

## 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

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



## CERTIFICATE OF CALIBRATION

Certificate No.:

14CA0529 01-01

Page

Item tested

Description: Manufacturer:

Sound Level Meter (Type 1) **B&K** 

Microphone

Type/Model No.:

2236

**B&K** 

Serial/Equipment No.:

2100736

4188 2157055

Adaptors used:

Item submitted by

Customer Name:

Lam Geotechnics Limited

Address of Customer:

Request No.:

29-May-2014

Date of receipt: Date of test:

29-May-2014

Reference equipment used in the calibration

Serial No.

**Expiry Date:** 

Traceable to:

Multi function sound calibrator Signal generator

Model: **B&K 4226** DS 360

2288444

22-Jun-2014 09-Apr-2015

CIGISMEC

Signal generator

DS 360

33873 61227

09-Apr-2015

**CEPREI CEPREI** 

**Ambient conditions** 

Temperature:

22 ± 1 °C

Relative humidity: Air pressure:

60 ± 10 % 1000 ± 10 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.

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.

<del>Jian Min/</del>Feng Jun Qi

Actual Measurement data are documented on worksheets.

Approved Signatory:

Date:

30-May-2014

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.

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.

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## CERTIFICATE OF CALIBRATION

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Certificate No.:

14CA0529 01-01

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### 1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

			Expanded	Coverage
Test:	Subtest:	Status:	Uncertanity (dB)	Factor
Self-generated noise	A	Pass	0.3	
gg	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leg	At reference range, Step 5 dB at 4 kHz	Pass	0.3	2.2
, 3	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
Frequency weightings	Α	Pass	0.3	
	С	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/103 at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 <sup>4</sup> at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

### 2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertanity (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

## 3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

Fung Chi Yip

End

Checked by:

Lam Tze Wai

Date:

29-May-2014

Date:

30-May-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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Form No.CARP152-2/Issue 1/Rev.C/01/02/2007



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

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## CERTIFICATE OF CALIBRATION

Certificate No.:

14CA0529 01-02

Page:

of

2

to:

Item tested

Description:

Acoustical Calibrator (Class 1)

Manufacturer:

Rion Co., Ltd. NC-73

Type/Model No.: Serial/Equipment No.:

NC-73 10465798

Adaptors used:

-

Item submitted by

Curstomer:

Lam Geotechnics Limited

Address of Customer:

8070

Request No.:

....

Date of receipt:

29-May-2014

Date of test:

30-May-2014

## Reference equipment used in the calibration

Description: Lab standard microphone Preamplifier Measuring amplifier Signal generator Digital multi-meter Audio analyzer Universal counter	Model: B&K 4180 B&K 2673 B&K 2610 DS 360 34401A 8903B 53132A	Serial No. 2412857 2239857 2346941 61227 US36087050 GB41300350 MY40003662	Expiry Date: 13-May-2015 10-Apr-2015 08-Apr-2015 09-Apr-2015 17-Dec-2014 07-Apr-2015 11-Apr-2015	Traceable SCL CEPREI CEPREI CEPREI CEPREI CEPREI CEPREI CEPREI
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## Ambient conditions

Temperature:

22 ± 1 °C 60 ± 10 %

Relative humidity: Air pressure:

1000 ± 10 hPa

### **Test specifications**

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B 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** 

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

Huang Jian Min/Feng Jun Qi

Approved Signatory:

Date:

30-May-2014

Company Chop:

Comments: The results reported in his 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.CARP156-1/Issue 1/Rev.D/01/03/2007



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

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



## CERTIFICATE OF CALIBRATION

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#### 1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties

			(Output level in dB re 20 µPa)
Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	94.57	0.10

#### 2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz

STF = 0.001 dB

Estimated expanded uncertainty

0.005 dB

#### **Actual Output Frequency** 3,

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz

Actual Frequency = 965.6 Hz

Estimated expanded uncertainty

0.1 Hz

Coverage factor k = 2.2

#### 4. **Total Noise and Distortion**

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz

TND = 0.9 %

Estimated expanded uncertainty

0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

Calibrated by:

End

Date:

Funa Chi Yip

30-May-2014

Checked by:

Date:

Lam Tze Wai 30-May-2014

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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Form No.CARP156-2/Issue 1/Rev.C/01/05/2005



TISCH ENVIRONMENTAL, INC. 145 SOUTH MIAMI AVE VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX

## ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Ju	Ta (K) -	298				
Operator	Pa (mm) -	- 749.3				
PLATE OR Run # 1 2 3 4 5	VOLUME START (m3) NA NA NA NA NA	VOLUME STOP (m3) NA NA NA NA NA	DIFF VOLUME (m3) 1.00 1.00 1.00 1.00	DIFF TIME (min)  1.3870 0.9830 0.8760 0.8340 0.6860	METER DIFF Hg (mm) 3.2 6.4 7.9 8.8 12.7	ORFICE DIFF H2O (in.)  2.00 4.00 5.00 5.50 8.00

### DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9817 0.9775 0.9754 0.9743 0.9692	0.7078 0.9944 1.1135 1.1683 1.4128	1.4042 1.9859 2.2203 2.3286 2.8084		0.9957 0.9915 0.9894 0.9882 0.9830	0.7179 1.0086 1.1294 1.1849 1.4330	0.8919 1.2613 1.4101 1.4790 1.7837
Qstd slop	(b) =	1.99175 -0.00041 0.99991	n e n	Qa slope intercept coefficie	= (b) $=$	1.24720 -0.00026 0.99991
y axis =	SQRT[H2O(B	Pa/760)(298/	[a)]	y axis =	SQRT [H2O (T	[a/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 =  $1/m\{ [SQRT H2O (Ta/Pa)] - b\}$ 



Location :		CMA1b			Calbration Date : 30-A				
Equipment no.		EL452				Calbratio	on Due Date	:	30-Oct-14
CALIBRATION OF CON	TINUOUS	FLOW RI	CORDER						
				Ambient C	Condition				
Temperature, T <sub>a</sub>		302	:	Kelvin	Pressure, P	a	1	006	mmHg
			Orifice Tr	ansfer Sta	ındard Infori	nation			
Equipment No.		EL086		Slope, m <sub>c</sub>	1.991	75	Intercept, bc	Т	-0.00041
Last Calibration Date		14-Jul-1	4		(Нх	P <sub>a</sub> / 101	3.3 x 298 /	T <sub>a</sub> ) 1/	2
Next Calibration Date		14-Jul-1	5		=	$m_c x$	$Q_{std} + b_c$		
				Calibratio	n of TSP				
Calibration	Mar	nometer R	eading	C	) <sub>std</sub>	Continu	ous Flow		IC
Point	<b>H</b> (i	inches of	water)	(m <sup>3</sup>			rder, W	(W(P <sub>a</sub> /10	013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)
	(up)	(down)	(difference)	X-	axis	(C	FM)		Y-axis
1	6.4	6.4	12.8	1.5	7781	(	62		61.3658
2	5.1	5.1	10.2	1.	5873		50		49.4885
3	4.2	4.2	8.4	1.4	4405	4	41		40.5806
4	2.5	2.5	5.0	1.1	1114	2	25		24.7443
5	1.3	1.3	2.6	0.8	8015		10		9.8977
By Linear Regression of	Y on X								
	Slope, m	=	52.00	603	Inte	ercept, b =	-32	.7404	
Correlation Co	efficient*	=	0.99	981					
Calibration	Accepted	=	Yes/	<b>\o</b> **					
* if Correlation Coefficier	nt < 0.990,	check and	l recalibration	n again.					
				Ü					
** Delete as appropriate.									
Remarks :									
Calibrated by		Felix Li				Checked	by	:	Pauline Wong
Date :	3	0-Aug-14				Date		:	30-Aug-14



				_			_	-			
Location :		CMA2a				Calbrati	on Date	:	30-Aug-14		
Equipment no.		EL449				Calbrati	on Due Date	:	30-Oct-14		
CALIBRATION OF CON	ITINUOUS	S FLOW RI	ECORDER								
				Ambient C	ondition						
Temperature, T <sub>a</sub>		302	2	Kelvin	Pressure, P	a		1006	mmHg		
			Orifice Tr	ansfer Sta	ndard Inforn	nation					
Equipment No.		EL086		Slope, mc	1.991		Intercept, bc		-0.00041		
Last Calibration Date		14-Jul-1		olopo, illo	$(H \times P_a / 1013.3 \times 298 /$						
Next Calibration Date		14-Jul-1			=		$Q_{std} + b_c$	' a /			
							- siu · · · · ·				
2 11 1				Calibration				Ī			
Calibration		nometer R	_		Q <sub>std</sub> Continuous Flow				IC		
Point		inches of			,		Recorder, W		(1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)		
_	(up)	(down)	(difference)		axis		CFM)		Y-axis		
1	6.0	6.0	12.0		7216		62		61.3658		
2	4.8	4.8	9.6		5399		53		52.4579		
3	3.5	3.5	7.0		3150		46		45.5295		
4	2.2	2.2	4.4		)426		39		38.6011		
5	1.5	1.5	3.0	0.8	3609		29		28.7034		
By Linear Regression of			05.4	044				5404			
O a madatia a O	Slope, m		35.4		inu	ercept, b =	-0	.5484			
Correlation Co		=	0.99								
Calibration	Accepted	=	Yes/f	<b>ν</b> θ							
* if Correlation Coefficier	nt < 0.990,	, check and	d recalibration	n again.							
** Delete as appropriate.											
Remarks :											
Calibrated by		Felix Li	<u> </u>			Checked	d by	:	Pauline Wong		
Date :	3	0-Aug-14				Date		:	30-Aug-14		



				_		-	-	-	
Location :		CMA3a				Calbrati	on Date	:	22-Aug-14
Equipment no.		EL333				Calbrati	on Due Date	:	22-Oct-14
CALIBRATION OF CON	TINUOUS	S FLOW RI	CORDER						
				Ambient Co	ondition				
Temperature, T <sub>a</sub>		303	1	Kelvin	Pressure, P	a		1009	mmHg
			Orifice Tr	ansfer Star	ndard Inforn	nation			
Equipment No.		EL086		Slope, m <sub>c</sub>	1.991		Intercept, bc	Т	-0.00041
Last Calibration Date		14-Jul-1		- 11 7	(Hx				
Next Calibration Date		14-Jul-1			=		$Q_{std} + b_c$	· a/	
				<b>.</b>	<b></b>		· siu · · · ·		
Orliburation		D		Calibration		0	Fl		10
Calibration		nometer R	_		Q std Continuous Flow				IC
Point		inches of			n <sup>3</sup> / min.) Record			(W(P <sub>a</sub> /	1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)
	(up)	(down)	(difference)		axis		CFM)		Y-axis
1	5.6	5.6	11.2		630		62		61.3557
2	4.3	4.3	8.6		573		51 		50.4700
3	3.8	3.8	7.6		699		44		43.5428
4	2.5	2.5	5.0		112		27		26.7194
5 Du Linear Degraceion of	1.4	1.4	2.8	0.8	316		15		14.8441
By Linear Regression of			E7 E	050	Inte	araant h	2.	1 6006	
Correlation Co	Slope, m		57.5		me	ercept, b =	-32	4.6006	
Calibration		=	0.99 Yes/						
Calibration	Accepted	=	1 65/1	<del>10</del>					
* if Correlation Coefficier	nt < 0.990,	, check and	d recalibration	n again.					
** Delete as appropriate.									
Remarks :									
						<u> </u>			
Calibrated by		Felix Li				Checked	а ву	:	Pauline Wong
Date :	2	2-Aug-14				Date		:	22-Aug-14



Location

## **Calibration Data for High Volume Sampler (TSP Sampler)**

Calbration Date

30-Aug-14

Equipment no.		EL390			Calbration Due Date :					
CALIBRATION OF CON	TINUOUS	S FLOW RE	CORDER							
				Ambient C	ondition					
Temperature, T <sub>a</sub>		302		Kelvin	Pressure, P	a		1006	mmHg	
			Orifico Tr	ansfor Sta	ndard Inforr	nation				
Equipment No.		EL086	Office 11	Slope, m <sub>o</sub>	1.991		Intercept, bo	. T	-0.00041	
Last Calibration Date		14-Jul-1	4	ото <b>р</b> о,			013.3 x 298			
Next Calibration Date		14-Jul-1			=		$x Q_{std} + b_c$	' a/		
							X \( \sta \cdot \sigma \cdot \s			
	ı			Calibratio				I		
Calibration	Mar	nometer Ro	eading		Q <sub>std</sub> Continuous				IC	
Point	Н (	inches of v	water)	(m <sup>3</sup> / min.) Recor			ecorder, W	(W(P <sub>a</sub> /1	013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.3	
	(up)	(down)	(difference)	X-	axis	(CFM)			Y-axis	
1	6.4	6.4	12.8	1.7	7781	61			60.3760	
2	5.2	5.2	10.4	1.0	6028	50			49.4885	
3	4.3	4.3	8.6	1.4	4575		41		40.5806	
4	2.8	2.8	5.6	1.1	1762		25		24.7443	
5	1.5	1.5	3.0	0.8	3609		10		9.8977	
By Linear Regression of	Y on X									
	Slope, m	=	55.1	108	Inte	ercept, b	= -38	3.7651		
Correlation Co	oefficient*	=	0.99	983						
Calibration	Accepted	=	Yes/ł	Ne**						
* if Correlation Coefficier	st ~ 0 000	chock and	l rocalibratio	n again						
ii Correlation Coemciei	11 < 0.990	, check and	recalibratio	n agam.						
** Delete as appropriate.										
Remarks :										
Calibrated by		Felix Li				Chec	ked by	:	Pauline Wong	

Date

30-Aug-14

30-Aug-14



				_			_	-	
Location :		CMA5a				Calbrati	on Date	:	22-Aug-14
Equipment no.		EL380				Calbrati	on Due Date	:	22-Oct-14
CALIBRATION OF CON	NTINUOUS	FLOW RI	ECORDER						
				Ambient C	Condition				
Temperature, T <sub>a</sub>		303		Kelvin	Pressure, P	a		1009	mmHg
			Orifico Tr	anctor Sta	ndard Inform	nation			
Equipment No.		EL086		Slope, m <sub>c</sub>			Intercept, bc		-0.00041
Last Calibration Date		14-Jul-1		Slope, III <sub>c</sub>					
Next Calibration Date		14-Jul-1			(		$Q_{std} + b_c$	' a)	
Next Cambration Date		14-501-1	5			III C X	Std + D <sub>C</sub>		
				Calibratio					
Calibration	Mar	nometer R	eading	C	Q <sub>std</sub> Continuous Flow				IC
Point	H (i	inches of	water)	(m <sup>3</sup>	(m <sup>3</sup> / min.) Record		Recorder, W		1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)
	(up)	(down)	(difference)	X-	axis	(0	(CFM)		Y-axis
1	5.8	5.8	11.6	1.	6924		60		59.3765
2	4.7	4.7	9.4	1.	5235	54			53.4389
3	3.6	3.6	7.2	1.3	3334		41		40.5739
4	2.4	2.4	4.8	1.	0888		28		27.7090
5	1.3	1.3	2.6	0.	8014		15		14.8441
By Linear Regression of	Y on X								
	Slope, m	=	51.6	826	Inte	ercept, b =	-27	7.3733	
Correlation C	oefficient*	=	0.99	71					
Calibration	Accepted	=	Yes/	<del>\</del> •**					
* if Correlation Coefficient	mt . 0 000	مم داد معاد	l va a a lib va ti a :						
* if Correlation Coefficier	nt < 0.990,	cneck and	recalibration	n again.					
** Delete as appropriate									
Remarks :									
Calibrated by		Felix Li				Checked	d by	:	Pauline Wong
Date :	2	2-Aug-14				Date		:	22-Aug-14



Location .		MATE				Calbrati	on Date	•	22-Aug-14		
Equipment no.		EL455				Calbrati	on Due Dat	: _	22-Oct-14		
CALIBRATION OF CON	ITINUOUS	S FLOW RE	CORDER								
	ı		A	mbient Co	ndition						
Temperature, T <sub>a</sub>		303		Kelvin	Pressure, P	a		1009	) mmHg		
			Orifice Tra	nsfer Stan	dard Informa	ation					
Equipment No.		EL086		Slope, m <sub>c</sub>	1.991	75	Intercept, b	С	-0.00041		
Last Calibration Date		14-Jul-1	1		a) <sup>1/2</sup>						
Next Calibration Date		14-Jul-1	5		=	$m_c x$	$Q_{std} + b_c$	;			
			C	alibration	of TSP						
Calibration	Mar	nometer Re	eading	C	std	Continue	ous Flow		IC		
Point	Н (	inches of v	water)	(m <sup>3</sup>	<sup>3</sup> / min.) Recorder, W			(m <sup>3</sup> / min.)		(W(P	a/1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31
	(up)	(down)	(difference)	X-	·		(CFM)		Y-axis		
1	6.4	6.4	12.8	1.7	7778	5	59		58.3869		
2	4.0	4.0	8.0	1.4	1055	4	6		45.5220		
3	3.5	3.5	7.0	1.3	3148	4	3		42.5532		
4	2.3	2.3	4.6	1.0	)658	3	3		32.6571		
5	1.6	1.6	3.2	0.8	3890	2	7		26.7194		
By Linear Regression of	Y on X										
	Slope, m	=	35.9	395	Inte	ercept, b =	-	5.215	53		
Correlation C	oefficient*	=	0.99	995							
Calibration	Accepted	=	Yes/l	No**							
* if Correlation Coefficier	nt < 0.990,	, check and	I recalibratio	n again.							
** Delete as appropriate.											
Remarks :											
Calibrated by		Felix Li				Checke	d by	:	Pauline Wong		
	2	2-Aug-14				Date		: -	22-Aug-14		
Date		-						_			



Location

# **Calibration Data for High Volume Sampler (TSP Sampler)**

_ocation :	MA1w			Calbratio			ation Date	:	22-Aug-14
Equipment no.	EL080				Calbration Due Da			ι:	22-Oct-14
								-	
CALIBRATION OF CON	ITINUOUS	S FLOW RI	CORDER						
				mbient Co	ndition				
Temperature, T <sub>a</sub>	303			Kelvin <b>Pressure</b> , <b>P</b> <sub>a</sub>			Т	100	09 mmHg
			Orifice Tra	nsfer Stan	dard Inform	ation			
Equipment No.	EL086			Slope, m <sub>c</sub> 1.99175			Intercept, b	ntercept, bc -0.00041	
Last Calibration Date		14-Jul-1	4	$(HxP_a/1013.3x298/T_a)^{1/2}$					
Next Calibration Date	$= m_c \times Q_{std} + b_c$							-,	
			(	Calibration	of TSP				
Calibration	Mar	nometer R	eading	g Q <sub>std</sub> Contin		nuous Flow		IC	
Point	H (inches of water) (m³ / min.)		Rec	Recorder, W		(P <sub>a</sub> /1013.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)			
	(up)	(down)	(difference)	X-	eaxis (C		CFM)		Y-axis
1	6.5	6.5	13.0	1.	7916	6			53.4389
2	5.3	5.3	10.6	1.0	6178		47		46.5116
3	4.4	4.4	8.8	1.4	1741		42		41.5636
4	2.6	2.6	5.2	1.	332		32		31.6675
5	2.1	2.1	4.2	1.0	1.0185		29		28.6986
By Linear Regression of	Y on X								
Slope, m = 3			31.5	0000	Inte	ercept, b	=	-3.94	<del>1</del> 61
Correlation Coefficient* =			0.99	972					
Calibration Accepted = Ye			Yes/	No**					
if Correlation Coefficier	nt ~ 0 000	check and	1 recalibratio	n again					
ii Correlation Coefficier	11 < 0.990,	, check and	recalibratio	ii ayaiii.					
* Delete as appropriate.									
Remarks :									
: Calibrated by	: Felix Li					Checl	ked by	:	Pauline Wong
Date	: 22-Aug-14					Date		:	22-Aug-14