Richter, C. (Ed.)
Proceedings of the Ocean Drilling Program, Scientific Results Volume 181

10. Data Report: Late Pliocene–Pleistocene Carbon and Oxygen Stable Isotopes from Benthic Foraminifers at Ocean Drilling Program Site 1123 in the Southwest Pacific[1]

Sara E. Harris[2]

INTRODUCTION

Stable isotope records were generated for a late Pliocene–early Pleistocene interval from Ocean Drilling Program (ODP) Site 1123 in the southwest Pacific (41°47′S, 171°30′W; 3290 m water depth). Based on these data, new revisions were made to the shipboard splice and composite section. The isotope records will be used to evaluate the influence of North Atlantic and Southern Ocean deepwater masses on water entering the Pacific in the Deep Western Boundary Current.

Three holes were cored at Site 1123, yielding a complete composite section over approximately the last 4.7 m.y. A representative spliced record ("the splice") was developed aboard ship based on magnetic susceptibility, gamma ray attenuation bulk density, and percent reflectance data from the three adjacent holes (Carter, McCave, Richter, Carter, et al., 1999). No gaps in the sedimentary record were detected for the multiple-cored section of Site 1123. In addition to the isotope data, postcruise revisions to the splice and composite section based on stable isotope data are described here.

ISOTOPE DATA

For the interval from 49.67 to 108.58 revised meters composite depth (rmcd), the splice was sampled at ~10-cm intervals (see **"Revised Com-**

[1]Harris, S.E., 2002. Data report: Late Pliocene–Pleistocene carbon and oxygen stable isotopes from benthic foraminifers at Ocean Drilling Program Site 1123 in the southwest Pacific. *In* Richter, C. (Ed.), *Proc. ODP, Sci. Results,* 181, 1–20 [Online]. Available from World Wide Web: <http://www-odp. tamu.edu/publications/181_SR/VOLUME/CHAPTERS/203.PDF>. [Cited YYYY-MM-DD]
[2]Sea Education Association, PO Box 6, Woods Hole, MA 02543, USA.
sharris@sea.edu

Initial receipt: 12 February 2001
Acceptance: 25 October 2001
Web publication: 14 May 2002
Ms 181SR-203

posite Depth Scale," p. 2, for an explanation of depth scales). This depth section corresponds to approximately 3–1.2 Ma. Handpicked benthic foraminiferal tests in the >150-µm sized fraction were analyzed for stable carbon and oxygen isotopic composition (Table T1; Fig. F1). All analyses were completed at Woods Hole Oceanographic Institution on a Finnegan MAT252 automated mass spectrometer with a Kiel device (Ostermann and Curry, 2000). Individual tests were analyzed where possible. Most species analyzed were *Cibicides wuellerstorfi*, although other *Cibicides* sp. and *Uvigerina* sp. were used where *C. wuellerstorfi* was unavailable. Standard corrections were employed for isotopic offsets among species, as summarized by Shackleton and Hall (1984). Interspecies corrections for oxygen isotope values followed Shackleton (1974), adding 0.64 to $\delta^{18}O$ values from *Cibicides* sp. An offset of –0.9 was added to $\delta^{13}C$ values measured from *Uvigerina* sp. (Duplessy et al., 1984); 0.35 was added to the $\delta^{18}O$ value for the single *Nuttalides umbonifera* analyzed (Shackleton and Hall, 1984). The average species offsets between *C. wuellerstorfi* and *Uvigerina* sp. that were calculated for duplicates within the Site 1123 data set are in statistical agreement with these offsets. The values listed in Table T1 are corrected for species offsets.

REVISED COMPOSITE DEPTH SCALE

The shipboard composite section was revised postcruise by Hall et al. (2001). An isotope cycle was missing from the upper section, resulting in the addition of 2.72 m to all data from Cores 181-1123A-5H, 181-1123B-5H, 181-1123C-5H, and deeper. An additional postcruise change adds 0.14 m to Cores 181-1123A-9H, 181-1123B-9H, 181-1123C-8H, and deeper. All meters composite depths (mcds) in Table T1 list shipboard-determined depths. All revised mcds cited here reflect the two postcruise offsets, rather than the original shipboard mcds. Some samples are not in the splice but are from overlapping sections in adjacent holes. Revised mcds for these samples include the offsets described above and also include small-scale (<10 cm) revisions obtained by matching reflectance records from adjacent holes to the splice.

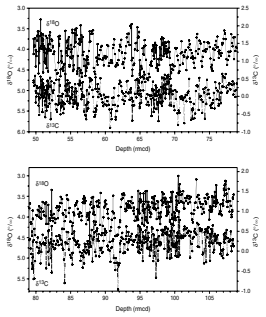
Comparisons between the benthic $\delta^{18}O$ records of Site 1123 presented here and those of Site 849 in the eastern equatorial Pacific (Mix et al., 1995) indicate that the oxygen isotope splice at Site 1123 is in good agreement with the established record at Site 849 (Fig. F2). The Analyseries software (Paillard et al., 1996) was used to map Site 1123 $\delta^{18}O$ to Site 849 $\delta^{18}O$. The resulting age model agrees with paleomagnetic reversal data for Site 1123.

ACKNOWLEDGMENTS

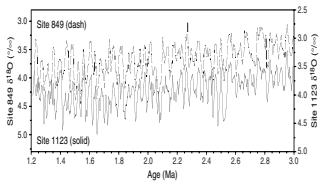
Thanks to Rindy Ostermann and Bill Curry at the Woods Hole Oceanographic Institution mass spectrometer laboratory, where these samples were run, and to Jodi Campbell, Billy Jo Gauley, and Jim Watkins, who washed samples and handpicked specimens for analysis. Thanks also to the Leg 181 shipboard scientific party. This research used samples and/or data provided by the Ocean Drilling Program (ODP). ODP is sponsored by the U.S. National Science Foundation (NSF) and participating countries under management of Joint Oceanographic In-

T1. Stable isotope data, Site 1123, p. 7.

F1. Oxygen and carbon isotope data, Site 1123, p. 5.



F2. Oxygen isotope data, Site 1123, mapped to Site 849 data, p. 6.



stitutions (JOI), Inc. This work was supported by a JOI/United States Science Support Program grant to Sara Harris (181-F000836).

REFERENCES

Carter, R.M., McCave, I.N., Richter, C., Carter, L., et al., 1999. *Proc. ODP, Init. Repts.,* 181 [CD-ROM]. Available from: Ocean Drilling Program, Texas A&M University, College Station, TX 77845-9547, U.S.A.

Duplessy, J.-C., Shackleton, N.J., Matthews, R.K., Prell, W.L., Ruddiman, W.F., Caralp, M., and Hendy, C.H., 1984. ^{13}C record of benthic foraminifera in the last interglacial ocean: implications for the carbon cycle and the global deep water circulation. *Quat. Res.,* 21:225-243.

Hall, I.R., McCave, I.N., Shackleton, N.J., Weedon, G.P., and Harris, S.E., 2001. Intensified deep Pacific inflow and ventilation in Pleistocene glacial times. *Nature,* 412:809–812.

Mix, A.C., Pisias, N.G., Rugh, W., Wilson, J., Morey, A., and Hagelberg, T.K., 1995. Benthic foraminifer stable isotope record from Site 849 (0–5 Ma): local and global climate changes. *In* Pisias, N.G., Mayer, L.A., Janecek, T.R., Palmer-Julson, A., and van Andel, T.H. (Eds.), *Proc. ODP, Sci. Results,* 138: College Station, TX (Ocean Drilling Program), 371–412.

Ostermann, D.R., and Curry, W.B., 2000. Calibration of stable isotopic data: an enriched $\delta^{18}O$ standard used for source gas mixing detection and correction. *Paleoceanography,* 15:353–360.

Paillard, D., Labeyrie, L., and Yiou, P., 1996. Macintosh program performs time-series analysis. *Eos, Transactions, Am. Geophys. Union,* 77:379. (Abstract).

Shackleton, N.J., 1974. Attainment of isotopic equilibrium between ocean water and the benthonic foraminifera genus *Uvigerina:* isotopic changes in the ocean during the last glacial. *Les. Meth. Quant. D'etude Var. Clim. Au Cours du Pleist., Coll. Int. CNRS,* 219:203–209.

Shackleton, N.J., and Hall, M.A., 1984. Oxygen and carbon isotope stratigraphy of Deep Sea Drilling Project Hole 552A: Plio-Pleistocene glacial history. *In* Roberts, D.G., Schnitker, D., et al., *Init. Repts. DSDP,* 81: Washington (U.S. Govt. Printing Office), 599–609.

Figure F1. Oxygen and carbon isotope data from Site 1123 on the revised meters composite depth (rmcd) scale.

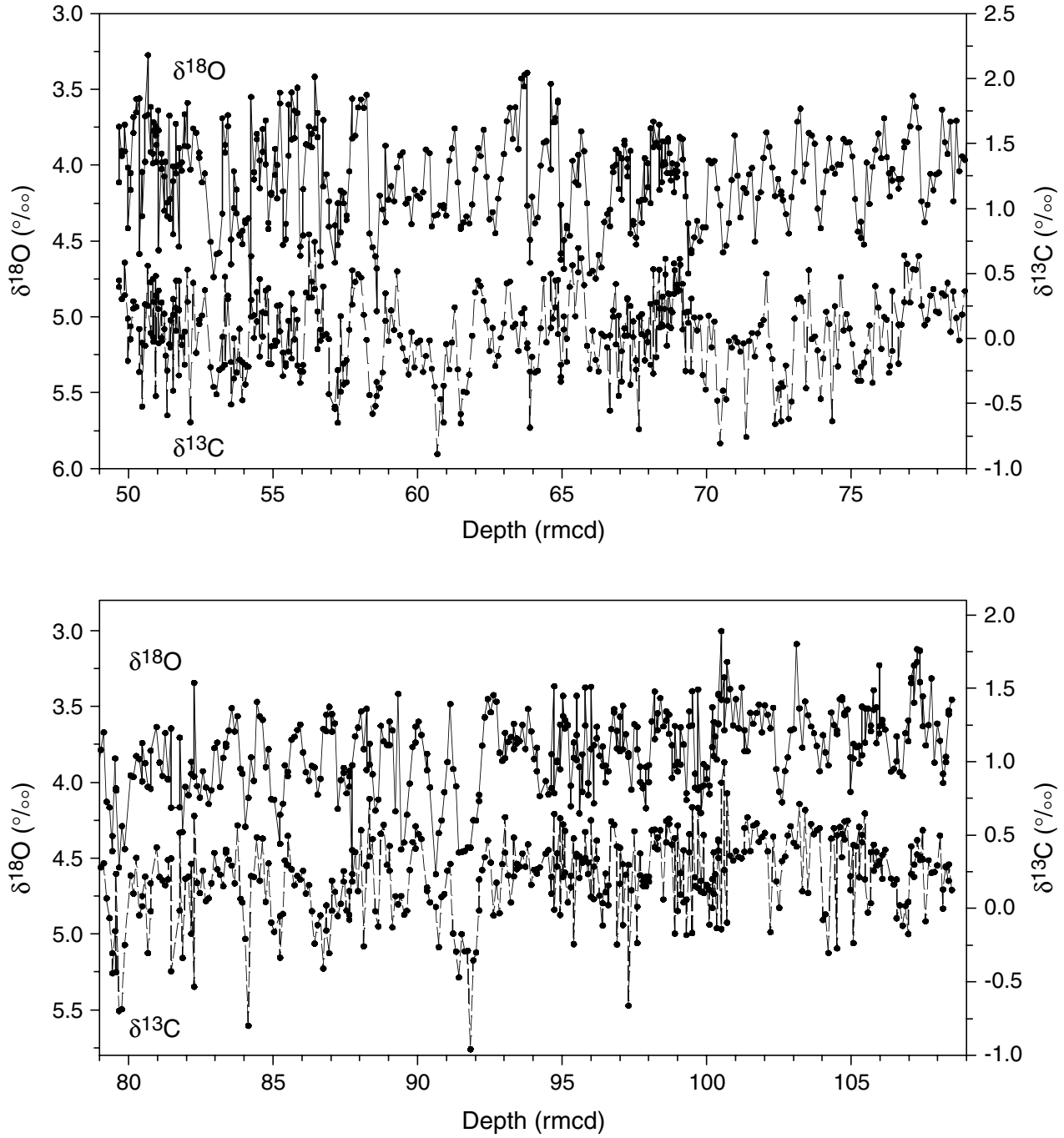


Figure F2. Oxygen isotope data from Site 1123 mapped to data from Site 849 (Mix et al., 1995). Data from both sites were smoothed with a 9-k.y. Gaussian filter to 3-k.y. resolution. This mapping supports post-cruise changes to the composite section described in the text.

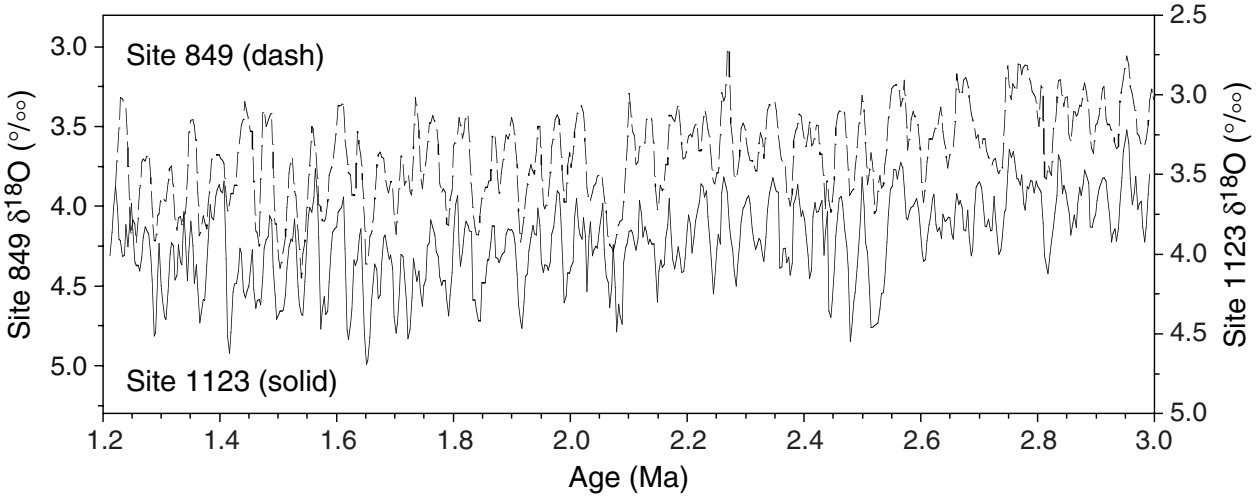


Table T1. Stable isotope data, Site 1123. (See **table notes.** Continued on next 13 pages.)

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
181-1123B-						
6H-3, 94–96	45.34	46.95	49.67	*C.* sp.–fragments	0.397	4.114
6H-3, 94–96	45.34	46.95	49.67	*U. peregrina*	0.448	3.747
6H-3, 104–106	45.44	47.05	49.77	*C. wuellerstorfi*	0.302	3.941
6H-3, 1041–06	45.44	47.05	49.77	*C. wuellerstorfi* 3	0.304	3.907
6H-3, 114–116	45.54	47.15	49.87	*C. cicatricosus*	0.334	3.909
6H-3, 114–116	45.54	47.15	49.87	*U. hispida* 2	0.584	3.734
6H-3, 124–126	45.64	47.25	49.97	*C. wuellerstorfi*	0.152	4.016
6H-3, 124–126	45.64	47.25	49.97	*C. wuellerstorfi*	–0.173	4.417
6H-3, 134–136	45.74	47.35	50.07	*C. Corpulentus*	0.093	4.164
6H-3, 134–136	45.74	47.35	50.07	*C. wuellerstorfi* 2	–0.006	4.051
6H-3, 144–146	45.84	47.45	50.17	*C. wuellerstorfi*	0.286	3.683
6H-3, 144–146	45.84	47.45	50.17	*C. wuellerstorfi* 2	0.229	3.788
6H-4, 4–6	45.94	47.55	50.27	*C. wuellerstorfi* (puffy)	0.243	3.564
6H-4, 4–6	45.94	47.55	50.27	*C. robertsonian*	NA	3.652
6H-4, 14–16	46.04	47.65	50.37	*C. wuellerstorfi*	0.074	3.560
6H-4, 14–16	46.04	47.65	50.37	*C. wuellerstorfi*	–0.258	4.586
6H-4, 24–26	46.14	47.75	50.47	*C. wuellerstorfi*	–0.033	4.046
6H-4, 24–26	46.14	47.75	50.47	*C. cicatricosu* 2	–0.524	4.336
6H-4, 34–36	46.24	47.85	50.57	*C. wuellerstorfi*	0.263	3.978
6H-4, 34–36	46.24	47.85	50.57	*C. wuellerstorfi*	–0.055	3.677
6H-4, 44–46	46.34	47.95	50.67	*C. wuellerstorfi*	0.560	3.275
6H-4, 44–46	46.34	47.95	50.67	*C. wuellerstorfi*	0.250	3.668
6H-4, 54–56	46.44	48.05	50.77	*C. cicatricosus*	0.041	3.914
6H-4, 54–56	46.44	48.05	50.77	*U. peregrina*	0.433	3.616
181-1123C-						
6H-1, 125–127	48.25	48.12	50.84	*C. wuellerstorfi*	0.457	3.925
6H-1, 125–127	48.25	48.12	50.84	*C.* sp. 3	0.013	3.988
181-1123B-						
6H-4, 64–66	46.54	48.15	50.86	*C. wuellerstorfi*	0.281	3.774
6H-4, 64–66	46.54	48.15	50.86	*C. cicatricosu* 3	–0.025	3.719
181-1123C-						
6H-1, 135–137	48.35	48.22	50.94	*C. wuellerstorfi*	0.482	3.805
6H-1, 135–137	48.35	48.22	50.94	*C. wuellerstorfi*	–0.443	3.745
181-1123B-						
6H-4, 74–76	46.64	48.25	50.96	*C. wuellerstorfi*	0.325	3.866
6H-4, 74–76	46.64	48.25	50.96	*C. wuellerstorfi*	0.333	3.979
6H-4, 84–86	46.74	48.35	51.03	*C. wuellerstorfi*	0.226	3.640
181-1123C-						
6H-1, 145–147	48.45	48.32	51.04	*C. wuellerstorfi*	0.369	3.770
6H-1, 145–147	48.45	48.32	51.04	*C. cicatricosus*	–0.037	4.561
6H-2, 5–7	48.55	48.42	51.14	*C. wuellerstorfi*	0.276	3.925
6H-2, 5–7	48.55	48.42	51.14	*C. wuellerstorfi* 2	0.004	4.026
181-1123B-						
6H-4, 94–96	46.84	48.45	51.15	*C. wuellerstorfi*	–0.021	3.982
181-1123C-						
6H-2, 15–17	48.65	48.52	51.24	*C. wuellerstorfi*	0.072	4.302
6H-2, 15–17	48.65	48.52	51.24	*C. wuellerstorfi*	0.190	4.075
181-1123B-						
6H-4, 104–106	46.94	48.55	51.28	*C. wuellerstorfi*	–0.132	3.977
181-1123C-						
6H-2, 25–27	48.75	48.62	51.34	*C. wuellerstorfi*	–0.593	4.248
6H-2, 25–27	48.75	48.62	51.34	*U. hispida* 3	–0.247	4.338
181-1123B-						
6H-4, 114–116	47.04	48.65	51.41	*C. wuellerstorfi*	–0.043	3.674
181-1123C-						
6H-2, 35–37	48.85	48.72	51.44	*C. wuellerstorfi*	0.139	4.353
6H-2, 35–37	48.85	48.72	51.44	*C. wuellerstorfi* 2	–0.070	4.223
181-1123B-						
6H-4, 124–126	47.14	48.75	51.54	*C. kullenbergi*	0.303	4.107

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
181-1123C-						
6H-2, 45–47	48.95	48.82	51.54	*C. cicatricosus*	–0.402	4.455
6H-2, 45–47	48.95	48.82	51.54	*C.* sp. 2	0.182	4.006
6H-2, 55–57	49.05	48.92	51.64	*C. wuellerstorfi*	0.235	4.054
6H-2, 55–57	49.05	48.92	51.64	*C. wuellerstorfi* 2	0.059	3.727
181-1123B-						
6H-4, 134–136	47.24	48.85	51.65	*C. wuellerstorfi*	0.444	4.009
181-1123C-						
6H-2, 65–67	49.15	49.02	51.74	*C. wuellerstorfi*	–0.284	4.538
6H-2, 65–67	49.15	49.02	51.74	*C. wuellerstorfi*	0.443	3.887
181-1123B-						
6H-4, 144–146	47.34	48.95	51.75	*C. wuellerstorfi*	0.218	3.997
181-1123C-						
6H-2, 75–77	49.25	49.12	51.84	*C. wuellerstorfi*	–0.050	4.037
6H-2, 75–77	49.25	49.12	51.84	*C. wuellerstorfi* 2	0.011	3.982
6H-2, 85–87	49.35	49.22	51.94	*C. wuellerstorfi*	–0.202	3.664
6H-2, 85–87	49.35	49.22	51.94	*C. wuellerstorfi* 2	0.053	3.874
6H-2, 95–97	49.45	49.32	52.04	*C. wuellerstorfi*	0.531	3.589
6H-2, 95–97	49.45	49.32	52.04	*C. wuellerstorfi* 2	0.281	3.877
6H-2, 105–107	49.55	49.42	52.14	*C. wuellerstorfi*	–0.645	4.029
6H-2, 105–107	49.55	49.42	52.14	*C. wuellerstorfi*	–0.645	4.029
6H-2, 115–117	49.65	49.52	52.24	*C. wuellerstorfi*	0.428	3.759
6H-2, 125–127	49.75	49.62	52.34	*C. wuellerstorfi*	–0.111	3.787
6H-2, 135–137	49.85	49.72	52.44	*C. wuellerstorfi*	0.110	3.917
6H-2, 135–137	49.85	49.72	52.44	*C. corpulentus*	0.142	3.952
6H-2, 145–147	49.95	49.82	52.54	*C. wuellerstorfi* 2	0.176	4.115
6H-3, 5–7	50.05	49.92	52.64	*C. wuellerstorfi*	0.372	4.054
6H-3, 25–27	50.25	50.12	52.84	*C. wuellerstorfi*	–0.221	4.506
6H-3, 35–37	50.35	50.22	52.94	*C. cicatricosus*	–0.373	4.739
6H-3, 45–47	50.45	50.32	53.04	*C. wuellerstorfi*	–0.431	4.587
6H-3, 55–57	50.55	50.42	53.14	*C. wuellerstorfi*	–0.242	4.578
6H-3, 65–67	50.65	50.52	53.24	*C. wuellerstorfi* (puffy)	0.013	4.320
6H-3, 65–67	50.65	50.52	53.24	*C. cicatricosus*	–0.225	3.690
6H-3, 75–77	50.75	50.62	53.34	*C. wuellerstorfi*	0.475	3.867
6H-3, 75–77	50.75	50.62	53.34	*C.* sp.	–0.201	3.917
6H-3, 85–87	50.85	50.72	53.44	*C. wuellerstorfi*	0.329	3.671
6H-3, 85–87	50.85	50.72	53.44	*C.* sp. 2	0.303	3.744
6H-3, 95–97	50.95	50.82	53.54	*C. wuellerstorfi*	–0.182	4.654
6H-3, 95–97	50.95	50.82	53.54	*C. wuellerstorfi*	–0.508	4.490
6H-3, 105–107	51.05	50.92	53.64	*C. wuellerstorfi*	–0.309	4.284
6H-3, 105–107	51.05	50.92	53.64	*C. wuellerstorfi*	0.001	4.040
6H-3, 115–117	51.15	51.02	53.74	*C. wuellerstorfi*	–0.259	4.161
6H-3, 115–117	51.15	51.02	53.74	*C. wuellerstorfi* 2	–0.263	4.318
6H-3, 125–127	51.25	51.12	53.84	*C. wuellerstorfi*	0.075	4.464
6H-3, 125–127	51.25	51.12	53.84	*C. wuellerstorfi* 2	–0.164	4.456
6H-3, 135–137	51.35	51.22	53.94	*C. wuellerstorfi*	–0.475	4.521
6H-3, 135–137	51.35	51.22	53.94	*C. wuellerstorfi*	–0.183	4.433
6H-3, 145–147	51.45	51.32	54.04	*C. wuellerstorfi*	–0.202	4.381
6H-3, 145–147	51.45	51.32	54.04	*C. wuellerstorfi* 2	–0.354	4.363
6H-4, 5–7	51.55	51.42	54.14	*C.* sp.	–0.217	4.351
6H-4, 15–17	51.65	51.52	54.24	*C. wuellerstorfi* 2	0.632	5.000
6H-4, 15–17	51.65	51.52	54.24	*U. peregrina* 2	0.297	3.551
6H-4, 25–27	51.75	51.62	54.34	*C. wuellerstorfi* 2	0.178	4.095
6H-4, 25–27	51.75	51.62	54.34	*C. wuellerstorfi* 2	0.004	4.048
6H-4, 35–37	51.85	51.72	54.44	*C. wuellerstorfi*	0.131	3.830
6H-4, 35–37	51.85	51.72	54.44	*C.* sp.	0.357	3.794
6H-4, 45–47	51.95	51.82	54.54	*C. wuellerstorfi*	0.456	3.969
6H-4, 45–47	51.95	51.82	54.54	*U.* sp.	–0.139	4.153
6H-4, 55–57	52.05	51.92	54.64	*C. wuellerstorfi* 2	0.013	3.913
6H-4, 55–57	52.05	51.92	54.64	*C. corpulentus*	0.201	3.762
6H-4, 65–67	52.15	52.02	54.74	*C. wuellerstorfi*	0.370	3.995
6H-4, 65–67	52.15	52.02	54.74	*C. wuellerstorfi* 2	0.193	3.705
6H-4, 75–77	52.25	52.12	54.84	*C. wuellerstorfi*	0.386	4.422
6H-4, 75–77	52.25	52.12	54.84	*C. wuellerstorfi*	–0.193	4.380
6H-4, 85–87	52.35	52.22	54.94	*C. wuellerstorfi*	–0.198	4.182
6H-4, 85–87	52.35	52.22	54.94	*C. wuellerstorfi* 2	–0.060	4.196
6H-4, 98–100	52.48	52.35	55.07	*C. wuellerstorfi*	–0.014	3.893

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
6H-4, 98–100	52.48	52.35	55.07	*C. wuellerstorfi* 2	–0.056	4.065
6H-4, 105–107	52.55	52.42	55.14	*U. hispida* 2	–0.024	4.219
6H-4, 105–107	52.55	52.42	55.14	*U.* sp. 3	0.252	3.999
6H-4, 115–117	52.65	52.52	55.24	*C. wuellerstorfi*	0.055	3.593
6H-4, 115–117	52.65	52.52	55.24	*C. wuellerstorfi*	0.256	3.522
6H-4, 125–127	52.75	52.62	55.34	*C. wuellerstorfi*	–0.290	4.171
6H-4, 125–127	52.75	52.62	55.34	*C. wuellerstorfi*	–0.109	4.527
6H-4, 135–137	52.85	52.72	55.44	*C. wuellerstorfi*	–0.214	4.490
6H-4, 135–137	52.85	52.72	55.44	*C. wuellerstorfi* 2	–0.191	4.388
6H-4, 145–147	52.95	52.82	55.54	*C. wuellerstorfi* 2	0.136	3.938
6H-4, 145–147	52.95	52.82	55.54	*C. kullenbergi*	–0.102	3.600
6H-5, 5–7	53.05	52.92	55.64	*C. wuellerstorfi*	0.348	3.831
6H-5, 5–7	53.05	52.92	55.64	*C. wuellerstorfi*	–0.155	3.521
6H-5, 15–17	53.15	53.02	55.74	*C.* sp.	0.222	3.641
6H-5, 15–17	53.15	53.02	55.74	*U. peregrina* 3	–0.007	3.822
6H-5, 25–27	53.25	53.12	55.84	*C. kullenbergi*	0.143	3.657
6H-5, 25–27	53.25	53.12	55.84	*C. kullenbergi*	–0.209	3.490
6H-5, 35–37	53.35	53.22	55.94	*C. wuellerstorfi*	–0.251	4.598
6H-5, 35–37	53.35	53.22	55.94	*C. wuellerstorfi*	–0.343	4.538
6H-5, 45–47	53.45	53.32	56.04	*C. wuellerstorfi*	–0.256	4.464
6H-5, 45–47	53.45	53.32	56.04	*C. wuellerstorfi* 2	–0.204	4.158
6H-5, 55–57	53.55	53.42	56.14	*C. wuellerstorfi* 2	0.352	3.863
6H-5, 65–67	53.65	53.52	56.24	*C. wuellerstorfi*	0.315	3.871
6H-5, 65–67	53.65	53.52	56.24	*U. peregrina* 3	0.801	3.746
6H-5, 75–77	53.75	53.62	56.34	*C. wuellerstorfi*	0.438	3.884
6H-5, 75–77	53.75	53.62	56.34	*U. peregrina* 3	0.315	3.793
6H-5, 85–87	53.85	53.72	56.44	*C. wuellerstorfi*	0.380	3.758
6H-5, 85–87	53.85	53.72	56.44	*U. peregrina* 3	0.744	3.418
6H-5, 95–97	53.95	53.82	56.54	*C. wuellerstorfi*	0.208	3.655
6H-5, 95–97	53.95	53.82	56.54	*C. wuellerstorfi*	–0.083	3.816
6H-5, 105–107	54.05	53.92	56.64	*C. wuellerstorfi*	0.069	4.666
6H-5, 105–107	54.05	53.92	56.64	*C. wuellerstorfi* 3	–0.017	4.571
6H-5, 115–117	54.15	54.02	56.74	*C. wuellerstorfi* 2	0.400	3.703
6H-5, 115–117	54.15	54.02	56.74	*U.* sp. 3	0.022	4.141
6H-5, 125–127	54.25	54.12	56.84	*C. wuellerstorfi 2*	0.033	4.060
6H-5, 134–136	54.34	54.21	56.93	*C. wuellerstorfi*	–0.005	4.238
6H-5, 134–136	54.34	54.21	56.93	*C. wuellerstorfi* 2	–0.429	4.406
6H-6, 5–7	54.55	54.42	57.14	*C. wuellerstorfi*	–0.542	4.643
6H-6, 5–7	54.55	54.42	57.14	*C. wuellerstorfi*	–0.525	4.397
6H-6, 15–17	54.65	54.52	57.24	*C. wuellerstorfi*	–0.244	4.251
6H-6, 15–17	54.65	54.52	57.24	*C. cicatricosus*	–0.649	4.527
6H-6, 25–27	54.75	54.62	57.34	*C. wuellerstorfi*	–0.410	4.443
6H-6, 25–27	54.75	54.62	57.34	*C. wuellerstorfi 2*	0.172	4.168
6H-6, 35–37	54.85	54.72	57.44	*C.* sp.	–0.354	4.253
6H-6, 35–37	54.85	54.72	57.44	*C.* sp. 2	–0.193	4.183
6H-6, 45–47	54.95	54.82	57.54	*C. wuellerstorfi* (puffy)	–0.167	4.363
6H-6, 45–47	54.95	54.82	57.54	*C. cicatricosus*	–0.337	4.333
6H-6, 55–57	55.05	54.92	57.64	*C. wuellerstorfi* (puffy)	0.066	4.041
6H-6, 65–67	55.15	55.02	57.74	*C. wuellerstorfi?*	0.524	3.561
6H-6, 65–67	55.15	55.02	57.74	*C. Corpulentus*	0.260	3.825
6H-6, 75–77	55.25	55.12	57.84	*C. wuellerstorfi?*	0.434	3.806
6H-6, 85–87	55.35	55.22	57.94	*C. wuellerstorfi*	0.494	3.620
6H-6, 95–97	55.45	55.32	58.04	*C. wuellerstorfi*	0.468	3.566
6H-6, 105–107	55.55	55.42	58.14	*C. wuellerstorfi*	0.183	3.623
6H-6, 115–117	55.65	55.52	58.24	*C.* sp.	–0.011	3.537
6H-6, 125–127	55.75	55.62	58.34	*C.* sp.	–0.436	4.451
6H-6, 135–137	55.85	55.72	58.44	*C. wuellerstorfi*	–0.579	4.542
6H-6, 145–147	55.95	55.82	58.54	*C.* sp.	–0.520	4.602
181-1123B-						
7H-2, 14–16	52.54	55.87	58.59	*C. wuellerstorfi*	–0.335	4.963
7H-2, 14–16	52.54	55.87	58.59	*C. cicatricosus*	–0.443	4.681
7H-2, 24–26	52.64	55.97	58.69	*C. wuellerstorfi* (puffy)	–0.381	4.200
7H-2, 34–36	52.74	56.07	58.79	*C. wuellerstorfi* (puffy)	–0.262	4.293
7H-2, 44–46	52.84	56.17	58.89	*C. wuellerstorfi* (puffy)	0.135	4.377
7H-2, 44–46	52.84	56.17	58.89	*C. wuellerstorfi*	0.347	3.872
7H-2, 54–56	52.94	56.27	58.99	*C. wuellerstorfi* (puffy)	–0.020	4.229
7H-2, 64–66	53.04	56.37	59.09	*C. wuellerstorfi* (puffy)	0.216	4.140
7H-2, 74–76	53.14	56.47	59.19	*C. wuellerstorfi?*	0.065	4.238
7H-2, 84–86	53.24	56.57	59.29	*C. wuellerstorfi*	0.517	4.017

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
7H-2, 94–96	53.34	56.67	59.39	*C. wuellerstorfi* (puffy)	0.024	3.936
7H-2, 104–106	53.44	56.77	59.49	*C. wuellerstorfi*	–0.075	3.915
7H-2, 114–116	53.54	56.87	59.59	*C. wuellerstorfi* (puffy)	–0.171	4.254
7H-2, 124–126	53.64	56.97	59.69	*C. wuellerstorfi*	–0.276	4.220
7H-2, 134–136	53.74	57.07	59.79	*C. wuellerstorfi*	0.049	4.389
7H-2, 144–146	53.84	57.17	59.89	*C. wuellerstorfi*	–0.223	4.162
7H-3, 4–6	53.94	57.27	59.99	*C. wuellerstorfi*	–0.033	4.201
7H-3, 14–16	54.04	57.37	60.09	*C. wuellerstorfi*	–0.015	4.220
7H-3, 24–26	54.14	57.47	60.19	*C. wuellerstorfi*	–0.258	4.179
7H-3, 34–36	54.24	57.57	60.29	*C. wuellerstorfi*	–0.135	3.898
7H-3, 46–48	54.36	57.69	60.41	*C. wuellerstorfi*	–0.015	3.921
7H-3, 54–56	54.44	57.77	60.49	*C. wuellerstorfi*	–0.234	4.404
7H-3, 64–66	54.54	57.87	60.59	*C. wuellerstorfi*	–0.370	4.332
7H-3, 74–76	54.64	57.97	60.69	*C. wuellerstorfi* 2	–0.890	4.326
7H-3, 84–86	54.74	58.07	60.79	*C. wuellerstorfi*	–0.468	4.266
7H-3, 95–97	54.85	58.18	60.90	*C. wuellerstorfi*	–0.646	4.284
7H-3, 95–97	54.85	58.18	60.90	*C. wuellerstorfi* (puffy)	–0.363	4.264
7H-3, 104–106	54.94	58.27	60.99	*C. wuellerstorfi*	–0.044	4.333
7H-3, 114–116	55.04	58.37	61.09	*C. corpulentus*	–0.239	3.971
7H-3, 124–126	55.14	58.47	61.19	*C. wuellerstorfi*	–0.031	3.890
7H-3, 134–136	55.24	58.57	61.29	*C. wuellerstorfi*	0.239	3.758
7H-3, 144–146	55.34	58.67	61.39	*C. wuellerstorfi*	–0.238	4.115
7H-4, 4–6	55.44	58.77	61.49	*C. wuellerstorfi* (puffy)	–0.654	4.404
7H-4, 4–6	55.44	58.77	61.49	*C. wuellerstorfi*	–0.581	4.421
7H-4, 14–16	55.54	58.87	61.59	*C. wuellerstorfi*	–0.411	4.377
7H-4, 24–26	55.64	58.97	61.69	*C. wuellerstorfi*	–0.414	4.338
7H-4, 34–36	55.74	59.07	61.79	*C. wuellerstorfi*	–0.278	4.385
7H-4, 44–46	55.84	59.17	61.89	*C. wuellerstorfi*	0.021	4.260
7H-4, 54–56	55.94	59.27	61.99	*C. wuellerstorfi*	0.355	4.027
7H-4, 64–66	56.04	59.37	62.09	*C. wuellerstorfi*	0.445	3.887
7H-4, 73–75	56.13	59.46	62.18	*C. wuellerstorfi*	0.404	3.940
7H-4, 84–86	56.24	59.57	62.29	*C. wuellerstorfi*	0.288	3.767
7H-4, 94–96	56.34	59.67	62.39	*C. wuellerstorfi*	0.138	4.077
7H-4, 104–106	56.44	59.77	62.49	*C. wuellerstorfi*	–0.096	4.357
7H-4, 114–116	56.54	59.87	62.59	*C. wuellerstorfi*	0.081	4.310
7H-4, 124–126	56.64	59.97	62.69	*C. wuellerstorfi*	–0.213	4.449
7H-4, 134–136	56.74	60.07	62.79	*C. wuellerstorfi*	–0.134	4.220
7H-4, 143–145	56.83	60.16	62.88	*C.* sp.	0.005	4.093
7H-5, 4–6	56.94	60.27	62.99	*C. wuellerstorfi*	0.118	3.927
7H-5, 14–16	57.04	60.37	63.09	*C. wuellerstorfi*	0.423	3.711
7H-5, 24–26	57.14	60.47	63.19	*C. wuellerstorfi*	0.438	3.622
7H-5, 34–36	57.24	60.57	63.29	*C. wuellerstorfi*	0.087	3.828
7H-5, 44–46	57.34	60.67	63.39	*C. wuellerstorfi*	0.111	3.618
7H-5, 54–56	57.44	60.77	63.49	*C. wuellerstorfi*	–0.096	3.894
7H-5, 64–66	57.54	60.87	63.59	*C. wuellerstorfi*	0.195	3.429
7H-5, 74–76	57.64	60.97	63.69	*C. wuellerstorfi*	0.231	3.481
7H-5, 74–76	57.64	60.97	63.69	*C. wuellerstorfi*	0.112	3.405
7H-5, 84–86	57.74	61.07	63.79	*C. wuellerstorfi*	–0.037	3.391
7H-5, 84–86	57.74	61.07	63.79	*U. hispida* 3	–0.074	4.267
7H-5, 94–96	57.84	61.17	63.89	*C. wuellerstorfi* (puffy)	–0.255	4.492
7H-5, 94–96	57.84	61.17	63.89	*C. wuellerstorfi* 2	–0.687	4.643
181-1123C-						
7H-3, 75–77	60.25	61.24	63.96	*C.* sp.	–0.142	4.209
7H-3, 85–87	60.35	61.34	64.06	*C. wuellerstorfi* (puffy)	–0.262	4.383
7H-3, 95–97	60.45	61.44	64.16	*C. wuellerstorfi*	–0.248	4.347
7H-3, 105–107	60.55	61.54	64.26	*C.* sp. 2	0.079	4.004
7H-3, 115–117	60.65	61.64	64.36	*C. wuellerstorfi*	0.458	3.852
7H-3, 125–127	60.75	61.74	64.46	*C. wuellerstorfi*	–0.029	3.841
181-1123B-						
7H-6, 24–26	58.64	61.97	64.61	*C. wuellerstorfi*	0.081	4.028
7H-6, 24–26	58.64	61.97	64.61	*C. wuellerstorfi*	0.499	3.464
7H-6, 34–36	58.74	62.07	64.68	*C. kullenbergi*	0.152	3.718
181-1123C-						
7H-4, 5–7	61.05	62.04	64.76	*C. kullenbergi*	0.240	3.689
7H-4, 5–7	61.05	62.04	64.76	*C. wuellerstorfi*	0.445	3.716
7H-4, 15–17	61.15	62.14	64.86	*C. wuellerstorfi*	0.034	3.574
7H-4, 15–17	61.15	62.14	64.86	*C. wuellerstorfi* 2	0.450	3.586
7H-4, 25–27	61.25	62.24	64.96	*C. wuellerstorfi*	–0.297	4.624

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
7H-4, 25–27	61.25	62.24	64.96	*C. cicatricosus*	–0.202	4.583
7H-4, 25–27	61.25	62.24	64.96	*U. hispida* 3	–0.333	4.262
7H-4, 35–37	61.35	62.34	65.06	*C. wuellerstorfi*	0.069	4.684
7H-4, 35–37	61.35	62.34	65.06	*C.* sp.	0.170	4.496
7H-4, 45–47	61.45	62.44	65.16	*C. wuellerstorfi*	–0.180	4.417
7H-4, 45–47	61.45	62.44	65.16	*C.* sp.	–0.002	4.400
7H-4, 55–57	61.55	62.54	65.26	*C. wuellerstorfi*	0.397	4.467
7H-4, 65–67	61.65	62.64	65.36	*C. wuellerstorfi*	0.564	3.971
7H-4, 75–77	61.75	62.74	65.46	*C. cicatricosus*	0.170	4.112
7H-4, 85–87	61.85	62.84	65.56	*C. cicatricosus*	0.509	3.931
7H-4, 85–87	61.85	62.84	65.56	*C. wuellerstorfi*	0.696	4.132
7H-4, 95–97	61.95	62.94	65.66	*C. wuellerstorfi*	0.618	3.778
7H-4, 105–107	62.05	63.04	65.76	*C. wuellerstorfi*	0.409	3.908
7H-4, 115–117	62.15	63.14	65.86	*C. wuellerstorfi*	–0.058	4.252
7H-4, 125–127	62.25	63.24	65.96	*C. wuellerstorfi*	–0.235	4.716
7H-4, 135–137	62.35	63.34	66.06	*C. wuellerstorfi*	0.060	4.697
7H-4, 145–147	62.45	63.44	66.16	*C. wuellerstorfi*	–0.165	4.748
7H-5, 5–7	62.55	63.54	66.26	*C. wuellerstorfi*	–0.254	4.592
7H-5, 15–17	62.65	63.64	66.36	*C. wuellerstorfi*	0.037	4.676
7H-5, 25–27	62.75	63.74	66.46	*C. wuellerstorfi*	0.016	4.376
7H-5, 35–37	62.85	63.84	66.56	*C. wuellerstorfi*	–0.069	4.321
7H-5, 45–47	62.95	63.94	66.66	*C. wuellerstorfi*	–0.555	4.404
7H-5, 45–47	62.95	63.94	66.66	*C. wuellerstorfi*	0.023	4.293
7H-5, 55–57	63.05	64.04	66.76	*C.* sp.	0.215	4.013
7H-5, 55–57	63.05	64.04	66.76	*C.* sp. 2	0.167	4.047
7H-5, 65–67	63.15	64.14	66.86	*C. wuellerstorfi*	0.419	3.997
7H-5, 65–67	63.15	64.14	66.86	*C. wuellerstorfi*	–0.046	3.897
7H-5, 75–77	63.25	64.24	66.96	*C. wuellerstorfi*	–0.440	4.158
7H-5, 75–77	63.25	64.24	66.96	*C. wuellerstorfi*	0.177	3.923
7H-5, 85–87	63.35	64.34	67.06	*C. wuellerstorfi*	–0.099	3.956
7H-5, 85–87	63.35	64.34	67.06	*C. wuellerstorfi*	–0.332	4.229
7H-5, 95–97	63.45	64.44	67.16	*C.* sp.	0.079	3.866
7H-5, 95–97	63.45	64.44	67.16	*C. wuellerstorfi*	0.020	3.838
7H-5, 105–107	63.55	64.54	67.26	*C. wuellerstorfi*	0.302	3.958
7H-5, 105–107	63.55	64.54	67.26	*C. wuellerstorfi* 2	0.023	4.014
7H-5, 105–107	63.55	64.54	67.26	*C. cicatricosus*	0.311	4.075
7H-5, 115–117	63.65	64.64	67.36	*C. wuellerstorfi*	0.249	3.906
7H-5, 115–117	63.65	64.64	67.36	*C. wuellerstorfi*	–0.356	4.452
7H-5, 125–127	63.75	64.74	67.46	*C. wuellerstorfi*	0.012	4.368
7H-5, 125–127	63.75	64.74	67.46	*C. wuellerstorfi* 2	0.131	4.392
7H-5, 135–137	63.85	64.84	67.56	*C. wuellerstorfi*	–0.168	4.478
7H-5, 135–137	63.85	64.84	67.56	*C. wuellerstorfi*	–0.240	4.524
7H-5, 145–147	63.95	64.94	67.66	*C. wuellerstorfi*	–0.699	4.239
7H-5, 145–147	63.95	64.94	67.66	*C. wuellerstorfi*	0.164	4.239
7H-6, 5–7	64.05	65.04	67.76	*C. wuellerstorfi*	0.032	4.380
7H-6, 5–7	64.05	65.04	67.76	*C. wuellerstorfi*	0.187	4.230
7H-6, 15–17	64.15	65.14	67.86	*C. wuellerstorfi*	0.021	3.954
7H-6, 15–17	64.15	65.14	67.86	*C. wuellerstorfi*	–0.168	4.228
7H-6, 25–27	64.25	65.24	67.96	*C. wuellerstorfi*	0.049	4.145
7H-6, 25–27	64.25	65.24	67.96	*C. wuellerstorfi* 2	–0.027	3.988
7H-6, 35–37	64.35	65.34	68.06	*C. wuellerstorfi*	0.266	4.251
7H-6, 35–37	64.35	65.34	68.06	*C. wuellerstorfi* 2	–0.202	3.757
7H-6, 45–47	64.45	65.44	68.16	*C. wuellerstorfi*	–0.271	3.882
7H-6, 45–47	64.45	65.44	68.16	*C. wuellerstorfi*	0.533	3.713
7H-6, 55–57	64.55	65.54	68.26	*C. wuellerstorfi*	–0.144	3.853
7H-6, 55–57	64.55	65.54	68.26	*C. wuellerstorfi* 2	0.276	3.870
7H-6, 65–67	64.65	65.64	68.36	*C. wuellerstorfi*	0.529	3.734
181-1123B-						
8H-2, 64–66	62.54	65.65	68.37	*C. wuellerstorfi*	0.083	4.163
8H-2, 64–66	62.54	65.65	68.37	*C. wuellerstorfi*	0.231	3.883
181-1123C-						
7H-6, 75–77	64.75	65.74	68.45	*C. wuellerstorfi*	0.109	4.112
181-1123B-						
8H-2, 74–76	62.64	65.75	68.47	*C. wuellerstorfi*	0.321	3.843
8H-2, 74–76	62.64	65.75	68.47	*C. wuellerstorfi* 2	0.092	4.003
181-1123C-						
7H-6, 85–87	64.85	65.84	68.54	*C. wuellerstorfi*	0.227	3.981

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
181-1123B-						
8H-2, 84–86	62.74	65.85	68.57	*C. wuellerstorfi*	0.614	3.842
8H-2, 84–86	62.74	65.85	68.57	*C. wuellerstorfi* 2	0.491	3.993
181-1123C-						
7H-6, 95–97	64.95	65.94	68.63	*C. wuellerstorfi*	–0.056	4.051
181-1123B-						
8H-2, 94–96	62.84	65.95	68.67	*C. wuellerstorfi*	0.095	3.846
8H-2, 94–96	62.84	65.95	68.67	*C. wuellerstorfi*	0.346	3.824
181-1123C-						
7H-6, 105–107	65.05	66.04	68.72	*C. wuellerstorfi*	0.341	3.922
181-1123B-						
8H-2, 104–106	62.94	66.05	68.77	*C. wuellerstorfi*	0.217	4.100
8H-2, 104–106	62.94	66.05	68.77	*C. wuellerstorfi* 2	0.081	4.053
181-1123C-						
7H-6, 115–117	65.15	66.14	68.81	*C. wuellerstorfi* 2	0.200	3.988
181-1123B-						
8H-2, 114–116	63.04	66.15	68.87	*C. wuellerstorfi*	0.577	4.050
8H-2, 114–116	63.04	66.15	68.87	*C. wuellerstorfi*	0.343	4.179
181-1123C-						
7H-6, 125–127	65.25	66.24	68.90	*C. wuellerstorfi*	0.525	4.036
181-1123B-						
8H-2, 124–126	63.14	66.25	68.97	*C. wuellerstorfi*	0.414	3.997
8H-2, 124–126	63.14	66.25	68.97	*C.* sp.	0.359	4.080
181-1123C-						
7H-6, 135–137	65.35	66.34	68.99	*C. wuellerstorfi*	0.380	4.041
181-1123B-						
8H-2, 134–136	63.24	66.35	69.07	*C. wuellerstorfi*	0.612	3.815
8H-2, 134–136	63.24	66.35	69.07	*C. cicatricosu* 2	0.369	3.814
181-1123C-						
7H-6, 145–147	65.45	66.44	69.09	*C. wuellerstorfi*	0.568	3.821
181-1123B-						
8H-2, 144–146	63.34	66.45	69.17	*C. wuellerstorfi*	0.069	3.962
8H-2, 144–146	63.34	66.45	69.17	*C. cicatricosus*	0.420	3.828
8H-3, 4–6	63.44	66.55	69.27	*C.* sp.	–0.250	4.208
8H-3, 4–6	63.44	66.55	69.27	*C. cicatricosu* 2	0.199	4.058
8H-3, 14–16	63.54	66.65	69.37	*C.* sp. 2	0.208	4.715
8H-3, 14–16	63.54	66.65	69.37	*U. hispida* 3	0.119	4.384
8H-3, 24–26	63.64	66.75	69.47	*C. wuellerstorfi*	0.306	4.580
8H-3, 24–26	63.64	66.75	69.47	*C.* sp.	–0.256	4.560
8H-3, 34–36	63.74	66.85	69.57	*C. wuellerstorfi*	0.161	4.477
8H-3, 44–46	63.84	66.95	69.67	*C. wuellerstorfi*	0.062	4.367
8H-3, 54–56	63.94	67.05	69.77	*C. wuellerstorfi*	0.162	4.502
8H-3, 64–66	64.04	67.15	69.87	*C. wuellerstorfi*	–0.282	4.410
8H-3, 74–76	64.14	67.25	69.97	*C. wuellerstorfi* 2	–0.394	4.410
8H-3, 84–86	64.24	67.35	70.07	*C. cicatricosus*	0.175	3.968
8H-3, 94–96	64.34	67.45	70.17	*C. wuellerstorfi*	–0.069	3.989
8H-3, 104–106	64.44	67.55	70.27	*C. wuellerstorfi*	0.130	3.973
8H-3, 114–116	64.54	67.65	70.37	*C. wuellerstorfi*	–0.480	4.154
8H-3, 124–126	64.64	67.75	70.47	*C. wuellerstorfi*	–0.808	4.264
8H-3, 134–136	64.74	67.85	70.57	*C.* sp.	–0.402	4.575
8H-3, 144–146	64.84	67.95	70.67	*C. wuellerstorfi*	–0.469	4.530
8H-4, 4–6	64.94	68.05	70.77	*C. wuellerstorfi*	–0.019	4.382
8H-4, 14–16	65.04	68.15	70.87	*C. wuellerstorfi*	–0.071	4.098
8H-4, 24–26	65.14	68.25	70.97	*C. wuellerstorfi*	0.008	3.804
8H-4, 34–36	65.24	68.35	71.07	*C. wuellerstorfi*	–0.028	4.070
8H-4, 44–46	65.34	68.45	71.17	*C. wuellerstorfi*	–0.101	4.346
8H-4, 54–56	65.44	68.55	71.27	*C. wuellerstorfi*	–0.038	4.152
8H-4, 64–66	65.54	68.65	71.37	*C. wuellerstorfi*	–0.759	4.184
8H-4, 74–76	65.64	68.75	71.47	*C. wuellerstorfi*	–0.021	4.061
8H-4, 84–86	65.74	68.85	71.57	*C. wuellerstorfi*	0.043	4.018
8H-4, 94–96	65.84	68.95	71.67	*C. wuellerstorfi*	–0.139	4.504
8H-4, 104–106	65.94	69.05	71.77	*C. wuellerstorfi*	0.038	4.217
8H-4, 114–116	66.04	69.15	71.87	*C. wuellerstorfi*	0.104	4.179
8H-4, 124–126	66.14	69.25	71.97	*C. wuellerstorfi*	0.141	3.952

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
8H-4, 134–136	66.24	69.35	72.07	*C. wuellerstorfi*	0.498	3.785
8H-4, 144–146	66.34	69.45	72.17	*C. wuellerstorfi*	–0.059	3.880
8H-5, 4–6	66.44	69.55	72.27	*C. wuellerstorfi*	–0.159	4.016
8H-5, 14–16	66.54	69.65	72.37	*C. wuellerstorfi*	–0.658	4.205
8H-5, 24–26	66.64	69.75	72.47	*C. wuellerstorfi*	–0.387	4.092
181–1123C-						
8H-2, 45–47	67.95	69.68	72.58	*C. wuellerstorfi*	–0.636	4.173
8H-2, 45–47	67.95	69.68	72.58	*C. wuellerstorfi*	–0.343	4.194
8H-2, 55–57	68.05	69.78	72.64	*C. wuellerstorfi*	–0.372	4.231
8H-2, 65–67	68.15	69.88	72.74	*C. wuellerstorfi*	–0.209	4.324
8H-2, 75–77	68.25	69.98	72.84	*C. wuellerstorfi*	–0.619	4.451
8H-2, 85–87	68.35	70.08	72.94	*C. wuellerstorfi*	–0.485	4.211
8H-2, 95–97	68.45	70.18	73.04	*C. wuellerstorfi*	0.152	4.047
8H-2, 105–107	68.55	70.28	73.14	*C. wuellerstorfi*	0.302	3.713
8H-2, 115–117	68.65	70.38	73.24	*U. hispida*	0.314	3.628
8H-2, 125–127	68.75	70.48	73.34	*C. wuellerstorfi*	0.284	4.109
8H-2, 135–137	68.85	70.58	73.44	*C. wuellerstorfi*	–0.383	3.994
8H-2, 145–147	68.95	70.68	73.54	*C. wuellerstorfi*	0.526	3.788
8H-3, 5–7	69.05	70.78	73.64	*C. wuellerstorfi*	–0.005	3.805
8H-3, 15–17	69.15	70.88	73.74	*C. wuellerstorfi*	0.016	3.859
8H-3, 25–27	69.25	70.98	73.84	*C. wuellerstorfi*	–0.092	4.287
8H-3, 35–37	69.35	71.08	73.94	*C. wuellerstorfi*	–0.465	4.417
8H-3, 45–47	69.45	71.18	74.04	*C. wuellerstorfi* 2	–0.154	4.181
8H-3, 55–57	69.55	71.28	74.14	*C. wuellerstorfi*	0.205	4.038
8H-3, 65–67	69.65	71.38	74.24	*C. wuellerstorfi*	0.111	3.824
8H-3, 75–77	69.75	71.48	74.34	*C. wuellerstorfi*	–0.636	4.019
8H-3, 85–87	69.85	71.58	74.44	*C. wuellerstorfi*	0.247	4.057
8H-3, 95–97	69.95	71.68	74.54	*C. wuellerstorfi*	–0.215	3.996
8H-3, 105–107	70.05	71.78	74.64	*C. wuellerstorfi*	0.474	3.998
8H-3, 115–117	70.15	71.88	74.74	*C. wuellerstorfi*	0.061	3.828
8H-3, 125–127	70.25	71.98	74.84	*C. wuellerstorfi*	0.187	3.852
8H-3, 135–137	70.35	72.08	74.94	*C. wuellerstorfi*	0.077	3.848
8H-3, 145–147	70.45	72.18	75.04	*C. wuellerstorfi*	–0.043	3.943
8H-4, 5–7	70.55	72.28	75.14	*C. wuellerstorfi* 2	–0.259	4.224
8H-4, 15–17	70.65	72.38	75.24	*C. wuellerstorfi*	–0.325	4.439
8H-4, 25–27	70.75	72.48	75.34	*C. wuellerstorfi?*	–0.219	4.481
8H-4, 25–27	70.75	72.48	75.34	*C. wuellerstorfi* 2	–0.327	4.374
8H-4, 35–37	70.85	72.58	75.44	*C. wuellerstorfi*	–0.188	4.523
8H-4, 45–47	70.95	72.68	75.54	*C. wuellerstorfi*	–0.101	3.983
8H-4, 55–57	71.05	72.78	75.64	*C. wuellerstorfi*	0.101	4.257
8H-4, 65–67	71.15	72.88	75.74	*C. wuellerstorfi*	–0.341	4.011
8H-4, 75–77	71.25	72.98	75.84	*C. wuellerstorfi*	0.403	3.899
8H-4, 85–87	71.35	73.08	75.94	*C. wuellerstorfi*	0.238	3.793
8H-4, 95–97	71.45	73.18	76.04	*C. wuellerstorfi*	–0.081	3.955
8H-4, 105–107	71.55	73.28	76.14	*C. wuellerstorfi*	0.164	3.690
8H-4, 115–117	71.65	73.38	76.24	*C. wuellerstorfi*	0.144	3.948
8H-4, 125–127	71.75	73.48	76.34	*C. wuellerstorfi*	–0.211	4.207
181-1123A-						
8H-5, 70–72	69.8	73.61	76.31	*C. wuellerstorfi*	–0.266	4.053
8H-5, 80–82	69.9	73.71	76.42	*C. wuellerstorfi*	–0.096	4.102
8H-5, 80–82	69.9	73.71	76.42	*C. wuellerstorfi*	0.366	4.026
181-1123C-						
8H-5, 5–7	72.05	73.78	76.64	*C. wuellerstorfi* 2	0.106	4.094
8H-5, 5–7	72.05	73.78	76.64	*C. wuellerstorfi*	–0.194	4.155
8H-5, 15–17	72.15	73.88	76.74	*C. wuellerstorfi*	0.106	4.091
8H-5, 25–27	72.25	73.98	76.84	*C. wuellerstorfi*	0.279	3.884
8H-5, 25–27	72.25	73.98	76.84	*U. peregrina*	0.639	3.844
8H-5, 35–37	72.35	74.08	76.94	*C. wuellerstorfi*	0.573	3.849
8H-5, 45–47	72.45	74.18	77.04	*C.* sp.	0.276	3.745
8H-5, 55–57	72.55	74.28	77.14	*C. wuellerstorfi*	0.533	3.543
8H-5, 65–67	72.65	74.38	77.24	*C. wuellerstorfi*	0.529	3.615
8H-5, 75–77	72.75	74.48	77.34	*C. wuellerstorfi*	0.635	3.753
8H-5, 85–87	72.85	74.58	77.44	*C. wuellerstorfi*	0.251	4.238
8H-5, 95–97	72.95	74.68	77.54	*C. wuellerstorfi* 2	0.103	4.377
8H-5, 105–107	73.05	74.78	77.64	*C. wuellerstorfi*	0.143	4.261
8H-5, 115–117	73.15	74.88	77.74	*C. wuellerstorfi*	0.330	4.057
8H-5, 125–127	73.25	74.98	77.84	*C. wuellerstorfi*	0.380	4.165
8H-5, 135–137	73.35	75.08	77.94	*C. wuellerstorfi*	0.209	4.061

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
8H-5, 145–147	73.45	75.18	78.04	*C. wuellerstorfi*	0.196	4.050
8H-6, 5–7	73.55	75.28	78.14	*U. peregrina 3*	0.348	3.633
8H-6, 15–17	73.65	75.38	78.24	*C. wuellerstorfi*	0.328	3.849
8H-6, 25–27	73.75	75.48	78.34	*C. wuellerstorfi*	0.428	3.926
8H-6, 35–37	73.85	75.58	78.44	*C. wuellerstorfi*	0.051	3.714
8H-6, 45–47	73.95	75.68	78.54	*C. wuellerstorfi*	0.362	4.238
8H-6, 55–57	74.05	75.78	78.64	*C. wuellerstorfi*	0.158	3.707
8H-6, 65–67	74.15	75.88	78.74	*C. wuellerstorfi*	–0.015	4.040
8H-6, 75–77	74.25	75.98	78.84	*C. wuellerstorfi*	0.184	3.942
8H-6, 85–87	74.35	76.08	78.94	*C. wuellerstorfi*	0.364	3.966
8H-6, 95–97	74.45	76.18	79.04	*C. wuellerstorfi*	0.280	3.787
8H-6, 105–107	74.55	76.28	79.14	*C. wuellerstorfi*	0.307	3.671
8H-6, 115–117	74.65	76.38	79.24	*C. wuellerstorfi*	0.069	4.130
8H-6, 125–127	74.75	76.48	79.34	*C. wuellerstorfi*	–0.067	4.166
8H-6, 135–137	74.85	76.58	79.44	*C. wuellerstorfi*	–0.306	4.455
8H-6, 135–137	74.85	76.58	79.44	*C. wuellerstorfi*	–0.442	4.355
8H-6, 145–147	74.95	76.68	79.54	*C. wuellerstorfi*	–0.155	3.843
181-1123B-						
9H-2, 84-86	72.24	76.71	79.57	*C. wuellerstorfi*	–0.435	4.040
9H-2, 84-86	72.24	76.71	79.57	*C. wuellerstorfi*	0.237	4.056
9H-2, 94-96	72.34	76.81	79.67	*C. wuellerstorfi* 2	–0.698	4.563
9H-2, 104–106	72.44	76.91	79.77	*C. wuellerstorfi*	–0.688	4.290
9H-2, 114–116	72.54	77.01	79.87	*C. wuellerstorfi*	–0.250	4.440
9H-2, 134–136	72.74	77.21	80.07	*C. wuellerstorfi*	0.223	3.955
9H-2, 144–146	72.84	77.31	80.17	*C. wuellerstorfi* 2	0.101	3.966
9H-3, 4–6	72.94	77.41	80.27	*C. wuellerstorfi*	0.345	3.828
9H-3, 14–16	73.04	77.51	80.37	*C. wuellerstorfi*	–0.047	3.847
9H-3, 24–26	73.14	77.61	80.47	*C. wuellerstorfi*	0.015	3.995
9H-3, 24–26	73.14	77.61	80.47	*C. wuellerstorfi* 2	0.085	3.742
9H-3, 34–36	73.24	77.71	80.57	*C. wuellerstorfi*	0.217	3.874
9H-3, 44–46	73.34	77.81	80.67	*C. wuellerstorfi*	–0.305	4.030
9H-3, 54–56	73.44	77.91	80.77	*C. wuellerstorfi*	–0.019	4.044
9H-3, 54–56	73.44	77.91	80.77	*C. wuellerstorfi*	0.172	3.791
9H-3, 74–76	73.64	78.11	80.97	*U. peregrina*	0.416	3.637
9H-3, 84–86	73.74	78.21	81.07	*C. wuellerstorfi* 2	0.214	3.870
9H-3, 94–96	73.84	78.31	81.17	*C. wuellerstorfi*	0.191	3.958
9H-3, 104–106	73.94	78.41	81.27	*C. wuellerstorfi*	0.158	3.675
9H-3, 114–116	74.04	78.51	81.37	*C. wuellerstorfi*	0.198	3.979
9H-3, 114–116	74.04	78.51	81.37	*U. hispida* 3	0.331	3.984
9H-3, 124–126	74.14	78.61	81.47	*C. wuellerstorfi*	0.340	3.645
9H-3, 124–126	74.14	78.61	81.47	*C. wuellerstorfi*	–0.429	4.168
9H-4, 4–6	74.44	78.91	81.77	*C. wuellerstorfi* 2	–0.015	4.166
9H-4, 4–6	74.44	78.91	81.77	*U. hispida*	0.517	3.706
9H-4, 14–16	74.54	79.01	81.87	*U. hispida*	–0.338	4.329
9H-4, 24–26	74.64	79.11	81.97	*C. wuellerstorfi*	0.203	4.030
9H-4, 34–36	74.74	79.21	82.07	*C. wuellerstorfi* 2	0.216	4.086
9H-4, 44–46	74.84	79.31	82.17	*C. wuellerstorfi*	–0.172	3.945
9H-4, 44–46	74.84	79.31	82.17	*C. wuellerstorfi* 3	0.304	3.865
9H-4, 54–56	74.94	79.41	82.27	*C. wuellerstorfi*	–0.534	3.963
9H-4, 54–56	74.94	79.41	82.27	*U. hispida*	0.630	3.344
9H-4, 64–66	75.04	79.51	82.37	*C.* sp. 2	0.174	4.025
9H-4, 74–76	75.14	79.61	82.47	*C.* sp.	0.104	4.102
9H-4, 84–86	75.24	79.71	82.57	*C.* sp.	0.258	3.927
9H-4, 94–96	75.34	79.81	82.67	*C. cicatricosus*	0.050	4.034
9H-4, 104–106	75.44	79.91	82.77	*C.* sp. 2	0.068	4.144
9H-4, 114–116	75.54	80.01	82.87	*C. wuellerstorfi*	0.171	4.053
9H-4, 124–126	75.64	80.11	82.97	*C. wuellerstorfi*	0.379	3.775
9H-4, 134–136	75.74	80.21	83.07	*C. wuellerstorfi*	0.267	3.739
9H-4, 144–146	75.84	80.31	83.17	*C. wuellerstorfi* 2	0.230	4.032
9H-5, 4–6	75.94	80.41	83.27	*C. wuellerstorfi*	0.151	3.839
9H-5, 14–16	76.04	80.51	83.37	*C. wuellerstorfi*	0.401	3.745
9H-5, 14–16	76.04	80.51	83.37	*C. wuellerstorfi*	0.380	3.767
9H-5, 24–26	76.14	80.61	83.47	*C. wuellerstorfi*	0.333	3.660
9H-5, 34–36	76.24	80.71	83.57	*C. wuellerstorfi*	0.292	3.511
9H-5, 44–46	76.34	80.81	83.67	*C. wuellerstorfi*	0.171	3.666
9H-5, 54–56	76.44	80.91	83.77	*U. peregrina*	0.566	3.565
9H-5, 64–66	76.54	81.01	83.87	*C.* sp.	0.066	3.910

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
181-1123C-						
9H-2, 135–137	78.35	81.08	83.94	*C. wuellerstorfi*	0.041	3.943
9H-2, 145–147	78.45	81.18	84.04	*C.* sp. 2	–0.208	4.294
9H-3, 5–7	78.55	81.28	84.14	*C. wuellerstorfi* 2	–0.799	4.103
9H-3, 15–17	78.65	81.38	84.24	*C. wuellerstorfi*	0.220	3.835
9H-3, 25–27	78.75	81.48	84.34	*C.* sp. 2	0.214	3.991
9H-3, 35–37	78.85	81.58	84.44	*U. peregrina* 2	0.485	3.471
9H-3, 45–47	78.95	81.68	84.54	*C.* sp. 2	0.188	3.566
9H-3, 55–57	79.05	81.78	84.64	*C. wuellerstorfi*	0.476	3.589
9H-3, 65–67	79.15	81.88	84.74	*C.* sp.	0.045	3.900
9H-3, 75–77	79.25	81.98	84.84	*C. wuellerstorfi*	0.307	3.783
9H-3, 85–87	79.35	82.08	84.94	*C.* sp.	–0.096	4.111
9H-3, 95–97	79.45	82.18	85.04	*C.* sp. 2	–0.160	4.116
9H-3, 115–117	79.65	82.38	85.24	*C. wuellerstorfi*	–0.052	4.406
9H-3, 115–117	79.65	82.38	85.24	*C. wuellerstorfi*	–0.336	4.214
9H-3, 125–127	79.75	82.48	85.34	*C. wuellerstorfi* 2	–0.038	4.142
181–1123A-						
9H-4, 100–102	78.10	82.49	85.41	*C. cicatricosus*	0.328	3.889
9H-4, 110–112	78.20	82.59	85.51	*C. wuellerstorfi*	0.295	3.931
9H-4, 110–112	78.20	82.59	85.51	*C. wuellerstorfi*	0.494	3.960
181–1123C-						
9H-4, 5–7	80.05	82.78	85.64	*C. wuellerstorfi* (puffy)	0.266	3.720
9H-4, 15–17	80.15	82.88	85.74	*C. wuellerstorfi*	0.158	3.700
9H-4, 25–27	80.25	82.98	85.84	*C. wuellerstorfi*	0.221	3.656
9H-4, 35–37	80.35	83.08	85.94	*C. wuellerstorfi*	0.196	3.620
9H-4, 45–47	80.45	83.18	86.04	*C. wuellerstorfi* (puffy)	0.257	3.804
9H-4, 55–57	80.55	83.28	86.14	*C. wuellerstorfi*	0.101	3.935
9H-4, 65–67	80.65	83.38	86.24	*C. wuellerstorfi*	0.159	3.989
9H-4, 75–77	80.75	83.48	86.34	*C. wuellerstorfi*	–0.019	3.892
9H-4, 85–87	80.85	83.58	86.44	*C.* sp.	–0.240	3.902
9H-4, 95–97	80.95	83.68	86.54	*C.* sp.	–0.113	4.082
9H-4, 105–107	81.05	83.78	86.64	*C.* sp.	–0.048	3.977
9H-4, 115–117	81.15	83.88	86.74	*C. wuellerstorfi*	–0.410	3.648
9H-4, 125–127	81.25	83.98	86.84	*C. wuellerstorfi*	0.021	3.664
9H-4, 125–127	81.25	83.98	86.84	*C. cicatricosus*	–0.151	3.555
9H-4, 135–137	81.35	84.08	86.94	*C. wuellerstorfi*	–0.306	3.503
9H-4, 145–147	81.45	84.18	87.04	*C. corpulentus*	–0.016	3.667
9H-4, 145–147	81.45	84.18	87.04	*U. peregrina* 3	0.189	3.550
9H-5, 5–7	81.55	84.28	87.14	*C. corpulentus*	0.113	3.612
9H-5, 15–17	81.65	84.38	87.24	*C. wuellerstorfi* 2	–0.052	4.176
9H-5, 25–27	81.75	84.48	87.34	*C.* sp. 2	0.031	3.986
9H-5, 35–37	81.85	84.58	87.44	*C. wuellerstorfi* (puffy)	0.182	3.905
9H-5, 35–37	81.85	84.58	87.44	*C. wuellerstorfi*	0.255	3.938
9H-5, 45–47	81.95	84.68	87.54	*C. wuellerstorfi* (puffy)	–0.015	4.074
9H-5, 55–57	82.05	84.78	87.64	*C. corpulentus*	–0.077	4.029
9H-5, 55–57	82.05	84.78	87.64	*C. wuellerstorfi* 2	0.118	3.926
9H-5, 55–57	82.05	84.78	87.64	*C. cicatricosus* 2	–0.045	3.961
9H-5, 65–67	82.15	84.88	87.74	*C. wuellerstorfi*	0.397	4.606
9H-5, 65–67	82.15	84.88	87.74	*C. cicatricosus* 2	0.182	3.888
9H-5, 75–77	82.25	84.98	87.84	*C. corpulentus*	0.384	3.699
9H-5, 85–87	82.35	85.08	87.94	*C. wuellerstorfi*	0.117	3.640
9H-5, 95–97	82.45	85.18	88.04	*C. wuellerstorfi*	0.533	3.534
9H-5, 105–107	82.55	85.28	88.14	*C. wuellerstorfi*	–0.259	3.781
9H-5, 115–117	82.65	85.38	88.24	*C. wuellerstorfi*	0.289	3.516
9H-5, 115–117	82.65	85.38	88.24	*C.* sp.	0.296	3.919
9H-5, 125–127	82.75	85.48	88.34	*U. hispida*	0.747	3.883
9H-5, 125–127	82.75	85.48	88.34	*C.* sp.	0.353	3.746
9H-5, 135–137	82.85	85.58	88.44	*C. wuellerstorfi*	0.472	3.947
9H-5, 145–147	82.95	85.68	88.54	*C. wuellerstorfi* 2	–0.020	4.186
9H-6, 5–7	83.05	85.78	88.64	*C. wuellerstorfi* 2	–0.123	4.114
181–1123B-						
10H-2, 14–16	81.04	85.87	88.73	*C. wuellerstorfi*	0.509	3.628
10H-2, 24–26	81.14	85.97	88.83	*C. wuellerstorfi*	0.570	3.730
10H-2, 35–37	81.25	86.08	88.94	*C.* sp. 2	0.297	3.754
10H-2, 44–46	81.34	86.17	89.03	*C. kullenbergi*	0.257	3.755
10H-2, 44–46	81.34	86.17	89.03	*C.* sp.	0.426	3.600
10H-2, 54–56	81.44	86.27	89.13	*C. wuellerstorfi*	–0.130	3.659
10H-2, 64–66	81.54	86.37	89.23	*C. wuellerstorfi*	0.083	4.192

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
10H-2, 74–76	81.64	86.47	89.33	*N. umbonifera*	0.028	3.417
10H-2, 84–86	81.74	86.57	89.43	*C. wuellerstorfi* (puffy)	0.085	4.443
10H-2, 94–96	81.84	86.67	89.53	*C.* sp. 2	–0.043	4.398
10H-2, 104–106	81.94	86.77	89.63	*C. wuellerstorfi* 2	–0.016	4.214
10H-2, 114–116	82.04	86.87	89.73	*C. wuellerstorfi*	0.262	4.010
10H-2, 124–126	82.14	86.97	89.83	*C. wuellerstorfi*	0.453	3.767
10H-2, 134–136	82.24	87.07	89.93	*C. wuellerstorfi*	0.408	3.738
10H-2, 134–136	82.24	87.07	89.93	*C. wuellerstorfi*	0.559	3.634
10H-2, 144–146	82.34	87.17	90.03	*C. wuellerstorfi*	0.506	3.601
10H-3, 4–6	82.44	87.27	90.13	*C. wuellerstorfi*	0.473	3.688
10H-3, 24–26	82.64	87.47	90.33	*C. pachyderma*	0.120	3.922
10H-3, 24–26	82.64	87.47	90.33	*C.* sp.	0.143	3.812
10H-3, 34–36	82.74	87.57	90.43	*C. wuellerstorfi* (puffy)	0.042	4.034
10H-3, 54–56	82.94	87.77	90.63	*C. wuellerstorfi*	0.010	4.606
10H-3, 64–66	83.04	87.87	90.73	*C.* sp.	–0.264	4.336
10H-3, 74–76	83.14	87.97	90.83	*C.* sp. 2	0.078	4.252
10H-3, 84–86	83.24	88.07	90.93	*C.* sp.	0.097	4.065
10H-3, 94–96	83.34	88.17	91.03	*C.* sp. 2	0.257	3.867
10H-3, 104–106	83.44	88.27	91.13	*U. peregrina* 2	0.303	3.485
10H-3, 114–116	83.54	88.37	91.23	*C. wuellerstorfi*	–0.171	3.913
10H-3, 124–126	83.64	88.47	91.33	*C. wuellerstorfi*	–0.293	4.027
10H-3, 134–136	83.74	88.57	91.43	*C. wuellerstorfi*	–0.471	4.464
10H-3, 144–146	83.84	88.67	91.53	*C. wuellerstorfi*	–0.175	4.460
10H-4, 4–6	83.94	88.77	91.63	*C. wuellerstorfi* (puffy)	–0.292	4.454
10H-4, 14–16	84.04	88.87	91.73	*C. wuellerstorfi* (puffy) 2	–0.288	4.430
10H-4, 24–26	84.14	88.97	91.83	*C. wuellerstorfi*	–0.960	4.432
10H-4, 34–36	84.24	89.07	91.93	*C. wuellerstorfi*	–0.354	4.251
10H-4, 44–46	84.34	89.17	92.03	*C. wuellerstorfi*	–0.300	4.252
10H-4, 54–56	84.44	89.27	92.13	*C. wuellerstorfi* (puffy)	–0.014	4.124
10H-4, 54–56	84.44	89.27	92.13	*C. wuellerstorfi* (puffy)	0.196	4.083
10H-4, 64–66	84.54	89.37	92.23	*C. wuellerstorfi* (puffy)	0.261	3.759
10H-4, 73–75	84.63	89.46	92.32	*C. wuellerstorfi* (puffy)	0.348	3.572
10H-4, 84–86	84.74	89.57	92.43	*C. wuellerstorfi*	0.462	3.452
10H-4, 94–96	84.84	89.67	92.53	*C. cicatricosus*	0.312	3.539
10H-4, 104–106	84.94	89.77	92.63	*C. wuellerstorfi*	–0.047	3.426
10H-4, 114–116	85.04	89.87	92.73	*U. peregrina* 2	0.176	3.469
10H-4, 124–126	85.14	89.97	92.83	*C. wuellerstorfi* 2	–0.034	3.805
10H-4, 134–136	85.24	90.07	92.93	*C. wuellerstorfi 2*	0.302	3.860
10H-4, 144–146	85.34	90.17	93.03	*U. peregrina* 2	0.622	3.674
10H-4, 144–146	85.34	90.17	93.03	*C. wuellerstorfi*	0.380	3.841
10H-5, 4–6	85.44	90.27	93.13	*C. wuellerstorfi*	0.225	3.735
10H-5, 14–16	85.54	90.37	93.23	*C.* sp.	0.040	3.701
10H-5, 24–26	85.64	90.47	93.33	*C.* sp.	0.218	3.780
10H-5, 24–26	85.64	90.47	93.33	*U. peregrina*	0.483	3.615
10H-5, 34–36	85.74	90.57	93.43	*C.* sp.	0.269	3.745
10H-5, 34–36	85.74	90.57	93.43	*U. peregrina* 2	0.303	3.713
10H-5, 44–46	85.84	90.67	93.53	*C. wuellerstorfi*	0.284	3.729
10H-5, 54–56	85.94	90.77	93.63	*C. wuellerstorfi*	0.374	3.622
10H-5, 64–66	86.04	90.87	93.73	*C. wuellerstorfi*	0.284	3.780
10H-5, 73–75	86.13	90.96	93.82	*C. wuellerstorfi*	0.436	3.517
10H-5, 84–86	86.24	91.07	93.93	*C. wuellerstorfi*	0.161	3.665
10H-5, 94–96	86.34	91.17	94.03	*C. wuellerstorfi*	0.264	3.847
10H-5, 104–106	86.44	91.27	94.13	*C. wuellerstorfi*	0.267	3.773
10H-5, 104–106	86.44	91.27	94.13	*C. wuellerstorfi*	0.237	3.927
10H-5, 114–116	86.54	91.37	94.23	*C. wuellerstorfi*	0.279	4.091
10H-5, 134–136	86.74	91.57	94.43	*C. wuellerstorfi*	0.372	3.993
10H-5, 144–146	86.84	91.67	94.53	*C. wuellerstorfi*	0.398	4.080
10H-6, 4–6	86.94	91.77	94.63	*C.* sp.	0.100	4.039
10H-6, 4–6	86.94	91.77	94.63	*C.* sp. 3	0.215	3.815
10H-6, 14–16	87.04	91.87	94.73	*C. wuellerstorfi*	0.644	3.367
10H-6, 14–16	87.04	91.87	94.73	*C.* sp. 2	–0.008	4.073
10H-6, 24–26	87.14	91.97	94.83	*C. wuellerstorfi*	0.375	3.868
10H-6, 24–26	87.14	91.97	94.83	*C. wuellerstorfi* 2	0.285	3.858
10H-6, 34–36	87.24	92.07	94.93	*C. wuellerstorfi*	0.614	3.620
10H-6, 34–36	87.24	92.07	94.93	*C. wuellerstorfi* 2	–0.044	3.914
10H-6, 44–46	87.34	92.17	95.03	*C.* sp. 2	0.573	3.564
10H-6, 44–46	87.34	92.17	95.03	*C. cicatricosus* 2	0.214	3.431
181-1123C-						
10H-3, 75–77	88.75	92.24	95.10	*C. wuellerstorfi* 2	0.528	3.645

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
10H-3, 75–77	88.75	92.24	95.10	*C. cicatricosus*	0.242	3.590
10H-3, 85–87	88.85	92.34	95.20	*C. cicatricosus*	0.041	3.624
10H-3, 95–97	88.95	92.44	95.30	*C. wuellerstorfi*	0.144	4.159
10H-3, 95–97	88.95	92.44	95.30	*C. wuellerstorfi*	0.222	4.023
10H-3, 105–107	89.05	92.54	95.40	*C. wuellerstorfi*	0.477	3.838
10H-3, 105–107	89.05	92.54	95.40	*U. peregrina* 2	–0.243	3.738
10H-3, 115–117	89.15	92.64	95.50	*C. wuellerstorfi*	0.371	3.853
10H-3, 115–117	89.15	92.64	95.50	*C. wuellerstorfi*	0.352	3.430
10H-3, 115–117	89.15	92.64	95.50	*C. wuellerstorfi*	NA	3.689
10H-3, 125–127	89.25	92.74	95.60	*C. wuellerstorfi*	0.355	3.899
10H-3, 125–127	89.25	92.74	95.60	*C. wuellerstorfi*	0.209	4.206
10H-3, 135–137	89.35	92.84	95.70	*C. wuellerstorfi*	0.311	3.816
10H-3, 135–137	89.35	92.84	95.70	*C. wuellerstorfi*	0.336	4.063
10H-3, 145–147	89.45	92.94	95.80	*C. wuellerstorfi*	0.343	3.626
10H-3, 145–147	89.45	92.94	95.80	*C. wuellerstorfi 2*	0.521	3.375
10H-4, 5–7	89.55	93.04	95.90	*C. wuellerstorfi*	0.235	4.005
10H-4, 5–7	89.55	93.04	95.90	*C. wuellerstorfi* 2	0.312	4.084
10H-4, 15–17	89.65	93.14	96.00	*C. wuellerstorfi*	0.080	3.781
10H-4, 15–17	89.65	93.14	96.00	*U. peregrina*	0.601	3.370
10H-4, 25–27	89.75	93.24	96.10	*C. wuellerstorfi*	0.063	4.139
10H-4, 25–27	89.75	93.24	96.10	*C. wuellerstorfi* 2	0.285	3.757
10H-4, 35–37	89.85	93.34	96.20	*C. wuellerstorfi*	0.462	3.710
10H-4, 35–37	89.85	93.34	96.20	*C. wuellerstorfi*	0.338	3.634
10H-4, 45–47	89.95	93.44	96.30	*C. cicatricosus*	0.087	3.826
10H-4, 55–57	90.05	93.54	96.40	*C. wuellerstorfi*	–0.117	3.893
10H-4, 55–57	90.05	93.54	96.40	*C. wuellerstorfi*	0.035	3.765
10H-4, 65–67	90.15	93.64	96.50	*C. wuellerstorfi*	0.238	4.002
10H-4, 65–67	90.15	93.64	96.50	*C. wuellerstorfi*	0.111	3.891
10H-4, 75–77	90.25	93.74	96.60	*C. wuellerstorfi*	0.157	3.927
10H-4, 75–77	90.25	93.74	96.60	*C. wuellerstorfi* 2	0.023	3.928
10H-4, 85–87	90.35	93.84	96.70	*C. wuellerstorfi*	0.593	3.649
10H-4, 95–97	90.45	93.94	96.80	*C. wuellerstorfi*	0.569	3.518
10H-4, 95–97	90.45	93.94	96.80	*C. wuellerstorfi*	0.569	3.540
10H-4, 105–107	90.55	94.04	96.90	*C. wuellerstorfi*	0.425	3.778
10H-4, 105–107	90.55	94.04	96.90	*C. wuellerstorfi*	–0.246	3.662
10H-4, 115–117	90.65	94.14	97.00	*C. wuellerstorfi*	0.168	3.797
10H-4, 115–117	90.65	94.14	97.00	*C. wuellerstorfi*	0.413	3.568
10H-4, 125–127	90.75	94.24	97.10	*C. wuellerstorfi*	0.302	3.496
10H-4, 125–127	90.75	94.24	97.10	*C. wuellerstorfi*	–0.113	3.783
10H-4, 135–137	90.85	94.34	97.20	*C.* sp. 2	0.229	3.684
10H-4, 145–147	90.95	94.44	97.30	*C. wuellerstorfi*	0.297	3.809
10H-4, 145–147	90.95	94.44	97.30	*C. wuellerstorfi*	–0.662	3.832
10H-5, 5–7	91.05	94.54	97.40	*C. wuellerstorfi* 2	0.123	4.049
10H-5, 15–17	91.15	94.64	97.50	*C. wuellerstorfi*	0.526	3.618
10H-5, 25–27	91.25	94.74	97.60	*C. wuellerstorfi*	–0.236	3.636
10H-5, 25–27	91.25	94.74	97.60	*C.* sp. 2	0.011	3.784
10H-5, 35–37	91.35	94.84	97.70	*C. wuellerstorfi*	0.375	3.898
10H-5, 35–37	91.35	94.84	97.70	*C. wuellerstorfi*	0.226	3.999
10H-5, 45–47	91.45	94.94	97.80	*C. wuellerstorfi*	0.153	4.019
10H-5, 45–47	91.45	94.94	97.80	*C.* sp. 2	0.186	4.040
10H-5, 55–57	91.55	95.04	97.90	*C. wuellerstorfi*	0.215	4.172
10H-5, 55–57	91.55	95.04	97.90	*C. wuellerstorfi* 2	0.149	3.899
10H-5, 65–67	91.65	95.14	98.00	*C. wuellerstorfi*	0.181	3.887
10H-5, 65–67	91.65	95.14	98.00	*C.* sp. 2	0.216	4.000
10H-5, 75–77	91.75	95.24	98.10	*C. wuellerstorfi*	0.531	3.599
10H-5, 85–87	91.85	95.34	98.20	*C. wuellerstorfi*	0.538	3.402
10H-5, 85–87	91.85	95.34	98.20	*C.* sp. 2	0.417	3.715
10H-5, 95–97	91.95	95.44	98.30	*C. wuellerstorfi*	0.484	3.546
10H-5, 95–97	91.95	95.44	98.30	*C. wuellerstorfi*	0.402	3.658
10H-5, 105–107	92.05	95.54	98.40	*C. wuellerstorfi*	0.532	3.445
10H-5, 115–117	92.15	95.64	98.50	*C. wuellerstorfi*	0.061	3.633
10H-5, 125–127	92.25	95.74	98.60	*C. wuellerstorfi*	0.596	3.594
10H-5, 125–127	92.25	95.74	98.60	*C. wuellerstorfi*	0.450	3.534
10H-5, 135–137	92.35	95.84	98.70	*C. wuellerstorfi*	0.611	3.556
10H-5, 135–137	92.35	95.84	98.70	*C. wuellerstorfi*	0.576	3.682
10H-5, 145–147	92.45	95.94	98.80	*C. wuellerstorfi*	0.435	3.757
10H-5, 145–147	92.45	95.94	98.80	*C. wuellerstorfi*	0.434	3.971
10H-6, 5–7	92.55	96.04	98.90	*C. wuellerstorfi*	–0.171	3.890
10H-6, 5-7	92.55	96.04	98.90	*C. wuellerstorfi*	0.479	3.629

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
10H-6, 15–17	92.65	96.14	99.00	*C. wuellerstorfi* 2	–0.017	3.929
10H-6, 15–17	92.65	96.14	99.00	*U. peregrina*	0.565	3.866
10H-6, 25–27	92.75	96.24	99.10	*C. wuellerstorfi?*	0.241	3.883
10H-6, 25–27	92.75	96.24	99.10	*C. wuellerstorfi* (high-spired)	0.094	3.639
10H-6, 35–37	92.85	96.34	99.20	*C. wuellerstorfi?*	0.396	3.753
10H-6, 35–37	92.85	96.34	99.20	*U. hispida* 2	0.042	3.751
10H-6, 45–47	92.95	96.44	99.30	*C. wuellerstorfi*	0.060	4.073
10H-6, 45–47	92.95	96.44	99.30	*C. wuellerstorfi* 2	–0.182	4.118
10H-6, 55–57	93.05	96.54	99.40	*C. wuellerstorfi*	0.382	3.533
10H-6, 55–57	93.05	96.54	99.40	*C. wuellerstorfi*	0.507	3.630
10H-6, 65–67	93.15	96.64	99.50	*C. wuellerstorfi*	–0.167	3.625
10H-6, 65–67	93.15	96.64	99.50	*U. hispida*	0.690	3.400
10H-6, 75–77	93.25	96.74	99.60	*C. wuellerstorfi*	0.213	3.943
10H-6, 75–77	93.25	96.74	99.60	*C.* sp. 3	0.152	4.036
10H-6, 85–87	93.35	96.84	99.70	*C.* sp.	0.140	4.052
10H-6, 85–87	93.35	96.84	99.70	*U. hispida*	0.684	3.388
10H-6, 95–97	93.45	96.94	99.80	*C.* sp. 2	0.189	4.031
10H-6, 95–97	93.45	96.94	99.80	*C. wuellerstorfi* 2	0.116	4.203
10H-6, 105–107	93.55	97.04	99.90	*C. wuellerstorfi?*	0.500	4.021
10H-6, 105–107	93.55	97.04	99.90	*C.* sp. 2	0.104	3.880
10H-6, 115–117	93.65	97.14	100.00	*C. wuellerstorfi?*	0.163	3.901
10H-6, 115–117	93.65	97.14	100.00	*C. wuellerstorfi*	0.151	3.980
10H-6, 125–127	93.75	97.24	100.10	*C. wuellerstorfi*	–0.110	4.078
10H-6, 125–127	93.75	97.24	100.10	*C.* sp. 3	0.125	4.023
10H-6, 135–137	93.85	97.34	100.20	*U. hispida*	0.200	3.505
10H-6, 135–137	93.85	97.34	100.20	*C.* sp.	0.003	3.769
181-1123B-						
11H-3, 24–26	92.14	97.25	100.25	*C. wuellerstorfi* 2	0.381	3.827
11H-3, 24–26	92.14	97.25	100.25	*C. cicatricosus*	0.099	3.602
11H-3, 34–36	92.24	97.35	100.30	*U. peregrina*	0.233	3.699
11H-3, 44–46	92.34	97.45	100.35	*C. wuellerstorfi*	–0.135	3.850
181-1123C-						
10H-7, 5–7	94.05	97.54	100.40	*C. wuellerstorfi*	0.470	3.618
10H-7, 5–7	94.05	97.54	100.40	*U. hispida* 2	0.393	3.613
181-1123B-						
11H-3, 54–56	92.44	97.55	100.41	*C.* sp. 2	0.343	3.428
11H-3, 54–56	92.44	97.55	100.41	*U. hispida*	0.459	3.416
11H-3, 64–66	92.54	97.65	100.51	*C. wuellerstorfi*	–0.141	3.004
11H-3, 64–66	92.54	97.65	100.51	*U. hispida* 2	0.857	3.456
11H-3, 74–76	92.64	97.75	100.61	*U. hispida*	0.995	3.309
11H-3, 74–76	92.64	97.75	100.61	*C. cicatricosus*	0.263	3.658
11H-3, 84–86	92.74	97.85	100.71	*C. wuellerstorfi*	–0.097	3.460
11H-3, 84–86	92.74	97.85	100.71	*U. peregrina*	0.785	3.206
11H-3, 94–96	92.84	97.95	100.81	*C. wuellerstorfi*	0.361	3.385
11H-3, 104–106	92.94	98.05	100.91	*C. wuellerstorfi*	0.327	3.625
11H-3, 114–116	93.04	98.15	101.01	*C. wuellerstorfi* 2	0.390	3.452
11H-3, 124–126	93.14	98.25	101.11	*C. wuellerstorfi*	0.351	3.645
11H-3, 134–136	93.24	98.35	101.21	*C. wuellerstorfi*	0.341	3.376
11H-3, 144–146	93.34	98.45	101.31	*C. wuellerstorfi*	0.387	3.795
11H-3, 144–146	93.34	98.45	101.31	*U. hispida*	0.549	3.657
11H-4, 4–6	93.44	98.55	101.41	*C. wuellerstorfi*	0.621	3.796
11H-4, 14–16	93.54	98.65	101.51	*C. wuellerstorfi*	0.391	3.543
11H-4, 24–26	93.64	98.75	101.61	*C. wuellerstorfi*	0.564	3.615
11H-4, 36–38	93.76	98.87	101.73	*C. wuellerstorfi*	0.579	3.544
11H-4, 44–46	93.84	98.95	101.81	*C. wuellerstorfi*	0.454	3.489
11H-4, 54–56	93.94	99.05	101.91	*C. wuellerstorfi*	0.486	3.671
11H-4, 64–66	94.04	99.15	102.01	*C. wuellerstorfi*	0.514	3.493
11H-4, 74–76	94.14	99.25	102.11	*C. wuellerstorfi*	0.389	3.555
11H-4, 84–86	94.24	99.35	102.21	*C. wuellerstorfi*	–0.162	3.644
11H-4, 94–96	94.34	99.45	102.31	*C. wuellerstorfi*	0.489	3.508
11H-4, 104–106	94.44	99.55	102.41	*C. wuellerstorfi*	0.184	3.913
11H-4, 114–116	94.54	99.65	102.51	*C. wuellerstorfi*	0.003	4.062
11H-4, 124–126	94.64	99.75	102.61	*C. wuellerstorfi*	0.322	4.132
11H-4, 134–136	94.74	99.85	102.71	*C. wuellerstorfi*	0.353	3.926
11H-4, 144–146	94.84	99.95	102.81	*C. wuellerstorfi*	0.497	3.836
11H-5, 4–6	94.94	100.05	102.91	*C. wuellerstorfi*	0.559	3.658
11H-5, 14–16	95.04	100.15	103.01	*C. wuellerstorfi*	0.448	3.650

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
11H-5, 24–26	95.14	100.25	103.11	*C. wuellerstorfi*	0.421	3.089
11H-5, 34–36	95.24	100.35	103.21	*C. wuellerstorfi*	0.711	3.513
11H-5, 44–46	95.34	100.45	103.31	*C. wuellerstorfi*	0.117	3.773
11H-5, 54–56	95.44	100.55	103.41	*C. wuellerstorfi*	0.671	3.468
11H-5, 64–66	95.54	100.65	103.51	*C. wuellerstorfi*	0.105	3.558
11H-5, 74–76	95.64	100.75	103.61	*C. wuellerstorfi*	0.575	3.633
11H-5, 84–86	95.74	100.85	103.71	*C. wuellerstorfi*	0.506	3.677
11H-5, 94–96	95.84	100.95	103.81	*C. wuellerstorfi*	0.531	3.761
11H-5, 104–106	95.94	101.05	103.91	*C. wuellerstorfi*	0.548	3.927
11H-5, 116–118	96.06	101.17	104.03	*C. cicatricosu* 2	–0.078	3.690
11H-5, 124–126	96.14	101.25	104.11	*C. wuellerstorfi*	–0.040	3.804
11H-5, 134–136	96.24	101.35	104.21	*C. wuellerstorfi*	–0.304	3.889
11H-5, 144–146	96.34	101.45	104.31	*C. wuellerstorfi*	0.476	3.540
11H-6, 4–6	96.44	101.55	104.41	*C. wuellerstorfi*	0.548	3.624
11H-6, 14–16	96.54	101.65	104.51	*C. wuellerstorfi*	–0.272	3.660
11H-6, 14–16	96.54	101.65	104.51	*U. hispida*	0.499	3.683
11H-6, 24–26	96.64	101.75	104.61	*C. wuellerstorfi*	0.554	3.452
181-1123C-						
11H-2, 15–17	96.15	101.82	104.68	*C. wuellerstorfi*	0.348	3.439
181-1123B-						
11H-6, 34–36	96.74	101.85	104.69	*C. wuellerstorfi*	0.507	3.458
11H-6, 44–46	96.84	101.95	104.78	*C. wuellerstorfi*	0.593	3.542
181-1123C-						
11H-2, 25–27	96.25	101.92	104.78	*C. wuellerstorfi*	0.469	3.558
11H-2, 35–37	96.35	102.02	104.88	*U. hispida*	0.598	3.520
11H-2, 45–47	96.45	102.12	104.98	*C. cicatricosus*	0.125	3.835
11H-2, 45–47	96.45	102.12	104.98	*C.* sp. 2	0.219	4.064
11H-2, 55–57	96.55	102.22	105.08	*C. wuellerstorfi*	0.432	3.844
11H-2, 55–57	96.55	102.22	105.08	*C. wuellerstorfi* 2	–0.237	3.746
11H-2, 65–67	96.65	102.32	105.18	*C. wuellerstorfi*	0.424	3.771
11H-2, 75–77	96.75	102.42	105.28	*C. wuellerstorfi*	0.555	3.761
11H-2, 75–77	96.75	102.42	105.28	*C. cicatricosus*	0.213	3.878
11H-2, 85–87	96.85	102.52	105.38	*C. wuellerstorfi*	0.501	3.821
11H-2, 85–87	96.85	102.52	105.38	*C. wuellerstorfi*	0.451	3.503
11H-2, 95–97	96.95	102.62	105.48	*C. wuellerstorfi*	0.647	3.513
11H-2, 95–97	96.95	102.62	105.48	*C. wuellerstorfi* 3	0.198	3.739
11H-2, 105–107	97.05	102.72	105.58	*C. wuellerstorfi* 2	–0.029	3.515
11H-2, 115–117	97.15	102.82	105.68	*C. wuellerstorfi*	0.035	3.627
11H-2, 115–117	97.15	102.82	105.68	*C. wuellerstorfi*	0.384	3.664
11H-2, 125–127	97.25	102.92	105.78	*C. wuellerstorfi*	0.434	3.393
11H-2, 125–127	97.25	102.92	105.78	*C.* sp. 2	0.256	3.522
11H-2, 135–137	97.35	103.02	105.88	*C. wuellerstorfi* 2	0.385	3.506
11H-2, 135–137	97.35	103.02	105.88	*C. cicatricosus*	0.293	3.743
11H-2, 145–147	97.45	103.12	105.98	*C. wuellerstorfi*	NA	3.678
11H-2, 145–147	97.45	103.12	105.98	*C. wuellerstorfi*	0.302	3.229
11H-2, 145–147	97.45	103.12	105.98	*C. wuellerstorfi* 3	0.323	3.631
11H-3, 5–7	97.55	103.22	106.08	*C. wuellerstorfi*	0.201	3.623
11H-3, 5–7	97.55	103.22	106.08	*C. wuellerstorfi*	0.364	3.590
11H-3, 15–17	97.65	103.32	106.18	*C. wuellerstorfi*	0.399	3.654
11H-3, 35–37	97.85	103.52	106.38	*C.* sp.	0.204	3.931
11H-3, 45–47	97.95	103.62	106.48	*C. wuellerstorfi* 2	0.163	3.911
11H-3, 55–57	98.05	103.72	106.58	*C. wuellerstorfi*	0.197	3.862
11H-3, 55–57	98.05	103.72	106.58	*C. wuellerstorfi*	–0.068	3.699
11H-3, 65–67	98.15	103.82	106.68	*C. wuellerstorfi*	0.021	3.935
11H-3, 75–77	98.25	103.92	106.78	*C.* sp.	–0.118	3.959
11H-3, 85–87	98.35	104.02	106.88	*C. cicatricosus*	0.017	3.677
11H-3, 95–97	98.45	104.12	106.98	*C. wuellerstorfi*	–0.174	3.594
11H-3, 95–97	98.45	104.12	106.98	*C. wuellerstorfi*	0.045	3.730
11H-3, 105–107	98.55	104.22	107.08	*C. wuellerstorfi*	0.424	3.346
11H-3, 105–107	98.55	104.22	107.08	*C.* sp. 2	0.235	3.312
11H-3, 115–117	98.65	104.32	107.18	*C. wuellerstorfi?*	0.214	3.231
11H-3, 115–117	98.65	104.32	107.18	*C. wuellerstorfi*	0.299	3.476
11H-3, 125–127	98.75	104.42	107.28	*C. wuellerstorfi*	0.367	3.207
11H-3, 125–127	98.75	104.42	107.28	*C. wuellerstorfi*	0.465	3.123
11H-3, 135–137	98.85	104.52	107.38	*C. wuellerstorfi*	0.354	3.132
11H-3, 135–137	98.85	104.52	107.38	*C. cicatricosus*	0.330	3.340
11H-3, 145–147	98.95	104.62	107.48	*C. wuellerstorfi*	0.532	3.631
11H-3, 145–147	98.95	104.62	107.48	*C. cicatricosus*	0.335	3.433

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Depth (mcd)	Depth (rmcd)	Genus and species	$\delta^{13}C$	$\delta^{18}O$
11H-4, 5–7	99.05	104.72	107.58	*C. wuellerstorfi*	–0.088	3.758
11H-4, 15–17	99.15	104.82	107.68	*C.* sp. 2	0.329	3.624
11H-4, 25–27	99.25	104.92	107.78	*C. kullenbergi*	0.241	3.315
11H-4, 35–37	99.35	105.02	107.88	*C. wuellerstorfi*	0.248	3.871
11H-4, 45–47	99.45	105.12	107.98	*C. wuellerstorfi*	0.293	3.614
11H-4, 55–57	99.55	105.22	108.08	*U. hispida*	0.496	3.727
11H-4, 65–67	99.65	105.32	108.18	*C.* sp.	–0.002	3.944
11H-4, 65–67	99.65	105.32	108.18	*C. wuellerstorfi*	0.129	4.005
11H-4, 75–77	99.75	105.42	108.28	*C. wuellerstorfi* 2	0.287	3.868
11H-4, 75–77	99.75	105.42	108.28	*C. cicatricosus*	0.279	3.833
11H-4, 85–87	99.85	105.52	108.38	*C. wuellerstorfi*	0.188	3.551
11H-4, 85–87	99.85	105.52	108.38	*C. wuellerstorfi* 2 *wuellerstorfi?*	0.300	3.528
11H-4, 95–97	99.95	105.62	108.48	*C.* sp. 2	0.125	3.456
11H-4, 105–107	100.05	105.72	108.58	*C. wuellerstorfi*	0.387	3.529

Notes: *C.* = *cibicides, U.* = *uvigerina, N.* = *nuttalides.* 2 = two individual tests were analyzed, 3 = three individual tests were analyzed. All other analyses are on single tests. *C. wuellerstorfi* sp. = species uncertain, identified to genus; *wuellerstorfi?* = uncertain, very close to *C. wuellerstorfi*. NA = not applicable.