## CHRISTINA RIVER BASIN

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA

LOCATION.--Lat $39^{\circ} 57^{\prime} 42^{\prime \prime}$, long $75^{\circ} 48^{\prime} 06^{\prime \prime}$, Chester County, Hydrologic Unit 02040205 , on left bank at bridge on SR 15068 at Modena, and 300 ft upstream from Dennis Run.

DRAINAGE AREA.--55.0 mi².

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1970 to current year.
REVISED RECORDS.--WDR PA-74-1: 1971-72(P), 1973. WDR PA-75-1: 1974(m).
GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 265 ft above National Geodetic Vertical Datum of 1929, from topographic map.
REMARKS.--Records fair except those for estimated daily discharges, which are poor. Slight regulation from Rock Run Reservoir 5.6 mi upstream, capacity, 982 acre-ft, and by Lukens Steel Company. Diversion from Rock Run Reservoir for municipal supply of city of Coatesville reenters creek upstream from gage. Satellite and landline telemetry at station.

COOPERATION.--Records of diversion provided by the Pennsylvania American Water Company.
PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of $1,000 \mathrm{ft}^{3} / \mathrm{s}$ and maximum (*):

| Date | Time | Discharge $\mathrm{ft}^{3} / \mathrm{s}$ | Gage Height <br> (ft) | Date | Time | Discharge $\mathrm{ft}^{3} / \mathrm{s}$ | Gage Height <br> (ft) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Feb. 23 | 1700 | 1,330 | 5.96 | Aug. 9 | 2330 | 2,670 | 7.60 |
| May 26 | 1030 | 1,120 | 5.63 | Sept. 15 | 1030 | 1,700 | 6.48 |
| June 4 | 1030 | 1,380 | 6.03 | Sept. 23 | 0930 | 1,410 | 6.08 |
| June 21 | 0400 | * 4, 660 | *9.35 |  |  |  |  |

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 | 15 | 53 | 42 | 362 | e44 | 73 | 124 | 61 | 236 | 108 | 49 | 44 |
| 2 | 17 | 37 | 38 | 496 | e47 | 225 | 103 | 61 | 124 | 103 | 51 | 152 |
| 3 | 18 | 32 | 38 | 199 | e50 | 382 | 94 | 56 | 83 | 119 | 47 | 93 |
| 4 | 18 | 30 | 34 | 304 | e53 | 145 | 87 | 55 | 757 | 102 | 149 | 209 |
| 5 | 19 | 29 | e31 | 144 | e55 | 241 | 83 | 55 | 376 | 93 | 105 | 117 |
| 6 | 16 | 58 | e28 | 122 | e39 | 652 | 84 | 61 | 171 | 96 | 78 | 65 |
| 7 | 16 | 42 | e30 | 112 | e41 | 257 | 83 | 56 | 259 | 113 | 57 | 52 |
| 8 | 14 | 32 | e28 | 105 | e38 | 163 | 95 | 66 | 288 | 107 | 51 | 46 |
| 9 | 16 | 27 | e31 | 123 | e34 | 477 | 137 | 70 | 158 | 85 | 282 | 44 |
| 10 | 46 | 28 | e34 | 116 | e37 | 299 | 132 | 64 | 124 | 83 | 677 | 40 |
| 11 | 327 | 34 | 231 | 88 | e35 | 129 | 275 | 61 | 107 | 87 | 166 | 40 |
| 12 | 177 | 117 | 435 | 74 | e33 | 124 | 192 | 55 | 103 | 92 | 119 | 39 |
| 13 | 44 | 188 | 197 | 71 | e30 | 227 | 121 | 53 | 163 | 77 | 88 | 77 |
| 14 | 27 | 51 | 605 | 65 | e30 | 226 | 98 | 50 | 241 | 68 | 74 | 124 |
| 15 | 24 | 38 | 216 | 66 | e30 | 152 | 90 | 47 | 210 | 65 | 66 | 711 |
| 16 | 170 | 85 | 117 | 56 | e27 | 159 | 86 | 51 | 112 | 62 | 63 | 353 |
| 17 | 163 | 459 | 87 | e47 | e32 | 186 | 81 | 56 | 94 | 56 | 69 | 132 |
| 18 | 40 | 309 | 68 | e40 | e40 | 147 | 75 | 51 | 173 | 57 | 60 | 119 |
| 19 | 32 | 86 | 64 | e42 | 47 | 114 | 77 | 49 | 124 | 55 | 53 | 567 |
| 20 | 25 | 63 | 317 | e43 | 50 | 298 | 74 | 45 | 1010 | 51 | 52 | 256 |
| 21 | 24 | 55 | 173 | e40 | 51 | 613 | 72 | 51 | 1820 | 49 | 49 | 156 |
| 22 | 20 | 70 | 95 | e36 | 470 | 203 | 81 | 51 | 353 | 65 | 50 | 105 |
| 23 | 21 | 65 | 80 | e34 | 1010 | 144 | 72 | 49 | 236 | 99 | 50 | 779 |
| 24 | 19 | 50 | 69 | e36 | 590 | 122 | 68 | 60 | 182 | 63 | 45 | 233 |
| 25 | 23 | 44 | 202 | e38 | 248 | 110 | 64 | 79 | 154 | 54 | 40 | 136 |
| 26 | 63 | 43 | 203 | e40 | 149 | 108 | 111 | 522 | 137 | 48 | 47 | 125 |
| 27 | 40 | 54 | 124 | e38 | 102 | 125 | 98 | 169 | 125 | 47 | 44 | 116 |
| 28 | 27 | 55 | 101 | e36 | 88 | 104 | 75 | 99 | 118 | 46 | 43 | 146 |
| 29 | 38 | 44 | 88 | e38 | --- | 103 | 68 | 79 | 119 | 43 | 41 | 136 |
| 30 | 107 | 44 | 84 | e40 | --- | 149 | 65 | 66 | 112 | 43 | 88 | 99 |
| 31 | 188 | --- | 91 | e42 | --- | 165 | --- | 65 | --- | 42 | 47 | --- |
| TOTAL | 1794 | 2322 | 3981 | 3093 | 3500 | 6622 | 2965 | 2413 | 8269 | 2278 | 2900 | 5311 |
| MEAN | 57.9 | 77.4 | 128 | 99.8 | 125 | 214 | 98.8 | 77.8 | 276 | 73.5 | 93.5 | 177 |
| MAX | 327 | 459 | 605 | 496 | 1010 | 652 | 275 | 522 | 1820 | 119 | 677 | 779 |
| MIN | 14 | 27 | 28 | 34 | 27 | 73 | 64 | 45 | 83 | 42 | 40 | 39 |
| CFSM | 1.05 | 1.41 | 2.33 | 1.81 | 2.27 | 3.88 | 1.80 | 1.42 | 5.01 | 1.34 | 1.70 | 3.22 |
| IN. | 1.21 | 1.57 | 2.69 | 2.09 | 2.37 | 4.48 | 2.01 | 1.63 | 5.59 | 1.54 | 1.96 | 3.59 |
| ( $\dagger$ | 0.1 | 1.0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

| MEAN | 54.6 | 70.5 | 91.9 | 101 | 106 | 128 | 115 | 93.3 | 86.2 | 67.0 | 46.8 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| MAX | 190 | 144 | 306 | 330 | 235 | 308 | 241 | 213 | 302 | 1236 | 186 |
| (WY) | 1997 | 1997 | 1997 | 1979 | 1971 | 1994 | 1983 | 1989 | 1972 | 1984 | 1971 |
| MIN | 20.0 | 17.8 | 21.5 | 20.1 | 30.2 | 43.0 | 34.7 | 41.5 | 28.4 | 15.4 | 11.8 |
| (WY) | 2002 | 2002 | 1999 | 1981 | 2002 | 1985 | 2002 | 1999 | 1999 | 2002 | 2002 |

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## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

| SUMMARY STATISTICS | FOR 2002 CALEND | AR YEAR | FOR 2003 WAT | R YEAR | WATER YEARS | 1970-2003 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ANNUAL TOTAL | 17034.5 |  | 45448 |  |  |  |  |
| ANNUAL MEAN | 46.7 |  | 125 |  | 84.9 |  |  |
| HIGHEST ANNUAL MEAN |  |  |  |  | 130 |  | 1979 |
| LOWEST ANNUAL MEAN |  |  |  |  | 29.7 |  | 2002 |
| HIGHEST DAILY MEAN | 605 | Dec 14 | 1820 | Jun 21 | 4010 | Jun 22 | 1972 |
| LOWEST DAILY MEAN | 7.4 | Aug 23 | 14 | Oct 8 | 7.4 | Aug 23 | 2002 |
| ANNUAL SEVEN-DAY MINIMUM | 8.1 | Aug 17 | 17 | Oct 3 | 8.1 | Aug 17 | 2002 |
| MAXIMUM PEAK FLOW |  |  | 4660 | Jun 21 | a9600 | Jun 29 | 1973 |
| MAXIMUM PEAK STAGE |  |  | 9.35 | Jun 21 | 12.47 | Jun 29 | 1973 |
| ANNUAL RUNOFF (CFSM) | 0.85 |  | 2.26 |  | 1.54 |  |  |
| ANNUAL RUNOFF (INCHES) | 11.52 |  | 30.74 |  | 20.97 |  |  |
| 10 PERCENT EXCEEDS | 94 |  | 244 |  | 146 |  |  |
| 50 PERCENT EXCEEDS | 30 |  | 74 |  | 56 |  |  |
| 90 PERCENT EXCEEDS | 13 |  | 34 |  | 25 |  |  |

a From rating curve extended above $7,800 \mathrm{ft}^{3} / \mathrm{s}$ on basis of slope-area measurement at gage height 11.48 ft .


## CHRISTINA RIVER BASIN

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1969 to October 1978, August 1981 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1971 to October 1977, August 1981 to current year.
pH: May 1971 to October 1977, August 1981 to current year.
WATER TEMPERATURES: May 1971 to October 1977, August 1981 to current year.
DISSOLVED OXYGEN: May 1971 to October 1977, August 1981 to current year.
INSTRUMENTATION.--Water-quality monitor May 1971 to October 1977, August 1981 to current year.
REMARKS.--Specific conductance record rated good except for periods Nov. 3-5 and Aug. 22-26, which are poor. pH record rated good except for period Apr. 7-21, which is fair. Water temperature record rated good. Dissolved oxygen record rated fair except for periods July 16 to Aug. 4 and Aug. 15 to Sept. 9, which are poor. Data collection discontinued during winter months since 1981 water year. Other interruptions in the record were due to malfunctions of the equipment.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 858 microsiemens, Jan. 10, 1977; minimum, 72 microsiemens, Nov. 16, 1985. pH: Maximum, 10.0, Dec. 21, 1971; minimum, 5.9, July 14, 1991.
WATER TEMPERATURE: Maximum, $33.5^{\circ} \mathrm{C}$, July 19,1977 ; minimum, $0.0^{\circ} \mathrm{C}$, many days during winters.
DISSOLVED OXYGEN: Maximum, $19.5 \mathrm{mg} / \mathrm{L}$, Sept. 2, 1990; minimum, $0.6 \mathrm{mg} / \mathrm{L}$, Nov. 1, 3, 1974.
WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| Date | Time | $\begin{gathered} \text { Agency } \\ \text { col- } \\ \text { lecting } \\ \text { sample, } \\ \text { code } \\ (00027) \end{gathered}$ | $\begin{gathered} \text { Agency } \\ \text { ana- } \\ \text { lyzing } \\ \text { sample, } \\ \text { code } \\ (00028) \end{gathered}$ | Instantaneous discharge, cfs (00061) | $\begin{gathered} \text { Dis- } \\ \text { solved } \\ \text { oxygen, } \\ \mathrm{mg} / \mathrm{L} \\ (00300) \end{gathered}$ | ```pH, water, unfltrd field, std units (00400)``` | ```Specif. conduc- tance, wat unf \muS/cm 25 degC (00095)``` | ```Temper- ature, water, deg C (00010)``` | $\begin{gathered} \text { Fecal } \\ \text { coli- } \\ \text { form, } \\ \text { M-FC } \\ 0.7 \mu \mathrm{MF} \\ \text { col/ } \\ 100 \mathrm{~mL} \\ (31625) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MAR 2003 |  |  |  |  |  |  |  |  |  |
| 10... | 1345 | 1028 | 1028 | 196 | 13.3 | 7.7 | 223 | 4.1 | 125 |
| 20. | 1215 | 1028 | 1028 | 122 | 12.7 | 8.0 | 302 | 7.2 | 220 |
| APR |  |  |  |  |  |  |  |  |  |
| 07. | 1245 | 1028 | 1028 | 81 | 13.1 | 8.4 | 299 | 7.0 | 160 |
| 21. | 1130 | 1028 | 1028 | 71 | 13.2 | 8.8 | 290 | 12.3 | 58 |
| MAY |  |  |  |  |  |  |  |  |  |
| 01. | 1310 | 1028 | 1028 | 61 | 13.4 | 9.1 | 315 | 16.6 | 157 |
| 12. | 1615 | 1028 | 1028 | 54 | 10.0 | 8.4 | 313 | 16.6 | 467 |
| 21. | 1425 | 1028 | 1028 | 51 | 9.9 | 7.8 | 325 | 15.4 | 1250 |
| JUN |  |  |  |  |  |  |  |  |  |
| 05. | 1420 | 1028 | 1028 | 329 | 9.6 | 7.6 | 218 | 16.1 | 5600 |
| 12. | 1200 | 1028 | 1028 | 105 | 9.1 | 7.9 | 304 | 19.4 | 560 |
| 26. | 0750 | 1028 | 1028 | 142 | 9.1 | 7.5 | 301 | 19.4 | 460 |
| JUL |  |  |  |  |  |  |  |  |  |
| 08. | 1210 | 1028 | 1028 | 109 | 8.7 | 7.6 | 298 | 22.7 | 2500 |
| 16. | 1105 | 1028 | 1028 | 64 | 8.7 | 7.6 | 322 | 21.4 | 1140 |
| 23. | 1250 | 1028 | 1028 | 102 | 8.3 | 7.7 | 306 | 22.1 | 2700 |
| AUG |  |  |  |  |  |  |  |  |  |
| 06. | 1225 | 1028 | 1028 | 76 | 8.1 | 7.7 | 305 | 22.2 | E700 |
| 27. | 1415 | 1028 | 1028 | 41 | 11.0 | 8.4 | 345 | 22.7 | 1470 |
| SEP |  |  |  |  |  |  |  |  |  |
| 09. | 1305 | 1028 | 1028 | 43 | 9.3 | 8.3 | 359 | 20.7 | 2000 |
| 22... | 1350 | 1028 | 1028 | 105 | 9.0 | 7.7 | 331 | 19.4 | 1520 |

## CHRISTINA RIVER BASIN

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

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

| Date | Time | $\begin{gathered} \text { Agency } \\ \text { col- } \\ \text { lecting } \\ \text { sample, } \\ \text { code } \\ (00027) \end{gathered}$ | $\begin{gathered} \text { Agency } \\ \text { ana- } \\ \text { lyzing } \\ \text { sample, } \\ \text { code } \\ (00028) \end{gathered}$ | Instantaneous discharge, cfs (00061) | $\begin{gathered} \text { Dis- } \\ \text { solved } \\ \text { oxygen, } \\ \mathrm{mg} / \mathrm{L} \\ (00300) \end{gathered}$ | $\begin{gathered} \text { pH, } \\ \text { water, } \\ \text { unfltrd } \\ \text { field, } \\ \text { std } \\ \text { units } \\ (00400) \end{gathered}$ | Specif. conductance, wat unf $\mu \mathrm{S} / \mathrm{cm}$ 25 degC (00095) | $\begin{aligned} & \text { Temper- } \\ & \text { ature, } \\ & \text { water, } \\ & \text { deg C } \\ & (00010) \end{aligned}$ | $\begin{gathered} \text { Calcium } \\ \text { water, } \\ \text { fltrd, } \\ \text { mg/L } \\ (00915) \end{gathered}$ | $\begin{gathered} \text { Magnes- } \\ \text { ium, } \\ \text { water, } \\ \text { fltrd, } \\ \mathrm{mg} / \mathrm{L} \\ (00925) \end{gathered}$ | Potassium, water, fltrd, mg/L (00935) | ```Sodium, water, fltrd, mg/L (00930)``` | ANC, wat unf incrm. titr., field, $\mathrm{mg} / \mathrm{L}$ as CaCO3 (00419) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { OCT } 2002 \\ 21 \ldots \end{gathered}$ | 1400 | 1028 | 80020 | 25 | 12.5 | 8.1 | 423 | 13.3 | 39.1 | 11.4 | 7.30 | 25.9 | 66 |
| Date | $\begin{gathered} \text { Chlor- } \\ \text { ide, } \\ \text { water, } \\ \text { fltrd, } \\ \mathrm{mg} / \mathrm{L} \\ (00940) \end{gathered}$ | $\begin{gathered} \text { Silica, } \\ \text { water, } \\ \text { fltrd, } \\ \mathrm{mg} / \mathrm{L} \\ (00955) \end{gathered}$ | $\begin{aligned} & \text { Sulfate } \\ & \text { water, } \\ & \text { fltrd, } \\ & \text { mg/L } \\ & (00945) \end{aligned}$ | $\begin{aligned} & \text { Ammonia } \\ & \text { water, } \\ & \text { fltrd, } \\ & \text { mg/L } \\ & \text { as N } \\ & (00608) \end{aligned}$ | ```Nitrite + nitrate water fltrd, mg/L as N (00631)``` | $\begin{gathered} \text { Nitrite } \\ \text { water, } \\ \text { fltrd, } \\ \text { mg/L } \\ \text { as N } \\ (00613) \end{gathered}$ | $\begin{aligned} & \text { Ortho- } \\ & \text { phos- } \\ & \text { phate, } \\ & \text { water, } \\ & \text { fltrd, } \\ & \text { mg/L } \\ & \text { as P } \\ & (00671) \end{aligned}$ | Aluminum, water, fltrd, $\mu \mathrm{g} / \mathrm{L}$ (01106) | ```Arsenic water, fltrd, \mug/L (01000)``` | Boron, water, fltrd, $\mu \mathrm{g} / \mathrm{L}$ (01020) | ```Cadmium water, fltrd, \mug/L (01025)``` | Chromium, water, fltrd, $\mu \mathrm{g} / \mathrm{L}$ (01030) | $\begin{gathered} \text { Copper, } \\ \text { water, } \\ \text { fltrd, } \\ \mu \mathrm{g} / \mathrm{L} \\ (01040) \end{gathered}$ |
| $\begin{gathered} \text { OCT } 2002 \\ 21 \ldots \end{gathered}$ | 41.2 | 13.4 | 47.9 | <. 04 | 4.21 | . 009 | . 11 | 30 | <2 | 110 | <. 2 | 9.1 | 3.0 |
|  |  | Date | $\begin{gathered} \text { Iron, } \\ \text { water, } \\ \text { fltrd, } \\ \mu g / L \\ (01046) \end{gathered}$ | $\begin{gathered} \text { Lead, } \\ \text { water, } \\ \text { fltrd, } \\ \mu \mathrm{g} / \mathrm{L} \\ (01049) \end{gathered}$ | Manganese, water, fltrd, $\mu \mathrm{g} / \mathrm{L}$ (01056) | ```Mercury water, fltrd, \mug/L (71890)``` | $\begin{gathered} \text { Molyb- } \\ \text { denum, } \\ \text { water, } \\ \text { fltrd, } \\ \mu \mathrm{g} / \mathrm{L} \\ (01060) \end{gathered}$ | ```Nickel, water, fltrd, \mug/L (01065)``` | $\begin{gathered} \text { Zinc, } \\ \text { water, } \\ \text { fltrd, } \\ \mu \mathrm{g} / \mathrm{L} \\ (01090) \end{gathered}$ |  |  |  |  |
|  |  | $\begin{aligned} & 2002 \\ & 21 \ldots \end{aligned}$ | 47 | <1 | 40.0 | <. 02 | 45.8 | 3.3 | <24 |  |  |  |  |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES
REMARKS.--Samples were collected using a Hess sampler with a mesh size of $500 \mu \mathrm{~m}$. Each sample covered a total area of $2.4 \mathrm{~m}^{2}$.

| Date | 10/21/02 |
| :---: | :---: |
| Benthic Macroinvertebrate | Count |
| Platyhelminthes |  |
| Turbellaria (FLATWORMS) |  |
| Tricladida |  |
| Planariidae | 321 |
| Nematoda (NEMATODES) | 5 |
| Nemertea (PROBOSAS WORMS) |  |
| Enopla |  |
| Hoplonemertea |  |
| Tetrastemmatidae |  |
| Prostoma sp | 48 |
| Mollusca |  |
| Gastropoda (SNAILS) |  |
| Basommatophora |  |
| Ancylidae |  |
| Ferrissia sp | 12 |
| Physidae |  |
| Physa sp | 1 |
| Mesogastropoda |  |
| Valvatidae |  |
| Valvata sp | 1 |
| Bivalvia (CLAMS) |  |
| Veneroida |  |
| Sphaeriidae |  |
| Pisidium sp | 4 |
| Annelida |  |
| Oligochaeta (AQUATIC EARTHWORMS) |  |
| Lumbriculida |  |
| Lumbriculidae | 4 |
| Arthropoda |  |
| Acariformes |  |
| Hydrachnidia (WATER MITES) | 18 |
| Insecta |  |
| Ephemeroptera (MAYFLIES) |  |
| Ephemerellidae |  |
| Serratella sp | 6 |
| Heptageniidae |  |
| Stenonema sp | 7 |
| Trichoptera (CADDISFLIES) |  |
| Hydropsychidae |  |
| Cheumatopsyche sp | 756 |
| Hydropsyche sp | 467 |
| Hydroptilidae |  |
| Leucotrichia sp | 360 |
| Philopotamidae |  |
| Chimarra sp | 6 |
| Polycentropodidae |  |
| Polycentropus sp | 1 |
| Lepidoptera (MOTHS AND BUTTERFLIES) |  |
| Pyralidae |  |
| Petrophila sp | 12 |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

BIOLOGICAL DATA
BENTHIC MACROINVERTEBRATES--Continued

| Date | $10 / 21 / 02$ |
| :---: | :---: |
| Benthic Macroinvertebrate | Count |
| Coleoptera (BEETLES) |  |
| Elmidae (RIFFLE BEETLES) |  |
| Ancyronyx sp |  |
| Macronychus sp |  |
| Optioservus sp | 1 |
| Oulimnius sp |  |
| Stenelmis sp |  |
| Hydrophilidae |  |
| Berosus sp |  |
| Psephenidae (WATER PENNIES) |  |
| Psephenus sp |  |
| Diptera (TRUE FLIES) |  |
| Chironomidae (MIDGES) |  |
| Empididae (DANCE FLIES) |  |
| Hemerodromia sp |  |
| Simulidae |  |
| Simulium sp |  |
| Tipulidae (CRANE FLIES) |  |
| Antocha sp |  |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT $25^{\circ}$ CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003


## CHRISTINA RIVER BASIN

## 01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS PER CENTIMETER AT $25^{\circ}$ CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | JUNE |  |  | JULY |  |  | AUGUST |  |  | SEPTEMBER |  |  |
| 1 | 279 | 206 | 234 | 316 | 302 | 309 | 375 | 311 | 358 | 372 | 343 | 357 |
| 2 | 281 | 239 | 257 | 327 | 278 | 311 | 362 | 327 | 346 | 343 | 209 | 250 |
| 3 | 296 | 263 | 282 | 329 | 264 | 309 | 368 | 346 | 356 | 299 | 273 | 283 |
| 4 | 276 | 165 | 196 | 321 | 307 | 315 | 359 | 119 | 272 | 301 | 193 | 256 |
| 5 | 248 | 185 | 214 | 320 | 300 | 312 | 331 | 173 | 290 | 305 | 257 | 281 |
| 6 | - | --- | --- | 317 | 300 | 309 | 330 | 276 | 303 | 336 | 305 | 318 |
| 7 | --- | --- | --- | 318 | 213 | 298 | 343 | 323 | 334 | 354 | 329 | 340 |
| 8 | --- | --- | --- | 307 | 278 | 290 | 353 | 327 | 342 | 357 | 338 | 349 |
| 9 | --- | --- | --- | --- | --- | --- | 354 | 114 | 286 | 372 | 332 | 353 |
| 10 | 303 | 280 | 290 | 333 | 309 | 319 | --- | --- | --- | 378 | 352 | 365 |
| 11 | 303 | 281 | 296 | 321 | 306 | 316 | --- | --- | --- | 383 | 355 | 367 |
| 12 | 308 | 301 | 304 | 319 | 196 | 302 | 310 | 249 | 284 | 380 | 346 | 365 |
| 13 | 309 | 173 | 285 | 329 | 297 | 312 | 327 | 309 | 318 | 356 | 214 | 310 |
| 14 | 236 | 173 | 209 | 328 | 313 | 322 | --- | --- | --- | 294 | 225 | 270 |
| 15 | 254 | 195 | 230 | 331 | 314 | 324 | --- | --- | --- | 301 | 98 | 199 |
| 16 | 285 | 253 | 267 | 341 | 317 | 332 | 361 | 339 | 349 | 281 | 171 | 228 |
| 17 | 297 | 280 | 288 | 345 | 322 | 335 | 346 | 320 | 331 | 311 | 271 | 288 |
| 18 | 296 | 235 | 259 | 360 | 329 | 344 | 344 | 324 | 336 | - | 266 | --- |
| 19 | 287 | 271 | 279 | 351 | 328 | 338 | 357 | 328 | 341 | --- | --- | --- |
| 20 | 282 | 125 | 228 | 346 | 324 | 336 | 359 | 334 | 344 | 302 | 240 | 277 |
| 21 | --- | --- | --- | 346 | 327 | 337 | 363 | 339 | 349 | 325 | 302 | 312 |
| 22 | --- | --- | --- | 346 | 203 | 331 | 365 | 255 | 318 | 337 | 319 | 328 |
| 23 | 279 | --- | --- | 329 | 169 | 287 | 362 | 230 | 285 | 332 | 144 | 197 |
| 24 | 291 | 278 | 284 | 340 | 325 | 334 | 365 | 260 | 327 | 275 | 169 | 234 |
| 25 | 302 | 286 | 294 | 349 | 330 | 338 | 373 | 249 | 295 | 302 | 275 | 290 |
| 26 | 310 | 299 | 304 | 354 | 324 | 340 | 376 | 274 | 347 | 304 | 288 | 297 |
| 27 | 312 | 302 | 308 | 354 | 328 | 342 | 360 | 335 | 347 | 306 | 250 | 298 |
| 28 | 311 | 304 | 308 | 365 | 334 | 353 | 369 | 346 | 355 | 315 | 229 | 278 |
| 29 | 312 | 304 | 308 | 370 | 348 | 362 | 370 | 350 | 361 | 306 | 280 | 295 |
| 30 | 310 | 299 | 304 | 389 | 351 | 367 | 371 | 154 | 312 | 324 | 302 | 311 |
| 31 | --- | --- | --- | 395 | 346 | 373 | 358 | 280 | 336 | --- | --- | -- |
| MONTH | 312 | 125 | 271 | 395 | 169 | 327 | 376 | 114 | 327 | 383 | 98 | 296 |

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | OCTOBE |  |  | VEMB |  |  | EMB |  |  | JANUAR |  |
| 1 | 8.5 | 7.5 | 7.9 | 7.6 | 7.4 | 7.4 | 7.7 | 7.4 | 7.4 | --- | --- | --- |
| 2 | 8.4 | 7.4 | 7.9 | 7.7 | 7.4 | 7.5 | 7.6 | 7.3 | 7.4 | --- | --- | --- |
| 3 | 8.4 | 7.3 | 8.0 | 7.7 | 7.4 | 7.5 | --- | --- | --- | --- | --- | --- |
| 4 | 7.9 | 7.0 | 7.3 | 7.7 | 7.4 | 7.5 | --- | -- | --- | - | --- | --- |
| 5 | 8.0 | 7.2 | 7.5 | 7.7 | 7.4 | 7.5 | --- | -- | --- | --- | --- | --- |
| 6 | 8.1 | 7.3 | 7.6 | 7.6 | 7.3 | 7.4 | --- | - | --- | --- | --- | --- |
| 7 | 8.2 | 7.3 | 7.7 | 7.7 | 7.3 | 7.4 | --- | --- | --- | - | -- | --- |
| 8 | 8.3 | 7.4 | 7.9 | 7.7 | 7.3 | 7.4 | --- | - | --- | - | -- | --- |
| 9 | 8.1 | 7.4 | 7.9 | 7.9 | 7.3 | 7.5 | --- | -- | -- | - | -- | --- |
| 10 | 7.8 | 7.4 | 7.5 | 7.9 | 7.4 | 7.5 | --- | --- | -- | --- | -- | - |
| 11 | 7.6 | 7.3 | 7.4 | 7.5 | 7.3 | 7.4 | --- | - | --- | - | - | --- |
| 12 | 7.4 | 7.3 | 7.3 | 7.4 | 7.3 | 7.3 | - | --- | --- | --- | --- | --- |
| 13 | 7.5 | 7.3 | 7.4 | --- | --- | --- | --- | - | -- | - | -- | --- |
| 14 | 7.8 | 7.4 | 7.6 | 7.8 | 7.6 | 7.6 | --- | -- | --- | -- | -- | - |
| 15 | 7.8 | 7.5 | 7.6 | 8.0 | 7.6 | 7.7 | --- | --- | --- | --- | --- | --- |
| 16 | --- | - | --- | 7.8 | 7.6 | 7.6 | - | --- | --- | --- | --- | --- |
| 17 | --- | --- | --- | --- | -- | -- | --- | -- | -- | -- | -- | --- |
| 18 | 7.7 | 7.4 | 7.5 | --- | --- | --- | - | - | - | - | -- | --- |
| 19 | 7.7 | 7.4 | 7.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20 | 7.8 | 7.4 | 7.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21 | 7.9 | 7.4 | 7.6 | --- | --- | --- | --- | --- | --- | - | --- | - |
| 22 | 7.9 | 7.4 | 7.6 | --- | --- | -- | --- | - | --- | - | - | --- |
| 23 | 8.1 | 7.4 | 7.7 | 7.8 | 7.6 | 7.6 | - | --- | --- | --- | --- | --- |
| 24 | 7.8 | 7.4 | 7.6 | 7.8 | 7.5 | 7.6 | --- | -- | -- | -- | -- | --- |
| 25 | 7.7 | 7.3 | 7.5 | 7.7 | 7.5 | 7.5 | --- | -- | --- | -- | --- | --- |
| 26 | 7.6 | 7.4 | 7.5 | 7.8 | 7.5 | 7.5 | --- | --- | --- | --- | --- | --- |
| 27 | 7.9 | 7.3 | 7.5 | 7.7 | 7.4 | 7.5 | --- | -- | --- | - | -- | --- |
| 28 | 7.9 | 7.4 | 7.6 | 7.7 | 7.4 | 7.5 | --- | -- | - | --- | -- | --- |
| 29 | 7.8 | 7.3 | 7.5 | 7.6 | 7.4 | 7.4 | --- | --- | --- | --- | --- | --- |
| 30 | 7.4 | 7.4 | 7.4 | 7.6 | 7.3 | 7.4 | --- | -- | --- | --- | --- | -- |
| 31 | 7.4 | 7.4 | 7.4 | --- | --- | -- | --- | - | - | --- | - | --- |
| MAX | 8.5 | 7.5 | 8.0 | 8.0 | 7.6 | 7.7 | 7.7 | 7.4 | 7.4 | --- | --- | --- |
| MIN | 7.4 | 7.0 | 7.3 | 7.4 | 7.3 | 7.3 | 7.6 | 7.3 | 7.4 | --- | --- | --- |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | FEBRUARY |  |  | MARCH |  |  | APRIL |  |  | MAY |  |  |
| 1 | --- | --- | - | 7.9 | 7.7 | 7.8 | 9.1 | 7.8 | 8.1 | 9.3 | 7.6 | 7.9 |
| 2 | --- | --- | --- | 8.3 | 7.7 | 7.8 | 9.4 | 7.7 | 8.2 | 9.2 | 7.4 | 8.1 |
| 3 | --- | --- | --- | 7.8 | 7.7 | 7.7 | 9.6 | 7.7 | 8.4 | 9.3 | 7.4 | 8.0 |
| 4 | --- | --- | --- | 7.8 | 7.7 | 7.7 | 9.0 | 7.7 | 7.9 | 9.2 | 7.4 | 8.1 |
| 5 | --- | --- | --- | 8.0 | 7.6 | 7.7 | 9.0 | 7.7 | 8.0 | 8.8 | 7.5 | 7.7 |
| 6 | - | - | --- | 7.8 | 7.6 | 7.6 | 9.4 | 7.8 | 8.6 | 8.8 | 7.5 | 7.7 |
| 7 | --- | --- | --- | 7.8 | 7.6 | 7.6 | 8.8 | 7.7 | 7.9 | 9.1 | 7.4 | 7.8 |
| 8 | --- | --- | --- | 7.8 | 7.6 | 7.7 | 8.9 | 7.6 | 7.8 | 8.3 | 7.3 | 7.5 |
| 9 | --- | --- | --- | 7.8 | 7.6 | 7.7 | 8.7 | 7.6 | 7.8 | 7.8 | 7.4 | 7.5 |
| 10 | --- | --- | --- | 7.8 | 7.6 | 7.7 | 9.2 | 7.6 | 8.2 | 8.3 | 7.4 | 7.6 |
| 11 | --- | --- | --- | 7.9 | 7.7 | 7.7 | 8.6 | 7.8 | 7.8 | 8.0 | 7.4 | 7.5 |
| 12 | --- | --- | --- | 8.0 | 7.6 | 7.7 | 8.7 | 7.7 | 7.8 | 8.5 | 7.3 | 7.6 |
| 13 | --- | --- | --- | 7.9 | 7.6 | 7.7 | 9.2 | 7.7 | 8.2 | 8.7 | 7.5 | 7.8 |
| 14 | --- | --- | --- | 7.9 | 7.6 | 7.7 | 9.4 | 7.8 | 8.2 | --- | 7.5 | --- |
| 15 | --- | --- | --- | 7.9 | 7.6 | 7.7 | 9.5 | 7.8 | 8.4 | 8.6 | 7.5 | 7.9 |
| 16 | - | --- | -- | 8.0 | 7.6 | 7.7 | 9.7 | 7.8 | 8.6 | 7.9 | 7.5 | 7.6 |
| 17 | --- | --- | --- | 8.1 | 7.6 | 7.6 | 9.5 | 7.8 | 8.5 | 8.3 | 7.5 | 7.6 |
| 18 | --- | --- | --- | 8.3 | 7.6 | 7.7 | 8.9 | 7.9 | 8.2 | 8.4 | 7.5 | 7.7 |
| 19 | --- | --- | --- | 8.4 | 7.6 | 7.8 | 9.7 | 8.0 | 8.6 | 8.4 | 7.5 | 7.7 |
| 20 | --- | --- | --- | 8.2 | 7.6 | 7.7 | 9.7 | 8.0 | 8.7 | 8.6 | 7.4 | 7.8 |
| 21 | --- | --- | --- | 7.7 | 7.6 | 7.6 | 9.4 | 7.9 | 8.4 | 8.0 | 7.4 | 7.6 |
| 22 | --- | --- | --- | 8.0 | 7.6 | 7.7 | 9.1 | 7.6 | 7.9 | 8.2 | 7.5 | 7.7 |
| 23 | --- | --- | --- | 8.2 | 7.6 | 7.8 | 9.4 | 7.6 | 8.3 | 8.1 | 7.5 | 7.6 |
| 24 | --- | --- | --- | 8.5 | 7.6 | 7.8 | 9.3 | 7.7 | 8.4 | 8.0 | 7.5 | 7.6 |
| 25 | --- | --- | --- | 8.8 | 7.7 | 7.9 | 9.5 | 7.6 | 8.3 | 7.8 | 7.5 | 7.6 |
| 26 | --- | --- | --- | 9.0 | 7.7 | 7.8 | 8.3 | 7.6 | 7.8 | 7.8 | 7.4 | 7.4 |
| 27 | 7.8 | 7.7 | 7.8 | 9.0 | 7.7 | 8.0 | 9.3 | 7.7 | 8.2 | 7.5 | 7.4 | 7.4 |
| 28 | 7.9 | 7.7 | 7.8 | 9.1 | 7.7 | 8.0 | 9.5 | 7.6 | 8.2 | 7.7 | 7.4 | 7.5 |
| 29 | -- | - | -- | 9.0 | 7.7 | 7.8 | 9.4 | 7.7 | 8.2 | 7.8 | 7.5 | 7.6 |
| 30 | --- | --- | --- | 8.5 | 7.7 | 7.8 | 9.5 | 7.7 | 8.3 | 8.0 | 7.5 | 7.6 |
| 31 | --- | --- | --- | 8.9 | 7.7 | 8.0 | --- | --- | --- | 7.9 | 7.5 | 7.6 |
| MAX | 7.9 | 7.7 | 7.8 | 9.1 | 7.7 | 8.0 | 9.7 | 8.0 | 8.7 | 9.3 | 7.6 | 8.1 |
| MIN | 7.8 | 7.7 | 7.8 | 7.7 | 7.6 | 7.6 | 8.3 | 7.6 | 7.8 | 7.5 | 7.3 | 7.4 |
| DAY | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN | MAX | MIN | MEDIAN |
|  | JUNE |  |  | JULY |  |  | AUGUST |  |  | SEPTEMBER |  |  |
|  | 7.8 | 7.5 | 7.6 | 8.7 | 7.5 | 7.8 | 7.9 | 7.4 | 7.6 | 7.9 | 7.6 | 7.7 |
| 2 | 7.8 | 7.5 | 7.6 | 8.8 | 7.5 | 7.8 | 7.9 | 7.4 | 7.6 | 7.6 | 7.5 | 7.5 |
| 3 | 7.8 | 7.5 | 7.6 | 8.3 | 7.4 | 7.6 | 7.8 | 7.5 | 7.6 | 7.6 | 7.5 | 7.5 |
| 4 | 7.8 | 7.4 | 7.5 | 8.6 | 7.5 | 7.8 | 8.2 | 7.4 | 7.6 | 7.7 | 7.4 | 7.5 |
| 5 | 7.6 | 7.4 | 7.5 | 8.4 | 7.4 | 7.6 | 8.1 | 7.5 | 7.6 | 7.6 | 7.4 | 7.5 |
| 6 | --- | --- | --- | 8.2 | 7.4 | 7.6 | 7.8 | 7.6 | 7.7 | 7.8 | 7.5 | 7.7 |
| 7 | --- | --- | --- | 8.0 | 7.3 | 7.4 | 7.9 | 7.6 | 7.7 | 8.1 | 7.6 | 7.7 |
| 8 | --- | --- | --- | 7.9 | 7.3 | 7.5 | 8.0 | 7.6 | 7.7 | 8.3 | 7.6 | 7.8 |
| 9 | -- | --- | --- | 8.0 | --- | --- | 7.8 | 7.4 | 7.6 | 8.8 | 7.6 | 7.9 |
| 10 | 7.8 | 7.5 | 7.6 | 7.8 | 7.5 | 7.6 | --- |  | --- | 8.9 | 7.7 | 8.1 |
| 11 | 7.8 | 7.5 | 7.6 | 7.9 | 7.5 | 7.6 | --- | --- | --- | 9.1 | 7.7 | 8.2 |
| 12 | 8.0 | 7.5 | 7.6 | 7.9 | 7.5 | 7.7 | 7.8 | 7.6 | 7.6 | 9.0 | 7.6 | 8.0 |
| 13 | 8.1 | 7.2 | 7.5 | 7.8 | 7.5 | 7.6 | 7.8 | 7.6 | 7.6 | 7.9 | 7.6 | 7.7 |
| 14 | 7.6 | 7.2 | 7.4 | 7.9 | 7.5 | 7.6 | --- |  |  | 7.9 | 7.5 | 7.6 |
| 15 | 7.6 | 7.3 | 7.4 | 8.0 | 7.5 | 7.7 | 8.2 | --- | --- | 7.7 | 7.3 | 7.4 |
| 16 | 7.8 | 7.4 | 7.6 | 8.1 | 7.5 | 7.6 | 7.9 | 7.6 | 7.7 | 7.5 | 7.3 | 7.4 |
| 17 | 8.0 | 7.5 | 7.7 | 8.0 | 7.5 | 7.7 | 8.2 | 7.6 | 7.7 | 7.8 | 7.5 | 7.6 |
| 18 | 7.9 | 7.5 | 7.6 | 7.9 | 7.5 | 7.7 | 8.3 | 7.6 | 7.8 | 7.6 | 7.6 | 7.6 |
| 19 | 8.0 | 7.6 | 7.7 | 8.1 | 7.5 | 7.7 | 8.6 | 7.6 | 7.8 | --- | --- | --- |
| 20 | 7.7 | 7.3 | 7.6 | 8.0 | 7.6 | 7.7 | 8.8 | 7.5 | 7.8 | 7.6 | 7.5 | 7.5 |
| 21 | --- | --- | -- | 8.1 | 7.5 | 7.7 | 8.9 | 7.5 | 8.0 | 7.7 | 7.5 | 7.6 |
| 22 | --- | --- | --- | 8.0 | 7.5 | 7.6 | 8.9 | 7.4 | 7.9 | 7.8 | 7.5 | 7.6 |
| 23 | -- | -- | --- | 8.3 | 7.5 | 7.7 | 8.9 | 7.4 | 8.0 | 8.1 | 7.3 | 7.5 |
| 24 | 7.6 | 7.5 | 7.6 | 8.0 | 7.5 | 7.7 | 9.0 | 7.5 | 8.1 | 7.6 | 7.4 | 7.6 |
| 25 | 7.6 | 7.5 | 7.6 | 7.9 | 7.6 | 7.7 | 9.1 | 7.5 | 8.2 | 7.7 | 7.6 | 7.6 |
| 26 | 7.7 | 7.4 | 7.5 | 7.9 | 7.5 | 7.6 | 9.0 | 7.3 | 7.8 | 7.8 | 7.6 | 7.6 |
| 27 | 7.9 | 7.4 | 7.6 | 8.0 | 7.5 | 7.6 | 8.9 | 7.3 | 7.9 | 7.8 | 7.6 | 7.6 |
| 28 | 8.3 | 7.5 | 7.7 | 7.9 | 7.4 | 7.6 | 9.1 | 7.5 | 8.2 | 7.8 | 7.6 | 7.6 |
| 29 | 8.6 | 7.6 | 7.8 | 7.9 | 7.5 | 7.7 | 9.0 | 7.5 | 8.0 | 7.9 | 7.6 | 7.7 |
| 30 | 8.8 | 7.5 | 7.8 | 8.1 | 7.5 | 7.7 | 8.7 | 7.5 | 7.6 | 8.0 | 7.7 | 7.8 |
| 31 | --- | --- | --- | 7.9 | 7.5 | 7.6 | 8.1 | 7.5 | 7.8 | --- | - | --- |
| MAX | 8.8 | 7.6 | 7.8 | 8.8 | 7.6 | 7.8 | 9.1 | 7.6 | 8.2 | 9.1 | 7.7 | 8.2 |
| MIN | 7.6 | 7.2 | 7.4 | 7.8 | 7.3 | 7.4 | 7.8 | 7.3 | 7.6 | 7.5 | 7.3 | 7.4 |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | OCTOBER |  |  | NOVEMBER |  |  | DECEMBER |  |  | JANUARY |  |  |
| 1 | 20.5 | 17.0 | 19.0 | 9.0 | 7.0 | 8.0 | 5.5 | 3.0 | 4.0 | --- | --- | --- |
| 2 | 21.5 | 18.5 | 20.5 | 9.5 | 7.5 | 8.0 | 4.5 | 3.0 | 3.5 | --- | --- | --- |
| 3 | 22.5 | 19.5 | 21.0 | 9.0 | 6.5 | 7.5 | --- | --- |  | --- |  | --- |
| 4 | 22.0 | 20.5 | 21.0 | 9.5 | 7.5 | 8.5 | --- | --- | --- | --- | --- | --- |
| 5 | 23.0 | 20.5 | 21.5 | 9.5 | 8.0 | 9.0 | --- | --- | --- | --- | --- | --- |
| 6 | 21.0 | 18.0 | 19.5 | 10.5 | 9.0 | 9.5 | --- | --- | --- | --- | --- | --- |
| 7 | 20.0 | 18.5 | 19.0 | 9.5 | 8.0 | 9.0 | --- | --- | --- | --- | --- | --- |
| 8 | 18.5 | 16.0 | 17.0 | 10.0 | 7.0 | 8.5 | --- | --- | --- | --- | --- | --- |
| 9 | 16.5 | 15.0 | 16.0 | 11.0 | 8.5 | 9.5 | --- | --- | --- | --- | --- | --- |
| 10 | 17.5 | 16.5 | 17.0 | 13.5 | 10.0 | 11.5 | --- | --- | --- | --- | --- | --- |
| 11 | 17.0 | 16.0 | 16.0 | 16.0 | 13.5 | 15.0 | --- | --- | --- | --- | --- | --- |
| 12 | 17.0 | 16.0 | 16.5 | 14.5 | 12.0 | 13.0 | --- | --- | --- | --- | --- | --- |
| 13 | 17.5 | 16.0 | 17.0 | --- | --- | - | --- | --- | --- | --- | --- | --- |
| 14 | 17.0 | 14.5 | 15.5 | 10.5 | 8.5 | 9.5 | --- | --- | --- | --- | --- | --- |
| 15 | 14.5 | 12.5 | 13.5 | 11.0 | 9.0 | 10.0 | --- | --- | --- | --- | --- | --- |
| 16 | --- | --- | --- | 10.0 | 9.0 | 10.0 | --- | --- | --- | --- | --- | --- |
| 17 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18 | 14.0 | 12.0 | 13.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19 | 13.5 | 11.5 | 12.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20 | 14.0 | 13.0 | 13.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21 | 14.0 | 12.0 | 13.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22 | 13.0 | 10.5 | 12.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23 | 13.0 | 10.5 | 12.0 | 9.0 | 6.5 | 7.5 | --- | --- | --- | --- | --- | --- |
| 24 | 12.5 | 11.0 | 11.5 | 8.0 | 6.0 | 7.0 | --- | --- | --- | --- | --- | --- |
| 25 | 11.5 | 10.5 | 11.0 | 8.5 | 6.0 | 7.0 | --- | --- | --- | --- | --- | --- |
| 26 | 13.5 | 11.0 | 12.0 | 9.0 | 7.0 | 8.0 | --- | --- | --- | --- | --- | --- |
| 27 | 13.5 | 11.0 | 12.0 | 8.0 | 5.5 | 7.0 | --- | --- | --- | --- | --- | --- |
| 28 | 12.5 | 11.0 | 11.5 | 5.5 | 4.0 | 5.0 | --- | --- | --- | --- | --- | --- |
| 29 | 11.0 | 9.0 | 10.0 | 4.5 | 3.5 | 4.0 | --- | --- | --- | --- | --- | --- |
| 30 | 9.0 | 7.5 | 8.0 | 6.0 | 4.5 | 5.0 | --- | --- | --- | --- | --- | --- |
| 31 | 8.5 | 7.0 | 7.5 |  | --- | --- | --- | --- | --- | --- | --- | --- |
| MONTH | 23.0 | 7.0 | 14.8 | 16.0 | 3.5 | 8.6 | 5.5 | 3.0 | 3.8 | --- | --- | --- |
| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|  | FEBRUARY |  |  | MARCH |  |  | APRIL |  |  | MAY |  |  |
| 1 | --- | --- | --- | 4.0 | 3.5 | 4.0 | 8.0 | 5.5 | 7.0 | 18.5 | 14.0 | 16.5 |
| 2 | --- | --- | --- | 5.5 | 2.5 | 4.0 | 13.0 | 7.0 | 10.0 | 19.0 | 16.0 | 17.5 |
| 3 | --- | --- | --- | 2.5 | 0.5 | 1.5 | 13.5 | 9.5 | 12.0 | 17.5 | 15.0 | 16.0 |
| 4 | --- | --- | --- | 4.0 | 0.0 | 2.0 | 12.0 | 9.0 | 10.5 | 15.5 | 14.0 | 14.5 |
| 5 | --- | --- | --- | 6.0 | 3.0 | 4.0 | 9.0 | 8.5 | 9.0 | 14.0 | 11.5 | 12.0 |
| 6 | --- | --- | --- | 3.0 | 1.0 | 2.0 | 11.0 | 7.0 | 9.0 | 13.5 | 11.0 | 12.0 |
| 7 | --- | --- | --- | 4.0 | 0.5 | 2.5 | 10.0 | 6.0 | 7.0 | 18.5 | 12.5 | 15.5 |
| 8 | --- | --- | --- | 6.5 | 2.0 | 4.0 | 6.5 | 5.5 | 6.0 | 17.5 | 16.0 | 16.5 |
| 9 | --- | --- | --- | 6.0 | 2.0 | 4.0 | 6.5 | 5.5 | 6.0 | 16.5 | 14.5 | 15.0 |
| 10 | --- | --- | - | 4.5 | 1.0 | 2.5 | 8.5 | 6.0 | 7.0 | 16.5 | 13.5 | 15.0 |
| 11 | --- | --- | --- | 4.0 | 1.0 | 2.5 | 8.0 | 6.0 | 7.0 | 17.5 | 15.0 | 16.0 |
| 12 | --- | --- | --- | 6.5 | 3.5 | 4.5 | 12.5 | 6.5 | 9.5 | 17.0 | 15.0 | 16.0 |
| 13 | --- | --- | --- | 7.0 | 4.0 | 5.5 | 13.5 | 8.5 | 11.0 | 15.0 | 13.5 | 14.0 |
| 14 | --- | --- | --- | 6.5 | 3.0 | 4.5 | 13.5 | 8.5 | 11.0 | - | -- |  |
| 15 | --- | --- | --- | 8.0 | 3.5 | 5.5 | 16.0 | 10.0 | 13.0 | 15.5 | 12.5 | 14.0 |
| 16 | --- | --- | --- | 10.0 | 4.5 | 7.5 | 17.5 | 13.0 | 15.5 | 14.0 | 12.5 | 13.5 |
| 17 | --- | --- | --- | 11.0 | 7.5 | 9.0 | 16.5 | 10.5 | 13.0 | 13.0 | 11.5 | 12.5 |
| 18 | --- | --- | --- | 11.5 | 8.0 | 9.5 | 10.5 | 8.5 | 9.0 | 13.0 | 11.5 | 12.0 |
| 19 | --- | --- | - | 10.0 | 7.5 | 8.5 | 13.5 | 9.0 | 10.5 | 16.5 | 10.5 | 13.5 |
| 20 | -- | --- | --- | 7.5 | 6.0 | 6.5 | 14.5 | 9.5 | 12.0 | 17.5 | 12.5 | 15.0 |
| 21 | --- | --- | --- | 8.5 | 6.0 | 7.0 | 14.0 | 11.0 | 12.5 | 16.0 | 14.0 | 15.0 |
| 22 | --- | --- | --- | 11.5 | 7.5 | 9.5 | 14.5 | 12.0 | 13.5 | 14.5 | 13.5 | 14.0 |
| 23 | --- | --- | --- | 11.5 | 8.0 | 9.5 | 13.5 | 10.0 | 12.0 | 14.0 | 13.0 | 13.5 |
| 24 | --- | --- | --- | 12.0 | 8.0 | 10.0 | 14.0 | 9.0 | 11.5 | 14.0 | 13.0 | 13.5 |
| 25 | -- | --- | -- | 13.0 | 8.5 | 10.5 | 14.5 | 10.0 | 12.5 | 14.0 | 13.5 | 13.5 |
| 26 | --- | --- | --- | 12.5 | 9.5 | 11.0 | 14.0 | 12.5 | 13.0 | 14.0 | 13.0 | 13.5 |
| 27 | 2.5 | 1.0 | 2.0 | 13.0 | 8.5 | 11.0 | 17.0 | 12.0 | 14.0 | 14.5 | 12.5 | 13.5 |
| 28 | 4.5 | 2.0 | 3.0 | 11.5 | 9.0 | 10.5 | 17.5 | 12.0 | 14.5 | 15.5 | 13.5 | 14.5 |
| 29 | --- | --- | -- | 13.0 | 11.0 | 12.0 | 16.5 | 13.5 | 15.0 | 17.0 | 13.0 | 15.0 |
| 30 | --- | --- | --- | 12.0 | 8.0 | 10.0 | 17.5 | 13.0 | 15.0 | 19.5 | 14.5 | 17.0 |
| 31 | - | - | -- | 9.0 | 6.0 | 7.5 |  | --- | --- | 17.5 | 15.5 | 16.5 |
| MONTH | 4.5 | 1.0 | 2.5 | 13.0 | 0.0 | 6.5 | 17.5 | 5.5 | 10.9 | 19.5 | 10.5 | 14.6 |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | JUNE |  |  | JULY |  |  | AUGUST |  |  | SEPTEMBER |  |
| 1 | 16.5 | 14.0 | 15.5 | 22.5 | 18.5 | 20.5 | 22.0 | 20.5 | 21.0 | 21.0 | 19.5 | 20.5 |
| 2 | 17.0 | 13.0 | 15.0 | 21.5 | 18.5 | 20.0 | 24.0 | 20.5 | 22.0 | 21.5 | 19.5 | 20.5 |
| 3 | 15.5 | 14.0 | 14.5 | 20.0 | 18.5 | 19.5 | 24.0 | 22.0 | 23.0 | 19.5 | 19.0 | 19.5 |
| 4 | 14.0 | 13.0 | 13.0 | 23.0 | 18.5 | 20.5 | 24.0 | 21.5 | 22.5 | 20.5 | 19.5 | 20.0 |
| 5 | 16.0 | 13.0 | 14.5 | 23.5 | 20.0 | 21.5 | 23.5 | 21.5 | 22.5 | 21.0 | 19.5 | 20.0 |
| 6 | --- | --- | --- | 24.0 | 20.0 | 22.0 | 23.5 | 21.0 | 22.0 | 20.5 | 17.5 | 19.0 |
| 7 | --- | --- | --- | 24.5 | 20.5 | 22.5 | 22.0 | 21.0 | 21.5 | 20.5 | 17.5 | 19.0 |
| 8 | --- | --- | --- | 24.0 | 21.0 | 22.5 | 24.0 | 20.5 | 22.0 | 21.0 | 17.5 | 19.0 |
| 9 | --- | --- | --- | 23.5 | --- | --- | 22.5 | 21.5 | 22.0 | 21.0 | 18.5 | 19.5 |
| 10 | 19.5 | 15.5 | 17.5 | 21.5 | 19.5 | 20.0 | --- | --- | --- | 20.0 | 17.0 | 18.5 |
| 11 | 19.5 | 16.5 | 18.0 | 22.0 | 19.0 | 20.5 | --- | --- | --- | 20.5 | 17.0 | 18.5 |
| 12 | 20.5 | 17.5 | 19.0 | 22.0 | 19.0 | 20.5 | 24.0 | 22.0 | 22.5 | 19.0 | 18.0 | 18.5 |
| 13 | 20.5 | 18.0 | 19.0 | 23.0 | 19.0 | 21.0 | 24.0 | 22.0 | 23.0 | 21.0 | 17.5 | 18.5 |
| 14 | 22.0 | 19.0 | 20.5 | 22.0 | 19.0 | 20.5 | --- | --- | --- | 21.5 | 19.0 | 20.0 |
| 15 | 21.0 | 19.5 | 20.5 | 23.0 | 19.0 | 20.5 | --- | --- | --- | 20.5 | 20.0 | 20.5 |
| 16 | 20.5 | 18.0 | 19.0 | 24.0 | 20.5 | 22.0 | 23.0 | 21.0 | 21.5 | 20.5 | 19.0 | 20.0 |
| 17 | 19.0 | 16.0 | 17.5 | 23.5 | 20.0 | 21.5 | 23.5 | 20.5 | 21.5 | 19.5 | 17.0 | 18.5 |
| 18 | 18.5 | 16.5 | 17.5 | 21.5 | 19.5 | 20.0 | 22.5 | 20.5 | 21.5 | --- | --- | --- |
| 19 | 19.5 | 17.5 | 18.0 | 22.5 | 19.0 | 20.5 | 23.5 | 19.5 | 21.5 | --- | --- | --- |
| 20 | 19.0 | 17.0 | 18.0 | 22.5 | 18.5 | 20.5 | 23.5 | 19.5 | 21.5 | 20.5 | 18.5 | 19.5 |
| 21 | --- | --- | --- | 24.0 | 19.5 | 21.5 | 24.5 | 20.5 | 22.0 | 19.5 | 18.0 | 19.0 |
| 22 | - | --- | --- | 24.0 | 21.5 | 22.5 | 25.0 | 21.5 | 23.0 | 19.5 | 18.0 | 18.5 |
| 23 | 19.5 | --- | --- | 23.0 | 21.0 | 22.0 | 24.0 | 21.5 | 22.5 | 19.5 | 19.0 | 19.5 |
| 24 | 21.0 | 17.0 | 19.0 | 23.5 | 21.0 | 22.0 | 22.0 | 19.0 | 20.5 | 19.0 | 17.0 | 18.0 |
| 25 | 21.5 | 18.0 | 19.5 | 24.0 | 20.0 | 21.5 | 22.5 | 18.5 | 20.0 | 19.0 | 16.0 | 17.5 |
| 26 | 22.5 | 19.0 | 20.5 | 24.0 | 20.0 | 22.0 | 23.0 | 20.0 | 21.0 | 19.5 | 18.0 | 18.5 |
| 27 | 22.5 | 19.5 | 21.0 | 24.5 | 21.0 | 22.5 | 23.0 | 20.0 | 21.5 | 20.5 | 18.0 | 19.0 |
| 28 | 21.5 | 18.5 | 20.0 | 23.5 | 21.5 | 22.5 | 24.0 | 20.5 | 22.0 | 19.5 | 18.0 | 19.0 |
| 29 | 21.5 | 18.5 | 20.0 | 24.0 | 20.5 | 22.0 | 22.5 | 20.5 | 21.5 | 18.0 | 16.0 | 17.0 |
| 30 | 22.0 | 19.0 | 20.5 | 23.5 | 20.0 | 21.5 | 24.5 | 21.0 | 22.0 | 16.5 | 14.0 | 15.5 |
| 31 | --- | -- | - | 22.0 | 20.5 | 21.5 | 22.0 | 19.5 | 21.0 | --- | -- | --- |
| MONTH | 22.5 | 13.0 | 18.2 | 24.5 | 18.5 | 21.3 | 25.0 | 18.5 | 21.8 | 21.5 | 14.0 | 19.0 |

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | OCTOBE |  |  | VEMB |  |  | CEMB |  |  | JANUARY |  |
| 1 | 11.5 | 7.4 | 9.0 | 12.0 | 11.0 | 11.4 | 12.7 | 11.1 | 12.0 | --- | --- | --- |
| 2 | 11.4 | 7.1 | 8.8 | 12.2 | 11.0 | 11.5 | 12.9 | 11.6 | 12.3 | --- | --- | --- |
| 3 | 11.4 | 6.8 | 8.6 | 12.6 | 11.2 | 12.0 | , | --- | , | --- | --- | --- |
| 4 | 8.8 | 5.7 | 7.0 | 12.3 | 11.7 | 12.0 | --- | --- | --- | --- | --- | --- |
| 5 | 9.8 | 6.7 | 7.8 | 13.2 | 11.8 | 12.2 | --- | --- | --- | --- | --- | --- |
| 6 | 10.6 | 6.9 | 8.4 | 14.2 | 11.8 | 12.7 | --- | --- | --- | --- | --- | --- |
| 7 | 10.8 | 6.8 | 8.6 | 13.6 | 11.8 | 12.5 | --- | --- | --- | --- | --- | --- |
| 8 | 11.9 | 7.6 | 9.3 | 13.2 | 11.7 | 12.3 | --- | --- | --- | --- | --- | --- |
| 9 | 11.5 | 8.0 | 9.4 | 13.4 | 11.0 | 12.0 | --- | --- | --- | --- | --- | --- |
| 10 | 9.6 | 8.0 | 8.7 | 12.2 | 10.0 | 11.1 | --- | --- | --- | --- | --- | - |
| 11 | 9.3 | 8.8 | 9.1 | 10.0 | 9.3 | 9.6 | --- | --- | --- | --- | --- | --- |
| 12 | 9.3 | 8.8 | 9.1 | 10.5 | 9.5 | 10.1 | --- | --- | --- | --- | --- | --- |
| 13 | 9.2 | 8.5 | 8.8 | 10.5 | --- |  | --- | --- | --- | --- | --- | --- |
| 14 | 10.0 | 8.5 | 9.2 | 11.3 | 10.4 | 10.8 | --- | --- | --- | --- | --- | --- |
| 15 | 10.9 | 9.0 | 9.9 | 11.5 | 10.3 | 10.7 | --- | --- | --- | --- | --- | -- |
| 16 | -- | 9.2 | -- | 10.6 | 10.1 | 10.3 | --- | --- | --- | --- | --- | --- |
| 17 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | - |
| 18 | 10.8 | 9.8 | 10.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19 | 10.9 | 9.7 | 10.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20 | 11.0 | 9.7 | 10.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21 | 11.8 | 9.6 | 10.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22 | 11.8 | 10.0 | 10.7 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| 23 | 12.2 | 10.0 | 10.9 | 11.5 | 10.5 | 11.1 | --- | --- | --- | --- | --- | --- |
| 24 | 11.9 | 9.9 | 10.7 | 11.7 | 10.9 | 11.2 | --- | --- | --- | --- | --- | --- |
| 25 | 11.7 | 10.0 | 10.6 | 11.8 | 10.7 | 11.2 | --- | --- | --- | --- | --- | --- |
| 26 | 11.0 | 10.2 | 10.6 | 11.6 | 10.6 | 11.0 | - | --- | --- | --- | --- | --- |
| 27 | 11.7 | 10.0 | 10.7 | 11.7 | 10.6 | 11.2 | --- | --- | --- | --- | --- | --- |
| 28 | 11.8 | 9.9 | 10.7 | 12.6 | 11.4 | 12.0 | - | --- | --- | --- | --- | - |
| 29 | 12.1 | 10.1 | 11.0 | 12.5 | 11.6 | 12.0 | -- | --- | --- | --- | --- | --- |
| 30 | 11.8 | 11.0 | 11.5 | 12.0 | 11.1 | 11.5 | --- | --- | --- | --- | --- | --- |
| 31 | 11.8 | 11.4 | 11.6 | --- | --- | - | --- | --- | -- | --- | - | -- |
| MONTH | 12.2 | 5.7 | 9.7 | 14.2 | 9.3 | 11.4 | 12.9 | 11.1 | 12.2 | --- | --- | --- |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

OXYGEN, DISSOLVED (MG/L), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | FEBRUARY |  |  | MARCH |  |  | APRIL |  |  | MAY |  |  |
| 1 | --- | --- | --- | 13.2 | 12.3 | 12.8 | 14.7 | 11.2 | 12.8 | 13.8 | 7.9 | 10.3 |
| 2 | --- | --- | --- | 13.0 | 11.9 | 12.3 | 14.3 | 9.5 | 12.0 | 13.3 | 7.8 | 10.0 |
| 3 |  |  | --- | 14.0 | 13.0 | 13.5 | 14.0 | 9.3 | 11.4 | 13.5 | 7.8 | 10.2 |
| 4 | --- | --- | --- | 14.0 | 12.2 | 13.2 | 13.0 | 9.3 | 11.0 | 13.6 | 8.4 | 10.7 |
| 5 | --- | --- | --- | 12.3 | 11.2 | 12.0 | 13.5 | 10.5 | 11.6 | 13.4 | 9.1 | 10.9 |
| 6 | --- | --- | --- | 13.6 | 12.1 | 12.9 | 14.5 | 10.2 | 12.3 | 12.9 | 9.3 | 10.8 |
| 7 | --- | --- | --- | 14.0 | 12.6 | 13.4 | 14.1 | 10.2 | 12.1 | 13.3 | 7.7 | 10.4 |
| 8 | --- | --- | --- | 13.5 | 11.8 | 12.7 | 14.4 | 11.9 | 12.8 | 11.2 | 7.5 | 9.2 |
| 9 | --- | --- | --- | 13.1 | 11.7 | 12.3 | 13.8 | 11.9 | 12.6 | 10.1 | 8.2 | 9.1 |
| 10 | --- | --- | --- | 13.7 | 12.7 | 13.2 | 14.3 | 11.2 | 12.7 | 11.2 | 8.5 | 9.8 |
| 11 | --- | --- | - | 14.0 | 12.6 | 13.3 | 11.9 | 11.2 | 11.6 | 10.7 | 8.0 | 9.3 |
| 12 | --- | --- | --- | 13.0 | 11.8 | 12.6 | 12.1 | 10.1 | 11.3 | 11.1 | 8.0 | 9.3 |
| 13 | --- | --- | --- | 12.5 | 11.4 | 12.1 | 13.0 | 9.8 | 11.3 | 11.7 | 8.7 | 10.2 |
| 14 | --- | --- | --- | 13.3 | 12.1 | 12.6 | 13.6 | 9.5 | 11.4 | --- | 9.3 | --- |
| 15 | --- | --- | --- | 13.3 | 11.3 | 12.4 | 13.4 | 8.6 | 11.0 | 12.0 | 9.1 | 10.4 |
| 16 | --- | --- | --- | 12.8 | 10.7 | 11.8 | 13.1 | 8.1 | 10.3 | 10.7 | 9.0 | 9.8 |
| 17 | --- | --- | --- | 11.9 | 10.4 | 11.1 | 13.3 | 8.0 | 10.8 | 11.9 | 9.7 | 10.6 |
| 18 | --- | --- | --- | 12.3 | 10.2 | 11.2 | 13.2 | 10.3 | 11.6 | 12.1 | 9.9 | 10.8 |
| 19 | --- | --- | --- | 13.0 | 10.4 | 11.7 | 14.2 | 9.5 | 11.8 | 11.9 | 8.7 | 10.5 |
| 20 | --- | --- | --- | 12.8 | 11.3 | 11.9 | 13.9 | 8.9 | 11.3 | 11.3 | 8.6 | 9.8 |
| 21 | --- | --- | --- | 12.1 | 11.3 | 11.7 | 13.7 | 8.9 | 10.9 | 10.3 | 8.3 | 9.3 |
| 22 | --- | --- | --- | 12.0 | 10.6 | 11.3 | 12.9 | 8.9 | 10.3 | 10.8 | 9.3 | 9.9 |
| 23 | --- | --- | --- | 12.3 | 10.6 | 11.4 | 14.0 | 9.2 | 11.4 | 11.0 | 9.5 | 10.1 |
| 24 | --- | --- | --- | 12.7 | 10.4 | 11.4 | 14.2 | 9.3 | 11.6 | 10.8 | 9.6 | 10.0 |
| 25 | --- | --- | --- | 12.9 | 10.0 | 11.4 | 14.3 | 8.9 | 11.3 | 10.3 | 9.4 | 9.8 |
| 26 |  |  | --- | 13.1 | 9.9 | 11.2 | 11.4 | 8.7 | 10 | 9.9 | 9.6 | 9.8 |
| 27 | 14.0 | 13.1 | 13.7 | 13.3 | 10.1 | 11.5 | 13.1 | 8.7 | 10.8 | 10.2 | 9.4 | 9.9 |
| 28 | 13.7 | 12.4 | 13.1 | 13.9 | 10.1 | 11.6 | 13.5 | 8.2 | 10.6 | 10.0 | 9.3 | 9.7 |
| 29 | --- | --- | --- | 13.3 | 9.8 | 11.0 | 13.0 | 8.1 | 10.4 | 10.4 | 8.8 | 9.7 |
| 30 | --- | --- | - | 12.7 | 10.0 | 11.3 | 14.0 | 8.4 | 10.7 | 10.1 | 8.2 | 9.2 |
| 31 | --- | --- | --- | 14.0 | 11.5 | 12.5 | --- | --- | --- | 10.0 | 8.4 | 9.2 |
| MONTH | 14.0 | 12.4 | 13.4 | 14.0 | 9.8 | 12.1 | 14.7 | 8.0 | 11.4 | 13.8 | 7.5 | 10.0 |
| DAY | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN | MAX | MIN | MEAN |
|  | JUNE |  |  | JULY |  |  | AUGUST |  |  | SEPTEMBER |  |  |
| 1 | 9.8 | 8.4 | 9.3 | 10.3 | 8.0 | 9.0 | 8.3 | 7.1 | 7.7 | 9.3 | 7.8 | 8.4 |
| 2 | 10.3 | 8.9 | 9.8 | 10.1 | 7.9 | 8.9 | 8.3 | 7.3 | 7.8 | 8.3 | 7.7 | 8.1 |
| 3 | 10.5 | 9.1 | 9.8 | 9.5 | 7.9 | 8.6 | 8.1 | 7.3 | 7.6 | 8.2 | 7.8 | 8.0 |
| 4 | 10.2 | 9.3 | 9.9 | 9.7 | 7.8 | 8.7 | 7.9 | 7.2 | 7.5 | 7.9 | 7.3 | 7.6 |
| 5 | 9.9 | 9.4 | 9.6 | 9.3 | 7.6 | 8.4 | 8.0 | 7.4 | 7.7 | 7.6 | 6.9 | 7.4 |
| 6 | --- | --- | --- | 9.0 | 7.8 | 8.3 | 8.2 | 7.7 | 7.9 | 8.1 | 7.0 | 7.6 |
| 7 | --- | --- | --- | 9.0 | 7.2 | 8.2 | 8.4 | 7.7 | 8.0 | 8.4 | 7.3 | 7.7 |
| 8 | --- | --- | --- | 9.2 | 7.8 | 8.3 | 8.6 | 7.7 | 8.1 | 8.6 | 7.0 | 7.6 |
| 9 | --- | --- | --- | --- | --- | --- | 8.4 | 7.7 | 7.9 | --- | 6.9 | --- |
| 10 | 9.8 | 8.6 | 9.3 | 9.2 | 8.1 | 8.7 | --- | --- | --- | --- | --- | --- |
| 11 | 9.6 | 8.5 | 9.0 | 9.2 | 8.2 | 8.7 | --- | --- | --- | --- | --- | --- |
| 12 | 9.7 | 8.0 | 8.9 | 9.2 | 7.3 | 8.5 | 8.3 | 7.8 | 8.1 | --- | --- | --- |
| 13 | 9.8 | 7.9 | 8.9 | 8.9 | 7.7 | 8.3 | 8.4 | 7.8 | 8.1 | --- | --- | --- |
| 14 | 8.6 | 6.8 | 8.1 | 9.0 | 7.7 | 8.3 | 8. | 7.8 |  | --- | --- | --- |
| 15 | 8.8 | 7.7 | 8.3 | 8.9 | 7.6 | 8.3 | --- | 7.8 | --- | --- | --- | --- |
| 16 | 9.3 | 8.2 | 8.8 | 8.9 | 7.6 | 8.1 | 9.0 | 7.8 | 8.3 | --- | - | --- |
| 17 | 10.1 | 8.6 | 9.3 | 9.1 | 7.8 | 8.3 | 9.4 | 7.9 | 8.6 | 9.2 | 8.6 | 8.9 |
| 18 | 9.9 | 8.4 | 9.3 | 9.1 | 7.9 | 8.5 | 9.9 | 7.9 | 8.8 | 9.2 | -- | --- |
| 19 | 10.0 | 8.8 | 9.4 | 9.1 | 8.0 | 8.5 | 10.6 | 8.1 | 9.1 | --- | -- | --- |
| 20 | --- | --- | --- | 9.2 | 7.9 | 8.5 | 11.2 | 8.1 | 9.3 | 8.8 | 8.2 | 8.5 |
| 21 | --- | --- | --- | 8.9 | 7.6 | 8.3 | 11.8 | 8.0 | 9.5 | 9.0 | 8.2 | 8.6 |
| 22 | --- | --- | -- | 8.7 | 7.3 | 8.0 | 11.8 | 7.7 | 9.2 | 9.3 | 8.4 | 8.8 |
| 23 | --- | --- | --- | 8.6 | 7.2 | 7.9 | 11.7 | 7.7 | 9.3 | 8.6 | 8.2 | 8.5 |
| 24 | 9.5 | 8.7 | 9.1 | 8.5 | 7.6 | 8.0 | 12.4 | 8.1 | 9.9 | 9.2 | 8.6 | 8.9 |
| 25 | 9.2 | 8.4 | 8.8 | 8.6 | 7.6 | 8.0 | 12.9 | 8.3 | 10.1 | 9.4 | 8.6 | 9.0 |
| 26 | 9.2 | 8.3 | 8.7 | 8.7 | 7.6 | 8.0 | 12.9 | 7.0 | 9.4 | 9.1 | 8.7 | 8.9 |
| 27 | 9.1 | 8.3 | 8.7 | 8.6 | 7.2 | 7.8 | 11.8 | 7.4 | 9.3 | 9.2 | 8.3 | 8.8 |
| 28 | 9.8 | 8.5 | 9.1 | 8.3 | 7.2 | 7.7 | 12.8 | 7.6 | 9.6 | 9.0 | 8.3 | 8.7 |
| 29 | 10.0 | 8.4 | 9.2 | 8.5 | 7.6 | 7.9 | 12.7 | 7.6 | 9.3 | 9.6 | 8.9 | 9.2 |
| 30 | 10.2 | 8.1 | 9.1 | 8.6 | 7.6 | 8.1 | 11.3 | 7.6 | 8.5 | 10.3 | 9.2 | 9.7 |
| 31 |  | --- | --- | 8.3 | 7.6 | 7.8 | 9.8 | 8.0 | 8.8 | --- | --- |  |
| MONTH | 10.5 | 6.8 | 9.1 | 10.3 | 7.2 | 8.3 | 12.9 | 7.0 | 8.6 | 10.3 | 6.9 | 8.4 |

## CHRISTINA RIVER BASIN

01480617 WEST BRANCH BRANDYWINE CREEK AT MODENA, PA--Continued

CROSS-SECTION ANALYSES, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

| Date | Time | $\begin{gathered} \text { Agency } \\ \text { col- } \\ \text { lecting } \\ \text { sample, } \\ \text { code } \\ (00027) \end{gathered}$ | $\begin{gathered} \text { Agency } \\ \text { ana- } \\ \text { lyzing } \\ \text { sample, } \\ \text { code } \\ (00028) \end{gathered}$ | Instantaneous discharge, cfs (00061) | Location in X-sect. looking dwnstrm ft from 1 bank (00009) | $\begin{gathered} \text { Sam- } \\ \text { pling } \\ \text { depth, } \\ \text { feet } \\ (00003) \end{gathered}$ | $\begin{gathered} \text { Dis- } \\ \text { solved } \\ \text { oxygen, } \\ \mathrm{mg} / \mathrm{L} \\ (00300) \end{gathered}$ | ```pH, water, unfltrd field, std units (00400)``` | Specif. <br> conduc- <br> tance, <br> wat unf <br> $\mu \mathrm{S} / \mathrm{cm}$ <br> 25 degC <br> (00095) | $\begin{aligned} & \text { Temper- } \\ & \text { ature, } \\ & \text { water, } \\ & \text { deg C } \\ & (00010) \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| OCT 2002 |  |  |  |  |  |  |  |  |  |  |
| 17.. | 1201 | 1028 | 1028 | 107 | 5 | 1 | 10.7 | 7.7 | 290 | 12.9 |
| 17. | 1203 | 1028 | 1028 | -- | 10 | 1 | 10.6 | 7.7 | 289 | 12.8 |
| 17. | 1204 | 1028 | 1028 | -- | 15 | 1 | 10.6 | 7.7 | 289 | 12.8 |
| 17. | 1206 | 1028 | 1028 | -- | 20 | 1 | 10.5 | 7.7 | 289 | 12.8 |
| 17. | 1207 | 1028 | 1028 | -- | 25 | 1 | 10.5 | 7.7 | 289 | 12.8 |
| 17. | 1209 | 1028 | 1028 | -- | 30 | 1 | 10.5 | 7.7 | 289 | 12.8 |
| 17. | 1210 | 1028 | 1028 | -- | 35 | 1 | 10.5 | 7.7 | 289 | 12.9 |
| 17. | 1211 | 1028 | 1028 | -- | 40 | 1 | 10.5 | 7.7 | 289 | 12.8 |
| 17. | 1212 | 1028 | 1028 | -- | 45 | 1 | 10.5 | 7.7 | 289 | 12.9 |
| 17. | 1214 | 1028 | 1028 | -- | 50 | 1 | 10.5 | 7.7 | 289 | 12.9 |
| 17. | 1215 | 1028 | 1028 | -- | 55 | 1 | 10.5 | 7.7 | 289 | 12.8 |
| 17. | 1216 | 1028 | 1028 | -- | 60 | 1 | 10.5 | 7.7 | 289 | 12.8 |
| 17. | 1217 | 1028 | 1028 | -- | 65 | 1 | 10.4 | 7.7 | 289 | 12.9 |
| 17. | 1218 | 1028 | 1028 | -- | 70 | 1 | 10.4 | 7.7 | 289 | 12.9 |
| 17. | 1219 | 1028 | 1028 | -- | 75 | 1 | 10.4 | 7.7 | 289 | 12.9 |
| 17. | 1220 | 1028 | 1028 | -- | 80 | 1 | 10.4 | 7.7 | 288 | 12.9 |
| 17. | 1221 | 1028 | 1028 | -- | 85 | 1 | 10.4 | 7.7 | 288 | 13.0 |
| 17... | 1222 | 1028 | 1028 | -- | 89 | 0 | -- | -- | -- | -- |


[^0]:    $\dagger$ Change in contents from Rock Run Reservoir, equivalent in cubic feet per second.
    e Estimated.

