



**DWQ Multi-Parameter Probe Calibration Report**

Run (Trip ID): \_\_\_\_\_

Analyst: \_\_\_\_\_

Date: \_\_\_\_\_

Instrument Make & Model: \_\_\_\_\_

Time: \_\_\_\_\_

Instrument ID Number: \_\_\_\_\_

Specific Conductance (SpC)							
CALIBRATION				QA/QC			
SpC Calibration Standard Solution Value:		SpC Calibration Standard Solution Expiration Date:		SpC Reference Solution Value:	SpC Reference Solution Expiration Date:	SpC Measured Value:	Measured Value $\pm 10\%$ of Reference Solution Value?
							<input type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

pH							
CALIBRATION				QA/QC			
pH Calibration Solution 1 Value <sup>2</sup> :	pH Calibration Solution 1 Expiration Date:	pH Calibration Solution 2 Value <sup>2</sup> :	pH Calibration Solution 2 Expiration Date:	pH Reference Solution Value:	pH Reference Solution Expiration Date:	pH Measured Value:	Measured Value $\pm 5\%$ of Reference Solution Value?
							<input type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

Dissolved Oxygen (DO)				Equipment QA/QC			
CALIBRATION			QA/QC	Instrument Date:	Instrument Time:	Instrument Date and Time Correct?	Does Instrument Battery Have Adequate Charge?
Barometric Pressure (BP) Used to Calibrate DO?	Calibration Value (%):	Displayed Value (%):	Displayed Value $\pm 5\%$ of Calibration Value?				
<input type="checkbox"/> Probe auto-accounts for BP	<b>100.0</b>		<input type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

**General Comments:**

Calibration Checks						
MLID	Which Probe is Being Checked?	Reason for Calibration Check?	Calibration Value	Measured Value <sup>3</sup>	Measured Value Within Range of Calibration Value? (i.e., SpC, pH, or DO)	
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> SpC <input type="checkbox"/> pH <input type="checkbox"/> DO				<input type="checkbox"/> Yes	<input type="checkbox"/> No

<sup>1</sup> If no, use a different probe or perform maintenance

<sup>2</sup> When using a Hydrolab brand probe, be sure to correct for temperature when calibrating pH (see chart on back)

<sup>3</sup> If measured value is not within acceptable range of calibration value, perform a recalibration using a new calibration sheet

**Specific Conductance Check Buffer Acceptability Range**

SC Buffer Value	Acceptable 10% Range
100 $\mu\text{S/cm@25}^\circ\text{C}$	90 - 110
500 $\mu\text{S/cm@25}^\circ\text{C}$	450 - 550
1413 $\mu\text{S/cm@25}^\circ\text{C}$	1272 - 1554
3000 $\mu\text{S/cm@25}^\circ\text{C}$	2700 - 3300
20000 $\mu\text{S/cm@25}^\circ\text{C}$	18000 - 22000

**pH Buffer Solution Temperature Correction and Check Buffer/On-site Calibration Check Acceptability Range**

pH 4.00		
$^\circ\text{C}$	Value	Acceptable 5% Range
15	4.00	3.80 - 4.20
20	4.00	3.80 - 4.20
25	4.00	3.80 - 4.20
30	4.01	3.81 - 4.21

pH 5.80		
$^\circ\text{C}$	Value	Acceptable 5% Range
15	5.79	5.50 - 6.08
20	5.80	5.51 - 6.09
25	5.80	5.51 - 6.09
30	5.80	5.51 - 6.09

pH 7.00		
$^\circ\text{C}$	Value	Acceptable 5% Range
15	7.04	6.69 - 7.39
20	7.02	6.67 - 7.37
25	7.00	6.65 - 7.35
30	6.99	6.64 - 7.34

pH 9.00		
$^\circ\text{C}$	Value	Acceptable 5% Range
15	9.10	8.65 - 9.56
20	9.05	8.60 - 9.50
25	9.00	8.55 - 9.45
30	8.97	8.52 - 9.42

pH 10.00		
$^\circ\text{C}$	Value	Acceptable 5% Range
15	10.11	9.60 - 10.62
20	10.05	9.55 - 10.55
25	10.00	9.50 - 10.50
30	9.95	9.45 - 10.45

**From the Hach LDO Sensor Instruction Sheet:**

<p>Determine the barometric pressure for entry as the calibration standard. The barometric pressure needs to be in mmHg.</p> <p>1 mmHg = 0.00133322 bar = 133.322 pascal = 0.019336778 pounds/square inch [absolute].</p>	<p>If using the local weather bureau BP, remember these numbers are corrected to sea level. To calculate the uncorrected atmospheric pressure BP', use the following equations:</p> <p><math>BP' = BP - 2.5(A_{ft}/100)</math> or <math>BP' = BP - 2.5(A_m/30.5)</math></p> <p>where:</p> <p>BP' = Barometric pressure at altitude</p>
<p>Local Barometric Pressure, BP in mmHg can be estimated using:</p> <p><math>BP' = 780 - 2.5(A_{ft}/100)</math> or <math>BP' = 780 - 2.5(A_m/30.5)</math></p> <p>Where:</p> <p>BP' = Barometric pressure at altitude                  BP = Barometric pressure at sea level                  A<sub>ft</sub> = Altitude in feet                  A<sub>m</sub> = Altitude in meters</p>	<p><b>BP Conversion Factors:</b></p> <p>Multiply BPmbar (hPa) by 0.75 to get BPmmHg                  Multiply BPinHg by 25.4 to get BPmmHG                  Hydrolab Series 5 Sondes require BP to be entered in mmHg</p>