



Laboratory Division

DS QA BLANK

Department of Environmental Quality Laboratory

Watershed Assessment Section Multiparameter Logger Monitoring Report

| LASAR # | SITENAME | FILENAME | CASE # |
|---------|---|----------|--------|
| | Deschutes River at Long Bend Campground | AUG22573 | |

NOTE: GRADE F is a manual grade for "exceptional event" level data only(See DQM for further explanation). GRADE D is a manual grade for "missing" data. Grade E is data of an unknown quality or of known poor quality. **GRADES D, E AND F REQUIRE AN EXPLANATION IN THE RUN COMMENTS SECTION.**

ELEVATION (ft)

TEMPERATURE AUDIT RESULTS

| # | Audit | DS Value | Abs. Difference | Status | |
|---|-------|----------|-----------------|--------|---------|
| 1 | | 16.4 | 16.6 | 0.20 | GRADE A |
| 2 | | 14.5 | 14.5 | 0.00 | GRADE A |
| 3 | | 16.3 | 16.3 | 0.00 | GRADE A |
| 4 | | 15.1 | 15.1 | 0.00 | GRADE A |
| 5 | | 16.7 | 16.8 | 0.10 | GRADE A |
| 6 | | 15.4 | 15.5 | 0.10 | GRADE A |
| 7 | | | | | |

Criteria:

| GRADE A | GRADE B | GRADE C |
|---------|----------------|---------|
| =<±1.5 | =<±1.51 - 2.00 | =>±2.01 |

pH AUDIT RESULTS

| # | Audit | DS Value | Abs. Difference | Status | |
|---|-------|----------|-----------------|--------|---------|
| 1 | | 8.4 | 8.5 | 0.10 | GRADE A |
| 2 | | 7.8 | 7.6 | 0.20 | GRADE A |
| 3 | | 8.2 | 8.5 | 0.30 | GRADE A |
| 4 | | 7.8 | 7.6 | 0.20 | GRADE A |
| 5 | | 8.8 | 8.5 | 0.30 | GRADE A |
| 6 | | 8.0 | 7.5 | 0.50 | GRADE B |
| 7 | | | | | |

Criteria:

| GRADE A | GRADE B | GRADE C |
|---------|--------------|---------|
| =<±0.3 | =<±0.31 -0.5 | =>±0.5 |

CONDUCTIVITY AUDIT RESULTS

| # | Audit | DS Value | Abs % Difference | Status | |
|---|-------|----------|------------------|--------|---------|
| 1 | | 116 | 117 | 1% | GRADE A |
| 2 | | 117 | 118 | 1% | GRADE A |
| 3 | | 123 | 118 | 4% | GRADE A |
| 4 | | 117 | 117 | 0% | GRADE A |
| 5 | | 117 | 118 | 1% | GRADE A |
| 6 | | 118 | 118 | 0% | GRADE A |
| 7 | | | | | |

Criteria:

| GRADE A | GRADE B | Grade D or E |
|---------|----------------|--------------|
| =<±10% | =<±10.1% - 15% | =>±15% |

DO AUDIT RESULTS

| # | Audit | DS Value | Abs. Difference | Status | |
|---|-------|----------|-----------------|--------|---------|
| 1 | | 10.5 | 11.1 | 0.60 | GRADE B |
| 2 | | 9.5 | 9.6 | 0.10 | GRADE A |
| 3 | | 10.5 | 11.1 | 0.60 | GRADE B |
| 4 | | 9.6 | 9.4 | 0.20 | GRADE A |
| 5 | | 10.4 | 11 | 0.60 | GRADE B |
| 6 | | 8.8 | 9 | 0.20 | GRADE A |
| 7 | | | | | |

Criteria: units in mg/L

| GRADE A | GRADE B | GRADE E | GRADE C |
|----------|---------------|--------------|----------|
| (≤± 0.3) | (≤± 0.31-1.0) | (≤±1.01-2.0) | (≥±2.01) |

RUN COMMENTS:

A
U
D
I
T

AUDIT RESULTS:

| # | LASAR # | DATE (mm/dd/yyyy) | TIME (hh:mm) | TEMP (deg C) | pH (SU) | CONDUCTIVITY (umhos/cm) | DO (mg/L) | DO SAT % | COMMENTS |
|---|---------|-------------------|--------------|--------------|---------|-------------------------|-----------|----------|----------|
| 1 | 0 | 8/5/2014 | 16:05 | 16.4 | 8.4 | 116 | 10.5 | 105% | |
| 2 | 0 | 8/6/2014 | 9:00 | 14.5 | 7.8 | 117 | 9.5 | 92% | |
| 3 | 0 | 8/6/2014 | 16:15 | 16.3 | 8.2 | 123 | 10.5 | 105% | |
| 4 | 0 | 8/7/2014 | 9:00 | 15.1 | 7.8 | 117 | 9.6 | 94% | |
| 5 | 0 | 8/7/2014 | 17:10 | 16.7 | 8.8 | 117 | 10.4 | 106% | |
| 6 | 0 | 8/8/2014 | 6:50 | 15.4 | 8 | 118 | 8.8 | 86% | |
| 7 | 0 | | | | | | | | |

| LASAR | Date | Time | Temp | pH | SpCond | DO | DO Sat |
|-------|----------|-------|------|-----|--------|------|--------|
| 10000 | 8/5/2014 | 11:00 | 15.6 | 7.8 | 116 | 10.2 | 102% |
| 10000 | 8/5/2014 | 11:15 | 15.6 | 7.9 | 117 | 10.2 | 103% |
| 10000 | 8/5/2014 | 11:30 | 15.6 | 8.0 | 117 | 10.3 | 104% |
| 10000 | 8/5/2014 | 11:45 | 15.7 | 8.0 | 117 | 10.4 | 105% |
| 10000 | 8/5/2014 | 12:00 | 15.7 | 8.1 | 117 | 10.5 | 105% |
| 10000 | 8/5/2014 | 12:15 | 15.7 | 8.1 | 117 | 10.6 | 106% |
| 10000 | 8/5/2014 | 12:30 | 15.8 | 8.1 | 117 | 10.6 | 107% |
| 10000 | 8/5/2014 | 12:45 | 15.8 | 8.2 | 117 | 10.7 | 108% |
| 10000 | 8/5/2014 | 13:00 | 15.9 | 8.2 | 117 | 10.7 | 109% |
| 10000 | 8/5/2014 | 13:15 | 16.0 | 8.3 | 117 | 10.8 | 109% |
| 10000 | 8/5/2014 | 13:30 | 16.0 | 8.3 | 117 | 10.8 | 110% |
| 10000 | 8/5/2014 | 13:45 | 16.1 | 8.3 | 117 | 10.9 | 111% |
| 10000 | 8/5/2014 | 14:00 | 16.1 | 8.3 | 117 | 10.9 | 111% |
| 10000 | 8/5/2014 | 14:15 | 16.2 | 8.4 | 117 | 11.0 | 112% |
| 10000 | 8/5/2014 | 14:30 | 16.3 | 8.4 | 117 | 11.0 | 112% |
| 10000 | 8/5/2014 | 14:45 | 16.3 | 8.4 | 117 | 11.0 | 112% |
| 10000 | 8/5/2014 | 15:00 | 16.4 | 8.4 | 117 | 11.0 | 113% |
| 10000 | 8/5/2014 | 15:15 | 16.4 | 8.5 | 117 | 11.1 | 113% |
| 10000 | 8/5/2014 | 15:30 | 16.5 | 8.5 | 117 | 11.1 | 113% |
| 10000 | 8/5/2014 | 15:45 | 16.6 | 8.5 | 117 | 11.1 | 114% |
| 10000 | 8/5/2014 | 16:00 | 16.6 | 8.5 | 117 | 11.1 | 114% |
| 10000 | 8/5/2014 | 16:15 | 16.7 | 8.5 | 117 | 11.1 | 114% |
| 10000 | 8/5/2014 | 16:30 | 16.7 | 8.5 | 117 | 11.1 | 114% |
| 10000 | 8/5/2014 | 16:45 | 16.7 | 8.5 | 117 | 11.1 | 114% |
| 10000 | 8/5/2014 | 17:00 | 16.8 | 8.6 | 117 | 11.0 | 114% |
| 10000 | 8/5/2014 | 17:15 | 16.8 | 8.6 | 117 | 11.0 | 113% |
| 10000 | 8/5/2014 | 17:30 | 16.8 | 8.6 | 117 | 11.0 | 113% |
| 10000 | 8/5/2014 | 17:45 | 16.8 | 8.6 | 117 | 10.9 | 113% |
| 10000 | 8/5/2014 | 18:00 | 16.8 | 8.6 | 117 | 10.9 | 112% |
| 10000 | 8/5/2014 | 18:15 | 16.8 | 8.6 | 117 | 10.8 | 112% |
| 10000 | 8/5/2014 | 18:30 | 16.8 | 8.6 | 117 | 10.8 | 111% |
| 10000 | 8/5/2014 | 18:45 | 16.8 | 8.6 | 117 | 10.7 | 110% |
| 10000 | 8/5/2014 | 19:00 | 16.8 | 8.6 | 117 | 10.6 | 110% |
| 10000 | 8/5/2014 | 19:15 | 16.7 | 8.6 | 117 | 10.6 | 109% |
| 10000 | 8/5/2014 | 19:30 | 16.7 | 8.5 | 118 | 10.5 | 108% |
| 10000 | 8/5/2014 | 19:45 | 16.7 | 8.5 | 118 | 10.4 | 107% |
| 10000 | 8/5/2014 | 20:00 | 16.6 | 8.5 | 118 | 10.3 | 106% |
| 10000 | 8/5/2014 | 20:15 | 16.6 | 8.5 | 118 | 10.3 | 105% |
| 10000 | 8/5/2014 | 20:30 | 16.6 | 8.5 | 118 | 10.2 | 104% |
| 10000 | 8/5/2014 | 20:45 | 16.5 | 8.5 | 118 | 10.1 | 103% |
| 10000 | 8/5/2014 | 21:00 | 16.5 | 8.5 | 118 | 10.0 | 102% |
| 10000 | 8/5/2014 | 21:15 | 16.4 | 8.5 | 118 | 9.9 | 101% |
| 10000 | 8/5/2014 | 21:30 | 16.4 | 8.4 | 118 | 9.8 | 100% |
| 10000 | 8/5/2014 | 21:45 | 16.3 | 8.4 | 118 | 9.8 | 100% |
| 10000 | 8/5/2014 | 22:00 | 16.3 | 8.4 | 118 | 9.7 | 99% |
| 10000 | 8/5/2014 | 22:15 | 16.3 | 8.4 | 118 | 9.6 | 98% |
| 10000 | 8/5/2014 | 22:30 | 16.2 | 8.3 | 118 | 9.6 | 97% |
| 10000 | 8/5/2014 | 22:45 | 16.2 | 8.4 | 118 | 9.5 | 97% |
| 10000 | 8/5/2014 | 23:00 | 16.2 | 8.3 | 118 | 9.5 | 96% |
| 10000 | 8/5/2014 | 23:15 | 16.2 | 8.3 | 118 | 9.4 | 96% |

| TEMP | pH | SP.COND | DO |
|-------|-------|---------|-------|
| AUDIT | AUDIT | AUDIT | AUDIT |

| | | | |
|------|-----|-----|------|
| 16.4 | 8.4 | 116 | 10.5 |
|------|-----|-----|------|

| | | | | | | | |
|-------|----------|-------|------|-----|-----|------|------|
| 10000 | 8/5/2014 | 23:30 | 16.2 | 8.3 | 118 | 9.4 | 95% |
| 10000 | 8/5/2014 | 23:45 | 16.2 | 8.3 | 118 | 9.3 | 95% |
| 10000 | 8/6/2014 | 0:00 | 16.1 | 8.3 | 118 | 9.3 | 94% |
| 10000 | 8/6/2014 | 0:15 | 16.1 | 8.2 | 118 | 9.2 | 94% |
| 10000 | 8/6/2014 | 0:30 | 16.1 | 8.2 | 118 | 9.2 | 93% |
| 10000 | 8/6/2014 | 0:45 | 16.1 | 8.2 | 118 | 9.2 | 93% |
| 10000 | 8/6/2014 | 1:00 | 16.0 | 8.2 | 119 | 9.1 | 93% |
| 10000 | 8/6/2014 | 1:15 | 16.0 | 8.1 | 119 | 9.1 | 92% |
| 10000 | 8/6/2014 | 1:30 | 16.0 | 8.1 | 119 | 9.1 | 92% |
| 10000 | 8/6/2014 | 1:45 | 16.0 | 8.0 | 119 | 9.1 | 92% |
| 10000 | 8/6/2014 | 2:00 | 15.9 | 8.0 | 119 | 9.0 | 91% |
| 10000 | 8/6/2014 | 2:15 | 15.9 | 8.0 | 119 | 9.0 | 91% |
| 10000 | 8/6/2014 | 2:30 | 15.9 | 8.0 | 119 | 9.0 | 91% |
| 10000 | 8/6/2014 | 2:45 | 15.8 | 7.9 | 119 | 9.0 | 91% |
| 10000 | 8/6/2014 | 3:00 | 15.8 | 7.9 | 119 | 9.0 | 91% |
| 10000 | 8/6/2014 | 3:15 | 15.7 | 7.9 | 119 | 9.0 | 91% |
| 10000 | 8/6/2014 | 3:30 | 15.7 | 7.8 | 119 | 9.0 | 91% |
| 10000 | 8/6/2014 | 3:45 | 15.7 | 7.8 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 4:00 | 15.6 | 7.8 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 4:15 | 15.6 | 7.8 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 4:30 | 15.5 | 7.8 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 4:45 | 15.5 | 7.7 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 5:00 | 15.5 | 7.7 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 5:15 | 15.4 | 7.7 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 5:30 | 15.4 | 7.7 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 5:45 | 15.3 | 7.6 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 6:00 | 15.2 | 7.6 | 119 | 9.0 | 90% |
| 10000 | 8/6/2014 | 6:15 | 15.2 | 7.6 | 119 | 9.1 | 90% |
| 10000 | 8/6/2014 | 6:30 | 15.1 | 7.6 | 119 | 9.1 | 90% |
| 10000 | 8/6/2014 | 6:45 | 15.0 | 7.6 | 119 | 9.1 | 90% |
| 10000 | 8/6/2014 | 7:00 | 15.0 | 7.6 | 119 | 9.1 | 91% |
| 10000 | 8/6/2014 | 7:15 | 14.9 | 7.6 | 118 | 9.2 | 91% |
| 10000 | 8/6/2014 | 7:30 | 14.8 | 7.6 | 118 | 9.2 | 91% |
| 10000 | 8/6/2014 | 7:45 | 14.8 | 7.6 | 118 | 9.3 | 91% |
| 10000 | 8/6/2014 | 8:00 | 14.7 | 7.6 | 118 | 9.3 | 92% |
| 10000 | 8/6/2014 | 8:15 | 14.6 | 7.6 | 118 | 9.4 | 92% |
| 10000 | 8/6/2014 | 8:30 | 14.6 | 7.6 | 118 | 9.4 | 92% |
| 10000 | 8/6/2014 | 8:45 | 14.5 | 7.6 | 118 | 9.5 | 93% |
| 10000 | 8/6/2014 | 9:00 | 14.5 | 7.6 | 118 | 9.6 | 94% |
| 10000 | 8/6/2014 | 9:15 | 14.5 | 7.7 | 118 | 9.7 | 95% |
| 10000 | 8/6/2014 | 9:30 | 14.5 | 7.7 | 118 | 9.8 | 96% |
| 10000 | 8/6/2014 | 9:45 | 14.6 | 7.7 | 118 | 9.9 | 97% |
| 10000 | 8/6/2014 | 10:00 | 14.6 | 7.8 | 118 | 10.0 | 98% |
| 10000 | 8/6/2014 | 10:15 | 14.6 | 7.8 | 118 | 10.1 | 99% |
| 10000 | 8/6/2014 | 10:30 | 14.6 | 7.8 | 118 | 10.2 | 100% |
| 10000 | 8/6/2014 | 10:45 | 14.7 | 7.9 | 118 | 10.3 | 101% |
| 10000 | 8/6/2014 | 11:00 | 14.7 | 7.9 | 118 | 10.3 | 102% |
| 10000 | 8/6/2014 | 11:15 | 14.8 | 8.0 | 118 | 10.4 | 103% |
| 10000 | 8/6/2014 | 11:30 | 14.9 | 8.0 | 118 | 10.5 | 104% |
| 10000 | 8/6/2014 | 11:45 | 14.9 | 8.0 | 118 | 10.6 | 105% |
| 10000 | 8/6/2014 | 12:00 | 15.0 | 8.1 | 118 | 10.6 | 105% |
| 10000 | 8/6/2014 | 12:15 | 15.1 | 8.1 | 118 | 10.7 | 106% |

14.5 7.8 117 9.5

| | | | | | | | |
|-------|----------|-------|------|-----|-----|------|------|
| 10000 | 8/6/2014 | 12:30 | 15.1 | 8.1 | 118 | 10.7 | 107% |
| 10000 | 8/6/2014 | 12:45 | 15.2 | 8.2 | 118 | 10.8 | 108% |
| 10000 | 8/6/2014 | 13:00 | 15.3 | 8.2 | 118 | 10.8 | 108% |
| 10000 | 8/6/2014 | 13:15 | 15.4 | 8.2 | 118 | 10.9 | 109% |
| 10000 | 8/6/2014 | 13:30 | 15.4 | 8.3 | 118 | 10.9 | 109% |
| 10000 | 8/6/2014 | 13:45 | 15.5 | 8.3 | 118 | 11.0 | 110% |
| 10000 | 8/6/2014 | 14:00 | 15.6 | 8.3 | 118 | 11.0 | 111% |
| 10000 | 8/6/2014 | 14:15 | 15.7 | 8.3 | 118 | 11.0 | 111% |
| 10000 | 8/6/2014 | 14:30 | 15.8 | 8.4 | 118 | 11.1 | 112% |
| 10000 | 8/6/2014 | 14:45 | 15.9 | 8.4 | 118 | 11.1 | 112% |
| 10000 | 8/6/2014 | 15:00 | 16.0 | 8.4 | 118 | 11.1 | 112% |
| 10000 | 8/6/2014 | 15:15 | 16.0 | 8.4 | 118 | 11.1 | 113% |
| 10000 | 8/6/2014 | 15:30 | 16.1 | 8.5 | 118 | 11.1 | 113% |
| 10000 | 8/6/2014 | 15:45 | 16.2 | 8.5 | 118 | 11.1 | 113% |
| 10000 | 8/6/2014 | 16:00 | 16.3 | 8.5 | 118 | 11.1 | 113% |
| 10000 | 8/6/2014 | 16:15 | 16.3 | 8.5 | 118 | 11.1 | 113% |
| 10000 | 8/6/2014 | 16:30 | 16.4 | 8.5 | 118 | 11.1 | 113% |
| 10000 | 8/6/2014 | 16:45 | 16.5 | 8.5 | 118 | 11.1 | 113% |
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| 10000 | 8/6/2014 | 18:00 | 16.7 | 8.6 | 118 | 10.9 | 112% |
| 10000 | 8/6/2014 | 18:15 | 16.6 | 8.5 | 118 | 10.8 | 111% |
| 10000 | 8/6/2014 | 18:30 | 16.7 | 8.5 | 118 | 10.7 | 110% |
| 10000 | 8/6/2014 | 18:45 | 16.7 | 8.5 | 118 | 10.6 | 109% |
| 10000 | 8/6/2014 | 19:00 | 16.7 | 8.5 | 118 | 10.6 | 109% |
| 10000 | 8/6/2014 | 19:15 | 16.7 | 8.5 | 118 | 10.5 | 108% |
| 10000 | 8/6/2014 | 19:30 | 16.7 | 8.5 | 117 | 10.4 | 107% |
| 10000 | 8/6/2014 | 19:45 | 16.7 | 8.5 | 118 | 10.3 | 106% |
| 10000 | 8/6/2014 | 20:00 | 16.7 | 8.5 | 117 | 10.3 | 106% |
| 10000 | 8/6/2014 | 20:15 | 16.7 | 8.5 | 117 | 10.2 | 105% |
| 10000 | 8/6/2014 | 20:30 | 16.7 | 8.5 | 118 | 10.1 | 104% |
| 10000 | 8/6/2014 | 20:45 | 16.7 | 8.5 | 118 | 10.0 | 102% |
| 10000 | 8/6/2014 | 21:00 | 16.6 | 8.4 | 118 | 9.9 | 101% |
| 10000 | 8/6/2014 | 21:15 | 16.6 | 8.4 | 118 | 9.8 | 100% |
| 10000 | 8/6/2014 | 21:30 | 16.6 | 8.4 | 118 | 9.7 | 100% |
| 10000 | 8/6/2014 | 21:45 | 16.6 | 8.4 | 118 | 9.6 | 99% |
| 10000 | 8/6/2014 | 22:00 | 16.6 | 8.4 | 118 | 9.6 | 98% |
| 10000 | 8/6/2014 | 22:15 | 16.6 | 8.3 | 118 | 9.5 | 98% |
| 10000 | 8/6/2014 | 22:30 | 16.7 | 8.3 | 118 | 9.4 | 97% |
| 10000 | 8/6/2014 | 22:45 | 16.7 | 8.3 | 118 | 9.4 | 96% |
| 10000 | 8/6/2014 | 23:00 | 16.7 | 8.3 | 118 | 9.3 | 96% |
| 10000 | 8/6/2014 | 23:15 | 16.7 | 8.3 | 118 | 9.3 | 95% |
| 10000 | 8/6/2014 | 23:30 | 16.7 | 8.2 | 118 | 9.2 | 95% |
| 10000 | 8/6/2014 | 23:45 | 16.7 | 8.2 | 118 | 9.2 | 94% |
| 10000 | 8/7/2014 | 0:00 | 16.7 | 8.2 | 118 | 9.1 | 94% |
| 10000 | 8/7/2014 | 0:15 | 16.7 | 8.1 | 118 | 9.1 | 93% |
| 10000 | 8/7/2014 | 0:30 | 16.7 | 8.1 | 118 | 9.0 | 93% |
| 10000 | 8/7/2014 | 0:45 | 16.7 | 8.1 | 118 | 9.0 | 93% |
| 10000 | 8/7/2014 | 1:00 | 16.7 | 8.1 | 118 | 9.0 | 92% |
| 10000 | 8/7/2014 | 1:15 | 16.7 | 8.0 | 118 | 8.9 | 92% |

| | | | |
|------|-----|-----|------|
| 16.3 | 8.2 | 123 | 10.5 |
|------|-----|-----|------|

| | | | | | | | |
|-------|----------|-------|------|-----|-----|------|------|
| 10000 | 8/7/2014 | 1:30 | 16.7 | 8.0 | 118 | 8.9 | 92% |
| 10000 | 8/7/2014 | 1:45 | 16.7 | 8.0 | 118 | 8.9 | 91% |
| 10000 | 8/7/2014 | 2:00 | 16.7 | 7.9 | 118 | 8.9 | 91% |
| 10000 | 8/7/2014 | 2:15 | 16.6 | 7.9 | 118 | 8.8 | 91% |
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| 10000 | 8/7/2014 | 2:45 | 16.6 | 7.9 | 118 | 8.8 | 91% |
| 10000 | 8/7/2014 | 3:00 | 16.6 | 7.8 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 3:15 | 16.5 | 7.8 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 3:30 | 16.5 | 7.8 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 3:45 | 16.5 | 7.8 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 4:00 | 16.4 | 7.7 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 4:15 | 16.4 | 7.7 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 4:30 | 16.3 | 7.7 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 4:45 | 16.3 | 7.7 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 5:00 | 16.2 | 7.7 | 118 | 8.8 | 90% |
| 10000 | 8/7/2014 | 5:15 | 16.1 | 7.6 | 118 | 8.9 | 90% |
| 10000 | 8/7/2014 | 5:30 | 16.1 | 7.6 | 118 | 8.9 | 90% |
| 10000 | 8/7/2014 | 5:45 | 16.0 | 7.6 | 118 | 8.9 | 90% |
| 10000 | 8/7/2014 | 6:00 | 15.9 | 7.6 | 118 | 8.9 | 90% |
| 10000 | 8/7/2014 | 6:15 | 15.8 | 7.6 | 118 | 8.9 | 90% |
| 10000 | 8/7/2014 | 6:30 | 15.8 | 7.6 | 118 | 8.9 | 90% |
| 10000 | 8/7/2014 | 6:45 | 15.7 | 7.6 | 118 | 9.0 | 90% |
| 10000 | 8/7/2014 | 7:00 | 15.6 | 7.6 | 118 | 9.0 | 90% |
| 10000 | 8/7/2014 | 7:15 | 15.5 | 7.6 | 118 | 9.0 | 91% |
| 10000 | 8/7/2014 | 7:30 | 15.4 | 7.6 | 117 | 9.1 | 91% |
| 10000 | 8/7/2014 | 7:45 | 15.4 | 7.6 | 117 | 9.1 | 91% |
| 10000 | 8/7/2014 | 8:00 | 15.3 | 7.6 | 117 | 9.2 | 92% |
| 10000 | 8/7/2014 | 8:15 | 15.2 | 7.6 | 117 | 9.2 | 92% |
| 10000 | 8/7/2014 | 8:30 | 15.2 | 7.6 | 117 | 9.3 | 92% |
| 10000 | 8/7/2014 | 8:45 | 15.1 | 7.6 | 117 | 9.3 | 93% |
| 10000 | 8/7/2014 | 9:00 | 15.1 | 7.6 | 117 | 9.4 | 94% |
| 10000 | 8/7/2014 | 9:15 | 15.1 | 7.7 | 117 | 9.5 | 95% |
| 10000 | 8/7/2014 | 9:30 | 15.1 | 7.7 | 117 | 9.7 | 96% |
| 10000 | 8/7/2014 | 9:45 | 15.1 | 7.7 | 117 | 9.7 | 97% |
| 10000 | 8/7/2014 | 10:00 | 15.1 | 7.8 | 117 | 9.9 | 98% |
| 10000 | 8/7/2014 | 10:15 | 15.1 | 7.8 | 117 | 10.0 | 99% |
| 10000 | 8/7/2014 | 10:30 | 15.2 | 7.8 | 117 | 10.1 | 100% |
| 10000 | 8/7/2014 | 10:45 | 15.2 | 7.9 | 117 | 10.2 | 101% |
| 10000 | 8/7/2014 | 11:00 | 15.2 | 7.9 | 117 | 10.3 | 102% |
| 10000 | 8/7/2014 | 11:15 | 15.3 | 8.0 | 117 | 10.3 | 103% |
| 10000 | 8/7/2014 | 11:30 | 15.3 | 8.0 | 117 | 10.4 | 104% |
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| 10000 | 8/7/2014 | 12:00 | 15.4 | 8.1 | 117 | 10.6 | 106% |
| 10000 | 8/7/2014 | 12:15 | 15.5 | 8.1 | 117 | 10.6 | 107% |
| 10000 | 8/7/2014 | 12:30 | 15.5 | 8.1 | 117 | 10.7 | 107% |
| 10000 | 8/7/2014 | 12:45 | 15.6 | 8.2 | 117 | 10.7 | 108% |
| 10000 | 8/7/2014 | 13:00 | 15.7 | 8.2 | 117 | 10.8 | 109% |
| 10000 | 8/7/2014 | 13:15 | 15.8 | 8.2 | 117 | 10.9 | 109% |
| 10000 | 8/7/2014 | 13:30 | 15.9 | 8.3 | 117 | 10.9 | 110% |
| 10000 | 8/7/2014 | 13:45 | 15.9 | 8.3 | 117 | 10.9 | 111% |
| 10000 | 8/7/2014 | 14:00 | 16.0 | 8.3 | 117 | 11.0 | 111% |
| 10000 | 8/7/2014 | 14:15 | 16.1 | 8.4 | 117 | 11.0 | 112% |

15.1 7.8 117 9.6

| | | | | | | | |
|-------|----------|-------|------|-----|-----|------|------|
| 10000 | 8/7/2014 | 14:30 | 16.2 | 8.3 | 117 | 11.0 | 112% |
| 10000 | 8/7/2014 | 14:45 | 16.3 | 8.4 | 118 | 11.0 | 113% |
| 10000 | 8/7/2014 | 15:00 | 16.3 | 8.4 | 118 | 11.1 | 113% |
| 10000 | 8/7/2014 | 15:15 | 16.4 | 8.4 | 118 | 11.1 | 113% |
| 10000 | 8/7/2014 | 15:30 | 16.5 | 8.5 | 118 | 11.1 | 113% |
| 10000 | 8/7/2014 | 15:45 | 16.5 | 8.4 | 118 | 11.1 | 114% |
| 10000 | 8/7/2014 | 16:00 | 16.6 | 8.4 | 118 | 11.1 | 114% |
| 10000 | 8/7/2014 | 16:15 | 16.6 | 8.5 | 118 | 11.1 | 114% |
| 10000 | 8/7/2014 | 16:30 | 16.7 | 8.5 | 118 | 11.1 | 114% |
| 10000 | 8/7/2014 | 16:45 | 16.7 | 8.5 | 118 | 11.1 | 114% |
| 10000 | 8/7/2014 | 17:00 | 16.8 | 8.5 | 118 | 11.0 | 114% |
| 10000 | 8/7/2014 | 17:15 | 16.8 | 8.5 | 118 | 11.0 | 113% |
| 10000 | 8/7/2014 | 17:30 | 16.8 | 8.5 | 118 | 11.0 | 113% |
| 10000 | 8/7/2014 | 17:45 | 16.8 | 8.5 | 118 | 10.9 | 113% |
| 10000 | 8/7/2014 | 18:00 | 16.8 | 8.5 | 118 | 10.9 | 112% |
| 10000 | 8/7/2014 | 18:15 | 16.8 | 8.5 | 118 | 10.8 | 111% |
| 10000 | 8/7/2014 | 18:30 | 16.8 | 8.5 | 118 | 10.7 | 110% |
| 10000 | 8/7/2014 | 18:45 | 16.8 | 8.5 | 118 | 10.6 | 109% |
| 10000 | 8/7/2014 | 19:00 | 16.8 | 8.5 | 118 | 10.6 | 109% |
| 10000 | 8/7/2014 | 19:15 | 16.8 | 8.5 | 118 | 10.5 | 108% |
| 10000 | 8/7/2014 | 19:30 | 16.7 | 8.5 | 118 | 10.4 | 107% |
| 10000 | 8/7/2014 | 19:45 | 16.7 | 8.4 | 118 | 10.3 | 106% |
| 10000 | 8/7/2014 | 20:00 | 16.7 | 8.4 | 118 | 10.3 | 106% |
| 10000 | 8/7/2014 | 20:15 | 16.7 | 8.4 | 118 | 10.2 | 105% |
| 10000 | 8/7/2014 | 20:30 | 16.7 | 8.4 | 118 | 10.1 | 104% |
| 10000 | 8/7/2014 | 20:45 | 16.7 | 8.4 | 118 | 10.0 | 102% |
| 10000 | 8/7/2014 | 21:00 | 16.7 | 8.4 | 118 | 9.9 | 101% |
| 10000 | 8/7/2014 | 21:15 | 16.6 | 8.4 | 118 | 9.8 | 100% |
| 10000 | 8/7/2014 | 21:30 | 16.6 | 8.4 | 118 | 9.7 | 100% |
| 10000 | 8/7/2014 | 21:45 | 16.6 | 8.3 | 118 | 9.6 | 99% |
| 10000 | 8/7/2014 | 22:00 | 16.6 | 8.3 | 118 | 9.6 | 98% |
| 10000 | 8/7/2014 | 22:15 | 16.6 | 8.3 | 118 | 9.5 | 98% |
| 10000 | 8/7/2014 | 22:30 | 16.6 | 8.3 | 118 | 9.4 | 97% |
| 10000 | 8/7/2014 | 22:45 | 16.6 | 8.3 | 118 | 9.4 | 96% |
| 10000 | 8/7/2014 | 23:00 | 16.6 | 8.2 | 118 | 9.3 | 96% |
| 10000 | 8/7/2014 | 23:15 | 16.6 | 8.2 | 118 | 9.3 | 95% |
| 10000 | 8/7/2014 | 23:30 | 16.6 | 8.2 | 119 | 9.2 | 95% |
| 10000 | 8/7/2014 | 23:45 | 16.6 | 8.2 | 119 | 9.2 | 94% |
| 10000 | 8/8/2014 | 0:00 | 16.6 | 8.1 | 119 | 9.1 | 94% |
| 10000 | 8/8/2014 | 0:15 | 16.5 | 8.1 | 119 | 9.1 | 93% |
| 10000 | 8/8/2014 | 0:30 | 16.5 | 8.1 | 119 | 9.1 | 93% |
| 10000 | 8/8/2014 | 0:45 | 16.5 | 8.1 | 119 | 9.0 | 93% |
| 10000 | 8/8/2014 | 1:00 | 16.5 | 8.0 | 119 | 9.0 | 92% |
| 10000 | 8/8/2014 | 1:15 | 16.4 | 8.0 | 119 | 9.0 | 92% |
| 10000 | 8/8/2014 | 1:30 | 16.4 | 8.0 | 119 | 8.9 | 91% |
| 10000 | 8/8/2014 | 1:45 | 16.4 | 7.9 | 119 | 8.9 | 91% |
| 10000 | 8/8/2014 | 2:00 | 16.4 | 7.9 | 119 | 8.9 | 91% |
| 10000 | 8/8/2014 | 2:15 | 16.3 | 7.9 | 119 | 8.9 | 91% |
| 10000 | 8/8/2014 | 2:30 | 16.3 | 7.9 | 119 | 8.9 | 91% |
| 10000 | 8/8/2014 | 2:45 | 16.3 | 7.8 | 119 | 8.9 | 91% |
| 10000 | 8/8/2014 | 3:00 | 16.3 | 7.8 | 119 | 8.9 | 90% |
| 10000 | 8/8/2014 | 3:15 | 16.3 | 7.8 | 119 | 8.9 | 90% |

16.7 8.8 117 10.4

| | | | | | | | | | | | |
|-------|----------|------|------|-----|-----|-----|-----|------|---|-----|-----|
| 10000 | 8/8/2014 | 3:30 | 16.2 | 7.7 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 3:45 | 16.2 | 7.7 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 4:00 | 16.2 | 7.7 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 4:15 | 16.1 | 7.7 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 4:30 | 16.0 | 7.6 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 4:45 | 16.0 | 7.6 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 5:00 | 15.9 | 7.6 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 5:15 | 15.9 | 7.6 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 5:30 | 15.8 | 7.6 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 5:45 | 15.8 | 7.6 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 6:00 | 15.7 | 7.6 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 6:15 | 15.6 | 7.5 | 119 | 8.9 | 90% | | | | |
| 10000 | 8/8/2014 | 6:30 | 15.6 | 7.5 | 119 | 9.0 | 90% | | | | |
| 10000 | 8/8/2014 | 6:45 | 15.5 | 7.5 | 118 | 9.0 | 90% | 15.4 | 8 | 118 | 8.8 |
| 10000 | 8/8/2014 | 7:00 | 15.4 | 7.5 | 119 | 9.0 | 90% | | | | |

Data Validation Criteria for Water Quality Parameters Measured in the Field

| Data Quality Level | Quality Assurance Plan | Water Temperature Methods | pH Methods | Dissolved Oxygen Methods | Turbidity Methods | Conductivity Methods | Bacteria Methods | Data Uses |
|--------------------|--------------------------------------|---|--|---|---|--|--|--|
| A+ | DEQ QAPP approved by DEQ QA Officer | Thermometer Accuracy checked with NIST standards A ≤ ± 0.5°C P ≤ ± 1.5°C | Calibrated pH electrode A ≤ ± 0.2 S.U. P ≤ ± 0.3 S.U. | Winkler titration or calibrated Oxygen meter A ≤ ± 0.2 mgL ⁻¹ P ≤ ± 0.3 mgL ⁻¹ | Nephelometric Turbidity meter A ≤ ± 5% Standard value P ≤ ± 5% | Meter with temp correction to 25°C A ≤ ± 7% of standard value P ≤ ± 10% | DEQ Approved Methods Absolute difference between log-transformed values F ≤ 0.6 log | Regulatory, permitting, compliance (e.g., 303(d) and 305(b) assessments) |
| A | External QAPP | External Data Thermometer Accuracy checked with NIST standards A ≤ ± 0.5°C P ≤ ± 1.5°C | External Data Calibrated pH electrode A ≤ ± 0.2 S.U. P ≤ ± 0.3 S.U. | External Data Winkler titration or calibrated Oxygen meter A ≤ ± 0.2 mgL ⁻¹ P ≤ ± 0.3 mgL ⁻¹ | External Data Nephelometric Turbidity meter A ≤ ± 5% Standard value P ≤ ± 5% | External Data Meter with temp correction to 25°C A ≤ ± 7% of standard value P ≤ ± 10% | External Data DEQ Approved Methods Absolute difference between log-transformed values F ≤ 0.6 log | Regulatory, permitting, compliance (e.g., 303(d) and 305(b) assessments) |
| B | Minimum Data Acceptance Criteria Met | Thermometer Accuracy checked with NIST standards A ≤ ± 1.0°C P ≤ ± 2.0°C | Any Method A ≤ ± 0.5 S.U. P ≤ ± 0.5 S.U. | Winkler titration or calibrated Oxygen meter A ≤ ± 1 mgL ⁻¹ P ≤ ± 1 mgL ⁻¹ | Any Method A ≤ ± 30% P ≤ ± 30% | Meter with temp correction to 25°C A ≤ ± 10% of standard value P ≤ ± 15% | DEQ Approved Methods Absolute difference between log-transformed values F ≤ 0.8 log | Regulatory, permitting, compliance (e.g., 303(d) and 305(b) assessments) <i>with professional judgment</i> |
| C | | A > ± 1.0°C P > ± 2.0°C | A > ± 0.5 S.U. P > ± 0.5 S.U. | A > ± 2 mgL ⁻¹ P > ± 2 mgL ⁻¹ | A > 30% P > 30% | A > ± 10% P > ± 15% | Absolute difference between log-transformed values P > 0.8 log | Void data. Not used for 303(d) and 305(b) assessments |
| D | | Missing Data | Missing Data | Missing Data | Missing Data | Missing Data | Missing Data | Missing Data |
| E | No QAPP provided | No Precision Checks | Any Method No Precision Checks | Any Method No Precision Checks or A ≤ ± 2 mgL ⁻¹ P ≤ ± 2 mgL ⁻¹ | Any Method No precision checks | Meter without routine calibration No precision checks | Any Method No precision checks | Informational purposes only |
| F | See accompanying notes | | | | | | | |

Data Validation Criteria for Water Quality Parameters Measured in the Field

Notes:

QA definitions of Data Quality Levels

- A+ – Data of known Quality; collected by DEQ; meets QC limits established in the QAPP.
- A – Data of known Quality; submitted by entities outside of DEQ; meets QC limits established in a *DEQ-approved* QAPP.
- B – Data of known *but lesser* Quality; data may not meet established QC but is within marginal acceptance criteria; or data value may be accurate, however controls used to measure Data Quality Objective elements failed (e.g., batch failed to meet blank QC limit); the data may be useful in limited situations or in supporting other, higher quality data.
- C – Data of unacceptable Quality; data are discarded (Void) typically in response to analytical failure.
- D – Incomplete data; no sample collected or no reportable results, typically due to sampling failure.
- E – Data of unknown quality or known to be of poor quality; no QA information is available, data could be valid, however, no evidence is available to prove either way. Data is provided for Educational Use Only.
- F – Exceptional Event; "A" quality data (data is of known quality), but not representative of sampling conditions as required by the project plan. (e.g., a continuous water quality monitor intended to collect background environmental conditions collects a sample impacted by a fire that created anomalous conditions to the environment).

Data Quality Level Grading Criteria:

- A = Accuracy as determined by comparison with standards, e.g., during equipment calibration or pre- and post-deployment checks
- P = Precision as determined by replicate measurements, e.g., during field duplicates, field audits, or split samples

Statistics for **turbidity**, **conductivity**, and **bacteria** are concentration-dependent; thus low-concentration B level data may be considered acceptable for all uses.