TISCH Environmental

RECALIBRATION DUE DATE:
December 2, 2025

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:** **3465**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4300	3.2	2.00
2	3	4	1	1.0190	6.4	4.00
3	5	6	1	0.9090	7.9	5.00
4	7	8	1	0.8680	8.8	5.50
5	9	10	1	0.7170	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)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0093	0.7058	1.4238	0.9958	0.6963	0.8796
1.0051	0.9863	2.0136	0.9916	0.9731	1.2439
1.0031	1.1035	2.2512	0.9896	1.0886	1.3907
1.0018	1.1542	2.3611	0.9884	1.1387	1.4586
0.9965	1.3898	2.8476	0.9831	1.3711	1.7592
QSTD	**m=**	**2.08107**	**QA**	**m=**	**1.30313**
	b=	**-0.04295**		**b=**	**-0.02653**
	r=	**0.99999**		**r=**	**0.99999**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

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

Tisch Environmental, Inc.
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TOLL FREE: (877)263-7610
FAX: (513)467-9009

HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

Site Information

Location:	**Representative For Heung YuenWai**	**Site ID:**	**AM2**	**Date:**	**10-Feb-2025**
Serial No:	**1106**	**Model:**	**TE-5170X**	**Operator:**	**Andy Li**

Ambient Condition

Actual Pressure during Calibration (P_a) (mm Hg):	766.3	**Actual Temperature during Calibration (T_a) (deg K):**	289.4

Calibration Orifice

Model:	TE-5025A	**Slope (m_c):**	2.08107
Serial No.:	3465	**Intercept (b_c):**	-0.04295
Calibration Due Date:	2-Dec-25	**Corr. Coeff:**	0.99999

Calibration Data

Plate or Test #	ΔH_2O (in)	Qa, X-Axis (m^3/min)	I, CFM (chart)	IC, Y-Axis (corrected)
18	12.00	1.717	53.0	54.00
13	10.20	1.584	50.0	50.95
10	8.20	1.423	44.0	44.83
7	5.60	1.179	36.0	36.68
5	3.00	0.869	30.0	30.57

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

m= 28.7309 b= 4.4948 Corr. Coeff= 0.9930

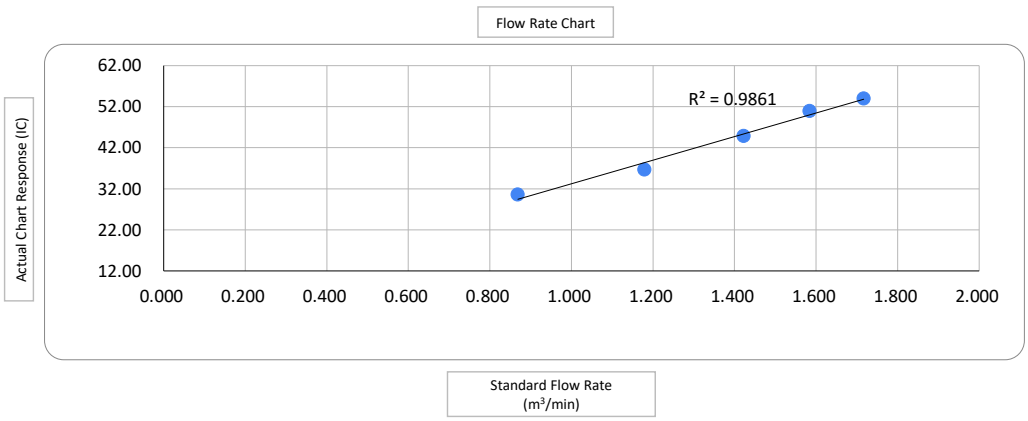
Calculations

$Qa = 1/m_c * [Sqrt (\Delta H_2O * (P_a/P_{Std}) * (T_{Std}/T_a)) - b_c]$

$IC = I * (Sqrt (P_a/P_{Std}) * (T_{Std}/T_a))$

Qa = actual flow rate
IC = corrected chart response
I = actual chart response
m_c = calibrator slope
b_c = calibrator intercept

m = sampler slope
b = sampler intercept
T_{Std} = 298 deg K
P_{Std} = 760 mm Hg
T_a = actual temperature during calibration (deg K)
P_a = actual pressure during calibration (mm Hg)



Checked by: F.C Tsang
Monitoring Team Leader

Date: 11-Feb-2025

Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information of Calibrated Equipment

Verification Test Date:	**23-Feb-25**	to	**2-Mar-25**	Next Verification Test Date:	**23-Feb-26**
Unit-under-Test- Model No.:	Sibata LD-5R				
Unit-under-Test Serial No.:	851816				
Our Report Reference No.:	RPT-25-HVS-0103				
Calibration Location:	AM2, location near the Leachate Treatment Works within the NENTX Landfill				

Standard Equipment Information

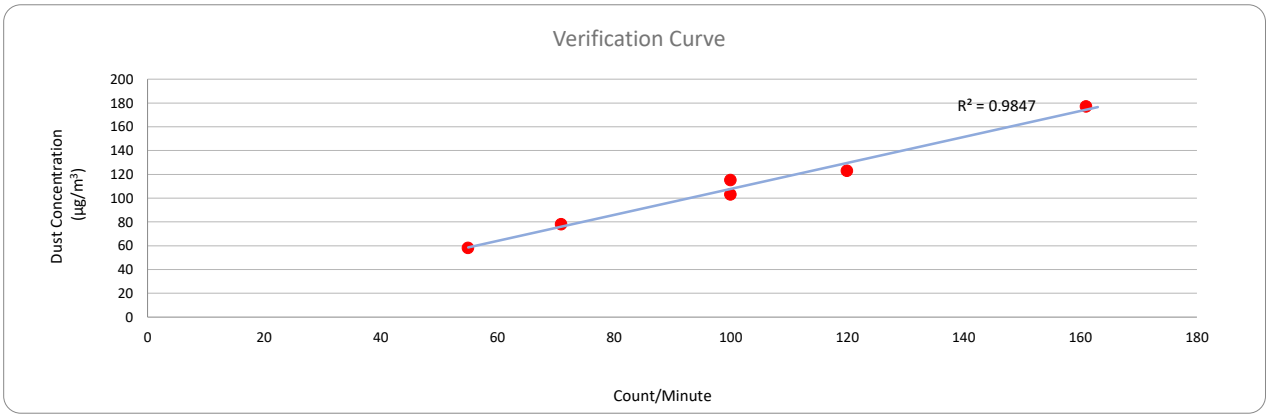
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	3465
Last Calibration Date:	10-Feb-25	2-Dec-24
Next Calibration Date:	9-Apr-25	2-Dec-25

Equipment Verification Result

Verification Test No.	Date	Duration			Results from Calibrated Equipment		Results from Standard Equipment
		Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (µg/m^3) y-axis
1	23/02/2025	5385.00	5388.00	180.00	12780	71	78
2	23/02/2025	5388.00	5391.00	180.00	28980	161	177
3	23/02/2025	5394.00	5397.00	180.00	18000	100	115
4	2/03/2025	5397.00	5400.00	180.00	9900	55	58
5	2/03/2025	5400.00	5403.00	180.00	18000	100	103
6	2/03/2025	5403.00	5406.00	180.00	21600	120	123

Linear Regression of y on x

Slope, K factor:	**1.0922**	Intercept:	**-1.4901**	*Correlation Coefficient, R:	**0.9923**
Verification Test Result:	Strong Correlation, Results were accepted.			* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.	



Operated By: Andy Li — Date: 04-03-2025
Project Technician, Environmental

Checked By: Vega Wong — Date: 04-03-2025
Senior Consultant, Environmental

Aerocet 831 K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information of Calibrated Equipment

Verification Test Date:	**23-Feb-25**	to	**2-Mar-25**	Next Verification Test Date:	**23-Feb-26**
Unit-under-Test- Model No.:	Sibrata				
Unit-under-Test Serial No.:	851820				
Our Report Reference No.:	RPT-25-HVS-0156				
Calibration Location:	AM2, location near the Leachate Treatment Works within the NENTX Landfill				

Standard Equipment Information

Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	3465
Last Calibration Date:	10-Feb-25	2-Dec-24
Next Calibration Date:	9-Apr-25	2-Dec-25

Equipment Verification Result

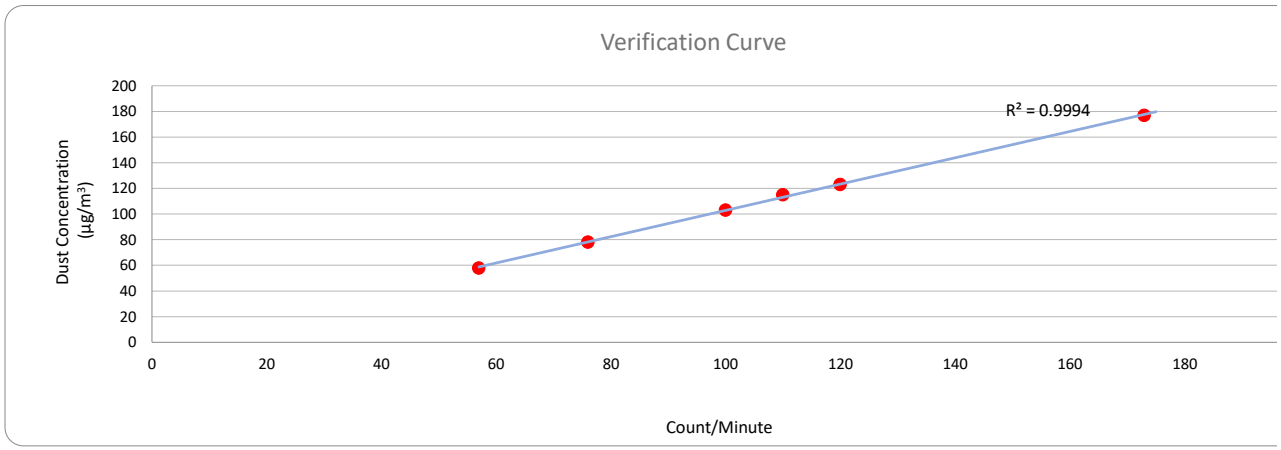
Verification Test No.	Date	Duration			Results from Calibrated Equipment		Results from Standard Equipment
		Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (µg/m^3) y-axis
1	23/2/2025	5385.00	5388.00	180.00	13680	76	78
2	23/2/2025	5388.00	5391.00	180.00	31140	173	177
3	23/2/2025	5394.00	5397.00	180.00	19800	110	115
4	2/3/2025	5397.00	5400.00	180.00	10260	57	58
5	2/3/2025	5400.00	5403.00	180.00	18000	100	103
6	2/3/2025	5403.00	5406.00	180.00	21600	120	123

Linear Regression of y on x

Slope, K factor: **1.0253** Intercept: **0.3230** *Correlation Coefficient,R: **0.9997**

Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Operated By: Andy Li — Date: 04-03-2025
Project Technician, Environmental

Checked By: Vega Wong — Date: 04-03-2025
Senior Consultant, Environmental

Aerocet 831 K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information of Calibrated Equipment

Verification Test Date:	**23-Feb-25**	to	**2-Mar-25**	Next Verification Test Date:	**23-Feb-26**
Unit-under-Test- Model No.:	Sibrata				
Unit-under-Test Serial No.:	992821				
Our Report Reference No.:	RPT-25-HVS-0155				
Calibration Location:	AM2, location near the Leachate Treatment Works within the NENTX Landfill				

Standard Equipment Information

Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	3465
Last Calibration Date:	10-Feb-25	2-Dec-24
Next Calibration Date:	9-Apr-25	2-Dec-25

Equipment Verification Result

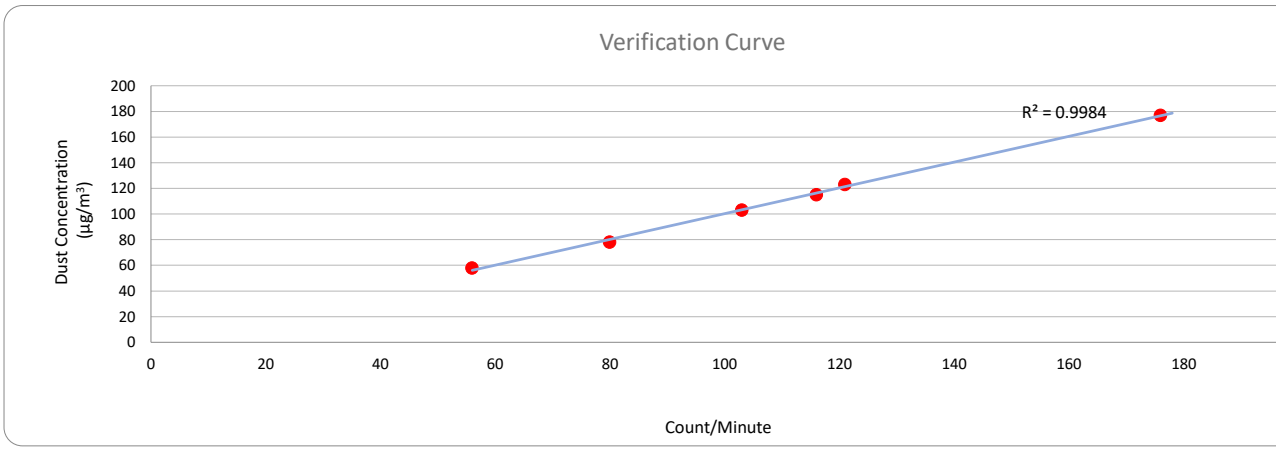
Verification Test No.	Date	Duration			Results from Calibrated Equipment		Results from Standard Equipment
		Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (µg/m^3) y-axis
1	23/2/2025	5385.00	5388.00	180.00	14400	80	78
2	23/2/2025	5388.00	5391.00	180.00	31680	176	177
3	23/2/2025	5394.00	5397.00	180.00	20880	116	115
4	2/3/2025	5397.00	5400.00	180.00	10080	56	58
5	2/3/2025	5400.00	5403.00	180.00	18540	103	103
6	2/3/2025	5403.00	5406.00	180.00	21780	121	123

Linear Regression of y on x

Slope, K factor: **1.0044** Intercept: **-0.1429** *Correlation Coefficient,R: **0.9992**

Verification Test Result: Strong Correlation, Results were accepted.

* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Operated By: Andy Li — Date: 04-03-2025
Project Technician, Environmental

Checked By: Vega Wong — Date: 04-03-2025
Senior Consultant, Environmental

Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information of Calibrated Equipment

Verification Test Date:	**23-Feb-25**	to	**2-Mar-25**	Next Verification Test Date:	**23-Feb-26**
Unit-under-Test- Model No.:	Sibata LD-5R				
Unit-under-Test Serial No.:	0Z4545				
Our Report Reference No.:	RPT-25-HVS-0115				
Calibration Location:	AM2, location near the Leachate Treatment Works within the NENTX Landfill				

Standard Equipment Information

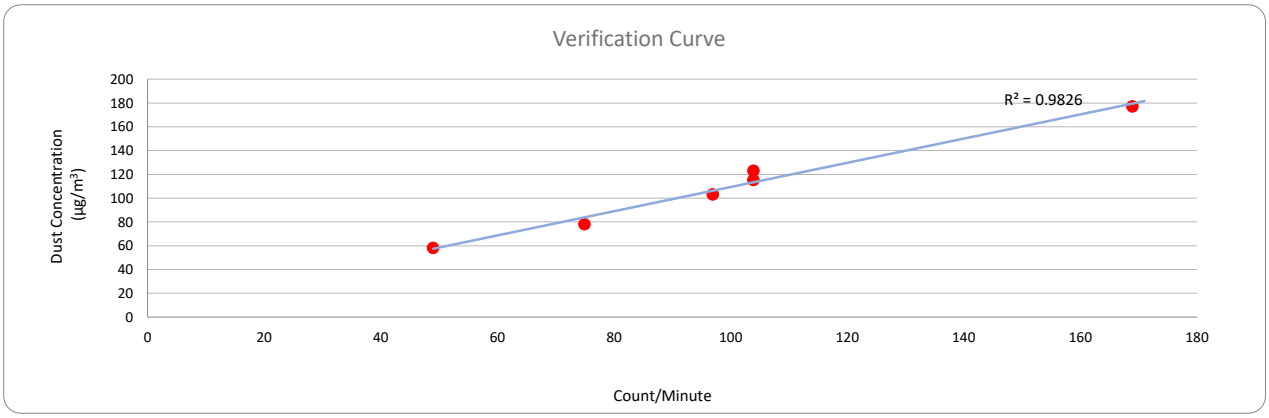
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5025A
Equipment serial no.:	1106	3465
Last Calibration Date:	10-Feb-25	2-Dec-24
Next Calibration Date:	9-Apr-25	2-Dec-25

Equipment Verification Result

Verification Test No.	Date	Duration			Results from Calibrated Equipment		Results from Standard Equipment
		Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (µg/m^3) y-axis
1	23/02/2025	5385.00	5388.00	180.00	13500	75	78
2	23/02/2025	5388.00	5391.00	180.00	30420	169	177
3	23/02/2025	5394.00	5397.00	180.00	18720	104	115
4	2/03/2025	5397.00	5400.00	180.00	8820	49	58
5	2/03/2025	5400.00	5403.00	180.00	17460	97	103
6	2/03/2025	5403.00	5406.00	180.00	18720	104	123

Linear Regression of y on x

Slope, K factor:	**1.0173**	Intercept:	**7.6117**	*Correlation Coefficient, R:	**0.9913**
Verification Test Result:	Strong Correlation, Results were accepted.			* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.	



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