

**01395000 RAHWAY RIVER AT RAHWAY, NJ**

RAHWAY RIVER BASIN

LOCATION.--Lat 40°37'08", long 74°17'00" referenced to North American Datum of 1983, Rahway City, Union County, NJ, Hydrologic Unit 02030104, on left bank, 100 ft upstream from bridge on St. Georges Avenue in Rahway, and 0.9 mi upstream from Robinsons Branch, and 1.7 mi southwest of Linden.

DRAINAGE AREA.--40.9 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

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

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 8.77 ft above NGVD of 1929. Prior to Aug 25, 1934, non-recording gage at site 40 ft downstream from Church Street and 1,500 ft downstream from present site at datum 2.77 ft lower.

REMARKS.--Records good, except for estimated daily discharges which are fair. Water for municipal supply diverted from river by cities of Rahway and Orange. The flow past this station is affected by diversions by pumpage from wells by the communities of Orange and South Orange, Springfield station of Elizabethtown Water Company (now New Jersey American Water Company, wells deactivated in late 1980s), by storage in the Lenape Park Detention Basin (since 1980), and by gate operations at Hansels Dam 5.6 mi upstream from gage in Cranford and Taylor Park Dam on the West Branch Rahway River in Millburn 11.6 mi upstream from gage. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec 9	1215	1,590	4.98
Dec 27	1115	1,070	4.21
Mar 14	0100	*3,690	*8.12
Mar 23	1045	1,010	4.10
Mar 30	2045	1,450	4.85

## 01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**  
**DAILY MEAN VALUES**

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	13	49	35	57	29	115	147	38	26	12	197	6.6
2	11	33	24	54	29	142	107	36	26	11	78	6.8
3	15	25	233	40	32	140	87	355	21	10	14	6.1
4	13	22	65	35	32	125	75	136	20	10	11	7.0
5	11	22	44	34	27	103	67	57	18	10	9.1	6.6
6	11	30	95	32	28	84	61	44	18	9.1	9.6	7.1
7	13	25	45	34	26	73	56	37	17	9.0	7.4	7.2
8	15	19	31	31	25	77	53	39	17	9.3	7.4	6.5
9	12	17	822	28	24	81	92	38	29	12	8.5	6.3
10	13	18	453	26	31	69	56	35	165	13	7.2	7.1
11	12	19	76	26	41	59	46	36	47	12	6.8	6.9
12	12	18	47	26	39	72	42	98	23	9.6	6.5	9.3
13	13	19	114	25	33	e1,460	41	53	21	28	9.5	25
14	12	54	267	25	29	e2,890	39	45	38	178	7.6	73
15	27	42	77	25	29	1,000	39	43	20	65	7.5	12
16	72	25	51	25	38	213	41	34	19	16	23	19
17	27	21	41	51	38	125	130	33	120	12	24	93
18	43	21	37	137	29	102	47	146	25	10	8.6	13
19	24	22	32	49	35	81	39	160	18	11	7.1	9.1
20	12	157	36	35	51	69	35	45	18	10	6.2	8.3
21	10	58	34	30	48	61	37	35	17	9.3	5.8	7.8
22	10	29	30	28	42	106	43	29	29	8.8	14	7.9
23	11	21	29	26	229	744	33	34	80	10	170	17
24	213	18	27	25	518	167	31	27	20	18	42	9.7
25	436	19	28	310	233	74	220	26	17	17	59	7.9
26	49	20	229	351	197	95	264	24	15	25	31	6.7
27	83	19	917	73	127	68	217	24	14	9.5	12	37
28	358	19	201	52	103	65	69	52	14	7.9	9.1	56
29	184	20	80	44	---	627	51	26	15	44	8.5	22
30	46	25	53	33	---	899	44	24	12	38	7.2	198
31	32	---	48	32	---	798	---	22	---	9.8	7.1	---
<b>Total</b>	1,813	906	4,301	1,799	2,142	10,784	2,309	1,831	939	654.3	821.7	705.9
<b>Mean</b>	58.5	30.2	139	58.0	76.5	348	77.0	59.1	31.3	21.1	26.5	23.5
<b>Max</b>	436	157	917	351	518	2,890	264	355	165	178	197	198
<b>Min</b>	10	17	24	25	24	59	31	22	12	7.9	5.8	6.1

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2010, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	33.0	44.5	51.8	53.1	58.5	81.5	71.9	53.3	40.7	42.7	39.2	38.9
<b>Max</b>	197	221	255	211	156	348	345	199	199	268	242	231
<b>(WY)</b>	(1997)	(1973)	(1984)	(1979)	(1925)	(2010)	(2007)	(1989)	(2003)	(1975)	(1971)	(1999)
<b>Min</b>	1.48	3.05	3.27	1.41	8.15	12.6	7.80	6.20	3.32	0.33	0.43	2.26
<b>(WY)</b>	(1964)	(1966)	(1981)	(1981)	(2002)	(1981)	(1963)	(1965)	(1965)	(1966)	(1964)	(1964)

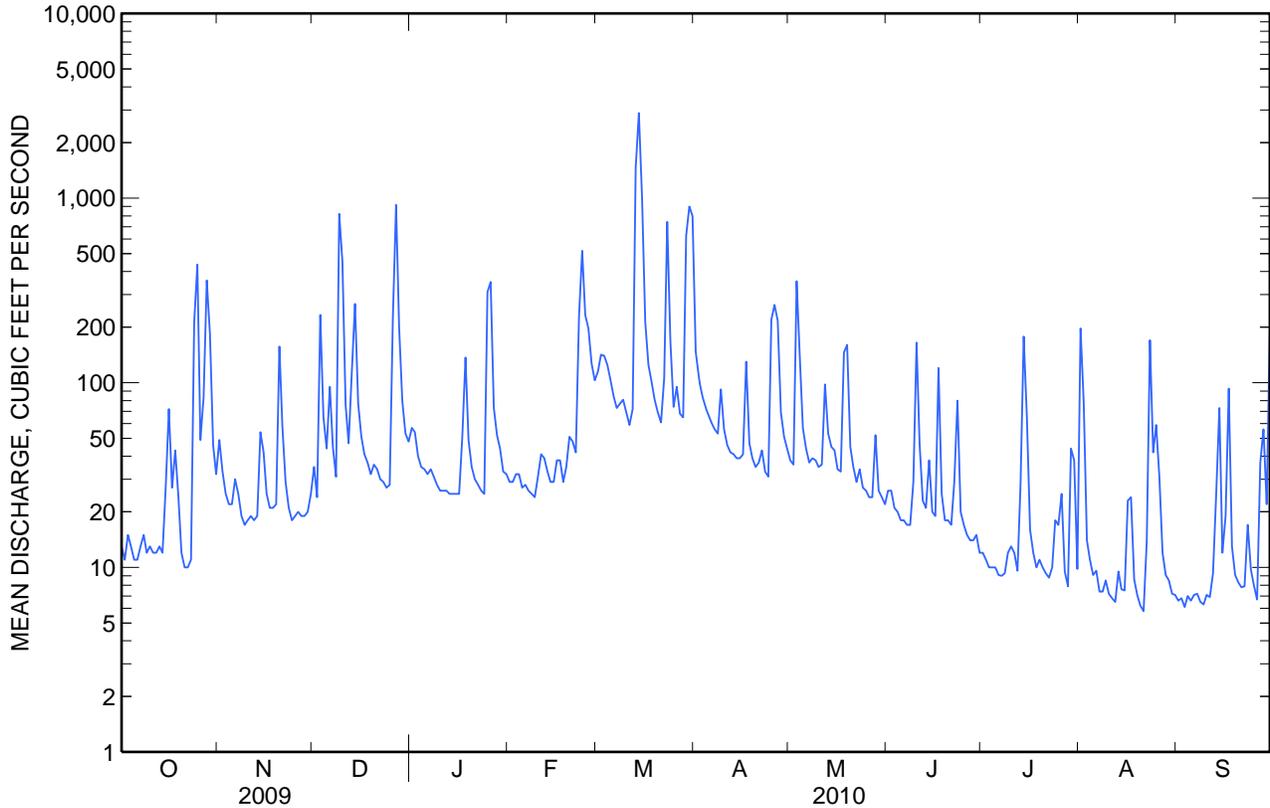
01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

SUMMARY STATISTICS

	Calendar Year 2009		Water Year 2010		Water Years 1922 - 2010	
<b>Annual total</b>	22,806		29,005.9			
<b>Annual mean</b>	62.5		79.5		50.7	
<b>Highest annual mean</b>					105	1973
<b>Lowest annual mean</b>					15.0	1965
<b>Highest daily mean</b>	917	Dec 27	<sup>a</sup> 2,890	Mar 14	<sup>a</sup> 3,670	Sep 17, 1999
<b>Lowest daily mean</b>	10	Sep 23	5.8	Aug 21	0.00	Oct 9, 1964
<b>Annual seven-day minimum</b>	12	Sep 20	6.7	Sep 3	0.00	Jul 10, 1981
<b>Maximum peak flow</b>			3,690	Mar 14	5,590	Sep 17, 1999
<b>Maximum peak stage</b>			<sup>b</sup> 8.12	Mar 14	<sup>b</sup> 9.60	Sep 17, 1999
<b>Instantaneous low flow</b>			5.6	Many days	0.00	Many days
<b>10 percent exceeds</b>	134		158		103	
<b>50 percent exceeds</b>	30		31		20	
<b>90 percent exceeds</b>	15		9.1		3.9	

<sup>a</sup> Estimated.

<sup>b</sup> From high-water mark inside gage house.



## 01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1923-24, 1952, 1962, 1967-70, 1979 to current year.

REMARKS.--Cooperative Network Site Descriptor: Watershed Integrator, New Jersey Department of Environmental Protection Watershed Management Area 7.

COOPERATION.--Physical measurements and samples for laboratory analyses were provided by personnel of the NJ Department of Environmental Protection. Determinations of dissolved ammonia, dissolved orthophosphate, and suspended residue were performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory.

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 1 of 5

[% , percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; cm, centimeter; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Absorbance, UV, 254 nm, 1 cm path length, water, filtered, units per centimeter (50624)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per centimeter (61726)	Discharge, instantaneous, ft <sup>3</sup> /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
11-24-2009	0930	767	13.0	.163	.127	23	8.3	74	7.8
02-01-2010	1030	768	3.0	.067	.050	28	13.7	97	8.0
06-14-2010	1015	760	22.5	.146	.108	41	5.9	66	7.7
08-23-2010	1000	760	22.5	.191	.143	197	6.9	80	7.4

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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Date	Specific conductance, water, unfiltered, μS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Dissolved solids, water, filtered, sum of constituents, milligrams per liter (70301)	Hardness, water, mg/L as CaCO <sub>3</sub> (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)
11-24-2009	503	10.1	3.4	294	277	161	4	50.2	8.78
02-01-2010	920	1.2	4.6	514	481	204	3	61.9	12.0
06-14-2010	477	20.6	4.0	296	E 264	161	7	51.5	8.00
08-23-2010	216	22.9	19	127	E 110	60.4	20	18.7	3.34

## 01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

**WATER-QUALITY DATA**  
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[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; cm, centimeter; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, fixed endpoint (pH 4.5)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Inorganic carbon, suspended sediment, total, mg/L (00688)	Silica, water, filtered, mg/L as SiO <sub>2</sub> (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)
			titration, laboratory, mg/L as CaCO <sub>3</sub> (90410)	titration, laboratory, mg/L as CaCO <sub>3</sub> (90410)						
11-24-2009	2.67	33.8	104	.43	71.9	.13	< .06	14.1	29.9	.40
02-01-2010	1.98	86.4	118	.41	189	.10	< .06	15.5	35.4	.27
06-14-2010	2.00	33.0	100	.52	69.5	E .08	< .06	12.5	23.8	.36
08-23-2010	1.88	14.7	40	1.64	28.8	E .05	< .06	4.6	11.2	.41

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; cm, centimeter; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Orthophos phate, water, filtered, mg/L as P (00671)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphoru s, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, mg/L (00602)	Total nitrogen, water, unfiltered, mg/L (00600)	Organic carbon, suspended sediment, total, mg/L (00689)
		mg/L as N (00631)	mg/L as P (00671)	mg/L (49570)	mg/L as P (00666)	mg/L as P (00665)	mg/L (00602)	mg/L (00600)	mg/L (00689)
11-24-2009	.068	.63	.058	.04	.061	.114	1.0	1.1	.43
02-01-2010	.081	1.63	.020	.06	.018	.063	1.9	2.0	.40
06-14-2010	.069	.80	--	.07	.091	.146	1.2	1.2	.50
08-23-2010	.084	.65	--	.16	.109	.192	1.1	1.2	1.61

01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

**WATER-QUALITY DATA  
WATER YEAR OCTOBER  
2009 TO SEPTEMBER  
2010**

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[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; cm, centimeter; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Organic carbon, water, filtered, mg/L (00681)
11-24-2009	4.5
02-01-2010	2.5
06-14-2010	4.3
08-23-2010	5.2

**WATER-QUALITY DATA  
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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[<, less than; E, estimated]

Date	Sample start time	Moisture content, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, percent (49282)	pH, bed sediment, standard units (70310)	Carbon (inorganic plus organic), bed sediment, total, dry weight, grams per kilogram (00693)	Inorganic carbon, bed sediment, total, dry weight, grams per kilogram (00686)	Phosphorus, bed sediment, total, dry weight, milligrams per kilogram as phosphorus (00668)	Cadmium, bed sediment, recoverable, dry weight, milligrams per kilogram (01028)	Chromium, bed sediment, recoverable, dry weight, milligrams per kilogram (01029)	Cobalt, bed sediment, recoverable, dry weight, milligrams per kilogram (01038)	Copper, bed sediment, recoverable, dry weight, milligrams per kilogram (01043)
08-23-2010	0945	26	7.30	15	.4	< 6.5	.310	21	6.0	27

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**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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[<, less than; E, estimated]

Date	Iron, bed sediment, total digestion, dry weight, milligrams per kilogram (01170)	Lead, bed sediment, recoverable, dry weight, milligrams per kilogram (01052)	Manganese, bed sediment, recoverable, dry weight, milligrams per kilogram (01053)	Mercury, bed sediment, recoverable, dry weight, milligrams per kilogram (71921)	Nickel, bed sediment, recoverable, dry weight, milligrams per kilogram (01068)	Zinc, bed sediment, recoverable, dry weight, milligrams per kilogram (01093)	Arsenic, bed sediment, recoverable, dry weight, milligrams per kilogram (64847)	Selenium, bed sediment, recoverable, dry weight, milligrams per kilogram (64848)	p-Cresol, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49451)	PCBs, bed sediment, recoverable, dry weight, micrograms per kilogram (39519)
08-23-2010	16,000	86	330	.031	13.4	120	2.6	.1	E 16	42.7

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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[<, less than; E, estimated]

Date	1,2-Dimethylnaphthalene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49403)	1,6-Dimethylnaphthalene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49404)	1-Methyl-9H-fluorene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49398)	1-Methylphenanthrene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49410)	1-Methylpyrene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49388)	2,3,6-Trimethylnaphthalene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49405)	2,6-Dimethylnaphthalene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49406)	2-Ethyl-naphthalene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49948)	2-Methylanthracene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49435)	4H-Cyclopenta[def]phenanthrene, bed sediment smaller than 2 millimeters, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49411)
08-23-2010	E 4	E 10	E 16	100	71	E 10	E 16	E 6	72	180

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**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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[<, less than; E, estimated]

Date	9H-Fluorene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49399)	Acenaphthene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49429)	Acenaphthylene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49428)	Anthracene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49434)	Benzo[a]anthracene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49436)	Benzo[a]pyrene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49389)	Benzo[b]fluoranthene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49458)	Benzo[ghi]perylene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49408)	Benzo[k]fluoranthene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49397)	Chrysene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49450)
08-23-2010	89	E 53	55	260	790	730	E 1,400	E 190	E 550	930

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

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[<, less than; E, estimated]

Date	Dibenzo[a,h]anthracene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49461)	Fluoranthene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49466)	Indeno[1,2,3-cd]pyrene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49390)	Isophorone, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49400)	Naphthalene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49402)	Phenanthrene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49409)	Phenanthrene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49393)	Pyrene, bed sediment smaller than 2 millimeter s, wet sieved (native water), field, recoverable, dry weight, micrograms per kilogram (49387)	Bed sediment, dry sieved, sieve diameter, percent smaller than 0.0625 millimeters (80164)
08-23-2010	E 84	1,600	E 240	< 55	E 27	1,100	E 38	1,300	.0