	--	--	--	--	0.2
NPS - QUARTERS 62 (LOG HOUSE)	404559074320301	08-27-03	1255	Environmental	--	--	--	--	--
		08-27-03	1320	Treated Water	--	0.40	20	--	--
		10-09-03	1120	Environmental	--	--	--	--	0.5
		10-09-03	1320	Environmental	--	0.40	90	--	0.5
		10-09-03	1420	Environmental	--	--	150	--	--
		12-16-03	1330	Environmental	--	--	--	--	--
NPS - TRAIL 2 (G5)	404603074315801	08-28-03	1300	Environmental	--	0.08	92	--	1.8
		12-16-03	1635	Environmental	1.74	0.20	78	--	47
		12-17-03	1415	Environmental	--	--	15	--	39
NPS - SOLDIER HUT TRAIL 1	404625074321701	08-28-03	1418	Environmental	--	--	18	--	300
		08-28-03	1420	Environmental	--	0.01	20	--	58
		12-16-03	1400	Environmental	--	0.02	45	--	64
NPS - GUERIN HOUSE	404629074312901	12-17-03	1300	Environmental	--	--	--	--	--
		08-26-03	1256	Treated Water	--	--	--	--	--
NPS - HAND PUMP/SOLDIERS	404630074322701	08-26-03	1323	Treated Water	--	--	--	--	--
		09-09-03	1142	Environmental	12.64	--	0.0	25.0	53
		09-09-03	1228	Environmental	12.64	0.75	40	25.0	29
		09-09-03	1300	Environmental	12.64	--	118	25.0	8.4
		09-09-03	1350	Environmental	12.64	--	208	25.0	4.2
		09-09-03	1400	Environmental	12.64	0.75	153	25.0	2.9
		09-09-03	1410	Replicate	12.64	--	163	25.0	2.9
		09-09-03	1700	Environmental	12.64	0.65	45	15.2	2.9
		12-17-03	1300	Environmental	9.85	--	2	20.0	28
		12-17-03	1412	Environmental	9.85	--	114	20.0	11
12-17-03	1600	Environmental	9.85	1.0	190	20.0	0.6		

## WATER-QUALITY AT SPECIAL-STUDY SITES

## MORRISTOWN NATIONAL HISTORICAL PARK—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)
NPS - WICK FARM	08-26-03	748	7.7	73	6.2	149	--	12.2	--	--	--
	08-26-03	748	8.1	76	6.2	149	27.1	12.0	50	13.2	4.17
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	634	7.8	84	6.1	127	10.7	10.9	45	12.5	3.31
	08-27-03	--	--	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	7.2	249	--	--	--	--	--
	10-09-03	752	5.9	56	7.2	247	--	12.3	--	--	--
	10-09-03	752	3.3	31	7.0	241	19.0	11.9	120	27.7	11.5
	10-09-03	--	--	--	--	--	--	--	--	--	--
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	08-28-03	754	--	--	6.2	142	25.9	22.9	67	17.0	6.05
	12-16-03	648	1.7	18	6.3	158	9.0	8.8	71	16.9	7.02
	12-17-03	--	--	--	--	--	--	--	--	--	--
NPS - SOLDIER HUT	08-28-03	754	--	--	--	--	--	--	--	--	--
	08-28-03	754	6.1	73	6.3	122	25.9	23.2	47	11.9	4.25
	12-16-03	748	--	--	6.7	105	7.4	7.9	42	10.3	3.94
NPS - GUERIN HOUSE	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
NPS - HAND PUMP	08-26-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	755	0.2	2	8.8	70	--	13.0	--	--	--
	09-09-03	755	2.0	20	7.0	175	--	12.7	--	--	--
	09-09-03	755	4.3	41	6.7	179	--	12.7	--	--	--
	09-09-03	755	4.5	43	6.7	180	--	12.8	--	--	--
	09-09-03	755	4.5	43	6.7	180	19.8	12.7	79	20.3	6.87
	09-09-03	755	4.5	43	6.7	180	20.0	12.7	--	--	--
	09-09-03	755	4.5	43	6.7	180	20.0	12.7	--	--	--
	12-17-03	634	--	--	--	--	--	11.5	--	--	--
	12-17-03	634	3.5	39	6.8	190	--	11.4	--	--	--
12-17-03	634	3.9	43	6.7	177	7.0	11.3	75	19.0	6.69	

## MORRISTOWN NATIONAL HISTORICAL PARK—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)	Ammonia, water, fltrd, mg/L as N (00608)	Nitrite + nitrate, water, fltrd, mg/L as N (00631)
NPS - WICK FARM	08-26-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	0.92	7.68	37	--	8.25	<0.8	25.4	12.8	<0.04	1.82
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	0.84	7.11	33	--	6.58	<0.17	23.9	13.0	<0.04	1.30
	08-27-03	--	--	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	98	--	--	--	--	--	--
	10-09-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	1.02	4.83	101	95	2.79	<0.17	43.9	20.7	<0.04	0.36
	10-09-03	--	--	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	12-16-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	--	4.50	54	50	2.84	<0.17	34.9	17.3	<0.04	0.11
	12-16-03	0.33	4.02	59	--	2.51	<0.17	34.3	16.8	<0.04	0.08
NPS - SOLDIER HUT	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	0.82	5.60	39	--	3.96	<0.17	30.9	10.2	<0.04	0.51
NPS - GUERIN HOUSE	12-16-03	0.61	4.45	37	33	3.60	<0.17	28.0	9.5	--	--
	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
NPS - HAND PUMP	08-26-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	1.84	4.91	64	--	3.78	<0.17	33.1	16.6	E.03	0.81
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--	--	--
12-17-03	--	--	--	--	--	--	--	--	--	--	
12-17-03	1.69	5.25	65	--	3.32	<0.17	30.9	15.9	0.06	0.69	



## MORRISTOWN NATIONAL HISTORICAL PARK—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)	1,4-Dichlorobenzene, water, fltrd, ug/L (34572)	1-Methylnaphthalene, water, fltrd, ug/L (62054)	2,6-Dimethylnaphthalene, water, fltrd, ug/L (62055)	2-Methylnaphthalene, water, fltrd, ug/L (62056)	3-beta-Coprostanol, water, fltrd, ug/L (62057)	3-Methyl-1H-indole, water, fltrd, ug/L (62058)	3-tert-Butyl-4-hydroxyanisole, wat flt ug/L (62059)	4-Cumylphenol, water, fltrd, ug/L (62060)
NPS - WICK FARM	08-26-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	E6	1.6	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	E5	<0.8	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	08-27-03	--	--	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	12	1.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	10-09-03	--	--	--	--	--	--	--	--	--	--
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	08-28-03	10	155	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	12-16-03	119	76.2	<1.0	<1.0	<1.0	<1.0	<4	<2	<10	<2
	12-17-03	--	--	--	--	--	--	--	--	--	--
NPS - SOLDIER HUT	08-28-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	<8	2.3	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	12-16-03	<6	<0.8	<1.0	<1.0	<1.0	<1.0	<4	<2	<10	<2
NPS - GUERIN HOUSE	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
NPS - HAND PUMP	08-26-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	434	45.5	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	09-09-03	--	--	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	09-09-03	--	--	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	724	65.1	<0.5	<0.5	<0.5	<0.5	<2	<1	<5	<1



MORRISTOWN NATIONAL HISTORICAL PARK—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	beta-Sitosterol, water, fltrd, ug/L (62068)	beta-Stigmasterol, water, fltrd, ug/L (62086)	Bisphenol A, water, fltrd, ug/L (62069)	Bromacil, water, fltrd, ug/L (04029)	Caffeine, water, fltrd, ug/L (50305)	Camphor water, fltrd, ug/L (62070)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbazole, water, fltrd, ug/L (62071)	Chlorpyrifos water, fltrd, ug/L (38933)	Cholesterol, water, fltrd, ug/L (62072)
NPS - WICK FARM	08-26-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	<2	<2	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	<2	<2	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2
	08-27-03	--	--	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	<2	<2	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2
	10-09-03	--	--	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	12-16-03	--	--	--	--	--	--	--	--	--	--
	12-16-03	<2	<2	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2
	12-16-03	<4	<4	<2	<1.0	<1.0	<1.0	<2	<1.0	<1.0	<4
	12-17-03	--	--	--	--	--	--	--	--	--	--
NPS - SOLDIER HUT	08-28-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	<2	<2	M	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2
	12-16-03	<4	<4	<2	<1.0	<1.0	<1.0	<2	<1.0	<1.0	<4
NPS - GUERIN HOUSE	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
NPS - HAND PUMP	08-26-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	<2	<2	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2
	09-09-03	<2	<2	<1	<0.50	<0.500	<0.5	<1.00	<2.0	<0.50	--
	09-09-03	<2	<2	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	<2	<2	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<2

WATER-QUALITY AT SPECIAL-STUDY SITES  
MORRISTOWN NATIONAL HISTORICAL PARK—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Cotinine, water, fltrd, ug/L (62005)	Diazinon, water, fltrd, ug/L (39572)	Di-ethoxy-nonyl-phenol, water, fltrd, ug/L (62083)	Di-ethoxy-octyl-phenol, water, fltrd, ug/L (61705)	D-Limonene, water, fltrd, ug/L (62073)	Ethoxy-octyl-phenol, water, fltrd, ug/L (61706)	Fluoranthene, water, fltrd, ug/L (34377)	HHCB, water, fltrd, ug/L (62075)	Indole, water, fltrd, ug/L (62076)	Isoborneol, water, fltrd, ug/L (62077)
NPS - WICK FARM	08-26-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	08-27-03	--	--	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	10-09-03	--	--	--	--	--	--	--	--	--	--
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	08-28-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	12-16-03	<2	<1.0	<10	<2	<1.0	<2	<1.0	<1.0	<1.0	<1.0
	12-17-03	--	--	--	--	--	--	--	--	--	--
NPS - SOLDIER HUT	08-28-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	12-16-03	<2	<1.0	<10	<2	<1.0	<2	<1.0	<1.0	<1.0	<1.0
NPS - GUERIN HOUSE	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
NPS - HAND PUMP	08-26-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	09-09-03	<1	<0.50	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	09-09-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	<1	<0.5	<5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5



MORRISTOWN NATIONAL HISTORICAL PARK—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Iso-phorone water, fltrd, ug/L (34409)	Iso-propyl-benzene water, fltrd, ug/L (62078)	Iso-quinoline, water, fltrd, ug/L (62079)	Menthol water, fltrd, ug/L (62080)	Meta-laxyl, water, fltrd, ug/L (50359)	Methyl salicylate, water, fltrd, ug/L (62081)	Metolachlor, water, fltrd, ug/L (39415)	Naphthalene, water, fltrd, ug/L (34443)	p-Cresol, water, fltrd, ug/L (62084)	Pentachlorophenol, water, fltrd, ug/L (34459)
NPS - WICK FARM	08-26-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<2
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<2
	08-27-03	--	--	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<2
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	08-28-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<2
	12-16-03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<4
	12-17-03	--	--	--	--	--	--	--	--	--	--
NPS - SOLDIER HUT	08-28-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	<0.5	<0.5	<0.5	<0.5	<0.5	M	<0.5	<0.5	<1	<2
	12-16-03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<4
NPS - GUERIN HOUSE	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
NPS - HAND PUMP	08-26-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	M	<2
	09-09-03	<0.5	<0.5	<0.5	<0.5	<0.50	<0.5	<0.50	<0.5	M	<2
	09-09-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	M	<2
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<2

WATER-QUALITY AT SPECIAL-STUDY SITES  
MORRISTOWN NATIONAL HISTORICAL PARK—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Phenanthrene, water, fltrd, ug/L (34462)	Prometon, water, fltrd, ug/L (04037)	Pyrene, water, fltrd, ug/L (34470)	Tetra-chloro-ethene, water, fltrd, ug/L (34476)	Tri-bromo-methane, water, fltrd, ug/L (34288)	Tri-butyl phosphate, water, fltrd, ug/L (62089)	Triclo-san, water, fltrd, ug/L (62090)	Tri-ethyl citrate, water, fltrd, ug/L (62091)	Tri-phenyl phosphate, water, fltrd, ug/L (62092)	Tris(2-butoxy-ethyl) phosphate, wat flt ug/L (62093)
NPS - WICK FARM	08-26-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	<0.5	<0.5	<0.5	<0.5	E2.1	<0.5	<1	<0.5	<0.5	<0.5
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	<0.5	<0.5	<0.5	E.1	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	08-27-03	--	--	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	--	--	--	--	--	--	--	--	--	--
	10-09-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	10-09-03	--	--	--	--	--	--	--	--	--	--
	12-16-03	--	--	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	08-28-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	12-16-03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1.0	<1.0	<1.0
	12-17-03	--	--	--	--	--	--	--	--	--	--
NPS - SOLDIER HUT	08-28-03	--	--	--	--	--	--	--	--	--	--
	08-28-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	12-16-03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<1.0	<0.5	<1.0
NPS - GUERIN HOUSE	12-17-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--	--	--
NPS - HAND PUMP	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--	--	--
	09-09-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	09-09-03	<0.5	<0.50	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	09-09-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--	--	--
	12-17-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5
	12-17-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5

## MORRISTOWN NATIONAL HISTORICAL PARK—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Tris(2-chloro-ethyl) phosphate, wat flt ug/L (62087)	Tris(di-chloro-i-Pr) phosphate, wat flt ug/L (62088)	Di-chloro- vos, water fltrd, ug/L (38775)	Deu-terium/ Protium ratio, water, unfltrd per mil (82082)	O-18 / O-16 ratio, water, unfltrd per mil (82085)	Rn-222 2-sigma water unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
NPS - WICK FARM	08-26-03	--	--	--	--	--	--	--	--
	08-26-03	<0.5	<0.5	<1.00	--	--	54	3,480	--
	12-16-03	--	--	--	--	--	--	--	--
NPS - QUARTERS 62	12-17-03	<0.5	<0.5	<1.00	--	--	63	3,650	0.23
	08-27-03	--	--	--	--	--	--	--	--
	08-27-03	--	--	--	--	--	44	2,090	--
	10-09-03	--	--	--	--	--	--	--	--
	10-09-03	<0.5	<0.5	<1.00	--	--	46	2,420	0.58
	10-09-03	--	--	--	--	--	--	--	--
NPS - TRAIL 2 (G5)	12-16-03	--	--	--	--	--	--	--	--
	08-28-03	<0.5	<0.5	<1.00	--	--	74	6,950	--
	12-16-03	<1.0	<1.0	<1.00	--	--	83	6,970	--
NPS - SOLDIER HUT	12-17-03	--	--	--	--	--	--	--	--
	08-28-03	--	--	--	--	--	--	--	--
	08-28-03	<0.5	<0.5	<1.00	-45.20	-7.51	--	--	--
NPS - GUERIN HOUSE	12-16-03	<1.0	<1.0	<2.00	--	--	39	1,310	--
	12-17-03	--	--	--	--	--	--	--	--
	08-26-03	--	--	--	--	--	--	--	--
NPS - HAND PUMP	08-26-03	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--
	09-09-03	--	--	--	--	--	--	--	--
	09-09-03	<0.5	<0.5	<1.00	--	--	33	890	--
	09-09-03	<0.5	<0.5	<1.00	--	--	--	--	--
	09-09-03	<0.5	<0.5	<1.00	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--
	12-17-03	--	--	--	--	--	--	--	--
	12-17-03	<0.5	<0.5	<1.00	--	--	35	900	0.29

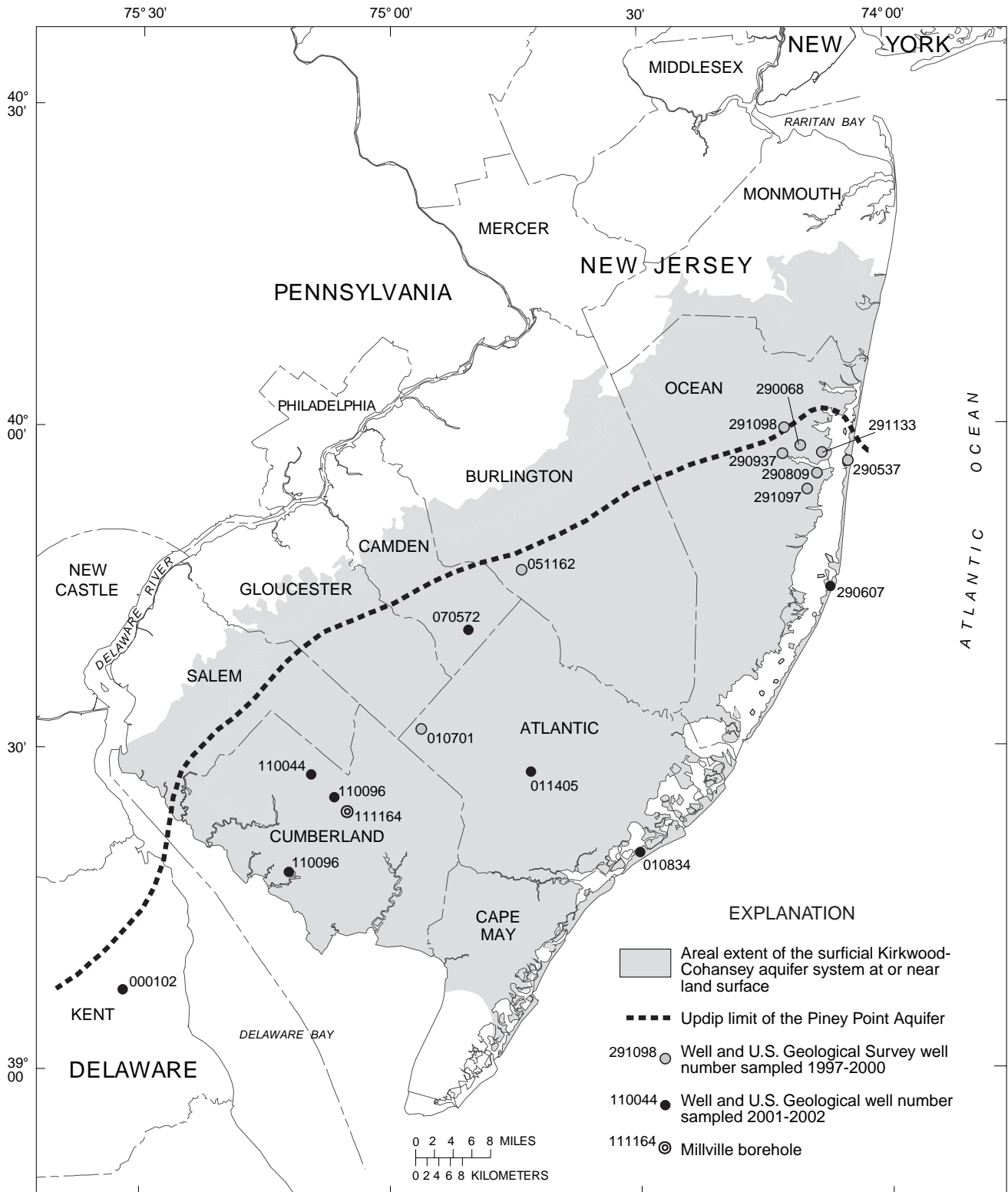
Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

M-- Presence verified, not quantified

CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS



Base modified from U.S. Geological Survey digital data, 1:100,000, 1983, Universal Transverse Mercator projection, Zone 18

**Figure 50.** Location of water samples from the Piney Point aquifer, 1997-2002.

CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS—Continued

The following tables contain site-information and water-quality data from a network of 16 wells in New Jersey and 1 well in Delaware sampled to increase water-quality information from the confined Piney Point and basal Kirkwood Sand aquifers in east-central and south-central New Jersey. Also listed is the site-information for 1 borehole site where geologic information only was gathered; the collected geologic information from the NJ Onshore Leg Drilling Program is available online [<http://www.rci.rutgers.edu/~kgm/coastalplain/>]. The sampling network was established in cooperation with the New Jersey Department of Environmental Protection, New Jersey Geological Survey (NJDEP, NJGS) and Rutgers University (fig. 50).

The sampling network improves baseline water quality against which potential future water quality degradation may be evaluated for these aquifers, which to date (2003) have seen limited water withdrawals, but are being considered for additional water supply development. Water-quality problems (nitrate, radium, mercury, VOCs, pesticides) in southern NJ in the outcrop area of the unconfined Kirkwood-Cohansey aquifer increase the need for high quality water from confined aquifers. The Piney Point aquifer and basal sand units within the Kirkwood Formation are the shallowest confined aquifers in the east-central and south-central New Jersey area. The confined Piney Point aquifer has had a large decline in head over the past few years in southern New Jersey. The areally extensive cone of depression extends from central Delaware to southern Cumberland County and northwards as far as southern Atlantic County (Lacombe and Rosman, 2001)<sup>1</sup>. Effects of increased pumpage on water quality are not known.

The installation of boreholes and observation wells throughout southern New Jersey coupled with regional sampling programs provide opportunity to characterize water quality in both confined aquifers and confining units. The growing population base needs information with which to evaluate or monitor degradation of water quality in the confined aquifers because of the limited availability of water for supply. The standard water-quality samples collected for ground water that are routinely analyzed using standard techniques were measured for physical characteristics, major ions, nutrients, a selected suite of minor and trace elements, and dissolved organic carbon. Because of concern in the region regarding naturally occurring radionuclides, radioactivity and concentrations of radionuclides, and ratios of stable isotopes were also determined.

Water quality was variable within the confined aquifers. The concentration of sodium was greater than 50 mg/L (milligrams per liter) in water from 8 wells and the concentration of chloride was greater than 250 mg/L in water from 1 well. The concentration of iron was greater than 300 ug/L (micrograms per liter) in water from 6 wells. Radon was detected commonly but the concentration of radium was low.

WATER-QUALITY CONTROL DATA

Quality assurance consisted of 2 selected sequential replicate samples. Sequential replicate samples closely reproduced results for the initial environmental samples.

<sup>1</sup> This reference is listed under "Water-Related Reports for New Jersey Completed by the Geological Survey in Recent Years" section in this report.

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
D00102	390729075315701	DOVER 6	390729	0753157	20	D0-10208	337	330 - 337	124PNPN
110096	391828075120902	JONES ISLAND 2 OBS	391829	0751207	10.10	34-00852	375	365 - 375	124PNPN
111164	392410075051101	MILLVILLE BOREHOLE	392410	0750510	80	--	1495	--	211MRPA
110163	392528075064101	FAIR GROUNDS 3 OBS	392526	0750642	80	35-01196	473	463 - 473	124PNPN
110044	392733075092401	VOCATIONAL SCHOOL 3 OBS	392732	0750928	81.95	35-01197	376	361 - 376	124PNPN
010834	392017074300201	MARGATE FIREHOUSE 1 OBS	392017	0743001	5	--	997.4	970.0 - 990.7	124PNPN
011405	392748074430501	HAMILTON TEST OW1	392749	0744304	23	36-23678	625	545 - 620	124PNPN
010701	393148074561701	BBMUA TW 1	393149	0745617	120	35-03992	460	410 - 460	124PNPN
070572	394051074504001	ELMTOWNE VIL 1/WINSLOW10	394057	0745028	110	31-14078	314	304 - 314	124MQVC
051162	394635074440901	TRAILER PARK 1980	394636	0744409	60	32-05879	235	215 - 235	124PNPN
290607	394454074065502	BLWD 4	394454	0740654	5	33-07876	658	596.75 - 661.92	124PNPN
291097	395400074093701	BTMUA 2	395400	0740936	25	33-29652	450	345 - 445	124PNPN
290809	395527074082601	OGBWD 4	395527	0740824	10	33-14067	370	330 - 370	124PNPN
290537	395636074043902	SHWD 2	395636	0740439	4	53-00001	439	400 - 430	124PNPN
290937	395719074123304	TRWC 37	395719	0741231	6	33-23928	238.5	190 - 210	121CKKD
291133	395724074074701	WINDSOR AVE STARION 40	395725	0740741	6	33-27487	318	258 - 318	121CKKD
290068	395803074102401	TRWC 15	395803	0741023	25	33-00829	230	195 - 225	121CKKD
291098	395944074122001	PARKWAY 41	395944	0741219	79	33-30281	282	237 - 282	121CKKD

DE-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
D00102	390729075315701	DOVER 6	390729	0753157	20	D0-10208	337	330 - 337	124PNPN

AQUIFER UNITS.--124PNPN, Piney Point aquifer; 211MRPA, Potomac-Raritan-Magothy system; 124MQVC, Manasquan-Vincentown aquifer; 121CKKD, Kirkwood-Cohansey aquifer system.

## CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Sample type	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)
KENT COUNTY, DE									
DOVER 6	390729075315701	11-21-02	1235	Environmental	0.1	762	<0.1	--	8.2
		03-24-03	1236	Environmental	--	--	--	--	--
CUMBERLAND COUNTY, NJ									
JONES ISLAND 2 OBS	391828075120902	11-28-01	1430	Environmental	0.1	--	0.1	--	8.3
FAIR GROUNDS 3 OBS	392528075064101	06-21-00	1445	Environmental	--	--	--	--	8.7
		11-22-02	1435	Environmental	--	765	<0.1	--	8.3
		11-22-02	1436	Environmental	--	--	--	--	--
VOCATIONAL SCHOOL 3 OBS	392733075092401	11-15-01	1500	Environmental	0.7	--	0.1	--	8.8
ATLANTIC COUNTY, NJ									
MARGATE FIREHOUSE 1 OBS	392017074300201	11-01-02	1130	Environmental	0.6	--	<0.1	--	9.0
		11-01-02	1131	Environmental	--	--	--	--	--
		11-01-02	1135	Environmental	--	--	--	--	--
HAMILTON TEST OW1	392748074430501	12-20-02	1330	Environmental	4.7	747	M	0.0	8.7
		12-20-02	1331	Replicate	4.7	747	M	0.0	8.7
BBMUA TW 1	393148074561701	04-18-00	1120	Environmental	0.1	758	0.1	1	8.2
CAMDEN COUNTY, NJ									
ELMTOWNE VIL 1/WINSLOW10	394051074504001	12-05-01	1000	Environmental	--	--	0.1	--	8.4
BURLINGTON COUNTY, NJ									
TRAILER PARK 1980	394635074440901	05-15-00	0835	Environmental	--	--	<0.1	--	8.4
OCEAN COUNTY, NJ									
BLWD 4	394454074065502	08-28-01	1015	Environmental	0.2	760	<0.1	--	8.6
BTMUA 2	395400074093701	04-19-00	1030	Environmental	--	760	<0.1	--	7.7
OGBWD 4	395527074082601	04-19-00	1445	Environmental	0.1	762	0.2	--	7.5
SHWD 2	395636074043902	07-15-98	1015	Environmental	0.6	765	0.2	2	8.8
TRWC 37	395719074123304	05-19-98	1120	Environmental	6.6	760	0.3	3	6.9
		05-19-98	1130	Replicate	--	--	--	--	--
WINDSOR AVE STARION 40	395724074074701	05-18-98	1140	Environmental	0.6	763	0.3	3	6.6
TRWC 15	395803074102401	12-15-97	1135	Environmental	0.1	765	--	--	6.5
PARKWAY 41	395944074122001	06-24-98	1200	Environmental	0.6	762	0.2	2	6.5

## CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	pH, water, unfltrd lab, std units (00403)	Specif. conduc-tance, wat unfltrd lab, uS/cm 25 degC (90095)	Specif. conduc-tance, wat unfltrd lab, uS/cm 25 degC (00095)	Temper-ature, air, deg C (00020)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unfltrd end pt, field, mg/L as CaCO3 (00410)
KENT COUNTY, DE												
DOVER 6	11-21-02	8.1	525	560	--	16.0	47	9.78	5.55	7.02	108	--
	03-24-03	--	--	--	--	--	--	--	--	--	--	--
CUMBERLAND COUNTY, NJ												
JONES ISLAND 2 OBS	11-28-01	8.1	216	214	--	14.5	86	29.1	3.18	3.48	8.96	--
FAIR GROUNDS 3 OBS	06-21-00	8.6	1,090	1,110	--	16.5	--	--	--	--	212	--
	11-22-02	8.3	1,010	1,090	12.0	14.8	52	9.50	6.75	11.3	197	271
	11-22-02	--	--	--	--	--	--	--	--	--	--	--
VOCATIONAL SCHOOL	11-15-01	8.7	553	555	--	15.0	48	9.02	6.18	9.75	108	--
ATLANTIC COUNTY, NJ												
MARGATE FIREHOUSE	11-01-02	8.4	1,830	1,900	--	16.8	35	5.00	5.37	15.5	379	--
	11-01-02	--	--	--	--	--	--	--	--	--	--	--
	11-01-02	--	--	--	--	--	--	--	--	--	--	--
HAMILTON TEST OW1	12-20-02	8.5	625	649	14.6	16.1	31	6.22	3.71	6.14	139	--
	12-20-02	--	--	649	14.6	16.1	--	--	--	--	--	--
BBMUA TW 1	04-18-00	7.7	501	505	--	14.8	56	11.6	6.55	8.16	83.9	--
CAMDEN COUNTY, NJ												
ELMTOWNE VIL 1/WIN	12-05-01	8.4	272	271	14.0	13.8	31	8.99	2.17	6.02	51.4	--
BURLINGTON COUNTY, NJ												
TRAILER PARK 1980	05-15-00	7.5	195	192	--	13.5	30	9.69	1.35	6.39	28.5	--
OCEAN COUNTY, NJ												
BLWD 4	08-28-01	8.4	362	372	--	17.9	34	8.17	3.36	6.31	71.2	--
BTMUA 2	04-19-00	7.3	172	172	--	13.7	36	11.5	1.69	5.22	20.3	--
OGBWD 4	04-19-00	7.4	168	169	--	13.7	45	15.0	1.69	5.13	14.3	66
SHWD 2	07-15-98	--	221	240	--	15.3	15	5.04	0.650	4.53	44.0	97
TRWC 37	05-19-98	--	107	115	--	12.9	11	2.76	1.02	4.77	16.8	--
	05-19-98	--	105	--	--	--	11	2.73	1.02	4.70	16.7	--
WINDSOR AVE STARIO	05-18-98	--	68	74	--	13.3	9	2.37	0.697	4.49	7.73	19
TRWC 15	12-15-97	5.9	49	53	--	12.7	8	1.85	0.790	2.97	3.19	--
PARKWAY 41	06-24-98	--	91	115	--	12.6	23	7.07	1.31	4.32	6.99	18

## CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	ANC, wat unfixed end pt, lab, mg/L as CaCO <sub>3</sub> (90410)	Alkalinity, wat flt inc tit field, mg/L as CaCO <sub>3</sub> (39086)	Bromide water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)
KENT COUNTY, DE												
DOVER 6	11-21-02	301	284	E.01	3.49	0.80	21.4	2.7	330	0.27	<0.06	<0.008
	03-24-03	--	--	--	--	--	--	--	--	--	--	--
CUMBERLAND COUNTY, NJ												
JONES ISLAND 2 OBS	11-28-01	94	--	--	4.47	--	56.2	9.6	173	0.08	<0.05	<0.008
FAIR GROUNDS 3 OBS	06-21-00	--	--	--	179	--	--	--	--	--	--	--
	11-22-02	281	--	0.68	168	0.91	10.3	3.9	573	0.44	<0.06	<0.008
	11-22-02	--	--	--	--	--	--	--	--	--	--	--
VOCATIONAL SCHOOL	11-15-01	209	220	--	51.7	--	14.3	3.7	270	0.26	<0.05	<0.008
ATLANTIC COUNTY, NJ												
MARGATE FIREHOUSE	11-01-02	430	--	--	321	--	18.6	47.7	1,010	0.81	<0.06	<0.008
	11-01-02	--	--	--	--	--	--	--	--	--	--	--
	11-01-02	--	--	--	--	--	--	--	--	0.82	<0.06	<0.008
HAMILTON TEST OW1	12-20-02	E238	236	0.13	58.3	0.69	11.5	13.7	382	0.31	<0.06	<0.008
	12-20-02	--	236	--	--	--	--	--	--	--	--	--
BBMUA TW 1	04-18-00	--	214	--	28.1	--	11.7	5.3	285	0.25	<0.05	<0.010
CAMDEN COUNTY, NJ												
ELMTOWNE VIL 1/WIN	12-05-01	129	122	--	0.96	--	10.4	11.7	166	0.16	<0.05	<0.008
BURLINGTON COUNTY, NJ												
TRAILER PARK 1980	05-15-00	103	--	--	2.16	--	15.4	E.3	--	0.12	<0.05	<0.010
OCEAN COUNTY, NJ												
BLWD 4	08-28-01	178	178	--	2.98	--	12.0	14.4	226	0.19	<0.05	<0.006
BTMUA 2	04-19-00	--	66	--	2.50	--	19.4	8.8	110	0.10	<0.05	<0.010
OGBWD 4	04-19-00	71	--	--	2.89	--	29.5	8.1	118	0.08	<0.05	<0.010
SHWD 2	07-15-98	--	--	--	1.95	--	17.2	7.2	140	0.18	<0.05	0.012
TRWC 37	05-19-98	--	46	--	2.89	--	23.6	4.2	88	0.09	<0.05	<0.010
	05-19-98	--	--	--	2.82	--	23.7	4.3	--	0.105	<0.050	<0.010
WINDSOR AVE STARIO	05-18-98	--	--	--	3.66	--	22.1	6.8	63	0.10	<0.05	<0.010
TRWC 15	12-15-97	7	12	--	4.56	--	18.7	6.5	49	<0.02	<0.05	0.010
PARKWAY 41	06-24-98	18	--	--	9.17	--	23.9	8.6	76	0.05	<0.05	<0.010



## CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Arsenic, water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Boron, water, fltrd, ug/L (01020)	Cadmium, water, fltrd, ug/L (01025)	Cobalt, water, fltrd, ug/L (01035)	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)	Strontium, water, fltrd, ug/L (01080)
KENT COUNTY, DE												
DOVER 6	11-21-02	0.03	1.2	<20	3.1	<0.9	664	--	<8	27	<2.0	107
	03-24-03	--	--	--	--	--	--	--	--	--	--	--
CUMBERLAND COUNTY, NJ												
JONES ISLAND 2 OBS	11-28-01	0.17	E.3	<20	<0.2	<0.9	43	--	--	68	16.2	152
FAIR GROUNDS 3 OBS	06-21-00	--	--	--	--	--	--	--	--	--	--	--
	11-22-02	0.23	1.3	<20	1.0	2.3	754	--	E5	224	9.9	142
	11-22-02	--	--	--	--	--	--	--	--	--	--	--
VOCATIONAL SCHOOL	11-15-01	0.05	1.1	<20	0.3	2.0	324	--	--	28	E1.2	135
ATLANTIC COUNTY, NJ												
MARGATE FIREHOUSE	11-01-02	0.12	1.5	<80	5.3	10.6	2,240	--	<40	260	E6.9	628
	11-01-02	--	--	--	--	--	--	--	--	--	--	--
	11-01-02	0.12	--	--	--	--	--	--	--	--	--	--
HAMILTON TEST OW1	12-20-02	0.11	2.6	<20	<0.3	1.8	924	--	<8	E8	2.4	136
	12-20-02	--	--	--	--	--	--	--	--	--	--	--
BBMUA TW 1	04-18-00	0.02	E.3	<20	--	E.7	416	--	<13	63	E2.2	167
CAMDEN COUNTY, NJ												
ELMTOWNE VIL 1/WIN	12-05-01	0.06	0.6	<20	<0.2	13.3	209	--	--	61	6.1	81.3
BURLINGTON COUNTY, NJ												
TRAILER PARK 1980	05-15-00	0.24	0.6	<20	--	44.9	132	--	<13	37	18.7	73.2
OCEAN COUNTY, NJ												
BLWD 4	08-28-01	E.04	0.6	<20	<0.2	<0.9	394	--	E.009	<10	<3.0	111
BTMUA 2	04-19-00	0.16	1.3	<20	--	E.3	31	--	<13	316	5.1	88.5
OGBWD 4	04-19-00	0.34	1.2	<20	--	8.3	23	--	<13	899	18.1	116
SHWD 2	07-15-98	0.32	1.6	--	--	--	--	--	--	14	--	40.2
TRWC 37	05-19-98	0.82	0.7	--	--	--	--	--	--	1,960	--	38.6
	05-19-98	0.820	0.7	--	--	--	--	--	--	1,950	--	38.4
WINDSOR AVE STARIO	05-18-98	0.80	0.5	--	--	--	--	--	--	1,660	--	30.0
TRWC 15	12-15-97	0.03	0.3	3	--	68	<16	<1.00	<1.00	3,050	45.6	29.6
PARKWAY 41	06-24-98	0.92	0.3	--	--	--	--	--	--	479	--	60.0

## CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS—Continued

## MULTIPLE STATION ANALYSES

Local identifier	Date	Zinc, water, fltrd, ug/L (01090)	Alpha radio-activity water, fltrd, Th-230, pCi/L (04126)	Alpha radio-activity wat flt Th-230, pCi/L (75987)	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Beta radio-activity wat flt CS-137, pCi/L (75989)	Alpha-emitting radium, wat flt plancht pCi/L (09510)	Ra-226, water, fltrd, radon method pCi/L (09511)	Ra-226 2-sigma water, fltrd, pCi/L (76001)	Ra-224 filtered gamma fast count pCi/L (99922)	Ra-224 PE 2 sigma filtered gamma fast count pCi/L (99923)
KENT COUNTY, DE											
DOVER 6	11-21-02	<24	--	--	--	--	--	0.02	0.01	--	--
	03-24-03	--	--	--	--	--	--	--	--	--	--
CUMBERLAND COUNTY, NJ											
JONES ISLAND 2 OBS	11-28-01	--	--	--	--	--	--	0.02	0.01	--	--
FAIR GROUNDS 3 OBS	06-21-00	--	--	--	--	--	--	--	--	--	--
	11-22-02	<24	--	--	--	--	--	0.05	0.02	--	--
	11-22-02	--	--	--	--	--	--	--	--	--	--
VOCATIONAL SCHOOL	11-15-01	--	--	--	--	--	--	0.03	0.01	--	--
ATLANTIC COUNTY, NJ											
MARGATE FIREHOUSE	11-01-02	<120	--	--	--	--	--	--	--	--	--
	11-01-02	--	--	--	--	--	--	--	--	--	--
	11-01-02	--	--	--	--	--	--	--	--	--	--
HAMILTON TEST OW1	12-20-02	<24	--	--	--	--	--	0.06	0.02	--	--
	12-20-02	--	--	--	--	--	--	--	--	--	--
BBMUA TW 1	04-18-00	<20	<3.0	2.5	6.8	4.3	--	--	0.03	--	--
CAMDEN COUNTY, NJ											
ELMTOWNE VIL 1/WIN	12-05-01	--	--	--	--	--	--	0.07	0.02	--	--
BURLINGTON COUNTY, NJ											
TRAILER PARK 1980	05-15-00	<20	<3.0	2.3	6.9	4.2	--	--	0.06	--	--
OCEAN COUNTY, NJ											
BLWD 4	08-28-01	<20	5.5	3.5	7.3	2.2	--	--	0.03	--	--
BTMUA 2	04-19-00	<20	4.3	2.6	6.0	4.0	--	--	0.03	--	--
OGBWD 4	04-19-00	<20	<3.0	1.8	<4.0	3.9	--	--	0.06	--	--
SHWD 2	07-15-98	--	1.6	1.2	--	--	--	--	--	0.390	0.210
TRWC 37	05-19-98	--	5.9	2.6	6.3	4.1	--	--	--	--	--
	05-19-98	--	3.9	2.2	5.9	4.0	--	--	--	--	--
WINDSOR AVE STARIO	05-18-98	--	0.5	0.23	4.2	0.30	<0.3	--	--	0.350	0.280
TRWC 15	12-15-97	2	<3.0	1.9	5.2	3.8	--	--	--	--	--
PARKWAY 41	06-24-98	--	0.9	0.60	--	--	<0.2	--	--	0.430	0.290

CONFINED AQUIFER FLOW AND CHEMISTRY: PINEY POINT AND BASAL KIRKWOOD SANDS—Continued

MULTIPLE STATION ANALYSES

Local identifier	Date	Rn-222, water, unfltrd pCi/L (82303)	Rn-222 2-sigma water unfltrd pCi/L (76002)	Tritium water unfltrd pCi/L (07000)	Tritium 2-sigma water unfltrd pCi/L (75985)	C-14, water, fltrd, percent modern (49933)	C-14 counting error, water, fltrd, percent modern (49934)	C-13 / C-12 ratio, water, unfltrd per mil (82081)	Deuterium/Protium ratio, water, unfltrd per mil (82082)	O-18 / O-16 ratio, water, unfltrd per mil (82085)	S34/S32 in sulfate water, fltrd, per mil (49932)
KENT COUNTY, DE											
DOVER 6	11-21-02	430	23	-0.2	0.58	0.190	0.070	-8.78	-34.00	-5.92	--
	03-24-03	--	--	--	--	--	--	--	--	-5.84	--
CUMBERLAND COUNTY, NJ											
JONES ISLAND 2 OBS	11-28-01	75	19	--	--	16.88	0.130	-10.79	--	--	--
FAIR GROUNDS 3 OBS	06-21-00	--	--	--	--	--	--	--	--	--	--
	11-22-02	390	29	0.1	0.58	0.740	0.080	-7.56	-40.30	-7.26	45.38
	11-22-02	--	--	--	--	--	--	--	--	-7.26	--
VOCATIONAL SCHOOL	11-15-01	400	23	-0.1	0.58	16.46	0.130	-11.00	--	--	30.41
ATLANTIC COUNTY, NJ											
MARGATE FIREHOUSE	11-01-02	430	34	--	--	--	--	-10.15	-41.50	-7.04	53.41
	11-01-02	--	--	--	--	--	--	--	--	-7.10	--
	11-01-02	--	--	--	--	--	--	--	--	--	--
HAMILTON TEST OW1	12-20-02	400	30	--	--	0.310	0.060	-10.49	--	--	59.64
	12-20-02	270	28	--	--	--	--	--	--	-7.43	--
BBMUA TW 1	04-18-00	200	17	--	--	1.000	0.080	-8.27	--	--	--
CAMDEN COUNTY, NJ											
ELMTOWNE VIL 1/WIN	12-05-01	240	20	--	--	0.480	0.050	-9.71	--	--	--
BURLINGTON COUNTY, NJ											
TRAILER PARK 1980	05-15-00	340	21	M	0.58	15.73	0.130	-14.52	--	--	--
OCEAN COUNTY, NJ											
BLWD 4	08-28-01	300	24	--	--	0.050	0.050	-8.51	--	--	--
BTMUA 2	04-19-00	350	21	--	--	14.10	0.390	-11.76	--	--	--
OGBWD 4	04-19-00	240	19	--	--	9.730	0.230	-12.37	--	--	--
SHWD 2	07-15-98	170	20	<0.3	0.58	2.830	0.080	-9.90	--	--	--
TRWC 37	05-19-98	670	26	<0.3	0.58	23.40	0.240	-15.94	--	--	--
	05-19-98	680	27	--	--	--	--	--	--	--	--
WINDSOR AVE STARIO	05-18-98	330	22	<0.3	0.58	41.64	0.330	-20.23	--	--	--
TRWC 15	12-15-97	400	23	<0.3	0.58	56.86	0.380	-22.18	--	--	--
PARKWAY 41	06-24-98	490	26	2.9	0.64	56.44	0.440	-20.30	--	--	--

Remark codes used in this table:  
 < -- Less than  
 E -- Estimated value  
 M -- Presence verified, not quantified

WATER-QUALITY AT SPECIAL-STUDY SITES  
TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM

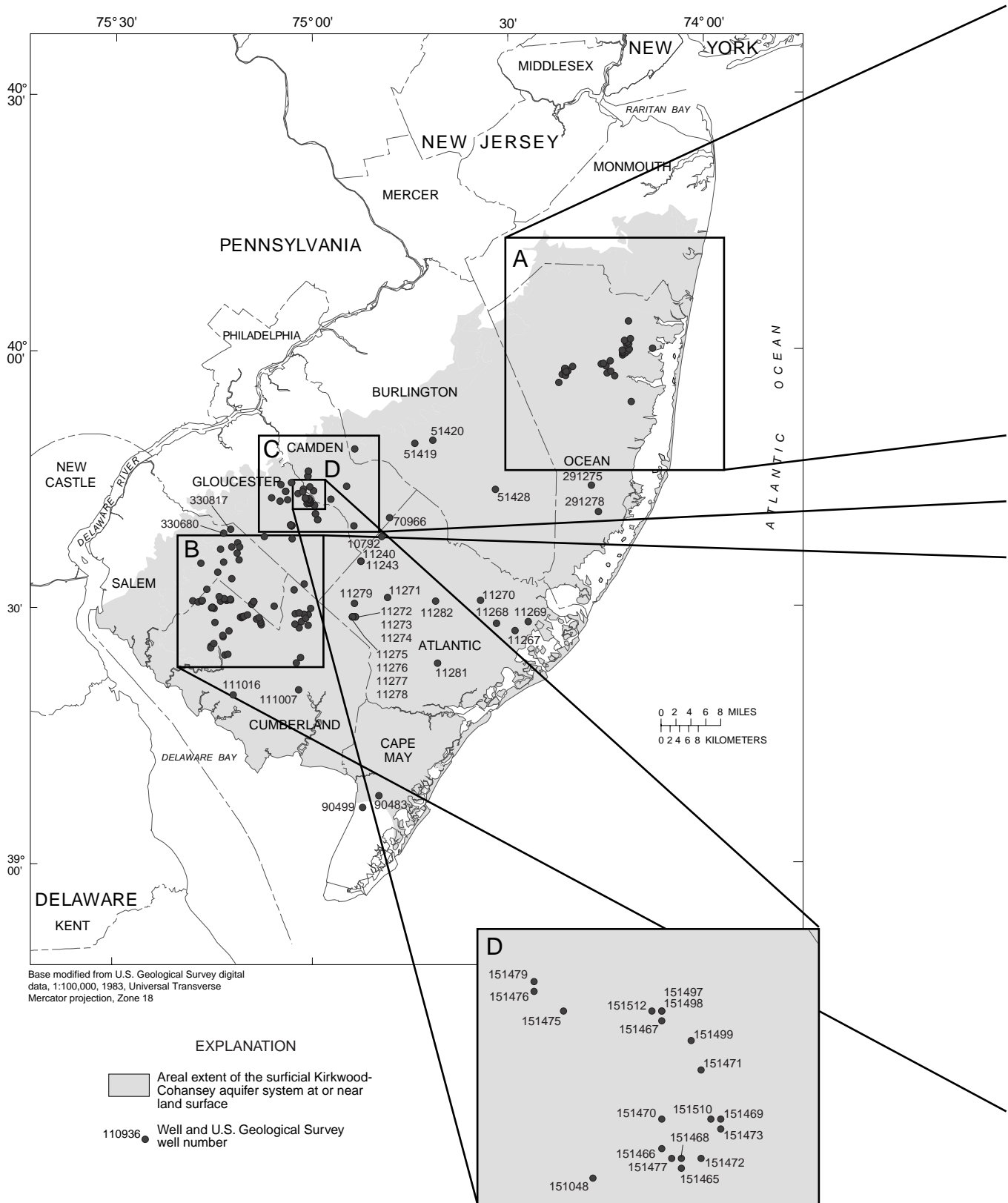


Figure 51. Location of wells sampled for trace elements and mercury, 1996 to 2001.

TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

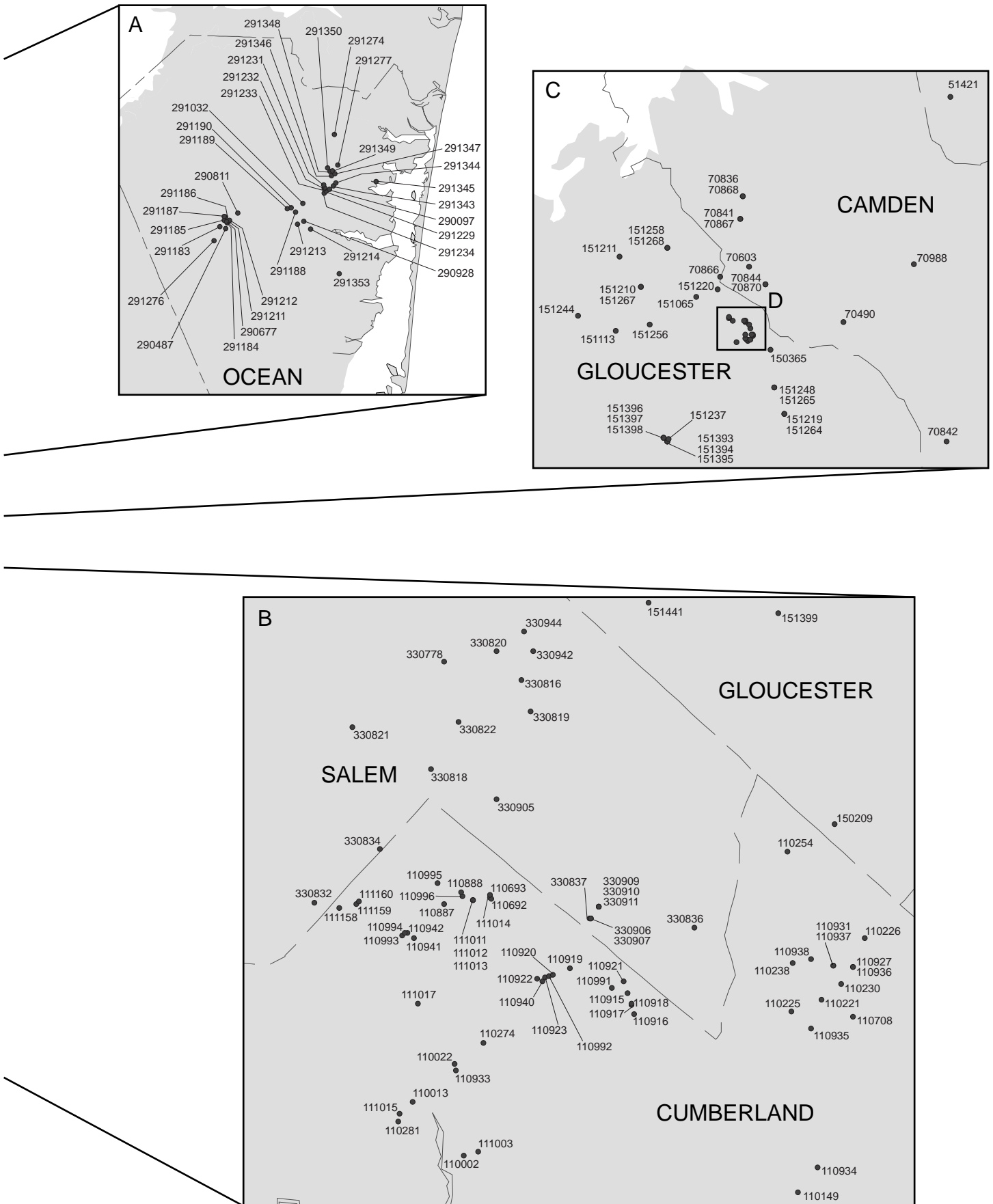


Figure 51. Location of wells sampled for trace elements and mercury, 1996 to 2001--continued.

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

The following tables contain site-information and water-quality data from a network of 196 wells sampled from 1996 to 2001 to update trace-element concentration and ancillary water-quality information from the unconfined Kirkwood-Cohansey aquifer system in southern New Jersey. The sampling network was established in cooperation with the New Jersey Department of Environmental Protection (NJDEP) (fig. 51).

The sampling network updates trace-element concentration data using improved ground-water sampling and analytical techniques (Ivahnenko and others, 2001). Water-quality problems (nitrate, radium, mercury, VOCs, pesticides) evaluated by various studies in southern NJ in the outcrop area of the unconfined Kirkwood-Cohansey aquifer increase the need for high quality water-quality data from the aquifer. Most mercury analyses are completed with gold-amalgamation atomic-fluorescence (Olsen and DeWild, 1999). Because water from the aquifer is acidic, many trace elements are expected to be somewhat soluble. The areally extensive sampling network is one of the largest trace-element concentration data sets assembled using the improved ground-water sampling and analytical techniques.

Water quality was variable within the aquifer. Select trace elements were commonly detected.

## WATER-QUALITY CONTROL DATA

Quality assurance consisted of about 25 percent selected sequential replicate samples and equipment blanks (59 samples total). Sequential replicate samples closely reproduced results for the initial environmental samples. The equipment blanks demonstrate low to very low levels of random contamination resulting from the sample collection and sample handling; detailed discussion is presented by Ivahnenko and others (2001).

The field methods used are described in Techniques of water resources investigations-Book 9-Handbooks for Water Resource Investigations-National field manual for the collection of water-quality data -Chapter A3 Cleaning of equipment for water sampling, edited by F.D. Wilde and others, 1998, Chapter A4 Collection of water samples edited by F.D. Wilde and others, 1999, and Chapter A5 Processing of water samples edited by F.D. Wilde and others, 1999, and by Ivahnenko and others (2001).

NJ-WRD Well Number	Station Number	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
291278	394113074164401	394112	0741642	24	33-30056	110	100 - 110	121CCKD
291275	394415074174301	394416	0741742	91	33-30949	127	117 - 127	121CCKD
291353	395401074113501	395401	0741135	49	33-28017	172	162 - 172	121CCKD
291276	395618074223501	395619	0742233	164	32-17317	118	108 - 118	121CCKD
291214	395703074140301	395703	0741403	33.72	33-18409	60	55 - 60	121CCKD
291183	395716074220301	395716	0742203	139	32-18568	55	45 - 55	121CCKD
290487	395722074222901	395708	0742130	178.71	32-00874	92.0	61 - 92	121CCKD
291213	395723074151101	395723	0741511	28.70	33-28040	90	80 - 90	121CCKD
291184	395732074212401	395732	0742124	144	32-06171	77	67 - 77	121CCKD
290928	395735074144001	395735	0741440	29	33-13599	102.5	72 - 102.5	121CCKD
291211	395737074211401	395737	0742114	138.71	32-07875	155	145 - 155	121CCKD
291185	395741074213901	395741	0742139	141	32-05929	35	32 - 35	121CCKD
291212	395742074211101	395742	0742111	138.72	32-07991	125	115 - 125	121CCKD
291186	395756074213101	395756	0742131	140	32-10059	120	110 - 120	121CCKD
291187	395757074213901	395757	0742139	144	32-07760	112	102 - 112	121CCKD
290811	3958120742202602	395812	0742202	138.72	32-07287	117	97 - 117	121CCKD
291188	395813074152101	395813	0741521	33	33-15871	65	60 - 65	121CCKD
291189	395827074160501	395827	0741605	44	33-12578	35	30 - 35	121CCKD
291190	395831074154401	395831	0741544	47	33-15877	40	35 - 40	121CCKD
291032	395848074144202	395848	0741442	64.54	33-16164-0	88	74 - 85	121CCKD
291234	395928074124901	395928	0741249	58.80	--	85	65 - 85	121CCKD
291229	395936074123901	395936	0741239	68.81	--	110	100 - 110	121CCKD
290997	395945074122201	395945	741221	80.00	33-01229	126	106 - 126	121CCKD
291233	395946074124901	395946	0741249	58.81	33-29984	70	50 - 70	121CCKD
291232	395950074124801	395950	0741248	68.81	29-26752	80	60 - 80	121CCKD
291343	395958074120101	395958	0741201	82	33-19959	98	83 - 93	121CCKD
291231	400002074125201	400002	0741252	58.81	33-99983	55	35 - 55	121CCKD
291344	400009074114901	400009	0741149	69	29-25021	180	170 - 180	121CCKD
291345	400014074081601	400014	0740816	6	29-18822	77	67 - 77	121CCKD
291346	400040074121001	400040	0741210	76	29-16364	180	170 - 180	121CCKD
291347	400048074115301	400048	0741153	79	29-29026	110	100 - 110	121CCKD
291348	400057074121801	400057	0741218	72	33-16396	77	74 - 77	121CCKD
291349	400059074120501	400059	0741205	75	29-15469	70	66 - 70	121CCKD
291350	400112074123201	400112	0741232	81	29-16644	73	69 - 73	121CCKD
291277	400122074113801	400122	0741137	69	29-24304	175	165 - 175	121CCKD
291274	400326074115201	400326	0741153	55	29-25585	67	57 - 67	121CCKD
290677	405758074212801	395736	0742125	158.72	32-05583	89.0	79 - 89	121CCKD
051428	394351074321501	394351	0743215	49	32-16167	101	91 - 101	121CCKD
051421	394838074533601	394840	0745333	125	31-48348	70	60 - 70	121CCKD
051419	394918074442801	394918	0744427	91	32-17408	70	60 - 70	121CCKD
051420	394939074414701	394939	0744142	94	32-18090	102	92 - 102	121CCKD
070842	393940074534201	393939	0745342	99	31-49664	14	12 - 14	121CCKD
070966	394034074482001	394036	0744819	81	31-34235	105	95 - 105	121CCKD
070490	394248074571001	394248	0745710	113.81	31-05542	113	72 - 103	121CCKD
070844	394348074595301	394347	0745950	159	31-49935.1	34	32 - 34	121CCKD
070870	394348074595302	394347	0745950	159	31-51570	55	52.5 - 55	121CCKD
070866	394358075012001	394358	0750120	148.82	31-32431	71	50.33 - 66	121CCKD
070603	394414075001601	394412	0750022	159	31-16697	120	100 - 120	121CCKD
070988	394416074544901	394416	0745449	148	31-38324	91	81 - 91	121CCKD
070841	394528075004301	394527	0750040	174	31-49750	54	52 - 54	121CCKD
070867	394528075004302	394527	0750040	173.83	31-51572	80	77.5 - 80	121CCKD
070836	394604075003601	394604	0750034	164	31-49828	37	30 - 37	121CCKD
070868	394604075003602	394604	0750033	163.83	31-51782	70	67.5 - 70	121CCKD
150209	393254075012101	393252	0750114	117	31-04599	162	132 - 162	121CCKD
151399	393807075030401	393810	0750303	124	31-44205	100	90 - 100	121CCKD

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

NJ-WRD Well Number	Station Number	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
151441	393823075071601	393823	0750716	129	31-36324	75	65 - 75	121CKKD
151393	393939075030901	393939	0750309	129	31-54007	34	32 - 34	121CKKD
151394	393939075030902	393939	0750309	129	31-54006	57	55 - 57	121CKKD
151395	393939075030903	393939	0750309	129	31-54005	70	68 - 70	121CKKD
151237	393943075030501	393943	0750305	125.81	31-50483.1	22	16 - 22	121CKKD
151396	393945075031701	393945	0750317	144	31-54010	35	30 - 35	121CKKD
151397	393945075031702	393945	0750317	144	31-54009	52	50 - 52	121CKKD
151398	393945075031703	393945	0750317	144	31-54008	75	71 - 75	121CKKD
151219	394018074590801	394022	0745909	144	31-49745	31	29 - 31	121CKKD
151264	394022074591002	394022	0745909	143.81	31-51568	53	50.5 - 53	121CKKD
151248	394104074593101	394104	0745930	143.81	31-50435.1	21.5	19.5 - 21.5	121CKKD
151265	394104074593203	394104	0745931	143.81	31-51567	48.5	46 - 48.5	121CKKD
151465	394217075002401	394217	0750024	164	31-36275	90	80 - 90	121CKKD
151048	394217075003901	394215	0750046	151	31-27529	144	100.5 - 141	121CKKD
151468	394218075002101	394219	0750024	159	--	85	--	121CKKD
151477	394218075002701	394218	0750027	159	--	95	--	121CKKD
150365	394219074594401	394203	0745937	138.82	31-05375	144	109 - 143.25	121CKKD
151472	394219075002401	394218	0750021	159	--	100	--	121CKKD
151466	394220075002901	394220	0750029	154	--	95	--	121CKKD
151473	394224075001401	394224	0750014	150	--	100	--	121CKKD
151469	394226075001501	394226	0750015	149	31-29633	85	75 - 85	121CKKD
151510	394226075001701	394226	0750017	149	--	87	--	121CKKD
151470	394226075003201	394226	0750032	144	--	80	--	121CKKD
151474	394233075003001	394233	0750030	144	--	100	--	121CKKD
151113	394233075045401	394233	0750454	144	31-34637	112	82 - 112	121CKKD
151471	394237075002101	394237	0750021	144	31-15672	55	50 - 55	121CKKD
151499	394242075002301	394242	0750023	144	31-56574	26.5	21.5 - 26.5	121CKKD
151511	394242075002302	394242	0750023	139	--	100	--	121CKKD
151256	394243075034401	394243	0750343	153.82	31-50008.1	22.5	20.5 - 22.5	121CKKD
151467	394247075003001	394247	0750030	149	--	60	--	121CKKD
151497	394248075003201	394248	0750032	144	31-56484	30	26 - 30	121CKKD
151498	394248075003202	394248	0750032	144	31-56485	45.5	43 - 45	121CKKD
151512	394248075003203	394248	0750032	149	--	105	95 - 105	121CKKD
151475	394249075005501	394249	0750055	164	--	90	--	121CKKD
151476	394252075010201	394252	0750102	164	--	95	88 - 95	121CKKD
151479	394254075010401	394254	0750104	161	31-11702	110	100 - 110	121CKKD
151244	394258075061101	394256	0750609	140.82	31-49939.1	39	33 - 39	121CKKD
151065	394327075021001	394326	0750209	151	31-28782	85	59.25 - 85	121CKKD
151220	394340075012701	394339	0750126	153.82	31-49747.1	30.5	28.5 - 30.5	121CKKD
151210	394342075040301	394343	0750401	141	31-49742	19.5	17.5 - 19.5	121CKKD
151267	394342075040302	394343	0750401	141	31-51565	43	40.5 - 43	121CKKD
151211	394428075044601	394428	0750444	146	31-49741	32	30 - 32	121CKKD
151258	394446075031001	394443	0750307	118.82	31-50430.1	19	17 - 19	121CKKD
151268	394446075031003	394443	0750307	118.82	31-51564	35	32.5 - 35	121CKKD
011281	392335074410801	392336	0744106	64	36-17936	157	147 - 157	121CKKD
011267	392719074292201	392720	0742923	49	36-16419	100	90 - 100	121CKKD
011268	392813074321001	392814	0743212	62	36-17164	100	90 - 100	121CKKD
011269	392824074272801	392824	0742725	44	36-13238	70	60 - 70	121CKKD
011272	392900074533101	392900	0745331	90	35-18898	20	15 - 20	121CKKD
011273	392900074533102	392900	0745331	90	35-18897	39	37 - 39	121CKKD
011274	392900074533103	392900	0745331	90	35-18896	61	57 - 61	121CKKD
011275	392901074535501	392901	0745355	100	35-18902	25	20 - 25	121CKKD
011276	392901074535502	392901	0745355	100	35-18901	44.5	42.5 - 44.5	121CKKD
011277	392901074535503	392901	0745355	100	35-18900	64.5	62.5 - 64.5	121CKKD
011278	392901074535504	392901	0745355	100	35-18899	79.5	75.5 - 79.5	121CKKD
011279	393035074533601	393036	0745336	91	35-15335	110	100 - 110	121CKKD
011282	393050074412501	393050	0744124	59	35-15453	104	94 - 104	121CKKD
011270	393053074344201	393054	0743437	54	36-15509	80	70 - 80	121CKKD
011271	3931170744484101	393117	0744837	69	35-13134	100	90 - 100	121CKKD
011243	393530074523902	393530	0745238	73.79	31-51781	40	37.5 - 40	121CKKD
011240	393531074523901	393530	0745238	74	31-49933.1	19	17 - 19	121CKKD
010792	393823074492901	393823	0744929	119	31-19462	218	178 - 218	121CKKD
330836	393015075054501	393017	0750544	86.78	35-17396	29	27 - 29	121CKKD
330837	393027075090901	393030	0750907	98	35-17424.1	20	18 - 20	121CKKD
330906	393030075090501	393030	0750905	94	35-18878	38	36 - 38	121CKKD
330907	393030075090502	393030	0750905	94	35-18877	48	46 - 48	121CKKD
330908	393030075090503	393030	0750905	94	35-18876	80	78 - 80	121CKKD
330909	393046075085201	393046	0750852	71	35-18875	20	15 - 20	121CKKD
330910	393046075085202	393046	0750852	71	35-18874	38	36 - 38	121CKKD
330911	393046075085203	393046	0750852	71	35-18873	62	60 - 62	121CKKD
330832	393050075180001	393052	0751801	123.99	34-05531.1	34	32 - 34	121CKKD
330834	393214075155601	393213	0751556	93.94	30-11811.1	22	20 - 22	121CKKD
330905	393328075121201	393329	0751208	114	30-06467	100	90 - 100	121CKKD
330818	393413075141901	393413	0751416	139	30-11704	32	30 - 32	121CKKD
330821	393516075164701	393516	0751648	137	30-11771	61	59 - 61	121CKKD
330822	393523075132801	393525	0751323	149	30-11772	31	29 - 31	121CKKD
330819	393542075110501	393542	0751103	129	31-49629.1	22	20 - 22	121CKKD
330816	393625075112501	393627	0751122	131	31-49628	20	18 - 20	121CKKD
330778	393654075135101	393654	751350	137	30-07965	55	44 - 49	121CKKD

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

NJ-WRD Well Number	Station Number	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
330944	393740075111801	393740	0751118	134	--	--	--	121CKKD
330942	393711075110001	393711	0751100	129	31-31659	55	50 - 55	121CKKD
330820	393712075121201	393711	0751210	124	30-11703.1	19	17 - 19	121CKKD
330680	393818075132401	393848	0751324	143.21	30-06586	32	27 - 32	121CKKD
330817	393916075122201	393915	0751221	141	30-11702	22	20 - 22	121CKKD
111016	391953075115701	391953	0751155	29	35-13490	100	90 - 100	121CKKD
111007	392028075020501	392028	0750204	24	35-11035	80	75 - 80	121CKKD
110149	392337075022302	392337	0750223	6.89	--	110	--	121CKKD
110934	392415075014601	392415	0750146	43.88	35-17509	133	98 - 128	121CKKD
110002	392430075131301	392432	0751312	29	34-00561	98.0	72 - 98	121CKKD
111003	392439075124501	392439	0751245	33.91	34-05181	119	84 - 119	121CKKD
111015	392533075151801	392536	0751516	84	34-04074	126	116 - 126	121CKKD
110281	392523075151901	392523	0751519	73.95	34-01194	146	86 - 146	121CKKD
110013	392552075145001	392552	0751450	63.95	34-00598	117	76 - 117	121CKKD
110933	392640075132801	392640	0751328	82.91	34-05096	110	86 - 106	121CKKD
110022	392650075133101	392650	0751331	56.91	34-00712	129	99 - 129	121CKKD
110274	392724075123603	392722	0751235	98.89	34-01195	110	70 - 110	121CKKD
110221	392744075015801	392744	0750158	68.85	35-00870	162	132 - 162	121CKKD
110708	3928010750003701	392801	0750037	79	35-07632	163	117 - 163	121CKKD
110225	392811075023601	392811	0750236	67.54	35-00962	181	151 - 181	121CKKD
110916	392806075074201	392806	0750742	81.82	35-03390	62	55 - 62	121CKKD
110917	392819075074701	392819	0750747	103.82	35-02625	60	50 - 60	121CKKD
111017	392820075144301	392820	0751441	79	34-04135	68	58 - 68	121CKKD
110918	392822075074801	392822	0750748	103.82	35-01217	59	52 - 59	121CKKD
110935	392832075014801	392828	0750138	93.83	35-17425	70	67.5 - 70	121CKKD
110226	392816075012101	392959	0750015	99	35-00668	162	132 - 162	121CKKD
110915	392836075075401	392836	0750754	108.82	35-11073	99	89 - 99	121CKKD
110991	392845075082601	392845	0750826	113.82	35-03937	140	130 - 140	121CKKD
110921	392854075080201	392854	0750802	104.81	35-01108	123	106 - 123	121CKKD
110940	392854075104001	392854	0751040	113.85	35-06960	75	65 - 75	121CKKD
110922	392858075105001	392858	0751050	113.85	35-00658	66	56 - 62	121CKKD
110923	392901075103401	392901	0751034	110.85	35-06947	130	120 - 130	121CKKD
110992	392903075102801	392903	0751028	103.85	35-10497	110	100 - 110	121CKKD
110920	392904075102101	392904	0751021	103.84	35-02741	54	47 - 54	121CKKD
110919	392915075094701	392915	0750947	101.83	35-10835	117	107 - 117	121CKKD
110927	392918075003301	392918	0750037	94.80	35-17397.1	32	30 - 32	121CKKD
110936	392918075003803	392918	0750037	94.80	35-17789	50	47.5 - 50	121CKKD
110931	392920075011901	392920	0750117	113	35-17179	51	49 - 51	121CKKD
110937	392920075011902	392920	0750117	113	35-17868	69.5	67 - 69.5	121CKKD
110238	392923075023401	392923	0750234	83.80	55-00007	163	108 - 163	121CKKD
110230	392853075005801	392852	0750060	111.81	35-00017	177	137 - 177	121CKKD
110938	392928075020002	392929	0750159	88.80	35-17867	55.5	53 - 55.5	121CKKD
110941	392959075145001	392959	0751450	88.93	34-03188	65	55 - 65	121CKKD
110993	393002075151101	393002	0751511	78.94	34-02373	54	44 - 54	121CKKD
110942	393007075150301	393007	0751503	88.94	34-01335	94	84 - 94	121CKKD
110994	393007075150801	393007	0751508	88.94	34-01689	82	72 - 82	121CKKD
110887	393051075135101	393051	0751351	107	34-02365	50	43 - 50	121CKKD
111158	393044075171501	393044	0751715	109	--	--	--	121CKKD
111159	393050075164301	393050	0751643	109	--	--	--	121CKKD
111160	393053075163801	393053	0751638	109	--	--	--	121CKKD
111011	393056075125401	393056	0751254	101	34-05931	18	13 - 18	121CKKD
111012	393056075125402	393056	0751254	101	34-05930	39	37 - 39	121CKKD
111013	393056075125403	393056	0751254	101	34-05929	60	58 - 60	121CKKD
111014	393100075122201	393100	0751222	120	34-05932	60	58 - 60	121CKKD
110996	393102075131601	393102	0751316	118.90	34-02992	90	80 - 90	121CKKD
110692	393104075122201	393058	0751219	118.50	34-03742.1	38	33 - 38	121CKKD
110693	393104075122202	393104	0751221	119.67	34-03743	78	73 - 78	121CKKD
110888	393108075131901	393108	0751319	108	34-03532	115	105 - 115	121CKKD
110995	393122075140301	393122	0751403	118.91	34-02317	73	66 - 73	121CKKD
110254	393208075024501	393210	0750245	88.79	31-05227	160	130 - 160	121CKKD
090499	390643074522501	390643	0745225	9	35-15580	38	33 - 38	121CKKD
090483	390805074500001	390806	0744959	14	35-11010	100	90 - 100	121CKKD

AQUIFER UNITS.--121CKKD, Kirkwood-Cohansey aquifer system.



## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Time	Sample type	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)
OCEAN COUNTY											
394113074164401	09-09-98	0900	Environmental	--	756	9.8	92	4.3	32	12.4	0.42
394415074174301	07-16-98	1300	Environmental	--	758	7.5	71	4.2	28	12.6	0.67
395401074113501	09-03-98	1400	Environmental	--	756	1.8	17	3.9	57	13.4	0.26
395618074223501	07-29-98	1000	Environmental	--	754	0.9	9	4.1	32	13.0	0.32
395703074140301	11-02-97	1150	Environmental	0.1	--	13.0	--	4.5	63	13.6	1.31
395716074220301	07-12-96	1145	Environmental	0.1	--	8.7	--	5.0	106	13.6	5.10
395722074222901	11-12-97	1030	Environmental	0.1	--	4.5	--	4.7	64	13.2	1.37
395723074151101	08-22-97	1140	Environmental	0.1	--	6.4	--	4.6	29	13.3	0.23
395732074212401	07-10-96	1115	Environmental	10	--	1.9	--	4.1	66	15.3	0.52
	07-10-96	1120	Environmental	--	--	--	--	--	--	--	--
395735074144001	06-20-96	1130	Environmental	0.1	--	5.1	--	5.0	48	13.5	1.30
	06-20-96	1135	Environmental	0.1	--	--	--	5.0	--	--	--
	11-24-97	1100	Environmental	0.1	--	5.1	--	4.7	51	13.7	1.52
395737074211401	08-08-97	1055	Environmental	0.0	--	8.2	--	4.4	95	13.4	1.45
395741074213901	07-18-96	1125	Environmental	0.1	--	7.2	--	4.4	93	13.2	3.30
	07-18-96	1520	Blank	--	--	--	--	--	--	--	0.003
395742074211101	08-07-97	1135	Environmental	0.2	--	6.7	--	4.5	88	13.4	1.20
395756074213101	07-11-96	1440	Environmental	0.1	--	8.3	--	4.6	72	14.4	1.20
395757074213901	07-09-96	1115	Environmental	--	--	8.2	--	4.5	97	14.1	2.60
395812074202602	11-17-97	1010	Blank	--	--	--	--	--	--	--	0.022
	11-17-97	1125	Environmental	0.1	--	4.7	--	4.3	50	12.1	0.50
395813074152101	07-24-96	1530	Environmental	0.1	--	5.6	--	4.6	61	14.7	0.90
395827074160501	07-24-96	1120	Environmental	0.8	--	5.0	--	4.9	107	14.9	8.10
395831074154401	07-25-96	1140	Environmental	0.1	--	2.6	--	4.7	65	14.7	1.00
	07-25-96	1145	Environmental	--	--	--	--	--	--	--	--
395848074144202	11-05-97	1130	Blank	--	--	--	--	--	--	--	<0.002
	11-05-97	1135	Blank	--	--	--	--	--	--	--	0.051
	11-05-97	1445	Environmental	0.8	--	9.0	--	4.9	65	12.2	1.01
395928074124901	06-02-98	1720	Environmental	0.7	--	4.2	--	4.8	130	17.2	5.53
395936074123901	06-02-98	1225	Environmental	0.1	--	3.9	--	5.0	98	14.4	1.14
395945074122201	12-23-97	1615	Blank	--	--	--	--	--	--	--	0.002
395946074124901	06-02-98	1133	Environmental	0.6	760	7.4	71	4.7	143	13.6	1.45
395950074124801	06-03-98	1227	Environmental	0.5	749	3.2	32	5.2	162	14.9	4.28
395958074120101	09-02-98	1210	Environmental	0.1	--	0.3	--	4.5	120	13.5	1.75
400002074125201	06-03-98	1230	Environmental	0.8	750	8.1	78	4.8	121	12.5	5.20
400009074114901	08-26-98	1420	Environmental	0.2	756	5.7	54	4.4	189	12.8	6.75
400014074081601	09-09-98	1015	Environmental	0.2	758	2.8	27	4.9	56	14.2	0.62
	09-09-98	1025	Replicate	--	--	--	--	--	--	--	0.62
400040074121001	09-02-98	1040	Environmental	0.3	--	0.3	--	4.5	74	13.3	0.35
400048074115301	08-25-98	1040	Environmental	0.1	758	10.7	101	4.9	79	12.7	0.94
400057074121801	08-31-98	1025	Environmental	0.1	758	10.3	99	4.9	191	13.5	2.21
400059074120501	09-01-98	1035	Environmental	0.2	--	10.6	--	4.7	78	13.7	0.80
400112074123201	09-01-98	1145	Environmental	0.9	--	9.5	--	4.9	88	12.7	1.37
400122074113801	09-23-98	1600	Environmental	--	761	9.4	88	4.6	83	12.6	0.82
400326074115201	07-15-98	1000	Environmental	--	724	10.8	107	4.5	93	12.5	1.40
405758074212801	07-11-96	1155	Environmental	--	--	0.6	--	4.1	100	14.9	1.10
BURLINGTON COUNTY											
394351074321501	11-12-98	1000	Environmental	--	771	1.3	13	4.1	53	13.6	1.02
394838074533601	09-02-98	1000	Environmental	--	752	6.0	59	4.3	91	13.7	0.89
394918074442801	07-15-98	1600	Environmental	--	724	7.4	74	4.6	147	12.9	0.56
394939074414701	07-27-98	1500	Environmental	--	759	3.4	32	5.4	311	13.4	35.3
CAMDEN COUNTY											
393940074534201	10-23-96	1559	Environmental	--	--	--	--	--	--	--	--
	10-23-96	1600	Environmental	--	--	3.2	32	3.9	51	15.0	0.39
	09-08-97	1130	Environmental	0.1	--	1.8	--	4.4	52	13.9	0.42
394034074482001	07-14-98	1200	Environmental	--	764	1.6	15	4.8	108	14.6	4.18
394248074571001	08-04-97	1145	Environmental	0.1	760	5.1	49	5.8	48	13.5	2.54
	03-03-98	0900	Environmental	--	747	5.0	48	4.9	101	12.9	4.12
394348074595301	10-01-96	1400	Environmental	--	767	9.7	104	4.4	75	16.6	0.13
	12-10-96	1110	Environmental	0.1	--	8.4	--	4.7	83	16.6	0.16
394348074595302	11-07-97	0900	Environmental	--	768	8.3	82	3.5	103	15.2	4.14
	11-11-97	1200	Environmental	0.0	--	8.3	--	4.3	107	15.7	4.07
394358075012001	07-21-97	1110	Environmental	0.1	760	7.8	75	4.8	102	13.2	4.60
394414075001601	06-16-97	1120	Environmental	0.1	764	6.5	63	4.9	117	13.8	--
	03-11-98	0900	Environmental	--	764	7.3	70	4.9	115	13.7	5.02
394416074544901	11-04-98	1000	Environmental	--	757	5.6	53	4.1	33	12.5	0.17
394528075004301	09-30-96	0959	Environmental	--	764	8.7	88	4.8	126	14.7	--
	09-30-96	1000	Environmental	--	764	8.7	88	4.8	126	14.8	1.40
	06-06-97	1700	Environmental	0.2	--	8.5	--	4.9	111	15.0	1.15
	07-28-97	1615	Blank	--	--	--	--	--	--	--	0.247
	09-11-97	1150	Blank	--	--	--	--	--	--	--	0.004
	09-11-97	1155	Blank	--	--	--	--	--	--	--	<0.002
	09-11-97	1200	Blank	--	--	--	--	--	--	--	<0.002
394528075004302	11-07-97	1200	Environmental	--	768	8.7	84	4.0	217	14.3	0.39
	11-13-97	1200	Environmental	0.1	--	8.0	--	4.8	203	14.7	--



TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Ammonia		Nitrite		Ortho-phosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Boron, water, fltrd, ug/L (01020)
		+ org-N, water, fltrd, mg/L as N (00623)	Ammonia water, mg/L as N (00608)	+ nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)							
OCEAN COUNTY												
394113074164401	09-09-98	<0.10	0.05	0.14	<0.010	0.02	0.2	--	--	<1	--	<16
394415074174301	07-16-98	<0.10	0.04	0.14	0.012	0.02	0.2	--	--	<1	--	16
395401074113501	09-03-98	<0.10	0.09	<0.05	0.013	0.02	0.3	--	--	<1	--	<16
395618074223501	07-29-98	<0.10	0.02	0.07	<0.010	<0.01	0.3	--	--	<1	--	<16
395703074140301	11-02-97	--	<0.02	2.31	<0.010	<0.01	0.3	82	<1.00	<1	27	13
395716074220301	07-12-96	<0.20	0.02	1.90	<0.010	<0.01	--	32	<1.00	<1	70	13
395722074222901	11-12-97	--	0.04	1.49	0.021	0.01	0.2	90	--	--	37.4	13
395723074151101	08-22-97	--	0.03	0.08	<0.010	<0.01	0.2	39	<1.00	<1	7	7.5
395732074212401	07-10-96	<0.20	0.02	1.10	<0.010	<0.01	--	508	<1.00	<1	14	7.9
	07-10-96	--	--	--	--	--	--	501	<1.00	<1	14	--
395735074144001	06-20-96	<0.20	0.03	0.92	<0.010	<0.01	0.3	102	<1.00	<1	21	15
	06-20-96	--	--	--	--	--	--	98	<1.00	--	19	--
	11-24-97	--	<0.02	1.02	<0.010	0.02	0.3	--	--	--	--	--
395737074211401	08-08-97	--	0.03	2.70	<0.010	<0.01	0.2	252	<1.00	<1	61	21
395741074213901	07-18-96	0.30	0.03	2.30	<0.010	<0.01	--	855	<1.00	<1	19	14
	07-18-96	--	<0.002	<0.005	<0.001	--	--	2.0	<0.2	<1	<0.2	4
395742074211101	08-07-97	--	0.04	2.54	<0.010	<0.01	0.2	351	<1.00	<1	49	15
395756074213101	07-11-96	<0.20	0.02	3.00	<0.010	<0.01	--	130	<1.00	<1	38	18
395757074213901	07-09-96	<0.20	0.02	3.40	<0.010	<0.01	--	185	<1.00	<1	43	14
395812074202602	11-17-97	--	<0.002	<0.005	<0.001	<0.001	--	1.1	<0.2	--	<0.2	5
	11-17-97	--	0.02	1.13	<0.010	<0.01	0.2	120	--	--	24.0	12
395813074152101	07-24-96	<0.20	0.05	2.40	<0.010	<0.01	0.2	51	<1.00	<1	30	16
395827074160501	07-24-96	<0.20	0.05	3.20	<0.010	<0.01	0.8	137	<1.00	<1	26	16
395831074154401	07-25-96	<0.20	0.05	2.50	<0.010	<0.01	0.3	47	<1.00	<1	29	14
	07-25-96	--	--	--	--	--	--	48	<1.00	<1	28	--
395848074144202	11-05-97	--	--	--	--	--	--	1.2	<0.2	--	<0.2	<2
	11-05-97	--	<0.002	<0.005	0.001	<0.001	--	1.6	<0.2	--	1.1	2
	11-05-97	--	0.02	1.07	0.021	0.02	0.3	--	--	--	--	--
395928074124901	06-02-98	--	0.04	0.85	0.014	0.01	0.5	66	<1.00	--	36	--
395936074123901	06-02-98	--	<0.02	1.79	0.015	<0.01	0.5	26	<1.00	--	65	--
395945074122201	12-23-97	--	--	--	--	--	--	1.2	<0.2	--	<0.2	<2
395946074124901	06-02-98	--	0.05	1.96	0.015	0.02	0.5	29	<1.00	--	58	--
395950074124801	06-03-98	--	0.04	2.53	0.023	0.01	0.7	159	<1.00	--	34	--
395958074120101	09-02-98	--	<0.02	0.31	<0.010	<0.01	0.3	--	--	--	43.6	--
400002074125201	06-03-98	--	0.03	1.66	0.015	0.01	0.6	81	<1.00	--	48	--
400009074114901	08-26-98	--	0.08	3.23	0.010	0.01	0.4	430	--	--	48.4	--
400014074081601	09-09-98	--	0.04	0.89	<0.010	<0.01	0.3	--	--	--	30.6	--
	09-09-98	--	0.03	0.90	<0.010	0.01	0.2	--	--	--	30.7	--
400040074121001	09-02-98	--	<0.02	<0.05	<0.010	<0.01	0.3	500	--	--	154	--
400048074115301	08-25-98	--	0.09	4.98	0.011	0.02	0.2	--	--	--	76.4	--
400057074121801	08-31-98	--	<0.02	3.18	<0.010	0.01	0.3	--	--	--	71.6	--
400059074120501	09-01-98	--	0.05	4.56	<0.010	0.01	0.2	--	--	--	72.0	--
400112074123201	09-01-98	--	0.04	3.01	<0.010	0.01	0.3	--	--	--	30.0	--
400122074113801	09-23-98	<0.10	<0.02	1.77	<0.010	0.01	0.2	--	--	<1	--	23
400326074115201	07-15-98	<0.10	0.05	4.28	0.011	0.02	0.3	--	--	<1	--	35
405758074212801	07-11-96	<0.20	0.05	0.55	0.010	<0.01	--	403	<1.00	<1	32	7.7
BURLINGTON COUNTY												
394351074321501	11-12-98	<0.10	0.05	0.08	<0.010	0.01	0.2	--	--	<1	--	17
394838074533601	09-02-98	<0.10	<0.02	6.42	<0.010	<0.01	0.2	--	--	<1	--	19
394918074442801	07-15-98	<0.10	0.05	2.39	0.011	0.02	0.3	--	--	<1	--	24
394939074414701	07-27-98	<0.10	<0.02	15.3	<0.010	<0.01	0.6	--	--	<1	--	23
CAMDEN COUNTY												
393940074534201	10-23-96	--	--	--	--	--	--	--	--	--	--	--
	10-23-96	<0.20	0.02	<0.05	<0.010	<0.01	1.1	--	--	--	--	--
	09-08-97	--	<0.01	<0.05	<0.010	<0.01	1.2	1,600	<1.00	--	61	20
394034074482001	07-14-98	<0.10	0.04	2.15	0.010	0.02	0.4	--	--	<1	--	<16
394248074571001	08-04-97	--	0.05	0.38	<0.010	0.02	--	--	--	--	--	18
	03-03-98	<0.10	<0.02	4.09	<0.010	<0.01	0.3	--	--	--	--	--
394348074595301	10-01-96	<0.20	<0.01	4.30	<0.010	<0.01	0.3	--	--	--	--	--
	12-10-96	<0.20	<0.01	4.30	<0.010	<0.01	0.3	93	<1.00	<1	57	7.4
394348074595302	11-07-97	<0.10	<0.02	7.07	0.028	0.02	0.3	--	--	--	--	25
	11-11-97	--	0.04	6.91	0.022	<0.01	0.3	481	<1.00	<1	67	16
394358075012001	07-21-97	--	<0.01	4.77	<0.010	<0.01	--	80	--	--	114	17
394414075001601	06-16-97	--	<0.01	3.85	<0.010	<0.01	--	--	--	--	--	--
	03-11-98	<0.10	<0.02	4.08	<0.010	0.01	0.4	--	--	--	--	--
394416074544901	11-04-98	<0.10	<0.02	0.44	<0.010	<0.01	0.3	--	--	<1	--	E12
394528075004301	09-30-96	--	--	--	--	--	--	--	--	--	--	--
	09-30-96	<0.20	<0.01	3.50	<0.010	<0.01	0.4	--	--	--	--	--
	06-06-97	<0.20	<0.01	2.72	<0.010	<0.01	0.2	36	<1.00	<1	42	12
	07-28-97	--	<0.002	<0.005	<0.001	--	--	<0.3	<0.2	--	<0.2	7
	09-11-97	--	<0.002	<0.005	<0.001	<0.001	--	1.8	<0.2	--	<0.2	3
	09-11-97	--	<0.002	<0.005	<0.001	<0.001	--	1.6	<0.2	--	<0.2	<2
	09-11-97	--	--	--	--	--	--	1.5	<0.2	--	<0.2	4
394528075004302	11-07-97	<0.10	<0.02	3.78	0.033	0.01	0.3	--	--	--	--	24
	11-13-97	--	<0.02	4.01	0.013	0.05	0.2	42	<1.00	<1	40	<16

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Mercury water fltrd, ng/L (50287)	Mercury water, unfltrd recover- able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)
OCEAN COUNTY												
394113074164401	09-09-98	--	--	--	--	<10	--	<4.0	--	E.20	--	--
394415074174301	07-16-98	--	--	--	--	<10	--	<4.0	--	0.56	--	--
395401074113501	09-03-98	--	--	--	--	23	--	6.2	--	E.27	--	--
395618074223501	07-29-98	--	--	--	--	<10	--	7.2	--	105	--	--
395703074140301	11-02-97	<1.00	1	<1.00	1.7	<3	<1.00	21.4	--	36.9	--	<1.00
395716074220301	07-12-96	<1.00	<1	1.00	8.0	<3	2.00	73.0	<0.1	--	--	3.00
395722074222901	11-12-97	--	--	<3	31.2	E6	3	21.0	--	122	--	--
395723074151101	08-22-97	<1.00	<1	<1.00	5.3	<3	<1.00	2.8	--	0.70	--	<1.00
395732074212401	07-10-96	<1.00	<1	<1.00	31.0	80	3.00	5.0	<0.1	--	0.3	2.00
	07-10-96	<1.00	<1	<1.00	34.0	--	3.00	5.0	<0.1	--	--	2.00
395735074144001	06-20-96	<1.00	<1	<1.00	12.0	66	7.00	17.0	0.2	--	--	<1.00
	06-20-96	<1.00	<1	<1.00	12.0	--	7.00	18.0	0.2	--	--	<1.00
	11-24-97	--	--	--	--	--	--	--	--	66.4	--	--
395737074211401	08-08-97	<1.00	<1	1.09	6.5	9	<1.00	15.8	--	<0.37	--	1.62
395741074213901	07-18-96	<1.00	<1	<1.00	3.0	6	<1.00	48.0	<0.1	--	--	<1.00
	07-18-96	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	<0.1	--	--	<0.5
395742074211101	08-07-97	<1.00	<1	1.21	29.9	<3	2.09	16.2	--	<0.50	--	1.88
395756074213101	07-11-96	<1.00	<1	<1.00	6.0	6	<1.00	23.0	<0.1	--	--	1.00
395757074213901	07-09-96	<1.00	<1	<1.00	10.0	<3	2.00	77.0	<0.1	--	--	1.00
395812074202602	11-17-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
	11-17-97	--	--	<3	2.4	25	2	9.5	--	<0.16	--	--
395813074152101	07-24-96	<1.00	<1	<1.00	7.0	<3	<1.00	8.0	<0.1	--	--	<1.00
395827074160501	07-24-96	<1.00	1	<1.00	6.0	16	<1.00	35.0	0.1	--	--	<1.00
395831074154401	07-25-96	<1.00	<1	<1.00	3.0	12	<1.00	8.0	1.0	--	1.1	<1.00
	07-25-96	<1.00	<1	<1.00	2.0	--	<1.00	8.0	1.0	--	--	<1.00
395848074144202	11-05-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
	11-05-97	<0.3	<0.2	0.2	0.2	<3	<0.3	1.4	--	--	--	0.5
	11-05-97	--	--	--	--	--	--	--	--	--	--	--
395928074124901	06-02-98	<1.00	1	<1.00	<1.0	<10	<1.00	21.8	--	2.57	--	1.37
395936074123901	06-02-98	<1.00	<1	1.86	<1.0	<10	<1.00	20.3	--	45.4	--	1.59
395945074122201	12-23-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
395946074124901	06-02-98	<1.00	2	1.79	1.0	11	<1.00	25.5	--	45.5	--	4.63
395950074124801	06-03-98	<1.00	3	3.80	<1.0	<10	<1.00	108	--	0.93	--	13.3
395958074120101	09-02-98	--	--	4.7	--	<10	<1	29.5	--	2.01	--	--
400002074125201	06-03-98	<1.00	2	2.90	<1.0	<10	<1.00	57.1	--	58.9	--	2.99
400009074114901	08-26-98	--	--	1.4	--	92	<1	29.5	--	1.27	--	--
400014074081601	09-09-98	--	--	<1.0	--	<10	<1	10.6	--	E.25	--	--
	09-09-98	--	--	1.0	--	<10	<1	10.8	--	--	--	--
400040074121001	09-02-98	--	--	<1.0	--	840	<1	17.6	--	E.14	--	--
400048074115301	08-25-98	--	--	<1.0	--	<10	<1	22.6	--	0.81	--	--
400057074121801	08-31-98	--	--	1.2	--	17	<1	22.4	--	0.57	--	--
400059074120501	09-01-98	--	--	2.0	--	24	<1	20.5	--	<0.10	--	--
400112074123201	09-01-98	--	--	1.1	--	<10	<1	8.4	--	<0.22	--	--
400122074113801	09-23-98	--	--	--	--	<10	--	10.3	--	E.33	--	--
400326074115201	07-15-98	--	--	--	--	<10	--	18.5	--	7.56	--	--
405758074212801	07-11-96	<1.00	<1	5.00	13.0	1,200	3.00	16.0	<0.1	--	--	7.00
BURLINGTON COUNTY												
394351074321501	11-12-98	--	--	--	--	E10	--	11.4	--	597	--	--
394838074533601	09-02-98	--	--	--	--	<10	--	25.7	--	0.63	--	--
394918074442801	07-15-98	--	--	--	--	<10	--	17.4	--	1.44	--	--
394939074414701	07-27-98	--	--	--	--	<10	--	<4.0	--	E.27	--	--
CAMDEN COUNTY												
393940074534201	10-23-96	--	--	--	--	--	--	--	--	--	--	--
	10-23-96	--	--	--	--	13	--	12.0	--	--	--	--
	09-08-97	<1.00	<1	1.42	<1.0	16	<1.00	12.7	--	0.86	--	2.33
394034074482001	07-14-98	--	--	--	--	<10	--	44.3	--	0.79	--	--
394248074571001	08-04-97	--	--	--	--	370	--	--	--	--	--	--
	03-03-98	--	--	--	--	123	--	29.4	--	--	--	--
394348074595301	10-01-96	--	--	--	--	9	--	5.0	--	--	--	--
	12-10-96	<1.00	<1	2.00	<1.0	7	<1.00	5.0	<0.1	--	--	2.00
394348074595302	11-07-97	--	--	--	--	33	--	8.0	--	--	--	--
	11-11-97	<1.00	2	2.10	<1.0	28	<1.00	7.2	--	4.11	--	2.15
394358075012001	07-21-97	--	--	<3	--	29	--	--	<0.1	--	--	--
394414075001601	06-16-97	--	--	--	--	--	--	--	<0.1	--	--	--
	03-11-98	--	--	--	--	236	--	20.6	--	--	--	--
394416074544901	11-04-98	--	--	--	--	<10	--	<3.0	--	3.53	--	--
394528075004301	09-30-96	--	--	--	--	--	--	--	--	--	--	--
	09-30-96	--	--	--	--	13	--	6.0	--	--	--	--
	06-06-97	<1.00	1	1.77	<1.0	3	<1.00	5.5	<0.1	--	--	2.20
	07-28-97	<0.3	<0.2	<0.2	<0.2	5	<0.3	<0.1	--	--	--	<0.5
	09-11-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
	09-11-97	<0.3	<0.2	<0.2	<0.2	3	<0.3	<0.1	<0.1	--	--	<0.5
	09-11-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
394528075004302	11-07-97	--	--	--	--	<10	--	4.5	--	--	--	--
	11-13-97	<1.00	<1	<1.00	<1.0	--	<1.00	3.3	--	2.55	--	1.61



## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Ra-226 2-sigma water, fltrd, pCi/L (76001)	Ra-226, water, fltrd, radon method pCi/L (09511)	Ra-228 2-sigma water, fltrd, pCi/L (76000)	Ra-228, water, fltrd, pCi/L (81366)	Rn-222 2-sigma water unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
OCEAN COUNTY								
394113074164401	09-09-98	--	--	--	--	--	--	--
394415074174301	07-16-98	--	--	--	--	--	--	--
395401074113501	09-03-98	--	--	--	--	--	--	--
395618074223501	07-29-98	--	--	--	--	--	--	--
395703074140301	11-02-97	0.24	1.39	0.50	1	21	160	<1.00
395716074220301	07-12-96	0.18	1.00	0.42	1	25	210	<1.00
395722074222901	11-12-97	--	--	--	--	22	290	--
395723074151101	08-22-97	0.10	0.57	0.44	1	27	250	<1.00
395732074212401	07-10-96	--	--	--	--	18	190	<1.00
	07-10-96	0.17	0.95	0.71	2	--	--	<1.00
395735074144001	06-20-96	0.18	0.99	0.51	2	19	210	<1.00
	06-20-96	--	--	--	--	--	--	<1.00
	11-24-97	--	--	0.50	2	19	200	--
395737074211401	08-08-97	0.31	1.96	0.58	2	34	180	<1.00
395741074213901	07-18-96	0.11	0.65	0.67	2	16	140	<1.00
	07-18-96	--	--	--	--	--	--	<0.2
395742074211101	08-07-97	0.24	1.44	0.54	2	17	130	<1.00
395756074213101	07-11-96	0.22	1.30	0.65	2	28	230	<1.00
395757074213901	07-09-96	0.23	1.40	0.85	3	17	160	<1.00
395812074202602	11-17-97	--	--	--	--	17	<80	<0.2
	11-17-97	--	--	--	1	20	190	--
395813074152101	07-24-96	0.41	2.50	0.78	3	22	190	<1.00
395827074160501	07-24-96	0.39	2.40	0.74	2	24	250	<1.00
395831074154401	07-25-96	0.54	3.20	0.64	2	23	350	<1.00
	07-25-96	--	--	--	--	--	--	<1.00
395848074144202	11-05-97	--	--	--	--	--	--	<0.2
	11-05-97	--	--	--	--	--	--	<0.2
	11-05-97	--	--	--	--	20	250	--
395928074124901	06-02-98	--	--	--	M	24	360	<1.00
395936074123901	06-02-98	0.05	0.72	--	M	20	240	<1.00
395945074122201	12-23-97	--	--	--	--	--	--	<0.2
395946074124901	06-02-98	--	--	0.40	1	19	193	<1.00
395950074124801	06-03-98	--	--	--	M	20	210	<1.00
395958074120101	09-02-98	0.19	--	0.66	2	22	210	--
400002074125201	06-03-98	--	--	--	1	20	210	<1.00
400009074114901	08-26-98	0.24	--	0.68	2	--	--	--
400014074081601	09-09-98	0.12	--	0.38	<1	21	150	--
	09-09-98	--	--	0.38	<1	22	150	--
400040074121001	09-02-98	--	--	0.48	<1	27	480	--
400048074115301	08-25-98	0.14	--	0.48	1	21	190	--
400057074121801	08-31-98	0.46	--	0.60	2	20	160	--
400059074120501	09-01-98	0.28	--	0.75	2	19	180	--
400112074123201	09-01-98	0.56	--	0.76	2	21	250	--
400122074113801	09-23-98	--	--	--	--	--	--	--
400326074115201	07-15-98	--	--	--	--	--	--	--
405758074212801	07-11-96	0.14	0.84	0.35	<1	30	260	<1.00
BURLINGTON COUNTY								
394351074321501	11-12-98	--	--	--	--	--	--	--
394838074533601	09-02-98	--	--	--	--	--	--	--
394918074442801	07-15-98	--	--	--	--	--	--	--
394939074414701	07-27-98	--	--	--	--	--	--	--
CAMDEN COUNTY								
393940074534201	10-23-96	--	--	--	--	--	--	--
	10-23-96	--	--	--	--	--	--	--
	09-08-97	0.03	0.15	0.75	<0.52	17	100	<1.00
3940340744482001	07-14-98	--	--	--	--	--	--	--
394248074571001	08-04-97	--	--	--	<0.6	20	250	--
	03-03-98	--	--	--	--	--	--	--
394348074595301	10-01-96	--	--	--	--	--	--	--
	12-10-96	0.43	2.60	0.63	2	25	560	<1.00
394348074595302	11-07-97	--	--	--	--	--	--	--
	11-11-97	1.0	6.19	1.3	5	23	210	<1.00
394358075012001	07-21-97	--	--	--	2	22	290	--
394414075001601	06-16-97	0.30	3.20	--	2	25	510	--
	03-11-98	--	--	--	--	--	--	--
394416074544901	11-04-98	0.08	0.45	0.55	1	--	--	--
394528075004301	09-30-96	--	--	--	--	--	--	--
	09-30-96	--	--	--	--	--	--	--
	06-06-97	0.46	2.84	1.0	4	34	440	<1.00
	07-28-97	--	--	--	--	--	--	<0.2
	09-11-97	--	--	--	--	--	--	<0.2
	09-11-97	--	--	--	--	--	--	<0.2
	09-11-97	--	--	--	--	--	--	<0.2
394528075004302	11-07-97	--	--	--	--	--	--	--
	11-13-97	0.55	3.25	0.77	3	33	270	<1.00

TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Time	Sample type	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unfltrd 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)
CAMDEN COUNTY											
394528075004302	11-13-97	1205	Environmental	--	--	--	--	--	--	--	--
	11-14-97	1055	Blank	--	--	--	--	--	--	--	<0.002
	11-14-97	1130	Blank	--	--	--	--	--	--	--	<0.002
394604075003601	10-01-96	0959	Environmental	--	767	8.9	89	4.9	114	15.2	--
	10-01-96	1000	Environmental	--	767	8.9	90	4.9	114	15.2	5.80
	09-09-97	1220	Environmental	0.1	--	8.2	--	5.0	120	14.6	6.17
	09-09-97	1225	Environmental	--	--	--	--	--	--	--	--
394604075003602	10-31-97	0900	Environmental	--	777	1.2	12	4.8	72	17.0	3.13
	10-31-97	0905	Blank	--	--	--	--	--	--	--	--
	10-31-97	0906	Blank	--	--	--	--	--	--	--	0.10
	11-06-97	1155	Environmental	350	--	1.9	--	5.7	87	16.8	--
	11-06-97	1310	Environmental	310	--	1.9	--	5.7	87	16.8	3.79
	11-07-97	1250	Blank	--	--	--	--	--	--	--	0.003
	11-07-97	1300	Blank	--	--	--	--	--	--	--	<0.002
GLOUCESTER COUNTY											
393254075012101	09-05-96	1150	Environmental	0.2	--	4.9	--	4.4	74	13.9	2.40
	09-16-97	1050	Environmental	0.1	761	4.3	41	4.4	65	13.2	1.90
393807075030401	09-03-98	1000	Environmental	--	--	5.6	--	4.0	64	13.5	2.13
393823075071601	10-14-98	1500	Environmental	--	756	1.4	14	4.0	129	13.7	5.59
393939075030901	11-10-98	1500	Environmental	0.3	768	3.5	33	4.7	41	13.1	0.94
393939075030902	12-02-98	1210	Environmental	0.0	764	4.0	38	4.2	49	13.4	0.80
393939075030903	12-01-98	1200	Environmental	0.1	760	8.7	83	4.9	53	13.3	1.10
	11-05-96	1359	Environmental	--	--	--	--	--	--	--	--
393943075030501	11-05-96	1400	Environmental	--	766	7.2	73	4.3	31	15.2	0.29
	11-10-98	1220	Environmental	0.3	768	8.3	78	4.5	26	12.8	--
393945075031701	12-09-98	1200	Environmental	4.4	765	0.3	3	4.5	221	14.0	1.17
393945075031702	11-30-98	1005	Blank	--	--	--	--	--	--	--	--
	12-03-98	1005	Blank	--	--	--	--	--	--	--	0.014
	12-03-98	1230	Environmental	0.0	--	--	--	--	--	--	5.08
393945075031703	11-16-98	1350	Environmental	0.1	760	3.7	35	4.3	47	13.3	1.03
	11-30-98	1020	Blank	--	--	--	--	--	--	--	0.007
394018074590801	10-02-96	1000	Environmental	--	765	7.0	71	4.7	240	14.8	13.0
	10-02-96	1001	Replicate	--	--	--	--	--	--	--	13.0
	10-02-96	1006	Blank	--	--	--	--	--	--	--	<0.02
	12-16-97	1100	Environmental	0.1	--	5.5	--	4.9	245	16.0	--
394022074591002	11-14-97	1200	Environmental	--	762	0.5	5	3.9	99	14.0	3.71
	12-16-97	1410	Environmental	0.1	--	0.6	--	4.8	102	14.7	--
	12-16-97	1415	Environmental	--	--	--	--	--	--	--	--
	08-23-99	1236	Blank	--	--	--	--	--	--	--	0.04
394104074593101	12-16-96	1559	Environmental	--	--	--	--	--	--	--	--
	12-16-96	1600	Environmental	--	762	6.4	66	4.9	240	17.0	14.0
	12-17-97	1545	Blank	--	--	--	--	--	--	--	0.008
	12-18-97	1110	Environmental	0.1	--	7.5	--	5.0	322	16.7	--
394104074593203	11-17-97	0900	Environmental	--	766	0.1	0.0	4.2	320	15.0	3.89
	12-18-97	1430	Environmental	0.1	--	0.2	--	4.8	321	15.0	--
394217075002401	05-11-99	1550	Environmental	0.2	--	2.4	--	4.7	149	14.3	0.13
394217075003901	06-03-99	1345	Environmental	0.1	--	5.2	--	4.9	90	13.2	2.42
394218075002101	05-13-99	1015	Environmental	0.0	--	0.6	--	4.6	190	13.8	0.15
394218075002701	05-27-99	1101	Environmental	0.1	--	1.0	--	4.6	57	14.2	0.28
394219074594401	06-03-99	1116	Environmental	0.4	--	3.4	--	4.6	80	13.5	2.38
394219075002401	05-19-99	2000	Environmental	0.1	--	0.3	--	4.7	155	13.9	0.18
394220075002901	05-11-99	1200	Environmental	0.1	--	4.4	--	4.8	63	14.0	0.39
394224075001401	05-20-99	1200	Environmental	0.1	--	0.5	--	5.0	133	13.5	0.79
394226075001501	05-17-99	1025	Environmental	0.1	--	1.1	--	4.8	84	13.5	0.16
394226075001701	11-18-99	1530	Environmental	--	--	0.9	--	4.7	--	--	0.33
	11-18-99	1545	Environmental	--	--	--	--	--	--	--	0.33
394226075003201	05-13-99	1400	Environmental	0.1	--	5.0	--	4.9	97	13.2	2.08
394233075003001	05-18-99	1620	Environmental	0.1	--	3.8	--	5.1	73	13.3	1.17
394233075045401	09-02-97	1045	Environmental	0.1	761	7.0	67	4.9	117	13.1	5.27
394237075002101	05-17-99	1340	Environmental	0.1	--	1.5	--	4.8	179	13.8	0.27
394242075002301	11-09-99	1344	Environmental	0.1	760	7.6	74	5.0	100	14.1	4.12
394242075002302	11-18-99	1900	Environmental	--	--	--	--	--	--	--	0.32
394243075034401	12-09-96	1330	Blank	--	--	--	--	--	--	--	0.004
	12-09-96	1535	Environmental	0.1	--	7.9	--	4.7	248	16.9	15.0
	12-10-96	1359	Environmental	--	--	--	--	--	--	--	--
	12-10-96	1400	Environmental	--	760	10.4	106	4.9	233	--	14.0
394247075003001	05-12-99	1100	Environmental	0.1	--	3.4	--	5.0	136	13.9	3.85
394248075003201	11-10-99	1425	Environmental	0.2	757	7.9	77	5.5	60	13.9	3.76
394248075003202	11-12-99	1045	Blank	--	--	--	--	--	--	22.0	--
	11-12-99	1055	Blank	--	--	--	--	--	--	22.0	--
	11-12-99	1215	Environmental	0.3	768	7.2	69	5.6	55	13.4	3.23
394248075003203	11-10-99	1125	Environmental	--	--	6.9	--	4.9	--	--	1.23
394249075005501	05-19-99	1635	Environmental	0.2	--	5.0	--	4.8	94	13.9	0.29
394252075010201	05-18-99	1925	Environmental	0.1	--	6.4	--	5.2	64	13.9	0.31
394254075010401	05-25-99	1110	Environmental	0.1	--	7.0	--	5.0	112	14.5	0.50

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Magnesium,	Potassium,	Sodium,	ANC,	ANC,	Alka-	Bromide	Chloride,	Fluoride,	Silica,	Sulfate
		water, fltrd, mg/L (00925)	water, fltrd, mg/L (00935)	water, fltrd, mg/L (00930)	wat unf fixed end pt, field, mg/L as CaCO <sub>3</sub> (00410)	wat unf fixed end pt, lab, mg/L as CaCO <sub>3</sub> (90410)	linity, wat flt inc tit field, mg/L as CaCO <sub>3</sub> (39086)		water, fltrd, mg/L (00940)	water, fltrd, mg/L (00950)	water, fltrd, mg/L (00955)	water, fltrd, mg/L (00945)
CAMDEN COUNTY												
394528075004302	11-13-97	--	--	--	--	--	--	--	--	--	--	--
	11-14-97	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
	11-14-97	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
394604075003601	10-01-96	--	--	--	--	--	2	--	--	--	--	--
	10-01-96	1.70	5.50	7.40	--	3	2	0.02	14.0	<0.1	4.50	12.0
	09-09-97	1.92	6.35	6.96	--	--	--	--	10.4	--	4.75	9.5
	09-09-97	--	--	--	--	--	--	--	--	--	--	--
394604075003602	10-31-97	0.690	1.73	2.68	--	--	3	0.01	3.36	<0.1	11.5	17.4
	10-31-97	--	--	--	--	--	--	--	--	--	--	--
	10-31-97	<0.010	<0.10	<0.20	--	2	--	<0.01	<0.10	<0.1	0.03	<0.1
	11-06-97	--	--	--	--	--	--	--	--	--	--	--
	11-06-97	0.855	2.66	7.66	--	--	--	--	4.97	--	9.43	16.0
	11-07-97	<0.001	--	0.07	--	--	--	--	--	--	<0.02	--
	11-07-97	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
GLOUCESTER COUNTY												
393254075012101	09-05-96	2.30	1.40	3.70	<1	<0.5	--	--	6.90	--	7.40	2.3
	09-16-97	2.02	1.23	3.35	--	--	--	--	6.15	--	7.53	1.7
393823075071601	09-03-98	1.12	1.37	2.69	--	--	--	0.04	4.64	<0.1	13.5	4.8
	10-14-98	2.42	1.50	4.78	--	--	--	0.05	8.38	<0.1	9.36	28.9
393939075030901	11-10-98	0.861	0.64	2.73	<1	<1	--	--	5.20	--	12.5	5.3
393939075030902	12-02-98	0.697	0.98	2.43	--	1	--	--	3.49	--	7.70	3.6
393939075030903	12-01-98	0.924	0.82	2.51	<1	<1	--	--	3.78	--	6.59	2.4
	11-05-96	--	--	--	--	--	--	--	--	--	--	--
393943075030501	11-05-96	0.410	0.40	4.40	--	6	--	0.02	4.70	<0.1	5.80	0.2
	11-10-98	--	--	--	--	--	--	--	--	--	--	--
393945075031701	12-09-98	2.97	3.93	23.3	--	2	--	--	29.4	--	7.40	1.2
393945075031702	11-30-98	--	--	--	--	--	--	--	--	--	--	--
	12-03-98	<0.001	--	0.04	--	--	--	--	--	--	<0.02	--
	12-03-98	2.44	1.44	7.36	--	1	--	--	15.5	--	9.54	1.4
393945075031703	11-16-98	0.629	0.75	2.48	--	<1	--	--	4.79	--	8.50	1.4
	11-30-98	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
394018074590801	10-02-96	2.90	3.40	20.0	--	1	--	0.02	52.0	<0.1	2.80	11.0
	10-02-96	2.80	3.50	20.0	--	2	--	0.02	50.0	<0.1	2.80	11.0
	10-02-96	<0.010	<0.10	<0.20	--	1	--	<0.01	<0.10	<0.1	<0.01	<0.1
	12-16-97	--	--	--	--	--	--	--	--	--	--	--
394022074591002	11-14-97	1.70	3.16	7.02	1	5	--	0.04	14.6	0.4	9.32	1.5
	12-16-97	--	--	--	4	--	--	--	--	--	--	--
	12-16-97	--	--	--	--	--	--	--	--	--	--	--
	08-23-99	0.020	<0.10	0.11	--	--	--	--	--	--	0.08	--
394104074593101	12-16-96	--	--	--	--	--	--	--	--	--	--	--
	12-16-96	4.40	7.00	14.0	--	2	3	0.03	27.0	<0.1	4.10	22.0
	12-17-97	<0.001	--	0.05	--	--	--	--	--	--	<0.00	--
	12-18-97	--	--	--	--	--	--	--	44.5	--	--	22.7
394104074593203	11-17-97	7.63	15.9	27.1	--	5	--	0.16	52.6	<0.1	9.42	44.8
	12-18-97	--	--	--	--	--	--	--	--	--	--	--
394217075002401	05-11-99	2.67	1.20	16.8	--	--	--	--	35.4	--	6.55	0.2
394217075003901	06-03-99	1.32	1.37	5.54	--	--	--	--	7.61	--	9.43	5.0
394218075002101	05-13-99	3.80	2.35	21.1	--	--	--	--	33.0	--	6.58	0.2
394218075002701	05-27-99	0.915	0.87	8.45	--	--	--	--	13.6	--	6.58	<0.1
394219074594401	06-03-99	1.84	1.31	3.56	--	--	--	--	6.24	--	12.5	4.8
394219075002401	05-19-99	2.68	1.61	18.9	--	--	--	--	31.3	--	6.69	0.6
394220075002901	05-11-99	0.956	1.32	6.85	--	--	--	--	11.3	--	7.01	<0.1
394224075001401	05-20-99	2.83	1.63	16.0	--	--	--	--	21.4	--	7.59	2.5
394226075001501	05-17-99	1.03	1.11	10.4	--	--	--	--	17.2	--	7.29	<0.1
394226075001701	11-18-99	1.84	1.13	15.7	--	--	--	--	23.5	--	6.01	1.6
	11-18-99	1.84	1.09	15.6	--	--	--	--	23.2	--	6.05	0.8
394226075003201	05-13-99	0.951	0.94	11.5	--	--	--	--	17.5	--	8.33	<0.1
394233075003001	05-18-99	1.17	1.12	6.90	--	--	--	--	12.7	--	9.34	<0.1
394233075045401	09-02-97	3.70	1.59	5.70	--	--	--	--	12.8	--	8.40	12.2
394237075002101	05-17-99	1.92	2.07	24.0	--	--	--	--	24.4	--	7.12	0.8
394242075002301	11-09-99	3.21	0.88	6.24	--	--	--	--	6.30	--	5.08	23.6
394242075002302	11-18-99	0.586	7.42	2.45	--	--	--	--	4.43	--	6.72	<0.3
394243075034401	12-09-96	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
	12-09-96	8.10	1.60	8.70	--	<1	--	--	--	--	5.70	--
	12-10-96	--	--	--	--	--	--	--	--	--	--	--
	12-10-96	8.10	1.60	8.70	--	<1	--	<0.01	10.0	<0.1	5.40	56.0
394247075003001	05-12-99	3.00	1.59	12.6	--	--	--	--	15.6	--	6.93	9.1
394248075003201	11-10-99	1.63	0.69	3.27	--	--	--	--	5.40	--	5.86	0.5
394248075003202	11-12-99	--	--	--	--	--	--	--	--	--	--	--
	11-12-99	--	--	--	--	--	--	--	--	--	--	--
	11-12-99	1.49	0.63	3.38	--	--	--	--	5.35	--	5.42	0.4
394248075003203	11-10-99	2.46	1.27	21.3	--	--	--	--	34.4	--	8.72	<0.3
394249075005501	05-19-99	1.73	1.32	12.2	--	--	--	--	18.4	--	8.26	<0.1
394252075010201	05-18-99	0.718	0.82	7.65	--	--	--	--	11.6	--	7.22	<0.1
394254075010401	05-25-99	1.33	1.05	15.3	--	--	--	--	24.8	--	7.43	<0.1



TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Ammonia		Nitrite		Ortho-phosphate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Aluminum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic, water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Boron, water, fltrd, ug/L (01020)
		+ org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	+ nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)							
CAMDEN COUNTY												
394528075004302	11-13-97	--	--	--	--	--	--	40	<1.00	<1	39	--
	11-14-97	--	--	--	--	--	--	1.2	<0.2	--	<0.2	4
	11-14-97	--	--	--	--	--	--	1.3	<0.2	--	<0.2	3
394604075003601	10-01-96	--	--	--	--	--	--	--	--	--	--	--
	10-01-96	0.12	0.02	3.50	<0.010	<0.01	0.5	--	--	--	--	--
	09-09-97	--	<0.01	6.02	<0.010	<0.01	0.5	29	<1.00	<1	36	31
394604075003602	09-09-97	--	<0.01	5.84	<0.010	<0.01	--	29	<1.00	<1	36	--
	10-31-97	<0.20	<0.01	0.43	<0.010	<0.01	0.2	--	--	--	--	17
	10-31-97	<0.20	<0.01	<0.05	<0.010	<0.01	2.5	--	--	--	--	--
	10-31-97	--	--	--	--	--	--	--	--	--	--	12
	11-06-97	--	--	--	--	--	--	--	--	--	--	--
	11-06-97	--	--	--	--	--	--	18	<1.00	<1	27	16
	11-07-97	--	--	--	--	--	--	1.4	<0.2	--	<0.2	2
11-07-97	--	--	--	--	--	--	0.7	<0.2	--	<0.2	<2	
GLOUCESTER COUNTY												
393254075012101	09-05-96	<0.20	<0.01	4.40	<0.010	<0.01	0.1	110	<1.00	<1	135	11
	09-16-97	--	<0.01	3.45	<0.010	<0.01	0.2	--	--	--	--	--
393807075030401	09-03-98	<0.10	0.04	2.97	0.016	0.02	<0.1	--	--	<1	--	16
393823075071601	10-14-98	<0.10	0.03	1.34	<0.010	<0.01	0.2	--	--	1	--	E14
393939075030901	11-10-98	--	<0.02	0.10	<0.010	<0.01	<0.1	100	--	--	18.9	E9.3
393939075030902	12-02-98	--	<0.02	2.10	<0.010	<0.01	0.2	340	--	--	13.6	E7.9
393939075030903	12-01-98	--	0.03	2.75	<0.010	<0.01	0.1	298	<1.00	--	18	<16
	11-05-96	--	--	--	--	--	--	--	--	--	--	--
393943075030501	11-05-96	<0.20	0.02	0.28	0.020	<0.01	0.5	--	--	--	--	--
	11-10-98	--	--	--	--	--	0.3	10	--	--	--	--
393945075031701	12-09-98	--	4.91	11.6	0.021	0.01	1.0	200	--	--	143	46
	11-30-98	--	0.002	<0.005	<0.001	0.002	--	--	--	--	--	--
393945075031702	12-03-98	--	--	--	--	--	--	2.3	<0.2	--	<0.2	4
	12-03-98	--	<0.02	6.34	0.013	<0.01	0.2	360	--	--	41.0	E14
	11-16-98	--	<0.02	1.87	<0.010	<0.01	0.1	290	--	--	10.6	E9.3
393945075031703	11-30-98	--	0.003	0.005	<0.001	0.001	--	1.8	<0.2	--	<0.2	6
	10-02-96	<0.20	<0.01	2.60	<0.010	<0.01	0.5	--	--	--	--	--
394018074590801	10-02-96	<0.20	<0.01	2.60	<0.010	<0.01	0.5	--	--	--	--	--
	10-02-96	<0.20	<0.01	2.60	<0.010	<0.01	0.4	--	--	--	--	--
	10-02-96	--	--	--	--	--	--	--	--	--	--	--
394022074591002	12-16-97	--	<0.02	4.32	<0.010	<0.01	0.7	157	<1.00	<1	72	59
	11-14-97	<0.10	<0.02	4.00	<0.010	0.02	0.4	--	--	--	--	33
	12-16-97	--	<0.02	3.83	<0.010	<0.01	0.5	68	<1.00	<1	70	23
	12-16-97	--	--	--	--	--	--	69	<1.00	<1	70	--
394104074593101	08-23-99	--	--	--	--	--	--	2	<1.00	<1	<1	--
	12-16-96	--	--	--	--	--	--	--	--	--	--	--
394104074593203	12-16-96	0.03	0.02	7.80	<0.010	0.01	0.6	--	--	--	--	--
	12-17-97	--	<0.002	<0.005	<0.001	--	--	1.4	<0.2	--	<0.2	<2
	12-18-97	--	<0.02	13.0	<0.010	<0.01	0.6	194	<1.00	<1	54	83
	11-17-97	2.1	<0.02	1.61	<0.010	<0.01	1.2	--	--	--	--	75
394217075002401	12-18-97	--	1.86	1.78	<0.010	<0.01	1.2	194	<1.00	<1	140	74
	05-11-99	E.10	0.06	0.72	<0.010	0.02	0.5	210	--	--	116	<16
	06-03-99	<0.10	0.02	2.89	<0.010	0.02	0.5	200	--	--	30.9	20
	05-13-99	0.15	0.09	5.18	0.013	0.01	0.6	360	--	--	89.6	E12
	05-27-99	E.06	<0.02	0.75	<0.010	<0.01	0.7	30	--	--	30.2	E9.9
	06-03-99	<0.10	<0.02	3.80	<0.010	0.02	0.4	380	--	--	44.9	E9.0
	05-19-99	E.09	0.04	2.48	<0.010	<0.01	0.8	240	--	--	85.5	20
	05-11-99	0.14	0.12	0.94	<0.010	0.02	0.3	40	--	--	37.8	E8.3
	05-20-99	E.06	0.02	3.49	<0.010	<0.01	0.8	40	--	--	56.6	108
	05-17-99	0.18	0.13	0.20	<0.010	0.01	0.6	30	--	--	41.5	43
	11-18-99	<0.10	<0.02	2.00	<0.010	<0.01	0.5	60	--	--	66.1	57
	11-18-99	E.05	<0.02	1.98	<0.010	<0.01	0.4	70	--	--	66.3	53
	05-13-99	E.06	<0.02	1.53	<0.010	0.01	0.2	M	--	--	22.6	<16
	05-18-99	<0.10	0.02	0.51	<0.010	<0.01	0.3	10	--	--	61.6	264
	09-02-97	--	0.03	3.19	<0.010	0.01	0.5	118	<1.00	--	77	17
	05-17-99	0.25	0.24	6.31	<0.010	<0.01	0.6	50	--	--	75.1	41
	05-19-99	<0.10	<0.02	0.57	<0.010	<0.01	0.8	90	--	--	77.6	32
	11-18-99	<0.10	<0.02	0.37	<0.010	<0.01	<0.3	<20	--	--	30.0	<16
	12-09-96	--	--	--	--	--	--	0.6	<0.2	<1	<0.2	<2
12-09-96	<0.20	0.02	7.10	0.010	<0.01	1.1	526	<1.00	<1	45	19	
12-10-96	--	--	--	--	--	--	--	--	--	--	--	
12-10-96	0.17	<0.01	6.90	<0.010	<0.01	1.4	--	--	--	--	--	
05-12-99	0.25	0.17	4.47	<0.010	0.02	0.7	40	--	--	--	141	17
11-10-99	<0.10	<0.02	2.27	<0.010	<0.01	0.4	60	--	--	--	68.7	<16
11-12-99	<0.10	<0.02	<0.05	<0.010	<0.01	--	--	--	--	--	--	--
11-12-99	<0.10	<0.02	<0.05	<0.010	<0.01	--	--	--	--	--	--	--
11-12-99	<0.10	<0.02	1.72	<0.010	<0.01	0.4	60	--	--	--	65.7	<16
11-10-99	<0.10	<0.02	2.62	<0.010	0.01	E.3	20	--	--	--	117	<16
05-19-99	E.08	0.02	1.97	<0.010	<0.01	0.3	50	--	--	--	155	E11
05-18-99	<0.10	<0.02	0.77	<0.010	<0.01	0.2	<10	--	--	--	42.1	E10
05-25-99	<0.10	0.04	0.99	<0.010	0.02	0.2	20	--	--	--	94.3	<16

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Mercury water fltrd, ng/L (50287)	Mercury water, unfltrd recover- able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)
CAMDEN COUNTY												
394528075004302	11-13-97	<1.00	<1	<1.00	<1.0	--	<1.00	3.4	--	2.62	--	1.42
	11-14-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
	11-14-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
394604075003601	10-01-96	--	--	--	--	--	--	--	--	--	--	--
	10-01-96	--	--	--	--	9	--	7.0	--	--	--	--
	09-09-97	<1.00	<1	<1.00	<1.0	5	<1.00	5.3	--	1.00	--	2.11
	09-09-97	<1.00	<1	<1.00	<1.0	--	<1.00	5.7	--	--	--	1.45
394604075003602	10-31-97	--	--	--	--	1,120	--	28.8	--	--	--	--
	10-31-97	--	--	--	--	--	--	--	--	--	--	--
	10-31-97	--	--	--	--	6	--	<1.0	--	--	--	--
	11-06-97	--	--	--	--	--	--	--	--	--	<0.1	--
	11-06-97	<1.00	<1	1.86	<1.0	650	<1.00	25.5	--	<0.38	--	10.5
	11-07-97	<0.3	0.2	0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
	11-07-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
GLOUCESTER COUNTY												
393254075012101	09-05-96	<1.00	<1	2.00	8.0	21	<1.00	30.0	0.2	--	--	2.00
	09-16-97	--	--	--	--	--	--	--	<0.1	--	--	--
393807075030401	09-03-98	--	--	--	--	105	--	10.3	--	E.49	--	--
393823075071601	10-14-98	--	--	--	--	1,540	--	19.3	--	E.35	--	--
393939075030901	11-10-98	--	--	--	--	E5	--	5.7	--	0.79	--	--
393939075030902	12-02-98	--	--	--	--	26	--	--	--	74.3	--	--
393939075030903	12-01-98	<1.00	<1	<1.00	<1.0	55	<1.00	3.7	--	1.28	--	<1.00
	11-05-96	--	--	--	--	--	--	--	--	--	--	--
393943075030501	11-05-96	--	--	--	--	8	--	<1.0	--	--	--	--
	11-10-98	--	--	--	--	<10	--	<3.0	--	<0.20	--	--
393945075031701	12-09-98	--	--	--	--	E6	--	15.7	--	363	--	--
393945075031702	11-30-98	--	--	--	--	--	--	--	--	--	--	--
	12-03-98	<0.3	<0.2	<0.2	<0.2	<3	<0.3	0.1	--	--	--	<0.5
	12-03-98	--	--	--	--	299	--	10.8	--	0.52	--	--
393945075031703	11-16-98	--	--	--	--	<10	--	E2.1	--	<0.16	--	--
	11-30-98	<0.3	<0.2	<0.2	1.5	<3	<0.3	<0.1	--	--	--	<0.5
394018074590801	10-02-96	--	--	--	--	4	--	23.0	--	--	--	--
	10-02-96	--	--	--	--	5	--	22.0	--	--	--	--
	10-02-96	--	--	--	--	<3	--	<1.0	--	--	--	--
	12-16-97	<1.00	4	1.57	3.4	--	<1.00	27.4	--	23.2	--	8.09
394022074591002	11-14-97	--	--	--	--	8	--	20.9	--	--	--	--
	12-16-97	<1.00	2	3.06	28.4	--	<1.00	22.8	--	2,150	--	5.50
	12-16-97	<1.00	3	3.04	36.5	--	<1.00	24.3	--	--	--	6.34
	08-23-99	<1.00	<1.0	<1.00	<1.0	<10	<1.00	<1.0	--	--	--	<1.00
394104074593101	12-16-96	--	--	--	--	--	--	--	--	--	--	--
	12-16-96	--	--	--	--	50	--	130	--	--	--	--
	12-17-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
	12-18-97	<1.00	<1	1.62	<1.0	--	<1.00	144	--	1.66	--	2.08
394104074593203	11-17-97	--	--	--	--	22	--	144	--	--	--	--
	12-18-97	<1.00	2	3.78	1.1	--	<1.00	134	--	13.8	--	7.35
394217075002401	05-11-99	--	--	E5	--	202	--	5.8	<0.1	--	--	--
394217075003901	06-03-99	--	--	E7	--	482	--	8.2	<0.1	--	--	--
394218075002101	05-13-99	--	--	E5	--	127	--	5.4	<0.1	--	--	--
394218075002701	05-27-99	--	--	<7	--	12	--	3.1	<0.1	--	--	--
394219074594401	06-03-99	--	--	E6	--	137	--	19.0	<0.1	--	--	--
394219075002401	05-19-99	--	--	<7	--	14	--	7.8	<0.1	--	--	--
394220075002901	05-11-99	--	--	<7	--	<10	--	9.4	2.0	--	--	--
394224075001401	05-20-99	--	--	<7	--	71	--	20.6	<0.1	--	--	--
394226075001501	05-17-99	--	--	<7	--	15	--	11.1	<0.1	--	--	--
394226075001701	11-18-99	--	--	--	--	46	--	20.1	--	2,830	--	--
	11-18-99	--	--	--	--	42	--	20.1	--	3,940	--	--
394226075003201	05-13-99	--	--	<7	--	<10	--	E2.8	1.3	--	--	--
394233075003001	05-18-99	--	--	E5	--	<10	--	10.4	0.4	--	--	--
394233075045401	09-02-97	<1.00	1	1.49	<1.0	118	<1.00	16.3	<0.1	--	--	2.36
394237075002101	05-17-99	--	--	<7	--	10	--	8.2	1.2	--	--	--
394242075002301	11-09-99	--	--	--	--	E6	--	66.2	--	3.47	--	--
394242075002302	11-18-99	--	--	--	--	<10	--	2.9	--	E.54	--	--
394243075034401	12-09-96	<0.3	<0.2	<0.2	<0.2	<3	<0.3	0.1	<0.1	--	--	<0.5
	12-09-96	<1.00	<1	4.00	<1.0	<3	<1.00	52.0	<0.1	--	--	2.00
	12-10-96	--	--	--	--	--	--	--	--	--	--	--
	12-10-96	--	--	--	--	5	--	53.0	--	--	--	--
394247075003001	05-12-99	--	--	<7	--	<10	--	15.6	0.1	--	--	--
394248075003201	11-10-99	--	--	--	--	44	--	8.4	--	E.27	--	--
394248075003202	11-12-99	--	--	--	--	--	--	--	--	E.91	--	--
	11-12-99	--	--	--	--	--	--	--	--	E.89	--	--
	11-12-99	--	--	--	--	51	--	6.6	--	E.35	--	--
394248075003203	11-10-99	--	--	--	--	<10	--	7.1	--	137	--	--
394249075005501	05-19-99	--	--	<7	--	E6	--	6.7	3.1	--	--	--
394252075010201	05-18-99	--	--	E5	--	<10	--	3.9	2.8	--	--	--
394254075010401	05-25-99	--	--	<7	--	36	--	8.1	0.5	--	--	--

TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Strontium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Atra-zine, water, fltrd, ug/L (39632)	MBAS, water, unfltrd mg/L (38260)	Prometon, water, fltrd, ug/L (04037)	Sima-zine, water, fltrd, ug/L (04035)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Methyl-t-butyl ether, water, unfltrd ug/L (78032)	Tetra-chloro-ethene, water, unfltrd ug/L (34475)	Tri-chloro-ethene, water, unfltrd ug/L (39180)	Alpha-emitting radium, wat flt plancht pCi/L (09510)
CAMDEN COUNTY												
394528075004302	11-13-97	--	<1	--	--	--	--	--	--	--	--	--
	11-14-97	<0.1	<0.5	--	--	--	--	--	--	--	--	--
	11-14-97	<0.1	<0.5	--	--	--	--	--	--	--	--	--
394604075003601	10-01-96	--	--	--	--	--	--	0.1	<0.1	<0.05	--	--
	10-01-96	--	--	<0.001	--	<0.02	0.605	<0.007	--	--	--	--
	09-09-97	37.7	1	--	--	--	--	--	--	--	--	--
	09-09-97	--	2	--	--	--	--	--	--	--	--	--
394604075003602	10-31-97	--	--	<0.001	--	<0.02	0.005	<0.007	<0.1	<0.04	<0.04	--
	10-31-97	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.1	<0.04	<0.04	--
	10-31-97	--	--	--	--	--	--	--	--	--	--	--
	11-06-97	--	--	--	--	--	--	--	--	--	--	--
	11-06-97	41.8	14	--	--	--	--	--	--	--	--	--
	11-07-97	<0.1	0.8	--	--	--	--	--	--	--	--	--
	11-07-97	<0.1	<0.5	--	--	--	--	--	--	--	--	--
GLOUCESTER COUNTY												
393254075012101	09-05-96	18.0	32	--	--	--	--	--	--	--	--	--
	09-16-97	--	--	--	--	--	--	--	--	--	--	1.1
393807075030401	09-03-98	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.2	<0.10	<0.04	--
393823075071601	10-14-98	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.2	<0.10	<0.04	--
393939075030901	11-10-98	8.0	E8	--	--	--	--	--	--	--	--	--
393939075030902	12-02-98	8.0	<20	--	--	--	--	--	--	--	--	--
393939075030903	12-01-98	11.3	3	--	--	--	--	--	--	--	--	--
	11-05-96	--	--	--	--	--	--	--	<0.1	M	<0.05	--
393943075030501	11-05-96	--	--	<0.001	--	<0.02	<0.005	<0.007	--	--	--	--
	11-10-98	--	--	--	--	--	--	--	--	--	--	--
393945075031701	12-09-98	24.0	<20	--	--	--	--	--	--	--	--	--
393945075031702	11-30-98	--	--	--	--	--	--	--	--	--	--	--
	12-03-98	<0.1	0.6	--	--	--	--	--	--	--	--	--
	12-03-98	22.5	E8	--	--	--	--	--	--	--	--	--
393945075031703	11-16-98	5.6	<20	--	--	--	--	--	--	--	--	--
	11-30-98	<0.1	<0.5	--	--	--	--	--	--	--	--	--
394018074590801	10-02-96	--	--	0.007	--	0.13	0.629	<0.007	--	--	--	--
	10-02-96	--	--	--	--	--	--	--	0.3	M	<0.05	--
	10-02-96	--	--	--	--	--	--	--	--	--	--	--
	12-16-97	55.1	11	--	--	--	--	--	--	--	--	--
394022074591002	11-14-97	--	--	0.016	--	<0.02	0.022	<0.007	<0.1	E.05	<0.04	--
	12-16-97	21.2	5	--	--	--	--	--	--	--	--	--
	12-16-97	--	6	--	--	--	--	--	--	--	--	--
	08-23-99	--	2	--	--	--	--	--	--	--	--	--
394104074593101	12-16-96	--	--	--	--	--	--	--	0.3	E.1	<0.05	--
	12-16-96	--	--	0.005	--	M	<0.005	<0.007	--	--	--	--
	12-17-97	<0.1	<0.5	--	--	--	--	--	--	--	--	--
	12-18-97	104	1	--	--	--	--	--	--	--	--	--
394104074593203	11-17-97	--	--	0.005	--	<0.02	<0.005	<0.007	<0.1	E.05	E.01	--
	12-18-97	53.3	2	--	--	--	--	--	--	--	--	--
394217075002401	05-11-99	10.8	<20	--	0.03	--	--	--	--	--	--	--
394217075003901	06-03-99	15.6	<20	--	0.06	--	--	--	--	--	--	--
394218075002101	05-13-99	13.0	E9	--	0.07	--	--	--	--	--	--	--
394218075002701	05-27-99	5.9	<20	--	0.05	--	--	--	--	--	--	--
394219074594401	06-03-99	19.1	<20	--	0.05	--	--	--	--	--	--	--
394219075002401	05-19-99	10.5	E10	--	0.05	--	--	--	--	--	--	--
394220075002901	05-11-99	7.0	<20	--	0.05	--	--	--	--	--	--	--
394224075001401	05-20-99	13.3	E7	--	0.09	--	--	--	--	--	--	--
394226075001501	05-17-99	5.2	<20	--	0.02	--	--	--	--	--	--	--
394226075001701	11-18-99	8.2	<20	--	0.02	--	--	--	--	--	--	--
	11-18-99	8.7	<20	--	0.04	--	--	--	--	--	--	--
394226075003201	05-13-99	14.5	<20	--	0.03	--	--	--	--	--	--	--
394233075003001	05-18-99	15.5	<20	--	0.06	--	--	--	--	--	--	--
394233075045401	09-02-97	37.4	2	--	--	--	--	--	--	--	--	1.7
394237075002101	05-17-99	6.1	E7	--	<0.02	--	--	--	--	--	--	--
394242075002301	11-09-99	40.4	<20	--	<0.02	--	--	--	--	--	--	--
394242075002302	11-18-99	6.5	<20	--	<0.02	--	--	--	--	--	--	--
394243075034401	12-09-96	<0.1	<0.5	--	--	--	--	--	--	--	--	--
	12-09-96	35.0	<1	--	--	--	--	--	--	--	--	--
	12-10-96	--	--	--	--	--	--	--	<0.1	<0.1	<0.05	--
	12-10-96	--	--	E.004	--	<0.02	0.009	<0.007	--	--	--	--
394247075003001	05-12-99	27.9	<20	--	0.06	--	--	--	--	--	--	--
394248075003201	11-10-99	20.9	<20	--	<0.02	--	--	--	--	--	--	--
394248075003202	11-12-99	--	--	--	<0.02	--	--	--	--	--	--	--
	11-12-99	--	--	--	<0.02	--	--	--	--	--	--	--
	11-12-99	19.0	<20	--	<0.02	--	--	--	--	--	--	--
394248075003203	11-10-99	27.8	<20	--	<0.02	--	--	--	--	--	--	--
394249075005501	05-19-99	12.7	<20	--	0.02	--	--	--	--	--	--	--
394252075010201	05-18-99	7.4	<20	--	<0.02	--	--	--	--	--	--	--
394254075010401	05-25-99	10.8	<20	--	0.02	--	--	--	--	--	--	--

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Ra-226	Ra-226,	Ra-228	Ra-228,	Rn-222	Rn-222,	Uranium
		2-sigma water, fltrd, pCi/L (76001)	water, radon method pCi/L (09511)	2-sigma water, fltrd, pCi/L (76000)	water, fltrd, pCi/L (81366)	2-sigma water unfltrd pCi/L (76002)	water, unfltrd pCi/L (82303)	natural water, fltrd, ug/L (22703)
CAMDEN COUNTY								
394528075004302	11-13-97	--	--	--	--	--	--	<1.00
	11-14-97	--	--	--	--	--	--	<0.2
	11-14-97	--	--	--	--	--	--	<0.2
394604075003601	10-01-96	--	--	--	--	--	--	--
	10-01-96	--	--	--	--	--	--	--
	09-09-97	0.34	2.07	0.54	1	50	3,170	<1.00
394604075003602	09-09-97	0.47	2.56	0.59	2	--	--	<1.00
	10-31-97	--	--	--	--	--	--	--
	10-31-97	--	--	--	--	--	--	--
	10-31-97	--	--	--	--	--	--	--
	11-06-97	--	--	--	--	--	--	--
	11-06-97	0.16	0.98	0.33	<1	26	630	<1.00
	11-07-97	--	--	--	--	--	--	<0.2
GLOUCESTER COUNTY								
393254075012101	09-05-96	0.19	1.20	0.56	1	22	380	<1.00
	09-16-97	--	--	--	1	24	390	--
393807075030401	09-03-98	--	--	--	--	--	--	--
393823075071601	10-14-98	--	--	--	--	--	--	--
393939075030901	11-10-98	0.08	--	0.51	M	21	190	--
393939075030902	12-02-98	--	--	--	--	18	150	--
393939075030903	12-01-98	0.34	--	0.52	1	17	100	<1.00
393943075030501	11-05-96	--	--	--	--	--	--	--
	11-05-96	--	--	--	--	--	--	--
	11-10-98	--	--	--	--	--	--	--
393945075031701	12-09-98	--	--	--	--	22	410	--
393945075031702	11-30-98	--	--	--	--	--	--	--
	12-03-98	--	--	--	--	--	--	<0.2
	12-03-98	--	--	--	--	19	180	--
393945075031703	11-16-98	--	--	--	--	19	210	--
	11-30-98	--	--	--	--	--	--	<0.2
394018074590801	10-02-96	--	--	--	--	--	--	--
	10-02-96	--	--	--	--	--	--	--
	10-02-96	--	--	--	--	--	--	--
394022074591002	12-16-97	0.41	2.46	0.61	2	23	220	<1.00
	11-14-97	--	--	--	--	--	--	--
	12-16-97	0.55	3.32	0.49	1	21	180	<1.00
	12-16-97	--	--	--	--	--	--	<1.00
394104074593101	08-23-99	--	--	--	--	--	--	<1.00
	12-16-96	--	--	--	--	--	--	--
	12-16-96	--	--	--	--	--	--	--
	12-17-97	--	--	--	--	--	--	<0.2
394104074593203	12-18-97	0.13	0.76	0.65	2	23	410	<1.00
	11-17-97	--	--	--	--	--	--	--
	12-18-97	1.2	6.39	0.76	3	--	--	<1.00
394217075002401	05-11-99	--	--	--	--	--	--	--
394217075003901	06-03-99	--	--	--	--	--	--	--
394218075002101	05-13-99	--	--	--	--	--	--	--
394218075002701	05-27-99	--	--	--	--	--	--	--
394219074594401	06-03-99	--	--	--	--	--	--	--
394219075002401	05-19-99	--	--	--	--	--	--	--
394220075002901	05-11-99	--	--	--	--	--	--	--
394224075001401	05-20-99	--	--	--	--	--	--	--
394226075001501	05-17-99	--	--	--	--	--	--	--
394226075001701	11-18-99	--	--	--	--	--	--	--
394226075003201	11-18-99	--	--	--	--	--	--	--
394226075003201	05-13-99	--	--	--	--	--	--	--
394233075003001	05-18-99	--	--	--	--	--	--	--
394233075045401	09-02-97	--	--	--	<0.5	28	860	<1.00
394237075002101	05-17-99	--	--	--	--	--	--	--
394242075002301	11-09-99	--	--	--	--	--	--	--
394242075002302	11-18-99	--	--	--	--	--	--	--
394243075034401	12-09-96	--	--	--	--	--	--	<0.2
394247075003001	12-09-96	0.16	0.98	0.75	2	24	280	<1.00
	12-10-96	--	--	--	--	--	--	--
	12-10-96	--	--	--	--	--	--	--
394248075003201	05-12-99	--	--	--	--	--	--	--
394248075003201	11-10-99	--	--	--	--	--	--	--
394248075003202	11-12-99	--	--	--	--	--	--	--
	11-12-99	--	--	--	--	--	--	--
	11-12-99	--	--	--	--	--	--	--
394248075003203	11-10-99	--	--	--	--	--	--	--
394249075005501	05-19-99	--	--	--	--	--	--	--
394252075010201	05-18-99	--	--	--	--	--	--	--
394254075010401	05-25-99	--	--	--	--	--	--	--

TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Time	Sample type	Turbidity, water, unfltrd field, NTU (61028)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)
GLOUCESTER COUNTY											
394258075061101	10-15-96	1359	Environmental	--	--	--	--	--	--	--	--
	10-15-96	1400	Environmental	--	764	8.7	89	4.6	196	16.4	11.0
	12-20-96	1150	Environmental	0.1	--	7.1	--	4.6	201	15.7	11.0
	12-23-96	1100	Spike	--	--	--	--	--	--	--	18.0
394327075021001	06-02-97	1040	Environmental	0.0	755	6.5	62	5.1	133	13.2	--
	02-27-98	1200	Environmental	--	754	6.2	61	5.1	133	13.9	5.68
394340075012701	09-18-96	1359	Environmental	--	--	--	--	--	--	--	--
	09-18-96	1400	Environmental	--	754	8.0	83	4.3	39	16.0	0.18
	09-18-96	1405	Blank	--	--	--	--	--	--	--	--
	12-09-96	1115	Environmental	0.2	--	6.8	--	4.7	39	16.2	0.12
	05-29-97	1259	Environmental	--	769	7.8	78	4.0	60	16.0	--
	05-29-97	1300	Environmental	--	769	7.8	78	4.0	60	16.0	0.17
	09-08-97	1100	Environmental	--	750	6.7	71	4.5	64	16.5	0.15
394342075040301	09-10-96	1359	Environmental	--	754	8.5	90	4.8	157	17.2	--
	09-10-96	1400	Environmental	--	754	8.5	90	4.8	157	17.2	5.20
	12-03-96	1330	Environmental	--	--	7.8	--	4.8	144	16.7	5.20
	12-03-96	1335	Environmental	--	--	--	--	--	--	--	--
394342075040302	11-04-97	1200	Environmental	--	756	7.4	74	4.6	94	15.2	5.06
	11-11-97	1625	Environmental	--	--	7.1	--	5.2	106	15.4	--
394428075044601	09-11-96	0959	Environmental	--	--	7.1	--	5.2	408	16.0	--
	09-11-96	1000	Environmental	--	754	7.1	73	5.2	408	16.0	39.0
	09-11-96	1001	Replicate	--	--	--	--	--	--	--	--
	09-11-96	1005	Blank	--	--	--	--	--	--	--	--
	12-05-96	1500	Environmental	0.1	--	6.6	--	5.4	397	15.8	37.0
	12-05-96	1505	Environmental	--	--	--	--	--	--	--	--
	12-06-96	1430	Blank	--	--	--	--	--	--	--	0.009
394446075031001	12-10-96	0959	Environmental	--	--	--	--	--	--	--	--
	12-10-96	1000	Environmental	--	762	2.0	19	6.2	225	15.2	8.50
	12-10-96	1530	Blank	--	--	--	--	--	--	--	0.007
	12-11-96	1210	Environmental	4.5	--	0.1	--	6.1	230	15.7	8.00
394446075031003	11-04-97	1500	Environmental	--	759	2.3	23	4.5	125	15.2	6.24
	12-04-97	1255	Environmental	0.1	--	6.1	--	5.2	162	16.0	--
ATLANTIC COUNTY											
392335074410801	09-23-98	1000	Environmental	--	762	3.8	36	3.7	37	12.9	0.64
392719074292201	07-22-98	1000	Environmental	--	759	7.1	67	4.8	52	13.1	0.88
392813074321001	08-25-98	1000	Environmental	--	757	7.9	--	4.4	--	13.2	0.61
392824074272801	07-22-98	1300	Environmental	--	758	8.4	758	4.7	59	14.5	1.09
392900074533101	12-04-98	1340	Blank	--	--	--	--	--	--	--	0.003
	12-07-98	1205	Environmental	0.1	757	10.3	103	4.6	203	15.0	17.5
392900074533102	12-14-98	1405	Environmental	0.1	761	9.7	90	4.6	278	11.6	23.9
392900074533103	12-14-98	1205	Environmental	0.3	761	8.9	82	4.5	319	11.4	13.2
392901074535501	12-21-98	1145	Environmental	0.2	768	9.1	85	4.8	188	12.9	13.0
392901074535502	12-21-98	1335	Environmental	0.1	--	8.8	--	5.0	297	11.6	24.5
392901074535503	12-17-98	1343	Environmental	0.1	752	5.6	52	4.4	257	11.4	21.2
392901074535504	12-17-98	1140	Environmental	0.2	--	8.4	--	4.1	283	12.4	24.8
393035074533601	09-22-98	1000	Environmental	--	754	0.1	0.0	3.9	53	12.9	0.75
393050074412501	09-10-98	1500	Environmental	--	761	3.6	34	4.5	408	12.9	7.12
393053074344201	07-28-98	1600	Environmental	--	758	0.1	1	4.5	70	14.6	1.41
393117074484101	07-21-98	1300	Environmental	--	760	8.5	--	4.4	--	14.0	0.72
393530074523902	11-13-97	0900	Environmental	--	766	4.2	40	3.6	39	13.5	0.43
	11-13-97	0905	Blank	--	--	--	--	--	--	--	--
	11-13-97	0906	Blank	--	--	--	--	--	--	--	<0.02
	12-05-97	1220	Environmental	0.1	--	6.1	--	4.5	162	16.0	--
	12-09-97	1525	Blank	--	--	--	--	--	--	--	0.011
393531074523901	10-23-96	0959	Environmental	--	--	--	--	--	--	--	--
	10-23-96	1000	Environmental	--	--	2.5	26	4.1	375	16.6	14.0
	12-12-96	1255	Environmental	0.1	--	0.6	--	4.3	387	15.4	14.0
	12-12-96	1300	Environmental	--	--	--	--	--	--	--	--
	12-12-96	1545	Blank	--	--	--	--	--	--	--	0.006
393823074492901	04-02-96	1025	Environmental	--	--	7.6	--	3.9	54	13.3	--
	10-21-97	1025	Environmental	0.1	761	9.9	95	4.5	54	13.3	1.59
SALEM COUNTY											
393015075054501	10-30-96	0959	Environmental	--	--	--	--	--	--	--	--
	10-30-96	1000	Environmental	--	751	10.1	102	4.5	336	15.4	31.0
	06-16-98	1110	Environmental	0.1	--	9.7	--	4.5	343	13.4	28.9
393027075090901	12-22-96	0959	Environmental	--	--	--	--	--	--	--	--
	12-22-96	1000	Environmental	--	--	8.5	84	4.0	19	14.2	0.08
	10-20-98	1200	Environmental	--	--	--	--	--	--	--	--
	11-17-98	1200	Environmental	0.6	756	3.8	--	4.3	16	--	0.03
393030075090501	11-17-98	1400	Environmental	0.2	--	7.9	--	4.6	14	--	2.94
393030075090502	11-18-98	1200	Environmental	0.1	770	6.4	60	4.3	268	13.5	16.0
393030075090503	11-30-98	1220	Environmental	0.1	762	5.8	56	4.3	328	13.9	16.1
393046075085201	11-19-98	1440	Environmental	0.2	--	1.6	--	4.9	157	14.3	6.67
393046075085202	11-19-98	1203	Environmental	1.7	--	0.2	--	6.0	59	12.7	4.19

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Magnesium,	Potassium,	Sodium,	ANC,	ANC,	Alka-	Bromide	Chloride,	Fluoride,	Silica,	Sulfate
		water,	water,	water,	wat unf	wat unf	linity,		water,	water,		water,
		fltrd,	fltrd,	fltrd,	fixed	fixed	wat flt	fltrd,	fltrd,	fltrd,	fltrd,	fltrd,
		mg/L	mg/L	mg/L	end pt,	end pt,	inc tit	mg/L	mg/L	mg/L	mg/L	mg/L
		(00925)	(00935)	(00930)	field,	lab,	field,	(71870)	(00940)	(00950)	(00955)	(00945)
					mg/L as	mg/L as	mg/L as					
					CaCO <sub>3</sub>	CaCO <sub>3</sub>	CaCO <sub>3</sub>					
					(00410)	(90410)	(39086)					
GLOUCESTER COUNTY												
394258075061101	10-15-96	--	--	--	--	--	--	--	--	--	--	--
	10-15-96	3.50	3.50	12.0	--	<1	2	0.05	17.0	<0.1	6.80	34.0
	12-20-96	3.70	3.20	12.0	--	--	--	--	--	--	7.00	--
	12-23-96	4.90	0.70	11.0	--	--	--	--	--	--	3.40	--
394327075021001	06-02-97	--	--	--	1	--	--	--	10.7	--	--	15.2
	02-27-98	3.46	2.27	9.86	--	5	4	0.02	11.3	<0.1	7.08	13.2
394340075012701	09-18-96	--	--	--	--	--	--	--	--	--	--	--
	09-18-96	0.600	0.50	4.40	--	2	--	0.03	7.70	<0.1	6.10	<0.1
	09-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-09-96	0.560	0.50	4.20	--	2	--	--	--	--	6.20	--
	05-29-97	--	--	--	--	--	--	--	--	--	--	--
	05-29-97	0.724	0.50	8.00	--	3	--	0.02	12.1	<0.1	6.17	0.1
	09-08-97	0.767	0.55	8.47	--	3	--	0.03	12.7	<0.1	6.34	0.2
394342075040301	09-10-96	--	--	--	--	--	1	--	--	--	--	--
	09-10-96	1.50	2.60	16.0	--	1	1	0.01	16.0	<0.1	4.60	29.0
	12-03-96	1.50	2.80	16.0	--	<0.5	--	--	13.0	--	4.60	27.0
	12-03-96	--	--	--	--	--	--	--	--	--	--	--
394342075040302	11-04-97	4.25	1.70	3.27	--	5	--	0.04	7.64	<0.1	8.47	8.3
	11-11-97	--	--	--	--	--	--	--	--	--	--	--
394428075044601	09-11-96	--	--	--	--	--	7	--	--	--	--	--
	09-11-96	7.00	2.10	19.0	--	8	7	0.14	85.0	<0.1	6.00	23.0
	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	12-05-96	6.50	2.20	20.0	--	7.0	--	--	82.0	--	5.70	24.0
	12-05-96	--	--	--	--	--	--	--	--	--	--	--
	12-06-96	0.001	--	0.12	--	--	--	--	--	--	<0.02	--
394446075031001	12-10-96	--	--	--	--	--	--	--	--	--	--	--
	12-10-96	2.20	2.60	26.0	--	26	35	0.11	38.0	<0.1	2.50	10.0
	12-10-96	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
	12-11-96	2.10	2.70	23.0	--	3.1	--	--	--	--	2.60	--
394446075031003	11-04-97	2.82	1.56	9.46	--	7	--	0.04	14.4	<0.1	6.62	18.2
	12-04-97	--	--	--	--	--	--	--	--	--	--	--
ATLANTIC COUNTY												
392335074410801	09-23-98	0.454	0.70	2.54	--	<1	--	0.03	4.23	<0.1	11.8	5.2
392719074292201	07-22-98	0.712	1.11	4.71	--	1	--	--	7.97	<0.1	9.68	3.9
392813074321001	08-25-98	0.415	1.31	3.12	--	3	--	0.03	5.59	<0.1	9.24	1.4
392824074272801	07-22-98	1.23	0.88	5.67	--	2	--	--	10.0	<0.1	5.48	4.3
392900074533101	12-04-98	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
	12-07-98	4.79	7.00	1.11	<1	<1	--	--	5.70	--	5.81	48.8
392900074533102	12-14-98	6.65	11.3	1.02	<1	<1	--	--	7.13	--	6.39	77.3
392900074533103	12-14-98	14.7	9.21	3.17	<1	<1	--	--	17.5	--	6.42	18.1
392901074535501	12-21-98	4.79	5.84	2.05	--	<1	--	--	3.98	--	4.76	35.4
392901074535502	12-21-98	7.88	8.22	2.85	--	<1	--	--	13.7	--	7.66	46.4
392901074535503	12-17-98	7.34	7.08	1.95	<1	<1	--	--	11.1	--	5.68	53.9
392901074535504	12-17-98	6.83	7.91	2.85	<1	2	--	--	11.4	--	5.72	52.7
393035074533601	09-22-98	0.425	0.93	1.79	--	--	--	0.05	3.44	<0.1	13.0	11.7
393050074412501	09-10-98	3.44	1.10	52.5	--	3	--	0.15	105	<0.1	7.40	1.2
393053074344201	07-28-98	1.60	0.73	6.66	--	10	--	<0.01	11.3	<0.1	9.48	0.3
393117074484101	07-21-98	0.417	0.35	1.35	--	4	--	--	2.93	<0.1	6.19	0.1
393530074523902	11-13-97	0.380	0.66	4.26	--	3	--	0.03	6.50	<0.1	5.54	0.4
	11-13-97	--	--	--	--	--	--	--	--	--	--	--
	11-13-97	<0.010	<0.10	<0.20	--	2	--	<0.01	<0.10	<0.1	<0.01	<0.1
	12-05-97	--	--	--	--	--	--	--	--	--	--	--
	12-09-97	0.001	--	<0.03	--	--	--	--	--	--	<0.00	--
393531074523901	10-23-96	--	--	--	--	--	--	--	--	--	--	--
	10-23-96	4.60	9.70	20.0	--	--	--	<0.01	26.0	0.1	7.40	12.0
	12-12-96	5.10	9.60	20.0	--	--	--	--	--	--	7.50	--
	12-12-96	--	--	--	--	--	--	--	--	--	--	--
	12-12-96	0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
393823074492901	04-02-96	--	--	--	--	--	--	--	--	--	--	--
	10-21-97	1.44	1.83	3.19	<1	--	--	--	5.86	--	6.29	0.5
SALEM COUNTY												
393015075054501	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	10-30-96	6.40	14.0	2.10	--	--	--	0.04	19.0	0.1	6.00	20.0
	06-16-98	5.98	11.3	2.15	<1	--	--	--	--	--	5.47	--
393027075090901	12-22-96	--	--	--	--	--	--	--	--	--	--	--
	12-22-96	0.320	0.50	1.40	--	2	--	<0.01	3.10	<0.1	5.40	<0.1
	10-20-98	--	--	--	--	--	--	--	--	--	--	--
	11-17-98	0.402	0.58	2.19	--	--	--	--	4.63	--	6.05	<0.1
393030075090501	11-17-98	1.69	1.44	5.15	--	2	--	--	12.2	--	6.04	0.5
393030075090502	11-18-98	7.93	2.87	4.72	<1	<1	--	--	20.7	--	6.33	3.4
393030075090503	11-30-98	13.5	2.76	4.36	<1	--	--	--	24.3	--	6.55	2.5
393046075085201	11-19-98	4.76	1.29	5.27	--	--	--	--	14.8	--	--	6.4
393046075085202	11-19-98	0.854	0.72	1.74	--	--	--	--	5.00	--	--	8.4

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Ammonia		Nitrite		Ortho-	Organic carbon,	Alum-	Anti-	Arsenic	Barium,	Boron,
		+ org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	+ nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	phos- phate, water, fltrd, mg/L as P (00671)						
GLOUCESTER COUNTY												
394258075061101	10-15-96	--	--	--	--	--	--	--	--	--	--	--
	10-15-96	<0.20	0.03	5.00	0.010	<0.01	0.6	--	--	--	--	--
	12-20-96	<0.20	<0.01	5.10	<0.010	<0.01	0.8	267	<1.00	<1	79	28
	12-23-96	--	--	--	--	--	--	15	9.00	1	31	10
394327075021001	06-02-97	--	<0.01	5.23	<0.010	<0.01	--	--	--	--	--	--
	02-27-98	0.11	0.09	6.75	<0.010	0.01	0.5	--	--	--	--	--
394340075012701	09-18-96	--	--	--	--	--	--	--	--	--	--	--
	09-18-96	<0.20	<0.01	0.47	<0.010	<0.01	0.5	--	--	--	--	--
	09-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-09-96	<0.20	<0.01	0.55	<0.010	<0.01	0.4	59	<1.00	<1	28	8.5
	05-29-97	--	--	--	--	--	--	--	--	--	--	--
	05-29-97	<0.20	<0.01	1.00	<0.010	<0.01	0.4	--	--	--	--	--
	09-08-97	<0.20	<0.01	1.18	<0.010	<0.01	0.4	--	--	--	--	--
394342075040301	09-10-96	--	--	--	--	--	--	--	--	--	--	--
	09-10-96	<0.20	<0.01	2.50	<0.010	<0.01	0.7	--	--	--	--	--
	12-03-96	<0.20	0.02	2.50	<0.010	<0.01	0.7	94	<1.00	<1	56	57
	12-03-96	--	--	--	--	--	--	92	<1.00	<1	56	--
394342075040302	11-04-97	<0.10	<0.02	4.58	<0.010	<0.01	0.3	--	--	--	--	21
	11-11-97	--	0.05	4.61	0.022	0.02	0.3	14	<1.00	<1	146	--
394428075044601	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	09-11-96	<0.20	<0.01	6.10	<0.010	<0.01	0.7	--	--	--	--	--
	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	12-05-96	<0.20	<0.01	5.50	0.010	<0.01	0.6	17	<1.00	<1	111	36
	12-05-96	--	--	--	--	--	--	22	<1.00	<1	112	--
	12-06-96	--	--	--	--	--	--	2.1	<0.2	<1	<0.2	6
394446075031001	12-10-96	--	--	--	--	--	--	--	--	--	--	--
	12-10-96	0.50	0.35	<0.05	0.010	0.02	5.6	--	--	--	--	--
	12-10-96	--	--	--	--	--	--	1.7	<0.2	<1	<0.2	2
	12-11-96	0.50	0.35	<0.05	0.010	<0.01	0.7	24	<1.00	1	67	34
394446075031003	11-04-97	<0.10	<0.02	1.61	<0.010	<0.01	0.8	--	--	--	--	36
	12-04-97	--	<0.002	1.58	<0.001	0.001	0.8	18	<1.00	<1	92	33
ATLANTIC COUNTY												
392335074410801	09-23-98	<0.10	<0.02	0.07	<0.010	<0.01	<0.1	--	--	<1	--	16
392719074292201	07-22-98	<0.10	0.03	1.08	<0.010	0.01	0.2	--	--	<1	--	<16
392813074321001	08-25-98	<0.10	0.11	<0.05	0.010	0.01	0.2	--	--	<1	--	<16
392824074272801	07-22-98	<0.10	0.02	0.87	<0.010	<0.01	0.4	--	--	<1	--	19
392900074533101	12-04-98	--	--	--	--	--	--	1.5	<0.2	--	<0.2	4
	12-07-98	--	0.02	7.26	<0.010	<0.01	1.1	840	<1.00	--	69	27
392900074533102	12-14-98	--	0.03	6.99	<0.010	<0.01	1.0	972	<1.00	--	71	30
392900074533103	12-14-98	--	0.03	22.6	<0.010	<0.01	0.6	1,470	<1.00	--	779	21
392901074535501	12-21-98	--	<0.02	5.91	<0.010	<0.01	1.1	700	--	--	68.8	38
392901074535502	12-21-98	--	<0.02	13.2	<0.010	<0.01	1.1	360	--	--	65.4	23
392901074535503	12-17-98	--	<0.02	8.14	<0.010	<0.01	1.2	870	--	--	55.8	32
392901074535504	12-17-98	--	<0.02	11.2	<0.010	<0.01	1.4	1,000	<1.00	--	50	29
393035074533601	09-22-98	<0.10	0.02	0.09	<0.010	<0.01	<0.1	--	--	<1	--	<16
393050074412501	09-10-98	<0.10	0.05	1.04	<0.010	0.01	0.2	--	--	<1	--	<16
393053074344201	07-28-98	<0.10	<0.02	<0.05	<0.010	<0.01	1.1	--	--	<1	--	19
393117074484101	07-21-98	<0.10	0.02	0.21	<0.010	<0.01	0.2	--	--	<1	--	<16
393530074523902	11-13-97	<0.10	<0.02	0.85	<0.010	0.01	0.1	--	--	--	--	21
	11-13-97	<0.10	<0.02	<0.05	<0.010	0.01	3.2	--	--	--	--	--
	11-13-97	--	--	--	--	--	--	--	--	--	--	14
	12-05-97	--	<0.02	0.97	<0.010	0.01	0.2	61	<1.00	<1	31	<16
	12-09-97	--	--	--	--	--	--	2.0	<0.2	--	<0.2	4
393531074523901	10-23-96	--	--	--	--	--	--	--	--	--	--	--
	10-23-96	0.60	0.57	31.0	0.180	<0.01	1.6	--	--	--	--	--
	12-12-96	0.80	0.61	31.0	0.010	<0.01	1.7	5,750	<1.00	<1	455	35
	12-12-96	--	--	--	--	--	--	5,740	<1.00	<1	451	--
	12-12-96	--	--	--	--	--	--	1.9	<0.2	<1	<0.2	<2
393823074492901	04-02-96	--	--	3.00	--	--	--	--	--	--	--	--
	10-21-97	--	<0.01	3.02	<0.010	<0.01	0.2	80	--	--	74.8	16
SALEM COUNTY												
393015075054501	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	10-30-96	<0.20	<0.01	25.0	<0.010	<0.01	0.9	--	--	--	--	--
	06-16-98	--	0.07	20.8	<0.010	<0.01	--	745	<1.00	--	98	--
393027075090901	12-22-96	--	--	--	--	--	--	--	--	--	--	--
	12-22-96	<0.20	<0.01	0.07	<0.010	<0.01	0.4	--	--	--	--	--
	10-20-98	--	--	--	--	--	--	--	--	--	--	--
	11-17-98	--	<0.02	0.11	<0.010	<0.01	0.3	40	--	--	14.1	18
393030075090501	11-17-98	--	<0.02	3.00	<0.010	<0.01	0.3	230	--	--	65.1	19
393030075090502	11-18-98	--	<0.02	18.5	<0.010	<0.01	0.4	1,230	<1.00	--	288	23
393030075090503	11-30-98	--	<0.02	23.7	<0.010	<0.01	0.4	1,310	<1.00	--	385	E12
393046075085201	11-19-98	--	0.03	9.38	0.010	0.01	0.4	1,710	--	--	116	<16
393046075085202	11-19-98	--	0.04	<0.05	0.010	0.48	0.8	40	--	--	20.0	<16

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Cadmium water, ftrd, ug/L (01025)	Chrom- ium, water, ftrd, ug/L (01030)	Cobalt water, ftrd, ug/L (01035)	Copper, water, ftrd, ug/L (01040)	Iron, water, ftrd, ug/L (01046)	Lead, water, ftrd, ug/L (01049)	Mangan- ese, water, ftrd, ug/L (01056)	Mercury water, ftrd, ug/L (71890)	Mercury water ftrd, ng/L (50287)	Mercury water, unfltrd recover- able, ug/L (71900)	Nickel, water, ftrd, ug/L (01065)
GLOUCESTER COUNTY												
394258075061101	10-15-96	--	--	--	--	--	--	--	--	--	--	--
	10-15-96	--	--	--	--	37	--	22.0	--	--	--	--
	12-20-96	<1.00	1	2.00	<1.0	7	<1.00	22.0	<0.1	--	--	3.00
	12-23-96	3.00	9	<1.00	1.0	31	3.00	47.0	--	--	--	8.00
394327075021001	06-02-97	--	--	--	--	--	--	--	<0.1	--	--	--
	02-27-98	--	--	--	--	<10	--	34.2	--	--	--	--
394340075012701	09-18-96	--	--	--	--	--	--	--	--	--	--	--
	09-18-96	--	--	--	--	47	--	6.0	--	--	--	--
	09-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-09-96	<1.00	2	1.00	2.0	5	<1.00	3.0	<0.1	--	--	2.00
	05-29-97	--	--	--	--	--	--	--	--	--	--	--
	05-29-97	--	--	--	--	22	--	2.8	--	--	--	--
	09-08-97	--	--	--	--	<3	--	2.3	--	--	--	--
394342075040301	09-10-96	--	--	--	--	--	--	--	--	--	--	--
	09-10-96	--	--	--	--	11	--	19.0	--	--	--	--
	12-03-96	<1.00	<1	2.00	<1.0	<3	<1.00	15.0	<0.1	--	--	1.00
	12-03-96	<1.00	<1	2.00	<1.0	--	<1.00	15.0	0.1	--	--	<1.00
394342075040302	11-04-97	--	--	--	--	<3	--	20.5	--	--	--	--
	11-11-97	<1.00	<1	<1.00	<1.0	--	<1.00	21.4	--	<0.17	--	2.26
394428075044601	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	09-11-96	--	--	--	--	6	--	28.0	--	--	--	--
	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	09-11-96	--	--	--	--	--	--	--	--	--	--	--
	12-05-96	<1.00	2	<1.00	<1.0	12	<1.00	10.0	0.1	--	--	1.00
	12-05-96	<1.00	2	<1.00	<1.0	--	<1.00	10.0	0.1	--	--	1.00
	12-06-96	<0.3	<0.2	<0.2	<0.2	<3	<0.3	0.2	<0.1	--	--	<0.5
394446075031001	12-10-96	--	--	--	--	--	--	--	--	--	--	--
	12-10-96	--	--	--	--	7,300	--	63.0	--	--	--	--
	12-10-96	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	<0.1	--	--	<0.5
	12-11-96	<1.00	2	<1.00	<1.0	760	<1.00	59.0	<0.1	--	<0.1	<1.00
394446075031003	11-04-97	--	--	--	--	10	--	65.9	--	--	--	--
	12-04-97	<1.00	2	1.78	<1.0	--	<1.00	52.9	--	2.43	--	1.72
ATLANTIC COUNTY												
392335074410801	09-23-98	--	--	--	--	<10	--	9.5	--	<0.15	--	--
392719074292201	07-22-98	--	--	--	--	<10	--	16.4	--	1.79	--	--
392813074321001	08-25-98	--	--	--	--	<10	--	5.1	--	E.36	--	--
392824074272801	07-22-98	--	--	--	--	<10	--	9.9	--	0.50	--	--
392900074533101	12-04-98	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	<0.5
	12-07-98	<1.00	<1	3.90	1.1	60	1.14	36.5	--	0.82	--	2.94
392900074533102	12-14-98	<1.00	<1	<3.99	1.3	E12	<1.21	37.9	--	1.33	--	3.75
392900074533103	12-14-98	<1.00	<1	<18.3	<3.6	24	<1.00	82.0	--	9.93	--	17.3
392901074535501	12-21-98	--	--	--	--	<10	--	34.1	--	3.47	--	--
392901074535502	12-21-98	--	--	--	--	14	--	92.9	--	1.38	--	--
392901074535503	12-17-98	--	--	--	--	37	--	78.5	--	1.47	--	--
392901074535504	12-17-98	<1.00	<1	<5.90	<1.0	39	<1.00	78.4	--	0.78	--	4.80
393035074533601	09-22-98	--	--	--	--	405	--	9.2	--	E.15	--	--
393050074412501	09-10-98	--	--	--	--	35	--	6.8	--	1,280	--	--
393053074344201	07-28-98	--	--	--	--	159	--	14.5	--	318	--	--
393117074484101	07-21-98	--	--	--	--	<10	--	<4.0	--	E.30	--	--
393530074523902	11-13-97	--	--	--	--	8	--	2.5	--	--	--	--
	11-13-97	--	--	--	--	--	--	--	--	--	--	--
	11-13-97	--	--	--	--	<3	--	<1.0	--	--	--	--
	12-05-97	<1.00	2	<1.00	<1.0	--	<1.00	3.5	--	E.95	--	1.89
	12-09-97	<0.3	<0.2	<0.2	<0.2	<0.0	<0.3	0.8	--	--	--	<0.5
393531074523901	10-23-96	--	--	--	--	--	--	--	--	--	--	--
	10-23-96	--	--	--	--	14	--	340	--	--	--	--
	12-12-96	<1.00	1	18.0	2.0	33	<1.00	330	<0.1	--	--	14.0
	12-12-96	<1.00	<1	17.0	2.0	--	<1.00	330	<0.1	--	--	14.0
	12-12-96	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	0.1	--	--	<0.5
393823074492901	04-02-96	--	--	--	--	--	--	--	--	--	--	--
	10-21-97	--	--	<3	4.1	29	<1	15.8	<0.1	--	--	--
SALEM COUNTY												
393015075054501	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	10-30-96	--	--	--	--	4	--	270	--	--	--	--
	06-16-98	<1.00	1	12.2	1.3	<10	<1.00	229	--	13.4	--	3.44
393027075090901	12-22-96	--	--	--	--	--	--	--	--	--	--	--
	12-22-96	--	--	--	--	5	--	2.0	--	--	--	--
	10-20-98	--	--	--	--	--	--	--	--	3.52	--	--
	11-17-98	--	--	--	--	<10	--	E1.9	--	5.41	--	--
393030075090501	11-17-98	--	--	--	--	<10	--	6.5	--	51.6	--	--
393030075090502	11-18-98	<1.00	<1	5.01	<1.0	33	<1.00	38.9	--	10.7	--	6.18
393030075090503	11-30-98	<1.00	2	12.7	1.2	29	<1.00	60.0	--	3.19	--	13.7
393046075085201	11-19-98	--	--	--	--	403	--	31.8	--	0.60	--	--
393046075085202	11-19-98	--	--	--	--	3,340	--	E23.2	--	<0.19	--	--





## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Ra-226,	Ra-226,	Ra-228	Ra-228,	Rn-222	Rn-222,	Uranium
		2-sigma water, fltrd, pCi/L (76001)	water, radon method pCi/L (09511)	2-sigma water, fltrd, pCi/L (76000)	water, fltrd, pCi/L (81366)	2-sigma water unfltrd pCi/L (76002)	water, unfltrd pCi/L (82303)	natural water, fltrd, ug/L (22703)
GLOUCESTER COUNTY								
394258075061101	10-15-96	--	--	--	--	--	--	--
	10-15-96	--	--	--	--	--	--	--
	12-20-96	0.17	0.98	0.82	3	30	440	<1.00
394327075021001	12-23-96	--	--	--	--	--	--	5.00
	06-02-97	0.30	1.80	--	2	20	240	--
	02-27-98	--	--	--	--	--	--	--
394340075012701	09-18-96	--	--	--	--	--	--	--
	09-18-96	--	--	--	--	--	--	--
	09-18-96	--	--	--	--	--	--	--
	12-09-96	0.03	0.17	0.38	<1	33	880	<1.00
	05-29-97	--	--	--	--	--	--	--
394342075040301	05-29-97	--	--	--	--	--	--	--
	09-08-97	--	--	--	--	--	--	--
	09-10-96	--	--	--	--	--	--	--
	09-10-96	--	--	--	--	--	--	--
394342075040302	12-03-96	0.02	0.09	0.39	<1	18	200	<1.00
	12-03-96	--	--	--	--	--	--	<1.00
	11-04-97	--	--	--	--	--	--	--
394428075044601	11-11-97	0.42	2.44	0.54	2	23	220	<1.00
	09-11-96	--	--	--	--	--	--	--
	09-11-96	--	--	--	--	--	--	--
	09-11-96	--	--	--	--	--	--	--
	12-05-96	0.30	1.70	0.67	2	31	300	<1.00
394446075031001	12-05-96	--	--	--	--	--	--	<1.00
	12-06-96	--	--	--	--	--	--	<0.2
	12-10-96	--	--	--	--	--	--	--
	12-10-96	--	--	--	--	--	--	--
	12-10-96	--	--	--	--	--	--	<0.2
394446075031003	12-11-96	0.05	0.25	0.39	<1	30	740	<1.00
	11-04-97	--	--	--	--	--	--	--
	12-04-97	0.10	0.62	0.36	<1	22	360	<1.00
ATLANTIC COUNTY								
392335074410801	09-23-98	--	--	--	--	--	--	--
392719074292201	07-22-98	--	--	--	--	--	--	--
392813074321001	08-25-98	--	--	--	--	--	--	--
392824074272801	07-22-98	--	--	--	--	--	--	--
392900074533101	12-04-98	--	--	--	--	--	--	<0.2
	12-07-98	0.17	--	0.51	1	19	254	<1.00
392900074533102	12-14-98	0.20	--	0.51	1	20	70	<1.00
392900074533103	12-14-98	2.2	--	2.9	13	24	250	<1.00
392901074535501	12-21-98	--	--	--	--	21	300	--
392901074535502	12-21-98	--	--	--	--	18	150	--
392901074535503	12-17-98	0.20	--	1.2	5	19	200	--
392901074535504	12-17-98	0.50	--	1.3	5	20	250	<1.00
393035074533601	09-22-98	--	--	--	--	--	--	--
393050074412501	09-10-98	--	--	--	--	--	--	--
393053074344201	07-28-98	--	--	--	--	--	--	--
393117074484101	07-21-98	--	--	--	--	--	--	--
393530074523902	11-13-97	--	--	--	--	--	--	--
	11-13-97	--	--	--	--	--	--	--
	11-13-97	--	--	--	--	--	--	--
	12-05-97	0.08	0.44	0.26	<1	25	180	<1.00
393531074523901	12-09-97	--	--	--	--	--	--	<0.2
	10-23-96	--	--	--	--	--	--	--
	10-23-96	--	--	--	--	--	--	--
	12-12-96	0.42	2.50	0.80	3	--	--	<1.00
	12-12-96	--	--	--	--	--	--	<1.00
393823074492901	12-12-96	--	--	--	--	--	--	<0.2
	04-02-96	--	--	--	--	--	--	--
10-21-97	--	--	--	2	16	50	--	
SALEM COUNTY								
393015075054501	10-30-96	--	--	--	--	--	--	--
	10-30-96	--	--	--	--	--	--	--
393027075090901	06-16-98	--	--	--	2	--	--	<1.00
	12-22-96	--	--	--	--	--	--	--
	12-22-96	--	--	--	--	--	--	--
393030075090501	10-20-98	--	--	--	--	--	--	--
	11-17-98	--	--	--	--	28	720	--
	11-17-98	--	--	--	--	20	290	--
	11-18-98	0.76	--	2.6	11	25	493	<1.00
	11-30-98	1.7	--	1.7	7	31	990	<1.00
393046075085201	11-19-98	--	--	--	--	22	340	--
393046075085202	11-19-98	--	--	--	--	29	840	--



## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, field, mg/L as CaCO3 (00410)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bromide, water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate, water, fltrd, mg/L (00945)
SALEM COUNTY												
393046075085203	11-23-98	0.800	0.77	1.71	5	13	--	--	3.51	--	18.0	8.8
	11-24-98	--	--	--	--	--	--	--	--	--	--	--
393050075180001	12-20-96	--	--	--	--	--	--	--	--	--	--	--
	12-20-96	15.0	1.80	2.90	--	3	2	0.07	14.0	<0.1	8.20	42.0
	06-18-98	--	--	--	--	--	--	--	--	--	--	--
393214075155601	12-20-96	--	--	--	--	--	--	--	--	--	--	--
	12-20-96	3.10	45.0	5.90	--	42	40	0.21	13.0	<0.1	8.10	13.0
	06-11-98	--	--	--	--	--	--	--	--	--	--	--
393328075121201	07-28-98	0.758	1.51	3.70	--	9	--	--	2.30	<0.1	20.3	11.6
393413075141901	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	15.0	4.00	4.30	--	2	1	0.07	22.0	0.1	9.10	93.0
	06-10-98	10.5	5.66	60.1	<1	--	--	--	--	--	8.24	--
393516075164701	10-28-96	--	--	--	--	--	--	--	--	--	--	--
	10-28-96	26.0	2.80	25.0	--	--	--	0.05	82.0	<0.1	11.0	210
	06-23-98	--	--	--	--	--	--	--	--	--	--	--
393523075132801	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	10-30-96	5.60	25.0	3.60	--	5	6	0.01	22.0	<0.1	9.40	5.8
	12-04-96	6.10	17.0	3.60	--	3.8	--	--	23.0	--	9.40	5.6
	12-04-96	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
	08-11-98	--	--	--	--	--	--	--	--	--	--	--
393542075110501	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	9.30	2.80	5.40	--	<1	--	0.04	12.0	0.1	8.80	11.0
	12-04-96	9.60	2.90	5.10	--	1	--	--	12.0	--	9.10	11.0
393625075112501	09-05-96	--	--	--	--	--	106	--	--	--	--	--
	09-05-96	21.0	50.0	5.00	--	97	106	0.03	23.0	0.2	4.60	60.0
	06-09-98	18.5	4.21	12.7	--	--	--	--	--	--	6.45	--
393654075135101	08-18-97	13.2	2.73	19.4	--	5	--	--	41.4	--	11.9	32.9
393740075111801	03-20-01	--	--	--	--	--	--	--	--	--	--	--
	03-20-01	--	--	--	--	2	--	--	--	--	--	--
393711075110001	03-14-01	--	--	--	--	--	--	--	--	--	--	--
393712075121201	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	20.0	2.20	8.80	--	1	--	0.03	33.0	0.4	11.0	150
	12-02-96	19.0	1.90	9.10	--	1	--	--	35.0	--	11.0	140
393818075132401	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	09-03-96	8.50	1.20	2.50	--	6	5	0.01	9.60	<0.1	9.40	64.0
	09-03-96	8.60	1.20	2.50	--	6	--	0.02	9.30	<0.1	9.50	64.0
	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	09-03-96	<0.010	<0.10	<0.20	--	2	--	<0.01	<0.10	<0.1	0.02	<0.1
	06-23-98	--	--	--	--	--	--	--	--	--	--	--
	09-23-99	--	--	--	--	--	--	--	--	--	--	--
	09-23-99	--	--	--	--	--	--	--	--	--	--	--
393916075122201	09-03-96	--	--	--	--	--	1	--	--	--	--	--
	09-03-96	8.70	3.70	4.00	--	2	1	0.03	17.0	<0.1	7.70	43.0
	06-17-98	9.40	4.22	3.77	<1	--	--	--	--	--	7.59	--
CUMBERLAND COUNTY												
391953075115701	08-25-98	0.731	1.55	4.06	--	4	--	0.06	6.81	<0.1	14.3	14.9
392028075020501	08-03-98	0.365	0.92	1.78	--	--	--	--	2.89	<0.1	13.2	7.5
392337075022302	03-08-01	--	--	--	--	--	--	--	--	--	--	--
	03-08-01	--	--	--	--	1	--	--	--	--	--	--
392415075014601	03-08-01	--	--	--	--	4	--	--	--	--	--	--
392430075131301	07-08-97	--	--	--	<1	--	--	--	15.5	--	--	14.4
392439075124501	03-02-01	--	--	--	--	2	--	--	--	--	--	--
392533075151801	08-27-98	3.54	1.79	3.31	--	2	--	0.03	10.4	<0.1	7.22	1.0
392523075151901	03-20-01	--	--	--	--	--	--	--	--	--	--	--
392552075145001	06-24-97	--	--	--	--	--	--	--	15.2	--	--	8.3
392640075132801	07-14-97	2.21	1.45	6.12	--	1	--	--	8.62	--	9.53	9.4
	10-14-97	2.25	1.48	6.13	--	--	--	0.04	9.55	<0.1	10.4	10.5
	02-28-01	--	--	--	--	--	--	--	--	--	--	--
	03-01-01	--	--	--	--	2	--	--	--	--	--	--
392650075133101	03-02-01	--	--	--	--	<1	--	--	--	--	--	--
392724075123603	06-30-97	--	--	--	<1	--	--	--	14.9	--	--	2.4
392744075015801	03-07-01	--	--	--	--	2	--	--	--	--	--	--
392801075003701	08-15-96	6.10	2.40	56.0	--	1	--	--	110	--	8.30	2.8
	08-15-96	--	--	--	--	--	--	--	--	--	--	--
	01-21-97	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	<1	--	--	--	97.0	--	--	3.0
392811075023601	03-09-01	--	--	--	--	1	--	--	--	--	--	--
392806075074201	10-30-96	8.50	3.00	2.40	--	--	--	--	14.0	--	7.20	<0.1
392819075074701	11-07-96	7.20	3.40	24.0	--	2	--	--	54.0	--	5.20	1.6
	11-19-96	0.001	--	<0.03	--	--	--	--	--	--	0.02	--
392820075144301	09-16-98	5.17	5.65	21.1	--	21	19	0.04	36.2	<0.1	4.54	10.5
392822075074801	10-24-96	8.70	3.20	23.0	--	--	--	--	60.0	--	6.60	<0.1
392832075014801	11-13-97	2.98	1.90	19.4	--	5	--	0.05	37.8	<0.1	8.05	0.4
	11-18-97	--	--	--	--	--	--	--	--	--	--	--
392816075012101	03-07-01	--	--	--	--	2	--	--	--	--	--	--

TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Ammonia	Ammonia	Nitrite	Nitrite	Ortho-	Organic	Alum-	Anti-	Arsenic	Barium	Boron
		+ org-N, water, fltrd, mg/L as N (00623)	water, fltrd, mg/L as N (00608)	+ nitrate water, fltrd, mg/L as N (00631)	water, fltrd, mg/L as N (00613)	phos- phate, water, fltrd, mg/L as P (00671)	carbon, water, fltrd, mg/L (00681)	inum, water, fltrd, ug/L (01106)	mony, water, fltrd, ug/L (01095)	water, fltrd, ug/L (01000)	water, fltrd, ug/L (01005)	water, fltrd, ug/L (01020)
SALEM COUNTY												
393046075085203	11-23-98	--	0.02	<0.05	<0.010	2.24	0.3	20	--	--	16.2	E10
	11-24-98	--	0.03	<0.05	<0.010	2.20	--	--	--	--	--	--
393050075180001	12-20-96	--	--	--	--	--	--	--	--	--	--	--
	12-20-96	0.05	<0.01	18.0	<0.010	<0.01	0.6	--	--	--	--	--
	06-18-98	--	--	--	--	--	--	--	--	--	--	--
393214075155601	12-20-96	--	--	--	--	--	--	--	--	--	--	--
	12-20-96	0.07	<0.01	8.30	<0.010	<0.01	0.7	--	--	--	--	--
	06-11-98	--	--	--	--	--	--	--	--	--	--	--
393328075121201	07-28-98	<0.10	0.04	<0.05	<0.010	0.06	0.2	--	--	<1	--	18
393413075141901	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	<0.20	0.02	21.0	0.010	<0.01	0.9	--	--	--	--	--
	06-10-98	--	0.02	16.0	<0.010	<0.01	--	242	<1.00	--	48	--
393516075164701	10-28-96	--	--	--	--	--	--	--	--	--	--	--
	10-28-96	0.30	0.16	0.10	0.020	<0.01	1.1	--	--	--	--	--
	06-23-98	--	--	--	--	--	--	--	--	--	--	--
393523075132801	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	10-30-96	0.30	0.02	9.50	<0.010	<0.01	1.3	--	--	--	--	--
	12-04-96	<0.20	0.03	9.60	<0.010	<0.01	1.1	32	<1.00	<1	350	10
	12-04-96	--	--	--	--	--	--	2.1	<0.2	<1	0.2	3
	08-11-98	--	--	--	--	--	--	--	--	--	--	--
393542075110501	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	<0.20	0.03	13.0	0.020	<0.01	1.8	--	--	--	--	--
	12-04-96	<0.20	0.02	13.0	<0.010	<0.01	1.4	527	<1.00	<1	192	30
393625075112501	09-05-96	--	--	--	--	--	--	--	--	--	--	--
	09-05-96	<0.20	<0.01	20.0	<0.010	<0.01	1.9	--	--	--	--	--
	06-09-98	--	<0.02	39.1	0.012	<0.01	--	12	<1.00	--	60	--
393654075135101	08-18-97	--	0.03	10.8	0.010	<0.01	0.5	90	--	--	114	14
393740075111801	03-20-01	--	--	--	--	--	--	--	--	--	--	--
	03-20-01	--	--	--	--	--	--	--	--	<0.2	--	--
393711075110001	03-14-01	--	--	--	--	--	--	--	--	--	--	--
393712075121201	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	<0.20	<0.01	11.0	0.020	<0.01	1.2	--	--	--	--	--
	12-02-96	<0.20	0.02	9.80	<0.010	<0.01	1.2	925	<1.00	<1	29	22
393818075132401	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	09-03-96	0.11	<0.01	4.90	<0.010	<0.01	0.5	--	--	--	--	--
	09-03-96	<0.01	<0.01	4.90	<0.010	<0.01	0.4	--	--	--	--	--
	09-03-96	<0.20	<0.01	0.09	<0.010	<0.01	0.3	--	--	--	--	--
	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	06-23-98	--	--	--	--	--	--	--	--	--	--	--
	09-23-99	--	--	--	--	--	--	--	--	--	--	--
	09-23-99	--	--	--	--	--	--	--	--	--	--	--
393916075122201	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	09-03-96	<0.20	<0.01	15.0	<0.010	<0.01	0.8	--	--	--	--	--
	06-17-98	--	0.07	12.9	<0.010	<0.01	--	213	<1.00	--	80	--
CUMBERLAND COUNTY												
391953075115701	08-25-98	<0.10	0.08	<0.05	0.010	0.03	0.3	--	--	<1	--	18
392028075020501	08-03-98	<0.10	0.02	<0.05	<0.010	<0.01	0.2	--	--	<1	--	18
392337075022302	03-08-01	--	--	--	--	--	--	--	--	--	--	--
	03-08-01	--	--	--	--	--	--	--	--	<0.2	--	--
392415075014601	03-08-01	--	--	--	--	--	--	--	--	<0.2	--	--
392430075131301	07-08-97	--	<0.01	3.31	<0.010	<0.01	--	--	--	--	--	--
392439075124501	03-02-01	--	--	--	--	--	--	--	--	<0.2	--	--
392533075151801	08-27-98	0.17	<0.02	4.97	<0.010	<0.01	<0.1	--	--	<1	--	28
392523075151901	03-20-01	--	--	--	--	--	--	--	--	--	--	--
392552075145001	06-24-97	--	0.01	7.06	<0.010	<0.01	--	--	--	--	--	--
392640075132801	07-14-97	--	0.03	2.82	<0.010	0.01	--	320	--	--	51.6	31
	10-14-97	<0.20	<0.01	2.80	<0.010	<0.01	0.3	--	--	--	--	--
	02-28-01	--	--	--	--	--	--	--	--	--	--	--
	03-01-01	--	--	--	--	--	--	--	--	<0.2	--	--
392650075133101	03-02-01	--	--	--	--	--	--	--	--	<0.2	--	--
392724075123603	06-30-97	--	0.02	8.22	<0.010	<0.01	--	--	--	--	--	--
392744075015801	03-07-01	--	--	--	--	--	--	--	--	<0.2	--	--
392801075003701	08-15-96	<0.20	0.02	4.10	0.010	<0.01	0.2	607	<1.00	<1	310	48
	08-15-96	--	--	--	--	--	--	597	<1.00	<1	312	--
	01-21-97	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	<0.01	5.03	<0.010	<0.01	--	--	--	--	--	--
392811075023601	03-09-01	--	--	--	--	--	--	--	--	0.6	--	--
392806075074201	10-30-96	--	--	--	--	--	0.3	272	<1.00	<1	392	13
392819075074701	11-07-96	<0.20	0.02	15.0	0.010	<0.01	0.4	303	<1.00	<1	142	26
	11-19-96	--	--	--	--	--	--	2.0	<0.2	<1	0.2	3
392820075144301	09-16-98	0.20	0.18	1.86	0.012	<0.01	1.0	--	--	<1	--	44
392822075074801	10-24-96	0.20	0.02	18.0	0.010	<0.01	0.3	682	<1.00	<1	238	17
392832075014801	11-13-97	<0.10	<0.02	2.67	<0.010	<0.01	--	--	--	--	--	30
	11-18-97	--	<0.02	2.88	<0.010	0.01	--	34	<1.00	<1	154	33
392816075012101	03-07-01	--	--	--	--	--	--	--	--	<0.2	--	--

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Mercury water fltrd, ng/L (50287)	Mercury water unfltrd ng/L (50286)	Mercury water, unfltrd recover- able, ug/L (71900)
SALEM COUNTY												
393046075085203	11-23-98	--	--	--	--	3,900	--	24.1	--	<0.20	--	--
	11-24-98	--	--	--	--	--	--	--	--	<0.20	--	--
393050075180001	12-20-96	--	--	--	--	--	--	--	--	--	--	--
	12-20-96	--	--	--	--	16	--	40.0	--	--	--	--
	06-18-98	--	--	--	--	18	--	21.5	--	1.39	--	--
393214075155601	12-20-96	--	--	--	--	--	--	--	--	--	--	--
	12-20-96	--	--	--	--	8	--	6.0	--	--	--	--
	06-11-98	--	--	--	--	--	--	<4.0	--	0.84	--	--
393328075121201	07-28-98	--	--	--	--	1,320	--	12.0	--	E.29	--	--
393413075141901	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	--	--	--	--	<3	--	200	--	--	--	--
	06-10-98	<1.00	<1	4.80	1.0	<10	<1.00	155	--	54.4	--	--
393516075164701	10-28-96	--	--	--	--	--	--	--	--	--	--	--
	10-28-96	--	--	--	--	9,100	--	65.0	--	--	--	--
	06-23-98	--	--	--	--	--	--	--	--	1.02	--	--
393523075132801	10-30-96	--	--	--	--	--	--	--	--	--	--	--
	10-30-96	--	--	--	--	50	--	15.0	--	--	--	--
	12-04-96	<1.00	2	1.00	<1.0	18	<1.00	13.0	<0.1	--	--	--
	12-04-96	<0.3	<0.2	<0.2	<0.2	<3	<0.3	0.2	<0.1	--	--	--
	08-11-98	--	--	--	--	--	--	--	--	--	--	--
393542075110501	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	--	--	--	--	11	--	140	--	--	--	--
	12-04-96	<1.00	3	5.00	<1.0	29	2.00	141	0.3	--	--	--
393625075112501	09-05-96	--	--	--	--	--	--	--	--	--	--	--
	09-05-96	--	--	--	--	6	--	5.0	--	--	--	--
	06-09-98	<1.00	3	<1.00	1.2	<10	<1.00	159	--	19.6	--	--
393654075135101	08-18-97	--	--	<3	23.9	101	2	26.3	<0.1	--	--	--
393740075111801	03-20-01	--	--	--	--	--	--	--	--	E.40	E.26	--
	03-20-01	--	--	--	--	--	--	--	--	E.41	E.41	--
393711075110001	03-14-01	--	--	--	--	--	--	--	--	1.81	1.82	--
393712075121201	10-16-96	--	--	--	--	--	--	--	--	--	--	--
	10-16-96	--	--	--	--	13	--	180	--	--	--	--
	12-02-96	<1.00	8	6.00	2.0	10	<1.00	174	<0.1	--	--	--
393818075132401	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	09-03-96	--	--	--	--	5	--	12.0	--	--	--	--
	09-03-96	--	--	--	--	5	--	12.0	--	--	--	--
	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	09-03-96	--	--	--	--	23	--	<1.0	--	--	--	--
	06-23-98	--	--	--	--	--	--	12.1	--	1.28	--	--
	09-23-99	--	<0.2	--	--	--	--	--	--	--	--	--
	09-23-99	--	0.7	--	--	--	--	--	--	--	--	--
393916075122201	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	09-03-96	--	--	--	--	8	--	58.0	--	--	--	--
	06-17-98	<1.00	2	2.35	1.1	<10	<1.00	54.9	--	2.55	--	--
CUMBERLAND COUNTY												
391953075115701	08-25-98	--	--	--	--	1,280	--	18.9	--	E.15	--	--
392028075020501	08-03-98	--	--	--	--	12	--	5.2	--	E.20	--	--
392337075022302	03-08-01	--	--	--	--	--	--	--	--	E.35	E.14	--
	03-08-01	--	--	--	--	--	--	--	--	19.2	20.6	--
392415075014601	03-08-01	--	--	--	--	--	--	--	--	126	150	--
392430075131301	07-08-97	--	--	--	--	--	--	--	<0.1	--	--	--
392439075124501	03-02-01	--	--	--	--	--	--	--	--	21.4	26.0	--
392533075151801	08-27-98	--	--	--	--	<10	--	10.8	--	E.20	--	--
392523075151901	03-20-01	--	--	--	--	--	--	--	--	1.20	1.19	--
392552075145001	06-24-97	--	--	--	--	--	--	--	<0.1	--	--	--
392640075132801	07-14-97	--	--	<3	5.1	173	3	9.9	<0.1	--	--	--
	10-14-97	--	--	--	--	165	--	7.9	--	--	--	--
	02-28-01	--	--	--	--	--	--	--	--	E.23	E.12	--
	03-01-01	--	--	--	--	--	--	--	--	15.3	22.9	--
392650075133101	03-02-01	--	--	--	--	--	--	--	--	271	472	--
392724075123603	06-30-97	--	--	--	--	--	--	--	<0.1	--	--	--
392744075015801	03-07-01	--	--	--	--	--	--	--	--	611	628	--
392801075003701	08-15-96	1.00	<1	4.00	11.0	77	1.00	36.0	3.1	--	--	3.1
	08-15-96	1.00	1	4.00	11.0	--	1.00	38.0	3.1	--	--	--
	01-21-97	--	--	--	--	--	--	--	3.6	--	--	--
	05-27-97	--	--	--	--	--	--	--	3.0	--	--	--
392811075023601	03-09-01	--	--	--	--	--	--	--	--	162	180	--
392806075074201	10-30-96	<1.00	<1	8.00	3.0	<3	<1.00	53.0	0.4	--	--	--
392819075074701	11-07-96	<1.00	<1	5.00	2.0	<3	<1.00	61.0	0.1	--	--	--
	11-19-96	<0.3	<0.2	<0.2	<0.2	4	<0.3	1.2	<0.1	--	--	--
392820075144301	09-16-98	--	--	--	--	561	--	15.3	--	0.91	--	--
392822075074801	10-24-96	<1.00	<1	9.00	8.0	13	<1.00	49.0	0.2	--	--	--
392832075014801	11-13-97	--	--	--	--	70	--	14.4	--	--	--	--
	11-18-97	<1.00	<1	2.41	<1.0	--	<1.00	14.6	--	43.5	--	--
392816075012101	03-07-01	--	--	--	--	--	--	--	--	938	1,050	--

TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Nickel, water, fltrd, ug/L (01065)	Strontium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Atra- zine, water, fltrd, ug/L (39632)	MBAS, water, unfltrd mg/L (38260)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra- chloro- ethene, water, unfltrd ug/L (34475)	Tri- chloro- ethene, water, unfltrd ug/L (39180)
SALEM COUNTY												
393046075085203	11-23-98	--	48.0	<20	--	--	--	--	--	--	--	--
	11-24-98	--	--	--	--	--	--	--	--	--	--	--
393050075180001	12-20-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	12-20-96	--	--	--	0.017	--	<0.02	1.38	<0.007	--	--	--
	06-18-98	--	--	--	--	--	--	--	--	--	--	--
393214075155601	12-20-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	12-20-96	--	--	--	0.005	--	1.09	0.230	<0.007	--	--	--
	06-11-98	--	--	--	--	--	--	--	--	--	--	--
393328075121201	07-28-98	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.2	<0.10	<0.04
393413075141901	10-16-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	10-16-96	--	--	--	E.004	--	<0.02	E.004	<0.007	--	--	--
	06-10-98	3.12	122	3	--	--	--	--	--	--	--	--
393516075164701	10-28-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	10-28-96	--	--	--	<0.001	--	<0.02	<0.005	<0.007	--	--	--
	06-23-98	--	--	--	--	--	--	--	--	--	--	--
393523075132801	10-30-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	10-30-96	--	--	--	0.544	--	<0.02	<0.005	<0.007	--	--	--
	12-04-96	1.00	82.0	<1	--	--	--	--	--	--	--	--
	12-04-96	<0.5	<0.1	<0.5	--	--	--	--	--	--	--	--
	08-11-98	--	--	--	--	--	--	--	--	<0.2	<0.10	<0.04
393542075110501	10-16-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	10-16-96	--	--	--	0.021	--	<0.02	E.004	<0.007	--	--	--
	12-04-96	6.00	97.0	23	--	--	--	--	--	--	--	--
393625075112501	09-05-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	09-05-96	--	--	--	0.124	--	<0.02	<0.005	<0.007	--	--	--
	06-09-98	3.76	326	65	--	--	--	--	--	--	--	--
393654075135101	08-18-97	--	150	65	--	--	--	--	--	--	--	--
393740075111801	03-20-01	--	--	--	--	--	--	--	--	--	--	--
	03-20-01	--	--	--	E.004	--	<0.01	<0.011	<0.034	--	--	--
393711075110001	03-14-01	--	--	--	0.028	--	<0.01	<0.011	<0.034	--	--	--
393712075121201	10-16-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	10-16-96	--	--	--	0.007	--	<0.02	<0.005	<0.007	--	--	--
	12-02-96	7.00	150	21	--	--	--	--	--	--	--	--
393818075132401	09-03-96	--	--	--	--	--	--	--	--	<0.1	<0.1	E.01
	09-03-96	--	--	--	0.347	--	<0.02	E.003	<0.007	--	--	--
	09-03-96	--	--	--	--	--	--	--	--	<0.1	<0.1	M
	09-03-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	09-03-96	--	--	--	--	--	--	--	--	--	--	--
	06-23-98	--	--	--	--	--	--	--	--	--	--	--
	09-23-99	--	--	--	--	--	--	--	--	--	--	--
	09-23-99	--	--	--	--	--	--	--	--	--	--	--
393916075122201	09-03-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	09-03-96	--	--	--	0.006	--	<0.02	<0.005	<0.007	--	--	--
	06-17-98	2.83	119	2	--	--	--	--	--	--	--	--
CUMBERLAND COUNTY												
391953075115701	08-25-98	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.2	<0.10	<0.04
392028075020501	08-03-98	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.2	<0.10	<0.04
392337075022302	03-08-01	--	--	--	--	--	--	--	--	--	--	--
	03-08-01	--	--	--	<0.007	--	<0.01	<0.011	<0.034	--	--	--
392415075014601	03-08-01	--	--	--	<0.007	--	<0.01	E.004	<0.034	--	--	--
392430075131301	07-08-97	--	--	--	--	--	--	--	--	--	--	--
392439075124501	03-02-01	--	--	--	0.010	--	<0.01	<0.011	<0.034	--	--	--
392533075151801	08-27-98	--	--	--	<0.001	--	<0.02	<0.005	E.014	<0.2	E.01	<0.04
392523075151901	03-20-01	--	--	--	<0.007	--	<0.01	<0.011	<0.034	--	--	--
392552075145001	06-24-97	--	--	--	--	--	--	--	--	--	--	--
392640075132801	07-14-97	--	23.1	11	--	--	--	--	--	--	--	--
	10-14-97	--	--	--	--	--	--	--	--	<0.2	E.2	<0.2
	02-28-01	--	--	--	--	--	--	--	--	--	--	--
	03-01-01	--	--	--	0.075	--	M	0.061	<0.034	--	--	--
392650075133101	03-02-01	--	--	--	0.043	--	<0.01	<0.011	<0.034	--	--	--
392724075123603	06-30-97	--	--	--	--	--	--	--	--	--	--	--
392744075015801	03-07-01	--	--	--	<0.007	--	<0.01	<0.011	<0.034	--	--	--
392801075003701	08-15-96	6.00	70.0	18	--	--	--	--	--	--	--	--
	08-15-96	6.00	--	19	--	--	--	--	--	--	--	--
	01-21-97	--	--	--	--	--	--	--	--	--	--	--
	05-27-97	--	--	--	--	--	--	--	--	--	--	--
392811075023601	03-09-01	--	--	--	<0.007	--	E.01	<0.011	<0.034	--	--	--
392806075074201	10-30-96	5.00	63.0	2	--	--	--	--	--	--	--	--
392819075074701	11-07-96	3.00	50.0	2	--	--	--	--	--	--	--	--
	11-19-96	0.7	<0.1	4.1	--	--	--	--	--	--	--	--
392820075144301	09-16-98	--	--	--	E.003	--	E.01	0.052	<0.007	<0.2	<0.10	<0.04
392822075074801	10-24-96	5.00	52.0	9	--	--	--	--	--	--	--	--
392832075014801	11-13-97	--	--	--	0.019	--	<0.02	<0.005	<0.007	<0.1	<0.04	<0.04
	11-18-97	3.77	35.3	1	--	--	--	--	--	--	--	--
392816075012101	03-07-01	--	--	--	<0.007	--	<0.01	<0.011	<0.034	--	--	--





## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Time	Sample type	Turbidity, water, unfltrd field, NTU (61028)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unfl- trd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)
CUMBERLAND COUNTY											
392836075075401	11-26-96	2005	Environmental	0.1	--	6.2	--	4.8	118	13.2	2.40
	11-26-96	2010	Environmental	--	--	--	--	--	--	--	--
392845075082601	08-21-97	1115	Environmental	0.2	--	8.3	--	4.6	73	14.0	1.93
392854075080201	11-06-96	1250	Environmental	0.1	--	7.7	--	5.0	80	14.0	2.60
392854075104001	08-13-97	1910	Environmental	0.0	--	7.4	--	4.4	164	15.0	6.93
392858075105001	10-17-96	1535	Environmental	0.3	--	8.9	--	4.5	237	13.5	17.0
392901075103401	10-17-96	1215	Environmental	0.1	--	7.0	--	4.5	114	13.6	3.10
	08-11-97	1125	Environmental	0.1	--	6.1	--	5.1	119	15.5	2.84
392903075102801	08-19-97	1950	Environmental	0.0	--	8.1	--	4.9	100	13.7	3.61
392904075102101	10-15-96	1220	Environmental	0.2	--	5.2	--	4.5	146	14.0	9.80
392915075094701	10-18-96	1145	Environmental	0.1	--	8.5	--	5.2	26	13.2	1.20
392918075003301	12-16-96	1615	Environmental	0.1	--	6.7	--	4.6	144	15.9	11.0
	12-16-96	1620	Environmental	--	--	--	--	--	--	--	--
	12-18-96	1359	Environmental	--	--	--	--	--	--	--	--
	12-18-96	1400	Environmental	--	756	7.1	72	4.5	142	16.2	14.0
392918075003803	11-10-97	1500	Environmental	--	756	8.8	88	4.2	97	14.8	6.32
	11-20-97	1515	Environmental	0.1	--	8.0	--	4.8	94	15.2	--
392920075011901	12-18-96	0959	Environmental	--	--	--	--	--	--	--	--
	12-18-96	1000	Environmental	--	756	6.3	64	4.4	232	15.8	8.50
	12-18-96	1130	Blank	--	--	--	--	--	--	--	0.005
	12-18-96	1345	Environmental	0.2	--	5.7	--	4.5	236	15.9	8.60
392920075011902	11-10-97	1200	Environmental	--	755	6.6	67	4.0	161	15.9	7.33
	11-18-97	1555	Environmental	0.1	--	6.1	--	4.5	162	16.0	--
	11-18-97	1600	Environmental	--	--	--	--	--	--	--	--
392923075023401	08-13-96	1525	Environmental	0.1	--	5.6	--	4.9	97	14.3	3.10
	05-19-97	1115	Environmental	0.1	755	5.9	58	4.9	106	14.2	--
392853075005801	03-07-01	1530	Environmental	--	--	--	--	--	--	--	--
	03-07-01	1535	Environmental	--	--	--	--	--	--	--	--
392928075020002	11-10-97	0900	Environmental	--	759	3.6	36	4.0	69	15.3	3.20
	11-19-97	1715	Blank	--	--	--	--	--	--	--	<0.002
	11-20-97	1100	Environmental	0.1	--	3.4	--	4.8	66	15.8	--
392959075145001	09-10-97	1105	Environmental	0.2	--	1.7	--	4.3	109	13.0	2.93
393002075151101	09-04-97	1710	Environmental	0.1	--	8.1	--	4.8	281	12.5	17.0
393007075150301	09-05-97	1035	Environmental	0.1	--	8.4	--	4.9	195	12.3	9.56
	09-05-97	1040	Environmental	--	--	--	--	--	--	--	--
393007075150801	09-03-97	1640	Environmental	0.1	--	8.1	--	4.8	281	12.5	15.7
393051075135101	09-11-96	1505	Environmental	0.0	--	7.0	--	4.2	201	13.9	8.70
	09-18-96	1400	Blank	--	--	--	--	--	--	--	--
393044075171501	03-13-01	1100	Environmental	--	--	--	--	--	--	--	--
393050075164301	03-14-01	1100	Environmental	--	--	--	--	--	--	--	--
	03-14-01	1115	Blank	--	--	--	--	--	--	--	--
393053075163801	03-13-01	1400	Environmental	--	--	--	--	--	--	--	--
393056075125401	12-16-98	1320	Environmental	0.0	--	5.0	--	4.6	85	12.7	3.99
393056075125402	12-16-98	1105	Environmental	0.1	758	6.8	63	5.1	70	11.8	5.11
393056075125403	12-15-98	1300	Environmental	1.7	767	4.9	44	4.5	159	11.6	8.81
393100075122201	12-10-98	1155	Environmental	0.1	770	9.9	91	4.7	150	12.2	7.82
393102075131601	12-22-97	1110	Environmental	0.1	--	5.8	--	5.4	155	12.9	11.6
	12-23-97	1525	Blank	--	--	--	--	--	--	--	0.068
	03-13-98	1110	Blank	--	--	--	--	--	--	--	0.003
393104075122201	09-04-96	0959	Environmental	--	759	10.4	107	4.6	137	14.0	--
	09-04-96	1000	Environmental	--	759	10.4	107	4.6	137	14.0	10.0
	09-04-96	1001	Replicate	--	--	--	--	--	--	--	--
	09-04-96	1005	Blank	--	--	--	--	--	--	--	--
	06-12-97	1059	Environmental	--	755	9.6	94	4.5	158	14.0	--
	06-12-97	1100	Environmental	--	755	9.6	94	4.5	158	14.0	11.3
	06-24-97	1200	Environmental	--	762	9.3	99	4.5	167	17.6	--
	06-24-97	1201	Replicate	--	--	--	--	--	--	--	--
	06-24-97	1205	Blank	--	--	--	--	--	--	--	--
	09-04-97	1200	Environmental	--	759	7.4	72	4.6	170	13.6	12.1
	10-06-98	1200	Environmental	--	--	--	--	--	--	--	--
	09-15-99	1236	Blank	--	--	--	--	--	--	--	--
393104075122202	12-20-91	1345	Environmental	--	--	9.2	--	4.6	262	13.4	18.0
393108075131901	09-11-96	1155	Environmental	0.1	--	0.2	--	4.3	92	13.9	1.90
393122075140301	09-03-97	1920	Environmental	0.1	--	9.2	--	5.4	529	12.7	33.0
393208075024501	05-12-97	1140	Environmental	0.2	755	1.6	16	4.4	118	13.3	3.52
	03-09-01	1415	Blank	--	--	--	--	--	--	--	--
	03-09-01	1430	Environmental	--	--	--	--	--	--	--	--
CAPE MAY COUNTY											
390643074522501	09-09-98	1400	Environmental	--	757	13.3	128	6.1	343	13.3	31.8
390805074500001	07-20-98	1000	Environmental	--	759	0.1	0.0	7.6	189	14.4	28.6

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, field, mg/L as CaCO <sub>3</sub> (00410)	ANC, wat unf fixed end pt, lab, mg/L as CaCO <sub>3</sub> (90410)	Alkalinity, wat flt inc tit field, mg/L as CaCO <sub>3</sub> (39086)	Bromide water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)
CUMBERLAND COUNTY												
392836075075401	11-26-96	5.40	2.70	5.90	--	1	--	--	12.0	--	7.10	<0.1
	11-26-96	--	--	--	--	--	--	--	--	--	--	--
392845075082601	08-21-97	2.96	1.81	2.90	--	--	--	--	6.92	--	6.62	0.1
392854075080201	11-06-96	2.50	1.60	4.20	--	2	--	--	6.20	--	6.80	<0.1
392854075104001	08-13-97	5.69	4.15	5.54	--	--	--	--	15.9	--	8.31	0.6
392858075105001	10-17-96	6.00	5.40	7.70	--	<0.5	--	--	18.0	--	8.20	21.0
392901075103401	10-17-96	4.50	1.80	5.60	--	--	--	--	12.0	--	7.20	<0.1
	08-11-97	4.03	1.97	7.11	4	--	--	--	11.7	--	--	<0.1
392903075102801	08-19-97	3.29	1.37	5.55	--	--	--	--	6.83	--	7.20	0.2
392904075102101	10-15-96	4.00	2.60	5.10	--	--	--	--	12.0	--	8.10	8.8
392915075094701	10-18-96	0.390	0.50	1.90	--	1.2	--	--	2.90	--	6.90	0.5
392918075003301	12-16-96	3.20	1.80	3.00	--	2	--	--	--	--	5.60	--
	12-16-96	--	--	--	--	--	--	--	--	--	--	--
	12-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-18-96	3.20	2.30	3.30	--	1	--	0.01	6.20	0.1	5.70	29.0
392918075003803	11-10-97	3.28	1.91	2.98	--	3	--	0.01	4.86	<0.1	7.71	18.1
	11-20-97	--	--	--	--	--	--	--	--	--	--	--
392920075011901	12-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-18-96	3.40	3.00	25.0	--	2	--	0.08	26.0	<0.1	4.90	38.0
	12-18-96	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
	12-18-96	3.60	2.90	23.0	--	2	--	--	--	--	5.00	--
392920075011902	11-10-97	4.29	6.24	7.34	--	2	--	0.54	20.0	0.1	7.01	25.1
	11-18-97	--	--	--	<1	--	--	--	--	--	--	--
	11-18-97	--	--	--	--	--	--	--	--	--	--	--
392923075023401	08-13-96	3.20	1.90	6.10	3	--	--	--	10.0	--	8.50	4.2
	05-19-97	--	--	--	--	--	--	--	10.7	--	--	4.3
392853075005801	03-07-01	--	--	--	--	3	--	--	--	--	--	--
	03-07-01	--	--	--	--	--	--	--	--	--	--	--
392928075020002	11-10-97	1.36	1.95	4.48	--	5	--	0.07	5.26	<0.1	7.97	1.8
	11-19-97	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
	11-20-97	--	--	--	--	--	--	--	--	--	--	--
392959075145001	09-10-97	2.00	1.63	6.26	--	--	--	--	12.6	--	13.3	11.4
393002075151101	09-04-97	13.8	2.76	6.01	--	--	--	--	21.4	--	9.15	25.4
393007075150301	09-05-97	7.53	3.48	7.15	--	--	--	--	23.3	--	9.47	2.3
	09-05-97	--	--	--	--	--	--	--	--	--	--	--
393007075150801	09-03-97	12.4	4.33	6.75	--	--	--	--	30.5	--	9.70	18.6
393051075135101	09-11-96	7.30	2.60	5.40	--	<0.5	--	--	19.0	--	9.10	15.0
	09-18-96	--	--	--	--	--	--	--	--	--	--	--
393044075171501	03-13-01	--	--	--	--	--	--	--	--	--	--	--
393050075164301	03-14-01	--	--	--	--	--	--	--	--	--	--	--
	03-14-01	--	--	--	--	--	--	--	--	--	--	--
393053075163801	03-13-01	--	--	--	--	--	--	--	--	--	--	--
393056075125401	12-16-98	3.48	3.02	2.31	<1	4	--	--	4.11	--	7.95	16.7
393056075125402	12-16-98	2.00	1.32	2.11	2	5	--	--	6.16	--	9.75	6.0
393056075125403	12-15-98	3.74	1.73	8.11	<1	<1	--	--	15.7	--	8.16	14.1
393100075122201	12-10-98	9.08	2.21	4.26	<1	2	--	--	16.7	--	8.74	0.1
393102075131601	12-22-97	6.55	2.65	3.10	--	--	--	--	12.1	--	8.44	14.7
	12-23-97	0.001	--	0.04	--	--	--	--	--	--	<0.02	--
	03-13-98	<0.001	--	<0.03	--	--	--	--	--	--	<0.02	--
393104075122201	09-04-96	--	--	--	--	--	4	--	--	--	--	--
	09-04-96	5.20	1.80	2.10	--	1	4	0.02	6.60	<0.1	7.40	17.0
	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	06-12-97	--	--	--	--	--	--	--	--	--	--	--
	06-12-97	5.84	1.74	2.60	--	2	--	0.04	8.94	<0.1	7.19	15.8
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	09-04-97	6.25	1.58	2.41	--	2	1	0.02	9.38	<0.1	6.87	19.7
	10-06-98	--	--	--	--	--	--	--	--	--	--	--
	09-15-99	--	--	--	--	--	--	--	--	--	--	--
393104075122202	12-20-91	12.0	3.40	5.60	--	2	--	--	23.0	<0.1	8.70	0.5
393108075131901	09-11-96	1.60	1.90	3.50	--	<0.5	--	--	6.50	--	39.0	18.0
393122075140301	09-03-97	34.3	1.91	6.69	--	8	--	--	30.0	--	9.66	140
393208075024501	05-12-97	2.32	2.10	4.94	--	--	--	--	8.57	--	12.1	20.1
	03-09-01	--	--	--	--	--	--	--	--	--	--	--
	03-09-01	--	--	--	--	--	--	--	--	--	--	--
CAPE MAY COUNTY												
390643074522501	09-09-98	3.59	6.30	20.7	--	46	42	0.06	21.6	<0.1	11.4	25.6
390805074500001	07-20-98	2.09	2.02	5.51	--	83	--	0.03	8.52	<0.1	45.9	0.2

TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Organic carbon, water, fltrd, mg/L (00681)	Alum- inum, water, fltrd, ug/L (01106)	Anti- mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Boron, water, fltrd, ug/L (01020)
CUMBERLAND COUNTY												
392836075075401	11-26-96	<0.20	<0.01	8.30	<0.010	<0.01	0.2	118	<1.00	<1	294	9.6
	11-26-96	--	--	--	--	--	--	116	<1.00	<1	295	--
392845075082601	08-21-97	--	0.02	4.64	<0.010	<0.01	0.1	72	<1.00	<1	145	9.3
392854075080201	11-06-96	<0.20	0.02	6.60	0.010	<0.01	0.1	45	<1.00	<1	95	8.1
392854075104001	08-13-97	--	<0.01	10.5	<0.010	<0.01	0.7	260	<1.00	<1	282	15
392858075105001	10-17-96	<0.20	<0.01	15.0	0.010	<0.01	1.6	437	<1.00	<1	286	26
392901075103401	10-17-96	<0.20	<0.01	7.90	0.010	<0.01	0.3	177	<1.00	<1	254	10
	08-11-97	--	<0.01	6.88	<0.010	<0.01	0.3	--	--	--	--	--
392903075102801	08-19-97	--	<0.01	7.64	<0.010	<0.01	0.2	45	<1.00	<1	138	13
392904075102101	10-15-96	<0.20	0.04	8.90	0.010	<0.01	0.7	379	<1.00	<1	161	27
392915075094701	10-18-96	<0.20	0.02	1.20	<0.010	0.01	<0.1	9	<1.00	<1	9	8.0
392918075003301	12-16-96	0.20	0.02	3.80	<0.010	0.01	1.0	390	<1.00	<1	98	46
	12-16-96	--	--	--	--	--	--	390	<1.00	<1	96	--
	12-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-18-96	<0.20	<0.01	4.00	<0.010	<0.01	0.9	--	--	--	--	--
392918075003803	11-10-97	<0.10	0.09	3.13	0.027	0.02	0.7	--	--	--	--	52
	11-20-97	--	<0.02	3.14	<0.010	<0.01	0.6	80	<1.00	<1	85	52
392920075011901	12-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-18-96	0.04	<0.01	4.30	<0.010	<0.01	0.9	--	--	--	--	--
	12-18-96	--	--	--	--	--	--	1.4	<0.2	<1	<0.2	2
	12-18-96	<0.20	<0.01	4.30	0.010	<0.01	0.9	315	<1.00	<1	82	44
392920075011902	11-10-97	<0.10	<0.02	2.31	0.024	<0.01	0.8	--	--	--	--	56
	11-18-97	--	<0.02	2.40	<0.010	0.02	--	432	<1.00	<1	116	41
	11-18-97	--	--	--	--	--	--	414	<1.00	<1	110	--
392923075023401	08-13-96	<0.20	0.02	4.80	0.010	<0.01	0.2	75	<1.00	<1	130	13
	05-19-97	--	<0.01	4.82	<0.010	<0.01	--	--	--	--	--	--
392853075005801	03-07-01	--	--	--	--	--	--	--	--	<0.2	--	--
	03-07-01	--	--	--	--	--	--	--	--	--	--	--
392928075020002	11-10-97	<0.10	0.10	3.74	0.031	<0.01	0.8	--	--	--	--	46
	11-19-97	--	<0.002	<0.005	<0.001	--	--	0.6	<0.2	--	<0.2	<2
	11-20-97	--	<0.02	3.78	<0.010	<0.01	0.8	61	<1.00	<1	90	39
392959075145001	09-10-97	--	<0.01	2.67	<0.010	0.01	0.2	720	<1.00	<1	31	5.6
393002075151101	09-04-97	--	<0.01	15.3	<0.010	<0.01	0.5	60	<1.00	<1	159	15
393007075150301	09-05-97	--	<0.01	11.4	--	0.02	0.3	165	<1.00	<1	164	6.3
	09-05-97	--	--	--	--	--	--	160	<1.00	--	169	--
393007075150801	09-03-97	--	<0.01	13.1	<0.010	<0.01	0.6	37	<1.00	<1	189	11
393051075135101	09-11-96	<0.20	<0.01	11.0	<0.010	<0.01	0.2	1,090	<1.00	<1	225	5.6
	09-18-96	--	--	--	--	--	--	--	--	--	--	--
393044075171501	03-13-01	--	--	--	--	--	--	--	--	--	--	--
393050075164301	03-14-01	--	--	--	--	--	--	--	--	--	--	--
	03-14-01	--	--	--	--	--	--	--	--	--	--	--
393053075163801	03-13-01	--	--	--	--	--	--	--	--	--	--	--
393056075125401	12-16-98	--	<0.02	2.34	<0.010	<0.01	0.5	110	--	--	120	22
393056075125402	12-16-98	--	0.02	2.35	<0.010	<0.01	--	30	--	--	49.6	E14
393056075125403	12-15-98	--	0.02	5.87	<0.010	<0.01	0.3	<441	<1.00	--	59	E12
393100075122201	12-10-98	--	<0.02	12.8	<0.010	<0.01	0.3	138	<1.00	--	442	E16
393102075131601	12-22-97	--	<0.02	7.96	<0.010	<0.01	0.5	15	<1.00	<1	140	<16
	12-23-97	--	--	--	--	--	--	2.0	<0.2	--	<0.2	4
	03-13-98	--	--	--	--	--	--	1.6	<0.2	--	<0.2	3
393104075122201	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	09-04-96	<0.20	<0.01	7.50	<0.010	<0.01	0.5	--	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	06-12-97	--	--	--	--	--	--	--	--	--	--	--
	06-12-97	<0.20	<0.01	8.98	<0.010	<0.01	1.0	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	09-04-97	<0.20	<0.01	10.2	<0.010	<0.01	0.6	--	--	--	--	--
	10-06-98	--	--	--	--	--	--	--	--	--	--	--
	09-15-99	--	--	--	--	--	--	--	--	--	--	--
393104075122202	12-20-91	<0.20	0.020	23.0	<0.010	<0.01	--	--	--	--	490	--
393108075131901	09-11-96	<0.20	<0.01	1.30	<0.010	<0.01	<0.1	444	<1.00	<1	57	5.5
393122075140301	09-03-97	--	<0.01	15.2	<0.010	<0.01	1.3	13	<1.00	<1	69	14
393208075024501	05-12-97	--	<0.01	2.15	<0.010	<0.01	--	699	<1.00	--	81	10
	03-09-01	--	--	--	--	--	--	--	--	--	--	--
	03-09-01	--	--	--	--	--	--	--	--	0.4	--	--
CAPE MAY COUNTY												
390643074522501	09-09-98	0.89	0.92	14.5	<0.010	<0.01	0.7	--	--	<1	--	44
390805074500001	07-20-98	0.60	0.58	<0.05	<0.010	0.17	1.0	--	--	<1	--	37

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Cadmium water, fltrd, ug/L (01025)	Chrom- ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Mangan- ese, water, fltrd, ug/L (01056)	Mercury water, fltrd, ug/L (71890)	Mercury water fltrd, ng/L (50287)	Mercury water unfltrd ng/L (50286)	Mercury water, unfltrd recover- able, ug/L (71900)
CUMBERLAND COUNTY												
392836075075401	11-26-96	<1.00	<1	4.00	3.0	<3	<1.00	30.0	<0.1	--	--	--
	11-26-96	<1.00	<1	3.00	2.0	--	<1.00	29.0	<0.1	--	--	--
392845075082601	08-21-97	<1.00	<1	3.79	6.8	<3	<1.00	19.4	--	E.64	--	--
392854075080201	11-06-96	<1.00	<1	3.00	4.0	<3	<1.00	13.0	<0.1	--	--	--
392854075104001	08-13-97	<1.00	<1	4.19	11.3	7	47.7	40.6	--	68.9	--	--
392858075105001	10-17-96	<1.00	<1	4.00	3.0	12	2.00	49.0	0.1	--	--	--
392901075103401	10-17-96	<1.00	<1	4.00	3.0	<3	1.00	17.0	3.8	6,280	--	3.4
	08-11-97	--	--	--	--	--	--	--	--	5,740	--	--
392903075102801	08-19-97	<1.00	<1	1.85	1.2	<3	<1.00	8.6	--	3,390	--	--
392904075102101	10-15-96	<1.00	<1	5.00	4.0	26	<1.00	68.0	0.2	--	--	--
392915075094701	10-18-96	<1.00	<1	<1.00	<1.0	<3	2.00	2.0	<0.1	--	--	--
392918075003301	12-16-96	<1.00	3	5.00	<1.0	20	<1.00	35.0	<0.1	--	--	--
	12-16-96	<1.00	3	5.00	<1.0	--	<1.00	34.0	<0.1	--	--	--
	12-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-18-96	--	--	--	--	22	--	36.0	--	--	--	--
392918075003803	11-10-97	--	--	--	--	12	--	37.7	--	--	--	--
	11-20-97	<1.00	<1	1.42	<1.0	--	<1.00	31.7	--	18.4	--	--
392920075011901	12-18-96	--	--	--	--	--	--	--	--	--	--	--
	12-18-96	--	--	--	--	23	--	30.0	--	--	--	--
	12-18-96	<0.3	<0.2	<0.2	<0.2	<3	<0.3	0.1	<0.1	--	--	--
	12-18-96	<1.00	2	4.00	<1.0	4	<1.00	30.0	0.2	--	--	--
392920075011902	11-10-97	--	--	--	--	<3	--	45.8	--	--	--	--
	11-18-97	<1.00	1	3.81	<1.0	--	<1.00	44.9	--	98.2	--	--
	11-18-97	<1.00	2	3.80	<1.0	--	<1.00	43.1	--	95.6	--	--
392923075023401	08-13-96	<1.00	<1	3.00	25.0	14	1.00	21.0	0.1	--	--	--
	05-19-97	--	--	--	--	--	--	--	<0.1	--	--	--
392853075005801	03-07-01	--	--	--	--	--	--	--	--	142	181	--
	03-07-01	--	--	--	--	--	--	--	--	136	177	--
392928075020002	11-10-97	--	--	--	--	<3	--	37.7	--	--	--	--
	11-19-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	--
	11-20-97	<1.00	<1	2.61	<1.0	--	<1.00	37.5	--	109	--	--
392959075145001	09-10-97	<1.00	<1	<1.00	21.0	112	<1.00	11.2	--	<0.46	--	--
393002075151101	09-04-97	<1.00	<1	1.99	7.7	28	<1.00	12.0	--	<0.33	--	--
393007075150301	09-05-97	<1.00	<1	2.29	7.6	<3	<1.00	15.7	--	0.98	--	--
	09-05-97	<1.00	1	2.32	7.6	--	<1.00	15.7	--	--	--	--
393007075150801	09-03-97	<1.00	<1	1.93	1.7	4	<1.00	17.0	--	E.85	--	--
393051075135101	09-11-96	<1.00	<1	3.00	5.0	400	6.00	33.0	<0.1	--	--	--
	09-18-96	--	--	--	--	--	--	--	<0.1	--	--	--
393044075171501	03-13-01	--	--	--	--	--	--	--	--	E.14	E.17	--
393050075164301	03-14-01	--	--	--	--	--	--	--	--	3.00	3.34	--
	03-14-01	--	--	--	--	--	--	--	--	E.30	E.21	--
393053075163801	03-13-01	--	--	--	--	--	--	--	--	E.24	E.24	--
393056075125401	12-16-98	--	--	--	--	12	--	55.5	--	3.53	--	--
393056075125402	12-16-98	--	--	--	--	459	--	14.2	--	E.15	--	--
393056075125403	12-15-98	<1.00	<1	<5.44	<1.0	962	<1.00	39.2	--	E.42	--	--
393100075122201	12-10-98	<1.00	<1	9.75	<1.0	E6	<1.00	37.6	--	0.94	--	--
393102075131601	12-22-97	<1.00	<1	<1.00	49.1	<10	<1.00	9.4	--	10.8	--	--
	12-23-97	<0.3	<0.2	<0.2	<0.2	<3	<0.3	<0.1	--	--	--	--
	03-13-98	<0.3	<0.2	<0.2	<0.2	<0.0	<0.3	0.2	--	--	--	--
393104075122201	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	09-04-96	--	--	--	--	<3	--	30.0	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--	--	--	--
	06-12-97	--	--	--	--	--	--	--	--	--	--	--
	06-12-97	--	--	--	--	7	--	31.7	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--	--	--	--
	09-04-97	--	--	--	--	<3	--	34.1	--	--	--	--
	10-06-98	--	--	--	--	--	--	--	--	4.86	--	--
	09-15-99	--	--	--	--	--	--	--	--	--	--	--
393104075122202	12-20-91	<1	<5	<3	<10	7	2	32.0	3.4	--	--	--
393108075131901	09-11-96	<1.00	<1	2.00	12.0	2,400	<1.00	27.0	<0.1	--	--	--
393122075140301	09-03-97	<1.00	<1	<1.00	29.4	4	<1.00	12.5	--	2.50	--	--
393208075024501	05-12-97	<1.00	<1	6.54	28.6	1,100	<1.00	62.3	0.2	--	--	--
	03-09-01	--	--	--	--	--	--	--	--	E.18	E.13	--
	03-09-01	--	--	--	--	--	--	--	--	104	119	--
CAPE MAY COUNTY												
390643074522501	09-09-98	--	--	--	--	40	--	76.6	--	0.71	--	--
390805074500001	07-20-98	--	--	--	--	421	--	121	--	0.64	--	--

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Nickel, water, fltrd, ug/L (01065)	Stront- ium, water, fltrd, ug/L (01080)	Zinc, water, fltrd, ug/L (01090)	Atra- zine, water, fltrd, ug/L (39632)	MBAS, water, unfltrd mg/L (38260)	Prome- ton, water, fltrd, ug/L (04037)	Sima- zine, water, fltrd, ug/L (04035)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Methyl t-butyl ether, water, unfltrd ug/L (78032)	Tetra- chloro- ethene, water, unfltrd ug/L (34475)	Tri- chloro- ethene, water, unfltrd ug/L (39180)
CUMBERLAND COUNTY												
392836075075401	11-26-96	4.00	50.0	4	--	--	--	--	--	--	--	--
	11-26-96	4.00	--	4	--	--	--	--	--	--	--	--
392845075082601	08-21-97	3.70	35.1	2	--	--	--	--	--	--	--	--
392854075080201	11-06-96	2.00	31.0	3	--	--	--	--	--	--	--	--
392854075104001	08-13-97	3.74	52.0	10	--	--	--	--	--	--	--	--
392858075105001	10-17-96	3.00	77.0	2	--	--	--	--	--	--	--	--
392901075103401	10-17-96	3.00	52.0	4	--	--	--	--	--	--	--	--
	08-11-97	--	--	--	--	--	--	--	--	--	--	--
392903075102801	08-19-97	1.70	36.6	3	--	--	--	--	--	--	--	--
392904075102101	10-15-96	5.00	54.0	12	--	--	--	--	--	--	--	--
392915075094701	10-18-96	<1.00	6.0	1	--	--	--	--	--	--	--	--
392918075003301	12-16-96	4.00	59.0	2	--	--	--	--	--	--	--	--
	12-16-96	4.00	--	2	--	--	--	--	--	--	--	--
	12-18-96	--	--	--	--	--	--	--	--	<0.1	<0.1	<0.05
	12-18-96	--	--	--	<0.001	--	<0.02	<0.005	<0.007	--	--	--
392918075003803	11-10-97	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.1	M	<0.04
	11-20-97	3.34	37.3	2	--	--	--	--	--	--	--	--
392920075011901	12-18-96	--	--	--	--	--	--	--	--	0.3	<0.1	<0.05
	12-18-96	--	--	--	<0.001	--	<0.02	E.004	<0.007	--	--	--
	12-18-96	<0.5	<0.1	<0.5	--	--	--	--	--	--	--	--
	12-18-96	3.00	23.0	6	--	--	--	--	--	--	--	--
392920075011902	11-10-97	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.1	<0.04	<0.04
	11-18-97	5.96	26.0	5	--	--	--	--	--	--	--	--
	11-18-97	5.94	--	6	--	--	--	--	--	--	--	--
392923075023401	08-13-96	7.00	32.0	11	--	--	--	--	--	--	--	--
	05-19-97	--	--	--	--	--	--	--	--	--	--	--
392853075005801	03-07-01	--	--	--	<0.007	--	<0.01	<0.011	<0.034	--	--	--
	03-07-01	--	--	--	--	--	--	--	--	--	--	--
392928075020002	11-10-97	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.1	<0.04	<0.04
	11-19-97	<0.5	<0.1	<0.5	--	--	--	--	--	--	--	--
	11-20-97	2.10	23.7	3	--	--	--	--	--	--	--	--
392959075145001	09-10-97	2.04	26.9	5	--	--	--	--	--	--	--	--
393002075151101	09-04-97	2.27	166	6	--	--	--	--	--	--	--	--
393007075150301	09-05-97	3.64	105	4	--	--	--	--	--	--	--	--
	09-05-97	3.01	--	3	--	--	--	--	--	--	--	--
393007075150801	09-03-97	1.92	162	3	--	--	--	--	--	--	--	--
393051075135101	09-11-96	3.00	110	4	--	--	--	--	--	--	--	--
	09-18-96	--	--	--	--	--	--	--	--	--	--	--
393044075171501	03-13-01	--	--	--	E.002	--	<0.01	<0.011	<0.034	--	--	--
393050075164301	03-14-01	--	--	--	0.032	--	<0.01	0.014	--	--	--	--
	03-14-01	--	--	--	--	--	--	--	--	--	--	--
393053075163801	03-13-01	--	--	--	E.003	--	<0.01	0.106	<0.034	--	--	--
393056075125401	12-16-98	--	32.6	<20	--	--	--	--	--	--	--	--
393056075125402	12-16-98	--	29.6	E9	--	--	--	--	--	--	--	--
393056075125403	12-15-98	8.58	57.6	4	--	--	--	--	--	--	--	--
393100075122201	12-10-98	4.12	90.7	3	--	--	--	--	--	--	--	--
393102075131601	12-22-97	<1.00	76.6	15	--	--	--	--	--	--	--	--
	12-23-97	<0.5	<0.1	0.6	--	--	--	--	--	--	--	--
	03-13-98	<0.5	<0.1	<0.5	--	--	--	--	--	--	--	--
393104075122201	09-04-96	--	--	--	--	--	--	--	--	M	M	<0.05
	09-04-96	--	--	--	0.676	--	<0.02	0.916	<0.007	--	--	--
	09-04-96	--	--	--	0.669	--	<0.02	0.873	<0.007	--	--	--
	09-04-96	--	--	--	<0.001	--	<0.02	<0.005	<0.007	--	--	--
	06-12-97	--	--	--	--	--	--	--	--	<0.1	E.02	<0.04
	06-12-97	--	--	--	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	0.399	--	<0.02	0.756	E.006	--	--	--
	06-24-97	--	--	--	0.404	--	<0.02	0.783	E.007	--	--	--
	06-24-97	--	--	--	<0.001	--	<0.02	<0.005	<0.007	--	--	--
	09-04-97	--	--	--	0.256	--	<0.02	0.682	E.005	E.1	E.01	<0.04
	10-06-98	--	93.7	--	--	--	--	--	--	--	--	--
	09-15-99	--	--	--	--	--	--	--	--	<0.2	<0.10	<0.04
393104075122202	12-20-91	<10	190	21	--	--	--	--	--	--	--	--
393108075131901	09-11-96	5.00	19.0	138	--	--	--	--	--	--	--	--
393122075140301	09-03-97	<1.00	330	<1	--	--	--	--	--	--	--	--
393208075024501	05-12-97	8.61	35.5	21	--	--	--	--	--	--	--	--
	03-09-01	--	--	--	--	--	--	--	--	--	--	--
	03-09-01	--	--	--	<0.007	--	<0.01	<0.011	<0.034	--	--	--
CAPE MAY COUNTY												
390643074522501	09-09-98	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.2	E.02	0.11
390805074500001	07-20-98	--	--	--	<0.001	--	<0.02	<0.005	<0.007	<0.2	<0.10	<0.04

## TRACE-ELEMENT CHEMISTRY: KIRKWOOD-COHANSEY AQUIFER SYSTEM—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Alpha-emitting radium, wat flt plancht pCi/L (09510)	Ra-226 2-sigma water, fltrd, pCi/L (76001)	Ra-226, water, radon method pCi/L (09511)	Ra-228 2-sigma water, fltrd, pCi/L (76000)	Ra-228, water, fltrd, pCi/L (81366)	Rn-222 2-sigma water, unfltrd pCi/L (76002)	Rn-222, water, unfltrd pCi/L (82303)	Uranium natural water, fltrd, ug/L (22703)
CUMBERLAND COUNTY									
392836075075401	11-26-96	--	0.69	4.00	1.3	5	24	230	<1.00
	11-26-96	--	--	--	--	--	--	--	<1.00
392845075082601	08-21-97	--	0.69	4.37	0.90	3	39	710	<1.00
392854075080201	11-06-96	--	0.76	4.60	0.69	2	25	640	<1.00
392854075104001	08-13-97	--	0.70	4.28	0.95	3	28	580	<1.00
392858075105001	10-17-96	--	1.0	6.20	0.93	3	31	330	<1.00
392901075103401	10-17-96	--	0.61	3.85	2.4	10	30	310	<1.00
	08-11-97	3.5	--	--	--	8	--	--	--
392903075102801	08-19-97	--	0.30	1.89	0.95	3	22	180	<1.00
392904075102101	10-15-96	--	0.31	1.90	0.88	3	25	400	<1.00
392915075094701	10-18-96	--	0.05	0.28	0.43	<1	26	270	<1.00
392918075003301	12-16-96	--	0.09	0.52	0.95	4	20	90	<1.00
	12-16-96	--	--	--	--	--	--	--	<1.00
	12-18-96	--	--	--	--	--	--	--	--
	12-18-96	--	--	--	--	--	--	--	--
392918075003803	11-10-97	--	--	--	--	--	--	--	--
	11-20-97	--	0.67	4.03	1.1	4	18	190	<1.00
392920075011901	12-18-96	--	--	--	--	--	--	--	--
	12-18-96	--	--	--	--	--	--	--	--
	12-18-96	--	--	--	--	--	--	--	<0.2
	12-18-96	--	0.07	0.42	1.4	6	36	300	<1.00
392920075011902	11-10-97	--	--	--	--	--	--	--	--
	11-18-97	--	0.12	0.75	2.4	10	23	190	<1.00
	11-18-97	--	--	--	--	--	--	--	<1.00
392923075023401	08-13-96	--	0.61	3.60	0.62	2	30	470	<1.00
	05-19-97	3.4	0.20	3.80	--	3	22	410	--
392853075005801	03-07-01	--	--	--	--	--	--	--	--
	03-07-01	--	--	--	--	--	--	--	--
392928075020002	11-10-97	--	--	--	--	--	--	--	--
	11-19-97	--	--	--	--	--	--	--	<0.2
	11-20-97	--	0.34	2.02	0.57	2	27	750	<1.00
392959075145001	09-10-97	--	0.27	1.69	0.78	2	21	280	<1.00
393002075151101	09-04-97	--	0.73	4.43	0.94	3	34	500	<1.00
393007075150301	09-05-97	--	0.50	3.14	0.79	3	27	280	<1.00
	09-05-97	--	--	--	--	--	--	--	<1.00
393007075150801	09-03-97	--	0.81	4.86	0.84	3	26	450	<1.00
393051075135101	09-11-96	--	1.1	6.40	0.82	3	26	520	<1.00
	09-18-96	--	--	--	--	--	--	--	--
393044075171501	03-13-01	--	--	--	--	--	--	--	--
393050075164301	03-14-01	--	--	--	--	--	--	--	--
	03-14-01	--	--	--	--	--	--	--	--
	03-13-01	--	--	--	--	--	--	--	--
393053075163801	12-16-98	--	0.06	--	0.31	M	25	580	0.04
393056075125401	12-16-98	--	0.24	--	0.58	2	18	120	--
393056075125402	12-15-98	--	1.1	--	0.85	3	32	980	<1.00
393100075122201	12-10-98	--	0.71	--	1.7	7	20	190	<1.00
393102075131601	12-22-97	--	0.40	2.50	0.56	2	27	720	<1.00
	12-23-97	--	--	--	--	--	--	--	<0.2
	03-13-98	--	--	--	--	--	--	--	<0.2
393104075122201	09-04-96	--	--	--	--	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--
	09-04-96	--	--	--	--	--	--	--	--
	06-12-97	--	--	--	--	--	--	--	--
	06-12-97	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--
	06-24-97	--	--	--	--	--	--	--	--
	09-04-97	--	--	--	--	--	--	--	--
	10-06-98	--	--	--	--	--	--	--	--
	09-15-99	--	--	--	--	--	--	--	--
393104075122202	12-20-91	--	2.3	14.0	1.8	7	46	480	0.12
393108075131901	09-11-96	--	0.36	2.00	0.51	1	22	260	<1.00
393122075140301	09-03-97	--	0.53	3.25	0.77	2	29	610	<1.00
393208075024501	05-12-97	2.1	--	--	--	3	17	130	<1.00
	03-09-01	--	--	--	--	--	--	--	--
	03-09-01	--	--	--	--	--	--	--	--
CAPE MAY COUNTY									
390643074522501	09-09-98	--	--	--	--	--	--	--	--
390805074500001	07-20-98	--	--	--	--	--	--	--	--

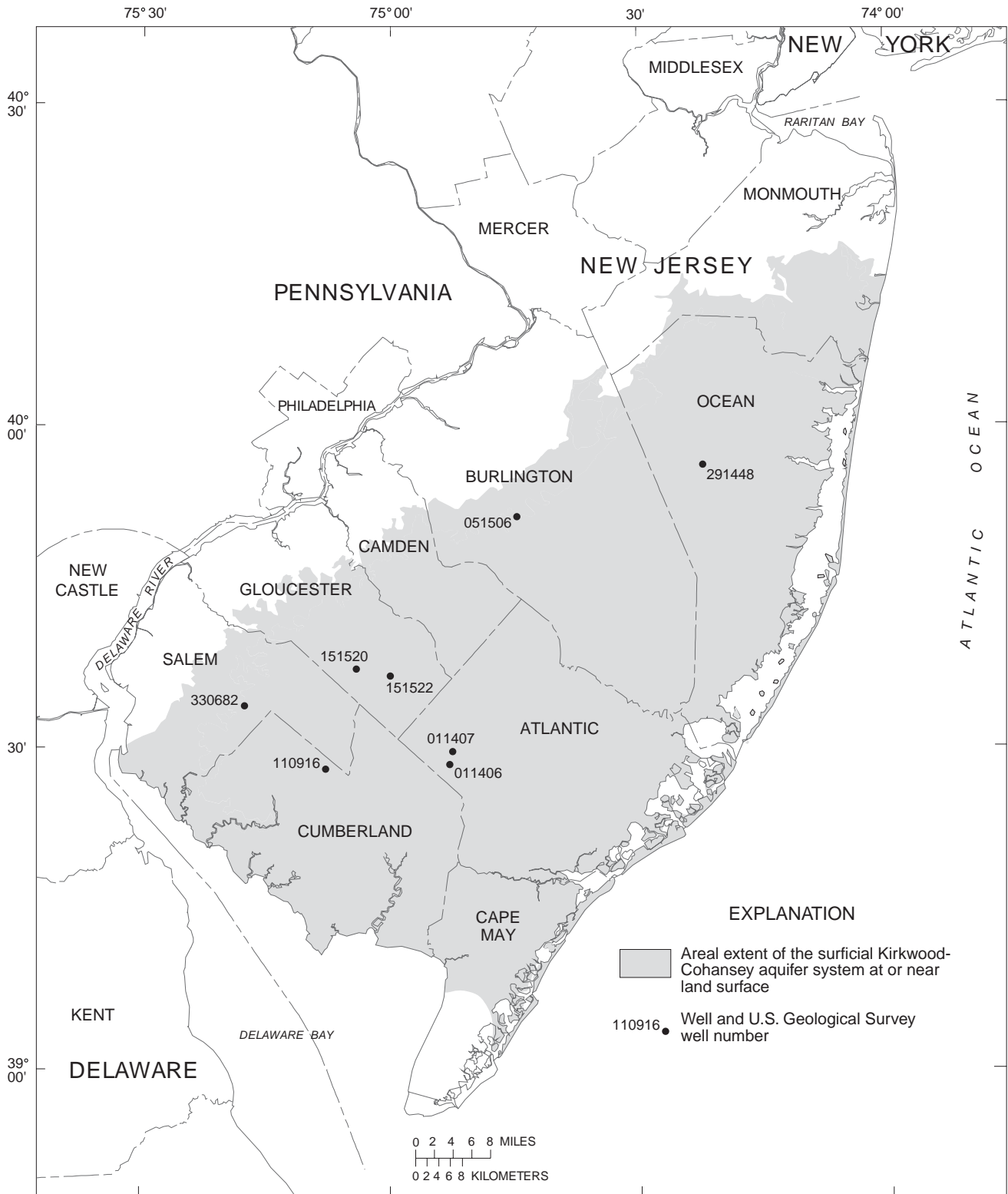
Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

M-- Presence verified, not quantified

RADIUM SAMPLING OF WATER FROM THE KIRKWOOD-COHANSEY AQUIFER SYSTEM AND OF BACKWASH BRINE FROM ION-EXCHANGE TREATMENT SYSTEMS



Base modified from U.S. Geological Survey digital data, 1:100,000, 1983, Universal Transverse Mercator projection, Zone 18

Figure 52. Location of water samples and ancillary samples from the Kirkwood-Cohansey aquifer system, water year 2003.

RADIUM SAMPLING OF WATER FROM THE KIRKWOOD-COHANSEY AQUIFER SYSTEM AND OF BACKWASH BRINE  
FROM ION-EXCHANGE TREATMENT SYSTEMS—Continued

The following tables contain site-information and water-quality data from a network of 8 sites sampled for radium and ancillary water-quality constituents. The sampled wells are completed in unconsolidated sand deposits of the Kirkwood-Cohansey aquifer system of southern New Jersey (fig. 52). The sampling network was established in cooperation with the New Jersey Department of Environmental Protection (NJDEP).

The sampling network was established to research and document the water quality at sites using ion-exchange treatment units to remediate (remove) elevated radium from private wells used for potable domestic supply in the area of the Kirkwood-Cohansey aquifer system. The issue of concern involves the fate of naturally occurring Ra from entry into the home, the treatment system (cation-exchange resins), and septic or other waste from domestic or institutional water wells. The concentration of Ra isotopes in backwash is believed to be high and needs to be characterized, as does the accumulation of Ra and progeny in terms of both concentration and load at end-points from the treatment system: waste stream, septic system liquids and sludge, shallow ground water, shallow soil, and the treatment units themselves. Disposal of back wash brine is often directed into the septic system or directly discharged into soil in the form of a dry well or a plain ditch. The treatment system, in other words, does not destroy the Ra, but only serves to minimize ingestion via the drinking-water pathway. Water samples were collected from the following locations at each site: (1) water well, untreated; (2) water, treated, from the treatment system, at the kitchen tap or other drinking-water source; (3) leachate brine, from back wash brine of the treatment system; and (4) sludge, liquid and solid phases from the septic tank after brine disposal (only liquid phase results are reported here). Sample collection from shallow ground water down gradient from the septic leach field is ongoing.

The unique data collected were the concentrations of radioactivity and radionuclides, at all the sampling points and organic wastewater compounds at select points. The ancillary standard water-quality samples collected for the untreated ground water are a subset of those routinely analyzed using standard techniques for physical characteristics, major ions, nutrients, volatile organic compounds (VOCs), pesticides, a selected suite of minor and trace elements, and dissolved organic carbon. A smaller subset of these ancillary constituents was analyzed for the remaining types of samples collected from each site.

Radioactivity and radium radionuclides were detected commonly and on occasion in high concentrations, except in treated drinking water. Organic wastewater compounds were not detected in filtered untreated ground water.

WATER-QUALITY CONTROL DATA

Determinations of wastewater compounds were made by USGS method number 0-1433-01. (The laboratory reporting limits for the target analytes are listed by Zaugg and others, 2002). The field methods used are described in Techniques of water resources investigations-Book 9-Handbooks for Water Resource Investigations-National field manual for the collection of water-quality data -Chapter A3 Cleaning of equipment for water sampling, edited by F.D. Wilde and others, 1998, Chapter A4 Collection of water samples edited by F.D. Wilde and others, 1999, and Chapter A5 Processing of water samples edited by F.D. Wilde and others, 1999.

Quality assurance consisted of one selected sequential replicate sample at each site and one equipment blank sample. Sequential replicate samples closely reproduced results for the initial environmental samples. The concentration of radium-226 in the blank sample was 0.03 (picocuries per liter). The phenol compound has frequently been detected in sampling programs using polyvinyl chloride (PVC) sampling tubing; the possibility of low-level sample contamination during sample handling cannot be ruled out at this time and results are not reported.

Personal protection and safety procedures needed at the sampling sites are described in a Project Specific Health and Safety Plan on file at the U.S. Geological Survey office in West Trenton, NJ.

NJ-WRD Well Number	Station Number	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
110916	392806075074201	392806	0750741	83	35-03390	62	55 - 62	121CKKD
011406	392924074523701	392832	0745245	95	35-23296	110	100 - 110	121CKKD
011407	392944074522401	392944	0745224	100	35-20629	80	70 - 80	121CKKD
330682	393359075172801	393359	0751727	140	34-03273	70	--	121CKKD
151522	393646074595501	393646	0745954	135	31-42091	95	90 - 95	121CKKD
151520	393725075035901	393725	0750359	105	31-54610	100	90 - 100	121CKKD
051506	395135074443701	395135	0744437	135	32-18064	85	75 - 85	121CKKD
291448	395624074220701	395624	0742207	160	32-16823	146	136 - 146	121CKKD

AQUIFER UNITS.--121CKKD, Kirkwood-Cohansey aquifer system.



RADIUM SAMPLING OF WATER FROM THE KIRKWOOD-COHANSEY AQUIFER SYSTEM AND OF BACKWASH BRINE FROM ION-EXCHANGE TREATMENT SYSTEMS—Continued

MULTIPLE STATION ANALYSES

Station number	Date	Time	Sample type	Turbidity, unfltrd field, NTU (61028)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)
CUMBERLAND COUNTY											
392806075074201	07-25-03	1045	Treated Water	--	--	--	--	--	--	6.1	--
	07-25-03	1050	Treated Water	--	--	--	--	--	--	6.8	--
	07-25-03	1240	Environmental	0.1	--	--	765	9.1	90	4.4	--
	07-25-03	1241	Replicate	0.1	--	--	765	9.1	90	4.4	--
	07-25-03	1510	Sludge Liquid	--	--	--	--	--	--	--	7.3
ATLANTIC COUNTY											
392924074523701	09-05-03	1020	Treated Water	--	--	--	--	--	--	4.9	--
	09-05-03	1050	Environmental	0.1	0.011	0.009	--	--	--	4.4	--
	09-05-03	1225	Leachate	--	--	--	--	--	--	2.3	--
	09-05-03	1230	Leachate	--	--	--	--	--	--	--	--
	09-05-03	1400	Sludge Liquid	--	0.705	0.574	--	--	--	6.2	--
392944074522401	08-08-03	1020	Treated Water	--	--	--	--	--	--	7.3	--
	08-08-03	1025	Treated Water	--	--	--	--	--	--	--	--
	08-08-03	1030	Treated Water	--	--	--	--	--	--	6.3	--
	08-08-03	1115	Environmental	0.2	0.004	<0.004	--	--	--	4.9	--
	08-08-03	1240	Sludge Liquid	--	--	--	--	--	--	6.7	--
	08-08-03	1410	Leachate	--	--	--	--	--	--	6.9	--
SALEM COUNTY											
393359075172801	09-10-03	1045	Treated Water	--	--	--	--	--	--	7.0	--
	09-10-03	1145	Environmental	0.1	0.006	0.008	764	8.8	85	4.9	--
	09-10-03	1315	Leachate	--	--	--	--	--	--	5.4	--
	09-10-03	1500	Sludge Liquid	--	0.726	0.395	--	--	--	6.8	--
	09-10-03	1700	Sludge Liquid	--	--	--	--	--	--	--	--
GLOUCESTER COUNTY											
393646074595501	08-22-03	0950	Treated Water	--	--	--	--	--	--	6.7	--
	08-22-03	1050	Environmental	0.1	<0.004	<0.004	762	8.1	79	4.9	4.9
	08-22-03	1340	Leachate	--	--	--	--	--	--	--	--
	08-22-03	1345	Leachate	--	--	--	--	--	--	--	--
	08-22-03	1500	Sludge Liquid	--	0.477	0.368	--	--	--	6.7	--
393725075035901	07-18-03	1210	Sludge Liquid	--	--	--	--	--	--	--	--
	07-18-03	1400	Environmental	0.1	--	--	760	3.1	31	4.4	--
	07-18-03	1445	Treated Water	--	--	--	--	--	--	6.7	--
	07-18-03	1630	Leachate	--	--	--	--	--	--	4.0	--
BURLINGTON COUNTY											
395135074443701	08-05-03	0950	Treated Water	--	--	--	758	--	--	7.9	--
	08-05-03	1110	Environmental	0.1	0.009	0.007	758	4.7	45	5.0	--
	08-05-03	1111	Replicate	0.1	--	--	758	4.7	--	5.0	--
	08-05-03	1240	Leachate	--	--	--	758	--	--	--	--
	08-05-03	1250	Leachate	--	--	--	--	--	--	5.5	--
	08-05-03	1500	Sludge Liquid	--	0.364	0.284	--	--	--	--	--
OCEAN COUNTY											
395624074220701	07-22-03	1600	Environmental	0.2	--	--	752	2.3	22	5.0	--
	07-22-03	1605	Replicate	0.2	--	--	752	2.3	22	5.0	--
	07-22-03	1630	Treated Water	--	--	--	--	--	--	6.7	--
	07-22-03	1740	Leachate	--	--	--	752	--	--	6.8	--
	07-22-03	1745	Leachate	--	--	--	--	--	--	6.8	--





## RADIUM SAMPLING OF WATER FROM THE KIRKWOOD-COHANSEY AQUIFER SYSTEM AND OF BACKWASH BRINE FROM ION-EXCHANGE TREATMENT SYSTEMS—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover- able, ug/L (71900)	Stront- ium, water, fltrd, ug/L (01080)	1,4-Di- chloro- benzene water, fltrd, ug/L (34572)	1- Methyl- naphth- alene, water, fltrd, ug/L (62054)	2,6-Di- methyl- naphth- alene, water, fltrd, ug/L (62055)	2- Methyl- naphth- alene, water, fltrd, ug/L (62056)
CUMBERLAND COUNTY											
392806075074201	07-25-03	<24	--	--	--	--	181	--	--	--	--
	07-25-03	<8	0.30	--	--	<0.02	119	--	--	--	--
	07-25-03	<8	0.14	<3	0.72	0.84	9.4	<0.5	<0.5	<0.5	<0.5
	07-25-03	--	--	--	--	--	--	--	--	--	--
	07-25-03	234	E.07	<3	0.06	--	105	--	--	--	--
ATLANTIC COUNTY											
392924074523701	09-05-03	11	--	--	--	--	<0.4	--	--	--	--
	09-05-03	<8	0.99	<3	--	0.02	104	<0.5	<0.5	<0.5	<0.5
	09-05-03	5,120	88.1	147	--	--	7,930	--	--	--	--
	09-05-03	4,300	--	138	--	--	7,250	--	--	--	--
	09-05-03	1,280	--	<9	<0.02	--	144	--	--	--	--
392944074522401	08-08-03	38	--	--	--	--	1.1	--	--	--	--
	08-08-03	--	--	--	--	--	--	--	--	--	--
	08-08-03	--	--	--	--	--	--	--	--	--	--
	08-08-03	<8	0.94	<3	E.01	E.01	14.9	M	<0.5	<0.5	<0.5
	08-08-03	83	--	E2	E.01	--	84.9	--	--	--	--
	08-08-03	<200	--	<75	--	--	2,430	--	--	--	--
SALEM COUNTY											
393359075172801	09-10-03	<8	0.16	--	--	--	E.2	--	--	--	--
	09-10-03	E7	1.44	<3	--	0.03	81.1	<0.5	<0.5	<0.5	<0.5
	09-10-03	<240	--	<90	--	--	3,530	--	--	--	--
	09-10-03	369	0.19	<9	<0.02	--	194	--	--	--	--
	09-10-03	--	--	--	--	--	--	--	--	--	--
GLOUCESTER COUNTY											
393646074595501	08-22-03	<8	--	--	--	--	E.3	--	--	--	--
	08-22-03	15	--	--	--	<0.02	4.4	--	--	--	--
	08-22-03	--	--	--	--	--	--	--	--	--	--
	08-22-03	--	--	--	--	--	--	--	--	--	--
	08-22-03	130	--	<9	--	<0.02	93.2	--	--	--	--
393725075035901	07-18-03	43	--	3	<0.02	--	50.7	--	--	--	--
	07-18-03	<8	0.59	--	--	<0.02	59.1	<0.5	<0.5	<0.5	<0.5
	07-18-03	E5	--	--	--	--	61.4	--	--	--	--
	07-18-03	<200	--	<75	--	--	181	--	--	--	--
BURLINGTON COUNTY											
395135074443701	08-05-03	E5	E.05	<3	--	--	1.2	--	--	--	--
	08-05-03	<8	1.66	<3	<0.02	<0.02	29.3	--	--	--	--
	08-05-03	--	--	--	--	--	--	--	--	--	--
	08-05-03	--	--	--	--	--	--	--	--	--	--
	08-05-03	4,710	13.7	<150	--	--	10,600	--	--	--	--
	08-05-03	49	0.17	<3	<0.02	--	57.3	--	--	--	--
OCEAN COUNTY											
395624074220701	07-22-03	E12	4.95	--	--	<0.02	0.9	--	--	--	--
	07-22-03	--	--	--	--	--	--	--	--	--	--
	07-22-03	<8	--	--	--	--	<0.4	--	--	--	--
	07-22-03	316	--	<9	--	--	86.8	--	--	--	--
	07-22-03	--	--	<9	--	--	--	--	--	--	--















## RADIUM SAMPLING OF WATER FROM THE KIRKWOOD-COHANSEY AQUIFER SYSTEM AND OF BACKWASH BRINE FROM ION-EXCHANGE TREATMENT SYSTEMS—Continued

## MULTIPLE STATION ANALYSES

Station number	Date	Gross beta radioac water, fltrd, Cs-137, pCi/L (03515)	Ra-226, water, fltrd, radon method pCi/L (09511)	Ra-228, water, fltrd, pCi/L (81366)
CUMBERLAND COUNTY				
392806075074201	07-25-03	26	4.12	7
	07-25-03	--	--	--
	07-25-03	28	5.19	10
	07-25-03	26	4.60	11
	07-25-03	42	--	--
ATLANTIC COUNTY				
392924074523701	09-05-03	2	0.04	--
	09-05-03	48	21.8	20
	09-05-03	1,840	1,230	688
	09-05-03	2,570	1,270	924
	09-05-03	33	--	--
392944074522401	08-08-03	M	0.17	--
	08-08-03	--	0.03	M
	08-08-03	--	--	--
	08-08-03	7	1.99	3
	08-08-03	12	--	--
	08-08-03	256	45.4	57
SALEM COUNTY				
393359075172801	09-10-03	1	0.08	--
	09-10-03	10	2.03	2
	09-10-03	279	72.4	73
	09-10-03	24	--	--
	09-10-03	--	--	--
GLOUCESTER COUNTY				
393646074595501	08-22-03	M	0.01	--
	08-22-03	4	0.47	2
	08-22-03	261	31.3	52
	08-22-03	119	--	--
	08-22-03	13	0.41	1
393725075035901	07-18-03	19	--	--
	07-18-03	12	5.13	3
	07-18-03	1	0.03	--
	07-18-03	375	309	194
BURLINGTON COUNTY				
395135074443701	08-05-03	3	0.07	--
	08-05-03	10	3.23	3
	08-05-03	9	--	--
	08-05-03	750	--	--
	08-05-03	750	492	257
	08-05-03	20	--	--
OCEAN COUNTY				
395624074220701	07-22-03	3	0.48	1
	07-22-03	--	--	--
	07-22-03	M	0.05	--
	07-22-03	11	0.62	1
	07-22-03	--	0.70	1

Remark codes used in this table:

&lt; -- Less than

E -- Estimated value

M-- Presence verified, not quantified

CHLORIDE DISTRIBUTION IN MAJOR ARTESIAN AQUIFERS OF THE NEW JERSEY COASTAL PLAIN

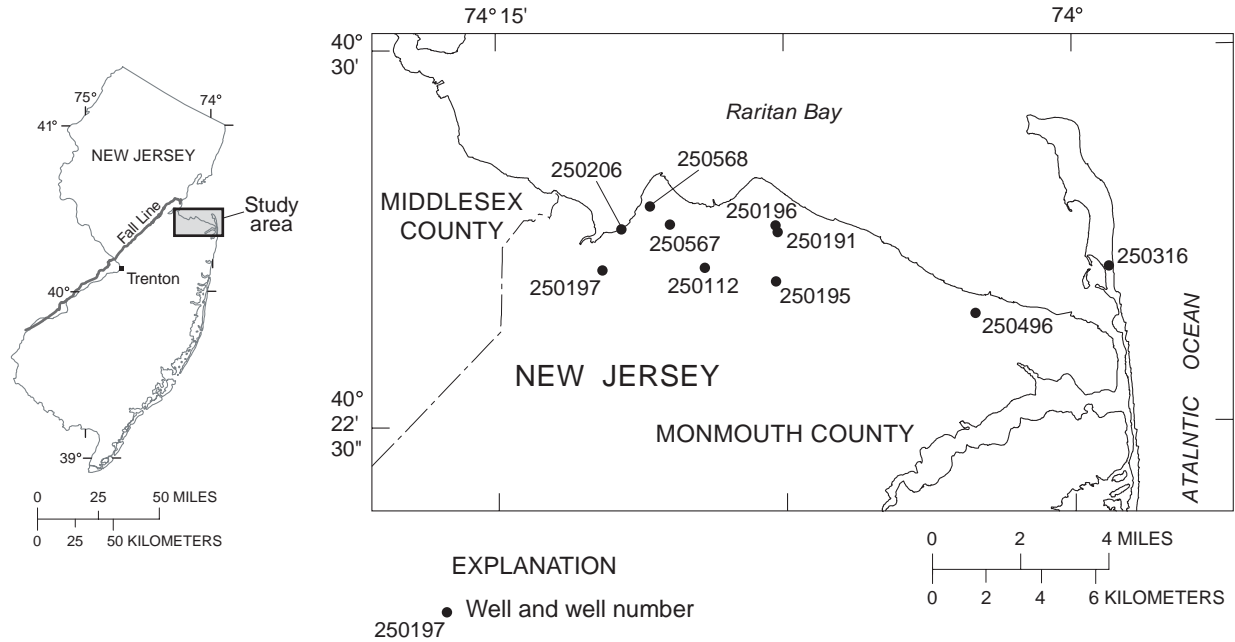


Figure 53. Location of sites sampled for the Saltwater Monitoring Network, Monmouth County, New Jersey, water year 2003.

The following table contains site and water-quality data from wells sampled as part of New Jersey's saltwater-monitoring network. The network was established in the 1940's to document and assess saltwater movement into the freshwater aquifers of New Jersey's Coastal Plain. The USGS collects and analyzes water samples from USGS and NJDEP observation wells, as well as selected public, domestic, and agricultural supply wells. Additionally, chloride-concentration data reported to the NJDEP by owners of public and industrial supply wells are used to supplement these measurements.

During the 2003 water year, the USGS sampled water from ten wells in northern Monmouth County, New Jersey. Chloride concentrations were observed to be increasing at several sites near Raritan Bay.

NJ-WRD Well Number	Station Number	Local Identifier	Latitude (NAD83)	Longitude (NAD83)	Altitude of Land Surface (NGVD29) (feet)	Well Permit Number	Depth of Well (feet)	Screen Interval (feet)	Aquifer Unit
250568	402652074110001	JCP&L	402652	0741059	10	29-16343	265	245 - 265	211ODBG
250496	402441074023302	AHWD 4	402441	0740232	15	29-10478	550	510 - 543	211ODBG
250567	402630074105801	UB WATER TOWER	402630	0741028	10	29-15851	270	250 - 260	211ODBG
250195	402521074074301	KWD 5A	402621	0740743	15	29-01297	350	290 - 350	211ODBG
250196	402628074074401	KWD 3	402628	0740743	12	49-00047	348	308 - 348	211ODBG
250191	402620074074201	KWD 6	402620	0740740	10	29-05333	362	302 - 362	211ODBG
250197	402535074121401	KEYPORT 7	402536	0741214	35	29-08379	364	304 - 354	211ODBG
250112	402534074093001	W KEANSBURG 2	402538	0740934	43.50	29-03096	352	312 - 352	211ODBG
250316	402536073590501	SANDY HOOK SP1 OBS	402536	0735903	10.91	29-04299	397	371 - 397	211ODBG
250206	402626074114204	KEYPORT 4 OBS	402625	0741144	14.47	--	249	225 - 249	211ODBG

AQUIFER UNITS.--211ODBG, Old Bridge Sand Member of Magothy Formation.

CHLORIDE DISTRIBUTION IN MAJOR ARTESIAN AQUIFERS OF THE NEW JERSEY COASTAL PLAIN—Continued

MULTIPLE STATION ANALYSES

Local identifier	Station number	Date	Time	Turbidity, water, unfltrd field, NTU (61028)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)
JCP&L	402652074110001	05-29-03	1230	1.6	<0.1	--	6.0	12,700	13.6	150
AHWD 4	402441074023302	05-23-03	1115	0.2	<0.1	--	6.5	101	16.0	5.48
UB WATER TOWER	402630074105801	06-05-03	1230	2.0	0.1	1	6.1	1,020	14.0	31.4
KWD 5A	402521074074301	06-10-03	1030	0.5	0.4	--	6.0	879	13.8	21.1
KWD 3	402628074074401	06-10-03	1415	0.7	0.1	--	6.0	807	13.5	18.1
KWD 6	402620074074201	06-10-03	1200	1.1	<0.1	--	5.9	2,270	13.6	55.8
KEYPORT 7	402535074121401	05-21-03	1100	0.3	0.2	2	5.9	123	13.6	3.21
W KEANSBURG 2	402534074093001	05-21-03	1400	0.1	<0.1	--	6.1	70	13.3	2.71
SANDY HOOK SP1 OBS	402536073590501	06-13-03	1500	0.5	<0.1	--	7.2	236	16.0	8.47
KEYPORT 4 OBS	402626074114204	06-09-03	1715	0.3	<0.1	--	6.2	1,460	13.7	48.5

MULTIPLE STATION ANALYSES

Local identifier	Date	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, field, mg/L as CaCO3 (00410)	Bromide water, fltrd, mg/L (71870)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)
JCP&L	05-29-03	184	24.7	1,840	30	14.8	4,120	<0.2	14.5	570	7,310
AHWD 4	05-23-03	1.59	2.19	1.50	36	E.01	1.26	<0.2	8.7	10.5	65
UB WATER TOWER	06-05-03	21.3	3.95	60.1	17	1.13	278	<0.2	13.2	39.5	551
KWD 5A	06-10-03	14.0	2.12	80.3	19	0.80	226	<0.2	14.9	42.0	480
KWD 3	06-10-03	11.7	2.47	63.7	20	0.93	194	<0.2	14.2	54.8	432
KWD 6	06-10-03	33.0	4.41	218	18	2.03	650	<0.2	16.5	120	1,290
KEYPORT 7	05-21-03	2.17	1.06	7.47	14	0.08	16.4	<0.2	8.4	14.3	72
W KEANSBURG 2	05-21-03	1.67	1.18	1.45	22	0.06	1.99	<0.2	8.2	8.6	47
SANDY HOOK SP1 OBS	06-13-03	6.81	6.34	21.0	62	0.10	21.2	<0.2	11.7	13.5	130
KEYPORT 4 OBS	06-09-03	29.5	4.34	81.7	18	1.55	419	<0.2	14.4	30.3	780

MULTIPLE STATION ANALYSES

Local identifier	Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Arsenic water, fltrd, ug/L (01000)	Iron, water, fltrd, ug/L (01046)	Manganese, water, fltrd, ug/L (01056)	Strontium, water, fltrd, ug/L (01080)
JCP&L	05-29-03	0.49	--	--	--	2.5	362,000	5,800	1,250
AHWD 4	05-23-03	0.05	<0.06	<0.008	0.03	<0.3	12,200	175	56.7
UB WATER TOWER	06-05-03	0.10	<0.06	<0.008	<0.02	0.3	90,900	1,200	342
KWD 5A	06-10-03	<0.21	<0.30	E.030	<0.09	<0.3	66,500	844	200
KWD 3	06-10-03	0.06	<0.06	E.004	<0.02	<0.3	59,000	775	168
KWD 6	06-10-03	0.12	<0.06	E.004	0.02	<0.3	175,000	2,200	518
KEYPORT 7	05-21-03	E.04	--	--	0.02	<0.3	9,730	156	30.4
W KEANSBURG 2	05-21-03	0.04	--	--	0.03	<0.3	8,000	132	29.0
SANDY HOOK SP1 OBS	06-13-03	0.09	--	--	<0.02	<0.3	3,000	74.0	79.3
KEYPORT 4 OBS	06-09-03	0.15	<0.06	E.004	<0.02	0.7	138,000	1,740	458

Remark codes used in this table:

< -- Less than

E -- Estimated value



01458570 Nishisakawick Creek near Frenchtown  
Agricultural Land Use Indicator Station  
Ambient Stream Monitoring Network  
(file photograph, U.S. Geological Survey, West Trenton, New Jersey)

## A

Absecon Creek, South Branch, near Pomona . . . . .	330
Acid neutralizing capacity, definition of . . . . .	44
Acre-foot, definition of . . . . .	44
Adenosine triphosphate, definition of . . . . .	44
Adjusted discharge, definition of . . . . .	45
Algae,	
Blue-green, definition of . . . . .	46
Fire, definition of . . . . .	50
Green, definition of . . . . .	51
Algal growth potential, definition of . . . . .	45
Alkalinity, definition of . . . . .	45
Allendale, Valentine Brook at . . . . .	193
Allentown, Doctors Creek at . . . . .	459
Annaricken Brook near Jobstown . . . . .	468
Annual runoff, definition of . . . . .	45
Annual 7-day minimum, definition of . . . . .	45
Aquifer	
Confined, definition of . . . . .	47
Unconfined, definition of . . . . .	62
Water-table, definition of . . . . .	62
Aroclor, definition of . . . . .	45
Artificial substrate, definition of . . . . .	45
Ash mass, definition of . . . . .	45
Aspect, definition of . . . . .	45
Assunpink Creek at Edinburg . . . . .	444
Assunpink Creek at Peace Street, at Trenton . . . . .	450
Atsion, Mullica River at outlet of Atsion Lake, at . . . . .	310
<b>B</b>	
Babcock Creek near Mays Landing . . . . .	342
Bacons Creek near Mansfield Square . . . . .	463
Bacteria, definition of . . . . .	45
Enterococcus, definition of . . . . .	49
<i>Escherichia coli</i> , definition of . . . . .	49
Fecal coliform, definition of . . . . .	50
Fecal streptococcal, definition of . . . . .	50
Total coliform, definition of . . . . .	61
Bankfull stage, definition of . . . . .	45
Baptistown, Lockatong Creek at Route 12, at . . . . .	416
Base discharge, definition of . . . . .	45
Base flow, definition of . . . . .	46
Bass River, East Branch, near New Gretna . . . . .	328
Batsto River at Batsto . . . . .	320
Bear Brook at Cranbury Road, at Princeton Junction . . . . .	250
Bear Brook at Dark Moon Road, near Johnsonburg . . . . .	382
Beaver Brook at Rockaway . . . . .	119
Beaver Dam Brook at Ryerson Road, at Lincoln Park . . . . .	150
Bed material, definition of . . . . .	46
Bedload, definition of . . . . .	46
Bedload discharge, definition of . . . . .	46
Belvidere, Pequest River at . . . . .	386
Benthic organisms, definition of . . . . .	46
Big Timber Creek, North Branch, at Glendora . . . . .	512
Biochemical oxygen demand, definition of . . . . .	46
Biomass, definition of . . . . .	46
Biomass pigment ratio, definition of . . . . .	46

Blacks Creek at Chesterfield . . . . .	461
Blacks Creek at Fieldsboro . . . . .	464
Blackwells Mills, Millstone River at . . . . .	257
Blairstown, Paulins Kill at . . . . .	380
Blue Anchor Brook at Elm . . . . .	312
Blue-green algae, definition of . . . . .	46
Bottom material, definition of . . . . .	46
Bound Brook at Middlesex . . . . .	265
Bound Brook at Route 28, at Middlesex . . . . .	263
Bound Brook, Raritan River at Queens Bridge, at . . . . .	259
Browns Mills, Ong Run at . . . . .	486
Bulk electrical conductivity, definition of . . . . .	46
Burnt Mills, Lamington River at . . . . .	243
Burrs Mill Brook, South Branch, near Hedger House . . . . .	472
<b>C</b>	
Canadian Geodetic Vertical Datum 1928, definition of . . . . .	46
Cecil, Hospitality Branch at Blue Bell Road, near . . . . .	338
Cedar Brook at Columbia Road, at Hammonton . . . . .	314
Cedar Creek at Cedar Crest . . . . .	305
Cedar Crest, Cedar Creek at . . . . .	305
Cell volume, definition of . . . . .	46
Cells/volume, definition of . . . . .	47
Cfs-day, definition of . . . . .	47
Chairville, Little Creek at . . . . .	484
Channel bars, definition of . . . . .	47
Chemical oxygen demand, definition of . . . . .	47
Chester, PA, Delaware River at . . . . .	524
Chesterfield, Blacks Creek at . . . . .	461
Chloride Distribution in Major Artesian Aquifers of the New Jersey Coastal Plain Special-Study Site . . . . .	660
<i>Clostridium perfringens</i> , definition of . . . . .	47
Clove Brook tributary at Rose Morrow Road, near Colesville . . . . .	84
Cohansey River at Seely . . . . .	367
Coles Brook at Hackensack . . . . .	106
Colesville, Clove Brook tributary at Rose Morrow Road, near . . . . .	84
Coliphages, definition of . . . . .	47
Color unit, definition of . . . . .	47
Conductivity, definition of . . . . .	58
Confined Aquifer Flow and Chemistry: Piney Point and Basal Kirkwood Sands Special-Study Site . . . . .	604
Confined aquifer, definition of . . . . .	47
Contents, definition of . . . . .	47
Continuous-record station, definition of . . . . .	47
Control, definition of . . . . .	47
Control structure, definition of . . . . .	47
Cookstown, South Run near . . . . .	452
Cooper River at Haddonfield . . . . .	498
Copper Creek near Frenchtown . . . . .	405
Crosswicks Creek at Groveville Road, at Groveville . . . . .	457
Cubic foot per second, definition of . . . . .	47
Cubic foot per second-day, definition of . . . . .	48
Cubic foot per second per square mile, definition of . . . . .	48
<b>D</b>	
Daily mean suspended-sediment concentration, definition	

- of . . . . . 48
- Daily record station, definition of . . . . . 48
- Data collection platform, definition of . . . . . 48
- Data logger, definition of . . . . . 48
- Datum, definition of . . . . . 48
- Dead River near Millington . . . . . 112
- Delaware River at Benjamin Franklin Bridge, at  
Philadelphia, PA . . . . . 500
- Delaware River at Chester, PA . . . . . 524
- Delaware River at Lumberville, PA . . . . . 420
- Delaware River at Montague . . . . . 369
- Delaware River at Portland, PA . . . . . 377
- Delaware River at Reedy Island Jetty, DE . . . . . 541
- Delaware River at Riegelsville . . . . . 397
- Delaware River at Trenton . . . . . 422
- Delaware River below Tohickon Creek, at Point Pleasant,  
PA . . . . . 409
- Diatoms, definition of . . . . . 48
- Diel, definition of . . . . . 48
- Discharge, definition of . . . . . 48
- Dissolved, definition of . . . . . 48
- Dissolved oxygen, definition of . . . . . 48
- Dissolved solids concentration, definition of . . . . . 49
- Diversity index, definition of . . . . . 49
- Doctors Creek at Allentown . . . . . 459
- Dorotockeys Run at Harrington Park . . . . . 102
- Double Kill at Wawayanda . . . . . 91
- Drainage area, definition of . . . . . 49
- Drainage basin, definition of . . . . . 49
- Dry mass, definition of . . . . . 49
- Dry weight, definition of . . . . . 49
- Dunnfield Creek at Dunnfield . . . . . 373
- Dunnfield, Dunnfield Creek at . . . . . 373
- E**
- Earle, Mingamahone Brook near . . . . . 290
- East Branch Bass River near New Gretna . . . . . 328
- Edinburg, Assunpink Creek at . . . . . 444
- Elm, Blue Anchor Brook at . . . . . 312
- Elwood, Indian Cabin Creek at Fifth Avenue, near . . . . . 322
- Embeddedness, definition of . . . . . 49
- Englishtown, McGellairds Brook at . . . . . 272
- Enterococcus bacteria, definition of . . . . . 49
- EPT Index, definition of . . . . . 49
- Escherichia coli* (*E. coli*), definition of . . . . . 49
- Estimated (E) value, definition of . . . . . 50
- Euglenoids, definition of . . . . . 50
- Extractable organic halides, definition of . . . . . 50
- F**
- Fecal coliform bacteria, definition of . . . . . 50
- Fecal streptococcal bacteria, definition of . . . . . 50
- Fieldsboro, Blacks Creek at . . . . . 464
- Fire algae, definition of . . . . . 50
- Fishing Creek at Rio Grande . . . . . 344
- Flat Brook near Flatbrookville . . . . . 371
- Flatbrookville, Flat Brook near . . . . . 371
- Flow, definition of . . . . . 48
- Flow-duration percentiles, definition of . . . . . 50
- French Creek near Phoenixville, PA . . . . . 514
- Frenchtown, Copper Creek near . . . . . 405
- Frenchtown, Nishisakawick Creek near . . . . . 403
- Furmans Brook at Furmans Corner . . . . . 228
- Furmans Corner, Furmans Brook at . . . . . 228
- G**
- Gage datum, definition of . . . . . 50
- Gage height, definition of . . . . . 50
- Gage values, definition of . . . . . 51
- Gaging station, definition of . . . . . 51
- Gas chromatography/flame ionization detector, definition  
of . . . . . 51
- Geomorphic channel units, definition of . . . . . 51
- Glen Gardner, Spruce Run near . . . . . 215
- Glendora, North Branch Big Timber Creek at . . . . . 512
- Gravelly Run at Laurel Lake . . . . . 358
- Great Egg Harbor River at Weymouth . . . . . 340
- Green algae, definition of . . . . . 51
- Green Brook near West Milford . . . . . 131
- Greenwood Branch at New Lisbon . . . . . 494
- Grovers Mill, Millstone River near . . . . . 248
- Groveville, Crosswicks Creek at Groveville Road, at . . . . . 457
- H**
- Habitat, definition of . . . . . 51
- Habitat quality index, definition of . . . . . 51
- Hackensack River at Rivervale . . . . . 100
- Hackensack, Coles Brook at . . . . . 106
- Haddonfield, Cooper River at . . . . . 498
- Hammonton Creek at Wescoatville . . . . . 318
- Hammonton, Cedar Brook at Columbia Road, at . . . . . 314
- Hardness, definition of . . . . . 51
- Harihokake Creek at Hartpence Road, near Mount  
Pleasant . . . . . 399
- Harrington Park, Dorotockeys Run at . . . . . 102
- Hastings-on-Hudson, Hudson River south of . . . . . 96
- Haystack Brook near Southard . . . . . 294
- Heathcote Brook at Kingston . . . . . 255
- Hedger House, South Branch Burrs Mill Brook near . . . . . 472
- High tide, definition of . . . . . 51
- Hilsenhoff's Biotic Index, definition of . . . . . 51
- Holmdel, Hop Brook at Willow Brook Road near . . . . . 278
- Honey Run near Hope . . . . . 385
- Hop Brook at Willow Brook Road, near Holmdel . . . . . 278
- Hope, Honey Run near . . . . . 385
- Horizontal datum, definition of . . . . . 51
- Hospitality Branch at Blue Bell Road, near Cecil . . . . . 338
- Hudson River south of Hastings-on-Hudson . . . . . 96
- Hydrologic index stations, definition of . . . . . 51
- Hydrologic unit, definition of . . . . . 51
- I**
- Inch, definition of . . . . . 52
- Indian Branch near Malaga . . . . . 354
- Indian Cabin Creek at Fifth Avenue, near Elwood . . . . . 322
- Instantaneous discharge, definition of . . . . . 52
- International Boundary Commission Survey Datum,



- definition of . . . . . 52
- Ironia, Lamington (Black) River near . . . . . 239
- Island, definition of . . . . . 52
- J**
- Jessups Mill, Oldmans Creek at . . . . . 535
- Jobstown, Annaricken Brook near . . . . . 468
- Johnsonburg, Bear Brook at Dark Moon Road, near . . . . . 382
- Jumping Brook near Neptune City . . . . . 282
- K**
- Kingston, Heathcote Brook at . . . . . 255
- L**
- Laboratory reporting level, definition of . . . . . 52
- Lafayette, Paulins Kill at Warbasse Junction Road,  
near . . . . . 379
- Lakehurst, Manapaqua Branch at . . . . . 299
- Lakewood, North Branch Metedeconk River at . . . . . 292
- Lamington (Black) River near Ironia . . . . . 239
- Lamington River at Burnt Mills . . . . . 243
- Land-surface datum, definition of . . . . . 52
- Latent heat flux, definition of . . . . . 52
- Laurel Lake, Gravelly Run at . . . . . 358
- Lawrence Brook at Riva Avenue, at Milltown . . . . . 268
- Lebanon State Forest, McDonalds Branch in . . . . . 490
- Leesburg, West Creek near . . . . . 350
- Light-attenuation coefficient, definition of . . . . . 52
- Lincoln Park, Beaver Dam Brook at Ryerson Road, at . . . . . 150
- Lipid, definition of . . . . . 52
- Little Creek at Chairville . . . . . 484
- Little Falls, Passaic River at . . . . . 186
- Little Neshaminy Creek at Valley Road, near Neshaminy,  
PA . . . . . 469
- Lokatong Creek at Route 12, at Baptistown . . . . . 416
- Lodi, Saddle River at . . . . . 197
- Long Branch near Wells Mills . . . . . 307
- Long-term method detection level, definition of . . . . . 52
- Low flow, 7-day, 10-year, definition of . . . . . 58
- Low tide, definition of . . . . . 52
- Lumberville, PA, Delaware River at . . . . . 420
- M**
- Macopin Intake Dam, Pequannock River at . . . . . 129
- Macrophytes, definition of . . . . . 52
- Mahwah, Ramapo River near . . . . . 135
- Malaga, Indian Branch near . . . . . 354
- Manalapan Brook at Federal Road, near Manalapan . . . . . 276
- Manalapan, Manalapan Brook at Federal Road, near . . . . . 276
- Manapaqua Branch at Lakehurst . . . . . 299
- Manasquan River at Squankum . . . . . 288
- Manasquan River at West Farms . . . . . 284
- Mansfield Square, Bacons Creek near . . . . . 463
- Mantua Creek at Mantua Avenue, at Wenonah . . . . . 520
- Manville, Raritan River at . . . . . 247
- Maurice River at Norma . . . . . 356
- Maxwell, West Branch Wading River at . . . . . 326
- Mays Landing, Babcock Creek near . . . . . 342
- McDonalds Branch in Lebanon State Forest . . . . . 490
- McGellairds Brook at Englishtown . . . . . 272
- Mean concentration of suspended sediment, definition of . . . . . 53
- Mean discharge, definition of . . . . . 53
- Mean high tide, definition of . . . . . 53
- Mean low tide, definition of . . . . . 53
- Mean sea level, definition of . . . . . 53
- Measuring point, definition of . . . . . 53
- Megahertz, definition of . . . . . 53
- Membrane filter, definition of . . . . . 53
- Menantico Creek at Route 49, at Millville . . . . . 363
- Mercerville, Miry Run at Route 533, at . . . . . 448
- Metamorphic stage, definition of . . . . . 53
- Metedeconk River, North Branch, at Lakewood . . . . . 292
- Method detection limit, definition of . . . . . 53
- Method of Cubatures, definition of . . . . . 53
- Methylene blue active substances, definition of . . . . . 53
- Micrograms per gram, definition of . . . . . 53
- Micrograms per kilogram, definition of . . . . . 53
- Micrograms per liter, definition of . . . . . 53
- Microsiemens per centimeter, definition of . . . . . 53
- Middlesex, Bound Brook at . . . . . 265
- Middlesex, Bound Brook at Route 28, at . . . . . 263
- Mill Brook at Randolph . . . . . 114
- Milligrams per liter, definition of . . . . . 54
- Millington, Dead River near . . . . . 112
- Millstone River at Blackwells Mills . . . . . 257
- Millstone River near Grovers Mill . . . . . 248
- Milltown, Lawrence Brook at Riva Avenue, at . . . . . 268
- Millville, Menantico Creek at Route 49, at . . . . . 363
- Mingamahone Brook near Earle . . . . . 290
- Minimum reporting level, definition of . . . . . 54
- Miry Run at Route 533, at Mercerville . . . . . 448
- Miscellaneous site, definition of . . . . . 54
- Montague, Delaware River at . . . . . 369
- Morristown National Historical Park Special-Study  
Site . . . . . 586
- Morristown National Historical Park, Primrose Brook  
at . . . . . 108
- Morristown, Whippany River at Ridgedale Avenue, at . . . . . 121
- Most probable number, definition of . . . . . 54
- Mount Bethel, Pohatcong Creek at Janes Chapel Road,  
at . . . . . 388
- Mount Holly, North Branch Rancocas Creek at Iron  
Works Park, at . . . . . 496
- Mount Pleasant, Harihokake Creek at Hartpence Road,  
near . . . . . 399
- Mulhockaway Creek at Van Syckel . . . . . 219
- Mullica River at outlet of Atsion Lake, at Atsion . . . . . 310
- Multiple-plate samplers, definition of . . . . . 54
- Musconetcong River at Riegelsville . . . . . 393
- N**
- Nanograms per liter, definition of . . . . . 54
- National Geodetic Vertical Datum of 1929, definition of . . . . . 54
- Natural substrate, definition of . . . . . 54
- Nekton, definition of . . . . . 54
- Nephelometric turbidity unit, definition of . . . . . 54
- Neptune City, Jumping Brook near . . . . . 282
- Neshaminy, PA, Little Neshaminy Creek at Valley

- Road, near . . . . . 469
- Neshanic River at Reaville . . . . . 225
- Neshanic Station, Pleasant Run at . . . . . 233
- New Gretna, East Branch Bass River near . . . . . 328
- New Lisbon, Greenwood Branch at . . . . . 494
- Newport, Spruce Run at . . . . . 211
- Newton Creek at West Collingswood . . . . . 508
- Nishisakawick Creek near Frenchtown . . . . . 403
- Norma, Maurice River at . . . . . 356
- North American Datum of 1927, definition of . . . . . 54
- North American Datum of 1983, definition of . . . . . 54
- North American Vertical Datum of 1988, definition of . . . . . 54
- North Branch Big Timber Creek at Glendora . . . . . 512
- North Branch Metedeconk River at Lakewood . . . . . 292
- North Branch Rancocas Creek at Iron Works Park, at  
Mount Holly . . . . . 496
- North Branch Raritan River near Raritan . . . . . 245
- North Dennis, Old Robbins Branch near . . . . . 346
- O**
- Old Robbins Branch near North Dennis . . . . . 346
- Oldmans Creek at Jessups Mill . . . . . 535
- Ong Run at Browns Mills . . . . . 486
- Open interval, definition of . . . . . 54
- Organic carbon, definition of . . . . . 55
- Organic mass, definition of . . . . . 55
- Organism count,  
Area, definition of . . . . . 55  
Total, definition of . . . . . 61  
Volume, definition of . . . . . 55
- Organochlorine compounds, definition of . . . . . 55
- P**
- Papakating Creek at Pellettown . . . . . 82
- Parameter code, definition of . . . . . 55
- Partial-record station, definition of . . . . . 55
- Particle size, definition of . . . . . 55
- Particle-size classification, definition of . . . . . 55
- Passaic River at Little Falls . . . . . 186
- Passaic River at Two Bridges . . . . . 127
- Passaic River below Pompton River, at Two Bridges . . . . . 152
- Paulins Kill at Blairstown . . . . . 380
- Paulins Kill at Warbasse Junction Road, near Lafayette . . . . . 379
- Peak flow, definition of . . . . . 55
- Peak stage, definition of . . . . . 55
- Pellettown, Papakating Creek at . . . . . 82
- Pequannock River at Macopin Intake Dam . . . . . 129
- Pequest River at Belvidere . . . . . 386
- Percent composition, definition of . . . . . 56
- Percent of total, definition of . . . . . 56
- Percent shading, definition of . . . . . 56
- Periodic-record station, definition of . . . . . 56
- Periphyton, definition of . . . . . 56
- Pesticides, definition of . . . . . 56
- pH, definition of . . . . . 56
- Philadelphia, PA, Delaware River at Benjamin Franklin  
Bridge, at . . . . . 500
- Philadelphia, PA, Schuylkill River at . . . . . 517
- Phoenixville, PA, French Creek near . . . . . 514
- Phytoplankton, definition of . . . . . 56
- Picocurie, definition of . . . . . 56
- Pine Brook, Whippany River near . . . . . 125
- Pine Grove, Southwest Branch Rancocas Creek at  
Elmwood Road, at . . . . . 480
- Plankton, definition of . . . . . 56
- Pleasant Run at Neshanic Station . . . . . 233
- Pohatcong Creek at Janes Chapel Road, at Mount  
Bethel . . . . . 388
- Point Pleasant, PA, Delaware River below Tohickon  
Creek, at . . . . . 409
- Polychlorinated biphenyls, definition of . . . . . 56
- Polychlorinated naphthalenes, definition of . . . . . 56
- Pomona, South Branch Absecon Creek near . . . . . 330
- Pompton Lakes, Ramapo River at . . . . . 137
- Pompton Plains, Pompton River at . . . . . 148
- Pompton River at Pompton Plains . . . . . 148
- Pool, definition of . . . . . 56
- Portland, PA, Delaware River at . . . . . 377
- Primary productivity, definition of . . . . . 56  
Carbon method, definition of . . . . . 57  
Oxygen method, definition of . . . . . 57
- Primrose Brook at Morristown National Historical  
Park . . . . . 108
- Princeton Junction, Bear Brook at Cranbury Road, at . . . . . 250
- R**
- Raccoon Creek near Swedesboro . . . . . 533
- Radioisotopes, definition of . . . . . 57
- Radium Sampling of Water from the Kirkwood-Cohansey  
Aquifer System and of Backwash Brine from Ion-  
Exchange Treatment Systems Special-Study Site . . . . . 647
- Rahway River at Morris Avenue, at Springfield . . . . . 199
- Rahway River at Rahway . . . . . 205
- Rahway River near Springfield . . . . . 203
- Rahway, Rahway River at . . . . . 205
- Ramapo River at Pompton Lakes . . . . . 137
- Ramapo River near Mahwah . . . . . 135
- Rancocas Creek, North Branch, at Iron Works Park, at  
Mount Holly . . . . . 496
- Rancocas Creek, South Branch, at Retreat . . . . . 476
- Rancocas Creek, Southwest Branch, at Elmwood Road, at  
Pine Grove . . . . . 480
- Randolph, Mill Brook at . . . . . 114
- Raritan River at Manville . . . . . 247
- Raritan River at Queens Bridge, at Bound Brook . . . . . 259
- Raritan River, North Branch, near Raritan . . . . . 245
- Raritan River, South Branch, at South Branch . . . . . 237
- Raritan, North Branch Raritan River near . . . . . 245
- Reach, definition of . . . . . 57
- Reaville, Neshanic River at . . . . . 225
- Recoverable from bed (bottom) material, definition of . . . . . 57
- Recurrence interval, definition of . . . . . 57
- Reedy Island Jetty, DE, Delaware River at . . . . . 541
- Replicate samples, definition of . . . . . 57
- Retreat, South Branch Rancocas Creek at . . . . . 476
- Return period, definition of . . . . . 58

- Riegelsville, Delaware River at . . . . . 397  
 Riegelsville, Musconetcong River at . . . . . 393  
 Riffle, definition of . . . . . 58  
 Rio Grande, Fishing Creek at . . . . . 344  
 River mileage, definition of . . . . . 58  
 Rivervale, Hackensack River at . . . . . 100  
 Robinsons Branch Tributary 2 at Westfield . . . . . 207  
 Rockaway, Beaver Brook at . . . . . 119  
 Run, definition of . . . . . 58  
 Runoff, definition of . . . . . 58
- S**
- Saddle River at Lodi . . . . . 197  
 Saddle River at Old Stone Church Road, at Upper Saddle  
 River . . . . . 188  
 Salem River at Woodstown . . . . . 539  
 Schuylkill River at Philadelphia, PA . . . . . 517  
 Screened interval, definition of . . . . . 54  
 Sea level, definition of . . . . . 58  
 Sediment, definition of . . . . . 58  
 Seely, Cohansey River at . . . . . 367  
 Sensible heat flux, definition of . . . . . 58  
 Seven-day, 10-year low flow, definition of . . . . . 58  
 Shelves, definition of . . . . . 58  
 Sodium adsorption ratio, definition of . . . . . 58  
 Soil heat flux, definition of . . . . . 58  
 Soil-water content, definition of . . . . . 58  
 South Branch Absecon Creek near Pomona . . . . . 330  
 South Branch Burrs Mill Brook near Hedger House . . . . . 472  
 South Branch Rancocas Creek at Retreat . . . . . 476  
 South Branch Raritan River at South Branch . . . . . 237  
 South Branch, South Branch Raritan River at . . . . . 237  
 South Run near Cookstown . . . . . 452  
 Southard, Haystack Brook near . . . . . 294  
 Southwest Branch Rancocas Creek at Elmwood Road, at  
 Pine Grove . . . . . 480  
 Sparta, Wallkill River at . . . . . 76
- Special-Study Sites
- Chloride Distribution in Major Artesian Aquifers of  
 the New Jersey Coastal Plain . . . . . 660  
   Confined Aquifer Flow and Chemistry: Piney Point  
 and Basal Kirkwood Sands . . . . . 604  
   Morristown National Historical Park . . . . . 586  
   Radium Sampling of Water from the Kirkwood-  
 Cohansey Aquifer System and of Backwash  
 Brine from Ion-Exchange Treatment Systems . . . . . 647  
   Trace-Element Chemistry: Kirkwood-Cohansey  
 Aquifer System . . . . . 612
- Specific electrical conductance (conductivity), definition  
 of . . . . . 58
- Springfield, Rahway River at Morris Avenue, at . . . . . 199  
 Springfield, Rahway River near . . . . . 203  
 Spruce Run at Newport . . . . . 211  
 Spruce Run near Glen Gardner . . . . . 215  
 Squankum Branch at Malaga Road, near Williamstown . . . . . 334  
 Squankum, Manasquan River at . . . . . 288  
 Stable isotope ratio, definition of . . . . . 59  
 Stage, definition of . . . . . 59
- Stage-discharge relation, definition of . . . . . 59  
 Streamflow, definition of . . . . . 59  
 Substrate, definition of . . . . . 59  
   Artificial, definition of . . . . . 45  
   Natural, definition of . . . . . 54  
 Substrate embeddedness class, definition of . . . . . 59  
 Surface area of a lake, definition of . . . . . 59  
 Surficial bed material, definition of . . . . . 59  
 Surrogate, definition of . . . . . 59  
 Suspended, definition of . . . . . 59  
   Recoverable, definition of . . . . . 59  
   Total, definition of . . . . . 60  
 Suspended sediment, definition of . . . . . 59  
 Suspended-sediment concentration, definition of . . . . . 59  
 Suspended-sediment discharge, definition of . . . . . 60  
 Suspended-sediment load, definition of . . . . . 60  
 Suspended solids, total residue at 105 °C concentration,  
 definition of . . . . . 60  
 Sussex, Wallkill River near . . . . . 79  
 Swedesboro, Raccoon Creek near . . . . . 533  
 Synoptic studies, definition of . . . . . 60
- T**
- Taxa (Species) richness, definition of . . . . . 60  
 Taxonomy, definition of . . . . . 60  
 Thalweg, definition of . . . . . 60  
 Thermograph, definition of . . . . . 60  
 Time-weighted average, definition of . . . . . 60  
 Toms River near Toms River . . . . . 303  
 Tons per acre-foot, definition of . . . . . 61  
 Tons per day, definition of . . . . . 61  
 Total, definition of . . . . . 61  
 Total coliform bacteria, definition of . . . . . 61  
 Total discharge, definition of . . . . . 61  
 Total in bottom material, definition of . . . . . 61  
 Total length, definition of . . . . . 61  
 Total load, definition of . . . . . 61  
 Total organism count, definition of . . . . . 61  
 Total recoverable, definition of . . . . . 61  
 Total sediment discharge, definition of . . . . . 61  
 Total sediment load, definition of . . . . . 62
- Trace-Element Chemistry: Kirkwood-Cohansey Aquifer  
 System Special-Study Site . . . . . 612
- Transect, definition of . . . . . 62  
 Trenton, Assunpink Creek at Peace Street, at . . . . . 450  
 Trenton, Delaware River at . . . . . 422  
 Turbidity, definition of . . . . . 62  
 Two Bridges, Passaic River at . . . . . 127  
 Two Bridges, Passaic River below Pompton River, at . . . . . 152
- U**
- Ultraviolet (UV) absorbance (absorption), definition of . . . . . 62  
 Unconfined aquifer, definition of . . . . . 62  
 Unionville, NY, Wallkill River near . . . . . 89  
 Upper Saddle River, Saddle River at Old Stone Church  
 Road, at . . . . . 188
- V**
- Valentine Brook at Allendale . . . . . 193

- Van Syckel, Mulhockaway Creek at ..... 219  
 Vertical datum, definition of ..... 62  
 Volatile mass, definition of ..... 55  
 Volatile organic compounds, definition of ..... 62  
**W**  
 Wading River, West Branch, at Maxwell ..... 326  
 Wallkill River at Sparta ..... 76  
 Wallkill River near Sussex ..... 79  
 Wallkill River near Unionville, NY ..... 89  
 Water table, definition of ..... 62  
 Water-table aquifer, definition of ..... 62  
 Water year, definition of ..... 62  
 Watershed, definition of ..... 62  
 Wawayanda, Double Kill at ..... 91  
 WDR, definition of ..... 62  
 Weighted average, definition of ..... 62  
 Wells Mills, Long Branch near ..... 307  
 Wenonah, Mantua Creek at Mantua Avenue, at ..... 520  
 Wescoatville, Hammonton Creek at ..... 318  
 West Branch Wading River at Maxwell ..... 326  
 West Collingswood, Newton Creek at ..... 508  
 West Creek near Leesburg ..... 350  
 West Farms, Manasquan River at ..... 284  
 West Milford, Green Brook near ..... 131  
 Westfield, Robinsons Branch Tributary 2 at ..... 207  
 Wet mass, definition of ..... 63  
 Wet weight, definition of ..... 63  
 Weymouth, Great Egg Harbor River at ..... 340  
 Whippany River at Ridgedale Avenue, at Morristown .. 121  
 Whippany River near Pine Brook ..... 125  
 Williamstown, Squankum Branch at Malaga Road,  
     near ..... 334  
 Woodstown, Salem River at ..... 539  
 WSP, definition of ..... 63  
**Z**  
 Zooplankton, definition of ..... 63

## Conversion Factors

Multiply	By	To obtain
<b>Length</b>		
inch (in.)	$2.54 \times 10^1$	millimeter (mm)
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter (m)
mile (mi)	$1.609 \times 10^0$	kilometer (km)
<b>Area</b>		
acre	$4.047 \times 10^3$	square meter (m <sup>2</sup> )
	$4.047 \times 10^{-1}$	square hectometer (hm <sup>2</sup> )
	$4.047 \times 10^{-3}$	square kilometer (km <sup>2</sup> )
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer (km <sup>2</sup> )
<b>Volume</b>		
gallon (gal)	$3.785 \times 10^0$	liter (L)
	$3.785 \times 10^{-3}$	cubic meter (m <sup>3</sup> )
	$3.785 \times 10^0$	cubic decimeter (dm <sup>3</sup> )
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter (m <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^{-2}$	cubic meter (m <sup>3</sup> )
	$2.832 \times 10^1$	cubic decimeter (dm <sup>3</sup> )
cubic-foot-per-second-per-day [(ft <sup>3</sup> /s/d)]	$2.447 \times 10^3$	cubic meter (m <sup>3</sup> )
	$2.447 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
acre-foot (acre-ft)	$1.223 \times 10^3$	cubic meter (m <sup>3</sup> )
	$1.223 \times 10^{-3}$	cubic hectometer (hm <sup>3</sup> )
	$1.223 \times 10^{-6}$	cubic kilometer (km <sup>3</sup> )
<b>Flow rate</b>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter (L/s)
	$2.832 \times 10^{-2}$	cubic meter per second (m <sup>3</sup> /s)
	$2.832 \times 10^1$	cubic decimeter per second (dm <sup>3</sup> /s)
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second (L/s)
	$6.309 \times 10^{-5}$	cubic meter per second (m <sup>3</sup> /s)
	$6.309 \times 10^{-2}$	cubic decimeter per second (dm <sup>3</sup> /s)
million gallons per day (Mgal/d)	$4.381 \times 10^{-2}$	cubic meter per second
	$4.381 \times 10^1$	cubic decimeter per second (dm <sup>3</sup> /s)
<b>Mass</b>		
ton, short (2,000 lb)	$9.072 \times 10^{-1}$	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$$

U.S. DEPARTMENT OF THE INTERIOR  
U.S. Geological Survey  
810 Bear Tavern Road, Suite 206  
West Trenton, NJ 08628-1099



---

1879–2004