

TO DETERMINE MASS SUSCEPTIBILITY OF STINGAMIRES SM04 TRENCH 1
ARCHAEO-MAGNETIC DATING REMAINDER MATERIAL

<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	61.8	4.06	81.2
High alumina cement	50.00	530	35.80	716
<u>Test samples</u>				
T1-1A	37.70	339	22.85	606
T1-1B	32.77	275	18.51	565
T1-2	27.84	560	37.83	1359
T1-3	36.99	376	25.36	686
T1-4A	38.89	375	25.29	650
T1-4B	38.26	398	26.85	702
T1-5A	23.10	672	45.43	1967
T1-5B	22.38	749	50.65	2263
T1-6A	20.76	470	31.73	1529
T1-6B	20.14	480	32.41	1609
T1-7A	19.79	276	18.58	939
T1-7B	17.74	239	16.07	906
T1-8A	15.05	343	23.12	1536
T1-8B	13.13	280	18.85	1436
T1-9A	20.63	376	25.36	1229
T1-9B	19.60	324	21.83	1114
T1-10A	22.55	554	37.43	1660
T1-10B	21.42	458	30.92	1443
T1-11A	12.76	530	35.80	2806
T1-11B	11.59	386	26.04	2247
T1-12A	13.03	490	33.09	2539
T1-12B	13.12	546	36.88	2811
T1-12C	12.57	481	32.48	2584
T1-12D	12.02	449	30.31	2522
T1-13A	25.21	444	29.97	1189
T1-13B	23.81	407	27.46	1153
T1-13C	23.06	410	27.67	1200
T1-13D	23.26	400	26.99	1160
T1-14A	18.09	480	32.41	1792
T1-14B	18.83	566	38.24	2031
T1-14C	18.81	480	32.41	1723
T1-15A	12.73	442	29.83	2344
T1-15B	11.86	423	28.55	2407
T1-15C	13.22	466	31.46	2380
T1-15D	11.80	468	31.60	2678
T1-16A	10.18	520	35.12	3450
T1-16B	11.25	544	36.75	3267
T1-17	20.35	483	32.61	1603
T1-18A	19.65	360	24.28	1235
T1-18B	19.05	378	25.50	1338
Mean	)			1716
Median	)			1570
Standard Deviation	+/-)			758

Chart data

Total sus.	Meter	Total sus.	Meter
0	0		
4.06	61.8	4.06	61.8
		35.80	530

Slope & constant values as calculated by data trendline:

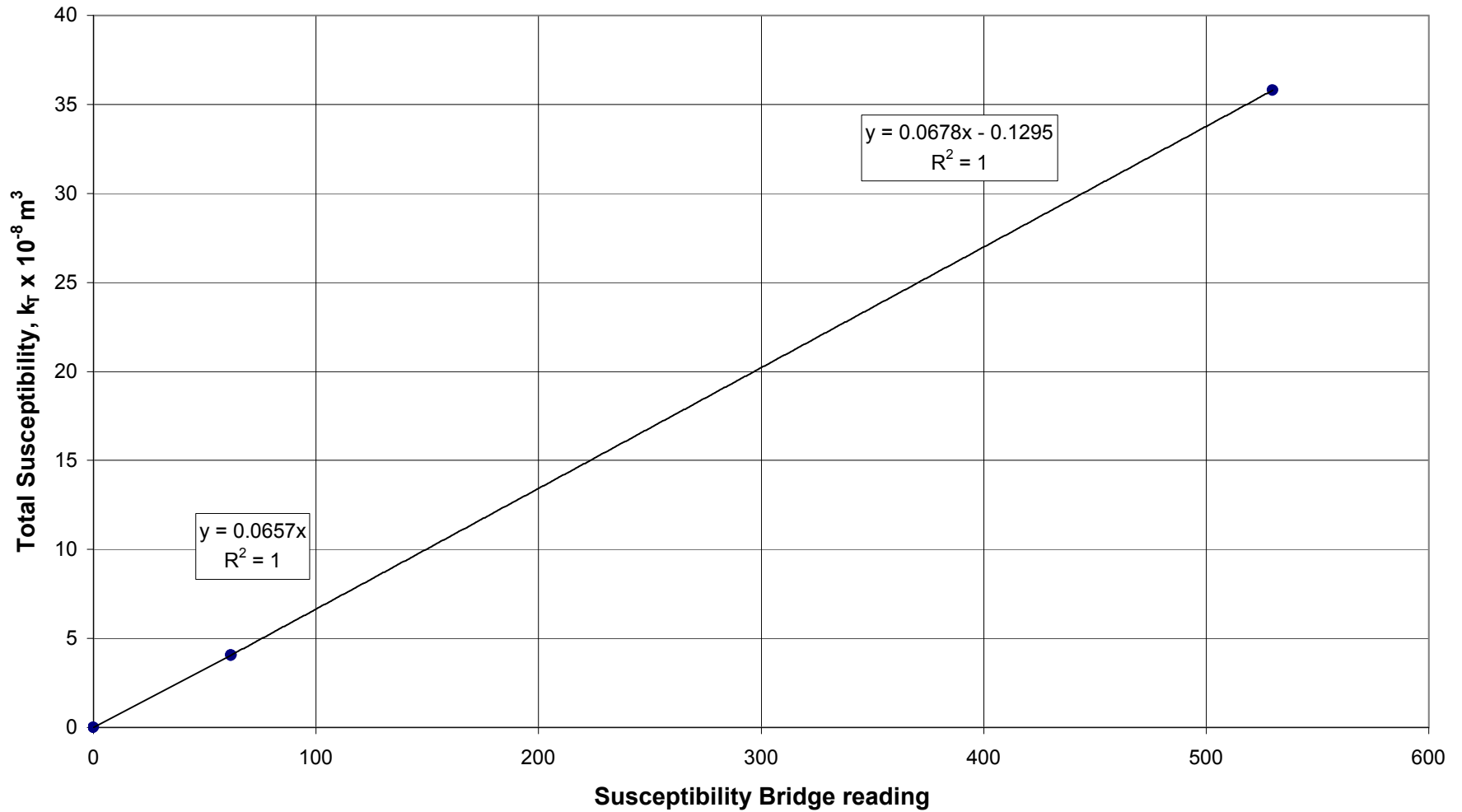
m	c	x	y
0.0657	0	61.8	4.0603
0.0678	-0.1295	61.8	4.0605
0.0678	-0.1295	530	35.8045

Slope & constant values as calculated from raw data:

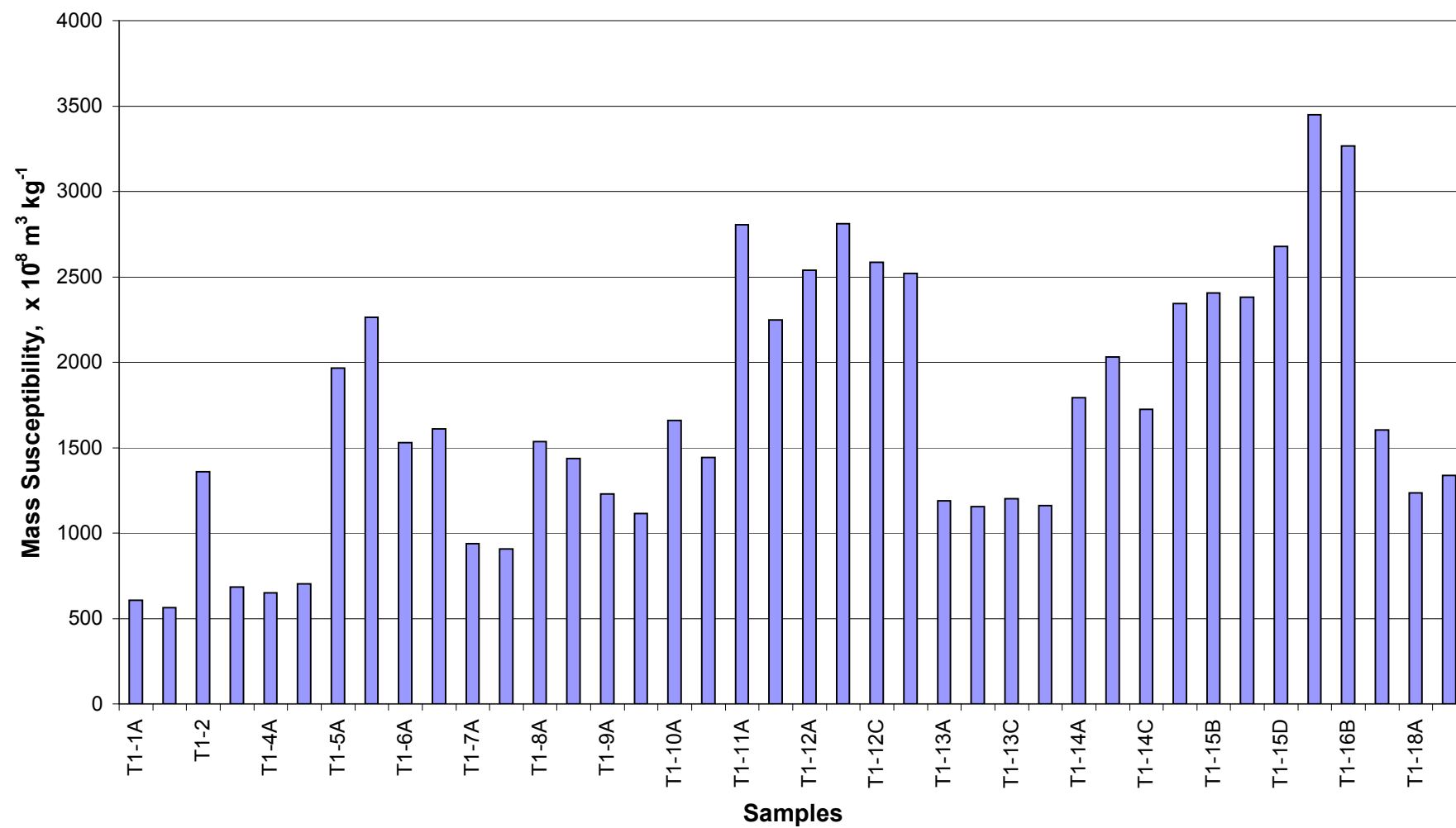
m	c	x	y
0.06570	0	61.8	4.06
0.06779	-0.12952	61.8	4.06
0.06779	-0.12952	530	35.80

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

SM04 TRENCH 1 A.M.D. MATERIAL SUSCEPTIBILITY CALIBRATION CURVE



SM04 TRENCH 1 A.M.D. MATERIAL MASS SUSCEPTIBILITY



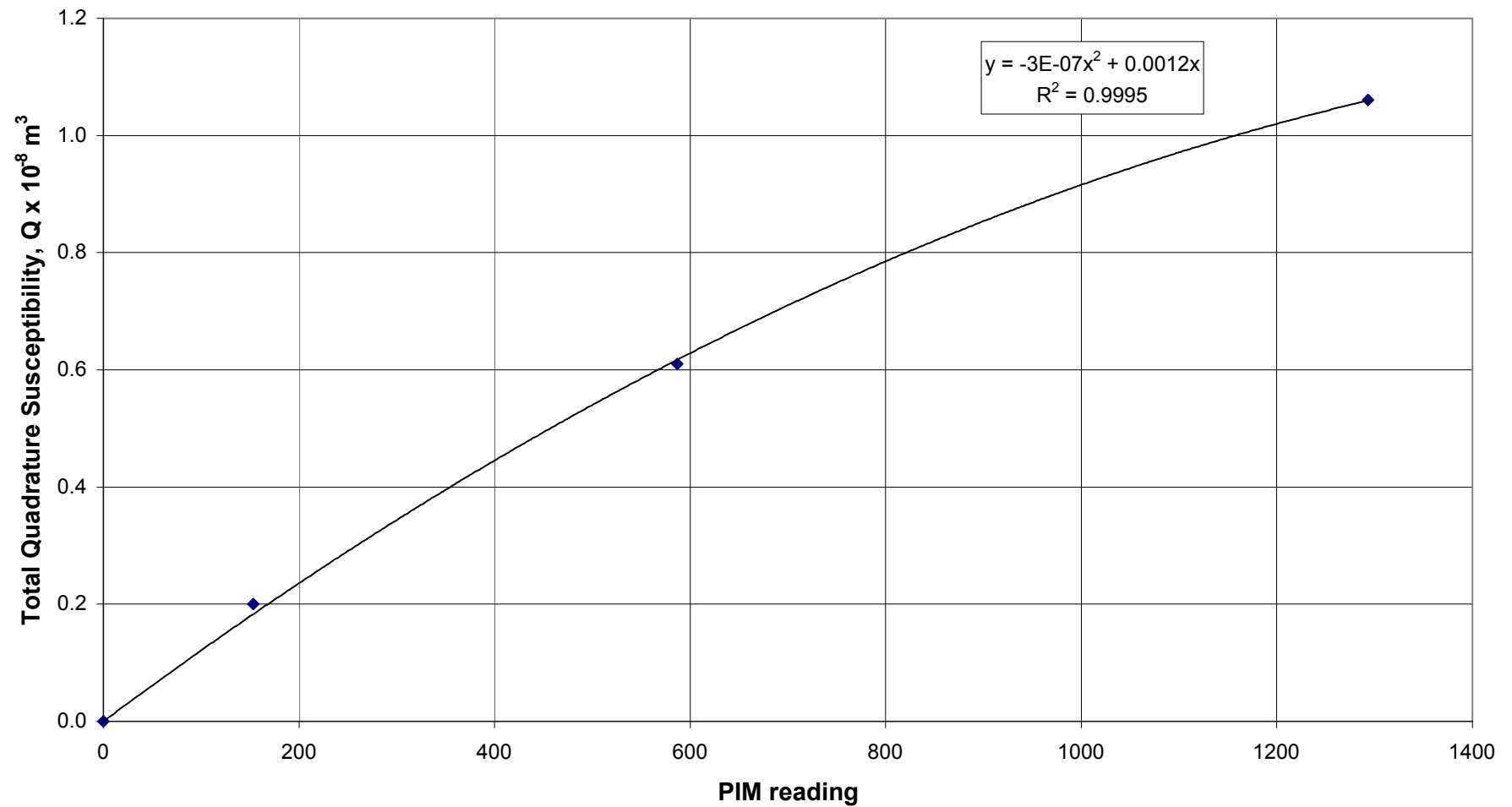
TO DETERMINE MASS QUADRATURE SUSCEPTIBILITY AND MAGNETIC VISCOSITY OF STINGAMIRES SM04 TRENCH 1 ARCHAEOMAGNETIC DATING REMAINDER MATERIAL

<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	153	0.20	4.0	
BS87	50.00	587	0.61	12.2	
BS62	40.64	1293	1.06	26.1	
<u>Test samples</u>					
T1-1A	37.70	1674	1.17	31	5.1
T1-1B	32.77	1362	1.08	33	5.8
T1-2	27.84	1712	1.18	42	3.1
T1-3	36.99	1928	1.20	32	4.7
T1-4A	38.89	1900	1.20	31	4.7
T1-4B	38.26	1936	1.20	31	4.5
T1-5A	23.10	1696	1.17	51	2.6
T1-5B	22.38	1716	1.18	53	2.3
T1-6A	20.76	1600	1.15	55	3.6
T1-6B	20.14	1660	1.17	58	3.6
T1-7A	19.79	1077	0.94	48	5.1
T1-7B	17.74	964	0.88	49	5.5
T1-8A	15.05	1416	1.10	73	4.7
T1-8B	13.13	1167	0.99	76	5.3
T1-9A	20.63	1246	1.03	50	4.1
T1-9B	19.60	1220	1.02	52	4.7
T1-10A	22.55	1650	1.16	52	3.1
T1-10B	21.42	1534	1.13	53	3.7
T1-11A	12.76	1424	1.10	86	3.1
T1-11B	11.59	1336	1.07	92	4.1
T1-12A	13.03	1790	1.19	91	3.6
T1-12B	13.12	1999	1.20	91	3.3
T1-12C	12.57	1934	1.20	95	3.7
T1-12D	12.02	1862	1.19	99	3.9
T1-13A	25.21	1999	1.20	48	4.0
T1-13B	23.81	1800	1.19	50	4.3
T1-13C	23.06	1994	1.20	52	4.3
T1-13D	23.26	1920	1.20	52	4.4
T1-14A	18.09	1732	1.18	65	3.6
T1-14B	18.83	1913	1.20	64	3.1
T1-14C	18.81	1840	1.19	63	3.7
T1-15A	12.73	1662	1.17	92	3.9
T1-15B	11.86	1572	1.15	97	4.0
T1-15C	13.22	1610	1.15	87	3.7
T1-15D	11.80	1718	1.18	100	3.7
T1-16A	10.18	1780	1.19	116	3.4
T1-16B	11.25	1926	1.20	107	3.3
T1-17	20.35	1696	1.17	58	3.6
T1-18A	19.65	1129	0.97	49	4.0
T1-18B	19.05	1119	0.97	51	3.8
Mean	)			64	4.0
Median	)			54	3.9
Standard Deviation	+/-)			24	0.8

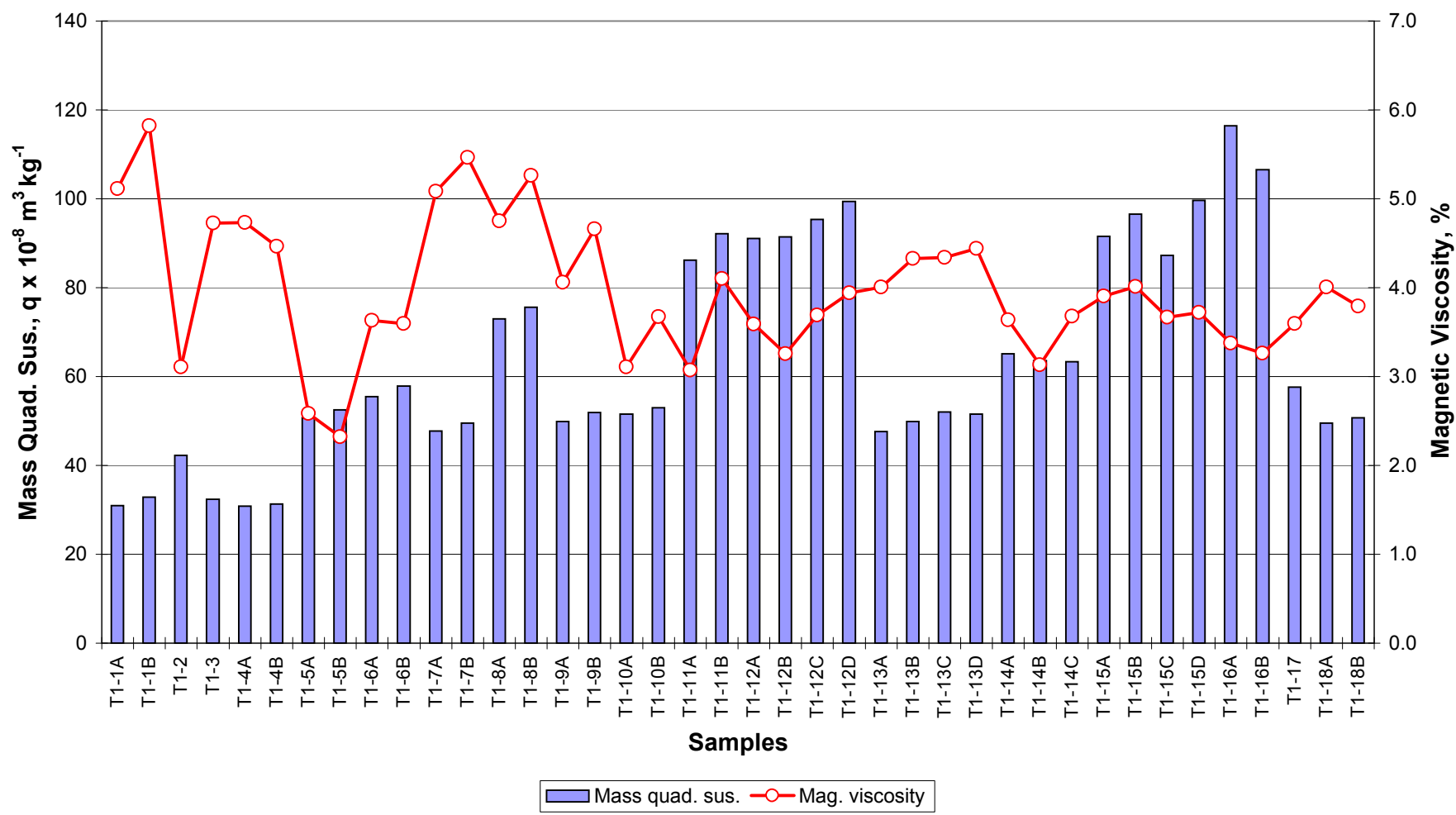
Chart data

Total quad.	PIM
0	0
0.20	153
0.61	587
1.06	1293

SM04 TRENCH 1 A.M.D. MATERIAL QUADRATURE SUSCEPTIBILITY CALIBRATION CURVE



SM04 TRENCH 1 A.M.D. MATERIAL **MASS QUADRATURE SUSCEPTIBILITY & MAGNETIC VISCOSITY**



As-measured results

	Mass g	Total susceptibility $k_T \times 10^{-8} \text{ m}^3$	Total quad. sus. $Q \times 10^{-8} \text{ m}^3$
T1-1A	37.70	22.85	1.17
T1-1B	32.77	18.51	1.08
T1-2	27.84	37.83	1.18
T1-3	36.99	25.36	1.20
T1-4A	38.89	25.29	1.20
T1-4B	38.26	26.85	1.20
T1-5A	23.10	45.43	1.17
T1-5B	22.38	50.65	1.18
T1-6A	20.76	31.73	1.15
T1-6B	20.14	32.41	1.17
T1-7A	19.79	18.58	0.94
T1-7B	17.74	16.07	0.88
T1-8A	15.05	23.12	1.10
T1-8B	13.13	18.85	0.99
T1-9A	20.63	25.36	1.03
T1-9B	19.60	21.83	1.02
T1-10A	22.55	37.43	1.16
T1-10B	21.42	30.92	1.13
T1-11A	12.76	35.80	1.10
T1-11B	11.59	26.04	1.07
T1-12A	13.03	33.09	1.19
T1-12B	13.12	36.88	1.20
T1-12C	12.57	32.48	1.20
T1-12D	12.02	30.31	1.19
T1-13A	25.21	29.97	1.20
T1-13B	23.81	27.46	1.19
T1-13C	23.06	27.67	1.20
T1-13D	23.26	26.99	1.20
T1-14A	18.09	32.41	1.18
T1-14B	18.83	38.24	1.20
T1-14C	18.81	32.41	1.19
T1-15A	12.73	29.83	1.17
T1-15B	11.86	28.55	1.15
T1-15C	13.22	31.46	1.15
T1-15D	11.80	31.60	1.18
T1-16A	10.18	35.12	1.19
T1-16B	11.25	36.75	1.20
T1-17	20.35	32.61	1.17
T1-18A	19.65	24.28	0.97
T1-18B	19.05	25.50	0.97

Recalculated results

	Mass g	Total susceptibility $k_T \times 10^{-8} \text{ m}^3$	Mass susceptibility $\chi \times 10^{-8} \text{ m}^3 \text{ kg}^{-1}$	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 %
T1-1	70.47	41.36	587	2.25	32	5.4
T1-2	27.84	37.83	1359	1.18	42	3.1
T1-3	36.99	25.36	686	1.20	32	4.7
T1-4	77.15	52.14	676	2.40	31	4.6
T1-5	45.48	96.07	2112	2.35	52	2.4
T1-6	40.90	64.14	1568	2.32	57	3.6
T1-7	37.53	34.65	923	1.82	49	5.3
T1-8	28.18	41.98	1490	2.09	74	5.0
T1-9	40.23	47.20	1173	2.05	51	4.3
T1-10	43.97	68.35	1554	2.30	52	3.4
T1-11	24.35	61.84	2540	2.17	89	3.5
T1-12	50.74	132.76	2616	4.78	94	3.6
T1-13	95.34	112.08	1176	4.79	50	4.3
T1-14	55.73	103.06	1849	3.57	64	3.5
T1-15	49.61	121.44	2448	4.64	94	3.8
T1-16	21.43	71.87	3354	2.38	111	3.3
T1-17	20.35	32.61	1603	1.17	58	3.6
T1-18	38.70	49.77	1286	1.94	50	3.9
Mean	)		1611		60	4.0
Median	)		1522		52	3.7
Standard Deviation	+/-)		757		23	0.8