

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 mi².

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 ft³/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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	377	433	e1210	5280	e539	e1740	2940	533	2240	318	1800	1340
2	268	451	e1220	5420	e537	e1640	2910	747	2120	296	1660	2920
3	215	563	e1050	4410	e616	e1560	2770	1330	1760	317	1540	2870
4	195	634	e969	3540	e1540	e1490	2740	1170	1310	285	1440	2230
5	201	666	e946	2800	e2700	e1470	6240	957	1090	327	1220	1920
6	211	716	e904	2430	e3520	e1530	6660	1340	1050	424	1040	1670
7	192	896	e870	2230	e3080	e1690	4860	1780	980	398	1390	1480
8	258	917	e835	2090	e2670	e1960	4170	1530	912	332	1330	1320
9	239	813	e812	1970	e2230	e2270	3960	1590	1230	343	1390	1140
10	199	727	e796	2030	e1860	e3240	3510	1670	1460	513	2310	852
11	183	1480	e786	1890	e1540	e2610	2930	1630	1300	647	2270	576
12	179	2350	e930	1650	e1240	e2110	2410	1670	2190	583	1580	428
13	177	1960	e1520	1370	e1040	e1860	2180	3460	4320	539	1290	373
14	167	1610	e2860	e1250	e948	e1730	2020	5630	4420	439	1080	338
15	156	1260	e4300	e1150	e868	e1910	1920	4700	3320	354	900	366
16	157	1040	3680	e1060	e809	e2650	1790	3550	2600	456	722	456
17	172	1170	3030	e927	e773	e3800	1630	2650	1810	496	593	564
18	233	1860	2250	e841	e737	e5040	1460	2160	1590	470	1020	476
19	376	2050	1970	e779	e723	6780	1270	1900	1520	571	1220	719
20	885	1910	3590	e740	e702	5880	992	1750	1500	523	1150	1630
21	1080	1740	4970	e702	e695	5390	1190	1800	1210	3310	983	1660
22	884	1530	3840	e671	e681	5670	1720	1680	986	7250	703	1250
23	678	1880	3170	e647	e1340	5290	1710	1480	865	8890	568	1910
24	484	2040	2560	e632	e2150	4440	1500	2150	721	8340	727	2270
25	398	1970	2220	e609	e2970	3530	1260	2250	585	4980	602	1670
26	410	1850	2000	e601	e2620	4050	1100	1790	496	2950	518	1280
27	584	1650	1830	e585	e2330	4600	890	1320	437	2310	776	2120
28	703	1400	1710	e562	e1980	3760	753	1070	395	3010	755	4240
29	619	1190	1660	e554	---	3450	647	894	357	2980	594	3460
30	516	1130	1540	e547	---	4100	575	753	333	2260	657	3570
31	453	---	2660	e539	---	3510	---	1260	---	1990	1110	---
TOTAL	11849	39886	62688	50506	43438	100750	70707	58194	45107	56901	34938	47098
MEAN	382	1330	2022	1629	1551	3250	2357	1877	1504	1836	1127	1570
MAX	1080	2350	4970	5420	3520	6780	6660	5630	4420	8890	2310	4240
MIN	156	433	786	539	537	1470	575	533	333	285	518	338
CFSM	0.49	1.69	2.57	2.07	1.97	4.12	2.99	2.38	1.91	2.33	1.43	1.99
IN.	0.56	1.88	2.96	2.38	2.05	4.76	3.34	2.75	2.13	2.69	1.65	2.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

MEAN	967	1729	1962	2252	2157	2456	2454	1519	900	531	495	718
MAX	3181	3205	3039	4233	4190	4059	4023	3421	2659	1836	1771	2786
(WY)	1991	1997	1991	1998	1990	1997	1994	2002	1989	2003	2000	1990
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

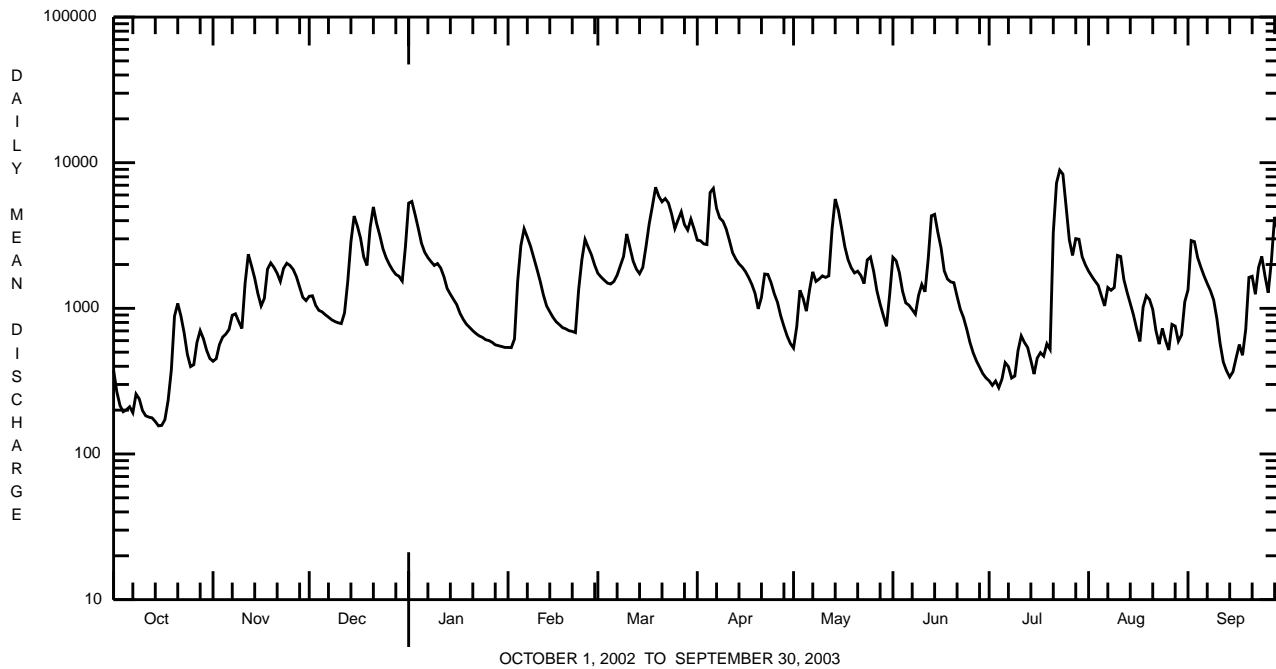
e Estimated.

FRENCH CREEK BASIN

03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	570145		622062			
ANNUAL MEAN	1562		1704		1507	
HIGHEST ANNUAL MEAN					1982	1996
LOWEST ANNUAL MEAN					824	1999
HIGHEST DAILY MEAN	10900	May 14	8890	Jul 23	14300	Jan 20 1996
LOWEST DAILY MEAN	65	Sep 11,12	156	Oct 15	37	Sep 22 1991
ANNUAL SEVEN-DAY MINIMUM	71	Sep 7	170	Oct 11	42	Sep 19 1991
MAXIMUM PEAK FLOW			9380	Jul 24	^a 14800	Jan 20 1996
MAXIMUM PEAK STAGE			12.21	Jul 24	15.52	Jan 20 1996
INSTANTANEOUS LOW FLOW			140	Oct 16	37	Sep 22 1991
ANNUAL RUNOFF (CFSM)	1.98		2.16		1.91	
ANNUAL RUNOFF (INCHES)	26.92		29.37		25.99	
10 PERCENT EXCEEDS	3280		3540		3470	
50 PERCENT EXCEEDS	1150		1340		1000	
90 PERCENT EXCEEDS	121		418		130	

a From rating curve extended above 10,300 ft³/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.

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 col- lecting sample, code (00027)	Agency ana- lyzing sample, code (00028)	Instan- taneous dis- charge, cfs (00061)	Sam- pling method, code (82398)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unfltrd µS/cm 25 degC (00095)	Temper- ature, deg C (00010)	Hard- ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water unfltrd recover -able, mg/L (00916)	Magnes- ium, water, unfltrd recover -able, mg/L (00927)	ANC, wat unfl fixed end pt, lab, mg/L as CaCO3 (00417)
NOV 2002 19...	1415	1028	9813	2040	40	10.6	7.6	211	4.5	94	29.6	4.9	62
JAN 2003 14...	1430	1028	9813	E1250	40	14.9	7.9	266	.3	92	27.7	5.5	64
MAR 18...	1430	1028	9813	E5040	40	13.5	7.3	144	3.2	51	14.9	3.4	31
JUN 05...	1400	1028	9813	1080	40	10.0	7.9	238	14.5	94	29.1	5.1	75
JUL 16...	1230	1028	9813	464	40	7.6	7.7	295	--	120	35.3	7.3	99
SEP 23...	1440	1028	9813	1970	40	8.7	7.3	243	17.0	93	28.5	5.3	79

Date	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 105degC wat flt mg/L (00515)	Residue total at 105 deg. C, sus- pended, 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- phos- phate, water, unfltrd mg/L as P (70507)	Phos- phorus, water, unfltrd mg/L (00665)	Total nitro- gen, water, unfltrd mg/L (00600)	Organic carbon, water, unfltrd mg/L (00680)	Alum- inum, water, unfltrd recover -able, µg/L (01105)	Copper, water, unfltrd recover -able, µg/L (01042)	Iron, water, unfltrd recover -able, µg/L (01045)
NOV 2002 19...	20.5	154	16	.030	.81	<.040	.02	.037	1.5	5.0	300	<10	570
JAN 2003 14...	16.1	194	2	.050	1.08	<.040	.01	.022	1.3	3.4	<200	<10	480
MAR 18...	10.1	22	106	.040	<.04	<.040	.08	.101	1.4	4.1	2800	<10	3970
JUN 05...	11.1	524	10	.040	.51	<.040	.02	.039	.95	4.5	400	<10	740
JUL 16...	11.9	274	10	<.020	.42	<.040	.04	.055	.81	5.1	200	<10	500
SEP 23...	10.5	156	46	.020	.42	<.040	.04	.077	.78	7.1	1000	<10	1680

Date	Lead, water, unfltrd recover -able, µg/L (01051)	Mangan- ese, water, unfltrd recover -able, µg/L (01055)	Nickel, water, unfltrd recover -able, µg/L (01067)	Zinc, water, unfltrd recover -able, µg/L (01092)
NOV 2002 19...	1.3	60	<50	<10
JAN 2003 14...	6.7	50	<50	<10
MAR 18...	3.4	160	<50	20
JUN 05...	<1.0	60	<50	20
JUL 16...	<1.0	80	<50	150
SEP 23...	1.7	120	<50	<10

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03023100 FRENCH CREEK AT MEADVILLE, PA--Continued

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 µm. Samples represent counts per 100 (approximate) subsamples.

Date	9/24/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	1
Nematoda (NEMATODES)	1
Nemertea (PROBOSAS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<u>Prostoma</u> sp	1
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancylidae	
<u>Ferrissia</u> sp	1
Hydrobiidae	
<u>Amnicola</u> sp	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	14
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	2
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Baetis</u> sp	1
Ephemerellidae	
<u>Serratella</u> sp	4
Heptageniidae	
<u>Stenonema</u> sp	2
Isonychiidae	
<u>Isonychia</u> sp	2
Potamanthidae	
<u>Anthopotamus</u> sp	14
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<u>Macrostemum</u> sp	6
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	14
<u>Stenelmis</u> sp	6
Diptera (TRUE FLIES)	
Chironomidae (MIDGES)	17
Empididae (DANCE FLIES)	
<u>Hemerodromia</u> sp	2
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	1
Total Organisms	90