

MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 40°56'21", long 79°00'31", Jefferson County, Hydrologic Unit 05010006, on right bank 75 ft downstream from Williams Run, 1.8 mi upstream from bridge on Diamond Road at Sportsburg, 1.9 mi downstream from Sawmill Run, and 2 mi west of Punxsutawney.

DRAINAGE AREA.--158 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WDR PA-87-3: 1977-86 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,206.14 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to Oct. 1, 1946, at site 2.9 mi upstream at datum 13.30 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuations at low flow by mine pumpage into stream above station. Several measurements of water temperature were made during the year. U.S. Army Corps of Engineers satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 18, 1936 reached a stage of 15.6 ft, from floodmark at former site and datum, discharge, 12,500 ft³/s, from rating curve extended above 4,300 ft³/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Jan. 2	0300	3,660	7.16	Sept. 4	0500	*4,640	*8.13

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	148	168	1550	e109	e222	269	121	604	101	1430	622
2	58	141	150	2820	e109	e215	370	117	399	91	966	1290
3	54	127	134	1410	e109	e209	329	110	337	87	695	1470
4	62	117	e123	900	e180	e205	310	102	358	86	535	3200
5	74	112	e113	648	e332	e289	1150	117	323	95	675	1540
6	67	208	e108	512	e258	e421	1060	139	281	87	571	940
7	55	196	e104	424	e209	e316	764	129	311	298	412	639
8	53	165	e99	381	e190	e304	641	181	341	306	351	467
9	60	148	e97	364	e174	855	559	205	505	162	556	372
10	58	138	e92	372	e161	667	463	298	385	153	548	314
11	54	196	e89	318	e155	473	552	306	332	277	406	266
12	47	192	e101	279	e145	439	566	293	319	207	350	230
13	49	185	e123	e252	e142	874	459	272	363	152	289	205
14	50	166	e255	e230	e132	1210	395	239	314	126	241	192
15	46	153	e411	e208	e129	972	350	208	294	110	205	184
16	50	160	e350	e192	e129	1120	318	229	243	125	190	246
17	78	444	e295	e186	e129	1280	285	213	211	103	186	176
18	69	432	e247	e183	e126	1170	253	186	278	210	158	152
19	80	344	e253	e177	e116	922	232	168	242	559	139	193
20	120	352	1220	e170	e109	856	215	156	210	238	126	237
21	87	300	1180	e164	e106	1020	220	608	221	183	118	166
22	72	287	765	e161	e113	759	214	434	232	512	111	156
23	65	297	588	e158	e609	606	194	356	183	622	102	409
24	61	256	445	e151	e475	491	171	346	157	443	93	264
25	60	233	395	e139	e364	417	159	298	141	339	87	229
26	267	213	340	e133	e310	375	152	263	129	266	327	230
27	193	203	292	e130	e269	336	145	225	119	227	563	196
28	140	186	262	e123	e242	300	133	204	110	809	313	424
29	122	176	250	e120	---	281	133	186	102	524	227	326
30	138	181	224	e120	---	289	126	169	104	343	804	275
31	155	---	335	e114	---	272	---	337	---	275	691	---
TOTAL	2605	6456	9608	13089	5631	18165	11187	7215	8148	8116	12465	15610
MEAN	84.0	215	310	422	201	586	373	233	272	262	402	520
MAX	267	444	1220	2820	609	1280	1150	608	604	809	1430	3200
MIN	46	112	89	114	106	205	126	102	102	86	87	152
CFSM	0.53	1.36	1.96	2.67	1.27	3.71	2.36	1.47	1.72	1.66	2.54	3.29
IN.	0.61	1.52	2.26	3.08	1.33	4.28	2.63	1.70	1.92	1.91	2.93	3.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

MEAN	116	218	323	335	406	558	466	330	213	153	109	99.3
MAX	394	715	769	1025	1013	1249	909	722	1210	855	670	572
(WY)	1987	1986	1973	1952	1975	1964	1994	1953	1972	1977	1956	1996
MIN	18.1	23.0	27.2	61.0	96.6	132	112	79.9	48.9	26.4	23.0	16.9
(WY)	1965	1999	1961	1961	1993	1969	1946	1941	1991	1988	1949	1964

e Estimated.

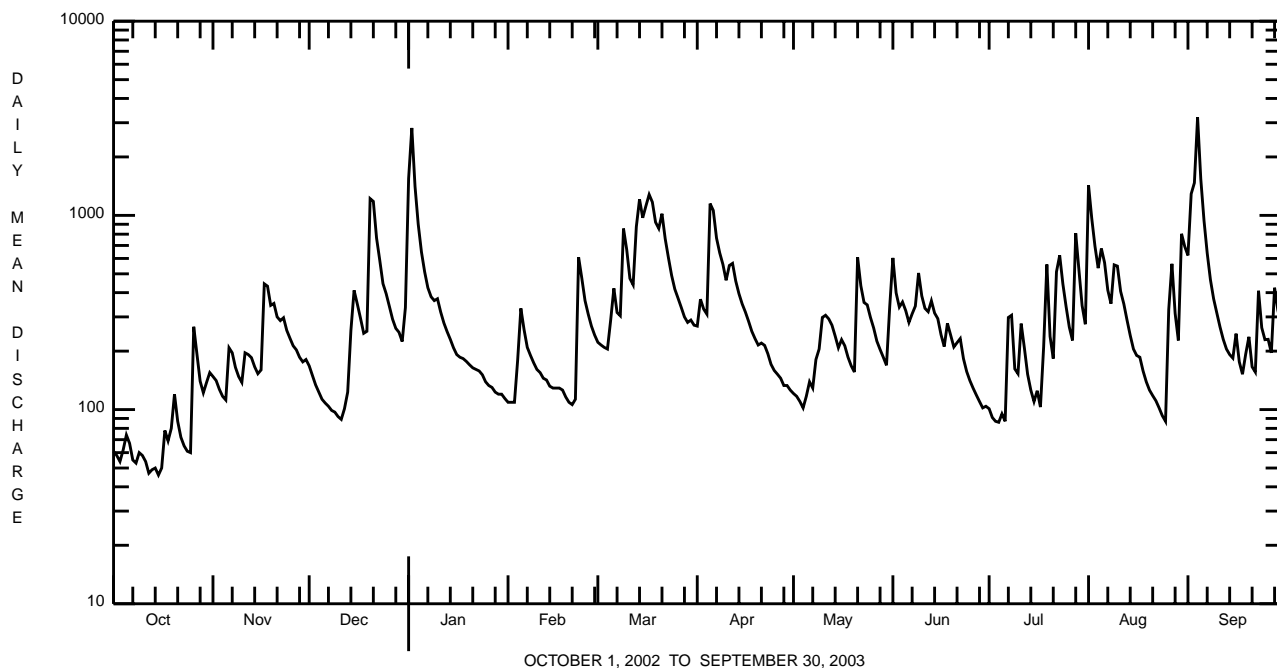
MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	100193		118295			
ANNUAL MEAN	275		324		277	
HIGHEST ANNUAL MEAN					433	1956
LOWEST ANNUAL MEAN					177	1963
HIGHEST DAILY MEAN	3510	Jun 6	3200	Sep 4	13200	Jun 23 1972
LOWEST DAILY MEAN	24	Sep 13,14	46	Oct 15	12	Oct 19 1939
ANNUAL SEVEN-DAY MINIMUM	25	Sep 8	51	Oct 10	13	Oct 14 1939
MAXIMUM PEAK FLOW			a 4640	Sep 4	a 20400	Jul 19 1996
MAXIMUM PEAK STAGE			8.13	Sep 4	b 18.38	Jul 19 1996
INSTANTANEOUS LOW FLOW			43	Oct 15,16	2.6	Sep 26 1939
ANNUAL RUNOFF (CFSM)	1.74		2.05		1.75	
ANNUAL RUNOFF (INCHES)	23.59		27.85		23.79	
10 PERCENT EXCEEDS	521		640		620	
50 PERCENT EXCEEDS	193		227		154	
90 PERCENT EXCEEDS	44		101		34	

a From rating curve extended above 4,300 ft³/s on basis of slope-area measurement at gage height 13.01 ft.

b From floodmark in gage well.



MAHONING CREEK BASIN

03034000 MAHONING CREEK AT PUNXSUTAWNEY, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

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

REMARKS.--Other data for the Water-Quality Network can be found on pages 242-289.

COOPERATION.--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 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Instantaneous discharge, cfs (00061)	Sampling method, code (82398)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specific conductance, μ S/cm 25 degC (00095)	Temperature, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 25...	1045	1028	9813	234	40	12.3	7.7	266	4.8	120	32.2	8.9	38
MAR 2003 26...	0930	1028	9813	376	40	10.6	7.5	330	9.2	130	34.2	9.9	33
JUN 11...	1330	1028	9813	333	40	9.9	7.6	288	15.5	110	29.2	8.9	36
JUL 17...	1100	1028	9813	101	40	9.1	7.5	455	--	180	49.6	14.0	56
SEP 18...	1000	1028	9813	152	40	10.8	7.4	432	14.5	180	47.0	15.0	50

Date	Sulfate water, unfltrd, mg/L (00945)	Residue on evap. at 105degC suspended, mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd mg/L as N (00610)	Nitrate water, unfltrd mg/L as N (00620)	Nitrite water, unfltrd mg/L as N (00615)	Ortho-phosphate, water, unfltrd mg/L as P (70507)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, μ g/L (01105)	Copper, water, unfltrd recover -able, μ g/L (01042)	Iron, water, unfltrd recover -able, μ g/L (01045)
NOV 2002 25...	75.0	230	2	.030	1.07	<.040	.01	.014	1.2	1.3	<200	<10	540
MAR 2003 26...	89.0	272	8	.020	.71	<.040	<.01	.015	8.6	1.4	200	<10	910
JUN 11...	69.9	214	2	<.020	.71	<.040	.01	.024	.88	1.6	300	<10	1000
JUL 17...	117	326	10	<.020	.56	<.040	.02	.018	.70	1.8	<200	<10	840
SEP 18...	127	308	6	<.020	.38	<.040	<.01	.021	.49	1.5	<200	<10	530

Date	Lead, water, unfltrd recover -able, μ g/L (01051)	Manganese, water, unfltrd recover -able, μ g/L (01055)	Nickel, water, unfltrd recover -able, μ g/L (01067)	Zinc, water, unfltrd recover -able, μ g/L (01092)
NOV 2002 25...	<1.0	160	<50	<10
MAR 2003 26...	<1.0	210	<50	80
JUN 11...	<1.0	150	<50	120
JUL 17...	<1.0	140	<50	20
SEP 18...	<1.0	160	<50	<10

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using rapid bioassessment protocols for benthic macroinvertebrates using a D-Frame net with a mesh size of 500 μ m. Samples represent counts per 100 (approximate) subsamples.

Date	9/25/02
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<u>Ferrissia</u> sp	9
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Tubificida	
Naididae	1
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	1
Crustacea	
Decapoda	
Cambaridae (CRAYFISH)	1
Insecta	
Ephemeroptera (MAYFLIES)	
Caenidae	
<u>Caenis</u> sp	8
Heptageniidae	
<u>Stenonema</u> sp	9
Isonychiidae	
<u>Isonychia</u> sp	9
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<u>Cheumatopsyche</u> sp	31
<u>Hydropsyche</u> sp	5
Philopotamidae	
<u>Chimarra</u> sp	1
Rhyacophilidae	
<u>Rhyacophila</u> sp	3
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	3
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	9
Total Organisms	90