REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Information supplied by customer:

CONTACT: SAM LAM **WORK ORDER: HK1510147**
CLIENT: LAM GEOTECHNICS LIMITED
DATE RECEIVED: 2015-05-22
DATE OF ISSUE: 2015-06-01
ADDRESS: 11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD, WANCHAI, HONG KONG
PROJECT: ---

METHOD OF PERFORMANCE CHECK/ CALIBRATION:
Ref: APHA22nd ed 2130B

COMMENTS
It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203010
Equipment No.:	---
Date of Calibration:	22-May-15

Remarks:
This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Peter Lee
Director

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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

WORK ORDER: HK1510147
DATE OF ISSUE: 2015-06-01
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203010
Equipment No.:	---
Date of Calibration:	22-May-15
Date of next Calibation:	22-Aug-15

Parameters:
Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)
0	0.00	---
4	3.86	-3.5
10	10.1	1.0
40	40.0	0.0
100	101	1.0
400	399	-0.3
1000	1000	0.0
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Information supplied by customer:

CONTACT: SAM LAM **WORK ORDER: HK1510319**
CLIENT: LAM GEOTECHNICS LIMITED
DATE RECEIVED: 21/8/2015
DATE OF ISSUE: 26/8/2015
ADDRESS: 11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD, WANCHAI, HONG KONG
PROJECT: ---

METHOD OF PERFORMANCE CHECK/ CALIBRATION:
Ref: APHA22nd ed 2130B

COMMENTS
It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203010
Equipment No.:	---
Date of Calibration:	21-Aug-15

Remarks:
This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Peter Lee
Director

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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

WORK ORDER: HK1510319
DATE OF ISSUE: 26/8/2015
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203010
Equipment No.:	---
Date of Calibration:	21-Aug-15
Date of next Calibation:	21-Nov-15

Parameters:
Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)
0	0.00	---
4	4.16	4.0
10	9.63	-3.7
40	41.5	3.8
100	96	-4.0
400	406	1.5
1000	998	-0.2
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Information supplied by customer:

CONTACT:	**SAM LAM**	**WORK ORDER:**	**HK1510256**
CLIENT:	**LAM GEOTECHNICS LIMITED**		
DATE RECEIVED:	**08/07/2015**		
DATE OF ISSUE:	**15/07/2015**		
ADDRESS:	**11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD, WANCHAI, HONG KONG**		
PROJECT:	---		

METHOD OF PERFORMANCE CHECK/ CALIBRATION:
Ref: APHA22nd ed 2130B

COMMENTS
It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203015
Equipment No.:	---
Date of Calibration:	08/07/2015

Remarks:
This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Peter Lee
Director

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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

WORK ORDER: HK1510256
DATE OF ISSUE: 15/07/2015
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1203015
Equipment No.:	---
Date of Calibration:	08/07/2015
Date of next Calibation:	08/10/2015

Parameters:
Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)
0	0.00	---
4	3.92	-2.0
10	10.3	3.0
40	38.5	-3.8
100	95.4	-4.6
400	387	-3.3
1000	996	-0.4
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Information supplied by customer:

CONTACT:	**SAM LAM**	**WORK ORDER:**	**HK1510257**
CLIENT:	**LAM GEOTECHNICS LIMITED**		
DATE RECEIVED:	**08/07/2015**		
DATE OF ISSUE:	**15/07/2015**		
ADDRESS:	**11/F, CENTRE POINT, 181-185, GLOUCESTER ROAD, WANCHAI, HONG KONG**		
PROJECT:	**---**		

METHOD OF PERFORMANCE CHECK/ CALIBRATION:
Ref: APHA22nd ed 2130B

COMMENTS
It is certified that the item under performance check/calibration has been calibrated/checked by corresponding calibrated equipment in the laboratory.
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1309192
Equipment No.:	---
Date of Calibration:	08/07/2015

Remarks:
This is the Final Report. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Peter Lee
Director

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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

WORK ORDER: HK1510257
DATE OF ISSUE: 15/07/2015
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type:	Turbidimeter
Brand Name:	Xin Rui
Model No.:	WGZ-3B
Serial No.:	1309192
Equipment No.:	---
Date of Calibration:	08/07/2015
Date of next Calibation:	08/10/2015

Parameters:
Turbidity

Method Ref: APHA 22nd ed. 2130B

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)
0	0.00	---
4	4.11	2.8
10	9.79	-2.1
40	42.4	6.0
100	103	3.0
400	387	-3.3
1000	982	-1.8
	Tolerance Limit (±%)	10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.

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Phone +852 2527 6691 | Email info@pilot-testing.com

EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT

Report No.	:	HK1510258
Project Name	:	EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT
Date of Issue	:	20/07/2015
Customer	:	LAM GEOTECHNICS LIMITED
Address	:	11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG
Calibration Job No.	:	HK1510258
Test Item No.	:	HK1510258-01
Test Item Details		
Test Item Description	:	Multifunctional Meter
Manufacturer	:	YSI
Model No.	:	Professional Plus
Serial No.	:	14E100105
Performance Method	:	Checked according to in-house method CAL005 (References: Temperature (Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure), pH value (APHA 21e 4500H:B), Salinity (Refer to Conductivity APHA 19e 2510B) , Dissolved oxygen (APHA 19e 4500-O,C))
Test Item Receipt Date	:	14-Jul-15
Test Item Calibration Date	:	15-Jul-15
Test Period	:	14/07/2015 - 20/07/2015

Notes :
1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.
2. Results relate to item(s) as received.
3. ± indicates the tolerance limit
4. N/A = Not applicable
5. APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF. USA
6. DO, pH, salinity and temperature performance check was conducted by Pilot Testing Limited.
7. Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

Approved Signatory : 

Mr. Peter Lee
(Director)

Issue Date: 20/07/2015

Pilot Testing Limited
Address: Room B12, Block B, 5/F, Tonic Industrial Centre, 19 Lam Hing Street, Kowloon Bay, Kowloon
Tel: (852) 2527 6691 email: test@pilot-testing.com

PILOT TESTING

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1510258
DATE OF ISSUE: 20/07/2015
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type	Multifunctional Meter
Manufacturer	YSI
Model No.	Professional Plus
Serial No.	14E100105
Date of Calibration	15-Jul-15
Date of next Calibation	15-Oct-15

Parameters:

Temperature (Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No.3 Second edition March 2008: Working Thermometer Calibration Procedure)

Reference Reading (°C)	Display Reading (°C)	Deviation (°C)
9.6	10.5	+0.9
19.9	20.3	+0.4
32.0	31.5	-0.5
	Tolerance Limit	±2.0

pH Value (Method Ref: APHA21e, 4500H:B)

Expected Reading (pH unit)	Reference Reading (pH unit)	Display Reading (pH unit)	Deviation (pH unit)
4.0	3.92	4.07	+0.15
7.0	6.94	6.97	+0.03
10.0	9.91	10.03	+0.12
	Tolerance Limit		±0.20

Conductivity (Method Ref: APHA 19e, 2510)

KCl concentration (mol/L)	Reference Reading (ms/cm)	Display Reading (ms/cm)	Deviation (%)
0.0000	0.00	0.00	--
0.1000	12.89	12.70	-1.45
0.2000	24.80	24.53	-1.08
0.5000	58.67	58.09	-0.99
	Tolerance Limit		±2.0

Dissolved Oxygen (DO) (Method Ref: APHA 19e, 4500-O, C)

Reference DO reading (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
8.41	8.46	+0.05
3.18	3.36	+0.18
1.06	1.09	+0.03
	Tolerance Limit	±0.20

Remarks:
(1) Maxium tolerance and calibration frequency stated in the report, unless otherewise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.
(2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
(3) Because of high sensitivity and ease of measurement, the conductivity method (accoridng to APHA 19e 2510) is used to determine salinity.

- End of Report -

PILOT TESTING

EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT

Report No.	:	HK1510261
Project Name	:	EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT
Date of Issue	:	24/07/2015
Customer	:	LAM GEOTECHNICS LIMITED
Address	:	11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG

Calibration Job No.	:	HK1510261
Test Item No.	:	HK1510261-01
Test Item Details		
Test Item Description	:	Multifunctional Meter
Manufacturer	:	YSI
Model No.	:	Professional Plus
Serial No.	:	14M100277
Performance Method	:	Checked according to in-house method CAL005 (References: Temperature (Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure), pH value (APHA 21e 4500H:B), Salinity (Refer to Conductivity APHA 19e 2510B) , Dissolved oxygen (APHA 19e 4500-O,C))
Test Item Receipt Date	:	17-Jul-15
Test Item Calibration Date	:	17-Jul-15
Test Period	:	17/07/2015 - 24/07/2015

Notes :
1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.
2. Results relate to item(s) as received.
3. ± indicates the tolerance limit
4. N/A = Not applicable
5. APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF. USA
6. DO, pH, salinity and temperature performance check was conducted by Pilot Testing Limited.
7. Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

Approved Signatory : 

Mr. Peter Lee
(Director)

Issue Date: 24/07/2015

Pilot Testing Limited
Address: Room B12, Block B, 5/F, Tonic Industrial Centre, 19 Lam Hing Street, Kowloon Bay, Kowloon
Tel: (852) 2527 6691 email: test@pilot-testing.com

PILOT TESTING

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1510261
DATE OF ISSUE: 24/07/2015
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type	Multifunctional Meter
Manufacturer	YSI
Model No.	Professional Plus
Serial No.	14M100277
Date of Calibration	17-Jul-15
Date of next Calibation	17-Oct-15

Parameters:

Temperature (Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No.3 Second edition March 2008: Working Thermometer Calibration Procedure)

Reference Reading (°C)	Display Reading (°C)	Deviation (°C)
10.3	10.4	+0.1
19.9	20.0	+0.1
29.5	29.4	-0.1
	Tolerance Limit	±2.0

pH Value (Method Ref: APHA21e, 4500H:B)

Expected Reading (pH unit)	Reference Reading (pH unit)	Display Reading (pH unit)	Deviation (pH unit)
4.0	4.02	4.04	+0.02
7.0	6.98	7.07	+0.09
10.0	9.94	10.06	+0.12
	Tolerance Limit		±0.20

Conductivity (Method Ref: APHA 19e, 2510)

KCl concentration (mol/L)	Reference Reading (ms/cm)	Display Reading (ms/cm)	Deviation (%)
0.0000	0.00	0.00	--
0.1000	12.89	12.66	-1.79
0.2000	24.80	25.12	+1.29
0.5000	58.67	58.77	+0.17
	Tolerance Limit		±2.0

Dissolved Oxygen (DO) (Method Ref: APHA 19e, 4500-O, C)

Reference DO reading (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
6.34	6.42	+0.08
3.10	3.17	+0.07
1.51	1.43	-0.08
	Tolerance Limit	±0.20

Remarks:
(1) Maxium tolerance and calibration frequency stated in the report, unless otherewise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.
(2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
(3) Because of high sensitivity and ease of measurement, the conductivity method (accoridng to APHA 19e 2510) is used to determine salinity.

- End of Report -

PILOT TESTING

EQUIPMENT PERFORMANCE CHECK / CALIBRATION REPORT

Report No.	:	HK1510259
Project Name	:	EQUIPMENT PERFORMANCE CHECK/CALIBRATION REPORT
Date of Issue	:	20/07/2015
Customer	:	LAM GEOTECHNICS LIMITED
Address	:	11/F., CENTRE POINT, 181-185 GLOUCESTER ROAD, WAN CHAI, HONG KONG

Calibration Job No.	:	HK1510259
Test Item No.	:	HK1510259-01
Test Item Details		
Test Item Description	:	Multifunctional Meter
Manufacturer	:	YSI
Model No.	:	Professional Plus
Serial No.	:	11F100420
Performance Method	:	Checked according to in-house method CAL005 (References: Temperature (Section 6 of Intermational Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure), pH value (APHA 21e 4500H:B), Salinity (Refer to Conductivity APHA 19e 2510B) , Dissolved oxygen (APHA 19e 4500-O,C))
Test Item Receipt Date	:	14-Jul-15
Test Item Calibration Date	:	15-Jul-15
Test Period	:	14/7/2015 - 20/7/2015

Notes :
1. This report shall not be reproduced, except in full, without prior approval from Pilot Testing Limited.
2. Results relate to item(s) as received.
3. ± indicates the tolerance limit
4. N/A = Not applicable
5. APHA - American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater, APHA-AWWA-WEF. USA
6. DO, pH, salinity and temperature performance check was conducted by Pilot Testing Limited.
7. Because of high sensitivity and ease of measurement, the conductivity method (according to APHA 19e 2510) is used to determine salinity.

Approved Signatory : 

Mr. Peter Lee
(Director)

Issue Date: 20/07/2015

Pilot Testing Limited
Address: Room B12, Block B, 5/F, Tonic Industrial Centre, 19 Lam Hing Street, Kowloon Bay, Kowloon
Tel: (852) 2527 6691 email: test@pilot-testing.com

PILOT TESTING

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1510259
DATE OF ISSUE: 20/07/2015
CLIENT: LAM GEOTECHNICS LIMITED

Equipment Type	Multifunctional Meter
Manufacturer	YSI
Model No.	Professional Plus
Serial No.	11F100420
Date of Calibration	15-Jul-15
Date of next Calibation	15-Oct-15

Parameters:

Temperature (Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No.3 Second edition March 2008: Working Thermometer Calibration Procedure)

Reference Reading (°C)	Display Reading (°C)	Deviation (°C)
9.8	10.1	+0.3
20.2	20.3	+0.1
30.1	29.5	-0.6
	Tolerance Limit	±2.0

pH Value (Method Ref: APHA21e, 4500H:B)

Expected Reading (pH unit)	Reference Reading (pH unit)	Display Reading (pH unit)	Deviation (pH unit)
4.0	4.02	4.08	+0.06
7.0	6.92	6.87	-0.05
10.0	10.10	9.98	-0.12
	Tolerance Limit		±0.20

Conductivity (Method Ref: APHA 19e, 2510)

KCl concentration (mol/L)	Reference Reading (ms/cm)	Display Reading (ms/cm)	Deviation (%)
0.0000	0.00	0.00	--
0.1000	12.89	12.92	+0.23
0.2000	24.80	24.52	-1.13
0.5000	58.67	59.10	+0.73
	Tolerance Limit		±2.0

Dissolved Oxygen (DO) (Method Ref: APHA 19e, 4500-O, C)

Reference DO reading (mg/L)	DO reading od DO probe (mg/L)	Deviation (mg/L)
8.83	8.90	+0.07
5.23	5.26	+0.03
1.17	1.24	+0.07
	Tolerance Limit	±0.20

Remarks:
(1) Maxium tolerance and calibration frequency stated in the report, unless otherewise stated, the internal acceptance criteria of Pilot Testing Limited will be followed.
(2) Displayed reading presents the figures shown on item under calibration/checking regardless of equipment precision or significant figures.
(3) Because of high sensitivity and ease of measurement, the conductivity method (accoridng to APHA 19e 2510) is used to determine salinity.

- End of Report -

TISCH ENVIRONMENTAL, INC.
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877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jun 30, 2015 Rootsmeter S/N 0438320 Ta (K) - 296
Operator Tisch Orifice I.D. - 0005 Pa (mm) - 749.3

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3930	3.2	2.00
2	NA	NA	1.00	0.9800	6.4	4.00
3	NA	NA	1.00	0.8790	7.9	5.00
4	NA	NA	1.00	0.8350	8.7	5.50
5	NA	NA	1.00	0.6900	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9883	0.7095	1.4090		0.9957	0.7148	0.8889
0.9841	1.0042	1.9926		0.9915	1.0117	1.2570
0.9820	1.1172	2.2278		0.9894	1.1256	1.4054
0.9810	1.1749	2.3365		0.9884	1.1837	1.4740
0.9757	1.4141	2.8179		0.9830	1.4247	1.7777
Qstd slope (m) =		2.00072		Qa slope (m) =		1.25282
intercept (b) =		-0.01209		intercept (b) =		-0.00763
coefficient (r) =		0.99995		coefficient (r) =		0.99995
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(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}

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA1b	**Calbration Date**	:	10-Jun-15
Equipment no.	:	EL452	**Calbration Due Date**	:	10-Aug-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	303	Kelvin	**Pressure, P_a**	1007	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	1.99175	**Intercept, bc**	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	14-Jul-15	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)**			**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** $(W(P_a/1013.3x298/T_a)^{1/2}/35.31)$ **Y-axis**
	(up)	(down)	(difference)			
1	6.1	6.1	12.2	1.7339	60	59.3176
2	4.7	4.7	9.4	1.5220	54	53.3859
3	3.8	3.8	7.6	1.3686	48	47.4541
4	2.3	2.3	4.6	1.0648	38	37.5678
5	1.4	1.4	2.8	0.8308	30	29.6588

By Linear Regression of Y on X

Slope, m = 33.1850 Intercept, b = 2.2031

Correlation Coefficient* = 0.9994

Calibration Accepted = Yes/~~No~~**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks :

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Jun-15	**Date**	:	10-Jun-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA1b	**Calbration Date**	:	10-Aug-15
Equipment no.	:	EL452	**Calbration Due Date**	:	10-Oct-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	301	Kelvin	**Pressure, P_a**	1005	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	2.00072	**Intercept, bc**	-0.01209
Last Calibration Date	30-Jun-15	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	30-Jun-16	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** ($W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31$) **Y-axis**
1	5.9	5.9	11.8	1.7074	60	59.4552
2	4.8	4.8	9.6	1.5406	52	51.5279
3	3.8	3.8	7.6	1.3714	45	44.5914
4	2.5	2.5	5.0	1.1135	36	35.6731
5	1.6	1.6	3.2	0.8920	28	27.7458

By Linear Regression of Y on X

Slope, m = 38.3067 Intercept, b = -6.9577

Correlation Coefficient* = 0.9980

Calibration Accepted = Yes/~~No~~**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Aug-15	**Date**	:	10-Aug-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA2a	**Calbration Date**	:	10-Jun-15
Equipment no.	:	EL449	**Calbration Due Date**	:	10-Aug-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	303	Kelvin	**Pressure, P_a**	1007	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, mc**	1.99175	**Intercept, bc**	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	14-Jul-15	$= m_c \times Q_{std} + b_c$			

Calibration of TSP

Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** $(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$ **Y-axis**
1	5.9	5.9	11.8	1.7053	60	59.3176
2	4.8	4.8	9.6	1.5381	52	51.4086
3	3.8	3.8	7.6	1.3686	46	45.4768
4	2.3	2.3	4.6	1.0648	36	35.5906
5	1.4	1.4	2.8	0.8308	20	19.7725

By Linear Regression of Y on X

Slope, m = 42.7672 Intercept, b = -13.3484

Correlation Coefficient* = 0.9900

Calibration Accepted = Yes/~~No~~**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Jun-15	**Date**	:	10-Jun-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA2a	**Calbration Date**	:	10-Aug-15
Equipment no.	:	EL449	**Calbration Due Date**	:	10-Oct-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	301	Kelvin	**Pressure, P_a**	1005	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	2.00072	**Intercept, bc**	-0.01209
Last Calibration Date	30-Jun-15	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	30-Jun-16	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** $(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$ **Y-axis**
1	5.8	5.8	11.6	1.6929	59	58.4643
2	4.6	4.6	9.2	1.5083	50	49.5460
3	3.7	3.7	7.4	1.3534	43	42.6096
4	2.5	2.5	5.0	1.1135	34	33.6913
5	1.5	1.5	3.0	0.8639	22	21.8003

By Linear Regression of Y on X

Slope, m	=	43.3899	Intercept, b	=	-15.4622
Correlation Coefficient*	=	0.9990			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Aug-15	**Date**	:	10-Aug-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA3a	**Calbration Date**	:	10-Jun-15
Equipment no.	:	EL333	**Calbration Due Date**	:	10-Aug-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	303	Kelvin	**Pressure, P_a**	1007	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	1.99175	**Intercept, bc**	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	14-Jul-15	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)**			**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** $(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$ **Y-axis**
	(up)	(down)	(difference)			
1	5.6	5.6	11.2	1.6613	52	51.4086
2	4.5	4.5	9.0	1.4893	48	47.4541
3	3.4	3.4	6.8	1.2946	40	39.5451
4	2.2	2.2	4.4	1.0414	34	33.6133
5	1.4	1.4	2.8	0.8308	28	27.6816

By Linear Regression of Y on X

Slope, m	=	28.9984	Intercept, b	=	3.3019
Correlation Coefficient*	=	0.9964			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Jun-15	**Date**	:	10-Jun-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA3a	**Calbration Date**	:	10-Aug-15
Equipment no.	:	EL333	**Calbration Due Date**	:	10-Oct-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	301	Kelvin	**Pressure, P_a**	1005	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	2.00072	**Intercept, bc**	-0.01209
Last Calibration Date	30-Jun-15	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	30-Jun-16	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** ($W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31$) **Y-axis**
1	5.6	5.6	11.2	1.6636	54	53.5097
2	4.6	4.6	9.2	1.5083	48	47.5642
3	3.6	3.6	7.2	1.3350	42	41.6187
4	2.4	2.4	4.8	1.0912	34	33.6913
5	2.0	2.0	4.0	0.9966	29	28.7367

By Linear Regression of Y on X

Slope, m	=	35.9922	Intercept, b	=	-6.4472
Correlation Coefficient*	=	0.9984			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Aug-15	**Date**	:	10-Aug-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA4a	**Calbration Date**	:	10-Jun-15
Equipment no.	:	EL390	**Calbration Due Date**	:	10-Aug-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	303	Kelvin	**Pressure, P_a**	1007	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	1.99175	**Intercept, bc**	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	14-Jul-15	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)**			**Q_{std}** (m^3 / min.)	**Continuous Flow Recorder, W**	**IC** $(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$
	(up)	(down)	(difference)	**X-axis**	(CFM)	**Y-axis**
1	5.9	5.9	11.8	1.7053	57	56.3517
2	4.7	4.7	9.4	1.5220	52	51.4086
3	3.6	3.6	7.2	1.3321	44	43.4996
4	2.3	2.3	4.6	1.0648	34	33.6133
5	1.4	1.4	2.8	0.8308	26	25.7043

By Linear Regression of Y on X

Slope, m	=	35.8979	Intercept, b	=	-4.2281
Correlation Coefficient*	=	0.9988			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Jun-15	**Date**	:	10-Jun-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA4a	**Calbration Date**	:	10-Aug-15
Equipment no.	:	EL390	**Calbration Due Date**	:	10-Oct-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	301	Kelvin	**Pressure, P_a**	1005	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	2.00072	**Intercept, bc**	-0.01209
Last Calibration Date	30-Jun-15	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	30-Jun-16	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)**			**Q_{std}** (m^3 / min.)	**Continuous Flow Recorder, W**	**IC** $(W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31)$
	(up)	(down)	(difference)	**X-axis**	(CFM)	**Y-axis**
1	5.7	5.7	11.4	1.6783	58	57.4734
2	4.6	4.6	9.2	1.5083	51	50.5370
3	3.6	3.6	7.2	1.3350	45	44.5914
4	2.4	2.4	4.8	1.0912	34	33.6913
5	1.5	1.5	3.0	0.8639	25	24.7730

By Linear Regression of Y on X

Slope, m	=	40.2813	Intercept, b	=	-9.9646
Correlation Coefficient*	=	0.9994			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Aug-15	**Date**	:	10-Aug-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA5b	**Calbration Date**	:	02-Jun-15
Equipment no.	:	EL222	**Calbration Due Date**	:	02-Aug-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	303	Kelvin	**Pressure, P_a**	1009	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	1.99175	**Intercept, bc**	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	14-Jul-15	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)**			**Q_{std}** (m^3 / min.)	**Continuous Flow Recorder, W**	**IC** ($W(P_a/1013.3\times298/T_a)^{1/2}/35.31$)
	(up)	(down)	(difference)	**X-axis**	(CFM)	**Y-axis**
1	6.3	6.3	12.6	1.7639	65	64.3245
2	4.8	4.8	9.6	1.5397	58	57.3973
3	3.6	3.6	7.2	1.3334	52	51.4596
4	2.3	2.3	4.6	1.0658	42	41.5636
5	1.4	1.4	2.8	0.8316	30	29.6883

By Linear Regression of Y on X

Slope, m = 36.5046 Intercept, b = 1.1799

Correlation Coefficient* = 0.9934

Calibration Accepted = Yes/~~No~~**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks :

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	02-Jun-15	**Date**	:	02-Jun-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA5b	**Calbration Date**	:	01-Aug-15
Equipment no.	:	EL222	**Calbration Due Date**	:	01-Oct-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	302	Kelvin	**Pressure, P_a**	1011	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	2.00072	**Intercept, bc**	-0.01209
Last Calibration Date	30-Jun-15	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	30-Jun-16	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** ($W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31$) **Y-axis**
1	5.5	5.5	11.0	1.6509	60	59.5336
2	4.3	4.3	8.6	1.4604	55	54.5725
3	3.4	3.4	6.8	1.2993	49	48.6191
4	2.3	2.3	4.6	1.0697	40	39.6891
5	1.5	1.5	3.0	0.8650	32	31.7513

By Linear Regression of Y on X

Slope, m	=	35.9878	Intercept, b	=	1.1624
Correlation Coefficient*	=	0.9974			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	01-Aug-15	**Date**	:	01-Aug-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA6a	**Calbration Date**	:	10-Jun-15
Equipment no.	:	EL448	**Calbration Due Date**	:	10-Aug-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	303	Kelvin	**Pressure, P_a**	1007	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	1.99175	**Intercept, bc**	-0.00041
Last Calibration Date	14-Jul-14	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	14-Jul-15	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** ($W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31$) **Y-axis**
1	5.8	5.8	11.6	1.6908	55	54.3745
2	4.6	4.6	9.2	1.5057	50	49.4314
3	3.5	3.5	7.0	1.3135	44	43.4996
4	2.3	2.3	4.6	1.0648	35	34.6020
5	1.4	1.4	2.8	0.8308	28	27.6816

By Linear Regression of Y on X

Slope, m	=	31.6381	Intercept, b	=	1.3862
Correlation Coefficient*	=	0.9990			
Calibration Accepted	=	Yes/~~No~~**			

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : _____

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Jun-15	**Date**	:	10-Jun-15

Lam Geotechincs Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	CMA6a	**Calbration Date**	:	10-Aug-15
Equipment no.	:	EL448	**Calbration Due Date**	:	10-Oct-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition					
Temperature, T_a	301	Kelvin	**Pressure, P_a**	1005	mmHg

Orifice Transfer Standard Information					
Equipment No.	**EL086**	**Slope, m_c**	2.00072	**Intercept, bc**	-0.01209
Last Calibration Date	30-Jun-15	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$			
Next Calibration Date	30-Jun-16	$= m_c \times Q_{std} + b_c$			

Calibration of TSP						
Calibration Point	**Manometer Reading H (inches of water)** (up)	(down)	(difference)	**Q_{std}** (m^3 / min.) **X-axis**	**Continuous Flow Recorder, W** (CFM)	**IC** ($W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31$) **Y-axis**
1	6.2	6.2	12.4	1.7501	58	57.4734
2	4.9	4.9	9.8	1.5565	52	51.5279
3	3.8	3.8	7.6	1.3714	45	44.5914
4	2.5	2.5	5.0	1.1135	36	35.6731
5	1.5	1.5	3.0	0.8639	30	29.7276

By Linear Regression of Y on X

Slope, m = 32.1012 Intercept, b = 1.0688

Correlation Coefficient* = 0.9974

Calibration Accepted = Yes/~~No~~**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks :

Calibrated by	:	LuLu Mar	**Checked by**	:	Derek Lo
Date	:	10-Aug-15	**Date**	:	10-Aug-15