

TABLE DR1. COUNTING TIMES, STATISTICAL DETECTION
LIMITS, AND STANDARDS USED IN ELECTRON
MICROPROBE ANALYSES

Element	Counting times (seconds)	Detection limits* (ppm)	Standards
Ca	20	400	Smithsonian Smith calcite
Mg	200	40	Smithsonian Smith dolomite
Fe	100	200	Smithsonian Smith siderite
Mn	100	180	C.M. Taylor spessartine
Sr	160	250	Smithsonian Smith strontianite
Na	190	75	C.M.T. Amelia albite
S	40	115	C.M.T. Taylor BaSO ₄
Si	10	180	C.M.T. Amelia albite

*Calculated using equation reported in Williams, K.L. (1987)
An Introduction to X-ray Spectrometry: X-ray Fluorescence and Electron Microprobe Analysis. Allen & Unwin.

TABLE DR2. CALCULATED PORE-WATER PARAMETERS

Depth mbsf	*Ca ²⁺ excess mM	#SO ₄ ²⁻ -reduced mM	Mg ²⁺ /Cl ⁻ mM/mM	Ca ²⁺ /Cl ⁻ mM/mM	Sr ²⁺ /Cl ⁻ μM/μM	SO ₄ ²⁻ /Cl ⁻ mM/mM	Ω _{calcite}	Ω _{aragonite}
Site 1008								
2.98	0.67	0.17	0.0980	0.0200	0.1911	0.0520	1.78	1.27
5.98	0.18	-0.19	0.0986	0.0192	0.1717	0.0514	1.11	0.79
11.05	0.45	-0.11	0.1004	0.0197	0.1903	0.0515	0.91	0.65
14.05	0.13	-0.11	0.0988	0.0191	0.2006	0.0515	0.96	0.68
20.55	0.11	0.11	0.0988	0.0191	0.2134	0.0519		
23.55	0.54	0.19	0.0998	0.0198	0.2041	0.0520	1.33	0.95
28.55	0.22	-0.05	0.0988	0.0193		0.0516	1.07	0.76
33.05	0.39	0.33	0.1015	0.0196	0.2127	0.0523	1.14	0.81
38.05	-0.05	0.39	0.0994	0.0188	0.2156	0.0524	0.99	0.71
43.15	1.02	0.28	0.0998	0.0206	0.2539	0.0522	0.73	1.02
47.65	-0.15	-0.13	0.0971	0.0186	0.3042	0.0515	0.92	0.65
57.15	0.39	-0.01	0.0972	0.0195	0.4395	0.0517	1.04	0.74
66.65	-0.76	-2.19	0.0973	0.0176	0.7714	0.0480	1.08	0.77
76.15	-1.40	-4.84	0.0928	0.0165	1.0106	0.0436	0.89	0.63
80.15	-1.99	-8.63	0.0882	0.0156	1.1385	0.0377	1.45	1.04
120.55	-4.31	-20.58	0.0658	0.0123	1.6185	0.0202	1.19	0.85
Site 1009								
1.45	0.52	-0.35	0.1002	0.0198	0.1675	0.0511	2.32	1.65
4.42	-0.14	0.13	0.0947	0.0186	0.1725	0.0519		
7.75	0.09	0.53	0.0984	0.0190	0.1742	0.0526		
12.25	-0.26	-2.47	0.0998	0.0184	0.1713	0.0474	1.32	0.94
17.25	-0.88	-4.07	0.0980	0.0174	0.1857	0.0447		
20.25	-1.11	-3.25	0.0997	0.0170	0.1709	0.0461	1.16	0.83
26.75	0.65	-1.70	0.0998	0.0200	0.1879	0.0488		
35.25	0.30	-2.28	0.0972	0.0194	0.1855	0.0478	1.26	0.90
38.33	-0.44	-3.91	0.0956	0.0181	0.1980	0.0451		
45.25	-0.50	-6.89	0.0925	0.0180	0.1882	0.0404	1.02	0.73
49.75	-0.91	-8.70	0.0914	0.0174	0.1874	0.0376	1.25	0.90
54.75	-1.11	-10.56	0.0888	0.0171	0.1953	0.0349		
59.25	-0.65	-12.33	0.0868	0.0178	0.2252	0.0323	1.22	0.87
64.25	-1.90	-14.65	0.0849	0.0159	0.2604	0.0287		
68.75	-2.41	-19.43	0.0811	0.0152	0.2455	0.0224	1.08	0.77
78.23	-2.56	-21.41	0.0800	0.0151	0.3342	0.0202	1.55	1.11
95.23	-2.91	-19.69	0.0817	0.0147	0.6678	0.0237	1.14	0.81
103.23	-1.78	-19.05	0.0805	0.0164	1.0397	0.0251	1.24	0.89
108.23	-1.36	-19.36	0.0788	0.0170	1.1784	0.0251	1.47	1.05
119.73	-0.50	-18.53	0.0827	0.0182	1.2508	0.0262	1.39	1.00
124.43	-2.62	-19.11	0.0809	0.0153	1.2490	0.0255	1.45	1.04
138.83	-3.45	-19.66	0.0831	0.0141	1.2980	0.0248	1.18	0.85
145.43	-3.12	-19.28	0.0828	0.0146	1.1794	0.0251	1.42	1.02
162.93	-3.88	-21.05	0.0786	0.0135	1.2015	0.0223	2.01	1.44
176.73	-3.22	-22.29	0.0758	0.0143	1.5161	0.0202	1.07	0.77
187.53	-2.67	-22.84	0.0736	0.0151	1.8545	0.0193	1.33	0.95
192.33	-2.85	-22.94	0.0724	0.0148	1.8526	0.0191	1.59	1.14
204.43	-2.65	-22.96	0.0713	0.0151	1.9361	0.0189		
212.03	-2.66	-23.83	0.0700	0.0151	2.0333	0.0175		
222.63	-2.70	-24.10	0.0684	0.0150	2.0577	0.0171	1.98	1.43

*Ca excess = (Ca/Cl - A)*Cl, where A = Ca/Cl of standard seawater.

#SO₄ reduced = (SO₄/Cl - A)*Cl, where A = SO₄/Cl of standard seawater.

Raw pore-water data can be obtained from the Ocean Drilling Program (database@odpemail.tamu.edu).