HIGH-VOLUME AIR SAMPLER CALIBRATION WORKSHEET

Site Location: _____

Date: _____ Barometric Pressure, P_2 mm Hg (or kPa) _____

Calibrated By: _____ Temperature, T_2 (K) _____

Sampler No. _____ Serial No. _____

Transfer std. type: _____ Serial No. _____

P_{std} = 760 mm Hg (or 101 kPa)

Optional:

Average barometric pressure: P_a = _____

Seasonal average temperature: T_a = _____

No.	ΔH Pressure drop across orifice ☐(in) or ☐(cm) of water	$\sqrt{\Delta H\left(\frac{P_2}{P_{std}}\right)\left(\frac{298}{T_2}\right)}$	(X) Q_{std} (from orifice certification) std m^3/min	I Sampler flow rate indication (arbitrary)	(Y) For specific pressure and temperature corrections (see Table 1)	(Y) For incorporation of average pressure and seasonal average temperature (see Table 1)
					☐ I or ☐ $\sqrt{I\left(\frac{P_2}{P_{std}}\right)\left(\frac{298}{T_2}\right)}$ or ☐ $I\sqrt{\left(\frac{P_2}{P_{std}}\right)\left(\frac{298}{T_2}\right)}$	☐ I or ☐ $\sqrt{I\left(\frac{P_2}{P_a}\right)\left(\frac{T_a}{T_2}\right)}$ or ☐ $I\sqrt{\left(\frac{P_2}{P_a}\right)\left(\frac{T_a}{T_2}\right)}$
1						
2						
3						
4						
5						
6						

LEAST SQUARES CALCULATIONS

Linear regression of Y on X: Y = mX + b; Y = appropriate expression from Table 1; X = Q_{std}.

Slope (m) = _____ Intercept (b) = _____ Correlation Coeff. (r) = _____

To determine subsequent flow rate during use: $X = \frac{1}{m}(Y-b)$; $Q_{std} = \frac{1}{m}$ ([appropriate expression from Table 2] - b)

Figure 5. Example of high-volume air sampler calibration worksheet.