TO DETERMINE MASS SUSCEPTIBILITY OF ROSEDALE ROASTED ORE & KAMAISHI MINE (JAPAN) MAGNETITE SAMPLES

Calibration samples	Mass g	Bridge reading	Total susceptibility $k_T \times 10^{-8}$ m^3	Mass susceptibility $\chi \times 10^{-8}$ m^3 kg^{-1}
Manganese sulphate	50.00	62.0	4.06	81.2
High alumina cement	50.00	534	35.80	716
Test samples				
Rosedale roasted ore - A	34.48	410	27.46	796
Rosedale roasted ore - B	31.39	1630	109.50	3488
Kamaishi magnetite - A	1.24	984	66.06	53275
Kamaishi magnetite - B	1.04	826	55.44	53304

Mean	) Rosedale		2142
Median	) roasted		2142
Standard Deviation	+/-) ore		1904
Mean	) Kamaishi		53289
Median	) magnetite		53289
Standard Deviation	+/-)		20

Chart data

Total sus.	Meter	Total sus.	Meter
0	0		
4.06	62.0	4.06	62.0
		35.80	534

Slope & constant values as calculated by data trendline:

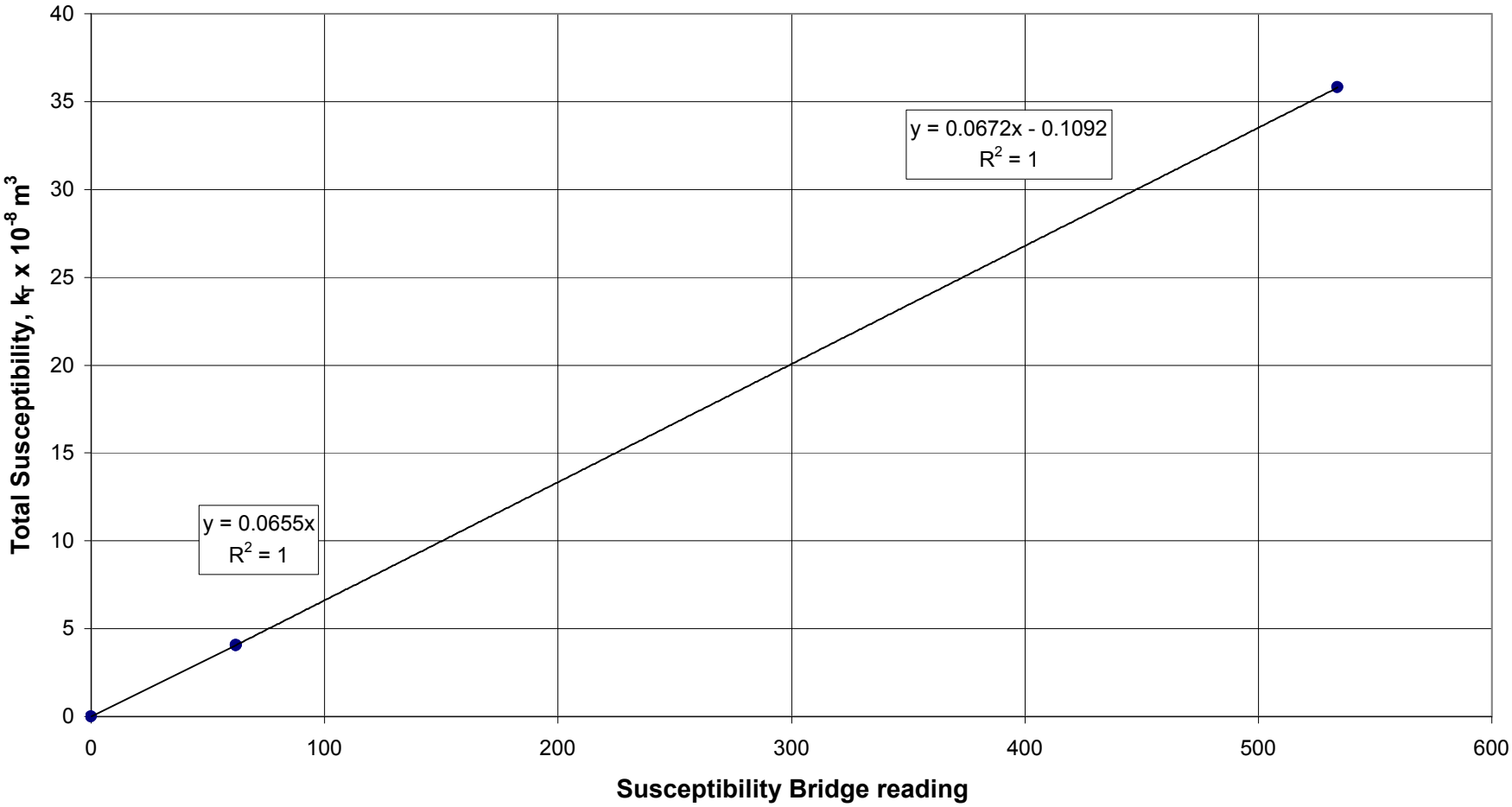
m	c	x	y
0.0655	0	62.0	4.0610
0.0672	-0.1092	62.0	4.0572
0.0672	-0.1092	534	35.7756

Slope & constant values as calculated from raw data:

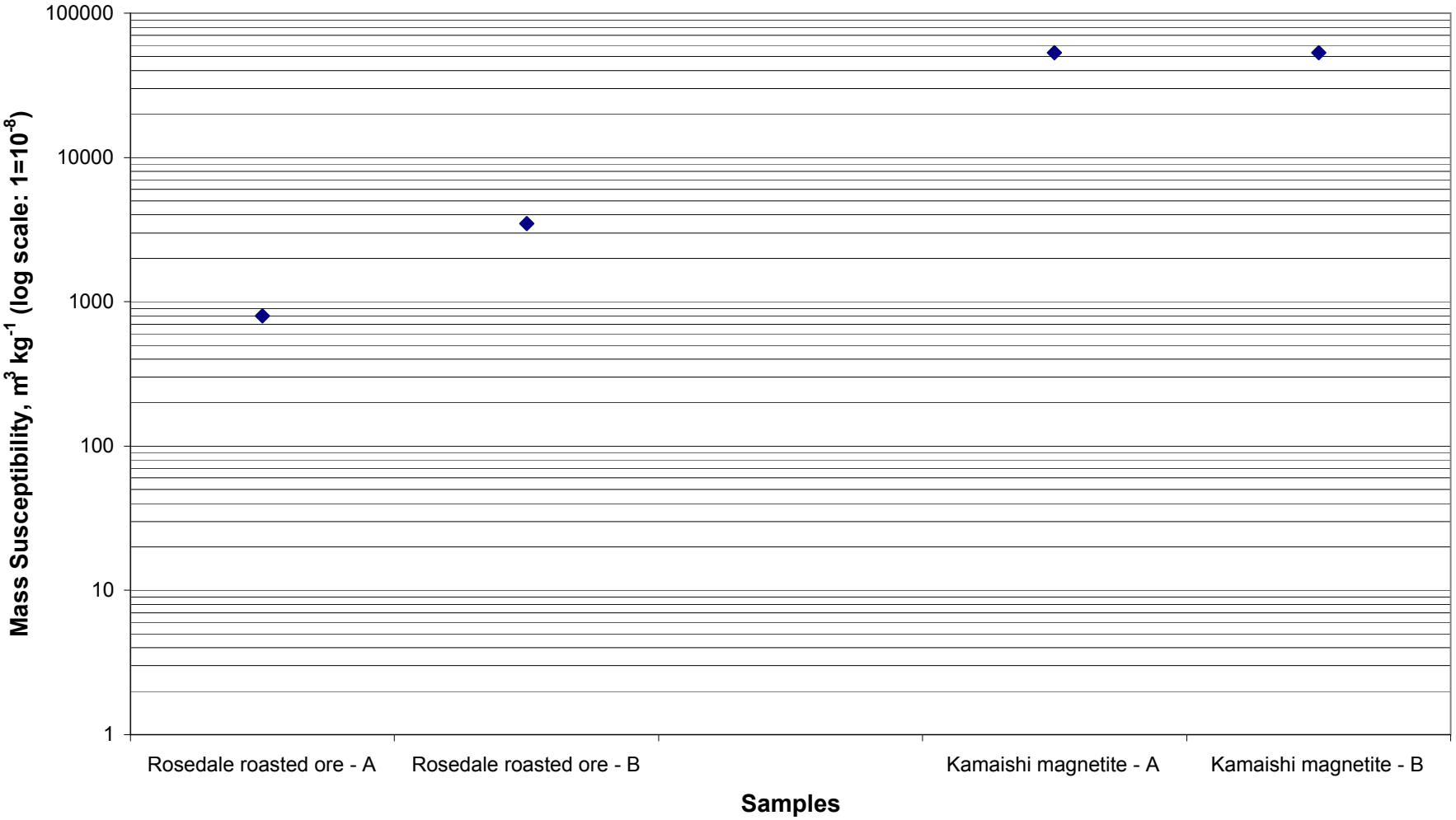
m	c	x	y
0.06548	0	62.0	4.06
0.06725	-0.10924	62.0	4.06
0.06725	-0.10924	534	35.80

Above slope & constant values used in formula to calculate total susceptibility from the corresponding meter reading.

ROSEDALE & KAMAISHI SAMPLES SUSCEPTIBILITY CALIBRATION CURVE



ROSEDALE & KAMAISHI SAMPLES MASS SUSCEPTIBILITY



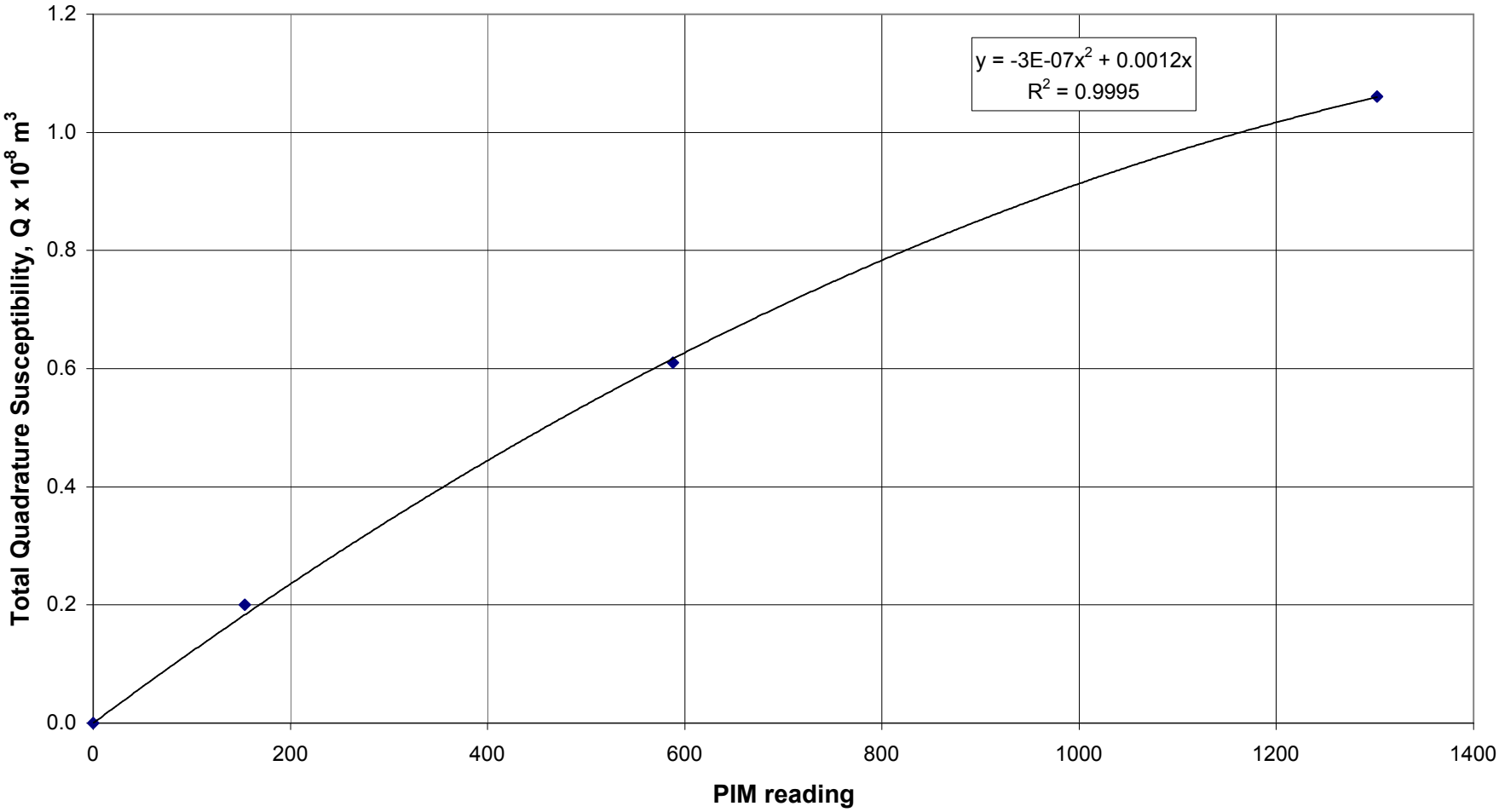
TO DETERMINE MASS QUADRATURE SUSCEPTIBILITY AND MAGNETIC VISCOSITY OF ROSEDALE ROASTED ORE & KAMAISHI MINE (JAPAN) MAGNETITE SAMPLES

Calibration samples		Mass g	PIM reading	Total quad. sus. Q x 10^{-8} m^3	Mass quad. sus. q x 10^{-8} m^3 kg^{-1}	Magnetic viscosity %
High alumina cement		50.00	154	0.20	4.0	
BS87		50.00	588	0.61	12.2	
BS62		40.64	1302	1.06	26.1	
Test samples	Type					
Rosedale roasted ore - A		34.48	1420	1.10	32	4.0
Rosedale roasted ore - B		31.39	1999	1.20	38	1.1
Kamaishi magnetite - A		1.24	19	0.02	18	0.03
Kamaishi magnetite - B		1.04	22	0.03	25	0.05
Mean	) Rosedale				35	2.5
Median	) roasted				35	2.5
Standard Deviation +/-	) ore				4	2.1
Mean	) Kamaishi				22	0.04
Median	) magnetite				22	0.04
Standard Deviation +/-	)				5	0.01

Chart data

Total quad.	PIM
0	0
0.20	154
0.61	588
1.06	1302

ROSEDALE & KAMAISHI SAMPLES QUADRATURE SUSCEPTIBILITY CALIBRATION CURVE



ROSEDALE & KAMAISHI SAMPLES
MASS QUADRATURE SUSCEPTIBILITY & MAGNETIC VISCOSITY