

## Data Repository Item 2003146

## APPENDIX TABLE DR1. SAMPLE DESCRIPTIONS

Site name	Water depth (m)	Geographical position	Depth interval (cm)	Organic matter content*	Remarks	
Eastern Mediterranean sapropel containing site				Sample no.	C <sub>org</sub> (wt %)	
SL114	3390	35.28 °N, 21.41 °E	0-0.5	291	0.38	Above Sapropel
			4.5-5	300	0.15	Above Sapropel
			12.3-12.8	315	0.11	Above Sapropel
			22.8-23.3	336	0.12	Boundary Oxidized Sapropel
			24.3-24.8	339	0.17	In Oxidized Sapropel
			25.8-26.3	342	0.24	In Oxidized Sapropel
			26.8-27.3	344	0.72	In Oxidized Sapropel
			28.3-28.8	347	3.61	Oxidized Sapropel/Sapropel
			31.3-31.8	353	3.44	In Sapropel
			36.3-36.8	363	0.38	Just Below Sapropel
			42.3-42.8	375	0.15	Below Sapropel
Marine sediments						
I-site (SL48BC)	706	35.46 °N, 27.34 °E	27.2-30.2	15	0.31	Mediterranean Sea
NAS-2 (SL78BC)	700	40.19 °N, 25.10 °E	8.4-11.4	9	0.70	North Aegean Sea
PE138-06	113	41.52 °N, 09.04 °E	0.75-1	4	3.86	Iberian shelf site
PE138-07	1387	42.00 °N, 09.29 °E	5-6	11	0.69	Iberian slope site
PE138-14	3097	39.31 °N, 09.51 °E	1.5-2	6	3.52	Fan of Nazaré canyon
PE138-15	396	39.35 °N, 09.37 °E	1.5-2	6	0.82	Head of Nazaré canyon
Lacustrine sediments				Lake pH	LOI (wt %)	
Lac Perron	15	47.84 °N, 78.24 °W	0-1	3.72	72	Surface sediment (2001)
			14-15			Deepest interval (2001)
			6-7			High Fe(III)/Fe(II) (2000)
			7-8			Low Fe(III)/Fe(II) (2000)
Lac de la Pépinière	10	48.59 °N, 78.28 °W	0-1	4.70	74	Surface sediment (2001)
			24-25			Deepest interval (2001)
Lac Bigat	6	48.20 °N, 78.51 °W	0-1	6.87	30	Surface sediment
Lac Campredon	2	48.32 °N, 79.30 °W	0-2	7.51	17	Surface sediment
Green Lake	19	47.82 °N, 78.27 °W	2-3	5.49	56	Subsurface sediment
Lac Hector	8	48.48 °N, 79.17 °W	0-1	6.00	37	Surface sediment
Lac Helene	7	48.21 °N, 79.18 °W	0-2	9.11	12	Surface sediment
Lake Biwa	75	35.23 °N, 136.00 °E	0-2	7.20	13	Japan

\*C<sub>org</sub> is organic carbon, LOI is loss on ignition.

**APPENDIX TABLE DR2. HYPERFINE PARAMETERS FOR THE REFERENCE  
MATERIALS AT LHT**

Material	<CS> (mm/s)	< > (mm/s)	<i>H</i> <sub>peak</sub> (kOe)	<  <i>H</i>  > (kOe)	HFD (kOe)	Remarks
2-line ferrihydrite #1	0.46	-0.047	495	479	29	
2-line ferrihydrite #2	0.46	-0.039	499	486	30	
6-line ferrihydrite	0.47	-0.057	500	485	30	
As-rich ferrihydrite #1	0.47	-0.024	468	456	35	Natural, yellow
As-rich ferrihydrite #2	0.47	-0.023	470	456	38	Natural, red
Bulk hematite	0.47	0.179	539	539	10	
Nanophase hematite	0.47	-0.088	530	507	29	
Microcrystalline Hm #1	0.47	-0.117	530	526	16	
Microcrystalline Hm #2	0.47	-0.093	531	530	30	
Microcrystalline Hm #3	0.47	-0.117	532	530	12	
Goethite	0.47	-0.137	504	502	12	
HSA* goethite #1	0.47	-0.143	501	492	24	SA 211 m <sup>2</sup> /g
HSA goethite #2	0.47	-0.138	501	495	21	SA 135 m <sup>2</sup> /g
MSA goethite #1	0.46	-0.139	503	501	13	SA 96 m <sup>2</sup> /g
MSA goethite #2	0.46	-0.140	503	502	10	SA 73 m <sup>2</sup> /g
MSA goethite #3	0.47	-0.139	504	500	13	SA 62 m <sup>2</sup> /g
MSA goethite #4	0.46	-0.140	503	501	13	SA 39 m <sup>2</sup> /g

\*HSA is high surface area, MSA is medium surface area, SA is surface area.