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TECH SERVICES

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DATE 6/8/99

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TO Scott Seary

OF Alameda County Environmental Health (410) 337-9335

FROM Christine Lillie x206 Lead Gilcrest x303

REMARKS: Here is a copy of ^{the} SOP used by Blaine Tech's field technicians. The instrument we use is the YSI Model 58. Please let me know if you have any other questions.

6/9 Call to C. Lillie (Blaine) re: operation of this D.O. meter. She suggested I talk w/ Lead Gilcrest (Blaine). Message left for him today.
∴ All measurements occur down-hole under ambient conditions

INSTRUCTION MANUAL YSI MODEL 58 DISSOLVED OXYGEN METER



YSI Incorporated

Yellow Springs Instrument Co., Inc., Yellow Springs, Ohio 45387 USA
Phone 513 767-7241 • HWY 393-HELP • Fax 513 767-9453 • Telex 209437

PRICE INCLUDING HANDLING \$6.00

CALIBRATION

Calibration consists of exposing the probe to a known oxygen concentration such as air at 100% relative humidity or water of a known oxygen content, and then adjusting the O₂ CALIB control so the display shows a reading that matches the O₂ concentration of the known sample.

In the discussion of calibration, below, instructions for Air Calibration are given for calibrating in the % air saturation mode; while instructions for Air Saturated Water Calibration are given for calibrating in the mg/l mode. Take note that *either* calibration technique can be performed in *either* mode. Use of the % air saturation mode is normally easier since the instrument automatically compensates for temperature variation in that mode. The operator may nevertheless elect to calibrate in the mg/l mode if he intends to make measurements in that mode, since doing so will eliminate any possible mode-to-mode error. See final "NOTE" under both Air Calibration and Air Saturated Water Calibration.

Air Calibration

Air calibration is the quickest and by far the simplest calibration technique. Experience has shown it to be quite reliable; it is recommended by YSI for the Model 58. Two other calibration techniques will also be discussed.

Air calibrate the Model 58, with any 5700 series probe, as follows:

1. Set function switch to % mode.
2. To calibrate the 5738 probe, place a moist sponge or a piece of cloth in the plastic calibration bottle. Loosen the bottle lid about 1/2 turn and slip the bottle over the probe guard up to the body. Place the probe in a protected location where temperature is not changing, or wrap it in a cloth or other insulator. Alternatively, calibrate with the 5075A Calibration Chamber (see page 18).
3. The BOD probes can be placed in a BOD bottle containing about 1" of water to provide a 100% relative humidity calibration environment. Remember that the highest accuracy of measurement is achieved when the probe is zeroed and calibrated at a temperature as close as possible to the temperature of the sample to be measured.
3. Set function switch to ZERO and readjust display to read 0.00. Switch back to % air saturation mode.
4. When the display reading has stabilized, unlock the O₂ CALIB control locking ring and adjust the display to the CALIB VALUE indicated in the pressure/altitude chart in Table A (also printed in the instructions on the back of the meter and reproduced on the back cover of this manual). Relock the locking ring to prevent inadvertent changes.

NOTE: The oxygen content of air is affected by water vapor content. The use of air at 100% relative humidity assures proper calibration. Moreover, air at less than 100% relative humidity can cause evaporation of moisture from the probe's temperature sensor, producing a local cooling effect. Errors of up to 8% can result from calibrating in dry air.

NOTE: Should the user elect to air calibrate in the mg/l mode, Air Saturated Water Calibration procedures 2 through 5 should be followed