

## Supplement 2: Data tables for sediments and pore waters

### Porewater data

Here, we compiled all the data that is displayed in Figure 2 and was used for the calculation of the diffusive fluxes of Mn across the sediment-water interface for sites LF1, BY5, LL19, BY15, F80 and LD1. For some sites a different set of samples with a higher resolution have been used to calculate the diffusive flux. The sampling procedure and the treatment of the samples is equal to the description in the main article.

In the third table of each site, where applicable, the results for  $\text{CaMnCO}_3$ , MnS and FeS of the Phreeq-C saturation calculations are shown.

<b>Fladen BS1</b>						
Depth cm	Mn <sup>2+</sup> μM	Ca <sup>2+</sup> mM	Fe <sup>2+</sup> μM	Alk mEq	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM
BW	2.5	6.7	0.7	1.97		
0.75	22.93	9.2	1.4	3.43	27.00	28.78
1.25		9.5	1.1	2.14	18.32	28.72
1.75	115.77	9.5	0.7	1.94	27.96	28.61
2.5	145.80	9.6	0.7	2.67	34.71	28.52
3.5	144.53	9.5	18.3	2.12	40.50	28.75
4.5	111.03	9.3	47.8	1.98	45.32	28.60
5.5	64.44	9.3	68.9	2.42	56.89	28.45
6.5	50.78	9.4	88.3	2.25	131.14	28.62
7.5	48.42	9.4	111.4	2.20	166.82	28.34
8.5	47.51	9.5	103.9	2.36	103.18	28.29
9.5	47.87	9.4	98.7	2.64	120.54	28.15
11.0	41.68	9.1	84.7	2.49	125.36	28.04
13.0	35.13	9.0	66.6	2.92	162.96	27.97
15.0	30.22	9.2	46.7	3.72	178.39	27.67
17.0	28.03	9.4	50.1	2.75	187.07	27.72
19.0	25.12	9.1	28.1	2.94	195.75	27.78
22.0	23.48	9.0	44.8	3.14	203.46	27.77
26.0	20.93	9.0	29.4	3.98	268.07	27.33
30.0	19.29	9.2	6.8		311.46	27.21

<b>LF1</b>							
Depth cm	Mn <sup>2+</sup> μM	Ca <sup>2+</sup> mM	Fe <sup>2+</sup> μM	Alk mEq	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM	Mn flux μmol m <sup>-2</sup> d <sup>-1</sup>
BW	0.73	2.87	0.00		49.73	6.28	
0.25	13.45	3.15	256.79		52.51	5.53	-115
0.75	15.64	3.14	208.57	2.24	75.72	6.28	
1.25	15.64	3.21	142.50	2.11	90.56	6.35	
1.75	15.64	3.30	140.00	2.21	107.69	6.36	
2.5	15.64	3.49	53.21	2.71	118.66	5.95	
3.5	13.82	3.62	43.57	3.05	144.07	6.01	
4.5	13.45	3.80	20.00	3.59	165.24	5.65	
5.5	13.82	3.85	4.29	3.89	166.80	4.87	
6.5	14.18	3.89	0.00	4.13	185.80	4.90	
7.5	13.45	3.78	0.00	4.39	187.34	4.52	
8.5				4.67	229.20	4.21	
9.5	12.73	3.72	0.00	4.75	235.62	4.77	
11	12.36	3.65	0.00	4.81	251.91	4.83	
13	12.36	3.67	0.00	5.07	234.76	4.41	
15	12.00	3.59	0.00	4.92	244.14	4.02	
17	12.73	3.56	0.00	5.02	250.38	3.89	
19	12.00	3.46	0.00	4.78	245.62	3.83	
21	13.45	3.66	0.00	5.01	195.34	3.33	
23	13.82	3.63	0.00	5.00	259.87	4.09	
25	14.18	3.51	0.00	4.98	238.63	3.93	

**BY5**

Depth cm	Mn <sup>2+</sup> μM	Ca <sup>2+</sup> mM	Fe <sup>2+</sup> μM	Alk mEq	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM	Mn flux μmol m <sup>-2</sup> d <sup>-1</sup>
BW	22.39	4.5935	0.0	1.49	5.79	13.24	
0.5	58.79	4.5883	0.0				-235.86
1.5	73.54	4.6731	0.0	1.95	88.71	12.62	
2.25	93.38	4.6689	0.0	3.07	110.89	12.43	
2.75				3.22	104.14	12.43	
3.25	108.30	4.6337	0.0	3.40	118.61	12.32	
3.75	117.95	4.6058	0.0	2.95	132.11	12.20	
4.5	123.05	4.603	0.0	3.74	134.04	12.20	
5.5	137.97	4.7091	0.0	3.99	147.54	12.08	
6.5	149.08	4.761	0.0	4.14	158.14	12.00	
7.5	158.91	4.731	0.0	4.26	169.71	11.87	
8.5	168.19	4.8041	0.0	4.34	182.25	11.82	
9.5	174.01	4.7769	0.0	4.42	187.07	11.76	
11	178.20	4.7927	0.0	4.71	197.68	11.72	
13	189.85	4.7914	0.0	4.83	212.14	11.61	
15	195.86	4.7922	0.0	4.95	221.79	11.49	
17	206.05	4.869	0.0	5.08	231.43	11.40	
19	208.42	4.7951	0.0	4.99	240.11	11.36	
22	215.52	4.9189	0.0	5.15	250.71	11.25	
26	221.16	4.9703	0.0	5.26	256.50	11.20	

**LF3 2011**

Depth cm	pH	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM	HS <sup>-</sup> μM	Ca mM	Cl mM	Fe μM	Mn <sup>2+</sup> μM	Na mM	P μM	Alk mEq
BW	7.21	22.1		7.58							2.84
1	7.25	62.3	7.78	21.14	3.46			11.64	142.89	42.62	3.12
6	7.67	186.9	6.75	154.99	3.64			5.82	142.54	38.10	4.64
11	8.18	287.4	6.09	360.87	3.59			3.64	142.16	54.24	6.17
16	8.14	351.8	5.21	563.32	3.50			3.27	139.07	76.19	8.36
21	8.29	426.1	4.52	753.16	3.59			3.64	143.01	91.69	8.70
26	8.23	516.6	3.89	930.87	3.55			4.36	139.28	100.73	9.81
31	8.30	536.7	3.40	1093.85	3.50			4.36	138.34	109.12	9.54
36	8.35	568.8	3.02		3.54			5.09	139.88	111.06	10.48
41	8.32	663.3	2.61	1325.95	3.56			4.73	140.55	122.04	10.12
46	8.32	663.3	2.38	1420.58	3.64			4.36	143.21	128.49	11.85

**LF3 2009 Aranda**

Depth cm	Mn <sup>2+</sup> μM	Mn flux μmol m <sup>-2</sup> d <sup>-1</sup>
BW	1.09	
1	0.91	0

**LF3**

Depth [cm]	SI		SI
	Mn <sub>0.74</sub>	Ca <sub>0.26</sub> CO <sub>3</sub>	MnS
1		-3.4	-3.0
6		-2.9	-2.2
11		-2.2	-1.8
16		-2.3	-1.8
21		-2.0	-1.6
26		-2.1	-1.6
31		-1.9	-1.5
36		-1.8	-1.4
41		-1.8	-1.4
46		-1.7	-1.4

**LL19 2011**

Depth cm	pH	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM	HS <sup>-</sup> μM	CH <sub>4</sub> mM	Ca mM	Cl mM	Fe μM	Mn <sup>2+</sup> μM	Na mM	P μM	Alk mEq
BW	6.94	5.2	8.75	2.35	0.0007	3.53	269.40	6.98	3.45	141.02	0.00	2.1

2.5	7.35	93.6	8.15	2.44	0.0007	3.54	272.28	6.98	40.00	138.69	23.57	3.0
7.5	7.93	163.5	7.59	2.12	0.0009	3.62	286.42	7.16	79.27	143.78	51.33	4.1
12.5	8.05	228.8	7.09	2.45	0.0008	3.64	276.71	6.98	114.55	146.14	83.94	5.9
17.5	8.1	279.5	6.25	11.86	0.0009	3.56	270.56	6.98	135.45	140.28	101.05	6.2
22.5	8.08	321.3	6.49	2.37	0.0016	3.89	294.19	8.06	154.55	154.69	123.97	7.0
27.5	8.19	349.0	5.79	21.32	0.0011	3.75	287.63	7.52	157.09	151.63	140.44	7.3
32.5	8.22	325.2	5.50	9.98	0.0011	3.68	270.14	7.70	147.27	146.77	139.79	7.4
37.5	8.22	398.9	5.18	2.29	0.0013	3.72	401.37	7.16	141.27	143.20	144.31	8.0

### LL19 2009 Aranda

Depth cm	Mn <sup>2+</sup> μM	Mn flux μmol m <sup>-2</sup> d <sup>-1</sup>
BW	6.00	
0.25	12.18	-80

### LL19

Depth [cm]	SI		SI	SI
	Mn <sub>0.74</sub>	Ca <sub>0.26</sub> CO <sub>3</sub>	MnS	FeS
0	-4.8172		-4.8965	-1.2394
2	-2.6607		-3.3248	-0.762
7	-1.0278		-2.5188	-0.275
12	-0.3291		-2.2574	-0.2367
17	-0.1567		-1.5025	0.4538
22	-0.0326		-2.1739	-0.2372
27	0.1553		-1.1464	0.7752
32	0.2275		-1.4475	0.4883
37	0.1339		-2.134	-0.2049

### BY15 2010

Depth cm	pH	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM	HS <sup>-</sup> μM	CH <sub>4</sub> mM	Ca mM	Cl mM	Fe μM	Mn <sup>2+</sup> μM	Na mM	P μM	Alk mEq
BW	6.89	48.31	9.97	11.90	0.001	4.02	281.45	6.45	11.27	166.98	14.85	2.37
2.5	7.71	161.93	8.65	37.34	0.001	3.96	278.66	6.45	60.18	165.82	36.48	4.17
7.5	7.93	215.70	8.13	76.14	0.001	3.98	297.83	5.73	114.00	165.89	54.88	5.31
12.5	8.00	266.01	7.77	67.25	0.001	3.96	276.58	5.55	156.91	169.28	68.44	6.12
17.5	8.10	297.12	7.50	67.42	0.001	4.09	269.16	5.55	182.73	169.18	85.56	6.47
22.5	8.01	317.48	7.11	106.59	0.001	4.10	286.04	5.01	194.91	168.97	95.56	7.12
27.5	8.05	325.93	6.74		0.001	4.14	271.08	5.55	204.55	172.12	104.93	7.57
32.5	8.07	371.63	6.48	131.08	0.001	4.16	328.91	6.63	208.36	171.55	114.94	7.99
37.5	8.15	388.53	6.18	173.94	0.001	4.13	312.07	4.83	207.82	168.12	119.13	8.36

### BY15 2009 Aranda

Depth cm	Mn <sup>2+</sup> μM	Mn flux μmol m <sup>-2</sup> d <sup>-1</sup>
BW	15.45	
0.25	22.91	-98

### BY15

Depth [cm]	SI		SI	SI
	Mn <sub>0.74</sub>	Ca <sub>0.26</sub> CO <sub>3</sub>	MnS	FeS
0	-4.2969		-3.8046	-0.6938
2	-1.5689		-1.641	0.7484
7	-0.7727		-0.9586	1.1307
12	-0.3272		-0.8487	1.0296
17	-0.0164		-0.7124	1.0832
22	-0.1509		-0.6196	1.146
27	0.1885			
32	-0.0036		-0.4791	1.3972
37	0.1256		-0.3041	1.484

### F80 2011

Depth cm	pH	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM	HS <sup>-</sup> μM	CH <sub>4</sub> mM	Ca mM	Cl mM	Fe μM	Mn <sup>2+</sup> μM	Na mM	P μM	Alk mEq
BW	6.96	34.72	9.72	25.50	0.005	3.96	277.63	7.70	9.27	162.93	12.27	2.44

2.5	7.92	341.87	6.25	1101.51	0.115	3.92	282.25	7.52	40.18	164.08	80.07	7.71
7.5	8.00	591.82	3.46	1877.74	0.743	3.84	281.40	7.88	86.18	163.62	146.57	12.13
12.5	8.04	771.47	2.11	2031.81	0.326	3.97	283.67	7.52	118.91	163.72	196.62	14.71
17.5	8.02	911.51	1.07	2031.59	1.149	4.01	286.43	6.98	155.64	167.69	241.49	16.55
22.5	7.93	1012.46	0.38	2184.51	1.406	3.92	292.56	6.63	185.27	166.99	285.72	18.24
27.5	7.95	1090.62	0.18	2035.96	3.194	3.69	285.37	6.98	200.55	162.10	304.77	18.95
32.5	8.03	1214.36		1933.46	3.544	3.66	277.23	6.27	219.45	164.89	328.66	19.19
37.5	8.26	1318.57	0.16		3.852	3.81	272.27	6.63	237.82	164.35	364.18	19.11
42.4	8.11	1351.14		1344.26	3.707	3.84	291.90	6.45	256.55	164.60	394.20	19.77

### F80 2009 Aranda

Depth cm	Mn <sup>2+</sup> μM	Mn flux μmol m <sup>-2</sup> d <sup>-1</sup>
BW	12.18	
0.25	18.55	-84

### F80

Depth [cm]	SI Mn <sub>0.74</sub> Ca <sub>0.26</sub> CO <sub>3</sub>	SI MnS	SI FeS
0	-4.2317	-3.4723	-0.1838
2	-1.9964	-0.909	2.5863
7	-1.3864	-0.4807	2.8303
12	-0.9947	-0.3004	2.8209
17	-0.7743	-0.205	2.7204
22	-0.8142	-0.218	2.6075
27	-0.6699	-0.1663	2.594
32	-0.4397	-0.0497	2.5892
37	0.3352	0.1891	2.5743
42	0.0255	0.0768	2.4554

### LD1 2011

Depth cm	pH	NH <sub>4</sub> <sup>+</sup> μM	SO <sub>4</sub> <sup>2-</sup> mM	HS <sup>-</sup> μM	CH <sub>4</sub> mM	Ca mM	Cl mM	Fe μM	Mn <sup>2+</sup> μM	Na mM	P μM	Alk mEq
BW	6.99	37.35		58.05	0.001							2.24
2.5	7.94	968.41	1.02	2252.65		3.52	273.19		205.45	139.10	198.23	15.88
7.5	8.08	1151.79	0.33	1527.95	0.971	3.42	271.68		303.09	138.25	245.69	18.79
12.5	8.19	1359.85	0.20	1442.33	1.302	3.47	277.29		378.00	140.30	323.17	18.96
17.5	8.17	1539.70	0.19	1569.75	1.851	3.58	274.58		830.00	141.90	504.29	19.49
22.5	8.07	1631.39	0.19	1114.11	2.447	3.51	273.47			137.96	404.86	20.16
27.5	8.09	1673.71	0.28	889.60	3.129	3.57	288.03		1078.00	139.18	565.96	20.49
32.5	8.07	1800.66	0.35	560.07	45.801	3.58	281.86		1221.27	141.41	598.57	21.17
37.5	8.08	1959.35	0.29	664.11	55.987	3.46	279.75		1194.91	139.09	620.20	21.10

### LD1 2011

Depth cm	Mn <sup>2+</sup> μM	Mn flux μmol m <sup>-2</sup> d <sup>-1</sup>
BW		
2.5	205.45	~220 *

\* LD1 has no measured bottom water sample. Therefore, the diffusive flux was estimated using the bottom water value of 3.1 from the Landsort Deep site BY31 from Mort et al. 2010.

### LD1

Depth [cm]	SI Mn <sub>0.74</sub> Ca <sub>0.26</sub> CO <sub>3</sub>	SI MnS	SI FeS
2	-0.985	-0.1607	
7	-0.1095	0.1273	
12	0.2242	0.3243	
17	0.6117	0.6309	
22	0.4445	0.3291	
27	1.0928	0.5108	
32	1.3571	0.3398	
37	1.2882	0.4138	

## Sediment data

### Fladen BS1 2007

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.25	2007	92.92	5.91	2.82	0.47	0.166	3.81	3.66	0.299	0.019
0.75	2006	92.35	6.14	2.73	0.44	0.124	3.90	3.79	0.298	0.011
1.25	2006	91.96	6.10	2.98	0.40	0.112	3.89	3.80	0.301	0.014
1.75	2005	89.90	6.28	2.67	0.37	0.084	4.33	3.82	0.294	0.098
2.5	2005	89.82	6.21	2.67	0.35	0.074	3.95	3.81	0.296	0.02
3.5	2004	88.97	6.22	2.68	0.35	0.075	3.91	3.87	0.301	0.009
4.5	2003	88.39	6.16	2.52	0.34	0.064	3.91	3.85	0.302	0.011
5.5	2002	88.07	6.35	2.68	0.34	0.048	3.96	3.82	0.291	0.004
6.5	2001	87.94	6.27	2.60	0.32	0.042	3.97	3.75	0.289	0.011
7.5	2000	87.01	6.34	2.58	0.33	0.042	3.96	3.72	0.283	0.009
8.5	1999	86.23	6.31	2.43	0.32	0.041	4.00	3.73	0.285	0.011
9.5	1998	86.50	6.36	2.54	0.32	0.041	4.17	3.71	0.282	0.007
11	1996	85.76	6.22	2.57	0.34	0.042	4.27	3.71	0.288	0.011
13	1994	84.51	6.50	2.37	0.34	0.040	3.95	3.83	0.285	0.013
15	1992	86.14	6.63	2.49	0.35	0.040	3.82	3.86	0.281	0.014
17	1990	85.19	6.54	2.48	0.37	0.040	3.67	3.89	0.287	0.016
19	1988	85.22	6.52	2.61	0.35	0.039	3.68	3.85	0.285	0.016
22	1985	84.61	6.46	2.37	0.35	0.039	3.73	3.73	0.279	0.018
26	1981	83.35	6.52	2.14	0.45	0.039	3.72	3.83	0.283	0.023
30	1977	82.99	6.17	2.11	0.42	0.036	3.51	3.56	0.279	0.026

### LF1

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.25	2009.5	86.67	4.55	2.79	0.16	0.03	2.22	2.19	0.48	0.00
0.75	2008.2	85.49	4.91	2.45	0.14	0.03	1.89	2.19	0.45	0.01
1.25	2006.5	84.09	4.60	2.22	0.16	0.03	1.64	2.03	0.44	0.01
1.75	2004.8	83.22	4.92	2.26	0.16	0.03	1.77	2.16	0.44	0.01
2.5	2002.8	82.73	4.60	1.93	0.16	0.02	1.54	2.00	0.43	0.01
3.5	1998.9	73.25	4.34	1.42	0.28	0.02	1.23	1.78	0.41	0.01
4.5	1994.4	68.04	4.18	1.06	0.47	0.02	1.23	1.83	0.44	0.02
5.5	1989.6	72.03	4.57	1.47	0.62	0.02	1.40	2.16	0.47	0.01
6.5	1984.8	73.90	4.64	1.47	0.50	0.02	1.41	2.07	0.45	0.01
7.5	1979.9	79.90	5.26	2.41	0.55	0.03	1.27	2.51	0.48	0.01
8.5	1964.1	81.94	5.26	2.71	0.74	0.03	1.20	2.74	0.52	0.02
9.5	1954.1	77.28	4.65	1.55	0.56	0.02	1.09	2.18	0.47	0.01
11	1943.5	77.02	4.62	1.41	0.70	0.02	0.70	2.32	0.50	0.01
13	1903.9	67.04	3.96	1.13	0.57	0.02	0.65	1.76	0.44	0.01
15	1847.7	65.16	4.24	0.99	0.65	0.02	0.54	1.98	0.47	0.02
17	1843.3	66.81	4.42	1.16	1.50	0.02	0.55	2.85	0.65	0.07
19		63.77	3.97	0.88	2.30	0.02	0.52	3.32	0.84	0.09
21		61.96	4.01	0.73	1.69	0.02	0.55	2.81	0.70	0.05
23		63.15	4.28	1.07	2.07	0.02	0.59	3.28	0.77	0.09
25		64.74	4.24	0.83	2.82	0.02	0.67	3.94	0.93	0.14

### BY5 2007

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.5	2006	99.03	3.35	11.91	2.03	0.060	0.71	3.37	1.01	0.376
2.25	2001	96.49	6.08	6.22	1.41	0.108	0.64	4.10	0.67	0.162
2.75	1998	91.26	6.86	6.71	1.45	0.079	0.59	4.63	0.67	0.282
3.25	1995	95.86	6.52	6.14	1.49	0.093	0.60	4.36	0.67	0.263
3.75	1991	87.24	7.02	5.73	1.49	0.072	0.54	4.66	0.66	0.239
4.5	1985	94.43	6.69	3.93	1.57	0.073	0.57	4.55	0.68	0.204
5.5	1979	89.72	7.00	5.64	1.76	0.081	0.69	4.98	0.71	0.224
6.5	1972	93.91	7.02	5.27	1.63	0.085	0.64	4.84	0.69	0.147
7.5	1965	92.77	7.03	5.18	1.54	0.106	0.66	4.73	0.67	0.104
8.5	1957	92.63	7.14	5.04	1.58	0.159	0.70	4.77	0.67	0.122
9.5	1947	91.96	7.23	4.73	1.17	0.122	0.66	4.46	0.62	0.12

11	1924	91.61	7.26	4.59	0.77	0.087	0.67	4.10	0.56	0.093
13	1895	91.47	7.28	4.52	0.71	0.090	0.66	4.14	0.57	0.075
15	1886	91.95	7.28	4.44	0.92	0.323	0.72	4.34	0.60	0.085
17		90.32	6.95	4.56	1.91	1.041	0.87	5.08	0.73	0.163
19		89.92	7.01	4.72	2.38	0.198	0.66	5.53	0.79	0.179
22		90.06	7.13	5.10	2.23	0.107	0.66	5.40	0.76	0.21
26		90.29	6.95	5.05	2.69	0.518	0.78	5.63	0.81	0.214

### LF3

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.25	2009.5	97.64	5.07	9.54	0.84	0.03	1.02	3.03	0.60	0.29
0.75	2008.8	97.51	5.58	8.52	0.91	0.03	0.96	3.40	0.61	0.35
1.25	2008.0	96.87	5.86	7.39	1.05	0.03	0.74	3.62	0.62	0.30
1.75	2007.2	95.37	6.37	5.60	0.99	0.03	0.69	3.78	0.59	0.17
2.5	2006.3	94.59	6.49	5.43	0.85	0.03	0.60	3.71	0.57	0.10
3.5	2004.3	94.88	6.32	5.48	0.95	0.03	0.53	3.71	0.59	0.08
4.5	2002.2	94.10	6.26	5.23	0.84	0.03	0.48	3.54	0.57	0.05
5.5	1999.9	93.77	6.22	5.17	0.99	0.03	0.45	3.65	0.59	0.07
6.5	1997.4	93.26	6.23	5.20	1.11	0.03	0.44	3.72	0.60	0.07
7.5	1994.4	93.19	6.12	5.23	1.32	0.03	0.44	3.83	0.63	0.11
8.5	1991.4	90.16	6.08	3.66	1.26	0.03	0.45	3.67	0.60	0.05
9.5	1988.9	91.36	6.05	3.91	1.19	0.03	0.46	3.65	0.60	0.06
11	1986.6	86.20	6.17	2.76	0.80	0.03	0.50	3.34	0.54	0.04
13	1983.1	87.19	6.31	3.22	0.82	0.03	0.58	3.46	0.55	0.04
15	1976.8	92.10	6.19	5.50	0.90	0.03	0.47	3.48	0.56	0.11
17	1961.3	91.07	6.18	4.57	1.10	0.03	0.44	3.69	0.60	0.10
19	1943.7	87.14	6.52	3.01	0.94	0.03	0.60	3.74	0.57	0.04
21	1923.1	83.99	5.95	2.50	0.77	0.03	0.83	3.20	0.54	0.02
23	1869.7	81.57	5.94	2.06	1.29	0.03	0.71	3.59	0.60	0.04
26		81.78	5.88	2.12	2.46	0.03	0.60	4.59	0.78	0.11
30		85.52	6.37	2.67	2.48	0.03	0.54	4.88	0.77	0.12
34		83.84	6.14		1.49	0.03	0.58	3.97	0.65	0.06

### LL19

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.25	2009.5	98.93	5.32	11.83	0.99	0.04	0.80	3.52	0.32	1.62
0.75	2008.2	99.01	5.14	13.65	2.02	0.05	0.83	4.61	0.43	2.25
1.25	2007.1	98.90	5.23	12.87	2.19	0.06	0.84	4.75	0.44	2.15
1.75	2005.8	98.71	5.57	11.68	2.04	0.06	0.84	4.71	0.41	2.04
2.5	2004.5	98.30	6.08	9.82	1.81	0.06	0.81	4.66	0.37	1.66
3.5	2001.0	97.91	6.42	8.83	2.37	0.10	0.86	5.66	0.43	1.66
4.5	1997.3	97.74	6.34	8.44	2.17	0.75	1.00	5.56	0.42	1.74
5.5	1993.7	97.71	6.09	8.47	2.41	2.11	1.24	5.82	0.46	1.67
6.5	1990.1	97.38	6.25	7.59	2.81	1.26	1.15	6.10	0.47	1.89
7.5	1984.8	97.38	6.38	7.73	3.93	0.15	0.94	7.09	0.54	2.31
8.5	1978.9	97.41	5.87	7.18	6.86	0.29	0.79	9.97	0.82	1.28
9.5	1973.0	95.63	7.64	3.74	4.54	0.96	0.95	8.99	0.57	0.25
11	1968.7	92.39	8.72	2.87	1.48	0.17	0.82	6.43	0.36	0.12
13	1958.6	88.40	8.85	2.48	0.63	0.11	0.79	5.54	0.30	0.11
15	1944.6	86.65	9.10	2.21	0.61	0.10	0.79	5.68	0.30	0.12
17	1930.1	86.56	8.64	2.14	0.81	0.10	0.77	5.62	0.31	0.09
19	1911.8	87.11	8.34	2.17	0.93	0.10	0.73	5.49	0.32	0.08
21	1891.3	86.28	8.70	1.95	0.68	0.10	0.73	5.30	0.29	0.06
23	1862.7	86.09	8.93	1.97	0.56	0.11	0.77	5.44	0.29	0.06
25		86.51	8.93	1.92	0.62	0.11	0.75	5.48	0.30	0.05

### BY15

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.25	2009.5	99.28	4.11	10.87	1.38	0.12	0.64	3.29	0.80	1.96
0.75	2008.3	99.12	4.67	11.57	1.90	0.19	0.72	4.19	0.90	2.07
1.25	2007.0	98.66	5.35	9.54	2.54	0.85	0.94	5.31	0.99	1.49
1.75	2005.6	98.27	5.53		3.29	0.78	0.80	6.23	1.13	1.59

2.25	2003.8	98.16	5.75	9.89	1.92	0.12	0.58	4.42	0.77	2.13
2.75	2001.8	98.40	5.71	10.63	2.04	0.08	0.55	4.21	0.74	2.66
3.25	1999.6	97.87	5.70	10.11	2.02	0.08	0.53	4.20	0.74	2.53
3.75	1996.7	97.67	5.74	8.55	4.55	0.14	0.59	6.45	1.12	2.29
4.25	1994.1	98.21	4.86	9.39	5.24	0.30	0.74	6.94	1.43	2.81
5	1992.1	97.17	4.22	6.01	4.45	6.89	2.50	5.97	1.41	1.50
6	1987.9	96.65	4.48	4.50	5.25	6.13	2.07	7.14	1.59	2.03
7	1983.8	94.91	5.45	3.88	2.98	7.55	2.75	5.64	1.03	0.44
8	1979.9	93.32	6.28	3.31	1.92	5.87	2.30	4.86	0.77	0.26
9	1975.9	93.07	6.65	3.74	1.94	3.67	1.63	5.10	0.77	0.39
10.5	1971.6	91.55	6.14	3.33	1.32	6.33	2.31	4.22	0.69	0.42
12.5	1961.6	92.20	7.60	3.32	1.84	2.03	1.03	5.63	0.74	0.43
14.5	1954.8	90.72	7.74	3.35	0.78	2.59	1.15	4.55	0.59	0.20
16.5	1945.8	91.11	7.35	3.11	1.70	3.28	1.35	5.29	0.72	0.26
18.5	1938.0	90.88	7.53	3.23	1.46	1.57	0.86	5.34	0.71	0.33
20.5	1924.9	90.32	7.56	3.42	0.79	2.32	1.12	4.49	0.59	0.21
22.5	1912.2	90.02	7.47	3.47	1.57	1.80	0.93	5.10	0.68	0.33
24.5	1886.1	89.46	7.24	3.30	0.85	3.93	1.54	4.32	0.60	0.35
26.5		89.94	7.83	3.23	2.11	0.68	0.67	5.85	0.75	0.84
29.5		90.18	7.46	3.50	1.31	2.68	1.21	4.88	0.65	0.41
33		91.04	7.13	4.04	1.51	1.89	1.01	4.94	0.69	0.57
35		90.96	6.82	4.37	3.11	2.08	1.14	6.03	0.88	0.91
36		90.88	6.44	4.50	2.04	3.84	1.61	5.00	0.78	0.66
37		90.25	5.86	4.54	2.79	5.75	2.16	5.28	0.90	1.11
38		90.47	5.12	4.67	3.91	8.36	2.58	5.77	1.13	1.03
39		90.44	5.81	4.42	1.82	7.44	2.55	4.45	0.77	0.64

### F80

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.25	2009	99.27	4.38	14.03						
0.75	2009	99.30	4.30	15.72	1.08	0.04	0.62	3.35	0.76	2.22
1.25	2008	99.09	4.24	14.25	1.22	0.04	0.68	3.61	0.84	2.04
1.75	2008	98.99	3.98	15.01	1.16	0.04	0.67	3.48	0.82	2.00
2.5	2007	98.87	4.83	16.42	1.01	0.04	0.67	3.13	0.79	1.96
3.5	2006	98.56	5.23	13.54	1.57	0.05	0.72	4.30	0.89	2.09
4.5	2005	98.46	5.70	11.63	1.59	0.06	0.76	4.27	0.82	2.30
5.5	2005	97.50	5.64	9.09	1.25	0.06	0.79	3.85	0.68	1.83
6.5	2005	97.70	5.56	9.98	1.35	0.06	0.71	3.94	0.70	1.72
7.5	2004	97.73	5.46	10.71	1.78	0.07	0.75	4.50	0.81	1.71
8.5	2004	97.51	5.20	9.40	1.68	1.31	0.97	4.53	0.83	1.27
9.5	2001	97.28	5.25	9.19	1.56	1.30	0.95	4.02	0.77	1.84
11	1999	97.15	5.55	9.35	1.32	0.09	0.71	3.64	0.69	1.98
13	1996	97.13	5.08	9.14	1.70	0.08	0.75	4.21	0.76	2.22
15	1992	97.28	5.27	8.16	2.01	1.11	1.03	4.86	0.96	1.46
17	1988	97.28	5.05	8.25	2.69	0.34	0.88	5.60	1.06	1.61
19	1984	97.51	5.01	8.83	3.17	0.15	0.78	6.40	1.27	1.71
21	1981	97.27	5.09	7.91	3.81	0.15	0.76	7.04	1.40	1.41
23	1977	96.91	5.54	7.56	3.58	0.26	0.77	6.91	1.36	1.60
25	1970	93.14	6.69	2.94	1.70	8.75	3.18	5.63	1.02	0.30
27	1962	92.37	7.25	2.55	1.64	5.50	2.17	5.95	0.89	0.42
29	1954	89.90	8.63	2.58	0.64	4.19	1.72	4.51	0.62	0.33
32		89.28		2.60	0.78	0.33	0.78	5.39	0.62	0.18

### LD1

Depth cm	Age	Porosity vol%	Al Wt%	TOC Wt%	S Wt%	Mn Wt%	Ca Wt%	Fe Wt%	Fe/Al wt%/wt%	Mo μmol/g
0.25	2011	98.89	4.76	7.86	1.96	7.97	1.85	3.78	0.80	0.65
0.75	2010	98.83	3.30	4.74	1.88	21.35	3.13	2.79	0.84	0.80
1.25	2010	98.45	2.89	4.34	1.67	23.78	3.50	2.32	0.80	1.23
1.75	2010	98.06	4.12	4.42	1.28	16.77	3.04	3.04	0.74	0.98
2.5	2010	97.75	3.86	3.80	1.49	17.06	2.49	2.51	0.65	0.58
3.5	2010	97.94	3.97	3.51	1.34	20.23	2.88	2.55	0.64	0.59
4.5	2009	98.42	2.69	4.00	1.42	24.56	3.79	1.99	0.74	1.18
5.5	2009	98.52	3.21	4.26	1.64	14.63	1.91	1.97	0.61	0.59
6.5	2008	98.26	3.19	3.84	1.18	20.61	3.28	2.23	0.70	0.71
7.5	2008	97.94	2.80	3.82	1.02	23.88	3.59	1.78	0.64	0.65

8.5	2008	97.69	3.34	4.77	1.61	20.65	3.08	2.65	0.79	1.31
9.5	2007	97.24	2.99	5.01	1.99	21.61	3.32	2.57	0.86	1.06
11	2006	97.00	1.83	3.58	1.66	25.77	3.77	1.39	0.76	1.00
13	2005	97.24	4.79	7.52	2.00	6.15	1.39	3.78	0.79	1.08
15	2002	97.28	3.55	5.53	2.33	16.89	2.51	3.28	0.92	1.20
17	2000	94.67	2.44	4.56	2.12	25.67	3.56	2.03	0.83	1.21
19	1997	94.74	3.76	6.93	2.52	11.58	2.16	3.84	1.02	0.99
21	1992	94.65	3.47	6.14	3.82	14.18	2.10	4.58	1.32	1.07
23	1986	94.83	2.61	3.67	2.39	19.44	3.43	4.39	1.68	0.16
25	1980	94.80	3.47	3.13	2.39	16.62	2.78	4.83	1.39	1.03
27	1974	93.31	6.36	2.82	1.49	7.52	1.99	5.04	0.79	0.64
29	1965	93.44	7.80	2.68	1.25	1.28	1.00	5.87	0.75	0.08
32	1955	92.35	8.03	2.29	0.81	0.64	0.90	5.67	0.71	0.03
36	1937	95.37	8.11	2.07	0.75	0.40	0.88	5.37	0.66	0.00

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