

## 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: 20-Aug-2021  
 Next Due Date: 20-Feb-2022

### 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
2.8	2.7	0.1
4.0	4.1	-0.1

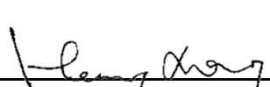
### 2. Performance check of Wind Direction

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



<b>RECALIBRATION DUE DATE:</b>
<b>January 11, 2022</b>

# Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 11, 2021	Rootsmeter S/N: 438320	Ta: 297	°K
Operator: Jim Tisch		Pa: 750.1	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: <b>3864</b>		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4470	3.2	2.00
2	3	4	1	1.0210	6.4	4.00
3	5	6	1	0.9140	8.0	5.00
4	7	8	1	0.8670	8.8	5.50
5	9	10	1	0.7140	12.9	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)	$\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$ (y-axis)
0.9860	0.6814	1.4073	0.9957	0.6881	0.8899
0.9818	0.9616	1.9902	0.9915	0.9711	1.2585
0.9797	1.0719	2.2251	0.9893	1.0824	1.4071
0.9786	1.1288	2.3337	0.9883	1.1399	1.4757
0.9732	1.3630	2.8146	0.9828	1.3765	1.7798
<b>QSTD</b>	m=	<b>2.06566</b>	<b>QA</b>	m=	<b>1.29348</b>
	b=	<b>0.00315</b>		b=	<b>0.00199</b>
	r=	<b>0.99996</b>		r=	<b>0.99996</b>

Calculations	
Vstd= $\Delta Vol \left( \frac{Pa - \Delta P}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)$	Va= $\Delta Vol \left( \frac{Pa - \Delta P}{Pa} \right)$
Qstd= $Vstd / \Delta Time$	Qa= $Va / \Delta Time$
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= $1/m \left( \left( \sqrt{\Delta H \left( \frac{Ta}{Pa} \right)} \right) - b \right)$

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. MA20003/18/0011

Project No. CKL 1 - Flat 121 Cha Kwo Ling Village  
 Date: 6-Nov-21 Next Due Date: 6-Jan-22 Operator: SK  
 Equipment No.: A-01-18 Model No.: TE 5170 Serial No. 0723

Ambient Condition			
Temperature, Ta (K)	<u>299.4</u>	Pressure, Pa (mmHg)	<u>757.5</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	<u>11-Jan-22</u>	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>12.9</u>	3.58	61.25	<u>9.8</u>	3.12
2	<u>10.3</u>	3.20	54.73	<u>8.0</u>	2.82
3	<u>8.5</u>	2.90	49.73	<u>5.9</u>	2.42
4	<u>6.2</u>	2.48	42.48	<u>4.0</u>	1.99
5	<u>3.4</u>	1.84	31.47	<u>1.9</u>	1.37

### By Linear Regression of Y on X

Slope, mw = 0.0598 Intercept, bw = -0.5241  
 Correlation coefficient\* = 0.9982

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation


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

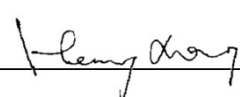
From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.23

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 6-Nov-21

Checked by: Henry Leung Signature:  Date: 6-Nov-21

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/18/0012

Project No. CKL 1 - Flat 121 Cha Kwo Ling Village  
 Date: 6-Jan-22 Next Due Date: 6-Mar-22 Operator: SK  
 Equipment No.: A-01-18 Model No.: TE 5170 Serial No. 0723

Ambient Condition			
Temperature, Ta (K)	<u>294</u>	Pressure, Pa (mmHg)	<u>763</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	<u>11-Jan-22</u>	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.0</u>	3.64	62.27	<u>9.8</u>	3.16
2	<u>10.3</u>	3.24	55.43	<u>8.0</u>	2.85
3	<u>8.5</u>	2.94	50.36	<u>5.9</u>	2.45
4	<u>6.2</u>	2.51	43.02	<u>4.0</u>	2.02
5	<u>3.4</u>	1.86	31.87	<u>1.9</u>	1.39

### By Linear Regression of Y on X

Slope, mw = 0.0595 Intercept, bw = -0.5157  
 Correlation coefficient\* = 0.9980

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation


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

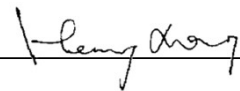
From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.10

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 6-Jan-22

Checked by: Henry Leung Signature:  Date: 6-Jan-22

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/0011

Project No. CKL 2 - Flat 103 Cha Kwo Ling Village  
 Date: 6-Nov-21 Next Due Date: 6-Jan-22 Operator: SK  
 Equipment No.: A-01-55 Model No.: TE 5170 Serial No. 1956

Ambient Condition			
Temperature, Ta (K)	<b>299.4</b>	Pressure, Pa (mmHg)	<b>757.5</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	11-Jan-22				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>12.7</b>	3.55	60.77	<b>9.8</b>	3.12
2	<b>10.7</b>	3.26	55.78	<b>7.6</b>	2.75
3	<b>8.4</b>	2.89	49.43	<b>6.0</b>	2.44
4	<b>5.5</b>	2.34	40.01	<b>3.6</b>	1.89
5	<b>2.9</b>	1.70	29.07	<b>1.9</b>	1.37

**By Linear Regression of Y on X**

Slope, mw = 0.0544 Intercept, bw = -0.2461  
 Correlation coefficient\* = 0.9978

\*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ <u>4.42</u>	

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 6-Nov-21

Checked by: Henry Leung Signature:  Date: 6-Nov-21

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/55/0012

Project No. CKL 2 - Flat 103 Cha Kwo Ling Village  
 Date: 6-Jan-22 Next Due Date: 6-Mar-22 Operator: SK  
 Equipment No.: A-01-55 Model No.: TE 5170 Serial No. 1956

Ambient Condition			
Temperature, Ta (K)	<b>294</b>	Pressure, Pa (mmHg)	<b>762</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	11-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>12.9</b>	3.62	61.99	<b>10.0</b>	3.19
2	<b>10.7</b>	3.30	56.46	<b>7.6</b>	2.78
3	<b>8.4</b>	2.92	50.03	<b>6.0</b>	2.47
4	<b>5.5</b>	2.36	40.50	<b>3.6</b>	1.91
5	<b>2.9</b>	1.72	29.42	<b>1.9</b>	1.39

**By Linear Regression of Y on X**

Slope, mw = 0.0546 Intercept, bw = -0.2557  
 Correlation coefficient\* = 0.9977

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.31

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 6-Jan-22

Checked by: Henry Leung Signature:  Date: 6-Jan-22

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/44/0010

Project No. KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)  
 Date: 2-Dec-21 Next Due Date: 2-Feb-22 Operator: SK  
 Equipment No.: A-01-44 Model No.: TE-5170 Serial No. 1316

Ambient Condition			
Temperature, Ta (K)	<u>290.4</u>	Pressure, Pa (mmHg)	<u>766.2</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</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>11-Jan-22</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.4</u>	<u>3.72</u>	<u>63.74</u>	<u>9.4</u>	<u>3.12</u>
2	<u>11.0</u>	<u>3.37</u>	<u>57.76</u>	<u>7.4</u>	<u>2.77</u>
3	<u>8.4</u>	<u>2.95</u>	<u>50.48</u>	<u>5.6</u>	<u>2.41</u>
4	<u>5.6</u>	<u>2.41</u>	<u>41.23</u>	<u>3.3</u>	<u>1.85</u>
5	<u>3.2</u>	<u>1.82</u>	<u>31.18</u>	<u>1.8</u>	<u>1.36</u>

**By Linear Regression of Y on X**

Slope, mw = 0.0541 Intercept, bw = -0.3451  
 Correlation coefficient\* = 0.9993

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.80

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature: [Signature] Date: 2-Dec-21

Checked by: Henry Leung Signature: [Signature] Date: 2-Dec-21

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/44/0011

Project No. KTD1 - Centre of Excellence in Paediatrics (Children's Hospital)  
 Date: 11-Jan-22 Next Due Date: 11-Mar-22 Operator: SK  
 Equipment No.: A-01-44 Model No.: TE-5170 Serial No. 1316

Ambient Condition			
Temperature, Ta (K)	<b>294</b>	Pressure, Pa (mmHg)	<b>763</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	11-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>13.2</b>	3.67	62.75	<b>9.6</b>	3.13
2	<b>11.0</b>	3.35	57.28	<b>7.4</b>	2.74
3	<b>8.4</b>	2.92	50.07	<b>5.6</b>	2.39
4	<b>5.6</b>	2.39	40.89	<b>3.3</b>	1.83
5	<b>3.2</b>	1.80	30.92	<b>1.8</b>	1.35

By Linear Regression of Y on X

Slope, mw = 0.0554 Intercept, bw = -0.3926

Correlation coefficient\* = 0.9985

\*If Correlation Coefficient < 0.990, check and recalibrate.

### Set Point Calculation


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

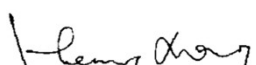
From the Regression Equation, the "Y" value according to

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

Therefore, Set Point; W =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  3.89

Remarks: \_\_\_\_\_  
 \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 11-Jan-22

Checked by: Henry Leung Signature:  Date: 11-Jan-22



# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/41/0009

Project No. KTD 2D - Next to the SOR Office of Trunk Road T2 in Kai Tak Area  
 Date: 25-Nov-21 Next Due Date: 25-Jan-22 Operator: SK  
 Equipment No.: A-01-41 Model No.: TE 5170 Serial No. 5280

Ambient Condition			
Temperature, Ta (K)	<b>293.6</b>	Pressure, Pa (mmHg)	<b>763.5</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	11-Jan-22				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>13.2</b>	3.67	62.81	<b>9.2</b>	3.06
2	<b>11.4</b>	3.41	58.37	<b>7.4</b>	2.75
3	<b>8.2</b>	2.89	49.52	<b>5.8</b>	2.43
4	<b>6.0</b>	2.47	42.36	<b>4.2</b>	2.07
5	<b>3.0</b>	1.75	29.97	<b>2.3</b>	1.53

**By Linear Regression of Y on X**

Slope, mw = 0.0454 Intercept, bw = 0.1604  
 Correlation coefficient\* = 0.9974

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.38

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 25-Nov-21

Checked by: Henry Leung Signature:  Date: 25-Nov-21

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/41/0010

Project No. KTD 2D - Next to the SOR Office of Trunk Road T2 in Kai Tak Area  
 Date: 11-Jan-22 Next Due Date: 11-Mar-22 Operator: SK  
 Equipment No.: A-01-41 Model No.: TE 5170 Serial No. 5280

Ambient Condition			
Temperature, Ta (K)	<b>293</b>	Pressure, Pa (mmHg)	<b>764</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	11-Jan-22				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>13.1</b>	3.66	62.66	<b>9.2</b>	3.07
2	<b>11.4</b>	3.41	58.45	<b>7.4</b>	2.75
3	<b>8.2</b>	2.90	49.58	<b>5.9</b>	2.46
4	<b>6.0</b>	2.48	42.42	<b>4.4</b>	2.12
5	<b>3.0</b>	1.75	30.01	<b>2.3</b>	1.53

**By Linear Regression of Y on X**

Slope, mw = 0.0452 Intercept, bw = 0.1869  
 Correlation coefficient\* = 0.9966

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.44

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 11-Jan-22

Checked by: Henry Leung Signature:  Date: 11-Jan-22

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/04/0009

Project No. KER 1 - Future Residential Development at Kerry Godown  
 Date: 2-Dec-21 Next Due Date: 2-Feb-22 Operator: SK  
 Equipment No.: A-01-04 Model No.: TE 5170 Serial No. 10595

Ambient Condition			
Temperature, Ta (K)	<u>290.4</u>	Pressure, Pa (mmHg)	<u>766.2</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</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>11-Jan-22</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X-axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.2</u>	3.70	63.27	<u>9.2</u>	3.09
2	<u>10.4</u>	3.28	56.16	<u>7.0</u>	2.69
3	<u>8.2</u>	2.91	49.88	<u>5.6</u>	2.41
4	<u>5.2</u>	2.32	39.73	<u>3.2</u>	1.82
5	<u>3.0</u>	1.76	30.19	<u>2.1</u>	1.47

**By Linear Regression of Y on X**

Slope, mw = 0.0495 Intercept, bw = -0.0709  
 Correlation coefficient\* = 0.9972

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.08

Remarks: \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature: [Signature] Date: 2-Dec-21

Checked by: Henry Leung Signature: [Signature] Date: 2-Dec-21

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA20003/04/0010

Project No. KER 1 - Future Residential Development at Kerry Godown  
 Date: 11-Jan-22 Next Due Date: 11-Mar-22 Operator: SK  
 Equipment No.: A-01-04 Model No.: TE 5170 Serial No. 10595

Ambient Condition			
Temperature, Ta (K)	<b>293</b>	Pressure, Pa (mmHg)	<b>764</b>

Orifice Transfer Standard Information					
Serial No.	3864	Slope, mc	0.05846	Intercept, bc	-0.00313
Last Calibration Date:	11-Jan-21	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	11-Jan-22	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<b>13.1</b>	3.66	62.66	<b>9.2</b>	3.07
2	<b>10.4</b>	3.26	55.83	<b>7.0</b>	2.68
3	<b>8.2</b>	2.90	49.58	<b>5.6</b>	2.39
4	<b>5.2</b>	2.31	39.50	<b>3.2</b>	1.81
5	<b>3.0</b>	1.75	30.01	<b>2.1</b>	1.47

By Linear Regression of Y on X

Slope, mw = 0.0497 Intercept, bw = -0.0803

Correlation coefficient\* = 0.9970

\*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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.14

Remarks: \_\_\_\_\_  
 \_\_\_\_\_

Conducted by: Wong Shing Kwai Signature:  Date: 11-Jan-22

Checked by: Henry Leung Signature:  Date: 11-Jan-22