

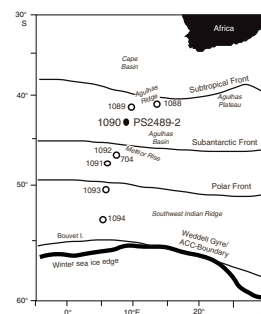
14. DATA REPORT: EARLY AND MID-PLEISTOCENE (MIS 65–11) SUMMER SEA-SURFACE TEMPERATURE, FORAMINIFERAL FRAGMENTATION, AND ICE-RAFTED DEBRIS RECORDS FROM THE SUBANTARCTIC (ODP LEG 177 SITE 1090)¹

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INTRODUCTION

Pleistocene summer sea-surface temperatures (SSSTs) have been reconstructed from planktonic foraminifers on a composite core section recovered from the Subantarctic Zone of the Southern Ocean, applying the modern analog technique (MAT) (Fig. F1). The composite consists of core PS2489-2 and a Pleistocene splice recovered from five holes drilled at Ocean Drilling Program (ODP) Leg 177 Site 1090 and represents the past 1.83 m.y. Core PS2489-2 documents a late and mid-Pleistocene record ranging from marine isotope Stage (MIS) 14 to MIS 1. Data and results obtained from core PS2489-2, including an age model based on stable isotope measurements and ¹⁴C-AMS (accelerator mass spectrometry) datings as well as records of MAT-derived SSST, species abundance distribution of selected foraminifers, foraminiferal fragmentation, and ice-rafted debris (IRD) are presented and discussed in Becquey and Gersonde (in press). The data on stable isotope measurements, species abundance distribution, SSST, IRD, and fragmentation ratio obtained from sections recovered at Site 1090 between 10.83 and 44.54 meters composite depth (mcd), representing a period between MIS 65 and MIS 11, are presented in this report. The upper portion (MIS

F1. Locations of drill sites, p. 7.



¹Becquey S., and Gersonde, R., 2003. Data report: Early and mid-Pleistocene (MIS 65–11) summer sea-surface temperature, foraminiferal fragmentation, and ice-rafted debris records from the subantarctic (ODP Leg 177 Site 1090). In Gersonde, R., Hodell, D.A., and Blum, P. (Eds.), *Proc. ODP, Sci. Results*, 177, 1–23 [Online]. Available from World Wide Web: <http://www-odp.tamu.edu/publications/177_SR/VOLUME/CHAPTERS/SR177_14.PDF>. [Cited YYYY-MM-DD]

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11–14) of this record overlaps that obtained from core PS2489-2, allowing an accurate splice of both records. The data are also archived in the on-line PANGAEA information system at the Alfred Wegener Institute (AWI) for Polar and Marine Research, Bremerhaven Germany (www.pangaea.de).

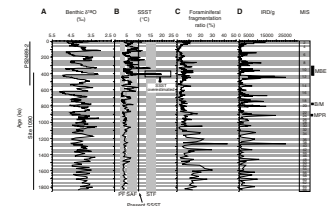
Scientific interpretation of the Site 1090 data is presented in Becquey and Gersonde (2002) and can be summarized as follows. The record, which documents hydrographic variability in the present Subantarctic Zone of the Southern Ocean during the past 1.83 m.y. is characterized by two main periods connected by a transitional interval (Fig. F2). Between 1.83 Ma (MIS 65) and 0.87 Ma (MIS 22), the SSST estimates display minor glacial–interglacial variability ranging between 3° and 5°C. This indicates that isotherms characteristic for the present Polar Front Zone (PFZ) were shifted to the north by ~7° in latitude and governed the area of the present central Subantarctic Zone during most of the early Pleistocene. This northward shift of the present PFZ isotherms may have affected the atmospheric circulation and reduced or even prevented warm-water advection from the Indian into the South Atlantic Ocean via the Agulhas Current system. The northward expansion of the Antarctic cold-water realm may have influenced the coastal upwelling regime off southwest Africa and the low-latitude climate. During the transitional period spanning from 0.87 Ma (MIS 22) to 0.43 Ma (MIS 12), glacial periods were the coldest during the Pleistocene, with temperatures corresponding to those at the present Polar Front. Interglacial SSSTs reach values that are close to present temperatures at the Subantarctic Front, which results in a slight steepening of the glacial–interglacial SSST gradient ranging between 3° and 10°C. The SSST variability shows increasing 100-k.y.-dominated climatic cyclicity, which is in response to a major increase in the ice volume around the mid-Pleistocene Revolution (MPR). The SSST record obtained for the past 0.43 m.y. (since MIS 12) exhibits strong fluctuations between glacial and interglacial periods. Only during the climatic optima (MIS 11.3, 9.3, 7.5, 7.1, 5.5, and the early Holocene), does the SSST exceed present-day temperatures. The distinct meridional shifts of the Antarctic Circumpolar Current (ACC) frontal zone systems are governed by a 100-k.y.-dominated cyclicity.

The mid-Brunhes dissolution event, as well as the enhanced carbonate preservation at the MPR, appears to be part of long-term carbonate preservation oscillations of global extension. The presence in the foraminiferal fragmentation ratio of 404- and 100-k.y. cyclicities during the early Pleistocene might be indicative for an involvement of the global carbon cycle.

METHODS

The samples were wet sieved using a 63- μm sieve. The dried sample residue >63 μm was sieved into five fractions (125–200, 200–250, 250–315, 315–400, and >400 μm) for micropaleontological studies. These five fractions were then quantitatively subsampled with a microsampler until ~100 whole planktonic foraminiferal specimens were left for microscopic investigation. All planktonic foraminifera in these subsamples were identified and counted, following the taxonomic concepts of Bé (1977), Bé and Tolderlund (1971), Kennett and Srinivasan (1983), and Hemleben et al., (1989) (see “Taxonomic List,” p. 6, in the “Appendix”). Using this method proposed by Pflaumann et al. (1996), a mini-

F2. $\delta^{18}\text{O}$, SSST, foraminifer fragmentation, and IRD, p. 8.



imum of 500 planktonic foraminifers were counted per sample. Percent abundances of planktonic foraminifer species found within each sample are listed in Table T1.

Because of selective carbonate dissolution, the composition of planktonic foraminiferal assemblages observed in the sediment core may differ significantly from the in situ living foraminiferal fauna. As a result, the SSST calculated based on such biased faunal composition would result in values that do not mirror the adequate sea-surface conditions (Le and Shackleton, 1992, 1994; Le and Thunell, 1996). To monitor carbonate dissolution we applied the fragmentation ratio proposed by Le and Shackleton (1992) (Table T2):

$$\text{Fragments (\%)} = 100\% \times (\text{number fragments}/8) / [(\text{number fragments}/8) + (\text{number whole})].$$

Fragmentation was estimated by counting the number of planktonic foraminiferal fragments in a split that contained 500 or more whole planktonic foraminifers.

Lithic fragments in the >125- μm fraction, interpreted as IRD, were also counted. The number of lithic grains per gram of dry sediment is listed in Table T2.

To evaluate the temperature estimates, we chose the MAT (Hutson, 1980; Prentice, 1980; Overpeck et al., 1985; Le, 1992; Pflaumann et al., 1996). The SSST estimate, the dissimilarity coefficient (which measures the difference between the assemblage of a downcore sample and the assemblage of the analog), and the standard deviation are listed in Table T2.

Isotopic analysis for Site 1090 was performed on benthic foraminifers (*Uvigerina peregrina*, *Fontbotia wuellerstorfi*, and species of the related genus, *Cibicidoides*) (Table T3; data are not corrected for specific fractionation). The isotope measurements were performed with a Finnigan MAT 251 mass spectrometer coupled to an automatic carbonate preparation device at the Alfred Wegener Institute. Data are related to the Peedee belemnite (PDB) standard through repeated analyses of National Bureau of Standards isotopic standard reference material SRM-19 (Hut, 1987). The standard deviation of replicate sample analyses run on different days for Site 1090 is 0.07‰ for $\delta^{18}\text{O}$. The benthic foraminiferal $\delta^{18}\text{O}$ record has been combined from both *F. wuellerstorfi* (and *Cibicidoides* spp.) and *U. peregrina* $\delta^{18}\text{O}$ data after correction for specific fractionation (+0.64‰ for *F. wuellerstorfi* and *Cibicidoides* spp., according to Shackleton, 1974) to produce a continuous record.

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T1. Planktonic foraminiferal species, p. 9.

T2. SSST estimates and IRD, p. 16.

T3. Benthic foraminiferal $\delta^{18}\text{O}$, p. 21.

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APPENDIX

Taxonomic List

Generic names are in accordance with Loeblich and Tappan (1988).

- Globigerina bulloides* d'Orbigny, 1826
Globigerina falconensis Blow, 1959
Globigerinella aequilateralis (Brady) = *Globigerina aequilateralis* Brady, 1879
Globigerinella calida (Parker) = *Globigerina calida* Parker, 1962
Globigerinina bradyi Wiesner, 1931
Globigerinina glutinata (Egger) = *Globigerina glutinata* Egger, 1893
Globigerinoides ruber (d'Orbigny) = *Globigerina rubra* d'Orbigny, 1839a
Globigerinoides sacculifer (Brady) = *Globigerina sacculifer* Brady, 1877
Globorotalia crassaformis (Galloway and Wissler) = *Globigerina crassaformis* Galloway and Wissler, 1927
Globorotalia hirsuta (d'Orbigny) = *Rotalina hirsuta* d'Orbigny, 1839b
Globorotalia inflata (d'Orbigny) = *Globigerina inflata* d'Orbigny, 1839b
Globorotalia scitula (Brady) = *Pulvinulina scitula* Brady, 1882
Globorotalia truncatulinoides (d'Orbigny) = *Rotalia truncatulinoides* d'Orbigny, 1839b
Globoturborotalita rubescens (Hofker) = *Globigerina rubescens* Hofker, 1956
Neogloboquadrina pachyderma (Ehrenberg) = *Aristospira pachyderma* Ehrenberg, 1861
Orbulina universa d'Orbigny, 1839a
Tenuitella iota (Parker) = *Globigerinina iota* Parker, 1962
Turborotalita quinqueloba (Natland) = *Globigerina quinqueloba* Natland, 1938.

Figure F1. Locations of Leg 177 drilled during ODP Leg 177, piston core PS 2489-2, and ODP Leg 114 Site 704. Position of the oceanographic fronts of the Antarctic Circumpolar Current and the sea ice edge are according to Peterson and Stramma (1991) and Sea Ice Climatic Atlas (1985).

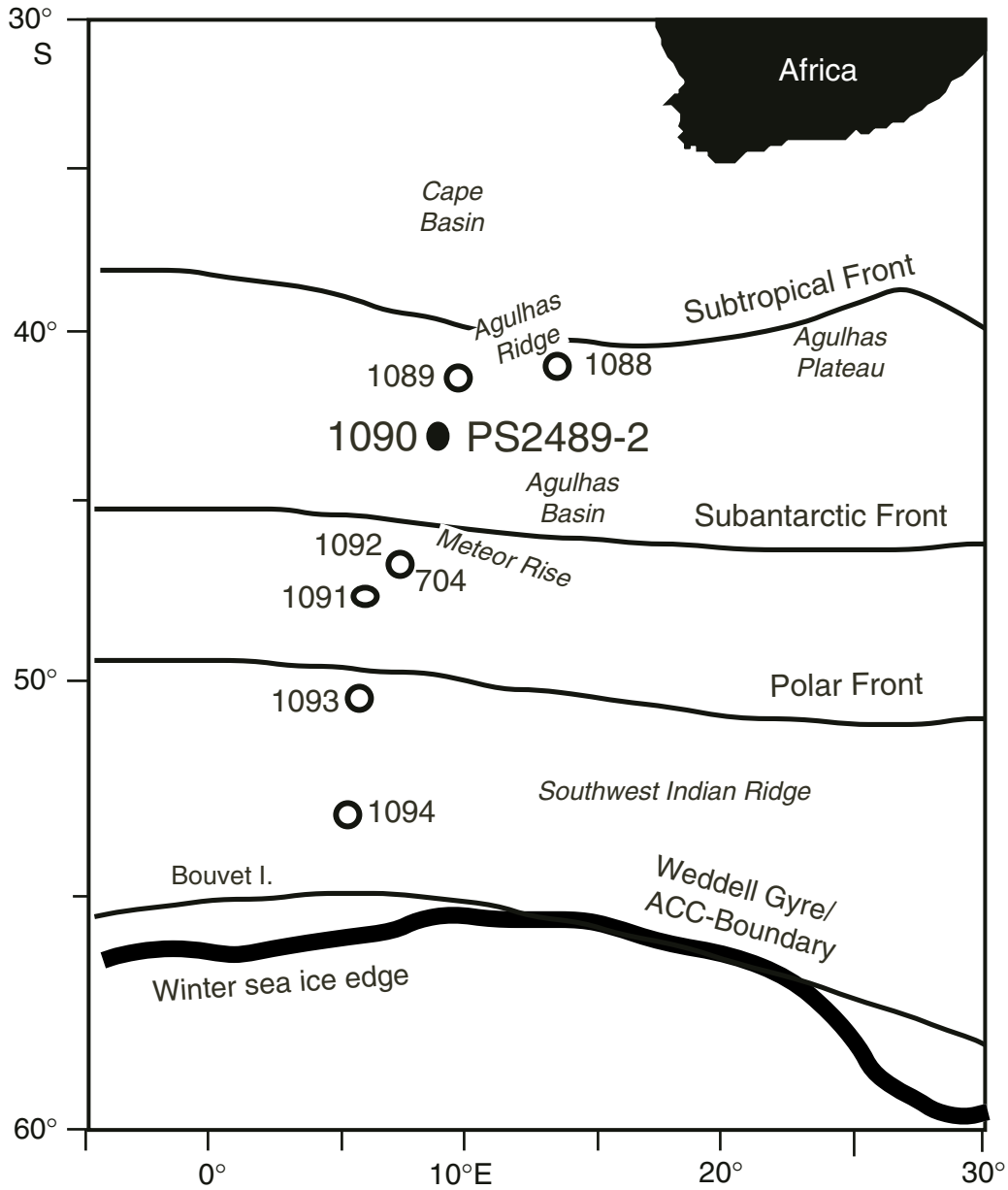


Figure F2. A. Benthic foraminiferal $\delta^{18}\text{O}$ record from a composite of core PS2489-2 and the Site 1090 splice vs. age. B. Variations of the SSST record from a composite of core PS2489-2 and Site 1090. Vertical shaded areas indicate modern temperature ranges at the Polar Front (PF), the Subantarctic Front (SAF), and the Subtropical Front (STF) and modern summer sea-surface temperature (SSST) at core location (10.2°C after Levitus and Boyer, 1994). C. Distribution of the percent of foraminiferal fragments. D. Distribution of the ice rafted debris (IRD). Horizontal shaded areas mark glacial periods (marine isotope stages). MBE = Mid-Brunhes Event, B/M = Brunhes/Matuyama boundary (according to Shipboard Scientific Party, 1999), MPR = Mid-Pleistocene Revolution. Age model according to Venz and Hodell (2002) (figure modified after Becquey and Gersonde, 2002).

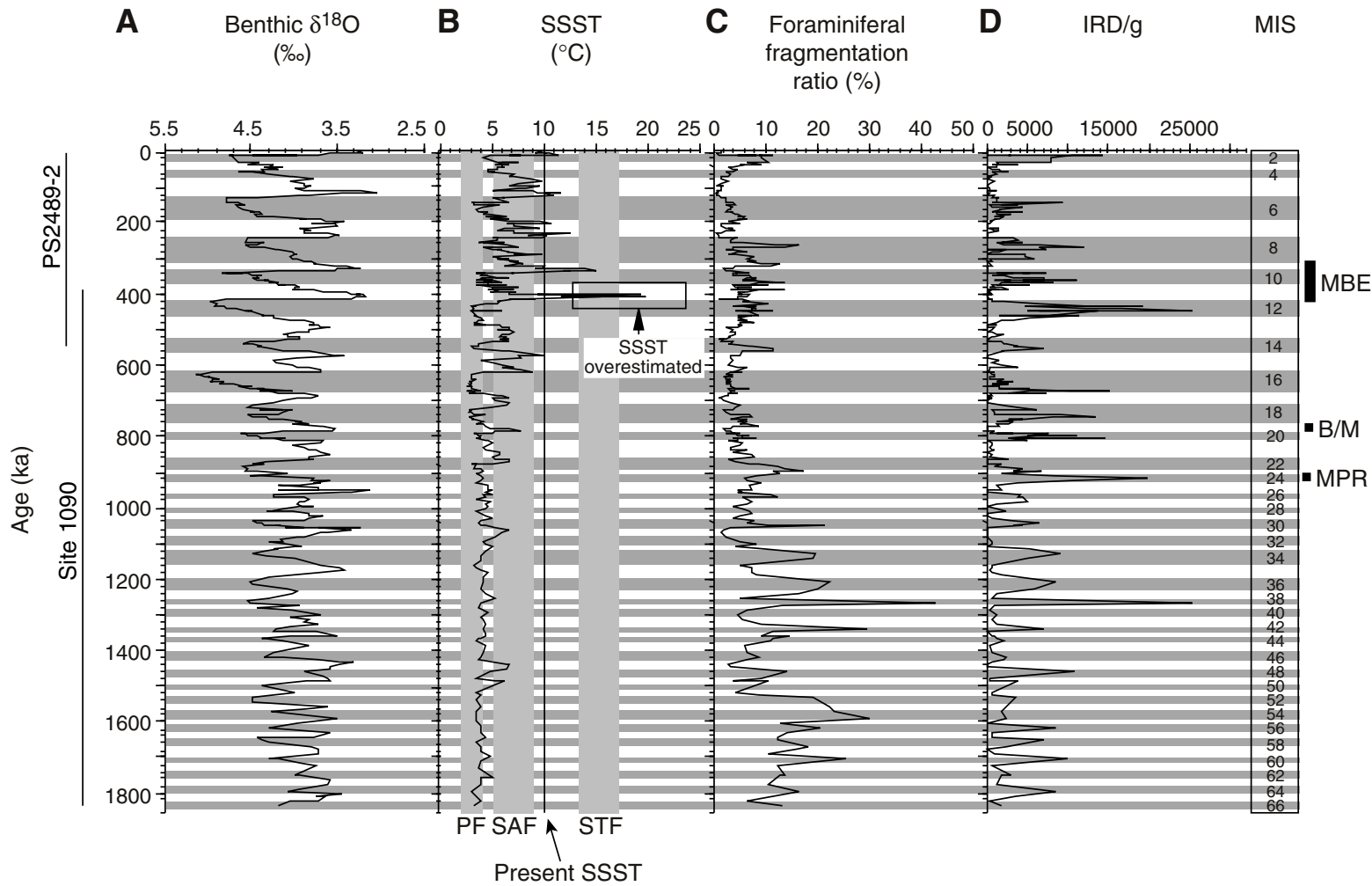


Table T1. Planktonic foraminiferal species from early to mid-Pleistocene, Holes 1090B, 1090D, and 1090E. (See table notes. Continued on next six pages.)

Core, section, interval (cm)	Volume (cm ³)	Depth (mbsf)	Depth (mcd)		<i>G. bulloides</i>	<i>G. falconensis</i>	<i>G. aequilateralis</i>	<i>G. calida</i>	<i>G. bradyi</i>	<i>G. glutinata</i>	<i>G. ruber</i> (white)	<i>G. crassaformis</i>	<i>G. hirsuta</i>	<i>G. inflata</i>	<i>G. scitula</i>	<i>G. truncatulinoides</i> (right)	<i>G. truncatulinoides</i> (left)	<i>G. rubescens</i>	<i>N. pachyderma</i> (right)	<i>N. pachyderma</i> (left)	<i>O. universa</i>	<i>T. iota</i>	<i>T. quinqueloba</i>	
			Top	Bottom																				
177-1090D-																								
2H-2, 58–60.5	40	9.48	11.63	11.66	41.52	0	0	0	0	8.33	0	7.34	0	5.58	0.37	0	0	0	5.21	29.41	0	0	2.23	
2H-2, 68–70.5	40	9.58	11.73	11.76	25.86	0.28	0	0	2.71	5.54	0	1.95	0	0.11	0.11	0	0.2	0	2.26	56.46	0	0	4.52	
2H-2, 78–80.5	40	9.68	11.83	11.86	17.34	0	0	0	0.71	11.65	0	4.72	0	17.44	0.94	0	0.04	0	5.04	41.41	0	0	0.71	
2H-2, 88–90.5	40	9.78	11.93	11.96	25.27	0.4	0	0	0.8	8.92	0	6.27	0	16.12	0.5	0	0	0	2.41	36.9	0	0	2.41	
2H-2, 98–100.5	40	9.88	12.03	12.06	15.25	0	0	0	0.33	9.28	0	8.89	0	27.63	1.99	0	0.33	0	7.46	27.51	0.01	0	1.33	
2H-2, 108–110.5	40	9.98	12.13	12.16	11.45	0.87	0.04	0	0	7.8	0	5.79	0	30.91	2.28	0	0.48	0	24.84	15.35	0.19	0	0	
2H-2, 118–120.5	40	10.08	12.23	12.26	9.58	0.07	0.9	0	0.8	11.9	0.4	10	0	28.82	0.9	0	0.47	0	12.44	17.92	1.02	0.8	3.98	
2H-2, 128–130.5	40	10.18	12.33	12.36	13.43	0.4	0	0	0.4	10.26	0	8.32	0	27.09	1.41	0	1.25	0	15.25	18.14	0.87	0.8	2.39	
2H-2, 138–140.5	40	10.28	12.43	12.46	9.55	0.36	0.45	0	0.73	11.63	0	6.39	0	26.54	0.23	0	1.82	0.55	15.9	21.44	0.43	1.09	2.91	
2H-2, 148–150	40	10.38	12.53		16.29	0.12	0.49	0	0	14.46	0	5.47	0	19.97	2.15	0	1.13	0.93	16.49	19.63	1.01	0.46	1.39	
2H-3, 8–10.5	40	10.48	12.63	12.66	30.44	0.36	0.09	0	0.36	9.6	0	6.27	0	17.27	1.81	0	1.13	0	9.96	17.93	0.07	0	4.71	
2H-3, 18–20.5	40	10.58	12.73	12.76	34.77	0.45	0	0	1.55	6.09	0	4.99	0	9.52	0.66	0	0.32	0	11.01	25.77	0.19	0	4.66	
2H-3, 28–30.5	40	10.68	12.83	12.86	31.65	0.22	0	0.09	0.6	5.85	0	5.87	0	7.33	0.67	0	0.09	0	16.49	26.91	0.02	0	4.2	
2H-3, 38–40.5	40	10.78	12.93	12.96	42.72	1.53	0	0.02	0	4.58	0	3.86	0	12.02	0.8	0	0.08	0	11.09	17.2	0	0	6.11	
2H-3, 48–50.5	40	10.88	13.03	13.06	24.83	0.17	0.27	0.08	0.81	6.91	0	2.63	0	2.25	0	0	0.07	0	8.42	48.75	0	0.27	4.56	
2H-3, 58–60.5	40	10.98	13.13	13.16	47.05	0.69	0	0.1	1.97	1.28	0	1.5	0	0.69	0	0	0	0	4.93	39.03	0	0	2.76	
2H-3, 68–70.5	40	11.08	13.23	13.26	46.19	0	0	0	0.99	1.23	0	8.29	0	0.71	0	0	0	0	1.97	39.13	0	0	1.48	
2H-3, 78–80.5	40	11.18	13.33	13.36	15.57	0	0	0	2.66	2.12	0	3.43	0	0.31	0	0	0	0	2.91	71.33	0	0	1.66	
2H-3, 88–90.5	40	11.28	13.43	13.46	19.02	0	0	0	2.86	1.61	0	5.73	0	3.07	0	0	0	0	3.13	62.44	0	0	2.14	
2H-3, 98–100.5	40	11.38	13.53	13.56	4.43	0	0	0	1.03	2.14	0	0.23	0	0.31	0	0	0	0	3.17	88.18	0	0	0.51	
2H-3, 108–110.5	40	11.48	13.63	13.66	7.43	0	0	0	0.62	0.17	0	0.41	0	0.17	0	0	0	0	4.69	86.51	0	0	0	
2H-3, 118–120.5	40	11.58	13.73	13.76	6.92	0	0	0	1.69	0.9	0	1.99	0	0.23	0	0	0.85	6	78.03	0	0	3.39		
2H-3, 128–130.5	40	11.68	13.83	13.86	7.38	0	0	0	1.36	0.51	0	1.29	0	0.19	0	0	0	0	0.54	88.28	0	0	0.45	
2H-3, 138–140.5	40	11.78	13.93	13.96	27.85	0	0	0	0	2.99	0	0.3	0	1.1	0	0	0	0	0.73	67.04	0	0	0	
2H-3, 147.5–150	40	11.88	14.03		20.73	0.15	0	0	0	1.63	0	1.35	0	1.04	0	0	0	0	1.39	73.7	0	0	0	
2H-4, 8–10.5	40	11.98	14.13	14.16	18.73	0.06	0	0	0	0.81	0	0.75	0	0.49	0	0	0	0	6.17	70.67	0	0	2.31	
2H-4, 18–20.5	40	12.08	14.23	14.26	13.29	0.11	0	0	0	0.65	0	3.86	0	1.13	0.11	0	0	0	2.48	76.66	0	0	1.72	
2H-4, 28–30.5	40	12.18	14.33	14.36	5.5	0.02	0	0	0	2.39	0	0.52	0	0.05	0.52	0	0	0	4.38	81.94	0	0	4.69	
2H-4, 38–40.5	40	12.28	14.43	14.46	11.09	0.14	0	0	1.11	2.53	0	0.88	0	1.04	0	0	0	0.14	3.41	76.9	0	0	2.77	
2H-4, 48–50.5	40	12.38	14.53	14.56	15.67	0.51	0	0	0.23	2.11	0	4	0	0.58	0.11	0	0	0	1.54	74.8	0	0	0.46	
2H-4, 58–60.5	40	12.48	14.63	14.66	17.98	0.3	0	0	2.52	4.64	0	0.61	0	0.07	0	0	0	0	1.78	70.84	0	0	1.26	
2H-4, 68–70.5	40	12.58	14.73	14.76	17.4	0.44	0	0	2.42	4.11	0	1.63	0	0.64	0	0	0	0	0.98	69.14	0	0.4	2.83	
2H-4, 78–80.5	40	12.68	14.83	14.86	18.45	0.47	0	0	2.15	5.64	0	2.68	0	0.47	0.03	0	0	0	3.26	65.25	0	0	1.61	
2H-4, 88–90.5	40	12.78	14.93	14.96	21.19	0.79	0	0	1.05	2.77	0	4.92	0	0.65	0.02	0	0	0	1.38	66.72	0	0	0.52	
2H-4, 98–100.5	40	12.88	15.03	15.06	0.85	0	0	0	1.67	2.31	0	2.19	0	0.13	0	0	0	0	1.72	88.92	0	0	2.22	
2H-4, 108–110.5	40	12.98	15.13	15.16	26.85	2.26	0	0	0.75	1.79	0	1.35	0	1.35	0	0	0	0	1.98	62.92	0	0	0.75	
2H-4, 118–120.5	40	13.08	15.23	15.26	34.46	0.81	0	0.04	0.56	4.22	0	3.26	0	0.66	0	0	0	0	0.63	54.81	0	0	0.56	
2H-4, 128–130.5	40	13.18	15.33	15.36	39.06	1.34	0	0.12	0.45	7.23	0	1.11	0	0.98	0.45	0	0.45	2.13	45.35	0	0.45	0.9		
2H-4, 138–140.5	40	13.28	15.43	15.46	36.12	1.32	0	0.05	1.86	3.49	0	2.85	0	0.7	0	0	0	0	2.56	49.81	0	0	1.24	
2H-4, 148–150	40	13.38	15.53		30.24	1.78	0	0.01	3.47	5.5	0	1.66	0	1.31	0.39	0	0	0	4.05	49.67	0	0	1.93	

Table T1 (continued).

Core, section, interval (cm)	Volume (cm ³)	Depth (mbsf)	Depth (mcd)		<i>G. bulloides</i>	<i>G. falconensis</i>	<i>G. aequilateralis</i>	<i>G. calida</i>	<i>G. bradyi</i>	<i>G. glutinata</i>	<i>G. ruber</i> (white)	<i>G. crassaformis</i>	<i>G. hirsuta</i>	<i>G. inflata</i>	<i>G. scitula</i>	<i>G. truncatulinoides</i> (right)	<i>G. truncatulinoides</i> (left)	<i>G. rubescens</i>	<i>N. pachyderma</i> (right)	<i>N. pachyderma</i> (left)	<i>O. universa</i>	<i>T. iota</i>	<i>T. quinqueloba</i>
			Top	Bottom																			
2H-5, 8–10.5	40	13.48	15.63	15.66	35.44	2.13	0	0	3.31	6.98	0	0.63	0	0.59	0.65	0	0	0	4.14	44.24	0	0	1.89
2H-5, 18–20.5	40	13.58	15.73	15.76	32.11	2.13	0	0	0.96	5.82	0	0.51	0	0.21	0	0	0.11	0	1.02	55.2	0	0	1.92
2H-5, 28–30.5	40	13.68	15.83	15.86	25.27	1.06	0	0	0.68	1.01	0	0.62	0	0.39	0.68	0	0.16	0	2.19	65.93	0	0	2.03
2H-5, 38–40.5	40	13.78	15.93	15.96	30.72	1.47	0	0	1.58	2.53	0	1.97	0	0.52	0.63	0	0.24	0	4.59	53.21	0	0	2.53
2H-5, 48–50.5	40	13.88	16.03	16.06	34.63	1.66	0	0	1.28	3.48	0	3.56	0	0.41	0.43	0	0.08	0	2.57	45.91	0	0	5.99
2H-5, 58–60.5	40	13.98	16.13	16.16	25.69	1.48	0	0	0.66	4.44	0	10.3	0	10.67	0.33	0	0.02	0	4.94	40.48	0	0	0.99
2H-5, 68–70.5	40	14.08	16.23	16.26	23.48	1.17	0	0	1.37	5.14	0	2.39	0	0.09	0.77	0	0.13	0	4.92	52.53	0	0	8
2H-5, 78–80.5	40	14.18	16.33	16.36	34	2.04	0	0.04	6.86	6.93	0	1.79	0	0.91	0	0	0	0	3.72	41.44	0	0	2.29
2H-5, 88–90.5	40	14.28	16.43	16.46	14.38	0.05	0	0	6.82	3.84	0	4.55	0	0.14	0.85	0	0.03	0	3.09	63.7	0	0	2.56
2H-5, 98–100.5	40	14.38	16.53	16.56	15.34	0.72	0	0	5.29	3.49	0	4.9	0	0.65	0	0	0	0	2.89	64.31	0	0	2.4
2H-5, 108–110.5	40	14.48	16.63	16.66	9.6	0.24	0	0	6.52	1.55	0	4.34	0	0.11	0	0	0	0	1.71	74.06	0	0	1.86
2H-5, 118–120.5	40	14.58	16.73	16.76	7.66	0.29	0	0	5.14	1.22	0	1.81	0	0.23	0.51	0	0	0	5.24	74.8	0.01	0	3.09
177-1090B-																							
3H-1, 139–141.5	40	15.09	16.83	16.86	6.63	0.31	0	0	3.34	2.71	0	7.32	0	0.27	0.07	0	0	0	3.54	72.46	0	0	3.34
3H-1, 148–150	40	15.18	16.93		5.26	0.15	0	0	2.84	1.07	0	3.95	0	0.16	0	0	0	0	2.43	81.3	0	0	2.84
3H-2, 8–10.5	40	15.28	17.03	17.06	7.09	0.33	0	0	2.62	1.75	0	7.75	0	0.44	0	0	0	0	2.19	77.4	0	0	0.44
3H-2, 18–20.5	40	15.38	17.13	17.16	27.98	0	0	0	0	0.75	0	6.35	0	0.17	0.37	0	0	0	2.71	59.06	0	0	2.61
3H-2, 28–30.5	40	15.48	17.23	17.26	28.58	0.91	0	0	0.48	3.15	0	2.96	0	0.12	0.48	0	0	0	5.87	52.85	0	0	4.6
3H-2, 38–40.5	40	15.58	17.33	17.36	60.71	1.53	0	0.1	0.19	4.7	0	3.52	0	0.86	0	0	0.19	0	3.64	23.39	0	0	1.15
3H-2, 48–50.5	40	15.68	17.43	17.46	42.54	1.79	0	0.17	0	5.64	0	2.31	0	0.72	0.21	0	0.07	0	4.44	40.02	0	0	2.09
3H-2, 58–60.5	40	15.78	17.53	17.56	38.91	2.11	0	0.04	0	6.53	0	1.72	0	1.02	0.13	0	0	0	6.88	39.13	0	0	3.53
3H-2, 68–70.5	40	15.88	17.63	17.66	14.13	0.36	0	0	0.38	0.62	0	1.04	0	0.32	0.38	0	0	0	1.33	80.31	0	0	1.14
3H-2, 78–80.5	40	15.98	17.73	17.76	19.16	0.65	0	0	1.2	2.29	0	1.01	0	0.53	0.15	0	0	0	2.99	70.83	0	0	1.2
3H-2, 88–90.5	40	16.08	17.83	17.86	26.37	1.17	0	0	0.61	2.34	0	2	0	0.57	0	0	0	0	2.44	61.24	0	0	3.26
3H-2, 98–100.5	40	16.18	17.93	17.96	38.58	1.92	0	0	1.68	2.52	0	4.12	0	1.5	0.36	0	0	0	2.04	45.35	0	0	1.92
3H-2, 108–110.5	40	16.28	18.03	18.06	28.25	0.91	0	0	0.81	1.52	0	3.61	0	0.75	0	0	0	0	2.48	59.24	0	0	2.43
3H-2, 118–120.5	40	16.38	18.13	18.16	36.79	1.98	0	0	0.47	4.65	0	2.88	0	0.89	0.12	0	0	0	6.51	39.44	0	0	6.28
3H-2, 128–130.5	40	16.48	18.23	18.26	37.17	0.83	0	0.07	0	6.51	0	3.42	0	1.67	0.66	0	0	0	11.89	28.15	0	0	9.65
3H-2, 138–140.5	40	16.58	18.33	18.36	21.66	0.48	0	0.05	1.46	6.87	0	3.18	0	1.01	0.06	0	0	0	17.23	38.47	0	0	9.55
3H-2, 148–150	40	16.68	18.43		13.69	0.24	0	0	1.15	2.16	0	3.3	0	0.26	0	0	0	0	3.46	73.04	0	0	2.69
3H-3, 8–10.5	40	16.78	18.53	18.56	13.47	0.37	0	0	1.12	2.81	0	1.53	0	0.33	0.01	0	0	0	2.79	73.12	0	0	4.46
3H-3, 18–20.5	40	16.88	18.63	18.66	3.52	0.03	0	0	3.32	0.73	0	0.69	0	0.33	0	0	0	0	4.02	84.45	0	0	2.91
3H-3, 28–30.5	40	16.98	18.73	18.76	0.43	0	0	0	4.32	1.44	0	0.12	0	0.09	0	0	0	0	2.99	85.92	0	0	4.68
3H-3, 38–40.5	40	17.08	18.83	18.86	1.12	0.02	0	0	1.86	0.27	0	0.12	0	0.27	0	0	0	0	2.94	87.31	0	0	6.1
3H-3, 48–50.5	40	17.18	18.93	18.96	1.12	0	0	0	2.87	0.45	0	0.29	0	0.03	0	0	0	0	3.97	84.07	0	0	7.19
3H-3, 58–60.5	40	17.28	19.03	19.06	0.57	0	0	0	2.31	0.77	0	0.07	0	0.02	0.01	0	0	0	4	84.8	0	0	7.45
3H-3, 68–70.5	40	17.38	19.13	19.16	0.73	0	0	0	1.91	1.28	0	0.06	0	0.02	0	0	0	0	5.23	84.32	0	0	6.45
3H-3, 78–80.5	40	17.48	19.23	19.26	2.12	0.17	0	0	4.51	1.79	0	0.13	0	0.21	0	0	0	0	2.62	82.33	0	0	6.12
3H-3, 88–90.5	40	17.58	19.33	19.36	0.38	0	0	0	6.44	3.48	0	0.01	0	0	0	0	0	0	3.39	80.97	0	0	5.34
3H-3, 98–100.5	40	17.68	19.43	19.46	2.37	0	0	0	7.51	5.27	0	0.01	0	0.03	0	0	0	0	5	77.56	0	0	2.24
3H-3, 108–110.5	40	17.78	19.53	19.56	1.52	0.01	0	0	5.56	4.25	0	0.2	0	0.01	0	0	0	0	5.24	79.28	0	0	3.93
3H-3, 118–120.5	40	17.88	19.63	19.66	0.82	0	0	0	6.37	2.83	0	0.41	0	0.06	0.3	0	0	0	3.29	82.27	0	0	3.64

Table T1 (continued).

Core, section, interval (cm)	Volume (cm ³)	Depth (mbsf)	Depth (mcd)		<i>G. bulloides</i>	<i>G. falconensis</i>	<i>G. aequilateralis</i>	<i>G. calida</i>	<i>G. bradyi</i>	<i>G. glutinata</i>	<i>G. ruber</i> (white)	<i>G. crassaformis</i>	<i>G. hirsuta</i>	<i>G. inflata</i>	<i>G. scitula</i>	<i>G. truncatulinoides</i> (right)	<i>G. truncatulinoides</i> (left)	<i>G. rubescens</i>	<i>N. pachyderma</i> (right)	<i>N. pachyderma</i> (left)	<i>O. universa</i>	<i>T. iota</i>	<i>T. quinqueloba</i>
			Top	Bottom																			
3H-3, 128–130.5	40	17.98	19.73	19.76	0.64	0	0	0	9.66	2.42	0	0.1	0	0.08	0	0	0	0	4.44	80.99	0	0	1.66
3H-3, 138–140.5	40	18.08	19.83	19.86	0.59	0.03	0	0	5.59	1.32	0	0.16	0	0.03	0	0	0	0	2.21	87.9	0	0	2.18
3H-3, 148–150	40	18.18	19.93		0.2	0	0	0	4.44	1.04	0	0.38	0	0	0	0	0	0	3.29	88.11	0	0	2.54
3H-4, 8–10.5	40	18.28	20.03	20.06	1.66	0	0	0	3.79	1.37	0	0.37	0	0.15	0	0	0	0	2.58	88.34	0	0	1.74
3H-4, 18–20.5	40	18.38	20.13	20.16	0.92	0	0	0	4.83	0.96	0	0.39	0	0.01	0	0	0	0	1.61	88.46	0	0	2.81
3H-4, 28–30.5	40	18.48	20.23	20.26	0.99	0	0	0	7.53	1.84	0	0.22	0	0.01	0	0	0	0	4.1	83.98	0	0	1.33
3H-4, 38–40.5	40	18.58	20.33	20.36	0.74	0	0	0	3.36	1.78	0	0.49	0	0.02	0.01	0	0	0	2.57	89.77	0	0	1.26
3H-4, 48–50.5	40	18.68	20.43	20.46	1.87	0.11	0	0	2.51	1.62	0	0.93	0	0.48	0	0	0	0	4.73	85.24	0	0	2.51
3H-4, 58–60.5	40	18.78	20.53	20.56	1.04	0.06	0	0	5.31	1.12	0	0.96	0	0.16	0.01	0	0	0	1.51	86.72	0.01	0	3.1
3H-4, 68–70.5	40	18.88	20.63	20.66	1.74	0.04	0	0	5.61	2.54	0	0.46	0	0.04	0	0	0	0	4.44	82.61	0	0	2.53
3H-4, 78–80.5	40	18.98	20.73	20.76	0.86	0.05	0	0	2.56	1.41	0	0.28	0	0.1	0	0	0	0	3.42	86.58	0	0	4.74
3H-4, 88–90.5	40	19.08	20.83	20.86	0.7	0	0	0	3.59	1.96	0	0.57	0	0.02	0	0	0	0	0.49	89.07	0	0	3.59
3H-4, 98–100.5	40	19.18	20.93	20.96	5.85	0	0	0	0.5	1.63	0	1.29	0	0.26	0.5	0	0	0	5.01	82.47	0	0	2.5
3H-4, 108–110.5	40	19.28	21.03	21.06	2.12	0.05	0	0	1.63	1.48	0	0.28	0	5.05	0.05	0	0	0	2.04	86.08	0	0	1.22
3H-4, 118–120.5	40	19.38	21.13	21.16	1.1	0	0	0	3.57	0.89	0	0.05	0	0.26	0	0	0	0	2.38	89.51	0	0	2.23
3H-4, 128–130.5	40	19.48	21.23	21.26	0.5	0	0	0	1.37	1.07	0	0.02	0	0.02	0.35	0	0	0	1.05	92.19	0	0	3.44
3H-4, 138–140.5	40	19.58	21.33	21.36	0.52	0	0	0	0.36	0.06	0	0.1	0	0.44	0	0	0	0	2.23	95.77	0	0	0.54
3H-4, 144–148	40	19.64	21.43		0.83	0	0	0	0	0.04	0	0.05	0	0.52	0	0	0	0	2.49	93.92	0	0	2.14
3H-5, 8–10.5	40	19.78	21.53	21.56	0.71	0	0	0	0	0.6	0	0.16	0	2.81	0.53	0	0	0	1.06	92.46	0	0	1.66
3H-5, 18–20.5	40	19.88	21.63	21.66	1.16	0	0	0	0	0.13	0	0.12	0	2.45	0.03	0	0.01	0	2.25	89.49	0	0	4.37
3H-5, 28–30.5	40	19.98	21.73	21.76	3.12	0.12	0	0	0	0.89	0	0.24	0	2.42	0.57	0	0	0	2.33	83.43	0	0	6.89
3H-5, 38–40.5	40	20.08	21.83	21.86	5.14	0	0	0	0	3.18	0	0.21	0	4.39	0.01	0	0.01	0	6.87	71.03	0	0	9.16
3H-5, 48–50.5	40	20.18	21.93	21.96	14.56	0.5	0	0	0	7.29	0	1.53	0	3.62	2.01	0	0	0	5.83	53.66	0	0	11
3H-5, 58–60.5	40	20.28	22.03	22.06	16.64	1.24	0	0.02	0	5.63	0	1.9	1.14	7.78	0.4	0	0	0	6.18	49.17	0	0	9.89
3H-5, 68–70.5	40	20.38	22.13	22.16	17.73	1.03	0	0.02	0	6.7	0	3.47	0	8.7	1.4	0	0	0	10.03	42.71	0	0	8.22
177-1090D-																							
3H-2, 76–78.5	40	19.16	22.23	22.26	11.92	0.52	0	0.02	0.34	6.85	0	2.38	0.08	6.52	2.09	0	0	0	10.66	49.9	0	0	8.71
3H-2, 86–88.5	40	19.26	22.33	22.36	9.06	0.08	0	0	0	5.61	0	1.1	1.04	6.19	0.88	0	0	0	6.24	60.62	0	0	9.19
3H-2, 96–98.5	40	19.36	22.43	22.46	8.34	0.33	0	0	0	9.53	0	1.26	0.71	5.5	1.89	0	0	0	7.16	53.65	0	0	11.64
3H-2, 106–108.5	40	19.46	22.53	22.56	18.19	0.22	0	0	0	10.17	0	1.27	1.41	5.54	1.61	0	0	0	9.46	43.63	0	0	8.49
3H-2, 116–118.5	40	19.56	22.63	22.66	26.9	0.21	0	0	0	2.05	0	1.13	0	2.58	0	0	0	0	2.46	57.67	0.02	0	6.98
3H-2, 126–128.5	40	19.66	22.73	22.76	15.86	0.06	0	0	0.47	4.44	0	1.8	0	1.77	0.12	0	0	0	2.8	70.31	0.03	0	2.34
3H-2, 136–138.5	40	19.76	22.83	22.86	2.83	0.01	0	0	0.8	0.43	0	0.09	0	0.68	1.21	0	0	0	2.09	87.04	0	0	4.82
3H-2, 146–148.5	40	19.86	22.93	22.96	0.35	0	0	0	1.85	0.09	0	0.39	0	0.51	0.01	0	0	0	1.68	93.28	0	0	1.85
3H-3, 2–4	40	19.92	22.99	23.01	2.79	0	0	0	0	0.14	0	0.01	0	0.62	0.58	0	0	0	2.44	89.38	0	0	4.03
3H-3, 12–14	40	20.02	23.09	23.11	6.4	0	0	0	1.2	0.15	0	0.03	0	0.79	0.75	0	0	0	1.37	85.1	0	0	4.21
3H-3, 22–24	40	20.12	23.19	23.21	6.9	0.06	0	0	1.06	0.41	0	0.37	0	0.74	0	0	0	0	2.67	83.9	0	0	3.9
3H-3, 32–34	40	20.22	23.29	23.31	10.04	0	0	0	0.56	1.26	0	0.02	0	1.05	0	0	0	0	2.93	81.85	0	0	2.3
3H-3, 42–44	40	20.32	23.39	23.41	11.4	0	0	0	0.55	1.65	0	0.05	0	11.92	1.14	0	0	0	1.65	68.33	0	0	3.3
3H-3, 52–54	40	20.42	23.49	23.51	1.96	0	0	0	0	1.96	0	0	0	0.84	0	0	0	0	0.62	92.16	0	0	2.46
3H-3, 62–64	40	20.52	23.59	23.61	0.59	0	0	0	0	0.01	0	0	0	0.87	0	0	0	0	0.44	97.26	0	0	0.83
3H-3, 72–74	40	20.62	23.69	23.71	0.76	0	0	0	1.32	0.88	0	0	0	1.16	0	0	0	0	0.47	94.09	0	0	1.32

Table T1 (continued).

Core, section, interval (cm)	Volume (cm ³)	Depth (mbsf)	Depth (mcd)		<i>G. bulloides</i>	<i>G. falconensis</i>	<i>G. aequilateralis</i>	<i>G. calida</i>	<i>G. bradyi</i>	<i>G. glutinata</i>	<i>G. ruber</i> (white)	<i>G. crassaformis</i>	<i>G. hirsuta</i>	<i>G. inflata</i>	<i>G. scitula</i>	<i>G. truncatulinoides</i> (right)	<i>G. truncatulinoides</i> (left)	<i>G. rubescens</i>	<i>N. pachyderma</i> (right)	<i>N. pachyderma</i> (left)	<i>O. universa</i>	<i>T. iota</i>	<i>T. quinqueloba</i>
			Top	Bottom																			
3H-3, 82-84	40	20.72	23.79	23.81	0.94	0	0	0	0.78	0.78	0	0.02	0	1.95	0.05	0	0	0	0.98	93.71	0	0	0.78
3H-3, 92-94	40	20.82	23.89	23.91	0.05	0	0	0	0.4	0.45	0	0.01	0	2.12	0	0	0	0	0.85	94.91	0	0	1.21
3H-3, 102-104	40	20.92	23.99	24.01	0.64	0	0	0	0.51	0.58	0	0.1	0	3	0	0	0	0	2.56	90.56	0	0	2.05
3H-3, 112-114	40	21.02	24.09	24.11	1.29	0	0	0	0	0.89	0	0.54	0	11.87	0	0	0	0	1.78	79.02	0	0	4.62
3H-3, 122-124	40	21.12	24.19	24.21	2.26	0	0	0	0.68	0.77	0	0.35	0	10.59	0.04	0	0	0	3.58	75.6	0	0	6.13
3H-3, 132-134	40	21.22	24.29	24.31	1.37	0	0	0	2.08	0.59	0	0.34	0	5.54	0	0	0	0	1.69	83.69	0	0	4.69
3H-3, 142-144	40	21.32	24.39	24.41	3.8	0	0	0	0	0.31	0	1.07	0	9.04	0	0	0	0	0.62	79.59	0	0	5.58
3H-4, 6-8.5	40	21.46	24.53	24.56	2.33	0.41	0	0	0	3.83	0	3.22	0	23.38	0	0	0	0	3.29	58.61	0	0	4.93
3H-4, 16-18.5	40	21.56	24.63	24.66	7.03	0.1	0	0	0	4.86	0	1.05	0.02	8.73	1.56	0	0	0	3.83	65.93	0	0	6.89
3H-4, 26-28.5	40	21.66	24.73	24.76	7.33	0.76	0	0.32	0	6.77	0	1.91	0	9.11	0.96	0	0	0	4.46	61.38	0	0.32	6.69
3H-4, 36-38.5	40	21.76	24.83	24.86	18.24	0.2	0	0	0	10.09	0	2.26	0	10.17	1.84	0	0	10	7.85	45.33	0	0	4.03
3H-4, 46-48.5	40	21.86	24.93	24.96	19.19	2.49	0	0	0	4.64	0	2.86	0	9.6	2.46	0	0	0	6.76	44.65	0	0	7.37
3H-4, 56-58.5	40	21.96	25.03	25.06	20.42	2.07	0	0.05	0	8.9	0	1.26	0	9.94	1.67	0	0	0	16.35	32.5	0	0	6.83
3H-4, 66-68.5	40	22.06	25.13	25.16	11.98	0.19	0	0	0	3.29	0	1.04	0	6.35	2.02	0	0	0	13.72	57.36	0	0	4.05
3H-4, 76-78.5	40	22.16	25.23	25.26	12.18	0.3	0	0	0	5.71	0	2.14	0	11.66	1.67	0	0	0	6.89	53.94	0	0	5.51
3H-4, 86-88.5	40	22.26	25.33	25.36	9.9	0.05	0	0	0.42	3.79	0	2.8	0	16.84	1.26	0	0	0	3.79	55.19	0	0	5.95
3H-4, 96-98.5	40	22.36	25.43	25.46	12.2	0	0	0	0	6.46	0	1.47	0	16.52	0.58	0	0	0	5.37	52.81	0	0	4.6
3H-4, 106-108.5	40	22.46	25.53	25.56	2.05	0	0	0	0	3.09	0	0.52	0	8.53	0.03	0	0	0	0.53	81.41	0	0	3.84
3H-4, 116-118.5	40	22.56	25.63	25.66	3.63	0	0	0	0	1.46	0	0.89	0	2.36	2.05	0	0	0	2.77	84.79	0	0	2.05
3H-4, 126-128.5	40	22.66	25.73	25.76	1.36	0	0	0	0	0.42	0	0.12	0	2.39	0.01	0	0	0	0.57	94.3	0	0	0.83
3H-4, 136-138.5	40	22.76	25.83	25.86	0.96	0	0	0	0	0.04	0	0.14	0	2.82	0.02	0	0	0	2.53	92.26	0	0	1.22
3H-4, 146-148.5	40	22.86	25.93	25.96	3.45	0	0	0	0	0.65	0	0.89	0	3.57	0.01	0	0	0	3.53	86.75	0	0	1.15
3H-5, 6-8.5	40	22.96	26.03	26.06	0.2	0	0	0	2.05	2.05	0	0.12	0	3.13	0	0	0	0	2.16	90.25	0	0	0.03
3H-5, 16-18.5	40	23.06	26.13	26.16	0.39	0	0	0	0	0.09	0	1.32	0	7.27	0	0	0	0	1.47	87.99	0	0	1.47
3H-5, 26-28.5	40	23.16	26.23	26.26	0.67	0	0	0	1.14	0.6	0	1.04	0	7.47	0	0	1	0	2.31	85.64	0	0	1.14
3H-5, 36-38.5	40	23.26	26.33	26.36	1.11	0	0	0	0.45	0.89	0	0.37	0	4.74	0.45	0	0	0	2.7	88.8	0	0	0.5
3H-5, 46-48.5	40	23.36	26.43	26.46	1.32	0	0	0	0.57	1.18	0	0.51	0	5.56	0	0	0	0	1.18	87.98	0	0	1.71
3H-5, 56-58.5	40	23.46	26.53	26.56	0.2	0	0	0	0.63	0.16	0	0.56	0	7.64	0	0	0	0	3.8	85.67	0	0	1.35
3H-5, 66-68.5	40	23.56	26.63	26.66	1.11	0	0	0	1.36	0.06	0	0.3	0	6.63	0	0	0	0	1.82	86.45	0	0	2.27
3H-5, 76-78.5	40	23.66	26.73	26.76	0.13	0	0	0	0.5	1.13	0	0.31	0	4.26	0	0	0	0	0.63	90.55	0	0	2.5
3H-5, 86-88.5	40	23.76	26.83	26.86	0.44	0	0	0	0	0.9	0	0.32	0	4.08	0	0	0	0	2.57	90.84	0	0	0.85
3H-5, 96-98.5	40	23.86	26.93	26.96	3	0	0	0	0	1.63	0	1.72	0	13.86	0.09	0	0	0	1.71	75.6	0	0	2.4
3H-5, 106-108.5	40	23.96	27.03	27.06	8.15	0	0	0	0	3.91	0	2.73	0	17.33	0.05	0	0	0	2.98	63.36	0	0	1.49
177-1090E-																							
3H-2, 71-73.5	40	20.41	27.12	27.15	8.4	0.06	0	0	0	5.11	0	1.7	0	18.75	1.58	0	0	0	3.53	54.05	0	0	6.82
3H-2, 81-83.5	40	20.51	27.22	27.25	10.4	0	0	0	0.67	4.2	0	2.27	0	12.04	0.75	0	0	0	6.07	57.63	0	0	5.99
3H-2, 91-93.5	40	20.61	27.32	27.35	1.79	0.28	0	0	0	0.51	0	2.58	0	11.93	0.91	0	0	0	1.82	79.04	0	0	1.14
3H-2, 101-103.5	40	20.71	27.42	27.45	3.79	0.46	0	0	0	2.28	0	1.94	0	11.14	0.97	0	0	0	4.44	68.74	0	0	6.26
3H-2, 111-113.5	40	20.81	27.52	27.55	3.29	0.13	0	0	0	0.89	0	1.82	0	17.29	1.02	0	0	0	3.19	68.8	0	0	3.57
3H-2, 121-123.5	40	20.91	27.62	27.65	2.47	0	0	0	0	2.18	0	3.08	0	15.1	1.54	0	0	0	2.56	69.49	0	0	3.59
3H-2, 131-133.5	40	21.01	27.72	27.75	10.26	0.15	0	0	0	5.92	0	3.75	0	21.42	1.04	0	0	0	3.07	45.79	0	0	8.61
3H-2, 141-143.5	40	21.11	27.82	27.85	13.42	0.1	0	0	0	4.49	0	3.75	0	15.45	1.81	0	0	0	8.36	48.49	0	0	4.13

Table T1 (continued).

Core, section, interval (cm)	Volume (cm ³)	Depth (mbsf)	Depth (mcd)		<i>G. bulloides</i>	<i>G. falconensis</i>	<i>G. aequilateralis</i>	<i>G. calida</i>	<i>G. bradyi</i>	<i>G. glutinata</i>	<i>G. ruber</i> (white)	<i>G. crassaformis</i>	<i>G. hirsuta</i>	<i>G. inflata</i>	<i>G. scitula</i>	<i>G. truncatulinoides</i> (right)	<i>G. truncatulinoides</i> (left)	<i>G. rubescens</i>	<i>N. pachyderma</i> (right)	<i>N. pachyderma</i> (left)	<i>O. universa</i>	<i>T. iota</i>	<i>T. quinqueloba</i>
			Top	Bottom																			
3H-3, 1-3.5	40	21.21	27.92	27.95	11.5	0.18	0	0	0	5.57	0	2.45	0	16.12	2.99	0	0	0	4.24	52.52	0	0	4.42
3H-3, 11-13.5	40	21.31	28.02	28.05	12.53	0.21	0	0	0.43	7.09	0	1.99	0.03	11.21	1.28	0	0	0	3.3	56.82	0	0	5.12
3H-3, 21-23.5	40	21.41	28.12	28.15	27.96	0.49	0	0.07	0	6.83	0	2.05	0.05	11.27	1.35	0	0	0	3.76	42.43	0.02	0	3.72
3H-3, 31-33.5	40	21.51	28.22	28.25	17.09	0.03	0	0.13	0	8.65	0	2.47	0.46	17.1	0.52	0	0	0	6.57	41.04	0.03	0	5.92
3H-3, 41-43.5	40	21.61	28.32	28.35	11.73	0	0	0	0	4.61	0	1.95	0	7.61	0	0	0	0	4.15	64.75	0.05	0	5.15
3H-3, 51-53.5	40	21.71	28.42	28.45	1.68	0	0	0	0	0.78	0	0.48	0	0.84	0	0	0	0	3.77	90.57	0	0	1.88
3H-3, 61-63.5	40	21.81	28.52	28.55	4.88	0	0	0	0	0.97	0	1.56	0	2.96	0.55	0	0	0	6.43	79.25	0.01	0	3.4
3H-3, 81-83.5	40	22.01	28.72	28.75	3.36	0	0	0	0	0.08	0	0.13	0	1.47	0	0	0	0	1.74	93.22	0	0	0
3H-3, 91-93.5	40	22.11	28.82	28.85	6.11	0.19	0	0	0	0.47	0	1.59	0	5.58	0	0	0	0	0.85	83.33	0	0	1.88
3H-3, 101-103.5	40	22.21	28.92	28.95	5.66	0	0	0	0	1	0	1.09	0	8.38	0	0	0	0	5.14	77.97	0	0	0.76
3H-3, 111-113.5	40	22.31	29.02	29.05	5.79	0.08	0	0	0	0	0	1.09	0	3.09	0	0	0	0	2.71	86.26	0	0	0.98
3H-3, 121-123.5	40	22.41	29.12	29.15	4.51	0.03	0	0	0	1.6	0	0.06	0	2.57	0	0	0	0	4	87.23	0	0	0
3H-3, 141-143.5	40	22.61	29.32	29.35	4.05	0.03	0	0	0	1.73	0	0.11	0	3.29	0	0	0	0	2.82	87.96	0	0	0
3H-4, 11-13.5	40	22.81	29.52	29.55	5.59	0.67	0	0	0	3.82	0	1.04	0	7.91	0.68	0	0	0	2.48	74.83	0.01	0	2.97
3H-4, 31-33.5	40	23.01	29.72	29.75	4.61	0.19	0	0	0	2.25	0	1.92	0.04	7.81	0.61	0	0	0	1.95	79.7	0	0	0.92
3H-4, 51-53.5	40	23.21	29.92	29.95	4.51	0	0	0	0	0	0	0.25	0	2.05	0	0	0	0	1.83	90.47	0	0	0.9
3H-4, 71-73.5	40	23.41	30.12	30.15	6.61	0.19	0	0	0	8.81	0	2.08	0	6.87	0.71	0	0	0	7.36	64.67	0	0	2.7
3H-4, 91-93.5	40	23.61	30.32	30.35	7.89	0	0	0	0	5.22	0	0.41	0	8	0.79	0	0	0	4.19	71.92	0	0	1.58
177-1090D-																							
4H-1, 101-103.5	40	27.41	30.4	30.43	6.57	0.19	0	0	0	8.73	0	3.98	0	11.27	0	0	0	0	4.96	62.46	0	0	1.85
4H-1, 111-113.5	40	27.51	30.5	30.53	14.17	0.16	0	0	0	6.61	0	2.16	0	5.43	0.07	0	0	0	2.85	67.54	0.12	0	0.9
4H-1, 121-123.5	40	27.61	30.6	30.63	8.86	0.5	0.06	0.15	0	4.99	0	2	0	11.79	0.55	0	0	0	2.98	65.18	0.11	0	2.83
4H-1, 131-133.5	40	27.71	30.7	30.73	5.18	0.13	0	0.03	0	7.05	0	2.05	0	9.73	1.17	0	0	0	8.19	57.68	0.01	0	8.77
4H-1, 141-143.5	40	27.81	30.8	30.83	5.82	0	0	0	0	7.27	0	2.48	0	7.62	0.22	0	0	0	1.18	74.22	0.03	0	1.16
4H-2, 1-3.5	40	27.91	30.9	30.93	6.4	0	0	0	0	1.36	0	2.5	0	15.83	0	0	0	0	1.75	71.78	0	0	0.39
4H-2, 21-23.5	40	28.11	31.1	31.13	7.8	0.14	0	0	0	2.59	0	1.92	0	3.39	0	0	0	0	2.45	79.54	0	0	2.18
4H-2, 41-43.5	40	28.31	31.3	31.33	11.9	0.33	0	0	0	6.69	0	2.76	0	5.98	0	0	0	0	1.74	64.18	0	0	6.42
4H-2, 61-63.5	40	28.51	31.5	31.53	6.94	0	0	0	0	1.07	0	2.36	0	10.85	0.36	0	0	0	0.8	76.38	0	0	1.25
4H-2, 81-83.5	40	28.71	31.7	31.73	10.61	0	0	0	0	3.97	0	3.53	0	14.33	0.63	0	0	0	2.62	60.35	0.08	0	3.89
4H-2, 101-103.5	40	28.91	31.9	31.93	8.01	0.07	0	0	0	4.82	0	3.79	0	12.56	0.13	0	0	0	1.2	65.13	0	0	4.28
4H-2, 121-123.5	40	29.11	32.1	32.13	3.01	0	0	0	0	0.59	0	0.19	0	4.35	0.54	0	0	0	3.38	85.23	0	0	2.71
4H-2, 141-143.5	40	29.31	32.3	32.33	4.56	0	0	0	0	1.45	0	1.31	0	6.24	0	0	0	0	4.36	77.29	0	0	4.78
4H-3, 11-13.5	40	29.51	32.5	32.53	13.09	0	0	0	0	3	0	0.94	0	5.47	0	0.02	0.02	0	1.95	72.26	0	0	3.25
4H-3, 31-33.5	40	29.71	32.7	32.73	11.32	2.87	0	0.75	0	5.69	0	0.55	0	4.63	0.71	0	0	0	4.28	62.14	0	0	7.06
4H-3, 51-53.5	40	29.91	32.9	32.93	4.89	0.58	0	0	0	1.29	0	1.23	0	6.1	0	0	0	0	2.01	82.17	0	0	1.73
4H-3, 71-73.5	40	30.11	33.1	33.13	1.81	0.47	0	0	0.47	0.47	0	0.63	0.03	3.78	0.03	0	0	0	3.43	87.92	0	0	0.95
4H-3, 91-93.5	40	30.31	33.3	33.33	1.66	0	0	0	0.71	1.44	0	1.72	0	6.5	0.02	0	0	0	2.83	83.71	0	0	1.42
4H-3, 111-113.5	40	30.51	33.5	33.53	2.68	0	0	0	0	2.47	0	0.76	0.1	16.15	0	0	0	0	1.71	75.32	0	0	0.81
4H-3, 131-133.5	40	30.71	33.7	33.73	9.22	0	0	0	0	5.43	0	2.7	0	14.11	0.64	0	0.08	0	5.86	54.35	0	0	7.61
4H-4, 1-3.5	40	30.91	33.9	33.93	16.62	2.47	0	0.4	0	9.54	0	1.84	0	12.07	1.42	0	0.5	0	4.95	40.91	0	0.71	8.57
4H-4, 21-23.5	40	31.11	34.1	34.13	17.54	3.11	0	1.32	0	8.35	0.08	0.88	0	17.77	1.39	0	1.41	0	4.67	39.54	0	0	3.93
4H-4, 41-43.5	40	31.31	34.3	34.33	15.04	4.54	0	0.79	0.38	7.08	0	2.02	0	10.29	0.95	0	0.05	0	5.11	46.63	0	0	7.11

Table T1 (continued).

Core, section, interval (cm)	Volume (cm ³)	Depth (mbsf)	Depth (mcd)		<i>G. bulloides</i>	<i>G. falconensis</i>	<i>G. aequilateralis</i>	<i>G. calida</i>	<i>G. bradyi</i>	<i>G. glutinata</i>	<i>G. ruber</i> (white)	<i>G. crassaformis</i>	<i>G. hirsuta</i>	<i>G. inflata</i>	<i>G. scitula</i>	<i>G. truncatulinoides</i> (right)	<i>G. truncatulinoides</i> (left)	<i>G. rubescens</i>	<i>N. pachyderma</i> (right)	<i>N. pachyderma</i> (left)	<i>O. universa</i>	<i>T. iota</i>	<i>T. quinqueloba</i>
			Top	Bottom																			
4H-4, 61-63.5	40	31.51	34.5	34.53	10.87	4.25	0	0.69	0	2.75	0	1.51	0	9.34	0.74	0	0.02	0	4.81	53.25	0	0	11.77
4H-4, 81-83.5	40	31.71	34.7	34.73	5.93	0.8	0	0	0	1.78	0	2.33	0	8.58	0.03	0	0	0	2.4	71.73	0	0	6.45
4H-4, 101-103.5	40	31.91	34.9	34.93	8.39	1.21	0	0	0	1.81	0	0.57	0	9.32	0.21	0	0	0	1.71	75.18	0	0	1.61
4H-4, 121-123.5	40	32.11	35.1	35.13	10.76	1.02	0	0	0	2.16	0	2.28	0	13.01	1.08	0	0	0	4.7	60.93	0	0	4.06
4H-4, 141-143.5	40	32.31	35.3	35.33	7.98	2.01	0	0	0	3.29	0	0.92	0	9.82	0.03	0	0	0	5.74	68.35	0	0	1.86
4H-5, 11-13.5	40	32.51	35.5	35.53	1.63	0.62	0	0	0	1.25	0	0.49	0	6.98	0	0	0	0	1.48	86.93	0	0	0.62
4H-5, 31-33.5	40	32.71	35.7	35.73	3.48	0.58	0	0	0	0.18	0	0.4	0	7.44	0	0	0.04	0	1.75	84.38	0	0	1.75
4H-5, 51-53.5	40	32.91	35.9	35.93	3.82	0	0	0	0	0.81	0	0.28	0	3.35	0.45	0	0.05	0	4.58	78.25	0	0.23	8.18
4H-5, 61-63.5	40	33.01	36	36.03	8.85	0.82	0	0.06	0	0.84	0	1.1	0	3.02	1.02	0	0.03	0	2.93	76.56	0	0	4.78
4H-5, 71-73.5	40	33.11	36.1	36.13	8.67	0.21	0	0.05	0	2.84	0	0.59	0	4.09	0.05	0	0	0	2.58	74.59	0	0.42	5.9
4H-5, 81-83.5	40	33.21	36.2	36.23	7.95	0.15	0	0	0	2.77	0	2.25	0	4.39	0.9	0	0.08	0	4.63	70.79	0	0	6.1
4H-5, 91-93.5	40	33.31	36.3	36.33	7.64	0.03	0	0	0	1.67	0	0.53	0	5.67	0.43	0	0.03	0	2.26	74.42	0	0	7.33
4H-5, 111-113.5	40	33.51	36.5	36.53	3.48	0	0	0.04	0	0.04	0	0.63	0	9.37	0	0	0	0	4.18	78.8	0	0	3.45
4H-5, 131-133.5	40	33.71	36.7	36.73	0.93	0.53	0	0	0	0.67	0	0.12	0	9.29	0	0	0	0	2.19	86.27	0	0	0
4H-6, 1-3.5	40	33.91	36.9	36.93	8.84	0.68	0	0	0	2.28	0	2.11	0	11.64	0.68	0	0.08	0	4.4	64.25	0.19	0.61	4.25
177-1090E-																							
4H-3, 29-31.5	40	30.99	37.14	37.17	11.13	0.63	0	0.16	0	5.5	0	1.89	0	6.44	0.01	0	0.05	0	5.87	59.52	0	0	8.8
4H-3, 49-51.5	40	31.19	37.34	37.37	3.46	0.04	0	0.04	0	2.14	0	0.41	0	4.6	0.71	0	0	0	2.27	83.88	0	0	2.44
4H-3, 69-71.5	40	31.39	37.54	37.57	1.21	0.04	0	0	0	0.66	0	0.57	0	6.82	1.21	0	0	0	5.29	80.08	0	0	4.11
4H-3, 89-91.5	40	31.59	37.74	37.77	8.36	0	0	0	0	8.9	0	1.49	0	8.05	1.07	0	0	0	3.41	66.06	0.07	0	2.6
4H-3, 109-111.5	40	31.79	37.94	37.97	4.5	0.14	0	0	0	5.08	0	0.54	0	3.12	1.01	0	0	0	5.11	77.28	0	0	3.23
4H-3, 129-131.5	40	31.99	38.14	38.17	5.72	0.15	0	0	0	5.29	0	1.7	0	7.46	0.57	0	0	0	3.1	73.15	0.02	0	2.85
4H-3, 147.5-150	40	32.17	38.33	38.35	10.52	0.94	0	0	0	2.26	0	1.13	0	15.07	0.47	0	0	0	1.51	67.34	0	0	0.75
4H-4, 19-21.5	40	32.39	38.54	38.57	5.13	0.9	0	0.01	0	1.88	0	0.28	0	8.63	0	0	0	0	5.35	76.02	0	0	1.8
4H-4, 39-41.5	40	32.59	38.74	38.77	9.44	0.16	0	0	0	3.91	0	0.55	0	11.7	0.65	0	0	0	3.91	66.43	0.08	0	3.16
4H-4, 49-51.5	40	32.69	38.84	38.87	9.73	0.42	0	0	0	2.64	0	1.58	0	11.71	0.47	0	0.05	0	2.16	68.63	0.08	0	2.53
4H-4, 59-61.5	40	32.79	38.94	38.97	3.25	0.03	0	0	0	4.02	0	1.49	0	6.24	0.99	0	0	0	1.98	79.54	0	0	2.47
4H-4, 79-81.5	40	32.99	39.14	39.17	1.1	0	0	0	0	0.73	0	1.56	0	3.01	0.04	0	0	0	0.62	92.32	0.02	0	0.59
4H-4, 89-91.5	40	33.09	39.24	39.27	4.03	0.09	0	0.01	0	1.52	0	1.47	0	4.08	0.04	0	0	0	5.19	81.53	0	0	2.05
4H-4, 99-101.5	40	33.19	39.34	39.37	8.41	0.42	0	0	0	2.82	0	1.79	0	8.14	0.68	0	0	0	4.61	68.96	0	0	4.16
4H-4, 109-111.5	40	33.29	39.44	39.47	6.28	0.05	0	0	0	1.85	0	1.7	0	7.97	0.1	0	0	0	2.54	74.71	0	0	4.79
4H-4, 119-121.5	40	33.39	39.54	39.57	2.41	0.1	0	0	0	0.56	0	1.87	0	6.79	0	0	0	0	0.79	86.43	0	0	1.05
4H-4, 139-141.5	40	33.59	39.74	39.77	3.56	0.24	0	0	0	3.36	0	1.16	0	3.98	0.35	0	0	0	8.25	73.86	0	0	5.24
4H-5, 9-11.5	40	33.79	39.94	39.97	8.56	0.61	0	0.04	0	7.69	0	1.56	0	7.23	1.13	0	0	0	18.67	48.5	0	0	6
4H-5, 19-21.5	40	33.89	40.04	40.07	7.49	0.25	0	0.04	0	11.13	0	1.35	0	10.36	0.02	0	0.2	0	20.77	42.55	0.02	0	5.82
4H-5, 29-31.5	40	33.99	40.14	40.17	9.32	2.21	0	0.03	0	5.68	0	1.08	0	6.41	0.03	0	1.45	0	21.56	45.9	0.11	0	6.22
4H-5, 49-51.5	40	34.19	40.34	40.37	4.39	0.71	0	0.01	0	4.45	0	0.87	0	4.64	0	0	0.57	0	12.91	65.86	0.01	0	5.58
4H-5, 69-71.5	40	34.39	40.54	40.57	3.37	0.04	0	0	0	2.06	0	0.53	0	1.92	0	0	0.13	0	13.11	74.56	0	0	4.29
177-1090D-																							
5H-1, 52.5-55	40	36.42	40.64	40.66	5.19	1.39	0	0	0	9.12	0	1.2	0	4.88	0	0	0.15	0	10.13	61.56	0	0	6.37
5H-1, 62.5-65	40	36.53	40.74	40.76	8.69	0.28	0	0.07	0	5.73	0	1.96	0	7.26	0.04	0	0.35	0	13.35	58.9	0.01	0	3.37

Table T1 (continued).

Core, section, interval (cm)	Volume (cm ³)	Depth (mbsf)	Depth (mcd)		<i>G. bulloides</i>	<i>G. falconensis</i>	<i>G. aequilateralis</i>	<i>G. calida</i>	<i>G. bradyi</i>	<i>G. glutinata</i>	<i>G. ruber</i> (white)	<i>G. crassaformis</i>	<i>G. hirsuta</i>	<i>G. inflata</i>	<i>G. scitula</i>	<i>G. truncatulinoides</i> (right)	<i>G. truncatulinoides</i> (left)	<i>G. rubescens</i>	<i>N. pachyderma</i> (right)	<i>N. pachyderma</i> (left)	<i>O. universa</i>	<i>T. iota</i>	<i>T. quinqueloba</i>
			Top	Bottom																			
5H-1, 82.5–85	40	36.72	40.94	40.96	5.5	0.98	0	0	0	3.41	0	2	0	4	0.6	0	0.02	0	3.11	76.77	0	0	3.62
5H-1, 92.5–95	40	36.83	41.04	41.06	3.67	0.09	0	0	0	3.41	0	1.02	0	4.59	0.02	0	0	0	1.79	83.39	0	0	2.02
5H-1, 102.5–105	40	36.92	41.14	41.16	3.14	0	0	0	0	0.2	0	1.22	0	3.1	1.09	0	0.01	0	2.3	87.85	0	0	1.08
5H-1, 122.5–125	40	37.12	41.34	41.36	1.63	0.08	0	0	0	1.72	0	1.53	0	4.36	0	0	0	0	3.73	85.3	0	0	1.65
5H-1, 142.5–145	40	37.33	41.54	41.56	3.78	0.09	0	0	0	0.89	0	1.2	0	5.36	0	0	0.04	0	2.5	81.84	0	0	4.29
5H-2, 12.5–15	40	37.53	41.74	41.76	5.37	0.06	0	0	0	2.68	0	1.86	0	4.06	0.65	0	0	0	3.42	77.98	0	0	3.91
5H-2, 22.5–25	40	37.62	41.84	41.86	2.36	0	0	0	0.56	2.44	0	0.92	0	8.25	0	0	0	0	1.96	80.73	0	0	2.79
5H-2, 32.5–35	40	37.72	41.94	41.96	2.44	0.7	0	0	0	0.7	0	0.95	0	4.6	0	0	0	0	1.66	87.56	0	0	1.39
5H-2, 42.5–45	40	37.83	42.04	42.06	2.25	0	0	0	0	7.66	0	0.74	0	5.35	0	0	0	0	2.54	81.46	0	0	0
5H-2, 52.5–55	40	37.92	42.14	42.16	6.54	0.07	0	0	0	2.85	0	1.75	0	9.97	0.03	0	0	0	3.58	70.96	0	0	4.25
5H-2, 72.5–75	40	38.12	42.34	42.36	0.92	0	0	0	0	0.05	0	1.47	0	4.32	0.86	0	0	0	1.99	90.39	0	0	0
5H-2, 92.5–95	40	38.33	42.54	42.56	3.57	0.03	0	0	0	3.01	0	0.79	0	4.38	0	0	0	0	2.18	83.07	0	0	2.95
5H-2, 102.5–105	40	38.42	42.64	42.66	3.33	0	0	0	0	1.38	0	0.8	0	7.04	0	0	0	0	0.73	84.89	0	0	1.84
5H-2, 112.5–115	40	38.53	42.74	42.76	4.28	1.1	0	0	0	6.09	0	1.75	0	11.73	0	0	0	0	6.03	63.22	0	0	5.79
5H-2, 132.5–135	40	38.72	42.94	42.96	2.96	0	0	0	0	0.4	0	1.25	0	10.29	1.41	0	0	0	1.99	80.29	0	0	1.41
5H-3, 2.5–5	40	38.92	43.14	43.16	4.41	0	0	0	0	0.79	0	0.9	0	4.89	0	0	0	0	12.99	75.25	0	0	0.78
5H-3, 12.5–15	40	39.03	43.24	43.26	6.45	0	0	0	0	5.75	0	0.32	0	2.48	0	0	0	0	16.6	67.62	0	0	0.79
5H-3, 22.5–25	40	39.12	43.34	43.36	2.42	0	0	0	0	0.21	0	1.31	0	7.02	0.05	0	0	0	11.27	74.4	0	0	3.32
5H-3, 42.5–45	40	39.33	43.54	43.56	2.04	0	0	0	0	0.71	0	1.23	0	5.5	0	0	0	0	12.03	77.87	0	0	0.61
5H-3, 62.5–65	40	39.53	43.74	43.76	0.18	0	0	0	0	3.09	0	0.63	0	2.68	0	0	0	0	7.92	85.49	0	0	0
5H-3, 82.5–85	40	39.72	43.94	43.96	2.1	0	0	0	0	0.35	0	1.76	0	3.56	0	0	0	0	4.48	87.75	0	0	0
5H-3, 102.5–105	40	39.92	44.14	44.16	7.52	0.25	0	0.09	0	5.15	0	1.35	0	1.31	0.02	0	0	0	5.03	73.77	0	0	5.52
5H-3, 122.5–125	40	40.12	44.34	44.36	1.41	0	0	0	0	1.71	0	0.54	0	1.6	0	0	0	0	2.48	91.47	0	0	0.8

Note: From 44.34 to 11.63 mcd recorded as percent of total foraminiferal assemblages.

Table T2. SSST estimates by MAT, percent of foraminiferal fragments, and IRD, Holes 1090B, 1090D, 1090E (44.34 to 11.63 mcd). (See table notes. Continued on next four pages.)

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		SSST (°C)	Standard deviation (°C)	Dissimilarity coefficient	Foraminiferal fragments (%)	IRD/g sediment
		Top	Bottom					
177-1090D-								
2H-2, 58-60.5	9.48	11.63	11.66	8.86	1.64	0.04	14.69	1,924.93
2H-2, 68-70.5	9.58	11.73	11.76	6.14	1.02	0.02	1.81	721.85
2H-2, 78-80.5	9.68	11.83	11.86	6.68	1.17	0.06	6.53	0.00
2H-2, 88-90.5	9.78	11.93	11.96	6.98	1.18	0.05	4.7	1,313.47
2H-2, 98-100.5	9.88	12.03	12.06	7.79	1.93	0.06	5.15	0.00
2H-2, 108-110.5	9.98	12.13	12.16	18.08	3.34	0.06	5.15	0.00
2H-2, 118-120.5	10.08	12.23	12.26	18.68	3.59	0.09	7.03	0.00
2H-2, 128-130.5	10.18	12.33	12.36	16.55	4.51	0.07	7.53	0.00
2H-2, 138-140.5	10.28	12.43	12.46	15.21	5.73	0.08	7.25	608.52
2H-2, 148-150	10.38	12.53		11.7	4.46	0.09	4.48	0.00
2H-3, 8-10.5	10.48	12.63	12.66	10.26	2.44	0.06	1.85	0.00
2H-3, 18-20.5	10.58	12.73	12.76	9.24	1.86	0.04	1.1	0.00
2H-3, 28-30.5	10.68	12.83	12.86	9.19	1.89	0.04	1	0.00
2H-3, 38-40.5	10.78	12.93	12.96	10.37	2.51	0.03	3.12	106.53
2H-3, 48-50.5	10.88	13.03	13.06	6.84	1.13	0.03	5.58	104.35
2H-3, 58-60.5	10.98	13.13	13.16	7.72	1.58	0.01	7.37	248.56
2H-3, 68-70.5	11.08	13.23	13.26	7.72	1.58	0.01	7.45	1,689.48
2H-3, 78-80.5	11.18	13.33	13.36	4.5	1.2	0.01	6.37	899.22
2H-3, 88-90.5	11.28	13.43	13.46	5.77	0.91	0.01	10.48	5,188.83
2H-3, 98-100.5	11.38	13.53	13.56	3.33	0.48	0	5.59	3,772.95
2H-3, 108-110.5	11.48	13.63	13.66	3.56	0.65	0	6.46	16,795.45
2H-3, 118-120.5	11.58	13.73	13.76	3.1	0.96	0	8.2	18,715.36
2H-3, 128-130.5	11.68	13.83	13.86	3.53	1.07	0	6.25	17,014.57
2H-3, 138-140.5	11.78	13.93	13.96	5.76	0.83	0.01	10.24	4,582.29
2H-3, 147.5-150	11.88	14.03		4.82	1.24	0.01	9.72	14,392.94
2H-4, 8-10.5	11.98	14.13	14.16	5.26	1.12	0	8.26	14,149.16
2H-4, 18-20.5	12.08	14.23	14.26	3.89	0.95	0	5.37	9,527.26
2H-4, 28-30.5	12.18	14.33	14.36	3.06	0.93	0.01	5.57	8,143.80
2H-4, 38-40.5	12.28	14.43	14.46	4.22	1.32	0.01	5.85	8,891.18
2H-4, 48-50.5	12.38	14.53	14.56	4.5	1.2	0.01	5.59	0.00
2H-4, 58-60.5	12.48	14.63	14.66	5	1.23	0.01	5.11	2,494.52
2H-4, 68-70.5	12.58	14.73	14.76	5	1.23	0.01	5.83	12,158.38
2H-4, 78-80.5	12.68	14.83	14.86	5.44	1.26	0.02	5.48	1,728.26
2H-4, 88-90.5	12.78	14.93	14.96	5.55	1.14	0.01	7.69	1,083.85
2H-4, 98-100.5	12.88	15.03	15.06	2.96	1.26	0	3.65	2,953.10
2H-4, 108-110.5	12.98	15.13	15.16	5.91	0.76	0.01	6.77	220.46
2H-4, 118-120.5	13.08	15.23	15.26	6.66	1.28	0.02	7.08	90.54
2H-4, 128-130.5	13.18	15.33	15.36	7.24	1.65	0.03	4.83	137.80
2H-4, 138-140.5	13.28	15.43	15.46	6.87	1.1	0.02	5.79	575.41
2H-4, 148-150	13.38	15.53		6.76	1.15	0.02	4.66	0.00
2H-5, 8-10.5	13.48	15.63	15.66	7.23	1.65	0.03	4.54	120.17
2H-5, 18-20.5	13.58	15.73	15.76	6.8	1.12	0.02	5.5	463.32
2H-5, 28-30.5	13.68	15.83	15.86	5.58	0.84	0.01	3.68	1,107.14
2H-5, 38-40.5	13.78	15.93	15.96	6.8	1.12	0.01	2.4	0.00
2H-5, 48-50.5	13.88	16.03	16.06	7.23	1.65	0.02	1.61	0.00
2H-5, 58-60.5	13.98	16.13	16.16	6.81	1.12	0.03	10.06	147.79
2H-5, 68-70.5	14.08	16.23	16.26	6.36	0.93	0.02	1.71	74.66
2H-5, 78-80.5	14.18	16.33	16.36	7.24	1.65	0.03	5.24	689.22
2H-5, 88-90.5	14.28	16.43	16.46	5.12	1.18	0.01	3.86	3,478.68
2H-5, 98-100.5	14.38	16.53	16.56	5.01	1.22	0.01	3.73	1,896.73
2H-5, 108-110.5	14.48	16.63	16.66	3.82	1.54	0.01	3.49	2,661.12
2H-5, 118-120.5	14.58	16.73	16.76	3.8	1.52	0	2.89	3,051.96
177-1090B-								
3H-1, 139-141.5	15.09	16.83	16.86	3.7	1.59	0.01	6.96	4,731.56
3H-1, 148-150	15.18	16.93		3.01	0.91	0	7.19	4,082.11
3H-2, 8-10.5	15.28	17.03	17.06	3.28	1.02	0.01	11.69	8,572.36
3H-2, 18-20.5	15.38	17.13	17.16	6.14	1.02	0.01	11.32	1,906.53
3H-2, 28-30.5	15.48	17.23	17.26	6.8	1.12	0.01	5.62	2,674.47
3H-2, 38-40.5	15.58	17.33	17.36	10.12	3.37	0.02	5.15	0.00
3H-2, 48-50.5	15.68	17.43	17.46	7.54	1.55	0.02	3.09	216.34
3H-2, 58-60.5	15.78	17.53	17.56	7.83	1.71	0.03	3.05	99.94
3H-2, 68-70.5	15.88	17.63	17.66	3.96	0.93	0	3.92	1,701.96
3H-2, 78-80.5	15.98	17.73	17.76	5.26	1.12	0.01	3.12	651.24
3H-2, 88-90.5	16.08	17.83	17.86	5.91	0.76	0.01	2.81	2,209.17

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		SSST (°C)	Standard deviation (°C)	Dissimilarity coefficient	Foraminiferal fragments (%)	IRD/g sediment
		Top	Bottom					
3H-2, 98-100.5	16.18	17.93	17.96	7.24	1.66	0.02	4.54	4,502.04
3H-2, 108-110.5	16.28	18.03	18.06	6.14	1.02	0.01	6.54	397.99
3H-2, 118-120.5	16.38	18.13	18.16	7.83	1.71	0.02	5.05	408.61
3H-2, 128-130.5	16.48	18.23	18.26	8.87	1.65	0.03	3.68	0.00
3H-2, 138-140.5	16.58	18.33	18.36	6.97	1.39	0.03	3.05	356.30
3H-2, 148-150	16.68	18.43		4.44	1.19	0.01	5.65	1,103.83
3H-3, 8-10.5	16.78	18.53	18.56	4.41	1.24	0.01	3.3	266.72
3H-3, 18-20.5	16.88	18.63	18.66	3.08	0.87	0	2.43	803.97
3H-3, 28-30.5	16.98	18.73	18.76	3.02	0.95	0	2.38	705.04
3H-3, 38-40.5	17.08	18.83	18.86	3.04	0.96	0	3.68	1,044.19
3H-3, 48-50.5	17.18	18.93	18.96	3.04	0.96	0	2.31	1,055.64
3H-3, 58-60.5	17.28	19.03	19.06	3.04	0.96	0	3.54	884.39
3H-3, 68-70.5	17.38	19.13	19.16	3.01	0.95	0	1.98	300.27
3H-3, 78-80.5	17.48	19.23	19.26	3.13	0.98	0	2.39	420.54
3H-3, 88-90.5	17.58	19.33	19.36	3.04	0.96	0.01	2.25	237.63
3H-3, 98-100.5	17.68	19.43	19.46	3.47	1.51	0.01	2.67	317.48
3H-3, 108-110.5	17.78	19.53	19.56	3.48	1.53	0.01	3.24	2,387.27
3H-3, 118-120.5	17.88	19.63	19.66	3.11	0.91	0.01	2.55	1,219.14
3H-3, 128-130.5	17.98	19.73	19.76	2.99	0.78	0	3.02	1,866.49
3H-3, 138-140.5	18.08	19.83	19.86	3.2	1.29	0	3.31	1,896.94
3H-3, 148-150	18.18	19.93		2.94	1.21	0	2.51	2,803.37
3H-4, 8-10.5	18.28	20.03	20.06	3.04	1.24	0	3.33	3,862.92
3H-4, 18-20.5	18.38	20.13	20.16	3.13	1.29	0	2.73	863.47
3H-4, 28-30.5	18.48	20.23	20.26	2.82	0.92	0	2.49	3,248.70
3H-4, 38-40.5	18.58	20.33	20.36	3.1	1.11	0	2.66	690.03
3H-4, 48-50.5	18.68	20.43	20.46	2.7	0.76	0	3.26	3,085.76
3H-4, 58-60.5	18.78	20.53	20.56	3.13	1.29	0	3.02	233.14
3H-4, 68-70.5	18.88	20.63	20.66	2.99	0.78	0.01	3.06	866.45
3H-4, 78-80.5	18.98	20.73	20.76	3.02	0.95	0	3.06	1,666.04
3H-4, 88-90.5	19.08	20.83	20.86	3.23	1.22	0	4.41	1,751.12
3H-4, 98-100.5	19.18	20.93	20.96	3.05	0.82	0	6.97	5,351.17
3H-4, 108-110.5	19.28	21.03	21.06	3.91	0.72	0.01	5.02	6,732.67
3H-4, 118-120.5	19.38	21.13	21.16	2.94	1.21	0	2.77	1,680.39
3H-4, 128-130.5	19.48	21.23	21.26	3.19	1.29	0	3.02	12,886.66
3H-4, 138-140.5	19.58	21.33	21.36	2.75	1.42	0	4.26	18,952.91
3H-4, 144-148	19.64	21.43		3.1	1.11	0	3.2	6,428.39
3H-5, 8-10.5	19.78	21.53	21.56	3.5	1.2	0	3.5	3,281.81
3H-5, 18-20.5	19.88	21.63	21.66	2.9	0.84	0	4.8	9,172.70
3H-5, 28-30.5	19.98	21.73	21.76	3.2	1.04	0	3.4	7,789.42
3H-5, 38-40.5	20.08	21.83	21.86	4.35	1.26	0.01	2.76	448.21
3H-5, 48-50.5	20.18	21.93	21.96	5.6	1.16	0.03	2.82	620.82
3H-5, 58-60.5	20.28	22.03	22.06	6.1	1.31	0.03	2.4	0.00
3H-5, 68-70.5	20.38	22.13	22.16	6.84	1.13	0.04	1.15	608.85
177-1090D-								
3H-2, 76-78.5	19.16	22.23	22.26	6.33	1.26	0.03	1.29	0.00
3H-2, 86-88.5	19.26	22.33	22.36	5.12	1.1	0.02	1.76	574.12
3H-2, 96-98.5	19.36	22.43	22.46	5.35	1.11	0.03	1.81	0.00
3H-2, 106-108.5	19.46	22.53	22.56	6.83	1.13	0.04	3.06	0.00
3H-2, 116-118.5	19.56	22.63	22.66	6.44	1.32	0.01	5.2	2,237.76
3H-2, 126-128.5	19.66	22.73	22.76	4.95	1.22	0.01	4.25	4,808.59
3H-2, 136-138.5	19.76	22.83	22.86	2.94	0.93	0	3.73	7,584.46
3H-2, 146-148.5	19.86	22.93	22.96	2.98	1.22	0	2.83	4,450.16
3H-3, 2-4	19.92	22.99	23.01	2.9	0.83	0	1.88	4,225.97
3H-3, 12-14	20.02	23.09	23.11	3.17	1.04	0	1.95	492.86
3H-3, 22-24	20.12	23.19	23.21	3.17	1.04	0	2.17	949.69
3H-3, 32-34	20.22	23.29	23.31	3.37	1.02	0.01	3.11	1,081.73
3H-3, 42-44	20.32	23.39	23.41	4.53	0.92	0.01	6.94	4,466.41
3H-3, 52-54	20.42	23.49	23.51	2.91	1.26	0	6.92	11,490.58
3H-3, 62-64	20.52	23.59	23.61	2.97	1.57	0	7.13	16,918.13
3H-3, 72-74	20.62	23.69	23.71	2.88	1.48	0	5.87	10,024.36
3H-3, 82-84	20.72	23.79	23.81	3.35	1.37	0	3.32	5,746.69
3H-3, 92-94	20.82	23.89	23.91	3	1.58	0	4.92	3,338.39
3H-3, 102-104	20.92	23.99	24.01	3.3	1.02	0	6.65	5,539.67
3H-3, 112-114	21.02	24.09	24.11	4.29	0.74	0.01	4.83	1,473.14
3H-3, 122-124	21.12	24.19	24.21	4.16	0.75	0.01	6.41	3,910.65
3H-3, 132-134	21.22	24.29	24.31	3.55	1.13	0	5.06	3,215.36
3H-3, 142-144	21.32	24.39	24.41	4.28	0.74	0	6.56	1,475.94
3H-4, 6-8.5	21.46	24.53	24.56	4.52	0.92	0.02	8.78	1,729.27

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		SSST (°C)	Standard deviation (°C)	Dissimilarity coefficient	Foraminiferal fragments (%)	IRD/g sediment
		Top	Bottom					
3H-4, 16-18.5	21.56	24.63	24.66	4.5	0.58	0.02	3.67	0.00
3H-4, 26-28.5	21.66	24.73	24.76	4.94	0.94	0.03	3.12	0.00
3H-4, 36-38.5	21.76	24.83	24.86	6.83	1.13	0.05	2.16	0.00
3H-4, 46-48.5	21.86	24.93	24.96	6.65	1.19	0.03	1.92	0.00
3H-4, 56-58.5	21.96	25.03	25.06	7.86	1.94	0.05	2.57	0.00
3H-4, 66-68.5	22.06	25.13	25.16	6.27	1.18	0.02	3.4	1,090.08
3H-4, 76-78.5	22.16	25.23	25.26	5.42	0.74	0.03	3.02	983.63
3H-4, 86-88.5	22.26	25.33	25.36	5.27	0.94	0.02	3.91	433.12
3H-4, 96-98.5	22.36	25.43	25.46	5.27	0.94	0.03	4.29	1,704.14
3H-4, 106-108.5	22.46	25.53	25.56	4.16	0.76	0.01	2.18	2,843.88
3H-4, 116-118.5	22.56	25.63	25.66	3.43	0.52	0.01	3.32	1,219.93
3H-4, 126-128.5	22.66	25.73	25.76	3.35	1.37	0	3.08	4,194.81
3H-4, 136-138.5	22.76	25.83	25.86	3.52	1.13	0	5.25	2,928.19
3H-4, 146-148.5	22.86	25.93	25.96	3.52	0.73	0	4.17	9,210.71
3H-5, 6-8.5	22.96	26.03	26.06	3.78	1.14	0.01	4.67	6,153.85
3H-5, 16-18.5	23.06	26.13	26.16	3.91	0.72	0	6.83	13,707.76
3H-5, 26-28.5	23.16	26.23	26.26	4	0.73	0	5.83	7,627.12
3H-5, 36-38.5	23.26	26.33	26.36	3.78	0.78	0	5.37	3,150.11
3H-5, 46-48.5	23.36	26.43	26.46	3.91	0.72	0	8.33	10,722.07
3H-5, 56-58.5	23.46	26.53	26.56	3.86	0.72	0	5.19	3,570.10
3H-5, 66-68.5	23.56	26.63	26.66	3.91	0.72	0	4.11	10,283.52
3H-5, 76-78.5	23.66	26.73	26.76	4.08	0.82	0	3.72	18,229.87
3H-5, 86-88.5	23.76	26.83	26.86	3.61	1	0	4.95	3,341.07
3H-5, 96-98.5	23.86	26.93	26.96	4.44	0.86	0.01	4.46	6,284.16
3H-5, 106-108.5	23.96	27.03	27.06	4.59	0.91	0.02	3.05	0.00
177-1090E-								
3H-2, 71-73.5	20.41	27.12	27.15	5.08	0.7	0.03	2.68	0.00
3H-2, 81-83.5	20.51	27.22	27.25	5.27	0.94	0.02	5.47	588.69
3H-2, 91-93.5	20.61	27.32	27.35	4.22	0.78	0.01	5.29	487.51
3H-2, 101-103.5	20.71	27.42	27.45	4.36	0.82	0.01	3.02	450.94
3H-2, 111-113.5	20.81	27.52	27.55	4.52	0.92	0.01	3.49	554.56
3H-2, 121-123.5	20.91	27.62	27.65	4.44	0.86	0.01	6.38	1,090.77
3H-2, 131-133.5	21.01	27.72	27.75	5.8	1.28	0.03	3.97	136.26
3H-2, 141-143.5	21.11	27.82	27.85	5.8	0.84	0.03	7.39	577.97
3H-3, 1-3.5	21.21	27.92	27.95	5.27	0.94	0.03	7.77	391.03
3H-3, 11-13.5	21.31	28.02	28.05	5.34	0.81	0.03	3.22	3,073.09
3H-3, 21-23.5	21.41	28.12	28.15	6.79	1.12	0.04	2.9	0.00
3H-3, 31-33.5	21.51	28.22	28.25	6.68	1.17	0.05	4.22	0.00
3H-3, 41-43.5	21.61	28.32	28.35	5.2	1.12	0.02	6.79	0.00
3H-3, 51-53.5	21.71	28.42	28.45	2.96	0.61	0	7.46	1,986.00
3H-3, 61-63.5	21.81	28.52	28.55	3.52	0.73	0.01	8.76	2,188.50
3H-3, 81-83.5	22.01	28.72	28.75	3.32	0.75	0	12.23	976.27
3H-3, 91-93.5	22.11	28.82	28.85	4.06	0.71	0	14.1	5,481.93
3H-3, 101-103.5	22.21	28.92	28.95	4.16	0.75	0.01	17.46	4,077.71
3H-3, 111-113.5	22.31	29.02	29.05	3.7	0.78	0	11.73	8,447.99
3H-3, 121-123.5	22.41	29.12	29.15	3.51	0.71	0.01	12.75	2,098.91
3H-3, 141-143.5	22.61	29.32	29.35	3.92	0.73	0.01	8.17	9,893.42
3H-4, 11-13.5	22.81	29.52	29.55	4.28	0.74	0.01	5.94	24,615.38
3H-4, 31-33.5	23.01	29.72	29.75	4.04	0.74	0.01	6.55	13,062.14
3H-4, 51-53.5	23.21	29.92	29.95	3.58	0.66	0	9.37	4,552.38
3H-4, 71-73.5	23.41	30.12	30.15	4.56	1.17	0.03	6.83	1,238.26
3H-4, 91-93.5	23.61	30.32	30.35	4.66	1.16	0.02	7.1	2,229.82
177-1090D-								
4H-1, 101-103.5	27.41	30.4	30.43	4.82	1.18	0.03	4.72	470.46
4H-1, 111-113.5	27.51	30.5	30.53	5.2	1.12	0.02	4.96	0.00
4H-1, 121-123.5	27.61	30.6	30.63	4.53	0.92	0.02	5.34	0.00
4H-1, 131-133.5	27.71	30.7	30.73	5.23	0.87	0.03	4.69	235.91
4H-1, 141-143.5	27.81	30.8	30.83	4.28	0.74	0.02	10.89	5,082.66
4H-2, 1-3.5	27.91	30.9	30.93	4.44	0.86	0.01	12.55	4,535.43
4H-2, 21-23.5	28.11	31.1	31.13	3.61	0.68	0.01	5.47	5,575.58
4H-2, 41-43.5	28.31	31.3	31.33	4.96	0.91	0.02	7.57	6,005.87
4H-2, 61-63.5	28.51	31.5	31.53	4.44	0.86	0.01	6.48	1,342.42
4H-2, 81-83.5	28.71	31.7	31.73	4.82	0.63	0.02	3.71	0.00
4H-2, 101-103.5	28.91	31.9	31.93	4.53	0.92	0.02	5.35	1,455.10
4H-2, 121-123.5	29.11	32.1	32.13	3.59	0.8	0	6.99	2,927.28
4H-2, 141-143.5	29.31	32.3	32.33	3.89	1.17	0.01	7.09	227.60
4H-3, 11-13.5	29.51	32.5	32.53	4.47	0.93	0.01	5.08	192.26

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		SSST (°C)	Standard deviation (°C)	Dissimilarity coefficient	Foraminiferal fragments (%)	IRD/g sediment
		Top	Bottom					
4H-3, 31-33.5	29.71	32.7	32.73	5.08	1.11	0.02	3.68	581.30
4H-3, 51-53.5	29.91	32.9	32.93	4.02	0.73	0.01	7.89	3,635.45
4H-3, 71-73.5	30.11	33.1	33.13	3.75	0.72	0	6.22	7,890.66
4H-3, 91-93.5	30.31	33.3	33.33	4.03	0.73	0.01	10.76	3,896.92
4H-3, 111-113.5	30.51	33.5	33.53	4.44	0.86	0.01	21.22	5,557.39
4H-3, 131-133.5	30.71	33.7	33.73	5.42	0.74	0.03	3.68	0.00
4H-4, 1-3.5	30.91	33.9	33.93	6.8	1.12	0.05	3.23	0.00
4H-4, 21-23.5	31.11	34.1	34.13	6.68	1.17	0.05	1.96	0.00
4H-4, 41-43.5	31.31	34.3	34.33	6.01	0.82	0.04	1.48	0.00
4H-4, 61-63.5	31.51	34.5	34.53	5.38	0.79	0.02	2.43	0.00
4H-4, 81-83.5	31.71	34.7	34.73	4.36	0.82	0.01	5.18	658.03
4H-4, 101-103.5	31.91	34.9	34.93	4.44	0.86	0.01	8.14	498.18
4H-4, 121-123.5	32.11	35.1	35.13	5.11	0.89	0.01	4.17	0.00
4H-4, 141-143.5	32.31	35.3	35.33	4.53	0.92	0.02	9.78	6,488.99
4H-5, 11-13.5	32.51	35.5	35.53	4	0.73	0.01	19.63	11,323.12
4H-5, 31-33.5	32.71	35.7	35.73	4.02	0.73	0	19.15	6,210.04
4H-5, 51-53.5	32.91	35.9	35.93	3.29	1.07	0	5.16	508.74
4H-5, 61-63.5	33.01	36	36.03	3.61	1.27	0.01	7.61	699.60
4H-5, 71-73.5	33.11	36.1	36.13	3.93	0.96	0.01	7.55	396.78
4H-5, 81-83.5	33.21	36.2	36.23	4.64	0.99	0.01	7.08	775.81
4H-5, 91-93.5	33.31	36.3	36.33	4.2	0.8	0.01	8.12	2,317.71
4H-5, 111-113.5	33.51	36.5	36.53	4.16	0.75	0	22.22	10,532.78
4H-5, 131-133.5	33.71	36.7	36.73	4.1	0.78	0	20.29	7,385.63
4H-6, 1-3.5	33.91	36.9	36.93	4.53	0.92	0.01	16.34	1,412.10
177-1090E-								
4H-3, 29-31.5	30.99	37.14	37.17	5.4	1.07	0.02	5	541.62
4H-3, 49-51.5	31.19	37.34	37.37	3.99	0.76	0.01	42.77	31,610.94
4H-3, 69-71.5	31.39	37.54	37.57	3.7	0.7	0	13.24	1,104.06
4H-3, 89-91.5	31.59	37.74	37.77	4.75	1.21	0.03	6.2	258.73
4H-3, 109-111.5	31.79	37.94	37.97	4	1.24	0.01	4.68	1,410.19
4H-3, 129-131.5	31.99	38.14	38.17	4.4	1.14	0.02	5.5	849.68
4H-3, 147.5-150	32.17	38.33	38.35	4.53	0.92	0.01	9.36	1,218.65
4H-4, 19-21.5	32.39	38.54	38.57	4.16	0.75	0.01	29.6	8,605.41
4H-4, 39-41.5	32.59	38.74	38.77	4.53	0.92	0.02	11.49	172.70
4H-4, 49-51.5	32.69	38.84	38.87	4.53	0.92	0.01	9.2	492.14
4H-4, 59-61.5	32.79	38.94	38.97	4.02	0.73	0.01	14.76	1,017.88
4H-4, 79-81.5	32.99	39.14	39.17	3.68	1.25	0	11.44	1,543.93
4H-4, 89-91.5	33.09	39.24	39.27	3.58	0.78	0.01	11.09	2,731.22
4H-4, 99-101.5	33.19	39.34	39.37	4.53	0.92	0.01	6.14	457.83
4H-4, 109-111.5	33.29	39.44	39.47	4.35	0.82	0.01	6.72	553.14
4H-4, 119-121.5	33.39	39.54	39.57	4	0.73	0	9.11	3,051.49
4H-4, 139-141.5	33.59	39.74	39.77	3.82	1.26	0.01	6.39	2,597.67
4H-5, 9-11.5	33.79	39.94	39.97	6.45	1.06	0.03	4.57	728.71
4H-5, 19-21.5	33.89	40.04	40.07	6.67	1.15	0.05	2.87	0.00
4H-5, 29-31.5	33.99	40.14	40.17	6.56	1.17	0.03	3.06	0.00
4H-5, 49-51.5	34.19	40.34	40.37	4.87	1.74	0.02	14.15	13,490.97
4H-5, 69-71.5	34.39	40.54	40.57	3.66	1.29	0.01	9.23	358.13
177-1090D-								
5H-1, 52.5-55	36.42	40.64	40.66	5.42	1.58	0.03	4.1	403.39
5H-1, 62.5-65	36.53	40.74	40.76	6.21	1.23	0.02	10.42	4,771.08
5H-1, 82.5-85	36.72	40.94	40.96	3.55	1.11	0.01	4.41	817.40
5H-1, 92.5-95	36.83	41.04	41.06	4.05	0.71	0.01	8.86	861.11
5H-1, 102.5-105	36.92	41.14	41.16	3.64	0.74	0	19.41	4,264.14
5H-1, 122.5-125	37.12	41.34	41.36	3.88	0.68	0.01	22.59	2,863.05
5H-1, 142.5-145	37.33	41.54	41.56	3.67	1.1	0.01	23.06	2,051.83
5H-2, 12.5-15	37.53	41.74	41.76	3.55	1.11	0.01	30.2	2,948.33
5H-2, 22.5-25	37.62	41.84	41.86	4.04	0.74	0.01	12.85	227.51
5H-2, 32.5-35	37.72	41.94	41.96	3.91	0.72	0	20.33	10,705.32
5H-2, 42.5-45	37.83	42.04	42.06	3.99	0.76	0.02	14.26	494.14
5H-2, 52.5-55	37.92	42.14	42.16	4.42	0.83	0.01	12.26	611.85
5H-2, 72.5-75	38.12	42.34	42.36	3.54	1.1	0	12.57	8,592.25
5H-2, 92.5-95	38.33	42.54	42.56	3.99	0.76	0.01	18.19	2,843.74
5H-2, 102.5-105	38.42	42.64	42.66	4.03	0.73	0.01	15.98	144.46
5H-2, 112.5-115	38.53	42.74	42.76	4.96	0.93	0.02	10.52	945.27
5H-2, 132.5-135	38.72	42.94	42.96	4.09	0.78	0.01	25.63	12,297.52
5H-3, 2.5-5	38.92	43.14	43.16	3.82	1.26	0.01	12.59	507.65
5H-3, 12.5-15	39.03	43.24	43.26	5.03	1.95	0.02	13.98	3,719.97

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		SSST (°C)	Standard deviation (°C)	Dissimilarity coefficient	Foraminiferal fragments (%)	IRD/g sediment
		Top	Bottom					
5H-3, 22.5–25	39.12	43.34	43.36	3.99	1.26	0	12.8	1,919.63
5H-3, 42.5–45	39.33	43.54	43.56	3.84	1.23	0.01	10.56	1,285.83
5H-3, 62.5–65	39.53	43.74	43.76	3.21	1.05	0.01	16.36	10,560.73
5H-3, 82.5–85	39.72	43.94	43.96	3.55	0.75	0	11.36	4,314.20
5H-3, 102.5–105	39.92	44.14	44.16	3.89	1.55	0.01	6.52	336.65
5H-3, 122.5–125	40.12	44.34	44.36	3.34	1.03	0	13.16	2,264.64

Notes: SSST = summer sea-surface temperature. MAT = modern analog technique (used to calculate SSSTs). IRD = ice-rafted debris. The mean dissimilarity coefficient is given for the 10 best modern analogs. Percent of foraminiferal fragments is after Le and Shackleton, 1992.

Table T3. Benthic foraminiferal (*Uvigerina peregrina*, *Fontbotia wuellerstorfi*, and species of the related genus *Cibicoides*) oxygen isotope in early to mid-Pleistocene, Holes 1090B, 1090D, 1090E (44.54 to 10.83 mcd). (Continued on next two pages.)

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		<i>Cibicoides</i> ¹⁸ O (‰)	<i>Uvigerina</i> ¹⁸ O (‰)	Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		<i>Cibicoides</i> ¹⁸ O (‰)	<i>Uvigerina</i> ¹⁸ O (‰)
		Top	Bottom					Top	Bottom		
177-1090D-						3H-2, 28-30.5	15.48	17.23	17.26	3.18	
2H-1, 128-130.5	8.68	10.83	10.86	3.64		3H-2, 38-40.5	15.58	17.33	17.36	2.87	
2H-1, 138-140.5	8.78	10.93	10.96	3.56		3H-2, 48-50.5	15.68	17.43	17.46	2.79	
2H-1, 148-150.5	8.88	11.03		3.57		3H-2, 58-60.5	15.78	17.53	17.56	3.32	
2H-2, 8-10.5	8.98	11.13	11.16	3.55		3H-2, 68-70.5	15.88	17.63	17.66	3.6	
2H-2, 18-20.5	9.08	11.23	11.26	3.45		3H-2, 78-80.5	15.98	17.73	17.76	3.56	
2H-2, 28-30.5	9.18	11.33	11.36	3.36		3H-2, 88-90.5	16.08	17.83	17.86	3.38	
2H-2, 38-40.5	9.28	11.43	11.46	3.21		3H-2, 98-100.5	16.18	17.93	17.96	3.32	
2H-2, 48-50.5	9.38	11.53	11.56	3.25		3H-2, 108-110.5	16.28	18.03	18.06	3.19	
2H-2, 58-60.5	9.48	11.63	11.66	3.37		3H-2, 118-120.5	16.38	18.13	18.16	3.04	
2H-2, 68-70.5	9.58	11.73	11.76	3.38		3H-2, 128-130.5	16.48	18.23	18.26	3.05	
2H-2, 78-80.5	9.68	11.83	11.86	3.07		3H-2, 138-140.5	16.58	18.33	18.36	3.6	
2H-2, 88-90.5	9.78	11.93	11.96	3.06		3H-2, 148-150	16.68	18.43		4.04	
2H-2, 98-100.5	9.88	12.03	12.06	2.75		3H-3, 8-10.5	16.78	18.53	18.56	4.29	
2H-2, 108-110.5	9.98	12.13	12.16	2.72		3H-3, 18-20.5	16.88	18.63	18.66	4.42	
2H-2, 118-120.5	10.08	12.23	12.26	2.63		3H-3, 28-30.5	16.98	18.73	18.76	4.48	
2H-2, 128-130.5	10.18	12.33	12.36	2.65		3H-3, 38-40.5	17.08	18.83	18.86	4.47	
2H-2, 138-140.5	10.28	12.43	12.46	2.62		3H-3, 48-50.5	17.18	18.93	18.96	4.4	
2H-2, 148-150	10.38	12.53		2.65		3H-3, 58-60.5	17.28	19.03	19.06	4.35	
2H-3, 8-10.5	10.48	12.63	12.66	2.77		3H-3, 68-70.5	17.38	19.13	19.16	4.34	
2H-3, 18-20.5	10.58	12.73	12.76	3.12		3H-3, 78-80.5	17.48	19.23	19.26	4.35	
2H-3, 28-30.5	10.68	12.83	12.86	3.24		3H-3, 88-90.5	17.58	19.33	19.36	4.22	
2H-3, 38-40.5	10.78	12.93	12.96	3.29	4.27	3H-3, 98-100.5	17.68	19.43	19.46	4.24	
2H-3, 48-50.5	10.88	13.03	13.06		4.56	3H-3, 108-110.5	17.78	19.53	19.56	4.28	
2H-3, 58-60.5	10.98	13.13	13.16		4.9	3H-3, 118-120.5	17.88	19.63	19.66	4.31	
2H-3, 68-70.5	11.08	13.23	13.26		4.96	3H-3, 128-130.5	17.98	19.73	19.76	4.32	
2H-3, 78-80.5	11.18	13.33	13.36	4.33	4.99	3H-3, 138-140.5	18.08	19.83	19.86	4.23	
2H-3, 88-90.5	11.28	13.43	13.46	4.27		3H-3, 148-150	18.18	19.93		4.22	
2H-3, 98-100.5	11.38	13.53	13.56	4.23		3H-4, 8-10.5	18.28	20.03	20.06	4.17	
2H-3, 108-110.5	11.48	13.63	13.66	4.17		3H-4, 18-20.5	18.38	20.13	20.16	4.21	
2H-3, 118-120.5	11.58	13.73	13.76	4.08		3H-4, 28-30.5	18.48	20.23	20.26	4.14	
2H-3, 128-130.5	11.68	13.83	13.86	3.97		3H-4, 38-40.5	18.58	20.33	20.36	4.06	
2H-3, 138-140.5	11.78	13.93	13.96	3.89		3H-4, 48-50.5	18.68	20.43	20.46		
2H-3, 147.5-150	11.88	14.03		3.89		3H-4, 58-60.5	18.78	20.53	20.56		4.59
2H-4, 8-10.5	11.98	14.13	14.16	3.84		3H-4, 68-70.5	18.88	20.63	20.66	3.82	
2H-4, 18-20.5	12.08	14.23	14.26	3.9		3H-4, 78-80.5	18.98	20.73	20.76	4	
2H-4, 28-30.5	12.18	14.33	14.36	3.87		3H-4, 88-90.5	19.08	20.83	20.86	3.86	
2H-4, 38-40.5	12.28	14.43	14.46	3.69		3H-4, 98-100.5	19.18	20.93	20.96	3.7	
2H-4, 48-50.5	12.38	14.53	14.56	3.23	3.76	3H-4, 108-110.5	19.28	21.03	21.06	3.79	
2H-4, 58-60.5	12.48	14.63	14.66	3.68	3.82	3H-4, 118-120.5	19.38	21.13	21.16	3.8	
2H-4, 68-70.5	12.58	14.73	14.76	3.55	4.05	3H-4, 128-130.5	19.48	21.23	21.26	3.38	
2H-4, 78-80.5	12.68	14.83	14.86		3.75	3H-4, 138-140.5	19.58	21.33	21.36	3.76	
2H-4, 88-90.5	12.78	14.93	14.96	3.42	3.81	3H-4, 144-148	19.64	21.43		3.65	
2H-4, 98-100.5	12.88	15.03	15.06	3.92	4.49	3H-5, 8-10.5	19.78	21.53	21.56	3.54	
2H-4, 108-110.5	12.98	15.13	15.16	3.16		3H-5, 18-20.5	19.88	21.63	21.66		4.01
2H-4, 118-120.5	13.08	15.23	15.26	3.13		3H-5, 28-30.5	19.98	21.73	21.76	3.28	
2H-4, 128-130.5	13.18	15.33	15.36	3.09	3.67	3H-5, 38-40.5	20.08	21.83	21.86	3.24	
2H-4, 138-140.5	13.28	15.43	15.46		3.66	3H-5, 48-50.5	20.18	21.93	21.96	3.09	
2H-4, 148-150	13.38	15.53			3.95	3H-5, 58-60.5	20.28	22.03	22.06	3.07	
2H-5, 8-10.5	13.48	15.63	15.66		4.01	3H-5, 68-70.5	20.38	22.13	22.16	3.15	
2H-5, 18-20.5	13.58	15.73	15.76		4.14	177-1090D-					
2H-5, 28-30.5	13.68	15.83	15.86		4.19	3H-2, 76-78.5	19.16	22.23	22.26	3.28	
2H-5, 38-40.5	13.78	15.93	15.96		4.11	3H-2, 86-88.5	19.26	22.33	22.36	3.32	
2H-5, 48-50.5	13.88	16.03	16.06		3.92	3H-2, 96-98.5	19.36	22.43	22.46	3.47	
2H-5, 58-60.5	13.98	16.13	16.16	3.26	3.79	3H-2, 106-108.5	19.46	22.53	22.56	3.58	
2H-5, 68-70.5	14.08	16.23	16.26	3.65		3H-2, 116-118.5	19.56	22.63	22.66	3.83	
2H-5, 78-80.5	14.18	16.33	16.36	3.72		3H-2, 126-128.5	19.66	22.73	22.76	3.88	
2H-5, 88-90.5	14.28	16.43	16.46	3.94		3H-2, 136-138.5	19.76	22.83	22.86	3.5	4.14
2H-5, 98-100.5	14.38	16.53	16.56	3.87		3H-2, 146-148.5	19.86	22.93	22.96		4.39
2H-5, 108-110.5	14.48	16.63	16.66	3.93		3H-3, 2-4	19.92	22.99	23.01		4.01
2H-5, 118-120.5	14.58	16.73	16.76	3.83		3H-3, 12-14	20.02	23.09	23.11		4.04
177-1090B-						3H-3, 22-24	20.12	23.19	23.21		4.11
3H-1, 139-141.5	15.09	16.83	16.86	3.87	4.37	3H-3, 32-34	20.22	23.29	23.31		4.16
3H-1, 148-150	15.18	16.93			4.44	3H-3, 42-44	20.32	23.39	23.41	3.78	4.4
3H-2, 8-10.5	15.28	17.03	17.06	3.63	4.26	3H-3, 52-54	20.42	23.49	23.51	3.89	
3H-2, 18-20.5	15.38	17.13	17.16	3.5		3H-3, 62-64	20.52	23.59	23.61	3.83	

Table T3 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		<i>Cibicoides</i> ¹⁸ O (‰)	<i>Uvigerina</i> ¹⁸ O (‰)	Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		<i>Cibicoides</i> ¹⁸ O (‰)	<i>Uvigerina</i> ¹⁸ O (‰)
		Top	Bottom					Top	Bottom		
3H-3, 72-74	20.62	23.69	23.71	3.67		4H-4, 131-133.5	32.21	35.2	35.23	3.59	
3H-3, 82-84	20.72	23.79	23.81	3.63		4H-4, 141-143.5	32.31	35.3	35.33	3.53	
3H-3, 92-94	20.82	23.89	23.91	3.62		4H-5, 1-3.5	32.41	35.4	35.43	3.71	
3H-3, 102-104	20.92	23.99	24.01	3.5		4H-5, 11-13.5	32.51	35.5	35.53	3.82	
3H-3, 112-114	21.02	24.09	24.11	3.35	3.9	4H-5, 21-23.5	32.61	35.6	35.63	3.67	
3H-3, 122-124	21.12	24.19	24.21		3.99	4H-5, 31-33.5	32.71	35.7	35.73	3.61	3.97
3H-3, 132-134	21.22	24.29	24.31		3.82	4H-5, 51-53.5	32.91	35.9	35.93		3.68
3H-3, 142-144	21.32	24.39	24.41		4.01	4H-5, 61-63.5	33.01	36	36.03	2.9	3.46
3H-4, 6-8.5	21.46	24.53	24.56	3.14	3.68	4H-5, 71-73.5	33.11	36.1	36.13	2.63	3.42
3H-4, 16-18.5	21.56	24.63	24.66	3.02		4H-5, 81-83.5	33.21	36.2	36.23	3.03	3.7
3H-4, 26-28.5	21.66	24.73	24.76	2.89		4H-5, 91-93.5	33.31	36.3	36.33		3.99
3H-4, 36-38.5	21.76	24.83	24.86	2.91		4H-5, 101-103.5	33.41	36.4	36.43	3.78	4.28
3H-4, 46-48.5	21.86	24.93	24.96	2.9		4H-5, 111-113.5	33.51	36.5	36.53		4.5
3H-4, 56-58.5	21.96	25.03	25.06	2.91		4H-5, 121-123.5	33.61	36.6	36.63	3.83	4.49
3H-4, 66-68.5	22.06	25.13	25.16	3.04		4H-5, 131-133.5	33.71	36.7	36.73	3.64	4.07
3H-4, 76-78.5	22.16	25.23	25.26	3.49		4H-5, 141-143.5	33.81	36.8	36.83	3.32	
3H-4, 86-88.5	22.26	25.33	25.36	3.68		4H-6, 1-3.5	33.91	36.9	36.93	3.37	
3H-4, 96-98.5	22.36	25.43	25.46	3.79							
3H-4, 106-108.5	22.46	25.53	25.56	3.82		177-1090E-					
3H-4, 116-118.5	22.56	25.63	25.66	3.96		4H-3, 29-31.5	30.99	37.14	37.17	3.64	
3H-4, 126-128.5	22.66	25.73	25.76	3.94		4H-3, 39-41.5	31.09	37.24	37.27	3.9	
3H-4, 136-138.5	22.76	25.83	25.86	3.97		4H-3, 49-51.5	31.19	37.34	37.37	3.86	4.02
3H-4, 146-148.5	22.86	25.93	25.96	3.91		4H-3, 59-61.5	31.29	37.44	37.47	3.38	
3H-5, 6-8.5	22.96	26.03	26.06	3.9		4H-3, 69-71.5	31.39	37.54	37.57	3.29	
3H-5, 16-18.5	23.06	26.13	26.16	3.83		4H-3, 79-81.5	31.49	37.64	37.67	3.79	
3H-5, 26-28.5	23.16	26.23	26.26	3.79		4H-3, 89-91.5	31.59	37.74	37.77	3.38	3.5
3H-5, 36-38.5	23.26	26.33	26.36	3.74		4H-3, 99-101.5	31.69	37.84	37.87		3.85
3H-5, 46-48.5	23.36	26.43	26.46	3.76		4H-3, 109-111.5	31.79	37.94	37.97		3.69
3H-5, 56-58.5	23.46	26.53	26.56	3.68		4H-3, 119-121.5	31.89	38.04	38.07		4.04
3H-5, 66-68.5	23.56	26.63	26.66	3.62		4H-3, 129-131.5	31.99	38.14	38.17	3.42	3.83
3H-5, 76-78.5	23.66	26.73	26.76	3.45		4H-3, 139-141.5	32.09	38.24	38.27	3.25	
3H-5, 86-88.5	23.76	26.83	26.86	3.58		4H-3, 147.5-150	32.17	38.33	38.35	3.09	
3H-5, 96-98.5	23.86	26.93	26.96	3.5		4H-4, 9-11.5	32.29	38.44	38.47	3.4	
3H-5, 106-108.5	23.96	27.03	27.06	3.15		4H-4, 19-21.5	32.39	38.54	38.57	3.57	
177-1090E-						4H-4, 29-31.5	32.49	38.64	38.67	3.6	
3H-2, 71-73.5	20.41	27.12	27.15	3.16	3.65	4H-4, 39-41.5	32.59	38.74	38.77	3.1	
3H-2, 81-83.5	20.51	27.22	27.25		3.68	4H-4, 49-51.5	32.69	38.84	38.87	2.86	
3H-2, 91-93.5	20.61	27.32	27.35	3.34	4.03	4H-4, 59-61.5	32.79	38.94	38.97	3.4	
3H-2, 101-103.5	20.71	27.42	27.45	3.24		4H-4, 69-71.5	32.89	39.04	39.07	3.72	
3H-2, 111-113.5	20.81	27.52	27.55	3.18		4H-4, 79-81.5	32.99	39.14	39.17	3.71	
3H-2, 121-123.5	20.91	27.62	27.65	3.1		4H-4, 89-91.5	33.09	39.24	39.27	3.5	
3H-2, 131-133.5	21.01	27.72	27.75	3.05		4H-4, 99-101.5	33.19	39.34	39.37	3.18	
3H-2, 141-143.5	21.11	27.82	27.85	2.95		4H-4, 109-111.5	33.29	39.44	39.47	3.6	
3H-3, 1-3.5	21.21	27.92	27.95	3.18		4H-4, 119-121.5	33.39	39.54	39.57	3.68	
3H-3, 11-13.5	21.31	28.02	28.05	3.17		4H-4, 129-131.5	33.49	39.64	39.67	3.48	
3H-3, 21-23.5	21.41	28.12	28.15	3.13		4H-4, 139-141.5	33.59	39.74	39.77	3.08	
3H-3, 31-33.5	21.51	28.22	28.25	3.67		4H-4, 147.5-150	33.67	39.83	39.85	2.84	
3H-3, 41-43.5	21.61	28.32	28.35	3.85		4H-5, 9-11.5	33.79	39.94	39.97	2.66	
3H-3, 51-53.5	21.71	28.42	28.45	3.82		4H-5, 19-21.5	33.89	40.04	40.07	2.82	
3H-3, 61-63.5	21.81	28.52	28.55	3.69		4H-5, 29-31.5	33.99	40.14	40.17	2.92	
3H-3, 71-73.5	21.91	28.62	28.65	3.95		4H-5, 39-41.5	34.09	40.24	40.27	2.95	
3H-3, 81-83.5	22.01	28.72	28.75	3.95		4H-5, 49-51.5	34.19	40.34	40.37	3.25	
3H-3, 91-93.5	22.11	28.82	28.85	3.87	4.54	4H-5, 59-61.5	34.29	40.44	40.47	3.02	
3H-3, 101-103.5	22.21	28.92	28.95		4.56	4H-5, 69-71.5	34.39	40.54	40.57	2.96	
3H-3, 111-113.5	22.31	29.02	29.05		4.44	177-1090D-					
3H-3, 121-123.5	22.41	29.12	29.15		4.07	5H-1, 52.5-55	36.42	40.64	40.66	2.94	
3H-3, 131-133.5	22.51	29.22	29.25		4.07	5H-1, 62.565	36.53	40.74	40.76	3.21	
3H-3, 141-143.5	22.61	29.32	29.35		4.5	5H-1, 72.5-75	36.52	40.84	40.86	3.73	
3H-4, 1-3.5	22.71	29.42	29.45		4.37	5H-1, 82.5-85	36.72	40.94	40.96	3.33	
3H-4, 11-13.5	22.81	29.52	29.55	3.12	1.38	5H-1, 92.5-95	36.83	41.04	41.06	3.59	
3H-4, 21-23.5	22.91	29.62	29.65		3.79	5H-1, 102.5-105	36.92	41.14	41.16	3.85	
3H-4, 31-33.5	23.01	29.72	29.75		3.56	5H-1, 112.5-115	37.03	41.24	41.26	3.83	
3H-4, 41-43.5	23.11	29.82	29.85		3.76	5H-1, 122.5-125	37.12	41.34	41.36	2.96	
3H-4, 51-53.5	23.21	29.92	29.95		3.67	5H-1, 132.5-135	37.22	41.44	41.46	3.24	
3H-4, 61-63.5	23.31	30.02	30.05	3.28	2.91	5H-1, 142.5-145	37.33	41.54	41.56	3.62	
3H-4, 71-73.5	23.41	30.12	30.15	3.55	3.42	5H-2, 12.5-15	37.53	41.74	41.76	2.86	
177-1090D-						5H-2, 22.5-25	37.62	41.84	41.86	3.31	3.79
4H-4, 121-123.5	32.11	35.1	35.13	3.35		5H-2, 32.5-35	37.72	41.94	41.96		4.28
						5H-2, 42.5-45	37.83	42.04	42.06		3.56

Table T3 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)		<i>Cibicidoides</i> ¹⁸ O (‰)	<i>Uvigerina</i> ¹⁸ O (‰)
		Top	Bottom		
5H-2, 52.5-55	37.92	42.14	42.16		3.76
5H-2, 62.5-65	38.03	42.24	42.26		4.43
5H-2, 72.5-75	38.12	42.34	42.36		4.36
5H-2, 82.5-85	38.22	42.44	42.46		4.29
5H-2, 92.5-95	38.33	42.54	42.56		3.79
5H-2, 102.5-105	38.42	42.64	42.66		3.73
5H-2, 112.5-115	38.53	42.74	42.76		3.71
5H-2, 122.5-125	38.62	42.84	42.86		4.29
5H-2, 132.5-135	38.72	42.94	42.96		4.18
5H-2, 142.5-145	38.83	43.04	43.06		3.91
5H-3, 2.5-5	38.92	43.14	43.16		3.74
5H-3, 12.5-15	39.03	43.24	43.26		3.99
5H-3, 22.5-25	39.12	43.34	43.36		3.93
5H-3, 32.5-35	39.22	43.44	43.46		3.58
5H-3, 42.5-45	39.33	43.54	43.56		3.61
5H-3, 52.5-55	39.42	43.64	43.66		3.93
5H-3, 62.5-65	39.53	43.74	43.76	3.46	4.08
5H-3, 72.5-75	39.62	43.84	43.86		3.45
5H-3, 82.5-85	39.72	43.94	43.96		3.75
5H-3, 92.5-95	39.83	44.04	44.06	3.22	3.62
5H-3, 102-105	39.92	44.14	44.16	2.93	3.73
5H-3, 112.5-115	40.03	44.24	44.26	3.41	
5H-3, 122.5-125	40.12	44.34	44.36	3.52	
5H-3, 132.5-135	40.22	44.44	44.46	3.22	
5H-3, 142.5-145	40.33	44.54	44.56	3.21	