45. *DATA REPORT:* INTERSTITIAL WATER CHEMISTRY, LEG 145[1]

T.F. Pedersen[2] and B.L. Ingram[3]

OVERVIEW

The objective of this annotated data report is to describe very briefly the extent of diagenesis in the organic-carbon-poor but opal-rich sediments drilled during Ocean Drilling Program (ODP) Leg 145. There are very few phenomena defined by the interstitial-water data set from Leg 145 that have not been described in detail previously in the many descriptions of pore-water chemistry published to date in the *Proceedings of the Ocean Drilling Program.* Therefore, we have chosen to summarize only a few key aspects here, which relate particularly to the distributions of Mn^{2+}, NO_3^-, SO_4^{2-}, and NH_4^+. The distributions of other parameters and ions (including S, Cl^-, titration alkalinity, Mg^{2+}, Ca^{2+}, K^+, Sr^{2+}, Li^+, Na^+, NH_4^+, and SiO_2) in pore waters have been discussed in detail elsewhere (see "Inorganic Chemistry" sections for each site in Rea, Basov, Janecek, Palmer-Julson, et al., 1993) and will not be elaborated upon in this data report.

METHODS

Samples were collected aboard the *JOIDES Resolution* by expressing pore fluids in a Manheim-type stainless-steel hydraulic squeezer without applying precautions for the pressure or temperature-of-squeezing artifacts that have been described by Bischoff and Ku (1970), Fanning and Pilson (1971), Mangelsdorf et al. (1969), and Murray et al. (1980). We do not feel that such artifacts have significantly compromised the quality of the data listed in this report. Standard ODP shipboard analytical methods (Gieskes et al., 1991; Rea, Basov, Janecek, Palmer-Julson, et al., 1993, pp. 26–27) were employed for all analyses reported here with the exception of nitrate, as follows:

chloride: Knudsen microtitration with $AgNO_3$ added with a Metrohm Dosimat titrator;
sulfate: ion chromatography;
calcium: colorimetric titration;
magnesium: determined as the difference between the total alkaline earths measured by colorimetric titration and the Ca^{2+} concentration;
potassium, lithium, and sodium: flame emission spectrophotometry;
strontium and manganese: flame atomic absorption spectrophotometry;
sodium: determined indirectly by charge balance and assigning all "missing" positive charge to Na^+;
reactive silicate, ammonium, and phosphate: colorimetry; and
titration alkalinity: potentiometric (Gran) titration using a computer-controlled Metrohm autotitrator.

Salinity was estimated using a Reichert optical refractometer. Aliquots of some samples were collected and frozen on board for nitrate analysis. NO_3^- was subsequently determined in the laboratory at the University of British Columbia (UBC) using the cadmium reduction method adapted for flow injection analysis.

The results of all measurements are listed in Table 1.

RESULTS

Despite the well-known coupling in the modern ocean between areas of high primary productivity and the accumulation of underlying siliceous oozes, the organic carbon content of North Pacific sediments is not high today and has been generally rather low throughout the Cenozoic (Rea, Basov, Janecek, Palmer-Julson, et al., 1993). Accumulation rates of sedimentary organic matter are moderate at best, compared to many other areas of equivalent euphotic zone productivity. Because sedimentary diagenesis is largely fueled by microbially mediated oxidation of organic compounds, the relative paucity of deposited organic matter limits the intensity of diagenesis in the North Pacific deposits.

At all sites with the exception of Site 886, dissolved nitrate occurs at low or near zero concentrations in shallow pore waters (Table 1), indicating that over a wide area, North Pacific sediments are suboxic to anoxic at depths typically of a few meters or less. This conclusion is consistent with (1) the appearance of often high concentrations of dissolved manganese in the pore waters at shallow depths; (2) the decline in sulfate concentrations in the upper 100 m at most locations; and (3) increases in ammonium commensurate with the sulfate depletions (Table 1). In contrast, diagenesis is much more subdued on the abyssal plain at Site 886, where the rate of sedimentation has been very low and the organic carbon accumulation rate has been extremely low throughout the last 50 Ma (Rea, Basov, Janecek, Palmer-Julson, et al., 1993). In the upper 20 m of these organic-carbon-poor deposits, nitrate is relatively abundant, dissolved manganese is slightly enriched, ammonium is absent, and sulfate is essentially constant (Table 1).

ACKNOWLEDGMENTS

We are very grateful to all of the shipboard technical staff during Leg 145 for their assistance with various aspects of sampling and analysis. In particular, it was a pleasure to work with Chieh Peng and Phil Rumford in the shipboard chemistry laboratory; their skills and hard work are highly appreciated. Mary Ann Cusimano freely offered advice and assistance with a number of technical issues, and Lorraine Southey cheerfully accommodated our requests for high-resolution sampling, as well as offering advice on haberdashery.

REFERENCES*

Bischoff, J.L., and Ku, T.L., 1970. Pore fluids of recent marine sediments, I: oxidizing sediments of 20°N continental rise to Mid-Atlantic ridge. *J. Sediment. Petrol.,* 40:960–973.

Fanning, K.A., and Pilson, M.E.Q., 1971. Interstitial silica and pH in marine sediments: some effects of sampling procedure. *Science,* 173:1228–1231.

[1]Rea, D.K., Basov, I.A., Scholl, D.W., and Allan, J.F. (Eds.), 1995. *Proc. ODP, Sci. Results,* 145: College Station, TX (Ocean Drilling Program).

[2]Department of Oceanography, University of British Columbia, Vancouver, BC V6T 1Z4, Canada.

[3]Department of Geology and Geophysics, University of California, Berkeley, CA 94720, U.S.A.

Gieskes, J.M., Gamo, T., and Brumsack, H., 1991. Chemical methods for interstitial water analysis aboard *JOIDES Resolution. ODP Tech. Note,* 15.

Mangelsdorf, P.C., Jr., Wilson, T.R.S., and Daniell, E., 1969. Potassium enrichments in interstitial waters of recent marine sediments. *Science,* 165:171–174.

Murray, J.W., Emerson, S., and Jahnke, R., 1980. Carbonate saturation and the effect of pressure on the alkalinity of interstitial waters from the Guatemala Basin. *Geochim. Cosmochim. Acta,* 44:963–972.

Rea, D.K., Basov, I.A., Janecek, T.R., Palmer-Julson, A., et al., 1993. *Proc. ODP, Init. Repts.,* 145: College Station, TX (Ocean Drilling Program).

*Abbreviations for names of organizations and publications in ODP reference lists follow the style given in *Chemical Abstracts Service Source Index* (published by American Chemical Society).

Date of initial receipt: 4 April 1994
Date of acceptance: 17 October 1994
Ms 145SR-133

Table 1. Interstitial water data, Leg 145.

Core, section, interval (cm)	Depth (mbsf)	pH	Alkalinity (mM)	S (g/kg)	Cl^- (mM)	Mg^{2+} (mM)	Ca^{2+} (mM)	SO_4^{2-} (mM)	NH_4^+ (μM)	NO_2^- (μM)	NO_3^- (μM)	SiO_2 (μM)	K^+ (mM)	Li^+ (μM)	Na^+ (mM)	Sr^{2+} (μM)	Mn^{2+} (μM)	Mg/Ca (mol ratio)
145-881A-																		
1H-1, 145–150	5.45	7.68	3.65	36.0	554	50.45	10.90	28.23	40	<d.l.		854	12.23	21.1	491	85.0	87.8	4.63
1H-3, 145–150	8.45	7.63	3.55	35.1	561	49.75	10.95	27.80	92	<d.l.	1.1	803	12.97	19.9	487	86.1	43.9	4.54
1H-6, 145–150	12.95	7.82	4.01	35.1	563	49.82	11.20	27.48	159	<d.l.	0.7	857	13.19	18.1	500	85.7	70.6	4.45
145-881C-																		
1H–1, 145–150	1.45	7.70	3.19	35.0	562	51.41	10.91	27.90	0	<d.l.	1.7	691	10.95	27.2	496	83.6	44.2	4.71
2H-4, 145–150	9.75	7.56	3.57	35.0	572	51.10	11.22	27.13	101	<d.l.	1.4	717	11.98	19.0	484	85.8	70.6	4.56
3H-3, 145–150	17.75	7.49	3.95	35.5	571	51.28	11.20	26.91	159		1.1	691	11.64	17.6	483	87.5	39.8	4.58
4H-4, 145–150	28.75	7.73	5.17	35.5	568	49.73	12.51	25.58	349		1.3	703	11.81	19.2	485	88.4	23.1	3.98
5H-4, 145–150	38.25	7.78	5.81	35.5	576	49.90	12.66	25.00	557		1.2	740	10.66	18.7	488	89.4	21.7	3.94
6H-5, 145–150	49.25	7.57	6.42	35.5	569	48.54	13.13	24.19	510			752	10.73	19.3	492	83.8	16.3	3.70
8H-5, 145–150	68.25	7.59	7.11	35.5	566	47.78	13.49	24.15	585			752	10.50	22.6	493	89.2	15.6	3.54
10H-4, 145–150	85.80	7.84	7.58	35.5	565	47.08	13.93	24.10	744			880	9.72	22.4	496	100.3	13.5	3.38
12H-4, 145–150	104.75	7.69	7.58	35.0	562	46.05	14.23	23.70	660			887	9.72	24.4	492	103.7	13.4	3.24
14H-4, 145–150	123.75	7.85	8.03	35.0	563	46.21	13.83	24.37	772			985	9.56	28.9	472	96.7	16.3	3.34
16H-4, 145–150	142.75	7.95	7.69	35.0	567	45.21	13.46	23.47	952			892	11.55	31.7	488	97.1	8.6	3.36
21H-4, 145–150	187.65	7.65	7.08	35.0	566	47.11	13.26	23.68	628			980	10.31	44.6	484	100.6	17.6	3.55
23X-4, 145–150	206.55	7.67	6.78	35.0	570	47.70	13.14	23.49	614			1141	9.93	49.3	508	109.5	19.7	3.63
25X-2, 145–150	221.95	7.41	6.25	35.0	559	47.41	13.20	23.40	597			1059	9.24	52.3	489	111.4	19.5	3.59
29X-2, 135–140	260.55	7.63	5.46	35.0	562	47.14	13.14	23.97	499			1106	9.52	67.1	494	110.3	18.7	3.59
32X-1, 135–140	287.95	7.76	4.42	35.0	560	47.34	12.78	23.68	514			1043	8.46	71.2	483	109.6	19.5	3.71
35X-4, 145–150	321.35	7.32	4.07	34.8	566	46.79	13.00	23.10	457			1055	8.80	83.2	488	111.3	27.7	3.60
145-882B-																		
1H-1, 145–150	1.45	7.71	3.48	35.0	555	50.75	10.25	28.01	108	<d.l.	1.3	842	11.8	27.8	492	87	6.3	4.95
2H-4, 145–150	10.35	7.88	5.45	35.0	566	51.44	9.56	25.64	294	0.3	1.4	770	11.5	24.7	500	90	16.6	5.38
3H-4, 145–150	19.85	7.76	5.80	35.0	569	51.48	9.28	23.79	418	<d.l.	0.4	780	11.3	24.9	500	91	15.4	5.55
4H-4, 145–150	29.35	7.77	6.43	35.0	566	50.52	8.61	22.51	561	<d.l.	0.4	810	11.1	24.8	498	96	16.6	5.87
5H-4, 145–150	38.85	7.78	6.22	35.0	565	48.88	7.89	22.34	490		1.1	963	11.9	24.7	501	92	15.7	6.20
6H-4, 145–150	48.35	7.71	6.76	35.0	565	49.18	7.75	21.70	593		1.0	889	11.2	24.5	500	96	13.7	6.34
8H-4, 145–150	67.35	7.81	6.73	35.0	566	49.58	7.10	21.12	676		0.5	864	11.5	25.0	500	97	10.1	6.98
10H-4, 145–150	86.35	7.86	6.86	35.0	561	49.57	6.87	20.38	716			805	10.7	26.8	495	97	10.0	7.21
12H-4, 145–150	105.35	7.82	6.94	35.0	560	50.60	6.57	20.32	742			835	10.1	28.5	492	100	7.7	7.70
14H-4, 145–150	124.35	7.82	6.65	34.2	561	50.31	6.45	20.24	791			1040	11.1	30.2	493	100	5.8	7.79
16H-4, 145–150	143.35	7.76	6.58	34.0	558	50.80	6.54	20.18	852			1052	10.4	31.5	489	100	4.5	7.77
19H-4, 145–150	171.85	7.83	6.62	34.0	560	50.40	6.61	20.40	863			854	10.3	32.7	492	99	3.0	7.62
22H-4, 145–150	200.35	7.68	6.65	34.0	559	49.78	6.98	21.07	893			1102	10.0	31.9	493	105	3.6	7.12
25H-4, 145–150	228.85	7.81	6.52	34.0	560	50.18	7.24	20.41	913			902	10.2	32.7	491	105	5.3	6.93
28H-4, 145–150	257.35	7.72	6.86	34.5	560	49.92	7.33	20.74	1027			874	10.4	32.6	492	108	7.7	6.80
145-883A-																		
1H-1, 145–150	1.45	7.8	5.99	35.0	555	49.3	9.2	23.8	365	<d.l.	0.6	826	12.9	28.2	478	114	3.8	5.36
1H-3, 145–150	4.45	7.89	5.82	35.0	564	49.2	8.9	22.9	471	0.3	1.2	834	11.1	27.0	487	126	3.3	5.53
1H-4, 145–150	5.95	7.65	5.78	34.5	566	49.2	8.8	23.1	464	1.4	2.9	991	12.0	27.7	489	126	3.4	5.58
2H-1, 125–130	10.75	7.78	5.62	35.0	568	49.6	8.9	22.7	501	<d.l.	0.7	804	10.8	27.8	490	137	3.5	5.58
2H-3, 145–150	13.95	7.84	5.93	35.0	568	50.0	9.0	22.6	535	<d.l.	0.4	819	12.9	28.2	487	137	3.9	5.58
2H-5, 125–130	16.75	7.85	5.72	34.5	568	47.6	8.5	22.3	585	<d.l.	0.9	1099	13.1	29.9	492	137	4.1	5.62
3H-1, 145–150	20.45	7.83	5.48	35.0	562	48.5	8.6	22.5	595		0.2	848	11.7	29.3	485	137	4.5	5.62
3H-3, 125–130	23.25	7.8	5.64	35.5	559	48.6	8.6	22.5	643		0.6	856	12.2	29.5	482	137	4.6	5.68
3H-5, 145–150	26.45	7.71	5.42	34.5	560	48.9	8.8	22.6	590		0.7	898	13.3	30.4	481	137	4.3	5.57
4H-1, 125–130	29.75	7.85	5.39	35.5	558	48.8	8.7	22.7	695		0.9	870	12.0	31.2	481	137	4.1	5.63
4H-3, 145–150	32.95	7.84	5.39	35.5	557	49.6	8.9	22.6	597		0.5	809	11.1	30.8	479	148	3.9	5.59
4H-5, 125–130	35.75	7.84	5.39	35.0	556	48.3	8.6	22.7	708		1.7	937	12.1	31.5	480	137	5.2	5.64
145-883B-																		
5H-4, 145–150	43.85	7.84	5.47	35.0	557	50.2	8.7	22.0	579		0.2	851	10.1	30.1	478	148	4.0	5.76
6H-4, 145–150	53.35	7.82	5.18	34.4	554	48.7	8.6	22.3	663			902	11.8	30.8	477	148	3.9	5.67
8H-4, 145–150	72.35	8.13	5.36	35.0	555	48.4	8.8	22.9	715			701	12.5	35.5	478	148	2.6	5.51
10H-3, 0–5	86.90	7.82	4.56	35.0	554	48.7	9.2	23.2	712			875	11.6	34.8	477	171	2.1	5.30
12H-3, 145–150	106.35	7.71	4.53	35.0	555	49.1	9.6	23.5	743			988	11.4	35.8	477	183	1.7	5.10
14H-4, 145–150	129.35	7.87	4.39	35.0	556	48.9	9.9	23.2	738			976	10.6	37.4	477	183	1.2	4.92
16H-4, 145–150	148.35	7.79	4.17	35.0	557	48.8	10.2	23.6	715			893	11.8	38.4	477	205	0.9	4.77
19H-4, 145–150	176.85	7.82	4.28	35.0	556	47.9	10.8	23.6	725			981	10.4	41.9	479	240	0.8	4.45
22H-4, 145–150	205.35	7.78	4.13	34.5	556	47.5	11.2	24.3	722			1178	12.8	42.4	477	251	1.0	4.22
25H-4, 145–150	231.85	7.77	4.13	34.5	558	46.7	11.8	24.3	740			1094	10.5	45.2	478	297	1.2	3.96
28H-4, 145–150	262.35	7.76	4.06	34.5	556	46.5	12.2	24.5	695			1180	13.4	45.2	477	297	1.6	3.80

Table 1 (continued).

Core, section, interval (cm)	Depth (mbsf)	pH	Alkalinity (mM)	S (g/kg)	Cl^- (mM)	Mg^{2+} (mM)	Ca^{2+} (mM)	SO_4^{2-} (mM)	NH_4^+ (µM)	NO_2^- (µM)	NO_3^- (µM)	SiO_2 (µM)	K^+ (mM)	Li^+ (µM)	Na^+ (mM)	Sr^{2+} (µM)	Mn^{2+} (µM)	Mg/Ca (mol ratio)
31H-4, 145–150	290.85	7.75	3.88	34.5	556	46.3	12.5	24.7	718			1089	11.1	47.3	479	308	1.7	3.69
34X-3, 145–150	314.65	7.69	4.00	35.0	557	46.7	13.1	24.6	622			1109	10.5	48.0	479	331	1.8	3.57
37X-1, 145–150	342.65	7.7	4.12	35.0	555	45.8	13.6	24.8	579			1067	10.6	48.8	478	342	2.0	3.38
40X-4, 145–150	377.65	7.71	4.14	35.0	556	45.5	14.4	24.4	555			944	10.8	52.4	477	354	1.9	3.17
43X-6, 145–150	408.45	7.6	3.92	35.0	558	45.7	14.8	24.7	501			1205	10.8	47.7	478	354	1.5	3.09
48X-4, 145–150	456.15	7.53	4.31	35.0	557	45.0	15.8	24.8	418			1141	12.0	46.0	476	377	2.3	2.85
51X-4, 145–150	483.85	7.46	4.27	35.0	557	45.3	16.1	25.5	368			1301	11.2	44.0	478		1.1	2.81
54X-4, 145–150	501.55	7.66	4.41	35.0	557	45.3	16.8	25.0	329			1362	9.8	42.9	476	365	0.9	2.70
57X-4, 145–150	531.05	7.55	4.50	35.0	558	45.2	16.8	25.0	326			1249	10.0	42.4	477	365	1.9	2.69
60X-4, 145–150	560.95	7.38	4.13	35.0	560	45.3	16.9	23.2	323			1343	10.6	39.6	474	354	1.6	2.68
63X-4, 145–150	590.95	7.47	3.29	35.0	563	45.3	16.2	25.9	295			1257	10.1	39.0	484	320	1.0	2.79
66X-4, 145–150	620.25	7.4	3.72	35.0	564	45.2	16.7	24.8	292			1129	9.8	35.6	483	285	1.1	2.71
69X-4, 145–150	648.75	7.52	3.28	35.0	556	46.2	16.7	24.9	228			1043	9.8	36.2	473	274	4.5	2.77
72X-4, 145–150	677.75	7.47	3.21	35.0	559	46.3	16.4	26.0	213			1217	12.8	31.1	475	240	2.1	2.82
76X-4, 145–150	714.01	7.52	2.98	35.0	561	46.4	16.5	25.9	172			944	8.9	30.8	480	217	0.6	2.82
79X-2, 145–150	743.45			35.0	562	47.1	16.1	25.9	155			961	9.2	32.6	477	194	1.1	2.92
82X-4, 145–150	773.15	7.63	2.74	35.0	560	45.8	16.1	25.9	157			772	10.4	28.1	480	148	0.9	2.84
85X-2, 145–150	802.85			35.0	562	48.9	14.4	24.3	102			364	10.2	31.4	473	126	1.2	3.40
145-884A-																		
1H-1, 145–150	3.65	7.79	4.63	35.0	554	52.2	10.6	27.5	74	<d.l.	1.0	859	10.54	25.5	477	86	66	4.94
1H-2, 145–150	5.10	7.77	4.84	35.0	554	52.9	10.8	27.5	110	0.2	0.7	747	10.42	24.9	476	87	80	4.88
1H-4, 145–150	6.95	7.67	5.15	35.0	554	53.2	11.0	27.6	393	0.2	2.1	768	9.95	24.3	475	88	105	4.82
145-884B–																		
1H-2, 145–150	2.95	7.63	4.03	35.0	554	52.1	10.5	28.6	96	<d.l.	0.6	962	10.17	26.5	480	87	61	4.96
2H-4, 145–150	12.45	7.73	5.98	35.0	558	53.4	11.1	26.7	209	<d.l.	0.7	732	9.90	23.8	478	89	118	4.80
3H-4, 145–150	21.95	7.72	6.66	35.0	561	52.4	10.9	25.6	408	<d.l.	1.6	950	10.17	24.0	482	88	145	4.83
4H-4, 145–150	31.45	7.77	7.58	35.0	565	51.8	11.2	25.0	372	<d.l.	0.8	833	9.91	23.6	486	87	143	4.64
5H-4, 145–150	40.95	7.80	7.91	35.0	565	51.4	11.1	24.7	576		1.3	828	10.06	23.8	486	89	109	4.63
6H-4, 145–150	50.45	7.85	8.58	35.0	562	51.8	11.2	24.0	452		4.0	823	10.77	24.2	481	88	96	4.62
8H-4, 145–150	69.45	7.81	8.50	35.0	562	50.3	10.8	23.5	603			921	10.04	25.0	485	85	76	4.66
10H-1, 115–120	83.65	7.77	8.67	35.0	561	49.9	11.0	22.9	567			881	9.76	26.6	483	88	62	4.55
13X-3, 145–150	97.75	7.69	8.54	35.0	560	49.3	10.9	22.4	546			830	9.95	26.0	482	87	58	4.51
15X-4, 145–150	118.55	7.85	8.50	35.0	560	48.8	10.6	21.9	569			1165	9.78	27.9	483	86	64	4.61
17X-4, 145–150	137.75	7.75	8.23	34.5	559	48.4	10.7	21.9	623			909	10.80	28.2	481	88	49	4.52
21X-4, 145–150	176.45	7.91	8.02	34.5	559	48.4	10.6	21.4	689			1012	9.84	31.8	481	89	38	4.55
24X-4, 145–150	205.35	7.64	8.23	34.5	560	48.5	11.3	21.4	678			1039	8.57	33.8	482	93	65	4.29
27X-4, 145–150	234.35	7.63	8.20	35.0	561	48.5	12.0	20.8	668			1058	9.48	36.6	480	96	77	4.05
30X-4, 145–150	263.25	7.75	8.13	35.0	561	47.3	12.2	20.9	668			1060	8.82	40.8	482	96	58	3.89
33X-3, 145–150	290.75	7.57	7.65	34.5	563	47.7	12.9	21.2	695			1094	8.89	44.9	482	100	64	3.68
36X-4, 145–150	321.25	7.56	6.63	35.0	562	46.9	13.4	20.9	661			1115	9.72	52.0	479	101	74	3.49
39X-4, 145–150	349.85	7.58	7.65	35.0	562	47.1	15.4	21.5	560			1180	10.64	56.2	476	110	72	3.07
42X-3, 145–150	377.15	7.60	7.17	35.0	561	47.1	16.1	21.8	574			1086	10.38	61.7	474	113	62	2.93
45X-5, 145–150	407.65	7.67	6.94	35.0	561	48.0	17.3	21.6	519			1084	8.25	67.6	472	123	62	2.78
48X-5, 145–150	436.55	7.77	6.12	35.0	563	47.8	18.2	22.5	488			1163	8.79	75.9	472	123	56	2.63
52X-4, 145–150	474.85	7.46	6.13	35.0	561	48.3	19.9	22.7	662				8.85	78.8	466	131	72	2.42
56X-4, 145–150	513.35	7.67	6.40	35.0	562	48.8	22.2	22.5	400			1213	6.92	85.9	464	143	81	2.20
59X-4, 145–150	542.35	7.16	5.05	35.0	561	48.5	22.8	23.4	379			1173	8.35	85.9	461	151	79	2.12
62X-4, 145–150	571.25	7.31	6.00	35.0	563	48.8	24.8	24.0	395			1194	6.99	87.9	462	168	88	1.97
65X-4, 145–150	600.05	7.57	4.56	35.0	562	48.5	24.6	23.2	472			1331	6.76	91.8	459	175	85	1.97
68X-4, 145–150	628.75	7.26	4.54	35.0	559	48.9	27.4	23.9	225			1225	6.12	86.4	452	168	158	1.78
71X-4, 145–150	657.65	7.35	3.92	35.0	562	48.8	29.0	24.8	194			1209	7.07	73.6	452	174	125	1.68
74X-4, 145–150	686.55				524	48.7	29.3	23.0	144			1086	5.11	65.4		184	147	1.66
77X-4, 145–150	715.40	7.43	1.95	35.0	562	48.4	31.3	25.2	162			1108	3.37	39.5	451	204	145	1.55
80X-4, 145–150	744.30	7.89	0.71	35.0	561	47.2	31.3	24.2	103			179	2.06	32.4	451	215	73	1.51
83X-4, 145–150	773.30	8.09	1.17	35.0	560	47.1	30.0	25.0	79			206	2.82	31.1	454	216	21	1.57
86X-4, 145–150	802.30	8.12	0.73	35.0	559	48.4	29.7	25.4	83			198	1.86	34.6	452	236	20	1.63
89X-4, 145–150	831.00				527	53.7	26.4	23.2	29			131	1.78	32.7		236	39	2.04
145-886A-																		
1H-1, 145–150	3.45	7.33	2.72	34.5	555	52.5	10.5	28.2	<d.l.	<d.l.	38.8	551	11.3	28.3	477	94	2.1	5.02
1H-2, 145–150	4.95	7.57	2.67	34.3	555	52.3	10.4	28.0	<d.l.	<d.l.	28.9	575	11.5	29.9	477	93	2.1	5.01
1H-3, 145–150	6.45	7.59	2.49	34.3	554	52.0	10.4	27.8	<d.l.	<d.l.	35.5	615	11.1	30.4	476	96	2.8	4.99
1H-4, 145–150	7.95	7.56	2.53	34.3	554	52.6	10.3	27.8	<d.l.	<d.l.	31.8	595	11.2	28.9	475	92	1.9	5.09

Table 1 (continued).

Core, section, interval (cm)	Depth (mbsf)	pH	Alkalinity (mM)	S (g/kg)	Cl^- (mM)	Mg^{2+} (mM)	Ca^{2+} (mM)	SO_4^{2-} (mM)	NH_4^+ (µM)	NO_2^- (µM)	NO_3^- (µM)	SiO_2 (µM)	K^+ (mM)	Li^+ (µM)	Na^+ (mM)	Sr^{2+} (µM)	Mn^{2+} (µM)	Mg/Ca (mol ratio)
145-886B-																		
1H-1, 115–120	1.65	7.60	2.63	35.0	554	51.7	10.3	27.6	<d.l.	<d.l.	42.2	583	10.9	31.5	477	92	4.9	5.01
2H-4, 145–150	7.75	7.60	2.60	35.0	557	52.3	10.4	27.8	<d.l.	<d.l.	20.0	612	11.1	29.2	478	91	12.4	5.01
3H-4, 145–150	17.25	7.63	2.74	35.0	563	52.8	10.7	28.4	<d.l.	<d.l.	17.2	717	10.8	29.4	485	92	25.1	4.92
4H-4, 145–150	26.75	7.51	2.69	35.3	564	53.8	10.9	28.6	93		8.7	764	10.0	29.7	484	97	28.4	4.94
5H-4, 145–150	36.25	7.63	2.62	35.5	563	54.0	10.9	28.8	154		5.7	800	10.3	30.7	483	95	23.1	4.97
6H-4, 145–150	45.75	7.57	2.58	36.0	561	53.9	10.9	28.6	19		10.5	717	10.2	30.5	481	99	21.0	4.96
7H-4, 145–150	55.75	7.55	2.52	35.5	560	52.0	10.6	27.1	70		25.1	698	10.3	31.6	481	88	16.0	4.92
145-887A-																		
1H-1, 145–150	1.45	7.67	3.59	35.0	554	51.3	10.5	28.6	53	<d.l.	0.7	863	11.8	27.2	479	87	53	4.89
2H-2, 145–150	9.65	7.60	5.24	35.2	556	51.5	10.5	26.8	212	<d.l.	0.6	1059	11.5	24.5	479	90	86	4.90
3H-2, 145–150	19.15	7.60	6.00	36.0	558	52.3	10.8	26.6	269	<d.l.	0.5	864	10.7	24.1	480	92	99	4.86
4H-2, 145–150	28.65	7.64	5.84	36.0	561	51.1	10.5	25.9	328	<d.l.		974	11.6	23.8	483	91	98	4.86
5H-2, 115–120	38.15	7.72	5.62	36.0	563	50.6	10.6	25.7	332			958	11.7	22.7	485	92	82	4.80
6H-2, 145–150	47.65	7.75	5.80	36.0	560	52.1	11.1	25.1	302			830	10.2	23.0	479	94	95	4.69
8H-2, 145–150	66.65	7.67	5.12	35.5	562	50.5	10.9	25.7	428			921	12.1	20.6	483	90	83	4.61
10H-2, 145–150	85.65	7.63	4.26	35.5	559	50.2	11.0	25.8	275			824	11.0	22.5	481	90	90	4.57
12H-4, 145–150	107.65	7.72	3.57	35.5	558	50.8	10.9	26.5	242			840	11.2	23.9	479	90	62	4.65
14H-4, 145–150	126.65	7.63	3.99	35.5	557	50.8	11.5	26.4	208			990	11.2	23.8	478	92	82	4.43
16X-2, 145–150	142.65	7.47	3.74	35.5	556	51.8	11.5	26.6	178			883	10.0	24.1	476	94	78	4.51
20X-4, 145–150	180.05	7.53	3.55	35.5	556	51.1	12.0	26.9	149			1227	10.0	26.3	477	96	63	4.27
23H-4, 145–150	208.85	7.56	3.53	35.5	557	50.7	11.8	27.2	212			835	10.5	26.1	479	96	79	4.29
27H-2, 145–150	244.15	7.55	3.19	35.0	557	50.6	11.8	27.3	163			1062	11.2	27.2	478	94	73	4.31

Notes: "H" in the sample number indicates collection of the sediment with the advanced hydraulic piston corer; "X" designates the use of the extended core barrel drilling head. A blank space in the table indicates that no measurement was made, and "<d.l." indicates that the concentration was less than the detection limit. Depths of samples from Hole 886A are based on correlation of the magnetic susceptibility data from Holes 886A and 886B.