Water-Data Report 2012

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 mi^2.

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. 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^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 23	1700	1,580	4.63
Dec 8	1300	2,060	*5.41

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 01443500, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/01443500.2012.pdf

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,010	411	568	367	360	166	110	132	153	56	109	26
2	1,520	414	478	346	347	177	145	141	413	56	92	25
3	1,100	386	426	317	302	209	133	223	371	49	79	25
4	986	352	388	270	273	210	116	235	293	47	69	33
5	837	313	359	259	253	183	104	217	265	46	66	228
6	667	289	374	245	232	163	96	183	223	41	82	216
7	553	272	639	243	226	152	89	161	212	38	75	144
8	478	266	1,790	240	214	148	82	155	197	38	65	114
9	435	253	1,350	225	207	170	76	182	171	34	56	132
10	394	240	975	215	190	160	74	173	157	32	70	109
11	351	236	746	208	186	143	74	155	146	31	83	84
12	317	221	618	412	172	140	75	136	139	31	77	68
13	305	208	542	502	161	135	72	123	185	29	63	59
14	383	203	483	398	160	133	70	121	158	29	57	54
15	430	199	451	e316	160	126	68	196	132	28	58	50
16	342	226	430	e277	162	122	69	279	114	30	72	45
17	303	372	392	263	172	121	67	213	101	30	63	40
18	283	309	339	272	164	115	63	173	93	33	77	89
19	296	259	301	243	156	114	61	150	85	42	69	472
20	373	228	297	225	147	111	59	134	82	45	60	301
21	330	218	305	217	136	109	61	139	76	56	57	210
22	291	228	358	206	131	105	89	198	71	47	52	163
23	265	1,170	421	224	131	107	442	190	84	68	45	137
24	248	1,130	389	394	154	101	383	169	78	203	41	113
25	233	803	327	401	202	99	268	155	78	126	38	93
26	220	635	304	343	182	96	218	154	79	99	36	80
27	244	537	318	550	156	91	188	320	68	128	35	73
28	309	482	644	598	146	87	165	242	60	128	37	88
29	298	469	501	486	143	89	146	192	58	218	34	107
30	341	682	435	427	---	87	130	222	57	172	30	95
31	400	---	398	383	---	102	---	184	---	134	27	---
Total	15,542	12,011	16,346	10,072	5,625	4,071	3,793	5,647	4,399	2,144	1,874	3,473
Mean	501	400	527	325	194	131	126	182	147	69.2	60.5	116
Max	2,010	1,170	1,790	598	360	210	442	320	413	218	109	472
Min	220	199	297	206	131	87	59	121	57	28	27	25
Cfsm	3.98	3.18	4.18	2.58	1.54	1.04	1.00	1.45	1.16	0.55	0.48	0.92
In.	4.59	3.55	4.83	2.97	1.66	1.20	1.12	1.67	1.30	0.63	0.55	1.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	127	175	231	231	248	376	338	223	162	113	108	121
Max	767	479	862	712	747	963	930	650	773	527	663	1,296
(WY)	(2006)	(1933)	(1997)	(1979)	(2008)	(1936)	(1983)	(1989)	(2003)	(1945)	(1955)	(2011)
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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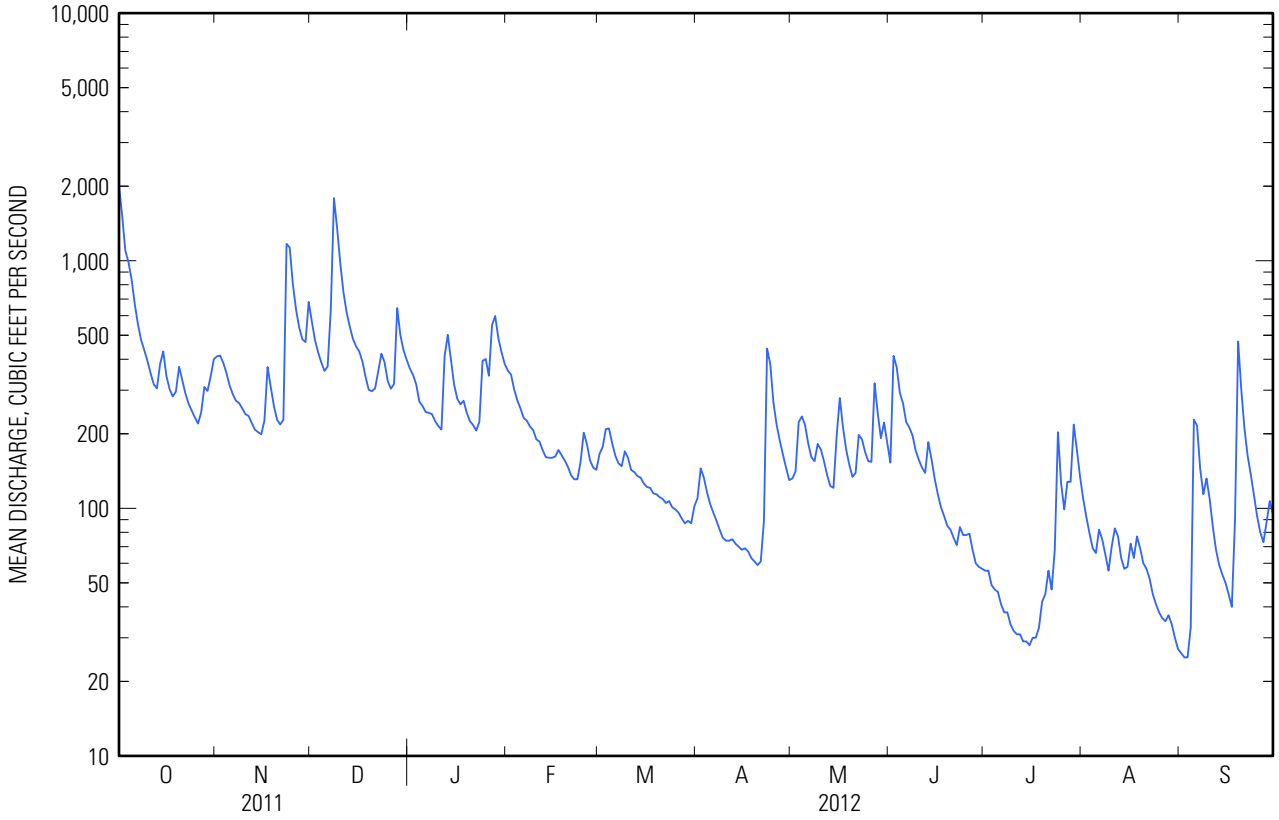
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1922 - 2012	
Annual total	174,451		84,997			
Annual mean	478		232		204	
Highest annual mean					404	2011
Lowest annual mean					67.4	1965
Highest daily mean	5,160	Sep 8	2,010	Oct 1	5,950	Aug 19, 1955
Lowest daily mean	48	Aug 2	25	Sep 2-3	5.0	Aug 13, 1930
Annual seven-day minimum	53	Jul 31	29	Aug 29	11	Aug 3, 1999
Maximum peak flow			[a]2,060	Dec 8	8,750	Aug 19, 1955
Maximum peak stage			[a]5.41	Dec 8	[b]11.12	Aug 19, 1955
Instantaneous low flow			24	Sep 1-3	2.8	Nov 1, 1922
Annual runoff (cfsm)	3.79		1.84		1.62	
Annual runoff (inches)	51.50		25.09		22.03	
10 percent exceeds	934		435		427	
50 percent exceeds	324		168		137	
90 percent exceeds	102		53		35	

[a] Maximum discharge, 2,270 ft³/s, Oct 1, gage height, 5.74 ft, occurred on recession following peak of Sep 28, 2011; maximum independent peak discharge, 2,060 ft³/s, Dec 8, gage height, 5.41 ft.

[b] 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.--
DISSOLVED OXYGEN: June-July 2010.
DISSOLVED OXYGEN, PERCENT OF SATURATION: June-July 2010.
pH: September 2009, June-July 2010.
SPECIFIC CONDUCTANCE: September 2009, June-July 2010.
WATER TEMPERATURE: September 2009, June-July 2010.

REMARKS.--Cooperative Network Site Descriptor: Undeveloped Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 1.

COOPERATION.--Physical measurements and samples for laboratory analysis were collected in cooperation with the NJ Department of Environmental Protection. Determinations of concentrations of ammonia in filtered water and suspended solids in unfiltered water were performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory (DHSS-ECL).

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 1 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; °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 cm (50624)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per cm (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)
11-09-2011	**0930**	757	6.0	0.121	0.091	257	11.0	93	8.1
03-21-2012	**1000**	762	14.0	.081	.061	109	9.4	90	8.1
05-30-2012	**0900**	748	20.5	.199	.152	233	7.7	88	7.9
09-13-2012	**1030**	764	16.5	.138	.103	60	8.0	84	7.9

01443500 PAULINS KILL AT BLAIRSTOWN, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 2 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; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Sample start time	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, mg/L (70301)	Hardness, water, mg/L as $CaCO_3$ (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)
11-09-2011	**0930**	408	8.2	0.9	236	214	155	< 1	39.5
03-21-2012	**1000**	418	14.7	2.0	222	223	160	4	40.2
05-30-2012	**0900**	323	22.3	5.9	178	172	119	8	29.5
09-13-2012	**1030**	323	18.3	1.4	190	E 177	119	5	29.0

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 3 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; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Sample start time	Magnesium, water, filtered, mg/L (00925)	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)
11-09-2011	**0930**	13.7	1.54	22.8	138	0.19	37.0	0.05	< .03	4.62
03-21-2012	**1000**	14.5	1.26	24.3	142	.50	39.4	.08	< .03	3.63
05-30-2012	**0900**	11.1	1.36	20.4	110	.77	28.0	.07	< .03	5.14
09-13-2012	**1030**	11.2	1.65	22.8	101	.44	33.4	.05	< .03	5.05

01443500 PAULINS KILL AT BLAIRSTOWN, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 4 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; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Sample start time	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Particulate nitrogen, suspended in water, mg/L (49570)	Phos-phorus, 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)
11-09-2011	**0930**	10.9	0.24	< .010	0.397	0.026	0.007	0.014	0.63	0.66
03-21-2012	**1000**	12.7	.32	.025	.467	.068	.008	.024	.79	.86
05-30-2012	**0900**	8.78	.42	.036	.396	.061	.042	.063	.82	.88
09-13-2012	**1030**	12.2	.35	E .006	.294	.043	.034	.039	.65	.69

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

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; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than; E, estimated]

Date	Sample start time	Organic carbon, suspended sediment, total, mg/L (00689)	Organic carbon, water, filtered, mg/L (00681)
11-09-2011	**0930**	0.19	3.50
03-21-2012	**1000**	.49	2.49
05-30-2012	**0900**	.76	4.97
09-13-2012	**1030**	.44	4.27