

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)
Mar. 22	0000	*1,600	*8.26	July 27	0315	832	6.37
July 16	1730	653	5.80				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	12	13	14	e12	21	32	23	16	12	13	9.1
2	12	92	13	14	e11	20	31	24	16	12	12	8.1
3	11	44	12	14	e13	19	31	22	15	16	13	9.7
4	16	18	12	41	e12	18	46	22	14	29	51	8.9
5	40	15	12	50	e11	18	33	22	14	13	14	7.1
6	16	14	39	18	e11	17	30	22	25	11	12	6.6
7	13	13	20	16	e10	17	28	21	17	11	13	6.6
8	12	13	15	15	e10	17	28	20	15	10	11	6.7
9	12	13	14	15	e10	17	65	19	14	10	10	6.6
10	53	13	31	34	e10	17	37	25	13	14	9.9	6.5
11	22	12	23	26	e13	22	30	24	13	11	10	6.8
12	14	12	16	17	e11	55	29	19	16	9.4	11	6.7
13	13	12	18	16	e10	22	27	22	20	8.9	11	23
14	12	12	128	14	e55	18	26	35	18	17	23	8.8
15	11	12	42	13	e34	17	28	19	16	17	17	97
16	12	11	24	e13	e32	20	54	18	15	76	11	11
17	13	11	20	e12	e27	132	75	19	14	22	9.5	8.8
18	14	11	18	e12	e26	27	57	18	58	12	9.8	8.2
19	11	11	17	e11	97	23	35	40	73	14	10	47
20	42	11	25	e13	38	20	31	37	18	15	9.0	40
21	21	12	29	e12	30	275	58	26	17	11	8.5	11
22	15	12	18	e12	29	543	66	24	52	12	8.5	9.2
23	20	12	17	e11	31	70	34	24	17	9.5	8.3	8.6
24	15	12	16	e11	40	52	30	41	15	9.6	8.2	9.2
25	13	17	14	e13	40	45	28	31	14	10	7.9	18
26	13	20	15	e12	34	40	27	20	13	72	7.1	187
27	13	112	15	e11	27	39	27	20	13	198	7.5	24
28	12	20	15	e11	43	113	27	20	15	22	8.4	15
29	12	16	14	e10	24	44	26	19	19	16	9.9	12
30	12	14	14	e10	---	37	24	18	15	15	8.1	11
31	12	---	14	e14	---	34	---	17	---	14	10	---
TOTAL	522	609	693	505	751	1829	1100	731	613	729.4	372.6	638.2
MEAN	16.8	20.3	22.4	16.3	25.9	59.0	36.7	23.6	20.4	23.5	12.0	21.3
MAX	53	112	128	50	97	543	75	41	73	198	51	187
MIN	11	11	12	10	10	17	24	17	13	8.9	7.1	6.5
CFSM	1.07	1.28	1.41	1.03	1.64	3.73	2.32	1.49	1.29	1.49	.76	1.35
IN.	1.23	1.43	1.63	1.19	1.77	4.31	2.59	1.72	1.44	1.72	.88	1.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2000, BY WATER YEAR (WY)

MEAN	14.9	20.5	25.6	27.5	27.8	37.3	33.4	25.8	18.7	16.3	12.3	16.0
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

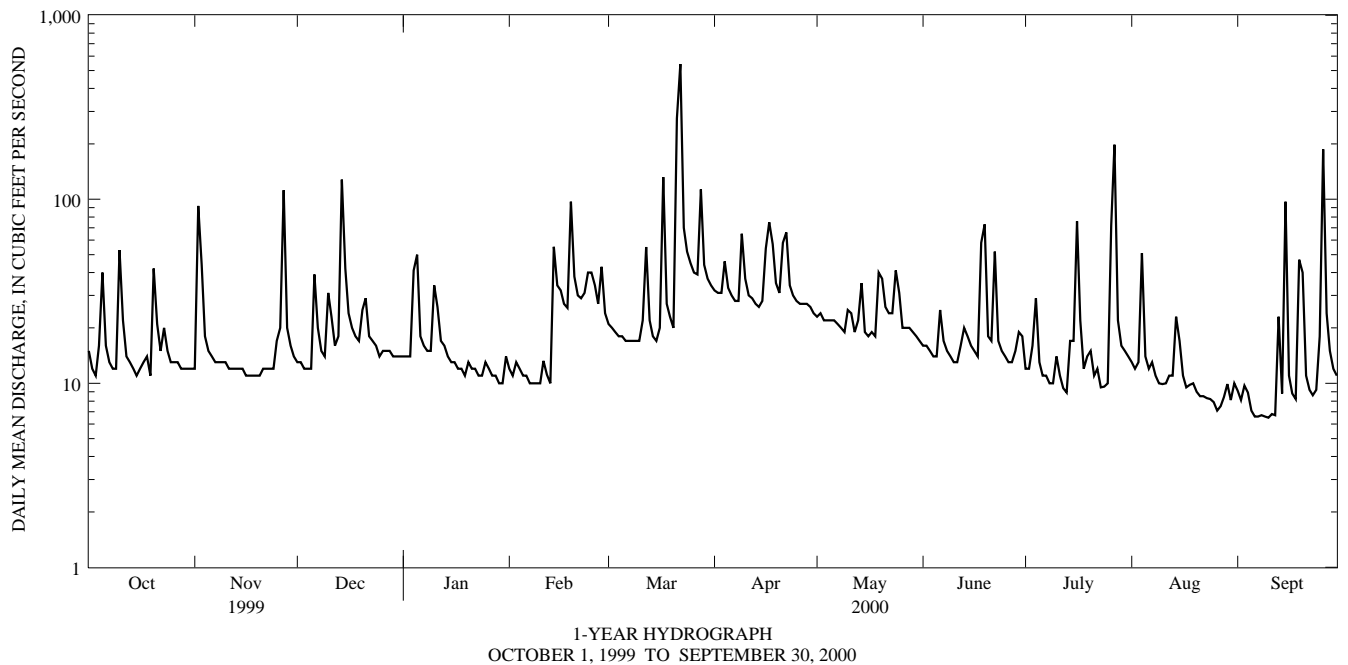
e Estimated.

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SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1982 - 2000	
ANNUAL TOTAL	8108.8		9093.2			
ANNUAL MEAN	22.2		24.8		23.0	
HIGHEST ANNUAL MEAN					34.7	1984
LOWEST ANNUAL MEAN					12.3	1985
HIGHEST DAILY MEAN	1610	Sep 16	543	Mar 22	1610	Sep 16 1999
LOWEST DAILY MEAN	1.3	Aug 12	6.5	Sep 10	.64	Aug 8 1991
ANNUAL SEVEN-DAY MINIMUM	1.6	Aug 2	6.6	Sep 6	1.6	Aug 2 1999
INSTANTANEOUS PEAK FLOW			a1600	Mar 22	a4250	Sep 16 1999
INSTANTANEOUS PEAK STAGE			8.26	Mar 22	b11.99	Sep 16 1999
ANNUAL RUNOFF (CFSM)	1.41		1.57		1.45	
ANNUAL RUNOFF (INCHES)	19.09		21.41		19.76	
10 PERCENT EXCEEDS	31		42		39	
50 PERCENT EXCEEDS	13		16		15	
90 PERCENT EXCEEDS	3.3		10		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 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	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)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	
OCT 1999 08...	1230	80020	1028	12	11.1	7.3	223	9.5	73	
DATE		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 AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC WATER UNFLTRD IT FIELD MG/L AS CACO3 (00419)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 1999 08...	16	8.3	2.2	.5	9.2	21	43	19	<.10	
DATE		SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	BORON, DIS- SOLVED (µG/L AS B) (01020)	IRON, DIS- SOLVED (µG/L AS FE) (01046)
OCT 1999 08...	17	14	<.020	1.93	<.010	<.010	124	19	20	

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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 m^2 .

Date	10/08/99
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (Flatworms)	
Tricladida	
Planariidae	4
Nemertea (Proboscis Worms)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<i>Prostoma</i>	3
Mollusca	
Gastropoda (Snails)	
Basommatophora	
Ancyliidae	
<i>Ferrissia</i>	18
Bivalvia (Clams)	
Veneroida	
Sphaeriidae	2
Annelida (Segmented Worms)	
Oligochaeta	2
Tubificida	
Naididae	2
Arthropoda	
Acariformes	
Hydrachnidia (Water Mites)	80
Insecta	
Ephemeroptera (Mayflies)	
Baetidae	
<i>Baetis</i>	3
<i>Pseudocloeon</i>	8
Caenidae	
<i>Caenis</i>	4
Ephemerellidae	
<i>Eurylophella</i>	7
<i>Serratella</i>	18
Heptageniidae	
<i>Stenonema</i>	26
Isonychiidae	
<i>Isonychia</i>	23
Plecoptera (Stoneflies)	
Perlidae	
<i>Acroneuria</i>	11
Megaloptera	
Sialidae (Alderflies)	
<i>Sialis</i>	1
Trichoptera (Caddisflies)	
Brachycentridae	
<i>Micrasema</i>	2
Glossosomatidae	
<i>Glossosoma</i>	1
Hydropsychidae	
<i>Cheumatopsyche</i>	53
<i>Hydropsyche</i>	109
Hydroptilidae	
<i>Hydroptila</i>	1
<i>Leucotrichia</i>	2
Philopotamidae	
<i>Chimarra</i>	2
Polycentropodidae	
<i>Polycentropus</i>	2
Psychomyiidae	
<i>Psychomyia</i>	16

Date	10/08/99
Benthic Macroinvertebrate	Count
Lepidoptera	
Pyralididae (Moths)	
<i>Petrophila</i>	1
Coleoptera (Beetles)	
Elmidae (Riffle Beetles)	
<i>Optioservus</i>	44
<i>Oulimnius</i>	16
<i>Stenelmis</i>	35
Psephenidae (Water Pennies)	
<i>Psephenus</i>	12
Diptera (True Flies)	
Chironomidae (Midges)	220
Simuliidae (Black Flies)	
<i>Simulium</i>	6
Tipulidae (Crane Flies)	
<i>Antocha</i>	4
<i>Tipula</i>	1
Total count	739
Total number of taxa	34