ENSR ASIA (HK) LTD
TSP High Volume Sampler
Field Calibration Report

Station	TKO2 (Combined Reception & Exit Office)	Operator:	Shum Kam Yuen
Cal. Date:	25-Aug-08	Next Due Date:	25-Oct-08
Equipment No.:	A-001-71T	Serial No.	10268

Ambient Condition			
Temperature, Ta (K)	305	Pressure, Pa (mmHg)	756.5

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.02026	Intercept, bc	-0.03609
Last Calibration Date:	22-Oct-07	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	22-Oct-08	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) X - axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	10.8	3.24	1.62	52.0	51.28
13	8.6	2.89	1.45	44.0	43.39
10	6.5	2.51	1.26	38.0	37.47
7	4.2	2.02	1.02	30.0	29.59
5	2.8	1.65	0.83	24.0	23.67

By Linear Regression of Y on X

Slope , mw = 34.3151 **Intercept, bw =** -5.3798

Correlation Coefficient* = 0.9952

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **39.78**

Remarks:

QC Reviewer: Joe Fu Signature: Joe Date: 26 Aug 08

ENSR ASIA (HK) LTD
TSP High Volume Sampler
Field Calibration Report

Station	TKO2 (Combined Reception & Exit Office)	Operator:	Shum Kam Yuen
Cal. Date:	20-Oct-08	Next Due Date:	20-Dec-08
Equipment No.:	A-001-71T	Serial No.	10268

Ambient Condition			
Temperature, Ta (K)	303	Pressure, Pa (mmHg)	759.3

Orifice Transfer Standard Information					
Serial No:	843	Slope, mc	2.02026	Intercept, bc	-0.03609
Last Calibration Date:	22-Oct-07	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	22-Oct-08	$Qstd = \{[DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler

Resistance Plate No.	Orfice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m^3/min) **X - axis**	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) **Y-axis**
18	10.8	3.26	1.63	50.0	49.56
13	8.5	2.89	1.45	44.0	43.62
10	6.4	2.51	1.26	38.0	37.67
7	4.1	2.01	1.01	30.0	29.74
5	2.6	1.60	0.81	24.0	23.79

By Linear Regression of Y on X

Slope , mw = **31.4500** **Intercept, bw =** **-1.8606**

Correlation Coefficient* = **0.9997**

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m^3/min

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

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

Therefore, Set Point; $IC = (mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ **39.37**

Remarks:

QC Reviewer: Joe Fu Signature: Joe Date: 21 Oct 08

EQUIPMENT CALIBRATION RECORD

Type: ***Laser Dust Monitor***
Manufacturer/Brand: ***SIBATA***
Model No.: ***LD-3***
Equipment No.: ***A.005.09a***
Sensitivity Adjustment Scale Setting: ***797 CPM***

Operator: *Mike Shek (MSKM)*

Standard Equipment

Equipment: *Rupprecht & Patashnick TEOM®*
Venue: *Cyberport (Pui Ying Secondary School)*
Model No.: *Series 1400AB*
Serial No: Control: *140AB219899803*
Sensor: *1200C143659803* K_o: *12500*
Last Calibration Date*: *12 June 2008*

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *797* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *797* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	15-06-08	08:00 - 09:00	29.7	78	0.01928	716	11.94
2	15-06-08	09:00 - 10:00	29.8	79	0.02128	767	12.78
3	15-06-08	10:00 - 11:00	29.8	78	0.02574	885	14.75
4	15-06-08	11:00 - 12:00	29.7	79	0.01953	712	11.86

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0017*
Correlation coefficient: *0.9359*

Validity of Calibration Record: *14 June 2009*

Remarks:

QC Reviewer: *Mike Shek* Signature: Mike Date: 16 June 2008

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EQUIPMENT CALIBRATION RECORD

Type: ***Laser Dust Monitor***
Manufacturer/Brand: ***SIBATA***
Model No.: ***LD-3***
Equipment No.: ***A.005.11a***
Sensitivity Adjustment Scale Setting: ***799 CPM***

Operator: *Mike Shek (MSKM)*

Standard Equipment

Equipment: *Rupprecht & Patashnick TEOM®*
Venue: *Cyberport (Pui Ying Secondary School)*
Model No.: *Series 1400AB*
Serial No: Control: *140AB219899803*
Sensor: *1200C143659803* K_o: *12500*
Last Calibration Date*: *12 June 2008*

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *799* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *799* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	06-07-08	10:00 - 11:00	29.9	81	0.01680	704	11.74
2	06-07-08	11:00 - 12:00	29.8	80	0.01748	738	12.30
3	06-07-08	12:00 - 13:00	29.6	80	0.01537	659	10.98
4	06-07-08	13:00 - 14:00	29.6	80	0.01688	730	12.17

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0014*
Correlation coefficient: *0.9275*

Validity of Calibration Record: *5 July 2009*

Remarks:

QC Reviewer: *Mike Shek* Signature: Mike Date: 7 July 2008