

2005

Appendix C. Physical Measurements and Chemical Analyses of China Lake Water Quality

Problems in Environmental Science course (Biology 493), Colby College

Colby Environmental Assessment Team, Colby College

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APPENDIX C. PHYSICAL MEASUREMENTS AND CHEMICAL ANALYSES OF CHINA

LAKE WATER QUALITY

Physical tests: temperature (°C), dissolved oxygen (ppm), and conductivity (µmhos) at sites 1 – 3. Data was collected using a YSI Sonde. (See Figure IIAABJ1)

| Depth (m) | 7-Jun-05 | | 22-Jun-05 | | 3-Aug-05 | | | 16-Aug-05 | | | 19-Sep-05 | | |
|-----------|----------|-------|-----------|-------|----------|-------|-------|-----------|-------|-------|-----------|-------|-------|
| | Temp. | D. O. | Temp. | D. O. | Temp. | D. O. | Cond. | Temp. | D. O. | Cond. | Temp. | D. O. | Cond. |
| Site 1 | | | | | | | | | | | | | |
| 0 | 16.0 | 10.9 | 19.9 | 9.6 | 24.8 | 9.8 | 89 | 24.6 | 9.3 | 90 | 21.2 | 9.6 | 84 |
| 1 | 15.7 | 10.3 | 19.8 | 9.5 | 24.8 | 9.8 | 89 | 24.6 | 9.4 | 90 | 21.2 | 9.5 | 84 |
| 2 | 15.6 | 10.5 | 19.7 | 9.5 | 24.7 | 9.8 | 89 | 24.6 | 9.5 | 89 | 21.1 | 9.6 | 84 |
| 3 | 15.6 | 10.4 | 19.4 | 9.6 | 24.7 | 9.8 | 89 | 24.5 | 9.4 | 89 | 21.0 | 9.6 | 83 |
| 4 | 15.4 | 10.5 | 18.9 | 9.6 | 24.1 | 9.7 | 87 | 24.5 | 9.2 | 89 | 21.0 | 9.6 | 83 |
| 5 | 14.0 | 10.5 | 18.8 | 9.4 | 23.8 | 8.8 | 86 | 23.3 | 7.1 | 86 | 21.0 | 9.6 | 83 |
| 6 | 12.9 | 10.3 | 14.9 | 9.8 | 21.2 | 6.6 | 81 | 21.9 | 6.2 | 83 | 20.7 | 9.4 | 82 |
| 7 | 11.9 | 10.0 | 13.7 | 8.9 | 15.9 | 5.8 | 71 | 18.6 | 5.2 | 77 | 20.5 | 8.9 | 82 |
| 8 | 11.5 | 9.7 | 11.7 | 8.8 | 14.0 | 4.2 | 68 | 14.2 | 2.9 | 69 | 20.4 | 8.7 | 82 |
| 9 | 11.1 | 9.6 | 10.9 | 8.1 | 12.3 | 3.8 | 65 | 12.9 | 2.2 | 67 | 15.7 | 2.8 | 76 |
| 10 | 10.9 | 9.7 | 10.6 | 8.1 | 11.7 | 4.0 | 64 | 11.6 | 2.5 | 64 | 13.0 | 1.1 | 71 |
| 11 | 10.8 | 9.8 | 10.5 | 8.2 | 11.3 | 4.3 | 63 | 11.1 | 3.3 | 63 | 11.8 | 0.5 | 67 |
| 12 | 10.6 | 9.6 | 10.4 | 8.1 | 11.1 | 4.4 | 62 | 10.9 | 3.8 | 62 | 11.4 | 0.8 | 66 |
| 13 | 10.4 | 9.5 | 10.4 | 8.0 | 10.9 | 4.6 | 62 | 10.7 | 3.7 | 62 | 11.2 | 0.8 | 66 |
| 14 | 10.4 | 9.5 | 10.3 | 8.1 | 10.7 | 4.8 | 61 | 10.5 | 3.6 | 62 | 10.7 | 0.8 | 65 |
| 15 | 10.3 | 9.3 | 10.3 | 8.1 | 10.5 | 4.8 | 61 | 10.3 | 3.4 | 61 | 10.7 | 0.8 | 65 |
| 16 | 10.3 | 9.4 | 10.2 | 8.0 | 10.8 | 4.0 | - | 10.5 | 2.6 | - | 10.6 | 0.7 | 65 |
| 17 | 10.2 | 9.2 | 10.2 | 7.9 | 10.6 | 4.1 | - | 10.4 | 2.5 | - | 10.5 | 0.7 | 65 |
| 18 | 10.2 | 9.1 | 10.2 | 7.9 | 10.4 | 3.8 | - | 10.3 | 2.2 | - | 10.4 | 0.6 | 65 |
| 19 | 10.1 | 9.1 | 10.2 | 7.7 | 10.3 | 4.0 | - | 10.2 | 1.8 | - | 10.3 | 0.5 | 65 |
| 20 | 10.1 | 8.9 | 10.2 | 7.5 | 10.2 | 3.6 | - | 10.1 | 1.6 | - | 10.3 | 0.4 | 66 |
| 21 | 10.0 | 8.8 | - | - | 10.1 | 3.2 | - | 10.1 | 1.6 | - | 10.2 | 0.2 | 65 |
| 22 | 10.0 | 8.9 | - | - | 10.1 | 2.8 | - | 10.1 | 1.5 | - | 10.2 | 0.2 | 65 |
| 23 | 10.0 | 8.9 | - | - | 10.0 | 2.6 | - | 10.0 | 1.3 | - | 10.2 | 0.1 | 66 |
| 24 | 10.0 | 8.7 | - | - | 10.0 | 2.5 | - | 10.0 | 1.3 | - | 10.2 | 0.1 | 66 |
| 25 | 9.9 | 8.6 | - | - | 10.0 | 2.4 | - | 10.0 | 1.0 | - | 10.2 | 0.1 | 66 |

APPENDIX C. (Continued)

| Depth (m) | 7-Jun-05 | | 22-Jun-05 | | 3-Aug-05 | | | 16-Aug-05 | | | 19-Sep-05 | | |
|---------------|----------|-------|-----------|-------|----------|-------|-------|-----------|-------|-------|-----------|-------|-------|
| | Temp. | D. O. | Temp. | D. O. | Temp. | D. O. | Cond. | Temp. | D. O. | Cond. | Temp. | D. O. | Cond. |
| Site 1 | | | | | | | | | | | | | |
| 26 | 9.9 | 8.4 | - | - | - | - | | 10.0 | 0.8 | | 10.1 | 0.1 | 67 |
| 27 | 9.8 | 8.0 | - | - | - | - | | - | - | | - | - | - |
| Site 2 | | | | | | | | | | | | | |
| 0 | 16.8 | 9.9 | 19.9 | 9.4 | 25.0 | 9.0 | 89 | 24.6 | 9.3 | 88 | 21.2 | 8.7 | 82 |
| 1 | 16.3 | 10.1 | 19.6 | 9.3 | 24.8 | 9.1 | 88 | 24.6 | 9.4 | 88 | 21.2 | 8.6 | 82 |
| 2 | 16.2 | 10.2 | 19.1 | 9.3 | 24.5 | 9.1 | 88 | 24.5 | 9.5 | 88 | 21.2 | 8.6 | 82 |
| 3 | 15.6 | 10.2 | 19.0 | 9.3 | 24.3 | 9.0 | 87 | 24.4 | 9.6 | 88 | 21.2 | 8.5 | 82 |
| 4 | 13.7 | 9.8 | 18.7 | 9.3 | 24.1 | 8.7 | 86 | 24.4 | 9.5 | 88 | 21.2 | 8.4 | 82 |
| 5 | 12.3 | 9.5 | 17.4 | 9.3 | 23.2 | 7.6 | 84 | 24.4 | 9.3 | 88 | 21.1 | 8.4 | 82 |
| 6 | 11.7 | 9.4 | 15.0 | 9.0 | 21.7 | 6.2 | 81 | 21.6 | 5.4 | 82 | 20.6 | 8.0 | 81 |
| 7 | 11.4 | 9.1 | 14.1 | 8.8 | 16.4 | 5.1 | 72 | 16.7 | 4.1 | 75 | 20.5 | 7.5 | 81 |
| 8 | 11.1 | 8.8 | 12.0 | 8.5 | 13.4 | 3.4 | 68 | 14.3 | 2.0 | 70 | 20.2 | 6.5 | 80 |
| 9 | 11.0 | 8.7 | 11.7 | 7.5 | 12.7 | 2.2 | 67 | 13.0 | 1.3 | 69 | 16.5 | 2.8 | 82 |
| 10 | 10.9 | 8.8 | 11.4 | 7.1 | 12.2 | 1.8 | 67 | 12.6 | 1.1 | 68 | 14.1 | 0.7 | 79 |
| 11 | 10.9 | 9.0 | 11.2 | 6.7 | 12.2 | 1.7 | 66 | 12.5 | 1.0 | 68 | 13.5 | 0.3 | 79 |
| 12 | 10.8 | 8.9 | 11.2 | 6.6 | 12.1 | 1.6 | 66 | 12.4 | 0.8 | 68 | 13.3 | 0.1 | 79 |
| 13 | 10.8 | 8.8 | 11.2 | 6.6 | 12.1 | 1.6 | 66 | 12.4 | 0.7 | 68 | 13.1 | 0.1 | 80 |
| 14 | 10.8 | 8.8 | 11.1 | 6.4 | 12.0 | 1.6 | 66 | 12.3 | 0.6 | 68 | 13.0 | 0.1 | 79 |
| 15 | 10.7 | 8.6 | 11.1 | 6.4 | 11.9 | 1.5 | 67 | 12.2 | 0.6 | 69 | 12.9 | 0.1 | 81 |
| 16 | 10.7 | 8.0 | - | - | - | - | - | - | - | - | - | - | - |
| Site 3 | | | | | | | | | | | | | |
| 0 | 18.6 | 9.6 | 20.4 | 9.8 | 25.3 | 9.1 | 89 | 25.0 | 9.2 | 89 | 21.2 | 8.9 | 82 |
| 1 | 18.5 | 9.5 | 20.3 | 9.3 | 25.3 | 9.1 | 89 | 25.0 | 9.2 | 89 | 21.2 | 8.9 | 82 |
| 2 | 18.2 | 9.6 | 19.9 | 9.3 | 25.1 | 9.2 | 89 | 25.0 | 9.3 | 89 | 21.2 | 8.9 | 81 |
| 3 | 18.0 | 9.5 | 19.5 | 9.3 | 25.0 | 9.2 | 89 | 25.0 | 9.2 | 89 | 21.1 | 8.9 | 81 |
| 4 | 17.9 | 9.4 | 17.1 | 8.9 | 24.7 | 9.0 | 88 | 24.9 | 9.1 | 89 | 21.1 | 8.9 | 81 |
| 5 | 14.2 | 9.3 | 14.9 | 8.6 | 22.8 | 7.1 | 84 | 24.7 | 8.8 | 88 | 21.1 | 8.9 | 81 |
| 6 | 12.5 | 9.1 | 14.1 | 8.1 | 20.3 | 4.9 | 79 | 22.9 | 5.2 | 85 | 21.1 | 8.9 | 81 |
| 7 | 11.8 | 9.1 | 12.2 | 8.1 | 14.7 | 3.7 | 68 | 17.2 | 2.4 | 75 | 20.7 | 8.5 | 81 |
| 8 | 11.4 | 9.2 | 11.4 | 7.4 | 12.6 | 1.6 | 66 | 14.4 | 1.0 | 71 | 20.3 | 8.0 | 81 |
| 9 | 11.3 | 9.1 | 11.1 | 6.9 | 11.9 | 1.4 | 65 | 12.3 | 0.3 | 68 | 14.8 | 4.9 | 83 |

APPENDIX C. (Continued)

| Depth (m) | 7-Jun-05 | | 22-Jun-05 | | 3-Aug-05 | | | 16-Aug-05 | | | 19-Sep-05 | | |
|----------------|----------|-------|-----------|-------|----------|-------|-------|-----------|-------|-------|-----------|-------|-------|
| | Temp. | D. O. | Temp. | D. O. | Temp. | D. O. | Cond. | Temp. | D. O. | Cond. | Temp. | D. O. | Cond. |
| Site 3 | | | | | | | | | | | | | |
| 10 | 11.0 | 8.6 | 11.0 | 6.5 | 11.4 | 0.9 | 65 | 11.6 | 0.2 | 68 | 12.3 | 1.4 | 78 |
| 11 | 10.9 | 8.5 | 11.0 | 6.1 | 11.3 | 0.7 | 65 | 11.4 | 0.2 | 68 | 11.7 | 0.4 | 79 |
| 12 | 10.9 | 8.5 | 10.9 | 5.9 | 11.2 | 0.7 | 64 | 11.3 | 0.1 | 67 | 11.3 | 0.2 | 76 |
| 13 | 10.8 | 8.4 | 10.8 | 5.7 | 10.9 | 0.6 | 64 | 11.0 | 0.1 | 66 | 11.1 | 0.1 | 76 |
| 14 | 10.8 | 8.2 | 10.8 | 5.3 | 10.9 | 0.4 | 64 | 10.9 | 0.1 | 66 | 11.0 | 0.1 | 77 |
| 15 | 10.8 | 8.1 | 10.8 | 5.1 | 10.8 | 0.3 | 64 | 10.8 | 0.1 | 66 | 10.9 | 0.1 | 78 |
| 16 | 10.8 | 7.8 | - | - | 10.9 | 0.1 | - | 10.9 | 0.1 | - | 10.8 | 0.1 | 80 |
| Site 4 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 23.0 | 8.5 | 77 |
| Site 5 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 23.2 | 7.9 | 59 |
| Site 6 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 21.4 | 9.2 | 56 |
| Site 7 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 21.3 | 8.1 | 56 |
| Site 8 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 21.8 | 7.9 | 59 |
| Site 9 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 73.1 | 3.7 | 77 |
| Site 10 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 67.7 | 8.5 | 111 |
| Site 11 | | | | | | | | | | | | | |
| 0 | - | - | - | - | - | - | - | - | - | - | 70.1 | 8.4 | 143 |

APPENDIX C. (Continued)

Sampling conditions and physical parameters: Secchi disk (m), turbidity (NTU), and true color (SPU).

| | 7-Jun-05 | 22-Jun-05 | 3-Aug-05 | 16-Aug-05 | 19-Sep-05 | 6-Oct-05 |
|--------------------------|--------------|-----------|----------|-------------|-----------|----------|
| Air Temperature | 21.1 °C | 21.0 °C | 21.3 °C | 20.5 °C | 23.3 °C | - |
| Cloud Cover | 5% | 10% | <5% | 50% | 5% | - |
| Wind Speed | - | 15 mph | 11 mph | 8 mph | - | - |
| Wind Direction | S | N-NE | N | SE | - | - |
| Previous Weather | rainy & cold | rain | t-storms | hot & sunny | mild rain | - |
| Site 1 | | | | | | |
| Sample Depths (m) | | | | | | |
| Epicore | 5.0 | 6.5 | 7.0 | 7.0 | 9.0 | - |
| Middle | 13.5 | 10.5 | 13.0 | 13.0 | 14.0 | - |
| Bottom | 26.0 | 20.0 | 25.0 | 25.0 | 25.0 | - |
| Secchi Disk (m) | 6.10 | 4.30 | 1.25 | 1.20 | 2.55 | - |
| Turbidity (NTU) | | | | | | |
| Surface | 0.68 | 0.83 | 5.09 | 6.42 | 4.27 | - |
| Middle | 0.73 | 0.72 | 1.10 | 1.61 | 1.19 | - |
| Bottom | 1.08 | 0.94 | 2.47 | 1.87 | 0.79 | - |
| Color (SPU) | - | - | - | - | 10 | - |
| Site 2 | | | | | | |
| Sample Depths (m) | | | | | | |
| Epicore | 4.0 | 6.5 | 7.0 | 7.0 | - | - |
| Middle | 8.0 | 7.5 | 7.8 | 7.8 | - | - |
| Bottom | 16.0 | 14.5 | 15.0 | 15.0 | - | - |
| Secchi Disk (m) | 5.50 | 3.5 | 1.6 | 1.5 | 2.5 | - |
| Turbidity (NTU) | | | | | | |
| Surface | 0.78 | 1.23 | 4.42 | 5.24 | 3.98 | - |
| Middle | 0.90 | 1.53 | 1.59 | 1.98 | 3.39 | 2.10 |
| Bottom | 1.56 | 1.78 | 5.48 | 3.78 | 2.51 | 0.85 |
| Color (SPU) | - | - | - | - | 11 | - |
| Site 3 | | | | | | |
| Sample Depths (m) | | | | | | |
| Epicore | 5.0 | 6.0 | 7.0 | 7.0 | - | - |
| Middle | 8.5 | 8.5 | 8.0 | 8.3 | - | - |
| Bottom | 16.0 | 16.0 | 16.0 | 16.0 | - | - |

APPENDIX C. (Continued)

| | 7-Jun-05 | 22-Jun-05 | 3-Aug-05 | 16-Aug-05 | 19-Sep-05 | 6-Oct-05 |
|-------------------------------------|----------|-----------|----------|-----------|-----------|----------|
| Secchi Disk (m) | 4.00 | 3.50 | 1.95 | 1.55 | 2.5 | - |
| Turbidity (NTU) | | | | | | |
| Surface | 0.94 | 1.24 | 3.17 | 5.76 | 4.09 | - |
| Middle | 0.67 | 1.05 | 1.39 | 2.35 | 3.41 | - |
| Bottom | 2.21 | 4.32 | - | 17.50 | 1.06 | - |
| Color (SPU) | - | - | - | - | 10 | - |
| Site 4 | | | | | | |
| Turbidity | - | - | - | - | 3.09 | - |
| Color | - | - | - | - | 16 | - |
| Site 5 | | | | | | |
| Turbidity | - | - | - | - | 3.54 | - |
| Color | - | - | - | - | 14 | - |
| Site 6 | | | | | | |
| Turbidity | - | - | - | - | 2.82 | - |
| Color | - | - | - | - | 12 | - |
| Site 7 | | | | | | |
| Turbidity | - | - | - | - | 1.8 | - |
| Color | - | - | - | - | 12 | - |
| Site 8 | | | | | | |
| Turbidity | - | - | - | - | 1.81 | - |
| Color | - | - | - | - | 10 | - |
| Site 9 | | | | | | |
| Secchi Tube^a (cm) | - | - | - | - | 122 | - |
| Color | - | - | - | - | 66 | - |
| Site 10 | | | | | | |
| Secchi Tube^a (cm) | - | - | - | - | 75 | - |
| Color | - | - | - | - | 175 | - |
| Site 11 | | | | | | |
| Secchi Tube^a (cm) | - | - | - | - | 113 | - |
| Color | - | - | - | - | 58 | - |

^a Secchi tubes are tall cylinders with a Secchi disk symbol at the bottom. The transparency of shallow water is measured by filling the tube with water and draining it until the Secchi symbol is visible.

APPENDIX C. (Continued)

Chemical tests: nitrates (mg/L), pH, and alkalinity (mg/L).

| Depth (m) | 22-Jun-05 | 3-Aug-05 | | 16-Aug-05 | | 19-Sep-05 | | |
|---------------|-----------|----------|----------|-----------|----------|-------------------|-------------------|--------------------|
| | Nitrates | pH | Nitrates | pH | Nitrates | pH | Nitrates | Alkalinity |
| Site 1 | | | | | | | | |
| 0 | - | - | - | - | - | 7.18 ^a | 0.02 ^a | 17.00 ^a |
| 0 | 1.19 | 9.30 | 4.16 | 9.13 | 8.87 | 8.23 | 0.43 | - |
| 1 | 1.20 | 9.38 | 3.40 | 9.24 | 6.30 | 8.20 | 0.46 | - |
| 2 | 1.17 | 9.39 | 2.98 | 9.26 | 5.38 | 8.20 | 0.47 | - |
| 3 | 1.23 | 9.38 | 2.68 | 9.24 | 4.89 | 8.20 | 0.49 | - |
| 4 | 1.21 | 9.26 | 2.26 | 9.21 | 4.37 | 8.21 | 0.49 | - |
| 5 | 1.25 | 8.83 | 1.44 | 8.61 | 1.05 | 8.20 | 0.52 | - |
| 6 | 1.00 | 8.25 | 0.61 | 8.36 | 0.81 | 8.13 | 0.49 | - |
| 7 | 0.97 | 8.05 | 0.51 | 8.12 | 0.65 | 7.97 | 0.42 | - |
| 8 | 0.95 | 7.83 | 0.51 | 7.79 | 0.63 | 7.89 | 0.44 | - |
| 9 | 0.96 | 7.72 | 0.53 | 7.52 | 0.66 | 7.57 | 0.30 | - |
| 10 | 0.99 | 7.60 | 0.54 | 7.47 | 0.73 | 7.45 | 0.40 | - |
| 11 | 1.06 | 7.35 | 0.64 | 7.38 | 0.84 | 7.23 | 0.59 | - |
| 12 | 1.10 | 7.30 | 0.66 | 7.29 | 0.90 | 7.07 | 0.76 | - |
| 13 | 1.11 | 7.25 | 0.72 | 7.22 | 1.02 | 7.04 | 0.81 | - |
| 14 | 1.13 | 7.20 | 0.79 | 7.15 | 1.11 | 7.00 | 0.93 | - |
| 15 | 1.19 | 7.16 | 0.89 | 7.13 | 1.23 | 6.98 | 0.98 | - |
| 16 | - | - | - | - | - | 6.93 | 1.07 | - |
| 17 | - | - | - | - | - | 6.91 | 1.13 | - |
| 18 | - | - | - | - | - | 6.90 | 1.17 | - |
| 19 | - | - | - | - | - | 6.88 | 1.23 | - |
| 20 | - | - | - | - | - | 6.88 | 1.27 | - |
| 21 | - | - | - | - | - | 6.87 | 1.30 | - |
| 22 | - | - | - | - | - | 6.86 | 1.33 | - |
| 23 | - | - | - | - | - | 6.85 | 1.31 | - |
| 24 | - | - | - | - | - | 6.85 | 1.33 | - |
| 25 | - | - | - | - | - | 6.85 | 1.32 | - |
| 26 | - | - | - | - | - | 6.85 | 1.30 | - |
| Site 2 | | | | | | | | |
| 0 | - | - | - | - | - | 7.28 ^a | 0.05 ^a | 16.00 ^a |
| 0 | 1.62 | 9.12 | 2.68 | 8.86 | 5.07 | 8.05 | 0.82 | - |

APPENDIX C. (Continued)

| Depth (m) | 22-Jun-05 | 3-Aug-05 | | 16-Aug-05 | | 19-Sep-05 | | |
|---------------|-----------|----------|----------|-----------|----------|-------------------|-------------------|--------------------|
| | Nitrates | pH | Nitrates | pH | Nitrates | pH | Nitrates | Alkalinity |
| Site 2 | | | | | | | | |
| 1 | 1.63 | 9.17 | 2.56 | 8.96 | 4.11 | 8.07 | 0.81 | - |
| 2 | 1.59 | 9.18 | 2.43 | 9.04 | 4.08 | 8.08 | 0.81 | - |
| 3 | 1.60 | 9.16 | 2.27 | 9.08 | 3.90 | 8.10 | 0.79 | - |
| 4 | 1.63 | 9.00 | 1.68 | 9.03 | 3.33 | 8.10 | 0.78 | - |
| 5 | 1.40 | 8.52 | 0.76 | 8.94 | 2.85 | 8.11 | 0.79 | - |
| 6 | 1.15 | 8.16 | 0.63 | 8.30 | 0.71 | 8.00 | 0.64 | - |
| 7 | 1.13 | 7.93 | 0.47 | 8.10 | 0.55 | 7.87 | 0.58 | - |
| 8 | 1.06 | 7.73 | 0.46 | 7.85 | 0.57 | 7.72 | 0.50 | - |
| 9 | 1.08 | 7.57 | 0.48 | 7.68 | 0.64 | 7.43 | 0.38 | - |
| 10 | 1.09 | 7.44 | 0.51 | 7.54 | 0.69 | 7.30 | 0.41 | - |
| 11 | 1.07 | 7.36 | 0.55 | 7.43 | 0.73 | 7.23 | 0.45 | - |
| 12 | 1.11 | 7.26 | 0.57 | 7.33 | 0.77 | 7.15 | 0.53 | - |
| 13 | 1.13 | 7.22 | 0.60 | 7.26 | 0.78 | 7.11 | 0.59 | - |
| 14 | 1.17 | 7.16 | 0.61 | 7.22 | 0.82 | 7.09 | 0.64 | - |
| 15 | 1.18 | 7.12 | 0.63 | 7.19 | 0.85 | 7.06 | 0.72 | - |
| Site 3 | | | | | | | | |
| 0 | - | - | - | - | - | 7.31 ^a | 0.06 ^a | 17.00 ^a |
| 0 | 1.40 | 8.95 | 2.99 | 8.73 | 4.66 | 7.76 | 0.79 | - |
| 1 | 1.52 | 8.99 | 2.72 | 8.79 | 3.95 | 7.76 | 0.81 | - |
| 2 | 1.52 | 9.01 | 2.51 | 8.83 | 3.57 | 7.77 | 0.82 | - |
| 3 | 1.57 | 9.02 | 2.48 | 8.80 | 2.95 | 7.78 | 0.85 | - |
| 4 | 1.45 | 8.87 | 1.97 | 8.73 | 2.46 | 7.79 | 0.85 | - |
| 5 | 1.31 | 8.36 | 0.84 | 8.49 | 1.34 | 7.81 | 0.85 | - |
| 6 | 1.36 | 7.91 | 0.68 | 8.04 | 0.77 | 7.81 | 0.88 | - |
| 7 | 1.34 | 7.67 | 0.55 | 7.73 | 0.59 | 7.75 | 0.79 | - |
| 8 | 1.39 | 7.35 | 0.68 | 7.56 | 0.61 | 7.66 | 0.72 | - |
| 9 | 1.41 | 7.26 | 0.74 | 7.34 | 0.75 | 7.43 | 0.53 | - |
| 10 | 1.42 | 7.14 | 0.84 | 7.21 | 0.85 | 7.30 | 0.59 | - |
| 11 | 1.42 | 7.04 | 0.92 | 7.16 | 0.90 | 7.19 | 0.90 | - |

APPENDIX C. (Continued)

| Depth (m) | 22-Jun-05 | 3-Aug-05 | | 16-Aug-05 | | 19-Sep-05 | | |
|----------------|-----------|----------|----------|-----------|----------|-------------------|-------------------|--------------------|
| | Nitrates | pH | Nitrates | pH | Nitrates | pH | Nitrates | Alkalinity |
| Site 3 | | | | | | | | |
| 12 | 1.44 | 6.99 | 0.96 | 7.12 | 0.94 | 7.15 | 1.06 | - |
| 13 | 1.44 | 6.96 | 1.12 | 7.04 | 0.95 | 7.11 | 1.41 | - |
| 14 | 1.43 | 6.88 | 1.21 | 7.01 | 0.95 | 7.08 | 1.76 | - |
| 15 | 1.44 | 6.86 | 1.25 | 6.99 | 0.93 | 7.08 | 2.36 | - |
| 16 | - | - | - | - | - | 7.07 | 3.16 | - |
| Site 4 | | | | | | | | |
| 0 | - | - | - | - | - | 7.50 ^a | 0.02 ^a | 17.00 ^a |
| Site 5 | | | | | | | | |
| 0 | - | - | - | - | - | 7.40 ^a | 0.02 ^a | 17.00 ^a |
| Site 6 | | | | | | | | |
| 0 | - | - | - | - | - | 7.07 ^a | 0.05 ^a | 18.00 ^a |
| Site 7 | | | | | | | | |
| 0 | - | - | - | - | - | 7.63 ^a | 0.07 ^a | 19.00 ^a |
| Site 8 | | | | | | | | |
| 0 | - | - | - | - | - | 7.22 ^a | 0.08 ^a | 17.00 ^a |
| Site 9 | | | | | | | | |
| 0 | - | - | - | - | - | 6.76 ^a | 0.04 ^a | 27.00 ^a |
| Site 10 | | | | | | | | |
| 0 | - | - | - | - | - | - | 0.03 ^a | - |
| Site 11 | | | | | | | | |
| 0 | - | - | - | - | - | 7.54 ^a | 0.05 ^a | 31.00 ^a |

^a Measurements made in lab, using surface sample

APPENDIX C. (Continued)

Chemical tests: total phosphorus concentrations in China Lake for summer and fall 2005, at different sites and levels within the lake.

| Site | Date | Sample Type ^a | Concentration (ppb) | Quality Control ^b |
|------|-----------|--------------------------|---------------------|------------------------------|
| 1 | 7-Jun-05 | S | 13.4 | - |
| 1 | 7-Jun-05 | M | 15.8 | - |
| 1 | 7-Jun-05 | B | 16.7 | - |
| 1 | 7-Jun-05 | B | 23.1 | Duplicate |
| 1 | 7-Jun-05 | E | 18.4 | - |
| 2 | 7-Jun-05 | S | 18.3 | - |
| 2 | 7-Jun-05 | M | 14.5 | - |
| 2 | 7-Jun-05 | B | 23.4 | - |
| 2 | 7-Jun-05 | E | 15.4 | - |
| 3 | 7-Jun-05 | S | 17.5 | - |
| 3 | 7-Jun-05 | M | 14.2 | - |
| 3 | 7-Jun-05 | B | 27.4 | - |
| 3 | 7-Jun-05 | E | 18.8 | - |
| 1 | 22-Jun-05 | M | 14.3 | - |
| 1 | 22-Jun-05 | B | 13.1 | - |
| 1 | 22-Jun-05 | B | 16.2 | Duplicate |
| 1 | 22-Jun-05 | E | 15.5 | - |
| 2 | 22-Jun-05 | S | 16.6 | - |
| 2 | 22-Jun-05 | M | 17.6 | - |
| 2 | 22-Jun-05 | B | 23.2 | - |
| 2 | 22-Jun-05 | E | 15.6 | - |
| 3 | 22-Jun-05 | S | 17.6 | - |
| 3 | 22-Jun-05 | S | 18.0 | Split |
| 3 | 22-Jun-05 | M | 20.6 | - |
| 3 | 22-Jun-05 | B | 46.8 | - |
| 3 | 22-Jun-05 | E | 14.1 | - |
| 4 | 11-Jul-05 | St-C | 16.5 | - |
| 4 | 11-Jul-05 | St-S | 21.3 | - |
| 1 | 3-Aug-05 | S | 16.1 | - |
| 1 | 3-Aug-05 | M | 11.4 | - |
| 1 | 3-Aug-05 | M | 11.9 | Duplicate |
| 1 | 3-Aug-05 | B | 25.3 | - |
| 1 | 3-Aug-05 | E | 19.7 | - |
| 2 | 3-Aug-05 | S | 12.9 | - |
| 2 | 3-Aug-05 | M | 13.1 | - |
| 2 | 3-Aug-05 | B | 59.2 | - |
| 2 | 3-Aug-05 | B | 58.1 | Split |
| 2 | 3-Aug-05 | E | 16.8 | - |
| 3 | 3-Aug-05 | S | 13.3 | - |
| 3 | 3-Aug-05 | M | 16.1 | - |
| 3 | 3-Aug-05 | M | 26.5 | 10 ppb Spike |
| 3 | 3-Aug-05 | B | 81.7 | - |
| 3 | 3-Aug-05 | E | 14.1 | - |
| 1 | 16-Aug-05 | S | 15.4 | - |
| 1 | 16-Aug-05 | M | 12.9 | - |
| 1 | 16-Aug-05 | M | 12.6 | Duplicate |
| 1 | 16-Aug-05 | B | 34.7 | - |

APPENDIX C. (Continued)

| Site | Date | Sample Type ^a | Concentration (ppb) | Quality Control |
|------|-----------|--------------------------|---------------------|-----------------|
| 1 | 16-Aug-05 | E | 17.2 | - |
| 2 | 16-Aug-05 | S | 17.1 | - |
| 2 | 16-Aug-05 | M | 14.6 | - |
| 2 | 16-Aug-05 | M | 22.6 | 10 ppb Spike |
| 2 | 16-Aug-05 | B | 32.9 | - |
| 2 | 16-Aug-05 | E | 15.3 | - |
| 3 | 16-Aug-05 | S | 18.2 | - |
| 3 | 16-Aug-05 | M | 14.5 | - |
| 3 | 16-Aug-05 | B | 111.1 | - |
| 3 | 16-Aug-05 | B | 105.5 | Split |
| 3 | 16-Aug-05 | E | 17.4 | - |
| 1 | 19-Sep-05 | S | 16.6 | - |
| 1 | 19-Sep-05 | M | 17.8 | - |
| 1 | 19-Sep-05 | B | 25.0 | - |
| 1 | 19-Sep-05 | B | 35.1 | 10 ppb Spike |
| 1 | 19-Sep-05 | E | 20.8 | - |
| 2 | 19-Sep-05 | S | 21.5 | - |
| 2 | 19-Sep-05 | M | 21.3 | - |
| 2 | 19-Sep-05 | B | 22.5 | - |
| 2 | 19-Sep-05 | E | 22.7 | - |
| 3 | 19-Sep-05 | S | 18.8 | - |
| 3 | 19-Sep-05 | S | 18.1 | Duplicate |
| 3 | 19-Sep-05 | M | 19.9 | - |
| 3 | 19-Sep-05 | M | 20.1 | Duplicate |
| 3 | 19-Sep-05 | B | 199.3 | - |
| 3 | 19-Sep-05 | B | 197.1 | Split |
| 3 | 19-Sep-05 | E | 25.4 | - |
| 4 | 19-Sep-05 | S | 20.4 | - |
| 5 | 19-Sep-05 | S | 18.1 | - |
| 6 | 19-Sep-05 | S | 20.8 | - |
| 6 | 19-Sep-05 | S | 31.2 | 10 ppb Spike |
| 7 | 19-Sep-05 | S | 21.0 | - |
| 8 | 19-Sep-05 | S | 18.0 | - |
| 9 | 19-Sep-05 | S | 32.7 | - |
| 10 | 19-Sep-05 | S | 63.3 | - |
| 11 | 19-Sep-05 | S | 44.7 | - |
| 11 | 19-Sep-05 | S | 42.5 | Split |
| 2 | 6-Oct-05 | S | 19.5 | - |
| 2 | 6-Oct-05 | S | 13.8 | Duplicate |
| 2 | 6-Oct-05 | M | 12.1 | - |
| 2 | 6-Oct-05 | M | 15.7 | 10 ppb Spike |
| 2 | 6-Oct-05 | B | 115.2 | - |
| 2 | 6-Oct-05 | B | 102.9 | Split |
| 2 | 6-Oct-05 | E | 15.8 | - |
| 9 | 6-Oct-05 | St-C | 25.3 | - |
| 9 | 6-Oct-05 | St-S | 46.1 | - |
| 11 | 6-Oct-05 | St-C | 16.7 | - |
| 11 | 6-Oct-05 | St - S | 20.9 | - |

^a S = Surface, M = Middle, B = Bottom, E = Epicore, St-C = Storm water - Continuous, and St-S = Storm water – Staggered

^b See Appendix B

APPENDIX C. (Continued)**Biotic measurements: chlorophyll-*a* concentration in China Lake, for summer and fall 2005.**

| Depth | Concentration (ppb) | | | |
|---------------|---------------------|----------|-----------|-----------|
| | 22-Jun-05 | 3-Aug-05 | 16-Aug-05 | 19-Sep-05 |
| Site 1 | | | | |
| 0 | - | 0.9 | 1.4 | 1.3 |
| 1 | - | 2.4 | 2.0 | 2.6 |
| 2 | - | 1.9 | 1.8 | 3.7 |
| 3 | - | 2.7 | 1.9 | 3.6 |
| 4 | - | 2.2 | 2.9 | 4.4 |
| 5 | - | 2.1 | 1.3 | 4.8 |
| 6 | - | 1.1 | 1.6 | 4.6 |
| 7 | - | 0.7 | 0.8 | 2.8 |
| 8 | - | 0.2 | 0.0 | 2.6 |
| 9 | - | 0.3 | 0.5 | 1.0 |
| 10 | - | 0.0 | 0.2 | 0.2 |
| 11 | - | 1.0 | 0.7 | 0.1 |
| 12 | - | 0.3 | 0.3 | 0.6 |
| 13 | - | 1.2 | 0.0 | 2.0 |
| 14 | - | 0.8 | 0.0 | 0.1 |
| 15 | - | 0.3 | 0.1 | 0.4 |
| 16 | - | - | - | 0.4 |
| 17 | - | - | - | 0.2 |
| 18 | - | - | - | 0.7 |
| 19 | - | - | - | 0.0 |
| 20 | - | - | - | 0.6 |
| 21 | - | - | - | 0.5 |
| 22 | - | - | - | 0.0 |
| 23 | - | - | - | 0.2 |
| 24 | - | - | - | 1.2 |
| 25 | - | - | - | 0.1 |
| 26 | - | - | - | 0.0 |
| Site 2 | | | | |
| 0 | 2.1 | 1.0 | 1.2 | 2.7 |
| 1 | 2.6 | 1.5 | 1.4 | 4.3 |
| 2 | 3.0 | 2.3 | 2.0 | 4.5 |
| 3 | 3.0 | 1.7 | 3.6 | 5.8 |
| 4 | 3.1 | 1.4 | 2.1 | 5.6 |
| 5 | 3.9 | 1.0 | 1.9 | 5.4 |
| 6 | 3.6 | 0.8 | 0.6 | 5.2 |
| 7 | 3.7 | 0.5 | 0.1 | 3.3 |
| 8 | 2.4 | 0.5 | 0.7 | 2.3 |
| 9 | 1.5 | 0.2 | 0.2 | 0.8 |
| 10 | 1.7 | 0.5 | 0.5 | 0.5 |
| 11 | 1.2 | 0.0 | 0.2 | 0.6 |
| 12 | 1.7 | 0.3 | 0.6 | 0.9 |
| 13 | 1.1 | 0.2 | 0.5 | 0.4 |
| 14 | 1.5 | 0.6 | 0.5 | 0.9 |
| 15 | 1.9 | 0.3 | 0.5 | 0.6 |

APPENDIX C. (Continued)

| Depth | Concentration (ppb) | | | |
|---------------|----------------------------|-----------------|------------------|------------------|
| | 22-Jun-05 | 3-Aug-05 | 16-Aug-05 | 19-Sep-05 |
| Site 3 | | | | |
| 0 | 3.4 | 0.7 | 1.8 | 1.8 |
| 1 | 2.8 | 1.6 | 3.2 | 2.8 |
| 2 | 3.7 | 1.6 | 3.0 | 3.8 |
| 3 | 3.9 | 2.0 | 3.1 | 3.6 |
| 4 | 6.5 | 2.0 | 3.2 | 3.3 |
| 5 | 4.4 | 2.1 | 1.5 | 4.3 |
| 6 | 3.3 | 1.0 | 1.0 | 3.4 |
| 7 | 2.1 | 1.1 | 0.6 | 2.6 |
| 8 | 2.0 | 1.4 | 0.8 | 3.7 |
| 9 | 1.3 | 1.0 | 0.7 | 1.8 |
| 10 | 1.9 | 0.6 | 0.5 | 1.1 |
| 11 | 1.4 | 1.0 | 0.6 | 0.7 |
| 12 | 1.7 | 1.1 | 0.8 | 1.0 |
| 13 | 1.6 | 1.4 | 1.0 | 1.2 |
| 14 | 1.1 | 1.3 | 0.6 | 0.9 |
| 15 | 2.9 | 0.9 | 0.9 | 0.4 |
| 16 | - | - | - | 1.0 |