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Report 18.11.03, Heincke 9-22.5, 04/Jnr03/16869

Dear Madams and Sirs

Enclosed please find the report of Heincke cruise He-208 for which we have received working permission in Norwegian waters (09.-22.05.04). The Cruise Summary Report for Heincke 208 has been submitted to the international database held at the BSH Hamburg, Germany, according to the DOD standards.

For your information I have also enclosed station list as well as a cruise track and high resolution maps showing our sampling in Norwegian waters. The samples are currently being processed. Oceanographic data (CTD casts) are available upon request.

Thank you very much for your cooperation,  
Sincerely,

Prof. Dr. Antje Boetius

Stiftung Alfred-Wegener-  
Institut für Polar- und  
Meeresforschung Mitglied der  
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# CRUISE SUMMARY REPORT

FOR COLLATING CENTRE USE

Centre: DOD Ref. No.:

Is data exchange restricted  Yes  In part  No

**SHIP** enter the full name and international radio call sign of the ship from which the data were collected, and indicate the type of ship, for example, research ship; ship of opportunity, naval survey vessel; etc.

Name: RV HeinckeCall Sign: DBCKType of ship: research vesselCRUISE NO. / NAME Heincke 208

enter the unique number, name or acronym assigned to the cruise (or cruise leg, if appropriate).

CRUISE PERIOD start 09/05/2005 to 21/05/2004 end  
(set sail) day/ month/ year day/ month/ year (return to port)

PORT OF DEPARTURE (enter name and country) Bremerhaven, GermanyPORT OF RETURN (enter name and country) Bremerhaven, Germany

**RESPONSIBLE LABORATORY** enter name and address of the laboratory responsible for coordinating the scientific planning of the cruise

Name: Alfred-Wegener-Institut für Polar- und MeeresforschAddress: ColumbusstrCountry: D-27515 Bremerhaven

**CHIEF SCIENTIST(S)** enter name and laboratory of the person(s) in charge of the scientific work (chief of mission) during the cruise.

Prof. Antje Boetius, MPI/AWI

**OBJECTIVES AND BRIEF NARRATIVE OF CRUISE** enter sufficient information about the purpose and nature of the cruise so as to provide the context in which the report data were collected.

This cruise contributed to the EU-Project (METROL - METHane fluxes in ocean margin sediments: microbiological and geochemical control). The scientific work is part of the collaboration between MPI, AWI and the Universities Cardiff and Bristol. In the framework of this project the question is addressed how methane turnover is controlled in shallow gassy sediments. Objectives of this cruise are

A) The quantification of the microbial turnover of methane in gassy sediments as well as the characterisation of the geochemical conditions for the anaerobic methane oxidation and its temporal and regional variation;

B) Quantification of the flux of methane into the water column and its dispersal and consumption

C) the characterisation and identification of microorganisms involved in the methane oxidation in aerobic and anaerobic sediment layers and in the water column.

As part of these investigations, characteristic organic molecules are to be identified which can be used as biomarkers for the anaerobic methane oxidation.

Station work focusses on areas already intensively studied in earlier years by Hovland & Judd (1988). Geographical information comes from the British Geological Survey and from Statoil.

**PROJECT (IF APPLICABLE)** if the cruise is designated as part of a larger scale cooperative project (or expedition), then enter the name of the project, and of organisation responsible for co-ordinating the project.

Project name: METROLCoordinating body: EU





**TRACK CHART:** You are strongly encouraged to submit, with the completed report, an annotated track chart illustrating the route followed and the points where measurements were taken.

Insert a tick(✓) in this box if a track chart is supplied



**GENERAL OCEAN AREA(S):** Enter the names of the oceans and/or seas in which data were collected during the cruise – please use commonly recognised names (see, for example, International Hydrographic Bureau Special Publication No. 23, 'Limits of Oceans and Seas').

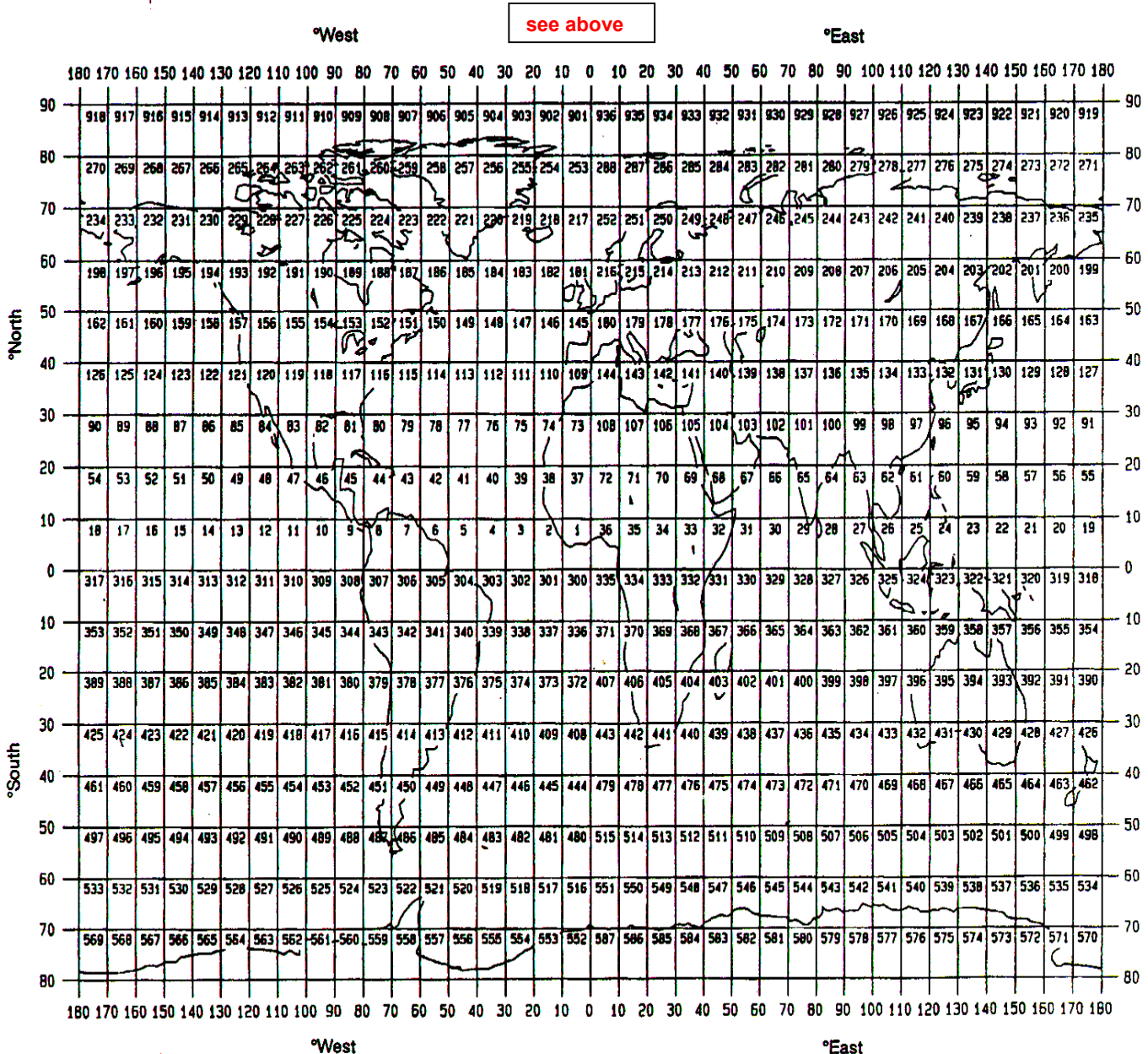
Northern North Sea

**SPECIFIC AREAS:** If the cruise activities were concentrated in a specific area(s) of an ocean or sea, then enter a description of the area(s). Such descriptions may include references to local geographic areas, to sea floor features, or to geographic coordinates.

**Please insert here the number of each square in which data were collected from the below given chart**

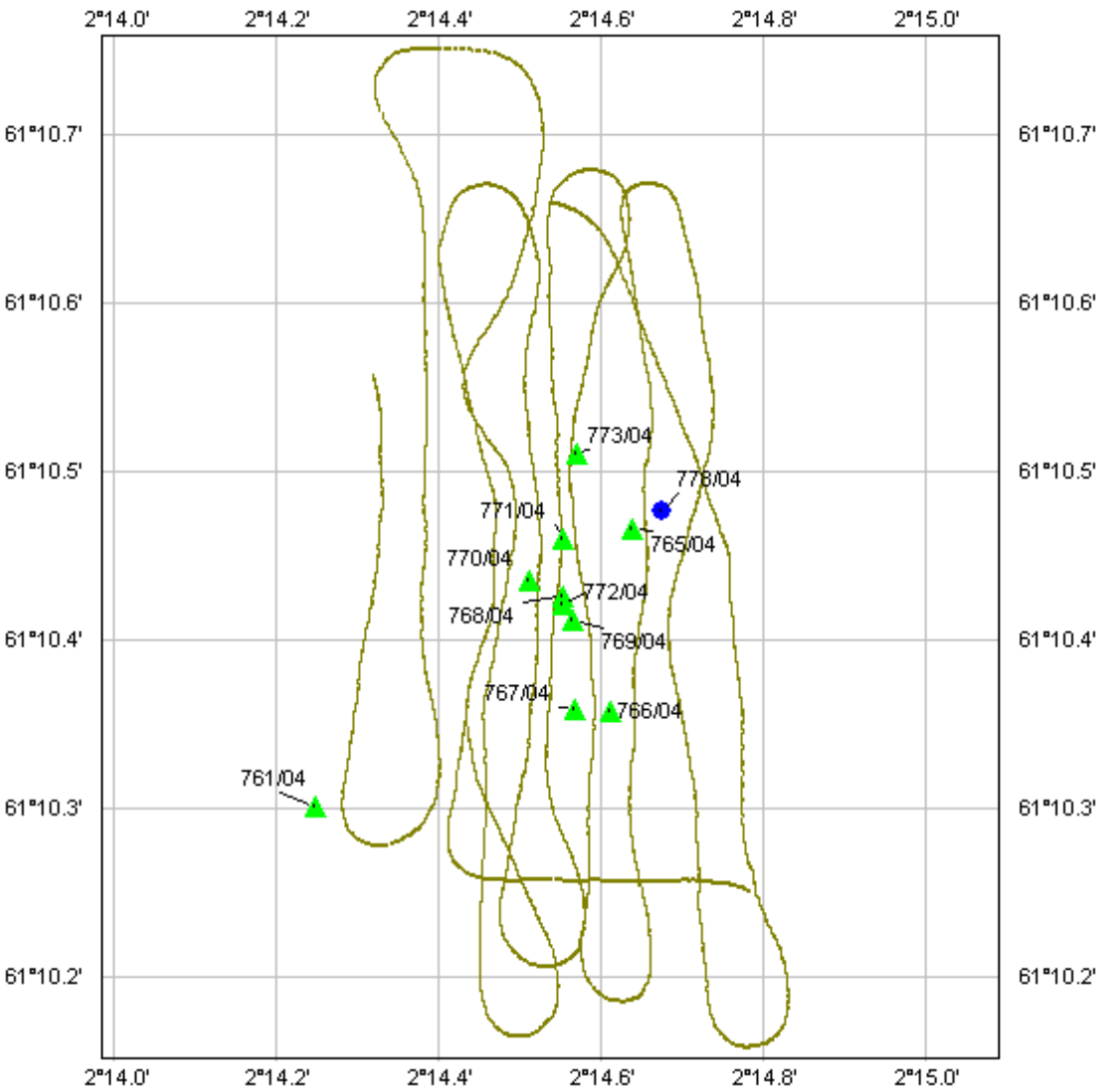
216, 252

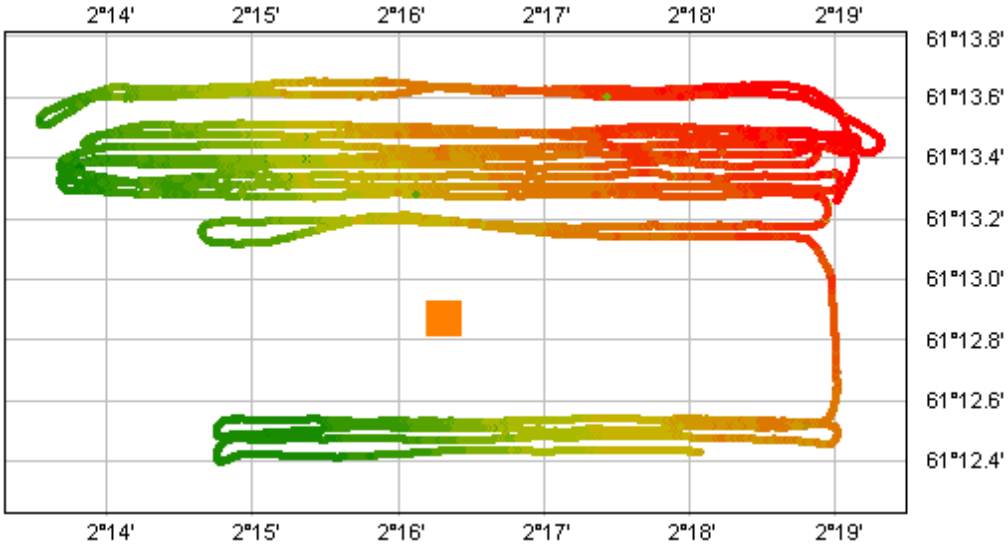
**GEOGRAPHIC COVERAGE - INSERT 'X' IN EACH SQUARE IN WHICH DATA WERE COLLECTED**

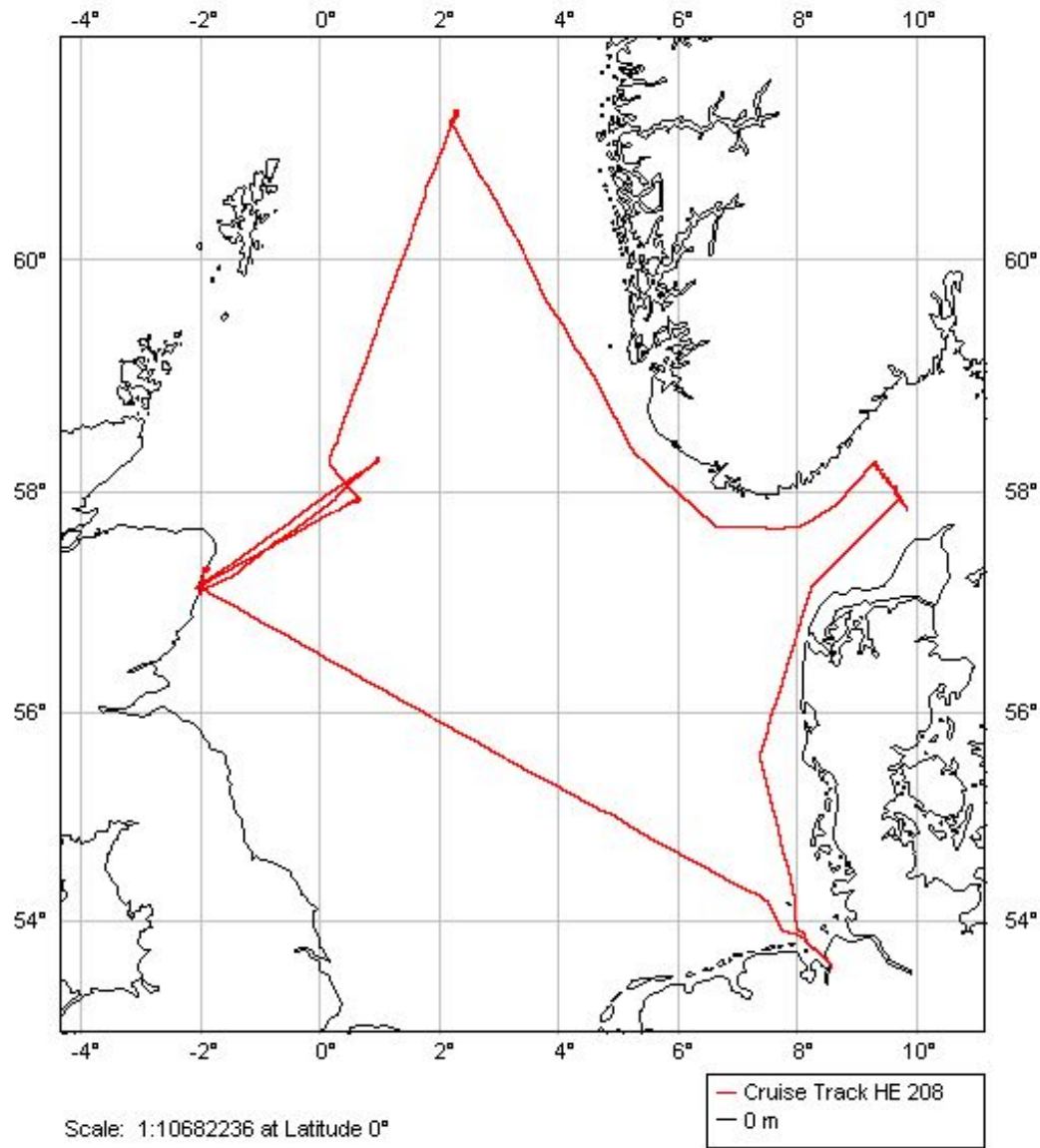


**THANK YOU FOR YOUR COOPERATION**

Please send your completed report without delay to the collating centre indicated on the cover page







Scale: 1:10682236 at Latitude 0°

Source: GEBCO.



Cruise #	Station #	Area	Sub Area	PI	Gear	Begin	UTC	Lat (°E)	Lat (min)	Lat (dec)	Lon (°E)	Lon (min)	Lon (dec)	Year
208	702-1/04	Test-Area	-	Gauger	CTD	10.05.04	11:56:00	55	59,2869	55,988115	1	44,5313	1,742188	2004
208	702-2/04	Test-Area	-	Wilkop	GC	10.05.04	13:11:00	55	59,6310	55,993850	1	44,3144	1,738574	2004
208	702-3/04	Test-Area	-	Wilkop	GC	10.05.04	13:28:00	55	59,7861	55,996435	1	44,2358	1,737263	2004
208	702-4/04	Test-Area	-	Wilkop	GC	10.05.04	13:51:00	55	59,8297	55,997161	1	44,2187	1,736979	2004
208	703/04	UK15/25	-	Wendt	SES	12.05.04	04:16:00	58	16,4474	58,274123	0	57,9993	0,966655	2004
208	704/04	UK15/25	-	Wendt	SES	12.05.04	05:16:30	58	18,7048	58,311746	0	57,4954	0,958256	2004
208	705/04	UK15/25	-	Wendt	SES	12.05.04	06:01:00	58	16,5058	58,275096	0	57,8074	0,963456	2004
208	706/04	UK15/25	Pockmark # 2	Meyer	ROV	12.05.04	07:12:00	58	16,8635	58,281059	0	58,2445	0,970742	2004
208	707/04	UK15/25	Pockmark # 2	Wilkop	TV-MUC	12.05.04	08:25:00	58	16,8731	58,281218	0	58,2172	0,970287	2004
208	708/04	UK15/25	Pockmark # 2	Wilkop	GC	12.05.04	10:02:00	58	16,8737	58,281228	0	58,2225	0,970375	2004
208	709/04	UK15/25	Pockmark # 2	Wilkop	GC	12.05.04	10:34:00	58	16,9067	58,281778	0	58,2220	0,970367	2004
208	710/04	UK15/25	Pockmark # 2	Wilkop	GC	12.05.04	11:09:00	58	16,8916	58,281526	0	58,2149	0,970248	2004
208	711/04	UK15/25	Pockmark # 3	Wilkop	GC	12.05.04	11:42:00	58	16,9210	58,282017	0	58,4374	0,973957	2004
208	712/04	UK15/25	Pockmark # 3	Wilkop	RL	12.05.04	12:23:30	58	16,9782	58,282970	0	58,4119	0,973531	2004
208	713/04	UK15/25	Pockmark # 3	Wilkop	GC	12.05.04	12:59:30	58	16,9223	58,282038	0	58,4667	0,974445	2004
208	714/04	UK15/25	Pockmark # 3	Wilkop	GC	12.05.04	13:51:10	58	16,8230	58,280383	0	58,3960	0,973267	2004
208	715/04	UK15/25	Pockmark # 3	Wilkop	GC	12.05.04	14:42:20	58	16,9090	58,281817	0	58,4900	0,974833	2004
208	716/04	UK15/25	Pockmark # 3	Wilkop	GC	12.05.04	16:14:00	58	16,9070	58,281783	0	58,4520	0,974200	2004
208	717/04	UK15/25	Pockmark # 4	Wilkop	GC	12.05.04	17:00:00	58	17,4168	58,290280	0	58,5128	0,975213	2004
208	718/04	UK15/25	Pockmark # 4	Wilkop	GC	12.05.04	18:00:10	58	17,4080	58,290133	0	58,4820	0,974700	2004
208	719/04	UK15/25	Pockmark # 2	Gauger	CTD	12.05.04	19:51:00	58	16,8687	58,281145	0	58,2239	0,970399	2004
208	720/04	UK15/25	Pockmark # 2	Gauger	CTD	12.05.04	21:14:50	58	16,8832	58,281387	0	58,1824	0,969707	2004
208	721/04	Millden links slog	-	Wendt	SES	13.05.04	10:59:00	57	14,5280	57,242133	-1	58,0350	-1,967250	2004
208	722/04	Millden links slog	-	Wendt	SES	13.05.04	11:16:00	57	13,5300	57,225500	-1	57,9000	-1,965000	2004
208	723/04	Millden links slog	-	Wendt	SES	13.05.04	11:32:00	57	14,5150	57,241917	-1	57,8060	-1,963433	2004
208	724/04	Millden links slog	-	Wendt	SES	13.05.04	11:47:50	57	13,5120	57,225200	-1	57,7000	-1,961667	2004
208	725/04	Millden links slog	-	Wilkop	RL	13.05.04	12:05:00	57	14,6750	57,244583	-1	57,5340	-1,958900	2004
208	726/04	River Ythan	-	Wendt	SES	13.05.04	12:48:00	57	17,8781	57,297969	-1	57,8749	-1,964582	2004
208	727/04	River Ythan	-	Wendt	SES	13.05.04	13:19:20	57	18,8580	57,314300	-1	54,8190	-1,913650	2004
208	728/04	River Ythan	-	Wendt	SES	13.05.04	14:00:00	57	16,9680	57,282800	-1	54,2160	-1,903600	2004
208	729/04	River Ythan	-	Wilkop	RL	13.05.04								2004
208	730/04	River Ythan	-	Wilkop	RL	13.05.04								2004
208	731-736/04	Witch Ground	-	Wendt	SES	14.05.04	13:08:00	57	55,5007	57,925011	0	38,0126	0,633544	2004
208	737/04	Witch Ground	# 1	Wilkop	RL	14.05.04	17:02:00	57	53,7977	57,896629	0	28,2554	0,470924	2004
208	738/04	Witch Ground	# 1	Wilkop	GC	14.05.04	18:16:10	57	53,8078	57,896796	0	28,2250	0,470417	2004
208	739/04	Witch Ground	# 1	Wilkop	TV-MUC	14.05.04	18:34:00	57	53,8153	57,896922	0	28,2324	0,470540	2004
208	740/04	Witch Ground	# 1	Wilkop	GC	14.05.04	19:11:30	57	53,8265	57,897109	0	28,1944	0,469907	2004
208	741/04	Witch Ground	# 1	Meyer	ROV	14.05.04	19:49:00	57	53,8998	57,898330	0	28,1928	0,469880	2004
208	742/04	Witch Ground	# 1	Gauger	CTD	14.05.04	21:05:00	57	53,7920	57,896533	0	28,2734	0,471224	2004
208	743/04	Witch Ground	# 2	Wilkop	GC	14.05.04	22:36:30	57	56,8520	57,947533	0	37,6530	0,627550	2004
208	744/04	Witch Ground	-	Wendt	SES	14.05.04	23:10:00	57	55,9626	57,932710	0	34,5220	0,575367	2004
208	745/04	Witch Ground	-	Wendt	SES	15.05.04	00:19:00	57	56,8919	57,948199	0	35,4477	0,590795	2004
208	746-748/04	Witch Ground	-	Wendt	SES	15.05.04	06:31:00	57	56,2007	57,936679	0	35,9676	0,599460	2004
208	749/04	Witch Ground	# 3	Wilkop	TV-MUC	15.05.04	07:21:00	57	57,2710	57,954517	0	36,3440	0,605733	2004
208	750/04	Witch Ground	# 3	Wilkop	GC	15.05.04	08:07:10	57	57,2670	57,954450	0	36,3080	0,605133	2004
208	751-753/04	Witch Ground	-	Wendt	SES	15.05.04	08:58:10	57	56,6900	57,944833	0	35,9650	0,599417	2004
208	754/04	Witch Ground	# 4	Wilkop	GC	15.05.04	10:16:00	57	57,3390	57,955650	0	37,6210	0,627017	2004
208	755-757/04	Ivenhow	-	Wendt	SES	15.05.04	13:06:20	58	15,5230	58,258717	0	9,8110	0,163517	2004
208	758/04	Ivenhow	-	Wilkop	GC	15.05.04	14:16:10	58	14,4000	58,240000	0	9,8660	0,164433	2004
208	759/04	Ivenhow	-	Wilkop	GC	15.05.04	14:40:00	58	15,0776	58,251293	0	10,0643	0,167738	2004
208	760/04	Kvitebjorn	-	Wendt	SES	16.05.04	11:30:40	61	10,2300	61,170500	2	14,4380	2,240633	2004
208	761/04	Kvitebjorn	-	Wilkop	TV-MUC	16.05.04	14:43:00	61	10,4970	61,174950	2	14,6730	2,244550	2004
208	762/04	Kvitebjorn	-	Meyer	ROV	16.05.04	16:17:00	61	10,5272	61,175453	2	14,8042	2,246737	2004
208	763/04	Kvitebjorn	-	Meyer	ROV	16.05.04	20:17:00	61	10,5205	61,175341	2	14,6048	2,243413	2004
208	764/04	Kvitebjorn	-	Wendt	SES	16.05.04	22:14:00	61	12,4304	61,207173	2	18,0819	2,301365	2004
208	765/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	08:00:00	61	10,5080	61,175133	2	14,6430	2,244050	2004
208	766/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	08:32:00	61	10,4411	61,174019	2	14,5679	2,242798	2004
208	767/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	09:09:40	61	10,5040	61,175067	2	14,5990	2,243317	2004
208	768/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	10:25:00	61	10,4602	61,174336	2	14,5441	2,242402	2004
208	769/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	11:03:10	61	10,3913	61,173189	2	14,5807	2,243011	2004
208	770/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	11:25:30	61	10,4192	61,173653	2	14,5260	2,242100	2004
208	771/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	11:50:00	61	10,4228	61,173714	2	14,5367	2,242278	2004
208	772/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	12:22:00	61	10,4330	61,173883	2	14,5565	2,242609	2004
208	773/04	Kvitebjorn	-	Wilkop	TV-MUC	17.05.04	12:41:30	61	10,4490	61,174150	2	14,5820	2,243033	2004
208	774/04	Kvitebjorn	-	Meyer	ROV	17.05.04	14:05:30	61	10,4821	61,174702	2	14,6683	2,244472	2004
208	775/04	Kvitebjorn	-	Meyer	ROV	17.05.04	15:52:00	61	10,5436	61,175727	2	14,5314	2,242190	2004
208	776/04	Kvitebjorn	-	Meyer	ROV	17.05.04	17:06:00	61	10,5272	61,175453	2	14,4862	2,241437	2004
208	777/04	Kvitebjorn	-	Meyer	ROV	17.05.04	17:35:00	61	10,5092	61,175153	2	14,3467	2,239112	2004

208	778/04	Kvitebjorn	-	Gauger	CTD	17.05.04	18:30:00	61	10,4765	61,174608	2	14,6529	2,244215	2004
208	779/04	Skagerrak	-	Wendt	SES	19.05.04	05:34:00	58	15,8940	58,264900	9	17,2960	9,288267	2004
208	780/04	Skagerrak	-	Wendt	SES	19.05.04	07:01:20	58	16,4600	58,274333	9	18,6150	9,310250	2004
208	781/04	Skagerrak	-	Wendt	SES	19.05.04	23:49:00	57	51,8505	57,864175	9	49,2752	9,821254	2004
208	782/04	Skagerrak	-	Wendt	SES	20.05.04	00:42:00	57	57,1225	57,952041	9	42,4390	9,707316	2004