



Water-Data Report 2010

01482500 SALEM RIVER AT WOODSTOWN, NJ

DELAWARE RIVER BASIN

LOCATION.--Lat 39°38'38", long 75°19'49" referenced to North American Datum of 1983, Woodstown Borough, Salem County, NJ, Hydrologic Unit 02040206, on right end of Memorial Lake Dam at Woodstown, 0.3 mi upstream from Chestnut Run, and 0.3 mi downstream from Salem County railroad bridge.

DRAINAGE AREA.--14.6 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--March to September 1940, December 1941 to January 1984, June to December 1989, October 2002 to current year. Operated as crest-stage gage 1985-95. Prior to 1952, published as "Salem Creek at Woodstown".

REVISED RECORDS.--WDR NJ-82-2: Drainage area.

GAGE.--Water-stage and precipitation recorder above concrete dam. Datum of gage is 29.49 ft above NGVD of 1929.

REMARKS.--Records fair, except for estimated daily discharges and daily discharges below 5 ft³/s, which are poor. Occasional regulation from lake gate operations or other activities upstream. 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 350 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct 28	1100	450	11.90
Dec 3	0800	397	11.84
Dec 9	1245	1,060	12.43
Dec 26	2300	768	12.20
Feb 23	2215	414	11.86
Mar 13	2015	*1,120	*12.47
Mar 29	0900	459	11.91

Water-Data Report 2010

01482500 SALEM RIVER AT WOODSTOWN, 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	4.2	23	e19	48	21	56	58	18	11	8.7	6.2	4.7
2	3.7	22	e19	e41	20	55	45	18	11	7.0	4.6	4.5
3	3.7	17	193	e28	22	50	39	18	11	6.7	3.7	3.7
4	5.0	15	40	e24	24	45	36	17	11	6.7	3.7	3.2
5	4.2	16	42	e25	22	37	35	15	11	6.7	4.2	3.6
6	3.7	15	95	e27	28	31	35	13	11	6.7	5.3	3.7
7	3.6	15	33	e26	27	29	33	13	9.9	6.7	6.0	4.5
8	3.9	e14	25	e28	24	28	30	13	8.5	6.7	5.5	4.5
9	3.7	e14	411	e28	22	28	57	10	9.6	13	4.0	4.3
10	3.7	e14	78	e25	34	26	37	8.5	15	15	3.7	3.9
11	3.7	e15	32	e25	39	26	29	9.3	13	17	3.7	3.7
12	3.7	e32	25	e25	31	36	28	17	10	10	5.5	4.2
13	3.7	e37	94	e25	29	508	26	16	13	10	6.1	4.4
14	3.7	27	113	e25	28	233	28	14	27	58	6.1	5.1
15	5.8	23	39	e25	26	117	26	17	16	49	5.6	5.1
16	8.1	19	28	e28	28	68	26	14	10	15	7.9	6.0
17	15	17	25	e42	28	45	34	13	8.5	11	7.9	14
18	55	15	24	65	27	40	26	56	7.7	9.4	6.8	11
19	23	16	25	34	32	36	25	44	6.7	8.5	6.7	6.8
20	12	31	31	28	39	34	25	22	6.7	8.7	6.7	4.9
21	10	23	28	25	41	31	25	19	7.2	11	6.1	3.7
22	10	18	25	25	42	50	29	16	6.7	10	6.8	4.4
23	8.8	17	25	23	185	112	25	18	6.8	8.5	12	16
24	18	e20	25	22	235	44	21	20	14	7.6	9.1	10
25	77	e19	29	129	126	34	27	18	28	11	6.7	5.9
26	20	e17	499	82	68	45	91	16	13	17	6.7	3.7
27	24	e16	250	35	49	37	75	15	9.6	9.9	5.9	5.5
28	214	e14	56	28	51	32	33	11	21	7.4	5.4	7.9
29	49	e13	37	23	---	220	26	13	53	7.1	5.1	7.3
30	23	e15	28	20	---	164	21	15	13	6.7	5.1	18
31	20	---	29	21	---	173	---	12	---	6.7	5.1	---
Total	646.9	569	2,422	1,055	1,348	2,470	1,051	538.8	399.9	383.4	183.9	188.2
Mean	20.9	19.0	78.1	34.0	48.1	79.7	35.0	17.4	13.3	12.4	5.93	6.27
Max	214	37	499	129	235	508	91	56	53	58	12	18
Min	3.6	13	19	20	20	26	21	8.5	6.7	6.7	3.7	3.2
Cfsm	1.43	1.30	5.35	2.33	3.30	5.46	2.40	1.19	0.91	0.85	0.41	0.43
In.	1.65	1.45	6.17	2.69	3.43	6.29	2.68	1.37	1.02	0.98	0.47	0.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2010, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	13.3	19.1	24.5	25.1	27.6	29.8	26.2	17.3	15.1	14.4	12.9	14.7
Max	43.0	50.9	78.1	82.7	55.7	79.7	72.6	38.5	45.6	66.1	47.5	172
(WY)	(2006)	(1973)	(2010)	(1978)	(1971)	(2010)	(2007)	(1983)	(1983)	(1984)	(1958)	(1940)
Min	3.11	3.91	4.99	5.22	11.5	9.33	7.67	4.99	2.75	0.98	0.55	1.97
(WY)	(1966)	(1966)	(1966)	(1966)	(1980)	(1966)	(1966)	(1955)	(1954)	(1955)	(1966)	(2007)

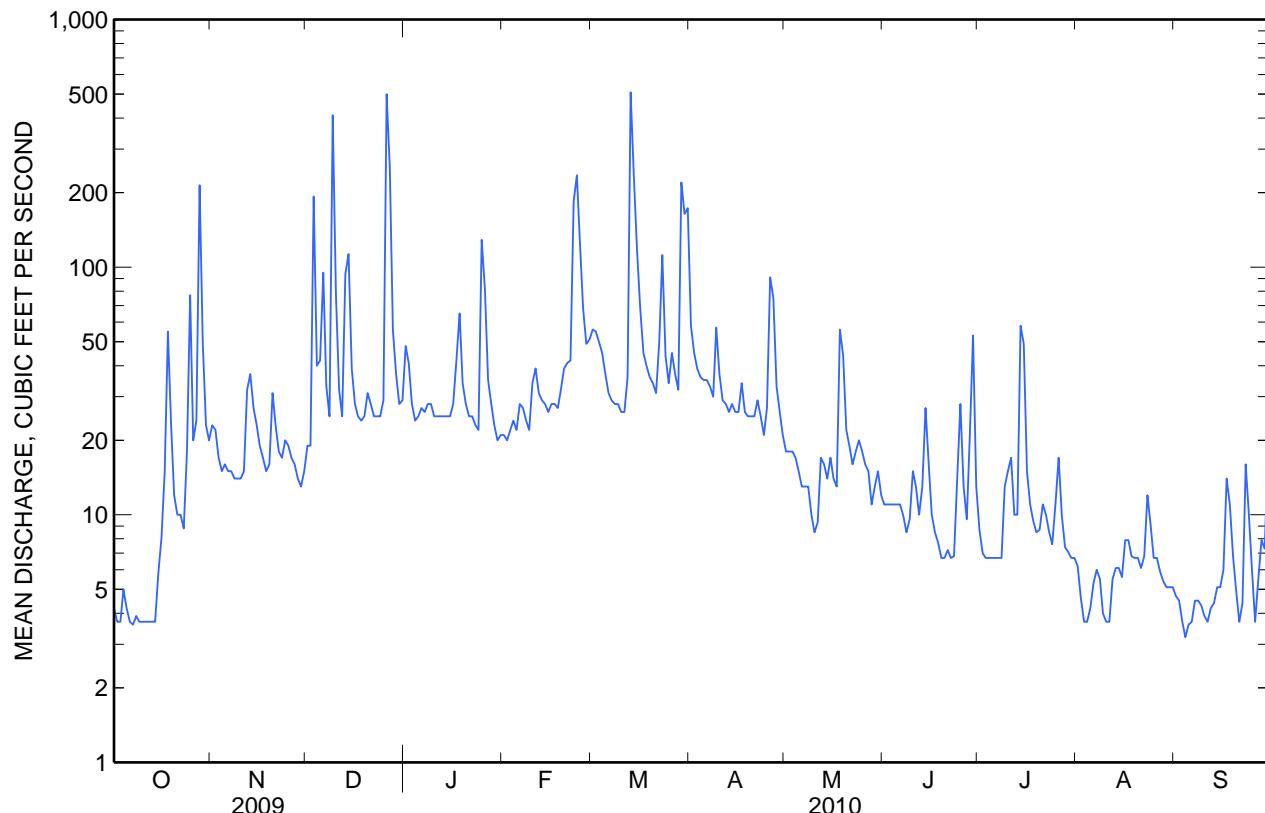
01482500 SALEM RIVER AT WOODSTOWN, NJ—Continued**SUMMARY STATISTICS**

	Calendar Year 2009		Water Year 2010		Water Years 1940 - 2010	
Annual total	8,089.7		11,256.1			
Annual mean	22.2		30.8		19.7	
Highest annual mean					30.8	1984
Lowest annual mean					5.71	1966
Highest daily mean	499	Dec 26	508	Mar 13	4,460	Sep 1, 1940
Lowest daily mean	2.5	Jul 10	3.2	Sep 4	0.00	Many days
Annual seven-day minimum	3.1	Jul 9	3.7	Oct 6	0.20	Jul 24, 1954
Maximum peak flow			1,120	Mar 13	^a 22,000	Sep 1, 1940
Maximum peak stage			12.47	Mar 13	^b 17.98	Sep 1, 1940
Instantaneous low flow			2.5	Many days	^c 0.00	Many days
Annual runoff (cfsm)	1.52		2.11		1.35	
Annual runoff (inches)	20.61		28.68		18.30	
10 percent exceeds	37		52		35	
50 percent exceeds	12		18		12	
90 percent exceeds	4.6		4.8		4.4	

^a From rating curve extended above 220 ft³/s on basis of slope-area measurement of peak flow at site 0.5 mi downstream.

^b From floodmark.

^c No flow short periods during many days just after waste gate was closed and water was below spillway.



01482500 SALEM RIVER AT WOODSTOWN, NJ—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1973 to current year.

REMARKS.--Cooperative Network Site Descriptor: Agricultural Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 17.

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; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/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 ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
12-08-2009	0830	770	1.5	.341	.267	25	8.6	74	7.1
02-17-2010	0900	752	-1.0	.142	.113	28	11.0	77	7.2
05-11-2010	0930	773	12.5	.185	.142	11	10.1	100	9.2
09-07-2010	0900	767	23.5	.197	.149	5.1	7.3	86	8.3

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

Part 2 of 5

[%; percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/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	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 °C ± 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids, dried at 180 °C, water, filtered, mg/L (70300)	Dissolved solids, dried at 180 °C, water, filtered, milligrams per liter (70301)	Hardness, water, mg/L as CaCO ₃ (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	Magnesium, water, filtered, mg/L (00925)
12-08-2009	215	4.7	23	139	119	65.7	19	14.9	6.95
02-17-2010	323	1.4	15	181	172	81.8	15	18.5	8.67
05-11-2010	275	15.5	18	162	150	94.5	22	21.3	10.0
09-07-2010	281	23.1	24	165	E 146	98.3	24	21.2	11.0

01482500 SALEM RIVER AT WOODSTOWN, NJ—Continued
**WATER-QUALITY DATA
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 3 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/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) titration, laboratory, mg/L as CaCO ₃ (90410)	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 ₂ (00955)	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)
12-08-2009	6.31	7.68	30	1.69	18.3	.09	E .04	8.3	27.9	.77
02-17-2010	5.04	17.3	27	1.03	39.5	.11	E .11	8.2	36.7	.86
05-11-2010	5.58	10.8	36	5.04	25.0	.14	E .08	4.3	36.7	.55
09-07-2010	7.55	10.7	55	3.82	28.0	.09	< .06	4.2	30.8	.60

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

Part 4 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/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	Nitrate plus nitrite, water, filtered, mg/L as N (00608)	Orthophos phate, water, filtered, mg/L as P (00631)	Particulate nitrogen, suspended filtered, mg/L (00671)	Phosphorus, in water, as P (49570)	Phosphorus, water, filtered, mg/L (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	nitrogen, water, unfiltered, mg/L (00602)	Total nitrogen, water, unfiltered, mg/L (00600)	Total nitrogen, water, unfiltered, mg/L (00600)	Organic carbon, suspended sediment, total, mg/L (00689)
12-08-2009	.082	2.43	.030	.25	.052	.182	3.2	3.4	1.65	
02-17-2010	.209	4.78	.016	.12	.028	.100	5.6	5.8	.93	
05-11-2010	.013	3.39	--	.77	.034	.170	3.9	4.7	4.96	
09-07-2010	E .009	< .04	--	.64	.043	.210	< .64	< 1.3	3.82	

01482500 SALEM RIVER AT WOODSTOWN, NJ—Continued

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

Part 5 of 5
 [%; percent; ANC, acid
 neutralizing capacity;
 CaCO_3 , calcium carbonate;
 N, nitrogen; NTRU,
 nephelometric turbidity
 ratio unit; P, phosphorus;
 SiO_2 , silicon dioxide; cm,
 centimeter; ft^3/s , cubic
 feet per second; mg/L,
 milligrams per liter; mm
 Hg, millimeters of
 mercury; nm, nanometers;
 $^{\circ}\text{C}$, degrees Celsius;
 $\mu\text{S}/\text{cm}$, microsiemens per
 centimeter; <, less than; E,
 estimated]

Date	Organic carbon, water, filtered, mg/L (00681)
12-08-2009	7.9
02-17-2010	4.2
05-11-2010	5.6
09-07-2010	5.9