

01443500 PAULINS KILL AT BLAIRSTOWN, NJ

DELAWARE RIVER BASIN

LOCATION.--Lat 40°58'51", long 74°57'12" referenced to North American Datum of 1983, Blairstown Township, Warren County, NJ, Hydrologic Unit 02040105, on right bank 1,200 ft upstream from bridge on State Route 94 in Blairstown, 1,400 ft upstream from Blair Creek, and 10 mi upstream from mouth.

DRAINAGE AREA.--126 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1921 to September 1976, October 1977 to current year.

REVISED RECORDS.--WSP 971: 1942. WSP 1382: 1952-53(M).

GAGE.--Water-stage recorder. Concrete control at current location since Aug 1941. Datum of gage is 335.86 ft above NGVD of 1929. Prior to May 23, 1922, a non-recording gage was located at former highway bridge 1,300 ft downstream of current location. From May 23, 1922 to Jun 24, 1931, a water-stage recorder was located 1,300 ft downstream at former highway bridge. Water-stage recorder was located 100 ft downstream of current location from Aug 8, 1931 to Jul 28, 1939 (same datum). Water-stage recorder was relocated to current site on Jul 28, 1939. A concrete control was 280 ft downstream of current location from Aug 1931 until it was destroyed in June 1941. Water-stage recorder was temporarily relocated to old site (100 ft downstream of current location) from Jun 9 to Aug 4, 1941 during construction of current control.

REMARKS.--Records good, except for estimated daily discharges, which are fair. Temporary fluctuations caused by unknown source and flow regulated slightly by Swartswood Lake and other lakes and ponds. Pumpage from limestone quarry entered tributary upstream from gage for about 60 years, but largely ceased in April 2004. Satellite gage-height telemetry at station. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 12	1530	*2,310	*5.79
Jun 19	0100	1,090	3.75

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

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	e94	244	260	427	156	171	157	117	147	345	137	92
2	e122	211	273	402	148	157	191	137	132	389	179	86
3	132	185	230	364	153	125	217	134	133	437	250	82
4	130	163	207	337	155	132	288	139	170	411	187	78
5	126	147	196	325	e132	139	250	163	165	334	160	73
6	116	147	185	332	e128	137	236	177	166	275	158	68
7	107	144	171	398	e123	154	259	354	146	249	126	62
8	94	132	150	452	144	168	235	349	130	255	105	60
9	84	125	146	386	183	205	212	289	293	233	95	57
10	78	122	205	335	182	224	199	254	358	208	99	47
11	71	149	378	318	200	195	190	212	311	189	103	44
12	64	136	1,870	293	349	179	179	184	608	198	93	70
13	59	132	1,420	270	394	161	165	162	518	176	134	70
14	64	151	922	249	318	149	156	153	504	154	200	59
15	64	191	703	231	279	145	176	172	482	133	170	49
16	57	308	622	e200	251	139	178	168	500	121	133	45
17	54	280	565	e195	233	133	162	340	425	120	110	54
18	51	236	528	200	223	127	147	301	668	145	97	61
19	50	204	484	200	229	131	140	234	944	123	109	58
20	43	188	450	188	229	134	133	202	737	109	118	51
21	39	176	423	177	205	122	172	175	713	104	98	48
22	34	157	366	172	197	119	233	159	615	109	144	46
23	32	143	338	167	191	114	221	145	513	105	190	42
24	31	133	377	166	175	106	188	205	456	96	171	42
25	41	169	700	e149	164	104	170	234	452	93	131	39
26	146	186	640	e153	152	104	161	173	398	208	108	37
27	147	167	566	149	138	117	146	159	390	186	96	52
28	317	149	578	153	182	118	134	151	344	148	86	60
29	562	139	629	186	---	123	127	177	302	121	132	52
30	368	144	559	182	---	174	110	208	284	134	132	44
31	287	---	503	162	---	169	---	175	---	131	108	---
Total	3,664	5,158	15,644	7,918	5,613	4,475	5,532	6,202	12,004	6,039	4,159	1,728
Mean	118	172	505	255	200	144	184	200	400	195	134	57.6
Max	562	308	1,870	452	394	224	288	354	944	437	250	92
Min	31	122	146	149	123	104	110	117	130	93	86	37
Cfsm	0.94	1.36	4.01	2.03	1.59	1.15	1.46	1.59	3.18	1.55	1.06	0.46
In.	1.08	1.52	4.62	2.34	1.66	1.32	1.63	1.83	3.54	1.78	1.23	0.51

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

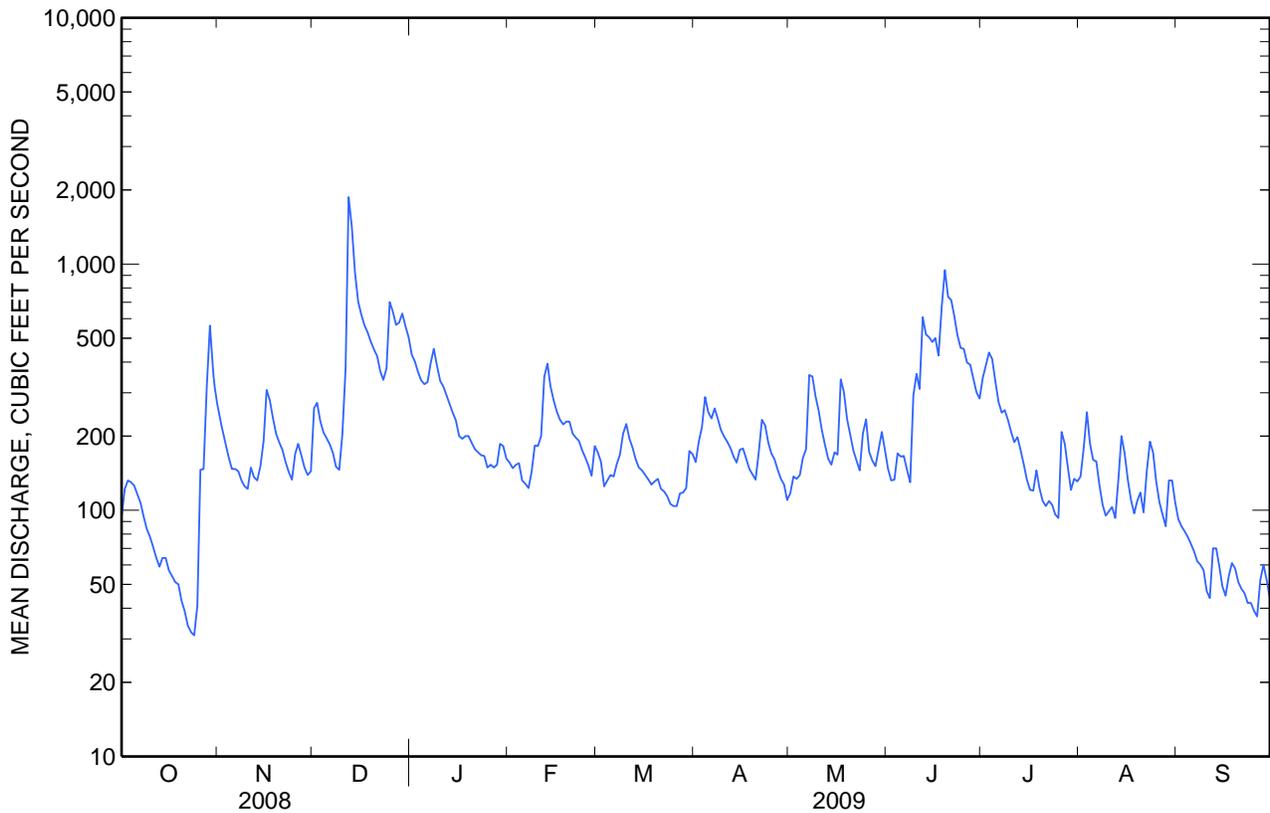
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	122	174	227	231	250	369	339	221	162	114	105	109
Max	767	479	862	712	747	963	930	650	773	527	663	626
(WY)	(2006)	(1933)	(1997)	(1979)	(2008)	(1936)	(1983)	(1989)	(2003)	(1945)	(1955)	(1933)
Min	20.5	22.1	35.5	37.8	47.3	65.0	106	54.6	41.0	19.4	19.6	18.2
(WY)	(1964)	(1965)	(1999)	(2002)	(2002)	(2002)	(1985)	(1941)	(1965)	(1955)	(1932)	(1964)

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SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1922 - 2009	
Annual total	102,802		78,136			
Annual mean	281		214		202	
Highest annual mean					362	1952
Lowest annual mean					67.4	1965
Highest daily mean	2,180	Mar 9	1,870	Dec 12	5,950	Aug 19, 1955
Lowest daily mean	17	Sep 4	31	Oct 24	5.0	Aug 13, 1930
Annual seven-day minimum	19	Aug 30	39	Oct 19	11	Aug 3, 1999
Maximum peak flow			2,310	Dec 12	8,750	Aug 19, 1955
Maximum peak stage			5.79	Dec 12	^a 11.12	Aug 19, 1955
Instantaneous low flow			29	Oct 25	2.8	Nov 1, 1922
Annual runoff (cfsm)	2.23		1.70		1.60	
Annual runoff (inches)	30.35		23.07		21.74	
10 percent exceeds	606		406		423	
50 percent exceeds	168		165		136	
90 percent exceeds	40		66		35	

^a From high-water mark in gage house.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1921, 1925, 1957-60, 1962-63, 1976 to current year.

PERIOD OF DAILY RECORD.--

PH: September 2009.

SPECIFIC CONDUCTANCE: September 2009.

WATER TEMPERATURE: September 2009.

REMARKS.--Cooperative Network Site Descriptor: Undeveloped Land Use Indicator, Watershed Reconnaissance, NJ Department of Environmental Protection Watershed Management Area 1. The accuracy of continuous water-quality data is routinely verified through inspections for fouling and calibration drift. The New Jersey Water Science Center requires that either constant or prorated adjustments be made to the continuous water-quality record when the difference between a sensor's response and a known value exceeds the following criteria: Water Temperature, 0.2 degrees Celsius (+ or -); Specific Conductance, the greater of 5 microsiemens/cm (+ or -) or 3% of the measured value; Dissolved Oxygen, the greater of 0.3 mg/L (+ or -) or 5% of the measured value; pH, 0.3 units (+ or -). If the difference between a sensor's response and a known value is within specified criteria, the data are considered to be reliable and are not adjusted. Data from the following period(s) were adjusted - TEMPERATURE: Sep 1-8, 2009. [Unpublished records of pH, specific conductance, and water temperature for the period of September 2009 are available at the U.S. Geological Survey office in West Trenton, NJ, and website <http://nwis.waterdata.usgs.gov/>. The dissolved oxygen record is null; the deletion criteria was exceeded due to excess fouling].

COOPERATION.--Physical measurements and samples for laboratory analysis on Dec 4, Mar 4, May 28, and Aug 8 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. Determination of chlorophyll-a was performed by the New Jersey Department of Environmental Protection, Bureau of Freshwater and Biological Monitoring 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 ³ /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)
Dec 04...	1030	754	5.5	.127	.095	206	13.0	96	8.0	377	2.9	2.6	213
Mar 04...	1045	762	-1.0	.080	.060	118	13.9	97	8.2	486	.5	1.8	264
May 28...	1045	746	20.0	.115	.086	151	8.8	90	8.1	438	16.3	4.0	252
Aug 20...	1030	750	26.5	.188	.142	114	8.0	94	7.9	--	23.4	3.2	222
Sep 01...	1245	759	--	--	--	91	10.1	110	8.2	479	19.2	--	--

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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)
Dec 04...	E199	120	2	31.7	10.7	1.40	25.3	103	.6	43.0	E.06	<.04	5.6
Mar 04...	E257	170	2	42.5	14.5	1.47	36.3	128	.4	60.2	E.05	<.04	4.0
May 28...	230	160	1	39.4	15.0	1.07	26.3	137	.6	46.2	.10	<.04	4.6
Aug 20...	E196	130	3	33.1	12.3	1.72	22.7	114	.4	39.6	E.05	<.04	6.9
Sep 01...	--	--	3	--	--	--	--	145	--	--	--	--	--

WATER-QUALITY DATA
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009

Part 3 of 3

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

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, fltrd, mg/L (00623)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water, fltrd, mg/L as N (00631)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Partic- ulate nitro- gen, susp, water, mg/L (49570)	Phos- phorus, water, fltrd, mg/L as P (00666)	Phos- phorus, water, unfltrd mg/L as P (00665)	Total nitro- gen, water, fltrd, mg/L (00602)	Total nitro- gen, water, unfltrd mg/L (00600)	Chloro- phyll a fluoro- metric method, uncorr, µg/L (32217)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)
Dec 04...	17.0	.26	E.009	.49	E.010	.05	.010	.026	.76	.80	--	.55	3.6
Mar 04...	18.2	.32	.031	.68	E.007	.07	E.007	.016	1.0	1.1	--	.37	2.6
May 28...	14.0	.32	.010	.27	.010	.07	.014	.029	.59	.66	--	.56	3.3
Aug 20...	9.94	.31	<.010	.31	.034	.05	.042	.055	.62	.66	--	.37	5.1
Sep 01...	--	--	--	.38	--	--	--	.040	--	--	1.1	--	4.2