# Refuge's Enhanced Water Quality Program
# Monthly Sampling

*October 2008 – December 2008 Data Update*

Posted Mar. 23, 2009

*by:*

**Matt Harwell**

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**A.R.M. Loxahatchee National Wildlife Refuge** **Oct-08**
**Enhanced Water Quality Monitoring Network**

| Site | Sample Date | Full(F), Partial(P), None(N), Reanalyzer (R) | Depth | Total Depth | DCS | Alkalinity | Calcium Dissolved | Carbon, Dissolved Organic | Carbon, Total Organic | Chloride | Conductivity (Field) | Nitrate + Nitrite as Nitrogen | Nitrogen, Total Kjeldahl (TKN) | Ortho-phosphate as Phosphorus | Oxygen, Dissolved (Field) | pH (Field) | Phosphorus, Total | Silica | Solids, Total Dissolved (TDS) | Solids, Total Suspended (TSS) | Sulfate | Temperature (Field) | Turbidity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Units | meter | meter | meter | mg/l | mg/l | mg/l | mg/l | mg/l | mMHSO/cm | mg/l | mg/l | mg/l | mg/l | ph units | mg/l | mg/l | mg/l | mg/l | mg/l | DEG C | NTU |
| A101 | 10/21/2008 | F | 0.2 | 0.4 | 0.52 | 170 | 58 | 28 | 28 | 85 | 678 | U | 1.2 | U | 2.3 | 7.2 | 0.014 | 18 | 410 | U | 29.0 | 23.3 | 0.4 |
| A102 | 10/21/2008 | F | 0.21 | 0.43 | 0.5 | 85 | 26 | 20 | 23 | 46 | 351 | U | 0.78 | 0.010 | 2.7 | 6.8 | 0.015 | 19 | 230 | U | 8.1 | 23.6 | 0.2 |
| A103 | 10/21/2008 | F | 0.23 | 0.47 | 0.59 | 68 | 24 | 25 | 31 | 54 | 362 | U | 0.93 | 0.006 | 1.1 | 6.6 | 0.016 | 21 | 240 | U | 10.0 | 22.9 | 0.7 |
| A104 | 10/22/2008 | F | | | >1M | 190 | 61 | 36 | 35 | 100 | 818 | 0.013 | 1.7 | U | 4.4 | 7.7 | 0.033 | 22 | 530 | 2.5 | 46.0 | 25.2 | 2.5 |
| A105 | 10/22/2008 | F | 0.3 | 0.6 | 0.63 | 200 | 60 | 38 | 37 | 110 | 851 | U | 1.6 | U | 1.9 | 7.0 | 0.017 | 29 | 560 | U | 46.0 | 23.8 | 0.9 |
| A106 | 10/22/2008 | F | 0.25 | 0.49 | 0.49 | 170 | 54 | 34 | 34 | 100 | 775 | U | 1.2 | U | 3.1 | 7.0 | 0.014 | 24 | 510 | U | 39.0 | 24.1 | 0.4 |
| A107 | 10/22/2008 | F | 0.2 | 0.4 | 0.4 | 53 | 14 | 18 | 19 | 29 | 214 | U | 0.6 | U | 2.0 | 6.5 | 0.010 | 17 | 170 | 1.5 | 1.1 | 23.4 | 0.4 |
| A108 | 10/21/2008 | F | 0.23 | 0.37 | 0.44 | 15 | 5 | 18 | 22 | 12 | 86 | U | 0.92 | U | 3.5 | 6.5 | 0.009 | 5 | 81 | 1.5 | U | 23.8 | 1.1 |
| A109 | 10/22/2008 | F | 0.22 | 0.44 | 0.68 | 100 | 31 | 28 | 26 | 70 | 497 | U | 1.1 | U | 2.3 | 6.9 | 0.013 | 19 | 330 | U | 20.0 | 24.1 | |
| A110 | 10/22/2008 | F | 0.22 | 0.43 | 0.52 | 30 | 5.6 | 19 | 19 | 13 | 93 | U | 1 | U | 4.8 | 6.7 | 0.010 | 7 | 67 | U | 0.3 | 24.3 | 0.7 |
| A111 | 10/22/2008 | F | 0.22 | 0.44 | 0.63 | 29 | 8.2 | 18 | 18 | 13 | 108 | U | 0.84 | U | 4.4 | 6.4 | 0.010 | 6 | 110 | 1.5 | 0.3 | 24.0 | 0.7 |
| A112 | 10/22/2008 | F | 0.25 | 0.5 | 0.73 | 17 | 7.7 | 18 | 18 | 18 | 145 | U | 0.83 | U | 1.9 | 6.5 | 0.012 | 6 | 120 | U | 1.4 | 23.9 | 0.5 |
| A113 | 10/22/2008 | F | 0.32 | 0.64 | 0.64 | 23 | 6.5 | 18 | 20 | 12 | 96 | U | 0.87 | U | 5.0 | 6.6 | 0.007 | 6 | 90 | 2 | 0.3 | 23.9 | 0.7 |
| A114 | 10/22/2008 | F | 0.22 | 0.44 | 0.61 | 17 | 8 | 16 | 19 | 12 | 89 | U | 0.91 | U | 3.4 | 6.3 | 0.010 | 6 | 87 | U | U | 23.5 | 0.7 |
| A115 | 10/23/2008 | F | | | >1M | 200 | 64 | 36 | 36 | 110 | 862 | U | 1.8 | U | 4.1 | 7.6 | 0.033 | 20 | 570 | 4 | 53.0 | 25.4 | 2.3 |
| A116 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A117 | 10/23/2008 | F | 0.17 | 0.35 | 0.64 | 89 | 30 | 29 | 29 | 54 | 409 | U | 0.93 | U | 0.6 | 6.5 | 0.024 | 18 | 290 | 2 | 14.0 | 23.3 | 3.7 |
| A118 | 10/23/2008 | F | 0.24 | 0.48 | 0.75 | 23 | 7.6 | 18 | 18 | 12 | 94 | U | 0.77 | U | 3.6 | 6.3 | 0.015 | 8 | 97 | U | 0.8 | 24.1 | 0.7 |
| A119 | 10/23/2008 | F | 0.27 | 0.55 | 0.71 | 13 | 4.6 | 17 | 16 | 9.7 | 71 | U | 0.56 | U | 6.3 | 6.5 | 0.010 | 12 | 90 | 1.5 | 0.3 | 23.8 | 0.7 |
| A120 | 10/23/2008 | F | 0.31 | 0.62 | 0.78 | 12 | 4.1 | 16 | 16 | 11 | 73 | U | 0.53 | U | 6.9 | 6.4 | 0.006 | 4 | 79 | U | U | 24.1 | 0.6 |
| A121 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A122 | 10/23/2008 | F | 0.26 | 0.53 | 0.68 | 84 | 30 | 25 | 25 | 44 | 371 | U | 0.96 | U | 0.9 | 6.6 | 0.015 | 13 | 260 | U | 13.0 | 23.6 | 0.7 |
| A123 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A124 | 10/20/2008 | F | 0.3 | 0.61 | 0.79 | 21 | 7.6 | 13 | 14 | 12 | 86 | U | 0.8 | U | 2.1 | 6.2 | 0.018 | 4 | 75 | U | 0.3 | 23.5 | 0.9 |
| A126 | 10/20/2008 | F | 0.23 | 0.47 | 0.75 | 51 | 17 | 17 | 16 | 27 | 189 | U | 0.54 | U | 2.1 | 6.6 | 0.011 | 7 | 125 | U | 3.9 | 24.0 | 0.6 |
| A127 | 10/20/2008 | F | 0.18 | 0.36 | 0.71 | 9 | 3.9 | 11 | 13 | 9.2 | 59 | U | 0.67 | U | 2.8 | 6.1 | 0.011 | 4 | 53 | U | U | 24.3 | 0.6 |
| A128 | 10/23/2008 | F | 0.24 | 0.48 | 0.63 | 14 | 4.5 | 17 | 18 | 12 | 78 | U | 0.74 | U | 6.8 | 6.5 | 0.007 | 4 | 82 | 1.5 | U | 24.2 | 0.6 |
| A129 | 10/20/2008 | F | | | >1M | 230 | 79 | 36 | 36 | 120 | 958 | 0.0063 | 1.6 | 0.008 | 2.0 | 7.6 | 0.042 | 22 | 620 | 3 | 60.0 | 25.1 | 2.2 |
| A130 | 10/20/2008 | F | 0.22 | 0.44 | 0.64 | 150 | 52 | 24 | 27 | 85 | 638 | U | 1.3 | U | 0.9 | 7.0 | 0.016 | 18 | 400 | U | 26.0 | 23.8 | 1.7 |
| A131 | 10/20/2008 | F | 0.23 | 0.47 | 0.68 | 55 | 18 | 13 | 14 | 32 | 227 | 0.026 | 0.72 | U | 4.2 | 7.1 | 0.007 | 10 | 150 | U | 1.5 | 24.2 | 0.4 |
| A132 | 10/20/2008 | F | | | >1M | 220 | 78 | 36 | 36 | 120 | 937 | U | 1.9 | 0.018 | 1.4 | 7.5 | 0.048 | 22 | 600 | 2 | 57.0 | 25.0 | 2.0 |
| A133 | 10/20/2008 | F | 0.12 | 0.25 | 0.52 | 180 | 60 | 30 | 30 | 95 | 775 | U | 1.4 | U | 2.1 | 7.0 | 0.031 | 19 | 450 | U | 26.0 | 23.7 | 2.2 |
| A134 | 10/20/2008 | F | 0.2 | 0.41 | 0.63 | 84 | 60 | 28 | 29 | 93 | 708 | U | 1.4 | U | 0.5 | 7.1 | 0.015 | 20 | 450 | 5.5 | 33.0 | 24.3 | 0.9 |
| A135 | 10/21/2008 | F | | | >1M | 230 | 80 | 35 | 42 | 120 | 963 | 0.014 | 1.9 | 0.013 | 2.5 | 7.5 | 0.049 | 23 | 620 | 2.5 | 55.0 | 24.7 | 1.7 |
| A136 | 10/21/2008 | F | 0.4 | 0.8 | 0.85 | 190 | 61 | 29 | 34 | 91 | 729 | U | 3 | U | 1.0 | 7.1 | 0.064 | 18 | 460 | 8 | 26.0 | 22.9 | 2.3 |
| A137 | 10/21/2008 | F | 0.24 | 0.48 | 0.7 | 150 | 58 | 29 | 34 | 94 | 724 | U | 1.3 | U | 0.5 | 6.9 | 0.017 | 21 | 450 | U | 33.0 | 23.1 | 0.9 |
| A138 | 10/21/2008 | F | 0.17 | 0.35 | 0.56 | 110 | 36 | 21 | 26 | 62 | 447 | U | 1.1 | U | 3.7 | 7.1 | 0.009 | 20 | 290 | 2.5 | 9.4 | 22.9 | 0.6 |
| A139 | 10/21/2008 | F | 0.12 | 0.25 | 0.52 | 21 | 7.1 | 20 | 23 | 21 | 120 | U | 1.1 | U | 4.1 | 6.4 | 0.012 | 10 | 110 | 3 | 0.4 | 22.8 | 0.9 |
| A140 | 10/21/2008 | F | 0.23 | 0.45 | 0.56 | 85 | 28 | 20 | 23 | 52 | 365 | U | 0.88 | U | 4.4 | 7.1 | 0.010 | 19 | 240 | 2 | 9.2 | 22.9 | 0.8 |
| A141 | 10/23/2008 | F | 0.19 | 0.38 | 0.98 | 45 | 16 | 18 | 18 | 23 | 193 | U | 0.72 | U | 1.2 | 6.4 | 0.012 | 4 | 150 | 2 | 6.2 | 23.6 | 0.7 |
| Total | | 40 | | | | | | | | | | | | | | | | | | | | | |
| Full | | 37 | | | | | | | | | | | | | | | | | | | | | |
| Partial | | 0 | | | | | | | | | | | | | | | | | | | | | |
| None | | 3 | | | | | | | | | | | | | | | | | | | | | |

(1) Field depth is one half of the tdepth (depth of the clear water column) and is only recorded if a sample is taken.
(2) Total depth is depth of the clear water column.
U indicates that the compound was analyzed for but not detected; see "LOXA_Parameter_Info" tab for table of MDLs.
"*" indicates sample improperly processed for analysis
Q indicates sample held beyond accepted holding time
*

Additional information on the Enhanced Water Quality Monitoring Network can be found at:
http://sofia.usgs.gov/lox_monitor_model/wq_network.html
Data from June 2004 to May 2006 available on DBHYDRO:
http://www.sfwmd.gov/org/ema/dbhydro/
Field notes are maintained by the Everglades Program Team at the A.R.M. Loxahatchee National Wildlife Refuge.

**A.R.M. Loxahatchee National Wildlife Refuge** **Nov-08**
**Enhanced Water Quality Monitoring Network**

| Site | Sample Date | Full(F), Partial(P), None(N), Reanalyzer (R) | Depth | Total Depth | DCS | Alkalinity | Calcium Dissolved | Carbon, Dissolved Organic | Carbon, Total Organic | Chloride | Conductivity (Field) | Nitrate + Nitrite as Nitrogen | Nitrogen, Total Kjeldahl (TKN) | Ortho-phosphate as Phosphorus | Oxygen, Dissolved (Field) | pH (Field) | Phosphorus, Total | Silica | Solids, Total Dissolved (TDS) | Solids, Total Suspended (TSS) | Sulfate | Temperature (Field) | Turbidity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Units | meter | meter | meter | mg/l | mg/l | mg/l | mg/l | mg/l | mMHSO/cm | mg/l | mg/l | mg/l | mg/l | ph units | mg/l | mg/l | mg/l | mg/l | mg/l | DEG C | NTU |
| A101 | 11/17/2008 | F | 0.22 | 0.44 | 0.40 | 190 | 63 | 33 | 32 | 100 | 736 | U | 1.60 | U | 3.3 | 7.3 | U | 13 | 400 | U | 23.0 | 19.2 | 0.4 |
| A102 | 11/17/2008 | F | 0.19 | 0.38 | 0.38 | 62 | 19 | 20 | 20 | 40 | 266 | U | 1.10 | U | 5.0 | 7.1 | U | 15 | 190 | U | 2.3 | 19.3 | 0.6 |
| A103 | 11/17/2008 | F | 0.18 | 0.36 | 0.42 | 45 | 13 | 21 | 22 | 26 | 186 | U | 0.76 | U | 1.4 | 7.1 | U | 17 | 160 | U | 1.7 | 17.7 | 0.4 |
| A104 | 11/18/2008 | F | | | >1M | 170 | 58 | 33 | 33 | 98 | 733 | U | 1.80 | U | 5.1 | 7.4 | 0.034 | 15 | 470 | 8.0 | 33.0 | 20.7 | 5.6 |
| A105 | 11/18/2008 | F | 0.23 | 0.45 | 0.55 | 170 | 57 | 34 | 33 | 110 | 771 | U | 1.70 | U | 2.9 | 7.3 | 0.011 | 19 | 490 | U | 33.0 | 17.0 | 0.6 |
| A106 | 11/18/2008 | F | 0.19 | 0.38 | 0.41 | 110 | 39 | 26 | 26 | 77 | 512 | U | 1.10 | U | 4.5 | 7.5 | 0.007 | 14 | 320 | U | 14.0 | 17.2 | 0.4 |
| A107 | 11/18/2008 | F | 0.11 | 0.22 | 0.31 | 37 | 11 | 19 | 18 | 26 | 181 | U | 0.73 | U | 5.3 | 7.7 | 0.007 | 13 | 130 | 1.5 | 1.3 | 16.6 | 0.4 |
| A108 | 11/17/2008 | F | 0.15 | 0.31 | 0.39 | 14 | 5 | 24 | 24 | 16 | 94 | U | 1.40 | U | 9.4 | 7.5 | U | 4 | 55 | 2.5 | U | 19.3 | 0.7 |
| A109 | 11/18/2008 | F | 0.14 | 0.28 | 0.59 | 57 | 18 | 20 | 20 | 40 | 270 | 0.016 | 1.00 | U | 4.8 | 7.8 | 0.007 | 11 | 180 | U | 5.6 | 17.5 | 0.4 |
| A110 | 11/18/2008 | F | 0.16 | 33.00 | 0.51 | 20 | 6 | 22 | 20 | 16 | 98 | U | 1.20 | U | 8.5 | 8.1 | 0.007 | 4 | 92 | 2.0 | 0.3 | 16.5 | 0.9 |
| A111 | 11/18/2008 | F | 0.22 | 0.45 | 0.56 | 28 | 8 | 19 | 18 | 9 | 113 | U | 1.00 | U | 6.9 | 7.9 | U | 4 | 79 | 7.0 | 4.5 | 16.3 | 0.5 |
| A112 | 11/18/2008 | F | 0.16 | 31.00 | 0.60 | 37 | 11 | 19 | 18 | 18 | 138 | U | 0.96 | U | 4.6 | 7.9 | 0.007 | 8 | 91 | 1.5 | 0.9 | 17.0 | 0.5 |
| A113 | 11/18/2008 | F | 0.23 | 0.47 | 0.55 | 24 | 7 | 19 | 17 | 13 | 103 | U | 1.00 | U | 4.4 | 7.7 | 0.007 | 6 | 93 | U | 2.2 | 16.3 | 0.5 |
| A114 | 11/18/2008 | F | 0.20 | 0.40 | 0.52 | 20 | 6 | 19 | 19 | 15 | 99 | U | 0.92 | U | 6.1 | 7.7 | 0.003 | 4 | 87 | U | U | 16.0 | 0.6 |
| A115 | 11/19/2008 | F | 0.50 | | >1M | 180 | 58 | 35 | 34 | 110 | 795 | 0.036 | 1.70 | U | 5.1 | 7.5 | 0.023 | 16 | 410 | 2.0 | 49.0 | 19.2 | 1.7 |
| A116 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A117 | 11/19/2008 | F | 0.22 | 0.42 | 0.61 | 75 | 27 | 27 | 26 | 49 | 340 | U | 1.10 | U | 1.3 | 6.6 | 0.009 | 16 | 230 | U | 11.0 | 15.5 | 0.7 |
| A118 | 11/19/2008 | F | 0.25 | 0.51 | 0.86 | 22 | 9 | 18 | 17 | 14 | 102 | U | 0.75 | U | 2.9 | 6.3 | 0.008 | 8 | 98 | 2.0 | 1.2 | 15.7 | 0.4 |
| A119 | 11/19/2008 | F | 0.24 | 0.47 | 0.63 | 20 | 6 | 18 | 17 | 14 | 936 | U | 1.00 | U | 6.4 | 6.5 | U | 12 | 84 | U | 0.3 | 14.5 | 0.4 |
| A120 | 11/19/2008 | F | 0.26 | 0.51 | 0.77 | 15 | 5 | 16 | 16 | 15 | 87 | 0.025 | 0.85 | U | 9.3 | 6.7 | U | 4 | 41 | U | U | 14.9 | 0.6 |
| A121 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A122 | 11/19/2008 | F | 0.18 | 0.37 | 0.56 | 85 | 27 | 23 | 22 | 35 | 292 | U | 0.99 | U | 1.0 | 6.6 | 0.006 | 10 | 210 | U | 6.8 | 15.8 | 0.5 |
| A123 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A124 | 11/19/2008 | F | 0.21 | 0.42 | 0.73 | 21 | 8 | 15 | 16 | 17 | 163 | U | 0.57 | U | 2.5 | 7.6 | U | 4 | 87 | U | U | 14.9 | 0.4 |
| A126 | 11/20/2008 | F | 0.23 | 0.47 | 0.62 | 32 | 11 | 15 | 16 | 16 | 128 | 0.021 | 1.10 | U | 6.2 | 7.7 | U | 6 | 110 | U | 0.9 | 16.6 | 0.6 |
| A127 | 11/20/2008 | F | 0.11 | 0.23 | 0.62 | 8 | 4 | 15 | 15 | 13 | 80 | U | 0.94 | U | 8.0 | 7.9 | U | 4 | 82 | 3.0 | 0.4 | 16.6 | 0.4 |
| A128 | 11/19/2008 | F | 0.18 | 0.37 | 0.42 | 13 | 5 | 21 | 19 | 16 | 88 | U | 0.96 | U | 6.0 | 6.3 | U | 5 | 99 | U | U | 15.0 | 0.4 |
| A129 | 11/20/2008 | F | | | >1M | 180 | 59 | 30 | 32 | 96 | 739 | 0.022 | 1.50 | U | 3.8 | 7.6 | 0.021 | 14 | 460 | 3.0 | 21.0 | 18.5 | 2.1 |
| A130 | 11/20/2008 | F | 0.18 | 37.00 | 0.58 | 110 | 35 | 21 | 24 | 64 | 448 | 0.017 | 0.97 | U | 3.2 | 7.6 | 0.010 | 17 | 290 | U | 8.5 | 16.1 | 0.5 |
| A131 | 11/20/2008 | F | 0.10 | 0.21 | 0.59 | 46 | 15 | 16 | 15 | 32 | 217 | U | 0.78 | U | 10.1 | 7.9 | U | 8 | 150 | U | 1.2 | 16.4 | 0.4 |
| A132 | 11/20/2008 | F | | | >1M | 190 | 62 | 30 | 33 | 110 | 784 | 0.034 | 1.60 | U | 3.7 | 7.5 | 0.024 | 14 | 490 | 4.0 | 25.0 | 18.9 | 2.9 |
| A133 | 11/20/2008 | P | 0.09 | 0.18 | 0.52 | | | | | 91 | 649 | | | | 3.2 | 7.4 | 0.018 | | | 2.5 | 13.0 | 16.2 | |
| A134 | 11/20/2008 | F | 0.18 | 37.00 | 0.64 | 150 | 51 | 30 | 31 | 93 | 686 | U | 1.40 | 0.075 | 5.4 | 7.5 | 0.008 | 16 | 410 | U | 22.0 | 17.4 | 0.7 |
| A135 | 11/17/2008 | F | 0.50 | | >1M | 170 | 62 | 25 | 26 | 130 | 815 | 0.089 | 1.40 | U | 5.8 | 7.6 | 0.013 | 11 | 500 | U | 34.0 | 22.1 | 1.3 |
| A136 | 11/17/2008 | F | 0.26 | 0.47 | 0.71 | 170 | 55 | 31 | 34 | 95 | 664 | U | 1.70 | U | 3.3 | 7.1 | 0.009 | 16 | 620 | U | 14.0 | 20.6 | 0.7 |
| A137 | 11/17/2008 | F | 0.25 | 0.51 | 0.59 | 150 | 53 | 32 | 32 | 100 | 663 | U | 1.50 | U | 1.5 | 6.9 | U | 20 | 420 | U | 19.0 | 19.2 | 0.7 |
| A138 | 11/17/2008 | F | 0.20 | 0.40 | 0.43 | 86 | 28 | 23 | 22 | 54 | 359 | U | 1.30 | U | 11.2 | 7.2 | U | 14 | 230 | 2.0 | 3.1 | 21.2 | 0.4 |
| A139 | 11/17/2008 | F | 0.15 | 0.30 | 0.39 | 14 | 7 | 24 | 27 | 20 | 109 | U | 1.30 | U | 10.4 | 7.4 | U | 6 | 130 | U | U | 20.3 | 0.5 |
| A140 | 11/17/2008 | F | 0.17 | 0.34 | 0.46 | 61 | 21 | 20 | 22 | 43 | 269 | U | 0.95 | U | 8.5 | 7.8 | U | 14 | 180 | U | 2.4 | 19.3 | 0.5 |
| A141 | 11/19/2008 | F | 0.31 | 0.61 | 1.01 | 52 | 16 | 18 | 17 | 24 | 190 | U | 0.83 | U | 2.8 | 6.8 | 0.006 | 7 | 130 | U | 3.9 | 15.6 | 1.3 |
| Total | | 40 | | | | | | | | | | | | | | | | | | | | | |
| Full | | 36 | | | | | | | | | | | | | | | | | | | | | |
| Partial | | 1 | | | | | | | | | | | | | | | | | | | | | |
| None | | 3 | | | | | | | | | | | | | | | | | | | | | |

(1) Field depth is one half of the tdepth (depth of the clear water column) and is only recorded if a sample is taken.
(2) Total depth is depth of the clear water column.
U indicates that the compound was analyzed for but not detected; see "LOXA_Parameter_Info" tab for table of MDLs.
"*" indicates sample improperly processed for analysis
Q indicates sample held beyond accepted holding time
*

Additional information on the Enhanced Water Quality Monitoring Network can be found at:
http://sofia.usgs.gov/lox_monitor_model/wq_network.html
Data from June 2004 to May 2006 available on DBHYDRO:
http://www.sfwmd.gov/org/ema/dbhydro/
Field notes are maintained by the Everglades Program Team at the A.R.M. Loxahatchee National Wildlife Refuge.

**A.R.M. Loxahatchee National Wildlife Refuge** **Dec-08**
**Enhanced Water Quality Monitoring Network**

| Site | Sample Date | Full(F), Partial(P), None(N), Reanalyzer (R) | Depth | Total Depth | DCS | Alkalinity | Calcium Dissolved | Carbon, Dissolved Organic | Carbon, Total Organic | Chloride | Conductivity (Field) | Nitrate + Nitrite as Nitrogen | Nitrogen, Total Kjeldahl (TKN) | Ortho-phosphate as Phosphorus | Oxygen, Dissolved (Field) | pH (Field) | Phosphorus, Total | Silica | Solids, Total Dissolved (TDS) | Solids, Total Suspended (TSS) | Sulfate | Temperature (Field) | Turbidity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Units | meter | meter | meter | mg/l | mg/l | mg/l | mg/l | mg/l | mMHSO/cm | mg/l | mg/l | mg/l | mg/l | ph units | mg/l | mg/l | mg/l | mg/l | mg/l | DEG C | NTU |
| A101 | 12/16/2008 | F | 0.2 | 0.39 | 0.41 | 200 | 63 | 36 | 37 | 120 | 830 | U | 1.8 | U | 4.6 | 7.2 | 0.010 | 14.0 | 540 | U | 20.0 | 20.2 | 0.5 |
| A102 | 12/16/2008 | F | 0.15 | 0.3 | 0.38 | 130 | 18 | 20 | 20 | 43 | 266 | U | 0.8 | 0.004 | 7.4 | 6.8 | 0.028 | 15.0 | 200 | U | 1.9 | 20.5 | 1.2 |
| A103 | 12/16/2008 | F | 0.11 | 0.22 | 0.47 | 58 | 12 | 21 | 21 | 24 | 173 | U | 0.8 | U | 2.7 | 6.6 | 0.015 | 18.0 | 150 | U | 1.3 | 19.2 | 0.4 |
| A104 | 12/17/2008 | F | | | >1M | 160 | 50 | 26 | 26 | 110 | 715 | 0.040 | 1.1 | U | 6.4 | 7.6 | 0.026 | 8.8 | 410 | U | 21.0 | 20.3 | 2.0 |
| A105 | 12/17/2008 | F | 0.2 | 41 | 0.55 | 190 | 53 | 32 | 33 | 100 | 725 | U | 1.6 | U | 5.5 | 7.0 | 0.010 | 15.0 | 410 | U | 23.0 | 19.8 | 0.6 |
| A106 | 12/17/2008 | F | 0.15 | 0.31 | 0.36 | 100 | 30 | 23 | 23 | 59 | 420 | U | 1.0 | U | 4.8 | 6.9 | 0.010 | 8.2 | 220 | U | 5.9 | 19.0 | 1.2 |
| A107 | 12/17/2008 | P | 0.08 | 0.16 | 0.27 | | | | | 24 | 168 | | | | 3.4 | 6.6 | 0.004 | | | 2.0 | 0.7 | 18.9 | |
| A108 | 12/16/2008 | P | 0.1 | 0.19 | 0.28 | | | | | 21 | 111 | | | | 6.9 | 6.8 | 0.013 | | | 2.0 | U | 22.6 | |
| A109 | 12/17/2008 | F | 0.2 | 0.41 | 0.62 | 53 | 13 | 20 | 20 | 30 | 212 | U | 1.1 | U | 4.3 | 7.2 | 0.007 | 8.4 | 110 | U | 1.4 | 20.2 | 0.5 |
| A110 | 12/17/2008 | P | 0.09 | 0.19 | 0.32 | | | | | 31 | 125 | | | | 7.4 | 7.6 | 0.003 | | | U | 1.4 | 21.5 | |
| A111 | 12/17/2008 | F | 0.15 | 0.31 | 0.45 | 31 | 8.7 | 20 | 19 | 18 | 123 | 0.018 | 0.7 | U | 5.4 | 7.0 | 0.006 | 3.7 | 66 | U | U | 19.4 | 0.6 |
| A112 | 12/17/2008 | F | 0.15 | 0.31 | 0.52 | 44 | 11 | 19 | 19 | 18 | 146 | U | 0.9 | U | 3.5 | 7.2 | 0.008 | 7.6 | 91 | 2.5 | 0.6 | 19.2 | 0.5 |
| A113 | 12/17/2008 | F | 0.17 | 0.37 | 0.52 | 28 | 7.2 | 20 | 20 | 17 | 112 | 0.015 | 0.8 | U | 5.1 | 7.5 | 0.005 | 2.8 | 69 | 1.5 | U | 19.2 | 1.0 |
| A114 | 12/17/2008 | F | 0.14 | 0.28 | 0.45 | 26 | 6.2 | 20 | 20 | 17 | 104 | U | 1.0 | U | 4.5 | 7.1 | 0.007 | 4.3 | 59 | U | U | 19.1 | 0.5 |
| A115 | 12/18/2008 | F | | | >1M | 180 | 55 | 32 | 32 | 97 | 737 | 0.040 | 1.6 | 0.011 | 6.4 | 7.7 | 0.012 | 14.0 | 450 | U | 46.0 | 20.6 | 0.7 |
| A116 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A117 | 12/18/2008 | F | 0.21 | 0.43 | 0.55 | 59 | 19 | 22 | 22 | 31 | 234 | U | 0.8 | U | 2.7 | 7.1 | 0.010 | 10.0 | 150 | 2.0 | 4.9 | 17.3 | 0.6 |
| A118 | 12/18/2008 | F | 0.21 | 0.43 | 0.6 | 30 | 9.1 | 17 | 18 | 15 | 114 | 0.016 | 0.7 | U | 4.1 | 7.2 | 0.010 | 8.5 | 87 | 3.0 | 1.1 | 20.1 | 0.4 |
| A119 | 12/18/2008 | F | 0.25 | 0.5 | 0.62 | 62 | 7.4 | 20 | 21 | 15 | 108 | U | 0.8 | U | 6.3 | 7.4 | 0.006 | 12.0 | 83 | 4.5 | U | 21.2 | 0.5 |
| A120 | 12/18/2008 | F | 0.25 | 0.51 | 0.57 | 18 | 5.8 | 18 | 17 | 17 | 100 | 0.025 | 0.6 | U | 8.9 | 7.1 | U | 3.7 | 73 | 4.5 | U | 22.0 | 0.5 |
| A121 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A122 | 12/18/2008 | F | 0.15 | 0.3 | 0.52 | 78 | 26 | 22 | 23 | 32 | 279 | U | 0.8 | 0.003 | 3.4 | 7.5 | 0.007 | 8.5 | 170 | U | 4.5 | 19.7 | 0.7 |
| A123 | - | N | | | | | | | | | | | | | | | | | | | | | |
| A124 | 12/15/2008 | F | 0.25 | 0.51 | 0.65 | 28 | 9.4 | 15 | 16 | 18 | 113 | U | 0.7 | 0.018 | 0.8 | 6.8 | 0.005 | 2.4 | 53 | U | U | 18.7 | 0.8 |
| A126 | 12/15/2008 | F | 0.21 | 0.42 | 0.56 | 39 | 12 | 14 | 16 | 16 | 125 | U | 0.8 | 0.037 | 6.4 | 7.1 | 0.004 | 2.9 | 80 | U | 0.6 | 20.2 | 0.8 |
| A127 | 12/15/2008 | F | 0.2 | 0.39 | 0.53 | 13 | 4.8 | 16 | 16 | 15 | 96 | U | 0.8 | 0.047 | 7.3 | 6.6 | U | 2.6 | 54 | U | U | 20.9 | 0.5 |
| A128 | 12/18/2008 | F | 0.12 | 0.24 | 0.4 | 19 | 5.6 | 21 | 21 | 18 | 106 | 0.021 | 0.9 | U | 8.8 | 6.9 | U | 3.4 | 83 | 4.0 | U | 23.7 | 0.5 |
| A129 | 12/15/2008 | F | 0.5 | | >1M | 140 | 49 | 21 | 22 | 95 | 630 | 0.009 | 1.2 | U | 4.9 | 7.5 | 0.019 | 6.2 | 340 | 2.0 | 18.0 | 19.5 | 1.6 |
| A130 | 12/15/2008 | F | 0.2 | 0.39 | 0.53 | 100 | 31 | 20 | 21 | 62 | 406 | U | 0.9 | U | 2.5 | 7.0 | 0.013 | 13.0 | 230 | U | 4.1 | 19.4 | 0.4 |
| A131 | 12/15/2008 | F | 0.21 | 0.42 | 0.53 | 48 | 15 | 17 | 18 | 37 | 217 | U | 1.0 | 0.058 | 4.9 | 6.8 | 0.008 | 5.4 | 110 | U | 0.6 | 19.1 | 0.6 |
| A132 | 12/15/2008 | F | 0.5 | | >1M | 170 | 51 | 21 | 21 | 102 | 675 | 0.011 | 1.3 | U | 5.5 | 7.6 | 0.022 | 4.8 | 380 | 2.5 | 25.0 | 19.4 | 2.4 |
| A133 | 12/15/2008 | F | 0.16 | 0.32 | 0.43 | 150 | 43 | 28.5 | 30 | 91 | 585 | U | 1.5 | U | 1.7 | 7.0 | 0.021 | 15.0 | 330 | U | 9.4 | 19.5 | 0.9 |
| A134 | 12/15/2008 | F | 0.15 | 0.3 | 0.48 | 150 | 47 | 28 | 29 | 93 | 620 | U | 1.4 | 0.010 | 5.5 | 7.4 | 0.012 | 12.0 | 370 | U | 15.0 | 20.6 | 0.4 |
| A135 | 12/16/2008 | F | 0.5 | | >1M | 170 | 57 | 20 | 21 | 110 | 726 | 0.012 | 1.1 | U | 6.1 | 7.5 | 0.022 | 5.4 | 450 | U | 32.0 | 20.7 | 1.8 |
| A136 | 12/16/2008 | F | 0.16 | 0.32 | 0.61 | 230 | 50 | 32 | 32 | 110 | 672 | U | 1.7 | U | 2.9 | 7.1 | 0.014 | 17.0 | 450 | U | 13.0 | 20.0 | 0.8 |
| A137 | 12/16/2008 | F | 0.21 | 0.43 | 0.52 | 140 | 41 | 28 | 28 | 94 | 594 | U | 1.4 | U | 2.5 | 7.0 | 0.010 | 14.0 | 390 | U | 11.0 | 20.2 | 0.6 |
| A138 | 12/16/2008 | F | 0.13 | 0.26 | 0.38 | 85 | 22 | 22 | 22 | 48 | 300 | U | 0.9 | U | 9.3 | 7.5 | 0.005 | 7.9 | 210 | 1.5 | 1.2 | 22.0 | 1.3 |
| A139 | 12/16/2008 | P | 0.08 | 0.17 | 0.31 | | | | | 21 | 114 | | | | 5.5 | 6.7 | 0.011 | | | U | U | 20.9 | |
| A140 | 12/16/2008 | F | 0.12 | 0.25 | 0.42 | 58 | 17 | 22 | 22 | 41 | 247 | 0.010 | 1.0 | U | 6.5 | 7.0 | 0.012 | 13.0 | 190 | 2.5 | 1.4 | 20.8 | 1.2 |
| A141 | 12/18/2008 | F | 0.25 | 0.52 | 0.8 | 58 | 15 | 18 | 17 | 21 | 179 | 0.014 | 0.8 | U | 4.2 | 7.3 | 0.006 | 6.8 | 110 | U | 1.8 | 20.3 | 0.6 |
| Total | | 40 | | | | | | | | | | | | | | | | | | | | | |
| Full | | 33 | | | | | | | | | | | | | | | | | | | | | |
| Partial | | 4 | | | | | | | | | | | | | | | | | | | | | |
| None | | 3 | | | | | | | | | | | | | | | | | | | | | |

(1) Field depth is one half of the tdepth (depth of the clear water column) and is only recorded if a sample is taken.
(2) Total depth is depth of the clear water column.
U indicates that the compound was analyzed for but not detected; see "LOXA_Parameter_Info" tab for table of MDLs.
"*" indicates sample improperly processed for analysis
Q indicates sample held beyond accepted holding time
*

Additional information on the Enhanced Water Quality Monitoring Network can be found at:
http://sofia.usgs.gov/lox_monitor_model/wq_network.html
Data from June 2004 to May 2006 available on DBHYDRO:
http://www.sfwmd.gov/org/ema/dbhydro/
Field notes are maintained by the Everglades Program Team at the A.R.M. Loxahatchee National Wildlife Refuge.

**A.R.M. Loxahatchee National Wildlife Refuge**
**Enhanced Water Quality Monitoring Network**

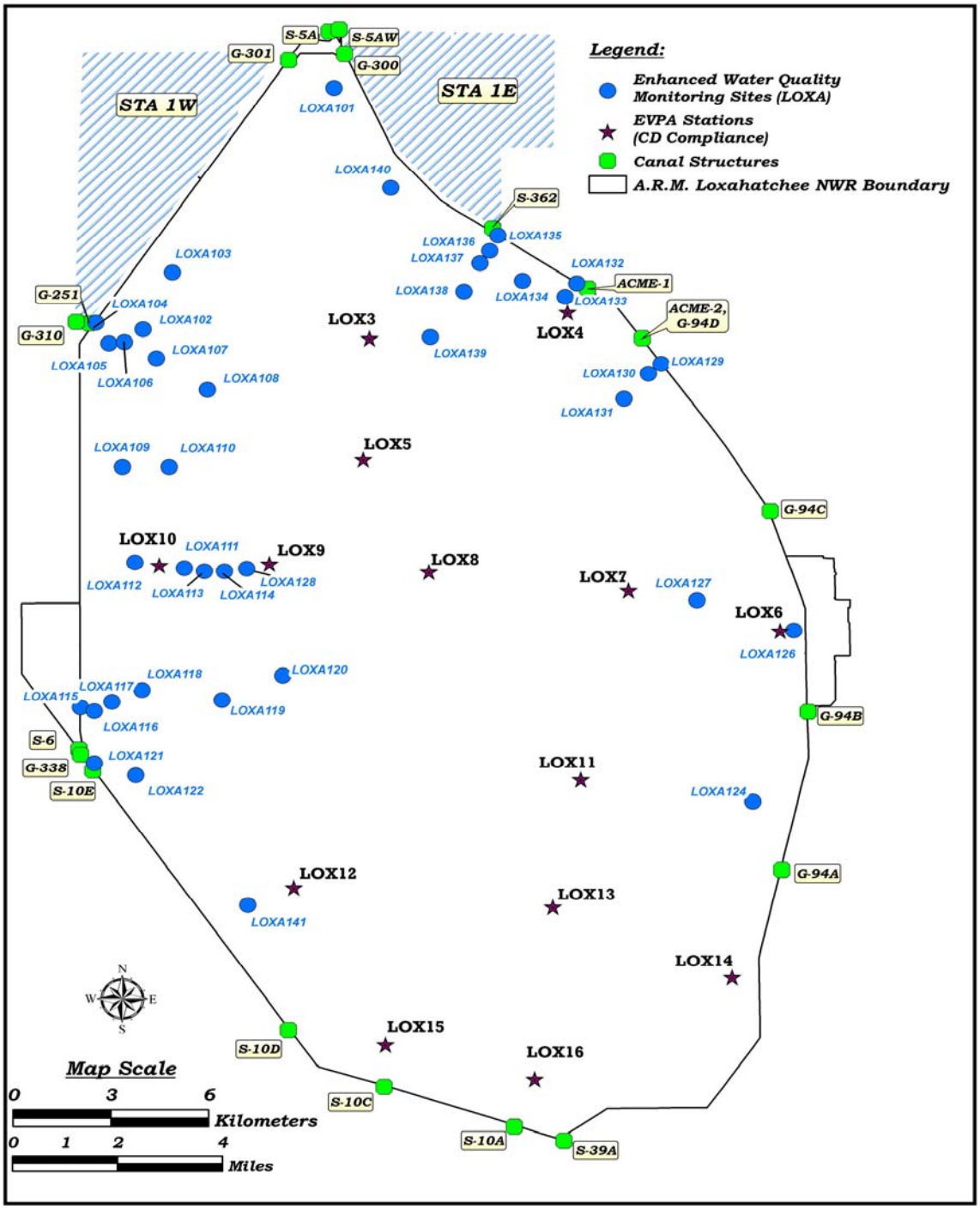
Parameter Information:

| Parameter | Units | Analysis Method | MDL |
|---|---|---|---|
| Alkalinity as $CaCO_3$, Total | mg/L | 310.1 | 1.9 |
| Calcium Dissolved | mg/L | 200.7 | 0.014 |
| Carbon, Dissolved Organic | mg/L | 415.1 | 0.5 |
| Carbon, Total Organic | mg/L | 415.1 | 0.5 |
| Chloride | mg/L | 300.0 | 0.052 |
| Conductivity (field) | uMHOS/cm | 120.1 (field) | - |
| Nitrate + Nitrite as Nitrogen | mg/L | 300.0 | 0.004 |
| Nitrogen, Total Kjeldahl (TKN) | mg/L | 351.2 | 0.1 |
| Ortho-phosphate as Phosphorus | mg/L | 365.1 | 0.003 |
| Oxygen, Dissolved (Field) | mg/L | 360.1 | 1 |
| pH (Field) | pH units | 150.1 | - |
| Phosphorus, Total | mg/L | 365.3 | 0.003 |
| Silica | mg/L | 370.1 | 0.068 |
| Solids, Total Dissolved (TDS) | mg/L | 160.1 | 4.7 |
| Solids, Total Suspended (TSS) | mg/L | 160.2 | 1.6 |
| Sulfate | mg/L | 300.0 | 0.16 |
| Temperature (Field) | DEG C | 170.1 | - |
| Turbidity | NTU | 180.1 | 0.17 |

Note: Nitrate and Nitrite not analyzed after June 2006

**A.R.M. Loxahatchee National Wildlife Refuge**
**Enhanced Water Quality Monitoring Network**

**Map of sites:**



**A.R.M. Loxahatchee National Wildlife Refuge** **August 2006**
**Enhanced Water Quality Monitoring Network**

## Coordinates of sites:

| Name | Latitude | Longitude | X_DMS* | Y_DMS* | X_DM** | Y_DM** |
|---|---|---|---|---|---|---|
| LOXA101 | 26.667392489 | -80.366364752 | 80° 21' 58.91" W | 26° 40' 2.61" N | 80° 21.9818333' W | 26° 40.0435' N |
| LOXA102 | 26.595988767 | -80.425537688 | 80° 25' 31.94" W | 26° 35' 45.56" N | 80° 25.532333' W | 26° 35.7593333333333' N |
| LOXA103 | 26.612851423 | -80.416436308 | 80° 24' 59.17" W | 26° 36' 46.27" N | 80° 24.98616667' W | 26° 36.7711666666667' N |
| LOXA104 | 26.597981879 | -80.440045081 | 80° 26' 24.16" W | 26° 35' 52.73" N | 80° 26.4026667' W | 26° 35.8788333333333' N |
| LOXA105 | 26.591899226 | -80.436094071 | 80° 26' 9.94" W | 26° 35' 30.84" N | 80° 26.1656667' W | 26° 35.514' N |
| LOXA106 | 26.592206216 | -80.431280960 | 80° 25' 52.61" W | 26° 35' 31.94" N | 80° 25.876833' W | 26° 35.5323333333333' N |
| LOXA107 | 26.587390459 | -80.421444676 | 80° 25' 17.20" W | 26° 35' 14.61" N | 80° 25.286667' W | 26° 35.2435' N |
| LOXA108 | 26.577960101 | -80.405853442 | 80° 24' 21.07" W | 26° 34' 40.66" N | 80° 24.35116667' W | 26° 34.6776666666667' N |
| LOXA109 | 26.555288645 | -80.432051570 | 80° 25' 55.39" W | 26° 33' 19.04" N | 80° 25.92316667' W | 26° 33.3173333333333' N |
| LOXA110 | 26.555239734 | -80.417691537 | 80° 25' 3.69" W | 26° 33' 18.86" N | 80° 25.0615' W | 26° 33.3143333333333' N |
| LOXA111 | 26.525335828 | -80.413147047 | 80° 24' 47.33" W | 26° 31' 31.21" N | 80° 24.7888333' W | 26° 31.5201666666667' N |
| LOXA112 | 26.527124725 | -80.428373322 | 80° 25' 42.14" W | 26° 31' 37.65" N | 80° 25.702333' W | 26° 31.6275' N |
| LOXA113 | 26.524427841 | -80.406998750 | 80° 24' 25.20" W | 26° 31' 27.94" N | 80° 24.42' W | 26° 31.4656666666667' N |
| LOXA114 | 26.524392580 | -80.400839654 | 80° 24' 3.02" W | 26° 31' 27.81" N | 80° 24.050333' W | 26° 31.4635' N |
| LOXA115 | 26.484225781 | -80.445336745 | 80° 26' 43.21" W | 26° 29' 3.21" N | 80° 26.7201667' W | 26° 29.0535' N |
| LOXA116 | 26.483058602 | -80.441097999 | 80° 26' 27.95" W | 26° 28' 59.01" N | 80° 26.4658333' W | 26° 28.9835' N |
| LOXA117 | 26.485804269 | -80.435685796 | 80° 26' 8.47" W | 26° 29' 8.90" N | 80° 26.14116667' W | 26° 29.1483333333333' N |
| LOXA118 | 26.489289243 | -80.426390912 | 80° 25' 35.01" W | 26° 29' 21.44" N | 80° 25.5835' W | 26° 29.3573333333333' N |
| LOXA119 | 26.486214619 | -80.401808449 | 80° 24' 6.51" W | 26° 29' 10.37" N | 80° 24.1085' W | 26° 29.1728333333333' N |
| LOXA120 | 26.493410539 | -80.383079866 | 80° 22' 59.09" W | 26° 29' 36.28" N | 80° 22.9848333' W | 26° 29.6046666666667' N |
| LOXA121 | 26.467676727 | -80.441132313 | 80° 26' 28.08" W | 26° 28' 3.64" N | 80° 26.468' W | 26° 28.0606666666667' N |
| LOXA122 | 26.464042966 | -80.428433669 | 80° 25' 42.36" W | 26° 27' 50.55" N | 80° 25.706' W | 26° 27.8425' N |
| LOXA123 | 26.426753074 | -80.400363722 | 80° 24' 1.31" W | 26° 25' 36.31" N | 80° 24.0218333' W | 26° 25.6051666666667' N |
| LOXA124 | 26.455353967 | -80.238754550 | 80° 14' 19.52" W | 26° 27' 19.27" N | 80° 14.325333' W | 26° 27.3211666666667' N |
| LOXA126 | 26.506011481 | -80.225851709 | 80° 13' 33.07" W | 26° 30' 21.64" N | 80° 13.55116667' W | 26° 30.3606666666667' N |
| LOXA127 | 26.515134740 | -80.255559757 | 80° 15' 20.02" W | 26° 30' 54.49" N | 80° 15.3336667' W | 26° 30.9081666666667' N |
| LOXA128 | 26.525162864 | -80.394012101 | 80° 23' 38.44" W | 26° 31' 30.59" N | 80° 23.6406667' W | 26° 31.5098333333333' N |
| LOXA129 | 26.585007262 | -80.266082555 | 80° 15' 57.90" W | 26° 35' 6.03" N | 80° 15.965' W | 26° 35.1005' N |
| LOXA130 | 26.582118809 | -80.270055306 | 80° 16' 12.20" W | 26° 34' 55.63" N | 80° 16.20333' W | 26° 34.9271666666667' N |
| LOXA131 | 26.574747906 | -80.277646525 | 80° 16' 39.53" W | 26° 34' 29.09" N | 80° 16.6588333' W | 26° 34.4848333333333' N |
| LOXA132 | 26.609005614 | -80.291899387 | 80° 17' 30.84" W | 26° 36' 32.42" N | 80° 17.514' W | 26° 36.5403333333333' N |
| LOXA133 | 26.605089596 | -80.295574907 | 80° 17' 44.07" W | 26° 36' 18.32" N | 80° 17.7345' W | 26° 36.3053333333333' N |
| LOXA134 | 26.609856637 | -80.308603250 | 80° 18' 30.97" W | 26° 36' 35.48" N | 80° 18.51616667'W | 26° 36.5913333333333' N |
| LOXA135 | 26.623355381 | -80.316122757 | 80° 18' 58.04" W | 26° 37' 24.08" N | 80° 18.967333' W | 26° 37.4013333333333' N |
| LOXA136 | 26.618793017 | -80.318666883 | 80° 19' 7.20" W | 26° 37' 7.65" N | 80° 19.12' W | 26° 37.1275' N |
| LOXA137 | 26.615103372 | -80.321703271 | 80° 19' 18.13" W | 26° 36' 54.37" N | 80° 19.30216667' W | 26° 36.9061666666667' N |
| LOXA138 | 26.606816926 | -80.326665374 | 80° 19' 36.00" W | 26° 36' 24.54" N | 80° 19.6' W | 26° 36.409' N |
| LOXA139 | 26.593325251 | -80.337153885 | 80° 20' 13.75" W | 26° 35' 35.97" N | 80° 20.22916667' W | 26° 35.5995' N |
| LOXA140 | 26.637603226 | -80.349094316 | 80° 20' 56.74" W | 26° 38' 15.37" N | 80° 20.9456667'W | 26° 38.2561666666667' N |
| LOXA141 | 26.42708333 | -80.39420 | 80° 23' 39.12" W | 26° 38' 37.5" N | 80° 23.652'W | 26° 25.625' N |

* DMS = Degrees Minutes Seconds
** DM = Degrees Minutes Decimal Minutes

Additional information on the coordinates for the Enhanced Water Quality Monitoring Network can be found at:
http://sofia.usgs.gov/lox_monitor_model/workplans/EnhancedWQsamplingStations_.pdf