

## 50. HIGHER RESOLUTION GEOCHEMICAL DATA, LEG 119<sup>1</sup>

R. E. Cranston<sup>2</sup>

### ABSTRACT

Higher resolution pore-water samples were recovered at intervals of 0.3 to 3 m from selected cores during Leg 119 in order to identify zones where active geochemical reactions were occurring. In addition to shipboard measurements, solid- and dissolved-phase samples were analyzed at my shore-based laboratory. Solid-phase samples were analyzed for redox conditions, carbon, total metals, and leachable metals. Pore-water samples were analyzed for ammonia, silica, sulfate, and major cations. Data are presented in tables for 400 samples from Site 739 in Prydz Bay, East Antarctica, and Sites 736, 737, 738, 744, 745, and 746 at the Kerguelen Ridge, South Indian Ocean.

### INTRODUCTION

Routine Ocean Drilling Program (ODP) procedures allow pore-water samples to be collected every 20 to 30 m downhole. Because 99% of the sediment record is not studied, much information about ongoing geochemical reactions is missed. Reactions can be limited to zones that are centimeters to meters thick. At the regular sampling frequency, most of these zones will be missed or are indicated by a single sample that may be regarded as an analytical artifact. By conducting high-resolution sampling, reaction zones can be clearly seen and discussed with confidence. Detailed discussion of the high-resolution geochemical sampling methods and data is available elsewhere in this volume (Cranston; Chambers and Cranston).

### METHODS OF ANALYSES

Organic carbon was determined by treating samples with 1 M hydrochloric acid to remove carbonate carbon prior to using a LECO combustion analyzer fitted with a thermal conductivity detector. Total carbon was determined on samples that were not acid treated. Inorganic carbon was calculated as the difference between total and organic carbon. Results are listed in Table 1.

Water content was determined aboard ship by weighing wet samples with a triple-beam balance, drying the samples in a freeze-dryer or a drying oven at 60°C, and then weighing the dried samples. Water contents are recorded in Table 1 on a wet-weight basis (i.e., grams of water per 100 g of wet sediment). All other elemental concentrations are calculated on a dry-weight basis.

Total metal concentrations in dried sediment were determined for iron, manganese, silica, aluminum, calcium, magnesium, potassium, copper, zinc, and nickel by dissolving the dried sediment in a sealed Teflon decomposition vessel with hydrofluoric acid and aqua regia and determining the metal concentrations with a Varian 975 atomic absorption spectrophotometer (Buckley and Cranston, 1971). Results are listed in Table 2.

A second portion of dried sediment was treated sequentially with the following procedures.

1. Metals leachable with a weak acid were recovered using a 4 M acetic acid solution and analyzed by atomic absorption. Results for iron, manganese, calcium, copper, zinc, and nickel are listed in Table 3.

2. Reducible metals were recovered with a 1 M hydroxyl amine hydrochloride solution (Chester and Hughes, 1967) and analyzed by atomic absorption. Results are listed in Table 4.

3. Heated hydroxyl amine-leachable metals were recovered with 0.04 M hydroxyl amine hydrochloride at pH 2 and 80°C for 16 hr (Tessier et al., 1979) and analyzed by atomic absorption. Results are listed in Table 5.

4. Residual metal was determined after the three sequential leaches, using the method discussed previously for total metal analyses. Results are listed in Table 6.

Selective leaching of a third sediment portion was done to dissolve opaline material. The procedure involved using a 5% sodium carbonate solution at 85°C for 5 hr (DeMasters, 1981). Metals were determined in the leachate using atomic absorption. Results are listed in Table 7.

Shipboard analyses for dissolved silica, sulfate, and ammonia were carried out according to standard ODP methods described in the Leg 119 "Explanatory Notes" (Barron, Larsen, et al., 1989, p. 35). Results are listed in Table 8.

Sediment pH measurements were done using platinum and reference electrodes standardized in Zobell solution (Whitfield, 1969). Results are listed in Table 8.

Dissolved sodium, potassium, magnesium, and calcium were determined in my shore-based laboratory using flame atomic absorption methods. Results are listed in Table 9.

Analytical precision and accuracy for all determinations are between  $\pm 5\%$  and  $\pm 10\%$  of the reported value, depending on the method, sample handling, and sample storage variations.

### ACKNOWLEDGMENTS

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<sup>2</sup> Geological Survey of Canada, Bedford Institute of Oceanography, Box 1006, Dartmouth, Nova Scotia, B2Y 4A2, Canada.

**Table 1. Carbon and water content.**

Core	Sample number	Depth (mbsf)	Water content <sup>a</sup> (%)	Organic carbon (%)	Inorganic carbon (%)
<b>119-736A-</b>					
1H	501	1.25	53.2	0.48	0.57
1H	502	4.25	45.0	0.39	0.03
1H	503	7.25	51.4	0.54	0.11
2H	504	10.25	49.4	0.53	0.19
2H	505	11.75	41.3	0.68	0.24
2H	506	13.88	54.0	0.42	0.10
3H	507	19.75	47.2	0.40	0.17
3H	508	21.25	46.1	0.64	0.08
3H	509	24.25	66.4	0.50	0.16
4H	510	28.70	49.7	0.51	0.08
4H	511	30.20	46.2	0.62	0.02
4H	512	31.70	48.6	0.47	0.00
5H	513	34.23	65.3	0.52	0.00
5H	514	37.23	46.2	0.46	0.23
6H	515	39.07	65.6	0.48	0.07
6H	516	42.07	63.0	0.46	0.14
7H	517	44.35	48.8	0.42	0.11
7H	518	47.25	58.5	0.44	0.56
8H	519	49.25	37.4	0.32	0.48
8H	520	52.25	40.8	0.67	0.11
9H	521	54.25	37.3	0.64	0.24
9H	522	57.25	34.0	0.29	0.09
10H	523	60.25	63.7	0.44	0.02
10H	524	63.25	56.3	0.40	0.28
10H	525	66.05	50.0	0.49	0.03
11H	526	69.75	56.3	0.38	0.03
11H	527	72.75	39.8	0.44	0.08
12H	528	74.76	45.2	0.48	0.04
12H	529	77.75	49.0	0.37	0.09
13H	530	80.75	52.9	0.50	0.04
13H	531	83.75	41.9	0.50	0.11
14H	532	90.25	33.7	0.36	0.22
14H	533	93.25	36.6	0.32	0.30
14H	534	96.25	38.5	0.32	0.30
15H	535	99.75	46.4	0.34	0.18
15H	536	102.75	44.1	0.38	1.05
15H	537	105.75	35.0	0.44	0.12
16H	538	109.23	49.3	0.32	0.53
16H	539	112.23	30.6	0.39	0.01
16H	540	115.23	33.5	0.43	0.06
17H	541	120.11	44.8	0.48	0.13
13H	542	86.75	31.8	0.54	0.19
20H	543	147.65	43.9	0.45	0.20
20H	544	150.65	33.9	0.48	0.08
20H	545	153.65	36.5	0.48	0.10
21H	546	157.30	22.1	0.35	0.06
21H	547	160.30	54.1	0.36	0.21
21H	548	163.30	39.8	0.29	1.09
23X	549	176.25	44.0	0.47	0.11
24X	550	186.22	49.2	0.38	0.08
26X	551	204.98	47.2	0.36	0.12
26X	552	207.98	31.1	0.43	0.21
27X	553	214.18	40.6	0.42	0.18
29X	554	233.90	44.9	0.38	0.06
29X	555	235.40	35.0	0.30	0.07
<b>119-736C-</b>					
2R	556	207.70	66.4	0.62	0.14
5R	557	236.95	54.7	0.32	0.09
5R	558	239.95	57.5	0.38	0.08
5R	559	241.86	59.0	0.29	0.76
7R	560	256.30	57.4	0.50	0.06
8R	561	265.95	62.7	0.32	0.85
8R	562	267.45	58.4	0.28	1.04
9R	563	275.65	60.0	0.27	0.06
9R	564	278.65	62.7	0.24	0.07
9R	565	281.65	61.0	0.28	0.22
10R	566	285.25	58.4	0.36	0.20
10R	567	288.25	62.4	0.38	0.13
10R	568	291.25	62.5	0.37	0.13
11R	569	294.95	64.0	0.28	1.22
11R	570	297.60	59.2	0.26	0.11
11R	571	299.90	58.7	0.26	0.08
12R	572	303.55	63.3	0.34	0.10

**Table 1 (continued).**

Core	Sample number	Depth (mbsf)	Water content <sup>a</sup> (%)	Organic carbon (%)	Inorganic carbon (%)
<b>119-736C- (Cont.)</b>					
13R	573	314.35	55.1	0.40	0.12
13R	574	317.35	62.2	0.37	0.07
13R	575	320.35	60.3	0.37	0.09
14R	576	323.79	64.6	0.29	0.17
14R	577	325.29	59.1	0.29	0.91
14R	578	326.79	59.2	0.28	0.25
15R	579	333.65	62.6	0.28	0.82
15R	580	336.65	57.8	0.28	0.52
15R	581	339.65	60.0	0.22	0.73
16R	582	343.25	60.6	0.52	0.01
16R	583	344.75	62.2	0.32	0.26
16R	584	346.80	59.0	0.30	0.48
17R	585	352.85	63.7	0.28	0.14
18R	586	362.55	62.1	0.27	0.95
18R	587	365.55	60.4	0.26	0.53
<b>119-737A-</b>					
1H	588	0.60	40.6	0.22	0.09
1H	589	2.10	72.8	0.48	0.08
1H	590	3.60	72.7	0.48	0.09
2H	591	5.60	66.9	0.39	0.07
2H	592	8.60	68.7	0.43	0.10
2H	593	11.60	68.7	0.40	0.41
3H	594	15.25	75.0	0.38	0.26
3H	595	18.10	74.8	0.50	0.12
3H	596	21.10	73.6	0.45	0.12
4H	597	24.60	71.4	0.50	0.21
4H	598	27.60	75.3	0.46	0.22
4H	599	30.60	72.8	0.40	0.18
5H	600	34.10	72.5	0.44	0.19
5H	901	37.10	69.9	0.48	0.28
5H	902	40.10	71.1	0.49	0.14
6H	903	43.60	69.1	0.50	0.10
6H	904	46.60	56.4	0.56	0.07
6H	905	49.60	61.3	0.43	0.08
7H	906	53.10	60.7	0.36	0.23
7H	907	56.10	69.7	0.42	0.05
7H	908	59.10	65.8	0.40	0.02
8H	909	62.60	64.5	0.32	0.32
8H	910	65.60	74.6	0.31	0.03
8H	911	68.60	78.4	0.35	0.01
9H	912	72.10	54.9	0.31	0.44
9H	913	75.10	65.4	0.43	0.90
9H	914	78.10	66.2	0.34	0.06
10H	915	86.10	62.3	0.34	0.04
10H	916	89.10	67.8	0.54	0.07
11H	917	91.10	69.3	0.48	0.18
11H	918	94.10	71.0	0.40	0.06
11H	919	97.10	72.1	0.44	0.11
12H	920	100.60	70.9	0.49	0.07
12H	921	103.60	72.5	0.37	0.09
12H	922	106.60	66.7	0.35	0.16
13H	923	110.10	70.2	0.46	0.13
13H	924	113.10	63.8	0.41	0.04
13H	925	116.10	64.3	0.48	0.03
15H	926	134.43	65.4	0.44	0.01
15H	927	137.43	69.4	0.42	0.04
16H	928	138.60	67.3	0.46	0.05
16H	929	141.60	63.3	0.61	0.08
16H	930	144.60	70.2	0.58	0.01
17H	931	148.10	67.2	0.51	0.07
11H	932	91.19	61.8	0.48	0.20
11H	933	91.74	55.6	0.28	0.05
11H	934	92.30	70.1	0.44	0.08
11H	935	93.30	46.5	0.46	0.09
11H	936	93.80	70.6	0.42	0.14
11H	937	94.50	69.4	0.32	0.09
11H	938	95.19	70.1	0.38	0.09
11H	939	95.90	67.2	0.36	0.09
11H	940	96.78	69.7	0.45	0.11
11H	941	97.84	68.5	0.44	0.11
11H	942	98.30	69.0	0.55	0.12
11H	943	99.05	66.4	0.44	0.10
11H	944	99.69	66.9	0.44	0.11

**Table 1 (continued).**

Core	Sample number	Depth (mbsf)	Water content <sup>a</sup> (%)	Organic carbon (%)	Inorganic carbon (%)
<b>119-737A- (Cont.)</b>					
12H	945	100.34	61.9	0.50	0.08
12H	946	100.98	69.0	0.48	0.12
12H	947	102.32	65.4	0.35	0.07
12H	948	101.70	69.2	0.52	0.10
12H	949	103.23	68.4	0.34	0.10
12H	950	104.04	68.2	0.32	0.09
12H	951	105.50	69.1	0.40	0.12
12H	952	104.70	69.5	0.37	0.08
12H	953	106.30	68.4	0.33	0.13
12H	954	107.40	69.1	0.40	0.11
12H	955	107.64	70.0	0.39	0.10
12H	956	108.90	67.2	0.40	0.14
12H	957	109.32	64.8	0.36	0.09
<b>119-737B-</b>					
17R	958	369.99	40.7	0.09	1.71
17R	959	370.39	36.3	0.08	1.82
17R	960	371.08	44.6	0.10	3.38
17R	961	371.80	42.1	0.09	2.64
17R	962	373.01	25.7	0.08	0.22
17R	963	373.46	31.5	0.15	1.47
17R	964	374.00	25.0	0.08	3.47
17R	965	374.50	44.8	0.10	2.70
18R	966	379.35	32.7	0.11	3.01
18R	967	380.13	40.0	0.13	1.69
18R	968	381.03	26.3	0.10	1.53
18R	969	381.60	39.1	0.10	1.33
18R	970	382.15	21.2	0.06	0.94
18R	971	382.40	39.7	0.10	2.24
19R	972	389.03	42.1	0.12	1.73
19R	973	389.60	38.0	0.08	1.46
19R	974	390.38	35.6	0.08	2.40
19R	975	391.40	32.5	0.11	0.93
19R	976	391.88	34.0	0.06	1.53
19R	977	392.70	31.4	0.06	2.58
19R	978	393.23	27.9	0.08	1.32
19R	979	393.41	32.4	0.10	1.06
20R	980	399.11	32.1	0.07	4.21
20R	981	399.40	42.1	0.08	3.10
20R	982	400.12	37.5	0.09	3.04
20R	983	400.53	31.5	0.07	1.29
20R	984	401.55	29.7	0.09	2.37
20R	985	402.71	29.5	0.08	4.10
20R	986	403.14	31.9	0.07	2.30
20R	987	403.58	32.1	0.07	3.87
20R	988	404.57	28.1	0.06	1.02
20R	989	405.50	25.9	0.11	3.51
20R	990	406.15	22.4	0.08	0.96
<b>119-738B-</b>					
1H	1901	2.10	48.4	0.04	7.36
2H	1902	6.10	56.5	0.05	6.08
3H	1903	17.12	40.1	0.04	7.13
4H	1904	25.10	43.1	0.04	10.17
5H	1905	34.60	44.6	0.04	10.23
6H	1906	44.13	39.2	0.03	10.77
7H	1907	55.08	38.1	0.04	10.58
8H	1908	63.10	37.3	0.03	10.62
9H	1909	72.60	37.6	0.03	10.65
10H	1910	82.12	37.7	0.05	10.76
11H	1911	87.10	38.2	0.05	10.41
12H	1912	96.59	38.0	0.03	10.27
13H	1913	106.10	37.6	0.03	10.45
14X	1914	110.30	37.1	0.03	10.20
15X	1915	119.90	35.0	0.03	10.61
16X	1916	128.51	37.2	0.03	10.64
17X	1917	139.30	36.4	0.03	10.70
18X	1918	148.90	34.1	0.03	10.65
19X	1919	158.59	34.3	0.03	10.37
19X	1920	161.40	32.1	0.03	10.63
20X	1921	168.30	33.2	0.03	10.77
21X	1922	177.84	33.9	0.03	10.62
22X	1923	187.50	32.6	0.04	10.39
23X	1924	195.60	31.9	0.04	10.30
24X	1925	206.70	30.5	0.07	10.89

**Table 1 (continued).**

Core	Sample number	Depth (mbsf)	Water content <sup>a</sup> (%)	Organic carbon (%)	Inorganic carbon (%)
<b>119-738C-</b>					
4R	1926	218.00	33.7	0.05	10.37
5R	1927	227.70	34.4	0.05	10.10
6R	1928	235.81	31.2	0.04	11.10
7R	1929	245.42	30.3	0.05	10.64
8R	1930	255.00	22.9	0.04	10.11
9R	1931	264.70	29.2	0.05	9.73
10R	1932	276.20	22.9	0.06	10.05
11R	1933	284.45	24.7	0.04	10.78
16R	1934	333.70	24.2	0.10	10.00
17R	1935	343.38	27.5	0.04	10.68
23R	1936	401.30	25.5	0.06	10.37
24R	1937	411.10	11.5	0.07	9.90
25R	1938	420.71	12.1	0.05	10.29
26R	1939	430.42	12.1	0.07	9.95
27R	1940	442.34	9.3	0.05	10.19
27R	1941	439.83	17.6	0.20	10.02
28R	1942	449.38	13.1	0.06	10.52
29R	1943	459.30	11.9	0.06	9.80
30R	1944	468.94	13.6	0.07	9.82
31R	1945	478.37	11.7	0.11	9.72
<b>119-738B-</b>					
6H	1946	42.30	36.3	0.02	10.80
6H	1947	43.30	38.9	0.04	10.75
6H	1948	43.63	38.4	0.04	10.70
6H	1949	44.28	36.3	0.04	10.85
6H	1950	44.85	38.3	0.04	10.74
6H	1951	45.31	36.7	0.04	10.94
6H	1952	46.35	35.9	0.04	10.89
6H	1953	47.25	31.5	0.04	11.19
6H	1954	47.85	33.0	0.04	11.06
6H	1955	48.75	33.9	0.04	11.08
6H	1956	49.35	35.7	0.04	10.93
6H	1957	50.15	35.5	0.03	10.97
6H	1958	50.65	31.4	0.04	11.04
7H	1959	52.16	36.1	0.04	10.79
7H	1960	52.64	37.4	0.03	10.70
7H	1961	53.18	37.1	0.04	10.61
7H	1962	54.16	32.9	0.05	10.19
7H	1963	54.80	35.5	0.04	10.84
7H	1964	55.52	37.9	0.04	10.64
7H	1965	56.30	36.8	0.05	10.35
7H	1966	57.00	36.7	0.04	10.67
7H	1967	57.80	36.2	0.04	10.83
7H	1968	58.60	36.1	0.04	10.34
7H	1969	59.20	36.6	0.05	10.59
7H	1970	60.20	33.6	0.04	10.49
7H	1971	60.70	32.9	0.04	10.67
8H	1972	61.30	33.0	0.19	10.45
8H	1973	62.73	31.8	0.04	10.42
8H	1974	63.30	37.8	0.04	10.39
8H	1975	64.30	38.9	0.04	10.64
8H	1976	65.10	36.4	0.04	10.90
<b>119-739A-</b>					
1H	1977	1.82	21.8	0.26	0.06
2H	1978	4.90	18.6	0.18	0.04
<b>119-739B-</b>					
1H	1979	0.60	22.4	0.23	0.07
<b>119-739C-</b>					
1R	1980	0.92	35.7	0.27	0.04
4R	1981	26.02	14.7	0.32	0.04
5R	1982	30.80	13.4	0.34	0.03
13R	1983	106.51	15.7	0.85	0.02
14R	1984	117.60	14.4	1.00	0.04
15R	1985	125.79	9.9	1.17	0.10
16R	1986	132.40	13.0	1.26	0.01
17R	1987	137.10	9.8	1.33	0.01
18R	1988	142.10	15.8	0.80	0.11
19R	1989	146.58	16.5	1.07	0.10
20R	1990	151.62	9.9	0.91	0.16

**Table 1 (continued).**

Core	Sample number	Depth (mbsf)	Water content <sup>a</sup> (%)	Organic carbon (%)	Inorganic carbon (%)
<b>119-739C- (Cont.)</b>					
21R	1991	156.40	12.2	0.93	0.07
22R	1992	161.40	9.5	1.42	0.14
23R	1993	166.10	12.5	1.12	0.23
25R	1994	174.24	14.0	0.58	0.07
26R	1995	186.06	21.5	0.78	0.23
26R	1996	187.50	19.3	0.56	0.16
28R	1997	203.10	14.5	0.43	0.26
29R	1998	214.26	16.0	0.47	0.11
30R	1999	223.90	22.8	0.51	0.20
31R	1501	233.50	18.3	0.52	0.15
32R	1502	241.69	18.3	0.49	0.14
33R	1503	252.80	28.1	0.48	0.18
34R	1504	262.50	20.7	0.62	0.30
35R	1505	271.98	24.4	0.57	0.18
36R	1506	281.80	23.8	0.76	0.26
37R	1507	289.67	15.2	0.48	0.02
38R	1508	299.48	15.8	0.70	0.14
38R	1509	301.00	13.0	0.49	0.12
40R	1510	318.37	16.8	0.50	0.09
41R	1511	328.11	14.7	0.57	0.12
42R	1512	337.98	11.6	0.43	0.13
43R	1513	348.28	10.7	0.56	0.03
44R	1514	358.66	13.8	0.58	0.06
45R	1515	366.66	13.7	0.58	0.14
46R	1516	377.43	13.2	0.61	0.05
47R	1517	386.46	17.8	0.72	0.14
48R	1518	397.70	13.4	0.57	0.01
50R	1519	415.50	16.7	0.58	0.10
51R	1520	425.10	10.1	0.65	0.11
52R	1521	436.10	15.3	0.36	0.10
53R	1522	440.22	11.8	0.34	0.12
54R	1523	445.58	11.2	0.33	0.03
55R	1524	450.12	16.6	0.40	0.03
56R	1525	454.33	11.0	0.40	0.03
57R	1526	459.11	13.1	0.40	0.05
58R	1527	465.43	16.6	0.68	0.06
59R	1528	468.78	14.3	0.46	0.02
60R	1529	473.50	14.8	0.40	0.05
<b>119-744A-</b>					
1H	1530	0.90	64.0	0.11	3.78
1H	1531	0.90	61.8	0.11	3.75
2H	1532	6.63	64.4	0.07	3.37
2H	1533	6.63	65.8	0.10	3.58
3H	1534	16.10	67.8	0.08	0.21
3H	1535	16.10	63.5	0.11	0.19
4H	1536	25.59	46.8	0.04	6.94
5H	1537	35.20	43.0	0.05	7.17
6H	1538	44.64	38.9	0.03	8.29
7H	1539	54.10	39.5	0.04	7.80
8H	1540	63.60	40.1	0.03	7.87
9H	1541	73.40	37.0	0.03	8.56
10H	1542	82.57	39.7	0.04	7.80
11H	1543	92.08	36.1	0.03	8.25
12H	1544	101.60	38.5	0.03	7.88
13H	1545	111.10	38.2	0.03	8.34
14H	1546	120.60	36.1	0.04	8.26
15H	1547	130.10	41.1	0.03	7.92
16H	1548	139.60	36.7	0.04	7.79
17H	1549	147.42	39.9	0.03	8.40
18H	1550	150.00	40.2	0.04	8.65
19H	1551	159.30	38.3	0.04	8.50
20H	1552	172.00	33.8	0.03	8.69
<b>119-744B-</b>					
1H	1553	2.20	63.6	0.10	3.46
2H	1554	11.69	63.8	0.06	2.66
3H	1555	21.19	45.9	0.04	7.28
4H	1556	23.67	43.8	0.04	6.25
5H	1557	33.50	35.8	0.03	8.55
5H	1558	33.55	34.2	0.03	9.25
6H	1559	42.70	43.5	0.03	8.27
7H	1560	52.30	37.5	0.03	8.71

**Table 1 (continued).**

Core	Sample number	Depth (mbsf)	Water content <sup>a</sup> (%)	Organic carbon (%)	Inorganic carbon (%)
<b>119-744B- (Cont.)</b>					
8H	1561	61.70	34.6	0.03	9.31
9H	1562	71.20	40.4	0.03	8.71
<b>119-745A-</b>					
1H	1563	2.70	74.3	0.26	0.04
<b>119-745B-</b>					
1H	1564	2.20	81.5	0.34	0.04
2H	1565	7.20	79.2	0.16	0.03
3H	1566	16.70	73.3	0.17	0.03
4H	1567	26.30	67.0	0.12	0.04
5H	1568	35.70	75.2	0.20	0.02
6H	1569	45.20	60.6	0.19	0.01
7H	1570	54.70	64.8	0.14	0.13
8H	1571	64.20	71.1	0.17	0.03
9H	1572	73.70	60.4	0.15	0.02
10H	1573	83.20	60.4	0.13	0.01
11H	1574	92.70	65.2	0.14	0.02
12H	1575	102.20	59.7	0.11	0.08
13H	1576	111.70	53.1	0.13	0.01
13H	1577	114.70	62.6	0.10	0.03
14H	1578	121.20	43.2	0.12	0.04
15H	1579	130.70	54.0	0.07	0.05
17H	1580	141.20	67.4	0.06	0.10
18H	1581	150.70	54.9	0.06	0.05
19H	1582	160.20	55.6	0.06	0.11
20H	1583	169.70	51.0	0.04	0.04
21H	1584	179.20	56.3	0.07	0.09
22H	1585	188.70	56.8	0.21	0.01
23H	1586	198.20	57.9	0.13	0.01
24H	1587	207.70	61.2	0.14	0.02
<b>119-746A-</b>					
4H	1588	167.00	61.7	0.15	0.02
5H	1589	176.50	60.3	0.10	0.01
6H	1590	186.01	55.8	0.10	0.02
7H	1591	195.50	51.9	0.10	0.01
8H	1592	205.00	55.0	0.13	0.01
9H	1593	216.00	55.1	0.12	0.02
10H	1594	220.00	55.5	0.13	0.01
11X	1595	229.50	61.5	0.13	0.01
13X	1596	244.40	56.0	0.12	0.37
14X	1597	252.44	60.2	0.20	0.12

<sup>a</sup> In wet sediment.

**Table 2.** Total metal concentrations in dry sediment.

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
<b>119-736A-</b>											
1H	1.25	1.07	38	19.8	0.97	2.23	0.37	0.43	1	63	7
1H	4.25	1.29	158	19.6	2.75	0.57	0.27	1.28	1	78	7
1H	7.25	3.72	310	25.5	3.58	2.29	1.49	1.03	18	108	43
2H	10.25	3.70	539	25.0	5.04	1.97	1.13	1.91	12	129	30
2H	11.75	3.44	354	27.7	3.66	2.39	1.26	1.24	22	147	27
2H	13.88	0.56	1	26.7	0.20	0.46	0.22	0.26	1	50	6
3H	19.75	4.49	630	28.1	6.04	2.29	1.20	2.23	42	156	23
3H	21.25	4.12	484	28.9	4.56	1.95	1.51	1.81	56	146	44
3H	24.25	2.43	219	32.3	2.25	1.54	1.02	0.84	32	93	23
4H	28.70	4.58	649	28.2	5.18	2.26	1.79	1.71	45	153	40
4H	30.20	3.86	380	29.8	3.23	1.89	1.73	0.90	51	137	44
4H	31.70	2.23	288	29.8	2.21	0.98	0.91	0.93	33	99	28
5H	34.23	1.11	97	35.3	0.56	0.35	0.40	0.30	24	48	1
5H	37.23	1.03	139	38.2	0.82	0.56	0.28	0.50	19	57	4
6H	39.07	1.20	122	36.0	0.85	0.49	0.39	0.42	23	69	2
6H	42.07	2.10	229	32.5	1.58	1.56	1.01	0.55	28	75	20
7H	44.35	1.97	239	28.6	1.31	0.99	0.81	0.53	29	79	27
7H	47.25	1.63	159	32.4	0.87	1.67	0.58	0.43	24	66	6
8H	49.25	1.13	170	21.0	0.58	1.23	0.19	0.36	20	63	5
8H	52.25	4.39	489	27.7	3.53	2.27	1.93	1.21	50	143	54
9H	54.25	4.38	546	25.1	3.38	2.58	1.63	1.24	38	131	44
9H	57.25	4.78	710	27.8	5.66	1.41	1.25	2.42	32	156	25
10H	60.25	1.76	272	32.4	1.01	0.79	0.64	0.45	36	64	3
10H	63.25	2.85	538	29.5	3.14	1.29	0.69	1.51	27	114	12
10H	66.05	0.64	32	33.3	0.78	0.32	0.27	0.33	24	34	1
11H	69.75	1.18	195	32.1	1.63	0.33	0.27	0.90	20	65	1
11H	72.75	0.72	1	25.3	0.69	0.52	0.29	0.25	23	52	1
12H	74.76	0.82	9	29.2	0.88	0.58	0.36	0.30	28	55	1
12H	77.75	0.94	103	28.0	1.03	0.38	0.16	0.48	22	66	1
13H	80.75	0.55	1	33.6	0.52	0.39	0.29	0.26	29	44	1
13H	83.75	0.79	16	27.0	0.83	0.42	0.31	0.31	31	61	1
14H	90.25	1.42	147	26.7	1.81	0.86	0.44	0.78	23	65	1
14H	93.25	1.61	206	23.3	1.85	1.25	0.46	0.75	21	73	1
14H	96.25	4.15	587	28.8	4.19	2.62	1.32	1.14	33	119	36
15H	99.75	0.97	118	26.8	1.11	0.95	0.39	0.28	25	43	1
15H	102.75	1.36	208	30.3	1.58	4.00	0.59	0.41	27	59	1
15H	105.75	1.43	163	25.7	1.66	0.84	0.55	0.49	28	81	9
16H	109.23	1.89	363	32.0	2.23	1.94	0.60	0.89	23	91	2
16H	112.23	2.56	351	21.0	2.46	1.14	0.79	0.75	24	93	13
16H	115.23	1.24	126	25.5	1.26	0.78	0.57	0.29	27	62	2
17H	120.11	0.57	66	33.4	0.74	0.69	0.40	0.19	19	36	1
13H	86.75	5.36	679	25.0	5.41	2.44	1.66	1.64	35	149	30
20H	147.65	0.72	80	28.9	0.86	0.42	0.22	0.25	21	47	1
20H	150.65	1.09	151	28.4	1.40	0.37	0.26	0.53	18	73	1
20H	153.65	0.23	14	29.8	0.40	0.14	0.07	0.11	16	27	3
21H	157.30	0.32	19	21.3	0.48	0.12	0.06	0.13	11	31	1
21H	160.30	0.20	13	33.3	0.38	0.37	0.07	0.12	13	26	1
21H	163.30	0.28	25	31.3	0.48	3.31	0.14	0.16	14	30	1
23X	176.25	0.56	43	25.6	0.61	0.21	0.08	0.17	20	30	1
24X	186.22	0.56	37	32.2	0.71	0.47	0.39	0.25	17	43	1
26X	204.98	1.31	187	24.5	1.78	0.48	0.22	0.91	16	81	8
26X	207.98	0.70	1	23.6	0.87	0.32	0.24	0.28	37	97	8
27X	214.18	0.69	1	31.8	0.86	0.57	0.30	0.40	16	53	8
29X	233.90	0.69	1	30.3	0.99	0.22	0.16	0.36	35	53	1
29X	235.40	0.44	1	27.5	0.62	0.11	0.04	0.23	9	39	1
<b>119-736C-</b>											
2R	207.70	0.87	1	35.8	1.05	0.35	0.36	0.39	23	62	2
5R	236.95	2.01	206	33.8	2.25	0.39	0.05	0.95	25	83	1
5R	239.95	2.57	312	34.0	2.88	0.97	0.52	1.01	25	88	9
5R	241.86	0.26	54	31.6	0.31	1.53	0.01	0.14	11	28	1
7R	256.30	1.82	186	35.8	1.46	0.41	0.36	0.49	23	71	8
8R	265.95	1.02	148	35.4	0.97	1.60	0.15	0.37	22	55	1
8R	267.45	0.59	80	34.8	0.51	1.67	0.03	0.18	14	40	1
9R	275.65	0.56	58	36.8	0.56	0.12	0.01	0.22	19	43	1
9R	278.65	0.48	62	34.8	0.51	0.12	0.02	0.23	11	38	1
9R	281.65	0.51	59	33.4	0.54	0.20	0.02	0.29	15	44	1
10R	285.25	1.39	175	31.8	1.77	0.51	0.19	0.56	33	82	1
10R	288.25	1.22	126	33.6	1.38	0.25	0.05	0.47	25	65	5
10R	291.25	1.84	281	29.6	2.07	0.31	0.16	0.71	25	69	1
11R	294.95	0.48	117	33.0	0.37	1.05	0.15	0.23	17	40	6
11R	297.60	0.45	135	39.6	0.37	0.15	0.01	0.18	14	36	1
11R	299.90	0.46	134	38.7	0.41	0.15	0.01	0.19	16	42	1
12R	303.55	0.52	120	35.9	0.38	0.15	0.01	0.18	16	41	1
13R	314.35	0.79	141	26.7	0.78	0.16	0.01	0.26	20	54	1

**Table 2 (continued).**

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
119-736C- (Cont.)											
13R	317.35	0.90	144	28.8	0.98	0.19	0.01	0.29	19	48	1
13R	320.35	1.04	70	42.3	1.19	0.32	0.01	0.33	21	54	3
14R	323.79	0.29	1	46.8	0.24	0.32	0.01	0.10	11	26	1
14R	325.29	0.43	1	35.6	0.47	1.05	0.18	0.17	12	35	1
14R	326.79	0.43	1	38.3	0.41	0.23	0.01	0.14	12	33	1
15R	333.65	0.50	1	32.5	0.37	0.80	0.23	0.18	13	31	2
15R	336.65	0.48	1	36.0	0.54	0.87	0.15	0.17	11	33	1
15R	339.65	0.56	1	36.9	0.51	0.65	0.16	0.20	13	35	1
16R	343.25	0.96	4	39.4	1.00	0.33	0.01	0.25	16	44	1
16R	344.75	1.03	27	45.2	1.21	0.43	0.03	0.35	15	45	1
16R	346.80	0.57	101	44.4	0.99	0.53	0.06	0.25	18	42	1
17R	352.85	0.30	69	57.9	0.57	0.17	0.01	0.16	11	34	1
18R	362.55	0.25	59	45.6	0.41	0.67	0.31	0.12	10	28	1
18R	365.55	0.31	70	35.6	0.38	0.57	0.15	0.15	16	36	7
119-737A-											
1H	0.60	12.78	233	26.1	2.73	0.94	1.70	4.37	1	131	3
1H	2.10	3.95	147	32.2	1.92	0.66	0.83	1.64	7	79	33
1H	3.60	1.69	88	33.6	1.62	0.56	0.53	0.99	5	67	8
2H	5.60	1.85	203	29.6	2.58	1.07	0.73	1.31	11	87	12
2H	8.60	1.39	135	28.6	1.84	0.94	0.67	0.96	9	72	16
2H	11.60	0.93	89	34.3	1.56	1.83	0.51	0.80	11	69	13
3H	15.25	0.83	51	32.8	1.43	0.74	0.61	0.70	22	66	17
3H	18.10	0.76	41	34.6	1.32	0.53	0.56	0.67	27	62	6
3H	21.10	0.63	37	36.1	1.13	0.54	0.51	0.66	28	56	7
4H	24.60	1.65	100	31.1	1.51	0.84	0.65	0.81	28	67	6
4H	27.60	1.25	64	30.3	1.17	1.10	0.59	0.65	27	59	1
4H	30.60	1.53	152	30.0	1.76	0.69	0.51	1.03	24	82	1
5H	34.10	1.64	82	28.9	1.65	1.08	0.68	0.84	26	65	5
5H	37.10	1.81	95	29.4	1.90	1.64	0.73	0.92	28	68	11
5H	40.10	1.50	46	29.1	1.52	1.05	0.69	0.81	28	72	14
6H	43.60	2.19	113	25.8	2.06	1.00	0.89	1.05	8	77	18
6H	46.60	3.05	272	24.3	3.21	1.15	1.10	1.49	10	122	23
6H	49.60	4.18	381	22.2	3.93	1.79	1.44	1.94	12	124	32
7H	53.10	2.91	374	29.4	3.11	1.29	0.75	1.84	8	105	4
7H	56.10	1.40	104	33.0	1.14	0.50	0.50	0.60	6	57	6
7H	59.10	1.96	143	34.0	1.82	0.34	0.55	1.17	8	82	10
8H	62.60	3.05	267	31.0	2.42	1.18	0.69	1.72	6	87	2
8H	65.60	1.60	132	32.1	1.69	0.94	0.45	0.67	6	49	1
8H	68.60	1.88	138	31.8	2.07	1.03	0.57	0.89	8	56	6
9H	72.10	2.60	215	30.9	2.27	1.39	0.53	1.00	5	75	1
9H	75.10	2.50	275	29.0	2.15	4.00	0.37	0.93	7	61	1
9H	78.10	2.07	166	30.2	2.12	1.10	0.43	0.89	7	61	1
10H	86.10	2.62	227	29.9	2.83	0.81	0.47	1.40	5	78	1
10H	89.10	1.65	44	32.5	1.42	0.70	0.30	0.62	5	47	1
11H	91.10	1.94	91	31.5	1.81	1.40	0.41	0.76	6	54	1
11H	94.10	1.42	30	30.3	1.56	1.21	0.31	0.67	4	45	1
11H	97.10	0.87	1	29.4	0.60	0.41	0.02	0.40	4	28	1
12H	100.60	1.95	52	26.4	1.83	1.16	0.50	0.89	6	57	8
12H	103.60	1.23	26	26.6	1.43	0.92	0.38	0.62	1	51	1
12H	106.60	1.63	46	26.8	1.89	1.43	0.45	0.77	1	51	1
13H	110.10	1.49	9	27.2	1.42	1.30	0.40	0.60	3	48	1
13H	113.10	1.70	128	31.5	1.83	1.28	0.49	0.78	3	55	6
13H	116.10	0.95	53	31.9	0.93	0.57	0.16	0.44	2	45	2
15H	134.43	1.25	65	32.5	1.33	0.73	0.24	0.58	1	52	7
15H	137.43	1.47	98	31.4	1.37	0.42	0.24	0.73	3	54	3
16H	138.60	0.46	17	33.8	0.35	0.38	0.01	0.27	1	27	1
16H	141.60	1.53	81	32.2	1.41	0.72	0.26	0.56	6	52	8
16H	144.60	1.00	62	31.6	1.27	0.51	0.17	0.67	2	43	1
17H	148.10	0.61	10	32.7	0.61	0.30	0.09	0.32	2	36	1
11H	91.19	1.82	148	29.6	2.07	1.46	0.38	0.89	4	57	1
11H	91.74	4.82	409	27.0	4.59	1.64	1.03	2.77	1	113	1
11H	92.30	1.16	63	31.9	0.95	0.32	0.17	0.55	1	37	1
11H	93.30	0.92	52	28.2	0.80	0.26	0.12	0.54	1	37	1
11H	93.80	1.14	89	30.2	1.25	0.45	0.18	0.69	1	38	1
11H	94.50	1.79	157	30.4	1.54	0.45	0.31	0.77	1	52	1
11H	95.19	1.16	97	35.8	1.27	0.82	0.41	0.51	12	44	1
11H	95.90	1.25	118	34.8	1.46	0.82	0.44	0.60	13	54	1
11H	96.78	1.15	92	34.5	1.00	0.64	0.37	0.43	16	43	1
11H	97.84	1.85	166	32.7	1.71	0.85	0.49	0.68	17	58	1
11H	98.30	1.13	88	33.7	1.10	0.52	0.35	0.45	15	46	1
11H	99.05	0.86	83	36.2	0.95	0.53	0.31	0.45	14	38	1
11H	99.69	0.90	53	36.7	0.86	0.36	0.40	0.39	14	47	1
12H	100.34	1.83	144	32.6	1.90	0.95	0.80	0.76	20	61	3
12H	100.98	1.74	146	33.3	1.78	0.93	0.77	0.71	19	57	6

Table 2 (continued).

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
119-737A- (Cont.)											
12H	102.32	2.33	305	32.2	3.39	1.38	0.91	1.58	18	83	1
12H	101.70	1.56	122	32.7	1.57	0.90	0.70	0.65	19	51	11
12H	103.23	1.47	111	34.9	1.50	0.71	0.50	0.66	14	47	1
12H	104.04	1.45	141	35.4	1.58	0.52	0.50	0.68	12	47	1
12H	105.50	1.35	88	35.5	1.39	1.00	0.49	0.59	16	51	1
12H	104.70	1.08	84	35.7	1.24	0.79	0.45	0.50	13	40	1
12H	106.30	1.40	134	32.0	1.51	0.70	0.44	0.62	13	49	1
12H	107.40	1.81	139	31.0	1.43	0.47	0.48	0.54	18	49	1
12H	107.64	1.27	117	32.3	1.33	0.66	0.44	0.51	13	42	1
12H	108.90	1.38	123	32.2	1.37	0.62	0.41	0.52	17	50	15
12H	109.32	1.23	108	32.3	1.37	0.58	0.41	0.55	14	44	4
119-737B-											
17R	369.99	8.25	1147	18.4	5.23	7.17	2.09	0.77	68	130	24
17R	370.39	7.82	1064	17.0	5.07	7.03	2.06	0.75	64	124	14
17R	371.08	6.54	900	15.1	3.90	8.54	1.64	0.73	41	85	11
17R	371.80	7.36	933	16.1	4.54	7.17	1.84	0.98	40	125	13
17R	373.01	3.98	527	25.9	6.01	2.06	0.74	2.22	26	133	12
17R	373.46	7.98	1170	18.6	5.53	8.56	1.86	0.75	73	135	9
17R	374.00	6.39	883	13.8	3.78	9.75	1.71	0.62	44	93	8
17R	374.50	7.65	854	15.1	4.16	9.68	1.88	1.12	56	133	9
18R	379.35	6.55	681	13.8	3.50	9.74	1.89	1.03	52	92	1
18R	380.13	8.46	752	16.2	4.23	7.70	1.95	1.71	55	205	1
18R	381.03	7.39	920	16.0	4.99	7.64	1.76	0.89	42	111	10
18R	381.60	8.30	1051	15.3	5.12	6.85	1.98	0.50	64	122	12
18R	382.15	8.50	1293	23.0	5.09	5.41	1.87	0.42	103	126	31
18R	382.40	6.95	804	16.1	3.34	7.98	1.20	0.89	52	98	27
19R	389.03	8.33	832	17.3	4.32	7.87	1.76	1.43	52	99	2
19R	389.60	6.87	846	18.2	5.08	6.97	1.38	1.51	50	111	14
19R	390.38	7.26	961	15.0	4.62	9.33	1.49	0.68	60	97	17
19R	391.40	8.26	1046	18.9	5.34	5.65	1.79	0.97	47	135	8
19R	391.88	7.86	891	17.4	4.44	7.77	1.61	1.05	53	110	6
19R	392.70	6.55	683	15.8	3.28	9.69	1.27	1.54	54	105	11
19R	393.23	7.43	683	19.0	3.56	8.49	1.52	2.33	41	96	9
19R	393.41	3.61	476	17.2	3.36	9.24	0.44	1.30	44	123	20
20R	399.11	8.67	1089	18.2	5.17	6.12	1.79	0.77	36	81	5
20R	399.40	6.23	764	15.1	3.60	10.56	1.36	1.11	46	203	4
20R	400.12	5.04	748	13.1	2.90	10.72	1.09	1.12	29	95	1
20R	400.53	5.48	968	17.9	5.23	6.35	0.83	1.50	65	221	7
20R	401.55	7.00	743	16.3	3.88	9.67	1.41	1.57	31	84	14
20R	402.71	6.07	709	12.9	3.08	10.72	1.31	1.23	31	77	6
20R	403.14	6.41	694	16.9	3.74	10.24	1.26	1.48	49	99	7
20R	403.58	5.80	793	14.0	3.29	10.61	1.23	1.25	34	90	14
20R	404.57	7.14	905	19.9	4.77	6.47	1.47	1.18	42	119	1
20R	405.50	5.72	587	15.8	3.51	9.92	1.28	1.85	32	136	1
20R	406.15	8.40	1007	19.5	5.22	6.03	1.92	1.09	35	114	1
119-738B-											
1H	2.10	0.49	91	9.1	0.95	22.18	0.15	0.50	11	31	6
2H	6.10	0.75	230	13.3	1.07	14.57	0.23	0.64	34	40	11
3H	17.12	0.88	672	9.5	1.29	22.16	0.29	0.69	61	45	22
4H	25.10	0.23	55	1.7	0.24	27.65	0.08	0.11	3	19	1
5H	34.60	0.14	117	1.1	0.41	31.04	0.12	0.09	1	13	10
6H	44.13	0.15	74	0.5	0.32	32.40	0.14	0.09	1	15	13
7H	55.08	0.14	146	0.2	0.18	33.32	0.09	0.07	20	17	16
8H	63.10	0.11	121	0.3	0.12	31.19	0.07	0.05	15	17	8
9H	72.60	0.06	123	0.0	0.01	33.62	0.06	0.03	11	14	9
10H	82.12	0.10	117	0.3	0.03	34.69	0.09	0.05	8	11	1
11H	87.10	0.11	127	0.5	0.05	34.12	0.09	0.05	11	16	4
12H	96.59	0.10	168	0.7	0.03	34.12	0.07	0.05	14	14	24
13H	106.10	0.13	192	0.8	0.18	33.62	0.08	0.09	16	12	7
14X	110.30	0.11	201	0.8	0.11	30.00	0.05	0.10	14	14	1
15X	119.90	0.09	201	0.4	0.02	28.86	0.05	0.04	12	17	4
16X	128.51	0.08	56	0.9	0.20	33.16	0.08	0.05	4	11	6
17X	139.30	0.12	42	1.1	0.53	28.19	0.04	0.04	4	14	1
18X	148.90	0.09	23	0.8	0.21	27.60	0.10	0.05	3	11	9
19X	158.59	0.06	6	0.4	0.04	17.32	0.05	0.07	6	10	1
19X	161.40	0.07	79	0.6	0.08	28.59	0.04	0.04	7	15	4
20X	168.30	0.04	1	0.4	0.08	11.09	0.01	0.05	6	10	1
21X	177.84	0.05	1	0.5	0.16	14.64	0.01	0.06	6	17	2
22X	187.50	0.14	25	1.3	0.21	25.70	0.08	0.08	4	10	6
23X	195.60	0.09	10	1.0	0.24	25.70	0.13	0.07	4	18	6
24X	206.70	0.15	119	0.9	0.86	22.91	0.53	0.08	13	18	1

Table 2 (continued).

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
<b>119-738C-</b>											
4R	218.00	0.07	85	0.8	0.32	16.46	0.02	0.06	11	14	8
5R	227.70	0.08	70	0.7	0.28	20.29	0.11	0.08	9	15	1
6R	235.81	0.08	101	0.6	0.37	26.96	0.10	0.05	10	13	1
7R	245.42	0.04	54	1.0	0.01	2.46	0.01	0.06	9	20	1
8R	255.00	0.20	156	1.0	0.37	25.21	0.14	0.10	17	24	2
9R	264.70	0.30	175	1.7	0.58	14.68	0.50	0.23	34	38	1
10R	276.20	0.20	164	1.0	0.59	17.43	0.50	0.15	13	21	4
11R	284.45	0.23	198	0.9	1.11	31.18	0.76	0.15	10	23	1
16R	333.70	0.24	190	1.8	0.49	24.52	0.19	0.14	36	40	7
17R	343.38	0.20	151	0.8	0.41	29.87	0.17	0.07	8	18	9
23R	401.30	0.31	226	1.4	1.18	31.38	0.80	0.16	11	36	3
24R	411.10	0.40	251	1.5	1.11	30.19	0.74	0.18	16	33	2
25R	420.71	0.43	322	1.8	1.34	30.99	0.84	0.22	16	36	7
26R	430.42	0.49	413	2.3	1.19	27.50	0.74	0.20	15	34	2
27R	442.34	0.25	342	1.0	1.20	27.78	0.61	0.15	30	35	3
27R	439.83	0.25	285	0.8	0.99	29.82	0.67	0.13	31	49	1
28R	449.38	0.33	368	1.0	0.86	29.60	0.58	0.12	18	21	3
29R	459.30	0.48	533	3.1	0.98	23.68	0.44	0.30	26	26	17
30R	468.94	0.32	444	2.9	0.88	17.11	0.46	0.20	9	20	1
31R	478.37	0.50	1233	4.3	1.11	25.45	0.42	0.25	19	26	17
<b>119-738B-</b>											
6H	42.30	0.19	144	0.7	0.97	23.42	0.47	0.15	16	16	19
6H	43.30	0.23	169	0.6	1.27	33.01	0.71	0.13	17	17	11
6H	43.63	0.22	162	0.7	1.06	28.09	0.71	0.13	17	17	2
6H	44.28	0.12	61	0.5	0.62	4.83	0.22	0.12	14	16	1
6H	44.85	0.17	111	0.5	0.98	23.41	0.46	0.10	14	29	5
6H	45.31	0.11	158	0.5	0.01	36.23	0.01	0.05	1	12	9
6H	46.35	0.11	160	0.3	0.01	32.56	0.03	0.05	1	11	2
6H	47.25	0.10	163	0.4	0.01	32.71	0.02	0.07	1	11	1
6H	47.85	0.07	156	0.3	0.01	29.23	0.01	0.05	1	11	5
6H	48.75	0.08	149	0.3	0.01	32.04	0.01	0.06	1	11	6
6H	49.35	0.11	161	0.5	0.01	30.86	0.17	0.09	1	13	6
6H	50.15	0.08	62	0.3	0.66	36.22	0.01	0.02	14	11	1
6H	50.65	0.06	83	0.2	0.53	34.84	0.01	0.02	16	12	11
7H	52.16	0.09	42	0.3	0.40	32.84	0.01	0.03	14	14	2
7H	52.64	0.09	40	0.3	0.41	33.76	0.01	0.03	13	14	2
7H	53.18	0.10	21	0.3	0.39	34.25	0.01	0.02	15	15	3
7H	54.16	0.11	44	0.3	0.40	33.43	0.05	0.04	15	14	2
7H	54.80	0.11	23	0.5	0.51	34.08	0.01	0.04	11	12	1
7H	55.52	0.14	40	0.4	0.44	32.41	0.01	0.03	17	81	8
7H	56.30	0.13	5	0.4	0.38	32.52	0.09	0.05	17	14	12
7H	57.00	0.19	182	0.7	0.36	33.83	0.07	0.06	16	16	9
7H	57.80	0.09	209	0.5	0.21	33.74	0.03	0.04	12	11	8
7H	58.60	0.10	200	0.4	0.02	33.25	0.03	0.04	13	13	2
7H	59.20	0.14	204	0.4	0.23	33.99	0.01	0.03	14	13	1
7H	60.20	0.09	212	0.3	0.06	32.40	0.01	0.03	12	12	1
7H	60.70	0.07	247	0.2	0.17	34.37	0.01	0.02	13	12	1
8H	61.30	0.07	210	0.6	0.30	32.09	0.01	0.04	12	12	4
8H	62.73	0.09	221	0.6	0.26	31.42	0.01	0.03	13	14	5
8H	63.30	0.10	150	0.7	0.27	33.72	0.03	0.06	13	14	4
8H	64.30	0.12	15	0.4	0.65	32.94	0.28	0.05	13	15	13
8H	65.10	0.07	7	0.2	0.20	32.94	0.01	0.02	11	14	2
<b>119-739A-</b>											
1H	1.82	4.68	764	27.8	5.93	1.41	0.99	3.20	27	88	13
2H	4.90	3.80	489	29.3	6.41	1.57	1.05	4.09	25	79	6
<b>119-739B-</b>											
1H	0.60	3.88	451	29.3	6.40	1.54	1.16	4.12	26	105	9
<b>119-739C-</b>											
1R	0.92	3.97	494	29.4	5.63	1.42	1.14	3.53	31	98	11
4R	26.02	3.11	411	31.6	5.36	1.00	0.83	3.54	15	47	3
5R	30.80	3.40	524	31.7	5.67	1.29	1.02	3.57	29	66	17
13R	106.51	2.79	345	31.6	5.09	0.74	0.57	3.96	17	55	4
14R	117.60	2.36	235	31.7	4.15	0.44	0.48	3.11	18	51	8
15R	125.79	2.44	267	30.5	4.33	0.34	0.44	3.69	17	48	1
16R	132.40	2.48	284	30.7	5.41	0.40	0.45	3.90	19	51	1
17R	137.10	2.51	292	30.2	5.17	0.41	0.46	3.56	16	46	7
18R	142.10	2.34	224	30.3	4.83	0.75	0.53	3.18	19	54	2
19R	146.58	2.70	509	30.0	5.19	0.76	0.60	3.27	19	52	3

Table 2 (continued).

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
119-739C- (Cont.)											
20R	151.62	2.70	273	28.3	4.94	0.78	0.56	3.32	19	54	4
21R	156.40	2.36	289	28.2	5.03	0.60	0.48	3.24	16	51	7
22R	161.40	2.44	229	30.0	4.99	0.42	0.42	3.36	20	55	1
23R	166.10	3.01	369	30.9	5.70	0.42	0.55	3.54	15	55	8
25R	174.24	2.46	214	33.4	3.74	0.57	0.68	2.18	20	57	13
26R	186.06	3.69	411	29.2	5.61	0.69	1.07	2.97	28	65	23
26R	187.50	3.37	293	30.3	5.08	0.88	0.90	2.90	22	62	22
28R	203.10	2.25	268	34.3	2.72	0.37	0.33	1.62	15	45	8
29R	214.26	2.88	286	32.1	4.40	0.64	0.63	2.29	16	54	12
30R	223.90	3.71	330	30.6	5.28	0.82	0.85	2.79	26	69	32
31R	233.50	2.75	283	32.5	4.16	0.74	0.65	2.35	21	60	20
32R	241.69	2.47	325	32.9	3.90	0.60	0.61	2.13	15	54	19
33R	252.80	3.37	412	28.8	5.33	0.67	0.89	3.00	21	79	19
34R	262.50	3.27	487	28.1	5.38	0.79	0.94	2.72	23	68	31
35R	271.98	3.58	505	25.6	5.72	0.66	0.99	3.15	23	75	25
36R	281.80	3.12	437	31.4	4.96	0.77	0.77	2.77	24	73	22
37R	289.67	1.79	233	35.8	2.95	0.38	0.26	1.88	21	43	7
38R	299.48	2.81	373	27.0	3.75	0.52	0.51	2.18	22	58	18
38R	301.00	2.41	360	34.8	3.77	0.44	0.41	2.30	17	48	1
40R	318.37	2.20	246	34.1	4.35	0.36	0.36	3.21	16	48	1
41R	328.11	2.62	336	31.8	4.14	0.49	0.53	2.45	19	46	1
42R	337.98	2.21	251	32.7	3.50	0.39	0.41	1.88	17	52	19
43R	348.28	2.45	287	31.4	3.71	0.30	0.29	2.43	19	49	11
44R	358.66	2.74	329	29.1	4.78	0.49	0.52	2.92	19	45	6
45R	366.66	2.23	232	27.5	3.65	0.39	0.44	2.31	19	44	19
46R	377.43	2.70	299	26.1	4.35	0.38	0.49	2.58	21	50	16
47R	386.46	2.77	366	24.0	4.50	0.51	0.53	2.64	6	55	2
48R	397.70	1.89	208	25.4	3.23	0.18	0.09	2.18	4	45	5
50R	415.50	2.54	313	21.4	4.22	0.34	0.36	2.89	4	49	1
51R	425.10	2.68	375	32.6	4.56	0.35	0.46	2.98	3	50	1
52R	436.10	2.73	320	31.9	4.92	0.28	0.37	2.84	1	45	1
53R	440.22	1.94	183	35.0	3.48	0.22	0.23	2.06	1	39	1
54R	445.58	2.31	276	33.6	4.49	0.23	0.30	2.60	1	50	1
55R	450.12	2.93	305	31.4	5.51	0.26	0.44	3.01	1	44	1
56R	454.33	7.20	292	29.4	4.03	0.21	0.27	2.54	1	50	1
57R	459.11	2.28	249	33.3	3.57	0.24	0.25	2.33	13	45	11
58R	465.43	3.60	240	27.1	6.74	0.46	0.75	3.61	23	81	25
59R	468.78	1.94	204	30.0	4.74	0.21	0.35	1.97	13	46	8
60R	473.50	2.65	304	31.5	4.96	0.25	0.37	2.36	13	55	9
119-744A-											
1H	0.90	0.69	463	23.2	0.79	13.84	0.26	0.43	51	46	14
1H	0.90	0.71	478	20.9	0.82	13.24	0.34	0.46	56	44	3
2H	6.63	0.23	50	22.8	0.38	12.92	0.26	0.25	34	25	1
2H	6.63	0.26	39	22.6	0.42	14.54	0.16	0.23	36	26	1
3H	16.10	1.28	762	32.5	1.86	0.88	0.45	1.08	108	96	29
3H	16.10	1.24	752	34.3	1.62	0.90	0.42	0.88	103	77	23
4H	25.59	0.31	446	7.4	0.75	27.92	0.24	0.18	38	24	31
5H	35.20	0.37	459	6.3	0.77	28.74	0.16	0.19	35	21	27
6H	44.64	0.06	80	1.6	0.32	28.48	0.08	0.06	10	7	11
7H	54.10	0.49	630	3.5	0.82	31.76	0.16	0.25	39	26	32
8H	63.60	0.32	325	3.2	0.55	34.42	0.12	0.17	23	19	27
9H	73.40	0.09	131	0.7	0.25	32.68	0.05	0.07	10	8	6
10H	82.57	0.28	390	3.6	0.83	31.24	0.17	0.14	28	17	23
11H	92.08	0.26	228	2.1	0.61	32.16	0.19	0.16	22	16	21
12H	101.60	0.23	161	2.4	0.52	31.30	0.23	0.16	20	15	10
13H	111.10	0.23	165	1.4	0.87	33.72	0.31	0.15	15	13	9
14H	120.60	0.27	154	1.7	1.00	31.98	0.34	0.17	15	15	15
15H	130.10	0.28	115	3.8	0.70	25.46	0.41	0.17	13	19	11
16H	139.60	0.23	222	4.0	0.71	32.84	0.33	0.10	13	16	9
17H	147.42	0.18	183	1.0	0.40	35.06	0.13	0.08	10	13	10
18H	150.00	0.18	190	0.7	0.82	33.46	0.33	0.08	7	12	12
19H	159.30	0.23	137	0.6	0.80	35.26	0.39	0.08	8	13	12
20H	172.00	0.28	179	1.0	0.46	34.36	0.13	0.09	3	17	3
119-744B-											
1H	2.20	0.66	69	20.6	0.87	13.16	0.23	0.31	32	42	1
2H	11.69	0.97	643	21.2	0.75	4.08	0.20	0.66	98	60	23
3H	21.19	0.52	564	4.9	0.97	25.26	0.49	0.25	45	33	13
4H	23.67	0.78	787	7.4	1.18	18.44	0.37	0.47	68	46	29
5H	33.50	0.13	61	0.8	0.89	36.00	0.53	0.06	9	8	7
5H	33.55	0.09	73	0.7	0.33	18.02	0.41	0.10	11	101	11
6H	42.70	0.09	52	4.6	0.34	19.72	0.33	0.10	11	13	12
7H	52.30	0.17	60	2.5	0.46	15.44	0.51	0.20	22	19	10
8H	61.70	0.16	141	0.7	0.99	35.04	0.74	0.11	3	11	1
9H	71.20	0.23	310	2.2	0.90	25.26	0.72	0.17	25	17	22

**Table 2 (continued).**

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
<b>119-745A-</b>											
1H	2.70	1.99	241	24.7	2.59	0.72	0.71	1.28	229	99	26
<b>119-745B-</b>											
1H	2.20	3.94	419	31.0	3.93	1.03	1.14	2.06	55	109	29
2H	7.20	2.65	359	32.7	3.06	0.60	0.78	1.66	73	81	5
3H	16.70	1.97	304	33.9	2.31	0.56	0.67	1.46	22	66	1
4H	26.30	5.40	817	29.7	5.09	0.93	1.32	3.40	53	178	21
5H	35.70	1.84	297	34.3	2.28	0.53	0.56	1.40	36	73	10
6H	45.20	4.44	670	27.2	5.49	0.98	1.50	2.52	59	120	41
7H	54.70	2.56	2173	29.6	3.34	0.73	0.94	1.76	57	83	10
8H	64.20	2.27	346	30.8	2.88	0.51	0.83	1.47	45	70	11
9H	73.70	3.91	601	28.4	4.32	0.84	1.26	2.40	251	112	37
10H	83.20	2.57	1029	29.0	3.00	0.50	0.75	1.62	68	93	17
11H	92.70	3.45	456	28.7	4.07	0.65	1.08	2.43	64	73	14
12H	102.20	3.44	3220	26.5	4.27	0.73	0.99	2.60	125	118	21
13H	111.70	4.33	597	25.5	5.37	0.84	1.24	2.95	100	112	20
13H	114.70	4.09	559	27.0	4.67	0.80	1.16	2.57	100	106	13
14H	121.20	3.36	527	31.5	5.70	0.70	0.91	3.17	193	79	11
15H	130.70	3.97	946	32.1	5.35	0.71	1.15	3.18	103	114	35
17H	141.20	1.81	2159	36.0	2.43	0.40	0.62	1.63	97	44	1
18H	150.70	3.87	447	32.3	4.44	0.61	1.08	2.40	43	86	10
19H	160.20	3.02	1599	32.4	4.17	0.67	0.92	2.54	64	89	9
20H	169.70	3.67	566	31.9	4.68	0.58	0.93	2.50	37	79	4
21H	179.20	4.04	516	31.4	4.86	0.60	1.11	2.46	95	83	16
22H	188.70	4.07	494	31.0	5.18	0.74	1.38	2.76	60	96	21
23H	198.20	3.12	409	34.4	3.92	0.54	0.94	2.36	29	74	1
24H	207.70	2.78	1076	30.4	4.09	0.48	0.80	2.22	81	69	1
<b>119-746A-</b>											
4H	167.00	2.70	270	20.7	3.53	0.52	0.85	1.87	42	92	6
5H	176.50	3.24	468	27.5	4.48	0.65	0.87	2.34	90	85	1
6H	186.01	3.14	675	26.6	4.99	0.53	0.89	2.50	45	87	1
7H	195.50	3.46	469	24.6	5.46	0.69	0.99	2.53	44	91	8
8H	205.00	3.62	414	23.7	5.39	0.55	0.97	2.54	56	92	3
9H	216.00	3.26	383	24.0	4.52	0.45	0.82	2.27	41	65	12
10H	220.00	2.63	311	23.5	4.09	0.48	0.71	2.10	36	64	1
11X	229.50	3.26	370	21.2	4.45	0.42	0.83	2.17	51	82	1
13X	244.40	3.19	1079	30.4	4.22	2.00	0.93	2.01	36	87	10
14X	252.44	2.56	3043	32.2	3.89	0.64	0.84	2.18	66	82	18













**Table 6. Residual metal in dry sediment after sequential leaching.**

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
<b>119-736A-</b>											
1H	1.25	2.09	228	35.1	2.58	0.95	0.41	1.21	23	86	1
1H	4.25	2.04	466	33.5	4.17	0.88	0.20	2.94	17	82	1
1H	7.25	3.36	337	31.2	3.12	1.88	1.23	1.14	31	80	31
2H	10.25	3.53	617	28.2	4.09	1.68	0.92	2.31	29	103	16
2H	11.75	3.02	341	29.0	3.07	1.55	0.93	1.28	36	84	24
2H	13.88	0.73	5	34.4	0.85	0.20	0.11	0.40	16	26	2
3H	19.75	4.26	807	27.3	4.62	2.02	0.91	2.81	26	114	32
3H	21.25	3.80	524	27.8	3.52	1.91	1.16	1.95	43	99	24
3H	24.25	2.60	357	30.4	2.20	1.18	0.73	1.12	25	57	9
4H	28.70	4.37	705	37.6	3.80	2.22	1.42	2.09	34	106	35
4H	30.20	3.69	479	40.8	2.71	1.90	1.40	0.92	38	86	29
4H	31.70	2.30	451	44.5	2.24	1.20	0.76	1.22	25	68	11
5H	34.23	1.05	106	48.5	0.57	0.31	0.31	0.23	20	25	1
5H	37.23	1.22	181	48.3	1.18	0.35	0.29	0.59	17	38	1
6H	39.07	2.02	404	44.3	2.02	1.05	0.56	1.09	20	32	1
6H	42.07	2.02	267	34.6	1.39	1.01	0.70	0.56	10	48	7
7H	44.35	2.07	289	32.4	1.53	0.93	0.71	0.70	10	54	12
7H	47.25	1.86	211	34.6	1.02	0.32	0.32	0.46	10	42	1
8H	49.25	1.71	251	34.2	1.34	0.53	0.38	0.69	8	51	1
8H	52.25	4.08	517	27.4	2.98	2.08	1.43	1.15	32	110	38
9H	54.25	4.28	567	27.1	2.99	1.67	1.24	1.37	27	107	39
9H	57.25	4.48	811	27.5	4.45	1.62	0.82	2.96	12	127	16
10H	60.25	1.47	182	35.4	1.07	0.32	0.26	0.46	13	32	9
10H	63.25	2.87	627	31.6	2.83	1.09	0.53	1.82	11	101	1
10H	66.05	0.64	87	37.3	0.75	0.10	0.05	0.37	2	23	1
11H	69.75	1.30	397	34.6	1.62	0.08	0.05	1.14	2	51	1
11H	72.75	0.88	99	34.6	0.84	0.13	0.14	0.35	4	29	1
12H	74.76	0.93	102	36.1	0.89	0.17	0.17	0.38	4	30	1
12H	77.75	1.04	235	35.7	1.08	0.09	0.05	0.61	2	63	1
13H	80.75	0.52	64	35.5	0.48	0.12	0.05	0.20	4	23	1
13H	83.75	0.94	127	35.1	0.86	0.11	0.05	0.45	7	37	1
14H	90.25	1.39	247	34.1	1.56	0.26	0.20	0.95	3	44	1
14H	93.25	2.06	442	32.0	2.22	0.48	0.34	1.49	4	63	1
14H	96.25	4.11	557	30.0	3.80	2.33	1.16	1.43	12	94	15
15H	99.75	0.98	24	39.5	1.06	0.24	0.19	0.33	1	28	1
15H	102.75	1.25	53	36.4	1.28	0.33	0.25	0.43	3	37	1
15H	105.75	1.72	110	37.8	1.93	0.56	0.43	0.74	3	43	1
16H	109.23	1.79	279	36.7	2.12	0.41	0.24	1.07	1	67	1
16H	112.23	3.31	411	33.6	2.71	1.13	0.85	1.32	2	80	10
16H	115.23	1.41	79	37.4	1.32	0.65	0.27	0.38	2	38	1
17H	120.11	0.53	10	39.8	0.57	0.25	0.05	0.14	1	20	1
13H	86.75	5.01	579	28.5	4.51	1.86	1.25	1.69	11	117	31
20H	147.65	0.71	20	35.8	0.77	0.16	0.04	0.30	4	25	1
20H	150.65	1.46	210	34.9	1.71	0.34	0.14	0.94	2	54	1
20H	153.65	0.20	12	37.8	0.34	0.17	0.01	0.09	1	13	1
21H	157.30	0.34	1	36.7	0.66	0.16	0.10	0.25	1	21	1
21H	160.30	0.15	1	37.2	0.26	0.17	0.01	0.06	1	11	1
21H	163.30	0.27	1	36.9	0.38	0.16	0.01	0.10	1	15	1
23X	176.25	0.44	1	39.1	0.60	0.15	0.03	0.17	6	19	6
24X	186.22	0.51	1	40.2	0.48	0.16	0.10	0.16	1	19	1
26X	204.98	1.69	491	35.2	2.43	0.55	0.20	1.53	19	62	5
26X	207.98	0.85	151	37.4	0.96	0.35	0.18	0.42	29	36	5
27X	214.18	0.66	144	38.5	0.78	0.22	0.11	0.34	18	32	1
29X	233.90	0.67	134	36.3	0.87	0.12	0.10	0.43	17	21	1
29X	235.40	0.47	94	38.7	0.69	0.13	0.04	0.32	16	19	1
<b>119-736C-</b>											
2R	207.70	0.88	94	38.6	0.79	0.19	0.15	0.36	27	27	10
5R	236.95	2.01	145	34.6	1.90	0.51	0.30	1.05	5	40	1
5R	239.95	2.35	220	32.1	2.25	0.79	0.43	1.09	5	46	1
5R	241.86	0.22	14	38.5	0.18	0.13	0.01	0.11	1	13	1
7R	256.30	1.88	106	35.1	1.46	0.54	0.38	0.56	6	32	4
8R	265.95	1.04	56	36.2	1.02	0.28	0.13	0.46	3	29	1
8R	267.45	0.59	33	36.9	0.49	0.17	0.02	0.21	1	18	1
9R	275.65	0.49	70	35.8	0.45	0.14	0.01	0.20	2	15	1
9R	278.65	0.46	77	34.6	0.47	0.12	0.01	0.21	1	15	1
9R	281.65	0.51	85	36.3	0.58	0.12	0.02	0.25	1	20	1
10R	285.25	1.59	168	33.6	1.96	0.35	0.28	0.79	20	33	1
10R	288.25	1.16	32	35.6	1.31	0.14	0.07	0.48	17	27	1
10R	291.25	1.41	104	33.3	1.61	0.22	0.20	0.63	21	32	1
11R	294.95	0.51	1	37.6	0.79	0.12	0.10	0.25	12	11	1
11R	297.60	0.36	1	36.7	0.55	0.13	0.10	0.14	8	7	1
11R	299.90	0.45	1	37.0	0.74	0.13	0.10	0.23	10	9	1
12R	303.55	0.46	1	35.8	0.67	0.13	0.10	0.16	13	4	1
13R	314.35	0.86	1	36.1	1.11	0.16	0.09	0.37	16	12	1

Table 6 (continued).

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
119-736C- (Cont.)											
13R	317.35	0.75	1	36.3	0.99	0.19	0.06	0.30	14	12	1
13R	320.35	0.92	66	37.1	1.10	0.16	0.09	0.37	19	25	1
14R	323.79	0.24	85	38.3	0.40	0.13	0.10	0.08	9	12	1
14R	325.29	0.39	86	37.6	0.60	0.11	0.10	0.18	10	16	1
14R	326.79	0.36	105	36.8	0.56	0.11	0.10	0.15	11	13	1
15R	333.65	0.46	124	37.1	0.63	0.11	0.10	0.17	9	14	1
15R	336.65	0.41	117	37.6	0.60	0.10	0.10	0.16	8	14	1
15R	339.65	0.39	127	36.2	0.55	0.11	0.10	0.15	8	13	1
16R	343.25	0.91	140	33.6	0.88	0.13	0.05	0.31	13	19	1
16R	344.75	0.95	146	35.4	1.01	0.13	0.02	0.40	14	21	1
16R	346.80	0.70	1	36.5	0.84	0.16	0.10	0.30	8	14	1
17R	352.85	0.25	1	42.2	0.03	0.02	0.01	0.09	9	17	1
18R	362.55	0.40	1	37.5	0.46	0.11	0.10	0.13	10	13	1
18R	365.55	0.43	1	37.5	0.46	0.13	0.01	0.13	8	16	1
119-737A-											
1H	0.60	12.03	253	24.59	2.72	0.71	1.41	3.68	1	124	10
1H	2.10	2.97	139	30.84	1.82	0.55	0.35	1.01	2	52	7
1H	3.60	2.12	161	30.48	1.37	0.37	0.14	0.76	4	36	1
2H	5.60	1.80	289	27.56	2.26	0.85	0.27	0.94	5	45	3
2H	8.60	1.15	105	27.27	1.46	0.43	0.15	0.54	6	33	1
2H	11.60	1.02	115	24.99	1.29	0.43	0.09	0.48	7	30	5
3H	15.25	1.04	78	32.77	1.35	0.40	0.08	0.44	23	27	2
3H	18.10	1.01	97	30.81	1.12	0.32	0.03	0.36	27	25	2
3H	21.10	0.89	123	31.37	1.06	0.32	0.02	0.34	28	22	1
4H	24.60	1.12	121	30.85	1.32	0.41	0.08	0.43	28	30	2
4H	27.60	0.75	53	30.35	1.05	0.23	0.01	0.30	23	24	1
4H	30.60	1.15	173	26.78	1.63	0.20	0.01	0.67	21	51	8
5H	34.10	1.26	135	24.35	1.54	0.53	0.12	0.50	23	31	1
5H	37.10	1.55	173	23.23	1.77	0.62	0.21	0.54	24	32	9
5H	40.10	1.46	174	22.49	1.59	0.44	0.11	0.55	22	32	11
6H	43.60	1.92	211	30.86	2.10	0.75	0.33	0.68	27	41	5
6H	46.60	2.58	312	29.94	2.97	1.10	0.58	1.04	26	60	8
6H	49.60	3.85	421	26.64	3.60	1.49	0.95	1.36	31	78	12
7H	53.10	1.94	206	27.17	2.71	0.51	0.25	1.20	23	62	1
7H	56.10	0.91	67	34.21	1.14	0.22	0.04	0.35	18	21	1
7H	59.10	1.31	119	32.58	1.79	0.36	0.10	0.70	23	36	1
8H	62.60	2.16	174	31.30	2.29	0.41	0.24	1.11	18	63	1
8H	65.60	1.18	114	32.44	1.35	0.37	0.04	0.35	19	25	1
8H	68.60	1.65	141	30.00	2.00	0.83	0.22	0.51	21	27	1
9H	72.10	1.84	194	30.17	2.16	0.75	0.23	0.67	20	44	1
9H	75.10	1.84	139	26.28	1.99	0.54	0.17	0.60	22	41	1
9H	78.10	1.65	151	27.13	1.76	0.33	0.13	0.53	18	34	1
10H	86.10	2.14	253	34.55	2.58	0.68	0.24	1.08	17	51	1
10H	89.10	1.28	101	35.89	1.27	0.45	0.06	0.33	14	24	1
11H	91.10	1.62	177	32.73	1.57	0.43	0.16	0.44	18	31	1
11H	94.10	1.16	100	33.94	1.05	0.23	0.05	0.28	14	22	1
11H	97.10	0.77	72	33.94	0.82	0.32	0.04	0.17	14	15	1
12H	100.60	1.81	183	32.41	1.78	0.75	0.19	0.44	21	29	1
12H	103.60	0.97	48	29.85	1.12	0.26	0.03	0.31	12	25	1
12H	106.60	1.26	61	27.66	1.45	0.36	0.04	0.43	17	27	1
13H	110.10	1.43	96	32.14	1.19	0.48	0.15	0.27	17	20	1
13H	113.10	1.40	61	32.27	1.51	0.32	0.03	0.44	19	25	1
13H	116.10	0.77	1	32.76	0.89	0.15	0.02	0.23	13	18	1
15H	134.43	0.93	1	32.11	1.05	0.14	0.02	0.27	19	22	1
15H	137.43	1.05	1	30.28	1.25	0.20	0.02	0.34	19	21	1
16H	138.60	0.36	1	30.07	0.49	0.10	0.01	0.13	18	14	1
16H	141.60	0.87	1	33.35	0.99	0.05	0.02	0.26	23	18	1
16H	144.60	0.78	59	32.76	0.99	0.12	0.01	0.28	21	18	1
17H	148.10	0.45	27	32.32	0.55	0.13	0.01	0.11	17	10	1
11H	91.19	1.29	99	28.17	1.43	0.27	0.01	0.41	20	28	1
11H	91.74	5.03	479	22.18	4.32	1.11	0.63	2.20	17	82	1
11H	92.30	0.81	44	27.13	0.66	0.11	0.01	0.17	14	12	1
11H	93.30	0.82	72	24.84	0.70	0.11	0.01	0.16	16	13	1
11H	93.80	0.73	45	24.97	0.89	0.34	0.01	0.19	14	17	1
11H	94.50	1.33	111	22.15	1.53	0.66	0.11	0.41	15	25	1
11H	95.19	0.88	63	33.28	1.03	0.41	0.01	0.27	12	20	3
11H	95.90	1.00	103	33.04	1.27	0.49	0.02	0.36	13	25	1
11H	96.78	0.81	80	32.19	0.79	0.35	0.01	0.22	14	15	1
11H	97.84	1.40	131	31.15	1.70	0.71	0.09	0.48	15	23	1
11H	98.30	0.91	95	31.63	0.98	0.28	0.01	0.29	17	17	1
11H	99.05	0.74	94	31.23	0.88	0.37	0.01	0.24	14	16	1
11H	99.69	0.68	4	31.77	0.87	0.29	0.01	0.17	3	15	1
12H	100.34	1.35	48	26.92	1.78	0.66	0.14	0.42	8	28	1
12H	100.98	1.40	59	25.36	1.81	0.65	0.12	0.43	7	25	1

Table 6 (continued).

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
119-737A- (Cont.)											
12H	102.32	1.52	90	23.53	2.51	0.86	0.24	0.78	5	48	1
12H	101.70	1.20	39	23.38	1.50	0.43	0.05	0.37	3	24	1
12H	103.23	1.21	36	21.11	1.52	0.36	0.01	0.44	1	27	1
12H	104.04	1.20	50	21.34	1.81	0.51	0.03	0.49	1	25	1
12H	105.50	1.06	5	40.27	1.38	0.43	0.01	0.30	1	26	1
12H	104.70	0.75	1	41.23	1.09	0.26	0.01	0.25	1	19	1
12H	106.30	1.07	88	31.38	1.65	0.57	0.07	0.41	15	26	1
12H	107.40	1.17	89	30.62	1.29	0.46	0.04	0.28	18	24	1
12H	107.64	0.99	97	29.17	1.27	0.47	0.05	0.29	14	22	1
12H	108.90	1.31	139	32.71	1.42	0.55	0.07	0.33	16	21	1
12H	109.32	0.91	119	33.84	1.38	0.42	0.03	0.35	13	22	1
119-737B-											
17R	369.99	7.89	1046	19.04	4.65	3.99	1.97	0.56	65	126	14
17R	370.39	7.41	974	18.36	4.65	4.05	1.97	0.52	61	132	19
17R	371.08	6.22	762	15.26	3.54	2.68	1.48	0.49	51	116	9
17R	371.80	7.00	795	16.85	4.02	2.82	1.68	0.72	43	144	18
17R	373.01	3.86	599	26.22	5.70	1.40	0.55	1.90	19	13	1
17R	373.46	7.61	1104	19.45	5.05	3.89	1.89	0.54	76	148	4
17R	374.00	5.87	676	14.79	3.67	2.43	1.61	0.51	58	192	10
17R	374.50	7.18	759	16.34	3.96	2.47	1.74	0.87	60	119	3
18R	379.35	5.24	316	14.58	3.27	1.28	1.42	0.76	45	84	1
18R	380.13	6.53	370	16.05	3.65	1.10	1.48	1.21	45	199	1
18R	381.03	5.43	460	15.42	4.28	1.23	1.30	0.44	33	84	1
18R	381.60	6.08	524	17.05	4.39	1.26	1.51	0.23	48	96	1
18R	382.15	6.61	823	18.47	5.25	1.97	2.05	0.18	67	90	12
18R	382.40	5.95	390	14.98	3.39	0.79	1.33	0.46	44	96	6
19R	389.03	6.31	364	17.13	3.83	1.05	1.40	1.07	41	97	1
19R	389.60	4.89	398	18.62	4.50	1.32	1.07	0.95	42	112	1
19R	390.38	5.40	421	16.91	4.15	1.11	1.23	0.43	52	89	11
19R	391.40	6.00	568	18.86	4.52	1.37	1.37	0.55	34	111	1
19R	391.88	5.77	426	18.04	4.06	1.11	1.30	0.65	47	111	1
19R	392.70	5.22	297	16.45	3.10	1.17	1.04	1.18	44	108	1
19R	393.23	5.33	292	17.86	3.24	0.95	1.20	1.27	31	60	1
19R	393.41	6.96	619	16.61	4.44	1.33	1.51	0.54	36	108	1
20R	399.11	3.93	242	12.37	2.49	0.77	0.88	0.75	34	89	4
20R	399.40	5.03	305	13.55	3.22	1.07	1.09	0.78	39	159	1
20R	400.12	2.55	109	17.99	3.56	0.97	0.48	0.70	25	102	1
20R	400.53	3.88	326	20.39	4.93	1.21	0.70	1.00	41	198	1
20R	401.55	5.65	348	16.37	3.67	1.21	1.21	1.15	34	98	1
20R	402.71	5.12	268	12.17	2.69	0.87	1.15	1.07	31	94	1
20R	403.14	5.14	273	15.54	3.52	1.35	1.12	1.00	35	93	1
20R	403.58	4.66	302	11.85	2.87	1.20	0.98	0.89	29	113	1
20R	404.57	6.17	503	15.50	4.53	1.78	1.33	0.79	54	205	3
20R	405.50	4.59	239	15.58	3.32	1.02	1.03	1.39	59	233	12
20R	406.15	6.71	500	18.30	4.63	1.43	1.52	0.80	39	126	10
119-739A-											
1H	1.82	2.60	348	29.52	5.85	1.16	0.59	2.57	14	57	12
2H	4.90	2.92	362	29.12	5.67	1.17	0.66	2.44	15	55	9
119-739B-											
1H	0.60	3.18	413	30.10	5.65	1.24	0.62	2.34	12	52	11
119-739C-											
1R	0.92	2.45	266	29.61	4.80	1.05	0.59	1.99	14	51	16
4R	26.02	1.69	224	31.63	4.07	0.64	0.33	1.95	7	30	5
5R	30.80	2.22	258	28.66	5.15	0.95	0.54	2.07	13	42	7
13R	106.51	1.99	138	37.35	6.20	0.68	0.36	2.49	8	33	6
14R	117.60	1.58	137	33.05	4.38	0.39	0.22	2.08	11	28	1
15R	125.79	1.68	129	29.95	5.60	0.30	0.19	2.48	11	31	2
16R	132.40	1.57	136	31.21	4.56	0.28	0.11	2.29	11	29	1
17R	137.10	1.03	57	32.69	4.19	0.20	0.05	2.11	8	26	1
18R	142.10	1.71	390	31.11	4.29	0.71	0.21	1.68	10	35	1
19R	146.58	1.75	153	30.20	4.62	0.71	0.32	2.06	9	34	1
20R	151.62	2.25	202	27.85	5.93	0.65	0.55	2.29	9	37	1
21R	156.40	1.36	130	28.84	5.09	0.84	0.23	1.61	7	32	1
22R	161.40	1.81	42	29.54	5.56	0.30	0.34	2.39	9	33	1
23R	166.10	1.65	15	29.71	5.31	0.34	0.26	2.29	11	38	1
25R	174.24	1.85	52	29.89	4.05	0.39	0.51	1.44	12	41	1
26R	186.06	2.44	65	25.79	6.19	0.41	0.76	2.18	17	49	6
26R	187.50	2.39	72	26.44	5.25	0.46	0.65	1.87	15	45	3
28R	203.10	1.59	8	28.87	3.52	0.28	0.29	1.19	9	29	1

Table 6 (continued).

Core	Depth (mbsf)	Fe (%)	Mn (ppm)	Si (%)	Al (%)	Ca (%)	Mg (%)	K (%)	Cu (ppm)	Zn (ppm)	Ni (ppm)
119-739C- (Cont.)											
29R	214.26	2.03	54	25.31	4.76	0.34	0.54	1.57	11	38	1
30R	223.90	2.69	58	23.91	6.08	0.33	0.70	1.95	19	46	2
31R	233.50	1.77	1	24.38	5.35	0.37	0.57	2.03	18	41	8
32R	241.69	1.69	156	34.33	3.91	0.37	0.35	1.52	12	41	1
33R	252.80	2.32	147	29.64	5.73	0.37	0.79	2.27	15	50	1
34R	262.50	2.16	201	29.51	5.31	0.53	0.72	1.92	15	53	8
35R	271.98	2.22	174	27.87	5.48	0.44	0.73	2.09	16	53	4
36R	281.80	2.03	173	32.48	4.80	0.42	0.62	1.77	16	49	11
37R	289.67	1.01	114	39.56	2.66	0.28	0.14	0.83	9	50	1
38R	299.48	1.74	159	33.25	4.83	0.42	0.37	1.86	14	47	1
38R	301.00	1.57	144	34.37	4.56	0.33	0.33	1.79	9	45	1
40R	318.37	1.36	138	34.07	5.00	0.54	0.22	1.58	10	35	7
41R	328.11	1.69	36	36.11	4.50	0.33	0.43	1.66	11	35	1
42R	337.98	1.50	37	37.52	3.72	0.30	0.29	1.40	8	30	4
43R	348.28	1.58	67	36.25	3.89	0.28	0.29	1.62	8	34	5
44R	358.66	1.75	77	35.68	4.29	0.32	0.31	1.62	20	33	7
45R	366.66	1.56	52	35.72	4.96	0.27	0.37	1.87	11	34	6
46R	377.43	1.85	58	36.93	4.47	0.23	0.34	1.57	10	35	6
47R	386.46	1.65	65	34.07	5.07	0.32	0.39	1.91	12	36	11
48R	397.70	1.06	59	36.20	4.25	0.14	0.15	1.84	8	31	9
50R	415.50	1.19	62	35.77	4.08	0.20	0.24	1.58	9	32	2
51R	425.10	1.48	17	33.50	5.08	0.16	0.23	1.80	9	35	1
52R	436.10	1.11	2	35.29	4.13	0.15	0.16	1.45	6	30	1
53R	440.22	1.05	19	34.73	4.03	0.09	0.01	1.79	6	28	1
54R	445.58	1.16	4	35.28	4.11	0.12	0.07	1.62	7	30	1
55R	450.12	1.24	1	34.22	4.57	0.13	0.12	1.74	8	30	1
56R	454.33	1.22	1	34.30	4.34	0.13	0.13	1.52	9	32	1
57R	459.11	1.53	24	32.73	4.31	0.14	0.11	1.55	6	33	1
58R	465.43	2.55	28	28.75	7.72	0.34	0.54	2.11	22	52	8
59R	468.78	1.33	13	32.69	5.43	0.12	0.21	1.79	51	196	1
60R	473.50	1.67	62	32.02	4.92	0.11	0.24	1.91	9	34	1
119-745A-											
1H	2.70	2.33	173	33.3	3.57	0.83	0.63	1.45	40	55	1
119-745B-											
1H	2.20	3.14	222	31.2	3.75	0.79	0.76	1.63	21	64	4
2H	7.20	1.90	66	35.3	2.94	0.40	0.48	1.24	16	49	1
3H	16.70	1.61	31	35.9	2.13	0.30	0.32	0.86	3	36	1
4H	26.30	4.27	456	29.4	4.85	0.73	0.92	2.53	10	62	1
5H	35.70	1.42	40	35.6	2.14	0.31	0.33	0.85	1	36	1
6H	45.20	3.62	467	31.0	5.06	0.86	1.02	2.09	17	76	10
7H	54.70	2.09	268	34.7	3.15	0.40	0.51	1.14	12	50	1
8H	64.20	1.69	216	35.0	2.54	0.35	0.41	0.86	11	46	1
9H	73.70	2.87	381	31.0	4.03	0.58	0.66	1.52	49	71	4
10H	83.20	2.89	328	31.9	4.30	0.45	0.66	1.91	15	59	8
11H	92.70	2.19	300	34.0	2.89	0.33	0.41	1.27	22	43	1
12H	102.20	3.07	564	30.0	4.54	0.52	0.56	2.07	26	81	1
13H	111.70	3.56	364	29.1	5.56	0.55	0.83	2.37	40	74	1
13H	114.70	3.33	390	30.7	4.66	0.53	0.72	2.11	38	71	10
14H	121.20	2.37	218	31.1	5.06	0.59	0.56	2.66	30	60	1
15H	130.70	3.40	372	30.5	5.07	0.55	0.79	2.72	29	79	3
17H	141.20	1.41	129	34.2	2.41	0.20	0.33	1.20	30	39	1
18H	150.70	3.36	265	32.2	4.42	0.50	0.77	2.11	24	68	4
19H	160.20	2.40	209	31.8	4.16	0.44	0.59	1.93	15	53	1
20H	169.70	3.05	329	29.9	4.41	0.47	0.66	2.16	28	67	1
21H	179.20	3.47	274	29.3	4.81	0.49	0.77	2.19	44	62	1
22H	188.70	3.45	273	28.2	5.11	0.61	0.99	2.39	23	68	1
23H	198.20	2.53	271	31.2	4.01	0.40	0.62	1.90	12	51	1
24H	207.70	2.14	32	32.9	3.57	0.34	0.52	1.78	17	44	1
119-746A-											
4H	167.00	3.29	78	30.3	4.25	0.55	0.85	2.19	20	66	7
5H	176.50	2.78	53	32.9	4.00	0.45	0.60	2.05	27	50	1
6H	186.01	2.59	35	33.1	4.14	0.41	0.61	2.13	20	57	5
7H	195.50	2.81	70	31.4	4.34	0.51	0.69	2.29	19	62	1
8H	205.00	2.89	14	30.2	4.27	0.41	0.65	2.19	29	61	3
9H	216.00	2.66	1	32.3	3.97	0.39	0.63	2.01	19	45	1
10H	220.00	2.09	1	30.9	3.77	0.36	0.52	1.75	11	42	1
11X	229.50	2.63	1	29.8	4.09	0.39	0.60	1.96	22	52	1
13X	244.40	2.81	332	31.1	4.02	0.41	0.68	1.91	22	55	2
14X	252.44	2.11	250	31.9	4.08	0.41	0.60	2.16	19	43	2



**Table 7 (continued).**

Core	Depth (mbsf)	Si (%)	K (%)	Mg (%)	Ca (%)
119-737A- (Cont.)					
12H	100.34	8.8	0.20	0.01	0.01
12H	100.98	8.9	0.19	0.01	0.01
12H	102.32	6.6	0.22	0.01	0.01
12H	101.70	9.8	0.20	0.01	0.01
12H	103.23	10.2	0.17	0.01	0.01
12H	104.04	9.3	0.16	0.01	0.01
12H	105.50	9.3	0.16	0.01	0.01
12H	104.70	9.3	0.16	0.01	0.01
12H	106.30	8.4	0.17	0.01	0.01
12H	107.40	9.1	0.17	0.01	0.01
12H	107.64	10.4	0.19	0.01	0.01
12H	108.90	10.6	0.16	0.01	0.01
12H	109.32	11.0	0.16	0.01	0.01
119-737B-					
17R	369.99	2.0	0.14	0.01	0.01
17R	370.39	2.5	0.15	0.01	0.01
17R	371.08	2.6	0.16	0.01	0.01
17R	371.80	1.9	0.17	0.01	0.01
17R	373.01	2.8	0.20	0.01	0.01
17R	373.46	3.2	0.16	0.01	0.01
17R	374.00	1.8	0.16	0.01	0.01
17R	374.50	1.4	0.17	0.01	0.01
18R	379.35	0.6	0.31	0.01	0.01
18R	380.13	0.7	0.35	0.01	0.01
18R	381.03	0.8	0.39	0.01	0.01
18R	381.60	1.0	0.30	0.01	0.01
18R	382.15	0.9	0.25	0.01	0.01
18R	382.40	0.8	0.24	0.01	0.01
19R	389.03	1.7	0.37	0.01	0.02
19R	389.60	1.0	0.36	0.01	0.07
19R	390.38	1.4	0.25	0.01	0.02
19R	391.40	1.6	0.29	0.01	0.07
19R	391.88	1.2	0.31	0.01	0.05
19R	392.70	1.7	0.34	0.01	0.01
19R	393.23	1.2	0.34	0.01	0.02
19R	393.41	1.2	0.24	0.01	0.02
20R	399.11	1.5	0.24	0.01	0.01
20R	399.40	1.9	0.31	0.01	0.01
20R	400.12	1.9	0.44	0.01	0.01
20R	400.53	1.4	0.34	0.01	0.01
20R	401.55	1.5	0.29	0.01	0.04
20R	402.71	1.3	0.19	0.01	0.02
20R	403.14	2.0	0.26	0.01	0.02
20R	403.58	1.8	0.25	0.01	0.01
20R	404.57	1.4	0.30	0.01	0.08
20R	405.50	1.4	0.23	0.01	0.01
20R	406.15	1.3	0.23	0.01	0.05
119-738B-					
1H	2.10	4.4	0.08	0.01	0.11
2H	6.10	8.3	0.17	0.01	0.08
3H	17.12	2.5	0.13	0.01	0.09
4H	25.10	0.8	0.07	0.01	0.12
5H	34.60	0.6	0.04	0.01	0.09
6H	44.13	0.3	0.05	0.01	0.12
7H	55.08	0.1	0.04	0.01	0.13
8H	63.10	0.2	0.05	0.01	0.13
9H	72.60	0.1	0.03	0.03	0.14
10H	82.12	0.5	0.05	0.08	0.12
11H	87.10	0.5	0.05	0.21	0.09
12H	96.59	0.8	0.06	0.04	0.07
13H	106.10	0.7	0.07	0.01	0.08
14X	110.30	0.4	0.05	0.01	0.09
15X	119.90	0.2	0.05	0.13	0.10
16X	128.51	0.4	0.03	0.01	0.06
17X	139.30	0.7	0.05	0.05	0.02
18X	148.90	0.5	0.04	0.01	0.01
19X	158.59	0.4	0.04	0.07	0.11
19X	161.40	0.6	0.03	0.01	0.09
20X	168.30	0.3	0.05	0.26	0.08
21X	177.84	0.5	0.02	0.01	0.04
22X	187.50	0.5	0.04	0.01	0.02
23X	195.60	0.5	0.03	0.01	0.01
24X	206.70	0.4	0.03	0.01	0.01

**Table 7 (continued).**

Core	Depth (mbsf)	Si (%)	K (%)	Mg (%)	Ca (%)
119-738C-					
4R	218.00	0.6	0.03	0.01	0.01
5R	227.70	0.6	0.04	0.01	0.01
6R	235.81	0.6	0.06	0.14	0.15
7R	245.42	0.5	0.05	0.01	0.14
8R	255.00	0.4	0.07	0.01	0.14
9R	264.70	0.7	0.20	0.66	0.13
10R	276.20	0.5	0.13	0.49	0.14
11R	284.45	0.6	0.09	0.56	0.14
16R	333.70	1.3	0.11	0.58	0.16
17R	343.38	0.6	0.06	0.56	0.11
23R	401.30	1.2	0.05	0.69	0.08
24R	411.10	2.0	0.07	0.02	0.15
25R	420.71	1.5	0.04	0.01	0.12
26R	430.42	2.4	0.07	0.01	0.09
27R	442.34	1.4	0.03	0.01	0.16
27R	439.83	1.0	0.04	0.01	0.09
28R	449.38	1.5	0.04	0.01	0.11
29R	459.30	0.9	0.05	0.01	0.11
30R	468.94	1.9	0.05	0.01	0.01
31R	478.37	2.4	0.04	0.01	0.05
119-738B-					
6H	42.30	0.2	0.78	0.10	0.10
6H	43.30	0.2	0.34	0.02	0.09
6H	43.63	0.4	0.24	0.01	0.08
6H	44.28	0.4	0.19	0.01	0.07
6H	44.85	0.3	0.16	0.01	0.05
6H	45.31	0.1	0.04	0.01	0.08
6H	46.35	0.1	0.04	0.01	0.02
6H	47.25	0.1	0.04	0.01	0.07
6H	47.85	0.1	0.05	0.01	0.03
6H	48.75	0.1	0.04	0.01	0.03
6H	49.35	0.1	0.04	0.01	0.03
6H	50.15	0.1	0.03	0.01	0.02
6H	50.65	0.2	0.03	0.01	0.02
7H	52.16	0.2	0.04	0.01	0.01
7H	52.64	0.2	0.04	0.01	0.07
7H	53.18	0.1	0.04	0.01	0.06
7H	54.16	0.1	0.07	0.10	0.06
7H	54.80	0.1	0.05	0.03	0.06
7H	55.52	0.2	0.07	0.01	0.05
7H	56.30	0.3	0.09	0.11	0.04
7H	57.00	0.3	0.08	0.01	0.04
7H	57.80	0.4	0.04	0.01	0.02
7H	58.60	0.2	0.06	0.01	0.01
7H	59.20	0.2	0.05	0.01	0.06
7H	60.20	0.2	0.04	0.04	0.04
7H	60.70	0.1	0.04	0.03	0.02
8H	61.30	0.7	0.05	0.01	0.01
8H	62.73	0.6	0.06	0.01	0.03
8H	63.30	0.7	0.09	0.02	0.01
8H	64.30	0.2	0.06	0.01	0.01
8H	65.10	0.1	0.04	0.01	0.01
119-739A-					
1H	1.82	2.7	0.36	0.01	0.01
2H	4.90	1.2	0.31	0.01	0.01
119-739B-					
1H	0.60	2.4	0.36	0.01	0.01
119-739C-					
1R	0.92	5.6	0.46	0.01	0.01
4R	26.02	0.3	0.20	0.01	0.01
5R	30.80	0.4	0.25	0.01	0.01
13R	106.51	1.2	0.19	0.01	0.01
14R	117.60	0.8	0.16	0.01	0.01
15R	125.79	0.1	0.17	0.01	0.01
16R	132.40	0.4	0.22	0.01	0.01
17R	137.10	0.4	0.23	0.01	0.01
18R	142.10	4.8	0.19	0.01	0.01
19R	146.58	1.3	0.22	0.01	0.01
20R	151.62	1.4	0.23	0.01	0.01
21R	156.40	0.5	0.21	0.01	0.01

**Table 7 (continued).**

Core	Depth (mbsf)	Si (%)	K (%)	Mg (%)	Ca (%)
119-739C- (Cont.)					
22R	161.40	0.1	0.19	0.01	0.01
23R	166.10	0.2	0.22	0.01	0.01
25R	174.24	0.9	0.20	0.01	0.01
26R	186.06	1.9	0.32	0.01	0.01
26R	187.50	1.4	0.24	0.01	0.01
28R	203.10	0.3	0.08	0.01	0.01
29R	214.26	0.6	0.13	0.01	0.01
30R	223.90	1.3	0.18	0.01	0.01
31R	233.50	1.3	0.18	0.01	0.01
32R	241.69	1.1	0.17	0.01	0.01
33R	252.80	2.8	0.16	0.01	0.01
34R	262.50	1.5	0.20	0.01	0.01
35R	271.98	2.8	0.22	0.01	0.01
36R	281.80	1.9	0.18	0.01	0.01
37R	289.67	0.9	0.11	0.01	0.01
38R	299.48	0.7	0.15	0.01	0.01
38R	301.00	0.3	0.15	0.01	0.01
40R	318.37	0.6	0.16	0.01	0.01
41R	328.11	0.6	0.16	0.01	0.01
42R	337.98	0.4	0.13	0.01	0.01
43R	348.28	0.2	0.13	0.01	0.01
44R	358.66	0.4	0.19	0.01	0.01
45R	366.66	0.4	0.17	0.01	0.01
46R	377.43	0.3	0.17	0.01	0.01
47R	386.46	0.8	0.25	0.01	0.07
48R	397.70	0.7	0.15	0.01	0.06
50R	415.50	0.9	0.16	0.01	0.07
51R	425.10	0.5	0.13	0.01	0.06
52R	436.10	0.7	0.13	0.01	0.09
53R	440.22	0.7	0.11	0.01	0.09
54R	445.58	0.6	0.07	0.01	0.08
55R	450.12	0.4	0.04	0.01	0.05
56R	454.33	0.5	0.04	0.01	0.01
57R	459.11	0.7	0.06	0.01	0.04
58R	465.43	0.7	0.12	0.01	0.07
59R	468.78	0.7	0.06	0.01	0.01
60R	473.50	0.5	0.06	0.01	0.01
119-744A-					
1H	0.90	13.2	0.26	0.01	0.01
1H	0.90	13.4	0.30	0.01	0.01
2H	6.63	16.2	0.31	0.01	0.03
2H	6.63	16.1	0.25	0.01	0.01
3H	16.10	10.3	0.33	0.01	0.07
3H	16.10	10.1	0.29	0.01	0.09
4H	25.59	4.3	0.12	0.01	0.01
5H	35.20	3.4	0.13	0.01	0.01
6H	44.64	1.2	0.03	0.01	0.01
7H	54.10	1.3	0.14	0.01	0.03
8H	63.60	1.5	0.09	0.01	0.01
9H	73.40	0.4	0.14	0.80	0.01
10H	82.57	1.8	0.14	0.05	0.01
11H	92.08	1.0	0.10	0.01	0.01
12H	101.60	1.2	0.08	0.01	0.01
13H	111.10	0.5	0.07	0.01	0.01
14H	120.60	0.6	0.11	0.01	0.01
15H	130.10	2.0	0.08	0.01	0.01
16H	139.60	2.6	0.08	0.01	0.03
17H	147.42	0.7	0.05	0.12	0.01
18H	150.00	0.4	0.03	0.01	0.01
19H	159.30	0.3	0.03	0.01	0.01
20H	172.00	0.3	0.04	0.01	0.01
119-744B-					
1H	2.20	13.1	0.13	0.01	0.01
2H	11.69	9.0	0.36	0.01	0.01
3H	21.19	2.9	0.17	0.01	0.01
4H	23.67	3.0	0.18	0.01	0.01
5H	33.50	0.6	0.05	0.02	0.01
5H	33.55	0.5	0.03	0.26	0.01
6H	42.70	3.5	0.05	0.01	0.01
7H	52.30	1.3	0.07	0.15	0.01
8H	61.70	0.3	0.08	1.15	0.01
9H	71.20	1.0	0.06	0.10	0.01

**Table 7 (continued).**

Core	Depth (mbsf)	Si (%)	K (%)	Mg (%)	Ca (%)
119-745A-					
1H	2.70	16.1	0.36	0.01	0.11
119-745B-					
1H	2.20	14.5	0.36	0.01	0.10
2H	7.20	16.7	0.28	0.01	0.07
3H	16.70	15.2	0.29	0.01	0.04
4H	26.30	6.8	0.49	0.01	0.10
5H	35.70	12.4	0.29	0.01	0.05
6H	45.20	6.5	0.46	0.01	0.09
7H	54.70	10.6	0.33	0.01	0.06
8H	64.20	10.5	0.30	0.01	0.05
9H	73.70	9.2	0.48	0.01	0.11
10H	83.20	9.5	0.41	0.01	0.07
11H	92.70	9.8	0.33	0.01	0.08
12H	102.20	7.0	0.43	0.01	0.11
13H	111.70	5.8	0.46	0.01	0.10
13H	114.70	6.7	0.42	0.01	0.10
14H	121.20	4.8	0.35	0.01	0.08
15H	130.70	6.2	0.41	0.01	0.07
17H	141.20	11.1	0.27	0.01	0.05
18H	150.70	8.3	0.39	0.01	0.11
19H	160.20	8.3	0.35	0.01	0.04
20H	169.70	6.4	0.33	0.01	0.08
21H	179.20	6.5	0.42	0.01	0.12
22H	188.70	7.1	0.44	0.01	0.02
23H	198.20	8.2	0.34	0.01	0.02
24H	207.70	8.1	0.31	0.01	0.02
119-746A-					
4H	167.00	7.1	0.43	0.01	0.06
5H	176.50	5.7	0.36	0.01	0.04
6H	186.01	11.5	0.34	0.01	0.12
7H	195.50	13.2	0.35	0.01	0.10
8H	205.00	12.4	0.35	0.01	0.12
9H	216.00	18.1	0.31	0.01	0.04
10H	220.00	15.3	0.28	0.01	0.06
11X	229.50	14.1	0.31	0.01	0.06
13X	244.40	15.0	0.29	0.01	0.01
14X	252.44	19.5	0.24	0.01	0.01

**Table 8. Shipboard geochemical measurements.**

Core	Depth (mbsf)	pE <sup>a</sup>	Silica <sup>b</sup> (µM)	Sulfate <sup>b</sup> (mM)	Ammonia <sup>b</sup> (mM)
119-736A-					
1H	1.25	4.6	827		
1H	4.25	5.1	831		
1H	7.25	3.2	857		
2H	10.25	4.3	900		
2H	11.75	3.2	941	19.8	0.24
2H	13.88	4.8	976		
3H	19.75	3.7	940		
3H	21.25	2.9	967		
3H	24.25	3.1	960		
4H	28.70	1.7	975	0.27	
4H	30.20	4.6	977		
4H	31.70	4.4	1010		
5H	34.23	4.3	995		
5H	37.23	3.9	1020		
6H	39.07	4.3	1170	20.0	0.21
6H	42.07	3.4	1120		
7H	44.35	4.1	1050		
7H	47.25	4.3	963		
8H	49.25	4.1	1040		
8H	52.25	3.6	1110	0.29	
9H	54.25	2.9	931		
9H	57.25	3.7	907		
10H	60.25	4.3	988		
10H	63.25	3.4	988		
10H	66.05	4.4	1080	19.8	0.29
11H	69.75	4.8	1000		
11H	72.75	5.3	1030		
12H	74.76	4.6	1060		
12H	77.75	3.8	986		
13H	80.75	4.5	1050	0.26	
13H	83.75	3.7	1010		
14H	90.25	4.4	1010		
14H	93.25	4.5	987		
14H	96.25	4.4	1140		
15H	99.75	4.4	1100	22.1	0.34
15H	102.75	4.8	1130		
15H	105.75	4.4	1150		
16H	109.23	4.9	1210		
16H	112.23	4.4	1060		
16H	115.23	3.6	1140	0.41	
17H	120.11	4.4	1160		
13H	86.75	3.1	1120		
20H	147.65	3.7	1160		
20H	150.65	4.3	1090		
20H	153.65	4.6	1220	23.4	0.38
21H	157.30	4.3	1110		
21H	160.30	4.3	1250		
21H	163.30	4.0	1160		
23X	176.25	5.0	1120		
24X	186.22	3.9	1100	0.40	
26X	204.98	4.2	1190		
26X	207.98	4.4	1160		
27X	214.18	3.7	1230		
29X	233.90	3.9	1260		
29X	235.40	3.7	1280	14.5	0.88
119-736C-					
2R	207.70	4.4	1390		
5R	236.95	4.1	1570		
5R	239.95	3.6	1480		
5R	241.86	4.3	2120		
7R	256.30	4.3	1610	0.39	
8R	265.95	4.3	1650		
8R	267.45	4.4	1930		
9R	275.65	4.3	1970		
9R	278.65	4.3	2050		
9R	281.65	3.7	1740		
10R	285.25	3.6	1750		
10R	288.25	3.6	1740		
10R	291.25	4.3	1940		
11R	294.95	4.3	1700		
11R	297.60	3.6	2170	0.38	
11R	299.90	4.1	2320		
12R	303.55	3.4	2090		
13R	314.35	3.6	2200		

**Table 8 (continued).**

Core	Depth (mbsf)	pE <sup>a</sup>	Silica <sup>b</sup> (µM)	Sulfate <sup>b</sup> (mM)	Ammonia <sup>b</sup> (mM)
119-736C- (Cont.)					
13R	317.35	3.9	1960		
13R	320.35	3.9	1760		
14R	323.79	4.3	1980		
14R	325.29	3.9	2140		
14R	326.79	4.3	2360		
15R	333.65	3.7	1860		
15R	336.65	4.1	2190	0.38	
15R	339.65	4.4	2440		
16R	343.25	3.9	1920		
16R	344.75	4.4	2000		
16R	346.80	4.4	2110		
17R	352.85	3.9	2120		
18R	362.55	4.4	2290	0.35	
18R	365.55	3.9	1930		
119-737A-					
1H	0.60	4.3	558	24.2	0.01
1H	2.10	4.6	684	25.1	
1H	3.60	4.4	778	24.7	0.01
2H	5.60	4.6	892	24.4	
2H	8.60	4.8	812	23.3	0.01
2H	11.60	4.6	884	24.3	
3H	15.25	4.6	903	19.7	0.03
3H	18.10	4.6	810	21.3	
3H	21.10	4.6	827	22.5	0.07
4H	24.60	4.6	915	19.6	
4H	27.60	4.4	940	19.6	0.03
4H	30.60	4.4	907	16.9	
5H	34.10	4.6	810	17.2	0.04
5H	37.10	4.6	908	19.8	
5H	40.10	4.6	927	18.3	0.06
6H	43.60	4.8	885	17.8	
6H	46.60	4.6	1020	19.6	0.06
6H	49.60	4.4	1100	16.8	
7H	53.10	4.3	1110	17.6	0.13
7H	56.10	4.6	982	17.6	
7H	59.10	4.8	1070	15.2	0.10
8H	62.60	4.3	1260	18.6	
8H	65.60	4.8	1180	16.6	0.07
8H	68.60	4.4	1180	14.9	
9H	72.10	4.4	1390	16.5	0.21
9H	75.10	4.4	1160	15.9	
9H	78.10	4.6	1170	14.4	0.19
10H	86.10	4.4	1460	16.3	
10H	89.10	4.8	1500	15.2	0.27
11H	91.10	4.6	1290	15.3	
11H	94.10	4.8	1070	15.8	0.25
11H	97.10	4.8	1090	16.1	
12H	100.60	4.9	1020	11.7	0.25
12H	103.60	4.9	1060	14.6	0.24
12H	106.60	5.1	1160	13.8	0.24
13H	110.10	5.1	1150	15.6	
13H	113.10	5.1	1230	17.0	0.25
13H	116.10	5.1	1160	15.6	0.25
15H	134.43	5.1	1250	11.8	0.26
15H	137.43	4.9	1330	12.6	
16H	138.60	4.8	1360	11.9	0.25
16H	141.60	5.1	1200	12.7	0.27
16H	144.60	5.1	1390	12.1	0.30
17H	148.10	5.1	1320	14.1	
11H	91.19	5.3	1230	0.21	
11H	91.74	5.4	968	0.23	
11H	92.30	5.6	900	0.23	
11H	93.30	5.4	856	0.22	
11H	93.80	5.3	956	0.23	
11H	94.50	5.3	997	0.21	
11H	95.19	5.3	1026	0.23	
11H	95.90	5.4	998	0.21	
11H	96.78	5.6	924	0.23	
11H	97.84	5.4	908	0.24	
11H	98.30	5.1	1153	0.22	
11H	99.05	5.6	1255	0.22	
11H	99.69	5.4	1376	0.22	
12H	100.34	5.1	937	0.22	
12H	100.98	5.1	968	0.23	









**Table 9 (continued).**

Core	Depth (mbsf)	Na (mM)	K (mM)	Mg (mM)	Ca (mM)
119-739C- (Cont.)					
19R	146.58	506	7.1	10.7	6.5
20R	151.62	477	6.0	13.7	7.3
21R	156.40	512	5.4	18.1	8.8
22R	161.40	474	4.6	8.3	5.3
23R	166.10	499	4.7	12.1	6.2
25R	174.24	458	4.1	20.5	8.5
26R	186.06	461	3.8	23.5	9.7
26R	187.50	457	3.4	26.0	10.7
28R	203.10	463	3.6	19.8	8.0
29R	214.26	476	3.4	20.7	8.4
30R	223.90	480	3.1	26.8	10.7
31R	233.50	459	2.9	26.0	10.2
32R	241.69	460	3.4	22.7	8.5
33R	252.80	485	3.4	26.1	9.9
34R	262.50	492	2.7	26.3	10.0
35R	271.98	477	2.3	27.1	10.6
36R	281.80	475	2.5	26.8	10.3
37R	289.67	468	3.2	13.6	5.8
38R	299.48	482	2.7	18.7	7.3
38R	301.00	499	1.9	21.6	8.2
40R	318.37	486	1.6	14.1	6.0
41R	328.11	495	2.4	12.5	5.8
42R	337.98	482	2.1	12.8	5.9
43R	348.28	478	2.1	16.9	7.4
44R	358.66	490	2.1	12.4	5.9
45R	366.66	492	2.7	17.9	7.6
46R	377.43	510	2.2	13.3	5.9
47R	386.46	489	2.4	22.2	8.4
48R	397.70	460	2.0	16.8	7.1
50R	415.50	494	4.4	21.2	8.4
51R	425.10	477	1.9	18.9	8.7
52R	436.10	500	2.6	9.5	5.9
53R	440.22	554	3.7	8.4	5.7
54R	445.58	521	4.5	3.1	4.0
55R	450.12	509	4.0	11.0	6.4
56R	454.33	529	4.3	3.3	4.2
57R	459.11	517	4.1	8.9	5.8
58R	465.43	546	3.2	12.7	7.3
59R	468.78	497	4.3	3.3	4.2
60R	473.50	485	4.4	3.4	3.3
119-744A-					
1H	0.90	486	11.8	53.7	12.1
1H	0.90	473	11.9	52.7	13.9
2H	6.63	429	11.0	52.5	12.7
2H	6.63	406	10.5	51.7	13.5
3H	16.10	440	11.7	51.9	12.4
3H	16.10	415	12.0	52.2	12.3
4H	25.59	424	11.7	50.7	12.6
5H	35.20	393	11.0	51.4	12.9
6H	44.64	465	13.0	61.0	16.3
7H	54.10	436	12.6	55.8	15.2
8H	63.60	401	11.1	49.4	14.0
9H	73.40	387	10.4	51.2	14.9
10H	82.57	388	10.5	49.3	14.8
11H	92.08	391	11.6	48.1	15.4
12H	101.60	389	11.0	48.9	15.4
13H	111.10	386	10.4	49.3	15.8
14H	120.60	383	10.8	49.1	16.3
15H	130.10	383	10.3	48.4	15.8
16H	139.60	396	10.8	46.7	17.5
17H	147.42	396	10.8	47.7	18.0
18H	150.00	381	10.6	47.5	17.6
19H	159.30	382	10.2	47.4	18.0
20H	172.00	397	11.2	48.5	18.2
119-744B-					
1H	2.20	375	10.7	52.0	12.0
2H	11.69	380	11.6	53.2	12.9
3H	21.19	398	11.8	50.7	12.7
4H	23.67	383	11.3	50.2	12.7
5H	33.50	402	11.4	52.6	13.5
6H	42.70	389	11.1	51.9	14.0

**Table 9 (continued).**

Core	Depth (mbsf)	Na (mM)	K (mM)	Mg (mM)	Ca (mM)
119-744B- (Cont.)					
7H	52.30	381	11.0	49.1	13.1
8H	61.70	378	10.7	49.0	15.1
9H	71.20	374	11.0	48.6	14.4
119-745A-					
1H	2.70	461	14.0	69.0	12.9
119-745B-					
1H	2.20	480	15.1	68.4	12.8
2H	7.20	438	10.7	70.7	12.3
3H	16.70	464	13.1	59.3	11.1
4H	26.30	416	15.7	59.0	12.0
5H	35.70	438	12.4	60.9	13.2
6H	45.20	435	12.9	53.9	13.1
7H	54.70	444	13.3	59.6	14.7
8H	64.20	476	15.0	75.2	18.0
9H	73.70	485	15.6	68.5	18.0
10H	83.20	412	12.9	57.3	16.5
11H	92.70	407	12.1	57.0	16.6
12H	102.20	389	11.5	52.0	15.6
13H	111.70	403	12.2	49.9	16.2
14H	121.20	406	11.8	47.2	15.9
119-746B-					
4H	167.00	407	10.9	42.2	18.6
5H	176.50	415	10.9	43.0	19.2
6H	186.01	419	10.3	40.4	19.0
7H	195.50	410	10.0	40.2	19.0
8H	205.00	428	10.4	40.0	19.3
9H	216.00	411	10.4	34.4	19.4
10H	220.00	396	9.4	38.4	19.3
11X	229.50	430	11.1	33.3	18.3
13X	244.40	423	10.3	33.6	18.0
14X	252.44	420	10.4	33.2	18.7