

Certificate of Calibration - Wind Monitoring Station

Description: Yau Lai Estate, Bik Lai House
 Manufacturer: Davis Instruments
 Model No.: Davis7440
 Serial No.: MC01010A44
 Equipment No.: SA-03-04
 Date of Calibration: 17-Feb-2026
 Next Due Date: 17-Aug-2026

1. Performance check of Wind Speed

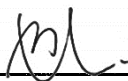
| Wind Speed, m/s | | Difference D (m/s) |
|-------------------------|-----------------------|--------------------|
| Wind Speed Reading (V1) | Anemometer Value (V2) | $D = V1 - V2$ |
| 0.0 | 0.0 | 0.0 |
| 1.5 | 1.5 | 0.0 |
| 2.5 | 2.5 | 0.0 |
| 4.0 | 4.1 | -0.1 |

2. Performance check of Wind Direction

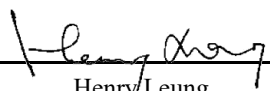
| Wind Direction (°) | | Difference D (°) |
|-----------------------------|---------------------------|------------------|
| Wind Direction Reading (W1) | Marine Compass Value (W2) | $D = W1 - W2$ |
| 0 | 0 | 0.0 |
| 90 | 90 | 0.0 |
| 180 | 180 | 0.0 |
| 270 | 270 | 0.0 |

Test Specification:

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer
2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by: 

 Wong Shing Kwai

Approved by: 

 Henry Leung



Certificate of Calibration

| Calibration Certification Information | | | |
|---------------------------------------|-----------------------------|-----------|-------|
| Cal. Date: January 7, 2026 | Rootsmeter S/N: 438320 | Ta: 294 | °K |
| Operator: Jim Tisch | | Pa: 749.0 | mm Hg |
| Calibration Model #: TE-5025A | Calibrator S/N: 3864 | | |

| Run | Vol. Init (m3) | Vol. Final (m3) | ΔVol. (m3) | ΔTime (min) | ΔP (mm Hg) | ΔH (in H2O) |
|-----|----------------|-----------------|------------|-------------|------------|-------------|
| 1 | 1 | 2 | 1 | 1.4310 | 3.2 | 2.00 |
| 2 | 3 | 4 | 1 | 1.0260 | 6.4 | 4.00 |
| 3 | 5 | 6 | 1 | 0.9150 | 7.9 | 5.00 |
| 4 | 7 | 8 | 1 | 0.8730 | 8.8 | 5.50 |
| 5 | 9 | 10 | 1 | 0.7200 | 12.8 | 8.00 |

| Data Tabulation | | | | | |
|-----------------|--------------------|--|-----------|--------------------|---|
| Vstd (m3) | Qstd (x-axis) | $\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis) | Va | Qa (x-axis) | $\sqrt{\Delta H \left(Ta/Pa \right)}$ (y-axis) |
| 0.9947 | 0.6951 | 1.4135 | 0.9957 | 0.6958 | 0.8860 |
| 0.9905 | 0.9654 | 1.9990 | 0.9915 | 0.9663 | 1.2530 |
| 0.9885 | 1.0803 | 2.2349 | 0.9895 | 1.0814 | 1.4009 |
| 0.9873 | 1.1309 | 2.3440 | 0.9883 | 1.1320 | 1.4693 |
| 0.9819 | 1.3638 | 2.8270 | 0.9829 | 1.3652 | 1.7720 |
| QSTD | m= 2.11337 | | QA | m= 1.32336 | |
| | b= -0.04919 | | | b= -0.03083 | |
| | r= 0.99993 | | | r= 0.99993 | |

| Calculations | |
|--|---|
| Vstd= ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta) | Va= ΔVol((Pa-ΔP)/Pa) |
| Qstd= Vstd/ΔTime | Qa= Va/ΔTime |
| For subsequent flow rate calculations: | |
| Qstd= 1/m $\left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$ | Qa= 1/m $\left(\left(\sqrt{\Delta H \left(Ta/Pa \right)} \right) - b \right)$ |

| Standard Conditions | |
|---------------------|---------------------------------------|
| Tstd: | 298.15 °K |
| Pstd: | 760 mm Hg |
| Key | |
| ΔH: | calibrator manometer reading (in H2O) |
| ΔP: | rootsmeter manometer reading (mm Hg) |
| Ta: | actual absolute temperature (°K) |
| Pa: | actual barometric pressure (mm Hg) |
| b: | intercept |
| m: | slope |

| RECALIBRATION |
|--|
| US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30 |

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA20003/18/037

Project No. CKL 1 - Flat 121 Cha Kwo Ling Village
 Date: 2-Mar-26 Next Due Date: 2-May-26 Operator: SK
 Equipment No.: A-01-18 Model No.: TE 5170 Serial No. 0723

| Ambient Condition | | | |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <u>295.5</u> | Pressure, Pa (mmHg) | <u>758.1</u> |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------------|---|----------------|---------------|-----------------|
| Serial No. | <u>3864</u> | Slope, mc | <u>0.05980</u> | Intercept, bc | <u>-0.04908</u> |
| Last Calibration Date: | <u>7-Jan-26</u> | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |
| Next Calibration Date: | <u>7-Jan-27</u> | | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|------------------------------------|--|---------------------|--------------------------------|---|
| Calibration Point | Orifice | | | HVS | |
| | ΔH (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) X - axis | ΔW (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1 | <u>13.4</u> | <u>3.67</u> | <u>62.22</u> | <u>9.2</u> | <u>3.04</u> |
| 2 | <u>10.2</u> | <u>3.20</u> | <u>54.39</u> | <u>7.1</u> | <u>2.67</u> |
| 3 | <u>8.1</u> | <u>2.85</u> | <u>48.55</u> | <u>5.5</u> | <u>2.35</u> |
| 4 | <u>6.5</u> | <u>2.56</u> | <u>43.58</u> | <u>3.5</u> | <u>1.88</u> |
| 5 | <u>3.6</u> | <u>1.90</u> | <u>32.64</u> | <u>1.6</u> | <u>1.27</u> |

By Linear Regression of Y on X

Slope, mw = 0.0617 Intercept, bw = -0.7373
 Correlation coefficient* = 0.9945

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.65

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 2-Mar-26

Checked by: Henry Leung Signature: Date: 2-Mar-26

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/037

Project No. CKL 2 - Flat 103 Cha Kwo Ling Village
 Date: 2-Mar-26 Next Due Date: 2-May-26 Operator: SK
 Equipment No.: A-01-55 Model No.: TE 5170 Serial No. 1956

| Ambient Condition | | | |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | 295.5 | Pressure, Pa (mmHg) | 758.1 |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|----------|--|---------|---------------|----------|
| Serial No. | 3864 | Slope, mc | 0.05980 | Intercept, bc | -0.04908 |
| Last Calibration Date: | 7-Jan-26 | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | 7-Jan-27 | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|------------------------------------|--|------------------------|--------------------------------|--|
| Calibration Point | Orifice | | | HVS | |
| | ΔH (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) X - axis | ΔW (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1 | 13.7 | 3.71 | 62.90 | 9.5 | 3.09 |
| 2 | 11.0 | 3.33 | 56.45 | 7.1 | 2.67 |
| 3 | 9.4 | 3.08 | 52.24 | 5.2 | 2.29 |
| 4 | 5.0 | 2.24 | 38.32 | 2.9 | 1.71 |
| 5 | 3.6 | 1.90 | 32.64 | 1.7 | 1.31 |

By Linear Regression of Y on X

Slope, $m_w =$ 0.0564 Intercept, $b_w =$ -0.5229
 Correlation coefficient* = 0.9932

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$m_w \times Qstd + b_w = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; $W = (m_w \times Qstd + b_w)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.60

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 2-Mar-26

Checked by: Henry Leung Signature: Date: 2-Mar-26

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA20003/44/0034

Project No. KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)/AM7 – Hong Kong Children's Hospital
 Date: 9-Mar-26 Next Due Date: 9-May-26 Operator: SK
 Equipment No.: A-01-44 Model No.: TE-5170 Serial No. 1316

| Ambient Condition | | | |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <u>292.7</u> | Pressure, Pa (mmHg) | <u>766.3</u> |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------------|---|----------------|---------------|-----------------|
| Serial No. | <u>3864</u> | Slope, mc | <u>0.05980</u> | Intercept, bc | <u>-0.04908</u> |
| Last Calibration Date: | <u>7-Jan-26</u> | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |
| Next Calibration Date: | <u>7-Jan-27</u> | | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|------------------------------------|--|------------------------|--------------------------------|--|
| Calibration Point | Orifice | | | HVS | |
| | ΔH (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) X - axis | ΔW (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1 | <u>13.3</u> | 3.70 | 62.61 | <u>9.4</u> | 3.11 |
| 2 | <u>11.0</u> | 3.36 | 57.01 | <u>7.2</u> | 2.72 |
| 3 | <u>9.5</u> | 3.12 | 53.04 | <u>5.4</u> | 2.35 |
| 4 | <u>6.3</u> | 2.54 | 43.35 | <u>3.4</u> | 1.87 |
| 5 | <u>3.1</u> | 1.78 | 30.65 | <u>1.8</u> | 1.36 |

By Linear Regression of Y on X

Slope, mw = 0.0541 Intercept, bw = -0.3867

Correlation coefficient* = 0.9883

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


From the TSP Field Calibration Curve, take Qstd = 43 CFM

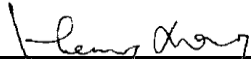
From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 3.66

Remarks: _____

Conducted by: Wong Shing Kwai Signature:  Date: 9-Mar-26

Checked by: Henry Leung Signature:  Date: 9-Mar-26

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA20003/41/0034

Project No. KTD 2D - Next to the SOR Office of Trunk Road T2 in Kai Tak Area
 Date: 9-Mar-26 Next Due Date: 9-May-26 Operator: SK
 Equipment No.: A-01-41 Model No.: TE 5170 Serial No. 5280

| Ambient Condition | | | |
|---------------------|--------------|---------------------|--------------|
| Temperature, Ta (K) | <u>292.7</u> | Pressure, Pa (mmHg) | <u>766.3</u> |

| Orifice Transfer Standard Information | | | | | |
|---------------------------------------|-----------------|--|----------------|---------------|-----------------|
| Serial No. | <u>3864</u> | Slope, mc | <u>0.05980</u> | Intercept, bc | <u>-0.04908</u> |
| Last Calibration Date: | <u>7-Jan-26</u> | $mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | | | |
| Next Calibration Date: | <u>7-Jan-27</u> | $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$ | | | |

| Calibration of TSP Sampler | | | | | |
|----------------------------|------------------------------------|--|-------------------|--------------------------------|---|
| Calibration Point | Orifice | | | HVS | |
| | ΔH (orifice), in. of water | $[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ | Qstd (CFM) X-axis | ΔW (HVS), in. of water | $[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis |
| 1 | <u>13.8</u> | 3.76 | 63.76 | <u>9.4</u> | 3.11 |
| 2 | <u>11.4</u> | 3.42 | 58.03 | <u>8.6</u> | 2.97 |
| 3 | <u>9.6</u> | 3.14 | 53.32 | <u>6.1</u> | 2.50 |
| 4 | <u>7.2</u> | 2.72 | 46.28 | <u>4.5</u> | 2.15 |
| 5 | <u>4.1</u> | 2.05 | 35.13 | <u>2.2</u> | 1.50 |

By Linear Regression of Y on X

Slope, mw = 0.0582 Intercept, bw = -0.5419
 Correlation coefficient* = 0.9923

*If Correlation Coefficient < 0.990, check and recalibrate.

| Set Point Calculation | |
|---|-------------|
| From the TSP Field Calibration Curve, take Qstd = 43 CFM | |
| From the Regression Equation, the "Y" value according to | |
| $mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ | |
| Therefore, Set Point; W = (mw x Qstd + bw) ² x (760 / Pa) x (Ta / 298) = | <u>3.75</u> |

Remarks: _____

Conducted by: Wong Shing Kwai Signature: Date: 9-Mar-26

Checked by: Henry Leung Signature: Date: 9-Mar-26