



Water-Data Report 2009

## 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. 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 12	0645	*1,550	*4.93
Apr 21	0115	1,050	4.17

## 01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	58	19	144	37	30	23	26	48	22	47	156	22
2	29	15	44	35	36	26	84	64	47	47	288	19
3	17	13	27	33	46	24	190	65	60	59	282	18
4	13	13	24	30	41	23	171	102	256	29	50	16
5	21	16	23	30	29	24	52	129	132	25	35	14
6	19	52	21	28	26	26	95	177	145	23	27	13
7	13	28	21	283	27	28	102	633	45	22	25	13
8	12	19	19	173	38	26	45	222	31	22	22	15
9	13	29	17	60	63	30	36	172	175	19	23	14
10	11	17	36	45	38	36	31	82	79	19	31	13
11	10	15	200	53	37	26	76	53	58	18	21	29
12	11	14	1,280	46	49	22	69	44	199	69	69	82
13	12	53	282	37	37	21	35	41	61	22	89	25
14	10	105	68	35	30	21	34	37	81	19	44	15
15	9.7	143	36	31	28	21	74	37	89	17	40	13
16	9.9	241	43	28	25	21	37	34	62	16	19	13
17	9.1	47	128	25	24	21	30	84	37	16	17	13
18	10	28	81	27	27	20	28	39	345	34	16	13
19	9.0	23	58	30	52	23	26	31	397	16	22	13
20	9.3	22	83	29	32	26	85	30	110	14	14	12
21	10	23	86	27	25	21	554	29	130	111	29	12
22	9.6	20	78	27	24	20	127	27	85	47	372	11
23	9.7	21	40	26	27	20	68	26	52	21	82	10
24	9.7	20	101	29	23	18	46	25	58	22	28	16
25	22	81	394	26	23	18	40	26	51	17	22	12
26	147	35	126	25	23	22	37	25	59	49	17	10
27	18	22	80	24	23	75	33	25	54	234	20	127
28	335	19	99	84	25	27	30	25	32	48	104	38
29	187	18	84	136	---	61	28	74	30	212	174	18
30	34	60	55	50	---	69	27	31	32	303	90	16
31	21	---	46	32	---	32	---	24	---	105	30	---
<b>Total</b>	1,109.0	1,231	3,824	1,581	908	871	2,316	2,461	3,014	1,722	2,258	655
<b>Mean</b>	35.8	41.0	123	51.0	32.4	28.1	77.2	79.4	100	55.5	72.8	21.8
<b>Max</b>	335	241	1,280	283	63	75	554	633	397	303	372	127
<b>Min</b>	9.0	13	17	24	23	18	26	24	22	14	14	10

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2009, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	32.7	44.6	50.8	53.1	58.3	78.5	71.9	53.3	40.8	43.0	39.3	39.1
<b>Max</b>	197	221	255	211	156	190	345	199	199	268	242	231
<b>(WY)</b>	(1997)	(1973)	(1984)	(1979)	(1925)	(1983)	(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)

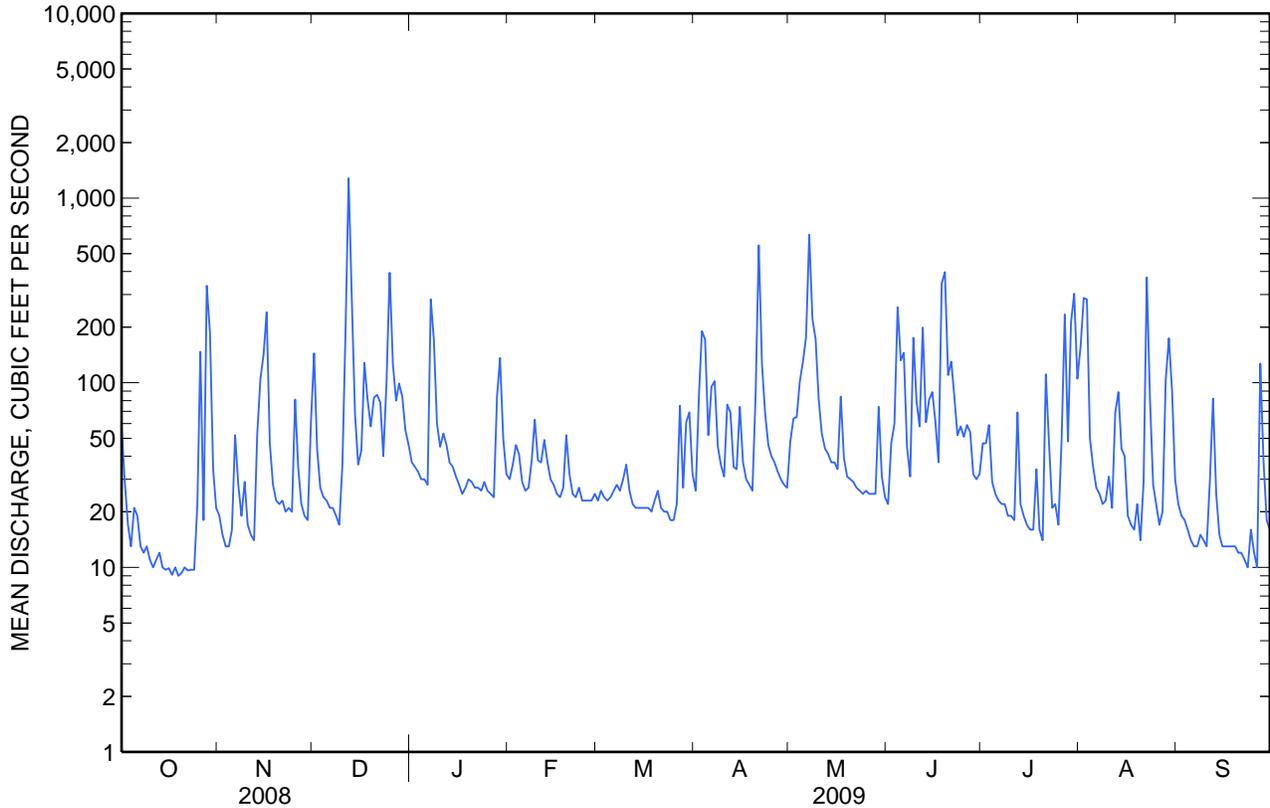
01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1922 - 2009	
<b>Annual total</b>	23,558.8		21,950.0			
<b>Annual mean</b>	64.4		60.1		50.4	
<b>Highest annual mean</b>					105	1973
<b>Lowest annual mean</b>					15.0	1965
<b>Highest daily mean</b>	1,280	Dec 12	1,280	Dec 12	<sup>a</sup> 3,670	Sep 17, 1999
<b>Lowest daily mean</b>	8.4	Sep 4	9.0	Oct 19	0.00	Oct 9, 1964
<b>Annual seven-day minimum</b>	9.5	Aug 23	9.5	Oct 17	0.00	Jul 10, 1981
<b>Maximum peak flow</b>			1,550	Dec 12	5,590	Sep 17, 1999
<b>Maximum peak stage</b>			4.93	Dec 12	<sup>b</sup> 9.60	Sep 17, 1999
<b>Instantaneous low flow</b>			2.4	Oct 27	0.00	Oct 1, 1981
<b>10 percent exceeds</b>	127		129		102	
<b>50 percent exceeds</b>	31		30		20	
<b>90 percent exceeds</b>	12		14		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 2008 TO SEPTEMBER 2009**

Part 1 of 3

[Remark codes: <, less than; E, estimated.]

Date	Time	Baro- metric pres- sure, mm Hg (00025)	Temper- ature, air, deg C (00020)	UV absorb- ance, 254 nm, wat flt units /cm (50624)	UV absorb- ance, 280 nm, wat flt units /cm (61726)	Instan- taneous dis- charge, ft <sup>3</sup> /s (00061)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif- ic conduc- tance, wat unf μS/cm @ 25 degC (00095)	Temper- ature, water, deg C (00010)	Turbdty white light, det ang 90+/-30 corrctd NTRU (63676)	Dis- solved solids dried @ 180degC wat flt mg/L (70300)
Nov 06...	0830	761	17.0	.119	.093	58	8.1	76	7.8	569	12.5	6.9	333
Feb 03...	0900	758	3.5	.064	.048	44	13.5	99	7.9	1,350	2.4	4.5	723
May 26...	1045	770	20.0	.083	.062	29	6.9	76	7.9	743	19.6	4.8	459
Aug 24...	1015	764	25.0	.205	.154	17	5.5	64	7.5	350	23.2	3.4	199

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 2 of 3

[Remark codes: <, less than; E, estimated.]

Date	Dis- solved solids, sum of consti- tuents, mg/L (70301)	Hard- ness, water, mg/L as CaCO3 (00900)	Sus- pended solids, water, unfltrd mg/L (00530)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (90410)	Total carbon, suspnd sedimnt total, mg/L (00694)	Chlor- ide, water, fltrd, mg/L (00940)	Fluor- ide, water, fltrd, mg/L (00950)	Inor- ganic carbon, suspnd sedimnt total, mg/L (00688)	Silica, water, fltrd, mg/L as SiO2 (00955)
Nov 06...	E312	190	2	58.5	10.5	2.47	34.8	120	.7	80.4	E.10	<.04	15.2
Feb 03...	E682	240	6	72.7	13.3	2.35	172	114	.5	298	E.08	<.04	13.6
May 26...	E409	240	4	73.4	14.1	2.26	52.5	135	.6	127	E.09	<.04	16.3
Aug 24...	E184	100	5	30.8	5.62	2.07	24.3	63	.5	50.0	E.06	<.04	9.2

## 01395000 RAHWAY RIVER AT RAHWAY, NJ—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**

Part 3 of 3

[Remark codes: &lt;, less than; E, estimated.]

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia	Nitrate	Ortho-	Partic-	Phos-	Phos-	Total	Total	Organic	Organic	
		+ org-N, water, fltrd, mg/L as N (00623)	Ammonia water, fltrd, mg/L as N (00608)	+ nitrite water, fltrd, mg/L as N (00631)	phos- phate, water, fltrd, mg/L as P (00671)	ulate nitro- gen, susp, water, mg/L (49570)	phorus, water, fltrd, mg/L as P (00666)	phorus, water, unfltrd mg/L as P (00665)	nitro- gen, water, fltrd, mg/L (00602)	nitro- gen, water, unfltrd mg/L (00600)	carbon suspnd sedimnt total, mg/L (00689)	carbon, water, fltrd, mg/L (00681)
<b>Nov</b>												
<b>06...</b>	33.3	.29	.063	.97	.041	.09	.051	.120	1.3	1.4	.74	3.7
<b>Feb</b>												
<b>03...</b>	34.7	.27	.053	1.53	.018	.07	.019	.059	1.8	1.9	.50	2.3
<b>May</b>												
<b>26...</b>	37.3	.40	.099	1.10	.065	.07	.076	.119	1.5	1.6	.62	2.9
<b>Aug</b>												
<b>24...</b>	20.5	.45	.053	.73	.077	.04	.097	.126	1.2	1.2	.52	5.7