

CHRISTINA RIVER BASIN

01480500 WEST BRANCH BRANDYWINE CREEK AT COATESVILLE, PA

LOCATION.--Lat 39°59'08", long 75°49'40", Chester County, Hydrologic Unit 02040205, on right bank at city limits of Coatesville, 1,200 ft upstream from bridge on old Lincoln Highway, and 0.6 mi downstream from Rock Run.

DRAINAGE AREA.--45.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1943 to December 1951, January 1970 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 306.05 ft above National Geodetic Vertical Datum of 1929. Sept. 10, 1943, to Dec. 31, 1951, nonrecording gage at site 1,100 ft downstream at different datum. Satellite and landline telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Diversion from Rock Run Reservoir (station 01480465) 2.6 mi upstream, capacity, 982 acre-ft, for municipal supply of city of Coatesville.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 9, 1942, reached a stage of 12.3 ft, site and datum then in use, discharge, 8,600 ft³/s, by slope-area measurement.

COOPERATION.--Records of diversion provided by city of Coatesville.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s and maximum (*):

Date	Time	Discharge ft ³ /s	Gage Height (ft)	Date	Time	Discharge ft ³ /s	Gage Height (ft)
May 13	2330	*741	*5.41	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	11	11	11	40	15	31	29	22	14	6.1	11
2	13	11	10	10	35	15	26	61	19	13	5.7	12
3	12	11	9.7	11	26	93	24	128	18	13	5.4	9.0
4	13	10	11	11	24	36	30	41	18	12	8.1	7.4
5	12	10	12	11	20	23	24	31	20	11	7.8	6.4
6	11	10	12	16	21	21	22	27	87	11	6.9	6.1
7	10	11	12	30	21	20	20	25	206	10	6.1	5.6
8	10	11	12	21	21	19	19	23	48	11	5.6	5.2
9	11	9.7	19	18	19	17	20	33	33	11	5.1	4.8
10	11	10	16	17	18	19	25	38	26	12	4.8	4.9
11	11	10	14	102	20	17	22	26	22	10	4.8	4.8
12	11	9.7	13	61	19	16	21	28	20	9.6	4.5	4.4
13	11	9.9	13	30	18	20	21	97	20	9.0	3.6	5.7
14	10	10	18	23	17	24	24	234	55	10	4.0	4.4
15	13	10	24	21	17	19	23	59	51	11	3.7	5.5
16	12	10	16	20	18	18	22	42	39	9.9	3.5	8.2
17	13	10	14	19	17	17	20	35	27	8.8	3.3	7.4
18	12	10	27	18	16	31	19	134	23	7.8	3.5	6.5
19	11	9.8	21	17	16	33	19	75	26	7.9	3.4	5.7
20	11	10	16	19	17	106	19	46	23	8.7	3.1	5.5
21	11	9.9	14	18	18	83	18	38	20	9.6	3.3	4.9
22	10	9.5	13	18	17	38	25	34	18	8.1	3.1	4.2
23	11	9.0	13	19	16	29	26	31	16	7.7	3.0	4.2
24	11	9.3	17	138	15	25	20	28	15	8.0	4.3	3.9
25	11	15	16	82	15	23	21	26	15	8.5	8.2	4.1
26	11	28	14	36	16	24	23	25	15	7.5	7.0	5.7
27	10	14	13	28	16	56	19	26	16	7.7	5.3	28
28	9.8	12	13	25	16	35	70	30	24	7.9	5.3	37
29	9.8	11	13	24	---	29	55	30	18	8.0	12	12
30	11	11	11	24	---	25	33	27	15	7.8	10	7.3
31	11	---	10	39	---	24	---	22	---	6.7	7.8	---
TOTAL	346.6	332.8	447.7	937	549	970	761	1529	975	298.2	168.3	241.8
MEAN	11.2	11.1	14.4	30.2	19.6	31.3	25.4	49.3	32.5	9.62	5.43	8.06
MAX	13	28	27	138	40	106	70	234	206	14	12	37
MIN	9.8	9.0	9.7	10	15	15	18	22	15	6.7	3.0	3.9
(†)	1.1	1.0	1.0	1.0	1.0	0.9	1.1	2.6	1.7	1.1	1.0	6.2

STATISTICS OF MONTHLY MEAN DATA FOR PERIOD OF DAILY RECORD, BY WATER YEAR (WY)

MEAN	37.2	54.1	67.9	77.6	84.2	96.1	86.0	71.9	58.9	47.5	31.2	36.7
MAX	149	114	227	262	179	275	197	159	236	176	82.9	136
(WY)	1997	1973	1997	1979	1971	1994	1983	1989	1972	1984	1971	1979
MIN	11.2	11.1	14.4	15.5	19.6	31.3	25.4	29.6	17.5	9.62	5.43	8.06
(WY)	2002	2002	2002	1981	2002	2002	2002	1999	1999	2002	2002	2002

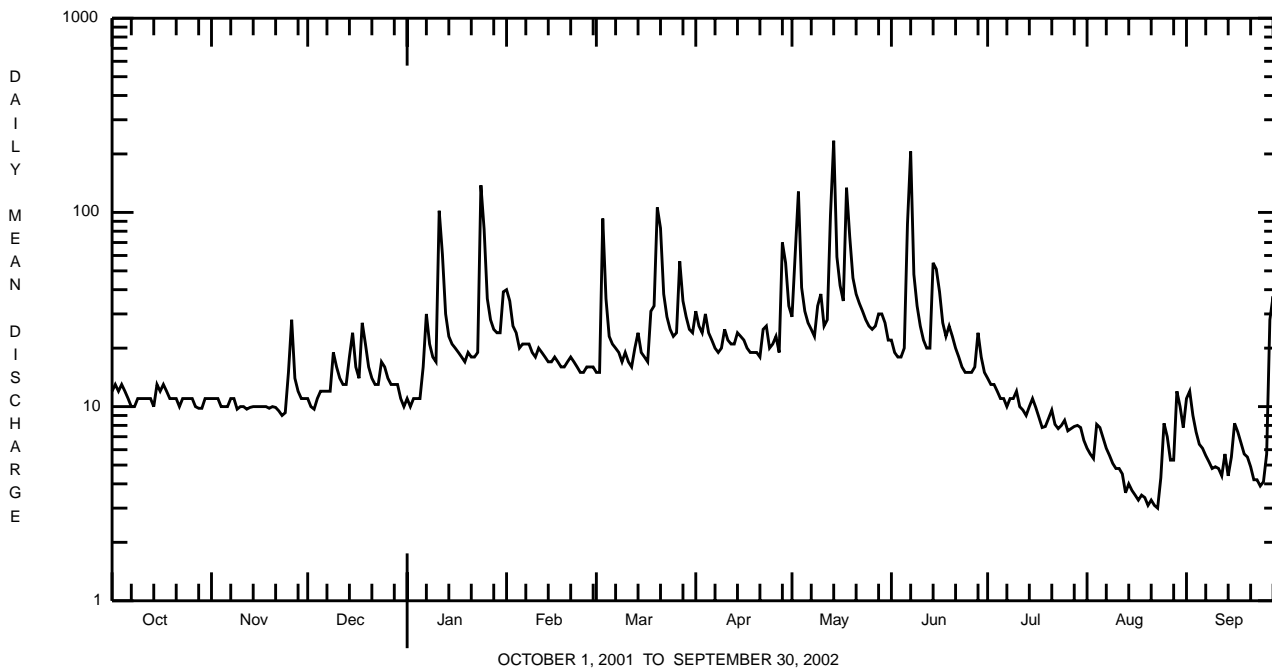
† Diversion for municipal supply, equivalent in cubic feet per second (includes change in contents from Rock Run Reservoir).

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SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		FOR PERIOD OF DAILY RECORD	
ANNUAL TOTAL	14883.4		7556.4		62.4	
ANNUAL MEAN	40.8		20.7		98.6	
HIGHEST ANNUAL MEAN					20.7	
LOWEST ANNUAL MEAN					2002	
HIGHEST DAILY MEAN	418	Mar 30	234	May 14	3400	Jun 22 1972
LOWEST DAILY MEAN	8.7	Sep 17	3.0	Aug 23	3.0	Aug 23 2002
ANNUAL SEVEN-DAY MINIMUM	9.4	Sep 13	3.2	Aug 17	3.2	Aug 17 2002
MAXIMUM PEAK FLOW			741	May 13	a8100	Jun 29 1973
MAXIMUM PEAK STAGE			5.41	May 13	10.08	Jun 29 1973
10 PERCENT EXCEEDS	83		35		110	
50 PERCENT EXCEEDS	26		15		41	
90 PERCENT EXCEEDS	10		5.7		15	

a From rating curve extended above 7,800 ft³/s on basis of slope-area measurement at gage height 9.92 ft.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965, 1970-72, 1995 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 1995 to current year.

INSTRUMENTATION.--Temperature probe interfaced with a data collection platform.

REMARKS.--Water temperature records rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 29.0°C, July 6, 1999; minimum, 0.0°C, many days during winters.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C, Aug. 18; minimum 0.5°C, many days during winter.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.5	12.5	13.0	11.5	8.5	10.0	13.5	12.0	12.5	1.0	0.5	0.5
2	15.5	11.5	13.5	14.5	10.5	12.5	12.0	8.5	10.0	1.0	0.5	0.5
3	17.0	13.5	15.0	15.0	13.0	14.0	8.5	6.5	7.0	1.0	0.5	0.5
4	17.0	15.0	16.0	13.0	10.0	11.5	8.0	5.5	6.5	1.0	0.5	0.5
5	17.0	14.5	16.0	11.0	8.5	9.5	10.5	7.5	9.0	1.0	0.5	0.5
6	17.0	15.0	16.0	8.5	7.5	8.0	11.0	9.0	10.0	1.0	0.5	0.5
7	15.0	11.5	12.5	10.0	7.0	8.5	11.5	10.5	11.0	1.0	0.5	0.5
8	11.5	9.5	10.5	9.5	7.5	9.0	10.5	7.5	8.0	1.0	0.5	0.5
9	10.0	7.5	9.0	9.5	8.5	9.0	8.0	6.5	7.5	1.0	0.5	0.5
10	11.5	8.0	9.5	8.5	6.5	7.5	6.5	4.0	5.0	1.0	0.5	1.0
11	14.0	10.5	12.0	8.0	7.0	7.5	7.5	6.0	6.5	2.0	0.5	1.0
12	15.0	12.5	13.5	7.5	5.0	6.0	7.0	5.0	6.0	3.0	1.5	2.0
13	16.5	14.0	15.5	6.0	4.5	5.5	9.0	7.0	8.0	3.5	2.0	2.5
14	17.0	15.0	16.0	6.5	4.5	5.5	10.0	8.5	9.0	3.0	1.0	2.0
15	17.0	15.0	16.0	9.0	6.0	7.5	10.0	7.0	8.5	4.0	2.0	3.0
16	15.0	11.5	13.0	9.5	7.5	8.5	7.0	4.5	5.5	4.0	3.0	3.5
17	13.5	11.5	12.0	9.5	8.0	8.5	7.5	5.5	6.0	4.0	2.5	3.5
18	11.5	9.0	10.0	8.0	6.0	7.0	9.0	7.5	8.5	3.5	2.0	3.0
19	11.0	8.0	9.5	8.5	6.0	7.5	7.5	6.5	7.0	2.0	0.5	1.0
20	12.5	9.5	11.0	8.5	7.5	8.5	6.5	4.5	5.5	1.0	0.5	1.0
21	13.5	10.0	12.0	7.5	5.0	5.5	4.5	3.5	4.0	1.0	0.5	1.0
22	15.0	12.0	13.5	5.5	3.5	4.5	3.5	2.0	2.5	2.0	0.5	1.5
23	15.5	13.0	14.5	5.5	4.0	5.0	4.0	1.5	2.5	3.5	1.5	2.0
24	17.0	14.5	15.5	9.0	5.0	6.5	5.0	4.0	4.5	5.0	3.5	4.0
25	17.0	15.0	15.5	12.0	9.0	11.0	4.0	1.5	2.5	5.5	4.0	5.0
26	15.0	11.0	12.5	12.0	10.5	11.5	2.5	1.5	2.0	5.0	2.5	3.5
27	11.0	9.0	9.5	10.5	8.0	9.5	1.5	0.5	1.0	5.0	2.0	3.5
28	9.5	8.5	9.0	12.5	10.5	11.5	1.0	0.5	0.5	6.0	2.5	4.0
29	9.0	6.5	8.0	12.5	12.0	12.0	1.0	0.5	1.0	8.0	4.0	5.5
30	10.5	8.5	9.5	13.5	12.0	13.0	1.0	0.5	1.0	8.5	7.0	8.0
31	10.0	8.0	9.0	---	---	---	1.0	0.5	0.5	8.5	7.0	7.5
MONTH	17.0	6.5	12.5	15.0	3.5	8.7	13.5	0.5	5.8	8.5	0.5	2.4

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CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SAM- PLING DEPTH (FEET) (00003)	TEMPER- ATURE WATER (DEG C) (00010)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)
JUL 2002					
12...	1201	9.9	--	--	1
12...	1203	--	.50	19.2	3
12...	1204	--	1.00	18.9	6
12...	1206	--	1.00	18.8	9
12...	1207	--	1.00	18.8	12
12...	1209	--	1.00	18.9	15
12...	1210	--	1.00	18.9	18
12...	1213	--	1.00	18.9	21
12...	1214	--	1.00	18.9	24
12...	1216	--	1.00	18.9	27
12...	1218	--	1.00	19.0	30
12...	1219	--	1.50	18.9	33
12...	1221	--	1.00	18.8	36
12...	1222	--	1.00	18.8	39
12...	1223	--	1.00	18.8	42
12...	1224	--	1.00	18.9	45
12...	1226	--	1.00	19.1	48
12...	1227	--	1.00	19.3	51
12...	1229	--	1.00	19.3	54
12...	1230	--	1.00	19.3	57
12...	1232	--	1.00	19.2	60
12...	1233	--	1.00	19.2	63
12...	1235	--	.50	19.5	66
12...	1236	--	--	--	70