

Table S1 - DIC

Full-depth Arctic carbon isotope profile data for DIC at two sites (CB4 and CB9) in the Canada Basin in August 2008

Station	NOSAMS RN#	Water depth (m)	DIC (mM)	$\delta^{13}\text{C}$ DIC (‰)	$\Delta^{14}\text{C}$ DIC (‰)	$\Delta^{14}\text{C}$ DIC Error (‰)
CB4	74082	3807	2.273	0.13	-111	2
CB4	74084	2500	2.258	1.17	-101	2
CB4	74085	2000	2.206	1.15	-79	3
CB4	74086	2000	2.232	1.16	-80	3
CB4	74087	1500	2.236	1.05	-34	4
CB4	74088	1000	2.284	0.97	8	4
CB4	74089	800	2.233	0.81	27	4
CB4	74090	500	2.264	0.82	43	4
CB4	74091	400	2.246	0.76	49	4
CB4	74092	320	2.256	0.76	50	4
CB4	74094	223	2.308	0.41	24	3
CB4	74095	122	2.262	0.54	13	4
CB4	74096	20	1.984	1.59	31	4
CB9	80145	3806	2.299	1.21	-115	3
CB9	80144	3100	2.289	1.17	-112	3
CB9	80143	3100	2.287	1.19	-114	3
CB9	80142	2500	2.244	1.19	-109	3
CB9	80141	2000	2.276	1.20	-81	4
CB9	80140	1500	2.272	1.10	-40	3
CB9	80139	1000	2.277	0.93	7	3
CB9	80138	800	2.228	0.94	22	3
CB9	80137	600	2.277	0.86	38	4
CB9	80136	600	2.282	0.85	40	3
CB9	80135	500	2.217	0.84	45	3
CB9	80134	442	2.288	0.86	59	4
CB9	80133	400	2.238	0.79	56	3
CB9	80132	345	2.286	0.77	54	4
CB9	80131	299	2.296	0.75	58	3
CB9	80130	299	2.259	0.75	62	4
CB9	80129	261	2.297	0.65	63	3
CB9	80128	226	2.314	0.43	48	3
CB9	80127	207	2.328	0.34	22	5
CB9	80126	207	2.351	0.30	18	3
CB9	80125	189	2.381	0.29	0	4
CB9	80124	171	2.420	-0.63	-24	4
CB9	80123	171	2.333	0.29	7	4
CB9	80122	139	2.313	0.34	7	3
CB9	80121	115	2.295	0.46	6	4
CB9	80120	77	2.214	1.11	10	3
CB9	80119	77	2.212	1.13	14	3
CB9	80118	45	2.161	1.55	15	3
CB9	80117	25	2.143	1.64	27	3
CB9	80116	5	2.028	1.63	-1	5

Table S2 - DOC

Full-depth Arctic carbon isotope profile data for DOC at two sites (CB4 and CB9) in the Canada Basin in August 2008

Station	NOSAMS RN#	Water depth (m)	DOC (μM)	$\delta^{13}\text{C}$ DOC (‰)	$\Delta^{14}\text{C}$ DOC (‰)	$\Delta^{14}\text{C}$ DOC Error (‰)
CB4	74097	3807	42.2	-23.1	-494	2
CB4	74099	3100	40.4	-22.7	-457	3
CB4	74100	2500	43.1	-22.7	-478	3
CB4	74101	2000	42.3	-22.8	-449	3
CB4	74102	1500	50.8	-23.6	-423	3
CB4	74103	1000	44.5	-22.7	-389	2
CB4	74104	1000	46.4	-22.7	-386	3
CB4	74105	800	47.2	-22.9	-378	2
CB4	74106	500	47.3	-22.8	-372	2
CB4	74108	320	58.5	-21.4	-340	4
CB4	74109	223	70.5	-21.6	-291	4
CB4	74110	223	72.5	-22.6	-375	3
CB4	74111	122	67.4	-22.6	-306	4
CB4	74112	20	73.1	-22.1	-234	5
CB9	80115	3806	39.9	-22.7	-471	5
CB9	80114	3100	39.9	-23.1	-466	5
CB9	80113	2500	34.5	-23.2	-455	6
CB9	80112	2500	40.9	-23.3	-459	5
CB9	80109	2000	41.8	-23.2	-430	6
CB9	80108	1500	45.5	-23.1	-413	5
CB9	80107	1500	43.8	-22.9	-390	6
CB9	80106	1000	45.5	-24.2	-369	5
CB9	80104	800	44.7	-24.1	-355	5
CB9	80102	600	45.1	-24.2	-340	5
CB9	80100	500	47.3	-24.2	-335	5
CB9	80099	500	46.2	-24.3	-342	5
CB9	80098	442	46.3	-24.2	-344	5
CB9	80097	400	47.3	-24.0	-338	6
CB9	80095	345	52.7	-21.5	-340	15
CB9	80094	345	54.0	-21.6	-355	14
CB9	80093	299	58.8	-22.1	-339	13
CB9	80092	261	60.4	-22.2	-297	13
CB9	80088	207	62.4	-21.7	-279	12
CB9	80087	189	62.2	-22.2	-290	12
CB9	80086	189	62.7	-22.5	-293	12
CB9	80083	139	58.7	-22.2	-311	13
CB9	80082	139	63.5	-22.2	-293	12
CB9	80081	115	68.7	-22.4	-335	12
CB9	80079	77	58.9	-24.4	-273	4
CB9	80077	45	71.8	-21.7	-222	11
CB9	80076	25	77.2	-22.5	-256	11
CB9	80074	5	70.8	-21.8	-216	10

Table S3 - POCsusp

Full-depth Arctic carbon isotope profile data for POCsusp at two sites (CB4 and CB9) in the Canada Basin in August 2008

Station	NOSAMS RN#	Water depth (m)	POCsusp (μM)	$\delta^{13}\text{C}$ POCsusp (‰)	$\Delta^{14}\text{C}$ POCsusp (‰)	$\Delta^{14}\text{C}$ POCsusp Error (‰)
CB4	78818	3750	0.04	-24.6	-227	40
CB4	78819	3500	0.04	-24.3	-291	37
CB4	78820	3000	0.04	-24.5	-174	40
CB4	78821	2500	0.03	-22.7	-87	56
CB4	78822	2000	0.05	-23.0	-50	33
CB4	78823	1000	0.07	-22.7	-79	23
CB4	78824	150	0.20	-24.8	-33	10
CB4	78825	50	0.84	-29.5	8	9
CB4	78826	9	0.81	-28.7	6	8
CB9	82210	3000	0.03	-24.9	-136	58
CB9	80216	1000	0.08	no data	-55	19
CB9	80217	500	0.13	-24.1	-36	13
CB9	80218	50	1.32	-27.0	7	7
CB9	80219	9	0.81	-28.0	-33	5