

CRUM CREEK BASIN

01475850 CRUM CREEK NEAR NEWTOWN SQUARE, PA

LOCATION.--Lat 39°58'35", long 75°26'13", Delaware County, Hydrologic Unit 02040202, at Castle Rock bridge on State Highway 3, 0.6 mi upstream from Preston Run, 0.8 mi upstream from Springton Reservoir, and 2.0 mi west of Newtown Square.

DRAINAGE AREA.--15.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1981 to current year. Occasional low-flow measurements, water years 1932, 1949, 1970-1977, and annual maximum 1977-1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 207.75 ft above sea level.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Several measurements of water temperature were made during the year. Satellite and landline telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Dec. 17	1000	*1,990	*8.99	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	13	e11	31	24	41	20	23	11	5.8	4.3
2	10	12	12	e11	26	23	36	20	50	11	5.3	3.5
3	10	12	12	e10	22	22	34	19	22	9.6	5.1	3.2
4	24	12	11	e10	20	27	32	19	19	10	5.1	7.3
5	68	12	11	e10	81	33	30	18	17	11	6.6	9.9
6	15	12	11	e10	46	27	33	17	16	9.7	5.4	4.5
7	12	12	11	e10	39	34	32	17	16	9.1	4.9	3.9
8	11	12	11	e10	33	32	31	17	15	9.2	4.4	3.7
9	11	13	10	e10	38	33	31	17	14	9.4	4.0	3.7
10	11	30	10	e10	115	26	35	17	14	9.6	6.8	3.5
11	11	13	10	e10	34	24	42	16	14	9.4	6.7	3.5
12	11	11	11	e10	28	23	50	16	16	8.6	9.8	3.2
13	10	11	10	e10	29	93	34	15	14	8.0	9.5	3.0
14	10	16	75	11	28	33	29	15	13	7.9	6.5	10
15	10	14	20	20	28	29	29	15	14	7.6	5.4	6.1
16	10	11	19	18	35	42	52	15	51	7.6	4.9	4.4
17	11	11	524	15	52	57	33	15	89	7.5	4.6	3.9
18	15	10	39	e12	27	33	34	15	21	7.8	4.5	3.8
19	13	10	24	100	25	28	28	16	16	8.2	4.4	3.7
20	11	10	21	78	25	26	27	15	15	7.1	5.4	7.7
21	11	11	17	32	24	137	26	33	14	6.6	4.4	25
22	11	10	e15	20	22	64	26	45	13	6.4	4.2	6.6
23	11	9.8	e14	e15	25	36	25	27	16	6.4	4.0	5.3
24	11	9.7	e13	e13	23	32	24	18	14	6.2	4.5	5.5
25	12	10	e12	e12	37	30	22	16	12	5.9	4.2	30
26	12	99	e12	e11	51	29	22	88	12	7.3	3.6	8.2
27	12	24	e12	e11	28	27	22	98	11	6.8	3.5	5.7
28	12	15	e12	e11	25	27	21	34	11	6.0	3.7	5.0
29	12	14	e11	13	---	28	20	22	11	6.3	3.7	4.5
30	12	17	e12	138	---	236	20	19	11	7.1	3.8	4.6
31	12	---	e12	47	---	52	---	17	---	6.1	5.0	---
TOTAL	423	475.5	1007	709	997	1367	921	751	594	250.4	159.7	197.2
MEAN	13.6	15.9	32.5	22.9	35.6	44.1	30.7	24.2	19.8	8.08	5.15	6.57
MAX	68	99	524	138	115	236	52	98	89	11	9.8	30
MIN	10	9.7	10	10	20	22	20	15	11	5.9	3.5	3.0
CFSM	.86	1.00	2.06	1.45	2.25	2.79	1.94	1.53	1.25	.51	.33	.42
IN.	1.00	1.12	2.37	1.67	2.35	3.22	2.17	1.77	1.40	.59	.38	.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2001, BY WATER YEAR (WY)

MEAN	14.8	20.3	25.9	27.3	28.2	37.6	33.3	25.7	18.8	15.9	11.9	15.5
MAX	53.4	37.3	92.6	63.0	42.7	95.0	76.8	58.9	43.8	36.2	24.3	74.6
(WY)	1997	1987	1997	1996	1984	1994	1983	1984	1982	1989	1996	1999
MIN	6.26	6.59	4.63	7.45	17.1	11.7	9.45	13.2	5.85	4.02	3.93	4.53
(WY)	1998	1999	1999	1985	1992	1985	1985	1999	1985	1999	1995	1998

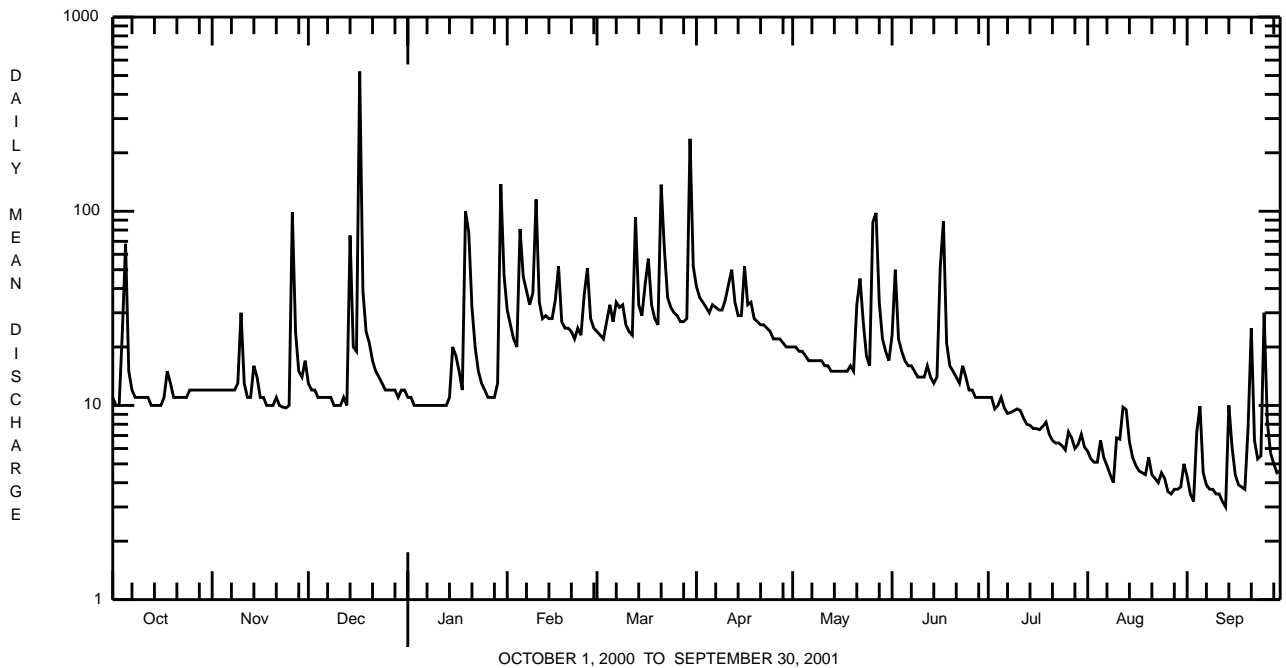
e Estimated.

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SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1982 - 2001	
ANNUAL TOTAL	9174.7		7851.8			
ANNUAL MEAN	25.1		21.5		22.9	
HIGHEST ANNUAL MEAN					34.7	1984
LOWEST ANNUAL MEAN					12.3	1985
HIGHEST DAILY MEAN	543	Mar 22	524	Dec 17	1610	Sep 16 1999
LOWEST DAILY MEAN	6.5	Sep 10	3.0	Sep 13	.64	Aug 8 1991
ANNUAL SEVEN-DAY MINIMUM	6.6	Sep 6	3.5	Sep 7	1.6	Aug 2 1999
MAXIMUM PEAK FLOW			a1990	Dec 17	a4250	Sep 16 1999
MAXIMUM PEAK STAGE			8.99	Dec 17	b11.99	Sep 16 1999
ANNUAL RUNOFF (CFSM)	1.59		1.36		1.45	
ANNUAL RUNOFF (INCHES)	21.60		18.49		19.69	
10 PERCENT EXCEEDS	40		35		39	
50 PERCENT EXCEEDS	14		13		15	
90 PERCENT EXCEEDS	9.9		5.1		5.9	

a From rating curve extended above 1,300 ft³/s on basis of slope-area measurement at peak flow.
 b From outside floodmark.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975, 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA-LYZING SAMPLE (CODE NUMBER)	AGENCY COL-LECTING SAMPLE (CODE NUMBER)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD) (UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (µS/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	CALCIUM DIS-SOLVED (MG/L) AS CA (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L) AS MG (00925)	POTAS-SIUM, DIS-SOLVED (MG/L) AS K (00935)	SODIUM, DIS-SOLVED (MG/L) AS NA (00930)
NOV 2000 03...	1000	80020	1028	12	12.4	6.5	230	9.0	18.1	8.77	2.13	10.3

DATE	ANC WATER UNFLTRD FET FIELD (MG/L AS CACO3) (00410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (µG/L AS B) (01020)	IRON, DIS-SOLVED (µG/L AS FE) (01046)
NOV 2000 03...	63	22.5	18.6	13.7	<.041	1.63	E.003	<.018	E6	50

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATESREMARKS.--Samples were collected using a Hess sampler with a mesh size of 500 µm. Each sample covered a total area of 3.2 m².

Date	11/03/00
Benthic Macroinvertebrate	Count
Nematoda (NEMATODES)	4
Nemertea (PROBOSAS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<u>Prostoma</u> sp	1
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	2
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	350
Crustacea	
Podocopa	1
Insecta	
Ephemeroptera (MAYFLIES)	
Baetidae	
<u>Pseudocloeon</u> sp	5
Ephemerellidae	
<u>Eurylophella</u> sp	4
<u>Serratella</u> sp	39
Heptageniidae	
<u>Stenonema</u> sp	22
Isonychiidae	
<u>Isonychia</u> sp	34
Plecoptera (STONEFLIES)	
Perlidae	
<u>Acroneuria</u> sp	3
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<u>Corydalus</u> sp	5
Trichoptera (CADDISFLIES)	
Glossosomatidae	
<u>Glossosoma</u> sp	1
Hydropsychidae	
<u>Cheumatopsyche</u> sp	157
<u>Hydropsyche</u> sp	293
Hydroptilidae	
<u>Leucotrichia</u> sp	3
Philopotamidae	
<u>Chimarra</u> sp	8
<u>Dolophilodes</u> sp	2

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	11/03/00
Benthic Macroinvertebrate	Count
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Optioservus</u> sp	105
<u>Oulimnius</u> sp	63
<u>Stenelmis</u> sp	35
Psephenidae (WATER PENNIES)	
<u>Psephenus</u> sp	5
Diptera (TRUE FLIES)	
Athericidae	
<u>Atherix</u> sp	1
Chironomidae (MIDGES)	395
Empididae (DANCE FLIES)	
<u>Hemerodromia</u> sp	4
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	30
Tipulidae (CRANE FLIES)	
<u>Antocha</u> sp	50
<u>Tipula</u> sp	1
Total Organisms	1623
Total Taxa	28