

Table 30. Summary of antibiotic compound (table 6) data for the spring 2005 Boulder Creek, Colorado (BC) and Fourmile Creek, Iowa (FC) Lagrangian samplings. [Site identifier defined in table 2; U, upstream from wastewater treatment plant (WWTP); E, WWTP effluent; BC-D3.6, BC-D7.4, FC-D2.9 and FC-D8.4 are sites downstream from the WWTP indicating distance in kilometers; number after compound indicates replicate analysis; µg/L, microgram per liter; <, less than laboratory reporting level; --, not determined.]

| Constituent | Unit | Boulder Creek | | | | | Fourmile Creek | | | | |
|------------------------------------------|------|---------------|-----------|-----------|-----------|-----------|----------------|----------|----------|----------|----------|
| | | BC-U | BC-E | BC-D3.6 | BC-D7.4 | Blank | FC-U | FC-E | FC-D2.9 | FC-D8.4 | Blank |
| Date | | 4/19/2005 | 4/19/2005 | 4/19/2005 | 4/19/2005 | 4/19/2005 | 3/8/2005 | 3/8/2005 | 3/8/2005 | 3/8/2005 | 3/8/2005 |
| Time | | 855 | 900 | 1145 | 1630 | 1430 | 740 | 745 | 1120 | 1540 | 1200 |
| Compound | | | | | | | | | | | |
| Amoxicillin 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Amoxicillin 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Amoxicillin 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Ampicillin 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Ampicillin 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Ampicillin 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Azithromycin 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Azithromycin 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Azithromycin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Carbadox 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.010 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Carbadox 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Carbadox 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Cefotaxime 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Cefotaxime 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Cefotaxime 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Chlorotetracycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Chlorotetracycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Chlorotetracycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>anhydro</i> -Chlorotetracycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| <i>anhydro</i> -Chlorotetracycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>anhydro</i> -Chlorotetracycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>epi</i> -Chlorotetracycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| <i>epi</i> -Chlorotetracycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>epi</i> -Chlorotetracycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>epi-anhydro</i> -Chlorotetracycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| <i>epi-anhydro</i> -Chlorotetracycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>epi-anhydro</i> -Chlorotetracycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>epi-iso</i> -Chlorotetracycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | 0.017 | <0.010 | <0.010 | <0.010 |
| <i>epi-iso</i> -Chlorotetracycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>epi-iso</i> -Chlorotetracycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>iso</i> -Chlorotetracycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | 0.041 | 0.019 | 0.019 | <0.010 |
| <i>iso</i> -Chlorotetracycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| <i>iso</i> -Chlorotetracycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Ciprofloxacin 1 | µg/L | <0.005 | 0.091 | <0.005 | <0.005 | <0.005 | <0.005 | 0.48 | 0.012 | 0.006 | <0.005 |
| Ciprofloxacin 2 | µg/L | <0.005 | 0.091 | <0.005 | <0.005 | -- | <0.005 | 0.52 | 0.016 | 0.013 | -- |
| Ciprofloxacin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | 0.44 | 0.014 | <0.005 | -- |
| Cinafloxacin 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Cinafloxacin 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Cinafloxacin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Cloxacillin 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Cloxacillin 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Cloxacillin 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Demeclocycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Demeclocycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Demeclocycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Doxycycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | 0.18 | <0.010 | <0.010 | <0.010 |
| Doxycycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | 0.16 | <0.010 | <0.010 | -- |
| Doxycycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | 0.18 | <0.010 | <0.010 | -- |
| Erythromycin 1 | µg/L | <0.005 | 0.25 | 0.21 | 0.14 | <0.005 | <0.005 | 0.21 | 0.045 | 0.040 | <0.005 |
| Erythromycin 2 | µg/L | <0.005 | 0.24 | 0.19 | 0.087 | -- | <0.005 | 0.25 | 0.053 | 0.019 | -- |
| Erythromycin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | 0.27 | 0.051 | 0.27 | -- |
| <i>anhydro</i> -Erythromycin 1 | µg/L | <0.005 | 0.35 | 0.13 | 0.093 | <0.005 | <0.005 | 0.60 | 0.088 | 0.038 | <0.005 |
| <i>anhydro</i> -Erythromycin 2 | µg/L | <0.005 | 0.31 | 0.11 | 0.099 | -- | <0.005 | 0.47 | 0.080 | 0.065 | -- |
| <i>anhydro</i> -Erythromycin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | 0.52 | 0.076 | 0.068 | -- |
| Flumequine 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Flumequine 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Flumequine 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Lincomycin 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.006 | <0.005 | <0.005 | <0.005 |
| Lincomycin 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Lincomycin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | 0.008 | <0.005 | <0.005 | -- |
| Lomefloxacin 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Lomefloxacin 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Lomefloxacin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Minocycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | 0.033 | <0.010 | <0.010 | <0.010 |
| Minocycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | 0.028 | <0.010 | <0.010 | -- |
| Minocycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | 0.019 | <0.010 | <0.010 | -- |
| Norfloxacin 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Norfloxacin 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Norfloxacin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Ofloxacin 1 | µg/L | <0.005 | 0.13 | 0.13 | 0.069 | <0.005 | <0.005 | 2.3 | 0.14 | 0.064 | <0.005 |
| Ofloxacin 2 | µg/L | <0.005 | 0.13 | 0.12 | 0.066 | -- | <0.005 | 2.2 | 0.13 | 0.066 | -- |
| Ofloxacin 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | 0.0 | 0.14 | 0.066 | -- |
| Ormetoprim 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Ormetoprim 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Ormetoprim 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Oxacillin 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Oxacillin 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Oxacillin 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Oxolinic Acid 1 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 |
| Oxolinic Acid 2 | µg/L | <0.005 | <0.005 | <0.005 | <0.005 | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Oxolinic Acid 3 | µg/L | -- | -- | -- | -- | -- | <0.005 | <0.005 | <0.005 | <0.005 | -- |
| Oxytetracycline 1 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 | <0.010 |
| Oxytetracycline 2 | µg/L | <0.010 | <0.010 | <0.010 | <0.010 | -- | <0.010 | <0.010 | <0.010 | <0.010 | -- |
| Oxytetracycline 3 | µg/L | -- | -- | -- | -- | -- | <0.010 | <0.010 | <0.0 | | |