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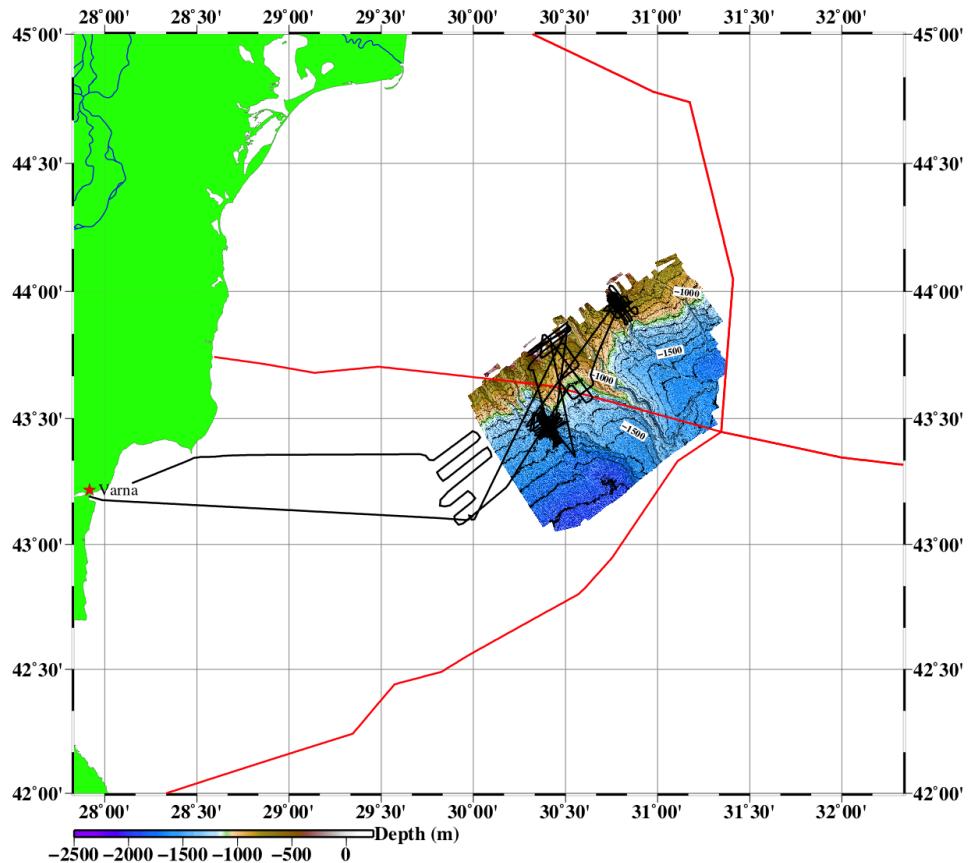
## Short Cruise Report R/V MARIA S. MERIAN – MSM34/2

**Varna, Bulgaria – Varna, Bulgaria**

**28.12.2013 – 18.01.2014**

**Chief Scientist: Dr. Joerg Bialas**

**Captain: Ralf Schmidt**



*Cruise Track MSM34/2*

## **Objectives**

Gas hydrates have been the focus of scientific and economic interest for the past 15-20 years, mainly because the amount of carbon stored in gas hydrates is much greater than in other carbon reservoirs. Several countries including Japan, Korea and India have launched vast research programs dedicated to the exploration for gas hydrate resources and ultimately the exploitation of the gas hydrates for methane. The German SUGAR project that is financed by the Ministry of Education and Research (BmBF) and the Ministry of Economics (BmWi) aims at developing technology to exploit gas hydrate resources by injecting and storing CO<sub>2</sub> instead of methane in the hydrates. This approach includes techniques to locate and quantify hydrate reservoirs, drill into the reservoir, extract methane from the hydrates by replacing it with CO<sub>2</sub>, and monitor the thus formed CO<sub>2</sub>-hydrate reservoir. Numerical modeling has shown that any exploitation of the gas hydrates can only be successful, if sufficient hydrate resources are present within permeable reservoirs such as sandy or gravelly deposits. The ultimate goal of the SUGAR project being a field test of the technology developed within the project, knowledge of a suitable test site becomes crucial. Within European waters only the Norwegian margin and the Danube deep-sea fan show clear geophysical evidence for large gas hydrate accumulations, but only the Danube deep-sea fan most likely contains gas hydrates within sandy deposits. The main objective of cruise MSM34, therefore, is locating and characterizing suitable gas hydrate deposits on the Danube deep-sea fan.

## **Narrative**

On Friday 27.12.13 R/V MARIA S. MERIAN returned from cruise MSM34/ Leg 1 to the port of Varna. PIs of Leg 2, Dr. Bialas and Dr. Haeckel, joined with the PI of Leg 1 Dr. Klaucke on board the vessel to discuss the results of the cruise. Seismic 2D profiling on Leg 1 was dedicated to provide a regional overview for the search of buried channel levee systems within the hydrate stability zone of the ancient Danube fan. On a first glance one promising channel levee system could be identified only, which seems to be accessible for a future drilling campaign with the mobile drilling device MeBo. Outline of the BSR distribution across the 2D seismic grid shows substantial differences to those published previously. Along seismic 2D line 15 the BSR could be mapped upwards the slope until it coincides almost with the seafloor. This area was chosen of second most interest. A third target area was the possible slump distribution within the vicinity of the shallow Piezometer deployment site at the shelf break.

In the evening of 27.12.13 the remaining 11 scientific crew members arrived at the port of Varna. Together with 5 crew members of Leg 1 a total of 18 scientists joined for geophysical and geochemical investigations during cruise MSM34/ Leg 2 on board. To avoid delays caused by season holidays all equipment was shipped with two trucks for the port call of Leg 1 already. A safety familiarization was undertaken in the afternoon of the 29.12.13 with all scientists. After two days of preparation major set up of equipment was completed on deck and in the laboratories when R/V MERIAN left the port of Varna on 29.12.13 at 19:00 hrs. Weather conditions were calm, less than 4 Bft. with wave heights less than 1.5 m. Weather conditions were stable through the following days.

During transit towards the working area two short PARASOUND profiles were recorded across a possible vent site that was observed by our colleagues from NIOZ in early 2013. At this time no flare was observed in the water column. In the morning of 30.12.13 a safety instruction training was undertaken with all crew on board. At 10:30 hrs scientific investigations of MSM34 Leg 2 began with multicore, gravity core and heatflow sampling next to the shallow Piezometer site of Leg 1. At 15:30 the acoustic releases of the OBS were tested at 1400 m water depth. A calibration of the heatflow probe and a sound velocity profile were taken as well. Next 15 OBS were deployed within the foreseen area of the 3D seismic cube.

On the 31.12.13 at 01:20 deployment of 15 OBS was completed. After some bathymetric profiles a gravity core was taken at the southern limits of the 3D area before deployment of the P-Cable system. Due to water penetration in the wet end termination of the P-Cable umbilical a 2D seismic

survey was run to serve airgun shots for the OBS array. At 18:30 a 45 / 45 cinch GI airgun and 5 streamer sections were deployed. Q/C tests for shot gathers did show interfering signals from M/V CGG SYMPHONY, a seismic 3D industry vessel operating in the Han Asparuh block. Due to far offsets and orthogonal survey outline the signals disappeared in filtered and stacked section display. At 13:30 on 01.01.14 the 2D seismic survey was completed. Deployment of the P-Cable was completed at 18:30 with 14 nodes. Nodes 5 to 8 were equipped with doubled streamer sections. Airgun shots were fired at 5 sec. interval. Q/C tests did not show any remaining interferences caused by the M/V CGG SYMPHONY operations.

P-Cable operation was continued until 13:00 hrs on 04.01.14. In the afternoon two multicorer stations were sampled. At 18:30 hrs the heatflow probe was deployed. 11 stations were sampled until 01:30 of the 05.01.14. The night hours were used to recover the 15 OBS.

On the 05.01.14 at 10:00 hrs sampling of two gravity cores at the western and eastern end of the heatflow profile followed. Next the seismic survey was continued after deployment of the P-Cable at 16:30 hrs.

On the 06.01.14 at 10:00 hrs the injector of the airgun failed and the gun was replaced. Following the data connection to the P-Cable streamers was lost. It turned out that the data umbilical between vessel and P-Cable need to be changed. The repair time was used to deploy a Mini-Corer at 17:30 hrs. At 22:00 hrs the P-Cable survey was continued.

At 03:00 hrs on 07.01.14 streamer section 6 delivered incomplete data. Node four of the P-Cable was taken out of the configuration scheme of the recording software and the survey was continued without recovery of the P-Cable.

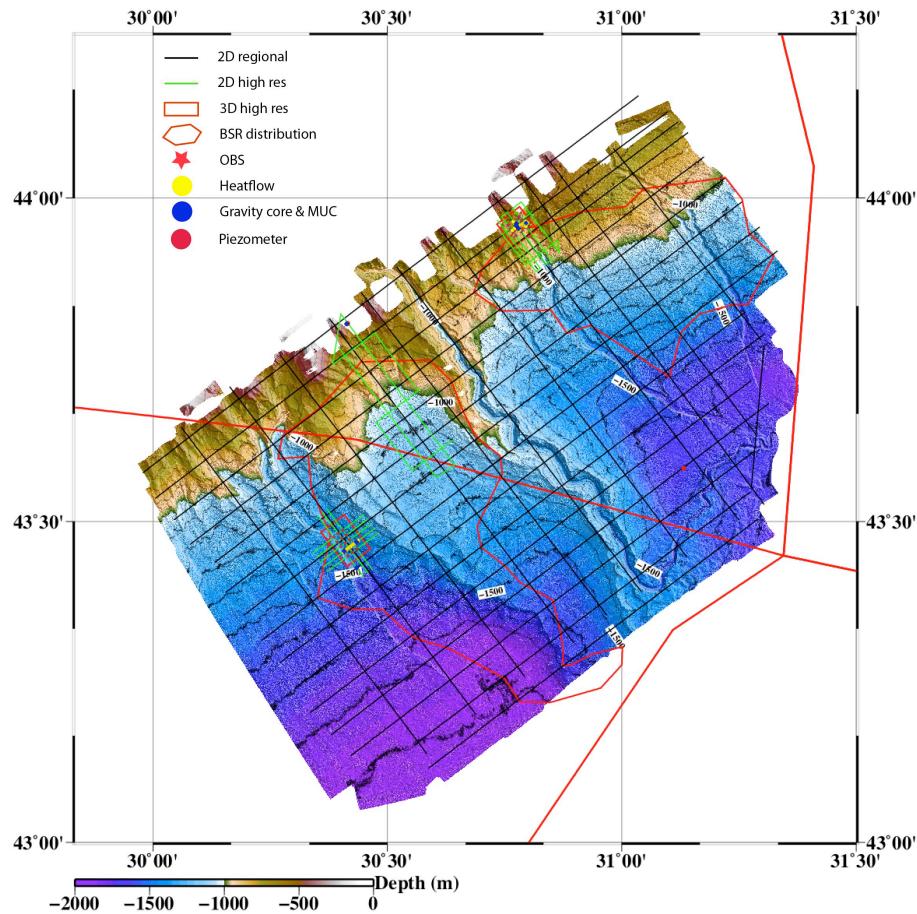
The remaining 3D survey could be completed without system failure. Acquisition was stopped on 09.01.14 at 10:00 hrs. After a short transit R/V MARIA S. MERIAN arrived in the second work area. At 13:00 hrs research work continued with acquisition of gravity corer, Multi-Corer samples and a third heatflow profile. Starting at 20:00 hrs 12 OBS were deployed until 23:00 hrs.

At 01:30 on 09.01.14 hrs acquisition of the second 3D seismic data volume started. The survey area covered parts of a slump area and the neighbouring canyon system.

The survey was completed without breaks on 13.01.14 at 13:00 hrs. Gravity coring, Multi-Corer and heatflow profiling was undertaken in the afternoon and night hours.

At 14.01.14 at 02:00 hrs 2D seismic profiling began to extend the survey area beyond the limits of the 3D cube. At 23:00 hrs recovery of 12 OBS took place until 03:30.

On 15.01.14 heatflow profiling began in order to connect measures from the slump area into the depression of the canyon system. Due to anomalous temperatures measured at the base of the canyon additional temperature and heatflow measurements were taken to better estimate the limits of the anomaly. For ground trothing a gravity core was taken on short notice prior to transit for the third working area. At 14:00 hrs a final 2D seismic survey began across a buried slump volume. On 16.01.14 seismic data acquisition was terminated at 08:15 hrs. Following a short transit a last multibeam and Parasound survey investigated the so-called NIOZ bubble site with water column imaging. Scientific work of cruise MSM34 was terminated at 24:00 hrs when R/V MARIA S MERIAN set course towards the port of Varna.



*Bathymetric map with profiles and stations of cruise MSM34-2*

## Acknowledgements

The scientific party of cruise MSM34-2 gratefully acknowledges the very warm and friendly welcome by Captain Ralf Schmidt and his entire crew. Their engaged, professional and most flexible support provided substantial contribution the great success of this cruise. We appreciate the support of the Leitstelle Deutsche Forschungsschiffe. Financial support for the cruise was jointly provided by the German SUGAR Project (BMBF 03G0819A) the EU funded Project MIDAS (FP7 603418) and the GEOMAR Marine Geodynamics department.

## Participants

#	Name	Expertise	Institute
1	Bialas, Jörg	Chief scientist/seismic	GEOMAR
2	Dannowski, Anke	OBS	GEOMAR
3	Koch, Stefanie	Seismic processing	GEOMAR
4	Sakar, Sudipta	Seismic interpretation	GEOMAR
5	Zander, Timo	Seismic interpretation	GEOMAR
6	Wetzel, Gero	Electronic engineering	GEOMAR
7	Matthiesen, Torge	Mechanic engineering	GEOMAR
8	Sauermilch, Isabel	OBS	GEOMAR
9	Gross, Felix	Parasound/Multibeam	GEOMAR
10	Schroeder, Henning	Seismic/OBS	GEOMAR
11	Schroller, Dirk	Geochemistry	GEOMAR
12	Haeckel, Matthias	Geochemistry	GEOMAR
13	Dibbern, Meike	Geochemistry	GEOMAR
14	Bigalke, Nikolaus	Geochemistry	GEOMAR
15	Pape, Thomas	Geochemistry	MARUM
16	Atgin, Orhan	Seismic	IMST-Seislab
17	Küçük, Hilmi Mert	Seismic	IMST-Seislab
18	Özel, Özkan	Seismic	IMST-Seislab

## Institutes

GEOMAR      Helmholtz-Zentrum für Ozeanforschung Kiel  
IMST-Seislab    Institute of Marine Science and Technology, Dokuz-Eylül University, Izmir  
IO-BAS        Institute of Oceanography, Bulgarian Academy of Science, Varna  
MARUM        Centre for Marine Environmental Sciences, Bremen

## Stationsliste

Station No.	Date	Time [UTC]	Position Lat	Position Lon	Depth [m]	Gear	Action
MSM34/001-1	30.12.13	00:40	43° 5,87' N	29° 58,26' E	1648,3	Multibeam und ParaSound	start profil
MSM34/001-1	30.12.13	00:56	43° 6,51' N	29° 59,43' E	1626,3	Multibeam und ParaSound	profile end
MSM34/001-2	30.12.13	01:16	43° 6,59' N	29° 58,58' E	1622,6	Multibeam und ParaSound	start profil
MSM34/001-2	30.12.13	01:31	43° 5,89' N	29° 59,57' E	1643,9	Multibeam und ParaSound	profile end
MSM34/002-1	30.12.13	05:59	43° 51,91' N	30° 31,15' E	700,1	Multibeam und ParaSound	start profil
MSM34/002-1	30.12.13	07:52	43° 45,07' N	30° 18,79' E	393,3	Multibeam und ParaSound	profile end
MSM34/003-1	30.12.13	08:56	43° 48,35' N	30° 24,79' E	418	Heat Flow	in the water
MSM34/003-1	30.12.13	09:33	43° 48,35' N	30° 24,79' E	425,5	Heat Flow	at the bottom
MSM34/003-1	30.12.13	09:48	43° 48,35' N	30° 24,79' E	422,5	Heat Flow	start heaving
MSM34/003-1	30.12.13	10:07	43° 48,35' N	30° 24,79' E	422	Heat Flow	on deck
MSM34/003-2	30.12.13	10:15	43° 48,35' N	30° 24,79' E	418,9	Multi corer	surface
MSM34/003-2	30.12.13	10:29	43° 48,35' N	30° 24,78' E	417	Multi corer	at sea bottom
MSM34/003-2	30.12.13	10:42	43° 48,35' N	30° 24,79' E	414,1	Multi corer	on deck
MSM34/003-3	30.12.13	10:56	43° 48,35' N	30° 24,79' E	417,9	Gravity corer	surface
MSM34/003-3	30.12.13	11:17	43° 48,35' N	30° 24,78' E	419,2	Gravity corer	at sea bottom
MSM34/003-3	30.12.13	11:19	43° 48,35' N	30° 24,79' E	419,4	Gravity corer	off ground hoisting
MSM34/003-3	30.12.13	11:30	43° 48,35' N	30° 24,78' E	429	Gravity corer	on deck
MSM34/004-1	30.12.13	14:43	43° 20,79' N	30° 32,98' E	1735,2	Schallprofilsonde	at sea surface
MSM34/004-1	30.12.13	15:06	43° 20,80' N	30° 32,99' E	1735	Schallprofilsonde	information
MSM34/004-1	30.12.13	15:14	43° 20,80' N	30° 32,99' E	1735	Schallprofilsonde	at max. depth
MSM34/004-1	30.12.13	15:30	43° 20,80' N	30° 32,99' E	1735	Schallprofilsonde	information
MSM34/004-1	30.12.13	15:54	43° 20,80' N	30° 32,99' E	1741,9	Schallprofilsonde	back to deck
MSM34/004-2	30.12.13	16:35	43° 20,80' N	30° 32,99' E	1736,4	Heat Flow	in the water
MSM34/004-2	30.12.13	17:07	43° 20,80' N	30° 32,99' E	1745,2	Heat Flow	Information
MSM34/004-2	30.12.13	17:44	43° 20,80' N	30° 32,99' E	1737,2	Heat Flow	on deck
MSM34/005-1	30.12.13	19:07	43° 29,18' N	30° 24,31' E	1424,8	Ocean Bottom Seismometer	surface

MSM34/006-1	30.12.13	19:31	43° 28,74' N	30° 24,75' E	1443	Ocean Bottom Seismometer	surface
MSM34/007-1	30.12.13	19:48	43° 28,31' N	30° 25,20' E	1459,4	Ocean Bottom Seismometer	surface
MSM34/008-1	30.12.13	20:02	43° 27,88' N	30° 25,64' E	1465	Ocean Bottom Seismometer	surface
MSM34/009-1	30.12.13	20:16	43° 27,45' N	30° 26,09' E	1494	Ocean Bottom Seismometer	surface
MSM34/010-1	30.12.13	20:38	43° 27,13' N	30° 25,50' E	1497,1	Ocean Bottom Seismometer	surface
MSM34/011-1	30.12.13	20:57	43° 27,57' N	30° 25,06' E	1474,8	Ocean Bottom Seismometer	surface
MSM34/012-1	30.12.13	21:14	43° 28,00' N	30° 24,62' E	1443,3	Ocean Bottom Seismometer	surface
MSM34/013-1	30.12.13	21:29	43° 28,43' N	30° 24,16' E	1466,8	Ocean Bottom Seismometer	surface
MSM34/014-1	30.12.13	21:44	43° 28,86' N	30° 23,72' E	1453,1	Ocean Bottom Seismometer	surface
MSM34/015-1	30.12.13	22:02	43° 28,53' N	30° 23,13' E	1449,6	Ocean Bottom Seismometer	surface
MSM34/016-1	30.12.13	22:27	43° 28,10' N	30° 23,58' E	1470,2	Ocean Bottom Seismometer	surface
MSM34/017-1	30.12.13	22:44	43° 27,67' N	30° 24,02' E	1480,8	Ocean Bottom Seismometer	surface
MSM34/018-1	30.12.13	23:01	43° 27,24' N	30° 24,47' E	1501,2	Ocean Bottom Seismometer	surface
MSM34/019-1	30.12.13	23:27	43° 26,82' N	30° 24,91' E	1514,7	Ocean Bottom Seismometer	surface
MSM34/020-1	31.12.13	02:09	43° 43,16' N	30° 18,86' E	527,8	Multibeam und ParaSound	start profil
MSM34/020-1	31.12.13	02:47	43° 45,80' N	30° 22,55' E	443,1	Multibeam und ParaSound	alter course
MSM34/020-1	31.12.13	04:13	43° 51,01' N	30° 31,98' E	683,4	Multibeam und ParaSound	profile end
MSM34/021-1	31.12.13	05:25	43° 45,73' N	30° 17,98' E	365,8	Multibeam und ParaSound	start profil
MSM34/021-1	31.12.13	07:19	43° 52,63' N	30° 30,40' E	739,9	Multibeam und ParaSound	profile end
MSM34/022-1	31.12.13	09:57	43° 25,67' N	30° 26,06' E	1550,8	Gravity corer	surface
MSM34/022-1	31.12.13	10:32	43° 25,68' N	30° 26,05' E	1551,2	Gravity corer	at sea bottom
MSM34/022-1	31.12.13	10:33	43° 25,68' N	30° 26,05' E	1549,7	Gravity corer	off ground hoisting
MSM34/022-1	31.12.13	11:08	43° 25,68' N	30° 26,04' E	1550,5	Gravity corer	on deck
MSM34/023-1	31.12.13	12:24	43° 22,67' N	30° 26,09' E	1596,1	Seismic refraction profile	Stb. Paravane lowered in to water
MSM34/023-1	31.12.13	12:30	43° 22,77' N	30° 26,10' E	1569,5	Seismic refraction profile	information
MSM34/023-1	31.12.13	14:49	43° 23,43' N	30° 26,70' E	1617,1	Seismic refraction profile	Stb. Paravane on deck
MSM34/024-1	31.12.13	16:44	43° 23,36' N	30° 27,22' E	1628,4	Seismic refraction profile	information
MSM34/024-1	31.12.13	16:50	43° 23,44' N	30° 27,28' E	1605,3	Seismic refraction profile	Streamer to water

MSM34/024-1	31.12.13	17:05	43° 23,66' N	30° 27,44' E	1590,3	Seismic refraction profile	airguns out
MSM34/024-1	31.12.13	17:41	43° 25,40' N	30° 28,16' E	1549,9	Seismic refraction profile	start profile
MSM34/024-1	31.12.13	19:28	43° 31,07' N	30° 22,34' E	1348,4	Seismic refraction profile	alter course
MSM34/024-1	31.12.13	22:17	43° 24,98' N	30° 27,71' E	1617,1	Seismic refraction profile	alter course
MSM34/024-1	01.01.14	00:30	43° 30,79' N	30° 20,79' E	1327,4	Seismic refraction profile	information
MSM34/024-1	01.01.14	01:46	43° 27,03' N	30° 20,33' E	1429,9	Seismic refraction profile	alter course
MSM34/024-1	01.01.14	03:14	43° 30,57' N	30° 26,83' E	1244,5	Seismic refraction profile	alter course
MSM34/024-1	01.01.14	05:23	43° 26,62' N	30° 20,89' E	1466,2	Seismic refraction profile	alter course
MSM34/024-1	01.01.14	07:26	43° 29,90' N	30° 27,97' E	1257,8	Seismic refraction profile	alter course
MSM34/024-1	01.01.14	09:20	43° 25,81' N	30° 21,89' E	1490,3	Seismic refraction profile	alter course
MSM34/024-1	01.01.14	11:16	43° 28,88' N	30° 28,75' E	1315,5	Seismic refraction profile	end profile
MSM34/024-1	01.01.14	11:35	43° 29,16' N	30° 29,99' E	1218,5	Seismic refraction profile	airgun on deck
MSM34/024-1	01.01.14	11:41	43° 29,16' N	30° 30,25' E	1231,6	Seismic refraction profile	streamer on deck
MSM34/025-1	01.01.14	14:36	43° 26,19' N	30° 21,43' E	1476,8	Seismic refraction profile	Stb. Paravane lowered in to water
MSM34/025-1	01.01.14	15:19	43° 25,97' N	30° 22,83' E	1490,5	Seismic refraction profile	Streamer array + data cable lowered into water
MSM34/025-1	01.01.14	17:01	43° 25,46' N	30° 26,04' E	1553,1	Seismic refraction profile	PS Paravane lowered into water
MSM34/025-1	01.01.14	17:23	43° 25,32' N	30° 26,86' E	1547,6	Seismic refraction profile	Airguns out
MSM34/025-1	01.01.14	18:55	43° 25,81' N	30° 25,00' E	1463,4	Seismic refraction profile	start profile
MSM34/025-1	01.01.14	20:16	43° 29,14' N	30° 21,54' E	1406,6	Seismic refraction profile	alter course
MSM34/025-1	01.01.14	22:11	43° 26,10' N	30° 26,49' E	1537,1	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	00:11	43° 29,40' N	30° 21,34' E	1405,9	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	02:09	43° 26,43' N	30° 26,25' E	1522,3	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	03:58	43° 29,14' N	30° 21,67' E	1407,1	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	05:45	43° 26,63' N	30° 26,10' E	1523,6	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	06:52	43° 27,19' N	30° 23,70' E	1402,4	Seismic refraction profile	information
MSM34/025-1	02.01.14	07:39	43° 29,15' N	30° 21,73' E	1409,8	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	09:32	43° 26,35' N	30° 26,44' E	1529,5	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	11:31	43° 29,40' N	30° 21,54' E	1410,5	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	13:26	43° 26,44' N	30° 26,43' E	1551,2	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	15:26	43° 29,29' N	30° 21,70' E	1413,9	Seismic refraction profile	alter course

MSM34/025-1	02.01.14	17:13	43° 26,61' N	30° 26,31' E	1521	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	19:05	43° 29,28' N	30° 21,79' E	1417,6	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	21:00	43° 26,50' N	30° 26,49' E	1529	Seismic refraction profile	alter course
MSM34/025-1	02.01.14	22:58	43° 29,44' N	30° 21,68' E	1411,6	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	00:57	43° 26,36' N	30° 26,70' E	1535,8	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	02:56	43° 29,33' N	30° 21,86' E	1415,6	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	04:44	43° 26,65' N	30° 26,46' E	1524,4	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	06:39	43° 29,38' N	30° 21,88' E	1424,5	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	08:32	43° 26,56' N	30° 26,62' E	1527,5	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	10:33	43° 29,58' N	30° 21,73' E	1405,6	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	12:27	43° 26,74' N	30° 26,50' E	1529,2	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	14:32	43° 29,37' N	30° 22,02' E	1426,3	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	16:29	43° 26,70' N	30° 26,59' E	1530,1	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	18:26	43° 29,51' N	30° 21,94' E	1410,3	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	20:23	43° 26,52' N	30° 26,89' E	1536,3	Seismic refraction profile	alter course
MSM34/025-1	03.01.14	22:26	43° 29,69' N	30° 21,83' E	1399,4	Seismic refraction profile	alter course
MSM34/025-1	04.01.14	00:30	43° 26,43' N	30° 27,01' E	1535,5	Seismic refraction profile	alter course
MSM34/025-1	04.01.14	02:30	43° 29,48' N	30° 22,10' E	1417,9	Seismic refraction profile	alter course
MSM34/025-1	04.01.14	04:19	43° 26,72' N	30° 26,78' E	1526,1	Seismic refraction profile	alter course
MSM34/025-1	04.01.14	06:12	43° 29,59' N	30° 22,05' E	1416,4	Seismic refraction profile	alter course
MSM34/025-1	04.01.14	08:04	43° 26,63' N	30° 26,95' E	1535,8	Seismic refraction profile	alter course
MSM34/025-1	04.01.14	10:01	43° 29,67' N	30° 22,05' E	1402,7	Seismic refraction profile	alter course
MSM34/025-1	04.01.14	11:06	43° 28,76' N	30° 24,79' E	1427,4	Seismic refraction profile	end profile
MSM34/025-1	04.01.14	11:09	43° 28,64' N	30° 24,91' E	1429,6	Seismic refraction profile	Airguns on deck
MSM34/025-1	04.01.14	11:46	43° 28,84' N	30° 26,43' E	1384,1	Seismic refraction profile	P. Paravane on deck
MSM34/025-1	04.01.14	12:19	43° 29,25' N	30° 27,00' E	1338,2	Seismic refraction profile	Streamer array + dataable on deck
MSM34/025-1	04.01.14	12:30	43° 29,38' N	30° 27,18' E	1306,3	Seismic refraction profile	Stb. Paravane on deck
MSM34/026-1	04.01.14	13:08	43° 27,24' N	30° 24,46' E	1504,3	Multi corer	surface
MSM34/026-1	04.01.14	13:48	43° 27,23' N	30° 24,47' E	1498,4	Multi corer	at sea bottom
MSM34/026-1	04.01.14	14:22	43° 27,23' N	30° 24,47' E	1499,9	Multi corer	on deck
MSM34/027-1	04.01.14	14:46	43° 28,09' N	30° 26,03' E	1457,9	Multi corer	surface

MSM34/027-1	04.01.14	15:20	43° 28,10' N	30° 26,04' E	1465,8	Multi corer	at sea bottom
MSM34/027-1	04.01.14	16:00	43° 28,10' N	30° 26,04' E	1466,7	Multi corer	on deck
MSM34/028-1	04.01.14	16:22	43° 28,22' N	30° 26,25' E	1438,4	Heat Flow	in the water
MSM34/028-1	04.01.14	16:57	43° 28,22' N	30° 26,25' E	1438,4	Heat Flow	at the bottom
MSM34/028-1	04.01.14	17:13	43° 28,22' N	30° 26,25' E	1444,1	Heat Flow	start heaving
MSM34/028-1	04.01.14	17:17	43° 28,22' N	30° 26,25' E	1435,6	Heat Flow	off bottom
MSM34/029-1	04.01.14	17:49	43° 28,09' N	30° 26,03' E	1463,5	Heat Flow	start lowering
MSM34/029-1	04.01.14	17:52	43° 28,09' N	30° 26,03' E	1458,2	Heat Flow	at the bottom
MSM34/029-1	04.01.14	18:08	43° 28,09' N	30° 26,03' E	1460	Heat Flow	start heaving
MSM34/029-1	04.01.14	18:11	43° 28,09' N	30° 26,03' E	1458,9	Heat Flow	off bottom
MSM34/030-1	04.01.14	18:34	43° 27,95' N	30° 25,79' E	1464,5	Heat Flow	start lowering
MSM34/030-1	04.01.14	18:38	43° 27,95' N	30° 25,79' E	1471,1	Heat Flow	at the bottom
MSM34/030-1	04.01.14	18:53	43° 27,95' N	30° 25,79' E	1469,9	Heat Flow	start heaving
MSM34/030-1	04.01.14	18:56	43° 27,95' N	30° 25,79' E	1470,7	Heat Flow	off bottom
MSM34/031-1	04.01.14	19:16	43° 27,86' N	30° 25,62' E	1488,4	Heat Flow	start lowering
MSM34/031-1	04.01.14	19:19	43° 27,86' N	30° 25,62' E	1471	Heat Flow	at the bottom
MSM34/031-1	04.01.14	19:26	43° 27,86' N	30° 25,62' E	1470,5	Heat Flow	start heaving
MSM34/031-1	04.01.14	19:28	43° 27,86' N	30° 25,62' E	1469,5	Heat Flow	off bottom
MSM34/032-1	04.01.14	19:49	43° 27,75' N	30° 25,44' E	1476,6	Heat Flow	start lowering
MSM34/032-1	04.01.14	19:52	43° 27,75' N	30° 25,44' E	1485,4	Heat Flow	at the bottom
MSM34/032-1	04.01.14	20:01	43° 27,75' N	30° 25,44' E	1484,3	Heat Flow	start heaving
MSM34/032-1	04.01.14	20:02	43° 27,75' N	30° 25,44' E	1476,8	Heat Flow	off bottom
MSM34/033-1	04.01.14	20:21	43° 27,67' N	30° 25,26' E	1470,6	Heat Flow	start lowering
MSM34/033-1	04.01.14	20:24	43° 27,67' N	30° 25,26' E	1473	Heat Flow	at the bottom
MSM34/033-1	04.01.14	20:31	43° 27,67' N	30° 25,26' E	1471	Heat Flow	start heaving
MSM34/033-1	04.01.14	20:33	43° 27,67' N	30° 25,26' E	1473,5	Heat Flow	off bottom
MSM34/034-1	04.01.14	20:52	43° 27,55' N	30° 25,05' E	1474,1	Heat Flow	start lowering
MSM34/034-1	04.01.14	20:54	43° 27,55' N	30° 25,05' E	1473,5	Heat Flow	at the bottom
MSM34/034-1	04.01.14	21:01	43° 27,55' N	30° 25,05' E	1476,6	Heat Flow	start heaving
MSM34/034-1	04.01.14	21:04	43° 27,55' N	30° 25,05' E	1480,6	Heat Flow	off bottom
MSM34/035-1	04.01.14	21:18	43° 27,47' N	30° 24,91' E	1501,3	Heat Flow	start lowering
MSM34/035-1	04.01.14	21:21	43° 27,47' N	30° 24,91' E	1506,1	Heat Flow	at the bottom
MSM34/035-1	04.01.14	21:28	43° 27,47' N	30° 24,91' E	1496,3	Heat Flow	start heaving
MSM34/035-1	04.01.14	21:30	43° 27,47' N	30° 24,91' E	1500,3	Heat Flow	off bottom
MSM34/036-1	04.01.14	21:46	43° 27,37' N	30° 24,74' E	1501,7	Heat Flow	start lowering

MSM34/036-1	04.01.14	21:49	43° 27,37' N	30° 24,73' E	1501,8		Heat Flow	at the bottom
MSM34/036-1	04.01.14	21:57	43° 27,37' N	30° 24,73' E	1501,8		Heat Flow	start heaving
MSM34/036-1	04.01.14	21:58	43° 27,37' N	30° 24,74' E	1501,7		Heat Flow	off bottom
MSM34/037-1	04.01.14	22:20	43° 27,27' N	30° 24,56' E	1500,2		Heat Flow	start lowering
MSM34/037-1	04.01.14	22:22	43° 27,27' N	30° 24,56' E	1504,3		Heat Flow	at the bottom
MSM34/037-1	04.01.14	22:29	43° 27,27' N	30° 24,56' E	1501,6		Heat Flow	start heaving
MSM34/037-1	04.01.14	22:31	43° 27,27' N	30° 24,56' E	1502,6		Heat Flow	off bottom
MSM34/038-1	04.01.14	22:51	43° 27,18' N	30° 24,37' E	1497,3		Heat Flow	start lowering
MSM34/038-1	04.01.14	22:53	43° 27,18' N	30° 24,37' E	1499,3		Heat Flow	at the bottom
MSM34/038-1	04.01.14	23:00	43° 27,18' N	30° 24,37' E	1503,9		Heat Flow	start heaving
MSM34/038-1	04.01.14	23:28	43° 27,18' N	30° 24,37' E	1497,7		Heat Flow	on deck
MSM34/018-1	04.01.14	23:36	43° 27,18' N	30° 24,37' E	0	Ocean Bottom Seismometer	released	
MSM34/018-1	04.01.14	23:55	43° 27,22' N	30° 24,19' E	0	Ocean Bottom Seismometer	sighted	
MSM34/018-1	04.01.14	23:56	43° 27,23' N	30° 24,20' E	0	Ocean Bottom Seismometer	on deck	
MSM34/017-1	05.01.14	00:10	43° 27,14' N	30° 24,43' E	0	Ocean Bottom Seismometer	released	
MSM34/017-1	05.01.14	00:27	43° 27,72' N	30° 23,75' E	0	Ocean Bottom Seismometer	sighted	
MSM34/016-1	05.01.14	00:41	43° 27,55' N	30° 23,90' E	0	Ocean Bottom Seismometer	released	
MSM34/017-1	05.01.14	00:41	43° 27,55' N	30° 23,90' E	0	Ocean Bottom Seismometer	on deck	
MSM34/016-1	05.01.14	01:00	43° 28,16' N	30° 23,20' E	0	Ocean Bottom Seismometer	sighted	
MSM34/015-1	05.01.14	01:14	43° 27,99' N	30° 23,43' E	0	Ocean Bottom Seismometer	released	
MSM34/016-1	05.01.14	01:16	43° 27,99' N	30° 23,44' E	0	Ocean Bottom Seismometer	on deck	
MSM34/015-1	05.01.14	01:37	43° 28,62' N	30° 22,81' E	0	Ocean Bottom Seismometer	sighted	
MSM34/014-1	05.01.14	01:50	43° 28,40' N	30° 23,01' E	0	Ocean Bottom Seismometer	released	
MSM34/015-1	05.01.14	01:51	43° 28,39' N	30° 23,00' E	0	Ocean Bottom Seismometer	on deck	
MSM34/014-1	05.01.14	02:09	43° 28,88' N	30° 23,44' E	0	Ocean Bottom Seismometer	sighted	
MSM34/013-1	05.01.14	02:17	43° 28,77' N	30° 23,64' E	0	Ocean Bottom Seismometer	released	
MSM34/014-1	05.01.14	02:19	43° 28,76' N	30° 23,65' E	0	Ocean Bottom Seismometer	on deck	
MSM34/013-1	05.01.14	02:39	43° 28,53' N	30° 24,02' E	0	Ocean Bottom Seismometer	sighted	
MSM34/012-1	05.01.14	02:49	43° 28,31' N	30° 24,02' E	0	Ocean Bottom Seismometer	released	
MSM34/013-1	05.01.14	02:51	43° 28,30' N	30° 24,00' E	0	Ocean Bottom Seismometer	on deck	
MSM34/012-1	05.01.14	03:11	43° 28,01' N	30° 24,28' E	0	Ocean Bottom Seismometer	sighted	
MSM34/011-1	05.01.14	03:19	43° 27,86' N	30° 24,49' E	0	Ocean Bottom Seismometer	released	
MSM34/012-1	05.01.14	03:22	43° 27,82' N	30° 24,50' E	0	Ocean Bottom Seismometer	on deck	
MSM34/011-1	05.01.14	03:40	0° 0,00' N	0° 0,00' E	0	Ocean Bottom Seismometer	sighted	
MSM34/010-1	05.01.14	03:46	43° 27,43' N	30° 24,93' E	0	Ocean Bottom Seismometer	released	
MSM34/011-1	05.01.14	03:48	43° 27,40' N	30° 24,94' E	0	Ocean Bottom Seismometer	on deck	

MSM34/010-1	05.01.14	04:07	43° 27,11' N	30° 25,24' E	0	Ocean Bottom Seismometer	sighted
MSM34/019-1	05.01.14	04:14	43° 27,04' N	30° 25,39' E	0	Ocean Bottom Seismometer	released
MSM34/010-1	05.01.14	04:16	43° 27,04' N	30° 25,41' E	0	Ocean Bottom Seismometer	on deck
MSM34/019-1	05.01.14	04:38	43° 26,81' N	30° 25,00' E	0	Ocean Bottom Seismometer	sighted
MSM34/009-1	05.01.14	04:44	43° 26,73' N	30° 24,83' E	0	Ocean Bottom Seismometer	released
MSM34/019-1	05.01.14	04:46	43° 26,72' N	30° 24,81' E	0	Ocean Bottom Seismometer	on deck
MSM34/009-1	05.01.14	05:06	43° 27,24' N	30° 25,71' E	0	Ocean Bottom Seismometer	sighted
MSM34/008-1	05.01.14	05:12	43° 27,39' N	30° 25,96' E	0	Ocean Bottom Seismometer	released
MSM34/009-1	05.01.14	05:14	43° 27,40' N	30° 25,96' E	0	Ocean Bottom Seismometer	on deck
MSM34/008-1	05.01.14	05:34	43° 27,74' N	30° 25,56' E	0	Ocean Bottom Seismometer	sighted
MSM34/007-1	05.01.14	05:40	43° 27,82' N	30° 25,49' E	0	Ocean Bottom Seismometer	released
MSM34/008-1	05.01.14	05:42	43° 27,85' N	30° 25,48' E	0	Ocean Bottom Seismometer	on deck
MSM34/007-1	05.01.14	06:02	43° 28,16' N	30° 25,04' E	0	Ocean Bottom Seismometer	sighted
MSM34/006-1	05.01.14	06:08	43° 28,25' N	30° 25,00' E	0	Ocean Bottom Seismometer	released
MSM34/007-1	05.01.14	06:13	43° 28,30' N	30° 24,90' E	0	Ocean Bottom Seismometer	on deck
MSM34/006-1	05.01.14	06:29	43° 28,44' N	30° 24,72' E	0	Ocean Bottom Seismometer	sighted
MSM34/005-1	05.01.14	06:38	43° 28,68' N	30° 24,54' E	0	Ocean Bottom Seismometer	released
MSM34/006-1	05.01.14	06:40	43° 28,73' N	30° 24,51' E	0	Ocean Bottom Seismometer	on deck
MSM34/005-1	05.01.14	06:57	43° 28,94' N	30° 24,44' E	0	Ocean Bottom Seismometer	sighted
MSM34/005-1	05.01.14	07:11	43° 29,17' N	30° 24,06' E	0	Ocean Bottom Seismometer	on deck
MSM34/039-1	05.01.14	08:08	43° 27,25' N	30° 24,47' E	1501,2	Gravity corer	surface
MSM34/039-1	05.01.14	08:45	43° 27,25' N	30° 24,48' E	1498,8	Gravity corer	at sea bottom
MSM34/039-1	05.01.14	08:46	43° 27,25' N	30° 24,48' E	1500,1	Gravity corer	off ground hoisting
MSM34/039-1	05.01.14	09:26	43° 27,25' N	30° 24,48' E	1500,3	Gravity corer	on deck
MSM34/040-1	05.01.14	10:09	43° 28,10' N	30° 26,03' E	1454	Gravity corer	surface
MSM34/040-1	05.01.14	10:43	43° 28,10' N	30° 26,04' E	1462,3	Gravity corer	at sea bottom
MSM34/040-1	05.01.14	10:44	43° 28,10' N	30° 26,04' E	1470,6	Gravity corer	off ground hoisting
MSM34/040-1	05.01.14	11:20	43° 28,10' N	30° 26,04' E	1463,3	Gravity corer	on deck
MSM34/041-1	05.01.14	12:28	43° 33,03' N	30° 21,66' E	1240,7	Seismic refraction profile	Stb. Paravane lowered in to water
MSM34/041-1	05.01.14	12:33	43° 32,93' N	30° 21,74' E	1261,9	Seismic refraction profile	Streamer array + dataable lowered into water
MSM34/041-1	05.01.14	13:49	43° 31,76' N	30° 22,48' E	1307,1	Seismic refraction profile	PS Paravane lowered into water
MSM34/041-1	05.01.14	14:20	43° 30,98' N	30° 22,98' E	1319,1	Seismic refraction profile	Airguns out
MSM34/041-1	05.01.14	14:39	43° 30,12' N	30° 23,47' E	1381,3	Seismic refraction profile	start profile

MSM34/041-1	05.01.14	16:03	43° 26,66' N	30° 27,05' E	1533,9	Seismic refraction profile	alter course
MSM34/041-1	05.01.14	17:57	43° 29,65' N	30° 22,12' E	1401,5	Seismic refraction profile	alter course
MSM34/041-1	05.01.14	19:51	43° 26,70' N	30° 27,07' E	1528,1	Seismic refraction profile	alter course
MSM34/041-1	05.01.14	21:47	43° 29,65' N	30° 22,19' E	1404,9	Seismic refraction profile	alter course
MSM34/041-1	05.01.14	23:45	43° 26,65' N	30° 27,13' E	1528,6	Seismic refraction profile	alter course
MSM34/041-1	06.01.14	01:50	43° 29,80' N	30° 22,04' E	1350,8	Seismic refraction profile	alter course
MSM34/041-1	06.01.14	03:45	43° 26,74' N	30° 27,11' E	1526,4	Seismic refraction profile	alter course
MSM34/041-1	06.01.14	05:40	43° 29,68' N	30° 22,24' E	1381,8	Seismic refraction profile	alter course
MSM34/041-1	06.01.14	07:35	43° 26,69' N	30° 27,19' E	1531	Seismic refraction profile	alter course
MSM34/041-1	06.01.14	09:00	43° 28,46' N	30° 23,56' E	1462,8	Seismic refraction profile	information
MSM34/041-1	06.01.14	09:09	43° 28,80' N	30° 23,20' E	1455,6	Seismic refraction profile	Airguns on deck
MSM34/041-1	06.01.14	09:15	43° 29,02' N	30° 22,97' E	1451,7	Seismic refraction profile	information
MSM34/041-1	06.01.14	09:39	43° 29,85' N	30° 22,14' E	1350,2	Seismic refraction profile	Airguns out
MSM34/041-1	06.01.14	10:16	43° 31,33' N	30° 20,58' E	1335,5	Seismic refraction profile	Airguns on deck
MSM34/041-1	06.01.14	10:55	43° 30,38' N	30° 19,24' E	1345,5	Seismic refraction profile	Stb. Paravane on deck
MSM34/041-1	06.01.14	11:00	43° 30,27' N	30° 19,22' E	1348,4	Seismic refraction profile	information
MSM34/041-1	06.01.14	12:56	43° 27,40' N	30° 18,61' E	1372,4	Seismic refraction profile	Streamer array + dataable on deck
MSM34/041-1	06.01.14	13:00	43° 27,30' N	30° 18,58' E	1363,8	Seismic refraction profile	P. Paravane on deck
MSM34/041-1	06.01.14	15:00	43° 30,25' N	30° 24,49' E	1345,4	Seismic refraction profile	information
MSM34/042-1	06.01.14	15:43	43° 25,68' N	30° 26,05' E	1553,6	Multi corer	surface
MSM34/042-1	06.01.14	16:20	43° 25,68' N	30° 26,07' E	1549,7	Multi corer	at sea bottom
MSM34/042-1	06.01.14	16:52	43° 25,68' N	30° 26,07' E	1548,3	Multi corer	on deck
MSM34/041-1	06.01.14	18:57	43° 31,27' N	30° 26,09' E	1186,3	Seismic refraction profile	Stb. Paravane lowered in to water
MSM34/041-1	06.01.14	20:11	43° 29,48' N	30° 25,65' E	1356,6	Seismic refraction profile	Streamer array + dataable lowered into water
MSM34/041-1	06.01.14	20:15	43° 29,38' N	30° 25,62' E	1375,7	Seismic refraction profile	PS Paravane lowered into water
MSM34/041-1	06.01.14	20:25	43° 29,05' N	30° 25,55' E	1392,3	Seismic refraction profile	Airguns out
MSM34/041-1	06.01.14	21:10	43° 28,19' N	30° 23,84' E	1462,2	Seismic refraction profile	information
MSM34/041-1	06.01.14	21:47	43° 29,67' N	30° 22,31' E	1377,6	Seismic refraction profile	alter course
MSM34/041-1	06.01.14	22:06	43° 30,53' N	30° 22,77' E	1371,2	Seismic refraction profile	Airguns on deck
MSM34/041-1	06.01.14	23:52	43° 26,41' N	30° 27,49' E	1530,3	Seismic refraction profile	alter course
MSM34/041-1	06.01.14	23:54	43° 26,30' N	30° 27,55' E	1533,4	Seismic refraction profile	Airguns out
MSM34/041-1	07.01.14	01:58	43° 29,82' N	30° 22,16' E	1351,7	Seismic refraction profile	alter course
MSM34/041-1	07.01.14	03:52	43° 26,79' N	30° 27,16' E	1508,4	Seismic refraction profile	alter course
MSM34/041-1	07.01.14	05:52	43° 29,77' N	30° 22,26' E	1375,2	Seismic refraction profile	alter course
MSM34/041-1	07.01.14	07:51	43° 26,73' N	30° 27,29' E	1517,3	Seismic refraction profile	alter course

MSM34/041-1	07.01.14	09:48	43° 29,80' N	30° 22,33' E	1368,2		Seismic refraction profile	alter course
MSM34/041-1	07.01.14	11:43	43° 26,76' N	30° 27,30' E	1518,3		Seismic refraction profile	alter course
MSM34/041-1	07.01.14	13:47	43° 29,87' N	30° 22,28' E	1353,5		Seismic refraction profile	alter course
MSM34/041-1	07.01.14	15:39	43° 26,93' N	30° 27,19' E	1502,1		Seismic refraction profile	alter course
MSM34/041-1	07.01.14	17:35	43° 29,73' N	30° 22,49' E	1373,5		Seismic refraction profile	alter course
MSM34/041-1	07.01.14	19:31	43° 26,80' N	30° 27,37' E	1506,5		Seismic refraction profile	alter course
MSM34/041-1	07.01.14	21:28	43° 29,79' N	30° 22,50' E	1363,2		Seismic refraction profile	alter course
MSM34/041-1	07.01.14	23:26	43° 26,83' N	30° 27,42' E	1509,3		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	01:29	43° 29,95' N	30° 22,38' E	1361,7		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	03:25	43° 26,95' N	30° 27,36' E	1494,5		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	05:18	43° 29,74' N	30° 22,64' E	1370,3		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	07:28	43° 26,65' N	30° 27,01' E	1529,8		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	09:24	43° 29,68' N	30° 22,04' E	1380,5		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	11:23	43° 26,57' N	30° 27,04' E	1531,1		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	11:46	43° 25,36' N	30° 26,60' E	1563,9		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	12:54	43° 27,73' N	30° 23,27' E	1390,6		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	13:11	43° 28,39' N	30° 22,60' E	1380,7		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	13:18	43° 28,68' N	30° 22,35' E	1367,9		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	13:32	43° 29,25' N	30° 21,76' E	1411,4		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	15:42	43° 26,49' N	30° 26,04' E	1516,7		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	17:18	43° 28,19' N	30° 23,12' E	1418,5		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	17:24	43° 28,42' N	30° 22,82' E	1395,1		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	17:49	43° 29,47' N	30° 21,72' E	1409,5		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	19:41	43° 26,58' N	30° 26,55' E	1527,7		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	21:47	43° 29,67' N	30° 21,84' E	1391		Seismic refraction profile	alter course
MSM34/041-1	08.01.14	23:49	43° 26,41' N	30° 27,03' E	1533,8		Seismic refraction profile	alter course
MSM34/041-1	09.01.14	01:53	43° 29,52' N	30° 22,01' E	1413,7		Seismic refraction profile	alter course
MSM34/041-1	09.01.14	03:19	43° 28,35' N	30° 24,13' E	1467,6		Seismic refraction profile	alter course
MSM34/041-1	09.01.14	03:26	43° 28,09' N	30° 24,46' E	1471		Seismic refraction profile	alter course
MSM34/041-1	09.01.14	04:09	43° 26,29' N	30° 26,33' E	1524,7		Seismic refraction profile	alter course
MSM34/041-1	09.01.14	05:03	43° 26,95' N	30° 24,09' E	1406,8		Seismic refraction profile	alter course
MSM34/041-1	09.01.14	05:32	43° 28,23' N	30° 23,07' E	1408,8		Seismic refraction profile	alter course
MSM34/041-1	09.01.14	05:57	43° 29,26' N	30° 22,01' E	1421,7		Seismic refraction profile	end profile
MSM34/041-1	09.01.14	06:21	43° 29,17' N	30° 20,56' E	1345,9		Seismic refraction profile	Airguns on deck
MSM34/041-1	09.01.14	07:04	43° 28,52' N	30° 18,74' E	1314,5		Seismic refraction profile	P. Paravane on deck
MSM34/041-1	09.01.14	07:23	43° 28,30' N	30° 18,06' E	1338,4		Seismic refraction profile	Streamer array + dataable on deck

MSM34/041-1	09.01.14	07:41	43° 28,09' N	30° 17,42' E	1326,6	Seismic refraction profile	Stb. Paravane on deck
MSM34/043-1	09.01.14	11:00	43° 57,44' N	30° 46,51' E	675,9	Gravity corer	surface
MSM34/043-1	09.01.14	11:21	43° 57,43' N	30° 46,50' E	681	Gravity corer	at sea bottom
MSM34/043-1	09.01.14	11:22	43° 57,43' N	30° 46,50' E	672,7	Gravity corer	off ground hoisting
MSM34/043-1	09.01.14	11:46	43° 57,43' N	30° 46,50' E	676	Gravity corer	on deck
MSM34/043-2	09.01.14	12:00	43° 57,43' N	30° 46,50' E	692,2	Multi corer	surface
MSM34/043-2	09.01.14	12:19	43° 57,44' N	30° 46,50' E	671,2	Multi corer	at sea bottom
MSM34/043-2	09.01.14	12:38	43° 57,44' N	30° 46,50' E	690,2	Multi corer	on deck
MSM34/044-1	09.01.14	13:07	43° 57,05' N	30° 46,90' E	751	Heat Flow	in the water
MSM34/044-1	09.01.14	13:16	43° 57,05' N	30° 46,90' E	751,6	Heat Flow	at the bottom
MSM34/044-1	09.01.14	13:40	43° 57,04' N	30° 46,90' E	753,7	Heat Flow	start heaving
MSM34/044-1	09.01.14	13:43	43° 57,04' N	30° 46,90' E	752,8	Heat Flow	off bottom
MSM34/045-1	09.01.14	14:02	43° 57,18' N	30° 46,76' E	724,5	Heat Flow	start lowering
MSM34/045-1	09.01.14	14:05	43° 57,18' N	30° 46,76' E	722,9	Heat Flow	at the bottom
MSM34/045-1	09.01.14	14:12	43° 57,18' N	30° 46,76' E	718,2	Heat Flow	start heaving
MSM34/045-1	09.01.14	14:13	43° 57,18' N	30° 46,76' E	730,9	Heat Flow	off bottom
MSM34/046-1	09.01.14	14:28	43° 57,31' N	30° 46,63' E	699,3	Heat Flow	start lowering
MSM34/046-1	09.01.14	14:29	43° 57,31' N	30° 46,63' E	695,3	Heat Flow	at the bottom
MSM34/046-1	09.01.14	14:37	43° 57,31' N	30° 46,63' E	694,2	Heat Flow	start heaving
MSM34/046-1	09.01.14	14:39	43° 57,31' N	30° 46,63' E	695,8	Heat Flow	off bottom
MSM34/047-1	09.01.14	14:55	43° 57,44' N	30° 46,50' E	676,4	Heat Flow	start lowering
MSM34/047-1	09.01.14	14:57	43° 57,44' N	30° 46,50' E	674	Heat Flow	at the bottom
MSM34/047-1	09.01.14	15:03	43° 57,44' N	30° 46,50' E	672,5	Heat Flow	start heaving
MSM34/047-1	09.01.14	15:05	43° 57,44' N	30° 46,50' E	672,7	Heat Flow	off bottom
MSM34/048-1	09.01.14	15:20	43° 57,56' N	30° 46,37' E	678,5	Heat Flow	start lowering
MSM34/048-1	09.01.14	15:21	43° 57,56' N	30° 46,37' E	680,1	Heat Flow	at the bottom
MSM34/048-1	09.01.14	15:27	43° 57,56' N	30° 46,37' E	676	Heat Flow	start heaving
MSM34/048-1	09.01.14	15:29	43° 57,56' N	30° 46,37' E	680	Heat Flow	off bottom
MSM34/049-1	09.01.14	15:43	43° 57,68' N	30° 46,24' E	657,3	Heat Flow	start lowering
MSM34/049-1	09.01.14	15:46	43° 57,68' N	30° 46,23' E	655,8	Heat Flow	at the bottom
MSM34/049-1	09.01.14	15:53	43° 57,68' N	30° 46,23' E	656,8	Heat Flow	start heaving
MSM34/049-1	09.01.14	15:55	43° 57,68' N	30° 46,23' E	656	Heat Flow	off bottom
MSM34/050-1	09.01.14	16:10	43° 57,81' N	30° 46,10' E	635	Heat Flow	start lowering
MSM34/050-1	09.01.14	16:12	43° 57,81' N	30° 46,10' E	636,3	Heat Flow	at the bottom
MSM34/050-1	09.01.14	16:19	43° 57,81' N	30° 46,10' E	632,5	Heat Flow	start heaving

MSM34/050-1	09.01.14	16:40	43° 57,81' N	30° 46,10' E	636,4	Heat Flow	on deck
MSM34/051-1	09.01.14	17:21	43° 57,18' N	30° 46,77' E	725	Gravity corer	surface
MSM34/051-1	09.01.14	17:42	43° 57,17' N	30° 46,76' E	723,1	Gravity corer	at sea bottom
MSM34/051-1	09.01.14	17:43	43° 57,17' N	30° 46,76' E	724,2	Gravity corer	off ground hoisting
MSM34/051-1	09.01.14	18:09	43° 57,17' N	30° 46,76' E	730,5	Gravity corer	on deck
MSM34/052-1	09.01.14	18:44	43° 57,49' N	30° 45,41' E	654,3	Ocean Bottom Seismometer	surface
MSM34/053-1	09.01.14	18:57	43° 57,17' N	30° 45,73' E	680,8	Ocean Bottom Seismometer	surface
MSM34/054-1	09.01.14	19:08	43° 56,84' N	30° 46,08' E	704,2	Ocean Bottom Seismometer	surface
MSM34/055-1	09.01.14	19:20	43° 56,52' N	30° 46,44' E	704,5	Ocean Bottom Seismometer	surface
MSM34/056-1	09.01.14	19:35	43° 56,92' N	30° 47,15' E	792,2	Ocean Bottom Seismometer	surface
MSM34/057-1	09.01.14	19:48	43° 57,23' N	30° 46,82' E	708,8	Ocean Bottom Seismometer	surface
MSM34/058-1	09.01.14	19:58	43° 57,56' N	30° 46,49' E	656,4	Ocean Bottom Seismometer	surface
MSM34/059-1	09.01.14	20:10	43° 57,86' N	30° 46,14' E	602,1	Ocean Bottom Seismometer	surface
MSM34/060-1	09.01.14	20:32	43° 58,28' N	30° 46,83' E	594,6	Ocean Bottom Seismometer	surface
MSM34/061-1	09.01.14	20:43	43° 57,96' N	30° 47,17' E	702	Ocean Bottom Seismometer	surface
MSM34/062-1	09.01.14	20:53	43° 57,65' N	30° 47,51' E	806,3	Ocean Bottom Seismometer	surface
MSM34/063-1	09.01.14	21:05	43° 57,32' N	30° 47,86' E	846,8	Ocean Bottom Seismometer	surface
MSM34/064-1	09.01.14	21:40	43° 57,52' N	30° 51,58' E	718,4	Seismic refraction profile	Stb. Paravane lowered in to water
MSM34/064-1	09.01.14	22:20	43° 56,78' N	30° 50,45' E	756,1	Seismic refraction profile	Streamer array + data cable lowered into water
MSM34/064-1	09.01.14	22:38	43° 56,41' N	30° 49,90' E	834	Seismic refraction profile	PS Paravane lowered into water
MSM34/064-1	09.01.14	22:49	43° 56,19' N	30° 49,57' E	873,6	Seismic refraction profile	Airguns out
MSM34/064-1	09.01.14	23:32	43° 55,90' N	30° 47,11' E	712,7	Seismic refraction profile	start profile
MSM34/064-1	10.01.14	00:25	43° 58,35' N	30° 44,49' E	522,4	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	01:51	43° 56,56' N	30° 48,66' E	830,3	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	03:27	43° 57,74' N	30° 43,85' E	527	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	04:48	43° 56,14' N	30° 47,99' E	892,8	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	06:10	43° 57,81' N	30° 43,90' E	544,1	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	07:35	43° 56,14' N	30° 48,11' E	902,3	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	09:03	43° 58,02' N	30° 43,83' E	555,3	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	10:30	43° 56,06' N	30° 48,32' E	908,9	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	11:50	43° 58,19' N	30° 44,30' E	546,7	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	13:14	43° 56,04' N	30° 48,40' E	913,2	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	14:30	43° 58,25' N	30° 44,27' E	536,5	Seismic refraction profile	alter course
MSM34/064-1	10.01.14	15:50	43° 56,23' N	30° 48,29' E	902,8	Seismic refraction profile	alter course

MSM34/064-1	10.01.14	17:05	43° 58,19' N	30° 44,43' E	538		Seismic refraction profile	alter course
MSM34/064-1	10.01.14	18:23	43° 56,29' N	30° 48,32' E	912,5		Seismic refraction profile	alter course
MSM34/064-1	10.01.14	19:38	43° 58,20' N	30° 44,48' E	539,7		Seismic refraction profile	alter course
MSM34/064-1	10.01.14	20:53	43° 56,24' N	30° 48,40' E	912,7		Seismic refraction profile	alter course
MSM34/064-1	10.01.14	22:10	43° 58,24' N	30° 44,48' E	529,2		Seismic refraction profile	alter course
MSM34/064-1	10.01.14	23:28	43° 56,25' N	30° 48,44' E	906		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	00:54	43° 58,37' N	30° 44,44' E	517,5		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	02:05	43° 56,71' N	30° 48,10' E	869,3		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	03:31	43° 58,21' N	30° 44,72' E	532,3		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	04:53	43° 56,42' N	30° 48,48' E	865		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	06:15	43° 58,30' N	30° 44,69' E	518,8		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	07:35	43° 56,44' N	30° 48,52' E	850,7		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	08:55	43° 58,32' N	30° 44,75' E	524,1		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	10:14	43° 56,26' N	30° 48,75' E	858,8		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	11:34	43° 58,44' N	30° 44,68' E	504,9		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	12:55	43° 56,33' N	30° 48,75' E	856,6		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	14:14	43° 58,32' N	30° 44,86' E	517,3		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	15:27	43° 56,55' N	30° 48,59' E	831,2		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	16:44	43° 58,26' N	30° 45,00' E	530,9		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	18:03	43° 56,58' N	30° 48,71' E	830,2		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	19:21	43° 58,38' N	30° 44,94' E	531,6		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	20:34	43° 56,59' N	30° 48,76' E	825,9		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	21:49	43° 58,40' N	30° 44,97' E	531,3		Seismic refraction profile	alter course
MSM34/064-1	11.01.14	23:09	43° 56,46' N	30° 48,93' E	844		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	00:27	43° 58,51' N	30° 44,94' E	519,8		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	01:47	43° 56,56' N	30° 48,87' E	838,5		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	03:05	43° 58,50' N	30° 45,00' E	523,1		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	04:24	43° 56,63' N	30° 48,91' E	831,9		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	05:40	43° 58,51' N	30° 45,07' E	522,2		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	06:59	43° 56,71' N	30° 48,90' E	839,8		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	08:06	43° 58,06' N	30° 45,61' E	562,4		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	09:37	43° 56,60' N	30° 49,08' E	836,3		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	10:57	43° 58,63' N	30° 45,07' E	519,1		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	12:14	43° 56,64' N	30° 49,11' E	845,9		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	13:31	43° 58,70' N	30° 45,06' E	513		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	14:47	43° 56,68' N	30° 49,12' E	823,8		Seismic refraction profile	alter course

MSM34/064-1	12.01.14	16:00	43° 58,62' N	30° 45,20' E	520,2		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	17:18	43° 56,66' N	30° 49,23' E	841,9		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	18:40	43° 58,65' N	30° 45,26' E	520,4		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	19:12	43° 57,52' N	30° 45,10' E	631,8		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	19:51	43° 55,59' N	30° 47,10' E	690,5		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	21:09	43° 58,70' N	30° 45,32' E	514,2		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	22:29	43° 56,67' N	30° 49,26' E	848,8		Seismic refraction profile	alter course
MSM34/064-1	12.01.14	23:50	43° 58,82' N	30° 45,44' E	495,4		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	00:34	43° 57,44' N	30° 45,55' E	673,7		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	00:40	43° 57,11' N	30° 45,80' E	690,2		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	01:09	43° 55,68' N	30° 47,29' E	727,1		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	02:24	43° 58,84' N	30° 45,75' E	494,4		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	03:40	43° 56,75' N	30° 49,25' E	834,1		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	04:16	43° 56,70' N	30° 47,64' E	859,5		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	04:25	43° 57,15' N	30° 47,20' E	758,4		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	04:29	43° 57,35' N	30° 46,99' E	664,1		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	04:37	43° 57,77' N	30° 46,61' E	605,1		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	04:42	43° 58,02' N	30° 46,34' E	580,5		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	04:47	43° 58,31' N	30° 46,16' E	555,2		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	04:52	43° 58,58' N	30° 45,91' E	510,3		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	05:45	43° 58,33' N	30° 45,75' E	543,2		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	05:52	43° 57,97' N	30° 46,13' E	583,5		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	06:02	43° 57,45' N	30° 46,67' E	673,9		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	06:04	43° 57,34' N	30° 46,78' E	686		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	06:22	43° 56,42' N	30° 47,76' E	876,8		Seismic refraction profile	information
MSM34/064-1	13.01.14	06:29	43° 56,13' N	30° 48,15' E	908,8		Seismic refraction profile	Airguns on deck
MSM34/064-1	13.01.14	06:59	43° 55,29' N	30° 49,26' E	972,3		Seismic refraction profile	Airguns out
MSM34/064-1	13.01.14	07:23	43° 56,33' N	30° 47,99' E	886,3		Seismic refraction profile	information
MSM34/064-1	13.01.14	07:30	43° 56,66' N	30° 47,65' E	863,3		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	07:41	43° 57,16' N	30° 47,11' E	711,6		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	08:13	43° 58,69' N	30° 45,51' E	495,7		Seismic refraction profile	alter course
MSM34/064-1	13.01.14	08:59	43° 57,35' N	30° 46,79' E	687		Seismic refraction profile	information
MSM34/064-1	13.01.14	09:21	43° 56,34' N	30° 47,85' E	894		Seismic refraction profile	end profile
MSM34/064-1	13.01.14	10:14	43° 55,32' N	30° 45,37' E	675,4		Seismic refraction profile	Airguns on deck
MSM34/064-1	13.01.14	10:33	43° 55,37' N	30° 44,61' E	709,1		Seismic refraction profile	P. Paravane on deck
MSM34/064-1	13.01.14	11:16	43° 55,45' N	30° 43,13' E	716,2		Seismic refraction profile	Streamer array + dataable on deck

MSM34/064-1	13.01.14	11:24	43° 55,46' N	30° 42,85' E	690,8	Seismic refraction profile	Stb. Paravane on deck
MSM34/065-1	13.01.14	12:21	43° 57,19' N	30° 46,77' E	721,7	Multi corer	surface
MSM34/065-1	13.01.14	12:41	43° 57,17' N	30° 46,77' E	720,5	Multi corer	at sea bottom
MSM34/065-1	13.01.14	12:59	43° 57,17' N	30° 46,77' E	723	Multi corer	on deck
MSM34/066-1	13.01.14	13:23	43° 57,63' N	30° 46,52' E	638,8	Multi corer	surface
MSM34/066-1	13.01.14	13:44	43° 57,62' N	30° 46,53' E	638	Multi corer	at sea bottom
MSM34/066-1	13.01.14	14:00	43° 57,62' N	30° 46,53' E	641,3	Multi corer	on deck
MSM34/066-2	13.01.14	14:14	43° 57,62' N	30° 46,53' E	645,4	Gravity corer	surface
MSM34/066-2	13.01.14	14:38	43° 57,62' N	30° 46,53' E	633,3	Gravity corer	at sea bottom
MSM34/066-2	13.01.14	14:39	43° 57,62' N	30° 46,53' E	630,5	Gravity corer	off ground hoisting
MSM34/066-2	13.01.14	14:59	43° 57,62' N	30° 46,53' E	643	Gravity corer	on deck
MSM34/067-1	13.01.14	15:33	43° 57,23' N	30° 46,72' E	710,5	Heat Flow	in the water
MSM34/067-1	13.01.14	15:56	43° 57,22' N	30° 46,72' E	713,5	Heat Flow	at the bottom
MSM34/067-1	13.01.14	16:11	43° 57,22' N	30° 46,72' E	713	Heat Flow	start heaving
MSM34/067-1	13.01.14	16:11	43° 57,22' N	30° 46,72' E	713	Heat Flow	off bottom
MSM34/068-1	13.01.14	16:24	43° 57,27' N	30° 46,67' E	702,7	Heat Flow	start lowering
MSM34/068-1	13.01.14	16:25	43° 57,27' N	30° 46,67' E	707,1	Heat Flow	at the bottom
MSM34/068-1	13.01.14	16:38	43° 57,27' N	30° 46,67' E	702,2	Heat Flow	start heaving
MSM34/068-1	13.01.14	16:40	43° 57,27' N	30° 46,67' E	701,3	Heat Flow	off bottom
MSM34/069-1	13.01.14	16:51	43° 57,31' N	30° 46,49' E	689,1	Heat Flow	start lowering
MSM34/069-1	13.01.14	16:54	43° 57,31' N	30° 46,49' E	697,4	Heat Flow	at the bottom
MSM34/069-1	13.01.14	17:13	43° 57,31' N	30° 46,49' E	701,3	Heat Flow	start heaving
MSM34/069-1	13.01.14	17:14	43° 57,31' N	30° 46,49' E	693	Heat Flow	off bottom
MSM34/070-1	13.01.14	17:27	43° 57,36' N	30° 46,58' E	694,2	Heat Flow	start lowering
MSM34/070-1	13.01.14	17:29	43° 57,36' N	30° 46,58' E	680,8	Heat Flow	at the bottom
MSM34/070-1	13.01.14	17:45	43° 57,36' N	30° 46,58' E	680,2	Heat Flow	start heaving
MSM34/070-1	13.01.14	17:46	43° 57,36' N	30° 46,58' E	694,8	Heat Flow	off bottom
MSM34/071-1	13.01.14	17:58	43° 57,40' N	30° 46,67' E	684,7	Heat Flow	start lowering
MSM34/071-1	13.01.14	18:00	43° 57,40' N	30° 46,68' E	676,7	Heat Flow	at the bottom
MSM34/071-1	13.01.14	18:14	43° 57,40' N	30° 46,68' E	690,7	Heat Flow	start heaving
MSM34/071-1	13.01.14	18:15	43° 57,40' N	30° 46,68' E	673	Heat Flow	off bottom
MSM34/072-1	13.01.14	18:29	43° 57,40' N	30° 46,54' E	689,8	Heat Flow	start lowering
MSM34/072-1	13.01.14	18:32	43° 57,40' N	30° 46,54' E	686	Heat Flow	at the bottom
MSM34/072-1	13.01.14	18:48	43° 57,40' N	30° 46,54' E	688,3	Heat Flow	start heaving
MSM34/072-1	13.01.14	18:49	43° 57,40' N	30° 46,54' E	687,1	Heat Flow	off bottom
MSM34/073-1	13.01.14	19:04	43° 57,48' N	30° 46,44' E	676,4	Heat Flow	start lowering

MSM34/073-1	13.01.14	19:06	43° 57,48' N	30° 46,44' E	674,2		Heat Flow	at the bottom
MSM34/073-1	13.01.14	19:09	43° 57,48' N	30° 46,44' E	675,9		Heat Flow	off bottom
MSM34/073-1	13.01.14	19:12	43° 57,48' N	30° 46,45' E	678		Heat Flow	at the bottom
MSM34/073-1	13.01.14	19:27	43° 57,48' N	30° 46,45' E	673		Heat Flow	start heaving
MSM34/073-1	13.01.14	19:28	43° 57,48' N	30° 46,45' E	685,9		Heat Flow	off bottom
MSM34/072-2	13.01.14	19:40	43° 57,40' N	30° 46,53' E	689,3		Heat Flow	start lowering
MSM34/072-2	13.01.14	19:44	43° 57,40' N	30° 46,53' E	688,2		Heat Flow	at the bottom
MSM34/072-2	13.01.14	19:58	43° 57,40' N	30° 46,53' E	690,5		Heat Flow	start heaving
MSM34/072-2	13.01.14	20:14	43° 57,40' N	30° 46,53' E	687,9		Heat Flow	off bottom
MSM34/072-2	13.01.14	21:48	43° 57,40' N	30° 46,52' E	689,9		Heat Flow	on deck
MSM34/074-1	13.01.14	22:05	43° 57,44' N	30° 46,51' E	673		Multi corer	surface
MSM34/074-1	13.01.14	22:22	43° 57,44' N	30° 46,50' E	678,4		Multi corer	at sea bottom
MSM34/074-1	13.01.14	22:38	43° 57,44' N	30° 46,50' E	677		Multi corer	on deck
MSM34/074-2	13.01.14	22:48	43° 57,44' N	30° 46,51' E	674,8		Gravity corer	surface
MSM34/074-2	13.01.14	23:07	43° 57,44' N	30° 46,50' E	671,9		Gravity corer	at sea bottom
MSM34/074-2	13.01.14	23:08	43° 57,44' N	30° 46,50' E	676,3		Gravity corer	off ground hoisting
MSM34/074-2	13.01.14	23:31	43° 57,44' N	30° 46,50' E	670,8		Gravity corer	on deck
MSM34/075-1	14.01.14	00:18	43° 58,27' N	30° 46,51' E	584,9		Seismic refraction profile	Streamer to water
MSM34/075-1	14.01.14	00:32	43° 58,68' N	30° 46,49' E	523,4		Seismic refraction profile	Airguns out
MSM34/075-1	14.01.14	01:28	43° 58,00' N	30° 44,01' E	558,4		Seismic refraction profile	start profile
MSM34/075-1	14.01.14	03:27	43° 53,09' N	30° 49,14' E	950,4		Seismic refraction profile	alter course
MSM34/075-1	14.01.14	06:08	43° 58,42' N	30° 44,46' E	508,1		Seismic refraction profile	alter course
MSM34/075-1	14.01.14	08:47	43° 53,74' N	30° 50,47' E	1092,8		Seismic refraction profile	alter course
MSM34/075-1	14.01.14	11:20	43° 58,81' N	30° 46,26' E	529,6		Seismic refraction profile	information
MSM34/075-1	14.01.14	11:40	43° 59,63' N	30° 45,37' E	456,7		Seismic refraction profile	information
MSM34/075-1	14.01.14	12:05	44° 0,58' N	30° 44,30' E	296,5		Seismic refraction profile	alter course
MSM34/075-1	14.01.14	13:02	43° 59,65' N	30° 47,12' E	499,3		Seismic refraction profile	information
MSM34/075-1	14.01.14	14:59	43° 54,83' N	30° 52,14' E	953,8		Seismic refraction profile	alter course
MSM34/075-1	14.01.14	16:57	43° 53,87' N	30° 47,76' E	845,3		Seismic refraction profile	alter course
MSM34/075-1	14.01.14	17:50	43° 55,79' N	30° 44,39' E	647,3		Seismic refraction profile	alter course
MSM34/075-1	14.01.14	18:58	43° 58,70' N	30° 48,58' E	609,4		Seismic refraction profile	end profile
MSM34/075-1	14.01.14	19:17	43° 58,43' N	30° 49,87' E	627,3		Seismic refraction profile	Airguns on deck
MSM34/075-1	14.01.14	19:34	43° 57,77' N	30° 50,67' E	644,6		Seismic refraction profile	Streamer on deck
MSM34/052-1	14.01.14	21:03	43° 57,49' N	30° 45,14' E	656,5		Ocean Bottom Seismometer	released
MSM34/052-1	14.01.14	21:12	43° 57,48' N	30° 45,14' E	656,8		Ocean Bottom Seismometer	sighted
MSM34/052-1	14.01.14	21:24	43° 57,47' N	30° 45,19' E	661,5		Ocean Bottom Seismometer	on deck

MSM34/053-1	14.01.14	21:26	43° 57,46' N	30° 45,24' E	662,5	Ocean Bottom Seismometer	released
MSM34/053-1	14.01.14	21:35	43° 57,32' N	30° 45,47' E	690,4	Ocean Bottom Seismometer	sighted
MSM34/054-1	14.01.14	21:47	43° 57,18' N	30° 45,56' E	682,5	Ocean Bottom Seismometer	released
MSM34/053-1	14.01.14	21:48	43° 57,17' N	30° 45,58' E	686,5	Ocean Bottom Seismometer	on deck
MSM34/054-1	14.01.14	21:57	43° 57,03' N	30° 45,77' E	689,7	Ocean Bottom Seismometer	sighted
MSM34/055-1	14.01.14	22:02	43° 56,95' N	30° 45,84' E	699	Ocean Bottom Seismometer	released
MSM34/054-1	14.01.14	22:10	43° 56,84' N	30° 45,88' E	698,5	Ocean Bottom Seismometer	on deck
MSM34/055-1	14.01.14	22:16	43° 56,69' N	30° 46,06' E	702,9	Ocean Bottom Seismometer	Information
MSM34/055-1	14.01.14	22:26	43° 56,71' N	30° 46,12' E	711,5	Ocean Bottom Seismometer	sighted
MSM34/056-1	14.01.14	22:30	43° 56,68' N	30° 46,16' E	711,6	Ocean Bottom Seismometer	released
MSM34/055-1	14.01.14	22:36	43° 56,52' N	30° 46,29' E	691,3	Ocean Bottom Seismometer	on deck
MSM34/056-1	14.01.14	22:39	43° 56,58' N	30° 46,34' E	715,9	Ocean Bottom Seismometer	sighted
MSM34/057-1	14.01.14	22:45	43° 56,88' N	30° 46,66' E	750,5	Ocean Bottom Seismometer	released
MSM34/056-1	14.01.14	22:57	43° 56,92' N	30° 46,99' E	799,7	Ocean Bottom Seismometer	on deck
MSM34/057-1	14.01.14	22:59	43° 56,94' N	30° 47,00' E	793,9	Ocean Bottom Seismometer	sighted
MSM34/058-1	14.01.14	23:09	43° 57,31' N	30° 46,61' E	711,4	Ocean Bottom Seismometer	released
MSM34/057-1	14.01.14	23:14	43° 57,21' N	30° 46,62' E	721,4	Ocean Bottom Seismometer	on deck
MSM34/058-1	14.01.14	23:19	43° 57,31' N	30° 46,59' E	708,1	Ocean Bottom Seismometer	sighted
MSM34/059-1	14.01.14	23:32	43° 57,55' N	30° 46,41' E	681,2	Ocean Bottom Seismometer	released
MSM34/058-1	14.01.14	23:33	43° 57,54' N	30° 46,41' E	681,7	Ocean Bottom Seismometer	on deck
MSM34/059-1	14.01.14	23:37	43° 57,61' N	30° 46,38' E	675	Ocean Bottom Seismometer	sighted
MSM34/060-1	14.01.14	23:47	43° 57,88' N	30° 46,04' E	604	Ocean Bottom Seismometer	released
MSM34/059-1	14.01.14	23:47	43° 57,88' N	30° 46,04' E	604	Ocean Bottom Seismometer	on deck
MSM34/060-1	14.01.14	23:53	43° 58,10' N	30° 46,16' E	591,8	Ocean Bottom Seismometer	sighted
MSM34/061-1	15.01.14	00:01	43° 58,35' N	30° 46,63' E	588,1	Ocean Bottom Seismometer	released
MSM34/060-1	15.01.14	00:08	43° 58,22' N	30° 46,72' E	607,6	Ocean Bottom Seismometer	on deck
MSM34/061-1	15.01.14	00:10	43° 58,21' N	30° 46,70' E	606,4	Ocean Bottom Seismometer	sighted
MSM34/062-1	15.01.14	00:21	43° 57,92' N	30° 47,06' E	694,2	Ocean Bottom Seismometer	released
MSM34/061-1	15.01.14	00:22	43° 57,91' N	30° 47,06' E	697,3	Ocean Bottom Seismometer	on deck
MSM34/062-1	15.01.14	00:30	43° 57,75' N	30° 47,20' E	741,8	Ocean Bottom Seismometer	sighted
MSM34/063-1	15.01.14	00:40	43° 57,61' N	30° 47,40' E	790,1	Ocean Bottom Seismometer	released
MSM34/062-1	15.01.14	00:42	43° 57,60' N	30° 47,41' E	794,3	Ocean Bottom Seismometer	on deck
MSM34/063-1	15.01.14	00:52	43° 57,43' N	30° 47,64' E	844	Ocean Bottom Seismometer	sighted
MSM34/063-1	15.01.14	01:00	43° 57,32' N	30° 47,80' E	858,6	Ocean Bottom Seismometer	on deck
MSM34/076-1	15.01.14	01:31	43° 57,04' N	30° 46,00' E	696,1	Heat Flow	in the water
MSM34/076-1	15.01.14	01:51	43° 57,03' N	30° 46,02' E	698,2	Heat Flow	at the bottom

MSM34/076-1	15.01.14	02:06	43° 57,03' N	30° 46,02' E	698,8		Heat Flow	start heaving
MSM34/076-1	15.01.14	02:07	43° 57,03' N	30° 46,02' E	697,9		Heat Flow	off bottom
MSM34/077-1	15.01.14	02:32	43° 57,21' N	30° 46,31' E	706,6		Heat Flow	start lowering
MSM34/077-1	15.01.14	02:35	43° 57,21' N	30° 46,31' E	706,6		Heat Flow	at the bottom
MSM34/077-1	15.01.14	02:48	43° 57,21' N	30° 46,31' E	706,8		Heat Flow	start heaving
MSM34/077-1	15.01.14	02:48	43° 57,21' N	30° 46,31' E	706,8		Heat Flow	off bottom
MSM34/078-1	15.01.14	03:22	43° 57,57' N	30° 46,51' E	648,1		Heat Flow	start lowering
MSM34/078-1	15.01.14	03:23	43° 57,57' N	30° 46,51' E	641,4		Heat Flow	at the bottom
MSM34/078-1	15.01.14	03:36	43° 57,57' N	30° 46,51' E	647,8		Heat Flow	start heaving
MSM34/078-1	15.01.14	03:38	43° 57,57' N	30° 46,51' E	646,8		Heat Flow	off bottom
MSM34/079-1	15.01.14	03:47	43° 57,63' N	30° 46,54' E	611,4		Heat Flow	start lowering
MSM34/079-1	15.01.14	03:49	43° 57,63' N	30° 46,54' E	615,1		Heat Flow	at the bottom
MSM34/079-1	15.01.14	04:04	43° 57,63' N	30° 46,54' E	615,8		Heat Flow	start heaving
MSM34/079-1	15.01.14	04:05	43° 57,63' N	30° 46,54' E	616,9		Heat Flow	off bottom
MSM34/080-1	15.01.14	04:26	43° 57,51' N	30° 46,88' E	633,1		Heat Flow	start lowering
MSM34/080-1	15.01.14	04:28	43° 57,51' N	30° 46,88' E	626,8		Heat Flow	at the bottom
MSM34/080-1	15.01.14	04:42	43° 57,51' N	30° 46,88' E	634		Heat Flow	start heaving
MSM34/080-1	15.01.14	04:44	43° 57,51' N	30° 46,88' E	637,6		Heat Flow	off bottom
MSM34/081-1	15.01.14	05:12	43° 57,60' N	30° 47,30' E	752,6		Heat Flow	start lowering
MSM34/081-1	15.01.14	05:15	43° 57,60' N	30° 47,30' E	752,9		Heat Flow	at the bottom
MSM34/081-1	15.01.14	05:29	43° 57,59' N	30° 47,30' E	749,7		Heat Flow	start heaving
MSM34/081-1	15.01.14	05:31	43° 57,59' N	30° 47,30' E	743,8		Heat Flow	off bottom
MSM34/082-1	15.01.14	05:57	43° 57,69' N	30° 47,76' E	829,8		Heat Flow	start lowering
MSM34/082-1	15.01.14	06:01	43° 57,69' N	30° 47,76' E	827,1		Heat Flow	at the bottom
MSM34/082-1	15.01.14	06:16	43° 57,69' N	30° 47,76' E	819,4		Heat Flow	start heaving
MSM34/082-1	15.01.14	06:19	43° 57,69' N	30° 47,76' E	829,1		Heat Flow	off bottom
MSM34/083-1	15.01.14	06:24	43° 57,69' N	30° 47,75' E	834,5		Heat Flow	start lowering
MSM34/083-1	15.01.14	06:26	43° 57,69' N	30° 47,75' E	819,4		Heat Flow	at the bottom
MSM34/083-1	15.01.14	06:32	43° 57,69' N	30° 47,75' E	816,2		Heat Flow	start heaving
MSM34/083-1	15.01.14	06:34	43° 57,69' N	30° 47,75' E	821,2		Heat Flow	off bottom
MSM34/084-1	15.01.14	06:51	43° 57,69' N	30° 47,54' E	815,4		Heat Flow	start lowering
MSM34/084-1	15.01.14	06:54	43° 57,69' N	30° 47,54' E	816,5		Heat Flow	at the bottom
MSM34/084-1	15.01.14	07:13	43° 57,69' N	30° 47,54' E	809,5		Heat Flow	start heaving
MSM34/084-1	15.01.14	07:15	43° 57,69' N	30° 47,54' E	806,2		Heat Flow	off bottom
MSM34/085-1	15.01.14	07:39	43° 57,83' N	30° 47,73' E	819		Heat Flow	start lowering
MSM34/085-1	15.01.14	07:42	43° 57,83' N	30° 47,74' E	827,6		Heat Flow	at the bottom

MSM34/085-1	15.01.14	07:57	43° 57,83' N	30° 47,73' E	808,8		Heat Flow	start heaving
MSM34/085-1	15.01.14	07:57	43° 57,83' N	30° 47,73' E	808,8		Heat Flow	off bottom
MSM34/086-1	15.01.14	08:19	43° 57,60' N	30° 47,74' E	817,2		Heat Flow	start lowering
MSM34/086-1	15.01.14	08:22	43° 57,60' N	30° 47,74' E	819,1		Heat Flow	at the bottom
MSM34/086-1	15.01.14	08:37	43° 57,60' N	30° 47,74' E	818,4		Heat Flow	start lowering
MSM34/086-1	15.01.14	08:38	43° 57,60' N	30° 47,74' E	819,2		Heat Flow	at the bottom
MSM34/086-1	15.01.14	08:48	43° 57,60' N	30° 47,74' E	834,4		Heat Flow	start heaving
MSM34/086-1	15.01.14	08:51	43° 57,59' N	30° 47,74' E	823,7		Heat Flow	off bottom
MSM34/087-1	15.01.14	09:10	43° 57,40' N	30° 47,74' E	835,3		Heat Flow	start lowering
MSM34/087-1	15.01.14	09:13	43° 57,40' N	30° 47,75' E	845,5		Heat Flow	at the bottom
MSM34/087-1	15.01.14	09:25	43° 57,40' N	30° 47,74' E	844,6		Heat Flow	start heaving
MSM34/087-1	15.01.14	09:28	43° 57,40' N	30° 47,74' E	836,5		Heat Flow	off bottom
MSM34/088-1	15.01.14	09:59	43° 57,69' N	30° 47,94' E	804,3		Heat Flow	start lowering
MSM34/088-1	15.01.14	10:03	43° 57,69' N	30° 47,94' E	794,8		Heat Flow	at the bottom
MSM34/088-1	15.01.14	10:18	43° 57,69' N	30° 47,94' E	804,1		Heat Flow	start heaving
MSM34/088-1	15.01.14	10:43	43° 57,69' N	30° 47,94' E	808,1		Heat Flow	on deck
MSM34/089-1	15.01.14	11:10	43° 57,70' N	30° 47,76' E	824,4		Gravity corer	surface
MSM34/089-1	15.01.14	11:33	43° 57,69' N	30° 47,76' E	818,1		Gravity corer	at sea bottom
MSM34/089-1	15.01.14	11:34	43° 57,69' N	30° 47,76' E	815,2		Gravity corer	off ground hoisting
MSM34/089-1	15.01.14	11:58	43° 57,69' N	30° 47,77' E	819,8		Gravity corer	on deck
MSM34/090-1	15.01.14	14:17	43° 40,11' N	30° 38,18' E	974,5		Seismic refraction profile	information
MSM34/090-1	15.01.14	14:49	43° 39,37' N	30° 38,59' E	992,1		Seismic refraction profile	Streamer to water
MSM34/090-1	15.01.14	15:02	43° 38,99' N	30° 38,79' E	1005		Seismic refraction profile	Airguns out
MSM34/090-1	15.01.14	15:24	43° 37,72' N	30° 38,61' E	1072,5		Seismic refraction profile	start profile
MSM34/090-1	15.01.14	16:42	43° 34,63' N	30° 32,94' E	1196,8		Seismic refraction profile	alter course
MSM34/090-1	15.01.14	18:00	43° 38,34' N	30° 28,39' E	1042,8		Seismic refraction profile	alter course
MSM34/090-1	15.01.14	19:31	43° 42,22' N	30° 34,06' E	967,3		Seismic refraction profile	alter course
MSM34/090-1	15.01.14	21:08	43° 47,55' N	30° 29,74' E	612		Seismic refraction profile	alter course
MSM34/090-1	15.01.14	22:43	43° 44,45' N	30° 22,74' E	525		Seismic refraction profile	alter course
MSM34/090-1	16.01.14	00:06	43° 49,40' N	30° 22,50' E	1064,3		Seismic refraction profile	alter course
MSM34/090-1	16.01.14	04:58	43° 35,01' N	30° 38,82' E	1188,5		Seismic refraction profile	alter course
MSM34/090-1	16.01.14	05:25	43° 33,79' N	30° 37,19' E	1226,3		Seismic refraction profile	alter course
MSM34/090-1	16.01.14	06:15	43° 36,10' N	30° 34,19' E	1172,3		Seismic refraction profile	end profile
MSM34/090-1	16.01.14	06:24	43° 36,55' N	30° 33,72' E	1155,4		Seismic refraction profile	Airguns on deck
MSM34/090-1	16.01.14	06:51	43° 37,82' N	30° 32,34' E	1113,4		Seismic refraction profile	Streamer on deck
MSM34/091-1	16.01.14	09:18	43° 13,72' N	30° 10,93' E	1604,5		Multibeam und ParaSound	start profil

MSM34/091-1	16.01.14	11:06	43° 4,51' N	29° 55,80' E	1731,8	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	11:24	43° 6,09' N	29° 53,49' E	1669,2	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	12:17	43° 10,68' N	30° 0,51' E	1604,2	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	12:36	43° 12,69' N	29° 58,84' E	1525,9	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	13:22	43° 9,20' N	29° 52,17' E	1611	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	13:49	43° 10,47' N	29° 49,23' E	1597,8	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	14:10	43° 12,57' N	29° 51,76' E	1560,3	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	15:50	43° 20,97' N	30° 5,93' E	1415,6	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	16:11	43° 23,20' N	30° 4,38' E	1281,5	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	17:47	43° 15,29' N	29° 50,60' E	1512,1	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	18:08	43° 16,99' N	29° 48,05' E	1476,6	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	19:46	43° 25,04' N	30° 2,09' E	1175,8	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	20:06	43° 27,18' N	30° 0,39' E	1079,9	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	21:43	43° 19,84' N	29° 46,61' E	1407,7	Multibeam und ParaSound	alter course
MSM34/091-1	16.01.14	22:00	43° 21,19' N	29° 44,47' E	1314,7	Multibeam und ParaSound	profile end