

SOP: DISSOLVED OXYGEN FIELD MEASUREMENTS WITH HAND-HELD D.O. METER

- Scope:** This procedure describes calibration and taking field measurement of Dissolved Oxygen (D.O.) levels with handheld dissolved oxygen meter.
- Frequency:** Aeration basins – every 4 hours; Plant effluent – once per day
- Safety:** Precautions around open tanks, slippery surfaces
- Equipment:** Portable field YSI Dissolved Oxygen Meter
Deionized water and squirt bottle
- Procedure:**

Calibration of field Dissolved Oxygen Meter

*Note: Instrument calibration must be performed daily just before use.

- Review and follow manufacturer's instructions for instrument operation and calibration.
- Check probe membrane. Be certain that membrane is free of air bubbles.
- Make sure sponge inside probe housing is damp.
- Turn meter on
- Observe the dissolved oxygen readout. When the dissolved oxygen values have stabilized, adjust the instrument as necessary.
- After the instrument has been calibrated, record the dissolved oxygen reading and temperature on D.O. Calibration log sheet on computer.

A. Sample D.O. field Measurement

- Calibrate the field meter as described above.
- Testing D.O.s on aeration basin: D.O.s are tested at south end of basin close to tank D.O. probes. Lower probe to about 2 ft. below surface. Allow time for D.O. readings to stabilize. Record the dissolved oxygen value to the nearest 0.1 mg/l on field notepad. Record DO result on AB log sheet on computer. Check D.O. result against tank D.O. probe, make note if not within 0.5 mg/l.
Acceptable D.O. range in ABs: 1-4mg/l; when D.O. is measured below 1 mg/l, note and report to Supervisor.

Taking DO of plant final effluent: DO's are taken at the UV effluent weir. Remove small cover and lower probe below water surface. Allow reading to stabilize, record DO level. Place cover back over opening. Record Dissolved Oxygen reading on DO log sheet on computer. Any DO measurement below 6.0 mg/l is to be reported to supervisor.

*DO measurement of plant effluent measured daily at 7:30, if not taken then, needs to be taken at some time during day for permit monitoring, once/day.

*DO meter calibrated before use. Recorded on Calibration record on SCADA.

B. QA/QC

- A Field Sample Duplicate is simply obtained by taking a second measurement at sample site. Procedure: Once the initial DO is measured and recorded, probe is taken out of water for few seconds and then placed back in water as was previously done. Measurement taken as stated above and recorded in log sheet on computer.

QC Frequency: Duplicates: Every 10-sample measurement