

CHRISTINA RIVER BASIN

01480300 WEST BRANCH BRANDYWINE CREEK NEAR HONEY BROOK, PA

LOCATION.--Lat 40°04'22", long 75°51'40", Chester County, Hydrologic Unit 02040205, on right bank 100 ft upstream from bridge on SR 4007 at Birdell, 0.4 mi downstream from Two Log Run, and 3.0 mi southeast of Honey Brook.

DRAINAGE AREA.--18.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1960 to current year.

REVISED RECORDS.--WDR PA-73-1: 1972(P). WDR PA-99-1: 1972, 1973, 1975, 1976, 1978, 1979, 1982, 1984, 1985, 1987-89, 1996, 1997 (P).

GAGE.--Water-stage recorder and crest-stage gage. Prior to July 1990, water-stage recorder at site 130 ft downstream on right bank at same datum. Datum of gage is 591.20 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair, except those above 1,000 ft³/s, and those for estimated daily discharges, which are poor. Some regulation at low flow by pumpage from the Northwestern Chester County Wastewater Treatment plant. 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 500 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
Jan. 1	2015	504	5.75	June 4	1230	845	6.67
Feb. 23	1600	845	6.67	June 20	2215	*2,790	*10.03
Mar. 5	1930	540	5.87	Sept. 15	1845	1,030	7.03
Mar. 9	1730	666	6.26	Sept. 19	0815	606	6.08
Mar. 20	2345	632	6.16	Sept. 23	1215	1,550	7.91

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	3.9	21	14	190	e11	18	26	16	83	19	13	10
2	3.5	15	14	138	e12	134	25	16	27	19	12	50
3	3.1	13	13	72	e14	141	23	15	23	19	11	27
4	5.1	13	e11	96	e24	38	21	14	385	17	17	77
5	4.7	12	e10	32	e16	181	23	15	81	18	15	24
6	3.0	27	e10	28	e14	257	20	16	34	19	15	15
7	3.4	16	e9.0	26	e14	58	21	15	100	20	13	12
8	3.2	13	e10	30	e13	72	26	21	63	20	12	12
9	3.2	12	e10	40	e12	259	52	19	34	19	22	11
10	6.9	11	e14	28	e13	50	35	18	26	19	66	11
11	93	29	e80	21	e12	26	101	16	24	19	16	10
12	49	88	170	18	e13	68	51	16	22	15	14	10
13	14	51	78	18	e12	89	27	15	32	15	13	27
14	10	21	262	18	e10	55	23	15	48	15	12	31
15	9.0	17	50	18	e9.0	45	22	14	42	15	11	295
16	97	52	29	16	e8.0	47	21	15	22	15	12	67
17	39	204	21	e14	e9.0	53	20	16	21	14	13	23
18	17	123	19	e12	e10	35	20	15	44	14	11	20
19	12	26	19	e13	e12	26	19	14	27	14	10	245
20	11	22	83	e14	e14	134	19	14	555	13	10	32
21	10	21	33	e13	16	217	19	18	643	13	10	23
22	9.3	27	22	e11	106	42	21	16	73	18	10	21
23	8.6	20	20	e10	551	28	19	16	40	27	9.4	456
24	8.4	16	18	e10	263	25	18	19	29	16	8.6	47
25	10	16	70	e11	86	23	17	24	26	13	9.1	30
26	26	15	53	e11	38	26	30	126	24	12	9.3	28
27	14	19	35	e10	24	32	23	31	22	12	11	25
28	11	17	27	e9.0	20	23	18	22	20	12	9.6	50
29	14	15	25	e10	---	32	18	20	19	12	12	27
30	78	15	23	e9.0	---	52	17	18	19	11	16	23
31	69	---	35	e10	---	37	---	17	---	11	9.3	---
TOTAL	649.3	967	1287.0	956.0	1356.0	2323	795	642	2608	495	432.3	1739
MEAN	20.9	32.2	41.5	30.8	48.4	74.9	26.5	20.7	86.9	16.0	13.9	58.0
MAX	97	204	262	190	551	259	101	126	643	27	66	456
MIN	3.0	11	9.0	9.0	8.0	18	17	14	19	11	8.6	10
CFSM	1.12	1.72	2.22	1.65	2.59	4.01	1.42	1.11	4.65	0.85	0.75	3.10
IN.	1.29	1.92	2.56	1.90	2.70	4.62	1.58	1.28	5.19	0.98	0.86	3.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003																	
MEAN	16.8	24.1	29.0	34.7	36.8	41.8	32.3	25.4	23.8	19.8	12.4	17.6	68.5	58.6	107	136	85.1	110	83.8	74.6	96.6	106	25.8	63.1	1997	1973	1997	1996	1979	1994	1983	1989	1972	1984	1990	1960	5.74	6.59	7.65	7.03	6.55	14.1	11.0	8.84	6.46	3.79	2.34	3.62	1965	2002	1999	1981	2002	2002	2002	2002	1963	1963	1963	2002	1964

e Estimated.

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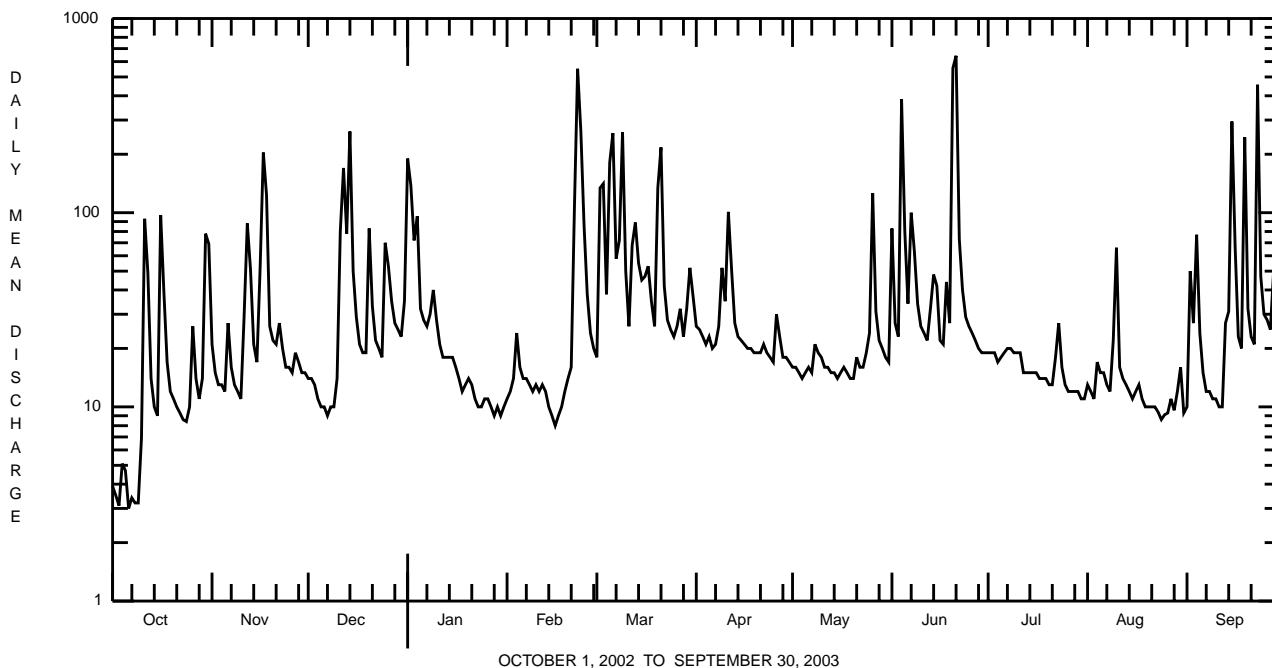
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SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL TOTAL	5654.6		14249.6			
ANNUAL MEAN	15.5		39.0		26.1	
HIGHEST ANNUAL MEAN					46.3	1984
LOWEST ANNUAL MEAN					9.24	2002
HIGHEST DAILY MEAN	262	Dec 14	643	Jun 21	1400	Jun 22 1972
LOWEST DAILY MEAN	1.0	Aug 21, 22	3.0	Oct 6	1.0	Aug 21 2002
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 16	3.7	Oct 3	1.2	Aug 16 2002
MAXIMUM PEAK FLOW			a2790	Jun 20	a3800	Jan 19 1996
MAXIMUM PEAK STAGE			10.03	Jun 20	11.62	Jan 19 1996
INSTANTANEOUS LOW FLOW			2.3	Oct 3 ^b	0.83	Aug 14 2002 ^c
ANNUAL RUNOFF (CFSM)	0.83		2.09		1.39	
ANNUAL RUNOFF (INCHES)	11.25		28.35		18.95	
10 PERCENT EXCEEDS	29		78		41	
50 PERCENT EXCEEDS	8.4		19		15	
90 PERCENT EXCEEDS	2.2		10		6.7	

a From rating curve extended above 1,000 ft³/s on basis of runoff comparison with nearby stations.

b Also Oct. 4, 9, 10.

c Also Aug. 19, 20, 2002.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1965 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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)	Specific conductance, wat unfltrd, 25 degC (00095)	Temperature, water, deg C (00010)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Chloride, water, fltrd, mg/L (00940)
OCT 2002 22...	1400	1028	80020	10	11.1	7.6	336	10.9	28.8	10.2	5.54	19.0	28.4

Date	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + Nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Boron, water, fltrd, µg/L (01020)	Iron, water, fltrd, µg/L (01046)
OCT 2002 22...	16.4	30.8	E.02	4.78	.023	.12	60	76

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATESREMARKS.--Samples were collected using a Hess sampler with a mesh size of 500 μ m. Each sample covered a total area of 2.4 m².

Date	10/22/02
Benthic Macroinvertebrate	Count
Platyhelminthes	
Turbellaria (FLATWORMS)	
Tricladida	
Planariidae	10
Nematoda (NEMATODES)	31
Nemertea (PROBOSAS WORMS)	
Enopla	
Hoplonemertea	
Tetrastemmatidae	
<u>Prostoma</u> sp	3
Mollusca	
Gastropoda (SNAILS)	
Basommatophora	
Ancyliidae	
<u>Ferrissia</u> sp	14
Physidae	1
Planorbidae	
<u>Gyraulus</u> sp	2
Bivalvia (CLAMS)	
Veneroidea	
Sphaeriidae	
<u>Pisidium</u> sp	3
Annelida	
Oligochaeta (AQUATIC EARTHWORMS)	
Lumbriculida	
Lumbriculidae	8
Tubificida	
Naididae	67
Arthropoda	
Acariformes	
Hydrachnidia (WATER MITES)	33
Insecta	
Ephemeroptera (MAYFLIES)	
Ephemerellidae	
<u>Serratella</u> sp	4
Ephemeridae	
<u>Ephemera</u> sp	2
Heptageniidae	
<u>Stenonema</u> sp	4
Plecoptera (STONEFLIES)	
Taeniopterygidae	
<u>Taeniopteryx</u> sp	2
Megaloptera	
Corydalidae (FISHFLIES AND DOBSONFLIES)	
<u>Corydalis</u> sp	2

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BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

Date	10/22/02
Benthic Macroinvertebrate	Count
Trichoptera (CADDISFLIES)	
Hydropsychidae	
<u>Cheumatopsyche</u> sp	217
<u>Hydropsyche</u> sp	505
Hydroptilidae	
<u>Hydroptila</u> sp	25
<u>Leucotrichia</u> sp	2
Leptoceridae	
<u>Oecetis</u> sp	2
Philopotamidae	
<u>Chimarra</u> sp	36
Coleoptera (BEETLES)	
Elmidae (RIFFLE BEETLES)	
<u>Ancyronyx</u> sp	8
<u>Dubiraphia</u> sp	5
<u>Macronychus</u> sp	22
<u>Microcylloepus</u> sp	22
<u>Optioservus</u> sp	133
<u>Oulimnius</u> sp	2
<u>Stenelmis</u> sp	820
Psephenidae (WATER PENNIES)	
<u>Psephenus</u> sp	12
Diptera (TRUE FLIES)	
Ceratopogonidae (BITING MIDGES)	
	4
Chironomidae (MIDGES)	
	572
Empididae (DANCE FLIES)	
<u>Hemerodromia</u> sp	10
Simuliidae (BLACK FLIES)	
<u>Simulium</u> sp	5
Tipulidae (CRANE FLIES)	
<u>Antocha</u> sp	95
<u>Hexatoma</u> sp	13
<u>Tipula</u> sp	1
Total organisms	2697
Total number of taxa	36