

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 mi².

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-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 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 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...	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:

< -- 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:

< -- 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 mi².

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:

< -- 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-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 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 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 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 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 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 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	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 mi².

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 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				
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

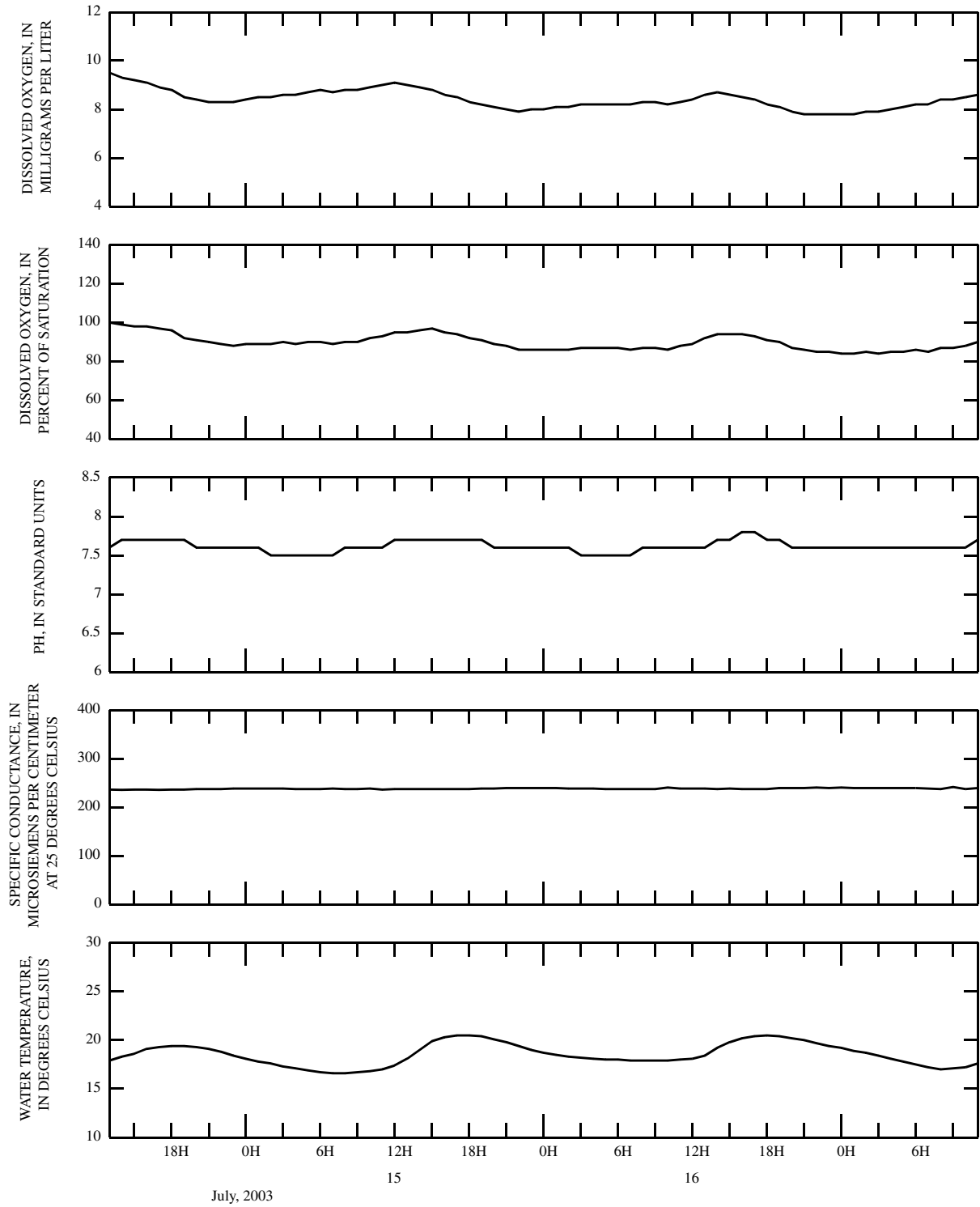


Figure 35. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01396660 Mulhockaway Creek at Van Syckel, water year 2003.

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 mi².

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, corrctd 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:

< -- 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:

< -- Less than

01398000 NESHANIC RIVER AT REAVILLE, NJ—Continued

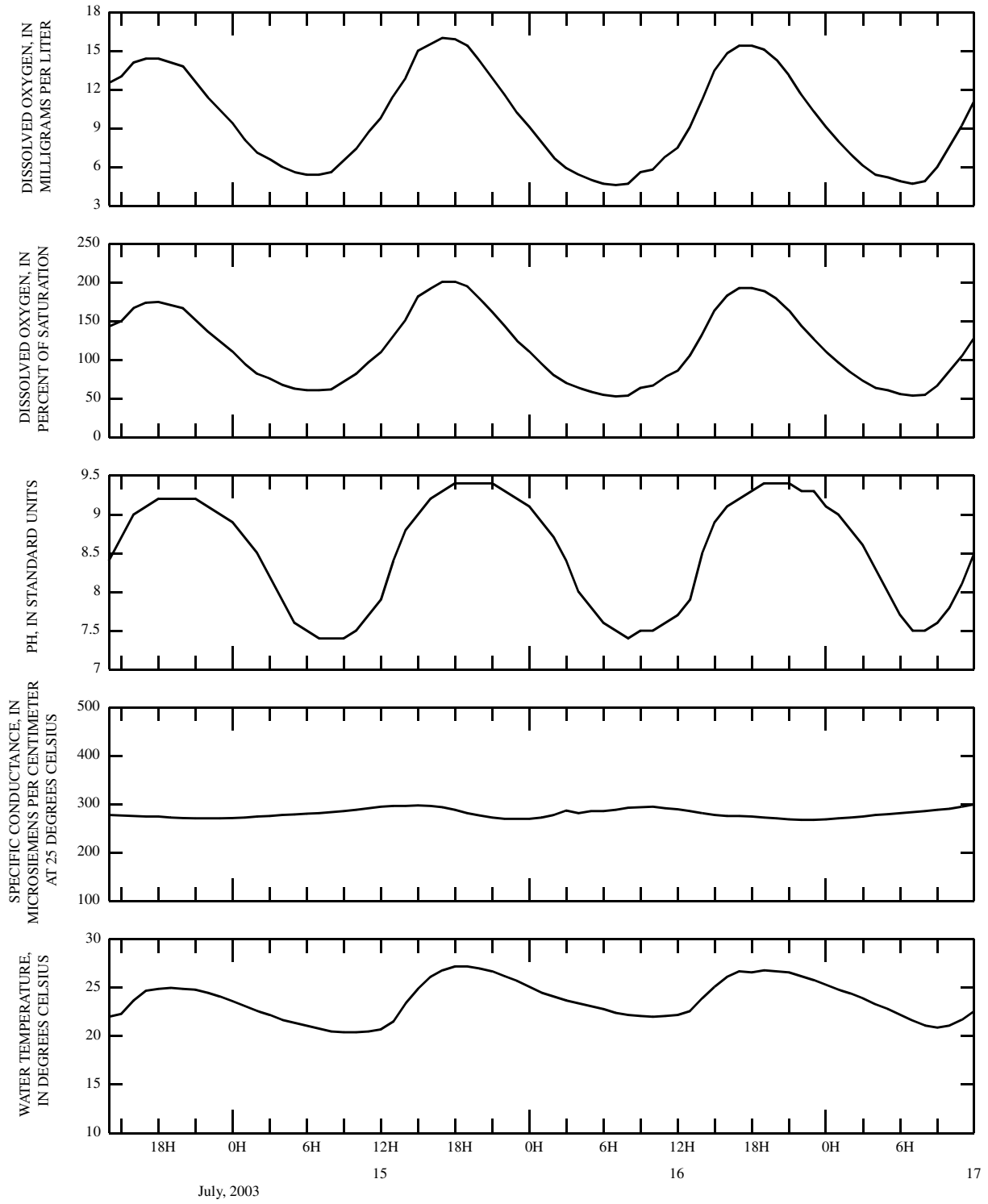


Figure 36. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01398000 Neshanic River at Reaville, water year 2003.

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 mi².

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 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	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 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...	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)	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-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 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 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:

< -- 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:

< -- 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 mi².

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 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	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					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:

< -- 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 mi².

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)	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...	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:

< -- 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:

< -- 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 mi².

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:

< -- 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 mi².

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:

< -- 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:

< -- 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 mi².

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:

< -- 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
14...	1115	10	<100	230					
21...	1130	110	100	300					
28...	0859	520	900	1,100					

Remark codes used in this table:

< -- 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 mi².

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.

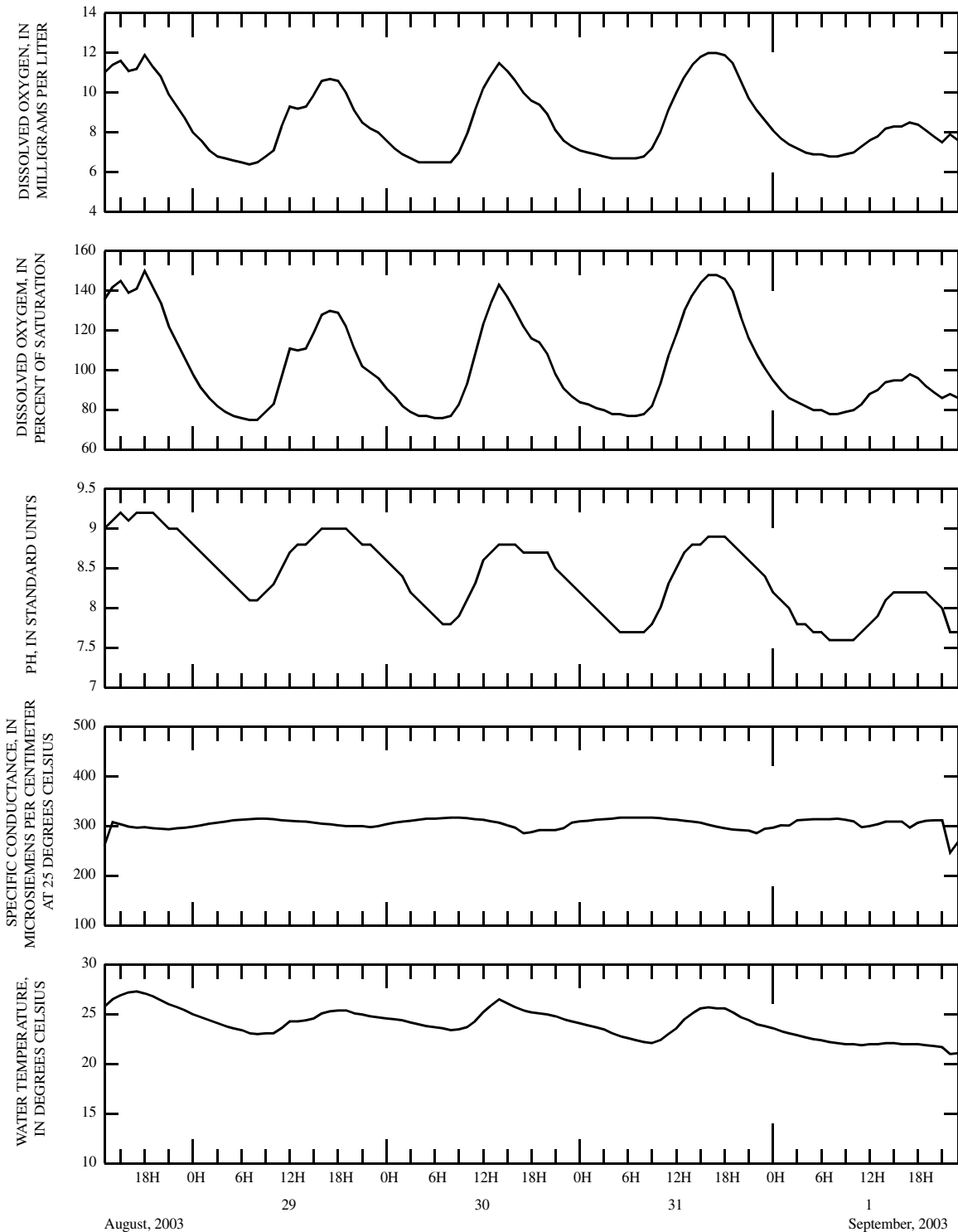


Figure 37. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01400500 Raritan River at Manville, water year 2003.

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 mi².

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 mi².

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-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 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	Chrysene, bed sed <2 mm, wsv nat field, ug/kg (49450)	Dibenzo[a,h]anthracene, bed sed <2 mm, wsv nat 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 ug/kg (49390)	Iso-phorone, bed sed <2 mm, wsv nat field, ug/kg (49400)	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)	Bed sediment 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 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 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-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...	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-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 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)
MAY					JUN				
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:

< -- 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 mi².

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	Split Replicate	--	--	--	--	--	--	--	--	--
04...	0931	Concurrent Replicate	--	--	--	--	--	--	--	--	--
MAY 28...	0910	Environmental	21	12	0.353	0.275	754	9.3	90	6.5	235
28...	0910	Split Replicate	--	--	--	--	--	--	--	--	--
28...	0911	Concurrent Replicate	--	--	--	--	--	--	--	--	--
AUG 05...	0900	Environmental	2.9	2.8	0.141	0.107	757	7.6	84	7.8	275
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)
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 mi².

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 mi².

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 ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (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:

< -- Less than

E -- Estimated value

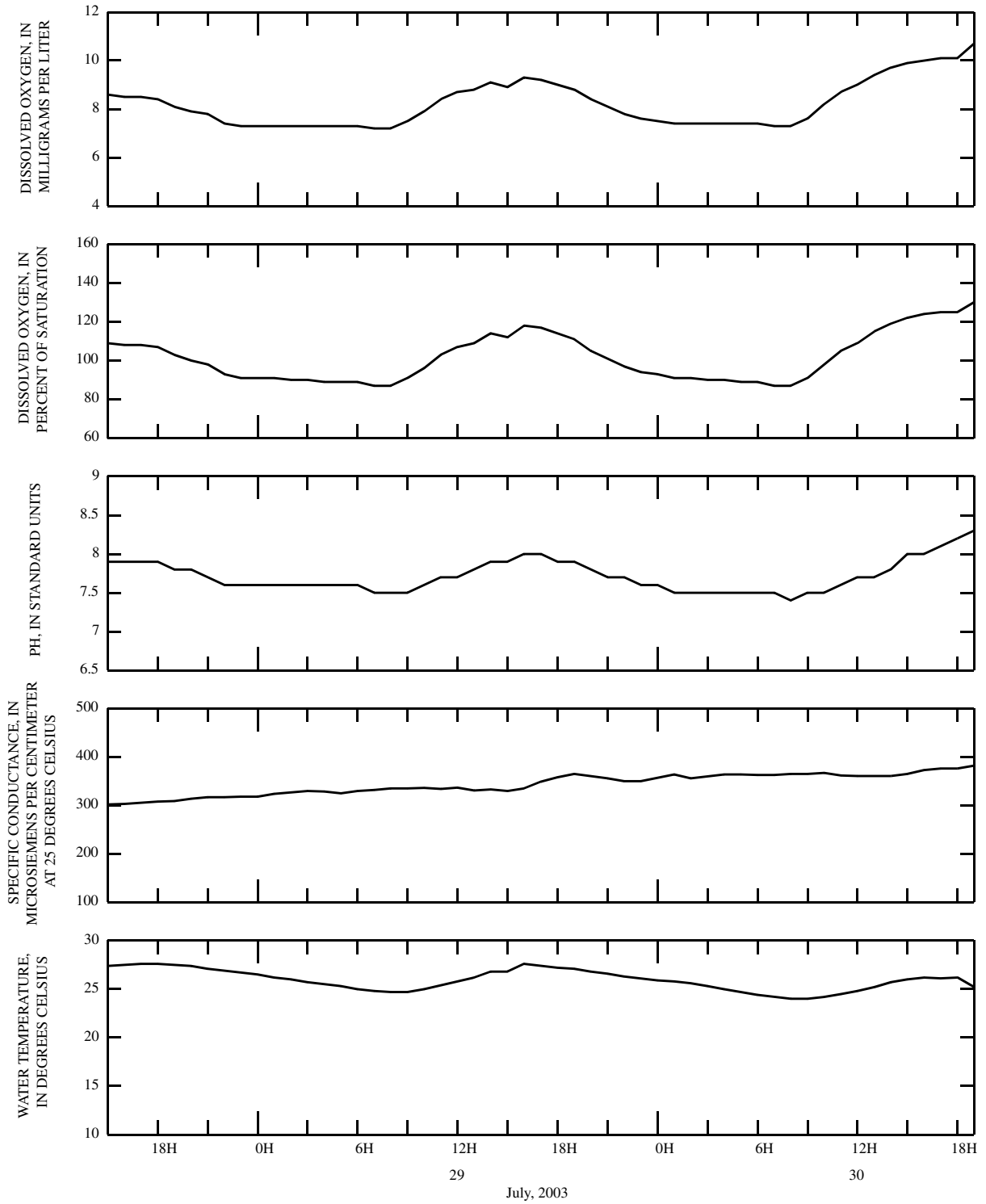


Figure 38. Reconnaissance Study--Physical characteristics and concentrations of constituents at 01403300 Raritan River at Queens Bridge, at Bound Brook, water year 2003.

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 mi².

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:

< -- 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:

< -- Less than

> -- 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 mi².

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 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 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 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 04...	1300	Environmental	<0.006	E.006	<0.006	<0.004	<0.005	0.007	<0.050	<0.010	<0.002
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
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
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 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 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
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
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
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 mi².

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 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-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 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-chloro-ethene, water, unfltrd ug/L (34475)	Tetra-chloro-methane water unfltrd ug/L (32102)	Toluene water unfltrd ug/L (34010)	trans-1,2-Dichloro-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

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 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 mi².

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, corrcrtd 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... 07...	1045 1200	-- 6.30	-- 280	-- 9,700	-- 5.1	-- <0.2	E1 --	29.4 --	E.04 --	52 --	E.02 --	<0.8 --	1.6 --

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... 07...	2,310 --	0.39 --	154 --	<0.02 --	5.69 --	0.5 --	<0.16 --	11 --	-- 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-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 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, 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 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	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	0.02	<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 mi².

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