

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK**

Water-quality and benthic macroinvertebrate samples were collected from selected streams in Chester County in October and November 1999 as part of the Stream Conditions of Chester County Biological Monitoring Network. The biological monitoring program was initiated in 1969 with the goals of evaluating stream quality and long-term changes in stream quality of selected streams in Chester County. Benthic macroinvertebrates are macroscopic animals that inhabit the bottoms of aquatic habitats. Freshwater forms include aquatic insects, clams, crustaceans, snails and worms. Benthic macroinvertebrate sampling was conducted using a single habitat approach. A cobble riffle habitat was used. Samples were collected using a Hess sampler with a mesh size of 500 μm . Four samples were collected from areas of various velocities from within the riffle. Samples were composited and the entire sample was sorted and identified. Identifications were made to the lowest practical level (family or genus) by a U.S. Geological Survey biologist.

TABLE 5.--Stream conditions of Chester County biological monitoring network station list.

| STATION NUMBER | STATION NAME | LATITUDE | LONGITUDE | DRAINAGE AREA (mi ²) |
|----------------|---|------------|-----------|----------------------------------|
| 01472080 | PIGEON CREEK NEAR SLONAKER, PA | 40°12'03" | 75°37'10" | 12.0 |
| 01472190 | PICKERING CREEK NEAR PHOENIXVILLE, PA | 40°06'33" | 75°31'42" | 31.4 |
| 01476435 | RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, PA | 39°58'50" | 75°31'00" | 9.71 |
| 01476835 | EAST BRANCH CHESTER CREEK AT WESTTOWN, PA | 39°56'26" | 75°32'30" | 10.4 |
| 01478120 | EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA | 39°49'42" | 75°46'52" | 11.3 |
| 01478230 | MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA | 39°45'02" | 75°46'19" | 25.5 |
| 01479679 | WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE, PA | 39°50'59" | 75°43'28" | 8.63 |
| 01479700 | WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, PA | 39°48'39" | 75°42'18" | 16.9 |
| 01479800 | EAST BRANCH RED CLAY CREEK NEAR FIVE POINT, PA | 39°49'10" | 75°41'29" | 10.2 |
| 01480629 | BUCK RUN AT DOE RUN, PA | 39°55'46" | 75°49'24" | 22.6 |
| 01480636 | BROAD RUN AT ROMANSVILLE, PA | 39°55'06" | 75°43'33" | 2.86 |
| 01480638 | BROAD RUN AT NORTHBROOK, PA | 39°55'49" | 75°41'06" | 6.39 |
| 01480653 | EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA | 40°05'48" | 75°46'44" | 16.5 |
| 01480697 | SHAMONA CREEK AT DOWLIN, PA | 40°02'28" | 75°41'57" | 3.85 |
| 01494900 | EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA | 39°48'48" | 75°54'04" | 11.1 |
| 01494950 | WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA | 39° 46'47" | 75°55'27" | 10.0 |
| 01494953 | BIG ELK CREEK AT MAPLE GROVE, PA | 39°45'44" | 75°55'16" | 26.6 |
| 01495300 | LITTLE ELK CREEK AT ELK MILLS, PA | 39°43'36" | 75°54'28" | 11.75 |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 MISCELLANEOUS STATION ANALYSES

| DATE | 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) | 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) |
|-------------------|---|--|---|--|--|--|---|---|---|--|---|
| | | 01472080 | PIGEON CREEK NEAR SLONAKER, PA (LAT 40 12 03N LONG 075 37 10W) | | | | | | | | |
| OCT 1999 13... | 80020 | 1028 | 8.8 | 10.4 | 7.1 | 168 | 11.5 | 14 | 4.8 | 1.7 | 8.3 |
| | | 01472190 | PICKERING CREEK NEAR PHOENIXVILLE, PA (LAT 40 06 33N LONG 075 31 42W) | | | | | | | | |
| OCT 1999 13... | 80020 | 1028 | 24 | 10.9 | 7.5 | 245 | 13.5 | 22 | 7.2 | 2.3 | 11 |
| | | 01476435 | RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, P(LAT 39 58 50N LONG 075 31 00W) | | | | | | | | |
| OCT 1999 07... | 80020 | 1028 | 11 | 10.6 | 7.1 | 272 | 11.0 | 18 | 10 | 2.2 | 15 |
| | | 01476835 | EAST BRANCH CHESTER CREEK AT WESTTOWN, PA (LAT 39 56 26N LONG 075 32 30W) | | | | | | | | |
| OCT 1999 07... | 80020 | 1028 | 8.5 | 8.2 | 6.8 | 288 | 12.5 | 23 | 10 | 3.3 | 15 |
| | | 01478120 | EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA (LAT 39 49 42N LONG 075 46 52W) | | | | | | | | |
| OCT 1999 14... | 80020 | 1028 | 12 | 11.0 | 7.6 | 352 | 13.5 | 36 | 15 | 3.2 | 8.4 |
| | | 01478230 | MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA (LAT 39 45 02N LONG 075 46 19W) | | | | | | | | |
| OCT 1999 14... | 80020 | 1028 | 20 | 10.0 | 7.5 | 225 | 13.5 | 18 | 7.1 | 3.8 | 8.6 |
| | | 01479679 | WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE, P(LAT 39 50 59N LONG 075 43 28W) | | | | | | | | |
| OCT 1999 27... | 80020 | 1028 | 6.7 | 11.7 | 7.1 | 285 | 11.0 | 26 | 11 | 2.7 | 8.1 |
| | | 01479700 | WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, P(LAT 39 48 39N LONG 75 42 18W) | | | | | | | | |
| OCT 1999 06... | 80020 | 1028 | 19 | 7.6 | 7.1 | 419 | 13.5 | 37 | 14 | 11 | 14 |
| | | 01479800 | EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA (LAT 39 49 10N LONG 075 41 29W) | | | | | | | | |
| OCT 1999 12... | 80020 | 1028 | 10 | 8.4 | 7.3 | 378 | 13.0 | 33 | 12 | 10 | 12 |
| | | 01480629 | BUCK RUN AT DOE RUN, PA (LAT 39 55 46N LONG 075 49 24W) | | | | | | | | |
| OCT 1999 15... | 80020 | 1028 | 20 | 10.8 | 7.2 | 240 | 12.0 | 22 | 8.7 | 2.2 | 10 |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 MISCELLANEOUS STATION ANALYSES

| DATE | ANC WATER UNFLTRD IT FIELD (MG/L AS CACO3) (00419) | 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 ORTHO, DIS- SOLVED (MG/L AS P) (00671) | ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106) | ARSENIC DIS- SOLVED (µG/L AS AS) (01000) | BORON, DIS- SOLVED (µG/L AS B) (01020) |
|-------------------|---|---|--|--|--|--|--|--|--|---|---|
| | 01472080 | PIGEON CREEK NEAR SLONAKER, PA (LAT 40 12 03N LONG 075 37 10W) | | | | | | | | | |
| OCT 1999 13... | 23 | 12 | 19 | 17 | <.020 | 2.43 | <.010 | .031 | -- | -- | 16 |
| | 01472190 | PICKERING CREEK NEAR PHOENIXVILLE, PA (LAT 40 06 33N LONG 075 31 42W) | | | | | | | | | |
| OCT 1999 13... | 46 | 22 | 19 | 21 | <.020 | 1.45 | <.010 | .011 | -- | -- | E15 |
| | 01476435 | RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, P(LAT 39 58 50N LONG 075 31 00W) | | | | | | | | | |
| OCT 1999 07... | 45 | 30 | 13 | 16 | <.020 | 2.99 | <.010 | .091 | -- | -- | 25 |
| | 01476835 | EAST BRANCH CHESTER CREEK AT WESTTOWN, PA (LAT 39 56 26N LONG 075 32 30W) | | | | | | | | | |
| OCT 1999 07... | 48 | 36 | 15 | 21 | .026 | 2.68 | .010 | .161 | -- | -- | 26 |
| | 01478120 | EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA (LAT 39 49 42N LONG 075 46 52W) | | | | | | | | | |
| OCT 1999 14... | 87 | 19 | 16 | 28 | <.020 | 4.47 | .013 | .021 | -- | -- | <16 |
| | 01478230 | MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA (LAT 39 45 02N LONG 075 46 19W) | | | | | | | | | |
| OCT 1999 14... | 62 | 16 | 15 | 19 | <.020 | 3.76 | .010 | .047 | -- | -- | E12 |
| | 01479679 | WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE, P(LAT 39 50 59N LONG 075 43 28W) | | | | | | | | | |
| OCT 1999 27... | 38 | -- | -- | -- | <.020 | 4.53 | <.010 | <.010 | <15 | <2.0 | E8 |
| | 01479700 | WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, P(LAT 39 48 39N LONG 75 42 18W) | | | | | | | | | |
| OCT 1999 06... | 79 | 28 | 17 | 49 | -- | -- | -- | -- | 21 | E1.3 | 36 |
| | 01479800 | EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA (LAT 39 49 10N LONG 075 41 29W) | | | | | | | | | |
| OCT 1999 12... | 66 | 27 | 18 | 42 | <.020 | 2.88 | .010 | .039 | 20 | E1.1 | 21 |
| | 01480629 | BUCK RUN AT DOE RUN, PA (LAT 39 55 46N LONG 075 49 24W) | | | | | | | | | |
| OCT 1999 15... | 93 | 17 | 10 | 18 | <.020 | 4.84 | .016 | .012 | -- | -- | E10 |

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STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 MISCELLANEOUS STATION ANALYSES

| DATE | CADMIUM DIS- SOLVED (µG/L AS CD) (01025) | CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030) | COPPER, DIS- SOLVED (µG/L AS CU) (01040) | IRON, DIS- SOLVED (µG/L AS FE) (01046) | LEAD, DIS- SOLVED (µG/L AS PB) (01049) | MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056) | MERCURY DIS- SOLVED (µG/L AS HG) (71890) | MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060) | NICKEL, DIS- SOLVED (µG/L AS NI) (01065) | ZINC, DIS- SOLVED (µG/L AS ZN) (01090) |
|-------------------|--|--|---|---|---|---|---|--|---|---|
| 01472080 | PIGEON CREEK NEAR SLONAKER, PA (LAT 40 12 03N LONG 075 37 10W) | | | | | | | | | |
| OCT 1999 13... | -- | -- | -- | 20 | -- | -- | -- | -- | -- | -- |
| 01472190 | PICKERING CREEK NEAR PHOENIXVILLE, PA (LAT 40 06 33N LONG 075 31 42W) | | | | | | | | | |
| OCT 1999 13... | -- | -- | -- | 20 | -- | -- | -- | -- | -- | -- |
| 01476435 | RIDLEY CREEK AT DUTTON MILL NEAR WEST CHESTER, P(LAT 39 58 50N LONG 075 31 00W) | | | | | | | | | |
| OCT 1999 07... | -- | -- | -- | 20 | -- | -- | -- | -- | -- | -- |
| 01476835 | EAST BRANCH CHESTER CREEK AT WESTTOWN, PA (LAT 39 56 26N LONG 075 32 30W) | | | | | | | | | |
| OCT 1999 07... | -- | -- | -- | 100 | -- | -- | -- | -- | -- | -- |
| 01478120 | EAST BRANCH WHITE CLAY CREEK AT AVONDALE, PA (LAT 39 49 42N LONG 075 46 52W) | | | | | | | | | |
| OCT 1999 14... | -- | -- | -- | 20 | -- | -- | -- | -- | -- | -- |
| 01478230 | MIDDLE BRANCH WHITE CLAY CREEK NEAR AVONDALE, PA (LAT 39 45 02N LONG 075 46 19W) | | | | | | | | | |
| OCT 1999 14... | -- | -- | -- | 20 | -- | -- | -- | -- | -- | -- |
| 01479679 | WEST BRANCH RED CLAY CREEK ABOVE KENNETT SQUARE,P(LAT 39 50 59N LONG 075 43 28W) | | | | | | | | | |
| OCT 1999 27... | <.1 | 11.6 | <1 | 20 | <1 | 10 | -- | <1 | <1 | <20 |
| 01479700 | WEST BRANCH RED CLAY CREEK NEAR KENNETT SQUARE, P(LAT 39 48 39N LONG 75 42 18W) | | | | | | | | | |
| OCT 1999 06... | .2 | 1.8 | 4 | 70 | <1 | 34 | <.2 | 1 | E1 | <20 |
| 01479800 | EAST BRANCH RED CLAY CREEK NEAR FIVE POINTS, PA (LAT 39 49 10N LONG 075 41 29W) | | | | | | | | | |
| OCT 1999 12... | <.1 | <.8 | 3 | 50 | <1 | 11 | E.1 | <1 | 2 | <20 |
| 01480629 | BUCK RUN AT DOE RUN, PA (LAT 39 55 46N LONG 075 49 24W) | | | | | | | | | |
| OCT 1999 15... | -- | -- | -- | 20 | -- | -- | -- | -- | -- | -- |

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STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

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| DATE | 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) | 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) |
|-------------------|---|--|---|---|--|--|---|---|---|--|---|
| | | | 01480636 | BROAD RUN AT ROMANSVILLE, PA (LAT 39 57 06N LONG 075 43 33W) | | | | | | | |
| NOV 1999 09... | 80020 | 1028 | 1.8 | 12.2 | 7.3 | 180 | 9.0 | 13 | 7.2 | 1.1 | 8.5 |
| | | | 01480638 | BROAD RUN AT NORTHBROOK, PA (LAT 39 55 49N LONG 075 41 06W) | | | | | | | |
| NOV 1999 09... | 80020 | 1028 | 4.6 | 12.2 | 7.4 | 200 | 6.5 | 16 | 7.5 | 1.7 | 9.6 |
| | | | 01480653 | EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA (LAT 40 05 48N LONG 075 46 44W) | | | | | | | |
| OCT 1999 15... | 80020 | 1028 | 11 | 10.3 | 7.2 | 220 | 9.0 | 18 | 6.2 | 2.7 | 8.2 |
| | | | 01480697 | SHAMONA CREEK AT DOWLIN, PA (LAT 40 02 28N LONG 75 41 57W) | | | | | | | |
| OCT 1999 28... | 80020 | 1028 | 3.0 | 11.2 | 7.0 | 360 | 8.0 | 30 | 12 | 2.9 | 17 |
| | | | 01494900 | EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA (LAT 39 48 48N LONG 075 54 04W) | | | | | | | |
| OCT 1999 26... | 80020 | 1028 | 9.4 | 11.7 | 7.0 | 188 | 11.5 | 13 | 6.4 | 2.6 | 8.3 |
| | | | 01494950 | WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA (LAT 39 46 47N LONG 075 55 27W) | | | | | | | |
| OCT 1999 26... | 80020 | 1028 | 7.9 | 11.6 | 6.8 | 260 | 10.5 | 18 | 8.5 | 9.1 | 10 |
| | | | 01494953 | BIG ELK CREEK AT MAPLE GROVE, PA (LAT 39 45 44N LONG 075 55 16W) | | | | | | | |
| OCT 1999 25... | 80020 | 1028 | 22 | 11.5 | 7.1 | 240 | 9.5 | 17 | 7.5 | 9.9 | 9.6 |
| | | | 01495300 | LITTLE ELK CREEK AT ELK MILLS, PA (LAT 39 43 36N LONG 075 54 28W) | | | | | | | |
| NOV 1999 01... | 1028 | 1028 | 7.2 | 10.9 | 7.3 | 195 | 12.5 | 11 | 10 | 2.7 | 6.7 |

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STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

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 MISCELLANEOUS STATION ANALYSES

| DATE | ANC WATER UNFLTRD IT FIELD (MG/L AS CACO3) (00419) | 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 ORTHO, DIS- SOLVED (MG/L AS P) (00671) | ALUM- INUM, DIS- SOLVED (µG/L AS AL) (01106) | ARSENIC DIS- SOLVED (µG/L AS AS) (01000) | BORON, DIS- SOLVED (µG/L AS B) (01020) |
|-------------------|--|--|--|--|--|--|--|--|--|---|---|
| | 01480636 BROAD RUN AT ROMANSVILLE, PA (LAT 39 57 06N LONG 075 43 33W) | | | | | | | | | | |
| NOV 1999 09... | 30 | 18 | 8.3 | 14 | <.020 | 2.81 | <.010 | <.010 | <10 | <2.0 | 16 |
| | 01480638 BROAD RUN AT NORTHBROOK, PA (LAT 39 55 49N LONG 075 41 06W) | | | | | | | | | | |
| NOV 1999 09... | 34 | 19 | 11 | 17 | <.020 | 2.65 | <.010 | <.010 | <15 | <2.0 | E13 |
| | 01480653 EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA (LAT 40 05 48N LONG 075 46 44W) | | | | | | | | | | |
| OCT 1999 15... | 48 | 14 | 18 | 16 | <.020 | 2.87 | .010 | .010 | -- | -- | <16 |
| | 01480697 SHAMONA CREEK AT DOWLIN, PA (LAT 40 02 28N LONG 75 41 57W) | | | | | | | | | | |
| OCT 1999 28... | 37 | 40 | 17 | 28 | <.020 | 2.98 | .013 | .010 | -- | -- | 27 |
| | 01494900 EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA (LAT 39 48 48N LONG 075 54 04W) | | | | | | | | | | |
| OCT 1999 26... | 16 | 16 | 12 | 8.6 | <.020 | 5.16 | <.010 | .025 | E10 | <2.0 | <16 |
| | 01494950 WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA (LAT 39 46 47N LONG 075 55 27W) | | | | | | | | | | |
| OCT 1999 26... | 29 | 25 | 12 | 18 | .086 | 5.95 | .069 | .059 | E12 | <2.0 | E12 |
| | 01494953 BIG ELK CREEK AT MAPLE GROVE, PA (LAT 39 45 44N LONG 075 55 16W) | | | | | | | | | | |
| OCT 1999 25... | 30 | 20 | 12 | 18 | .066 | 4.94 | .044 | .027 | <15 | <2.0 | E12 |
| | 01495300 LITTLE ELK CREEK AT ELK MILLS, PA (LAT 39 43 36N LONG 075 54 28W) | | | | | | | | | | |
| NOV 1999 01... | 41 | 13 | 10 | 7.6 | <.020 | 4.36 | .011 | <.010 | <10 | <2.0 | E11 |

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| DATE | CADMIUM DIS- SOLVED (µG/L AS CD) (01025) | CHRO- MIUM, DIS- SOLVED (µG/L AS CR) (01030) | COPPER, DIS- SOLVED (µG/L AS CU) (01040) | IRON, DIS- SOLVED (µG/L AS FE) (01046) | LEAD, DIS- SOLVED (µG/L AS PB) (01049) | MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056) | MERCURY DIS- SOLVED (µG/L AS HG) (71890) | MOLYB- DENUM, DIS- SOLVED (µG/L AS MO) (01060) | NICKEL, DIS- SOLVED (µG/L AS NI) (01065) | ZINC, DIS- SOLVED (µG/L AS ZN) (01090) |
|-------------------|--|--|---|---|---|---|---|--|---|---|
| | 01480636 BROAD RUN AT ROMANSVILLE, PA (LAT 39 57 06N LONG 075 43 33W) | | | | | | | | | |
| NOV 1999 09... | <.1 | <.8 | <1 | 10 | <1 | 13 | <.2 | <1 | <1 | <20 |
| | 01480638 BROAD RUN AT NORTHBROOK, PA (LAT 39 55 49N LONG 075 41 06W) | | | | | | | | | |
| NOV 1999 09... | <.1 | 1.0 | <1 | 20 | <1 | 14 | <.2 | <1 | <1 | <20 |
| | 01480653 EAST BRANCH BRANDYWINE CREEK AT GLENMOORE, PA (LAT 40 05 48N LONG 075 46 44W) | | | | | | | | | |
| OCT 1999 15... | -- | -- | -- | 40 | -- | -- | -- | -- | -- | -- |
| | 01480697 SHAMONA CREEK AT DOWLIN, PA (LAT 40 02 28N LONG 75 41 57W) | | | | | | | | | |
| OCT 1999 28... | -- | -- | -- | E10 | -- | -- | -- | -- | -- | -- |
| | 01494900 EAST BRANCH BIG ELK CREEK AT ELKVIEW, PA (LAT 39 48 48N LONG 075 54 04W) | | | | | | | | | |
| OCT 1999 26... | <.1 | <.8 | E1 | 20 | <1 | 14 | <.2 | <1 | E1 | <20 |
| | 01494950 WEST BRANCH BIG ELK CREEK NEAR OXFORD, PA (LAT 39 46 47N LONG 075 55 27W) | | | | | | | | | |
| OCT 1999 26... | <.1 | <.8 | E1 | 50 | <1 | 21 | <.2 | 1 | 2 | <20 |
| | 01494953 BIG ELK CREEK AT MAPLE GROVE, PA (LAT 39 45 44N LONG 075 55 16W) | | | | | | | | | |
| OCT 1999 25... | <.1 | <.8 | E1 | 60 | <1 | 12 | <.2 | <1 | E1 | <20 |
| | 01495300 LITTLE ELK CREEK AT ELK MILLS, PA (LAT 39 43 36N LONG 075 54 28W) | | | | | | | | | |
| NOV 1999 01... | <.1 | <.8 | E1 | 40 | <1 | 6 | <.2 | <1 | 4 | <20 |

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BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES

REMARKS.--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 . A dash (—) indicates there were no observations of the organism in the sample.

| Station Number | 01472080 | 01472190 | 01476435 | 01476835 | 01478120 |
|----------------------------|----------|----------|----------|----------|----------|
| Date | 10/13/99 | 10/13/99 | 10/07/99 | 10/07/99 | 10/14/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Platyhelminthes | | | | | |
| Turbellaria (Flatworms) | | | | | |
| Tricladida | | | | | |
| Planariidae | — | 2 | 30 | 7 | 114 |
| Nematoda (Nematodes) | 1 | 2 | 1 | 2 | 20 |
| Nemertea (Proboscis Worms) | | | | | |
| Enopla | | | | | |
| Hoploneurtea | | | | | |
| Tetrastemmatidae | | | | | |
| <i>Prostoma</i> | — | 7 | 8 | 2 | 2 |
| Mollusca | | | | | |
| Gastropoda (Snails) | | | | | |
| Basommatophora | | | | | |
| Ancyliidae | | | | | |
| <i>Ferrissia</i> | — | 2 | 2 | 11 | 1 |
| Lymnaeidae | 1 | — | — | — | — |
| Planorbidae | | | | | |
| <i>Gyraulus</i> | — | — | — | — | 1 |
| Bivalvia (Clams) | | | | | |
| Veneroida | | | | | |
| Sphaeriidae | 5 | — | 1 | 7 | 2 |
| Annelida (Segmented Worms) | | | | | |
| Oligochaeta | | | | | |
| Tubificida | | | | | |
| Naididae | 1 | — | 1 | — | — |
| Tubificidae | — | — | — | — | — |
| Hirudinea (Leeches) | | | | | |
| Arhynchobdellidae | | | | | |
| Erpobdellidae | — | — | — | 1 | — |
| Rhynchobdellida | | | | | |
| Glossiphoniidae | | | | | |
| <i>Helobdella</i> | — | — | — | — | — |
| Arthropoda | | | | | |
| Acariformes | | | | | |
| Hydrachnidia (Water Mites) | 11 | 25 | 8 | 3 | 17 |
| Crustacea | | | | | |
| Cyclopoida | | | | | |
| Cyclopidae | — | — | — | — | — |
| Amphipoda (Scuds) | | | | | |
| Crangonyctidae | | | | | |
| <i>Crangonyx</i> | — | — | 1 | 13 | — |
| <i>Stygonectes</i> | — | — | — | — | — |
| Gammaridae | | | | | |
| <i>Gammarus</i> | 1 | 1 | — | — | — |
| Isopoda (Sow Bugs) | | | | | |
| Asellidae | | | | | |
| <i>Caecidotea</i> | — | — | — | — | — |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01478230 | 01479679 | 01479700 | 01479800 | 01480629 | Station Number |
|----------|----------|----------|----------|----------|----------------------------|
| 10/14/99 | 10/27/99 | 10/06/99 | 10/12/99 | 10/15/99 | Date |
| Count | Count | Count | Count | Count | Benthic Macroinvertebrate |
| | | | | | Platyhelminthes |
| | | | | | Turbellaria (Flatworms) |
| | | | | | Tricladida |
| 2 | 7 | 1 | 2 | 125 | Planariidae |
| - | 5 | 10 | 7 | 9 | Nematoda (Nematodes) |
| | | | | | Nemertea (Proboscis Worms) |
| | | | | | Enopla |
| | | | | | Hoplonemertea |
| | | | | | Tetrastemmatidae |
| 3 | 12 | - | 1 | 2 | <i>Prostoma</i> |
| | | | | | Mollusca |
| | | | | | Gastropoda (Snails) |
| | | | | | Basommatophora |
| | | | | | Ancylidae |
| 1 | 1 | 2 | 1 | 5 | <i>Ferrissia</i> |
| - | - | - | - | - | Lymnaeidae |
| | | | | | Planorbidae |
| - | - | - | - | 1 | <i>Gyraulus</i> |
| | | | | | Bivalvia (Clams) |
| | | | | | Veneroidea |
| - | 1 | 1 | 1 | 48 | Sphaeriidae |
| | | | | | Annelida (Segmented Worms) |
| 9 | 3 | 3 | 6 | 3 | Oligochaeta |
| | | | | | Tubificida |
| - | - | 123 | 7 | 2 | Naididae |
| - | - | 1 | - | - | Tubificidae |
| | | | | | Hirudinea (Leeches) |
| | | | | | Arhynchobdellidae |
| - | - | - | - | - | Erpobdellidae |
| | | | | | Rhynchobdellida |
| | | | | | Glossiphoniidae |
| - | - | 1 | - | - | <i>Helobdella</i> |
| | | | | | Arthropoda |
| | | | | | Acariformes |
| 41 | 48 | 1 | 14 | 22 | Hydrachnidia (Water Mites) |
| | | | | | Crustacea |
| | | | | | Cyclopoida |
| - | 9 | - | - | - | Cyclopidae |
| | | | | | Amphipoda (Scuds) |
| | | | | | Crangonyctidae |
| - | - | - | 9 | - | <i>Crangonyx</i> |
| - | 2 | - | 13 | - | <i>Stygonectes</i> |
| | | | | | Gammaridae |
| - | - | - | - | - | <i>Gammarus</i> |
| | | | | | Isopoda (Sow Bugs) |
| | | | | | Asellidae |
| - | 31 | - | 5 | - | <i>Caecidotea</i> |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| Station Number | 01472080 | 01472190 | 01476435 | 01476835 | 01478120 |
|---|----------|----------|----------|----------|----------|
| Date | 10/13/99 | 10/13/99 | 10/07/99 | 10/07/99 | 10/14/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Insecta | | | | | |
| Ephemeroptera (Mayflies) | | | | | |
| Baetidae | | | | | |
| <i>Baetis</i> | 3 | 3 | 35 | 18 | 4 |
| <i>Pseudocloeon</i> | 1 | 10 | - | - | 3 |
| Caenidae | | | | | |
| <i>Caenis</i> | - | - | 12 | 1 | - |
| Ephemeridae | | | | | |
| <i>Ephemera</i> | 1 | - | - | - | - |
| Ephemerebellidae | | | | | |
| <i>Eurylophella</i> | 23 | - | 8 | 1 | - |
| <i>Serratella</i> | 3 | 3 | 18 | 3 | 34 |
| Heptageniidae | | | | | |
| <i>Cinygmula</i> | - | - | - | - | - |
| <i>Epeorus</i> | 2 | - | - | - | - |
| <i>Stenacron</i> | 1 | - | - | - | - |
| <i>Stenonema</i> | 23 | 25 | 86 | 10 | 12 |
| Isonychiidae | | | | | |
| <i>Isonychia</i> | 2 | 4 | 2 | - | 4 |
| Leptohyphidae | | | | | |
| <i>Tricorythodes</i> | - | - | 1 | - | - |
| Leptophlebiidae | | | | | |
| <i>Paraleptophlebia</i> | 5 | - | - | - | - |
| Odonata (Dragonflies and Damselflies) | | | | | |
| Aeshnidae | | | | | |
| <i>Boyeria</i> | - | - | 1 | - | - |
| Coenagrionidae | | | | | |
| <i>Argia</i> | - | - | 2 | 3 | - |
| Gomphidae | | | | | |
| <i>Lanthus</i> | 1 | - | - | - | - |
| Plecoptera (Stoneflies) | | | | | |
| Capniidae | | | | | |
| <i>Capnia</i> | - | 1 | - | - | 1 |
| Leuctridae | | | | | |
| <i>Leuctra</i> | 20 | - | - | - | - |
| Nemouridae | | | | | |
| <i>Nemoura</i> | - | 1 | - | - | - |
| Perlidae | | | | | |
| <i>Acroneuria</i> | 5 | 2 | - | - | - |
| <i>Agnatina</i> | 1 | - | - | - | - |
| Taeniopterygidae | | | | | |
| <i>Taeniopteryx</i> | 5 | 11 | - | - | 1 |
| Megaloptera | | | | | |
| Corydalidae (Fishflies and Dobsonflies) | | | | | |
| <i>Corydalus</i> | - | 1 | - | 1 | - |
| <i>Nigronia</i> | - | - | - | 1 | - |
| Sialidae (Alderflies) | | | | | |
| <i>Sialis</i> | 1 | - | - | 1 | - |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01478230 | 01479679 | 01479700 | 01479800 | 01480629 | Station Number |
|----------|----------|----------|----------|----------|---|
| 10/14/99 | 10/27/99 | 10/06/99 | 10/12/99 | 10/15/99 | Date |
| Count | Count | Count | Count | Count | Benthic Macroinvertebrate |
| | | | | | Insecta |
| | | | | | Ephemeroptera (Mayflies) |
| | | | | | Baetidae |
| | 49 | | | 6 | <i>Baetis</i> |
| 5 | 2 | | | 1 | <i>Pseudocloeon</i> |
| | | | | | Caenidae |
| 1 | 6 | | | 3 | <i>Caenis</i> |
| | | | | | Ephemeridae |
| | 6 | | | | <i>Ephemera</i> |
| | | | | | Ephemerellidae |
| | 23 | 2 | 3 | 11 | <i>Eurylophella</i> |
| 2 | 412 | | 3 | 126 | <i>Serratella</i> |
| | | | | | Heptageniidae |
| | 15 | | | | <i>Cinygmula</i> |
| | 31 | | | | <i>Epeorus</i> |
| | 12 | | | | <i>Stenacron</i> |
| 4 | 178 | | 8 | 111 | <i>Stenonema</i> |
| | | | | | Isonychiidae |
| 18 | | | | 52 | <i>Isonychia</i> |
| | | | | | Leptohyphidae |
| | 8 | | | 1 | <i>Tricorythodes</i> |
| | | | | | Leptophlebiidae |
| | 30 | | | | <i>Paraleptophlebia</i> |
| | | | | | Odonata (Dragonflies and Damselflies) |
| | | | | | Aeshnidae |
| | | | | | <i>Boyeria</i> |
| | | | | | Coenagrionidae |
| | 2 | | | 7 | <i>Argia</i> |
| | | | | | Gomphidae |
| | | | | 4 | <i>Lanthus</i> |
| | | | | | Plecoptera (Stoneflies) |
| 4 | 19 | | | 1 | Capniidae |
| | | | | | Leuctridae |
| 2 | | | | | Nemouridae |
| | | | | | Perlidae |
| | 2 | | | | <i>Acroneuria</i> |
| | | | | | <i>Paragnetina</i> |
| | | | | | Taeniopterygidae |
| 6 | 10 | | | 4 | <i>Taeniopteryx</i> |
| | | | | | Megaloptera |
| | | | | | Corydalidae (Fishflies and Dobsonflies) |
| | | | | | <i>Corydalus</i> |
| | | | | | <i>Nigronia</i> |
| | | | | | Sialidae (Alderflies) |
| | 2 | | | | <i>Sialis</i> |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| Station Number | 01472080 | 01472190 | 01476435 | 01476835 | 01478120 |
|-----------------------------|----------|----------|----------|----------|----------|
| Date | 10/13/99 | 10/13/99 | 10/07/99 | 10/07/99 | 10/14/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Trichoptera (Caddisflies) | | | | | |
| Apataniidae | | | | | |
| <i>Apatania</i> | 2 | 2 | — | — | — |
| Brachycentridae | | | | | |
| <i>Micrasema</i> | 2 | 8 | 1 | — | — |
| Glossosomatidae | | | | | |
| <i>Glossosoma</i> | — | — | — | — | — |
| <i>Protoptila</i> | — | 1 | — | — | — |
| Goeridae | | | | | |
| <i>Goera</i> | — | — | — | — | 2 |
| Helicopsychidae | | | | | |
| <i>Helicopsyche</i> | — | — | — | 1 | — |
| Hydropsychidae | | | | | |
| <i>Cheumatopsyche</i> | 79 | 55 | 165 | 229 | 85 |
| <i>Diplectrona</i> | 1 | — | — | — | — |
| <i>Hydropsyche</i> | 42 | 91 | 383 | 110 | 116 |
| <i>Potamyia</i> | — | — | — | — | — |
| Hydroptilidae | | | | | |
| <i>Hydroptila</i> | 3 | 2 | 4 | 2 | — |
| <i>Leucotrichia</i> | — | 1 | 34 | — | 7 |
| Leptoceridae | | | | | |
| <i>Oecetis</i> | — | — | — | 2 | — |
| <i>Triaenodes</i> | — | — | — | 1 | — |
| Philopotamidae | | | | | |
| <i>Chimarra</i> | 29 | 7 | 51 | 50 | 4 |
| <i>Wormaldia</i> | — | — | — | 1 | — |
| Polycentropodidae | | | | | |
| <i>Neureclipsis</i> | — | — | 1 | — | — |
| <i>Polycentropus</i> | — | — | — | — | — |
| Psychomyiidae | | | | | |
| <i>Psychomyia</i> | 1 | 17 | — | 2 | 1 |
| Coleoptera (Beetles) | | | | | |
| Elmidae (Riffle Beetles) | | | | | |
| <i>Ancyronyx</i> | 2 | 3 | 1 | 2 | — |
| <i>Dubiraphia</i> | — | — | 6 | 13 | 1 |
| <i>Macronychus</i> | 1 | — | — | — | — |
| <i>Microcylloepus</i> | — | — | — | — | — |
| <i>Optioservus</i> | 35 | 14 | 30 | 124 | 185 |
| <i>Oulimnius</i> | 17 | 4 | 17 | 26 | 34 |
| <i>Stenelmis</i> | 53 | 1 | 51 | 506 | 200 |
| Hydrophilidae | | | | | |
| <i>Berosus</i> | — | — | — | 1 | — |
| Psephenidae (Water Pennies) | | | | | |
| <i>Psephenus</i> | 8 | 4 | 55 | 23 | 290 |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01478230 | 01479679 | 01479700 | 01479800 | 01480629 | Station Number |
|----------|----------|----------|----------|----------|-----------------------------|
| 10/14/99 | 10/27/99 | 10/06/99 | 10/12/99 | 10/15/99 | Date |
| Count | Count | Count | Count | Count | Benthic Macroinvertebrate |
| | | | | | Trichoptera (Caddisflies) |
| | | | | | Apataniidae |
| - | - | - | - | - | <i>Apatania</i> |
| | | | | | Brachycentridae |
| - | - | - | - | - | <i>Micrasema</i> |
| | | | | | Glossosomatidae |
| - | 2 | - | - | - | <i>Glossosoma</i> |
| - | - | - | - | - | <i>Protoptila</i> |
| | | | | | Goeridae |
| - | 1 | - | - | - | <i>Goera</i> |
| | | | | | Helicopsychidae |
| - | - | - | - | - | <i>Helicopsyche</i> |
| | | | | | Hydropsychidae |
| 65 | 232 | 8 | 32 | 16 | <i>Cheumatopsyche</i> |
| - | - | - | - | - | <i>Diplectrona</i> |
| 38 | 468 | 15 | 104 | 45 | <i>Hydropsyche</i> |
| 4 | - | - | - | - | <i>Potamyia</i> |
| | | | | | Hydroptilidae |
| - | 7 | - | 4 | - | <i>Hydroptila</i> |
| - | 7 | - | - | 6 | <i>Leucotrichia</i> |
| | | | | | Leptoceridae |
| - | - | - | - | - | <i>Oecetis</i> |
| - | - | - | - | - | <i>Triaenodes</i> |
| | | | | | Philopotamidae |
| 6 | 57 | - | - | 127 | <i>Chimarra</i> |
| - | - | - | - | - | <i>Wormaldia</i> |
| | | | | | Polycentropodidae |
| - | - | - | 1 | - | <i>Neureclipsis</i> |
| - | 11 | - | - | 6 | <i>Polycentropus</i> |
| | | | | | Psychomyiidae |
| - | 10 | - | - | 1 | <i>Psychomyia</i> |
| | | | | | Coleoptera (Beetles) |
| | | | | | Elmidae (Riffle Beetles) |
| | | | | | Ancyronyx |
| - | 7 | - | 4 | 2 | <i>Dubiraphia</i> |
| - | - | - | - | - | <i>Macronychus</i> |
| - | 4 | - | - | - | <i>Microcylloepus</i> |
| 6 | 142 | 2 | 166 | 117 | <i>Optioservus</i> |
| 17 | 28 | - | 41 | 29 | <i>Oulimnius</i> |
| 1 | 23 | 1 | 198 | 64 | <i>Stenelmis</i> |
| | | | | | Hydrophilidae |
| - | - | - | - | 1 | <i>Berosus</i> |
| | | | | | Psephenidae (Water Pennies) |
| - | 65 | - | 108 | 54 | <i>Psephenus</i> |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| Station Number | 01472080 | 01472190 | 01476435 | 01476835 | 01478120 |
|---------------------------|----------|----------|----------|----------|----------|
| Date | 10/13/99 | 10/13/99 | 10/07/99 | 10/07/99 | 10/14/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Diptera (True Flies) | | | | | |
| Athericidae | | | | | |
| <i>Atherix</i> | 1 | — | — | — | — |
| Ceratopogonidae | 1 | 2 | — | — | — |
| Chironomidae (Midges) | 130 | 352 | 255 | 135 | 210 |
| Empididae (Dance Flies) | | | | | |
| <i>Hemerodromia</i> | 1 | — | — | — | 3 |
| Simuliidae (Black Flies) | | | | | |
| <i>Simulium</i> | 9 | 1 | 8 | 8 | — |
| Tipulidae (Crane Flies) | | | | | |
| <i>Antocha</i> | 4 | 5 | 3 | 1 | 41 |
| <i>Hexatoma</i> | 2 | — | — | 3 | — |
| <i>Tipula</i> | 3 | — | — | 1 | — |
| Total Organisms | 543 | 678 | 1282 | 1331 | 1416 |
| Total Taxa | 44 | 35 | 33 | 40 | 29 |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01478230 | 01479679 | 01479700 | 01479800 | 01480629 | Station Number |
|----------|----------|----------|----------|----------|---------------------------|
| 10/14/99 | 10/27/99 | 10/06/99 | 10/12/99 | 10/15/99 | Date |
| Count | Count | Count | Count | Count | Benthic Macroinvertebrate |
| | | | | | Diptera (True Flies) |
| | | | | | Athericidae |
| | | | 1 | | <i>Atherix</i> |
| | | | | | Ceratopogonidae |
| 78 | 400 | 133 | 70 | 202 | Chironomidae (Midges) |
| | | | | | Empididae (Dance Flies) |
| | 13 | 4 | 16 | | <i>Hemerodromia</i> |
| | | | | | Simuliidae (Black Flies) |
| 12 | 1 | 1 | | 12 | <i>Simulium</i> |
| | | | | | Tipulidae (Crane Flies) |
| 9 | 21 | | 5 | 2 | <i>Antocha</i> |
| | | | | | <i>Hexatoma</i> |
| | | 1 | | | <i>Tipula</i> |
| 334 | 2425 | 310 | 830 | 1225 | Total Organisms |
| 23 | 46 | 18 | 27 | 36 | Total Taxa |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| Station Number | 01480636 | 01480638 | 01480653 | 01480697 | 01494900 |
|----------------------------|----------|----------|----------|----------|----------|
| Date | 11/09/99 | 11/09/99 | 10/15/99 | 10/28/99 | 10/26/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Platyhelminthes | | | | | |
| Turbellaria (Flatworms) | | | | | |
| Tricladida | | | | | |
| Planariidae | 2 | 7 | 20 | 1 | - |
| Nematoda (Nematodes) | 13 | 5 | - | 1 | 1 |
| Nemertea (Proboscis Worms) | | | | | |
| Enopla | | | | | |
| Hoploneurata | | | | | |
| Tetrastemmatidae | | | | | |
| <i>Prostoma</i> | - | 10 | 11 | - | 6 |
| Mollusca | | | | | |
| Gastropoda (Snails) | | | | | |
| Basommatophora | | | | | |
| Ancyliidae | | | | | |
| <i>Ferrissia</i> | - | - | 9 | 1 | 1 |
| Lymnaeidae | - | - | - | - | 1 |
| Planorbidae | | | | | |
| <i>Helisoma</i> | - | - | 1 | - | - |
| Bivalvia (Clams) | | | | | |
| Veneroida | | | | | |
| Sphaeriidae | - | 3 | - | - | - |
| Annelida (Segmented Worms) | | | | | |
| Oligochaeta | | | | | |
| Tubificida | 6 | 4 | 15 | 1 | 8 |
| Naididae | 38 | 3 | 1 | - | 1 |
| Hirudinea (Leeches) | | | | | |
| Arhynchobdellidae | | | | | |
| Erpobdellidae | | | | | |
| <i>Erpobdella</i> | - | - | - | - | 1 |
| Arthropoda | | | | | |
| Acariformes | | | | | |
| Hydrachnidia (Water Mites) | 29 | 17 | 21 | 2 | 1 |
| Crustacea | | | | | |
| Cyclopoida | | | | | |
| Cyclopidae | 2 | 1 | - | 2 | - |
| Amphipoda (Scuds) | | | | | |
| Crangonyctidae | | | | | |
| <i>Crangonyx</i> | - | - | 1 | - | - |
| <i>Stygonectes</i> | 5 | - | - | 1 | - |
| Talitride | | | | | |
| <i>Hyalolella</i> | - | - | - | 1 | - |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01494950 | 01494953 | 01495300 | Station Number |
|----------|----------|----------|----------------------------|
| 10/26/99 | 10/25/99 | 11/01/99 | Date |
| Count | Count | Count | Benthic Macroinvertebrate |
| | | | Platyhelminthes |
| | | | Turbellaria (Flatworms) |
| | | | Tricladida |
| 1 | — | 1 | Planariidae |
| — | — | — | Nematoda (Nematodes) |
| | | | Nemertea (Proboscis Worms) |
| | | | Enopla |
| | | | Hoplonemertea |
| | | | Tetrastemmatidae |
| — | 3 | — | <i>Prostoma</i> |
| | | | Mollusca |
| | | | Gastropoda (Snails) |
| | | | Basommatophora |
| | | | Ancylidae |
| — | — | 1 | <i>Ferrissia</i> |
| — | — | — | Lymnaeidae |
| | | | Planorbidae |
| — | — | — | <i>Helisoma</i> |
| | | | Bivalvia (Clams) |
| | | | Veneroidea |
| — | — | — | Sphaeriidae |
| | | | Annelida (Segmented Worms) |
| — | — | 2 | Oligochaeta |
| | | | Tubificida |
| 3 | 1 | 48 | Naididae |
| | | | Hirudinea (Leeches) |
| | | | Arhynchobdellidae |
| | | | Erpobdellidae |
| — | — | — | <i>Erpobdella</i> |
| | | | Arthropoda |
| | | | Acariformes |
| 3 | 5 | 8 | Hydrachnidia (Water Mites) |
| | | | Crustacea |
| | | | Cyclopoida |
| — | — | 2 | Cyclopidae |
| | | | Amphipoda (Scuds) |
| | | | Crangonyctidae |
| — | — | — | <i>Crangonyx</i> |
| — | — | — | <i>Stygonectes</i> |
| | | | Talitride |
| — | — | — | <i>Hyallela</i> |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| Station Number | 01480636 | 01480638 | 01480653 | 01480697 | 01494900 |
|---|----------|----------|----------|----------|----------|
| Date | 11/09/99 | 11/09/99 | 10/15/99 | 10/28/99 | 10/26/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Insecta | | | | | |
| Ephemeroptera (Mayflies) | | | | | |
| Baetidae | | | | | |
| <i>Baetis</i> | 26 | - | 3 | - | - |
| <i>Pseudocloeon</i> | 1 | 1 | 11 | - | 1 |
| Caenidae | | | | | |
| <i>Caenis</i> | - | - | 8 | - | - |
| Ephemerellidae | | | | | |
| <i>Eurylophella</i> | 6 | 5 | 4 | 2 | - |
| <i>Serratella</i> | 45 | 40 | 109 | 7 | - |
| Heptageniidae | | | | | |
| <i>Epeorus</i> | 1 | - | 2 | - | - |
| <i>Stenonema</i> | 11 | 6 | 117 | 2 | - |
| Isonychiidae | | | | | |
| <i>Isonychia</i> | - | - | 57 | 1 | - |
| Leptohiphidae | | | | | |
| <i>Tricorythodes</i> | - | - | - | - | - |
| Leptophlebiidae | | | | | |
| <i>Paraleptophlebia</i> | 7 | - | 1 | - | - |
| Odonata (Dragonflies and Damselflies) | | | | | |
| Gomphidae | | | | | |
| <i>Lanthus</i> | - | - | - | 1 | - |
| Plecoptera (Stoneflies) | | | | | |
| Capniidae | | | | | |
| <i>Allocapnia</i> | 11 | 16 | 2 | 130 | - |
| Nemouridae | | | | | |
| <i>Paranemoura</i> | - | - | - | 45 | - |
| Perlidae | | | | | |
| <i>Acroneuria</i> | - | - | 3 | 1 | - |
| <i>Agnatina</i> | 27 | - | - | - | - |
| <i>Paragnetina</i> | - | 8 | 1 | - | - |
| Taeniopterygidae | | | | | |
| <i>Strophopteryx</i> | 2 | - | - | 1 | - |
| <i>Taeniopteryx</i> | 2 | 1 | 28 | 4 | - |
| Megaloptera | | | | | |
| Corydalidae (Fishflies and Dobsonflies) | | | | | |
| <i>Corydalus</i> | - | - | 8 | - | - |
| <i>Nigronia</i> | 2 | 2 | 2 | 2 | - |
| Sialidae (Alderflies) | | | | | |
| <i>Sialis</i> | 1 | 1 | - | - | - |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01494950 | 01494953 | 01495300 | Station Number |
|----------|----------|----------|---|
| 10/26/99 | 10/25/99 | 11/01/99 | Date |
| Count | Count | Count | Benthic Macroinvertebrate |
| | | | Insecta |
| | | | Ephemeroptera (Mayflies) |
| | | | Baetidae |
| | | | <i>Baetis</i> |
| - | - | - | |
| 2 | 1 | 2 | <i>Pseudocloeon</i> |
| | | | Caenidae |
| 6 | 1 | 5 | <i>Caenis</i> |
| | | | Ephemerellidae |
| 11 | - | 8 | <i>Eurylophella</i> |
| 10 | 2 | 13 | <i>Serratella</i> |
| | | | Heptageniidae |
| | | | <i>Epeorus</i> |
| - | - | - | |
| 9 | 2 | 2 | <i>Stenonema</i> |
| | | | Isonychiidae |
| 1 | 6 | 8 | <i>Isonychia</i> |
| | | | Leptohyphidae |
| | | | <i>Tricorythodes</i> |
| - | - | 1 | |
| | | | Leptophlebiidae |
| | | | <i>Paraleptophlebia</i> |
| - | - | - | |
| | | | Odonata (Dragonflies and Damselflies) |
| | | | Gomphidae |
| | | | <i>Lanthus</i> |
| - | - | - | |
| | | | Plecoptera (Stoneflies) |
| | | | Capniidae |
| 3 | - | 7 | <i>Allocapnia</i> |
| - | - | - | |
| | | | Nemouridae |
| | | | <i>Paranemoura</i> |
| - | - | 2 | |
| | | | Perlidae |
| | | | <i>Acroneuria</i> |
| - | - | - | |
| | | | <i>Agneta</i> |
| - | - | - | |
| | | | <i>Paragnetina</i> |
| | | | Taeniopterygidae |
| | | | <i>Strophopteryx</i> |
| - | - | - | |
| | | | <i>Taeniopteryx</i> |
| - | - | 6 | |
| | | | Megaloptera |
| | | | Corydalidae (Fishflies and Dobsonflies) |
| | | | <i>Corydalus</i> |
| - | - | 2 | |
| | | | <i>Nigronia</i> |
| - | - | - | |
| | | | Sialidae (Alderflies) |
| | | | <i>Sialis</i> |
| - | - | - | |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| Station Number | 01480636 | 01480638 | 01480653 | 01480697 | 01494900 |
|----------------------------------|----------|----------|----------|----------|----------|
| Date | 11/09/99 | 11/09/99 | 10/15/99 | 10/28/99 | 10/26/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Trichoptera (Caddisflies) | | | | | |
| Apataniidae | | | | | |
| <i>Apatania</i> | — | — | 2 | — | — |
| Brachycentridae | | | | | |
| <i>Micrasema</i> | 4 | 2 | 1 | — | — |
| Glossosomatidae | | | | | |
| <i>Glossosoma</i> | 8 | 1 | 10 | — | — |
| Goeridae | | | | | |
| <i>Goera</i> | 1 | — | — | — | — |
| Hydropsychidae | | | | | |
| <i>Cheumatopsyche</i> | 27 | 23 | 727 | 19 | 5 |
| <i>Hydropsyche</i> | 93 | 60 | 348 | 80 | 22 |
| <i>Macostemum</i> | — | — | — | — | — |
| Hydroptilidae | | | | | |
| <i>Hydroptila</i> | — | 3 | — | 1 | — |
| <i>Leucotrichia</i> | — | — | 6 | — | — |
| Leptoceridae | | | | | |
| <i>Ceraclea</i> | — | — | — | — | — |
| <i>Oecetis</i> | — | — | — | — | — |
| Philopotamidae | | | | | |
| <i>Chimarra</i> | 4 | 42 | 84 | 2 | — |
| <i>Dolophilodes</i> | 3 | — | 8 | — | — |
| <i>Wormaldia</i> | — | 1 | — | — | — |
| Polycentropodidae | | | | | |
| <i>Polycentropus</i> | 7 | 4 | 2 | — | — |
| Psychomyiidae | | | | | |
| <i>Lype</i> | — | 1 | — | — | — |
| <i>Psychomyia</i> | 1 | — | 3 | — | — |
| Rhyacophilidae | | | | | |
| <i>Rhyacophila</i> | — | — | 7 | — | — |
| Uenoidae | | | | | |
| <i>Neophylax</i> | 11 | — | — | — | — |
| Coleoptera (Beetles) | | | | | |
| Elmidae (Riffle Beetles) | | | | | |
| <i>Ancyronyx</i> | 4 | 34 | — | — | 1 |
| <i>Dubiraphia</i> | 1 | — | 4 | — | — |
| <i>Optioservus</i> | 93 | 124 | 90 | 22 | 8 |
| <i>Oulimnius</i> | 42 | 102 | 44 | 20 | 1 |
| <i>Stenelmis</i> | 3 | 37 | 30 | 5 | 3 |
| Psephenidae (Water Pennies) | | | | | |
| <i>Psephenus</i> | 6 | 9 | 7 | 19 | — |
| Ptilodactylidae | | | | | |
| <i>Anchytarsus</i> | 3 | — | — | — | — |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01494950 | 01494953 | 01495300 | Station Number |
|----------|----------|----------|-----------------------------|
| 10/26/99 | 10/25/99 | 11/01/99 | Date |
| Count | Count | Count | Benthic Macroinvertebrate |
| | | | Trichoptera (Caddisflies) |
| | | | Apataniidae |
| - | - | - | <i>Apatania</i> |
| | | | Brachycentridae |
| - | - | 5 | <i>Micrasema</i> |
| | | | Glossosomatidae |
| - | - | - | <i>Glossosoma</i> |
| | | | Goeridae |
| - | - | - | <i>Goera</i> |
| | | | Hydropsychidae |
| 31 | 23 | 21 | <i>Cheumatopsyche</i> |
| 53 | 7 | 13 | <i>Hydropsyche</i> |
| 3 | - | - | <i>Macrostemum</i> |
| | | | Hydroptilidae |
| - | 2 | 1 | <i>Hydroptila</i> |
| 1 | - | 2 | <i>Leucotrichia</i> |
| | | | Leptoceridae |
| - | - | 1 | <i>Ceraclea</i> |
| 1 | - | - | <i>Oecetis</i> |
| | | | Philopotamidae |
| 18 | - | 13 | <i>Chimarra</i> |
| - | - | - | <i>Dolophilodes</i> |
| - | - | - | <i>Wormaldia</i> |
| | | | Polycentropodidae |
| - | - | - | <i>Polycentropus</i> |
| | | | Psychomyiidae |
| - | - | - | <i>Lype</i> |
| - | - | - | <i>Psychomyia</i> |
| | | | Rhyacophilidae |
| - | - | - | <i>Rhyacophila</i> |
| | | | Uenoidae |
| - | - | 5 | <i>Neophylax</i> |
| | | | Coleoptera (Beetles) |
| | | | Elmidae (Riffle Beetles) |
| - | 1 | - | <i>Ancyronyx</i> |
| - | 1 | - | <i>Dubiraphia</i> |
| 9 | 5 | 18 | <i>Optioservus</i> |
| 8 | 2 | - | <i>Oulimnius</i> |
| 14 | 1 | 6 | <i>Stenelmis</i> |
| | | | Psephenidae (Water Pennies) |
| 3 | 1 | 13 | <i>Psephenus</i> |
| | | | Ptilodactylidae |
| - | - | - | <i>Anchytarsus</i> |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| Station Number | 01480636 | 01480638 | 01480653 | 01480697 | 01494900 |
|---------------------------|----------|----------|----------|----------|----------|
| Date | 11/09/99 | 11/09/99 | 10/15/99 | 10/28/99 | 10/26/99 |
| Benthic Macroinvertebrate | Count | Count | Count | Count | Count |
| Diptera (True Flies) | | | | | |
| Athericidae | | | | | |
| <i>Atherix</i> | — | — | 2 | 2 | — |
| Ceratopogonidae | 1 | — | — | — | — |
| Chironomidae (Midges) | 525 | 45 | 75 | 41 | 117 |
| Empididae (Dance Flies) | | | | | |
| <i>Hemerodromia</i> | 2 | — | — | — | — |
| Simuliidae (Black Flies) | | | | | |
| <i>Simulium</i> | 8 | 2 | 6 | — | — |
| Tipulidae (Crane Flies) | | | | | |
| <i>Antocha</i> | 8 | 3 | 11 | — | 15 |
| <i>Diranota</i> | 6 | — | — | — | — |
| <i>Limnophila</i> | — | — | — | 1 | — |
| <i>Molophilus</i> | — | — | — | — | 1 |
| <i>Tipula</i> | — | — | — | — | — |
| Total Individuals | 1098 | 624 | 1904 | 419 | 194 |
| Total Taxa | 43 | 35 | 44 | 31 | 18 |

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
STREAM CONDITIONS OF CHESTER COUNTY BIOLOGICAL MONITORING NETWORK--Continued

BIOLOGICAL DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
 BENTHIC MACROINVERTEBRATES--Continued

| 01494950 | 01494953 | 01495300 | Station Number |
|----------|----------|----------|---------------------------|
| 10/26/99 | 10/25/99 | 11/01/99 | Date |
| Count | Count | Count | Benthic Macroinvertebrate |
| | | | Diptera (True Flies) |
| | | | Athericidae |
| | | | <i>Atherix</i> |
| - | - | - | |
| | | | Ceratopogonidae |
| - | - | - | |
| 181 | 117 | 67 | Chironomidae (Midges) |
| | | | Empididae (Dance Flies) |
| | | | <i>Hemerodromia</i> |
| 1 | - | - | |
| | | | Simuliidae (Black Flies) |
| | | | <i>Simulium</i> |
| 2 | - | 2 | |
| | | | Tipulidae (Crane Flies) |
| | | | <i>Antocha</i> |
| 26 | 3 | 2 | |
| | | | <i>Diranota</i> |
| - | - | - | |
| | | | <i>Limnophila</i> |
| - | - | - | |
| | | | <i>Molophilus</i> |
| - | - | - | |
| | | | <i>Tipula</i> |
| - | 1 | - | |
| 400 | 185 | 287 | Total Individuals |
| 24 | 20 | 31 | Total Taxa |