e: 5 e: 5	297.5   6843   5-Nov-11   5-Nov-12   0	Pressure, F Drifice Transfer S Slope, mc	tandard Information 2.00834 mc x Qstd + bc		767.8  Pept, bc -0.0292  (298/Ta)] 1/2  1/2 -bc} / mc
e: 5 e: 5	297.5 843 5-Nov-11 5-Nov-12	Pressure, For Strain Pressure, For Stope, mc	Condition Pa (mmHg)  tandard Information 2.00834 mc x Qstd + bc = Qstd = {[DH x (F	n Interce = [DH x (Pa/760) x ( Pa/760) x (298/Ta)] <sup>1</sup>	767.8  ept, bc -0.0292 (298/Ta)] 1/2 (1/2 -bc} / mc
e: 5 e: 5	297.5 843 5-Nov-11 5-Nov-12	Pressure, For Strain Pressure, For Stope, mc	tandard information 2.00834 mc x Qstd + bc = Qstd = {[DH x (F	n Interce = [DH x (Pa/760) x ( Pa/760) x (298/Ta)] <sup>1</sup>	767.8  ept, bc -0.0292 (298/Ta)] 1/2 1/2 -bc} / mc
e: 5 e: 5	843 5-Nov-11 5-Nov-12	Orifice Transfer States Stope, mc	tandard Information 2.00834  mc x Qstd + bc = Qstd = {[DH x (F	Interce = [DH x (Pa/760) x ( Pa/760) x (298/Ta)] <sup>1</sup>	ept, bc -0.0292 (298/Ta)] <sup>1/2</sup> (298/Ta) / mc
e: 5	843 5-Nov-11 5-Nov-12	Slope, mc	2.00834 mc x Qstd + bc = Qstd = {[DH x (F	Interce = [DH x (Pa/760) x ( Pa/760) x (298/Ta)] <sup>1</sup>	ept, bc -0.0292 (298/Ta)] 1/2 (298/Ta)] 1/2 -bc} / mc
e: 5	843 5-Nov-11 5-Nov-12	Slope, mc	2.00834 mc x Qstd + bc = Qstd = {[DH x (F	Interce = [DH x (Pa/760) x ( Pa/760) x (298/Ta)] <sup>1</sup>	ept, bc -0.0292 (298/Ta)] 1/2 (298/Ta)] 1/2 -bc} / mc
e: 5	5-Nov-11 5-Nov-12	Calibration o	mc x Qstd + bc = Qstd = {[DH x (F	= [DH x (Pa/760) x ( Pa/760) x (298/Ta)] <sup>1</sup>	(298/Ta)] <sup>1/2</sup> -bc} / mc
e: 5	5-Nov-12 0		Qstd = {[DH x (F	Pa/760) x (298/Ta)] <sup>1</sup>	1/2 -bc} / mc
rifice),	0				
			f TSP Sampler		
			it for Gampler		The fact that the state of
		Tille			S Flow Recorder
	•	60) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
.7		3.13	1.57	50.0	50.30
.0	2.46		1.24	40.0	40.24
.5	2.13		1.08	34.0	34.20
.6	1.91		0.96	30.0	30.18
		1.49	0.76	24.0	24.14
Y on X 4721			Intercept, bw =	-0.6	578
=	0.0	9983	_		
			Calculation		
ation Curve			Valculation	THE STATE OF THE SECTION OF THE SECT	
ation, the	value accord	,g .co			
	mw	x Qstd + bw = IC	x [(Pa/760) x (298/T	<sup>-</sup> a)] <sup>1/2</sup>	
	Y on X 4721 = < 0.990, che	Y on X  4721  = 0.9  < 0.990, check and recallibration Curve, take Qstd = 1	Y on X 4721 = 0.9983 < 0.990, check and recalibrate.	1.91 0.96 1.2 1.49 0.76  Y on X 4721 Intercept, bw = 0.9983 < 0.990, check and recalibrate.  Set Point Calculation ration Curve, take Qstd = 1.30m³/min	1.6 1.91 0.96 30.0 1.2 1.49 0.76 24.0  Y on X 4721 Intercept, bw = -0.6 <a href="#">-0.6</a> <a href="#">-0.6</a> <a href="#">Set Point Calculation</a> <a href="#">ation Curve, take Qstd = 1.30m³/min</a>

-0.029  a)] 1/2  / mc  Recorder  atinuous Flow Recorder  adding IC (CFM) Y-ax
-0.029  a)] <sup>1/2</sup> I mc  Recorder  attinuous Flow Recorder  adding IC (CFM) Y-ax
-0.029  a)] <sup>1/2</sup> I mc  Recorder  attinuous Flow Recorder  adding IC (CFM) Y-ax
-0.029  a)] <sup>1/2</sup> I mc  Recorder  attinuous Flow Recorder  adding IC (CFM) Y-ax
Recorder atinuous Flow Recorder ading IC (CFM) Y-ax
Recorder atinuous Flow Recorder ading IC (CFM) Y-ax
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Recorder attinuous Flow Recorder adding IC (CFM) Y-ax
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ading IC (CFM) Y-ax
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40.47
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23.27
<u> </u>
40.99

Station	Shan Tong New	Village (AM2)		Operator: Shum Kam Yuen			
al. Date:	11-Jan-12		- <del></del>	Next Due Date:	ar-12		
quipment No.:	A-001-29T			Serial No.	102	202	
			Ambient	Condition			
Temperatu	ure, Ta (K)	291	Pressure, F	Pa (mmHg)		766.5	
			Orifice Transfer S	tandard Informatio			
Seria	al No:	988	Slope, mc	2.01182	Intercept, bc		-0.0251
Last Calibration Date: 17-May-11					= [DH x (Pa/760) x		
Next Calibra	ration Date:	17-May-12		Qstd = {[DH x (I	x (Pa/760) x (298/Ta)] <sup>1/2</sup> -bc} / mc		
							_
			Calibration o	f TSP Sampler			
		. (	Orfice		HVS Flow Recorder		
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/7	(60) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X · axis	Flow Recorder Reading (CFM)	Continuous Flow Reading IC (CFI	
18	10.0		3.21	1.61	50.0	50.81	
13	7.2		2.73	1.37	42.0	42.68	
10	5.0		2.27		34.0	34.55	
7	3.5		1.90	0.96	30.0	30.49	
5	2.4		1.57	0.80	24.0	24.39	
By Linear Regre Slope , mw =	ession of Y on X 31.9509			Intercept, bw =	-0.9	412	_
Correlation Coe	efficient* =	0	.9958		4		
If Correlation Co	oefficient < 0.990	, check and recal	ibrat <mark>e</mark> .	- 17			
					<u> </u>		
			Set Point	Calculation			
rom the TSP Fi	ield Calibration C	urve, take Qstd =	1.30m³/min				
rom the Regres	ssion Equation, th	ne "Y" value acco	rding to				
					410		
		mv	$x \times Qstd + bw = IC$	x [(Pa/760) x (298/	Га)] "*		
Therefore Cat D	Dainte IC = / muses	Ootd + bur \ v 1/ 7	760 / Pa ) x ( Ta / 29	08 )1 <sup>1/2</sup> =		39.94	
merelole, Set P	-опц, ю – ( пъж х	woru ⊤uw ) ⊼ [( /	ovii a j x ( lai 23	<i>~</i>		VU.UT	-
							<u> </u>
Remarks:							
Remarks:			- <u>-</u>				
Remarks:	<u> </u>			<u> </u>		Date: (2-Jan	() <

Station	Riverain Bayside	e (AM3)		_ Operator:	_			
Cal. Date:	11-Jan-12			Next Due Date:	11-M	_		
Equipment No.:	A-001-69T			Serial No.	7′	16	-	
			Ambient	Condition				
Temperatu	ıre Ta (K)	291	Pressure, f			766.5		
Temperate	, ru (rt)	201	7 7000010,1	9/				
			Orifice Transfer S	tandard Informatio	on			
Seria	ıl No:	988	Slope, mc	2.01182	Intercept, bc -0.02			
Last Calibra	ation Date:	17-May-11		mc x Qstd + bc	= [DH x (Pa/760) x	(298/Ta)] 1/2		
Next Calibr	ation Date:	17-May-12			1 x (Pa/760) x (298/Ta)] 1/2 -bc} / mc			
		NI.						
			Calibration o	f TSP Sampler				
		(	Orfice		HV	S Flow Recorder		
Resistance Plate No.	DH (orifice), in. of water	[DH x (Pa/7	60) x (298/Ta)] <sup>1/2</sup>	Qstd (m³/min) X · axis	Flow Recorder Reading (CFM)	Continuous Flow Reading IC (CF		
18	9.8		3.18	1.59	50.0	50.81	-	
13	7.6		2.80		42.0	42.68	}	
10	5.8		2.45		36.0	36.59	)	
7	4.4	2.13		1.07	30.0	30.49	)	
5	2.3		1.54	0.78	22.0	22.36	;	
By Linear Regre Slope , mw =	ession of Y on X 34.8825	_		Intercept, bw =	-5.8	228	_	
Correlation Coe	efficient* =	0.	9921	_				
*If Correlation Co	pefficient < 0.990	, check and recali	brat <mark>e.</mark>	77				
				Calculation				
From the TSP Fi	eld Calibration C	urve, take Qstd =	<b>1.30</b> m <sup>3</sup> /min					
From the Regres	ssion Equation, th	ne "Y" value accor	ding to					
					410			
		mw	x Qstd + $bw = IC$	x [(Pa/760) x (298/1	Га)] <sup>1/2</sup>			
Therefore, Set P	oint; IC = ( mw x	Qstd + bw ) x [( 7	60 / Pa ) x ( Ta / 29	18 )] <sup>1/2</sup> =		38.89		
					,		-	
	-							
Remarks:								
	×( /			6 /		12. Jan-	1.0	
OC Berieves	1 W	My	Cianaturo:	4/		Date: 1 L'July-	1 4	

Serial No:   843   Slope, mc   2.00834   Intercept, bc	-0.029 1/2 mc
Temperature, Ta (K)   290.7   Pressure, Pa (mmHg)   769.8	-0.029 1/2 mc
Temperature, Ta (K)   290.7   Pressure, Pa (mmHg)   769.8	-0.029 1/2 mc
Serial No:  Serial No:  843  Slope, mc  2.00834  Intercept, bc  mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]  Next Calibration Date:  15-Nov-12  Qstd = {[DH x (Pa/760) x (298/Ta)]}  Calibration of TSP Sampler  Orfice  Plate No.  DH (orifice), in. of water  [DH x (Pa/760) x (298/Ta)] Qstd (m³/min) X axis  Flow Recorder Reading (CFM)  Reading (CFM)  Reading (CFM)	-0.029 1/2 mc
Serial No:   843   Slope, mc   2.00834   Intercept, bc	-0.029 1/2 mc
Serial No:	-0.029 1/2 mc
Last Calibration Date:   15-Nov-11   mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]   Next Calibration Date:   15-Nov-12   Qstd = {[DH x (Pa/760) x (298/Ta)]   1/2 -bc} / mc x Qstd + bc = [DH x (Pa/760) x (298/Ta)]   1/2 -b	1/2 mc
Next Calibration Date: 15-Nov-12  Qstd = {[DH x (Pa/760) x (298/Ta)] 1/2 -bc} / recorder Resistance Plate No. DH (orifice), in. of water  [DH x (Pa/760) x (298/Ta)] 1/2 Qstd (m³/min) X axis  Reading (CFM) Reading (CFM)	mc
Resistance Plate No. DH (orifice), in. of water Plate No.	
Resistance Plate No.  DH (orifice), in. of water    DH x (Pa/760) x (298/Ta)]   Qstd (m³/min) X   Flow Recorder   Reading (CFM)   Reading (CFM	<u></u>
Resistance Plate No.  DH (orifice), in. of water    DH (x (Pa/760) x (298/Ta)]	<u></u>
Resistance Plate No.  DH (orifice), in. of water  [DH x (Pa/760) x (298/Ta)] <sup>1/2</sup> Qstd (m³/min) X Flow Recorder Reading (CFM) Reading	ecoraer
Plate No. DH (orifice), in. of water [DH x (Pa/760) x (298/Ta)] <sup>1/2</sup> Qstd (m³/min) X Flow Recorder Reading (CFM) Reading	
	nuous Flow Recorde ng IC (CFM) Y-axi
18 10.6 3.32 1.67 52.0	52.99
13 8.5 2.97 1.49 46.0	46.87
10 5.8 2.45 1.24 38.0	38.72
7 4.1 2.06 1.04 30.0	30.57
5 2.5 1.61 0.82 24.0	24.46
By Linear Regression of Y on X  Slope , mw = 34.0607	
If Correlation Coefficient < 0.990, check and recalibrate.	
Set Point Calculation	The state of the s
rom the TSP Field Calibration Curve, take Qstd = 1.30m³/min	and the second second
From the Regression Equation, the "Y" value according to	
mw x Qstd + bw = IC x $[(Pa/760) \times (298/Ta)]^{1/2}$	
200.000	
Therefore, Set Point; IC = ( mw x Qstd + bw ) x [( 760 / Pa ) x ( Ta / 298 )] <sup>1/2</sup> =	2.63
	<del></del> -
Daniela.	
Remarks:	
	(Jan-12
OC Reviewer: Date:	/ <1



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

#### AIR POLLUTION MONITORING EQUIPMENT

#### ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

	ay 17, 2011 Tisch	Ta (K) - Pa (mm) -	294 - 748.03			
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA	NA NA NA NA NA	1.00 1.00 1.00 1.00 1.00	1.3900 0.9830 0.8800 0.8380 0.6920	3.2 6.4 7.9 8.8 12.7	2.00 4.00 5.00 5.50 8.00

#### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9934 0.9891 0.9870 0.9859 0.9807	0.7146 1.0062 1.1216 1.1765 1.4172	1.4125 1.9976 2.2334 2.3424 2.8251		0.9957 0.9915 0.9893 0.9882 0.9830	0.7163 1.0086 1.1243 1.1793 1.4205	0.8866 1.2538 1.4018 1.4703 1.7732
Qstd slop intercept coefficie	t (b) =	2.01182 -0.02516 0.99999	320	Qa slope intercep coefficie	t (b) =	1.25977 -0.01579 0.99999
y axis =	SQRT[H2O(I	2a/760)(298/	Ta)]	y axis =	SQRT [H2O (1	Ta/Pa)]

#### CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]

Qa = Va/Time

For subsequent flow rate calculations:

Qstd =  $1/m\{ [SQRT (H2O(Pa/760) (298/Ta))] - b \}$ Qa =  $1/m\{ [SQRT H2O(Ta/Pa)] - b \}$ 



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#### AIR POLLUTION MONITORING EQUIPMENT

# ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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#### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)			
0.9934 0.9891 0.9871 0.9859 0.9807	0.7193 1.0083 1.1269 1.1779 1.4233	1.4125 1.9976 2.2334 2.3424 2.8251	0.995 0.991 0.989 0.988 0.983	5 1.0107 5 1.1295 2 1.1807	0.8866 1.2538 1.4018 1.4703 1.7732			
Qstd slop intercept coefficie	(b) =	2.00834 -0.02923 0.99994	inter	lope (m) = cept (b) = icient (r) =	1.25759 -0.01835 0.99994			
y axis = SQRT[H2O(Pa/760) (298/Ta)]								

#### CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)

Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]

Qa = Va/Time

For subsequent flow rate calculations:

Qstd =  $1/m\{ [SQRT (H2O (Pa/760) (298/Ta))] = b \}$ Qa =  $1/m\{ [SQRT H2O (Ta/Pa)] - b \}$ 

Type:	acturer/Brand:			Laser Du SIBATA	ıst Monii	tor		
Model			· · · · · · · · · · · · · · · · · · ·	LD-3				
	ment No.:			A.005.07	a	<del> </del>		
	ivity Adjustment	Scale Setti		557 CPN				
	. ridy i ragadii nomi			<del></del>	-	· · · · · · · · · · · · · · · · · · ·		
Opera	tor:		ATTER	Mike She	k (MSKN	<u> </u>		
Standaı	rd Equipment							
Equipr	nent:	Rupj	orecht & Pat	tashnick	TEOM®			
Venue	:		Cyberport (Pui Ying Secondary School)					
Model			es 1400AB					
Serial	No:	Cont		AB21989				
		Sens		00C14365	59803	K₀: <u>12500</u>		
Last C	alibration Date*:	_4 Ju	ne 2011					<del></del>
*Remarl	ks: Recommend	ed interval	for hardwar	e calibrat	tion is 1 y	/ear		
Calibra	tion Result		:					
Canali	i. da . A ali mana mak	Capla Catt	ina /Dafasa	Calibratia	\-	<i>557</i> CP	* 4	
	ivity Adjustment		•		,			
Sensil	ivity Adjustment	Scale Sell	ing (Aiter Ca	anoradon,	1.	_ <i>557</i> CP	tVI .	
Hour	Date		me	Amb	pient	Concentration 1	Total	Count/
) loui	(dd-mm-yy)	11	1110	Cond		(mg/m <sup>3</sup> )	Count <sup>2</sup>	Minute <sup>3</sup>
	(44 ///// 33/			Temp	R.H.	Y-axis	Journ	X-axis
				(°C)	(%)			A GAIG
1	05-06-11	09:30	- 10:30	31.3	67	0.04118	1540	25.67
2	05-06-11	10:30	- 11:30	31.3	67	0.04354	1637	27.28
3	05-06-11	11:30	- 12:30	31.3	67	0.04633	1730	28.83
4	05-06-11	12:30	- 13:30	31.4	66	0.04271	1603	26.72
Note:	1. Monitoring o	lata was m	easured by	Rupprecl	ht & Pata	shnick TEOM®		
	2. Total Count							
	3. Count/minut	e was calc	culated by (T	otal Cou	nt/60)			
D . 1 fam.		M = M						
	ar Regression of	Y OF X	0.0046				,	
	(K-factor):		0.0016					
Corre	ation coefficient:		0.9958					
Validit	y of Calibration F	Record:	4 June 20	)12				
Remark	:S:		_					
L								
				i				
QC Re	eviewer: YW F	ung	Signa	ture: 🕌	¥	Date	e: <u>8 June</u>	<u> 2011</u>

Type:				Laser D	ust Mor	nitor		
	cturer/Brand:		·	SIBATA				
Model N	₹o.:		_	LD-3			•	
Eguipm	ent No.:		_	A.005.08	a			
	ity Adjustment	Scale Setting	g: _	702 CP	M			
Operato	or:		_	Mike She	ek (MSK	(M)	•	
Standard	f Equipment					<del>~~~~</del>	,	· · · ·
						-	74. III. III. III. III. III. III. III. I	
Equipm	ent:		echt & Pa					
Venue:			oort (Pui	Ying Seco	ondary S	School)		
Model N		**************************************	1400AB					***************************************
Serial N	lo:	Contro		0AB2198			······································	<del></del>
		Senso		00C1436	59803	K <sub>o</sub> : <u>125</u>	500	
Last Ca	llibration Date*:	4 June	2011					
*Remark	s: Recommend	led interval fo	or hardwa	re calibra	ition is 1	year		
Calibrati	on Result							
	ity Adjustment					702	CPM	
Sensitiv	ity Adjustment	Scale Settin	g (After C	alibration	:):	702	CPM	
						·	<b></b>	
Hour	Date	Tim	е	Amb		Concentration '	Total	Count/
	(dd-mm-yy)		Conditio		(mg/m³)	Count <sup>2</sup>	Minute <sup>3</sup>	
	-			Temp	R.H.	Y-axis		X-axis
				(°C)	(%)			
1	02-07-1\$	09:00 -	10:00	31.1	70	0.04313	1607	26.78
2	02-07-11	10:00 -	11:00	31.1	70	0.04137	1550	25.83
3	02-07-11	11:00 -	12:00	31.2	71	0.04552	1713	28.55
4	02-07-11	12:00 -	13:00	31.2	71	0.04736	1771	29.51
Note:						tashnick TEOM®		
	2. Total Count							
	3. Count/minu	ie was caicui	ared by (	TOIBI COL	HWOU			
Ry Lineau	Regression of	YorX		•				
	K-factor):	1 01 70	0.0016					
	tion coefficient:	_	0.9949					
		<del>-</del>						
Validity	of Calibration F	Kecord:	1 July 20	12				
Remarks								
Comains	•				-			
		•						
	•				Μ			
QC Rev	iewer: YW I	-ung	Signa	ature:	0.1/	ľ	Date: 4	July 2011

Type:			i	Laser Du	ıst Monit	tor			
Manu	facturer/Brand:			SIBATA					
Model			*****	LD-3					
	ment No.:		want	A.005.09a					
Sensi	tivity Adjustment	Scale Settin	g: _	797 CPN	Λ				
Opera	ator:		, 	Mike She	k (MSKN	1)			
Standa	rd Equipment						***************************************		
Equip	ment:	Ruppr	echt & Pai	tashnick <sup>*</sup>	ТЕОМ <sup>®</sup>				
Venue			oort (Pui Y			chool)	\		
Model	No.:		1400AB						
Serial	No:	Contro	ol: <u>140</u>	AB21989	99803				
		Senso	***	00 <mark>C14</mark> 365	59803	K <sub>a</sub> : <u>12500</u>	)		
Last C	Calibration Date*:	4 June	2011					-	
*Remar	ks: Recommend	ed interval fo	or hardwar	e calibrat	tion is 1 y	year			
Calibra	tion Result								
	tivity Adjustment tivity Adjustment						PM PM		
Hour Date (dd-mm-yy)		Tim	Time		pient	Concentration	Total	Count/	
					dition	(mg/m³)	Count <sup>2</sup>	Minute <sup>3</sup>	
				Temp (°C)	R.H. (%)	Y-axis		X-axis	
1	05-06-11	13:30 -	14:30	31.4	66	0.04416	1758	29.30	
2	05-06-11	14:30 -	15:30	31.5	66	0.04752	1889	31.48	
3	05-06-11	15:30 -	16:30	31.5	66	0.04371	1748	29.13	
4	05-06-11	16:30 -	17:30	31.5	67	0.04543	1808	30.13	
Note:	1			1	ht & Pata	ashnick TEOM®			
	2. Total Count 3. Count/minut	was logged	by Laser [	Dust Mon	itor				
	ar Regression of	Y or X							
	(K-factor):	_	0.0015						
Correl	lation coefficient:	_	0.9953		······································				
Validit	y of Calibration F	Record:	4 June 20	)12				•	
Remark	(SI								
				-					
								***************************************	
								To Commission	
		,			11/	r			
QC R	eviewer: YW F	<sup>E</sup> ung	Signa	ture:		Dat	e: 8 June	e 2011	

Type:			1	aser Du	st Monit	for				
Manufacturer/Brand:				SIBATA						
Model No.:				LD-3						
Equipment No.:				A.005.11a						
Sensitivity Adjustment Scale Setting:			ing:	799 CPM						
Opera	tor:			Mike She	k (MSKN	1)				
Standa	rd Equipment									
Equipr			orecht & Pat			-h11		<del></del>		
Venue	-		Cyberport (Pui Ying Secondary School) Series 1400AB							
Model Serial										
Senai	NO.									
Last C	alibration Date*:		Sensor: <u>1200C143659803</u> K <sub>o</sub> : <u>12500</u> 4 June 2011							
	,						**************************************			
*Remar	ks: Recommend	ed interval	for hardwar	e calibrat	ion is 1 y	<i>e</i> ar				
Calibra	tion Result									
		······································			*		***************************************	<del></del>		
	ivity Adjustment					_799 CP				
Sensit	ivity Adjustment	Scale Sett	ing (After Ca	alibration)	:	_799 CP	M			
<del> </del>				* .						
Hour	Date	1	ime	Amb		Concentration <sup>1</sup>	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup>		
	(dd-mm-yy)			Cond	R.H.	(mg/m³) <b>Y-axis</b>	Count	X-axis		
				Temp (°C)	(%)	I-dxi5		V-qYI2		
1	02-07-11	09:30	- 10:30	31.1	70	0.04305	1718	28.63		
2	02-07-11	10:30	- 11:30	31.1	71	0.04257	1703	28.38		
3	02-07-11	11:30	- 12:30	31.2	71	0.04424	1763	29.38		
4	02-07-11	12:30	- 13:30	31.2	71	0.04632	1855	30.92		
Note:	1. Monitoring o	iata was m	easured by	Rupprecl	nt & Pata	shnick TEOM®				
	<ol><li>Total Count</li></ol>									
	3. Count/minut	te was cald	culated by (T	otal Cou	nt/60)					
	D	V								
	ar Regression of	Yorx	0.0045							
	(K-factor): ation coefficient:		0.0015 0.9961	***************************************						
Correi	ation coemicient.		0.9901							
Validity of Calibration Record: 1 July 2012										
Remark	ks:									
L	3					3				
_		_		_	h /	_				
$\triangle$	outouror: VIA/A	Euna	Signa	huro:	V 1 /	Data	s: A luba	2011		

Туре:	C1(D1-			Laser Du	ıst Moni	tor		
Manufacturer/Brand: Model No.: Equipment No.: Sensitivity Adjustment Scale Setting:			_	SIBATA LD-3B A.005.12a 805 CPM Mike Shek (MSKM)				
			_					
			_					
Opera	Operator:						•	
Standa	rd Equipment							
					7501®			
Equip		Rupprecht				. ( I)		<del></del>
Venue		Cyberport		ing Seco	naary So	inooi)		
Model		Series 140		A DO4000	20000			
Serial	No:	Control:		AB21989		V - 40500		
Loot C	`alibratian Data*:	Sensor: 4 June 20		00C14365	9803	K <sub>o</sub> : <u>12500</u>		
Lasi C	Calibration Date*:	4 June 20	11					<del></del>
*Remar	ks: Recommend	ed interval for ha	ardwar	e calibrat	ion is 1 y	/ear		
Calibra	tion Result				•	-		
			_					
	ivity Adjustment					805 CP		
Sensit	tivity Adjustment	Scale Setting (A	tter Ca	alibration	):	805 CP	'M	
Hour	Date	Time		Amb	ient	Concentration <sup>1</sup>	Total	Count/
11001	(dd-mm-yy)				dition	(mg/m <sup>3</sup> )	Count <sup>2</sup>	Minute <sup>3</sup>
	(== ),			Temp	R.H.	Y-axis		X-axis
				(°C)	(%)			
1	02-07-11	09:30 - 1	0:30	31.1	70	0.04305	1843	30.72
2	02-07-11	10:30 - 1	1:30	31.1	71	0.04257	1826	30.43
3	02-07-11	11:30 - 1	2:30	31.2	71	0.04424	1893	31.55
4	02-07-11		3:30	31.2	71	0.04632	1994	33.23
Note:	1. Monitoring d	lata was measur	ed by	Rupprecl	ht & Pata	shnick TEOM®		
	<ol><li>Total Count</li></ol>	was logged by L	aser [	Dust Mon	itor			
	<ol><li>Count/minut</li></ol>	e was calculated	by (T	otal Cou	nt/60)			
	ar Regression of	Y or X	24.4					
	(K-factor):	0.00						
Correl	ation coefficient:	0.99	347					
Validit	y of Calibration F	Record: 1 Ju	ily 201	12		•		
Remark	is:							
		•						
								:
					1/			
00 B	eviewer: YW F	una	Signat	ture:	2/	Date	e: 4 July	2011

Model	acturer/Brand: No.: ment No.:			Laser Du SIBATA LD-3B A.005.13a		dor			
Sensitivity Adjustment Scale Setting:			ting:	643 CPM					
Operator:				Mike Shek (MSKM)					
Standar	rd Equipment								
Equipr Venue Model	1.	Cyl		Patashnick ī ii Ying Seco. B		chool)	Appellula Abdolf 114 4 v 8 mm.		
Serial No: Con Sen:			ntrol:1	rol: 140AB219899803 for: 1200C143659803 K <sub>o</sub> : 12500					
*Remarl	ks: Recommend	ed interva	al for hardv	vare calibrat	ion is 1 y	/ear		÷	
Calibra	tion Result								
	ivity Adjustment ivity Adjustment					643 CF			
Hour	Date (dd-mm-yy)	,	Time	Amb Cond Temp (°C)		Concentration <sup>1</sup> (mg/m <sup>3</sup> ) <b>Y-axis</b>	Total Count <sup>2</sup>	Count/ Minute <sup>3</sup> X-axis	
1	05-06-11	11:00	- 12:0		67	0.04513	1933	32.21	
2	05-06-11	12:00	- 13:0		67	0.04392	1833	31.38	
3	05-06-11	13:00 14:00	- 14:0 - 15:0		66 66	0.04751 0.04476	2042 1918	34.03 31.97	
Note:	1. Monitoring of 2. Total Count 3. Count/minut	lata was r was logg	measured ed by Lase	by Rupprecl er Dust Mon	nt & Pata itor	ashnick TEOM®	1	J	
· · · · · · · · · · · · · · · · · · ·			0.0014 0.9978			÷			
Validity of Calibration Record: 4 Jul			4 June	4 June 2012					
Remark	s:				^				
QC Re	eviewer: YW f	ung	Sig	ınature:	4	Dat	e: 8 June	e 2011	



# 綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com





### CERTIFICATE OF CALIBRATION

Certificate No.:

11CA0317 06-01

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of

2

Item tested

Description: Manufacturer: Sound Level Meter (Type 1) **B&K** 

Microphone **B&K** 4188

Type/Model No.: Serial/Equipment No.: 2238 2285692/N.009.04 2250420

Adaptors used:

Item submitted by

**Customer Name:** 

AECOM ASIA CO., LTD.

Address of Customer: Request No .:

Date of request:

17-Mar-2011

Date of test:

26-Mar-2011

#### Reference equipment used in the calibration

Description: Multi function sound calibrator Signal generator

Signal generator

Model: B&K 4226 DS 360

DS 360

Serial No. 2288444 33873 61227

**Expiry Date:** 10-Jan-2012 28-Jun-2011 24-Jun-2011

Traceable to: CIGISMEC CEPREI CEPREI

**Ambient conditions** 

Temperature: Relative humidity:

Air pressure:

(22 ± 1) °C  $(60 \pm 5) \%$ (1005 ± 5) hPa

#### Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 3. between the free-field and pressure responsess of the Sound Level Meter.

#### Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Huang Jian Min/Feng Jun Qi

Actual Measurement data are documented on worksheets

Approved Signatory:

Date:

29-Mar-2011

Company Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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Form No.CARP152-1/Issue 1/Rev.C/01/02/2007



# 綜合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黃竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 Website: www.cigismec.com E-mail: smec@cigismec.com

Tel: (852) 2873 6860 Fax: (852) 2555 7533



### CERTIFICATE OF CALIBRATION

Certificate No.:

11CA0830 02

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of

Item tested

Description: Manufacturer: Sound Level Meter (Type 1)

Rion Co., Ltd.

NI -31

Microphone Rion Co., Ltd. Preamo Rion Co., Ltd.

2

Serial/Equipment No.:

Type/Model No.:

00320528 / N.007.03A

UC-53A 90565

NH-19 75883

Adaptors used: Item submitted by

**Customer Name:** 

AECOM ASIA CO., LTD.

Address of Customer:

Request No.:

Date of receipt:

30-Aug-2011

Date of test:

31-Aug-2011

#### Reference equipment used in the calibration

Description:

Multi function sound calibrator

Signal generator

Signal generator

Model: B&K 4226

DS 360

DS 360

2288444 33873 61227

Serial No.

Expiry Date:

09-May-2012 30-May-2012 30-May-2012 Traceable to: CIGISMEC CEPREL **CEPREI** 

Ambient conditions

Temperature:

 $(23 \pm 1)$  °C  $(60 \pm 5) \%$ 

Relative humidity: Air pressure:

 $(1000 \pm 5) hPa$ 

#### Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 1, and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and 2, replaced by an equivalent capacitance within a tolerance of ±20%.
- The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference 3, between the free-field and pressure responsess of the Sound Level Meter.

#### Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

ng Jun Qi

31-Aug-2011 Date:

Company Chop:

The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

C Soils & Materials Engineering Co., Ltd.

Form No.CARP152-1/Issue 1/Rev.C/01/02/2007



# 綜 合 試 驗 有 限 公 司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黄竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com

Tel : (852) 2873 6860 Fax: (852) 2555 7533



### CERTIFICATE OF CALIBRATION

Certificate No.:

11CA0711 01-05

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of

2

Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

Ríon Co., Ltd.

Type/Model No.:

NC-73

Serial/Equipment No.:

10307223 / N.004.08

Adaptors used:

Item submitted by

Curstomer:

AECOM ASIA CO. LTD.

Address of Customer:

Request No.: Date of receipt:

11-Jul-2011

Date of test:

13-Jul-2011

#### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	18-May-2012	SCL
Preamplifier	B&K 2673	2239857	14-Dec-2011	CEPREI
Measuring amplifier	B&K 2610	2346941	15-Dec-2011	CEPREI
Signal generator	DS 360	61227	30-May-2012	CEPREI
Digital multi-meter	34401A	US36087050	09-Dec-2011	CEPREI
Audio analyzer	8903B	GB41300350	27-May-2012	CEPREI
Universal counter	53132A	MY40003662	30-May-2012	CEPREI

#### **Ambient conditions**

Temperature: Relative humidity: 22 ± 1 °C  $55 \pm 5 \%$ 

Air pressure:

990 ± 5 hPa

#### **Test specifications**

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B 1, and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3. The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

#### Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions,

Details of the performed measurements are presented on page 2 of this certificate.

Huang Jian

Approved Signatory:

nÆerlg Jun Qi

Company Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibra carry no implication regarding the long-term stability of the instrument.

Soils & Materials Engineering Co., Ltd.

Form No,CARP156-1/(ssue 1/Rev.D/01/03/2007



# 綜合試驗有限公司

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### CERTIFICATE OF CALIBRATION

Certificate No.:

11CA0317 06-02

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of

2

Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

Rion Co., Ltd.

Type/Model No.:

NC-73

Serial/Equipment No.:

10186482/N.004.09

Adaptors used:

Item submitted by

Curstomer:

AECOM ASIA CO., LTD.

Address of Customer:

Request No .: Date of request:

17-Mar-2011

Date of test:

26-Mar-2011

#### Reference equipment used in the calibration

Description: Lab standard microphone Preamplifier Measuring amplifier Signal generator Digital multi-meter Audio analyzer	Model: B&K 4180 B&K 2673 B&K 2610 DS 360 34401A 8903B	Serial No. 2412857 2239857 2346941 61227 US36087050 GB41300350	02-Jul-2011 14-Dec-2011 15-Dec-2011 24-Jun-2011 09-Dec-2011 28-Jun-2011	Traceable to: SCL CEPREI CEPREI CEPREI CEPREI CEPREI
Universal counter	53132A	MY40003662	05-Jul-2011	CEPREI

#### **Ambient conditions**

Temperature:

22 ± 1 °C

Relative humidity:

60 ± 5 %

Air pressure:

1005 ± 5 hPa

#### **Test specifications**

The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B 1, and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference 3. pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

#### Test results

Details of the performed measurements are presented on page 2 of this certificate.

Huane Jian

Approved Signatory.

Date:

Jun Qi

29-Mar-2011

Company Chop:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

@ Soils & Materials Engineering Co., Ltd.

Form No.CARP156-1/Issue 1/Rev.D/01/03/2007