



SUB-CONTRACTING REPORT

CONTACT	: MR MAGNUM FAN	WORK ORDER	: HK2523080
CLIENT	: ENVIROTECH SERVICES CO.		
ADDRESS	: RM 712, 7/F, MY LOFT 9 HOI WING ROAD, TUEN MUN, N.T. HK	SUB-BATCH	: 1
		DATE RECEIVED	: 3-JUN-2025
		DATE OF ISSUE	: 9-JUN-2025
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
- Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.
- Calibration was subcontracted to Envirotech Services Company.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories

Position

Richard Fung

Managing Director

This report supersedes any previous report(s) with the same work order number.

All pages of this report have been checked and approved for release.

ALS Technichem (HK) Pty Ltd
Part of the **ALS Laboratory Group**

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Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com

WORK ORDER : HK2523080
SUB-BATCH : 1
CLIENT : ENVIROTECH SERVICES CO.
PROJECT : ----



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2523080-001	Sibata LD-3B (476664)	Equipments	03-Jun-2025	S/N:476664

----- END OF REPORT -----



Envirotech Services Co.

Rm. 712, 7/F
My Loft,
9 Hoi Wing Road,
Tuen Mun, H.K.
Tel : 2560 8450
Fax : 2560 6553
E-mail: envirotech@netvigator.com

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust Monitor
Manufacturer: Sibata LD-3B
Serial No.: 476664
Equipment Ref.: N/A
ALS Job Order: HK2521123

Standard Equipment

Standard Equipment: High Volume Sampler (TSP)
Location: Envirotech Room (Calibration Room)
Equipment Ref.: HVS 8162
Last Calibration Date: 24-May-2025

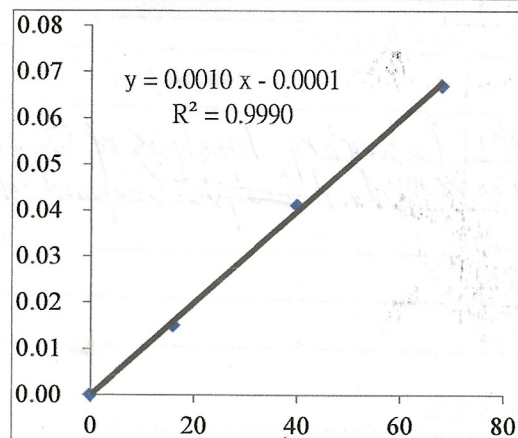
Equipment Verification Results:

Verification Date: 24-May-2025

Hour	Time	Mean Temp °C	Mean Pressure (hpa)	TSP Level in mg (Standard Equipment) (Y-Axis)	Total Count (Calibrated Equipment) (X-Axis)
1hr 00mins	0910-1010	23.8	1013.2	0.015	16
2hr 00mins	1015-1215	24.0	1013.4	0.041	40
3hr 00mins	1315-1615	24.4	1013.5	0.067	68

Linear Regression of Y or X

Slope (K-factor): 0.0010(mg)/Count
Correlation Coefficient (R): 0.9995
Date of Issue: 2-Jun-2025



Remarks:

1. Strong Correlation (>0.8)
2. Factor 0.0010(mg)/Count should be applied for TSP monitoring

*If $R < 0.5$, repair or verification is required for the equipment

Operator: P.F.Yeung Signature Fai Date: 02 June 2025

QC Reviewer: K.F.Ho Signature at Date: 02 June 2025

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Rm. 712, My Loft, Tuen Mun

Date of Calibration: 24-May-25

HVS ID: 8162

Next Calibration Date: 24-Jul-25

Name and Model : TISCH HVS Model TE-5170

Operator: K.F.Ho

CONDITIONS

Sea Level Pressure (hpa)

1013.2

Corrected Pressure (mm Hg)

759.9

Temperature (°C)

23.8

Temperature (K)

296.8

CALIBRATION ORIFICE

Make:

TISCH

Qstd Slope

2.08315

Model:

TE-5025A

Qstd Intercept

-0.04938

Serial#:

2454

CALIBRATION

Plate No.	H2O(L) (in)	H2O(R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION
18	6.4	6.4	12.8	1.745	58	58.13	Slope= 33.91 Intercept= -0.9035 Corr. Coeff.= 0.9999
13	5.1	5.1	10.2	1.560	52	52.12	
10	4.0	4.0	8.0	1.385	46	46.10	
7	2.4	2.5	4.9	1.089	36	36.08	
5	1.5	1.5	3.0	0.857	28	28.06	

Calculations:

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pa = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

$$1/m((I)[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

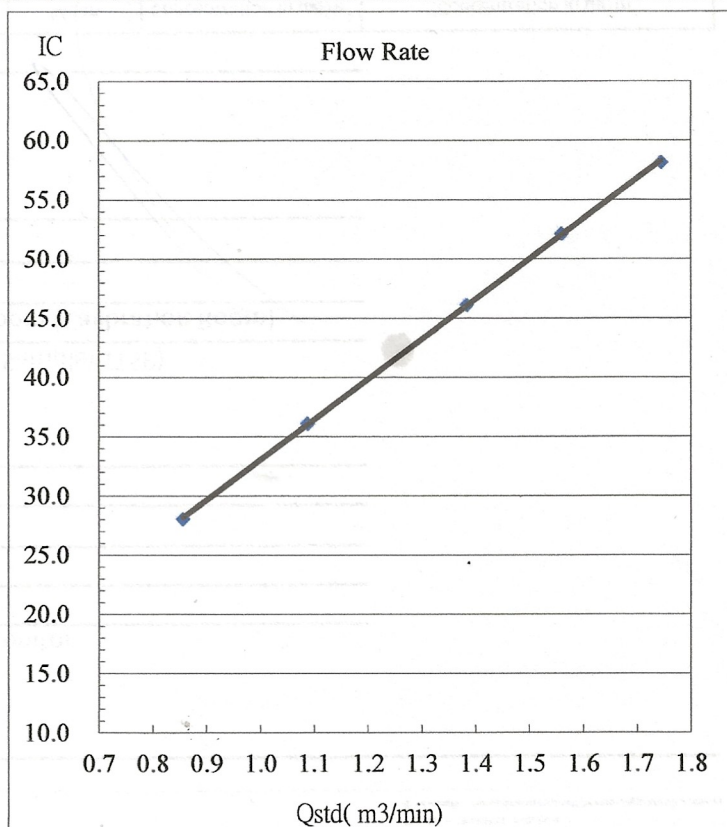
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure



Certificate of Calibration

Calibration Certification Information

Cal. Date: December 2, 2024

Rootsmeter S/N: 438320

Ta: 293 °K

Operator: Jim Tisch

Pa: 757.4 mm Hg

Calibration Model #: TE-5025A

Calibrator S/N: 2454

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4200	3.2	2.00
2	3	4	1	1.0170	6.4	4.00
3	5	6	1	0.9090	7.9	5.00
4	7	8	1	0.8700	8.8	5.50
5	9	10	1	0.7140	12.8	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)
1.0093	0.7108	1.4238	0.9958	0.7013	0.8796
1.0051	0.9883	2.0136	0.9916	0.9750	1.2439
1.0031	1.1035	2.2512	0.9896	1.0886	1.3907
1.0018	1.1515	2.3611	0.9884	1.1361	1.4586
0.9965	1.3956	2.8476	0.9831	1.3769	1.7592
QSTD	m=	2.08315	QA	m=	1.30443
	b=	-0.04938		b=	-0.03050
	r=	0.99985		r=	0.99985

Calculations

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

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



SUB-CONTRACTING REPORT

CONTACT	: MR MAGNUM FAN	WORK ORDER	: HK2517351
CLIENT	: ENVIROTECH SERVICES CO.		
ADDRESS	: RM 712, 7/F, MY LOFT 9 HOI WING ROAD, TUEN MUN, N.T. HK	SUB-BATCH	: 1
		DATE RECEIVED	: 4-MAY-2025
		DATE OF ISSUE	: 12-MAY-2025
PROJECT	: ----	NO. OF SAMPLES	: 1
		CLIENT ORDER	: ----

General Comments

- Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.
- Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.
- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition.
- Calibration was subcontracted to Envirotech Services Company.

Signatories

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WORK ORDER : HK2517351
SUB-BATCH : 1
CLIENT : ENVIROTECH SERVICES CO.
PROJECT : ----



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2517351-001	Sibata LD-5R (841724)	Equipments	26-Apr-2025	S/N: 841724

----- END OF REPORT -----

**Equipment Verification Report (TSP)****Equipment Calibrated:**

Type: Laser Dust Monitor
Manufacturer: Sibata LD-3B
Serial No.: 841724
Equipment Ref.: N/A
ALS Job Order: HK2516538

Standard Equipment

Standard Equipment: High Volume Sampler (TSP)
Location : Envirotech Room (Calibration Room)
Equipment Ref.: HVS 8162
Last Calibration Date: 17-Mar-2025

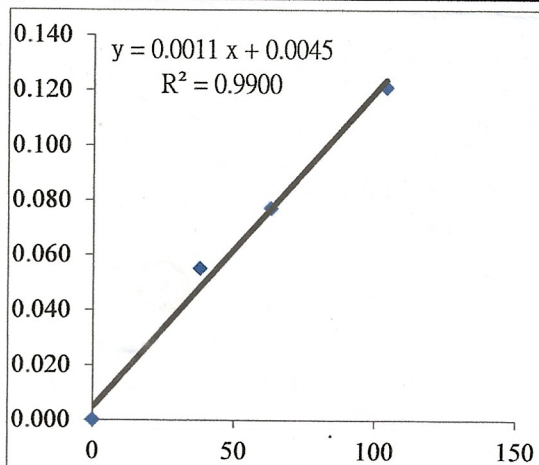
Equipment Verification Results:

Verification Date: 26-Apr-2025

Hour	Time	Mean Temp °C	Mean Pressure (hpa)	TSP Level in mg (Standard Equipment) (Y-Axis)	Total Count (Calibrated Equipment) (X-Axis)
1hr 00mins	0845-0945	23.8	1013.2	0.055	38
2hr 00mins	0950-1150	24.9	1013.4	0.077	63
3hr 00mins	1315-1615	28.2	1013.5	0.121	104

Linear Regression of Y or X

Slope (K-factor): 0.0011(mg)/Count
Correlation Coefficient (R): 0.9900
Date of Issue: 3-May-2025

**Remarks:**

1. Strong Correlation (>0.8)
2. Factor 0.0011(mg)/Count should be applied for TSP monitoring

*If $R < 0.5$, repair or verification is required for the equipment

Operator: P.F.Yeung Signature Pai Date: 03 May 2025

QC Reviewer: K.F.Ho Signature at Date: 03 May 2025

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Rm. 712, My Loft, Tuen Mun	Date of Calibration: 17-Mar-25
HVS ID: 8162	Next Calibration Date: 16-May-25
Name and Model : TISCH HVS Model TE-5170	Operator: K.F.Ho

CONDITIONS

Sea Level Pressure (hpa)	1022	Corrected Pressure (mm Hg)	766.6
Temperature (°C)	18.0	Temperature (K)	291

CALIBRATION ORIFICE

Make:	TISCH	Qstd Slope	2.08315
Model:	TE-5025A	Qstd Intercept	-0.04938
Serial#:	2454		

CALIBRATION

Plate No.	H2O(L) (in)	H2O(R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION
18	6.8	6.9	13.7	1.830	62	63.03	Slope= 39.645 Intercept= -8.4950 Corr. Coeff.= 0.9912
13	5.2	5.3	10.5	1.605	56	56.93	
10	4.8	4.8	9.6	1.536	50	50.83	
7	2.8	2.8	5.6	1.179	40	40.66	
5	1.6	1.6	3.2	0.897	25	25.41	

Calculations:

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

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$$1/m(I[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

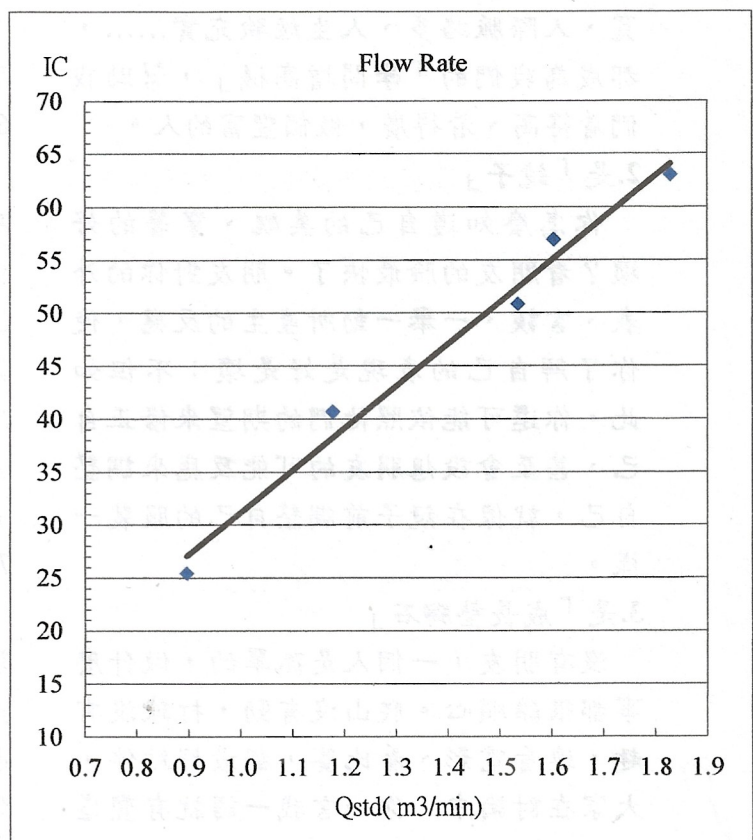
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RECALIBRATION

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