

TSP HIGH VOLUME AIR SAMPLER CALIBRATION REPORT

Sampler Location				Date	December 9, 2022
Project Site				Start Time	10:30 AM
Sampler Number	TSP No.2	Transfer Standard Type	Orifice	Stop Time	10:45 AM
Motor Serial Number	TSP No.2	Calibrator Model	25A	Person	Mr.Pasagorn Samol
Recorder Serial Number	-	Calibrator Serial Number	307N		

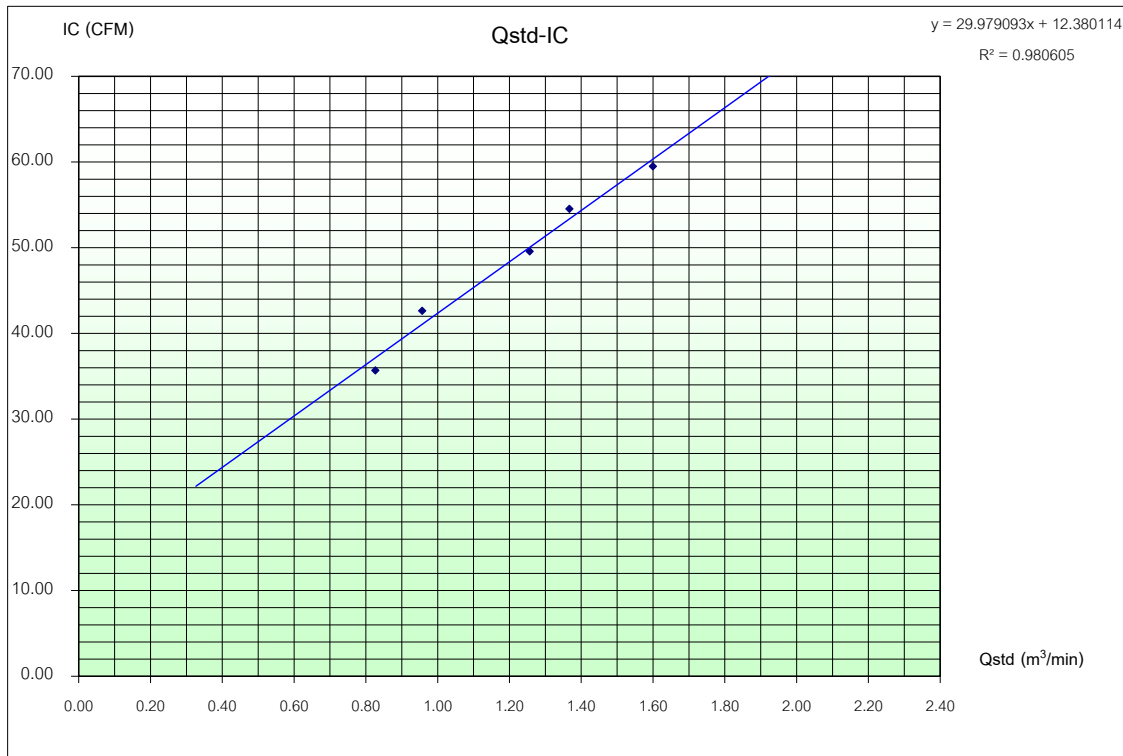
Plate No.	(Delta H)			(A)	(X)	(I)	(Y)	Temperature	Barometric Pressure	Start Meter	Stop Meter
	Positive	Negative	ΔH_{H_2O}	$[\Delta H_{H_2O} (Pa/P_{std}) (T_{std}/T_a)]^{1/2}$	$Q_{std} = (1/m) [(A-b)]$ (m^3/min)	Sample Flow Rate Indicator (ft^3/min)	$IC = I [(Pa/P_{std}) (T_{std}/T_a)]^{1/2}$	($^{\circ}K = ^{\circ}C + 273$)	(mmHg)		
5	1.5	1.4	2.9	1.67421	0.82660	36.0	35.70	303.0	760.0		
7	2.0	1.8	3.8	1.94336	0.95703	43.0	42.64	303.0	760.0		
10	3.4	3.3	6.7	2.56124	1.25646	50.0	49.59	303.0	760.0		
13	4.0	3.9	7.9	2.78917	1.36692	55.0	54.54	303.0	760.0		
18	5.5	5.4	10.9	3.26965	1.59976	60.0	59.50	303.0	760.0		

Linear Regression Y ON X : $Y = mX + b$

1	Slope (m)	2.06353	Linear Equation		Average	303.0	760.0		
2	Intercept (b)	-0.03151	Set Point Flow Rate (X) (m^3/min)	1.133	r^2	0.999555	Pstd(mmHg)	760.0	
3	Correlation Coefficient (r)	0.99993	Final Set Flow Rate = (I)	0	r	0.9997775	T _{NTP}	298.0	
Result							$C = (Pa/P_{std}) (T_{std}/T_a)$	0.96349635	
							$C = (Pa/P_{std}) (T_{std}/T_a)^{0.5}$	0.991714853	

COMMENT

Andersen Instruments, Inc.



Calibrated By

Mr. Pasagorn Samol

PM10 HIGH VOLUME AIR SAMPLER CALIBRATION REPORT

Sampler Location				Date	December 9, 2022
Project Site				Start Time	10:20 AM
Sampler Number	PM10 No.2	Transfer Standard Type	Orifice	Stop Time	10:35 AM
Motor Serial Number	PM10 No.2	Calibrator Model	25A	Person	Mr.Pasagorn Samol
Recorder Serial Number	-	Calibrator Serial Number	307N		

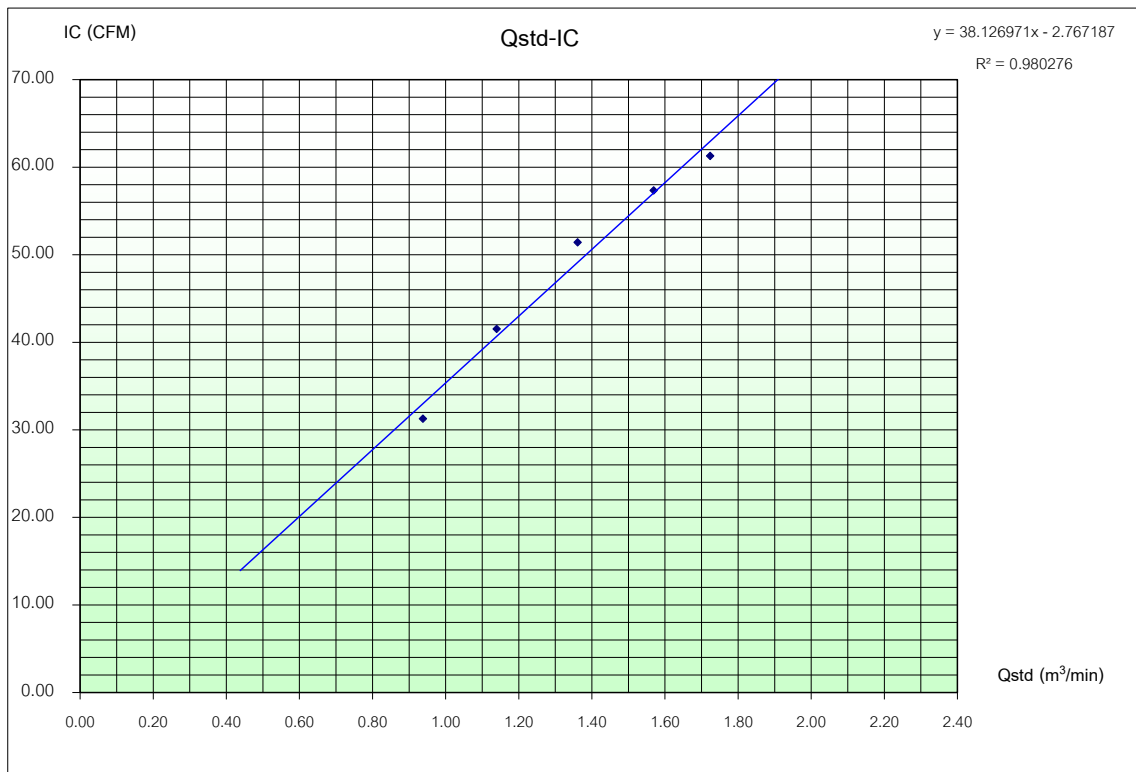
Plate No.	(Delta H)			(A)	(X)	(I)	(Y)	Temperature	Barometric Pressure	Start Meter	Stop Meter
	Pressure Drop Across Orifice (inH ₂ O)			$[\Delta H_2O(Pa/P_{std})(T_{std}/T_a)]^{1/2}$	$Q_{std} = (1/m)[(A-b)]$	Sample Flow Rate Indication	$IC = I[(Pa/P_{std})(T_{std}/T_a)]^{1/2}$	(°K = °C+273)	(mmHg)		
	Positive	Negative	ΔH_2O		(m ³ /min)	(ft ³ /min)					
5	1.9	1.8	3.7	1.90390	0.93791	32.0	31.27	305.0	760.0		
7	2.8	2.7	5.5	2.32025	1.13968	42.0	41.52	305.0	760.0		
10	4.0	3.9	7.9	2.77649	1.36078	52.0	51.40	305.0	760.0		
13	5.3	5.2	10.5	3.20602	1.56893	58.0	57.33	305.0	760.0		
18	6.4	6.3	12.7	3.52535	1.72368	62.0	61.28	305.0	760.0		

Linear Regression Y ON X : Y= mX + b

			Average			
1	Slope (m)	2.0635	Linear Equation		r^2	0.982631
2	Intercept(b)	-0.03151	Set Point Flow Rate (X) (m ³ /min)	1.133	r	0.99127746
3	Correlation Coefficient (r)	0.99993	Final Set Flow Rate = (I)	0	(Pa/Pstd)*(Tstd/Ta)	0.97704918
Result						C=(Pa/Pstd)*(Tstd/Ta)^0.5
						0.988457981

COMMENT

Andersen Instruments, Inc.



Calibrated By


Mr.Pasagorn Samol
Technician



บริษัท เอ็นไวร์ เซอร์วิส จำกัด
ENVIR SERVICE CO., LTD.

บริษัท เอ็นไวร์ เซอร์วิส จำกัด

42 รามอินทรา 14 แยก 9 แขวงท่าแร้ง เขตบางเขน กรุงเทพฯ 10230 โทรศัพท์ 02-9435814-5 โทรสาร 02-9438201

42 Raminthra 14 yeak 9, Tha Rang, Bangkhen, Bankok 10230 Tel : 02-9435814-5 Fax : 02-9438201

Analyzer Performance Test

Calibrated Date: 22 April 2022

Instruments Information

Analyzer Type: CO Analyzer Model: 48C	Manufacturer Thermo Environmental S/N: 0604815182
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Calibration System

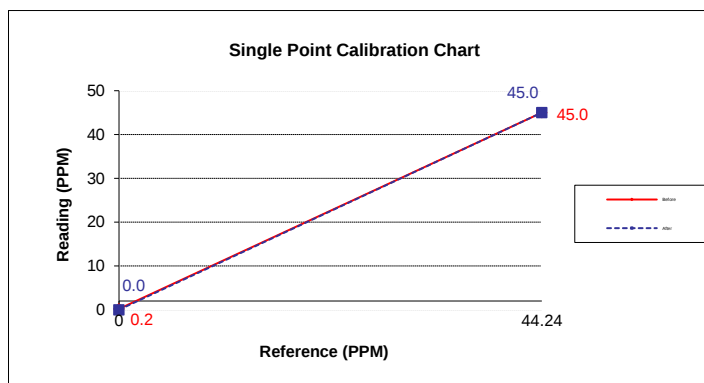
Calibrator Unit	Standard Gas
Dilutor Model Dasibi Model 5008 S/N: 705 ZERO AIR Generator API MODEL 701 S/N: 1924	NO Conc 55.47 PPM SO2 Conc 55.11 PPM CO Conc 4,535 PPM Cylinder number EB0129027 Expire Date: 29 Oct. 2027

Environment: Temperature 25.5 °C

Humidity: 51 %RH

Calibration Report

Status	Zero			Span		
	Reference (PPM)	Reading (PPM)	Drift (PPM)	Reference (PPM)	Reading (PPM)	Drift%
Before	0.0	0.2	0.2	44.2	45.0	1.7
After	0.0	0.0	0.0	45.0	45.0	0.0



Calibrate By :

Mr. PASAGORN SAMOL

Certificate No. EN-260120-04

Calibration & Test Certificate

FOR

Equipment Name : Sound Level Meter
Manufacturer : ACO
Model : 6236
Serial Number : 75929
Location of Calibration : In Lab
Received Date : Jan 12, 2026
Calibration Date : Jan 20, 2026
Recommended Due Date : N/A
Customer Name : GREEN ENVI ENGINEERING CO., LTD.
153/393 Moo 1, Wat Pho-Bang Yai Road, Makham Tia,
Mueang Surat Thani, Surat Thani 84000

CONDITION AS RECIVED : Normal

Environmental Conditions

Ambient Temperature : $(25 \pm 2) ^\circ\text{C}$ Relative Humidity : $(50 \pm 15) \% \text{RH}$
Result : No Adjustment (See data attached in page 2 to the end of certificate)

1. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $K = 2$ providing a level of confidence of approximately 95%
2. The Unit Under Calibration (UUC) has been calibrated by using the working standard which is traceable to SI-Unit. The calibration procedure documented is intended to implement the requirements of ISO/IEC 17025 : 2005 (TAF)
3. The working standard is indicated in page 2 of this certificate.
4. The report applies to the item and shall not be reproduced except in full, without written approval by Calibration Laboratory, Envir Service Co., Ltd.

Date of Calibration : Jan. 20, 2026

Valid to : Jan. 19, 2027

Calibrated By : 
Kittisak Jansangwattana
(Technician)


บริษัท เอ็นไวร์ เซอร์วิส จำกัด
ENVIR SERVICE CO., LTD.

Approved By : 
Pasagorn Samol
(Technician Manager)

Certificate No. EN-260120-04

We hereby certify that the instrument under mentioned has been certainly calibrated according to our calibration standard and the testing result in the calibration procedure has been good enough within the tolerance regulated in our specification.

Reference Standard

Equipment Name	Model	Serial Number	Due Date
Standard SOUND LEVEL METER	B&K 2239	2449143	OCT/22/2026

The Standard generators used for calibration procedure are proofed once a year and cab be traceable to the standard authorized by public organization.

Result of Calibration

Calibration Range : 94 dB, 114 dB

Function : @ 1KHz

Select A Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty (±)
94.01	93.9	0.11	0.88
114.04	113.8	0.24	0.88

Select A Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty (±)
94.01	93.9	0.11	0.88
114.04	113.8	0.24	0.88

Select C Fast response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty (±)
94.01	94.0	0.01	0.88
114.04	113.8	0.24	0.88

Select C Slow response

STD Setting	UUC Reading (dB)	Correction (dB)	Uncertainty (±)
94.01	94.0	0.01	0.88
114.04	113.8	0.24	0.88

STD = Standard

UUC = Unit Under Calibration

Calibration Certificate

Part Number: 721A2601

Description: Micromate with DIN Geophone

Serial Number: UM16257

Calibration Date: NOV 30 2021

Calibration Reference Equipment: 714J7402

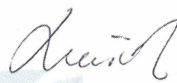
Instantel certifies that the above product was calibrated in accordance with the applicable Instantel procedures. These procedures are part of a quality system that is designed to assure that the product listed above meets or exceeds Instantel specifications.

Instantel further certifies that the measurement instruments used during the calibration of this product are traceable to the National Institute of Standards and Technology; or National Research Council of Canada. Evidence of traceability is on file at Instantel and is available upon request.

The environment in which this product was calibrated is maintained within the operating specifications of the instrument.

Please note that the sensor check function is intended to check that the sensors are connected to the unit, installed in the proper orientation and sufficiently level to operate properly. This function should not be confused with a formal calibration, which requires the sensors be checked against a reference that is traceable to a known standard. Instantel recommends that products be returned to Instantel or an authorized service and calibration facility for annual calibration.

Calibrated By: _____



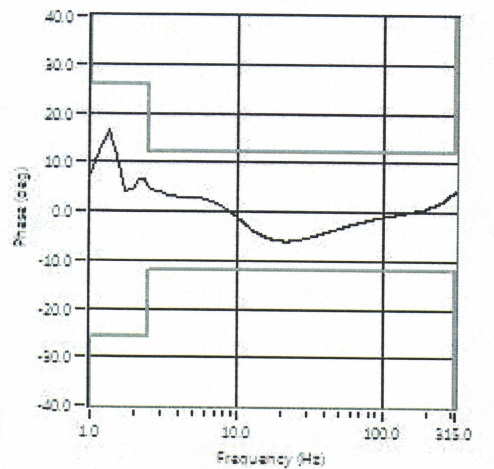
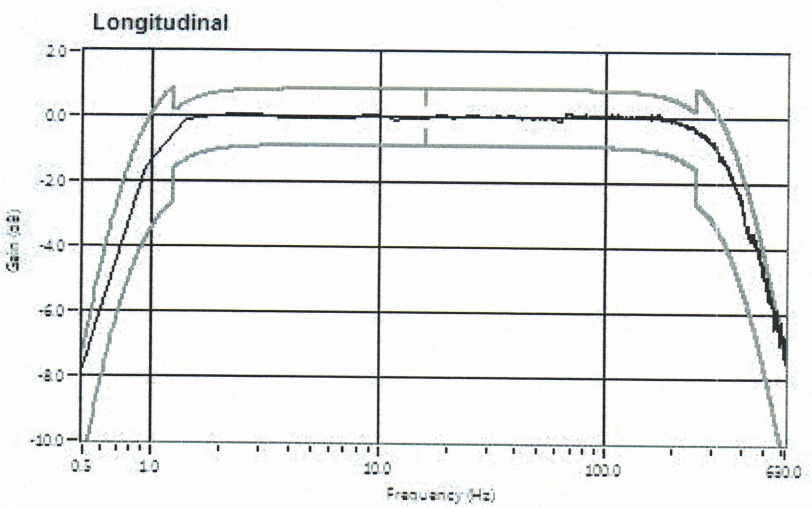
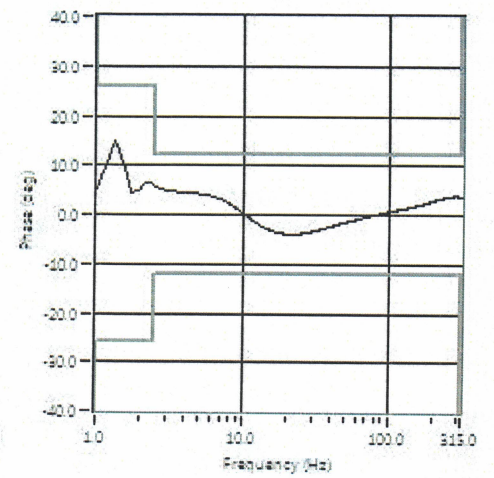
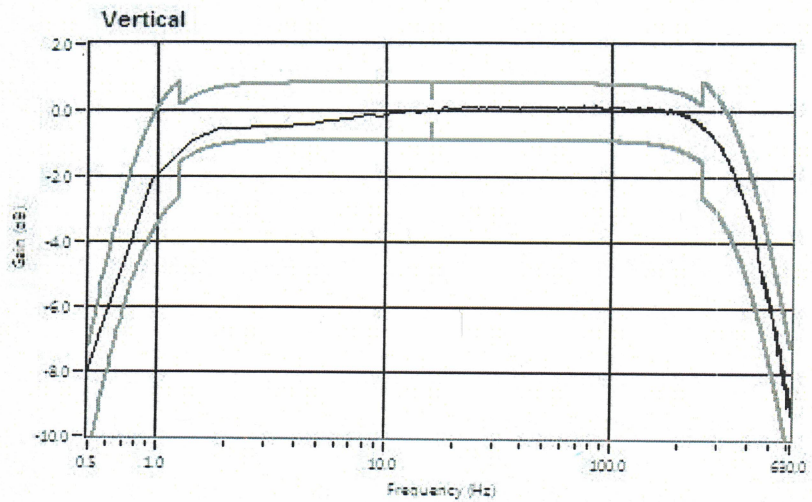
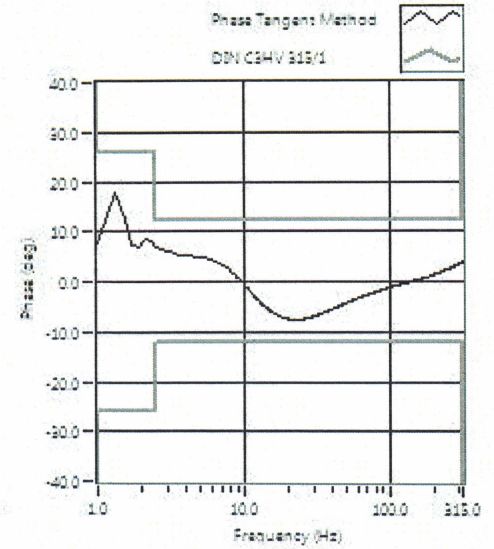
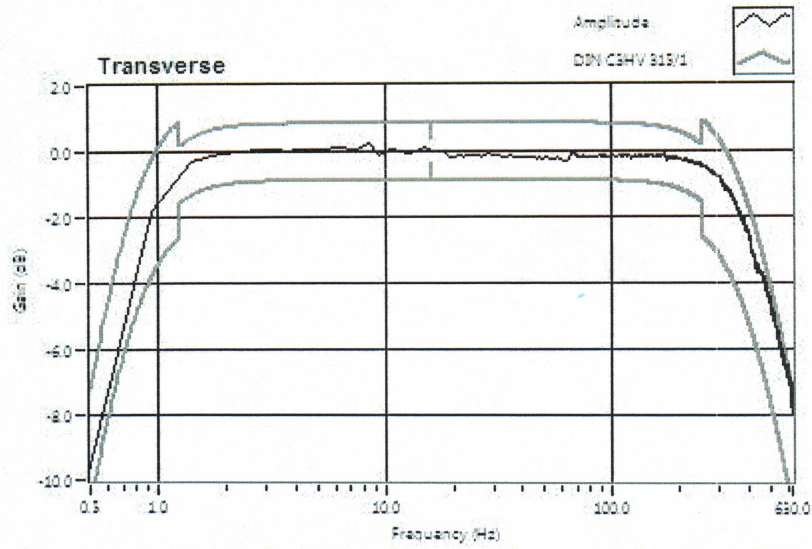
Xiaoming Yang

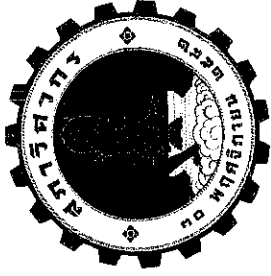


Instantel®

309 Legget Drive, Ottawa, Ontario, K2K 3A3, (613) 592-4642

Frequency Response of UM16257





สภากวีศวก

ตามพระราชบัญญัติศวก พ.ศ. ๒๕๕๒
ออกโดยนุญัตินี้ไว้เพื่อแสดงว่า

บริษัท กรีน เอ็นไว เอ็นจิเนียริง จำกัด

ได้รับอนุญาตประกอบวิชาชีพวิศวกรรมควบคุม

เลขทะเบียน ๑๕๖๕/๖๒

ตั้งแต่วันที่ ๑๖ สิงหาคม ๒๕๖๗ ถึงวันที่ ๑๕ สิงหาคม ๒๕๗๐

ศาสตราจารย์ ดร. นพ.

(นายชเนต วิระศิริ)

นายกสภากวีศวก