



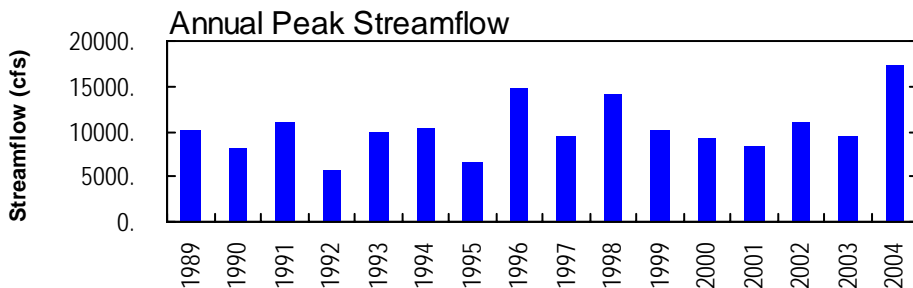
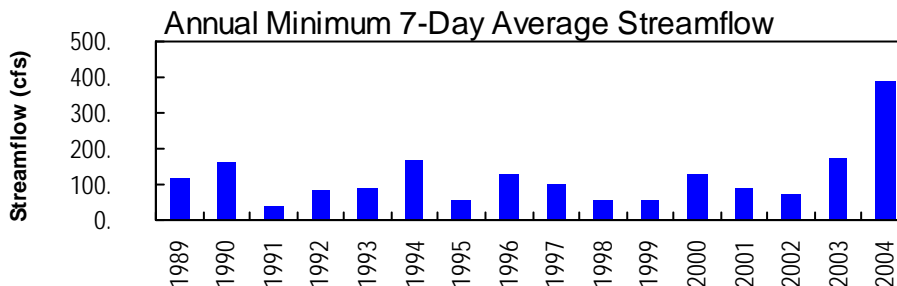
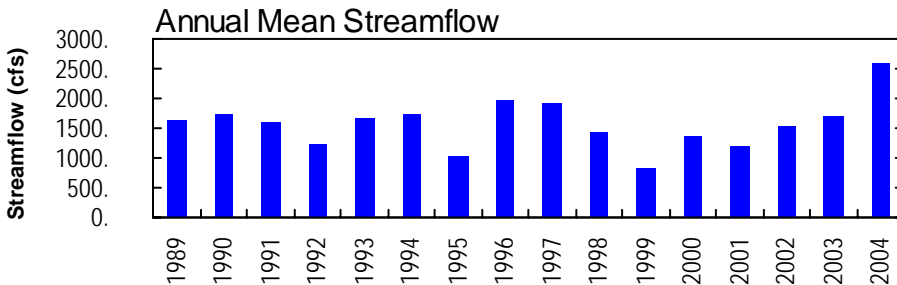
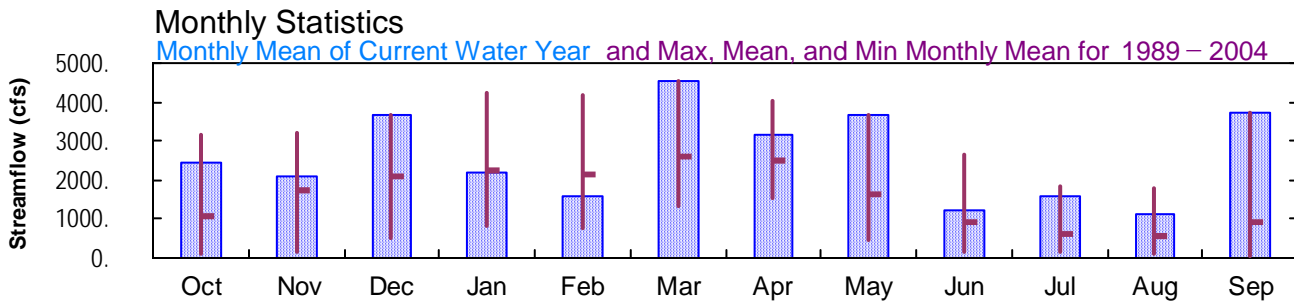
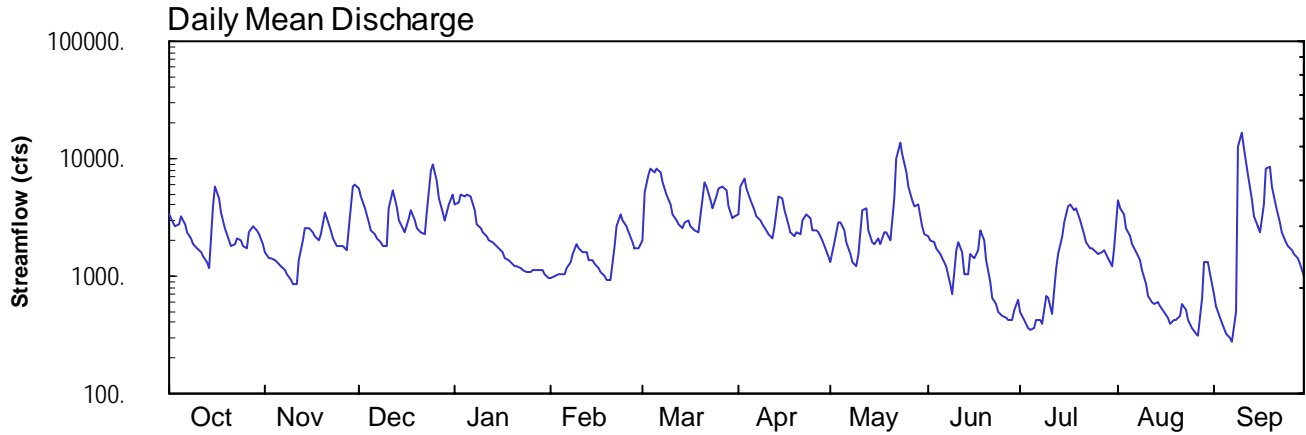
# 2004 Water Year FRENCH CREEK BASIN

## 03023100 French Creek at Meadville, PA

Latitude: 41° 37' 57"  
Crawford County

Longitude: 080° 09' 35"  
Datum: 1058.83 feet

Hydrologic Unit Code: 05010004  
Drainage Area: 788. mi<sup>2</sup>



**FRENCH CREEK BASIN**

**03023100 FRENCH CREEK AT MEADVILLE, PA  
(Pennsylvania Water-Quality Network Station)**

**LOCATION.**--Lat 41°37'57", long 80°09'35", Crawford County, Hydrologic Unit 05010004, on left bank 30 ft upstream from bridge on Mercer Street at Meadville, 300 ft downstream from Mill Run, 2,600 ft downstream from Cussewago Creek, at mile 30.5.

**DRAINAGE AREA.**--788 mi<sup>2</sup>.

**WATER-DISCHARGE RECORDS**

**PERIOD OF RECORD.**--October 1988 to current year.

**GAGE.**--Water-stage recorder. Datum of gage is 1,058.83 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). Prior to October 27, 1989, water-stage recorder at site 2,300 ft upstream at different datum.

**REMARKS.**--Records good except those for estimated daily discharges, which are poor. Flow regulated since October 1971 by Union City Reservoir 43 mi upstream, serving as a retarding basin, and since January 1974 by Woodcock Creek Lake (station 03022550) 9.0 mi upstream. 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.**--Maximum discharge 25,800 ft<sup>3</sup>/s April 1947, gage height, 17.05 ft; maximum gage height 17.60 ft, January 1959 (backwater from ice), site and datum then in use.

**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	3300	1580	5600	4020	e979	e2010	3360	1330	2150	490	4410	714
2	2850	1450	4830	4240	e994	e5090	5850	1950	2010	417	3830	551
3	2660	1430	3720	4980	e1030	e7340	6740	2920	1910	367	3310	447
4	2720	1380	2900	4750	e1040	e8160	5560	2810	1720	347	2540	364
5	3180	1290	2450	5030	e1040	7620	4450	2490	1550	358	2170	328
6	2740	1200	2280	4700	e1150	8080	3560	1910	1410	419	1840	300
7	2350	1130	2120	3560	e1340	7530	3210	1520	1200	418	1570	271
8	2100	1030	1940	2810	e1540	6250	3000	1340	871	391	1370	488
9	1900	927	1790	e2570	e1870	5000	2750	1210	691	669	1130	12500
10	1730	850	1770	e2320	e1730	4010	2490	1530	1630	659	866	16600
11	1600	864	3710	e2160	e1620	3370	2240	3600	1930	477	678	12200
12	1470	1340	5380	e2020	e1570	3030	2060	3800	1600	1180	613	7280
13	1300	2050	3980	e1970	e1370	2780	2560	2430	1040	1550	577	4320
14	1170	2550	2990	e1880	e1350	2570	4770	1960	1040	2190	607	3190
15	3850	2510	2520	e1710	e1260	2830	4670	1850	1540	2860	564	2650
16	5830	2340	2330	e1600	e1180	2980	3590	2130	1430	3950	495	2350
17	4550	2150	3140	e1430	e1100	2630	2710	1850	1660	4020	435	4050
18	3440	2020	3660	e1380	e1000	2450	2330	2390	2470	3630	394	8310
19	2580	2230	3000	e1320	e922	2350	2160	2370	2050	3750	424	8580
20	2040	3490	2590	e1230	e922	3170	2350	2020	1360	2960	431	5880
21	1800	3130	2370	e1210	e1810	6140	2260	4640	885	2290	461	3950
22	1850	2460	2280	e1180	e2640	5850	3000	10000	652	1910	576	2880
23	2060	2070	3500	e1130	e3380	4330	3300	13700	572	1760	518	2370
24	1980	1800	7990	e1090	e3010	3780	3100	10800	504	1740	421	1940
25	1790	1790	8910	e1090	e2670	4780	2430	7750	460	1600	364	1770
26	1690	1830	6610	e1120	e2350	5460	2480	5870	448	1520	326	1650
27	2310	1630	4620	e1100	e1940	5900	2390	4490	427	1620	315	1520
28	2670	2660	3510	e1120	e1710	5410	2060	3950	421	1680	661	1410
29	2460	5900	2970	e1100	e1710	3990	1780	4030	521	1420	1340	1260
30	2260	6130	4110	e1040	---	3120	1460	2680	625	1230	1320	994
31	1890	---	4910	e979	---	3190	---	2250	---	1700	1030	---
TOTAL	76120	63211	114480	67839	46227	141200	94670	113570	36777	49572	35586	111117
MEAN	2455	2107	3693	2188	1594	4555	3156	3664	1226	1599	1148	3704
MAX	5830	6130	8910	5030	3380	8160	6740	13700	2470	4020	4410	16600
MIN	1170	850	1770	979	922	2010	1460	1210	421	347	315	271
CFSM	3.12	2.67	4.69	2.78	2.02	5.78	4.00	4.65	1.56	2.03	1.46	4.70
IN.	3.59	2.98	5.40	3.20	2.18	6.67	4.47	5.36	1.74	2.34	1.68	5.25

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2004, BY WATER YEAR (WY)**

MEAN	1060	1753	2070	2248	2121	2587	2497	1653	920	597	536	905
MAX	3181	3205	3693	4233	4190	4555	4023	3664	2659	1836	1771	3704
(WY)	1991	1997	2004	1998	1990	2004	1994	2004	1989	2003	2000	2004
MIN	104	154	510	815	757	1313	1556	451	155	134	81.3	52.6
(WY)	1992	1992	1999	2001	1993	2000	1995	1993	1991	1998	1998	1991

e Estimated.

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1989 - 2004	
ANNUAL TOTAL	761450		950369			
ANNUAL MEAN	2086		2597		1575	
HIGHEST ANNUAL MEAN					2597	
LOWEST ANNUAL MEAN					824	
HIGHEST DAILY MEAN	8910	Dec 25	16600	Sep 10	16600	Sep 10 2004
LOWEST DAILY MEAN	285	Jul 4	271	Sep 7	37	Sep 22 1991
ANNUAL SEVEN-DAY MINIMUM	319	Jun 29	388	Jul 2	42	Sep 19 1991
MAXIMUM PEAK FLOW			a17400	Sep 10	a17400	Sep 10 2004
MAXIMUM PEAK STAGE			16.35	Sep 10	16.35	Sep 10 2004
INSTANTANEOUS LOW FLOW			257	Sep 7,8	37	Sep 22 1991
ANNUAL RUNOFF (CFSM)	2.65		3.30		2.00	
ANNUAL RUNOFF (INCHES)	35.95		44.87		27.17	
10 PERCENT EXCEEDS	4130		5010		3580	
50 PERCENT EXCEEDS	1730		2050		1100	
90 PERCENT EXCEEDS	563		577		135	

a From rating curve extended above 11,400 ft<sup>3</sup>/s.

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, 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													
21...	1435	1028	9813	1780	10.2	7.3	7.3	201	201	10.5	90	27.4	5.2
DEC													
15...	1530	1028	9813	2480	14.2	7.1	7.5	188	190	1.0	71	21.9	4.0
FEB 2004													
23...	1515	1028	9813	E3380	13.3	7.3	7.2	232	237	.3	74	22.3	4.3
APR													
13...	1500	1028	9813	2500	12.0	7.7	7.7	222	225	7.0	83	25.5	4.6
JUN													
15...	1445	1028	9813	1540	8.8	7.5	7.8	230	225	21.0	89	26.8	5.2
AUG													
17...	1455	1028	9813	432	10.4	8.2	8.1	300	293	20.0	120	37.3	6.9

Date	ANC, wat unfltrd fixed 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 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, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)
OCT 2003													
21...	69	9.5	136	14	<.020	.42	<.040	.02	.034	1.0	5.9	300	<10
DEC													
15...	56	10.3	138	4	.060	.72	<.040	.04	.040	1.0	3.7	500	<10
FEB 2004													
23...	55	10.6	144	46	.120	1.20	<.040	.04	.053	1.6	3.3	800	<10
APR													
13...	63	10.9	128	<2	.060	.73	<.040	.02	.032	1.2	3.0	300	<10
JUN													
15...	78	10.1	158	36	.060	.57	<.040	.01	.066	1.2	5.5	1300	10
AUG													
17...	104	--	212	10	<.020	.53	<.200	.01	.024	.75	3.5	<200	<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					
21...	720	<1.0	60	<50	90
DEC					
15...	750	30	50	<50	<10
FEB 2004					
23...	1500	1.4	100	<50	<10
APR					
13...	610	<1.0	50	<50	<10
JUN					
15...	1800	1.9	110	<50	70
AUG					
17...	370	<1.0	50	<50	70

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, 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	10/28/03
Benthic Macroinvertebrate	Count
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<i>Ferrissia</i>	2
Hydrobiidae	
<i>Ammicola</i>	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	2
Arthropoda	
Crustacea	
Amphipoda (SCUDS)	
Gammaridae	
<i>Gammarus</i>	4
Isopoda (AQUATIC SOWBUGS)	
Asellidae	
<i>Caecidotea</i>	17
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<i>Baetis</i>	2
Caenidae	
<i>Caenis</i>	1
Ephemerellidae	
<i>Serratella</i>	6
Heptageniidae	
<i>Stenonema</i>	11
Isonychiidae	
<i>Isonychia</i>	7
Tricorythidae	
<i>Tricorythodes</i>	1
Odonata (DRAGONFLIES AND DAMSELFLIES)	
Coenagrionidae	
<i>Argia</i>	1
Plecoptera (STONEFLIES)	
Capniidae	1
Perlidae	1
Taeniopterygidae	
<i>Taeniopteryx</i>	3

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

BIOLOGICAL DATA  
BENTHIC MACROINVERTEBRATES--Continued

Date	10/28/03
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Brachycentridae	
<i>Brachycentrus</i>	7
<i>Micrasema</i>	1
Glossosomatidae	
<i>Protoptila</i>	1
Hydropsychidae	
<i>Cheumatopsyche</i>	11
<i>Hydropsyche</i>	1
Leptoceridae	
<i>Oecetis</i>	3
Philopotamidae	
<i>Chimarra</i>	1
Polycentropodidae	
<i>Neureclipsis</i>	1
Uenoidae	
<i>Neophylax</i>	1
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<i>Dubiraphia</i>	1
<i>Optioservus</i>	1
<i>Stenelmis</i>	3
Psephenidae (WATER PENNIES)	
<i>Psephenus</i>	1
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	
	13
Simuliidae (BLACK FLIES)	
<i>Simulium</i>	2
Total Organisms	108
Total Taxa	30