

# CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there is qualified data on this page.

Meter Snoop-frog

RQ- 2016-11-21-46

Project SMP

Notes: (1) Numbers  $\leq 4$ , are rounded down; numbers  $\geq 5$  are rounded up (e.g., 5.15 becomes 5.2).

(2) Always wait for meter to stabilize before recording any readings.

(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification

11/16

| DO<br>FDEP SOP<br>FT 1500 | Name       | Date     | Time<br>CT-ET | Temp | D.O.<br>Chart<br>mg/L | Meter<br>D.O.<br>mg/L | % DO | Probe<br>Charge | Probe<br>Gain | Pass<br>/ Fail | Lab<br>/ Field |
|---------------------------|------------|----------|---------------|------|-----------------------|-----------------------|------|-----------------|---------------|----------------|----------------|
| Calibr.                   | M. Drennan | 11/22/16 |               | 20.9 | 8.9                   | 8.9                   | 100  |                 |               | P              | L              |
| ICV                       | L. Boman   | 11/23/16 | 8:50          | 21.7 | 8.8                   | 8.9                   | 102  |                 |               | P              | L              |
| CCV                       |            |          |               |      |                       |                       |      |                 |               |                |                |
| CCV                       |            |          |               |      |                       |                       |      |                 |               |                |                |

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.

DO Acceptance criteria from Table  $\pm 0.3$  mg/L.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Optical: DO gain range 0.85 to 1.15; DO charge N/A.

Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

| Spec<br>Cond.<br>FT 1200 | Name       | Date     | Time<br>CT-ET | Lot #   | Expir.<br>Date | Standard<br>$\mu$ mhos/cm | Meter<br>Reading<br>$\mu$ mhos/cm | Pass<br>/ Fail | Lab<br>/ Field |
|--------------------------|------------|----------|---------------|---------|----------------|---------------------------|-----------------------------------|----------------|----------------|
| Calibr.                  | M. Drennan | 11/22/16 |               | 161024  | 11/17          |                           |                                   |                |                |
| ICV                      | L. Boman   | 11/23/16 |               | 2601855 | 1/18           | 50000                     | 50030                             | P              | L              |
| CCV                      |            |          |               | 2601829 | 1/18           | 10000                     | 9945                              | P              | L              |
| CCV                      |            |          | 8:50          | 161024  | 11/17          | 1000                      | 988                               | P              | L              |

Report specific conductance as a whole number with no decimal figure.

Conductivity Acceptance criteria  $\pm 5\%$

| pH<br>FDEP SOP<br>FT 1100 | Name       | Date     | Time<br>CT-ET | Lot #  | Expir.<br>Date | pH<br>Buffer<br>SU | Meter<br>reading<br>SU | mV   | Pass<br>/ Fail | Lab<br>/ Field |
|---------------------------|------------|----------|---------------|--------|----------------|--------------------|------------------------|------|----------------|----------------|
| Calibr.                   | M. Drennan | 11/22/16 |               | 161856 | 4/18           | 7.0                | 7.0                    |      | P              | L              |
| Calibr.                   | L. Boman   | 11/23/16 |               | 161855 | 4/18           | 4.0                | 4.0                    |      | P              | L              |
| Calibr.                   |            | 11/23/16 |               | 163619 | 6/18           | 10.0               | 10.0                   |      | P              | L              |
| ICV                       |            |          |               | 163619 | 6/18           | 10.0               | 10.0                   | -194 | P              | L              |
| CCV                       | L. Boman   | 11/23/16 | 8:50          | 161855 | 4/18           | 4.0                | 4.0                    | 152  | P              | L              |
| CCV                       |            |          |               |        |                |                    |                        |      |                |                |

Report pH with one decimal place; pH Acceptance criteria  $\pm 0.2$  SU; mV pH7 Range  $0 \pm 50$ ;

mV pH 4 Range  $+180 \pm 50$ ;

mV pH 10 Range  $-180 \pm 50$ ;

Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly)

Date of Last Depth Verification

| Depth Sensor<br>(Daily) | Name | Date | Time<br>CT-ET | Zero the<br>Sensor | ICV Value | Pass /<br>Fail | Lab /<br>Field |
|-------------------------|------|------|---------------|--------------------|-----------|----------------|----------------|
| Pressure mode<br>in air |      |      |               | 0.000              |           |                |                |

ICV acceptance criteria  $\pm 5\%$  or  $\pm 0.05$ m, whichever is greater

# CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there is qualified data on this page.

Meter **Betta 67**

RQ- **2016-11-21-416**

Project **SMP**

Notes: (1) Numbers  $\leq 4$ , are rounded down; numbers  $\geq 5$  are rounded up (e.g., 5.15 becomes 5.2).

(2) Always wait for meter to stabilize before recording any readings.

(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site

**Temperature (Quarterly) FT 1400**

Date of Last Temperature Verification **11/16**

| DO DEP SOP FT 1500 | Name       | Date     | Time CT-ET | Temp | D.O. Chart mg/L | Meter D.O. mg/L | % DO | Probe Charge | Probe Gain | Pass / Fail | Lab / Field |
|--------------------|------------|----------|------------|------|-----------------|-----------------|------|--------------|------------|-------------|-------------|
| Calibr.            | Leif Boman | 11/22/16 | 8:35       | 21.6 | 8.9             | 8.9             | 100  | 50           | 0.8        | P           | L           |
| ICV                |            | 1        | 1          | 21.0 | 8.9             | 8.9             | 100  | 50           |            | P           | L           |
| CCV                |            | 11/23/16 | 8:30       | 21.4 | 8.8             | 8.9             | 101  | 51           | 0.8        | P           | L           |
| CCV                |            |          |            |      |                 |                 |      |              |            |             |             |

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.

DO Acceptance criteria from Table  $\pm 0.3$  mg/L.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Optical: DO gain range 0.85 to 1.15; DO charge N/A.

Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

| Spec. Cond. FT 1200 | Name     | Date     | Time CT-ET | Lot #   | Expir. Date | Standard $\mu\text{mhos/cm}$ | Meter Reading $\mu\text{mhos/cm}$ | Pass / Fail | Lab / Field |
|---------------------|----------|----------|------------|---------|-------------|------------------------------|-----------------------------------|-------------|-------------|
| Calibr.             | L. Boman | 11/22/16 | 8:35       | 2601855 | 1/18        | 50,000                       | 50,006                            | P           | L           |
| ICV                 |          | 1        | 1          | 2601829 | 1/18        | 10,000                       | 10,175                            | P           | L           |
| CCV                 |          | 11/23/16 | 8:30       | 2601829 | 1/18        | 10,000                       | 10,089                            | P           | L           |
| CCV                 |          | 11/23/16 | 8:30       | 161024  | 11/17       | 1000                         | 993                               | P           | L           |

Report specific conductance as a whole number with no decimal figure.

Conductivity Acceptance criteria  $\pm 5\%$

| pH DEP SOP FT 1100 | Name     | Date     | Time CT-ET | Lot #  | Expir. Date | pH Buffer SU | Meter reading SU | mV   | Pass / Fail | Lab / Field |
|--------------------|----------|----------|------------|--------|-------------|--------------|------------------|------|-------------|-------------|
| Calibr.            | L. Boman | 11/20/16 | 8:35       | 161856 | 4/18        | 7.0          | 7.0              | -32  | P           | L           |
| Calibr.            |          | 1        | 1          | 161855 | 4/18        | 4.0          | 4.0              | 138  | P           | L           |
| Calibr.            |          |          |            | 163619 | 6/18        | 10.0         | 10.0             | -204 | P           | L           |
| ICV                |          |          |            | 163619 | 6/18        | 10.0         | 10.0             | -203 | P           | L           |
| CCV                |          | 11/23/16 | 8:30       | 161855 | 4/18        | 4.0          | 4.0              | 136  | P           | L           |
| CCV                |          |          |            |        |             |              |                  |      |             |             |

Report pH with one decimal place; pH Acceptance criteria  $\pm 0.2$  SU;

mV pH7 Range  $0 \pm 50$ ;

mV pH 4 Range  $+180 \pm 50$ ;

mV pH 10 Range  $-180 \pm 50$ ;

Slope from 7 to 10 and 4 to 7 must be between 165 and 180mV

**Depth (Quarterly)**

Date of Last Depth Verification

| Depth Sensor (Daily) | Name | Date | Time CT-ET | Zero the Sensor | ICV Value | Pass / Fail | Lab / Field |
|----------------------|------|------|------------|-----------------|-----------|-------------|-------------|
| Pressure mode in air |      |      |            | 0.000           |           |             |             |

ICV acceptance criteria  $\pm 5\%$  or  $\pm 0.05\text{m}$ , whichever is greater

# CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

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Meter Boop / Non

RQ- 2016-11-14-46

Project SMP

Notes: (1) Numbers  $\leq 4$ , are rounded down; numbers  $\geq 5$  are rounded up (e.g., 5.15 becomes 5.2).

(2) Always wait for meter to stabilize before recording any readings.

(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification

11/16

| DO<br>FDEP SOP<br>FT 1500 | Name        | Date     | Time<br>CT-ET | Temp | D.O.<br>Chart<br>mg/L | Meter<br>D.O.<br>mg/L | % DO | Probe<br>Charge | Probe<br>Gain | Pass<br>/ Fail | Lab<br>/ Field |
|---------------------------|-------------|----------|---------------|------|-----------------------|-----------------------|------|-----------------|---------------|----------------|----------------|
| Calibr.                   | Mike Linger | 11/22/16 | 8:45          | 21.2 | 8.9                   | 8.9                   | 100  | 49              | 0.97          | P              | L              |
| ICV                       |             |          | 1             | 21.3 | 8.9                   | 8.9                   | 100  | 49              | 0.97          | P              | L              |
| CCV                       |             |          | 15:50         | 21.3 | 8.9                   | 8.9                   | 100  | 49              | 0.97          | P              | L              |
| CCV                       |             |          |               |      |                       |                       |      |                 |               |                |                |

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DO Acceptance criteria from Table  $\pm 0.3$  mg/L.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Optical: DO gain range 0.85 to 1.15; DO charge N/A.

Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

| Spec<br>Cond.<br>FT 1200 | Name        | Date     | Time<br>CT-ET | Lot #   | Expir.<br>Date | Standard<br>$\mu$ mhos/cm | Meter<br>Reading<br>$\mu$ mhos/cm | Pass<br>/ Fail | Lab<br>/ Field |
|--------------------------|-------------|----------|---------------|---------|----------------|---------------------------|-----------------------------------|----------------|----------------|
| Calibr.                  | Mike Linger | 11/22/16 | 8:45          | 161024  | 11/17          | 1000                      | 1000                              | P              | L              |
| ICV                      |             |          | 1             | 2604736 | 3/18           | 100                       | 101                               | P              | L              |
| CCV                      |             |          | 15:50         | 2604736 | 3/18           | 100                       | 101                               | P              | L              |
| CCV                      |             |          |               |         |                |                           |                                   |                |                |

Report specific conductance as a whole number with no decimal figure.

Conductivity Acceptance criteria  $\pm 5\%$

| pH<br>FDEP SOP<br>FT 1100 | Name        | Date     | Time<br>CT-ET | Lot #  | Expir.<br>Date | pH<br>Buffer<br>SU | Meter<br>reading<br>SU | mV   | Pass<br>/ Fail | Lab<br>/ Field |
|---------------------------|-------------|----------|---------------|--------|----------------|--------------------|------------------------|------|----------------|----------------|
| Calibr.                   | Mike Linger | 11/22/16 | 8:45          | 161856 | 4/18           | 7.0                | 7.0                    | -33  | P              | L              |
| Calibr.                   |             |          |               | 161855 | 4/18           | 4.0                | 4.0                    | -143 | P              | L              |
| Calibr.                   |             |          |               | 163619 | 6/18           | 10.0               | 10.0                   | -211 | P              | L              |
| ICV                       |             |          |               | 163619 | 6/18           | 10.0               | 10.0                   | -210 | P              | L              |
| CCV                       |             |          | 15:50         | 163619 | 6/18           | 10.0               | 10.0                   | -212 | P              | L              |
| CCV                       |             |          |               |        |                |                    |                        |      |                |                |

Report pH with one decimal place; pH Acceptance criteria  $\pm 0.2$  SU; mV pH7 Range  $0 \pm 50$ ;

mV pH 4 Range  $+180 \pm 50$ ;

mV pH 10 Range  $-180 \pm 50$ ;

Slope from 7 to 10 and 4 to 7 must be between 165 and 180mV

Depth (Quarterly)

Date of Last Depth Verification

| Depth Sensor<br>(Daily) | Name | Date | Time<br>CT-ET | Zero the<br>Sensor | ICV Value | Pass /<br>Fail | Lab /<br>Field |
|-------------------------|------|------|---------------|--------------------|-----------|----------------|----------------|
| Pressure mode<br>in air |      |      |               | 0.000              |           |                |                |

ICV acceptance criteria  $\pm 5\%$  or  $\pm 0.05$ m, whichever is greater