PM-10 High Volume Air Sampler Calibration Data Sheet

Air Quality Monitoring Program, Yerington Mine, Yerington Nevada

General Information

Calibration Date: 11/10/2006 11:43

Site Location: AM-6-PM10

Ambient Conditions		Field Equipment Units		Calculation Required Units
Actual Pressure (P_a):	871	millibars	653.5	mm Hg
Actual Temperature (T_a):	47.12	°F	281.6	°K
Seasonal Pressure (P_s):	870.29	millibars	652.9	mm Hg
Seasonal Temp. (T_s):	37.16	°F	276.0	°K

High Volume Sampler Information

Type: PM-10

Make/Model: Tisch Environmental TE-6070D

Serial #: Blower 1020 Inlet 0615

Calibration Orifice

Type: Variable Resistance Orifice

Make/Model: Tisch Environmental TE-5028A

Rootsmeter Serial #: 9833620

Orifice Serial #: 0835

Calibrator Slope (m_c): 0.98871 based on actual flow rate (Q_a)

Calibrator Intercept (b_c): -0.00738 based on actual flow rate (Q_a)

Date Certified: 11/19/2004

Calibration Measurements and Calculations

	Manometer (in H_2O)	Q_a (m^3/min)	I (chart)	IC (corrected)
Point #1	2.60	1.078	27.5	18.05
Point #2	2.80	1.118	28.5	18.71
Point #3	3.00	1.157	29.5	19.36
Point #4	3.20	1.195	30.0	19.69
Point #5	3.40	1.232	31.5	20.68

Sampler Slope (m_s):	16.218
Sampler Intercept (b_s):	0.5485
Correlation Coefficient (R):	0.9894
Sampler Flow Rate Set Point (SFR):	1.152
Sampler Chart Set Point (SSP):	29.29

Equations

$Q_a = 1/m_c*(\text{Sqrt}(\text{Manometer}*T_a/P_a)-b_c)$

$IC = I*\text{Sqrt}(T_a/P_a)$

$SFR = 1.13*P_s/P_a*T_a/T_s$

$SSP = (m_s*SFR+b_s)*\text{Sqrt}(P_a/T_a)$

Notes

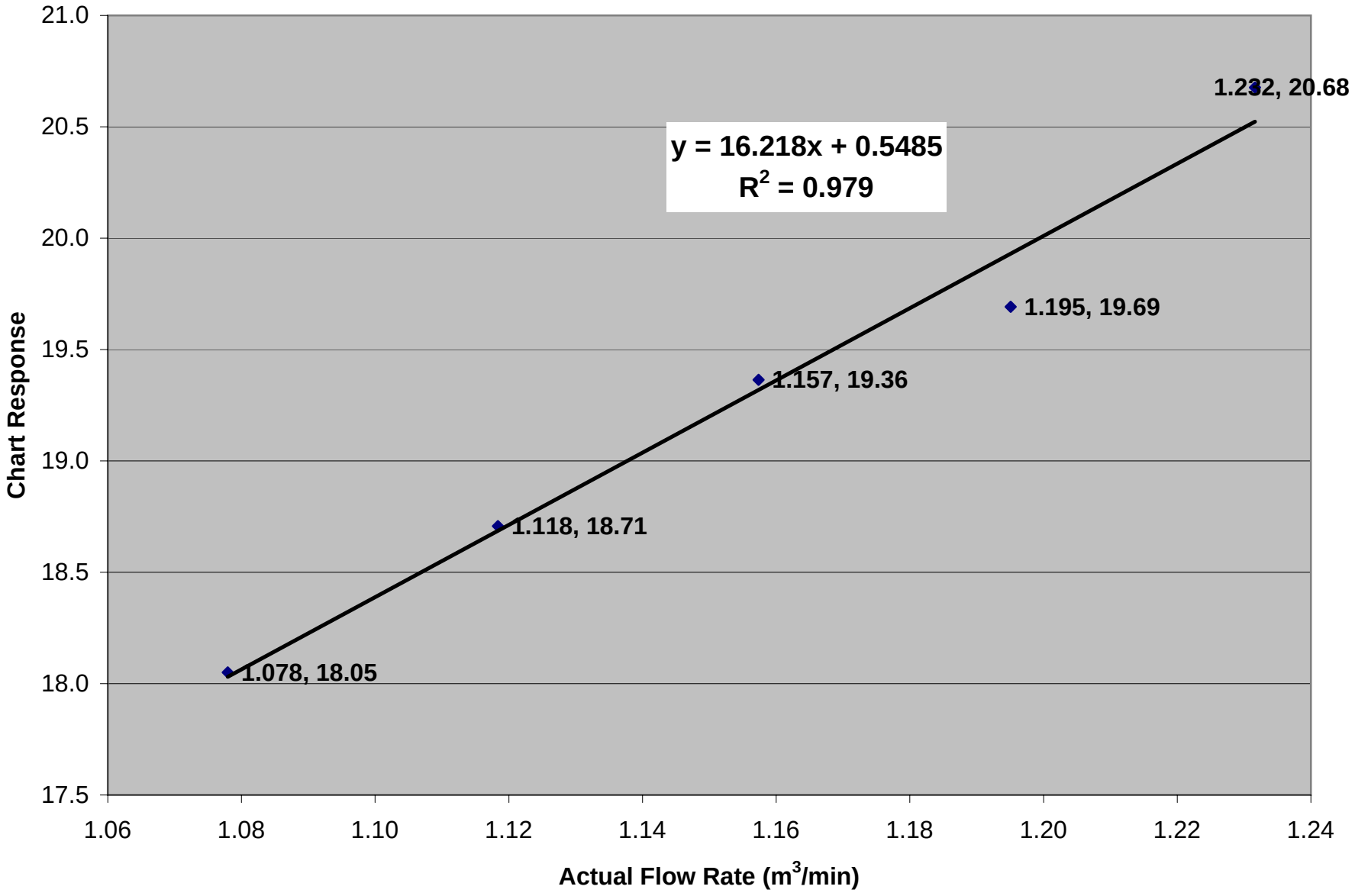
Minimum 5 calibration points required and 3 must be within 1.02 to 1.24 m^3/min.

Correlation coefficient must be greater than 0.990.

X *Marne Sherman*	*Brown and Caldwell*	*11/10/2006*
Field Technician Signature	**Company**	**Date**

AM-6-PM10 High Volume Air Sampler Calibration Chart (11/10/06)

Air Quality Monitoring Program, Yerington Mine, Yerington, Nevada



PM-10 High Volume Air Sampler Calibration Data Sheet

Air Quality Monitoring Program, Yerington Mine, Yerington Nevada

General Information

Calibration Date: 11/15/2006 11:16

Site Location: AM-6-PM10

Ambient Conditions		Field Equipment Units		Calculation Required Units
Actual Pressure (P_a):	871	millibars	653.5	mm Hg
Actual Temperature (T_a):	46.05	°F	281.0	°K
Seasonal Pressure (P_s):	870.24	millibars	652.9	mm Hg
Seasonal Temp. (T_s):	38.76	°F	276.9	°K

High Volume Sampler Information

Type: PM-10

Make/Model: Tisch Environmental TE-6070D

Serial #: Blower 1020 Inlet 0615

Calibration Orifice

Type: Variable Resistance Orifice

Make/Model: Tisch Environmental TE-5028A

Rootsmeter Serial #: 9833620

Orifice Serial #: 0835

Calibrator Slope (m_c): 0.98871 based on actual flow rate (Q_a)

Calibrator Intercept (b_c): -0.00738 based on actual flow rate (Q_a)

Date Certified: 11/19/2004

Calibration Measurements and Calculations

	Manometer (in H_2O)	Q_a (m^3/min)	I (chart)	IC (corrected)
Point #1	2.60	1.077	28.0	18.36
Point #2	2.80	1.117	29.0	19.02
Point #3	3.00	1.156	30.0	19.67
Point #4	3.20	1.194	31.5	20.65
Point #5	3.40	1.230	32.5	21.31

Sampler Slope (m_s):	19.634
Sampler Intercept (b_s):	-2.8720
Correlation Coefficient (R):	0.9962
Sampler Flow Rate Set Point (SFR):	1.146
Sampler Chart Set Point (SSP):	29.92

Equations

$Q_a = 1/m_c*(\text{Sqrt}(\text{Manometer}*T_a/P_a)-b_c)$

$IC = I*\text{Sqrt}(T_a/P_a)$

$SFR = 1.13*P_s/P_a*T_a/T_s$

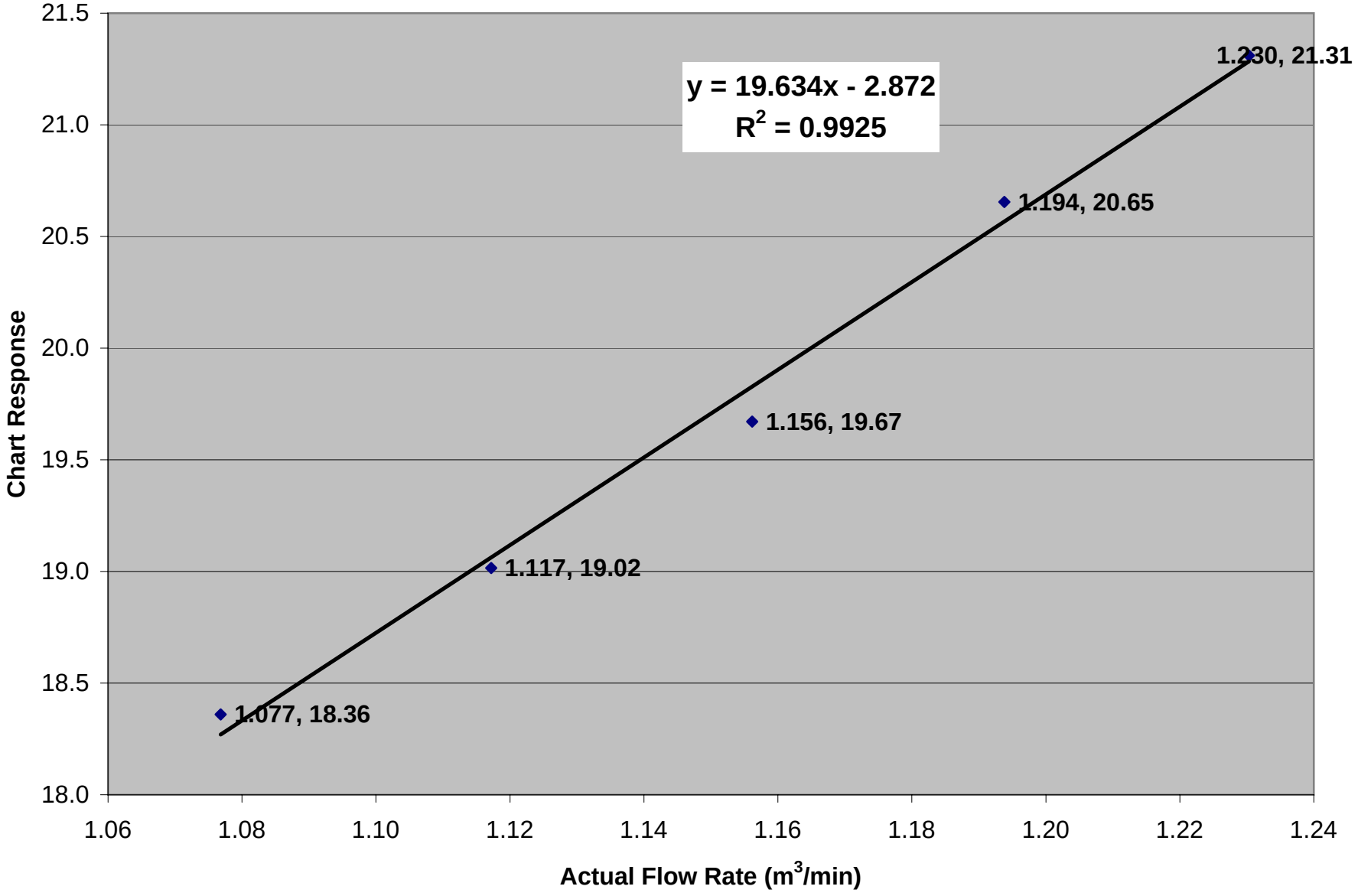
$SSP = (m_s*SFR+b_s)*\text{Sqrt}(P_a/T_a)$

Notes

Minimum 5 calibration points required and 3 must be within 1.02 to 1.24 m^3/min.

Correlation coefficient must be greater than 0.990.

X *Marne Sherman*	*Brown and Caldwell*	*11/15/2006*
Field Technician Signature	**Company**	**Date**

AM-6-PM10 High Volume Air Sampler Calibration Chart (11/15/06)

Air Quality Monitoring Program, Yerington Mine, Yerington, Nevada