Water-Data Report 2008

01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA

Upper Susquehanna Basin
Tioga Subbasin

LOCATION.--Lat 41°59′48″, long 77°08′25″ referenced to North American Datum of 1927, Tioga County, PA, Hydrologic Unit 02050104, on left bank on SR 4022, 0.5 mi downstream from Cowanesque Dam, 0.8 mi upstream from highway bridge on U.S. Route 15 in Lawrenceville, and 1.4 mi upstream from mouth.

DRAINAGE AREA.--298 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--June 1951 to current year. Prior to October 1951 monthly discharge only, published in WSP 1722.

REVISED RECORDS.--WDR PA-72-1: 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 983.96 ft above National Geodetic Vertical Datum of 1929. Prior to July 1976 at site 1.1 mi upstream at datum 14.07 ft higher. Satellite and landline telemetry at station.

COOPERATION.--Station established and maintained by the U.S. Geological Survey in cooperation with the U.S. Army Corps of Engineers, Baltimore District, and the Pennsylvania Department of Environmental Protection.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated since December 1979 by Cowanesque Dam (station 01519995). Several measurements of water temperature were made during the year.

01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	32	27	171	388	208	177	2,370	388	60	35	24	15
2	30	25	226	335	348	154	2,030	328	60	35	20	15
3	30	25	299	190	321	185	906	267	61	38	20	16
4	30	25	287	128	272	904	863	320	65	38	22	17
5	30	25	226	201	1,260	2,150	925	288	65	35	26	18
6	30	25	145	282	3,300	1,040	741	239	50	30	33	19
7	30	25	109	487	3,730	989	621	214	41	30	32	19
8	32	23	130	595	3,580	1,320	536	217	41	32	30	18
9	35	22	144	559	1,960	968	474	211	41	32	30	15
10	38	22	146	523	1,060	499	459	161	41	32	30	17
11	24	21	231	518	492	575	441	146	41	32	30	17
12	15	32	1,500	534	317	578	442	146	41	32	30	17
13	15	61	622	427	375	462	442	146	37	121	30	16
14	15	69	486	382	339	903	401	146	25	184	30	15
15	15	310	339	349	294	2,520	333	118	25	107	29	15
16	15	425	363	298	265	1,750	285	123	37	71	29	16
17	14	214	347	246	250	661	255	274	43	52	29	16
18	13	109	265	223	1,380	660	255	272	65	47	34	15
19	14	109	219	196	809	1,090	255	250	96	38	43	16
20	15	131	219	181	310	3,140	229	218	95	38	37	16
21	16	193	219	96	235	1,620	200	181	80	38	30	17
22	17	195	219	60	314	786	188	159	80	38	30	17
23	19	274	957	101	295	571	166	124	131	38	28	17
24	22	180	3,320	119	222	496	165	121	105	38	25	17
25	28	109	1,960	106	204	466	163	121	71	36	25	17
26	27	251	1,120	83	242	467	171	119	52	35	26	17
27	27	1,230	849	83	239	549	524	108	41	35	26	17
28	27	543	540	83	148	1,960	447	83	35	35	26	18
29	27	377	514	98	118	1,730	418	77	35	35	23	16
30	27	267	534	140	---	932	399	65	35	35	14	15
31	27	---	447	187	---	1,910	---	60	---	35	14	---
Total	736	5,344	17,153	8,198	22,887	32,212	16,104	5,690	1,695	1,457	855	496
Mean	23.7	178	553	264	789	1,039	537	184	56.5	47.0	27.6	16.5
Max	38	1,230	3,320	595	3,730	3,140	2,370	388	131	184	43	19
Min	13	21	109	60	118	154	163	60	25	30	14	15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1977, BY WATER YEAR (WY) (PRIOR TO REGULATION)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	121	203	297	288	345	808	707	359	220	61.0	39.1	87.9
Max	809	826	860	886	1,173	1,909	1,934	797	1,366	223	125	1,054
(WY)	(1956)	(1978)	(1973)	(1952)	(1976)	(1964)	(1958)	(1960)	(1972)	(1977)	(1977)	(1975)
Min	3.33	7.95	12.2	13.9	45.6	230	167	55.5	13.8	7.00	3.11	2.52
(WY)	(1965)	(1965)	(1961)	(1961)	(1963)	(1965)	(1955)	(1955)	(1955)	(1966)	(1954)	(1964)

01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA—Continued

SUMMARY STATISTICS

	Water Years 1952 - 1977	
Annual mean	286	
Highest annual mean	453	1956
Lowest annual mean	135	1965
Highest daily mean	21,500	Jun 23 1972
Lowest daily mean	1.0	Sep 1 1962
Annual seven-day minimum	1.5	Sep 22 1964
Maximum peak flow	[a]43,700	Sep 26 1975
Maximum peak stage	[b]18.13	Sep 26 1975
Instantaneous low flow	0.80	Aug 31 1964[c]
Annual runoff (cfsm)	.99	
Annual runoff (inches)	13.40	
10 percent exceeds	666	
50 percent exceeds	93	
90 percent exceeds	9.6	

[a] From rating curve extended above 6,000 ft³/s, on basis of slope-area measurement of peak flow.

[b] From floodmark; site and datum then in use.

[c] Also Sep 1, 27, 1964.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	167	297	366	369	364	705	710	363	262	116	114	146
Max	1,122	1,114	864	1,198	1,027	1,527	2,773	1,115	1,222	628	889	1,724
(WY)	(1991)	(1997)	(1991)	(1996)	(1981)	(1994)	(1993)	(1996)	(1989)	(2003)	(1994)	(2004)
Min	13.9	14.3	19.1	23.3	57.6	158	231	48.9	17.4	14.1	11.9	5.09
(WY)	(1989)	(1992)	(1999)	(1981)	(1980)	(1981)	(1997)	(1985)	(1991)	(1991)	(1983)	(1980)

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1978 - 2008	
Annual total	102,870		112,827			
Annual mean	282		308		331	
Highest annual mean					632	2004
Lowest annual mean					165	1999
Highest daily mean	4,030	Mar 19	3,730	Feb 7	6,140	Sep 12, 2004
Lowest daily mean	13	Jul 24[a]	13	Oct 18	[b]0.00	Aug 22, 1978
Annual seven-day minimum	14	Jul 24	14	Oct 13	3.9	Sep 10, 1980
Maximum peak flow			[c,d]4,070	Feb 7	[e,f]6,580	Jan 23, 1996
Maximum peak stage			[d]12.16	Feb 7	[d]12.64	Mar 19, 2007
10 percent exceeds	662		793		804	
50 percent exceeds	80		118		114	
90 percent exceeds	15		17		18	

[a] Also Jul 26, 30, Oct 18.

[b] Result of construction of Cowanesque Dam.

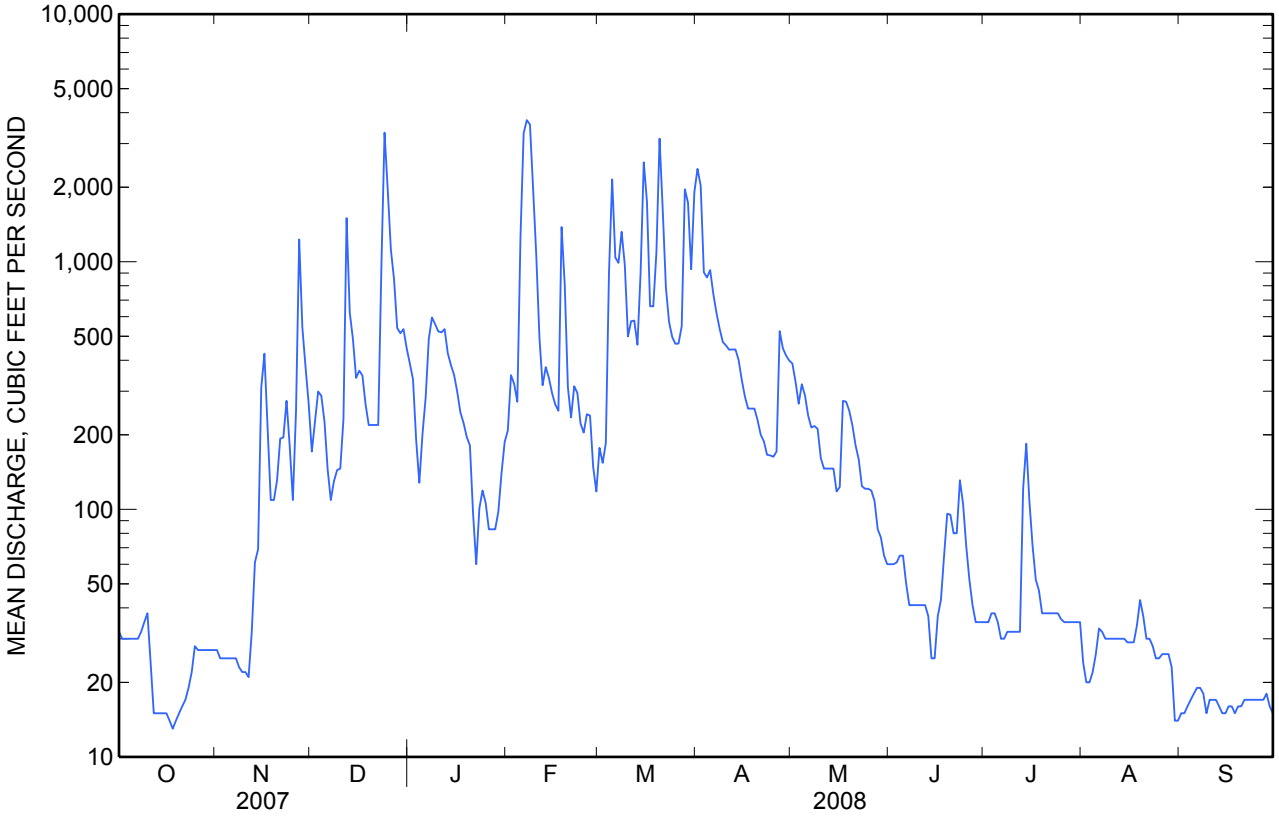
[c] Based on release data from Cowanesque Dam.

[d] Backwater from coffer dam.

[e] At gage height 12.41 ft.

[f] From rating curve extended above 4,900 ft³/s.

01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA—Continued



01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2002 to current year.

REMARKS.--Analyses for pH, water temperature, specific conductance, and dissolved oxygen were performed on site. All other sample analyses were performed at the Pennsylvania Department of Environmental Protection laboratory in Harrisburg, Pa. Some values for filtered parameters exceed values for the corresponding unfiltered parameter. These results are within the limits of analytical precision and methods.

COOPERATION.--Water-quality samples were collected as part of the Pennsylvania Department of Environmental Protection Water-Quality Network (WQN) with cooperation from the Pennsylvania Department of Environmental Protection.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 1 of 3
[Remark codes: <, less than.]

Date	Time	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	pH, water, unfltrd lab, std units (00403)	Specif. conductance, wat unf lab, µS/cm 25 degC (90095)	Specific conductance, wat unf µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water unfltrd recoverable, mg/L (00916)	Magnesium, water, unfltrd recoverable, mg/L (00927)	ANC, wat unf fixed end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)
Oct													
04...	1345	30	12.6	8.8	8.7	188	192	22.0	75	22.8	4.4	61	12.9
Nov													
08...	1245	22	14.6	8.7	8.4	191	195	10.7	76	22.6	4.6	63	12.9
Dec													
04...	1200	250	14.2	8.2	8.1	194	198	5.0	77	23.2	4.7	63	13.8
Jan													
31...	1400	209	15.7	8.2	8.1	153	158	2.8	53	14.9	3.7	41	13.7
Feb													
06...	1000	3,330	15.5	7.2	7.7	152	157	2.6	58	17.0	3.9	40	14.3
Mar													
05...	1145	2,300	15.9	7.3	7.5	132	130	1.3	45	13.2	2.9	32	11.6
Apr													
09...	1330	486	14.6	7.5	7.6	102	104	6.9	37	10.4	2.6	27	9.6
Jun													
04...	1245	64	11.5	8.7	8.4	146	150	19.2	57	16.6	3.7	47	11.6
Aug													
06...	1330	32	10.9	8.8	8.6	182	187	26.9	72	22.0	4.1	61	13.7

01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 2 of 3
[Remark codes: <, less than.]

Date	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total non-filter-able, mg/L (00530)	Ammonia water, fltrd, mg/L as N (00608)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate + nitrite water fltrd, mg/L as N (00631)	Nitrate + nitrite water unfltrd mg/L as N (00630)	Total nitro-gen, water, fltrd, mg/L (00602)	Total nitro-gen, water, unfltrd mg/L (00600)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Ortho-phos-phate, water, unfltrd mg/L as P (70507)	Phos-phorus, water, fltrd, mg/L as P (00666)	Phos-phorus, water, unfltrd mg/L as P (00665)	Organic carbon, water, unfltrd mg/L (00680)
Oct													
04...	132	14	.040	.040	.170	.170	.55	.46	.025	.03	.030	.044	3.1
Nov													
08...	116	16	.060	.060	.250	.240	.58	.54	.018	.03	.025	.040	2.8
Dec													
04...	128	16	.030	.040	.250	.290	.54	.50	<.010	.03	.011	.024	2.9
Jan													
31...	118	4	<.020	.020	.770	.780	1.4	1.0	<.010	.02	.014	.038	3.1
Feb													
06...	122	12	<.020	<.020	.840	.840	1.1	1.0	.011	.02	.014	.040	3.1
Mar													
05...	136	4	.050	.060	.720	.730	1.1	1.1	.018	.03	.030	.055	3.5
Apr													
09...	90	8	.030	.030	.420	.420	.74	.77	.013	.03	.022	.054	3.3
Jun													
04...	110	<5	--	.030	--	--	--	.41	--	.02	--	.038	--
Aug													
06...	114	10	--	.050	--	--	--	.55	--	.05	--	.056	--

01520000 COWANESQUE RIVER NEAR LAWRENCEVILLE, PA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
Part 3 of 3
[Remark codes: <, less than.]

Date	Aluminum, water, unfltrd recoverable, µg/L (01105)	Copper, water, unfltrd recoverable, µg/L (01042)	Iron, water, unfltrd recoverable, µg/L (01045)	Lead, water, unfltrd recoverable, µg/L (01051)	Manganese, water, unfltrd recoverable, µg/L (01055)	Nickel, water, unfltrd recoverable, µg/L (01067)	Zinc, water, unfltrd recoverable, µg/L (01092)
Oct							
04...	<200	<4	140	<1.0	60	<50	<10
Nov							
08...	<200	<4	190	<1.0	150	<50	<10
Dec							
04...	200	<4	310	<1.0	40	<50	<10
Jan							
31...	1,100	<4	780	<1.0	70	<50	<10
Feb							
06...	1,300	<4	1,260	<1.0	90	<50	<10
Mar							
05...	500	<4	720	<1.0	40	<50	<10
Apr							
09...	1,000	<4	1,650	<1.0	60	<50	<10
Jun							
04...	<200	<4	150	<1.0	50	<50	<10
Aug							
06...	<200	<4	240	<1.0	60	<50	<10