

TO DETERMINE MASS SUSCEPTIBILITY OF RIEVAULX BLAST FURNACE SAMPLES

<u>Calibration samples</u>	Mass g	Bridge reading	Total susceptibility $K_T \times 10^{-8} \text{ m}^3$	Mass susceptibility $\chi \times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$
Manganese sulphate	50.00	60.8	4.06	81.2
High alumina cement	50.00	541	35.80	716
<u>Rievaulx RIV97</u>	Type			
104/24-A	35.36	76	5.06	143
104/24-B	21.43	52.6	3.51	164
104/24-C	24.47	179	11.87	485
105/27-A	31.84	121	8.04	252
105/27-B	26.40	49.0	3.27	124
105/30-A	47.09	78	5.20	110
105/30-B	39.88	81	5.40	135
105/30-C	22.21	53.4	3.57	161
105/31-A	37.32	63	4.21	113
105/31-B	12.85	64	4.27	332
105/31-C	14.12	51.5	3.44	244
105/62-A	18.21	42.3	2.82	155
105/62-B	20.65	610	40.36	1955
105/63-A	77.79	158	10.48	135
105/63-B	47.70	184	12.20	256
105/63-C	13.08	96	6.39	488
107/38-A	26.04	41.2	2.75	106
107/38-B	29.10	1190	78.70	2704
107/38-C	28.96	127	8.44	291
110/52-A	27.54	50.6	3.38	123
110/52-B	19.53	40	2.67	137
110/52-C	26.99	48.6	3.25	120
111/68-A	25.98	24.6	1.64	63
111/68-B	28.45	140	9.29	327
115/85-A	27.64	51.2	3.42	124
115/85-B	23.64	62	4.14	175
117/90-A	25.84	118	7.84	303
117/90-B	34.77	1183	78.23	2250
117/90-C	19.77	1215	80.35	4064
117/90-D	17.86	354	23.44	1312
Mean	)			578
Median	)			170
Standard Deviation	+/-)			942

Chart data

Total sus.	Meter	Total sus.	Meter
0	0		
4.06	60.8	4.06	60.8
		35.80	541

Slope & constant values as calculated by data trendline:

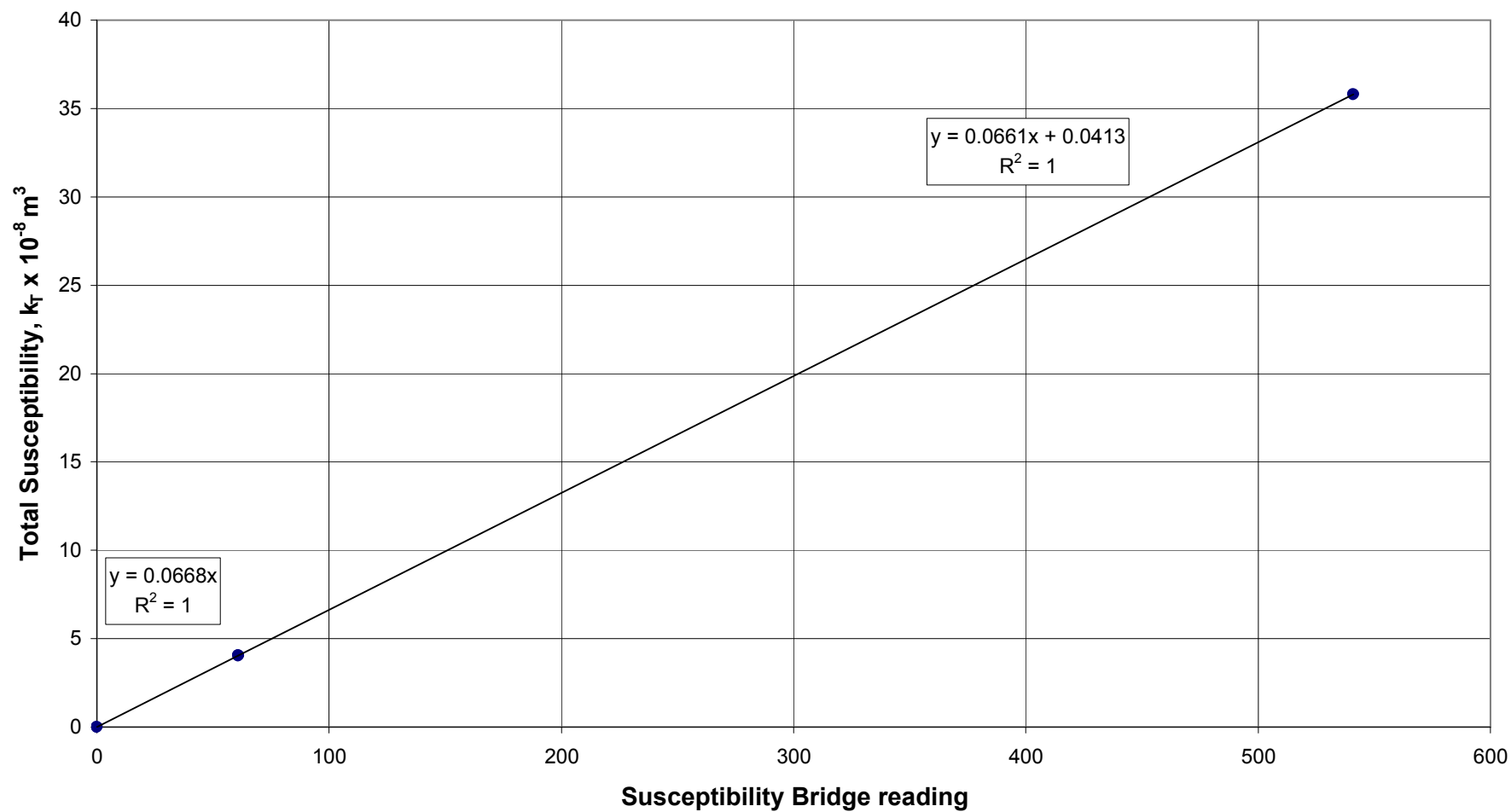
m	c	x	y
0.0668	0	60.8	4.0614
0.0661	0.0413	60.8	4.0602
0.0661	0.0413	541	35.8014

Slope & constant values as calculated from raw data:

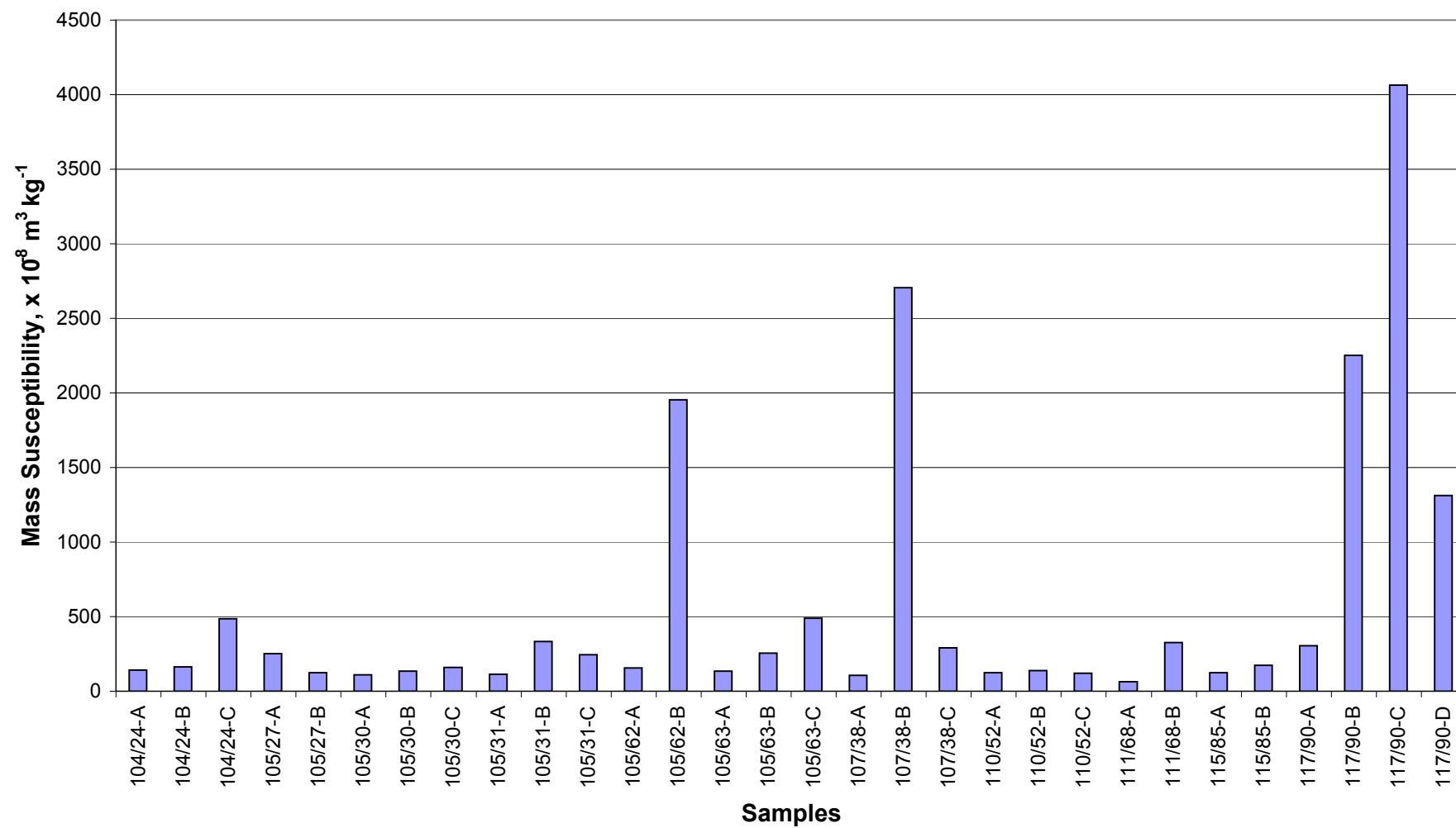
m	c	x	y
0.06678	0	60.8	4.06
0.06610	0.041274	60.8	4.06
0.06610	0.041274	541	35.80

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

RIEVAULX BLAST FURNACE SLAG SAMPLES SUSCEPTIBILITY CALIBRATION CURVE



RIEVAULX BLAST FURNACE SLAG SAMPLES MASS SUSCEPTIBILITY



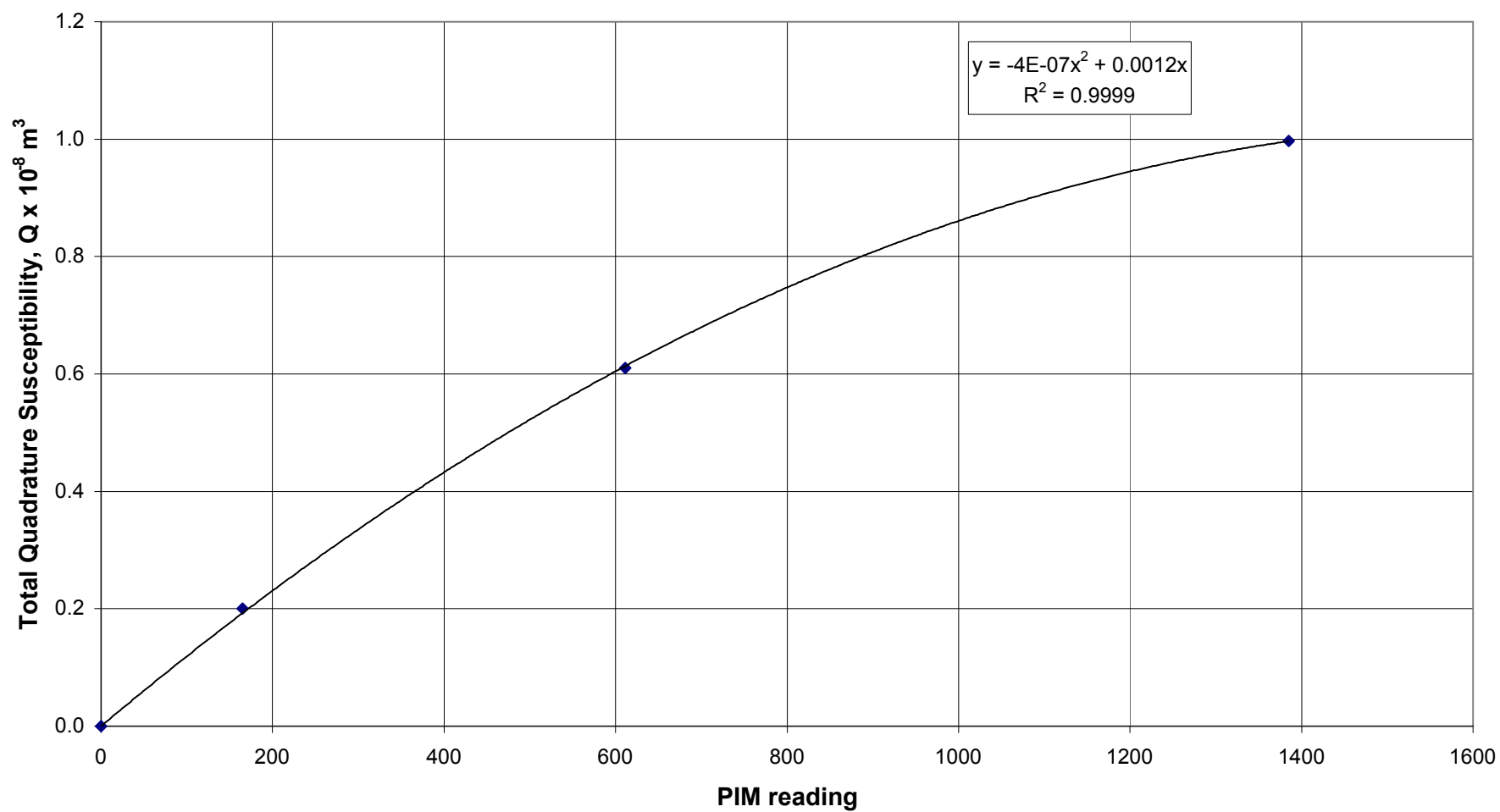
**TO DETERMINE MASS QUADRATURE SUSCEPTIBILITY AND MAGNETIC VISCOSITY
OF RIEVAULX BLAST FURNACE SAMPLES**

<u>Calibration samples</u>	Mass g	PIM reading	Total quad. sus. $Q \times 10^{-8} \text{ m}^3$	Mass quad. sus. $q \times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$	Magnetic viscosity %
High alumina cement	50.00	165	0.20	4.0	
BS87	50.00	611	0.61	12.2	
BS62	38.20	1385	1.00	26.1	
<u>Rievaulx RIV97</u>	Type				
104/24-A	35.36	3	0.00	0	0.1
104/24-B	21.43	3	0.00	0	0.1
104/24-C	24.47	14	0.02	1	0.1
105/27-A	31.84	4	0.00	0	0.1
105/27-B	26.40	4	0.00	0	0.1
105/30-A	47.09	3	0.00	0	0.1
105/30-B	39.88	1	0.00	0	0.0
105/30-C	22.21	5	0.01	0	0.2
105/31-A	37.32	4	0.00	0	0.1
105/31-B	12.85	11	0.01	1	0.3
105/31-C	14.12	5	0.01	0	0.2
105/62-A	18.21	2	0.00	0	0.1
105/62-B	20.65	1500	0.90	44	2.2
105/63-A	77.79	5	0.01	0	0.1
105/63-B	47.70	10	0.01	0	0.1
105/63-C	13.08	17	0.02	2	0.3
107/38-A	26.04	3	0.00	0	0.1
107/38-B	29.10	150	0.17	6	0.2
107/38-C	28.96	11	0.01	0	0.2
110/52-A	27.54	1	0.00	0	0.0
110/52-B	19.53	2	0.00	0	0.1
110/52-C	26.99	5	0.01	0	0.2
111/68-A	25.98	2	0.00	0	0.1
111/68-B	28.45	46	0.05	2	0.6
115/85-A	27.64	2	0.00	0	0.1
115/85-B	23.64	4	0.00	0	0.1
117/90-A	25.84	14	0.02	1	0.2
117/90-B	34.77	817	0.71	21	0.9
117/90-C	19.77	113	0.13	7	0.2
117/90-D	17.86	458	0.47	26	2.0
Mean	)			4	0.3
Median	)			0	0.1
Standard Deviation	+/-)			10	0.5

Chart data

Total quad.	PIM
0	0
0.20	165
0.61	611
1.00	1385

RIEVAULX BLAST FURNACE SLAG SAMPLES QUADRATURE SUSCEPTIBILITY CALIBRATION CURVE



RIEVAULX BLAST FURNACE SLAG SAMPLES MASS QUADRATURE SUSCEPTIBILITY & MAGNETIC VISCOSITY

