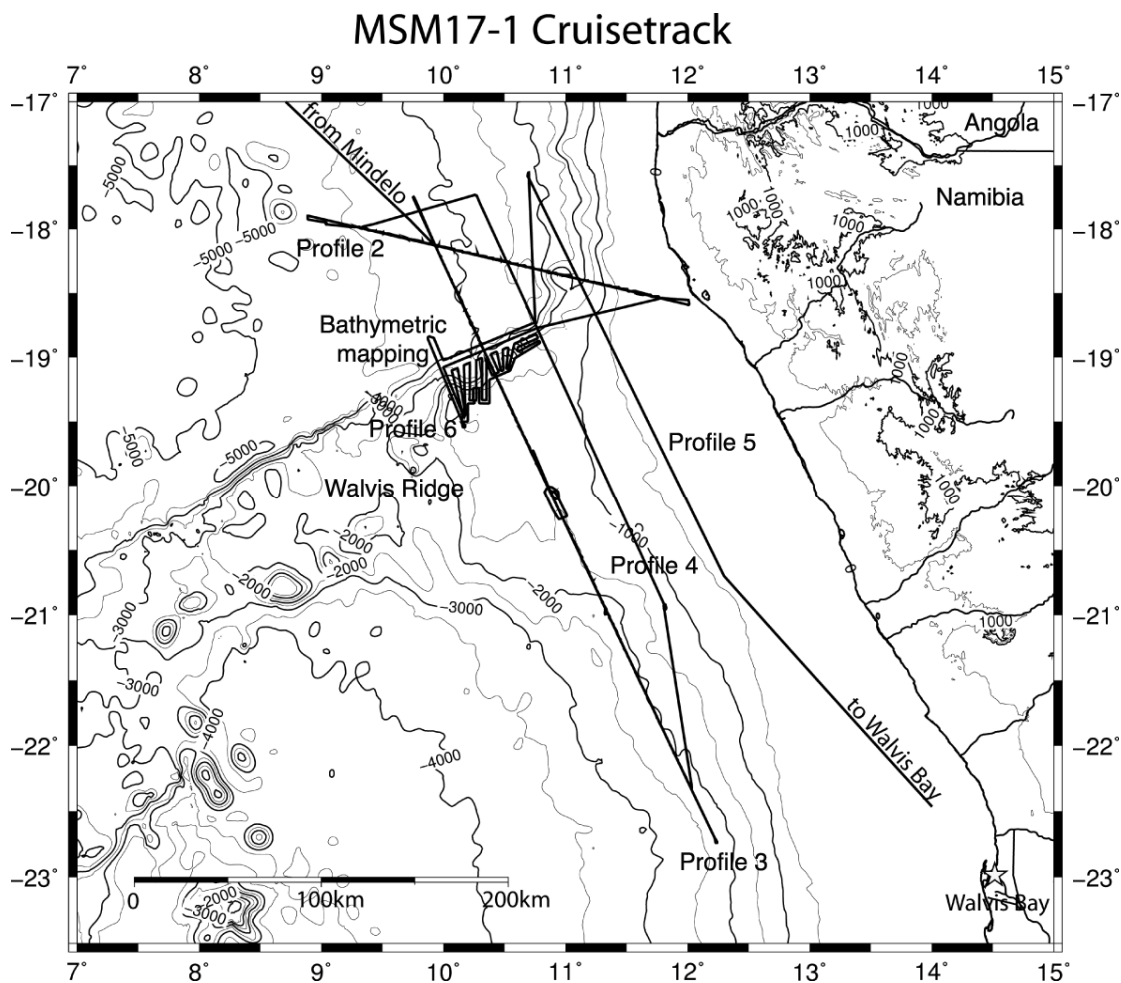


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**Short Cruise Report**  
**Maria S. Merian; Cruise No. MSM 17/1**

**Mindelo – Walvis Bay**  
**24th November – 29th December 2010**  
**Chief Scientist: Jan H. Behrmann**  
**Captain: Friedhelm von Staa**



## Objectives

Continental break-up is closely related to the question regarding the driving forces behind processes related to such an incisive geological event. A common explanation is that mantle plumes are the most important triggers for the separation of continents. Around the head of a plume the upper mantle temperatures are strongly increased. After weakening of the continental crust by horizontal extension the high temperatures cause extensive volcanism, forming flood basalts as parts of so-called Large Igneous Provinces (LIP) on the continents, and in some cases also in the newly formed oceanic basin. Following this theory, in the ideal case flood basalts are deposited on the continents before break-up. After the start of the drifting stage with formation of oceanic crust between the continents, the mantle plume should create an aseismic ridge due to its continuing activity. The aseismic ridge in the adjacent oceanic basin will mark the plume position through space and time.

However, such a clear relationship between volcanism on the continents and the adjoining ocean basins is rarely observed on a global scale. Among the best examples on Earth for such a relationship are the Parana/Etendeka flood basalts and the Rio Grande Rise/Walvis Ridges on both margins of the South Atlantic. Expedition MSM17/1 was designed to investigate critical parameters, like crustal thickness and structure of the subjacent Earth's mantle in this model region offshore northern Namibia for a globally important plate tectonic process. Our work was led by the hypothesis that in the uppermost Earth's mantle and in the overlying crust structures relating to fossil plume and/or deformation processes are frozen in and can be visualized by geophysical methods.

Our approach mandated us to investigate the structure of the Namibian continental margin, and near-shore parts of Walvis Ridge with all geophysical methods available. Scientific techniques used were marine wide-angle active seismics, multichannel reflection seismics, ocean bottom magnetotellurics, and high-resolution bathymetric swath mapping.

The work program was divided into three parts: active seismic measurements in which the OBS/OBH (ocean bottom seismometers/ocean bottom hydrophones) are deployed for a maximum of 5 days, the magnetotelluric (OBMT) measurement program with instrument deployment for a few weeks (OBMT recovered on Cruise MSM 17/2), and high-resolution bathymetric mapping along the profiles and on a grid covering the ocean-continent boundary on the northwestern side of Walvis Ridge.

The track chart on the title page (above) shows the geometrical and temporal layout of the experiment. Profile 3 parallel to the Namibian Skeleton Coast was surveyed first, followed by series of airgun shots on Profile 4, to be recorded by a seismometer array on land in northern Namibia. After this we conducted a seismic survey along Profile 2, located between the Cape Frio area and the southeastern edge of the Angola Basin. This was followed by a high-resolution bathymetric and reflection seismic survey on the NW side of Walvis Ridge. En route to Walvis Bay we completed the scientific program by a series of airgun shots for the land-based array on Profile 5.

## Narrative

R/V MARIA S. MERIAN set sail at 19:00 UTC, 24th November, 2010 at the port of Mindelo, Sao Vicente Island, Republic of Cape Verde, for the working area offshore Namibia. ETA in the working area at the northern end of Profile 3 was 4th December, 15:30 UTC. During transit all scientific instrumentation was assembled, tested and made ready for deployment. In the following days three ARGO floats were deployed at the following times and locations. Float 1: 2nd December, 02:19 UTC at 08°59.96'S / 00°00.02'E. Float 2: 3rd December, 04:15 UTC, at 12°59.97' S / 04°10.95'E. Float 3: 04th December 03:43 UTC, at 16°20.02' S/08°06.96'E.

After arrival at the northern end of Profile 3 (18°08.21'S / 09°56.25'E) at 4th December, 15:30

UTC, one OBS and one OBMT were deployed, and a joint CTD and releaser test was taken to 4000 m water depth. After this OBS/OBH (total 39 instruments) and OBMT (total 15 instruments) deployment proceeded on the northern segment of Profile 3 in SSE direction at average spacings of about 7 km. Deployment was completed on 5th December, 15:30 UTC at 20°34.53'S / 11°08.40'E. Then we transited to the southern starting point for airgun shooting (20°57.07'S / 11°19.67'E).

Telephone contact was established with the GFZ Potsdam land team operating in Kaoko Veld. It was agreed to interrupt firing our airguns after shooting details for explosions on land were announced over Iridium telephone link to the Bridge of MARIA S. MERIAN. Interruptions were between three minutes before explosion and three minutes after explosion on land.

Eight airguns (three dual clusters on port side, one dual cluster on starboard side) were deployed, and shooting at one shot per minute proceeded heading 335° at 4 knots speed. The northern end of Profile 3 was reached on 8th December, 04:14 UTC at 17°45.46'S / 09°45.22'E. From there we started to recover 34 out of 39 OBS/OBH. Five OBS instruments at the southern termination were left at the sea floor to be integrated in the survey of the southern segment of Profile 3. Immediately after recovery data were retrieved, instruments were re-programmed and prepared for redeployment. This started on 9th December, 16:20 UTC at 20°10,50'S / 10°56,38'E. Deployment was successfully completed on 10th December, 09:20 UTC at 22°19,29'S / 12°01,64'E, including the remaining nine OBMT instruments for extended period recording at the seafloor.

Airgun shots on the southern segment of Profile 3 commenced immediately after a short transit to the southern end of the profile on 10th December 13:31 UTC at 22°41,64'S / 12°13,15'E, heading 335° at one shot per minute and 5 kt speed, and was terminated successfully on 12th December 07:00 UTC at 19°44,29'S / 10°44,48'E, with all eight airguns in continuous operation. OBS/OBH retrieval started immediately afterwards, with all instruments on deck on 13th December at 14:30 UTC. The short four-channel streamer was continuously deployed during the shooting on Profile 3 and yielded uninterrupted reflection seismic data.

After seven hours of transit to the southern termination of the 350 km long Profile 5, streamer and airguns were deployed after testing on deck at 20°54,26'S / 11°48,11'E, and shooting started at 23:30 UTC, heading 335°, one shot per minute at 5 kt speed. Initially shots were fired by seven airguns, and later by six airguns after failure of one instrument. Shots were recorded by the streamer, and registered by seismometer stations on land deployed by GFZ Potsdam on a coast parallel transect. The NNW end of the profile was reached on 15th December, 16:00 UTC at 17°48,17'S / 10°18,08'E close to the southern border of the Angolan Exclusive Economic Zone.

After six hours of transit, deployment of all 39 OBS/OBH on Profile 2 was started at 17°59,36'S / 09°19,05'E. On this profile no OBMT were deployed, and measurements were restricted to wide angle and reflection seismics, and high-resolution multibeam bathymetry. The 330 km long Profile starts close to the shoreline at 18°35,39'S / 12°00,04'E, and is geographically linked to an ESE trending chain of seismological land stations deployed by GFZ Potsdam. The WNW seaward extension reaches far into the oceanic Angola Basin. OBS/OBH deployment was completed on 16th December, 15:00 UTC. Immediately afterwards streamer and airguns were brought into the water, and the profile was shot heading WNW at 4 kt speed and one shot per minute. All eight airguns fired flawlessly. On 18th December, 17:00 UTC recovery of OBS/OBH was started. The 112th and last instrument was successfully recovered on 20th December at 03:40 UCT at 18°32,21'S / 11°46,05'E.

Immediately afterwards we transited to the northwestern slope of Walvis Ridge to start a detailed high-resolution bathymetric survey of a 75 x 50 km area where reconnaissance on Profiles 3 and 5 had revealed differences in water depth of more than 3000 m at short distance and strongly heterogeneous relief. On the SW margin of the mapped area an 80 km long profile (termed Profile 6) was surveyed by reflection seismics. The profile is between coordinates 19°29,99'S / 10°09,19'E and 18°51,19'S / 09°52,30'E. We surveyed heading NNW, at 4 kt speed, firing the six port side airguns every 20 seconds. This survey was completed at 20:14 UTC.

After ten hours of transit to the northern end of Profile 4 (17°35,85'S / 10°41,88'E), all eight airguns were deployed, and firing started at one shot per minute started on 10:57 UTC, heading 155°, speed 4 kt. Initially eight airguns fired, later one of the portside guns suffered pressure loss and was switched off. The end of the profile was reached at 27th December 14:53 UTC at 20°42,10'S / 12°18,05'E. Streamer and airguns were recovered and stowed, and transit for Walvis Bay started

In summary we accomplished deployment and successful recovery of 112 ocean bottom seismometer (OBS) or ocean bottom hydrophone (OBH) stations, and deployed 24 ocean bottom magnetotelluric (OBMT) instruments for longer-term (about one month) recording of data. Instrument deployments were on two profiles, one on the middle and lower continental slope on the Namibian passive margin in NNW-SSE direction, and a second one from the crest area of Walvis Ridge far into the southern Angola Basin in WNW-ESE direction. In addition, airgun shots were fired on two margin-parallel profiles on the upper slope and shelf, to be recorded by an array of seismological land stations deployed in the Kaoko-Veld of northern Namibia. High-resolution bathymetric data were acquired on all profiles. In addition, the northwest slope of Walvis Ridge around the ocean-continent boundary was covered by a bathymetric survey, to document landforms likely created by magmatic processes, crustal deformation, and submarine mass wasting. Reflection seismic data were collected on all profiles to investigate the thickness of the sediment cover on attenuated continental crust and oceanic crust. Expedition MSM 17/1 terminated at Walvis Bay on 29<sup>th</sup> December 2010, with all scientific objectives achieved, and zero loss of instrumentation and ship time.

## **Acknowledgements**

We thank the master and crew of R/V MARIA S. MERIAN for their unrivalled support of the scientific work at sea, for their high motivation and highly professional work, which laid the foundation for a perfect expedition. The Leitstelle Meteor/Merian in Hamburg, the Senate Commission for Oceanography of DFG, the German Ministry for Education and Research (BMBF) and Briese Schifffahrts GmbH & Co. KG are all acknowledged for the support and practical assistance that have made Cruise MSM 17/1 possible. We thank DFG, and especially Dr. Susanne Faulhaber for the support in making the combined land-sea experiments possible. The scientific coordination of the DFG Priority Program SAMPLE and the colleagues working on SAMPLE companion projects have helped us in many ways in preparing and carrying out our experiments. Trond Ryberg (GFZ Potsdam) made perfect communication possible with his field team. Dr. Gabi Schneider, Director of the Geological Survey of Namibia, and the German Ministry of Foreign Affairs were instrumental in obtaining the necessary research permits.

## Participants

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# Station Book

Station No.	Date	Time	Position Lat	Position Lon	Water	Gear	Action	Comment
	2010	UTC			Depth[m]			
MSM17/1082-1	02.12.	2:19	8° 59,96' S	0° 0,02' W	5831,3	ARGOFL	into water	
MSM17/1083-1	03.12.	4:15	12° 59,97' S	4° 10,95' E	5538,8	ARGOFL	into water	
MSM17/1084-1	04.12.	3:43	16° 20,02' S	8° 6,96' E	4826	ARGOFL	into water	
MSM17/1085-1	04.12.	15:24	18° 8,17' S	9° 56,25' E	4156,6	OBS	surface	
MSM17/1085-2	04.12.	15:34	18° 8,21' S	9° 56,29' E	4211,9	OBMT	surface	
MSM17/1085-3	04.12.	15:38	18° 8,21' S	9° 56,29' E	4223,9	CTD/RO	surface	Rel. Test/CTD
MSM17/1085-3	04.12.	16:47	18° 8,20' S	9° 56,32' E	4223,2	CTD/RO	at depth	SL max. 4091m
MSM17/1085-3	04.12.	17:45	18° 8,19' S	9° 56,33' E	4222,9	CTD/RO	on deck	
MSM17/1086-1	04.12.	18:25	18° 12,53' S	9° 58,37' E	0	OBH	surface	
MSM17/1087-1	04.12.	19:01	18° 16,74' S	10° 0,37' E	4120,4	OBH	surface	
MSM17/1088-1	04.12.	19:34	18° 20,64' S	10° 2,28' E	4108,3	OBH	surface	
MSM17/1089-1	04.12.	19:39	18° 20,67' S	10° 2,30' E	4107,9	OBMT	surface	
MSM17/1090-1	04.12.	20:00	18° 23,61' S	10° 3,72' E	4109,7	OBS	surface	
MSM17/1091-1	04.12.	20:43	18° 27,71' S	10° 5,75' E	4087,3	OBH	surface	
MSM17/1092-1	04.12.	21:15	18° 31,15' S	10° 7,43' E	4041,1	OBH	surface	
MSM17/1092-2	04.12.	21:23	18° 31,13' S	10° 7,42' E	4035,1	OBMT	surface	
MSM17/1093-1	04.12.	21:55	18° 34,55' S	10° 9,10' E	4045,9	OBH	surface	
MSM17/1094-1	04.12.	22:25	18° 38,01' S	10° 10,73' E	4044,3	OBH	surface	
MSM17/1095-1	04.12.	22:55	18° 41,43' S	10° 12,40' E	4003,2	OBS	surface	
MSM17/1095-2	04.12.	23:00	18° 41,46' S	10° 12,40' E	4002	OBMT	surface	
MSM17/1096-1	04.12.	23:32	18° 44,85' S	10° 14,08' E	3911,4	OBH	surface	
MSM17/1097-1	05.12.	0:03	18° 48,29' S	10° 15,78' E	3881,2	OBH	surface	
MSM17/1098-1	05.12.	0:37	18° 51,71' S	10° 17,42' E	3898,8	OBH	surface	
MSM17/1098-2	05.12.	0:42	18° 51,86' S	10° 17,38' E	3905,3	OBMT	surface	OBMT 05
MSM17/1099-1	05.12.	1:14	18° 55,16' S	10° 19,13' E	2969,9	OBH	surface	
MSM17/1100-1	05.12.	1:41	18° 58,59' S	10° 20,82' E	2721	OBS	surface	
MSM17/1101-1	05.12.	2:08	19° 2,02' S	10° 22,50' E	2104,7	OBH	surface	
MSM17/1101-2	05.12.	2:12	19° 2,13' S	10° 22,53' E	2093,4	OBMT	surface	OBMT 06
MSM17/1102-1	05.12.	2:36	19° 5,46' S	10° 24,18' E	1779,7	OBH	surface	
MSM17/1103-1	05.12.	3:03	19° 8,88' S	10° 25,83' E	1608,6	OBH	surface	
MSM17/1104-1	05.12.	3:29	19° 12,34' S	10° 27,54' E	1501	OBH	surface	
MSM17/1104-2	05.12.	3:35	19° 12,42' S	10° 27,60' E	1497,1	OBMT	surface	OBMT 07
MSM17/1105-1	05.12.	3:59	19° 15,75' S	10° 29,23' E	1424,7	OBS	surface	
MSM17/1106-1	05.12.	4:27	19° 19,14' S	10° 30,90' E	1349,9	OBS	surface	
MSM17/1107-1	05.12.	4:56	19° 22,59' S	10° 32,59' E	1299,9	OBH	surface	
MSM17/1107-2	05.12.	5:04	19° 22,63' S	10° 32,62' E	1300	OBMT	surface	
MSM17/1108-1	05.12.	5:31	19° 26,01' S	10° 34,27' E	1269,4	OBH	surface	
MSM17/1109-1	05.12.	5:59	19° 29,44' S	10° 35,97' E	1250,8	OBH	surface	
MSM17/1110-1	05.12.	6:26	19° 32,85' S	10° 37,67' E	1236,2	OBS	surface	
MSM17/1110-2	05.12.	6:37	19° 32,87' S	10° 37,68' E	1237,6	OBMT	surface	
MSM17/1111-1	05.12.	7:07	19° 36,27' S	10° 39,36' E	1220,9	OBH	surface	
MSM17/1112-1	05.12.	7:37	19° 39,69' S	10° 41,04' E	1209,3	OBH	surface	
MSM17/1113-1	05.12.	8:08	19° 43,11' S	10° 42,72' E	1200,8	OBH	surface	
MSM17/1113-2	05.12.	8:13	19° 43,16' S	10° 42,73' E	5588,4	OBMT	surface	
MSM17/1114-1	05.12.	8:45	19° 46,50' S	10° 44,42' E	5588	OBH	surface	
MSM17/1115-1	05.12.	9:14	19° 49,95' S	10° 46,14' E	0	OBS	surface	
MSM17/1116-1	05.12.	9:44	19° 53,37' S	10° 47,84' E	1223,6	OBH	surface	
MSM17/1116-2	05.12.	9:52	19° 53,36' S	10° 47,82' E	1224,1	OBMT	surface	
MSM17/1117-1	05.12.	10:23	19° 56,77' S	10° 49,50' E	1254,1	OBH	surface	
MSM17/1118-1	05.12.	10:52	20° 0,22' S	10° 51,22' E	1328,8	OBH	surface	
MSM17/1119-1	05.12.	11:27	20° 3,64' S	10° 52,95' E	1394,7	OBH	surface	

MSM17/1119-2	05.12.	11:32	20° 3,68' S	10° 52,96' E	1395,4	OBMT	surface	
MSM17/1120-1	05.12.	12:01	20° 7,07' S	10° 54,64' E	1425,7	OBS	surface	
MSM17/1121-1	05.12.	12:49	20° 13,94' S	10° 58,06' E	1455,9	OBS	surface	
MSM17/1121-2	05.12.	12:54	20° 14,01' S	10° 58,13' E	1456,7	OBMT	surface	OBMT 13
MSM17/1122-1	05.12.	13:39	20° 20,77' S	11° 1,51' E	1452,2	OBS	surface	
MSM17/1123-1	05.12.	14:05	20° 24,20' S	11° 3,20' E	1444,2	OBMT	surface	OBMT 14
MSM17/1124-1	05.12.	14:30	20° 27,59' S	11° 4,89' E	1427,3	OBS	surface	
MSM17/1125-1	05.12.	15:19	20° 34,44' S	11° 8,32' E	1416,5	OBS	surface	
MSM17/1125-2	05.12.	15:23	20° 34,53' S	11° 8,40' E	1414,9	OBMT	surface	OBMT 15
MSM17/1126-1	05.12.	18:00	20° 57,07' S	11° 19,67' E	1226,5	SEIS	Airguns out	Bb Seite
MSM17/1126-1	05.12.	18:30	20° 57,98' S	11° 19,69' E	1510,4	SEIS	information	guns back on deck
MSM17/1126-1	05.12.	18:55	20° 58,45' S	11° 19,54' E	1228,4	SEIS	information	guns to water
MSM17/1126-1	05.12.	19:16	20° 58,89' S	11° 19,50' E	1676,1	SEIS	Airguns out	Stb
MSM17/1126-1	05.12.	20:14	20° 57,14' S	11° 19,74' E	2238,6	SEIS	start profile	
MSM17/1126-1	05.12.	20:23	20° 56,60' S	11° 19,47' E	2234,5	SEIS	Streamer to water	312m streamer
MSM17/1126-1	06.12.	6:02	20° 21,51' S	11° 1,86' E	1450,8	SEIS	information	interrupt firing
MSM17/1126-1	06.12.	6:08	20° 21,15' S	11° 1,67' E	1455,4	SEIS	information	continue firing
MSM17/1126-1	06.12.	8:34	20° 12,29' S	10° 57,24' E	1448,4	SEIS	information	interrupt firing
MSM17/1126-1	06.12.	8:56	20° 10,96' S	10° 56,58' E	1443,3	SEIS	information	continue firing
MSM17/1126-1	06.12.	10:21	20° 5,80' S	10° 54,02' E	1417,4	SEIS	information	interrupt firing
MSM17/1126-1	06.12.	10:27	20° 5,43' S	10° 53,83' E	1415,4	SEIS	information	continue firing
MSM17/1126-1	06.12.	11:02	20° 3,30' S	10° 52,76' E	1391,5	SEIS	information	interrupt profile; airgun failure
MSM17/1126-1	06.12.	11:14	20° 2,55' S	10° 52,73' E	1376,7	SEIS	Streamer on deck	
MSM17/1126-1	06.12.	11:59	20° 3,08' S	10° 53,21' E	1374,2	SEIS	Airguns on deck	Bb airguns on deck
MSM17/1126-1	06.12.	12:00	20° 3,09' S	10° 53,21' E	1376,3	SEIS	information	EM120profile during airgun maintenance
MSM17/1126-1	06.12.	18:00	20° 4,91' S	10° 50,77' E	1440,6	SEIS	information	test guns on deck
MSM17/1126-1	06.12.	19:09	20° 0,47' S	10° 52,61' E	1307,8	SEIS	information	test guns on deck
MSM17/1126-1	06.12.	19:44	20° 1,96' S	10° 55,49' E	1313,1	SEIS	information	test guns on deck
MSM17/1126-1	06.12.	20:43	20° 4,67' S	10° 56,75' E	1355,2	SEIS	Airguns out	Bb Seite
MSM17/1126-1	06.12.	20:53	20° 5,18' S	10° 56,80' E	1363,9	SEIS	Streamer to water	100m out
MSM17/1126-1	06.12.	22:01	20° 3,75' S	10° 53,04' E	1397,1	SEIS	information	continue profile
MSM17/1126-1	07.12.	6:13	19° 26,29' S	10° 34,43' E	1268,2	SEIS	information	interrupt firing
MSM17/1126-1	07.12.	6:20	19° 25,76' S	10° 34,18' E	1269,9	SEIS	information	continue firing
MSM17/1126-1	07.12.	15:47	18° 42,42' S	10° 12,90' E	3993,8	SEIS	information	interrupt firing
MSM17/1126-1	07.12.	15:53	18° 41,97' S	10° 12,67' E	4007,8	SEIS	information	continue firing
MSM17/1126-1	08.12.	4:14	17° 45,46' S	9° 45,22' E	4139,5	SEIS	end profile	
MSM17/1126-1	08.12.	4:28	17° 44,95' S	9° 45,58' E	4132,3	SEIS	Streamer on deck	
MSM17/1126-1	08.12.	5:09	17° 46,48' S	9° 46,31' E	4161,4	SEIS	Airguns on deck	Bb
MSM17/1126-1	08.12.	5:18	17° 46,88' S	9° 46,50' E	4161,3	SEIS	Airguns on deck	Stb
MSM17/1127-1	08.12.	6:54	18° 3,60' S	9° 54,13' E	4183,2	OBS	Information	All OBS & OBH to be released by ship hydrophone
MSM17/1127-1	08.12.	6:58	18° 3,58' S	9° 54,15' E	4182,8	OBS	released	OBS 01
MSM17/1127-1	08.12.	7:57	18° 7,94' S	9° 56,14' E	0	OBS	at surface	
MSM17/1127-1	08.12.	8:05	18° 8,25' S	9° 56,28' E	0	OBS	on deck	
MSM17/1128-1	08.12.	8:08	18° 8,26' S	9° 56,28' E	0	OBH	released	OBH 02
MSM17/1128-1	08.12.	9:53	18° 12,24' S	9° 58,24' E	0	OBH	sighted	
MSM17/1128-1	08.12.	10:06	18° 12,63' S	9° 58,44' E	0	OBH	back to deck	
MSM17/1129-1	08.12.	10:15	18° 12,62' S	9° 58,40' E	0	OBH	released	OBH 03

MSM17/1129-1	08.12.	11:01	18° 16,45' S	10° 0,23' E	0	OBH	sighted	
MSM17/1129-1	08.12.	11:09	18° 16,80' S	10° 0,46' E	0	OBH	back to deck	
MSM17/1130-1	08.12.	12:17	18° 20,60' S	10° 2,44' E	0	OBH	sighted	
MSM17/1131-1	08.12.	12:20	18° 20,64' S	10° 2,42' E	0	OBS	released	OBS 05
MSM17/1130-1	08.12.	12:23	18° 20,64' S	10° 2,44' E	0	OBH	back to deck	
MSM17/1131-1	08.12.	13:00	18° 23,93' S	10° 4,07' E	0	OBS	at surface	
MSM17/1132-1	08.12.	13:05	18° 24,20' S	10° 4,14' E	0	OBH	released	OBH 06
MSM17/1131-1	08.12.	13:09	18° 24,35' S	10° 4,12' E	0	OBS	on deck	
MSM17/1133-1	08.12.	13:40	18° 26,67' S	10° 5,23' E	0	OBH	released	OBH 07
MSM17/1132-1	08.12.	13:45	18° 26,97' S	10° 5,42' E	0	OBH	sighted	
MSM17/1132-1	08.12.	13:59	18° 27,67' S	10° 5,84' E	0	OBH	back to deck	
MSM17/1133-1	08.12.	14:53	18° 30,76' S	10° 7,56' E	0	OBH	sighted	
MSM17/1133-1	08.12.	15:01	18° 31,07' S	10° 7,54' E	0	OBH	back to deck	
MSM17/1134-1	08.12.	15:04	18° 31,09' S	10° 7,59' E	0	OBH	released	OBH 08
MSM17/1134-1	08.12.	15:52	18° 34,24' S	10° 9,34' E	0	OBH	sighted	
MSM17/1134-1	08.12.	16:01	18° 34,43' S	10° 9,17' E	0	OBH	back to deck	
MSM17/1135-1	08.12.	16:37	18° 36,61' S	10° 10,27' E	0	OBH	released	OBH 09
MSM17/1135-1	08.12.	17:05	18° 37,83' S	10° 10,85' E	0	OBH	sighted	
MSM17/1135-1	08.12.	17:13	18° 37,95' S	10° 10,76' E	0	OBH	back to deck	
MSM17/1136-1	08.12.	17:18	18° 37,93' S	10° 10,79' E	0	OBS	released	OBS 10
MSM17/1136-1	08.12.	18:14	18° 41,16' S	10° 12,50' E	0	OBS	at surface	
MSM17/1136-1	08.12.	18:24	18° 41,35' S	10° 12,36' E	0	OBS	on deck	
MSM17/1137-1	08.12.	18:30	18° 41,37' S	10° 12,34' E	0	OBH	released	OBH 11
MSM17/1137-1	08.12.	19:08	18° 44,06' S	10° 14,03' E	0	OBH	sighted	
MSM17/1137-1	08.12.	19:19	18° 44,74' S	10° 14,06' E	0	OBH	back to deck	
MSM17/1138-1	08.12.	19:24	18° 44,71' S	10° 13,99' E	0	OBH	released	OBH 12
MSM17/1138-1	08.12.	19:53	18° 47,28' S	10° 15,51' E	0	OBH	sighted	
MSM17/1138-1	08.12.	20:10	18° 48,06' S	10° 15,72' E	0	OBH	back to deck	
MSM17/1139-1	08.12.	20:14	18° 48,03' S	10° 15,76' E	0	OBH	released	OBH 13
MSM17/1139-1	08.12.	21:09	18° 51,43' S	10° 17,41' E	0	OBH	sighted	
MSM17/1139-1	08.12.	21:19	18° 51,67' S	10° 17,35' E	0	OBH	back to deck	
MSM17/1140-1	08.12.	21:22	18° 51,62' S	10° 17,32' E	0	OBH	released	OBH 14
MSM17/1140-1	08.12.	21:53	18° 53,41' S	10° 18,59' E	0	OBH	sighted	
MSM17/1140-1	08.12.	22:15	18° 54,99' S	10° 18,94' E	0	OBH	back to deck	
MSM17/1141-1	08.12.	22:18	18° 54,98' S	10° 18,91' E	0	OBS	released	OBS 15
MSM17/1141-1	08.12.	22:45	18° 56,94' S	10° 20,24' E	0	OBS	at surface	
MSM17/1141-1	08.12.	23:04	18° 58,34' S	10° 20,52' E	0	OBS	on deck	
MSM17/1142-1	08.12.	23:05	18° 58,32' S	10° 20,52' E	0	OBH	released	OBH 16
MSM17/1142-1	08.12.	23:31	19° 0,85' S	10° 22,15' E	0	OBH	sighted	
MSM17/1142-1	08.12.	23:47	19° 1,95' S	10° 22,41' E	0	OBH	back to deck	
MSM17/1143-1	08.12.	23:52	19° 1,94' S	10° 22,39' E	0	OBH	released	OBH 17
MSM17/1143-1	09.12.	0:52	19° 5,23' S	10° 24,21' E	0	OBH	sighted	
MSM17/1143-1	09.12.	1:01	19° 5,45' S	10° 24,16' E	0	OBH	back to deck	
MSM17/1144-1	09.12.	1:04	19° 5,50' S	10° 24,19' E	0	OBH	released	OBH 18
MSM17/1144-1	09.12.	1:25	19° 7,99' S	10° 25,58' E	0	OBH	sighted	
MSM17/1144-1	09.12.	1:33	19° 8,68' S	10° 25,80' E	0	OBH	back to deck	
MSM17/1145-1	09.12.	2:01	19° 10,83' S	10° 26,76' E	0	OBH	released	OBH 19
MSM17/1145-1	09.12.	2:18	19° 11,92' S	10° 27,57' E	0	OBH	sighted	
MSM17/1145-1	09.12.	2:28	19° 12,24' S	10° 27,45' E	0	OBH	back to deck	
MSM17/1146-1	09.12.	2:46	19° 13,78' S	10° 28,44' E	0	OBS	released	OBS 20
MSM17/1146-1	09.12.	3:01	19° 15,14' S	10° 29,15' E	0	OBS	at surface	
MSM17/1146-1	09.12.	3:09	19° 15,62' S	10° 29,15' E	0	OBS	on deck	
MSM17/1147-1	09.12.	3:26	19° 17,09' S	10° 29,95' E	0	OBH	released	OBH 21
MSM17/1147-1	09.12.	3:51	19° 18,85' S	10° 30,91' E	0	OBH	sighted	
MSM17/1147-1	09.12.	3:58	19° 19,02' S	10° 30,79' E	0	OBH	back to deck	
MSM17/1148-1	09.12.	4:17	19° 20,25' S	10° 31,60' E	0	OBH	released	OBH 22
MSM17/1148-1	09.12.	4:35	19° 22,08' S	10° 32,50' E	0	OBH	sighted	



MSM17/1148-1	09.12.	4:46	19° 22,34' S	10° 32,33' E	0	OBH	back to deck	
MSM17/1149-1	09.12.	5:08	19° 23,72' S	10° 33,22' E	0	OBH	released	OBH 23
MSM17/1149-1	09.12.	5:26	19° 25,42' S	10° 34,15' E	0	OBH	sighted	
MSM17/1149-1	09.12.	5:36	19° 25,84' S	10° 33,94' E	0	OBH	back to deck	
MSM17/1150-1	09.12.	5:56	19° 27,19' S	10° 34,82' E	0	OBH	released	OBH 24
MSM17/1150-1	09.12.	6:17	19° 29,08' S	10° 35,85' E	0	OBH	sighted	
MSM17/1150-1	09.12.	6:24	19° 29,32' S	10° 35,66' E	0	OBH	back to deck	
MSM17/1151-1	09.12.	6:42	19° 30,58' S	10° 36,46' E	0	OBS	released	OBS 25
MSM17/1151-1	09.12.	7:03	19° 32,47' S	10° 37,61' E	0	OBS	at surface	
MSM17/1151-1	09.12.	7:20	19° 32,67' S	10° 37,24' E	0	OBS	on deck	
MSM17/1152-1	09.12.	7:39	19° 34,05' S	10° 38,17' E	0	OBH	released	OBH 26
MSM17/1152-1	09.12.	7:55	19° 35,57' S	10° 39,07' E	0	OBH	sighted	
MSM17/1152-1	09.12.	8:04	19° 36,11' S	10° 39,13' E	0	OBH	back to deck	
MSM17/1154-1	09.12.	8:25	19° 37,43' S	10° 40,02' E	0	OBH	released	OBH 27
MSM17/1154-1	09.12.	8:44	19° 39,03' S	10° 40,99' E	0	OBH	sighted	
MSM17/1154-1	09.12.	8:55	19° 39,56' S	10° 40,82' E	0	OBH	back to deck	
MSM17/1155-1	09.12.	9:18	19° 40,81' S	10° 41,74' E	0	OBH	released	OBH 28
MSM17/1155-1	09.12.	9:36	19° 42,57' S	10° 42,72' E	0	OBH	sighted	
MSM17/1155-1	09.12.	9:44	19° 43,01' S	10° 42,58' E	0	OBH	back to deck	
MSM17/1156-1	09.12.	10:04	19° 44,24' S	10° 43,52' E	0	OBH	released	OBH 29
MSM17/1156-1	09.12.	10:26	19° 46,15' S	10° 44,43' E	0	OBH	sighted	
MSM17/1156-1	09.12.	10:34	19° 46,46' S	10° 44,31' E	0	OBH	back to deck	
MSM17/1157-1	09.12.	10:58	19° 47,70' S	10° 45,08' E	0	OBS	released	OBS 30
MSM17/1157-1	09.12.	11:20	19° 49,52' S	10° 46,15' E	0	OBS	at surface	
MSM17/1157-1	09.12.	11:27	19° 49,79' S	10° 45,91' E	0	OBS	on deck	
MSM17/1158-1	09.12.	11:50	19° 51,12' S	10° 46,83' E	0	OBS	released	OBS 31
MSM17/1158-1	09.12.	12:10	19° 52,98' S	10° 47,88' E	0	OBS	at surface	
MSM17/1158-1	09.12.	12:17	19° 53,22' S	10° 47,71' E	0	OBS	on deck	
MSM17/1159-1	09.12.	12:36	19° 54,95' S	10° 48,82' E	0	OBH	released	OBH 32
MSM17/1159-1	09.12.	12:55	19° 56,50' S	10° 49,55' E	0	OBH	sighted	
MSM17/1159-1	09.12.	13:05	19° 56,63' S	10° 49,33' E	0	OBH	back to deck	
MSM17/1160-1	09.12.	13:23	19° 58,18' S	10° 50,25' E	0	OBH	released	OBH 33
MSM17/1160-1	09.12.	13:45	19° 59,90' S	10° 51,23' E	0	OBH	sighted	
MSM17/1160-1	09.12.	13:50	20° 0,10' S	10° 51,12' E	0	OBH	back to deck	
MSM17/1161-1	09.12.	14:12	20° 2,07' S	10° 52,29' E	0	OBH	released	OBH 34
MSM17/1161-1	09.12.	14:50	20° 3,14' S	10° 53,04' E	0	OBH	comment	OBH released
MSM17/1161-1	09.12.	15:16	20° 3,18' S	10° 53,13' E	0	OBH	sighted	
MSM17/1161-1	09.12.	15:23	20° 3,50' S	10° 52,91' E	0	OBH	back to deck	
MSM17/1162-1	09.12.	16:23	20° 10,50' S	10° 56,38' E	1443,1	OBH	surface	OBH 40
MSM17/1163-1	09.12.	17:14	20° 17,34' S	10° 59,79' E	1461,8	OBH	surface	OBH 41
MSM17/1164-1	09.12.	18:01	20° 24,15' S	11° 3,14' E	1445	OBH	surface	OBH 42
MSM17/1165-1	09.12.	18:50	20° 31,00' S	11° 6,63' E	1414,8	OBH	surface	OBH 43
MSM17/1166-1	09.12.	19:39	20° 37,85' S	11° 10,05' E	1445,1	OBH	surface	OBH 44
MSM17/1167-1	09.12.	20:07	20° 41,28' S	11° 11,75' E	1502,7	OBH	surface	OBH 45
MSM17/1168-1	09.12.	20:33	20° 44,68' S	11° 13,49' E	1627,7	OBH	surface	OBH 46
MSM17/1168-2	09.12.	20:37	20° 44,74' S	11° 13,52' E	1634,8	OBMT	surface	OBMT 16
MSM17/1169-1	09.12.	21:03	20° 48,10' S	11° 15,19' E	1832,7	OBS	surface	OBS 47
MSM17/1170-1	09.12.	21:29	20° 51,51' S	11° 16,89' E	14,2	OBH	surface	OBH 48
MSM17/1171-1	09.12.	21:56	20° 54,93' S	11° 18,62' E	2203,9	OBH	surface	OBH 49
MSM17/1171-2	09.12.	22:01	20° 54,98' S	11° 18,62' E	2206,2	OBMT	surface	OBMT 17
MSM17/1172-1	09.12.	22:27	20° 58,35' S	11° 20,35' E	2246,7	OBH	surface	OBH 50
MSM17/1173-1	09.12.	22:52	21° 1,77' S	11° 22,06' E	2229,4	OBS	surface	OBS 51
MSM17/1174-1	09.12.	23:20	21° 5,18' S	11° 23,81' E	2243,6	OBH	surface	OBH 52
MSM17/1174-2	09.12.	23:24	21° 5,21' S	11° 23,84' E	14,2	OBMT	surface	OBMT 18
MSM17/1175-1	09.12.	23:50	21° 8,60' S	11° 25,51' E	2274,4	OBH	surface	OBH 53
MSM17/1176-1	10.12.	0:17	21° 12,07' S	11° 27,29' E	2277,9	OBH	surface	OBH 54
MSM17/1177-1	10.12.	0:41	21° 15,47' S	11° 28,98' E	2258,3	OBS	surface	OBS 55

MSM17/1177-2	10.12.	0:46	21° 15,59' S	11° 29,04' E	2258,1	OBMT	surface	OBMT 19
MSM17/1178-1	10.12.	1:10	21° 18,88' S	11° 30,73' E	2220,5	OBH	surface	OBH 56
MSM17/1179-1	10.12.	1:34	21° 22,29' S	11° 32,48' E	2188,2	OBH	surface	OBH 57
MSM17/1180-1	10.12.	1:57	21° 25,73' S	11° 34,20' E	2119,7	OBH	surface	OBH 58
MSM17/1180-2	10.12.	2:02	21° 25,86' S	11° 34,28' E	2119,1	OBMT	surface	OBMT 20
MSM17/1181-1	10.12.	2:27	21° 29,15' S	11° 35,94' E	2083,8	OBS	surface	OBS 59
MSM17/1182-1	10.12.	2:50	21° 32,56' S	11° 37,67' E	2045,7	OBH	surface	OBH 60
MSM17/1183-1	10.12.	3:12	21° 35,95' S	11° 39,41' E	2034,2	OBH	surface	OBH 61
MSM17/1183-2	10.12.	3:17	21° 36,04' S	11° 39,47' E	2034,7	OBMT	surface	OBMT 21
MSM17/1184-1	10.12.	3:41	21° 39,40' S	11° 41,17' E	2043,5	OBH	surface	OBH 62
MSM17/1185-1	10.12.	4:07	21° 42,76' S	11° 42,87' E	2065,6	OBS	surface	OBS 63
MSM17/1186-1	10.12.	4:37	21° 46,18' S	11° 44,64' E	2104,8	OBH	surface	OBH 64
MSM17/1187-1	10.12.	4:41	21° 46,20' S	11° 44,67' E	2105,2	OBMT	surface	OBMT 22
MSM17/1188-1	10.12.	5:11	21° 49,59' S	11° 46,36' E	2132,2	OBH	surface	OBH 65
MSM17/1189-1	10.12.	5:39	21° 53,00' S	11° 48,10' E	2141,3	OBH	surface	OBH 66
MSM17/1190-1	10.12.	6:09	21° 56,40' S	11° 49,86' E	2129,7	OBS	surface	OBS 67
MSM17/1191-1	10.12.	6:14	21° 56,46' S	11° 49,89' E	2130,1	OBMT	surface	OBMT 23
MSM17/1192-1	10.12.	6:43	21° 59,83' S	11° 51,62' E	2124,1	OBH	surface	OBH 68
MSM17/1193-1	10.12.	7:11	22° 3,24' S	11° 53,37' E	2141,4	OBH	surface	OBH 69
MSM17/1194-1	10.12.	7:43	22° 6,88' S	11° 55,25' E	2164,9	OBH	surface	OBH 70
MSM17/1196-1	10.12.	8:17	22° 10,77' S	11° 57,23' E	2181,4	OBS	surface	OBS 71
MSM17/1197-1	10.12.	8:47	22° 14,93' S	11° 59,36' E	2194	OBH	surface	OBH 72
MSM17/1198-1	10.12.	9:19	22° 19,29' S	12° 1,64' E	2251,2	OBH	surface	OBH 73
MSM17/1199-1	10.12.	11:45	22° 42,25' S	12° 13,36' E	2312,4	SEIS	information	Beginn Aussetzen
MSM17/1199-1	10.12.	12:22	22° 43,21' S	12° 13,60' E	2321,7	SEIS	airguns in water	Bb-Array 6 guns
MSM17/1199-1	10.12.	12:33	22° 43,47' S	12° 13,66' E	2324	SEIS	airguns in water	Stb-Array: 2 guns
MSM17/1199-1	10.12.	12:44	22° 44,01' S	12° 13,78' E	2329,2	SEIS	Streamer in water	250m
MSM17/1199-1	10.12.	12:56	22° 44,21' S	12° 14,62' E	2307,2	SEIS	information	first shot
MSM17/1199-1	10.12.	13:31	22° 41,64' S	12° 13,15' E	2309,7	SEIS	profile start	KüG 355°, FüG 5kn
MSM17/1199-1	10.12.	23:48	21° 54,92' S	11° 49,09' E	2135,1	SEIS	information	continue FüG 4kn
MSM17/1199-1	11.12.	8:10	21° 24,36' S	11° 33,51' E	2148,7	SEIS	information	continue FüG 5kn
MSM17/1199-1	12.12.	6:10	19° 44,46' S	10° 43,42' E	1198,6	SEIS	end of profile	
MSM17/1199-1	12.12.	6:22	19° 43,54' S	10° 43,66' E	1196	SEIS	streamer on deck	
MSM17/1199-1	12.12.	6:58	19° 44,13' S	10° 44,41' E	1191,9	SEIS	airgun on deck	Bb Seite
MSM17/1199-1	12.12.	7:05	19° 44,29' S	10° 44,48' E	1192,4	SEIS	airgun on deck	Stb Seite
MSM17/1200-1	12.12.	9:19	20° 4,67' S	10° 53,57' E	0	OBS	released	OBS 35
MSM17/1200-1	12.12.	9:35	20° 6,16' S	10° 54,19' E	0	OBS	at surface	
MSM17/1200-1	12.12.	9:49	20° 6,88' S	10° 54,50' E	0	OBS	on deck	
MSM17/1201-1	12.12.	10:10	20° 8,29' S	10° 55,23' E	0	OBH	released	OBH 40
MSM17/1201-1	12.12.	10:25	20° 9,37' S	10° 55,79' E	0	OBH	sighted	
MSM17/1201-1	12.12.	10:42	20° 10,44' S	10° 56,23' E	0	OBH	back to deck	
MSM17/1202-1	12.12.	10:59	20° 11,55' S	10° 56,87' E	0	OBS	released	OBS 36
MSM17/1202-1	12.12.	11:13	20° 12,43' S	10° 57,31' E	0	OBS	at surface	
MSM17/1202-1	12.12.	11:29	20° 13,75' S	10° 57,91' E	0	OBS	on deck	
MSM17/1203-1	12.12.	11:49	20° 15,10' S	10° 58,69' E	0	OBH	released	OBH 41
MSM17/1203-1	12.12.	12:11	20° 16,82' S	10° 59,51' E	0	OBH	sighted	
MSM17/1203-1	12.12.	12:18	20° 17,17' S	10° 59,74' E	0	OBH	back to deck	
MSM17/1204-1	12.12.	12:35	20° 18,77' S	11° 0,48' E	0	OBS	released	OBS 37
MSM17/1204-1	12.12.	12:54	20° 20,22' S	11° 1,53' E	0	OBS	at surface	
MSM17/1204-1	12.12.	13:00	20° 20,55' S	11° 1,45' E	0	OBS	on deck	
MSM17/1205-1	12.12.	13:16	20° 22,13' S	11° 2,28' E	0	OBH	released	OBH 42
MSM17/1205-1	12.12.	13:38	20° 23,56' S	11° 3,13' E	0	OBH	sighted	
MSM17/1205-1	12.12.	13:45	20° 23,96' S	11° 3,10' E	0	OBH	back to deck	
MSM17/1206-1	12.12.	14:05	20° 25,80' S	11° 4,12' E	0	OBS	released	OBS 38
MSM17/1206-1	12.12.	14:24	20° 27,10' S	11° 4,80' E	0	OBS	at surface	

MSM17/1206-1	12.12.	14:38	20° 27,41' S	11° 4,82' E	0	OBS	on deck	
MSM17/1207-1	12.12.	14:56	20° 28,85' S	11° 5,63' E	0	OBH	released	OBH 43
MSM17/1207-1	12.12.	15:16	20° 30,44' S	11° 6,56' E	0	OBH	sighted	
MSM17/1207-1	12.12.	15:24	20° 30,84' S	11° 6,56' E	0	OBH	back to deck	
MSM17/1208-1	12.12.	15:38	20° 32,08' S	11° 7,25' E	0	OBS	released	OBS 39
MSM17/1208-1	12.12.	15:58	20° 33,62' S	11° 8,35' E	0	OBS	at surface	
MSM17/1208-1	12.12.	16:12	20° 34,11' S	11° 8,11' E	0	OBS	on deck	
MSM17/1209-1	12.12.	16:33	20° 35,60' S	11° 8,99' E	0	OBS	released	OBH 44
MSM17/1209-1	12.12.	16:58	20° 37,56' S	11° 10,08' E	0	OBS	at surface	
MSM17/1209-1	12.12.	17:08	20° 37,68' S	11° 9,94' E	0	OBS	on deck	
MSM17/1210-1	12.12.	17:27	20° 38,97' S	11° 10,86' E	0	OBH	released	OBH 45
MSM17/1210-1	12.12.	17:54	20° 40,87' S	11° 11,79' E	0	OBH	sighted	
MSM17/1210-1	12.12.	18:09	20° 41,07' S	11° 11,62' E	0	OBH	back to deck	
MSM17/1211-1	12.12.	18:27	20° 42,37' S	11° 12,51' E	0	OBH	released	OBH 46
MSM17/1211-1	12.12.	18:52	20° 44,39' S	11° 13,51' E	0	OBH	sighted	
MSM17/1211-1	12.12.	19:04	20° 44,48' S	11° 13,35' E	0	OBH	back to deck	
MSM17/1212-1	12.12.	19:21	20° 45,33' S	11° 13,96' E	0	OBH	released	OBS 47
MSM17/1212-1	12.12.	19:41	20° 47,39' S	11° 14,99' E	0	OBH	sighted	
MSM17/1212-1	12.12.	19:52	20° 47,96' S	11° 15,03' E	0	OBH	back to deck	
MSM17/1213-1	12.12.	20:09	20° 49,25' S	11° 15,83' E	0	OBH	released	OBH 48
MSM17/1213-1	12.12.	20:33	20° 50,86' S	11° 16,87' E	0	OBH	sighted	
MSM17/1213-1	12.12.	20:45	20° 51,41' S	11° 16,75' E	0	OBH	back to deck	
MSM17/1214-1	12.12.	20:48	20° 51,41' S	11° 16,74' E	0	OBH	released	OBH 49
MSM17/1214-1	12.12.	21:12	20° 53,89' S	11° 18,27' E	0	OBH	sighted	
MSM17/1214-1	12.12.	21:24	20° 54,83' S	11° 18,49' E	0	OBH	back to deck	
MSM17/1215-1	12.12.	21:28	20° 54,80' S	11° 18,46' E	0	OBH	released	OBH 50
MSM17/1215-1	12.12.	21:53	20° 57,49' S	11° 20,18' E	0	OBH	sighted	
MSM17/1215-1	12.12.	22:08	20° 58,29' S	11° 20,15' E	0	OBH	back to deck	
MSM17/1216-1	12.12.	22:09	20° 58,29' S	11° 20,13' E	0	OBS	released	OBS 51
MSM17/1216-1	12.12.	22:33	21° 0,29' S	11° 21,55' E	0	OBS	at surface	
MSM17/1216-1	12.12.	22:57	21° 1,73' S	11° 21,83' E	0	OBS	on deck	
MSM17/1217-1	12.12.	22:59	21° 1,73' S	11° 21,81' E	0	OBH	released	OBH 52
MSM17/1217-1	12.12.	23:28	21° 4,49' S	11° 23,66' E	0	OBH	sighted	
MSM17/1217-1	12.12.	23:39	21° 5,17' S	11° 23,69' E	0	OBH	back to deck	
MSM17/1218-1	12.12.	23:43	21° 5,27' S	11° 23,73' E	0	OBH	released	OBH 53
MSM17/1218-1	13.12.	0:20	21° 8,25' S	11° 25,49' E	0	OBH	sighted	
MSM17/1218-1	13.12.	0:30	21° 8,58' S	11° 25,34' E	0	OBH	back to deck	
MSM17/1219-1	13.12.	0:35	21° 8,62' S	11° 25,33' E	0	OBH	released	OBH 54
MSM17/1219-1	13.12.	1:08	21° 11,67' S	11° 27,13' E	0	OBH	sighted	
MSM17/1219-1	13.12.	1:20	21° 12,08' S	11° 27,11' E	0	OBH	back to deck	
MSM17/1220-1	13.12.	1:21	21° 12,10' S	11° 27,11' E	0	OBS	released	OBS 55
MSM17/1220-1	13.12.	1:43	21° 14,26' S	11° 28,40' E	0	OBS	at surface	
MSM17/1220-1	13.12.	1:57	21° 15,47' S	11° 28,76' E	0	OBS	on deck	
MSM17/1221-1	13.12.	2:01	21° 15,51' S	11° 28,74' E	0	OBH	released	OBH 56
MSM17/1221-1	13.12.	2:23	21° 17,68' S	11° 30,16' E	0	OBH	sighted	
MSM17/1221-1	13.12.	2:39	21° 18,95' S	11° 30,57' E	0	OBH	back to deck	
MSM17/1222-1	13.12.	2:41	21° 18,97' S	11° 30,58' E	0	OBH	released	OBH 57
MSM17/1222-1	13.12.	3:07	21° 21,77' S	11° 32,20' E	0	OBH	sighted	
MSM17/1222-1	13.12.	3:15	21° 22,31' S	11° 32,37' E	0	OBH	back to deck	
MSM17/1223-1	13.12.	3:19	21° 22,43' S	11° 32,38' E	0	OBH	released	OBH 58
MSM17/1223-1	13.12.	3:43	21° 25,39' S	11° 33,96' E	0	OBH	sighted	
MSM17/1223-1	13.12.	3:51	21° 25,71' S	11° 34,16' E	0	OBH	back to deck	
MSM17/1224-1	13.12.	3:56	21° 25,84' S	11° 34,15' E	0	OBS	released	OBS 59
MSM17/1224-1	13.12.	4:13	21° 27,84' S	11° 35,15' E	0	OBS	at surface	
MSM17/1224-1	13.12.	4:32	21° 29,11' S	11° 35,85' E	0	OBS	on deck	
MSM17/1225-1	13.12.	4:35	21° 29,12' S	11° 35,85' E	0	OBH	released	OBH 60
MSM17/1225-1	13.12.	5:02	21° 32,07' S	11° 37,39' E	0	OBH	sighted	

MSM17/1225-1	13.12.	5:14	21° 32,53' S	11° 37,66' E	0	OBH	back to deck	
MSM17/1226-1	13.12.	5:17	21° 32,56' S	11° 37,68' E	0	OBH	released	OBH 61
MSM17/1226-1	13.12.	5:51	21° 35,75' S	11° 39,34' E	0	OBH	sighted	
MSM17/1226-1	13.12.	6:00	21° 35,94' S	11° 39,38' E	0	OBH	back to deck	
MSM17/1227-1	13.12.	6:04	21° 35,94' S	11° 39,40' E	0	OBH	released	OBH 62
MSM17/1227-1	13.12.	6:30	21° 38,98' S	11° 41,00' E	0	OBH	sighted	
MSM17/1227-1	13.12.	6:40	21° 39,37' S	11° 41,14' E	0	OBH	back to deck	
MSM17/1228-1	13.12.	6:43	21° 39,42' S	11° 41,19' E	0	OBS	released	OBS 63
MSM17/1228-1	13.12.	7:11	21° 42,52' S	11° 42,78' E	0	OBS	at surface	
MSM17/1228-1	13.12.	7:18	21° 42,67' S	11° 42,88' E	0	OBS	on deck	
MSM17/1229-1	13.12.	7:20	21° 42,68' S	11° 42,90' E	0	OBH	released	OBH 64
MSM17/1229-1	13.12.	7:46	21° 45,69' S	11° 44,40' E	0	OBH	sighted	
MSM17/1229-1	13.12.	7:58	21° 46,09' S	11° 44,59' E	0	OBH	back to deck	
MSM17/1230-1	13.12.	8:02	21° 46,08' S	11° 44,63' E	0	OBH	released	OBH 65
MSM17/1230-1	13.12.	8:23	21° 48,61' S	11° 45,85' E	0	OBH	sighted	
MSM17/1230-1	13.12.	8:37	21° 49,53' S	11° 46,24' E	0	OBH	back to deck	
MSM17/1231-1	13.12.	8:39	21° 49,52' S	11° 46,20' E	0	OBH	released	OBH 66
MSM17/1231-1	13.12.	9:16	21° 52,66' S	11° 47,98' E	0	OBH	sighted	
MSM17/1231-1	13.12.	9:27	21° 52,90' S	11° 48,06' E	0	OBH	back to deck	
MSM17/1232-1	13.12.	9:29	21° 52,91' S	11° 48,06' E	0	OBS	released	OBS 67
MSM17/1232-1	13.12.	9:56	21° 55,80' S	11° 49,55' E	0	OBS	at surface	
MSM17/1232-1	13.12.	10:06	21° 56,25' S	11° 49,77' E	0	OBS	on deck	
MSM17/1233-1	13.12.	10:35	21° 58,24' S	11° 50,85' E	0	OBH	released	OBH 68
MSM17/1233-1	13.12.	10:46	21° 59,09' S	11° 51,17' E	0	OBH	sighted	
MSM17/1233-1	13.12.	10:59	21° 59,74' S	11° 51,48' E	0	OBH	back to deck	
MSM17/1234-1	13.12.	11:03	21° 59,75' S	11° 51,47' E	0	OBH	released	OBH 69
MSM17/1234-1	13.12.	11:31	22° 2,83' S	11° 53,15' E	0	OBH	sighted	
MSM17/1234-1	13.12.	11:41	22° 3,13' S	11° 53,24' E	0	OBH	back to deck	
MSM17/1235-1	13.12.	11:44	22° 3,13' S	11° 53,17' E	0	OBH	released	OBH 70
MSM17/1235-1	13.12.	12:10	22° 6,00' S	11° 54,84' E	0	OBH	sighted	
MSM17/1235-1	13.12.	12:30	22° 6,76' S	11° 55,15' E	0	OBH	back to deck	
MSM17/1236-1	13.12.	12:33	22° 6,83' S	11° 55,18' E	0	OBS	released	OBS 71
MSM17/1236-1	13.12.	13:03	22° 10,43' S	11° 57,11' E	0	OBS	at surface	
MSM17/1236-1	13.12.	13:11	22° 10,68' S	11° 57,18' E	0	OBS	on deck	
MSM17/1237-1	13.12.	13:14	22° 10,73' S	11° 57,19' E	0	OBH	released	OBH 72
MSM17/1237-1	13.12.	13:43	22° 14,33' S	11° 59,20' E	0	OBH	sighted	
MSM17/1237-1	13.12.	13:51	22° 14,80' S	11° 59,33' E	0	OBH	back to deck	
MSM17/1238-1	13.12.	13:52	22° 14,82' S	11° 59,34' E	0	OBH	released	OBH 73
MSM17/1238-1	13.12.	14:26	22° 18,80' S	12° 1,34' E	2247,4	OBH	sighted	
MSM17/1238-1	13.12.	14:35	22° 19,11' S	12° 1,56' E	2250,3	OBH	back to deck	
MSM17/1239-1	13.12.	21:58	20° 55,67' S	11° 49,26' E	1179,9	SEIS	airguns in water	BB Array 6 guns
MSM17/1239-1	13.12.	22:21	20° 56,41' S	11° 49,52' E	1182,7	SEIS	airguns in water	Stbd Array 2 guns
MSM17/1239-1	13.12.	22:29	20° 56,65' S	11° 49,57' E	1182,5	SEIS	Streamer in water	190m Gesamtlänge ab Heck
MSM17/1239-1	13.12.	23:09	20° 55,99' S	11° 48,41' E	1198,2	SEIS	information	one gun Bb faulty
MSM17/1239-1	13.12.	23:30	20° 54,26' S	11° 48,11' E	1188,3	SEIS	profile start	5kn
MSM17/1239-1	15.12.	16:00	17° 48,17' S	10° 18,08' E	1187,5	SEIS	end of profile	
MSM17/1239-1	15.12.	16:11	17° 47,45' S	10° 17,75' E	1189	SEIS	streamer on deck	
MSM17/1239-1	15.12.	16:47	17° 45,20' S	10° 16,77' E	1188,3	SEIS	airgun on deck	Bb Seite
MSM17/1239-1	15.12.	16:55	17° 44,72' S	10° 16,54' E	1185,3	SEIS	airgun on deck	Stb Seite
MSM17/1240-1	15.12.	21:44	17° 59,36' S	9° 19,05' E	0	OBH	surface	OBH 74
MSM17/1241-1	15.12.	22:09	18° 0,25' S	9° 22,93' E	0	OBH	surface	OBH 75
MSM17/1242-1	15.12.	22:33	18° 1,12' S	9° 26,79' E	4434,4	OBH	surface	OBH 76
MSM17/1243-1	15.12.	23:05	18° 2,01' S	9° 30,66' E	4408,2	OBH	surface	OBH 77
MSM17/1244-1	15.12.	23:28	18° 2,88' S	9° 34,52' E	4321,9	OBH	surface	OBH 78

MSM17/1245-1	15.12.	23:53	18° 3,74' S	9° 38,39' E	4342	OBH	surface	OBH 79
MSM17/1246-1	16.12.	0:23	18° 4,52' S	9° 42,22' E	4439,2	OBH	surface	OBH 80
MSM17/1247-1	16.12.	0:48	18° 5,47' S	9° 46,15' E	4318,1	OBH	surface	OBH 81
MSM17/1248-1	16.12.	1:11	18° 6,32' S	9° 50,03' E	4445,8	OBH	surface	OBH 82
MSM17/1249-1	16.12.	1:34	18° 7,16' S	9° 53,89' E	4473,2	OBH	surface	OBH 83
MSM17/1250-1	16.12.	1:57	18° 8,06' S	9° 57,79' E	4332,4	OBH	surface	OBH 84
MSM17/1251-1	16.12.	2:20	18° 8,91' S	10° 1,68' E	4317	OBH	surface	OBH 85
MSM17/1252-1	16.12.	2:42	18° 9,78' S	10° 5,54' E	4351,7	OBS	surface	OBS 86
MSM17/1253-1	16.12.	3:04	18° 10,66' S	10° 9,40' E	4484,6	OBH	surface	OBH 87
MSM17/1254-1	16.12.	3:26	18° 11,49' S	10° 13,28' E	4384,8	OBH	surface	OBH 88
MSM17/1255-1	16.12.	3:49	18° 12,37' S	10° 17,11' E	4462,6	OBH	surface	OBH 89
MSM17/1256-1	16.12.	4:16	18° 13,23' S	10° 20,98' E	4358,4	OBH	surface	OBH 90
MSM17/1257-1	16.12.	4:45	18° 14,10' S	10° 24,84' E	4394	OBH	surface	OBH 91
MSM17/1258-1	16.12.	5:11	18° 14,98' S	10° 28,71' E	4382,6	OBS	surface	OBS 92
MSM17/1259-1	16.12.	5:38	18° 15,83' S	10° 32,59' E	4233,5	OBH	surface	OBH 93
MSM17/1260-1	16.12.	6:17	18° 16,67' S	10° 36,49' E	4380,5	OBH	surface	OBH 94
MSM17/1261-1	16.12.	6:46	18° 17,57' S	10° 40,32' E	4467,6	OBH	surface	OBH 95
MSM17/1262-1	16.12.	7:11	18° 18,45' S	10° 44,20' E	4332,1	OBS	surface	OBS 96
MSM17/1263-1	16.12.	7:40	18° 19,32' S	10° 48,05' E	4418,7	OBS	surface	OBS 97
MSM17/1264-1	16.12.	8:07	18° 20,19' S	10° 51,92' E	4723,9	OBS	surface	OBS 98
MSM17/1265-1	16.12.	8:32	18° 21,04' S	10° 55,81' E	1860,3	OBS	surface	OBS 99
MSM17/1266-1	16.12.	8:58	18° 21,92' S	10° 59,66' E	1959,5	OBS	surface	OBS 100
MSM17/1267-1	16.12.	9:24	18° 22,81' S	11° 3,53' E	2231,6	OBS	surface	OBS 101
MSM17/1268-1	16.12.	9:50	18° 23,64' S	11° 7,41' E	2168,7	OBS	surface	OBS 102
MSM17/1269-1	16.12.	10:15	18° 24,49' S	11° 11,30' E	1670,5	OBH	surface	OBH 103
MSM17/1270-1	16.12.	10:40	18° 25,38' S	11° 15,17' E	1242,4	OBS	surface	OBS 104
MSM17/1271-1	16.12.	11:08	18° 26,22' S	11° 19,03' E	880,6	OBH	surface	OBH 105
MSM17/1272-1	16.12.	11:34	18° 27,09' S	11° 22,90' E	14,2	OBH	surface	OBH 106
MSM17/1273-1	16.12.	11:58	18° 27,96' S	11° 26,75' E	366,8	OBS	surface	OBS 107
MSM17/1274-1	16.12.	12:21	18° 28,83' S	11° 30,64' E	256,7	OBH	surface	OBH 108
MSM17/1275-1	16.12.	13:04	18° 30,56' S	11° 38,35' E	195,6	OBH	surface	OBH 110
MSM17/1276-1	16.12.	13:05	18° 30,59' S	11° 38,37' E	194,3	OBH	comment	OBH 109 now ready
MSM17/1276-1	16.12.	13:34	18° 29,73' S	11° 34,52' E	210	OBH	surface	OBH 109
MSM17/1277-1	16.12.	14:22	18° 31,38' S	11° 42,23' E	189,5	OBH	surface	OBH 111
MSM17/1278-1	16.12.	14:48	18° 32,28' S	11° 46,13' E	178,2	OBH	surface	OBH 112
MSM17/1279-1	16.12.	16:23	18° 34,33' S	12° 0,80' E	129,2	SEIS	Airguns out	Bb Array 6 guns
MSM17/1279-1	16.12.	16:34	18° 34,84' S	12° 0,87' E	135,3	SEIS	Airguns out	Stb Array 2 guns
MSM17/1279-1	16.12.	16:35	18° 34,89' S	12° 0,87' E	147,5	SEIS	Streamer to water	
MSM17/1279-1	16.12.	16:56	18° 35,39' S	12° 0,04' E	83,8	SEIS	start profile	pressure 170 Bar
MSM17/1279-1	17.12.	1:40	18° 27,52' S	11° 24,79' E	469,7	SEIS	information	pressure 200bar
MSM17/1279-1	18.12.	14:01	17° 53,68' S	8° 53,65' E	4612,9	SEIS	end profile	
MSM17/1279-1	18.12.	14:10	17° 54,08' S	8° 53,25' E	4604,3	SEIS	Streamer on deck	
MSM17/1279-1	18.12.	14:36	17° 54,88' S	8° 53,29' E	4606,4	SEIS	Airguns on deck	Bb-Array
MSM17/1279-1	18.12.	14:42	17° 55,08' S	8° 53,29' E	4637,4	SEIS	Airguns on deck	Stb-Kanone
MSM17/1280-1	18.12.	16:59	17° 58,91' S	9° 15,10' E	0	OBH	released	OBH 74
MSM17/1280-1	18.12.	17:55	17° 59,16' S	9° 19,14' E	0	OBH	sighted	
MSM17/1281-1	18.12.	17:57	17° 59,16' S	9° 19,14' E	0	OBH	released	OBH 75
MSM17/1280-1	18.12.	18:15	17° 59,43' S	9° 18,94' E	0	OBH	back to deck	
MSM17/1281-1	18.12.	18:51	17° 59,69' S	9° 22,53' E	0	OBH	sighted	
MSM17/1281-1	18.12.	19:09	18° 0,34' S	9° 22,86' E	0	OBH	back to deck	
MSM17/1282-1	18.12.	19:10	18° 0,35' S	9° 22,85' E	0	OBH	released	OBH 76
MSM17/1282-1	18.12.	20:06	18° 0,73' S	9° 26,78' E	0	OBH	sighted	
MSM17/1283-1	18.12.	20:10	18° 0,73' S	9° 26,80' E	0	OBH	released	OBH 77

MSM17/1282-1	18.12.	20:24	18° 1,18' S	9° 26,82' E	0	OBH	back to deck	
MSM17/1283-1	18.12.	21:04	18° 1,53' S	9° 30,64' E	0	OBH	sighted	
MSM17/1284-1	18.12.	21:09	18° 1,54' S	9° 30,66' E	0	OBS	released	OBS 78
MSM17/1283-1	18.12.	21:21	18° 2,01' S	9° 30,67' E	0	OBH	back to deck	
MSM17/1285-1	18.12.	22:09	18° 2,48' S	9° 34,54' E	0	OBH	released	OBH 79
MSM17/1284-1	18.12.	22:11	18° 2,51' S	9° 34,56' E	0	OBS	at surface	
MSM17/1284-1	18.12.	22:27	18° 2,87' S	9° 34,52' E	0	OBS	on deck	
MSM17/1286-1	18.12.	23:16	18° 3,24' S	9° 38,38' E	0	OBH	released	OBH 80
MSM17/1285-1	18.12.	23:24	18° 3,32' S	9° 38,46' E	0	OBH	sighted	
MSM17/1285-1	18.12.	23:40	18° 3,65' S	9° 38,43' E	0	OBH	back to deck	
MSM17/1287-1	19.12.	0:18	18° 4,19' S	9° 42,20' E	0	OBH	released	OBH 81
MSM17/1286-1	19.12.	0:40	18° 4,11' S	9° 42,18' E	0	OBH	sighted	
MSM17/1286-1	19.12.	0:51	18° 4,34' S	9° 42,28' E	0	OBH	back to deck	
MSM17/1287-1	19.12.	1:07	18° 4,78' S	9° 44,49' E	0	OBH	sighted	
MSM17/1287-1	19.12.	1:21	18° 5,03' S	9° 46,22' E	0	OBH	back to deck	
MSM17/1288-1	19.12.	1:23	18° 5,02' S	9° 46,22' E	0	OBH	released	OBH 82
MSM17/1288-1	19.12.	2:11	18° 5,92' S	9° 50,04' E	0	OBH	sighted	
MSM17/1288-1	19.12.	2:17	18° 6,17' S	9° 50,16' E	0	OBH	back to deck	
MSM17/1289-1	19.12.	2:18	18° 6,18' S	9° 50,18' E	0	OBH	released	OBH 83
MSM17/1290-1	19.12.	2:52	18° 6,85' S	9° 53,84' E	0	OBH	released	OBH 84
MSM17/1289-1	19.12.	2:54	18° 6,85' S	9° 53,85' E	0	OBH	sighted	
MSM17/1289-1	19.12.	3:02	18° 7,04' S	9° 53,97' E	0	OBH	back to deck	
MSM17/1291-1	19.12.	3:36	18° 7,57' S	9° 57,75' E	0	OBH	released	OBH 85
MSM17/1290-1	19.12.	3:57	18° 7,62' S	9° 57,79' E	0	OBH	sighted	
MSM17/1290-1	19.12.	4:13	18° 7,93' S	9° 58,00' E	0	OBH	back to deck	
MSM17/1291-1	19.12.	4:40	18° 8,58' S	10° 1,43' E	0	OBH	sighted	
MSM17/1291-1	19.12.	4:53	18° 8,61' S	10° 1,63' E	0	OBH	back to deck	
MSM17/1292-1	19.12.	5:00	18° 8,64' S	10° 1,70' E	0	OBS	released	OBS 86
MSM17/1292-1	19.12.	5:45	18° 9,44' S	10° 5,43' E	0	OBS	at surface	
MSM17/1292-1	19.12.	5:56	18° 9,79' S	10° 5,53' E	0	OBS	on deck	
MSM17/1293-1	19.12.	6:00	18° 9,78' S	10° 5,54' E	0	OBH	released	OBH 87
MSM17/1293-1	19.12.	6:49	18° 10,34' S	10° 9,36' E	0	OBH	sighted	
MSM17/1294-1	19.12.	6:50	18° 10,34' S	10° 9,36' E	0	OBH	released	OBH 88
MSM17/1293-1	19.12.	7:01	18° 10,70' S	10° 9,46' E	0	OBH	back to deck	
MSM17/1294-1	19.12.	7:34	18° 11,14' S	10° 13,17' E	0	OBH	sighted	
MSM17/1295-1	19.12.	7:37	18° 11,18' S	10° 13,21' E	0	OBH	released	OBH 89
MSM17/1294-1	19.12.	7:52	18° 11,53' S	10° 13,31' E	0	OBH	back to deck	
MSM17/1296-1	19.12.	8:00	18° 11,67' S	10° 14,24' E	0	OBH	released	OBH 90
MSM17/1295-1	19.12.	8:18	18° 11,95' S	10° 17,06' E	0	OBH	sighted	
MSM17/1295-1	19.12.	8:35	18° 12,30' S	10° 17,11' E	0	OBH	back to deck	
MSM17/1297-1	19.12.	9:11	18° 12,83' S	10° 20,95' E	0	OBH	released	OBH 91
MSM17/1296-1	19.12.	9:16	18° 12,85' S	10° 20,93' E	0	OBH	back to deck	
MSM17/1298-1	19.12.	10:14	18° 13,72' S	10° 24,82' E	0	OBS	released	OBS 92
MSM17/1297-1	19.12.	10:40	18° 13,76' S	10° 24,84' E	0	OBH	sighted	
MSM17/1297-1	19.12.	10:52	18° 13,93' S	10° 24,59' E	0	OBH	back to deck	
MSM17/1298-1	19.12.	11:09	18° 14,10' S	10° 26,60' E	0	OBS	at surface	
MSM17/1299-1	19.12.	11:29	18° 14,52' S	10° 28,66' E	0	OBH	released	OBH 93
MSM17/1298-1	19.12.	11:38	18° 14,65' S	10° 28,62' E	0	OBS	on deck	
MSM17/1299-1	19.12.	12:10	18° 15,46' S	10° 32,62' E	0	OBH	sighted	
MSM17/1300-1	19.12.	12:10	18° 15,46' S	10° 32,62' E	0	OBH	released	OBH 94
MSM17/1299-1	19.12.	12:16	18° 15,72' S	10° 32,57' E	0	OBH	back to deck	
MSM17/1301-1	19.12.	12:51	18° 16,31' S	10° 36,44' E	0	OBH	released	OBH 95
MSM17/1300-1	19.12.	12:53	18° 16,33' S	10° 36,44' E	0	OBH	sighted	
MSM17/1300-1	19.12.	13:02	18° 16,58' S	10° 36,41' E	0	OBH	back to deck	
MSM17/1301-1	19.12.	13:32	18° 16,98' S	10° 40,10' E	0	OBH	sighted	
MSM17/1302-1	19.12.	13:40	18° 17,47' S	10° 40,25' E	0	OBS	released	OBS 96
MSM17/1301-1	19.12.	13:43	18° 17,50' S	10° 40,19' E	0	OBH	back to deck	

MSM17/1302-1	19.12.	14:14	18° 18,00' S	10° 44,19' E	0	OBS	at surface	
MSM17/1303-1	19.12.	14:19	18° 18,26' S	10° 44,17' E	0	OBS	released	OBS 97
MSM17/1302-1	19.12.	14:24	18° 18,38' S	10° 44,09' E	0	OBS	on deck	
MSM17/1303-1	19.12.	14:54	18° 19,00' S	10° 48,09' E	0	OBS	at surface	
MSM17/1304-1	19.12.	15:03	18° 19,31' S	10° 47,93' E	0	OBS	released	OBS 98
MSM17/1303-1	19.12.	15:03	18° 19,31' S	10° 47,93' E	0	OBS	on deck	
MSM17/1304-1	19.12.	15:27	18° 19,68' S	10° 51,51' E	0	OBS	at surface	
MSM17/1304-1	19.12.	15:38	18° 20,20' S	10° 51,75' E	0	OBS	on deck	
MSM17/1305-1	19.12.	15:46	18° 20,48' S	10° 51,61' E	0	OBS	released	OBS 99
MSM17/1305-1	19.12.	16:12	18° 20,62' S	10° 55,47' E	0	OBS	at surface	
MSM17/1305-1	19.12.	16:24	18° 20,94' S	10° 55,66' E	0	OBS	on deck	
MSM17/1306-1	19.12.	16:31	18° 20,95' S	10° 55,62' E	0	OBS	released	OBS 100
MSM17/1306-1	19.12.	17:30	18° 21,57' S	10° 59,63' E	0	OBS	at surface	
MSM17/1306-1	19.12.	17:42	18° 21,90' S	10° 59,52' E	0	OBS	on deck	
MSM17/1307-1	19.12.	17:45	18° 21,91' S	10° 59,53' E	0	OBS	released	OBS 101
MSM17/1307-1	19.12.	18:12	18° 22,12' S	11° 1,68' E	0	OBS	at surface	
MSM17/1307-1	19.12.	18:35	18° 22,77' S	11° 3,31' E	0	OBS	on deck	
MSM17/1308-1	19.12.	18:39	18° 22,75' S	11° 3,18' E	0	OBS	released	OBS 102
MSM17/1308-1	19.12.	19:14	18° 23,30' S	11° 6,75' E	0	OBS	at surface	
MSM17/1308-1	19.12.	19:26	18° 23,63' S	11° 7,17' E	0	OBS	on deck	
MSM17/1309-1	19.12.	19:45	18° 23,86' S	11° 8,86' E	0	OBH	released	OBH 103
MSM17/1309-1	19.12.	20:03	18° 24,12' S	11° 10,89' E	0	OBH	sighted	
MSM17/1309-1	19.12.	20:15	18° 24,51' S	11° 11,21' E	0	OBH	back to deck	
MSM17/1310-1	19.12.	20:33	18° 24,73' S	11° 12,90' E	0	OBS	released	OBS 104
MSM17/1310-1	19.12.	20:45	18° 24,79' S	11° 14,03' E	0	OBS	at surface	
MSM17/1310-1	19.12.	21:02	18° 25,30' S	11° 15,06' E	0	OBS	on deck	
MSM17/1311-1	19.12.	21:22	18° 25,37' S	11° 17,05' E	0	OBH	released	OBH 105
MSM17/1311-1	19.12.	21:37	18° 25,72' S	11° 18,41' E	0	OBH	sighted	
MSM17/1311-1	19.12.	21:50	18° 26,18' S	11° 19,02' E	0	OBH	back to deck	
MSM17/1312-1	19.12.	22:16	18° 26,52' S	11° 21,91' E	0	OBH	released	OBH 106
MSM17/1312-1	19.12.	22:24	18° 26,65' S	11° 22,44' E	0	OBH	sighted	
MSM17/1312-1	19.12.	22:38	18° 27,03' S	11° 22,79' E	0	OBH	back to deck	
MSM17/1313-1	19.12.	23:07	18° 27,35' S	11° 25,87' E	0	OBS	released	OBS 107
MSM17/1313-1	19.12.	23:31	18° 27,61' S	11° 26,75' E	0	OBS	released	second try
MSM17/1313-1	19.12.	23:33	18° 27,59' S	11° 26,72' E	0	OBS	at surface	
MSM17/1313-1	19.12.	23:49	18° 27,90' S	11° 26,64' E	0	OBS	on deck	
MSM17/1314-1	20.12.	0:25	18° 28,27' S	11° 30,51' E	250,8	OBH	released	OBH 108
MSM17/1314-1	20.12.	0:29	18° 28,28' S	11° 30,54' E	251,1	OBH	sighted	
MSM17/1314-1	20.12.	0:44	18° 28,92' S	11° 30,63' E	248,4	OBH	back to deck	
MSM17/1315-1	20.12.	1:13	18° 29,21' S	11° 34,33' E	203,5	OBH	released	OBH 109
MSM17/1315-1	20.12.	1:15	18° 29,25' S	11° 34,34' E	203	OBH	sighted	
MSM17/1315-1	20.12.	1:25	18° 29,70' S	11° 34,46' E	204	OBH	back to deck	
MSM17/1316-1	20.12.	1:59	18° 30,14' S	11° 38,18' E	186	OBH	released	OBH 110
MSM17/1316-1	20.12.	2:02	18° 30,11' S	11° 38,16' E	186,3	OBH	sighted	
MSM17/1316-1	20.12.	2:12	18° 30,52' S	11° 38,16' E	188,5	OBH	back to deck	
MSM17/1317-1	20.12.	2:46	18° 30,93' S	11° 42,02' E	183,4	OBH	released	OBH 111
MSM17/1317-1	20.12.	2:46	18° 30,93' S	11° 42,02' E	183,4	OBH	sighted	
MSM17/1317-1	20.12.	2:56	18° 31,37' S	11° 42,14' E	182,9	OBH	back to deck	
MSM17/1318-1	20.12.	3:27	18° 31,71' S	11° 45,91' E	170,5	OBH	released	OBH 112
MSM17/1318-1	20.12.	3:29	18° 31,77' S	11° 45,96' E	171	OBH	sighted	
MSM17/1318-1	20.12.	3:40	18° 32,21' S	11° 46,05' E	170,5	OBH	back to deck	
MSM17/1319-1	20.12.	8:38	18° 46,30' S	10° 46,50' E	1538,3	MB+PS	start track	Kurs 247°; 5 Knoten
MSM17/1319-1	20.12.	18:14	19° 4,83' S	10° 0,05' E	3849,3	MB+PS	alter course	new heading 158°
MSM17/1319-1	20.12.	23:02	19° 27,09' S	10° 9,57' E	1220,8	MB+PS	Reboot Multibeam	
MSM17/1319-1	20.12.	23:24	19° 27,11' S	10° 9,74' E	1228,9	MB+PS	alter course	new heading 346°

MSM17/1319-1	21.12.	3:38	19° 6,46' S	10° 4,20' E	3546,6	MB+PS	alter course	new heading 067°
MSM17/1319-1	21.12.	4:13	19° 5,17' S	10° 6,76' E	3663,2	MB+PS	alter course	new heading 171°
MSM17/1319-1	21.12.	8:47	19° 26,96' S	10° 10,85' E	1242,6	MB+PS	alter course	new heading 360°
MSM17/1319-1	21.12.	13:27	19° 3,94' S	10° 10,09' E	3805,3	MB+PS	alter course	new heading 067°
MSM17/1319-1	21.12.	14:02	19° 2,70' S	10° 12,71' E	3791,1	MB+PS	alter course	new heading 180°
MSM17/1319-1	21.12.	17:40	19° 20,10' S	10° 13,00' E	1127,5	MB+PS	alter course	new heading 091°
MSM17/1319-1	21.12.	18:12	19° 20,16' S	10° 15,78' E	1202,9	MB+PS	alter course	new heading 360°
MSM17/1319-1	21.12.	22:01	19° 1,46' S	10° 16,32' E	2896,5	MB+PS	alter course	new heading 066°
MSM17/1319-1	21.12.	22:01	19° 1,46' S	10° 16,32' E	2896,5	MB+PS	alter course	new heading 180°
MSM17/1319-1	22.12.	2:23	19° 19,68' S	10° 19,04' E	1562	MB+PS	alter course	new heading 092°
MSM17/1319-1	22.12.	2:45	19° 20,06' S	10° 20,81' E	1465,3	MB+PS	alter course	new heading 360°
MSM17/1319-1	22.12.	6:20	19° 2,22' S	10° 21,20' E	2192,6	MB+PS	alter course	new heading 156°
MSM17/1319-1	22.12.	7:48	19° 8,29' S	10° 23,88' E	1662,7	MB+PS	alter course	new heading 064°
MSM17/1319-1	22.12.	8:32	19° 6,91' S	10° 27,22' E	1673,7	MB+PS	alter course	new heading 336°
MSM17/1319-1	22.12.	10:22	18° 58,52' S	10° 23,38' E	2493,1	MB+PS	alter course	new heading 066°
MSM17/1319-1	22.12.	10:55	18° 57,48' S	10° 26,05' E	2623	MB+PS	alter course	new heading 167°
MSM17/1319-1	22.12.	12:40	19° 5,82' S	10° 28,18' E	1726,9	MB+PS	alter course	new heading 067°
MSM17/1319-1	22.12.	12:54	19° 6,20' S	10° 29,12' E	1714,4	MB+PS	alter course	new heading 358°
MSM17/1319-1	22.12.	14:50	18° 56,74' S	10° 29,19' E	2558,2	MB+PS	alter course	new heading 022°
MSM17/1319-1	22.12.	15:19	18° 55,54' S	10° 31,19' E	2622	MB+PS	alter course	new heading 186°
MSM17/1319-1	22.12.	17:18	19° 4,80' S	10° 30,98' E	1781,9	MB+PS	alter course	new heading 013°
MSM17/1319-1	22.12.	19:55	18° 54,00' S	10° 34,83' E	2244,6	MB+PS	alter course	new heading 066°
MSM17/1319-1	22.12.	22:11	18° 49,33' S	10° 45,53' E	1484	MB+PS	alter course	new heading 156°
MSM17/1319-1	22.12.	22:37	18° 51,19' S	10° 46,12' E	1430	MB+PS	alter course	new heading 246°
MSM17/1319-1	23.12.	0:31	18° 55,05' S	10° 36,96' E	2038,7	MB+PS	alter course	new heading 190°
MSM17/1319-1	23.12.	0:52	18° 56,58' S	10° 36,35' E	1980,2	MB+PS	alter course	new heading 062°
MSM17/1319-1	23.12.	3:08	18° 52,39' S	10° 46,57' E	1435,4	MB+PS	alter course	new heading 163°
MSM17/1319-1	23.12.	3:25	18° 53,18' S	10° 47,41' E	1408	MB+PS	alter course	new heading 239°
MSM17/1319-1	23.12.	6:05	19° 0,19' S	10° 35,49' E	1872	MB+PS	alter course	new heading 201°
MSM17/1319-1	23.12.	7:19	19° 5,83' S	10° 32,98' E	1702,1	MB+PS	alter course	new heading 246°
MSM17/1319-1	23.12.	9:26	19° 10,32' S	10° 22,92' E	1630,4	MB+PS	alter course	new heading 180°
MSM17/1319-1	23.12.	11:35	19° 20,93' S	10° 22,67' E	1425,1	MB+PS	alter course	new heading 271°
MSM17/1319-1	23.12.	11:35	19° 20,93' S	10° 22,67' E	1425,1	MB+PS	alter course	new heading 360°
MSM17/1319-1	23.12.	13:53	19° 14,96' S	10° 17,57' E	1863,9	MB+PS	alter course	new heading 270°
MSM17/1319-1	23.12.	14:24	19° 14,32' S	10° 15,23' E	2022,3	MB+PS	alter course	new heading 180°
MSM17/1319-1	23.12.	15:34	19° 19,76' S	10° 14,61' E	1203	MB+PS	alter course	new heading 135°
MSM17/1319-1	23.12.	15:55	19° 21,26' S	10° 15,29' E	1197,7	MB+PS	alter course	new heading 270°
MSM17/1319-1	23.12.	16:27	19° 21,52' S	10° 12,60' E	1124,2	MB+PS	alter course	new heading 180°
MSM17/1319-1	23.12.	18:06	19° 29,44' S	10° 12,02' E	1429,7	MB+PS	alter course	new heading 270°
MSM17/1319-1	23.12.	18:59	19° 30,44' S	10° 9,15' E	1422,3	MB+PS	alter course	new heading 170°
MSM17/1320-1	23.12.	19:44	19° 31,27' S	10° 9,26' E	1447,2	SEIS	airguns in water	Bb Array 6 guns
MSM17/1320-1	23.12.	20:01	19° 31,90' S	10° 9,36' E	1458,8	SEIS	Streamer in water	150 m
MSM17/1319-1	23.12.	20:03	19° 31,98' S	10° 9,38' E	1457,5	MB+PS	alter course	new heading 338°
MSM17/1320-1	23.12.	21:14	19° 29,99' S	10° 9,19' E	1389,2	SEIS	profile start	
MSM17/1320-1	24.12.	7:46	18° 51,19' S	9° 52,30' E	0	SEIS	end of profile	
MSM17/1320-1	24.12.	8:07	18° 50,24' S	9° 53,04' E	0	SEIS	streamer on deck	
MSM17/1320-1	24.12.	8:23	18° 50,39' S	9° 53,69' E	0	SEIS	airgun on deck	
MSM17/1319-1	24.12.	8:51	18° 51,40' S	9° 55,47' E	0	MB+PS	alter course	new heading 158°
MSM17/1319-1	24.12.	10:58	19° 1,16' S	9° 59,84' E	4166,2	MB+PS	alter course	new heading 068°
MSM17/1319-1	24.12.	20:14	18° 43,71' S	10° 44,82' E	0	MB+PS	alter course	new heading 357°
MSM17/1319-1	25.12.	9:39	17° 36,19' S	10° 42,07' E	3141,5	MB+PS	profile break	
MSM17/1321-1	25.12.	10:22	17° 34,11' S	10° 41,50' E	3121,1	SEIS	airguns in water	Bb Array 6 guns
MSM17/1321-1	25.12.	10:32	17° 34,54' S	10° 41,43' E	3125,5	SEIS	airguns in water	Stb Array 2 guns
MSM17/1321-1	25.12.	10:44	17° 35,12' S	10° 41,40' E	3122,6	SEIS	Streamer in water	150m
MSM17/1319-1	25.12.	10:57	17° 35,85' S	10° 41,88' E	3141,6	MB+PS	continue profile	new heading 154°



MSM17/1321-1	25.12.	10:57	17° 35,85' S	10° 41,88' E	3141,6	SEIS	profile start	heading 154°
MSM17/1321-1	26.12.	0:30	18° 24,48' S	11° 6,86' E	2140,4	SEIS	information	Bb-Array - 1 gun off
MSM17/1321-1	26.12.	10:36	19° 0,62' S	11° 25,46' E	441,8	SEIS	information	heave Stbd Array
MSM17/1321-1	27.12.	14:53	20° 42,10' S	12° 18,05' E	387,3	SEIS	end of profile	
MSM17/1321-1	27.12.	15:03	20° 42,67' S	12° 18,12' E	396,4	SEIS	streamer on deck	
MSM17/1321-1	27.12.	15:23	20° 43,39' S	12° 17,98' E	408,5	SEIS	airgun on deck	Bb-Array
MSM17/1321-1	27.12.	15:33	20° 43,78' S	12° 17,90' E	416,4	SEIS	airgun on deck	Stb-gun
MSM17/1319-1	27.12.	15:45	20° 44,96' S	12° 18,93' E	418,8	MB+PS	profile end	