

## 7 Lists

### 7.1 Leg M39/1

#### 7.1.1 Locations for sediment and plankton/water samples

Geomar no.	Meteor no.	date	device	time (UTC)	latitude (N)	longitude (W)	water depth (m)	recovery (m)	remarks
M39001-1	121	20.04.1997	ROS/CTD	16:17	36°02.608	7°45.572	1145		Pinger at 30 m, 12/12 1156, 1119, 988, 946, 921, 845, 797, 677, 576, 345, 147, 10
M39001-2	121	20.04.1997	GoFlo	18:53	36°02.491	7°45.606	1132		Water samples at: 607, 710, 830, 878, 954, 974, 1022, 1052, 1089, a test
M39001-3	121	20.04.1997	PN	18:30			1131		
M39001-4	121	20.04.1997	CTD	19:53	36°02.3	7°45.7	1131		CTD-Test
M39002-1	122	21.04.1997	BC	07:15	36°01.7	7°46.6	1208		Box washed out
M39002-2	122	21.04.1997	BC	08:12	36°01.7	7°46.5	1209	0.49	
M39002-3	122	21.04.1997	MUC	09:28	36°1.6	7°46.5	1205	0.38	! tube empty
M39002-4	122	21.04.1997	PN	09:22					
M39002-5	122	21.04.1997	GC6	12:42	36°1.7	7°46.4	1205	4.7	
M39002-6	122	21.04.1997	GC12	12:05	36°1.6	7°46.4	1212	5.82	
M39002-7	122	21.04.1997	GoFlo	12:52	36°01.712	7°47.086	1214		Water samples at: 231, 452, 500/F(S), 601, 774, 811(S)
M39003-1	123	22.04.1997	BC	17:01	36°06.7	7°13.4	802	0.42	
M39003-2	123	22.04.1997	MUC	17:48	36°6.6	7°13.4	801	0.36-0.40	
M39003-3	123	22.04.1997	GC6	18:33	36°6.7	7°13.3	800	3.52	
M39003-4	123	22.04.1997	PN	17:15					
M39003-5	123	22.04.1997	GC12	19:26	36°6.6	7°13.3	798	0	Core bent
M39003-6	123	22.04.1997	ROS / CTD	20:41	36°6.8	7°14.1	803		Pinger at 30 m, 12/12 804, 777.6, 642, 502, 401.5, 303.1, 277.7, 211, 154, 103.5, 53.6, 12.3
M39003-7	123	22.04.1997	GoFlo	22:26	36°6.6	7°14.0	824		Water samples at: 79, 181, 330, 429, 524, 664, 784 (S)
M39004-1	124	23.04.1997	BC	21:01	36°14.2	7°43.9	966	0.46	
M39004-2	124	23.04.1997	MUC	21:53	36°14.2	7°43.8	968	0.40-0.44	
M39004-3	124	23.04.1997	GC6	22:49	36°14.3	7°43.8	968	5.75	
M39004-4	124	23.04.1997	GC12	23:52	36°14.2	7°43.9	968	0	Tube lost
M39004-5	124	24.04.1997	GC12	01:22	36°14.2	7°43.8	968	6.17	
M39005-1	125	24.04.1997	Grab	07:55	36°32.0	6°44.0	119	0.2-0.3	dark, olive-greyish silty finesand
M39005-2	125	24.04.1997	BC	08:33	36°32.1	6°44.1	118.3	0	not triggered
M39005-3	125	24.04.1997	BC	08:48	36°32.2	6°44.1	118	0.34	
M39006-1	126	24.04.1996	BC	09:45	36°30.7	6°46.4	214	0.34	
M39006-2	126	24.04.1996	PN	09:40					
M39007-1	127	24.04.1997	Grab	11:17	36°37.2	6°54.8	467		Finesand with abundant quartz and carbonate
M39008-1	128	24.04.1997	Grab	13:02	36°22.9	7°04.5	578		Clayish Silt with planktic Foraminifera
M39008-2	128	24.04.1997	GC6	13:33	36°23.0	7°04.4	579		
M39008-3	128	24.04.1997	GC8.5	14:30	36°22.8	7°04.3	577	5.77	
M39008-4	128	24.04.1997	BC	15:27	36°22.7	7°04.2	577	0.32	
M39008-5	128	24.04.1997	PN						
M39009-1	129	24.04.1997	BC	16:42	36°21.0	7°08.5	681	0.36	BC
M39010-1	130	24.04.1997	Grab	18:05	36°19.3	7°12.4	878		Sandstone with attached Hydrozoas, Ascidiaceae, Bryozoas, Poriferas, Serpulidae, juvenile Pectinidae
M39010-2	130	24.04.1997	Grab	18:48	36°19.3	7°12.4	882		coarse sand with biogenic debris
M39011-1	131	24.04.1997	Grab	20:05	36°16.3	7°12.9	846		coarse sand with lithoclastic and biogenic material
M39012-1	132	24.04.1997	Grab	21:13	36°14.7	7°13.1	873		coarse sand with lithoclastic and biogenic material
M39013-1	133	24.04.1997	Dredge	22:28 - 22:55	36°19.2 - 36°19.2	7°12.4 - 7°12.7	871		boulder with sessile epifauna, seaurchin
M39014-1	134	25.04.1997	Dredge	0:21 - 0:50	36°16.3 - 36°16.5	7°12.9 - 7°13.4	850		boulder with sessile epifauna, seaurchin
M39014-2	134	25.04.1997	Dredge	1:52 - 2:25	36°16.2 - 36°16.3	7°12.8 - 7°13.3	847		sandstone pebbles, corals, compacted sand with biogenics
M39015-1	135	25.04.1997	ROS/CTD	05:14	36°14.240	7°43.832	970		Pinger at 30 m, 12/12 373, 856, 792, 704, 622.3, 532, 448.5, 374, 203, 117, 64.3, 10.6
M39015-2	135	25.04.1997	GoFlo	07:22	36°14.2	7°43.8	967		Water samples at: 64, 374, 622, 702, 792, 856, 938 (S)
M39015-3	135	25.04.1997	GC12	09:59	36°14.2	7°43.8	967	3.37	

List of M39/1 site locations for sediment and plankton/water sampling.

Gear no.	Meteor no.	date	device	time (UTC)	latitude (N)	longitude (W)	water depth (m)	recovery (m)	re m a r k s
M39016-1	136	26.04.1997	BC	14:54	36°46.7	7°42.2	581	0.33	
M39016-2	136	26.04.1997	MUC	15:37	36°46.7	7°42.1	581	0.20-0.22	4 empty liners
M39016-3	136	26.04.1997	GC6	16:08	36°46.7	7°42.2	581	2.44	
M39017-1	137	26.04.1997	ROS/CTD	20:54	36°39.0	7° 24.7	527		Pinger at 30 m, 12/12 529, 511, 487.5, 462, 410, 380.6, 302, 202, 138.6, 100.7, 60.6, 10.6
M39017-2	137	26.04.1997	GoFlo	22:18	36°39.0	7° 24.5	533		Water samples at: 204, 304, 383, 412, 464, 490, 507
M39017-3	137	26.04.1997	GC6	23:00	36°39.0	7°24.5	533	4.1	
M39017-4	137	26.04.1997	MUC	23:42	36°38.9	7°24.6	532	0.18-0.21	5 empty liners
M39017-5	137	26.04.1997	BC	00:24	36°39.0	7°24.6	533	0.27	
M39017-6	137	26.04.1997	PN	23:32					
M39018-1	138	27.04.1997	BC	02:06	36°45.2	7° 15.1	496	0.32	
M39018-2	138	27.04.1997	GC6	02:41	36°45.2	7°15.1	496	2.88	
M39019-1	139	27.04.1997	Grab	13:46	36°44.9	8° 06.2	729		
M39019-2	139	27.04.1997	BC	14:22	36°44.9	8°06.1	730	0.16	
M39020-1	140	27.04.1997	BC	15:16	36°44.3	8° 06.3	726	0.32	
M39020-2	140	27.04.1997	GC6	16:06	36°44.4	8°6.2	728	2	Core bent
M39020-3	140	27.04.1997	PN	15:33 - 15:50					
M39021-1	141	28.04.1997	ROS/CTD	12:26	36°36.5	8°15.4	900		12/12 901, 861, 821, 790, 758, 664, 526, 497, 392, 101, 50/52, 10/11
M39021-2	141	28.04.1997	GoFlo	13:44	36°36.5	8°15.3	900		Water samples at: 860, 875 (S)
M39021-3	141	28.04.1997	Grab	14:44	36°36.5	8°15.4	903		middle sand, clay
M39021-4	141	28.04.1997	PN	14:25					
M39021-5	141	28.04.1997	BC	15:30	36°36.5	8°15.3	901	0.06	
M39022-1	142	28.04.1997	BC	17:02	36°42.7	8°15.6	668	0.36	
M39022-2	142	28.04.1997	PN	16:54					
M39022-3	142	28.04.1997	MUC	17:40	36°42.7	8°15.6	668	0.24-0.27	4 Tubes empty, not triggered
M39022-4	142	28.04.1997	GC6	18:20	36°42.7	8°15.6	668	2.66	
M39023-1	143	28.04.1997	Grab	19:41	36°44.1	8°15.3	728	full	silty middle sand, corals, brachiopods
M39023-2	143	28.04.1997	PN	19:23					
M39023-3	143	28.04.1997	BC	20:20	36°44.1	8°15.3	730	0.34	
M39024-1	144	29.04.1997	Grab	10:20	36°53.1	8°18.8	103		not closed
M39024-2	144	29.04.1997	Grab	10:31	36°52.9	8°18.8	106	full	clayish silt with endobenthic bivalves
M39024-3	144	29.04.1997	PN	10:20					
M39025-1	145	29.04.1997	Grab	11:26	36°48.2	8°18.7	272	full	clayish silt with endobenthic bivalves (Nucula)
M39025-2	145	29.04.1997	PN	11:22					
M39026-1	146	29.04.1997	Grab	12:09	36°47.7	8°19.1	308	full	clayish silt with Nucula
M39026-2	146	29.04.1997	PN						
M39027-1	147	29.04.1997	Grab	12:52	36°46.9	8°19.0	396		silty fine sand
M39027-2	147	29.04.1997	PN	12:41					
M39028-1	148	29.04.1997	Grab	13:37	36°46.2	8°18.9	545	not closed	
M39028-2	148	29.04.1997	PN	13:22					
M39028-3	148	29.04.1997	Grab	14:08	36°46.1	8°18.9	550	full	silty fine to middle sand, with Bivalves and Coralls
M39029-1	149	30.04.1997	CTD/ROS	12:53	36°2.6	8°13.8	1915		pinger at 30 m, 12/12 1933, 1710, 1503, 1326, 1207, 896, 696, 543, 301, 102, 51, 12
M39029-2	149	30.04.1997	GoFlo	15:36	36°2.7	8°14.0	1914		Water samples at: 540, 1320, 1700, 1890 (S)
M39029-3	149	30.04.1997	BC	17:27	36°02.5	8°14.0	1917	0.36	
M39029-4	149	30.04.1997	GC6	18:39	36°2.5	8°14.0	1918	3.055	russian core device
M39029-5	149	30.04.1997	PN	19:00			1917		
M39029-6	149	30.04.1997	MUC	19:50	36°2.5	8°14.0	1919	0.31-0.45	
M39029-7	149	30.04.1997	GC6	21:05	36°2.5	8°13.8	1917	5.02	kiel core device
M39029-8	149	30.04.1997	GC9	22:54	36°2.5	8°13.8	1916	5.21	kiel core device
M39030-1	150	01.05.1997	Grab	09:08	37°13.5	9°12.7	159.8		carbonate fine sand to coarse sand
M39031-1	150*	01.05.1997	Grab	09:35	37°13.4	9°12.9	146.6	empty	
M39032-1	151	01.05.1997	Grab	10:08	37°12.9	9°13.5	310	not closed	
M39032-2	151	01.05.1997	Grab	10:24	37°13.0	9°13.5	293	not closed	
M39032-3	151	01.05.1997	Grab	10:43	37°12.9	9°13.5	322		silty middle to coarse sand
M30033-1	152	01.05.1997	Grab	11:57	37°10.5	9°17.9	319	not closed	
M30033-2	152	01.05.1997	Grab	12:13	37°10.5	9°17.8	319	full	silty, carbonate sand
M39034-1	153	01.05.1997	Grab	12:56	37°10.9	9°17.4	197		carbonate sand
M39034-2	153	01.05.1997	Dredge	13:40	37°10.9 - 37°10.9	9°17.5 - 9°17.4	186		stones, sponge, echinoderms
M39034-3	153	01.05.1997	Drege	14:14	37°10.9 - 37°10.9	9°17.5 - 9°17.4	184		searichins

List of M39/1 site locations for sediment and plankton/water sampling.

Geomar no.	Meteor no.	date	device	time (UTC)	latitude (N)	longitude (W)	water depth (m)	recovery (m)	remarks
M39035-1	154	02.05.1997	CTD/ROS	09:17	37°49.3	9°30.2	1086		pinger at 30 m, 12/12 1094, 1005.6, 928.7, 856.6, 679, 633.3, 605, 354, 201.6, 101.6, 52.1, 10.7
M39035-2	154	02.05.1997	GoFlo	10:52	37°49.3	9°30.2	1084		water samples at: 352, 601, 630, 675, 923, 1059 (S)
M39035-3	154	02.05.1997	MUC	12:00	37°49.350	9°30.1	1085	0.18-0.44	
M39035-4	154	02.05.1997	PN	11:36					
M39036-1	155	02.05.1997	BC	14:07	37°48.3	9°41.0	1747	0.46	
M39036-2	155	02.05.1997	GC6	15:20	37°48.3	9°40.8	1746	5.71	
M39036-3	155	02.05.1997	PN	14:20					
M39036-4	155	02.05.1997	GC12	16:46	37°48.3	9°40.8	1745	7.17	
M39037-1	156	02.05.1997	GC12	20:18	37°48.5	9°59.77	2533	7	
M39037-2	156	02.05.1997	PN	19:51					
M39037-3	156	02.05.1997	BC	21:44	37°48.5	9°59.6	2532	0.29	
M39038-1	157	03.05.1997	Grab	03:37	37°44.7	9°28.1	508.8		silty carbonate middle to coarse sand
M39039-1	158	03.05.1997	Grab	05:16	37°44.3	9°30.8	1014	full	silty clay
M39040-1	159	03.05.1997	Grab	06:19	37°44.1	9°30.2	800		clayish silt
M39041-1	160	03.05.1997	Grab	07:18	37°43.9	9°29.6	660		silty carbonate sand
M39042-1	161	03.05.1997	Grab	08:06	37°43.7	9°29.2	568		middle sand
M39043-1	162	03.05.1997	Grab	08:54	37°43.4	9°28.5	424		mudpebbles, pebble with sessile organisms, ophiurae (Starfish)
M39043-2	162	03.05.1997	Grab	09:13	37°43.5	9°28.5	401		
M39044-1	163	03.05.1997	Grab	09:47	37°43.5	9°28.5	398		fine to middle sand with ophiurae
M39045-1	164	03.05.1997	Grab	10:33	37°43.7	9°27.6	470	not closed	
M39045-2		03.05.1997	Grab	10:54	37°43.7	9°27.6	470		
M39046-1	165	03.05.1997	Grab	11:50	37°44.1	9°26.3	740	not closed	
M39046-2	165	03.05.1997	Grab	12:25	37°44.0	9°26.3	716		
M39047-1	166	03.05.1997	Grab	14:39	37°33.8	9°11.1	451		glaucconitic sand with benthic forams and bivalves
M39047-2	166	03.05.1997	PN	14:30					
M39048-1	167	03.05.1997	Grab	16:08	37°37.3	9°02.8	253		carbonate sand
M39048-2	167	03.05.1997	PN	16:03					
M39049-1	168	03.05.1997	Grab	18:48	37°42.9	8°50.5	51	not closed	
M39049-2	168	03.05.1997	PN	18:46					
M39049-3	168	03.05.1997	Grab	18:53	37°42.9	8°50.5	55	empty	carbonate coarse sand with bivalves; pebbles with sessile epifauna
M39049-4	168	03.05.1997	Grab	19:02	37°42.9	8°50.6	55		
M39050-1	169	03.05.1997	Grab	19:38	37°42.1	8°52.5	93	empty	
M39050-2	169	03.05.1997	PN	19:34					
M39050-3	169	03.05.1997	Grab	19:49	37°42.1	8°52.6	93		carbonate coarse sand, pebbles with sessile epifauna
M39051-1	170	03.05.1997	Grab	20:30	37°40.7	8°55.1	127		middle sand with glauconite
M39051-2	170	03.05.1997	PN	20:28					
M39052-1	171	03.05.1997	Grab	21:15	37°39.6	8°57.7	145.3		glaucconitic middle to coarse sand
M39052-2	171	03.05.1997	PN	21:10					
M39053-1	172	03.05.1997	Grab	21:56	37°38.8	8°59.5	164		glaucconitic middle to coarse sand
M39053-2	172	03.05.1997	PN	21:51					
M39054-1	173	03.05.1997	Grab	22:36	37°38.1	9°00.8	200		glaucconitic middle to coarse sand
M39054-2	173	03.05.1997	PN	22:31					
M39055-1	174	04.05.1997	Grab	07:22	38°49.9	10°02.1	180		carbonate sand
M39056-1	175	04.05.1997	Grab	07:48	38°49.9	10°01.8	119		sponge
M39057-1	176	04.05.1997	Dredge	10:45 -11:19	39°05.0	10°10.1	150 (190)		boulders, pebbles with sessile epifauna, crinoids
M39058-1	177	04.05.1997	BC	16:50	39°02.4	10°40.8	1975	0.29	
M39058-2	177	04.05.1997	GC6	18:14	39°2.4	10°40.8	1974	3.2	
M39058-3	177	04.05.1997	PN	18:05					
M39059-1	178	04.05.1997	GC6	20:04	39°04.0	10°32.1	1605	0.95	
M39059-2	178	04.05.1997	BC	20:45	39°4.1	10°32.2	1605	0.18	
M39060-1	179	05.05.1997	BC	12:15	40°06.3	09°51.3	1166	0.3	Chalk with attached organisms
M39061-1	180	05.05.1997	BC	14:10	40°06.5	09°41.8	544	0.3	

## 7.1.2 Water sampling sites for plankton assemblage studies

Filter Nr.	Date	METEOR Station	GEOMAR Number	Latitude N	Longitude W	Water depth [m]	Water temp. [°C]	Salinity	Water filtered [l]
1	20/04/97	# 121	M 39001-1	36° 02,6	011° 45,6	10	17.92	36.41	1
2						147	14.61	36.02	1.5
3						345	12.52	35.68	2
4						797	10.44	35.70	1.5
5						946	10.35	35.91	1.5
6						Sea floor at: 1176 m	1156	11.19	36.24
7	22/04/97	# 123	M39003-6	36° 06,9	007° 14,0	10	18	36.50	1.5
8						50	17	36.40	2
9						100	15.7	36.20	2
10						211	14.5	36.00	2
11						502	11.3	35.60	2
12						Sea floor at: 810 m	804	11.15	36.06
13	24/04/97	# 135	M39015-1	36° 14,2	007° 43,8	10	17.9	36.40	2
14						64	17.2	36.40	2
15						117	15.8	36.20	2
16						203	14.1	35.90	2
17						622	11.2	35.60	2
18						Sea floor at: 945 m	937	12.3	36.50
19	26/04/97	# 137	M39017-1	36° 38,9	007° 24,5	10	18.2	36.40	2
20						60	17.3	36.40	2
21						100	16.2	36.30	2
22						202	14.2	36.00	2
23						410	12.4	35.70	2
24						Sea floor at: 535 m	529	12.3	36.10
25	28/04/97	# 141	M 39021-1	36° 36,500	008° 15,300	10	18.16	36.34	2
26						50	17.61	36.45	2
27						100	16.24	36.31	2
28						390	12.36	35.70	2
29						525	11.32	35.64	2
30						Sea floor at: 892 m	860	12.51	36.51
31	30/04/97	# 149	M 39029-1	36° 02,568	008° 13,752	10	18.9	36.50	2
32						50	17.8	36.50	2
33						100	15.8	36.20	2
34						544	10.8	35.60	2
35						897	9.6	35.60	2
36						Sea floor at: 1950 m	1503	8	35.70
37	02/05/97	# 154	M 39035-1	37° 49,360	009° 30,226	10	18.3	36.20	2
38						50	16.6	36.20	2
39						100	15.1	36.10	2
40						354	12.6	35.70	2
41						680	12.6	36.20	2
42						Sea floor at: 1088 m	1005	12.6	36.30
43	06/05/97	# 184	M 39065-1	40° 34,768	010° 20,962	10	16.83	35.98	2
44						50	14.57	35.91	2
45						100	13.85	35.85	2
46						400	11.47	35.58	2
47						793	12.1	36.16	2
48						Sea floor at: 3350 m	1186	11.33	36.20

Filter Nr.	Date	METEOR Station	GEOMAR Number	Latitude N	Longitude W	Water depth [m]	Water temp. [°C]	Salinity	Water filtered [l]
49	09/05/97	# 193	M 39073-1	43° 51,600	009° 50,089	10	14	35.70	1.5
50						50	14	35.70	1.5
51						100	12.8	35.70	2
52						457	11.2	35.50	2
53						993	10.9	36.02	2
54						Sea floor at: 3200 m	2041	3.79	34.97



Table 5, continued																																	
GEO																																	
MAR Number	M 39001	M 39002	M 39003	M 39006	M 39008	M 39017	M 39020	M 39021	M 39022	M 39023	M 39024	M 39025	M 39026	M 39027	M 39028	M 39029	M 39035	M 39037	M 39047	M 39048	M 39049	M 39050	M 39051	M 39052	M 39053	M 39054	M 39058	M 39065	M 39070	M 39073	M 39075	M 39076	
Species																																	
<i>Tintinnus tuberculatus</i>				x						x		x	x		x	x	x	x	x	x				x			x						
<i>Amphorides quadrilineata</i>																												x	x		x	x	
<i>Dadayiella bulbosa</i>			x		x	x						x					x		x	x	x	x	x	x	x	x							
<i>Dadayiella acutiformis</i>																						x											
<i>Dictyocysta spp.</i>																							x		x				x		x		
<i>Steenstrupiella steenstrupii</i>																													x				
<i>Rhabdonella spp.</i>																			x	x	x						x	x					
<i>Parafavella sp</i>			x														x																
<i>Xystonellopsis spp.</i>													x	x																			
<i>Epiplocyloides spp.</i>			x																														
Foraminifera, nonspinos	x				x															x	x	x											
Foraminifera, spinous	x	x			x	x	x	x	x	x							x			x	x			x	x			x	x		x	x	
Larvae indet.	x	x	x	x	x	x		x	x	x	x	x				x	x	x				x		x			x	x	x	x			
Radiolarian							x									x												x					

## 7.2 Leg M39/2

### 7.2.1 CTD Inventory

Stat	Prof	Date			Hour	Latitude	Longitude	Depth	Pmax
		YYYY	MM	DD					
199	1	1997	5	16	9.000	50.6133	-9.0631	127	104
200	2	1997	5	17	9.000	54.6656	-10.5825	342	324
201	3	1997	5	17	10.000	54.7373	-10.7316	1646	1662
201	4	1997	5	17	13.000	54.7372	-10.7184	1540	1554
202	5	1997	5	17	15.000	54.7998	-10.8638	1922	1942
203	6	1997	5	17	19.000	54.9009	-11.0960	2630	2632
204	7	1997	5	18	0.000	55.1429	-11.6393	2630	2796
205	8	1997	5	18	6.000	55.5772	-12.6013	2829	2838
206	9	1997	5	18	12.000	55.9998	-13.5626	2829	2552
207	10	1997	5	18	15.000	56.1419	-13.8858	2196	2192
208	11	1997	5	18	19.000	56.2832	-14.2142	1118	1106
209	12	1997	5	18	23.000	56.5619	-14.8277	200	174
210	13	1997	5	19	4.000	56.9964	-15.9990	1075	1056
211	14	1997	5	19	8.000	57.2823	-16.8920	1302	1276
212	15	1997	5	19	13.000	57.6181	-17.6186	1244	1228
213	16	1997	5	19	17.000	57.9157	-18.5818	849	856
214	17	1997	5	19	22.000	58.2678	-19.5044	9999	1586
215	18	1997	5	20	4.000	58.6668	-20.6338	2909	2916
216	19	1997	5	20	11.000	59.0868	-21.8491	2408	2878
217	20	1997	5	20	17.000	59.4084	-22.8425	2516	2508
218	21	1997	5	20	22.000	59.7442	-23.8193	2636	2354
219	22	1997	5	21	4.000	60.0704	-24.7252	2287	2278
220	23	1997	5	21	13.000	60.3772	-25.6542	2287	2126
221	24	1997	5	21	16.000	60.5694	-26.2344	1927	1920
222	25	1997	5	21	20.000	60.7676	-26.8329	9999	1548
223	26	1997	5	22	0.000	60.9534	-27.3308	1364	1786
224	27	1997	5	22	3.000	61.1661	-27.9373	976	944
225	28	1997	5	22	14.000	59.6670	-29.8243	1088	1080
226	29	1997	5	22	20.000	59.2089	-28.5529	2054	2016
227	30	1997	5	23	2.000	58.7604	-27.2662	2054	2200



228	31	1997	5	23	9.000	58.2659	-26.0048	2569	2562
229	32	1997	5	23	16.000	57.7941	-24.7145	2812	2810
230	33	1997	5	23	23.000	57.3007	-23.4189	3052	3058
231	34	1997	5	24	6.000	56.8255	-22.1344	2295	2284
232	35	1997	5	24	14.000	56.2951	-20.8421	1563	1560
233	36	1997	5	25	0.000	56.0012	-23.3165	2345	2344
234	37	1997	5	25	11.000	55.6912	-25.7763	3311	3322
235	38	1997	5	25	21.000	55.4001	-27.9416	2804	2806
236	39	1997	5	26	6.000	55.1273	-30.2160	2804	2996
237	40	1997	5	26	14.000	54.9152	-31.6450	2617	2618
238	41	1997	5	26	19.000	54.7844	-32.5150	2632	2622
239	42	1997	5	27	0.000	54.6750	-33.3384	2458	2442
240	43	1997	5	27	6.000	54.5770	-34.1944	1749	1714
241	44	1997	5	27	9.000	54.5072	-34.7265	1499	1412
242	45	1997	5	27	19.000	54.2773	-32.8919	2707	2700
243	46	1997	5	28	0.000	54.3644	-33.5911	2647	2714
244	47	1997	5	28	7.000	54.0568	-32.3555	2831	2798
245	48	1997	5	28	16.000	53.5449	-31.0454	3174	3162
245	49	1997	5	28	19.000	53.5356	-31.0461	3178	3158
245	50	1997	5	28	21.000	53.5309	-31.0331	3175	3156
246	51	1997	5	29	3.000	53.2521	-30.3054	3066	3054
247	52	1997	5	29	12.000	52.9652	-29.5679	3389	3402
248	53	1997	5	29	20.000	52.4885	-28.4173	3779	3792
249	54	1997	5	31	4.000	53.8349	-31.7787	2848	2862
250	55	1997	5	31	22.000	53.2172	-35.1645	2749	2734
251	56	1997	6	1	2.000	52.8671	-34.9184	3335	3310
252	57	1997	6	1	6.000	52.7510	-35.0010	3152	3174
253	58	1997	6	1	9.000	52.6503	-34.9970	3412	3420
254	59	1997	6	1	14.000	52.3477	-35.0022	3856	3876
255	60	1997	6	1	18.000	52.0989	-35.0016	3324	3366
256	61	1997	6	2	1.000	51.3488	-34.9972	3300	3312
257	62	1997	6	2	8.000	51.4490	-33.4906	3868	3898
258	63	1997	6	2	16.000	51.6081	-32.0429	2981	3046
259	64	1997	6	3	1.000	51.7665	-30.3364	2300	2274
260	65	1997	6	3	5.000	51.7508	-30.0036	3238	3242
261	66	1997	6	3	9.000	51.8290	-29.5218	2243	2398
261	67	1997	6	3	11.000	51.8315	-29.5219	2358	2416

261	68	1997	6	3	13.000	51.8370	-29.5223	2358	2474
262	69	1997	6	3	18.000	52.0003	-28.9596	3755	3792
263	70	1997	6	4	0.000	52.3165	-28.1166	3770	3804
264	71	1997	6	4	9.000	52.9329	-26.5365	3704	3736
265	72	1997	6	4	20.000	51.7607	-24.7344	3929	3962
266	73	1997	6	5	14.000	51.0518	-20.5638	4307	4366
267	74	1997	6	5	23.000	50.7333	-18.6706	4723	4806
268	75	1997	6	5	10.000	50.4215	-16.7619	4745	4836
269	76	1997	6	5	18.000	50.5274	-15.5674	4264	4324
270	77	1997	6	6	23.000	50.6337	-14.8419	3221	3264
271	78	1997	6	7	4.000	50.7176	-14.2003	1010	1002
272	79	1997	6	7	13.000	50.9880	-12.0890	1800	1812

---

## 7.2.2 Mooring Activities

Sta. No.	Int. No.	IfM No.	Date 1997	Latitude North	Longitude West	Depth (m)	Instr. Type	Remarks incl. nominal instr.depth
<i>Current Meter Moorings</i>								
246	IM3	V388	29 May	53° 14.6' N	030° 16.0' W	3087	SoSo	No.23, Win.01:30Z @1407m ACM No.10078@1357m ACM No. 8412@2207m ACM No. 9819@2507m ACM No. 6159@2757m ACM No. 8575@3037m
242		V386	27 May	54° 17.1' N	032° 57.0' W	2723	ACM	No.12051@1213m ACM No. 9812@2063m ACM No. 7929@2363m ACM No. 7927@2673m
249		V387	31 May	53° 50.2' N	031° 43.6' W	2858	ACM	No.10074@1310m ACM No. 9311@2258m ACM No. 4570@2558m ACM No. 4563@2808m
<hr/>								
<i>Sound Source Moorings</i>								
219	IM1	V384	21 May	60° 04.3' N	024° 43.5' W	2281	SoSo	No. 24, Win 01:00Z @1381m ACM No. 9346 @ 1331 m Wdog ARGOS 2263
231	IM2	V385	24 May	56° 48.7' N	022° 08.0' W	2307	SoSo	No22, Win 00:30Z @1447m (see Fig. B3) no ac. release Wdog ARGOSS 2264
	IM3							— see above —

SoSo	Sound source
Win	window
ACM	Aanderaa Current Meter
Wdog	Watch Dog buoy

### 7.2.3 List of RAFOS Float Launches

Sta. No.	IfM No.	Date 1997	Time Z	Latitude North	Longitude West	ARGOS Mission (DEC)	Mission (months)	Remarks
<i>RAFOS floats</i>								
203	403	17/5	22:05	54° 53.9' N	011° 05.8' W	12611	12	Eastern boundary Rockall Tr.
207	408	18/5	18:05	56° 08.6' N	013° 53.8' W	12617	18	Western boundary
215	405	20/5	07:07	58° 40.4' N	020° 38.4' W	12613	15	Maury Channel North
217	411	20/5	19:17	59° 24.6' N	022° 49.3' W	12620	24	Central Iceland Basin
220	407	21/5	14:56	60° 22.8' N	025° 39.4' W	12616	18	Reykjanes Ridge North
227	406	23/5	04:44	58° 45.7' N	027° 13.8' W	12614	15	Reykjanes Ridge South
229	404	23/5	18:32	57° 47.7' N	024° 42.4' W	12612	12	Central Iceland Basin
231	409	24/5	09:47	56° 48.4' N	022° 08.3' W	12618	21	Rockall Plateau West
234	410	25/5	13:39	55° 41.5' N	025° 45.8' W	12619	21	Maury Channel
245	401	29/5	00:46	53° 31.9' N	031° 01.6' W	4374	14	1 <sup>st</sup> float park (North)
261	402B	3/6	15:41	51° 50.7' N	029° 32.0' W	4375	24	2 <sup>nd</sup> float park (South)
.....								
<i>Dual Release RAFOS floats deployed by CTD probe ('Ofenrohr') (see Fig. B4)</i>								
245	412	28/5	18:07	53° 32.3' N	031° 02.6' W	4376	2+12	1 <sup>st</sup> float park (North)
245	413	28/5	20:38	53° 31.9' N	031° 02.2' W	4377	4+10	1 <sup>st</sup> float park (North)
245	414	28/5	23:14	53° 32.0' N	031° 01.9' W	12615	6+8	1 <sup>st</sup> float park (North)
261	415	3/6	10:28	51° 50.1' N	029° 31.4' W	5487	3+21	2 <sup>nd</sup> float park (South)
261	416	3/6	12:31	51° 50.2' N	029° 31.4' W	12610	6+18	2 <sup>nd</sup> float park (South)
261	417	3/6	14:31	51° 50.3' N	029° 31.6' W	12621	9+15	2 <sup>nd</sup> float park (South)

## 7.3 Leg M39/3

### 7.3.1 Station list of cruise M39/3

A2 R/V METEOR CRUISE 039 leg 3					Version 1.1 February 1998; 03.03.98 Update													
SHIP/CRS WOCE		CAST			UTC			POSITION			UNC	HT	ABOVE	WIRE	MAX	NO. OF		
EXPCODE	SECT	STNBR	CASTNO	TYPE	DATE	TIME	CODE	LATITUDE	LONGITUDE	NAV	DEPTH	BOTTOM	OUT	PRESS	BOTTLES	COMMENTS		
06MT039/3	A2	274	01	ROS	061397	0929	BE	48 55.3 N	13 16.3 W	GPS	3719							
06MT039/3	A2	274	01	ROS	061397	1044	BO	48 55.6 N	13 16.8 W	GPS	3719	09	3731	3500	22			
06MT039/3	A2	274	01	ROS	061397	1207	EN	48 55.6 N	13 17.3 W	GPS	3719							
06MT039/3	A2	275	02	ROS	061397	1416	BE	49 00.1 N	13 02.5 W	GPS	3124							
06MT039/3	A2	275	02	ROS	061397	1513	BO	49 00.2 N	13 02.5 W	GPS	3124	10	3107	3149	22			
06MT039/3	A2	275	02	ROS	061397	1627	EN	49 00.3 N	13 02.5 W	GPS	3124							
06MT039/3	A2	276	01	ROS	061397	1753	BE	49 00.0 N	12 58.9 W	GPS	2570							
06MT039/3	A2	276	01	ROS	061397	1843	BO	49 00.1 N	12 58.9 W	GPS	2570	07	2565	2598	22			
06MT039/3	A2	276	01	ROS	061397	1952	EN	49 00.0 N	12 59.4 W	GPS	2570							
06MT039/3	A2	277	01	ROS	061397	2149	BE	49 00.9 N	12 51.4 W	GPS	2019							
06MT039/3	A2	277	01	ROS	061397	2231	BO	49 00.9 N	12 51.6 W	GPS	2019	09	2004	2020	21			
06MT039/3	A2	277	01	ROS	061397	2337	EN	49 01.1 N	12 52.2 W	GPS	2019							
06MT039/3	A2	278	01	ROS	061497	0111	BE	49 03.1 N	12 41.5 W	GPS	1509							
06MT039/3	A2	278	01	ROS	061497	0142	BO	49 03.1 N	12 41.7 W	GPS	1509	11	1489	1450	17			
06MT039/3	A2	278	01	ROS	061497	0228	EN	49 03.1 N	12 41.9 W	GPS	1509							
06MT039/3	A2	279	01	ROS	061497	0436	BE	49 06.6 N	12 12.0 W	GPS	1013							
06MT039/3	A2	279	01	ROS	061497	0502	BO	49 06.6 N	12 12.1 W	GPS	1013	10	1004	0999	13			
06MT039/3	A2	279	01	ROS	061497	0536	EN	49 06.7 N	12 12.5 W	GPS	1013							
06MT039/3	A2	280	01	ROS	061497	0847	BE	49 11.0 N	11 26.2 W	GPS	495							
06MT039/3	A2	280	01	ROS	061497	0900	BO	49 11.2 N	11 26.2 W	GPS	495	10	482	0469	8			
06MT039/3	A2	280	01	ROS	061497	0923	EN	49 11.2 N	11 26.3 W	GPS	495							
06MT039/3	A2	281	01	ROS	061497	1036	BE	49 11.9 N	11 11.0 W	GPS	200							
06MT039/3	A2	281	01	ROS	061497	1046	BO	49 11.9 N	11 10.9 W	GPS	200	09	185	0177	5			
06MT039/3	A2	281	01	ROS	061497	1104	EN	49 12.1 N	11 10.8 W	GPS	200							
06MT039/3	A2	282	01	ROS	061497	1329	BE	49 13.9 N	10 38.9 W	GPS	160							
06MT039/3	A2	282	01	ROS	061497	1338	BO	49 13.9 N	10 38.9 W	GPS	160	09	147	0150	7			
06MT039/3	A2	282	01	ROS	061497	1354	EN	49 13.9 N	10 38.8 W	GPS	160							
06MT039/3	A2	283	01	ROS	061597	2315	BE	48 55.3 N	13 16.4 W	GPS	3729							
06MT039/3	A2	283	01	ROS	061697	0020	BO	48 55.5 N	13 16.2 W	GPS	3729	09	3735	3770	22			
06MT039/3	A2	283	01	ROS	061697	0151	EN	48 55.9 N	13 15.9 W	GPS	3729							

06MT039/3 A2	283	02	ROS	061597	0219	BE	48	55.9	N	13	15.9	W	GPS	3723					
06MT039/3 A2	283	02	ROS	061597	0319	BO	48	55.8	N	13	15.9	W	GPS	3723					
06MT039/3 A2	283	02	ROS	061597	0551	EN	48	55.9	N	13	15.2	W	GPS	3723		09	3564	3499	36
06MT039/3 A2	284	01	ROS	061597	0734	BE	48	51.4	N	13	48.2	W	GPS	4515					
06MT039/3 A2	284	01	ROS	061597	0856	BO	48	51.5	N	13	47.9	W	GPS	4515					
06MT039/3 A2	284	01	ROS	061597	1052	EN	48	51.8	N	13	47.7	W	GPS	4515		10	4527	4601	22
06MT039/3 A2	285	01	ROS	061597	1428	BE	48	44.5	N	14	44.1	W	GPS	4717					
06MT039/3 A2	285	01	ROS	061597	1601	BO	48	44.4	N	14	44.0	W	GPS	4717					
06MT039/3 A2	285	01	ROS	061597	1750	EN	48	44.4	N	14	43.7	W	GPS	4717		20	4730	4784	21
06MT039/3 A2	286	01	ROS	061597	2059	BE	48	36.4	N	15	28.7	W	GPS	4802					
06MT039/3 A2	286	01	ROS	061597	2229	BO	48	36.4	N	15	29.1	W	GPS	4802					
06MT039/3 A2	286	01	ROS	061597	0031	EN	48	36.8	N	15	29.6	W	GPS	4802		17	4814	4858	21
06MT039/3 A2	287	01	ROS	061697	0445	BE	48	27.1	N	16	34.9	W	GPS	4818					
06MT039/3 A2	287	01	ROS	061697	0618	BO	48	27.0	N	16	34.8	W	GPS	4818					
06MT039/3 A2	287	01	ROS	061697	0810	EN	48	26.8	N	16	34.9	W	GPS	4818					
06MT039/3 A2	288	01	ROS	061697	1616	BE	48	18.0	N	17	40.9	W	GPS	4016					
06MT039/3 A2	288	01	ROS	061697	1727	BO	48	18.2	N	17	41.3	W	GPS	4016					
06MT039/3 A2	288	01	ROS	061697	1858	EN	48	18.3	N	17	41.7	W	GPS	4016					
06MT039/3 A2	289	02	ROS	061797	0221	BE	48	09.8	N	18	40.1	W	GPS	4395					
06MT039/3 A2	289	02	ROS	061797	0342	BO	48	09.8	N	18	40.3	W	GPS	4395					
06MT039/3 A2	289	02	ROS	061797	0525	EN	48	09.8	N	18	40.6	W	GPS	4395					
06MT039/3 A2	290	01	ROS	061797	0956	BE	48	01.8	N	19	39.4	W	GPS	4471					
06MT039/3 A2	290	01	ROS	061797	1121	BO	48	01.8	N	19	36.7	W	GPS	4471					
06MT039/3 A2	290	01	ROS	061797	1310	EN	48	01.8	N	19	40.0	W	GPS	4471		20	4476	4513	21
06MT039/3 A2	291	01	ROS	061797	1837	BE	47	53.6	N	20	39.2	W	GPS	4343					
06MT039/3 A2	291	01	ROS	061797	1956	BO	47	53.6	N	20	39.7	W	GPS	4343					
06MT039/3 A2	291	01	ROS	061797	2142	EN	47	53.2	N	20	40.1	W	GPS	4343		09	4362	4417	35
06MT039/3 A2	291	02	ROS	061797	2223	BE	47	53.1	N	20	39.7	W	GPS	4333					
06MT039/3 A2	291	02	ROS	061797	2242	BO	47	53.0	N	20	39.7	W	GPS	4333					
06MT039/3 A2	291	02	ROS	061797	2312	EN	47	53.0	N	20	40.0	W	GPS	4333		09	993	0899	12
06MT039/3 A2	292	02	ROS	061897	0639	BE	47	45.9	N	21	37.8	W	GPS	4114					
06MT039/3 A2	292	02	ROS	061897	0752	BO	47	45.9	N	21	38.1	W	GPS	4114					
06MT039/3 A2	292	02	ROS	061897	0924	EN	47	45.7	N	21	37.9	W	GPS	4114					

06MT039/3 A2	293	02	ROS	061897	1342	BE	47	37.6	N	22	36.0	W	GPS	4070					
06MT039/3 A2	293	02	ROS	061897	1459	BO	47	37.6	N	22	36.3	W	GPS	4070	4075	4110	22		
06MT039/3 A2	293	02	ROS	061897	1638	EN	47	37.6	N	22	36.3	W	GPS	4070					
06MT039/3 A2	293	03	ROS	061897	1642	BE	47	37.4	N	22	36.3	W	GPS	4011					
06MT039/3 A2	293	03	ROS	061897	1659	BO	47	37.4	N	22	36.3	W	GPS	4011	995	0900	12		
06MT039/3 A2	293	03	ROS	061897	1727	EN	47	37.2	N	22	36.4	W	GPS	4011					
06MT039/3 A2	294	02	ROS	061897	1956	BE	47	33.8	N	23	05.3	W	GPS	4224					
06MT039/3 A2	294	02	ROS	061897	2110	BO	47	33.7	N	23	05.4	W	GPS	4224	4220	4266	22		
06MT039/3 A2	294	02	ROS	061897	2255	EN	47	37.6	N	23	05.5	W	GPS	4224					
06MT039/3 A2	294	03	ROS	061897	2304	BE	47	33.7	N	23	05.4	W	GPS	4234					
06MT039/3 A2	294	03	ROS	061897	2326	BO	47	33.7	N	23	05.5	W	GPS	4234	994	0874	12		
06MT039/3 A2	294	03	ROS	061897	2355	EN	47	33.6	N	23	05.5	W	GPS	4234					
06MT039/3 A2	295	01	ROS	061997	0217	BE	47	29.6	N	23	33.5	W	GPS	3988					
06MT039/3 A2	295	01	ROS	061997	0329	BO	47	29.4	N	23	33.0	W	GPS	3988	3987	4019	22		
06MT039/3 A2	295	01	ROS	061997	0508	EN	47	29.4	N	23	34.5	W	GPS	3988					
06MT039/3 A2	296	01	ROS	061997	0837	BE	47	23.0	N	24	15.9	W	GPS	3327					
06MT039/3 A2	296	01	ROS	061997	0939	BO	47	22.9	N	24	16.0	W	GPS	3327	20	3312	3320	21	
06MT039/3 A2	296	01	ROS	061997	1107	EN	47	22.9	N	24	16.1	W	GPS	3327					
06MT039/3 A2	297	01	ROS	061997	1516	BE	47	16.9	N	25	00.6	W	GPS	3040					
06MT039/3 A2	297	01	ROS	061997	1613	BO	47	16.8	N	25	00.6	W	GPS	3040	3045	3046	22		
06MT039/3 A2	297	01	ROS	061997	1732	EN	47	16.1	N	25	02.1	W	GPS	3040					
06MT039/3 A2	298	01	ROS	061997	2125	BE	47	10.7	N	25	43.2	W	GPS	2977					
06MT039/3 A2	298	01	ROS	061997	2225	BO	47	10.6	N	25	43.4	W	GPS	2977	3013	2972	22		
06MT039/3 A2	298	01	ROS	061997	2345	EN	47	10.5	N	25	43.8	W	GPS	2977					
06MT039/3 A2	298	05	ROS	062097	0020	BE	47	10.5	N	25	43.6	W	GPS	3058					
06MT039/3 A2	298	05	ROS	062097	0117	BO	47	10.4	N	25	44.2	W	GPS	3058	13	3041	3066	24	
06MT039/3 A2	298	05	ROS	062097	0233	EN	47	10.2	N	25	45.2	W	GPS	3058					
06MT039/3 A2	299	01	ROS	062097	0533	BE	47	06.4	N	26	17.1	W	GPS	2519					
06MT039/3 A2	299	01	ROS	062097	0621	BO	47	06.3	N	26	17.4	W	GPS	2519	2410	2404	22		
06MT039/3 A2	299	01	ROS	062097	0729	EN	47	06.2	N	26	17.9	W	GPS	2519					
06MT039/3 A2	300	01	ROS	062097	0941	BE	47	03.2	N	26	39.6	W	GPS	2802					
06MT039/3 A2	300	01	ROS	062097	1035	BO	47	03.0	N	26	39.9	W	GPS	2802	20	2782	2800	22	
06MT039/3 A2	300	01	ROS	062097	1150	EN	47	02.9	N	26	40.4	W	GPS	2802					

06MT039/3 A2	301	01	ROS	062097	1329	BE	46	59.0	N	26	59.5	W	GPS	2178				
06MT039/3 A2	301	01	ROS	062097	1412	BO	46	58.9	N	26	59.6	W	GPS	2178	2162	2170	22	
06MT039/3 A2	301	01	ROS	062097	1519	EN	46	59.0	N	26	59.9	W	GPS	2178				
06MT039/3 A2	302	01	ROS	062097	1658	BE	46	54.7	N	27	18.3	W	GPS	3487				
06MT039/3 A2	302	01	ROS	062097	1801	BO	46	54.8	N	27	18.3	W	GPS	3487	3517	3541	22	
06MT039/3 A2	302	01	ROS	062097	1926	EN	46	54.7	N	27	18.3	W	GPS	3487				
06MT039/3 A2	302	02	FLT	062097	2042	EN	46	54.4	N	27	18.3	W	GPS	3487	ALACE 719	FLOAT		
06MT039/3 A2	302	02	ROS	062097	1923	BE	46	54.7	N	27	18.3	W	GPS	3501				
06MT039/3 A2	302	02	ROS	062097	1952	BO	46	54.7	N	27	18.4	W	GPS	3501	1011	0999	12	
06MT039/3 A2	302	02	ROS	062097	2023	EN	46	54.7	N	27	18.4	W	GPS	3501				
06MT039/3 A2	303	01	ROS	062197	0109	BE	46	43.5	N	28	15.9	W	GPS	3398				
06MT039/3 A2	303	01	ROS	062197	0218	BO	46	43.6	N	28	15.8	W	GPS	3398	3381	3407	22	
06MT039/3 A2	303	01	ROS	062197	0346	EN	46	43.6	N	28	15.8	W	GPS	3398				
06MT039/3 A2	304	01	ROS	062197	0812	BE	46	32.5	N	29	08.8	W	GPS	2995				
06MT039/3 A2	304	01	ROS	062197	0910	BO	46	32.6	N	29	08.7	W	GPS	2995	20	2953	2969	22
06MT039/3 A2	304	01	ROS	062197	1029	EN	46	32.4	N	29	08.5	W	GPS	2995				
06MT039/3 A2	304	02	FLT	062197	1039	EN	46	32.4	N	29	08.4	W	GPS	2995	ALACE 720	FLOAT		
06MT039/3 A2	305	00	MOR	062297	1426	BE	46	19.8	N	29	55.3	W	GPS	3308	Recovery of MOORING K1/96			
06MT039/3 A2	305	00	MOR	062297	2235	EN	46	21.3	N	29	53.9	W	GPS	3308	New MOORING K1/97			
06MT039/3 A2	305	01	ROS	062297	2310	BE	46	19.9	N	29	55.8	W	GPS	3296				
06MT039/3 A2	305	01	ROS	062397	0011	BO	46	19.8	N	29	55.8	W	GPS	3296	19	3268	3305	21
06MT039/3 A2	305	01	ROS	062397	0128	EN	46	19.7	N	29	55.8	W	GPS	3296				
06MT039/3 A2	306	01	ROS	062297	0528	BE	46	05.0	N	30	46.4	W	GPS	3277				
06MT039/3 A2	306	01	ROS	062297	0624	BO	46	04.9	N	30	46.5	W	GPS	3277	09	3266	3300	22
06MT039/3 A2	306	01	ROS	062297	0742	EN	46	04.9	N	30	46.7	W	GPS	3277				
06MT039/3 A2	307	01	ROS	062297	1134	BE	45	50.1	N	31	36.8	W	GPS	3651				
06MT039/3 A2	307	01	ROS	062297	1245	BO	45	50.1	N	31	36.8	W	GPS	3651	19	3637	3682	22
06MT039/3 A2	307	01	ROS	062297	1410	EN	45	49.8	N	31	36.6	W	GPS	3651				
06MT039/3 A2	307	02	FLT	062297	1414	EN	45	49.5	N	31	37.7	W	GPS	3651	ALACE 718	FLOAT		
06MT039/3 A2	308	01	ROS	062297	1802	BE	45	35.3	N	32	26.7	W	GPS	3772				
06MT039/3 A2	308	01	ROS	062297	1908	BO	45	35.0	N	32	26.6	W	GPS	3772	09	3782	3800	21
06MT039/3 A2	308	01	ROS	062297	2033	EN	45	34.4	N	32	26.2	W	GPS	3772				



06MT039/3 A2	309	01	ROS	062397	0015	BE	45	19.2	N	33	12.7	W	GPS	3653	11	3663	3704	22
06MT039/3 A2	309	01	ROS	062397	0121	BO	45	18.9	N	33	12.2	W	GPS	3653				
06MT039/3 A2	309	01	ROS	062397	0245	EN	45	18.7	N	33	11.9	W	GPS	3653				
06MT039/3 A2	309	02	MOR	062397	0621	BE	45	19.8	N	33	12.6	W	GPS	3655				
06MT039/3 A2	309	02	MOR	062397	1434	EN	45	19.3	N	33	09.1	W	GPS	3567				
06MT039/3 A2	310	01	ROS	062397	1935	BE	45	07.2	N	34	04.8	W	GPS	3619				
06MT039/3 A2	310	01	ROS	062397	2040	BO	45	07.1	N	34	04.8	W	GPS	3619	09	3625	3669	21
06MT039/3 A2	310	01	ROS	062397	2206	EN	45	07.2	N	34	04.4	W	GPS	3619				
06MT039/3 A2	311	01	ROS	062497	0153	BE	44	55.6	N	34	45.7	W	GPS	4068				
06MT039/3 A2	311	01	ROS	062497	0308	BO	44	55.4	N	34	45.4	W	GPS	4068	11	4080	4132	22
06MT039/3 A2	311	01	ROS	062497	0437	EN	44	55.2	N	34	45.3	W	GPS	4068				
06MT039/3 A2	312	01	ROS	062497	0759	BE	44	45.1	N	35	24.6	W	GPS	3953				
06MT039/3 A2	312	01	ROS	062497	0911	BO	44	45.1	N	35	24.6	W	GPS	3953	10	3965	4014	22
06MT039/3 A2	312	01	ROS	062497	1046	EN	44	44.9	N	35	24.7	W	GPS	3953				
06MT039/3 A2	313	01	ROS	062497	1403	BE	44	34.0	N	36	05.0	W	GPS	4078				
06MT039/3 A2	313	01	ROS	062497	1518	BO	44	33.7	N	36	05.2	W	GPS	4078	09	4110	4158	22
06MT039/3 A2	313	01	ROS	062497	1648	EN	44	33.6	N	36	05.1	W	GPS	4078				
06MT039/3 A2	314	01	ROS	062497	2043	BE	44	20.0	N	36	54.5	W	GPS	4233				
06MT039/3 A2	314	01	ROS	062497	2200	BO	44	19.9	N	36	54.5	W	GPS	4233	09	4255	4312	22
06MT039/3 A2	314	01	ROS	062497	2339	EN	44	19.9	N	36	54.5	W	GPS	4233				
06MT039/3 A2	315	01	ROS	062597	0337	BE	44	05.8	N	37	43.6	W	GPS	4140				
06MT039/3 A2	315	01	ROS	062597	0450	BO	44	05.6	N	37	43.6	W	GPS	4140	11	4136	4190	22
06MT039/3 A2	315	01	ROS	062597	0618	EN	44	05.3	N	37	43.7	W	GPS	4140				
06MT039/3 A2	316	01	ROS	062597	1034	BE	43	52.0	N	38	32.8	W	GPS	4044				
06MT039/3 A2	316	01	ROS	062597	1150	BO	43	51.9	N	38	32.6	W	GPS	4044	11	4048	4082	22
06MT039/3 A2	316	01	ROS	062597	1327	EN	43	51.6	N	38	32.5	W	GPS	4044				
06MT039/3 A2	316	02	ROS	062597	1342	BE	43	51.7	N	38	32.5	W	GPS	4036				
06MT039/3 A2	316	02	ROS	062597	1416	BO	43	51.6	N	38	32.4	W	GPS	4036				
06MT039/3 A2	316	02	ROS	062597	1506	EN	43	51.8	N	38	32.3	W	GPS	4036				
06MT039/3 A2	317	01	ROS	062597	2001	BE	43	38.1	N	39	21.6	W	GPS	4658				
06MT039/3 A2	317	01	ROS	062597	2024	BO	43	37.9	N	39	21.3	W	GPS	4658				
06MT039/3 A2	317	01	ROS	062597	2102	EN	43	37.6	N	39	20.8	W	GPS	4658				

Recovery Mooring K3/96  
New Mooring K3/97

06MT039/3 A2	317	02	ROS	062597	2106	BE	43	37.4	N	39	20.6	W	GPS	4602
06MT039/3 A2	317	02	ROS	062597	2238	BO	43	36.2	N	39	19.8	W	GPS	4602
06MT039/3 A2	317	02	ROS	062697	0024	EN	43	35.0	N	39	19.6	W	GPS	4602
06MT039/3 A2	318	01	ROS	062697	0431	BE	43	24.2	N	40	10.2	W	GPS	4780
06MT039/3 A2	318	01	ROS	062697	0453	BO	43	24.3	N	40	10.7	W	GPS	4780
06MT039/3 A2	318	01	ROS	062697	0530	EN	43	24.5	N	40	10.9	W	GPS	4780
06MT039/3 A2	318	02	ROS	062697	0536	BE	43	24.5	N	40	10.9	W	GPS	4779
06MT039/3 A2	318	02	ROS	062697	0638	BO	43	24.7	N	40	10.5	W	GPS	4779
06MT039/3 A2	318	02	ROS	062697	0828	EN	43	24.7	N	40	11.9	W	GPS	4779
06MT039/3 A2	319	01	ROS	062697	1209	BE	43	10.4	N	40	59.4	W	GPS	4798
06MT039/3 A2	319	01	ROS	062697	1338	BO	43	10.5	N	41	00.1	W	GPS	4798
06MT039/3 A2	319	01	ROS	062697	1519	EN	43	10.5	N	41	00.9	W	GPS	4798
06MT039/3 A2	320	01	ROS	062697	1839	BE	42	56.3	N	41	47.3	W	GPS	4809
06MT039/3 A2	320	01	ROS	062697	1900	BO	42	56.0	N	41	47.6	W	GPS	4809
06MT039/3 A2	320	01	ROS	062697	1937	EN	42	55.8	N	41	48.7	W	GPS	4809
06MT039/3 A2	320	02	ROS	062697	1943	BE	42	55.2	N	41	49.0	W	GPS	4809
06MT039/3 A2	320	02	ROS	062697	2108	BO	42	55.2	N	41	40.0	W	GPS	4809
06MT039/3 A2	320	02	ROS	062697	2252	EN	42	54.3	N	41	49.9	W	GPS	4809
06MT039/3 A2	320	04	ROS	062797	0133	BE	42	52.3	N	41	52.4	W	GPS	4880
06MT039/3 A2	320	04	ROS	062797	0236	BO	42	51.4	N	41	53.2	W	GPS	4880
06MT039/3 A2	320	04	ROS	062797	0350	EN	42	50.7	N	41	54.1	W	GPS	4880
06MT039/3 A2	321	01	ROS	062797	0715	BE	42	24.7	N	42	35.9	W	GPS	4837
06MT039/3 A2	321	01	ROS	062797	0842	BO	42	41.8	N	42	36.5	W	GPS	4837
06MT039/3 A2	321	01	ROS	062797	1027	EN	42	41.0	N	42	37.8	W	GPS	4837
06MT039/3 A2	322	01	ROS	062797	1345	BE	42	28.1	N	43	30.0	W	GPS	4832
06MT039/3 A2	322	01	ROS	062797	1423	BO	42	28.4	N	43	24.4	W	GPS	4832
06MT039/3 A2	322	01	ROS	062797	1505	EN	42	28.0	N	43	24.7	W	GPS	4832
06MT039/3 A2	322	02	ROS	062797	1523	BE	42	27.9	N	43	25.0	W	GPS	4831
06MT039/3 A2	322	02	ROS	062797	1651	BO	42	27.3	N	43	25.6	W	GPS	4831
06MT039/3 A2	322	02	ROS	062797	1822	EN	42	26.9	N	43	26.7	W	GPS	4831
06MT039/3 A2	323	01	ROS	062797	2157	BE	42	15.2	N	44	12.2	W	GPS	4865
06MT039/3 A2	323	01	ROS	062797	2231	BO	42	15.6	N	44	12.6	W	GPS	4865
06MT039/3 A2	323	01	ROS	062797	2309	EN	42	16.0	N	44	13.3	W	GPS	4865

06MT039/3 A2	323	02	ROS	062897	2319	BE	42	16.0	N	44	13.4	W	GPS	4863
06MT039/3 A2	323	02	ROS	062997	0049	BO	42	16.6	N	44	14.5	W	GPS	4863
06MT039/3 A2	323	02	ROS	062997	0232	EN	42	17.2	N	44	15.9	W	GPS	4863
06MT039/3 A2	324	01	ROS	062897	0636	BE	42	00.9	N	44	59.9	W	GPS	4814
06MT039/3 A2	324	01	ROS	062897	0702	BO	42	01.6	N	45	00.9	W	GPS	4814
06MT039/3 A2	324	01	ROS	062897	0740	EN	42	20.4	N	45	01.4	W	GPS	4814
06MT039/3 A2	324	02	ROS	062897	0755	BE	42	02.8	N	45	01.5	W	GPS	4801
06MT039/3 A2	324	02	ROS	062897	0928	BO	42	04.4	N	45	03.2	W	GPS	4801
06MT039/3 A2	324	02	ROS	062897	1118	EN	42	05.8	N	45	05.1	W	GPS	4801
06MT039/3 A2	325	01	ROS	062897	1350	BE	42	11.5	N	45	38.4	W	GPS	4720
06MT039/3 A2	325	01	ROS	062897	1413	BO	42	12.2	N	45	38.8	W	GPS	4720
06MT039/3 A2	325	01	ROS	062897	1453	EN	42	13.1	N	45	39.3	W	GPS	4720
06MT039/3 A2	325	02	ROS	062897	1454	BE	42	13.3	N	45	39.4	W	GPS	4714
06MT039/3 A2	325	02	ROS	062897	1619	BO	42	14.8	N	45	40.6	W	GPS	4714
06MT039/3 A2	325	02	ROS	062897	1804	EN	42	17.1	N	45	40.9	W	GPS	4714
06MT039/3 A2	326	01	ROS	062897	2045	BE	42	22.4	N	46	17.6	W	GPS	4660
06MT039/3 A2	326	01	ROS	062897	2140	BO	42	22.3	N	46	17.5	W	GPS	4660
06MT039/3 A2	326	01	ROS	062897	2300	EN	42	22.3	N	46	17.4	W	GPS	4660
06MT039/3 A2	326	02	ROS	062897	2333	BE	42	22.3	N	46	17.5	W	GPS	4660
06MT039/3 A2	326	02	ROS	062997	0056	BO	42	22.4	N	46	17.7	W	GPS	4660
06MT039/3 A2	326	02	ROS	062997	0241	EN	42	22.5	N	46	17.4	W	GPS	4660
06MT039/3 A2	327	01	ROS	062997	0516	BE	42	44.3	N	46	17.5	W	GPS	4660
06MT039/3 A2	327	01	ROS	062997	0630	BO	42	22.4	N	46	17.7	W	GPS	4660
06MT039/3 A2	327	01	ROS	062997	0753	EN	42	22.5	N	46	17.4	W	GPS	4660
06MT039/3 A2	328	01	ROS	062997	0940	BE	42	36.5	N	47	07.3	W	GPS	4045
06MT039/3 A2	328	01	ROS	062997	1102	BO	42	35.6	N	47	08.1	W	GPS	4045
06MT039/3 A2	328	01	ROS	062997	1232	EN	42	34.6	N	47	09.0	W	GPS	4045
06MT039/3 A2	329	01	ROS	062997	1452	BE	42	34.7	N	47	26.7	W	GPS	3825
06MT039/3 A2	329	01	ROS	062997	1600	BO	42	44.0	N	47	27.3	W	GPS	3825
06MT039/3 A2	329	01	ROS	062997	1723	EN	42	43.8	N	47	27.1	W	GPS	3825
06MT039/3 A2	330	01	ROS	062997	1934	BE	42	49.2	N	47	44.1	W	GPS	3741
06MT039/3 A2	330	01	ROS	062997	2036	BO	42	49.4	N	47	43.9	W	GPS	3741
06MT039/3 A2	330	01	ROS	062997	2206	EN	42	49.8	N	47	43.8	W	GPS	3741
06MT039/3 A2	10									4915	4983		21	
06MT039/3 A2	09									4937	4914		22	
06MT039/3 A2	09									1278	1101		11	
06MT039/3 A2	09									4835	4802		22	
06MT039/3 A2	12									3029	2298		24	
06MT039/3 A2	12									4742	4733		21	
06MT039/3 A2	12									4298	4332		22	
06MT039/3 A2	11									4070	4077		21	
06MT039/3 A2	10									3846	3879		22	
06MT039/3 A2	09									3742	3786		22	

06MT039/3 A2	331	01	ROS	062997	2358	BE	42	54.8	N	48	01.7	W	GPS	3486				
06MT039/3 A2	331	01	ROS	063097	0103	BO	42	55.0	N	48	01.7	W	GPS	3486		3465	3505	22
06MT039/3 A2	331	01	ROS	063097	0223	EN	42	55.0	N	48	01.2	W	GPS	3486				
06MT039/3 A2	332	01	ROS	063097	0506	BE	43	03.1	N	48	37.5	W	GPS	2510				
06MT039/3 A2	332	01	ROS	063097	0549	BO	43	03.0	N	48	37.6	W	GPS	2510				
06MT039/3 A2	332	01	ROS	063097	0651	EN	43	03.1	N	48	37.6	W	GPS	2510		2473	2494	22
06MT039/3 A2	333	01	ROS	063097	0836	BE	43	05.5	N	48	50.5	W	GPS	2072				
06MT039/3 A2	333	01	ROS	063097	0913	BO	43	05.3	N	48	50.8	W	GPS	2072				
06MT039/3 A2	333	01	ROS	063097	1014	EN	43	04.9	N	48	51.4	W	GPS	2072		2043	2050	22
06MT039/3 A2	334	01	ROS	063097	1206	BE	43	08.3	N	48	59.8	W	GPS	1588				
06MT039/3 A2	334	01	ROS	063097	1248	BO	43	08.4	N	48	59.7	W	GPS	1588				
06MT039/3 A2	334	01	ROS	063097	1340	EN	43	08.4	N	48	59.4	W	GPS	1588		1554	1564	22
06MT039/3 A2	335	01	ROS	063097	1518	BE	43	11.7	N	49	09.3	W	GPS	1049				
06MT039/3 A2	335	01	ROS	063097	1547	BO	43	11.6	N	49	09.2	W	GPS	1049				
06MT039/3 A2	335	01	ROS	063097	1621	EN	43	11.6	N	49	09.2	W	GPS	1049		1022	1029	10
06MT039/3 A2	336	01	ROS	063097	1803	BE	43	15.2	N	49	22.2	W	GPS	0570				
06MT039/3 A2	336	01	ROS	063097	1840	EN	43	15.2	N	49	22.2	W	GPS	0570		557	560	10
06MT039/3 A2	337	01	ROS	063097	1953	BE	43	20.1	N	49	34.9	W	GPS	0097				
06MT039/3 A2	337	01	ROS	063097	2000	BO	43	20.1	N	49	34.9	W	GPS	0097				
06MT039/3 A2	337	01	ROS	063097	2009	EN	43	20.1	N	49	34.9	W	GPS	0097		77	0080	7
06MT039/3 A2	338	01	ROS	063097	2223	BE	43	30.2	N	50	00.3	W	GPS	0068				
06MT039/3 A2	338	01	ROS	063097	2227	BO	43	20.2	N	50	00.3	W	GPS	0068				
06MT039/3 A2	338	01	ROS	063097	2235	EN	43	30.3	N	50	00.4	W	GPS	0068		55	0057	5

## 7.4 Leg M39/4

### 7.4.1. CTD-profile station list and water samples taken from the bottles

CTD-Profile	Station No.	Date	Time	Latitude	Longitude	Water Depth	Profile Depth dbar	Comment	CH <sub>4</sub> -samples	He, <sup>3</sup> H, <sup>18</sup> O samples	Plankton net depth/comment	<sup>18</sup> O for Lamont US England GB
1	339	1997/07/07	23:03	52°57.22'N	51°21.08'W	2200	2111				200m culturing	
2	341	1997/07/08	23:03	55°19.54'N	53°53.55'N	2405	2398	K2, K6 retrieved		He (12) <sup>3</sup> H (12) <sup>18</sup> O (5)		US (4) GB (20)
3	342	1997/07/09	03:30	55°00.72'N	54°12.57'W	514	482			He (6) <sup>3</sup> H (6) <sup>18</sup> O (6)	500m conservation	US (4) GB (5)
4	343	1997/07/09	06:30	55°09.11'N	54°03.86'W	1270	1236			He (7) <sup>3</sup> H (7) <sup>18</sup> O (6)		US (5) GB (10)
	344	1997/07/09	08:35	55°15.96'N	53°57.03'W						500m conservation	
5	346	1997/07/09	12:09	55°33.52'N	53°40.02'W	2898	2887			<sup>18</sup> O (6)		US (4) GB (22)
6	347	1997/07/09	17:06	55°58.01'N	53°15.96'W	3230	3233			He (12) <sup>3</sup> H (12) <sup>18</sup> O (6)		US (4) GB (22)
7	348	1997/07/10	04:02	57°22.74'N	51°47.36'W	3552	3569			He (12) <sup>3</sup> H (12) <sup>18</sup> O (6)		US (4) GB (22)
8	349	1997/07/10	23:30	58°29.63'N	50°33.49'W	3552	3569	K4 retrieved		He (13) <sup>3</sup> H (14) <sup>18</sup> O (6)		US (4) GB (22)
9	350	1997/07/11	13:07	57°44.89'N	49°56.87'W	3595	3611	no LADCP		<sup>18</sup> O (6)		

Profile	Station No.	Date	Time	Latitude	Longitude	Water Depth	Profile Depth	Comment	CH <sub>4</sub> - samples	He, <sup>3</sup> H, <sup>18</sup> O samples	Plankton net depth/ comment	<sup>18</sup> O for Lamont US England GB
10	351	1997/07/11	20:52	57°00.03'N	49°19.05'W	3644	3651			He (12) <sup>3</sup> H (12) <sup>18</sup> O (4)		
11	352	1997/07/12	04:18	56°16.48'N	48°41.95'W	3716	3733	K3 retrieved			500m conservation	
12	353	1997/07/12	18:26	55°22.99'N	48°47.86'W	3780	3808			He (12) <sup>3</sup> H (12) <sup>18</sup> O (5)		
13	354	1997/07/13	03:00	54°32.11'N	49°06.88'W	3746	3766	no LADCP				
14	355	1997/07/13	13:43	53°41.13'N	49°26.64'W	3716	3741	K16 deployed, no LADCP		He (13) <sup>3</sup> H (13) <sup>18</sup> O (6)		US (4)
15	357	1997/07/14	01:21	53°26.08'N	50°04.04'W	3533	3565	K10 deployed, no LADCP		<sup>18</sup> O (6)	500m conservation	US (4)
16	358	1997/07/14	06:54	53°16.06'N	50°33.11'W	3189	3192			He (12) <sup>3</sup> H (12) <sup>18</sup> O (5)		US (4)
17	359	1997/07/14	14:56	53°07.99'N	50°53.68'W	2903	2902	K9 deployed		<sup>18</sup> O (7)		US (4)
18	361	1997/07/14	23:18	52°52.44'N	51°30.77'W	1691	1665	K7 deployed		He (9) <sup>3</sup> H (9) <sup>18</sup> O (7)	500m conservation	US (4)
19	362	1997/07/15	03:37	53°02.50'N	51°05.89'W	2601	2577			He (10) <sup>3</sup> H (10) <sup>18</sup> O (6)	500m conservation	US (4)
20	363	1997/07/15	07:56	52°58.02'N	51°18.00'W	2284	2261	K8 deployed		<sup>18</sup> O (6)	500m culturing	US (4)
21	364	1997/07/15	17:02	52°47.93'N	51°45.05'W	550	520			He (5) <sup>3</sup> H (5) <sup>18</sup> O (6)	500m conservation	US (3)

Profile	Station No.	Date	Time	Latitude	Longitude	Water Depth	Profile Depth	Comment	CH <sub>4</sub> - samples	He, <sup>3</sup> H, <sup>18</sup> O samples	Plankton net depth/ comment	<sup>18</sup> O for Lamont US England GB
22	366	1997/07/19	04:02	57°40.13'N	56°32.03'W	3019	3018		22		500m conservation	US (4)
23	367	1997/07/20	01:30	57°06.51'N	54°36.11'W	3260	3262	K15+ K17 deployed	22		500m conservation	US (4)
24	370	1997/07/21	12:54	55°08.92'N	54°04.21'W	1243	1234		8			
25	372	1997/07/21	23:18	55°22.02'N	53°49.10'W	2581	2558	K12 deployed	17			
26	373	1997/07/22	03:37	55°42.09'N	53°31.88'W	3020	3009		22			
27	374	1997/07/22	12:03	56°34.07'N	52°39.93'W	3509	3520	K11 deployed	21	He (12) <sup>3</sup> H (12)	500m conservation	GB (22)
28	375	1997/07/23	11:26	57°56.12'N	51°10.26'W	3588	3602		22	He (9) <sup>3</sup> H (8) SF <sub>6</sub> (8)		GB (19)
29	376	1997/07/23	19:15	58°27.49'N	50°29.94'W	3552	505	K14 deployed	-		500m conservation	
30	377	1997/07/24	05:18	59°27.87'N	49°29.79'W	3413	3425		21			US (4) GB (22)
31	378	1997/07/24	10:54	59°53.97'N	49°00.02'W	3110	3113		21	He (12) <sup>3</sup> H (12) <sup>18</sup> O (4)		US (4) GB (22)
32	379	1997/07/24	16:02	60°07.77'N	48°45.76'W	2918	2917		-	He (10) <sup>3</sup> H (10) <sup>18</sup> O (4)	500m conservation	US (5) GB (17)
33	380	1997/07/24	20:56	60°18.46'N	48°34.20'W	2747	2741		21	He (10) <sup>3</sup> H (10) <sup>18</sup> O (4)	500m conservation	US (5) GB (17)
34	381	1997/07/25	20:45	59°03.07'N	43°30.05'W	1707	1692		13	He (8) <sup>3</sup> H (8) <sup>18</sup> O (3)	500m conservation	US (5)

Profile	Station No.	Date	Time	Latitude	Longitude	Water Depth	Profile Depth	Comment	CH <sub>4</sub> -samples	He, <sup>3</sup> H, <sup>18</sup> O samples	Plankton net depth/ comment	<sup>18</sup> O for Lamont US England GB
35	382	1997/07/26	01:33	58°40.08'N	43°30.03'W	1975	1946		-	He (8) <sup>3</sup> H (8) <sup>18</sup> O (3)		US (4)
36	383	1997/07/26	05:55	58°26.27'N	43°30.31'W	2439	2425		22	He (9) <sup>3</sup> H (9) <sup>18</sup> O (4)	500m conservation	US (3)
37	384	1997/07/26	09:31	58°11.98'N	43°30.02'W	2942	2942		-			US (4)
38	385	1997/07/26	14:20	57°58.10'N	43°30.14'W	3248	3252		22	He (11) <sup>3</sup> H (11)	500m conservation	US (4)
39	386	1997/07/26	18:44	57°37.87'N	43°29.95'W	3417	3426		20	He (5) <sup>3</sup> H (5)		
40	387	1997/07/26	23:48	57°10.04'N	43°30.09'W	3449	3478		-			
41	388	1997/07/27	05:15	56°39.91'N	43°29.91'W	3502	3515		21			
42	389	1997/07/27	12:07	55°57.93'N	43°29.94'W	3348	3360		22	He (3) <sup>3</sup> H (3)		
43	390	1997/07/27	18:37	55°15.88'N	43°30.02'W	3329	3338		22	He (8) <sup>3</sup> H (8)		
44	391	1997/07/28	00:48	54°33.99'N	43°30.00'W	3410	3414		-			
45	392	1997/07/28	07:09	53°51.92'N	43°29.76'W	3625	3668		21			
46	393	1997/07/28	13:41	53°09.96'N	43°30.05'W	3661	3686		21			
47	394	1997/07/28	20:11	52°27.97'N	43°29.87'W	4190	4237		21	He (9) <sup>3</sup> H (9)		
48	395	1997/07/29	01:45	51°59.84'N	43°30.00'W	4176	4218		-			
49	396	1997/07/29	07:29	51°30.07'N	43°30.02'W	4234	4289		22			
50	397	1997/07/29	14:07	50°59.92'N	43°29.98'W	4205	4259		22			
51	398	1997/07/29	22:22	50°30.03'N	43°29.99'W	4267	4305		-			
52	399	1997/07/30	05:00	49°59.99'N	43°30.00'W	4259	4310		21			US (5)
53	400	1997/07/30	10:58	49°40.04'N	43°49.97'W	4070	4111		22	He (10) <sup>3</sup> H (10)		US (4)
54	401	1997/07/30	16:52	49°15.65'N	44°14.86'W	3106	3113		21	He (9) <sup>3</sup> H (9) <sup>18</sup> O (5)		US (4)



Profile	Station No.	Date	Time	Latitude	Longitude	Water Depth	Profile Depth	Comment	CH <sub>4</sub> -samples	He, <sup>3</sup> H, <sup>18</sup> O samples	Plankton net depth/comment	<sup>18</sup> O for Lamont US England GB
55	402	1997/07/30	22:15	48°51.41'N	44°38.72'W	1573	1548		19	He (9) <sup>3</sup> H (7) <sup>18</sup> O (6)	500m conversation	US (5)
56	403	1997/07/31	02:29	49°04.30'N	44°25.89'W	2550	2538		-	He (10) <sup>3</sup> H (10) <sup>18</sup> O (4)		
57	404	1997/07/31	07:49	49°27.79'N	44°03.01'W	3845	3906		22	He (11) <sup>3</sup> H (11) <sup>18</sup> O (3)	500m conversation	
58	405	1997/07/31	18:18	50°12.05'N	41°59.78'W	4349	4412		21			
59	406	1997/08/01	02:00	50°23.97'N	40°29.68'W	4341	4407		22	He (9) <sup>3</sup> H (9)		
60	407	1997/08/01	10:16	50°35.97'N	39°00.12'W	4136	4192		21			
61	408	1997/08/01	18:11	50°48.01'N	37°29.86'W	4242	4308		21	He (10) <sup>3</sup> H (10)		
62	409	1997/08/02	02:00	50°59.94'N	35°59.91'W	4328	4380		-			
63	410	1997/08/02	08:54	51°20.11'N	34°59.97'W	3307	3316		21	He (10) <sup>3</sup> H (10)		
64	411	1997/08/02	13:11	51°40.12'N	35°00.04'W	3828	3859		-			
65	412	1997/08/02	17:30	51°55.02'N	34°59.94'W	3235	3223		-			
66	413	1997/08/02	20:36	52°06.11'N	34°59.92'W	3321	3343		20	He (8) <sup>3</sup> H (8)		
67	414	1997/08/03	00:13	52°15.17'N	34°59.88'W	3779	3849		-			
68	415	1997/08/03	03:30	52°22.62'N	35°00.02'W	3774	3744		21	He (9) <sup>3</sup> H (9)		
69	416	1997/08/03	07:18	52°28.03'N	34°59.88'W	2821	2774		-			
70	417	1997/08/03	09:54	52°34.04'N	35°00.22'W	2784	2752		-	He (6) <sup>3</sup> H (6)		
71	418	1997/08/03	12:35	52°38.54'N	35°01.18'W	3332	3369		21	He (9) <sup>3</sup> H (9)		

Profile	Station No.	Date	Time	Latitude	Longitude	Water Depth	Profile Depth	Comment	CH <sub>4</sub> samples	He, <sup>3</sup> H, <sup>18</sup> O samples	Plankton net depth/ comment	<sup>18</sup> O for Lamont US England GB
72	419	1997/08/03	19:41	53°01.99'N	35°06.84'W	3136	3270		21	He (6) <sup>3</sup> H (6)		
73	420	1997/08/03	23:18	53°02.05'N	35°18.94'W	2419	2421		-			
74	421	1997/08/04	01:40	53°02.06'N	35°12.35'W	3109	3108		-			
75	422	1997/08/04	05:11	52°56.67'N	34°58.45'W	3083	3110		-			
76	423	1997/08/04	08:31	52°47.56'N	34°58.11'W	3281	3214		-			
77	424	1997/08/04	11:16	52°43.11'N	34°59.61'W	3531	3537		-			
78	425	1997/08/04	14:37	52°51.97'N	34°57.45'W	3482	3510		22	He (7) <sup>3</sup> H (7)		
79	426	1997/08/04	19:33	53°11.62'N	34°51.47'W	2795	2750		-			
80	427	1997/08/04	22:30	53°15.09'N	34°51.76'W	2613	2616		-	He (8) <sup>3</sup> H (8)		
81	428	1997/08/05	03:38	53°44.07'N	35°15.08'W	2480	2467		-	He (4) <sup>3</sup> H (4)		
82	429	1997/08/05	08:37	54°13.99'N	35°08.96'W	2900	2893		20	He (7) <sup>3</sup> H (7)		
83	430	1997/08/05	13:41	54°42.41'N	35°09.77'W	2001	1964		-			
84	431	1997/08/05	17:41	54°59.08'N	34°49.99'W	2460	2434		-			
85	432	1997/08/05	20:18	55°03.44'N	34°49.95'W	2568	2559		14	He (6) <sup>3</sup> H (6)		
86	433	1997/08/06	01:15	55°34.03'N	35°06.89'W	2047	2027		-			
87	434	1997/08/06	06:01	56°03.02'N	35°24.80'W	2042	2022		19			
88	435	1997/08/06	10:39	56°31.10'N	35°42.16'W	2270	2246		-			
89	436	1997/08/06	14:09	56°41.12'N	36°02.05'W	2421	2416		22			
90	437	1997/08/06	17:33	56°50.96'N	36°21.90'W	2620	2629		-			
91	438	1997/08/06	21:07	57°02.02'N	36°42.98'W	2422	2423		22			
92	439	1997/08/07	00:35	57°12.01'N	37°03.09'W	2743	2734		-			
93	440	1997/08/07	04:17	57°23.03'N	37°24.04'W	3250	3263		-			
94	441	1997/08/07	08:07	57°32.99'N	37°44.90'W	3222	3216		22			
95	442	1997/08/07	13:58	57°54.00'N	38°26.01'W	3249	3262		21	He (15) <sup>3</sup> H (15)		
96	443	1997/08/07	20:18	58°14.00'N	39°05.88'W	3324	3334		-			

Profile	Station No.	Date	Time	Latitude	Longitude	Water Depth	Profile Depth	Comment	CH <sub>4</sub> samples	He, <sup>3</sup> H, <sup>18</sup> O samples	Plankton net depth/ comment	<sup>18</sup> O for Lamont US England GB
97	444	1997/08/08	02:45	58°34.04'N	39°44.76'W	3139	3134		22			
98	445	1997/08/08	07:59	58°48.96'N	40°14.84'W	3088	3091		-			US (4) GB (20)
99	446	1997/08/08	13:22	59°01.93'N	40°39.07'W	2948	2944		21		200m culturing	US (4) GB (18)
100	447	1997/08/08	17:11	59°13.03'N	41°02.90'W	2716	2709		19			US (4) GB (20)
101	448	1997/08/08	20:45	59°23.97'N	41°26.00'W	2359	2342		6			US (4) GB (20)
102	449	1997/08/09	00:03	59°35.08'N	41°50.03'W	1942	1922		14			US (4) GB (14)
103	450	1997/08/09	02:45	59°42.47'N	42°06.94'W	1755	1730		-			GB (4)

## 7.5 Leg M39/5

## 7.5.1 Station listing

EXPO-CODE	Section Name	Stat No.	Cast No.	Cast Type	Date	Time UTC	Code	Latitude	Longitude	Position	Bottom Depth	Max. Wheel Pres.	Bottom No. of Para Dist. Btls	Comments	
06MT39/5	VEINS-6	451	01	ROS/A	081497	2110	BE	64 45.0 N	26 39.7 W	GPS	250				
06MT39/5	VEINS-6	451	01	ROS/A	081497	2110	BO	64 45.0 N	26 39.9 W	GPS	250	243	10	1-8,23	
06MT39/5	VEINS-6	451	01	ROS/A	081497	2148	EN	64 45.0 N	26 40.0 W	GPS	250			Test station	
06MT39/5	VEINS-6	451	02	ROS/A	081497	2345	BE	64 45.0 N	26 40.0 W	GPS	253				
06MT39/5	VEINS-6	451	02	ROS/A	081497	2356	BO	64 45.0 N	26 40.1 W	GPS	250	239	10	1-8,20	
06MT39/5	VEINS-6	451	02	ROS/A	081597	0014	EN	64 45.1 N	26 40.2 W	GPS	250				
06MT39/5	VEINS-6	452	01	ROS/A	081597	0149	BE	64 45.1 N	27 14.9 W	GPS	495				
06MT39/5	VEINS-6	452	01	ROS/A	081597	0206	BO	64 45.2 N	27 14.8 W	GPS	494	482	8	1-8,20,23	
06MT39/5	VEINS-6	452	01	ROS/A	081597	0226	EN	64 45.2 N	27 14.8 W	GPS	492				
06MT39/5	VEINS-6	453	01	ROS/A	081597	0406	BE	64 45.3 N	27 50.2 W	GPS	902				
06MT39/5	VEINS-6	453	01	ROS/A	081597	0431	BO	64 45.4 N	27 50.0 W	GPS	893	902	9	11	1-8,20,23
06MT39/5	VEINS-6	453	01	ROS/A	081597	0503	EN	64 45.5 N	27 49.8 W	GPS	882				
06MT39/5	VEINS-6	454	01	ROS/A	081597	0637	BE	64 45.1 N	28 25.1 W	GPS	1171				
06MT39/5	VEINS-6	454	01	ROS/A	081597	0703	BO	64 45.1 N	28 24.9 W	GPS	1168	1162	11	13	1-8,20
06MT39/5	VEINS-6	454	01	ROS/A	081597	0740	EN	64 44.9 N	28 24.9 W	GPS	1164				
06MT39/5	VEINS-6	455	01	ROS/A	081597	0920	BE	64 45.2 N	29 04.9 W	GPS	1070				
06MT39/5	VEINS-6	455	01	ROS/A	081597	0947	BO	64 45.2 N	29 04.8 W	GPS	1070	1044	16	13	1-8,20
06MT39/5	VEINS-6	455	01	ROS/A	081597	1028	EN	64 45.0 N	29 05.0 W	GPS	1071				
06MT39/5	VEINS-6	456	01	ROS/A	081597	1209	BE	64 45.1 N	29 45.1 W	GPS	2139				
06MT39/5	VEINS-6	456	01	ROS/A	081597	1251	BO	64 45.2 N	29 45.2 W	GPS	2139	2141	22	22	1-10,20
06MT39/5	VEINS-6	456	01	ROS/A	081597	1349	EN	64 45.2 N	29 45.4 W	GPS	2155				
06MT39/5	VEINS-6	457	01	ROS/A	081597	1533	BE	64 45.1 N	30 25.2 W	GPS	2236				
06MT39/5	VEINS-6	457	01	ROS/A	081597	1616	BO	64 45.2 N	30 25.1 W	GPS	2235	2237	12	22	1-10,20,23,26
06MT39/5	VEINS-6	457	01	ROS/A	081597	1719	EN	64 45.4 N	30 24.9 W	GPS	2230				
06MT39/5	VEINS-6	458	01	ROS/A	081597	1901	BE	65 00.2 N	30 42.2 W	GPS	1888				
06MT39/5	VEINS-6	458	01	ROS/A	081597	1943	BO	65 00.3 N	30 42.5 W	GPS	1887	1887	12	22	1-10,20
06MT39/5	VEINS-6	458	01	ROS/A	081597	2045	EN	65 00.4 N	30 42.9 W	GPS	1868				
06MT39/5	VEINS-6	459	01	ROS/A	081597	2257	BE	65 16.2 N	31 00.0 W	GPS	1192				
06MT39/5	VEINS-6	459	01	ROS/A	081597	2325	BO	65 16.2 N	31 00.2 W	GPS	1187	1171	20	14	1-8,20,23,26
06MT39/5	VEINS-6	459	01	ROS/A	081697	0009	EN	65 16.5 N	31 01.3 W	GPS	1178				
06MT39/5	VEINS-6	460	01	ROS/A	081697	0149	BE	65 31.2 N	31 15.9 W	GPS	364				
06MT39/5	VEINS-6	460	01	ROS/A	081697	0202	BO	65 31.1 N	31 16.0 W	GPS	364	353	10	8	1-6,20
06MT39/5	VEINS-6	460	01	ROS/A	081697	0223	EN	65 31.1 N	31 16.4 W	GPS	364				
06MT39/5	VEINS-5	461	01	ROS/A	081697	0937	BE	65 05.1 N	34 28.0 W	GPS	316				
06MT39/5	VEINS-5	461	01	ROS/A	081697	0949	BO	65 05.1 N	34 28.0 W	GPS	316	302	13	6	1-10
06MT39/5	VEINS-5	461	01	ROS/A	081697	1007	EN	65 05.1 N	34 28.1 W	GPS	316	296	13	6	1-10
06MT39/5	VEINS-5	462	01	ROS/A	081697	1203	BE	64 48.9 N	34 07.9 W	GPS	1028				
06MT39/5	VEINS-5	462	01	ROS/A	081697	1224	BO	64 48.8 N	34 08.4 W	GPS	1029	1009	8	12	1-8,23,26
06MT39/5	VEINS-5	462	01	ROS/A	081697	1258	EN	64 48.8 N	34 09.2 W	GPS	1026				
06MT39/5	VEINS-5	463	01	MOR	081697	1500	BE	64 30.4 N	33 49.9 W	GPS	1608				
06MT39/5	VEINS-5	463	01	MOR	081697	1538	EN	64 30.4 N	33 50.5 W	GPS	1608				

Recovery of mooring "9602"  
(failed)

06MT39/5 VEINS-5 464	01	MOR	081697	1654	BE	64	19.8	N	33	39.5	W	GPS	1946				Recovery of mooring "9601"
06MT39/5 VEINS-5 464	01	MOR	081697	1705	EN	64	19.8	N	33	39.5	W	GPS					(failed)
06MT39/5 VEINS-5 464	02	ROS/A	081697	1719	BE	64	19.7	N	33	39.5	W	GPS	1946				
06MT39/5 VEINS-5 464	02	ROS/A	081697	1758	BO	64	19.8	N	33	39.6	W	GPS	1946				
06MT39/5 VEINS-5 464	02	ROS/A	081697	1906	EN	64	19.8	N	33	39.3	W	GPS	1948			20	1-10,23,26
06MT39/5 VEINS-5 463	02	ROS/A	081697	2307	BE	64	30.6	N	33	50.7	W	GPS	1613				
06MT39/5 VEINS-5 463	02	ROS/A	081697	2339	BO	64	30.6	N	33	50.9	W	GPS	1612			14	1-10
06MT39/5 VEINS-5 463	02	ROS/A	081797	0035	EN	64	30.6	N	33	51.6	W	GPS	1609				
06MT39/5 VEINS-5 465	01	ROS/A	081797	0612	BE	64	09.5	N	33	25.5	W	GPS	2239				
06MT39/5 VEINS-5 465	01	ROS/A	081797	0338	BO	64	09.6	N	33	26.0	W	GPS	2234			10	1-10,23,26
06MT39/5 VEINS-5 465	01	ROS/A	081797	0441	EN	64	09.8	N	33	26.5	W	GPS	2229				
06MT39/5 VEINS-5 464	03	MOR	081797	0615	BE	64	20.7	N	33	39.0	W	GPS	1920				Dredging of mooring "9601"
06MT39/5 VEINS-5 464	03	MOR	081797	1453	EN	64	19.0	N	33	40.8	W	GPS					(failed)
06MT39/5 VEINS-5 463	03	MOR	081797	1612	BE	64	30.4	N	33	50.1	W	GPS	1633				Dredging of mooring "9602"
06MT39/5 VEINS-5 463	03	MOR	081797	2329	EN	64	30.2	N	33	51.1	W	GPS					(failed)
06MT39/5 VEINS-5 466	01	MOR	081897	0734	BE	63	16.8	N	35	52.4	W	GPS	2200				Recovery of mooring "9604"
06MT39/5 VEINS-5 466	01	MOR	081897	0912	EN	63	16.2	N	35	52.8	W	GPS					
06MT39/5 VEINS-5 467	01	MOR	081897	1008	BE	63	22.4	N	36	04.6	W	GPS	2200				Recovery of IES
06MT39/5 VEINS-5 467	01	MOR	081897	1117	EN	63	22.0	N	36	04.6	W	GPS					
06MT39/5 VEINS-5 468	01	MOR	081897	1209	BE	63	29.6	N	36	16.3	W	GPS	2151				Recovery of mooring "9603"
06MT39/5 VEINS-5 468	01	MOR	081897	1321	EN	63	29.4	N	36	17.0	W	GPS					
06MT39/5 VEINS-5 469	01	MOR	081897	1336	BE	63	29.6	N	36	18.4	W	GPS	1970				Dredging of mooring "9504"
06MT39/5 VEINS-5 469	01	MOR	081897	2153	EN	63	27.9	N	36	18.7	W	GPS					(failed)
06MT39/5 VEINS-4 470	01	ROS/A	081897	2237	BE	63	34.1	N	36	27.2	W	GPS	1803				
06MT39/5 VEINS-4 470	01	ROS/A	081897	2314	BO	63	34.4	N	36	27.5	W	GPS	1780			20	1-8,23,26
06MT39/5 VEINS-4 470	01	ROS/A	081897	2359	BO	63	34.4	N	36	27.4	W	GPS					
06MT39/5 VEINS-4 471	01	ROS/A	081997	0114	BE	63	43.0	N	36	44.2	W	GPS	1632				
06MT39/5 VEINS-4 471	01	ROS/A	081997	0147	BO	63	42.9	N	36	44.6	W	GPS	1633			20	1-8
06MT39/5 VEINS-4 471	01	ROS/A	081997	0223	EN	63	42.8	N	36	44.9	W	GPS	1644				
06MT39/5 VEINS-4 472	01	ROS/A	081997	0324	BE	63	50.0	N	36	57.9	W	GPS	358				
06MT39/5 VEINS-4 472	01	ROS/A	081997	0336	BO	63	50.0	N	36	57.8	W	GPS	355			9	1-6
06MT39/5 VEINS-4 472	01	ROS/A	081997	0350	EN	63	50.0	N	36	57.7	W	GPS	356				
06MT39/5 VEINS-4 473	01	MOR	081997	0609	BE	63	38.4	N	36	47.4	W	GPS	1614				Deployment of mooring "F1"
06MT39/5 VEINS-4 473	01	MOR	081997	0631	EN	63	38.2	N	36	47.4	W	GPS					
06MT39/5 VEINS-4 474	01	MOR	081997	0748	BE	63	33.4	N	36	30.3	W	GPS	1784				Deployment of mooring "F2"
06MT39/5 VEINS-4 474	01	MOR	081997	0812	EN	63	33.2	N	36	30.1	W	GPS					
06MT39/5 VEINS-4 475	01	MOR	081997	0906	BE	63	28.8	N	36	18.0	W	GPS	1993				Deployment of mooring "UK1"
06MT39/5 VEINS-4 475	01	MOR	081997	1012	EN	63	28.9	N	36	18.1	W	GPS					and of IES1
06MT39/5 VEINS-4 476	01	MOR	081997	1117	BE	63	22.0	N	36	03.8	W	GPS	1993				Deployment of mooring "G1"
06MT39/5 VEINS-4 476	01	MOR	081997	1218	EN	63	22.0	N	36	03.9	W	GPS					and of IES2
06MT39/5 VEINS-4 477	01	MOR	081997	1330	BE	63	16.8	N	35	51.2	W	GPS	2364				Deployment of mooring "UK2"
06MT39/5 VEINS-4 477	01	MOR	081997	1344	EN	63	16.6	N	35	51.5	W	GPS					
06MT39/5 VEINS-4 478	01	MOR	081997	1503	BE	63	07.2	N	35	32.2	W	GPS	2589				Deployment of mooring "G2"
06MT39/5 VEINS-4 478	01	MOR	081997	1518	EN	63	07.0	N	35	32.3	W	GPS					

06MT39/5	VEINS-4 479	01	ROS/A	081997	1648	BE	63 18.1 N	35 57.1 W	GPS	2313		8	22	1-10,23,26
06MT39/5	VEINS-4 479	01	ROS/A	081997	1732	BO	63 17.9 N	35 57.0 W	GPS	2313	2317			
06MT39/5	VEINS-4 479	01	ROS/A	081997	1847	EN	63 17.9 N	35 57.1 W	GPS	2314				
06MT39/5	VEINS-4 480	01	ROS/A	081997	2048	BE	63 02.0 N	35 27.4 W	GPS	2658		14	22	1-10
06MT39/5	VEINS-4 480	01	ROS/A	081997	2138	BO	63 02.1 N	35 27.4 W	GPS	2656	2663 2661			
06MT39/5	VEINS-4 480	01	ROS/A	081997	2257	EN	63 02.1 N	35 27.3 W	GPS	2654				
06MT39/5	VEINS-4 481	01	ROS/A	082097	0105	BE	62 45.9 N	34 57.1 W	GPS	2780		12	21	1-10
06MT39/5	VEINS-4 481	01	ROS/A	082097	0158	BO	62 46.1 N	34 57.6 W	GPS	2774	2742 2781			
06MT39/5	VEINS-4 481	01	ROS/A	082097	0312	EN	62 46.2 N	34 57.9 W	GPS					
06MT39/5	VEINS-4 482	01	ROS/A	082097	0524	BE	62 30.0 N	34 27.9 W	GPS	2845		14	22	1-10,23,26
06MT39/5	VEINS-4 482	01	ROS/A	082097	0619	BO	62 30.1 N	34 28.0 W	GPS	2845	2815 2852			
06MT39/5	VEINS-4 482	01	ROS/A	082097	0738	EN	62 30.1 N	34 28.0 W	GPS	2846				
06MT39/5	VEINS-3 483	01	ROS/A	082097	1105	BE	61 58.0 N	35 07.8 W	GPS	2901		20	22	1-8,23,26
06MT39/5	VEINS-3 483	01	ROS/A	082097	1156	BO	61 58.1 N	35 07.8 W	GPS	2899	2848 2905			
06MT39/5	VEINS-3 483	01	ROS/A	082097	1306	EN	61 58.2 N	35 07.8 W	GPS	2898				
06MT39/5	VEINS-3 484	01	ROS/A	082097	1632	BE	61 26.1 N	35 44.1 W	GPS	2915		14	22	1-10,20
06MT39/5	VEINS-3 484	01	ROS/A	082097	1720	BO	61 26.0 N	35 43.9 W	GPS	2917	2926			
06MT39/5	VEINS-3 484	01	ROS/A	082097	1855	EN	61 26.0 N	35 44.2 W	GPS	2917				
06MT39/5	VEINS-3 485	01	ROS/A	082097	2120	BE	61 37.8 N	36 18.2 W	GPS	2804		15	22	1-10,20
06MT39/5	VEINS-3 485	01	ROS/A	082097	2214	BO	61 37.9 N	36 18.2 W	GPS	2800	2775 2806			
06MT39/5	VEINS-3 485	01	ROS/A	082097	2333	EN	61 38.0 N	36 18.0 W	GPS	2800				
06MT39/5	VEINS-3 486	01	ROS/A	082197	0201	BE	61 48.9 N	36 53.0 W	GPS	2685		19	21	1-10,20
06MT39/5	VEINS-3 486	01	ROS/A	082197	0250	BO	61 48.9 N	36 53.2 W	GPS	2684	2648 2685			
06MT39/5	VEINS-3 486	01	ROS/A	082197	0413	EN	61 49.1 N	36 53.6 W	GPS	2685				
06MT39/5	VEINS-3 487	01	ROS/A	082197	0640	BE	62 01.0 N	37 28.3 W	GPS	2563		10	22	1-10,20,23
06MT39/5	VEINS-3 487	01	ROS/A	082197	0731	BO	62 01.0 N	37 28.3 W	GPS	2565	2525 2572			
06MT39/5	VEINS-3 487	01	ROS/A	082197	0849	EN	62 01.0 N	37 28.3 W	GPS	2564				
06MT39/5	VEINS-3 488	01	ROS/A	082197	1058	BE	62 11.9 N	38 03.1 W	GPS	2492		13	22	1-10,20
06MT39/5	VEINS-3 488	01	ROS/A	082197	1142	BO	62 12.0 N	38 03.0 W	GPS	2492	2470 2491			
06MT39/5	VEINS-3 488	01	ROS/A	082197	1251	EN	62 11.9 N	38 03.1 W	GPS	2491				
06MT39/5	VEINS-3 489	01	ROS/A	082197	1459	BE	62 24.0 N	38 38.3 W	GPS	2267		20	22	1-10,20
06MT39/5	VEINS-3 489	01	ROS/A	082197	1543	BO	62 24.2 N	38 38.5 W	GPS	2270	2201 2256			
06MT39/5	VEINS-3 489	01	ROS/A	082197	1655	EN	62 24.3 N	38 38.9 W	GPS	2272				
06MT39/5	VEINS-3 490	01	ROS/A	082197	1856	BE	62 35.1 N	39 13.2 W	GPS	2030		9	20	1-10,20,23,26
06MT39/5	VEINS-3 490	01	ROS/A	082197	1943	BO	62 35.1 N	39 13.3 W	GPS	2026	2004 2027			
06MT39/5	VEINS-3 490	01	ROS/A	082197	2046	EN	62 35.2 N	39 13.3 W	GPS	2028				
06MT39/5	VEINS-3 491	01	ROS/A	082197	2245	BE	62 47.0 N	39 49.3 W	GPS	1931		30	20	1-10,20
06MT39/5	VEINS-3 491	01	ROS/A	082197	2325	BO	62 46.8 N	39 49.3 W	GPS	1939	1963 1924			
06MT39/5	VEINS-3 491	01	ROS/A	082297	0026	EN	62 46.0 N	39 51.2 W	GPS	1939				
06MT39/5	VEINS-3 492	01	ROS/A	082297	0207	BE	62 51.8 N	40 06.7 W	GPS	1706		32	18	1-8,20
06MT39/5	VEINS-3 492	01	ROS/A	082297	0243	BO	62 51.4 N	40 07.0 W	GPS	1690	1672 1694			
06MT39/5	VEINS-3 492	01	ROS/A	082297	0337	EN	62 51.1 N	40 07.4 W	GPS	1666				
06MT39/5	VEINS-3 493	01	ROS/A	082297	0514	BE	62 58.0 N	40 25.0 W	GPS	218		10	4	1-10,20
06MT39/5	VEINS-3 493	01	ROS/A	082297	0525	BO	62 58.0 N	40 25.2 W	GPS	232	212 215			
06MT39/5	VEINS-3 493	01	ROS/A	082297	0543	EN	62 57.9 N	40 25.4 W	GPS	241				
06MT39/5	VEINS-3 494	01	ROS	082297	1123	BE	62 08.6 N	41 19.2 W	GPS	415				
06MT39/5	VEINS-3 494	01	ROS	082297	1135	BO	62 08.4 N	41 19.1 W	GPS	421	406	24	1,23	Test CTD "DHI-2"
06MT39/5	VEINS-3 494	01	ROS	082297	1200	EN	62 08.2 N	41 19.2 W	GPS	433				

06MT39/5	VEINS-2	495	01	ROS/A	082297	1817	BE	61	17.7	N	41	29.5	W	GPS	445					
06MT39/5	VEINS-2	495	01	ROS/A	082297	1831	BO	61	17.7	N	41	29.5	W	GPS	456	465	458	9	6	1-6,9,20
06MT39/5	VEINS-2	495	01	ROS/A	082297	1852	EN	61	17.7	N	41	29.5	W	GPS	462					
06MT39/5	VEINS-2	496	01	ROS/A	082297	2007	BE	61	14.9	N	41	05.2	W	GPS	1761			24	16	1-8,20
06MT39/5	VEINS-2	496	01	ROS/A	082297	2043	BO	61	14.7	N	41	05.6	W	GPS	1763	1726	1752			
06MT39/5	VEINS-2	496	01	ROS/A	082297	2133	EN	61	14.5	N	41	06.2	W	GPS	1760					
06MT39/5	VEINS-2	497	01	ROS/A	082397	2316	BE	61	11.1	N	40	39.1	W	GPS	1892			50	20	1-10,20,23
06MT39/5	VEINS-2	497	01	ROS/A	082497	0001	BO	61	10.9	N	40	39.3	W	GPS	1897	1827	1878			
06MT39/5	VEINS-2	497	01	ROS/A	082497	0059	EN	61	10.5	N	40	39.6	W	GPS	1818					
06MT39/5	VEINS-2	498	01	ROS/A	082397	0306	BE	61	04.0	N	40	07.7	W	GPS	2193			19	21	1-8,20
06MT39/5	VEINS-2	498	01	ROS/A	082397	0349	BO	61	03.9	N	40	07.5	W	GPS	2196	2160	2185			
06MT39/5	VEINS-2	498	01	ROS/A	082397	0501	EN	61	03.7	N	40	07.8	W	GPS	2197					
06MT39/5	VEINS-2	499	01	ROS/A	082397	0701	BE	60	56.9	N	39	27.1	W	GPS	2580			9	20	1-10,20
06MT39/5	VEINS-2	499	01	ROS/A	082397	0749	BO	60	57.1	N	39	27.2	W	GPS	2579	2550	2583			
06MT39/5	VEINS-2	499	01	ROS/A	082397	0904	EN	60	57.2	N	39	27.3	W	GPS	2578					
06MT39/5	VEINS-2	500	01	ROS/A	082397	1110	BE	60	50.1	N	38	46.9	W	GPS	2816			24	22	1-10,20,23
06MT39/5	VEINS-2	500	01	ROS/A	082397	1201	BO	60	49.9	N	38	47.3	W	GPS	2814	2765	2820			
06MT39/5	VEINS-2	500	01	ROS/A	082397	1315	EN	60	49.7	N	38	47.0	W	GPS	2813					
06MT39/5	VEINS-2	501	01	ROS	082397	1532	BE	60	44.1	N	38	06.0	W	GPS	2906			04	23	1-2,20
06MT39/5	VEINS-2	501	01	ROS	082397	1624	BO	60	43.9	N	38	06.0	W	GPS	2905	2914				Test CTD "DHI-2"
06MT39/5	VEINS-2	501	01	ROS	082397	1748	EN	60	43.9	N	38	06.2	W	GPS	2906					
06MT39/5	VEINS-2	501	03	ROS/A	082397	1858	BE	60	43.9	N	38	05.8	W	GPS	2906			18	21	1-8,23
06MT39/5	VEINS-2	501	03	ROS/A	082397	1954	BO	60	43.9	N	38	05.8	W	GPS	2906	2874	2911			Ros. quality test # 2
06MT39/5	VEINS-2	501	03	ROS/A	082397	2102	EN	60	44.0	N	38	06.3	W	GPS	2907					
06MT39/5	VEINS-2	502	01	ROS/A	082497	0023	BE	60	13.9	N	38	50.0	W	GPS	2877			18	26	1-10,20,23
06MT39/5	VEINS-2	502	01	ROS/A	082497	0116	BO	60	13.7	N	38	49.6	W	GPS	2879	2847	2883			
06MT39/5	VEINS-2	502	01	ROS/A	082497	0229	EN	60	13.5	N	38	49.4	W	GPS	2879					
06MT39/5	VEINS-2	503	01	MOR	082497	0911	BE	59	25.4	N	40	35.7	W	GPS						Rec. of mooring
06MT39/5	VEINS-2	503	01	MOR	082497	1014	EN	59	25.5	N	40	35.5	W	GPS						"VEINS21"
06MT39/5	VEINS-2	504	01	MOR	082497	1042	BE	59	23.0	N	40	38.0	W	GPS						Rec. of mooring "VEINS2"
06MT39/5	VEINS-2	504	01	MOR	082497	1050	EN	59	23.0	N	40	38.0	W	GPS						(failed)
06MT39/5	VEINS-2	505	01	MOR	082497	1342	BE	59	41.3	N	41	26.5	W	GPS						Rec. and dredging of mooring "VEINS11" (failed)
06MT39/5	VEINS-2	505	01	MOR	082497	2332	EN	59	41.8	N	41	26.2	W	GPS						CTD-Tests: "DHI-1", "DHI-2", "NB-3"

EXPO- CODE	WOCE WHP-ID	Stat. No.	Cast No.	Cast Type	Date	Time UTC	Code	Latitude	Longitude	Position Code	Bottom Depth	Meter Wheel	Bottom Dist.	Max. Pres.	No. of Btls.	Parameters	Comments
06Me039	Al/E	506	01	ROS/A	082597	0709	BE	59°59.8 N	42°30.0 W	GPS 193							
06Me039	Al/E	506	01	ROS/A	082597	0720	BO	59°59.8 N	42°30.1 W	GPS 193	173	10	179	4	1-6,10,20,23,26		
06Me039	Al/E	506	01	ROS/A	082597	0735	EN	59°59.8 N	42°30.1 W	GPS 193							
06Me039	Al/E	507	01	ROS/A	082597	0859	BE	59°58.0 N	42°10.4 W	GPS 497							
06Me039	Al/E	507	01	ROS/A	082597	0911	BO	59°58.9 N	42°10.6 W	GPS 497	480	9	478	8	1-8,10,20,23,26		
06Me039	Al/E	507	01	ROS/A	082597	0933	EN	59°58.0 N	42°10.7 W	GPS 497							
06Me039	Al/E	508	01	ROS/A	082597	1059	BE	59°55.9 N	41°51.0 W	GPS 1829							
06Me039	Al/E	508	01	ROS/A	082597	1131	BO	59°55.8 N	41°51.1 W	GPS 1829	1806	11	1821	20	1-10,20		
06Me039	Al/E	508	01	ROS/A	082597	1229	EN	59°55.5 N	41°51.7 W	GPS 1829							
06Me039	Al/E	509	01	ROS/A	082597	1406	BE	59°54.1 N	41°30.7 W	GPS 1902							
06Me039	Al/E	509	01	ROS/A	082597	1445	BO	59°53.9 N	41°30.8 W	GPS 1902	1864	22	1895	21	1-6,20,23,26		
06Me039	Al/E	509	01	ROS/A	082597	1540	EN	59°53.6 N	41°31.3 W	GPS 1902							
06Me039	Al/E	510	01	ROS/A	082597	1701	BE	59°52.0 N	41°12.0 W	GPS 2040							
06Me039	Al/E	510	01	ROS/A	082597	1741	BO	59°52.0 N	41°12.0 W	GPS 2040	2023	10	2038	22	1-10,23		
06Me039	Al/E	510	01	ROS/A	082597	1848	EN	59°51.9 N	41°12.0 W	GPS 2040							
06Me039	Al/E	511	01	ROS/A	082597	2041	BE	59°49.1 N	40°45.1 W	GPS 2598							
06Me039	Al/E	511	01	ROS/A	082597	2131	BO	59°49.0 N	40°45.6 W	GPS 2598	2576	10	2608	21	1-10,23		
06Me039	Al/E	511	01	ROS/A	082597	2246	EN	59°49.0 N	40°45.9 W	GPS 2598							
06Me039	Al/E	512	02	ROS/A	082697	0108	BE	59°45.9 N	40°13.2 W	GPS 2646							
06Me039	Al/E	512	02	ROS/A	082697	0211	BO	59°46.0 N	40°12.9 W	GPS 2646	2612	16	2597	22	1-8,23		
06Me039	Al/E	512	02	ROS/A	082697	0317	EN	59°45.9 N	40°12.8 W	GPS 2646							
06Me039	Al/E	513	01	ROS/A	082697	0546	BE	59°41.0 N	39°23.8 W	GPS 2854							
06Me039	Al/E	513	01	ROS/A	082697	0640	BO	59°40.9 N	39°23.8 W	GPS 2854	2829	9	2865	22	1-10,23,26		
06Me039	Al/E	513	01	ROS/A	082697	0806	EN	59°40.8 N	39°23.7 W	GPS 2854							
06Me039	Al/E	514	01	ROS/A	082697	1032	BE	59°36.0 N	38°35.8 W	GPS 3012							
06Me039	Al/E	514	01	ROS/A	082697	1132	BO	59°36.1 N	38°35.9 W	GPS 3012	3993	9	3029	22	1-10,20,23,26		
06Me039	Al/E	514	01	ROS/A	082697	1250	EN	59°35.9 N	38°35.8 W	GPS 3012							
06Me039	Al/E	514	02	ROS	082697	1302	BE	59°35.9 N	38°35.8 W	GPS 3013							
06Me039	Al/E	514	02	ROS	082697	1356	BO	59°35.9 N	38°35.9 W	GPS 3013							CTD "NB-3"
06Me039	Al/E	515	01	ROS/A	082697	1817	BE	59°30.9 N	37°37.1 W	GPS 3126							
06Me039	Al/E	515	01	ROS/A	082697	1920	BO	59°31.0 N	37°37.3 W	GPS 3126	3106	11	3147	22	1-10,23,26		
06Me039	Al/E	515	01	ROS/A	082697	2043	EN	59°31.0 N	37°37.4 W	GPS 3126							
06Me039	Al/E	516	01	ROS/A	082697	2349	BE	59°25.0 N	36°39.1 W	GPS 3124							
06Me039	Al/E	516	01	ROS/A	082797	0045	BO	59°25.1 N	36°39.1 W	GPS 3124	3059	10	3145	22	1-8,23,26		
06Me039	Al/E	516	01	ROS/A	082797	0202	EN	59°25.1 N	36°39.1 E	GPS 3124							
06Me039	Al/E	517	01	ROS/A	082797	0507	BE	59°20.1 N	35°40.8 W	GPS 3124							
06Me039	Al/E	517	01	ROS/A	082797	0606	BO	59°20.0 N	35°40.8 W	GPS 3124	3102	11	3143	22	1-8,23		
06Me039	Al/E	517	01	ROS/A	082797	0730	EN	59°20.0 N	35°41.1 W	GPS 3124							
06Me039	Al/E	518	01	ROS/A	082797	1028	BE	59°14.0 N	34°44.0 W	GPS 2592							
06Me039	Al/E	518	01	ROS/A	082797	1118	BO	59°13.9 N	34°44.0 W	GPS 2592	2568	8	2595	22	1-8,23		
06Me039	Al/E	518	01	ROS/A	082797	1227	EN	59°13.7 N	34°44.1 W	GPS 2592							
06Me039	Al/E	519	01	ROS/A	082797	1530	BE	59°08.0 N	33°45.8 W	GPS 2411							
06Me039	Al/E	519	01	ROS/A	082797	1615	BO	59°07.9 N	33°46.0 W	GPS 2411	2399	9	2421	22	1-10,23,26		
06Me039	Al/E	519	01	ROS/A	082797	1729	EN	59°08.0 N	33°45.9 W	GPS 2411							



06Me039	Al/E	520	01	ROS/A	082797	2031	BE	59°02.0 N	32°49.2 W	GPS 2209	2189	11	2214	21	1-8,23
06Me039	Al/E	520	01	ROS/A	082797	2116	BO	59°02.0 N	32°48.9 W	GPS 2209					
06Me039	Al/E	520	01	ROS/A	082797	2222	EN	59°02.0 N	32°48.8 W	GPS 2209					
06Me039	Al/E	521	01	ROS/A	082897	0037	BE	58°58.1 N	32°08.9 W	GPS 1609	1578	22	1608	16	1-10,23,26
06Me039	Al/E	521	01	ROS/A	082897	0110	BO	58°58.1 N	32°08.9 W	GPS 1609					
06Me039	Al/E	521	01	ROS/A	082897	0208	EN	58°58.0 N	32°08.9 W	GPS 1609					
06Me039	Al/E	522	01	ROS/A	082897	0429	BE	58°53.9 N	31°29.0 W	GPS 1558	1536	10	1553	17	1-10,23
06Me039	Al/E	522	01	ROS/A	082897	0501	BO	58°54.0 N	31°28.9 W	GPS 1558					
06Me039	Al/E	522	01	ROS/A	082897	0555	EN	58°53.9 N	31°28.9 W	GPS 1558					
06Me039	Al/E	523	01	ROS/A	082897	0807	BE	58°50.0 N	30°50.0 W	GPS 1467	1457	16	1479	17	1-8,23,26
06Me039	Al/E	523	01	ROS/A	082897	0838	BO	58°49.9 N	30°49.2 W	GPS 1467					
06Me039	Al/E	523	01	ROS/A	082897	0927	EN	58°49.7 N	30°49.2 W	GPS 1467					
06Me039	Al/E	524	01	ROS/A	082897	1132	BE	58°35.9 N	30°22.1 W	GPS 1513	1498	18	1581	15	1-10,23
06Me039	Al/E	524	01	ROS/A	082897	1204	BO	58°35.9 N	30°22.1 W	GPS 1513					
06Me039	Al/E	524	01	ROS/A	082897	1251	EN	58°36.0 N	30°22.0 W	GPS 1513					
06Me039	Al/E	525	01	ROS/A	082897	1503	BE	58°21.1 N	29°55.9 W	GPS 2384	2346	27	2390	22	1-10,23,26
06Me039	Al/E	525	01	ROS/A	082897	1547	BO	58°21.0 N	29°56.2 W	GPS 2384					
06Me039	Al/E	525	01	ROS/A	082897	1659	EN	58°21.2 N	29°56.4 W	GPS 2384					
06Me039	Al/E	526	01	ROS/A	082897	1904	BE	58°06.9 N	29°29.0 W	GPS 2316	2215	19	2304	21	1-10,23
06Me039	Al/E	526	01	ROS/A	082897	1955	BO	58°06.9 N	29°28.9 W	GPS 2316					
06Me039	Al/E	526	01	ROS/A	082897	2106	EN	58°06.9 N	29°28.9 W	GPS 2316					
06Me039	Al/E	527	01	ROS/A	082897	2322	BE	57°52.0 N	28°59.9 W	GPS 2374	2354	17	2383	18	1-10,23
06Me039	Al/E	527	01	ROS/A	082997	0009	BO	57°52.0 N	29°00.0 W	GPS 2374					
06Me039	Al/E	527	01	ROS/A	082997	0115	EN	57°51.9 N	29°00.0 W	GPS 2374					
06Me039	Al/E	528	01	ROS/A	082997	0318	BE	57°38.1 N	28°37.0 W	GPS 2477	2461	13	2487	20	1-8,23,26
06Me039	Al/E	528	01	ROS/A	082997	0407	BO	57°38.0 N	28°37.1 W	GPS 2477					
06Me039	Al/E	528	01	ROS/A	082997	0518	EN	57°37.9 N	28°37.0 W	GPS 2477					
06Me039	Al/E	529	01	ROS/A	082997	0719	BE	57°22.9 N	28°10.9 W	GPS 2615	2615	14	2625	21	1-8,23
06Me039	Al/E	529	01	ROS/A	082997	0810	BO	57°22.9 N	28°10.9 W	GPS 2615					
06Me039	Al/E	529	01	ROS/A	082997	0929	EN	57°22.9 N	28°11.0 W	GPS 2615					
06Me039	Al/E	530	01	ROS/A	082997	1205	BE	56°59.0 N	27°51.9 W	GPS 2801	2775	17	2819	20	1-8,23
06Me039	Al/E	530	01	ROS/A	082997	1257	BO	56°59.0 N	27°52.1 W	GPS 2801					
06Me039	Al/E	530	01	ROS/A	082997	1418	EN	56°59.0 N	27°52.4 W	GPS 2801					
06Me039	Al/E	531	01	ROS/A	082997	1658	BE	56°35.2 N	27°34.4 W	GPS 2758	2725	19	2757	22	1-10,23,26
06Me039	Al/E	531	01	ROS/A	082997	1749	BO	56°35.3 N	27°34.8 W	GPS 2758					
06Me039	Al/E	531	01	ROS/A	082997	1905	EN	56°35.4 N	27°35.3 W	GPS 2758					
06Me039	Al/E	532	01	ROS/A	082997	2146	BE	56°11.0 N	27°15.1 W	GPS 2779	2758	15	2793	22	1-8,23
06Me039	Al/E	532	01	ROS/A	082997	2241	BO	56°11.0 N	27°15.0 W	GPS 2779					
06Me039	Al/E	532	01	ROS/A	083097	0004	EN	56°11.1 N	27°15.1 W	GPS 2779					
06Me039	Al/E	533	01	ROS/A	083097	0249	BE	55°46.9 N	26°56.9 W	GPS 2966	2959	13	2987	22	1-8,23,26
06Me039	Al/E	533	01	ROS/A	083097	0344	BO	55°46.9 N	26°56.7 W	GPS 2966					
06Me039	Al/E	533	01	ROS/A	083097	0504	EN	55°47.1 N	26°56.6 W	GPS 2966					
06Me039	Al/E	534	01	ROS/A	083097	0755	BE	55°23.0 N	26°38.9 W	GPS 3347	3333	16	3379	22	1-8,23
06Me039	Al/E	534	01	ROS/A	083097	0858	BO	55°23.0 N	26°38.8 W	GPS 3347					
06Me039	Al/E	534	01	ROS/A	083097	1028	EN	55°23.0 N	26°38.8 W	GPS 3347					
06Me039	Al/E	534	02	ROS	083097	1203	BE	55°23.0 N	26°39.0 W	GPS 3340	1760				
06Me039	Al/E	534	02	ROS	083097	1238	BO	55°23.1 N	26°38.9 W	GPS 3340					
06Me039	Al/E	534	02	ROS	083097	1322	EN	55°23.0 N	26°38.9 W	GPS 3340					

Ros. quality test # 3

06Me039 Al/E 535	01 ROS/A	083097	1629	BE	55°00.2 N	26°21.5 W	GPS 3362	3351	21	1-10,23,26
06Me039 Al/E 535	01 ROS/A	083097	1733	BO	55°00.1 N	26°21.5 W	GPS 3362			
06Me039 Al/E 535	01 ROS/A	083097	1904	EN	55°00.2 N	26°21.4 W	GPS 3362			
06Me039 Al/E 536	01 ROS/A	083097	2152	BE	54°36.1 N	26°03.7 W	GPS 3409	3394	22	1-8,23
06Me039 Al/E 536	01 ROS/A	083097	2257	BO	54°36.0 N	26°03.7 W	GPS 3409			
06Me039 Al/E 536	01 ROS/A	083197	0022	EN	54°35.9 N	26°03.6 W	GPS 3409			
06Me039	537	01 ROS/A	083197	0205	BE	54°34.0 N	25°36.9 W	GPS 2421	16	1-6,23
06Me039	537	01 ROS/A	083197	0247	BO	54°33.9 N	25°36.9 W	GPS 2421		
06Me039	537	01 ROS/A	083197	0358	EN	54°33.7 N	25°37.3 W	GPS 2421		
06Me039 Al/E 538	01 ROS/A	083197	0556	BE	54°18.9 N	25°51.8 W	GPS 3050	3065	21	1-8,23
06Me039 Al/E 538	01 ROS/A	083197	0657	BO	54°18.9 N	25°52.1 W	GPS 3050			
06Me039 Al/E 538	01 ROS/A	083197	0820	EN	54°19.0 N	25°52.2 W	GPS 3050			
06Me039	539	01 ROS/A	083197	1052	BE	54°04.0 N	26°13.8 W	GPS 3400	12	1-8,23,26
06Me039	539	01 ROS/A	083197	1155	BO	54°03.8 N	26°13.7 W	GPS 3400		
06Me039	539	01 ROS/A	083197	1318	EN	54°03.5 N	26°13.5 E	GPS 3400		
06Me039	540	01 ROS/A	083197	1826	BE	53°33.1 N	26°56.9 W	GPS 2666	11	1-8,23
06Me039	540	01 ROS/A	083197	1919	BO	53°33.4 N	26°57.2 W	GPS 2666		
06Me039	540	01 ROS/A	083197	2030	EN	53°33.4 N	26°57.7 W	GPS 2666		
06Me039	541	01 ROS/A	090197	0136	BE	53°01.9 N	27°39.8 W	GPS 3632	41	1-8,23,26
06Me039	541	01 ROS/A	090197	0245	BO	53°01.8 N	27°39.9 W	GPS 3632		
06Me039	541	01 ROS/A	090197	0426	EN	53°01.8 N	27°39.9 W	GPS 3632		
06Me039	542	01 ROS/A	090197	0836	BE	52°32.0 N	28°22.7 W	GPS 3683	12	1-10,23
06Me039	542	01 ROS/A	090197	0944	BO	52°32.1 N	28°22.4 W	GPS 3683		
06Me039	542	01 ROS/A	090197	1120	EN	52°32.0 N	28°22.3 W	GPS 3683		
06Me039	543	01 ROS/A	090197	1527	BE	52°00.9 N	29°05.0 W	GPS 3793	9	1-8,23
06Me039	543	01 ROS/A	090197	1636	BO	52°00.9 N	29°05.0 W	GPS 3793		
06Me039	543	01 ROS/A	090197	1813	EN	52°01.1 N	29°05.0 W	GPS 3793		
06Me039	544	01 ROS/A	090197	2053	BE	51°42.9 N	29°30.2 W	GPS 1839	17	1-6,20,23
06Me039	544	01 ROS/A	090197	2127	BO	51°42.9 N	29°30.1 W	GPS 1839		
06Me039	544	01 ROS/A	090197	2221	EN	51°42.9 N	29°30.3 W	GPS 1839		
06Me039	545	01 ROS/A	090297	0014	BE	51°51.9 N	29°15.9 W	GPS 3198	20	1-8,23
06Me039	545	01 ROS/A	090297	0110	BO	51°52.0 N	29°15.7 W	GPS 3198		
06Me039	545	01 ROS/A	090297	0232	EN	51°51.8 N	29°15.5 W	GPS 3198		
06Me039	546	01 ROS/A	090297	0544	BE	52°17.0 N	28°42.0 W	GPS 3121	9	1-8,23
06Me039	546	01 ROS/A	090297	0652	BO	52°17.0 N	28°42.1 W	GPS 3121		
06Me039	546	01 ROS/A	090297	0818	EN	52°17.1 N	28°41.9 W	GPS 3121		
06Me039	547	01 ROS/A	090297	1156	BE	52°46.9 N	28°01.8 W	GPS 3464	18	1-8,23
06Me039	547	01 ROS/A	090297	1301	BO	52°47.0 N	28°01.9 W	GPS 3464		
06Me039	547	01 ROS/A	090297	1427	EN	52°47.0 N	28°01.8 W	GPS 3464		
06Me039	548	01 ROS/A	090297	1837	BE	53°18.0 N	27°19.0 W	GPS 3618	8	1-8,23
06Me039	548	01 ROS/A	090297	1947	BO	53°18.0 N	27°19.1 W	GPS 3618		
06Me039	548	01 ROS/A	090297	2118	EN	53°18.0 N	27°19.3 W	GPS 3618		
06Me039	549	01 ROS/A	090397	0132	BE	53°47.9 N	26°34.9 W	GPS 3713	20	1-8,23
06Me039	549	01 ROS/A	090397	0235	BO	53°47.8 N	26°35.1 W	GPS 3713		
06Me039	549	01 ROS/A	090397	0413	EN	53°47.5 N	26°35.6 W	GPS 3713		
06Me039 Al/E 550	01 ROS/A	090397	0746	BE	53°59.9 N	25°37.9 W	GPS 3252	16	1-8,23	
06Me039 Al/E 550	01 ROS/A	090397	0848	BO	53°60.0 N	25°38.0 W	GPS 3252			
06Me039 Al/E 550	01 ROS/A	090397	1009	EN	53°59.9 N	25°37.9 W	GPS 3252			

Eriador-Hecate-Section

06Me039	Al/E	551	01	ROS/A	090397	1211	BE	53°41.8 N	25°24.7 W	GPS 3603								
06Me039	Al/E	551	01	ROS/A	090397	1318	BO	53°41.4 N	25°24.2 W	GPS 3603								
06Me039	Al/E	551	01	ROS/A	090397	1452	EN	53°41.4 N	25°24.0 W	GPS 3603								
06Me039	Al/E	552	01	ROS/A	090397	1717	BE	53°33.0 N	24°45.7 W	GPS 3621								
06Me039	Al/E	552	01	ROS/A	090397	1825	BO	53°32.9 N	24°45.7 W	GPS 3621								
06Me039	Al/E	552	01	ROS/A	090397	1959	EN	53°32.9 N	24°45.9 W	GPS 3621								
06Me039	Al/E	553	01	ROS/A	090397	2238	BE	53°22.9 N	24°06.6 W	GPS 3674								
06Me039	Al/E	553	01	ROS/A	090397	2347	BO	53°22.7 N	24°06.9 W	GPS 3674								
06Me039	Al/E	553	01	ROS/A	090497	0118	EN	53°22.2 N	24°08.4 W	GPS 3674								
06Me039	Al/E	554	01	ROS/A	090497	0402	BE	53°14.0 N	23°27.9 W	GPS 3725								
06Me039	Al/E	554	01	ROS/A	090497	0514	BO	53°13.9 N	23°28.3 W	GPS 3725								
06Me039	Al/E	554	01	ROS/A	090497	0652	EN	53°14.0 N	23°28.2 W	GPS 3725								
06Me039	Al/E	555	01	ROS	090497	1011	BE	53°05.0 N	22°49.8 W	GPS 4000								
06Me039	Al/E	555	01	ROS	090497	1127	BO	53°05.0 N	22°49.9 W	GPS 4000								
06Me039	Al/E	555	01	ROS	090497	1300	EN	53°05.0 N	22°49.9 W	GPS 4000								
06Me039	Al/E	555	02	ROS	090497	1511	BE	53°04.8 N	22°50.5 W	GPS 3972								
06Me039	Al/E	555	02	ROS	090497	1615	BO	53°04.7 N	22°50.3 W	GPS 3972								
06Me039	Al/E	555	02	ROS	090497	1752	EN	53°04.8 N	22°50.1 W	GPS 3972								
06Me039	Al/E	556	01	ROS	090497	2025	BE	52°55.0 N	22°11.0 W	GPS 4022								
06Me039	Al/E	556	01	ROS	090497	2140	BO	52°54.9 N	22°11.3 W	GPS 4022								
06Me039	Al/E	556	01	ROS	090497	2314	EN	52°54.8 N	22°11.1 W	GPS 4022								
06Me039	Al/E	557	01	ROS	090597	0143	BE	52°45.9 N	21°33.0 W	GPS 3877								
06Me039	Al/E	557	01	ROS	090597	0300	BO	52°45.7 N	21°32.9 W	GPS 3877								
06Me039	Al/E	557	01	ROS	090597	0431	EN	52°45.8 N	21°32.8 W	GPS 3877								
06Me039	Al/E	558	01	ROS/A	090597	0728	BE	52°36.8 N	20°55.0 W	GPS 3709								
06Me039	Al/E	558	01	ROS/A	090597	0837	BO	52°36.7 N	20°55.4 W	GPS 3709								
06Me039	Al/E	558	01	ROS/A	090597	1012	EN	52°36.4 N	20°55.5 W	GPS 3709								
06Me039		559	01	ROS/A	090597	1414	BE	52°01.9 N	21°21.1 W	GPS 4318								
06Me039		559	01	ROS/A	090597	1536	BO	52°01.6 N	21°20.9 W	GPS 4318								
06Me039		559	01	ROS/A	090597	1722	EN	52°01.4 N	21°21.3 W	GPS 4318								
06Me039		560	01	ROS/A	090597	1923	BE	51°42.8 N	21°36.1 W	GPS 2712								
06Me039		560	01	ROS/A	090597	2020	BO	51°42.7 N	21°36.3 W	GPS 2712								
06Me039		560	01	ROS/A	090597	2145	EN	51°42.4 N	21°36.6 W	GPS 2712								
06Me039		561	01	ROS/A	090697	0206	BE	52°18.9 N	21°08.8 W	GPS 3774								
06Me039		561	01	ROS/A	090697	0314	BO	52°18.4 N	21°09.0 W	GPS 3774								
06Me039		561	01	ROS/A	090697	0448	EN	52°18.3 N	21°09.4 W	GPS 3774								
06Me039		562	01	ROS/A	090697	0850	BE	52°55.0 N	20°41.0 W	GPS 2901								
06Me039		562	01	ROS/A	090697	0943	BO	52°55.0 N	20°41.0 W	GPS 2901								
06Me039		562	01	ROS/A	090697	1100	EN	52°55.0 N	20°41.0 W	GPS 2901								
06Me039		563	01	ROS/A	090697	1506	BE	53°31.0 N	20°13.0 W	GPS 2151								
06Me039		563	01	ROS/A	090697	1544	BO	53°30.9 N	20°13.2 W	GPS 2151								
06Me039		563	01	ROS/A	090697	1655	EN	53°31.0 N	20°13.6 W	GPS 2151								
06Me039	Al/E	564	01	ROS/A	090897	0434	BE	52°24.0 N	20°09.8 W	GPS 2883								
06Me039	Al/E	564	01	ROS/A	090897	0528	BO	52°23.9 N	20°09.9 W	GPS 2883								
06Me039	Al/E	564	01	ROS/A	090897	0651	EN	52°24.0 N	20°09.9 W	GPS 2883								
06Me039	Al/E	565	01	ROS/A	090897	0938	BE	52°20.0 N	19°19.9 W	GPS 3670								
06Me039	Al/E	565	01	ROS/A	090897	1045	BO	52°20.1 N	19°20.0 W	GPS 3670								
06Me039	Al/E	565	01	ROS/A	090897	1206	EN	52°20.1 N	19°20.1 W	GPS 3670								

Lorien Bank - E.Thulean Section

22 1-10,23

22 3638

22 3587

20 3663

20 3712

22 3776

21 4064

24 4047

22 4080

23 3931

22 3747

22 4399

21 2727

22 3801

22 2925

22 2171

22 2916

22 3705

22 3663

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705

22 3705



## **8 Concluding remarks and acknowledgements**

The 39<sup>th</sup> voyage of RV METEOR served a multi-disciplinary group of projects in the North Atlantic Ocean. All groups and institution involved helped to support the coordination work. Special thanks is expressed to Deutsche Forschungsgemeinschaft (DFG) for making available the shiptime and funding for cruise M39. Projects of the Sonderforschungsbereich 460 were also founded by the DFG.

The principle investigators further acknowledge financial support received from the German Ministry of Education and Research (BMBF) through various grants under the German WOCE programs for preparation and evaluation of the research carried out on cruise M39.

It is our particular pleasure to thank captains and crew of all cruise legs for the flexible friendly and very helpful attitude during deployments of the complex moored arrays and the various kinds of shipboard measurement programs.

## 9 References

- ALTENBACH, A., M. SARNTHEIN and G. WEFER (1989): Productivity record in benthic foraminifera.- In W. H. Berger and V. S. Smetacek (Ed.): *Productivity of the Ocean, Present and Past*- John Wiley, New York, 255-269.
- ALVE, E. (1995): Benthic foraminiferal distribution and recolonization of formerly anoxic environments in Drammensfjord, southern Norway. *Mar. Micropaleontol.*, **25**, 169-186.
- AMBAR, I., M. R. HOWE and M. I. ABDULLAH (1976): A physical and chemical description of the Mediterranean Outflow in the Gulf of Cadiz- *Deutsche Hydrographische Zeitschrift*, **29** (2), 58-68.
- AUFFRET G.A., PASTOURET, L., CHAMLEY, H., and LANOIX, F. (1974): Influence of the prevailing current regime on sedimentation in the Alboran Sea. *Deep Sea Res.*, Vol. **21**, 839-849.
- BAAS, J.H., SCHÖNFELD, J. and ZAHN, R., manuscript. Mid-depth oxygen drawdown during Heinrich Events: evidence from benthic foraminiferal community structure, trace fossil tiering, und benthic  $d^{13}C$  at the Portuguese Margin. Submitted to *Marine Geology*.
- BARAZA, J. and ERCILLA, G. (1996): Gas-charged sediments and large pockmark-like features on the Gulf of Cadiz slope (SW Spain). *Marine and Petroleum geology*, Vol.13, No **2**, 253-261.
- BERNAT, M., CHURCH, T., and ALLEGRE, C.J. (1972): Barium and strontium concentrations in Pacific and Mediterranean sea water profiles by direct isotope dilution mass spectrometry. *Earth Planet. Sci. Letters*, **16**, 75-80.
- BERNER, R.A. (1980): *Early diagenesis. A theoretical approach*. 241 pp., Princeton University Press; Princeton.
- BERNSTEIN, R.E., BYRNE, R.H., BETZER, P.R., and GRECO, A.M. (1991): Morphologies and transformations of celestite in seawater: The role of acantharians in strontium and barium geochemistry. *Geochim. Cosmochim. Acta*, **56**, 3273-3279.
- BERSCH, M., J. MEINCKE and A. SY (1998): Interannual thermohaline changes at the eastern margin of the North Atlantic subpolar gyre 1991-1996. *Deep-Sea Res.* (in press).
- BOND, G., HEINRICH, H., BROECKER, W., LABEYRIE, L., MCMANUS, J., ANDREWS, J., HUON, S., JANTSCHIK, R., CLASEN, S., SIMET, C, TEDESCO, K., KLAS, M., BONANI, G., and IVY, S. (1992): Evidence for massive discharges of icebergs into the North Atlantic ocean during the last glacial period. *Nature*, **360**, 245-249.
- BOND, G., BROECKER, W., JOHNSON, S., MCMANUS, J., LABEYRIE, L., JOUZEL, J., and BONANI, G. (1993): Correlations between climatic records from North Atlantic sediments and Greenland ice. *Nature*, **365**, 143-147.
- BOYCE, R.E. (1976): Definitions and laboratory techniques of compressional sound velocity parameters and wet-water content, wet-bulk density, and porosity parameters by gravimetric and gamma ray attenuation techniques. In Schlanger, S., O., Jackson, E. D. et al. (eds.), *Init.Rep. DSDP*, **33**, 931-958.
- BOYLE, E.A. and L. D. KEIGWIN (1987): North Atlantic thermohaline circulation during the

- last 20,000 years: Link to high latitude surface temperature- *Nature*, **330**, 35-40.
- BOYLE, E.A. (1988): Cadmium: chemical tracer of deepwater paleoceanography, *Paleoceanography*, **4**, 471-489.
- BOYLE, E.A. (1994): A comparison of carbon isotopes and cadmium in the modern and glacial maximum ocean: can we account for the discrepancies?, in R. Zahn, T.F. Pedersen, M. Kaminski and L. Labeyrie (eds.), *Carbon Cycling in the Glacial Ocean: Constraints on the Ocean's Role in Global Change, NATO ASI Series I*, Vol. **17**, 167-194.
- BOZZANO, G. (1996): La sedimentazione e la mineralogia dei depositi del Mare di Alboran: significato paleoceanografico e paleoclimatico. Graduation thesis. University of Genoa. 140pp.
- BRASS, G.W. and TUREKIAN, K.K. (1974): Strontium distribution in Geosecs oceanic profiles. *Earth Planet. Sci. Letters*, **23**, 141-148.
- BROECKER, W.S. and E. MAIER-REIMER (1992): The influence of air and sea exchange on the carbon isotope distribution in the sea, *Global Biogeochem. Cyc.*, **6**, 315-320.
- BROECKER, W.S. and PENG, T.-H. (1982): *Tracers in the sea*. Eldigio Press, New York.
- BROWN, S.J. (1996): Controls on the trace metal chemistry of foraminiferal calcite and aragonite. Ph.D. thesis, Univ. of Cambridge, 231 pp., October 1996.
- CHI, J. (1995): Multi-Sensor-Kern-Logging-Methoden zur Bestimmung von physikalischen Sedimenteigenschaften. Berichte aus dem Sonderforschungsbereich 313, Univ. Kiel, **58**, 125 p.
- CORLISS, B. H., D. G. MARTINSON and T. KELTER (1986): Late Quaternary deep- ocean circulation- *Geological Society of America Bulletin*, **97**, 1106-1121.
- CULBERSON, D.H. (1991): Dissolved Oxygen. In: WHP Operations and Methods, WHP Office Report, WHPO **91-1**, 15 pp.
- CURRY, R., M.S. MCCARTNEY and T. JOYCE (1998): Oceanic transport of subpolar climate signals to mid-depth subtropical waters. *Nature*, **391**, 575-577.
- DANSGAARD, W., J. J. JOHNSON, B. H. CLAUSEN, D. DAHL-JENSEN, N. S. GUNDESTRUP, C. U. HAMMER, C. S. HVIDBERG, J. P. STEFFENSON, A. E. SVEINBJÖRNDOTTIR, J. JOUZEL, and G. BOND (1993): Evidence for general instability of past climate from a 250- kyr ice- core record, *Nature*, **364**, 218-220.
- DIAMOND GENERAL (1997): Instructions for use 768-20R needle oxygen electrode with internal reference. 6 pp., Diamond General Development Corp.; Ann Arbor.
- DICKSON, R.R., J. LAZIER, J. MEINCKE, P. RHINES and J. SWIFT (1996): Long-term coordinate changes in the convective activity of the North Atlantic. *Prog. Oceanogr.*, **38**, 241-295.
- DOE (1994): Handbook of methods for the analysis of various parameters of the carbon dioxide system in sea water; version 2, Dickson, A.G. and Goyet, C (eds.) ORNL/CDIAC-74.
- DÖSCHER, R., C.W. BÖNING and P. HERRMANN (1994): Response of Circulation and Heat Transport in the North Atlantic to Changes in Thermohaline Forcing in Northern Latitudes: A Model Study. *J. Phys. Oceanogr.*, **24**(11), 2306-2319.

- DUPLESSY, J.-C., N. J. SHACKLETON, R. G. FAIRBANKS, L. D. LABEYRIE, D. OPPO, and N. KALLEL (1988): Deepwater source variations during the last climatic cycle and their impact on the global deepwater circulation, *Paleoceanography*, **3**, 317-341.
- DWYER, G.S., CRONIN, TH.M., BAKER, P.A., RAYMO, M.E., BUZAS, J.S., and CORREGE, TH. (1995): North Atlantic deepwater temperature changes during late Pliocene and late Quaternary climatic cycles. *Science* **270**, 1347-1351.
- FREW, R.D. and K.A. HUNTER (1992): Influence of Southern Ocean waters on the cadmium-phosphate properties of the global ocean, *Nature*, **360**, 144-146.
- FREW, R.D. (1995): Antarctic bottom water formation and the global cadmium to phosphorus relationship, *Geophys. Res. Lett.*, **22**, 2349-2352.
- GOLOWAY, F. and BENDER, M. (1982): Diagenetic models of interstitial nitrate profiles in deep sea suboxic sediments. *Limnol. Oceanogr.*, **27**, 624-638.
- GRASHOFF, K. (1983): Determination of oxygen. In: Grashoff, K. (Hrsg), *Methods of seawater analysis*, 2nd ed., 61-72, Verlag Chemie; Weinheim.
- GRASSHOFF, K., M. EHRHARDT and K. KREMLING (eds.): (1983): *Methods of Seawater Analysis*; 2nd edition, Verlag Chemie, Weinheim.
- GROOTES, P.M., M. STUIVER, J.W.C. WHITE, S. JOHNSEN, and J. JOUZEL (1993): Comparison of oxygen isotope records from the GISP2 and GRIP Greenland ice cores, *Nature*, **366**, 552-554.
- GROUSSET, F.E., JORON, J.L., BISCAYE, P.E., LATOUCHE, C., TREUIL, M., MAILLET, N., FAUGERPS, J.C., and GONTHIER, E. (1988): Mediterranean Outflow through the Strait of Gibraltar since 18,000 years B.P.: mineralogical and geochemical arguments. *Geo-Marine Letters*, Vol. **8**, 25-34.
- HANAWA, K., P. RUAL, R. BAILEY, A. SY and M. SZABADOS (1995): A new depth-time equation for Sippican or TSK T-7, T-6 and T-4 expendable bathythermographs (XBT). *Deep-Sea Res.*, **42**, 1423-1451.
- HASTINGS, D., RUSSELL, A., and EMERSON, S. (1996): Foraminiferal Mg as a paleotemperature-proxy in the equatorial Atlantic and Caribbean surface oceans. AGU Fall Meeting, San Francisco, Abstract.
- HARMAN, R.A. (1964): Distribution of foraminifera in the Santa Barbara Basin, California. *Micropaleontology*, **10**, 81-96.
- HARVEY, J. G. and A. THEODOROU (1986): The circulation of Norwegian Sea overflow water in the eastern North Atlantic- *Oceanologica Acta*, **9**, 393-402.
- HENRICH, R., FREIWALD, A., BICKERT, T., SCHAEFER, P. (1997): Evolution of an Arctic open-shelf carbonate platform, Spitsbergen Bank (Barents Sea). - In: N.P. James and J.A.B. Clarke (eds.), *Cool-Water Carbonates*, SEPM Special Publication, **56**, 163-181.
- HERMELIN, J.O.R. (1992): Variations in the benthic foraminiferal fauna of the Arabian S: a response to changes in upwelling intensity? In: Summerhayes, C.P., Prell, W.J. and Emeis, K.C.(Editors). *Upwelling systems: Evolution since the Miocene*. *Geol. Soc. Spec. Publ.*, **64**, 151-166.
- HOWE, M. R. (1982): The Mediterranean Water outflow in the Gulf of Cadiz- *Oceanogr. Mar.*



*Biol. Ann. Rev.*, **20**, 37-64.

- IOC (1993): Manual of quality control procedures for validation of oceanographic data. UNESCO, Manual and Guides **26**, 436 pp.
- JOHNSON, K.M., K.D. WILLS, D.B. BUTLER, W.K. JOHNSON and C.S. WONG (1993): Coulometric total carbon dioxide analysis for marine studies: maximizing the performance of an automated gas extraction system and coulometric detector. *Mar. Chem.*, **44**, 167-187.
- JUNG, S. J. A. (1996): Wassermassenaustausch zwischen dem NE-Atlantik und dem Europäischen Nordmeer während der letzten 300 000/80 000 Jahre im Abbild stabiler O- und C-Isotope.- Sonderforschungsbereich 313 "Veränderungen der Umwelt: Der nördliche Nordatlantik", Report No. 61.
- KAIHO, K. (1994): Benthic foraminiferal dissolved-oxygen index and dissolved oxygen levels in the modern ocean. *Geology*, **22**, 719-722.
- KIRKWOOD, D. S. and A. R. FOLKARD (1986): Results of the ICES salinity sample-bottle intercomparison. ICES C.M., 16 pp.
- KOLTERMANN, K.P., A. SOKOV, V.TERECHECHENKOV, S. DOBROLIUBOV, K. LORBACHER and A. SY (1998a): Decadal Changes in the Thermohaline Circulation of the North Atlantic. *Deep-Sea Res.* (under review).
- KOLTERMANN, K.P. and K. LORBACHER (1998b): The changes in the Hydrography of the North Atlantic along 48°N during WOCE. (subm. *J. Geophys. Res.*).
- KÖRTZINGER, A., H. THOMAS, B. SCHNEIDER, N. GRONAU, L. MINTROP and J.C. DUINKER (1996): At-sea intercomparison of two newly designed underway  $p\text{CO}_2$  systems - Encouraging results. *Mar. Chem.*, **52**, 133-145.
- KÖRTZINGER, A., MINTROP, L., and DUINKER, J.C., 1998. On the penetration of anthropogenic  $\text{CO}_2$  in the North Atlantic Ocean.. *J. Geophys. Res.*, **103**: 18681-18689
- KOUTSOUKOS, E.A.M., LEARY, P.N. and HART, M.B. (1990): Latest Cenomanian-earliest Turonian low-oxygen tolerant benthonic foraminifera: a case study from the Sergipe basin (N.E. Brazil) and the western Anglo-Paris basin (southern England). *Palaeogeogr., Palaeoclimatol., Palaeoecol.*, **77**, 145-177.
- KRAUSS, W. (1986): The North Atlantic Current. *Journ. Geophys. Res.*, **91**, 5061-5074.
- LAZIER, J. (1995): The salinity decrease in the Labrador Sea over the past thirty years. In: *Climate on decade-to-century time scales*, p. 295-305. National Academy of Sciences Press. Washington, D.C. (1995).
- LEBREIRO, S.M., J.C. MORENO, I.N. MCCAVE and P.P.E. WEAVER (1996): Evidence for 'Heinrich' layers off Portugal (Torre Seamount: 39°N, 12°W), *Mar. Geol.*, **131**, 47-56.
- LOUBERE, P. (1994): Quantitative estimation of surface ocean productivity and bottom water oxygen concentration using benthic foraminifera. *Paleoceanography*, **9**, 723-737.
- LUTZE, G.F. and COULBOURN, W.T. (1984): Recent benthic Foraminifera from the continental margin of northwest Africa: community structures and distribution. *Mar. Micropaleontol.*, **8**, 361-401.
- LYNCH-STIEGLITZ, J., A. VAN GEEN, and R.G. FAIRBANKS (1996): Interocean exchange of glacial North Atlantic Intermediate Water: evidence from subantarctic Cd/Ca and carbon

- isotope measurements, *Paleoceanography*, **11**, 191-201.
- MASLIN, M.A., SHACKLETON, N.J., and PFLAUMANN, U. (1995): Surface water temperature, salinity and density changes in the Northeast Atlantic during the last 45.000 years: Heinrich events, deep water formation and climatic rebounds. *Paleoceanography*, **10**, 527-544.
- MCCARTNEY, M. S., (1992): Recirculating components to the deep boundary current of the northern North Atlantic- *Progress in Oceanography*, **29** , 283-383.
- MCCORKLE, D.C., MARTIN, P.A., LEA, D. W. and KLINKHAMMER, G.P. (1995): Evidence of a dissolution effect on benthic foraminiferal shell chemistry:  $^{13}\text{C}$ , Cd/Ca, Ba/Ca and Sr/Ca results from the Ontong Java Plateau. *Paleoceanography*, **10**, 699-714.
- MILLERO, F. J., ZHANG, J.-Z., LEE, K., and CAMPBELL, D. M., 1993. Titration alkalinity of seawater. *Mar. Chem.*, **44**, 153-165.
- MINTROP, L., The VINDTA manual, Version 2.0 (June 1996), *unpubl.*
- MULLINEAUX, L.E. and LOHMANN, G.P. (1981): Late Quaternary stagnations and recirculation of the eastern Mediterranean: changes in the deep water recorded by fossil benthic foraminifera. *J. Foram. Res.*, **11**, 20-37.
- MURPHY, J. and J.P. RILEY (1962): A modified single solution method for the determination of phosphate in natural waters, *Anal. Chim. Acta*, **27**, 31-36.
- NELSON, C.H., BARAZA, J. and MALDONADO, A. (1993): Mediterranean undercurrent sandy contourites, Gulf of Cadiz, Spain. *Sedimentary Geology*, Vol. **82**, 103-131.
- NÜRNBERG, D. (1995): Magnesium in tests of *Neogloboquadrina pachyderma* sinistral from high northern and southern latitudes. *J.Foram. Res.* **25** (4), 350-368.
- NÜRNBERG, D., BIJMA, J., and HEMLEBEN, C. (1996a): Assessing the reliability of magnesium in foraminiferal calcite as a proxy for water mass temperatures. *Geochimica et Cosmochimica Acta*, **60** (5), 803-814.
- NÜRNBERG, D., BIJMA, J., and HEMLEBEN, C. (1996b): Erratum to "Assessing the reliability of magnesium in foraminiferal calcite as a proxy for water mass temperatures." *Geochimica et Cosmochimica Acta* **60** (13), 2483-2484.
- OPPO, D. W. and S. J. LEHMAN (1993): Mid- depth circulation of the subpolar North Atlantic during the last glacial maximum- *Science*, **259**, 1148-1152.
- PALANQUES, A., DIAZ, J.I., and FARRAN, M. (1995): Contamination of heavy metals in the suspended and surface sediment of the Gulf of Cadiz (Spain): the role of sources, currents, pathways and sinks. *Oceanologica Acta*, Vol. **18**, 469-477.
- REIMERS, C.E., JAHNKE, R.A. and MCCORCLE, D.C. (1992): Carbon fluxes and burial rates over the continental slope and rise off central California with implications for the global carbon cycle. *Global Biogeochem. Cycles*, **6**, 199-224.
- ROETHER, W., A. PUTZKA, K. BULSIEWICZ, G. FRAAS, O. KLATT, W. PLEP, C. RUETH and B. SCHLENKER; (1998): Advances in Tracer Measurements; International WOCE Newsletter; No. **30**.
- SARNTHEIN, M., K. WINN, S. JUNG, J.-C. DUPLESSY, L. LABEYRIE, H. ERLLENKEUSER, and G. GANSSEN (1994): Changes in east Atlantic deepwater circulation over the last

- 30,000 years: eight time slice reconstructions, *Paleoceanography*, **9**, 209-267.
- SAUNDERS, P.M. (1994): The flux of overflow water through the Charlie-Gibbs Fracture Zone. *J. Geophys. Res.*, **99** (C6), 12,343-12,355.
- SCHÄFER, P., HENRICH, R., ZANKL, H., BADER, B. (1996): Carbonate production and depositional patterns of BRYOMOL-carbonates on deep shelf banks in mid and high Northern Latitudes. - *Göttinger Arb. Geol. Palaeont.*, **Sb 2**, 101-110.
- SCHMITZ JR., W. J. J. and M. S. MCCARTNEY (1993): On the North Atlantic Circulation-*Reviews of Geophysics*, **31** (1), 29-49.
- SCHÖNFELD, J. (1997): The impact of the Mediterranean Outflow Water (MOW) on Benthic foraminiferal assemblages and surface sediments at the southern Portuguese continental margin. *Mar. Micropaleontol.*, **29**, 211-236.
- SCHULTHEISS, P.J. and MCPHAIL, S.D. (1989): An automated P-wave logger for recording fine scale compressional wave velocity structure in sediments. In Rudiman, W., Sarnthein, M. et al. (eds.) *Proc. ODP Sci. Res.*, **108**, 407-413.
- SCHULTHEISS, P.J., MIENERT, J. and Shipboard Scientific Party (1988): Whole-core p-wave velocity and gamma ray attenuation logs from Leg 108 (Sites 657 through 668). In Ruddiman, W.Sarnthein, M. et al. (eds.) *Proc. ODP Init. Rep. (Pt.A)* **108**, 1015-1046.
- SY, A. (1985): An alternative editing technique for oceanographic data. *Deep-Sea Res.*, **32**, 1591-1599.
- SY, A. (1991): XBT measurements. In: WHP Operations and Methods, WHP Office Report WHPO **91-1**, 19 pp.
- SY, A. (1996): Summary of field tests of improved XCTD/MK-12 system. *Intern. WOCE Newsletter*, No. **22**, 11-13.
- SY, A. and H.-H. HINRICHSEN (1986): The influence of long-term storage on the salinity of bottled seawater samples. *Dt. Hydr. Z.*, **39**, 35-40.
- SY, A. (1998): At-sea test of a new XCTD system. *Intern. WOCE Newsletter*, 31, 45-47.
- SY, A., M. RHEIN, J. LAZIER, K.P. KOLTERMANN, J. MEINCKE, A. PUTZKA and M. BERSCH (1997): Surprisingly rapid spreading of newly formed intermediate waters across the North Atlantic Ocean. *Nature*, **386**, 675-679.
- SY, A., K.P. KOLTERMANN and U. PAUL (1997b): Observing opposing temperature changes in the upper and intermediate layers of the North Atlantic Ocean. *Intern. WOCE Newsl.*, **26**, 30-33.
- TALLEY, L.D. and M.S. MCCARTNEY (1982): Distribution and circulation of Labrador Sea Water, *J. Phys. Oceanogr.*, **12**, 1189-1205.
- TAYLOR, K. C., C. U. HAMMER, R. B. ALLEY, H. B. CLAUSEN, D. DAHL-JENSEN, A. J. GOW, N. S. GUNDESTRUP, J. KIPFSTUHL, J. C. MOORE and E. D. WADDINGTON (1993): Electrical conductivity measurements from GISP 2 and GRIP Greenland ice cores-*Nature*, **366**, 549-552.
- TAYLOR, K.C., G.W. LAMOREY, G.A. DOYLE, R.B. ALLEY, P.M. GROOTES, P.A. MAYEWSKI, J.W.C. WHITE, and L.K. BARLOW (1993): The 'flickering switch' of

- late Pleistocene climate change, *Nature*, **361**, 432-436.
- UNESCO (1988): The acquisition, calibration, and analysis of CTD data. Unesco technical papers in marine science, **54**, 92 pp.
- VAN AKEN, H.M. and C.J. DE BOER (1995): On the synoptic hydrography of intermediate and deep water masses in the Iceland Basin. *Deep-Sea Res.*, **42**, 165-189.
- VAN AAKEN, H.M. and G. BECKER (1996): Hydrography and through-flow in the north eastern North Atlantic Ocean: the NANSEN project. *Prog. Oceanogr.*, **38**, p. 297 - 346.
- VAN GEEN, A., ADKIND, J.F., BOYLE, E.A., NELSON, C.H., and PALANQUES, A. (1997): A 120 yr record of widespread contamination from mining of the Iberian pyrite belt. *Geology*, Vol. **25**, No. 4, 291-294.
- VEUM, T., E. JANSEN, M. ARNOLD, I. BEYER and J.-C. DUPLESSY (1992): Watermass exchange between the North Atlantic and the Norwegian Sea during the past 28,000 years-*Nature*, **356**, 783-785.
- WANG L., SARNTHEIN, M., DUPLESSY, J.-C., ERLLENKEUSER, H. , JUNG, S., and PFLAUMANN, U. (1995): Paleo sea surface salinities in the low-latitude Atlantic: the  $\delta^{18}\text{O}$  record of *Globigerinoides ruber* (white), *Paleoceanography*, **10**, 749-761.
- WCRP (1988): World Ocean Circulation Experiment Implementation Plan. WMO/TD No. **242** and **243**. WOCE International Planning Office, Wormley, England.
- WETZEL, A. (1981): Ökologische und stratigraphische Bedeutung biogener Gefüge in quartären Sedimenten am NW-afrikanischen Kontinentalrand. - *METEOR Forsch. - Ergebnisse*, Reihe C, **34**, 1-47.
- WHP (1994): WOCE operations manual. Vol. 3, Section 3.1, Part 3.1.3. WHP Office Report WHPO **91-1**, Woods Hole, USA.
- ZAHN, R. (1997): North Atlantic thermohaline circulation during the last glacial period: evidence for coupling between meltwater events and convective instability, *GEOMAR Rept.*, **63**, 133 p.
- ZAHN, R., SARNTHEIN, M., and ERLLENKEUSER, H. (1987): Benthic isotope evidence for changes of the Mediterranean outflow during the late Quaternary. *Paleoceanography*, **2**, 543-559.
- ZAHN, R. and R. KEIR (1994): Tracer-nutrient correlations in the upper ocean: observational and box model constraints on the use of benthic foraminiferal  $\delta^{13}\text{C}$  and Cd/Ca as paleo-proxies for the intermediate-depth ocean, in R. Zahn, T.F. Pedersen, M. Kaminski and L. Labeyrie (eds.), *Carbon Cycling in the Glacial Ocean: Constraints on the Ocean's Role in Global Change*, *NATO ASI Series I*, Vol. **17**, 195-221.
- ZAHN, R., J. SCHÖNFELD, H.-R. KUDRASS, M.-H. PARK, H. ERLLENKEUSER, and P. GROOTES (1997): Thermohaline instability in the North Atlantic during meltwater events: stable isotope and ice-rafted detritus records from Core SO75-26KL, Portuguese Margin, *Paleoceanography*, **12**, 696-710.
- ZENK, W. (1975): On the origin of the intermediate double-maxima in T/S profiles from the North Atlantic. "*METEOR*" *Forsch.-Ergebn.*, **A(16)**, 35-43.
- ZENK, W. and L. ARMI (1990): The complex spreading pattern of Mediterranean Water off the Portuguese continental slope, *Deep-Sea Res.*, **37**, 1805-1823.

**Publications from METEOR expeditions  
in other reports**

---

- Gerlach, S.A., J. Thiede, G. Graf und F. Werner (1986): Forschungsschiff Meteor, Reise 2 vom 19. Juni bis 16. Juli 1986. Forschungsschiff Poseidon, Reise 128 vom 7. Mai bis 8. Juni 1986. Ber. Sonderforschungsbereich 313, Univ. Kiel, 4, 140 S.
- Siedler, G., H. Schmickler, T.J. Müller, H.-W. Schenke und W. Zenk (1987): Forschungsschiff Meteor, Reise Nr. 4, Kapverden - Expedition, Oktober - Dezember 1986. Ber. Inst. f. Meeresk., 173, Kiel, 123 S.
- Wefer, G., G.F. Lutze, T.J. Müller, O. Pfannkuche, W. Schenke, G. Siedler und W. Zenk (1988): Kurzbericht über die Meteor - Expedition Nr. 6, Hamburg - Hamburg, 28. Oktober 1987 - 19. Mai 1988. Berichte, Fachbereich Geowissenschaften, Universität Bremen, 4, 29 S.
- Müller T.J., G. Siedler und W. Zenk (1988): Forschungsschiff Meteor, Reise Nr. 6, Atlantik 87/88, Fahrtabschnitte Nr. 1 - 3, Oktober - Dezember 1987. Ber. Inst. f. Meeresk., 184, Kiel, 77 S.
- Lutze, G.F., C.O.C. Agwu, A. Altenbach, U. Henken-Mellies, C. Kothe, N. Mühlhan, U. Pflaumann, C. Samtleben, M. Sarnthein, M. Segl, Th. Soltwedel, U. Stute, R. Tiedemann und P. Weinholz (1988): Bericht über die "Meteor" -Fahrt 6-5, Dakar - Libreville, 15.1.-16.2.1988. Berichte - Reports, Geol. Paläont. Inst., Univ. Kiel, 22, 60 S.
- Wefer, G., U. Bleil, P.J. Müller, H.D. Schulz, W.H. Berger, U. Brathauer, L. Brück, A. Dahmke, K. Dehning, M.L. Durate-Morais, F. Fürsich, S. Hinrichs, K. Klockgeter, A. Kölling, C. Kothe, J.F. Makaya, H. Oberhänsli, W. Oschmann, J. Posny, F. Rostek, H. Schmidt, R. Schneider, M. Segl, M. Sobiesiak, T. Soltwedel und V. Spieß (1988): Bericht über die Meteor - Fahrt M 6-6, Libreville - Las Palmas, 18.2.1988 - 23.2.1988. Berichte, Fachbereich Geowissenschaften, Universität Bremen, 3, 97 S.
- Hirschleber, H., F. Theilen, W. Balzer, B. v. Bodungen und J. Thiede (1988): Forschungsschiff Meteor, Reise 7, vom 1. Juni bis 28. September 1988, Ber. Sonderforschungsbereich 313, Univ. Kiel, 10, 358 S.

## METEOR-Berichte

### List of publications

---

- 89-1 (1989) Meincke, J.,  
Quadfasel, D. GRÖNLANDSEE 1988-Expedition, Reise Nr. 8,  
27. Oktober 1988 - 18. Dezember 1988.  
Universität Hamburg, 40 S.
- 89-2 (1989) Zenk, W.,  
Müller, T.J.,  
Wefer, G. BARLAVENTO-Expedition, Reise Nr. 9,  
29. Dezember 1988 - 17. März 1989.  
Universität Hamburg, 238 S.
- 90-1 (1990) Zeitschel, B.,  
Lenz, J.,  
Thiel, H.,  
Boje, R.,  
Stuhr, A.,  
Passow, U. PLANKTON'89 - BENTHOS'89, Reise Nr. 10,  
19. März - 31. August 1989.  
Universität Hamburg, 216 S.
- 90-2 (1990) Roether, W.,  
Sarnthein, M.,  
Müller, T.J.,  
Nellen, W.,  
Sahrhage, D. SÜDATLANTIK-ZIRKUMPOLARSTROM,  
Reise Nr. 11, 3. Oktober 1989 - 11. März 1990.  
Universität Hamburg, 169 S.
- 91-1 (1991) Wefer, G.,  
Weigel, W.,  
Pfannkuche OSTATLANTIK 90 - EXPEDITION, Reise Nr. 12,  
13. März - 30. Juni 1990.  
Universität Hamburg, 166 S.
- 91-2 (1991) Gerlach, S.A.,  
Graf, G. EUROPÄISCHES NORDMEER, Reise Nr. 13,  
6. Juli - 24. August 1990.  
Universität Hamburg, 217 S.
- 91-3 (1991) Hinz, K.,  
Hasse, L.,  
Schott, F. SUBTROPISCHER & TROPISCHER ATLANTIK,  
Reise Nr. 14/1-3, Maritime Meteorologie und  
Physikalische Ozeanographie, 17. September -  
30. Dezember 1990. Universität Hamburg, 58 S.
- 91-4 (1991) Hinz, K. SUBTROPISCHER & TROPISCHER ATLANTIK,  
Reise Nr. 14/3, Geophysik, 31. Oktober -  
30. Dezember 1990. Universität Hamburg, 94 S.
- 92-1 (1992) Siedler, G.,  
Zenk, W. WOCE Südatlantik 1991, Reise Nr. 15,  
30. Dezember 1990 - 23. März 1991. Universität  
Hamburg, 126 S.
- 92-2 (1992) Wefer, G.,  
Schulz, H.D.,  
Schott, F.,  
Hirschleber, H. B. ATLANTIK 91 - EXPEDITION, Reise Nr. 16,  
27. März - 8. Juli 1991. Universität Hamburg,  
288 S.

- 92-3 (1992) Suess, E.,  
Altenbach, A.V. EUROPÄISCHES NORDMEER, Reise Nr. 17,  
15. Juli - 29. August 1991. Universität Hamburg, 164 S.
- 93-1 (1993) Meincke, J.,  
Becker, G. WOCE-NORD, Cruise No. 18, 2. September -  
26. September 1991. NORDSEE, Cruise No. 19,  
30 September - 12 October 1991. Universität  
Hamburg, 105 pp.
- 93-2 (1993) Wefer, G.,  
Schulz, H.D. OSTATLANTIK 91/92 - EXPEDITION, Reise Nr. 20,  
M 20/1 und M 20/2, 18. November 1991 - 3. Februar  
1992. Universität Hamburg, 248 S.
- 93-3 (1993) Wefer, G.,  
Hinz, K.,  
Roeser, H.A. OSTATLANTIK 91/92 - EXPEDITION, Reise Nr. 20,  
M 20/3, 4. Februar - 13. März 1992. Universität  
Hamburg, 145 S.
- 93-4 (1993) Pfannkuche, O.,  
Duinker, J.C.,  
Graf, G.,  
Henrich, R.,  
Thiel, H.,  
Zeitschel, B. NORDATLANTIK 92, Reise Nr. 21,  
16. März - 31. August 1992. Universität  
Hamburg, 281 S.
- 93-5 (1993) Siedler, G.,  
Balzer, W.,  
Müller, T.J.,  
Rhein, M.,  
Onken, R.,  
Zenk, W. WOCE South Atlantic 1992, Cruise No. 22,  
22 September 1992 - 31 January 1993.  
Universität Hamburg, 131 pp.
- 94-1 (1994) Bleil, U.,  
Spieß, V.,  
Wefer, G. Geo Bremen SOUTH ATLANTIC 1993, Cruise  
No. 23, 4 February - 12 April 1993. Universität  
Hamburg, 261 pp.
- 94-2 (1994) Schmincke, H.-U.,  
Rihm, O. OZEANVULKAN 1993, Cruise No. 24, 15 April -  
9 May 1993. Universität Hamburg, 88 pp.
- 94-3 (1994) Hieke, W.,  
Halbach, P.,  
Türkay, M.,  
Weikert, H. MITTELMEER 1993, Cruise No. 25,  
12 May - 20 August 1993. Universität Hamburg,  
243 pp.
- 94-4 (1994) Suess, E.,  
Kremling, K.,  
Mienert, J. NORDATLANTIK 1993, Cruise No. 26,  
24 August - 26 November 1993. Universität Hamburg,  
256 pp.

- 94-5 (1994) Bröckel, K. von,  
Thiel, H.,  
Krause, G. ÜBERFÜHRUNGSFAHRT, Reise Nr. 0, 15. März -  
15. Mai 1986. ERPROBUNGSFAHRT, Reise Nr. 1,  
16. Mai - 14. Juni 1986. BIOTRANS IV, Skagerrak 86,  
Reise Nr. 3, 21. Juli - 28. August 1986. Universität  
Hamburg, 126 S.
- 94-6 (1994) Pfannkuche, O.,  
Balzer, W.,  
Schott, F. CARBON CYCLE AND TRANSPORT OF WATER  
MASSES IN THE NORTH ATLANTIC - THE  
WINTER SITUATION, Cruise No. 27, 29 December -  
26 March 1994. Universität Hamburg, 134 pp.
- 95-1 (1995) Zenk, W.,  
Müller, T.J. WOCE Studies in the South Atlantic, Cruise No. 28,  
29 March - 14 June 1994. Universität Hamburg, 193 pp.
- 95-2 (1995) Schulz, H.,  
Bleil, U.,  
Henrich, R.,  
Segl, M. Geo Bremen SOUTH ATLANTIC 1994, Cruise  
No. 29, 17 June - 5 September 1994. Universität  
Hamburg, 323 pp.
- 96-1 (1996) Nellen, W.,  
Bettac, W.,  
Roether, W.,  
Schnack, D.,  
Thiel, H.,  
Weikert, H.,  
Zeitschel, B. MINDIK (Band I), Reise Nr. 5, 2. Januar -  
24. September 1987. Universität Hamburg, 275 S.
- 96-2 (1996) Nellen, W.,  
Bettac, W.,  
Roether, W.,  
Schnack, D.,  
Thiel, H.,  
Weikert, H.,  
Zeitschel, B. MINDIK (Band II), Reise Nr. 5, 2. Januar -  
24. September 1987. Universität Hamburg, 179 S.
- 96-3 (1996) Koltermann, K.P.,  
Pfannkuche, O.,  
Meincke, J. JGOFS, OMEG and WOCE in the North Atlantic 1994,  
Cruise No. 30, 7 September - 22 December 1994.  
Universität Hamburg, 148 pp.
- 96-4 (1996) Hemleben, Ch.,  
Roether, W.,  
Stoffers, P. Östliches Mittelmeer, Rotes Meer, Arabisches Meer,  
Cruise No. 31, 30 December 1994 - 22 March 1995.  
Universität Hamburg, 282 pp.
- 96-5 (1996) Lochte, K.,  
Halbach, P.,  
Flemming, B.W. Biogeochemical Fluxes in the Deep-Sea and Investiga-  
tions of Geological Structures in the Indian Ocean,  
Cruise No. 33, 22 September - 30 December 1995.  
Universität Hamburg, 160 pp.



- 96-6 (1996) Schott, F.,  
Pollehne, F.,  
Quadfasel, D.,  
Stramma, L.,  
Wiesner, M.,  
Zeitzschel, B. ARABIAN SEA 1995, Cruise No. 32, 23 March -  
19 September 1995.  
Universität Hamburg, 163 pp
- 97-1 (1997) Wefer, G.  
Bleil, U.  
Schulz, H.  
Fischer, G. Geo Bremen SOUTH ATLANTIC 1996 (Volume I),  
Cruise No. 34, 3 January - 18 February 1996.  
Universität Hamburg, 254 pp.
- 97-2 (1997) Wefer, G.  
Bleil, U.  
Schulz, H.  
Fischer, G. Geo Bremen SOUTH ATLANTIC 1996 (Volume II),  
Cruise No. 34, 21 February - 15 April 1996.  
Universität Hamburg, 268 pp.
- 97-3 (1997) Wefer, G. 10 Jahre Forschungsschiff METEOR (1986 - 1996) -  
Dokumentation der Fahrten M0 - M34 (Volume I),  
Cruise No. 0-17. Universität Hamburg, 269 pp.
- 97-4 (1997) Wefer, G. 10 Jahre Forschungsschiff METEOR (1986 - 1996) -  
Dokumentation der Fahrten M0 - M34 (Volume II),  
Cruise No. 18-34. Universität Hamburg, 236 pp.
- 98-1 (1998) Wefer, G.  
Müller, T.J. Canary Islands 1996/97, Cruise No. 37, 4 December  
1996 - 22 January 1997. Universität Hamburg, 134 pp.
- 98-2 (1998) Mienert, J.  
Graf, G.  
Hemleben, C.  
Kremling, K.  
Pfannkuche, O.  
Schulz-Bull, D. Nordatlantik 1996, Cruise No. 36, 6 June 1996 -  
4 November 1996. Universität Hamburg, 302 pp.
- 98-3 (1998) Hemleben, C.  
Zahn, R.  
Meischner, D. Karibik 1996, Cruise No. 35, 18 April - 3 June 1996.  
Universität Hamburg, 208 pp.
- 98-4 (1998) Bleil, U.  
Fischer, G. Geo Bremen South Atlantic 1997, Cruise No. 38,  
25 January - 14 April 1997. Universität Hamburg,  
244 pp.
- 99-1 (1999) Schott, F.  
Koltermann, K.-P.  
Stramma, L.  
Sy, A.  
Zahn, R.  
Zenk, W. North Atlantic 1997, Cruise No. 39, 18 April - 14 Sep-  
tember 1997. Universität Hamburg, 197 pp.