



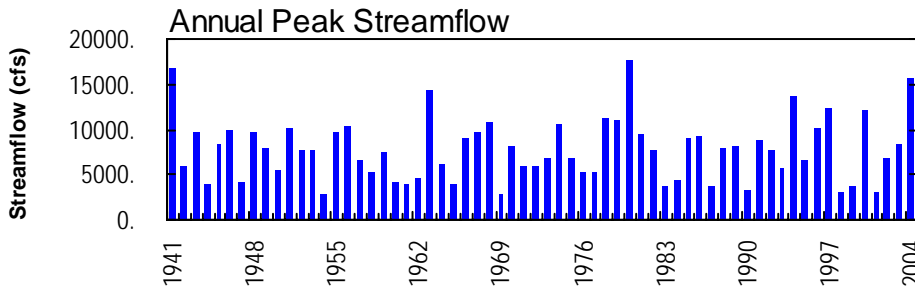
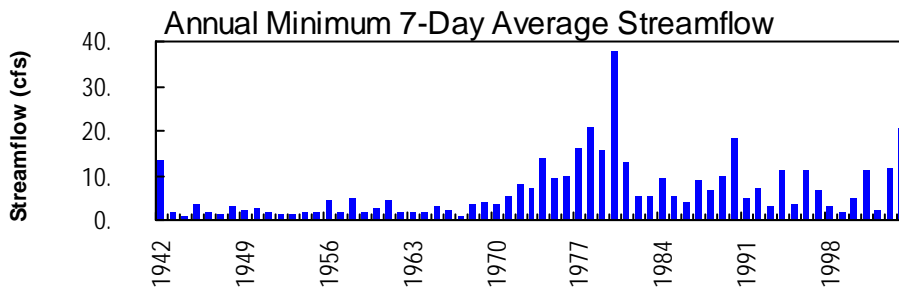
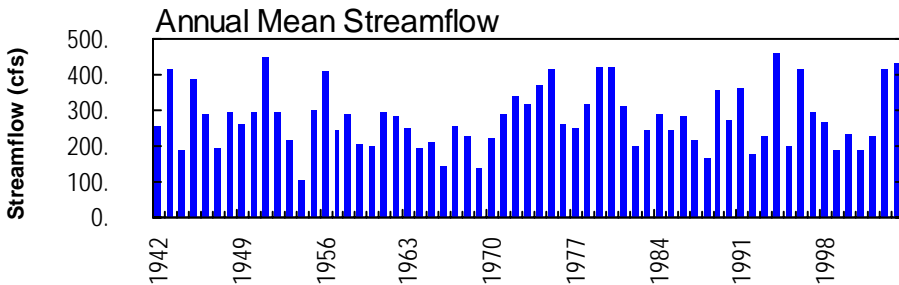
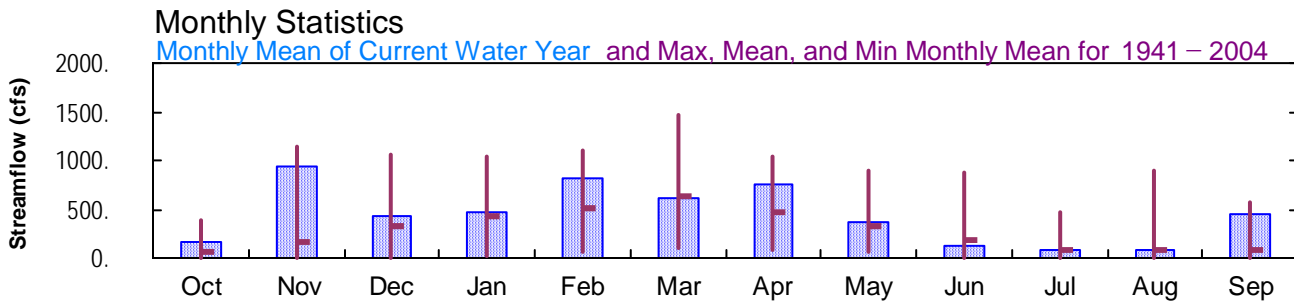
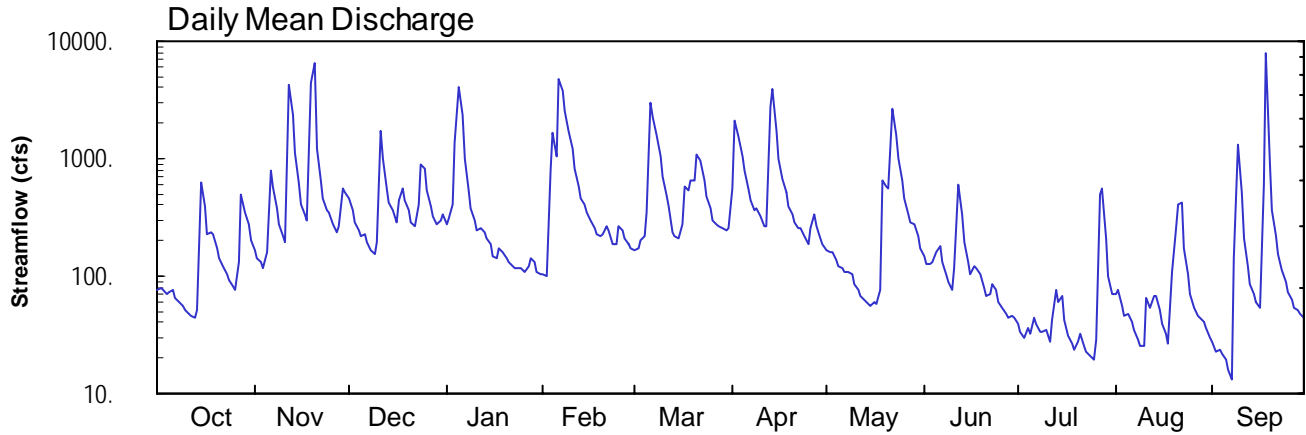
2004 Water Year
MONONGAHELA RIVER BASIN

03072000 Dunkard Creek at Shannopin, PA

Latitude: 39° 45 ' 33"
Greene County

Longitude: 079° 58 ' 15"
Datum: 806.25 feet

Hydrologic Unit Code: 05020005
Drainage Area: 229. mi²



MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA
(Pennsylvania Water-Quality Network Station)

LOCATION.--Lat 39°45'33", long 79°58'15", Greene County, Hydrologic Unit 05020005, on left bank 1,300 ft upstream from highway bridge at mine buildings at Shannopin, 1.2 mi north of Dunkard, 3.5 mi upstream from mouth, and 4 mi southwest of Greensboro.

DRAINAGE AREA.--229 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to current year. Prior to December 1940 monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1505: 1955.

GAGE.--Water-stage recorder. Datum of gage is 806.25 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than a base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Nov. 12	1700	7,620	10.36	Mar. 6	1600	4,950	9.03
Nov. 19	2300	*15,600	*13.59	Apr. 13	2400	7,410	10.27
Jan. 5	1700	5,370	9.27	Sept. 18	0900	12,000	12.23
Feb. 6	1800	8,310	10.66				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	166	456	279	e105	e165	e550	169	149	39	71	27
2	79	145	364	307	e100	e175	2070	161	125	33	75	23
3	77	129	290	406	e790	e200	1520	159	127	30	56	24
4	70	115	242	1370	e1680	e220	e1060	138	129	36	46	22
5	74	161	222	4080	e1060	e350	e777	123	160	33	48	19
6	75	804	225	e2400	4830	2940	e560	115	180	44	41	16
7	66	585	194	e1000	e3730	e2270	e444	107	133	40	35	13
8	60	383	167	e540	e2550	e1600	e363	109	103	34	29	140
9	56	280	154	e380	e1700	e1020	378	105	88	34	25	1320
10	52	221	191	e300	e1200	e700	317	87	77	35	25	505
11	48	193	1710	e250	e830	e500	268	75	119	28	66	211
12	46	4180	983	e260	e580	e390	269	68	610	42	54	120
13	44	2390	557	e240	e450	e240	2790	62	335	77	68	87
14	52	1120	432	e210	e400	e220	3930	60	193	60	69	72
15	625	e620	367	e190	e350	e210	1730	57	132	69	51	61
16	389	e410	292	e150	e300	278	1000	61	102	43	39	54
17	227	e330	437	e140	e260	588	666	59	123	31	32	597
18	241	e300	567	e170	e230	528	509	77	118	27	27	7830
19	227	e4400	446	e160	e220	651	396	662	103	24	109	881
20	175	6600	362	e140	e230	644	331	571	80	27	246	365
21	140	1220	284	e130	e270	1090	292	557	68	32	414	220
22	120	657	264	e120	e250	961	259	2630	70	26	428	153
23	105	458	411	e115	e190	e640	251	1600	84	23	173	114
24	92	361	874	e115	e185	e475	220	990	76	21	103	88
25	81	348	816	e115	e270	e375	189	654	59	19	70	73
26	75	278	533	e110	e250	e300	259	466	53	28	54	62
27	130	235	399	e120	e210	e275	340	341	47	499	47	55
28	503	269	322	e140	e190	e265	265	288	44	557	45	51
29	352	568	278	e130	e175	e255	214	275	46	211	41	47
30	272	510	303	e110	---	e245	187	218	43	102	36	44
31	203	---	334	e105	---	e260	---	172	---	71	29	---
TOTAL	4832	28436	13476	14282	23585	19030	22404	11216	3776	2375	2652	13294
MEAN	156	948	435	461	813	614	747	362	126	76.6	85.5	443
MAX	625	6600	1710	4080	4830	2940	3930	2630	610	557	428	7830
MIN	44	115	154	105	100	165	187	57	43	19	25	13
CFSM	0.68	4.14	1.90	2.01	3.55	2.68	3.26	1.58	0.55	0.33	0.37	1.94
IN.	0.78	4.62	2.19	2.32	3.83	3.09	3.64	1.82	0.61	0.39	0.43	2.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2004, BY WATER YEAR (WY)

MEAN	69.1	168	326	419	513	627	468	336	188	91.6	78.5	79.5
MAX	381	1149	1071	1050	1100	1475	1033	903	877	461	890	573
(WY)	1955	1986	1991	1994	1956	1994	1948	1968	1981	1996	1980	1975
MIN	1.73	2.44	7.46	26.5	63.5	112	80.9	57.4	10.2	4.62	2.45	2.38
(WY)	1952	1954	1954	1967	1954	1987	1971	1986	1966	1962	1962	1999

e Estimated.

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004	
ANNUAL TOTAL	182961		159358			
ANNUAL MEAN	501		435		280	
HIGHEST ANNUAL MEAN					462	
LOWEST ANNUAL MEAN					104	
HIGHEST DAILY MEAN	6600	Nov 20	7830	Sep 18	11200	Mar 5 1963
LOWEST DAILY MEAN	23	Aug 26	13	Sep 7	0.50	Aug 27 1944
ANNUAL SEVEN-DAY MINIMUM	32	Aug 20	21	Sep 1	0.73	Aug 25 1944
MAXIMUM PEAK FLOW			15600	Nov 19	a 17600	Aug 18 1980
MAXIMUM PEAK STAGE			13.59	Nov 19	14.27	Aug 18 1980
INSTANTANEOUS LOW FLOW			12	Sep 6,7	0.40	Aug 28 1944
ANNUAL RUNOFF (CFSM)	2.19		1.90		1.22	
ANNUAL RUNOFF (INCHES)	29.72		25.89		16.60	
10 PERCENT EXCEEDS	1220		968		686	
50 PERCENT EXCEEDS	235		194		99	
90 PERCENT EXCEEDS	67		41		8.1	

a From rating curve extended above 16,000 ft³/s.

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued
(Pennsylvania Water-Quality Network Station)

WATER-QUALITY RECORDS

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

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 2003 TO SEPTEMBER 2004

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	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 unfltrd lab, µS/cm 25 degC (90095)	Specif. conductance, wat unfltrd lab, µS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, unfltrd recover -able, mg/L (00916)	Magnesium, water, unfltrd recover -able, mg/L (00927)
OCT 2003	07...	1028	9813	65.9	11.7	7.2	7.7	762	739	10.5	220	58.7	17.9
DEC	09...	1000	9813	153	11.4	7.3	7.5	517	519	2.5	160	44.8	12.3
FEB 2004	17...	0930	9813	E260	11.5	7.1	7.6	420	426	.5	150	41.8	11.5
APR	07...	0925	9813	E444	11.4	7.5	7.7	351	358	7.5	120	33.1	8.8
JUN	09...	0915	9813	89.7	8.2	7.4	7.6	796	797	20.5	270	76.7	19.3
AUG	11...	0945	9813	74.3	7.9	7.5	7.3	1260	1220	20.0	450	133	29.2

Date	ANC, wat unfltrd end pt, lab, mg/L as CaCO3 (00417)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC, wat flt mg/L (00515)	Residue total at 105 deg. C, suspended, mg/L (00530)	Ammonia water, unfltrd as N (00610)	Nitrate water, unfltrd as N (00620)	Nitrite water, unfltrd as N (00615)	Ortho-phosphate, water, unfltrd as P (70507)	Phosphorus, water, unfltrd as P (00665)	Total nitrogen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Aluminum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
OCT 2003	101	203	518	14	<.020	.15	<.040	<.01	.011	.44	2.2	1200	<10
DEC	82	141	360	16	.030	.51	<.040	<.01	.016	.71	1.5	900	<10
FEB 2004	77	108	328	2	.030	.68	<.040	.01	.010	.80	1.2	800	<10
APR	70	87.1	274	8	<.020	.56	<.040	.01	.014	.70	1.4	500	<10
JUN	93	284	220	4	.030	.21	<.040	<.01	<.010	.60	2.1	800	<10
AUG	94	520	1020	18	.060	.21	<.040	.02	.023	.60	2.6	1000	<10

Date	Iron, water, unfltrd recover -able, µg/L (01045)	Lead, water, unfltrd recover -able, µg/L (01051)	Manganese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
OCT 2003	1360	<1.0	260	<50	20
DEC	1090	<1.0	180	<50	20
FEB 2004	980	<1.0	170	<50	30
APR	540	<1.0	100	<50	90
JUN	740	<1.0	210	<50	10
AUG	800	<1.0	170	<50	<10

MONONGAHELA RIVER BASIN

03072000 DUNKARD CREEK AT SHANNOPIN, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES

REMARKS.--Samples were collected using a D-Frame net with a mesh size of 500 µm. Samples represent counts per 100 animal (approximate) subsamples.

Date	10/08/03
Benthic Macroinvertebrate	Count
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	3
Insecta	
Ephemeroptera (MAYFLIES)	
Heptageniidae	2
Tricorythidae	
<i>Tricorythodes</i>	6
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
<i>Argia</i>	1
Plecoptera (STONEFLIES)	
Taeniopterygidae	
<i>Taeniopteryx</i>	4
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<i>Nigronia</i>	1
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<i>Cheumatopsyche</i>	5
<i>Hydropsyche</i>	78
Hydroptilidae	
<i>Hydroptila</i>	8
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<i>Optioservus</i>	3
<i>Stenelmis</i>	7
Diptera (TRUE FLIES)	
Ceratopogonidae (BITING MIDGES)	
<i>Bezzia</i>	1
Chironomidae (MIDGES)	2
Tipulidae (CRANE FLIES)	
<i>Antocha</i>	1
Total Organisms	122
Total Taxa	14