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Short Cruise Report

Maria S. Merian – Cruise MSM103

Emden – Halifax – Emden

12.9.2021 – 15.11.2021

Chief Scientist: Dr. Sebastian Hölz

Captain: Ralf Schmidt

Maps

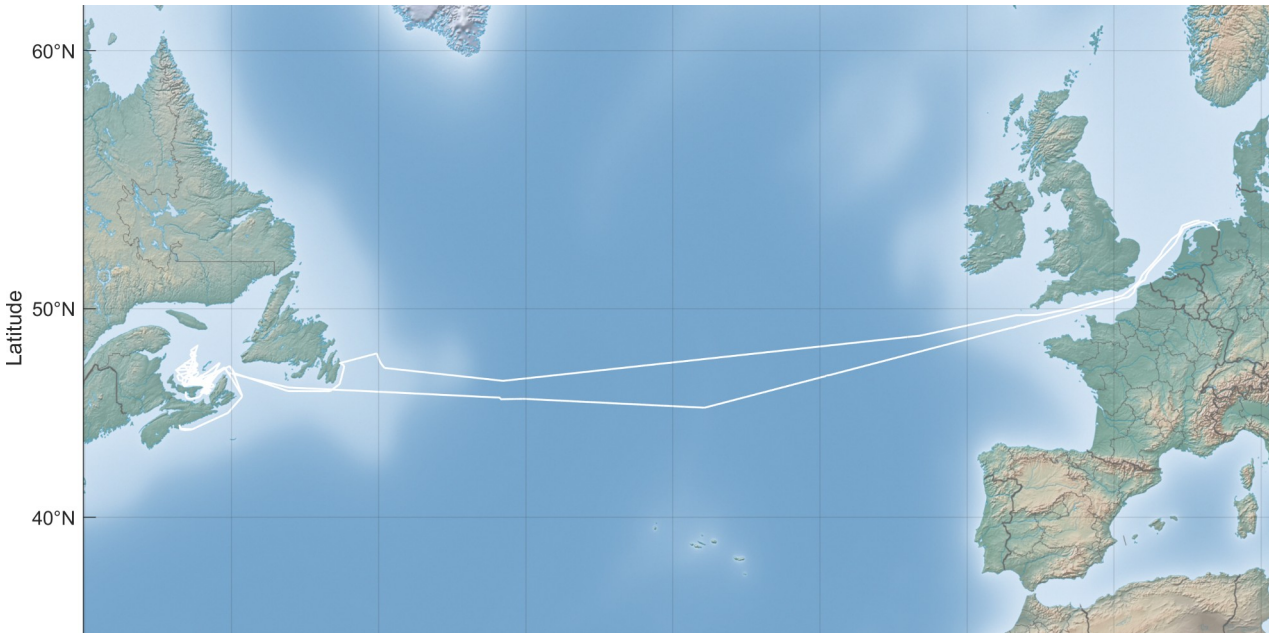

Fig. 1: Ship track of RV M.S. Merian during cruise MSM103 from Emden (Germany) to the Gulf of St. Lawrence (Canada) and back.

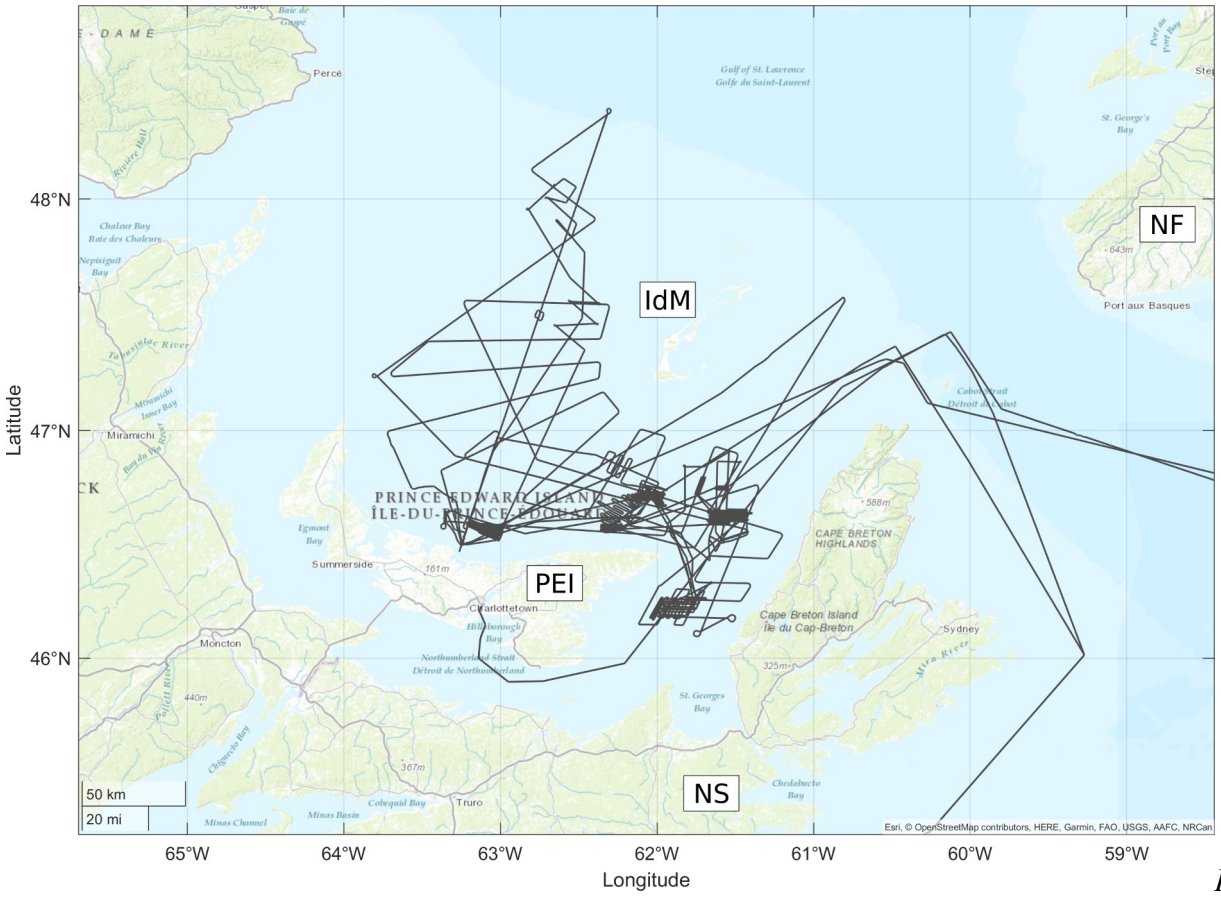

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Fig. 2: Ship track of RV M.S.Merian during cruise MSM103 in the working area, which was entered through the Cabot Strait between Newfoundland (NF) and Nova Scotia (NS). Work was mostly carried out between Prince Edward Island (PEI) and Îles de la Madeleine (IdM) and between PEI and the Cape Breton Island.

Objectives

Our overarching hypothesis is that ice sheet dynamics and landscape evolution during the last glacial – interglacial cycle(s) significantly altered the recharge of freshwater offshore aquifers (FOAs) hosted in fractured consolidated clastic sediments. If this is the case, we should observe groundwater distribution aligned with the main ice sheet distribution, e.g. the St. Lawrence Channel. If this is not the case, we will observe a distribution that is controlled by distance from the coast and water depth. At any rate, the distance of resistivity anomalies from onshore aquifers and their patchiness will reveal the influence of sea level change.

Our project will provide answers to the following fundamental questions directly from the results of the cruise:

- How are FOAs distributed and what are their geometrical, physical, and lithological characteristics?
- What are the roles of both fractured sandstone and unconsolidated Quaternary sediments of glacial origin in hosting fresh groundwater reserves on the continental shelf, in controlling spatial variation in salinity distributions, and in driving fresh groundwater discharge?
- When and how was the groundwater emplaced?
- Which FOAs are hydraulically linked to onshore/coastal groundwater aquifers and what are the consequences of such links?

Furthermore, we will address the following questions within the SOURCE project based on

data from this cruise and additional data to be collected by the Canadian colleagues:

- What is the distribution of modern groundwater seeps at the seafloor and what is their effect on the hydrogeological cycle and benthic ecosystems?
- How will climate change or pumping affect the quality and quantity of linked offshore-onshore groundwater aquifers?
- Can coastal cities sustainably extract groundwater from offshore aquifers to meet present and future freshwater needs?

To answers these questions we will quantify the processes controlling the formation of FOAs hosted in fractured rocks, the recharge mechanisms, and their timing; quantitatively characterize the geometry of the offshore groundwater system; determine whether the offshore groundwater system is presently connected to a freshwater source onshore; explore the impacts of groundwater flow across the sea floor and the mixing with ambient ocean waters; define the hydrological budget of the groundwater system; determine the role played by freshened groundwater seepage on the distribution and dynamics of shallow marine benthic ecosystems; and model the evolution of the groundwater system in response to extraction, saltwater intrusion driven by relative sea-level rise, and other changes in climate such as precipitation patterns or ice extent.

Narrative

Due to the COVID situation, every member of the crew has to be and is indeed vaccinated and tested before embarking on RV *M.S. Merian*. The cruise starts in the morning hours of September 12th with a scientific crew consisting of 15 members, mostly junior scientists and students, supported by three technicians from GEOMAR. Due to the pandemic situation, we have to leave one cabin empty for quarantine purposes and three spaces are reserved for marine mammal observers (MMOs), which will embark onto the ship in Canada. During the 11 days of transit across the Atlantic, we are kept busy with safety drills, getting familiarized with the ship, setting up the laboratories testing of gear and instruments, which we will use to conduct seismic and electromagnetic experiments in combination with sampling with a gravity corer (GC) and hydroacoustic investigations.

First scientific measurements start on September 15th: a first CTD cast yields data for the calibration of the hydroacoustic systems. For the DAM (Deutsche Allianz Meeresforschung) project "Unterwegs" we will be collecting bathymetric data with the multibeam echosounder (MBES), structural data from the seafloor with the sub-bottom profiler (SBP) and information about oceanic currents with the Acoustic Doppler Current Profiler (ADCP). Additionally, water probes will be collected and seawater conditions will be measured with the thermosalinograph (TSG). After leaving the European continental shelf, HA measurements (EM122 MBES, SBP, ADCP) and the TSG sampling commence. On the 17th we finally received the Letter of Acceptance (LOA) – i.e. the diplomatic clearance from the Canadian Department of Foreign Affairs, Trade and Development – for the working area. Now, the only permit missing is the one by the Department of Fisheries and Oceans Canada (DFO), which contains details about exclusive zones and mitigation measures and other requirements to be followed by the ship. In the evening hours, we receive news that one of our scientific colleagues will need to leave the ship after the transit due to family affairs back home. In cooperation with the captain, the disembarkment and travel home are organized and after reaching the Canadian coast, we have to say farewell to our colleague on the 21st in the port of St. John's (Newfoundland). On the 23rd we finally arrive in the working area and directly transfer to Charlottetown on the Prince Edward Island (PEI), where we welcome the three MMOs, who will be monitoring our seismic and hydroacoustic work. Shortly after the MMOs' embarkment we also finally receive the permit by the DFO and have all the necessary permits needed.

Shortly after midnight on the 24th we arrive at the NE tip of PEI and after deployment and activation of the Passive Acoustic Monitoring System (PAM), which is operated by the MMOs for the detection of protected species, we receive the clearance to start our scientific work. This is followed by a ramp-up procedure, in which the acoustic systems are slowly activated over a time span of 30min to give animals around the ship a heads-up before fully activating the hydroacoustic (HA) systems, which are Multibeam Echosounder (MBES) and Sub-Bottom Profiler (SBP). Until the morning, we run tests for test for the HA systems and in the morning start with the deployment of 12 ocean-bottom electromagnetic (OBEM) receivers along the central profile line, which runs in a NNE direction from PEI to the Lawrentide Channel. Measurements with 2D Multichannel streamer seismics (MCSS) commence in the morning hours of the 25th.

The first half of the project is mostly dedicated to MCSS with HA measurements running in parallel. We start measurements along profiles covering large sections of the area between PEI and the Lawrentide Channel and crossing most of the boreholes in the area. Afterwards we focus on the

area to the E of PEI, where previously published multibeam data gives some indication for old channel systems dating back to the last glaciation. Seismic and HA measurements frequently have to be interrupted after sightings of protected species or due to acoustic alarms of the MMOs and – especially in the first ten days – due to technical problems with the seismic streamer and the acoustic sources. However, in the following three weeks until October 16th, we acquire MCSS data along profiles with a total length of about 2000km, which is more than we planned for.

During downtime of the seismic system, we run first dedicated HA profiles and also – based on results of SBP data – take first gravity cores. In one of the cores, taken on October 4th just to the E of the central profile, we also find some freshening of the pore fluids: a first indication of offshore groundwater. On the 29th of September we also try our first controlled source electromagnetic (CSEM) experiment with our bottom-towed system. Shortly after the system is finally fully deployed we encounter problems with the stability of communication between the lab and the deployed transmitter. After a partial recovery of the transmitter we see that the system is pretty banged up and decide to fully recover the whole system. After full recovery we see that the hard seafloor and rock debris have caused substantial damage to the system. It seems that the seafloor along the main profile is not suitable for a bottom-towed system. For future CSEM measurements we will use a mobile transmitter system, which does not need to be in contact with the seafloor in combination with the stationary OBEM receivers. The mobile source is not as strong as the bottom-towed and will only allow for experiments at a smaller scale, but safety concerns force us to adjust our plans. The first experiment with the mobile source is carried out between October 5th – 6th and will be used for all experiments in the second half of the cruise.

With the last seismic measurements and a redeployment of OBEM stations to new locations on October 16th, we finish the first half of the project. A port call in Halifax for stashing up supplies gives the scientific crew and the technicians some well deserved time to rest. In Halifax we say farewell to the MMOs because we will not run any MCSS anymore. We also get to meet our Canadian project partners in person for the first time and connect to an outreach project team from the “Ocean School Canada”.

After our break in Halifax, scientific work N of PEI commences on the 20th of October. In the following two weeks, we conduct seven CSEM experiments, which often requires us to recover, prepare and redeploy the OBEMs followed by operation of the mobile transmitter system around the clock. To have some breaks in between, we also run HA profiles across structures of interest several times. In addition, we also give the GC team several time slots for sampling.

In the evening hours of November 3rd the scientific work ends after the recovery of the last OBEM station. We have conducted a total of eight CSEM experiments with at total of about 200km of profile, have deployed and successfully recovered OBEM 93 times, collected about 8TB of HA data and successfully recovered 40m of sediment material from nine locations in the working area with the GC.

After leaving the working area on November 4th, we start HA measurements and TSG sampling for the DAM project “Unterwegs” during the transit back. When reaching the Mid-Atlantic Ridge on the 8th of November, we try to conduct another EM experiment. However, due to a strong swell, we have to abandon the experiment after a couple of hours. The rest of the transit is dedicated to packing up, cleaning the labs, backing up data and getting some rest. On November 15th we finally arrive back in Emden. After 65 days at sea, the longest scientific cruise ever on RV *M.S. Merian*, we are happy to go home and say “Farewell” and “Thank You” to Captain Schmidt and his crew.

Acknowledgements

The scientific crew of cruise MSM103 thank Captain Ralf Schmidt and his crew for their support and great flexibility which during the cruise, which was a great help in conducting our experiments and contributed to the success of this cruise. Thanks go also to our colleagues and project partners Vittorio Marselli, Mladen Nedimovic, Graeme Cairns (Dalhousie University), Aaron Micaleff (University of Malta), Christian Berndt, Marion Jegen, Judith Elger, Amir Haroon (GEOMAR) for helping in organizational matters and their scientific input. We are grateful to Angeline LeBlanc (Department of Fisheries & Oceans, Canada) and her colleagues from DFO for providing us with the permit, which enabled us to carry out work in the Bay of St. Lawrence.

Teilnehmerliste

Name	Discipline	Institution
Hölz, Sebastian, Dr.	geophysics, chief scientist	GEOMAR
Franz, Gesa	geophysics, lead electromagnetics	GEOMAR
Córdoba Ramírez, Fernando	geophysics, electromagnetics	Dalhousie
Faghih, Zahra	geophysics, electromagnetics	GEOMAR
Kühn, Michel	geophysics, lead seismics	GEOMAR
Castillo Castellanos, José Miguel	geophysics, seismics	Dalhousie
Klein, Johanna	geophysics, lead hydroacoustics	GEOMAR
Pandolpho, Bruna	geophysics, hydroacoustics	GEOMAR
Schulten, Irena, Dr.	geochemistry, lead gravity coring	UoM
Bucci, Monica, Dr.	geochemistry, gravity coring	UoM
Breunig, Emelie	watchkeeper	GEOMAR
Klein, Elisa	watchkeeper	GEOMAR
Plett, Johanna	watchkeeper	GEOMAR
Schmitz, Wanda	watchkeeper	GEOMAR
Timm, Henrike	watchkeeper	GEOMAR
Wollatz-Vogt, Martin	engineer, electromagnetics	GEOMAR
Bartels, Thies	technician, seismics	GEOMAR
Rohde, Lea	technician, seismics, gravity coring	GEOMAR
Rutherford, Bryan	marine mammal observer, passive acoustic monitor	RPS
Renaud, Galaxina	marine mammal observer, passive acoustic monitor	RPS
Reid, Connor	marine mammal observer, passive acoustic monitor	RPS

GEOMAR	GEOMAR Helmholtz Centre for Ocean Research (Kiel, Germany)
UoM	University of Malta (Msida, Malta)
Dalhousie	Dalhousie University (Halifax, Canada)
RPS	RPS Energy Canada Ltd. (Calgary, Canada)

Stationsliste

Station MSM103	Date [2021]	Time UTC	Device	Lat [N]	Lon [W]	Depth [m]	Comment
1-1		07:27	CTD	48° 44,861'	14° 01,917'	0	in the water
1-1	15.09.	08:10	CTD	48° 44,862'	14° 01,918'	0	max depth/on ground
1-1		08:44	CTD	48° 44,861'	14° 01,917'	0	on deck
2-1		12:00	Releaser Test	46° 34,363'	57° 31,680'	296	in the water
2-1		12:15	Releaser Test	46° 34,364'	57° 31,679'	296	max depth/on ground
2-1	22.09.	12:16	Releaser Test	46° 34,363'	57° 31,680'	296	hydrophone in water
2-1		12:47	Releaser Test	46° 34,363'	57° 31,679'	296	hydrophone on deck
2-1		13:01	Releaser Test	46° 34,363'	57° 31,680'	296	on deck
3-1		22:33	CTD	46° 23,991'	61° 46,484'	45	in the water
3-1	23.09.	22:37	CTD	46° 23,991'	61° 46,483'	45	max depth/on ground
3-1		22:40	CTD	46° 23,991'	61° 46,483'	45	on deck
4-1		23:53	PAM	46° 33,708'	61° 52,987'	54	length: 220m – deployed
4-1		00:07	PAM	46° 34,140'	61° 54,474'	204	Pre-watch – start
4-1		00:37	PAM	46° 35,005'	61° 58,059'	54	Pre-watch – end
5-1		00:43	MBES (EM712)	46° 35,205'	61° 58,892'	54	start ramp up
5-1		01:02	MBES (EM712)	46° 35,867'	62° 01,700'	55	ramp up complete
5-1		01:39	MBES (EM712)	46° 37,109'	62° 07,093'	55	calibration start
5-1		05:51	MBES (EM712)	46° 37,274'	62° 15,709'	52	calibration end
4-1		09:55	PAM	46° 36,140'	62° 45,833'	50	on deck
6-1		12:10	OBEM	46° 29,897'	63° 15,021'	25	OBEM01 – deployed
6-2		12:51	OBEM	46° 32,476'	63° 13,788'	35	OBEM02 – deployed
6-3		13:26	OBEM	46° 35,024'	63° 12,560'	42	OBEM03 – deployed
6-4		14:06	OBEM	46° 37,594'	63° 11,312'	45	OBEM04 – deployed
6-5		14:37	OBEM	46° 40,158'	63° 10,068'	51	OBEM05 – deployed
6-6		15:23	OBEM	46° 42,715'	63° 08,820'	54	OBEM06 – deployed
6-7	24.09.	15:48	OBEM	46° 45,271'	63° 07,570'	54	OBEM07 – deployed
6-8		16:35	OBEM	46° 47,834'	63° 06,326'	60	OBEM08 – deployed
6-9		17:12	OBEM	46° 50,391'	63° 05,077'	55	OBEM09 – deployed
6-10		17:37	OBEM	46° 52,946'	63° 03,829'	62	OBEM10 – deployed
6-11		18:02	OBEM	46° 55,508'	63° 02,573'	64	OBEM11 – deployed
6-12		18:26	OBEM	46° 58,070'	63° 01,315'	64	OBEM12 – deployed
7-1		18:37	CTD	46° 58,080'	63° 01,367'	64	in the water
7-1		18:42	CTD	46° 58,080'	63° 01,367'	64	max depth/on ground
7-1		18:47	CTD	46° 58,080'	63° 01,368'	64	on deck
8-1		20:31	PAM	46° 54,703'	62° 33,923'	66	length: 220m – deployed
8-1		20:41	PAM	46° 54,553'	62° 32,726'	64	Pre-watch – start
8-1		21:14	PAM	46° 54,143'	62° 28,373'	66	Pre-watch – end
9-1		21:37	MBES (EM712)	46° 53,853'	62° 25,299'	65	profile start
10-1		21:54	Parasound P70	46° 53,536'	62° 23,013'	67	profile start
10-1		08:14	Parasound P70	46° 33,207'	62° 48,949'	49	profile end
9-1		08:14	MBES (EM712)	46° 33,202'	62° 48,988'	49	profile end
8-1		08:25	PAM	46° 33,005'	62° 50,418'	51	on deck
11-1		11:05	Seismic Streamer	46° 38,469'	63° 20,635'	41	Streamer in water
11-1	25.09.	11:47	Seismic Streamer	46° 37,546'	63° 20,010'	40	length: 260m
11-2		12:08	Seismic Source	46° 37,022'	63° 19,656'	40	Airgun in water
12-1		12:29	PAM	46° 36,218'	63° 19,111'	39	length: 80m – deployed
12-1		12:39	PAM	46° 35,592'	63° 18,688'	39	Pre-watch – start
11-2		12:39	Seismic Source	46° 35,592'	63° 18,688'	39	Pre-watch – start

12-1		13:09	PAM	46° 33,964'	63° 16,969'	36	Pre-watch – end
11-2		13:09	Seismic Source	46° 33,964'	63° 16,971'	36	Pre-watch – end
11-2		13:11	Seismic Source	46° 33,925'	63° 16,785'	36	start ramp up
11-2		13:28	Seismic Source	46° 33,609'	63° 15,166'	38	ramp up complete
14-1		13:50	Parasound P70	46° 33,676'	63° 13,183'	38	profile start
13-1		13:50	MBES (EM712)	46° 33,676'	63° 13,183'	38	profile start
11-2		13:50	Seismic Source	46° 33,676'	63° 13,183'	38	profile start
12-1		14:21	PAM	46° 35,877'	63° 12,078'	41	length: 220m
13-1	26.09.	02:50	MBES (EM712)	47° 29,368'	62° 45,487'	59	Interrupt profile, PAM detection dolphins <1000m
14-1		02:50	Parasound P70	47° 29,368'	62° 45,487'	59	Interrupt profile, PAM detection dolphins <1000m
12-1		02:50	PAM	47° 29,368'	62° 45,487'	59	detection dolphins <1000m (PAM)
11-2		02:50	Seismic Source	47° 29,368'	62° 45,487'	59	Interrupt profile, PAM detection dolphins <1000m
12-1		02:51	PAM	47° 29,443'	62° 45,457'	58	Last detection < 1000m, start pre-watch (PAM)
12-1		03:21	PAM	47° 30,596'	62° 43,582'	59	Pre-watch – end
11-2		03:22	Seismic Source	47° 30,527'	62° 43,536'	59	start ramp up
11-2		03:39	Seismic Source	47° 29,244'	62° 43,981'	57	ramp up complete
14-1		04:02	Parasound P70	47° 29,285'	62° 45,530'	59	profile - continue
13-1		04:02	MBES (EM712)	47° 29,285'	62° 45,530'	59	profile - continue
11-2		04:02	Seismic Source	47° 29,285'	62° 45,530'	59	profile - continue
12-1		04:18	PAM	47° 30,447'	62° 44,952'	58	detection dolphins <1000m (PAM)
14-1		04:19	Parasound P70	47° 30,520'	62° 44,915'	59	Interrupt profile, PAM detection dolphins <1000m
13-1		04:19	MBES (EM712)	47° 30,520'	62° 44,915'	59	Interrupt profile, PAM detection dolphins <1000m
12-1		04:19	PAM	47° 30,520'	62° 44,915'	59	Last detection < 1000m, start pre-watch (PAM)
11-2		04:19	Seismic Source	47° 30,520'	62° 44,915'	59	Interrupt profile, PAM detection dolphins <1000m
12-1		04:49	PAM	47° 30,425'	62° 46,446'	61	Pre-watch – end
11-2		04:49	Seismic Source	47° 30,406'	62° 46,464'	61	start ramp up
11-2		05:05	Seismic Source	47° 29,385'	62° 46,261'	61	ramp up complete
11-2		05:27	Seismic Source	47° 30,477'	62° 44,915'	58	profile - continue
13-1		05:27	MBES (EM712)	47° 30,493'	62° 44,908'	58	profile - continue
14-1		05:28	Parasound P70	47° 30,531'	62° 44,895'	58	profile - continue
12-1		06:49	PAM	47° 36,384'	62° 41,972'	59	detection dolphins <1000m (PAM)
14-1		06:50	Parasound P70	47° 36,458'	62° 41,937'	60	Interrupt profile, PAM detection dolphins <1000m
13-1		06:50	MBES (EM712)	47° 36,458'	62° 41,937'	60	Interrupt profile, PAM detection dolphins <1000m
11-2		06:50	Seismic Source	47° 36,458'	62° 41,937'	60	Interrupt profile, PAM detection dolphins <1000m
12-1		08:06	PAM	47° 41,983'	62° 39,163'	64	Last detection < 1000m, start pre-watch (PAM)
12-1		08:39	PAM	47° 44,341'	62° 37,972'	65	Pre-watch – end
11-2		08:40	Seismic Source	47° 44,388'	62° 37,948'	63	start ramp up
11-2		08:55	Seismic Source	47° 45,464'	62° 37,406'	65	ramp up complete
11-2		08:55	Seismic Source	47° 45,484'	62° 37,396'	65	profile - continue
13-1		08:58	MBES (EM712)	47° 45,695'	62° 37,289'	64	profile - continue
14-1		09:14	Parasound P70	47° 46,876'	62° 36,694'	67	profile - continue
11-2		12:32	Seismic Source	48° 00,859'	62° 29,622'	74	Interrupt profile, technical problems

11-2		12:51	Seismic Source	48° 02,015'	62° 29,038'	70	Airgun on deck
12-1		13:08	PAM	48° 02,889'	62° 28,595'	65	Pre-watch – start
11-2		13:24	Seismic Source	48° 03,723'	62° 28,166'	61	Airgun in water
12-1		13:38	PAM	48° 04,575'	62° 27,741'	62	Pre-watch – end
11-2		13:38	Seismic Source	48° 04,598'	62° 27,729'	62	start ramp up
11-2		13:54	Seismic Source	48° 05,646'	62° 27,198'	61	profile - continue
11-2		13:54	Seismic Source	48° 05,646'	62° 27,198'	61	ramp up complete
12-1		22:35	PAM	48° 10,312'	62° 42,765'	90	detection dolphins <1000m (PAM)
13-1		22:35	MBES (EM712)	48° 10,279'	62° 42,833'	94	Interrupt profile, PAM detection dolphins <1000m
11-2		22:35	Seismic Source	48° 10,279'	62° 42,833'	94	Interrupt profile, PAM detection dolphins <1000m
14-1		22:38	Parasound P70	48° 10,142'	62° 43,125'	92	Interrupt profile, PAM detection dolphins <1000m
12-1		23:00	PAM	48° 09,025'	62° 45,515'	87	Last detection < 1000m, start pre-watch (PAM)
12-1		23:13	PAM	48° 08,357'	62° 46,804'	83	Pre-watch – end; detection dolphin < 1000m
12-1		23:46	PAM	48° 06,524'	62° 46,688'	84	Last detection < 1000m, start pre-watch (PAM)
12-1		00:16	PAM	48° 05,224'	62° 44,092'	91	Pre-watch – end
11-2		00:16	Seismic Source	48° 05,224'	62° 44,092'	91	start ramp up
11-2		00:33	Seismic Source	48° 04,454'	62° 42,540'	94	ramp up complete
13-1		00:34	MBES (EM712)	48° 04,405'	62° 42,451'	96	profile - continue
11-2		00:36	Seismic Source	48° 04,325'	62° 42,286'	95	profile - continue
14-1		00:51	Parasound P70	48° 03,653'	62° 40,961'	91	profile - continue
12-1		02:28	PAM	47° 59,404'	62° 32,526'	70	detection dolphins <1000m (PAM)
11-2		02:28	Seismic Source	47° 59,404'	62° 32,526'	70	Interrupt profile, PAM detection dolphins <1000m
13-1	27.09.	02:30	MBES (EM712)	47° 59,329'	62° 32,358'	76	Interrupt profile, PAM detection dolphins <1000m
14-1		02:30	Parasound P70	47° 59,329'	62° 32,358'	76	Interrupt profile, PAM detection dolphins <1000m
12-1		02:51	PAM	47° 58,263'	62° 30,273'	71	
12-1		03:27	PAM	47° 56,650'	62° 26,848'	74	Pre-watch – end
11-2		03:27	Seismic Source	47° 56,646'	62° 26,839'	74	start ramp up
11-2		03:43	Seismic Source	47° 55,964'	62° 25,428'	75	ramp up complete
13-1		04:18	MBES (EM712)	47° 54,085'	62° 24,638'	81	profile - continue
14-1		04:18	Parasound P70	47° 54,085'	62° 24,638'	81	profile - continue
11-2		04:18	Seismic Source	47° 54,085'	62° 24,638'	81	profile - continue
11-2	28.09.	03:20	Seismic Source	46° 51,928'	63° 08,751'	61	Interrupt profile, technical problems
12-1		11:19	PAM	46° 42,445'	62° 13,824'	70	on deck
11-2		11:25	Seismic Source	46° 42,386'	62° 13,346'	74	Airgun on deck
11-1		11:46	Seismic Streamer	46° 42,184'	62° 11,765'	61	Streamer on deck
14-1		18:56	Parasound P70	46° 41,049'	61° 59,028'	58	profile end
13-1		18:56	MBES (EM712)	46° 41,032'	61° 58,972'	58	profile end
15-1		19:21	GC	46° 43,257'	61° 57,456'	89	core barrel length: 3m – deployed
15-1		19:25	GC	46° 43,257'	61° 57,456'	89	max depth/on ground
15-1		19:33	GC	46° 43,257'	61° 57,456'	89	on deck
16-1		19:51	GC	46° 42,937'	61° 57,706'	96	core barrel length: 5m – deployed
16-1		19:54	GC	46° 42,937'	61° 57,705'	96	max depth/on ground
16-1		20:01	GC	46° 42,937'	61° 57,705'	96	on deck
17-1		20:23	GC	46° 43,430'	61° 57,574'	90	core barrel length: 5m – deployed
17-1		20:24	GC	46° 43,430'	61° 57,574'	90	max depth/on ground

17-1		20:31	GC	46° 43,430'	61° 57,574'	90	on deck
18-1		21:02	GC	46° 44,593'	62° 01,441'	76	core barrel length: 5m – deployed
18-1		21:04	GC	46° 44,593'	62° 01,441'	76	max depth/on ground
18-1		21:09	GC	46° 44,593'	62° 01,441'	76	on deck
18-2		21:20	GC	46° 44,594'	62° 01,445'	76	core barrel length: 5m – deployed
18-2		21:23	GC	46° 44,594'	62° 01,445'	76	max depth/on ground
18-2		21:29	GC	46° 44,594'	62° 01,445'	76	on deck
19-1		22:14	PAM	46° 45,820'	62° 11,560'	70	in the water
19-1		22:15	PAM	46° 45,830'	62° 11,606'	70	length: 220m
20-1		22:38	MBES (EM712)	46° 46,951'	62° 13,647'	67	profile start
21-1		22:38	Parasound P70	46° 46,984'	62° 13,623'	67	profile start
21-1		05:10	Parasound P70	46° 50,460'	62° 22,009'	60	profile end
20-1		05:10	MBES (EM712)	46° 50,460'	62° 22,009'	60	profile end
19-1		09:56	PAM	46° 34,664'	63° 00,192'	47	on deck
22-1		11:42	CSEM - Bottom-towed	46° 28,221'	63° 15,799'	21	in the water
22-1		14:50	CSEM - Bottom-towed	46° 28,590'	63° 15,619'	31	start towing
22-1		15:06	CSEM - Bottom-towed	46° 28,694'	63° 15,568'	28	interrupt towing
22-1		15:06	CSEM - Bottom-towed	46° 28,694'	63° 15,568'	28	profile start
22-1		15:32	CSEM - Bottom-towed	46° 28,694'	63° 15,568'	28	Interrupt profile, technical problems
22-1		16:51	CSEM - Bottom-towed	46° 28,701'	63° 15,564'	28	continue towing
22-1		17:04	CSEM - Bottom-towed	46° 28,781'	63° 15,525'	28	interrupt towing
22-1		17:05	CSEM - Bottom-towed	46° 28,781'	63° 15,526'	74	profile end (technical problems)
22-1		18:42	CSEM - Bottom-towed	46° 28,781'	63° 15,526'	28	on deck
23-1		19:16	Seismic Streamer	46° 28,794'	63° 15,519'	29	Streamer in water
23-1		19:39	Seismic Streamer	46° 29,328'	63° 15,262'	22	length: 260m
23-2		19:48	Seismic Source	46° 29,718'	63° 15,076'	25	Airgun in water
24-1	29.09.	21:03	PAM	46° 34,807'	63° 12,628'	41	length: 220m – deployed
24-1		21:14	PAM	46° 35,516'	63° 12,258'	42	Pre-watch – start
23-2		21:14	Seismic Source	46° 35,516'	63° 12,258'	42	Pre-watch – start
25-1		21:38	MBES (EM712)	46° 37,057'	63° 11,629'	43	profile start
26-1		21:38	Parasound P70	46° 37,078'	63° 11,634'	43	profile start
24-1		21:46	PAM	46° 37,475'	63° 12,161'	43	Pre-watch – end
23-2		21:46	Seismic Source	46° 37,475'	63° 12,161'	43	Pre-watch – end
23-2		21:47	Seismic Source	46° 37,487'	63° 12,380'	43	start ramp up
23-2		22:02	Seismic Source	46° 36,530'	63° 13,290'	41	ramp up complete
23-2		22:02	Seismic Source	46° 36,521'	63° 13,295'	41	profile start
26-1		22:51	Parasound P70	46° 35,320'	63° 12,364'	42	profile end
25-1		22:51	MBES (EM712)	46° 35,320'	63° 12,364'	42	profile end
23-2		22:51	Seismic Source	46° 35,320'	63° 12,364'	42	profile end
23-2		23:11	Seismic Source	46° 36,415'	63° 11,837'	43	Airgun on deck (technical problems)
24-1		23:35	PAM	46° 37,458'	63° 11,273'	45	on deck
23-1		23:42	Seismic Streamer	46° 37,655'	63° 11,141'	46	Streamer on deck
27-1	30.09.	03:42	PAM	47° 10,975'	62° 46,903'	54	length: 220m – deployed
27-1		03:55	PAM	47° 11,881'	62° 46,008'	67	Pre-watch – start
27-1		04:25	PAM	47° 14,041'	62° 43,902'	67	Pre-watch – end
29-1		05:04	Parasound P70	47° 17,185'	62° 40,822'	68	profile start
28-1		05:04	MBES (EM712)	47° 17,185'	62° 40,822'	68	profile start
27-1		08:22	PAM	47° 34,464'	62° 28,387'	76	detection dolphins <1000m (PAM)
28-1		08:23	MBES (EM712)	47° 34,582'	62° 28,378'	75	Interrupt profile, PAM detection dolphins <1000m
29-1		08:23	Parasound P70	47° 34,640'	62° 28,377'	75	Interrupt profile, PAM detection dolphins <1000m
27-1		08:34	PAM	47° 35,650'	62° 28,323'	76	Last detection < 1000m, start pre-watch (PAM)

27-1		09:04	PAM	47° 38,641'	62° 28,151'	76	Pre-watch – end
28-1		09:23	MBES (EM712)	47° 40,447'	62° 28,056'	75	profile - continue
29-1		09:42	Parasound P70	47° 42,177'	62° 27,959'	77	profile - continue
27-1		10:27	PAM	47° 46,156'	62° 27,745'	70	on deck
28-1		12:16	MBES (EM712)	47° 54,403'	62° 37,971'	64	profile end
29-1		12:16	Parasound P70	47° 54,403'	62° 37,971'	64	profile end
30-1		13:06	GC	47° 50,214'	62° 32,730'	77	in the water
30-1		13:09	GC	47° 50,215'	62° 32,731'	76	max depth/on ground
30-1		13:14	GC	47° 50,215'	62° 32,730'	77	on deck
30-2		13:22	GC	47° 50,211'	62° 32,737'	75	in the water
30-2		13:29	GC	47° 50,210'	62° 32,737'	76	on deck
30-3		13:36	GC	47° 50,211'	62° 32,728'	76	in the water
30-3		13:38	GC	47° 50,211'	62° 32,729'	78	max depth/on ground
30-3		13:44	GC	47° 50,211'	62° 32,729'	76	on deck
30-4		14:00	GC	47° 50,131'	62° 32,906'	76	in the water
30-4		14:02	GC	47° 50,133'	62° 32,906'	77	max depth/on ground
30-4		14:06	GC	47° 50,132'	62° 32,907'	76	on deck
32-1		14:14	MBES (EM712)	47° 50,270'	62° 32,641'	77	profile start
31-1		14:14	Parasound P70	47° 50,270'	62° 32,641'	77	profile start
31-1		14:59	Parasound P70	47° 54,301'	62° 31,848'	66	Interrupt profile, technical problems
31-1		15:07	Parasound P70	47° 54,833'	62° 32,742'	64	profile - continue
31-1		19:23	Parasound P70	48° 03,023'	62° 39,936'	92	profile end
32-1		19:23	MBES (EM712)	48° 03,014'	62° 39,977'	92	profile end
33-1		19:40	CTD	48° 03,060'	62° 39,841'	91	in the water
33-1		19:46	CTD	48° 03,060'	62° 39,840'	91	max depth/on ground
33-1		19:52	CTD	48° 03,061'	62° 39,839'	91	on deck
34-1		20:00	GC	48° 03,061'	62° 39,840'	91	core barrel length: 3m – deployed
34-1		20:02	GC	48° 03,061'	62° 39,842'	92	max depth/on ground
34-1		20:10	GC	48° 03,060'	62° 39,839'	93	on deck
34-2		20:20	GC	48° 03,061'	62° 39,839'	92	core barrel length: 3m – deployed
34-2		20:22	GC	48° 03,061'	62° 39,842'	92	max depth/on ground
34-2		20:31	GC	48° 03,060'	62° 39,840'	92	on deck
34-3		20:59	GC	48° 03,060'	62° 39,840'	92	core barrel length: 5m – deployed
34-3		21:01	GC	48° 03,060'	62° 39,840'	92	max depth/on ground
34-3		21:11	GC	48° 03,060'	62° 39,842'	93	on deck
36-1		21:28	Parasound P70	48° 03,266'	62° 39,525'	91	profile start
35-1		21:28	MBES (EM712)	48° 03,266'	62° 39,525'	91	profile start
36-1		10:58	Parasound P70	47° 21,152'	62° 27,886'	61	profile end
35-1		10:58	MBES (EM712)	47° 21,152'	62° 27,886'	61	profile end
37-1		15:58	Seismic Streamer	46° 31,275'	63° 01,656'	42	Streamer in water
37-1		16:15	Seismic Streamer	46° 31,200'	63° 02,421'	41	length: 190m
37-2		16:24	Seismic Source	46° 31,119'	63° 03,061'	44	Pre-watch – start
37-2		16:44	Seismic Source	46° 30,924'	63° 04,793'	42	Airgun in water
37-2	01.10.	16:54	Seismic Source	46° 30,851'	63° 05,612'	37	Pre-watch – end
37-2		16:54	Seismic Source	46° 30,849'	63° 05,628'	37	start ramp up
37-2		17:10	Seismic Source	46° 30,696'	63° 07,113'	38	ramp up complete
38-1		17:11	MBES (EM712)	46° 30,685'	63° 07,224'	38	profile start
39-1		17:11	Parasound P70	46° 30,682'	63° 07,246'	37	profile start
37-2		18:41	Seismic Source	46° 31,537'	63° 14,230'	35	profile start
40-1		20:05	PAM	46° 36,847'	63° 11,603'	43	length: 220m – deployed
37-2	02.10.	22:01	Seismic Source	46° 31,688'	61° 29,362'	62	profile end (technical problems)
37-2		22:01	Seismic Source	46° 31,679'	61° 29,399'	62	profile end (technical problems)
37-2		22:01	Seismic Source	46° 31,674'	61° 29,420'	62	profile end
40-1		22:25	PAM	46° 31,092'	61° 31,687'	61	on deck

37-2		22:29	Seismic Source	46° 31,031'	61° 32,019'	61	Airgun on deck
37-1		22:43	Seismic Streamer	46° 30,927'	61° 32,816'	61	Streamer on deck
39-1		22:58	Parasound P70	46° 30,775'	61° 34,087'	60	profile end
38-1		22:59	MBES (EM712)	46° 30,773'	61° 34,104'	60	profile end
42-1		23:34	MBES (EM712)	46° 35,063'	61° 37,540'	62	profile start
41-1		23:34	Parasound P70	46° 35,063'	61° 37,540'	62	profile start
42-1		15:17	MBES (EM712)	46° 35,954'	61° 55,336'	54	profile end
41-1		15:17	Parasound P70	46° 35,954'	61° 55,336'	54	profile end
43-1		15:24	CTD	46° 35,869'	61° 55,580'	53	in the water
43-1		15:29	CTD	46° 35,869'	61° 55,581'	53	max depth/on ground
43-1		15:32	CTD	46° 35,869'	61° 55,581'	53	on deck
44-1		16:09	Seismic Streamer	46° 32,164'	61° 54,284'	48	Streamer in water
44-2		16:10	Seismic Source	46° 32,136'	61° 54,243'	48	Pre-watch – start
44-1	03.10.	16:26	Seismic Streamer	46° 31,761'	61° 53,699'	51	length: 195m
44-2		16:39	Seismic Source	46° 31,227'	61° 52,983'	43	Airgun in water
44-2		16:48	Seismic Source	46° 30,810'	61° 52,446'	40	Pre-watch – end
44-2		16:50	Seismic Source	46° 30,687'	61° 52,287'	40	start ramp up
44-2		17:06	Seismic Source	46° 29,874'	61° 51,110'	35	ramp up complete
45-1		17:20	MBES (EM712)	46° 29,377'	61° 49,808'	35	profile start
46-1		17:20	Parasound P70	46° 29,377'	61° 49,808'	35	profile start
44-2		17:20	Seismic Source	46° 29,377'	61° 49,808'	35	profile start
47-1		21:39	PAM	46° 44,779'	61° 31,894'	76	length: 220m – deployed
47-1		10:36	PAM	47° 32,588'	060° 49,102'	54	on deck
44-2		10:54	Seismic Source	47° 33,641'	060° 48,154'	54	profile end
44-2		11:03	Seismic Source	47° 34,166'	060° 48,132'	55	Airgun on deck
44-1		11:21	Seismic Streamer	47° 34,737'	060° 48,559'	54	Streamer on deck
45-1		11:22	MBES (EM712)	47° 34,749'	060° 48,570'	54	profile end
46-1		11:22	Parasound P70	47° 34,749'	060° 48,570'	54	profile end
48-1		11:27	CTD	47° 34,752'	060° 48,581'	54	in the water
48-1	04.10.	11:35	CTD	47° 34,752'	060° 48,582'	54	on deck
49-1		20:26	GC	46° 33,507'	63° 03,451'	52	core barrel length: 3m – deployed
49-1		20:28	GC	46° 33,506'	63° 03,450'	52	max depth/on ground
49-1		20:33	GC	46° 33,507'	63° 03,451'	52	on deck
50-1		21:00	GC	46° 32,772'	63° 05,537'	49	core barrel length: 3m – deployed
50-1		21:01	GC	46° 32,773'	63° 05,538'	49	max depth/on ground
50-1		21:07	GC	46° 32,773'	63° 05,540'	49	on deck
51-1		21:52	CSEM	46° 36,805'	63° 11,635'	43	USBL – in water
51-1		23:55	CSEM	46° 36,813'	63° 11,636'	42	CAGEM – in water
51-1	05.10.	01:13	CSEM	46° 36,812'	63° 11,636'	42	recording start (v = 0.6kn)
51-1		03:56	CSEM	46° 38,347'	63° 10,891'	45	recording end
51-1		04:03	CSEM	46° 38,348'	63° 10,891'	45	on deck
51-2		04:27	CSEM	46° 39,631'	63° 10,267'	48	CAGEM
51-2		04:39	CSEM	46° 39,645'	63° 10,260'	48	recording start (v = 0.6kn)
51-2		06:36	CSEM	46° 40,651'	63° 09,775'	48	recording end
51-2		06:43	CSEM	46° 40,651'	63° 09,776'	48	on deck
51-3		07:18	CSEM	46° 42,195'	63° 09,022'	48	CAGEM
51-3		07:32	CSEM	46° 42,218'	63° 09,011'	49	recording start (v = 0.6kn)
51-3		09:21	CSEM	46° 43,213'	63° 08,527'	52	recording end
51-3		09:28	CSEM	46° 43,213'	63° 08,528'	52	on deck
51-4		09:54	CSEM	46° 44,754'	63° 07,777'	53	CAGEM
51-4		10:07	CSEM	46° 44,759'	63° 07,774'	53	recording start (v = 0.6kn)
51-4		12:04	CSEM	46° 45,779'	63° 07,277'	54	recording end
51-4		12:06	CSEM	46° 45,780'	63° 07,277'	54	on deck
51-5		12:40	CSEM	46° 47,313'	63° 06,529'	56	CAGEM

51-5		12:49	CSEM	46° 47,313'	63° 06,529'	56	recording start (v = 0.6kn)
51-5		14:38	CSEM	46° 48,326'	63° 06,035'	57	recording end
51-5		14:50	CSEM	46° 48,330'	63° 06,033'	57	on deck
51-6		15:15	CSEM	46° 49,874'	63° 05,279'	54	CAGEM
51-6		15:32	CSEM	46° 49,881'	63° 05,276'	54	recording start (v = 0.6kn)
51-6		17:23	CSEM	46° 50,890'	63° 04,782'	57	recording end
51-6		17:26	CSEM	46° 50,890'	63° 04,782'	57	on deck
51-7		17:52	CSEM	46° 52,430'	63° 04,029'	57	CAGEM
51-7		18:11	CSEM	46° 52,436'	63° 04,026'	57	recording start (v = 0.6kn)
51-7		20:03	CSEM	46° 53,450'	63° 03,530'	57	recording end
51-7		20:12	CSEM	46° 53,450'	63° 03,530'	57	on deck
51-8		20:40	CSEM	46° 54,992'	63° 02,771'	63	CAGEM
51-8		20:54	CSEM	46° 54,993'	63° 02,771'	63	recording start (v = 0.6kn)
51-8		22:46	CSEM	46° 56,006'	63° 02,275'	65	recording end
51-8		22:52	CSEM	46° 56,006'	63° 02,275'	65	on deck
51-9		23:21	CSEM	46° 57,555'	63° 01,517'	65	CAGEM
51-9		23:43	CSEM	46° 57,618'	63° 01,485'	65	recording start (v = 0.6kn)
51-9	06.10.	01:19	CSEM	46° 58,524'	63° 01,042'	63	recording end
51-9		01:29	CSEM	46° 58,527'	63° 01,040'	63	on deck
6-12		01:35	OBEM	46° 58,502'	63° 01,087'	63	hydrophone in water
6-12		01:43	OBEM	46° 58,164'	63° 01,252'	63	released
6-12		01:48	OBEM	46° 58,005'	63° 01,311'	64	hydrophone on deck
6-12		01:49	OBEM	46° 57,999'	63° 01,318'	64	OBEM on deck
6-11		02:10	OBEM	46° 55,792'	63° 02,486'	66	hydrophone in water
6-11		02:17	OBEM	46° 55,552'	63° 02,542'	64	released
6-11		02:20	OBEM	46° 55,456'	63° 02,576'	65	hydrophone on deck
6-11		02:23	OBEM	46° 55,423'	63° 02,588'	65	OBEM on deck
6-10		02:43	OBEM	46° 53,193'	63° 03,702'	62	hydrophone in water
6-10		02:45	OBEM	46° 53,183'	63° 03,712'	62	released
6-10		02:46	OBEM	46° 53,174'	63° 03,721'	62	hydrophone on deck
6-10		02:56	OBEM	46° 52,878'	63° 03,927'	58	OBEM on deck
6-9		03:16	OBEM	46° 50,521'	63° 04,978'	55	hydrophone in water
6-9		03:19	OBEM	46° 50,445'	63° 04,968'	54	released
6-9		03:22	OBEM	46° 50,320'	63° 05,029'	55	hydrophone on deck
6-9		03:26	OBEM	46° 50,311'	63° 05,017'	55	OBEM on deck
6-8		03:45	OBEM	46° 48,099'	63° 06,160'	59	hydrophone in water
6-8		03:46	OBEM	46° 48,082'	63° 06,158'	59	released
6-8		03:48	OBEM	46° 48,047'	63° 06,149'	59	hydrophone on deck
6-8		03:56	OBEM	46° 47,803'	63° 06,239'	59	OBEM on deck
6-7		04:14	OBEM	46° 45,619'	63° 07,389'	55	hydrophone in water
6-7		04:16	OBEM	46° 45,575'	63° 07,400'	55	released
6-7		04:17	OBEM	46° 45,535'	63° 07,405'	55	hydrophone on deck
6-7		04:30	OBEM	46° 45,233'	63° 07,512'	54	OBEM on deck
6-6		04:49	OBEM	46° 43,014'	63° 08,672'	52	hydrophone in water
6-6		04:51	OBEM	46° 42,972'	63° 08,674'	52	released
6-6		04:53	OBEM	46° 42,928'	63° 08,687'	53	hydrophone on deck
6-6		05:04	OBEM	46° 42,685'	63° 08,754'	51	OBEM on deck
6-5		05:22	OBEM	46° 40,394'	63° 09,923'	50	hydrophone in water
6-5		05:24	OBEM	46° 40,342'	63° 09,939'	51	released
6-5		05:26	OBEM	46° 40,287'	63° 09,936'	51	hydrophone on deck
6-5		05:36	OBEM	46° 40,094'	63° 09,995'	51	OBEM on deck
6-4		05:54	OBEM	46° 37,872'	63° 11,135'	46	hydrophone in water
6-4		05:55	OBEM	46° 37,870'	63° 11,135'	45	released
6-4		05:56	OBEM	46° 37,813'	63° 11,137'	45	hydrophone on deck

6-4		06:10	OBEM	46° 37,505'	63° 11,215'	45	OBEM on deck
52-1		07:34	OBEM	46° 35,530'	63° 12,301'	43	OBEM13 – deployed
52-2		08:05	OBEM	46° 34,522'	63° 12,775'	43	OBEM14 – deployed
52-3		08:38	OBEM	46° 34,005'	63° 13,029'	41	OBEM15 – deployed
52-4		09:01	OBEM	46° 33,498'	63° 13,283'	38	OBEM16 – deployed
52-5		09:26	OBEM	46° 32,989'	63° 13,529'	37	OBEM17 – deployed
52-6		09:53	OBEM	46° 31,964'	63° 14,029'	35	OBEM18 – deployed
52-7		10:20	OBEM	46° 31,445'	63° 14,269'	36	OBEM19 – deployed
52-8		11:02	OBEM	46° 30,935'	63° 14,514'	34	OBEM20 – deployed
52-9		11:43	OBEM	46° 30,424'	63° 14,764'	32	OBEM21 – deployed
53-1		11:58	CSEM	46° 29,926'	63° 14,968'	25	USBL – hydrophone in water
53-1		13:07	CSEM	46° 29,927'	63° 14,963'	25	CAGEM – in water
53-1		13:14	CSEM	46° 29,927'	63° 14,963'	25	recording start (v = 0.6kn)
53-1		16:16	CSEM	46° 31,649'	63° 14,130'	35	Interrupt profile, technical problems
53-1		16:21	CSEM	46° 31,659'	63° 14,125'	35	measurements - continue
53-1	07.10.	00:01	CSEM	46° 36,022'	63° 12,013'	43	recording end
53-1		00:10	CSEM	46° 36,021'	63° 12,014'	43	on deck
54-1		00:24	CTD	46° 36,021'	63° 12,014'	43	in the water
54-1		00:31	CTD	46° 36,022'	63° 12,014'	43	on deck
56-1		01:13	Parasound P70	46° 35,094'	63° 12,761'	43	profile start
55-1		01:13	MBES (EM712)	46° 35,094'	63° 12,761'	43	profile start
55-1		09:00	MBES (EM712)	46° 34,027'	63° 02,369'	50	profile end
56-1		09:01	Parasound P70	46° 33,985'	63° 02,352'	51	profile end
57-1		09:29	GC	46° 33,884'	63° 07,132'	51	core barrel length: 3m – deployed
57-1		09:31	GC	46° 33,884'	63° 07,132'	51	max depth/on ground
57-1		09:36	GC	46° 33,884'	63° 07,132'	51	on deck
57-2		10:02	GC	46° 33,884'	63° 07,132'	51	core barrel length: 5m – deployed
57-2		10:03	GC	46° 33,884'	63° 07,132'	51	max depth/on ground
57-2		10:09	GC	46° 33,884'	63° 07,132'	51	on deck
52-1		10:51	OBEM	46° 35,487'	63° 12,149'	43	hydrophone in water
52-1		11:00	OBEM	46° 35,487'	63° 12,149'	43	released
52-1		11:02	OBEM	46° 35,494'	63° 12,162'	43	hydrophone on deck
52-1		11:07	OBEM	46° 35,591'	63° 12,273'	43	OBEM on deck
6-3		11:14	OBEM	46° 34,981'	63° 12,470'	43	hydrophone in water
6-3		11:17	OBEM	46° 34,942'	63° 12,402'	43	released
6-3		11:25	OBEM	46° 35,018'	63° 12,487'	43	OBEM on deck
52-2		11:42	OBEM	46° 34,480'	63° 12,664'	42	released
52-2		11:50	OBEM	46° 34,528'	63° 12,746'	42	OBEM on deck
52-3		12:00	OBEM	46° 34,098'	63° 12,911'	41	released
52-3		12:08	OBEM	46° 33,985'	63° 12,992'	40	OBEM on deck
52-4		12:16	OBEM	46° 33,643'	63° 13,113'	38	released
52-4		12:24	OBEM	46° 33,473'	63° 13,234'	37	OBEM on deck
52-5		12:30	OBEM	46° 33,184'	63° 13,352'	37	released
52-5		12:40	OBEM	46° 33,015'	63° 13,478'	36	OBEM on deck
6-2		12:47	OBEM	46° 32,693'	63° 13,594'	35	released
6-2		12:58	OBEM	46° 32,472'	63° 13,724'	35	OBEM on deck
52-6		13:05	OBEM	46° 32,064'	63° 13,920'	34	released
52-6		13:10	OBEM	46° 31,963'	63° 13,988'	35	OBEM on deck
52-7		13:17	OBEM	46° 31,606'	63° 13,900'	35	released
52-7		13:26	OBEM	46° 31,457'	63° 14,209'	36	OBEM on deck
52-8		13:35	OBEM	46° 31,001'	63° 14,136'	35	released
52-8		13:49	OBEM	46° 30,940'	63° 14,499'	34	OBEM on deck
52-9		13:57	OBEM	46° 30,537'	63° 14,436'	32	released
52-9		14:04	OBEM	46° 30,419'	63° 14,749'	32	OBEM on deck

6-1		14:12	OBEM	46° 30,064'	63° 14,807'	29	released
6-1		14:18	OBEM	46° 29,884'	63° 14,988'	25	OBEM on deck
58-1		14:32	Seismic Streamer	46° 30,487'	63° 15,711'	28	Streamer in water
58-2		14:45	Seismic Source	46° 30,789'	63° 16,079'	29	Pre-watch – start
58-1		14:50	Seismic Streamer	46° 30,927'	63° 16,247'	29	length: 200m
58-1		15:23	Seismic Streamer	46° 32,494'	63° 17,117'	33	Streamer on deck (technical problems)
58-1		16:21	Seismic Streamer	46° 32,594'	63° 17,168'	34	Streamer in water
58-1		16:37	Seismic Streamer	46° 33,034'	63° 17,513'	33	length: 200m
58-1		17:14	Seismic Streamer	46° 34,534'	63° 18,964'	34	Streamer on deck (technical problems)
58-1		18:08	Seismic Streamer	46° 38,957'	63° 21,177'	41	Streamer in water
58-1		18:24	Seismic Streamer	46° 38,389'	63° 21,133'	40	length: 200m
58-2		18:49	Seismic Source	46° 36,614'	63° 21,538'	36	Airgun in water
58-2		19:05	Seismic Source	46° 35,623'	63° 21,306'	34	Airgun on deck (technical problems)
58-2		19:45	Seismic Source	46° 34,549'	63° 22,688'	32	Airgun in water
58-2		19:49	Seismic Source	46° 34,816'	63° 22,832'	32	Pre-watch – end
58-2		19:50	Seismic Source	46° 34,833'	63° 22,835'	32	start ramp up
58-2		20:06	Seismic Source	46° 35,688'	63° 21,719'	34	ramp up complete
58-2		20:07	Seismic Source	46° 35,728'	63° 21,601'	34	profile start
60-1		20:07	Parasound P70	46° 35,741'	63° 21,563'	34	profile start
59-1		20:07	MBES (EM712)	46° 35,745'	63° 21,549'	34	profile start
61-1		21:57	PAM	46° 35,650'	63° 08,135'	46	length: 220m – deployed
58-2	08.10.	07:35	Seismic Source	46° 32,514'	61° 58,098'	46	profile end – PAM and streamer entangled
58-1		07:35	Seismic Streamer	46° 32,514'	61° 58,098'	46	profile end – PAM and streamer entangled
61-1		07:36	PAM	46° 32,504'	61° 57,940'	46	profile end – PAM and streamer entangled
59-1		07:40	MBES (EM712)	46° 32,538'	61° 57,440'	45	profile end
60-1		07:40	Parasound P70	46° 32,546'	61° 57,407'	46	profile end
58-2		07:55	Seismic Source	46° 33,284'	61° 56,611'	51	Airgun on deck
61-1		08:19	PAM	46° 34,088'	61° 56,178'	55	on deck
58-1		08:19	Seismic Streamer	46° 34,095'	61° 56,179'	55	Streamer on deck
62-1		10:00	Seismic Streamer	46° 26,071'	61° 39,708'	53	Streamer in water
62-2		10:00	Seismic Source	46° 26,087'	61° 39,711'	54	Pre-watch – start
62-1		10:17	Seismic Streamer	46° 26,714'	61° 39,824'	53	length: 200m
62-2		10:25	Seismic Source	46° 27,048'	61° 39,812'	54	Airgun in water
62-2		10:30	Seismic Source	46° 27,250'	61° 39,841'	54	Pre-Watch – end
62-2		10:38	Seismic Source	46° 27,623'	61° 39,920'	54	start ramp up
62-2		10:55	Seismic Source	46° 28,496'	61° 40,115'	55	ramp up complete
62-2		10:55	Seismic Source	46° 28,504'	61° 40,117'	55	profile start
63-1		10:55	MBES (EM712)	46° 28,518'	61° 40,119'	55	profile start
64-1		10:55	Parasound P70	46° 28,536'	61° 40,121'	56	profile start
62-2		11:48	Seismic Source	46° 31,159'	61° 40,106'	60	profile end (technical problems)
64-1		12:00	Parasound P70	46° 31,524'	61° 40,063'	56	profile end
63-1		12:00	MBES (EM712)	46° 31,530'	61° 40,062'	56	profile end
62-2		12:01	Seismic Source	46° 31,548'	61° 40,062'	57	Airgun on deck
62-1		12:01	Seismic Streamer	46° 31,553'	61° 40,063'	56	profile end (technical problems)
62-1		12:18	Seismic Streamer	46° 31,854'	61° 39,885'	57	Streamer on deck
65-1		13:04	CTD	46° 30,759'	61° 34,324'	62	in the water
65-1		13:04	CTD	46° 30,759'	61° 34,324'	62	max depth/on ground
65-1		13:12	CTD	46° 30,756'	61° 34,324'	61	on deck
67-1		13:23	Parasound P70	46° 31,307'	61° 34,305'	59	profile start

66-1		13:23	MBES (EM712)	46° 31,307'	61° 34,305'	59	profile start
66-1		17:05	MBES (EM712)	46° 35,198'	61° 25,580'	63	profile - interrupt (CTD station MSM103_68-1)
67-1		17:05	Parasound P70	46° 35,198'	61° 25,580'	63	profile - interrupt (CTD station MSM103_68-1)
68-1		17:10	CTD	46° 35,207'	61° 25,591'	63	in the water
68-1		17:15	CTD	46° 35,207'	61° 25,593'	63	max depth/on ground
68-1		17:18	CTD	46° 35,207'	61° 25,591'	62	on deck
67-1		17:21	Parasound P70	46° 35,210'	61° 25,593'	62	profile - continue
66-1		17:21	MBES (EM712)	46° 35,210'	61° 25,593'	62	profile - continue
66-1		12:06	MBES (EM712)	46° 39,412'	61° 33,103'	66	profile end
67-1		12:06	Parasound P70	46° 39,412'	61° 33,103'	66	profile end
69-2		13:15	Seismic Source	46° 28,308'	61° 37,586'	57	Pre-watch – start
69-1		13:15	Seismic Streamer	46° 28,308'	61° 37,586'	57	Streamer in water
69-1		13:28	Seismic Streamer	46° 28,707'	61° 37,820'	57	length: 150m
69-2		13:45	Seismic Source	46° 29,472'	61° 38,204'	57	Pre-watch – end
69-2		13:48	Seismic Source	46° 29,648'	61° 38,282'	58	Airgun in water
69-2	09.10.	13:56	Seismic Source	46° 29,899'	61° 38,401'	57	start ramp up
70-1		13:56	Parasound P70	46° 29,907'	61° 38,404'	57	start ramp up
69-2		14:12	Seismic Source	46° 30,676'	61° 39,135'	58	ramp up complete
70-1		14:13	Parasound P70	46° 30,746'	61° 39,221'	58	ramp up complete
69-2		14:14	Seismic Source	46° 30,768'	61° 39,246'	59	profile start
71-1		14:14	MBES (EM712)	46° 30,782'	61° 39,260'	59	profile start
70-1		14:14	Parasound P70	46° 30,807'	61° 39,287'	60	profile start
72-1		21:59	PAM	46° 52,364'	61° 39,864'	58	length: 150m – deployed
	10.10.						Profiles continued
72-1		15:30	PAM	46° 50,424'	63° 20,437'	50	profile - interrupt
71-1		15:30	MBES (EM712)	46° 50,424'	63° 20,437'	50	profile - interrupt
70-1		15:30	Parasound P70	46° 50,424'	63° 20,437'	50	profile - interrupt
69-2		15:30	Seismic Source	46° 50,424'	63° 20,437'	50	profile - interrupt
72-1		15:44	PAM	46° 49,975'	63° 21,767'	49	on deck
69-2		15:50	Seismic Source	46° 49,840'	63° 22,163'	52	Airgun on deck
69-1		16:04	Seismic Streamer	46° 49,519'	63° 22,746'	50	Streamer on deck
73-1		16:13	CTD	46° 49,460'	63° 22,746'	50	Deployed
73-1	11.10.	16:17	CTD	46° 49,460'	63° 22,746'	50	max depth/on ground
73-1		16:24	CTD	46° 49,460'	63° 22,746'	50	on deck
74-1		18:49	CSEM	46° 28,244'	63° 15,774'	14	in the water
74-1		18:57	CSEM	46° 28,254'	63° 15,769'	14	on deck
74-1		18:59	CSEM	46° 28,249'	63° 15,772'	14	in the water
74-1		19:14	CSEM	46° 28,247'	63° 15,773'	14	video profile only – recording start
74-1		21:30	CSEM	46° 29,908'	63° 14,972'	25	recording end
74-1		21:34	CSEM	46° 29,923'	63° 14,964'	25	on deck
69-1		23:20	Seismic Streamer	46° 45,433'	63° 25,783'	45	Streamer in water
69-1		23:37	Seismic Streamer	46° 45,433'	63° 26,577'	44	length: 210m
69-2	12.10.	00:37	Seismic Source	46° 45,142'	63° 31,170'	42	Airgun in water
72-1		00:42	PAM	46° 45,071'	63° 31,539'	43	length: 150m – deployed
72-1		00:54	PAM	46° 44,882'	63° 32,355'	40	Pre-watch – start
72-1		01:24	PAM	46° 45,503'	63° 34,425'	40	Pre-watch – end
69-2		01:24	Seismic Source	46° 45,503'	63° 34,425'	40	start ramp up
69-2		01:39	Seismic Source	46° 46,330'	63° 34,980'	40	profile - continue
69-2		01:39	Seismic Source	46° 46,330'	63° 34,980'	40	ramp up complete
70-1		01:41	Parasound P70	46° 46,443'	63° 35,070'	39	profile - continue
71-1		01:42	MBES (EM712)	46° 46,489'	63° 35,103'	39	profile - continue

69-2		10:17	Seismic Source	47° 06,732'	63° 02,932'	60	detection leatherback turtle <1000m (visual)
69-2		10:31	Seismic Source	47° 07,020'	63° 01,245'	61	Last detection < 1000m, start pre-watch (visual)
69-2		11:01	Seismic Source	47° 07,616'	62° 57,715'	59	Pre-watch – end
69-2		11:01	Seismic Source	47° 07,616'	62° 57,713'	59	start ramp up
69-2		11:17	Seismic Source	47° 07,944'	62° 55,799'	59	ramp up complete
69-2		11:17	Seismic Source	47° 07,945'	62° 55,797'	59	profile - continue
69-2		11:33	Seismic Source	47° 23,629'	62° 49,848'	51	detection minke whale <1000m (visual)
69-2		11:34	Seismic Source	47° 23,632'	62° 49,720'	51	Last detection < 1000m, start pre-watch (visual)
69-2		12:04	Seismic Source	47° 23,666'	62° 46,034'	59	Pre-watch – end
69-2		12:04	Seismic Source	47° 23,666'	62° 46,032'	59	start ramp up
69-2		12:20	Seismic Source	47° 23,686'	62° 44,070'	58	ramp up complete
69-2		12:20	Seismic Source	47° 23,686'	62° 44,068'	58	profile - continue
69-2		12:34	Seismic Source	47° 23,699'	62° 42,289'	62	detection dolphins <1000m (visual)
69-2		13:05	Seismic Source	47° 23,736'	62° 38,531'	67	Last detection < 1000m, start pre-watch (visual)
69-2		13:35	Seismic Source	47° 23,768'	62° 35,042'	93	Pre-watch – end
69-2		13:35	Seismic Source	47° 23,769'	62° 35,005'	94	start ramp up
69-2		13:50	Seismic Source	47° 23,785'	62° 33,299'	74	ramp up complete
69-2		13:50	Seismic Source	47° 23,786'	62° 33,281'	73	profile - continue
69-2		14:25	Seismic Source	47° 23,819'	62° 29,506'	68	detection dolphins <1000m (visual)
69-2		14:25	Seismic Source	47° 23,819'	62° 29,453'	68	Last detection < 1000m, start pre-watch (visual)
69-2	13.10.	14:55	Seismic Source	47° 23,850'	62° 26,187'	64	Pre-watch – end
69-2		14:55	Seismic Source	47° 23,850'	62° 26,168'	64	start ramp up
69-2		15:10	Seismic Source	47° 23,866'	62° 24,429'	60	ramp up complete
69-2		15:11	Seismic Source	47° 23,867'	62° 24,420'	60	profile - continue
70-1		16:20	Parasound P70	47° 27,475'	62° 20,169'	58	Interrupt profile, technical problems
69-2		16:23	Seismic Source	47° 27,725'	62° 20,093'	59	detection dolphins <1000m (visual)
69-2		16:24	Seismic Source	47° 27,758'	62° 20,085'	59	Last detection < 1000m, start pre-watch (visual)
70-1		16:34	Parasound P70	47° 28,544'	62° 19,757'	60	profile - continue
69-2		16:54	Seismic Source	47° 29,913'	62° 19,177'	62	Pre-watch – end
69-2		16:55	Seismic Source	47° 29,986'	62° 19,148'	63	start ramp up
69-2		17:10	Seismic Source	47° 31,039'	62° 18,713'	63	ramp up complete
69-2		17:10	Seismic Source	47° 31,067'	62° 18,700'	62	profile - continue
69-2		17:41	Seismic Source	47° 32,856'	62° 19,650'	64	detection dolphins <1000m (visual)
69-2		17:52	Seismic Source	47° 32,888'	62° 21,002'	65	Last detection < 1000m, start pre-watch (visual)
69-2		18:22	Seismic Source	47° 32,956'	62° 24,712'	65	Pre-watch – end
69-2		18:22	Seismic Source	47° 32,957'	62° 24,778'	65	start ramp up
69-2		18:38	Seismic Source	47° 32,999'	62° 26,767'	70	ramp up complete
69-2		18:38	Seismic Source	47° 32,999'	62° 26,795'	69	profile - continue
69-2		16:17	Seismic Source	46° 43,808'	62° 04,486'	72	detection finback <1000m (visual)
69-2		16:29	Seismic Source	46° 43,507'	62° 03,039'	77	Last detection < 1000m, start pre-watch (visual)
69-2	14.10.	16:59	Seismic Source	46° 42,759'	61° 59,413'	67	Pre-watch – end
69-2		16:59	Seismic Source	46° 42,739'	61° 59,322'	67	start ramp up
69-2		17:14	Seismic Source	46° 42,382'	61° 57,626'	64	ramp up complete
69-2		17:14	Seismic Source	46° 42,370'	61° 57,571'	64	profile - continue
72-1	15.10.	02:32	PAM	46° 26,635'	61° 24,954'	74	detection dolphins <1000m (PAM)

69-2		02:32	Seismic Source	46° 26,635'	61° 24,954'	74	Interrupt profile, PAM detection dolphins <1000m
72-1		02:41	PAM	46° 26,658'	61° 25,816'	70	Last detection < 1000m, start pre-watch (PAM)
69-2		02:41	Seismic Source	46° 26,658'	61° 25,816'	70	Last detection < 1000m, start pre-watch (visual)
69-2		03:11	Seismic Source	46° 26,758'	61° 28,718'	66	Pre-watch – end
69-2		03:11	Seismic Source	46° 26,759'	61° 28,746'	66	start ramp up
72-1		03:11	PAM	46° 26,759'	61° 28,754'	66	Pre-watch – end
69-2		03:28	Seismic Source	46° 26,820'	61° 30,348'	62	ramp up complete
69-2		03:28	Seismic Source	46° 26,821'	61° 30,369'	62	profile - continue
69-2		07:00	Seismic Source	46° 35,416'	61° 26,546'	65	detection dolphins <1000m (visual)
72-1		07:00	PAM	46° 35,466'	61° 26,516'	65	detection dolphins <1000m (PAM)
72-1		07:00	PAM	46° 35,474'	61° 26,511'	64	Last detection < 1000m, start pre-watch (PAM)
72-1		07:31	PAM	46° 37,809'	61° 25,133'	66	Pre-watch – end
69-2		07:31	Seismic Source	46° 37,826'	61° 25,122'	67	start ramp up
69-2		07:46	Seismic Source	46° 39,000'	61° 24,431'	68	ramp up complete
69-2		07:47	Seismic Source	46° 39,033'	61° 24,413'	68	profile - continue
69-2		08:59	Seismic Source	46° 44,598'	61° 21,119'	71	profile end
70-1		08:59	Parasound P70	46° 44,610'	61° 21,112'	71	profile end
71-1		08:59	MBES (EM712)	46° 44,639'	61° 21,098'	71	profile end
72-1		09:05	PAM	46° 45,101'	61° 21,174'	71	on deck
69-2		09:13	Seismic Source	46° 45,471'	61° 21,450'	57	Airgun on deck
69-1		09:28	Seismic Streamer	46° 45,796'	61° 21,764'	69	Streamer on deck
75-1		09:32	CTD	46° 45,796'	61° 21,763'	69	in the water
75-1		09:36	CTD	46° 45,796'	61° 21,763'	70	max depth/on ground
75-1		09:40	CTD	46° 45,796'	61° 21,763'	70	on deck
76-1	16.10.	12:58	OBEM	46° 33,447'	62° 19,185'	48	OBEM 22 – deployed
76-2		13:22	OBEM	46° 33,464'	62° 19,503'	48	OBEM 23 – deployed
76-3		13:39	OBEM	46° 33,478'	62° 19,813'	49	OBEM 24 – deployed
76-4		13:55	OBEM	46° 33,492'	62° 20,125'	49	OBEM 25 – deployed
76-5		14:09	OBEM	46° 33,770'	62° 20,094'	48	OBEM 26 – deployed
76-6		14:22	OBEM	46° 33,756'	62° 19,786'	49	OBEM 27 – deployed
76-7		14:43	OBEM	46° 33,743'	62° 19,474'	49	OBEM 28 – deployed
76-8		15:15	OBEM	46° 33,724'	62° 19,172'	49	OBEM 29 – deployed
76-9		15:31	OBEM	46° 33,993'	62° 19,151'	49	OBEM 30 – deployed
76-10		15:50	OBEM	46° 34,006'	62° 19,450'	49	OBEM 31 – deployed
76-11		16:05	OBEM	46° 34,014'	62° 19,762'	49	OBEM 32 – deployed
76-12		16:21	OBEM	46° 34,028'	62° 20,075'	49	OBEM 33 – deployed
77-1		16:29	CTD	46° 34,010'	62° 20,148'	49	in the water
77-1		16:33	CTD	46° 34,010'	62° 20,148'	50	max depth/on ground
77-1		16:36	CTD	46° 34,010'	62° 20,148'	50	on deck
79-1		16:42	Parasound P70	46° 33,981'	62° 20,411'	49	profile start
78-1		16:42	MBES (EM712)	46° 33,981'	62° 20,411'	49	profile start
78-1	17.10.	00:48	MBES (EM712)	46° 35,292'	62° 17,777'	50	profile end
79-1		00:48	Parasound P70	46° 35,292'	62° 17,777'	50	profile end
80-1	20.10.	05:00	MBES (EM712)	46° 45,556'	61° 32,276'	74	profile start
81-1		05:08	Parasound P70	46° 45,474'	61° 33,455'	75	profile start
81-1		10:07	Parasound P70	46° 44,589'	61° 32,548'	79	profile end
80-1		10:07	MBES (EM712)	46° 44,595'	61° 32,501'	78	profile end
82-1		10:22	CTD	46° 44,903'	61° 33,042'	79	in the water
82-1		10:26	CTD	46° 44,907'	61° 33,051'	79	max depth/on ground
82-1		10:30	CTD	46° 44,913'	61° 33,061'	79	on deck

83-1		10:34	GC	46° 44,914'	61° 33,061'	79	core barrel length = 3m – deployed
83-1		10:36	GC	46° 44,914'	61° 33,061'	81	max depth/on ground
83-1		10:44	GC	46° 44,914'	61° 33,060'	81	on deck
84-1		11:17	GC	46° 45,195'	61° 37,147'	77	core barrel length = 3m – deployed
84-1		11:19	GC	46° 45,195'	61° 37,147'	77	max depth/on ground
84-1		11:26	GC	46° 45,195'	61° 37,147'	77	on deck
85-1		14:25	CSEM	46° 33,298'	62° 18,840'	47	USBL – hydrophone in water
85-1		14:25	CSEM	46° 33,298'	62° 18,840'	47	in the water
85-1		15:05	CSEM	46° 33,298'	62° 18,843'	47	recording start
85-1		16:43	CSEM	46° 33,354'	62° 20,259'	51	Interrupt profile, technical problems
85-1		16:55	CSEM	46° 33,356'	62° 20,263'	51	measurements - continue
85-1		22:19	CSEM	46° 33,640'	62° 20,515'	49	recording end
85-1		22:19	CSEM	46° 33,640'	62° 20,515'	50	profile end (technical problems)
85-1		22:28	CSEM	46° 33,641'	62° 20,516'	50	on deck
85-1		22:49	CSEM	46° 33,776'	62° 20,501'	50	in the water
85-1		22:54	CSEM	46° 33,769'	62° 20,471'	50	recording start
85-1		23:16	CSEM	46° 33,755'	62° 20,211'	50	recording end
85-1		23:22	CSEM	46° 33,753'	62° 20,169'	50	on deck
85-1		23:50	CSEM	46° 33,757'	62° 20,287'	50	in the water
85-1		23:51	CSEM	46° 33,757'	62° 20,277'	50	recording start
85-1		16:05	CSEM	46° 33,125'	62° 19,374'	47	recording end
85-1		16:06	CSEM	46° 33,125'	62° 19,374'	47	USBL – on deck
85-1		16:10	CSEM	46° 33,125'	62° 19,374'	47	on deck
76-1		16:25	OBEM	46° 33,314'	62° 19,259'	49	hydrophone in water
76-1		16:42	OBEM	46° 33,413'	62° 19,185'	49	released
76-1		17:05	OBEM	46° 33,445'	62° 19,197'	49	OBEM on deck (with anchor)
76-2		17:19	OBEM	46° 33,426'	62° 19,469'	50	released
76-2		17:35	OBEM	46° 33,462'	62° 19,499'	50	OBEM on deck (with anchor)
76-3		17:47	OBEM	46° 33,443'	62° 19,787'	50	released
76-3		18:04	OBEM	46° 33,475'	62° 19,816'	51	OBEM on deck (with anchor)
76-4		18:13	OBEM	46° 33,463'	62° 20,072'	52	released
76-4		18:27	OBEM	46° 33,490'	62° 20,107'	50	OBEM on deck (with anchor)
76-5		18:42	OBEM	46° 33,732'	62° 20,080'	50	released
76-5		19:00	OBEM	46° 33,760'	62° 20,117'	50	OBEM on deck (with anchor)
76-6	21.10.	19:13	OBEM	46° 33,720'	62° 19,756'	49	released
76-6		19:27	OBEM	46° 33,744'	62° 19,813'	50	OBEM on deck (with anchor)
76-7		19:40	OBEM	46° 33,705'	62° 19,447'	51	released
76-7		19:55	OBEM	46° 33,730'	62° 19,498'	50	OBEM on deck (with anchor)
76-8		20:06	OBEM	46° 33,690'	62° 19,139'	50	released
76-8		20:17	OBEM	46° 33,703'	62° 19,168'	50	OBEM on deck (with anchor)
76-9		20:29	OBEM	46° 33,952'	62° 19,113'	51	released
76-9		20:45	OBEM	46° 33,990'	62° 19,110'	50	OBEM on deck (with anchor)
76-10		21:02	OBEM	46° 33,968'	62° 19,418'	51	released
76-10		21:09	OBEM	46° 33,975'	62° 19,525'	50	Anchor hook does not open
76-11		21:15	OBEM	46° 33,986'	62° 19,731'	51	released
76-11		21:27	OBEM	46° 34,012'	62° 19,747'	51	OBEM on deck (with anchor)
76-12		21:36	OBEM	46° 34,004'	62° 20,033'	51	released
76-12		21:49	OBEM	46° 34,027'	62° 20,046'	51	OBEM on deck (with anchor)
76-10		22:45	OBEM	46° 34,001'	62° 19,464'	51	released
76-10		23:50	OBEM	46° 34,007'	62° 19,440'	51	OBEM on hook
76-10	22.10.	00:06	OBEM	46° 34,007'	62° 19,440'	51	OBEM on deck (with anchor)
86-1		02:26	CTD	46° 35,316'	61° 41,766'	64	in the water
86-1		02:32	CTD	46° 35,316'	61° 41,765'	64	max depth/on ground
86-1		02:36	CTD	46° 35,316'	61° 41,766'	64	on deck

87-1		02:49	MBES (EM712)	46° 35,363'	61° 40,259'	64	profile start
88-1		02:49	Parasound P70	46° 35,364'	61° 40,232'	64	profile start
88-1		19:14	Parasound P70	46° 38,669'	61° 38,282'	64	profile end
87-1		19:14	MBES (EM712)	46° 38,669'	61° 38,309'	64	profile end
89-1		19:22	CTD	46° 38,651'	61° 38,459'	66	in the water
89-1		19:27	CTD	46° 38,651'	61° 38,460'	66	max depth/on ground
89-1		19:29	CTD	46° 38,651'	61° 38,459'	66	At surface, another cast
89-1		19:33	CTD	46° 38,651'	61° 38,459'	66	max depth/on ground
89-1		19:38	CTD	46° 38,651'	61° 38,459'	66	on deck
90-1		20:16	OBEM	46° 36,400'	61° 39,029'	65	OBEM34 – deployed
90-2		20:38	OBEM	46° 36,338'	61° 38,691'	65	OBEM35 – deployed
90-3		20:56	OBEM	46° 36,281'	61° 38,347'	65	OBEM36 – deployed
90-4		21:14	OBEM	46° 36,221'	61° 38,005'	65	OBEM37 – deployed
90-5		21:35	OBEM	46° 36,161'	61° 37,663'	65	OBEM38 – deployed
90-6		21:56	OBEM	46° 36,102'	61° 37,322'	65	OBEM39 – deployed
90-7		22:10	OBEM	46° 36,043'	61° 36,985'	65	OBEM40 – deployed
90-8		22:28	OBEM	46° 35,984'	61° 36,642'	65	OBEM41 – deployed
90-9		22:42	OBEM	46° 35,924'	61° 36,298'	64	OBEM43 – deployed
90-10		22:56	OBEM	46° 35,863'	61° 35,953'	64	OBEM43 – deployed
90-11		23:11	OBEM	46° 35,806'	61° 35,611'	64	OBEM44 – deployed
90-12		23:28	OBEM	46° 35,746'	61° 35,271'	64	OBEM45 – deployed
91-1		00:06	CSEM	46° 35,349'	61° 34,679'	64	USBL – hydrophone in water
91-1		00:18	CSEM	46° 35,363'	61° 34,716'	64	CAGEM – deployed
91-1		00:32	CSEM	46° 35,362'	61° 34,716'	64	recording start
91-1		01:13	CSEM	46° 35,456'	61° 35,246'	64	Interrupt profile, technical problems
91-1		01:20	CSEM	46° 35,455'	61° 35,244'	64	on deck
91-1		01:39	CSEM	46° 35,455'	61° 35,244'	64	CAGEM – deployed
91-1		01:48	CSEM	46° 35,456'	61° 35,251'	64	Interrupt profile, technical problems
91-1		01:50	CSEM	46° 35,458'	61° 35,262'	64	Interrupt profile, technical problems
91-1		01:55	CSEM	46° 35,458'	61° 35,262'	64	on deck
91-1		03:16	CSEM	46° 35,457'	61° 35,261'	64	in the water
91-1		03:25	CSEM	46° 35,459'	61° 35,273'	64	measurements - continue
91-1		06:20	CSEM	46° 35,888'	61° 37,726'	64	Interrupt profile, technical problems
91-1		06:35	CSEM	46° 35,887'	61° 37,726'	64	on deck
91-1		06:47	CSEM	46° 35,888'	61° 37,726'	64	in the water
91-1		06:56	CSEM	46° 35,890'	61° 37,739'	64	measurements - continue
91-1	23.10.	12:13	CSEM	46° 36,156'	61° 37,483'	65	Interrupt profile, technical problems
91-1		12:19	CSEM	46° 36,155'	61° 37,476'	65	on deck
91-1		12:24	CSEM	46° 36,155'	61° 37,476'	65	in the water
91-1		12:28	CSEM	46° 36,155'	61° 37,475'	65	measurements - continue
91-1		21:51	CSEM	46° 36,801'	61° 39,605'	66	recording end
91-1		21:57	CSEM	46° 36,796'	61° 39,593'	66	on deck
90-1		22:14	OBEM	46° 36,353'	61° 39,016'	65	hydrophone in water
90-1		22:23	OBEM	46° 36,397'	61° 39,014'	65	released
90-1		22:32	OBEM	46° 36,402'	61° 39,039'	65	OBEM on deck (with anchor)
90-2		22:40	OBEM	46° 36,313'	61° 38,696'	65	released (hydrophone still in water after stn. 90-1)
90-2		22:56	OBEM	46° 36,337'	61° 38,701'	65	OBEM on deck (with anchor)
90-3		23:05	OBEM	46° 36,260'	61° 38,339'	65	released
90-3		23:15	OBEM	46° 36,282'	61° 38,370'	65	OBEM on deck (with anchor)
90-4		23:25	OBEM	46° 36,194'	61° 38,003'	65	released
90-4		23:36	OBEM	46° 36,219'	61° 38,026'	65	OBEM on deck (with anchor)
90-5		23:48	OBEM	46° 36,135'	61° 37,672'	65	released
90-5	24.10.	00:00	OBEM	46° 36,158'	61° 37,669'	65	OBEM on deck (with anchor)

90-6		00:08	OBEM	46° 36,075'	61° 37,316'	65	released
90-6		00:19	OBEM	46° 36,094'	61° 37,336'	65	OBEM on deck (with anchor)
90-7		00:27	OBEM	46° 36,019'	61° 36,972'	65	released
90-7		00:39	OBEM	46° 36,036'	61° 36,986'	65	OBEM on deck (with anchor)
90-8		00:50	OBEM	46° 35,961'	61° 36,632'	65	released
90-8		01:00	OBEM	46° 35,979'	61° 36,645'	65	OBEM on deck (with anchor)
90-9		01:13	OBEM	46° 35,892'	61° 36,290'	64	released
90-9		01:30	OBEM	46° 35,920'	61° 36,294'	65	OBEM on deck (with anchor)
90-10		01:39	OBEM	46° 35,838'	61° 35,948'	65	released
90-10		01:50	OBEM	46° 35,852'	61° 35,954'	65	OBEM on deck (with anchor)
90-11		01:59	OBEM	46° 35,784'	61° 35,604'	64	released
90-11		02:10	OBEM	46° 35,793'	61° 35,618'	64	OBEM on deck (with anchor)
90-12		02:17	OBEM	46° 35,725'	61° 35,266'	64	released
90-12		02:22	OBEM	46° 35,745'	61° 35,272'	64	hydrophone on deck
90-12		02:27	OBEM	46° 35,740'	61° 35,283'	64	OBEM on deck (with anchor)
92-1		03:20	CTD	46° 42,479'	61° 43,722'	71	in the water
92-1		03:26	CTD	46° 42,479'	61° 43,722'	71	max depth/on ground
92-1		03:30	CTD	46° 42,479'	61° 43,723'	71	on deck
93-1		03:40	MBES (EM712)	46° 43,044'	61° 44,793'	73	profile start
94-1		03:40	Parasound P70	46° 43,044'	61° 44,793'	73	profile start
93-1		10:46	MBES (EM712)	46° 43,176'	61° 44,184'	72	profile end
94-1		10:46	Parasound P70	46° 43,164'	61° 44,191'	72	profile end
95-1		10:53	CTD	46° 43,119'	61° 44,208'	74	in the water
95-1		10:59	CTD	46° 43,116'	61° 44,203'	74	max depth/on ground
95-1		11:02	CTD	46° 43,108'	61° 44,186'	74	on deck
96-1		12:07	GC	46° 37,422'	61° 34,500'	66	core barrel length = 3m – deployed
96-1		12:10	GC	46° 37,423'	61° 34,500'	67	max depth/on ground
96-1		12:16	GC	46° 37,422'	61° 34,500'	67	on deck
96-2		12:21	GC	46° 37,428'	61° 34,500'	67	core barrel length = 3m – deployed
96-2		12:23	GC	46° 37,428'	61° 34,500'	67	max depth/on ground
96-2		12:30	GC	46° 37,426'	61° 34,503'	66	on deck
97-1		13:06	GC	46° 38,393'	61° 30,861'	69	core barrel length = 3m – deployed
97-1		13:08	GC	46° 38,393'	61° 30,860'	69	max depth/on ground
97-1		13:14	GC	46° 38,393'	61° 30,857'	69	on deck
97-2		13:20	GC	46° 38,391'	61° 30,849'	69	core barrel length = 3m – deployed
97-2		13:21	GC	46° 38,389'	61° 30,850'	69	max depth/on ground
97-2		13:28	GC	46° 38,390'	61° 30,849'	69	on deck
98-1		13:57	GC	46° 38,666'	61° 28,945'	69	core barrel length = 3m – deployed
98-1		13:58	GC	46° 38,666'	61° 28,944'	69	max depth/on ground
98-1		14:04	GC	46° 38,668'	61° 28,942'	69	on deck
99-1		14:40	GC	46° 36,187'	61° 28,331'	65	core barrel length = 3m – deployed
99-1		14:41	GC	46° 36,187'	61° 28,330'	65	max depth/on ground
99-1		14:47	GC	46° 36,189'	61° 28,330'	65	on deck
99-2		14:51	GC	46° 36,192'	61° 28,337'	65	core barrel length = 3m – deployed
99-2		14:53	GC	46° 36,191'	61° 28,336'	65	max depth/on ground
99-2		14:59	GC	46° 36,191'	61° 28,337'	65	on deck
100-1		17:27	CTD	46° 19,356'	61° 58,444'	42	in the water
100-1		17:31	CTD	46° 19,357'	61° 58,443'	42	max depth/on ground
100-1		17:34	CTD	46° 19,356'	61° 58,443'	42	on deck
102-1		17:48	Parasound P70	46° 18,764'	61° 59,581'	44	profile start
101-1		17:48	MBES (EM712)	46° 18,764'	61° 59,581'	44	profile start
102-1	25.10.	10:37	Parasound P70	46° 16,161'	61° 58,139'	45	profile end
101-1		10:37	MBES (EM712)	46° 16,172'	61° 58,129'	44	profile end
103-1		10:44	CTD	46° 16,259'	61° 58,092'	45	in the water

103-1		10:50	CTD	46° 16,260'	61° 58,092'	45	max depth/on ground
103-1		10:54	CTD	46° 16,259'	61° 58,092'	45	on deck
104-1		11:33	OBEM	46° 14,542'	61° 58,554'	45	OBEM 57 – deployed
104-2		11:53	OBEM	46° 14,326'	61° 58,721'	46	OBEM 56 – deployed
104-3		12:12	OBEM	46° 14,116'	61° 58,889'	46	OBEM 55 – deployed
104-4		12:30	OBEM	46° 13,904'	61° 59,058'	46	OBEM 54 – deployed
104-5		12:43	OBEM	46° 13,688'	61° 59,231'	46	OBEM 53 – deployed
104-6		12:56	OBEM	46° 13,476'	61° 59,400'	47	OBEM 52 – deployed
104-7		13:13	OBEM	46° 13,263'	61° 59,569'	46	OBEM 51 – deployed
104-8		13:26	OBEM	46° 13,049'	61° 59,740'	46	OBEM 50 – deployed
104-9		13:37	OBEM	46° 12,837'	61° 59,908'	46	OBEM 49 – deployed
104-10		13:50	OBEM	46° 12,623'	62° 00,078'	47	OBEM 48 – deployed
104-11		14:03	OBEM	46° 12,414'	62° 00,246'	47	OBEM 47 – deployed
104-12		14:16	OBEM	46° 12,200'	62° 00,417'	46	OBEM 46 – deployed
105-1		16:04	GC	46° 20,049'	61° 38,963'	59	core barrel length = 3m – deployed
105-1		16:04	GC	46° 20,049'	61° 38,963'	59	max depth/on ground
105-1		16:09	GC	46° 20,050'	61° 38,961'	59	on deck
105-2		16:31	GC	46° 20,049'	61° 38,963'	60	core barrel length = 5m – deployed
105-2		16:33	GC	46° 20,050'	61° 38,963'	60	max depth/on ground
105-2		16:39	GC	46° 20,049'	61° 38,963'	60	on deck
106-1		17:36	GC	46° 15,533'	61° 46,005'	57	core barrel length = 3m – deployed
106-1		17:38	GC	46° 15,532'	61° 46,005'	57	max depth/on ground
106-1		17:43	GC	46° 15,533'	61° 46,006'	57	on deck
106-2		18:00	GC	46° 15,534'	61° 46,009'	58	core barrel length = 5m – deployed
106-2		18:01	GC	46° 15,534'	61° 46,009'	57	max depth/on ground
106-2		18:05	GC	46° 15,534'	61° 46,010'	56	on deck
107-1		19:30	CSEM	46° 11,887'	62° 00,393'	47	USBL – hydrophone in water
107-1		19:32	CSEM	46° 11,886'	62° 00,392'	47	CAGEM – deployed
107-1		19:54	CSEM	46° 11,887'	62° 00,392'	47	recording start
107-1	26.10.	12:00	CSEM	46° 14,859'	61° 58,544'	45	recording end
107-1		12:06	CSEM	46° 14,861'	61° 58,543'	45	USBL – on deck
107-1		12:07	CSEM	46° 14,861'	61° 58,543'	45	on deck
104-12		12:22	OBEM	46° 14,500'	61° 58,506'	46	hydrophone in water
104-12		12:26	OBEM	46° 14,506'	61° 58,516'	46	released
104-12		12:39	OBEM	46° 14,542'	61° 58,533'	46	OBEM on deck (with anchor)
104-11		12:48	OBEM	46° 14,343'	61° 58,646'	46	released
104-11		12:59	OBEM	46° 14,320'	61° 58,704'	46	OBEM on deck (with anchor)
104-10		13:08	OBEM	46° 14,107'	61° 58,832'	46	released
104-10		13:19	OBEM	46° 14,110'	61° 58,869'	45	OBEM on deck (with anchor)
104-9		13:30	OBEM	46° 13,894'	61° 58,996'	46	released
104-9		13:42	OBEM	46° 13,892'	61° 59,050'	46	OBEM on deck (with anchor)
104-8		13:52	OBEM	46° 13,682'	61° 59,167'	46	released
104-8		14:04	OBEM	46° 13,674'	61° 59,223'	46	OBEM on deck (with anchor)
104-7		14:12	OBEM	46° 13,466'	61° 59,338'	46	released
104-7		14:26	OBEM	46° 13,457'	61° 59,392'	46	OBEM on deck (with anchor)
104-6		14:36	OBEM	46° 13,229'	61° 59,522'	46	released
104-6		14:51	OBEM	46° 13,251'	61° 59,559'	46	OBEM on deck (with anchor)
104-5		15:01	OBEM	46° 13,019'	61° 59,693'	46	released
104-5		15:13	OBEM	46° 13,039'	61° 59,732'	46	OBEM on deck (with anchor)
104-4		15:22	OBEM	46° 12,811'	61° 59,862'	46	released
104-4		15:32	OBEM	46° 12,833'	61° 59,898'	46	OBEM on deck (with anchor)
104-3		15:41	OBEM	46° 12,605'	62° 00,036'	46	released
104-3		15:51	OBEM	46° 12,616'	62° 00,071'	46	OBEM on deck (with anchor)
104-2		15:59	OBEM	46° 12,391'	62° 00,207'	46	released

104-2		16:09	OBEM	46° 12,404'	62° 00,240'	46	OBEM on deck (with anchor)
104-1		16:16	OBEM	46° 12,180'	62° 00,384'	46	released
104-1		16:23	OBEM	46° 12,191'	62° 00,414'	46	hydrophone on deck
104-1		16:25	OBEM	46° 12,192'	62° 00,414'	46	OBEM on deck (with anchor)
108-1		16:39	CTD	46° 12,191'	62° 00,414'	46	in the water
108-1		16:43	CTD	46° 12,191'	62° 00,414'	46	max depth/on ground
108-1		16:46	CTD	46° 12,190'	62° 00,415'	46	on deck
109-1		17:23	MBES (EM712)	46° 10,411'	62° 01,140'	46	profile start
110-1		17:23	Parasound P70	46° 10,411'	62° 01,140'	46	profile start
109-1		10:18	MBES (EM712)	46° 15,232'	61° 43,643'	58	profile - interrupt (CTD station)
110-1		10:18	Parasound P70	46° 15,232'	61° 43,643'	58	profile - interrupt (CTD station)
111-1		10:20	CTD	46° 15,232'	61° 43,643'	59	in the water
111-1		10:25	CTD	46° 15,232'	61° 43,643'	58	max depth/on ground
111-1		10:27	CTD	46° 15,233'	61° 43,643'	58	on deck
110-1		10:30	Parasound P70	46° 15,236'	61° 43,633'	58	profile - continue
109-1		10:30	MBES (EM712)	46° 15,238'	61° 43,629'	58	profile - continue
110-1		15:35	Parasound P70	46° 15,669'	61° 44,984'	57	profile - interrupt (CTD station)
109-1		15:35	MBES (EM712)	46° 15,669'	61° 44,984'	57	profile - interrupt (CTD station)
112-1		15:39	CTD	46° 15,679'	61° 45,017'	56	in the water
112-1		15:45	CTD	46° 15,679'	61° 45,018'	56	max depth/on ground
112-1		15:49	CTD	46° 15,677'	61° 45,019'	56	on deck
109-1		15:58	MBES (EM712)	46° 15,558'	61° 44,756'	56	profile - continue
110-1		15:58	Parasound P70	46° 15,558'	61° 44,756'	56	profile - continue
110-1		17:39	Parasound P70	46° 13,134'	61° 59,264'	46	profile - interrupt (GC)
109-1		17:39	MBES (EM712)	46° 13,134'	61° 59,264'	46	profile - interrupt (GC)
113-1		17:52	GC	46° 13,153'	61° 59,668'	47	core barrel length = 3m – deployed
113-1		17:54	GC	46° 13,152'	61° 59,667'	46	max depth/on ground
113-1		17:57	GC	46° 13,152'	61° 59,667'	47	on deck
113-2		18:14	GC	46° 13,151'	61° 59,667'	47	core barrel length = 5m – deployed
113-2	27.10.	18:16	GC	46° 13,152'	61° 59,668'	47	max depth/on ground
113-2		18:20	GC	46° 13,150'	61° 59,668'	47	on deck
114-1		18:42	GC	46° 13,925'	61° 58,398'	47	core barrel length = 5m – deployed
114-1		18:43	GC	46° 13,925'	61° 58,398'	48	max depth/on ground
114-1		18:49	GC	46° 13,926'	61° 58,397'	48	on deck
110-1		19:01	Parasound P70	46° 14,232'	61° 58,004'	46	profile - continue
109-1		19:01	MBES (EM712)	46° 14,232'	61° 58,004'	46	profile - continue
109-1		20:26	MBES (EM712)	46° 15,393'	61° 45,103'	56	profile end
110-1		20:26	Parasound P70	46° 15,411'	61° 45,095'	57	profile end
115-1		20:42	OBEM	46° 15,525'	61° 45,211'	56	OBEM58 – deployed
115-2		20:57	OBEM	46° 15,533'	61° 45,559'	57	OBEM59 – deployed
115-3		21:13	OBEM	46° 15,543'	61° 45,911'	56	OBEM60 – deployed
115-4		21:27	OBEM	46° 15,551'	61° 46,256'	56	OBEM61 – deployed
115-5		21:43	OBEM	46° 15,562'	61° 46,608'	56	OBEM62 – deployed
115-6		21:58	OBEM	46° 15,572'	61° 46,957'	56	OBEM63 – deployed
115-7		22:18	OBEM	46° 15,841'	61° 46,945'	55	OBEM64 – deployed
115-8		22:33	OBEM	46° 15,829'	61° 46,598'	57	OBEM65 – deployed
115-9		22:48	OBEM	46° 15,818'	61° 46,246'	57	OBEM66 – deployed
115-10		23:06	OBEM	46° 15,810'	61° 45,901'	57	OBEM67 – deployed
115-11		23:22	OBEM	46° 15,801'	61° 45,550'	58	OBEM68 – deployed
115-12		23:36	OBEM	46° 15,789'	61° 45,204'	58	OBEM69 – deployed
116-1	28.10.	02:35	CTD	46° 40,477'	61° 57,222'	59	in the water
116-1		02:40	CTD	46° 40,476'	61° 57,221'	61	max depth/on ground
116-1		02:40	CTD	46° 40,476'	61° 57,221'	58	on deck
116-2		03:15	CTD	46° 41,129'	61° 58,590'	62	in the water

116-2		03:22	CTD	46° 41,129'	61° 58,590'	63	max depth/on ground
116-2		03:26	CTD	46° 41,138'	61° 58,573'	62	on deck
116-3		04:01	CTD	46° 43,270'	62° 02,153'	56	in the water
116-3		04:06	CTD	46° 43,271'	62° 02,156'	56	max depth/on ground
116-3		04:10	CTD	46° 43,273'	62° 02,147'	56	on deck
116-4		04:45	CTD	46° 43,277'	62° 02,142'	144	in the water
116-4		04:53	CTD	46° 43,278'	62° 02,144'	143	max depth/on ground
116-4		04:59	CTD	46° 43,277'	62° 02,143'	143	on deck
116-5		05:22	CTD	46° 44,617'	62° 04,040'	73	in the water
116-5		05:27	CTD	46° 44,618'	62° 04,039'	74	max depth/on ground
116-5		05:31	CTD	46° 44,617'	62° 04,038'	75	on deck
117-1		05:52	MBES (EM712)	46° 45,523'	62° 04,436'	70	profile start
118-1		05:52	Parasound P70	46° 45,523'	62° 04,436'	70	profile start
118-1		10:57	Parasound P70	46° 33,761'	62° 13,845'	44	profile end
117-1		10:57	MBES (EM712)	46° 33,749'	62° 13,809'	44	profile end
119-1		11:03	CTD	46° 33,739'	62° 13,706'	46	in the water
119-1		11:08	CTD	46° 33,740'	62° 13,707'	46	max depth/on ground
119-1		11:11	CTD	46° 33,740'	62° 13,705'	46	on deck
120-1	29.10.	14:17	CSEM	46° 15,348'	61° 44,847'	57	USBL – hydrophone in water
120-1		14:17	CSEM	46° 15,350'	61° 44,846'	57	CAGEM – deployed
120-1		14:25	CSEM	46° 15,356'	61° 44,842'	57	recording start
120-1		18:07	CSEM	46° 15,580'	61° 46,891'	56	recording interrupted
120-1		18:11	CSEM	46° 15,580'	61° 46,894'	56	on deck
120-1		18:23	CSEM	46° 15,579'	61° 46,894'	56	in the water
120-1		18:30	CSEM	46° 15,580'	61° 46,877'	56	measurements - continue
120-1	30.10.	10:30	CSEM	46° 16,010'	61° 44,794'	58	recording end
120-1		10:34	CSEM	46° 16,009'	61° 44,795'	58	on deck
115-12		10:53	OBEM	46° 15,746'	61° 45,175'	58	hydrophone in water
115-12		10:57	OBEM	46° 15,733'	61° 45,185'	58	released
115-12		11:15	OBEM	46° 15,790'	61° 45,238'	58	OBEM on deck (with anchor)
115-11		11:25	OBEM	46° 15,823'	61° 45,579'	57	released
115-11		11:36	OBEM	46° 15,813'	61° 45,575'	57	OBEM on deck (with anchor)
115-10		11:47	OBEM	46° 15,832'	61° 45,935'	57	released
115-10		11:58	OBEM	46° 15,821'	61° 45,928'	57	OBEM on deck (with anchor)
115-9		12:08	OBEM	46° 15,843'	61° 46,281'	56	released
115-9		12:18	OBEM	46° 15,823'	61° 46,274'	56	OBEM on deck (with anchor)
115-8		12:28	OBEM	46° 15,853'	61° 46,633'	56	released
115-8		12:39	OBEM	46° 15,844'	61° 46,629'	131	OBEM on deck (with anchor)
115-7		12:49	OBEM	46° 15,862'	61° 46,983'	55	released
115-7		12:55	OBEM	46° 15,847'	61° 46,975'	56	OBEM on deck (no anchor)
115-6		13:12	OBEM	46° 15,596'	61° 46,991'	56	released
115-6		13:26	OBEM	46° 15,578'	61° 46,983'	56	OBEM on deck (with anchor)
115-5		13:37	OBEM	46° 15,585'	61° 46,638'	56	released
115-5		13:50	OBEM	46° 15,567'	61° 46,635'	56	OBEM on deck (with anchor)
115-4		13:59	OBEM	46° 15,577'	61° 46,283'	56	released
115-4		14:13	OBEM	46° 15,551'	61° 46,286'	56	OBEM on deck (with anchor)
115-3		14:22	OBEM	46° 15,566'	61° 45,935'	57	released
115-3		14:50	OBEM	46° 15,543'	61° 45,934'	57	OBEM on deck (with anchor)
115-2		15:13	OBEM	46° 15,555'	61° 45,589'	57	released
115-2		15:34	OBEM	46° 15,531'	61° 45,545'	57	OBEM on deck (with anchor)
115-1		15:40	OBEM	46° 15,543'	61° 45,239'	57	released
115-1		15:46	OBEM	46° 15,519'	61° 45,251'	57	hydrophone on deck
115-1		15:53	OBEM	46° 15,521'	61° 45,225'	57	OBEM on deck (with anchor)
121-1		18:47	OBEM	46° 42,723'	62° 02,149'	63	OBEM70 – deployed

121-2		19:00	OBEM	46° 42,868'	62° 02,370'	76	OBEM71 – deployed
121-3		19:13	OBEM	46° 43,020'	62° 02,601'	144	OBEM72 – deployed
121-4		19:25	OBEM	46° 43,170'	62° 02,829'	119	OBEM73 – deployed
121-5		19:45	OBEM	46° 43,320'	62° 03,056'	93	OBEM74 – deployed
121-6		19:58	OBEM	46° 43,476'	62° 03,254'	77	OBEM75 – deployed
121-7		20:16	OBEM	46° 43,447'	62° 02,094'	134	OBEM76 – deployed
121-8		20:27	OBEM	46° 43,297'	62° 02,348'	139	OBEM77 – deployed
121-9		20:39	OBEM	46° 43,157'	62° 02,583'	141	OBEM78 – deployed
121-10		20:50	OBEM	46° 43,015'	62° 02,820'	143	OBEM79 – deployed
121-11		21:02	OBEM	46° 42,873'	62° 03,056'	153	OBEM80 – deployed
121-12		21:14	OBEM	46° 42,732'	62° 03,292'	145	OBEM81 – deployed
122-1		22:09	CSEM	46° 42,345'	62° 02,011'	63	CAGEM – deployed
122-1		22:17	CSEM	46° 42,345'	62° 02,011'	63	USBL – hydrophone in water
122-1		22:21	CSEM	46° 42,352'	62° 02,023'	63	recording start
122-1		21:57	CSEM	46° 43,778'	62° 01,908'	78	recording end
122-1		21:57	CSEM	46° 43,777'	62° 01,908'	78	hydrophone on deck
122-1		22:03	CSEM	46° 43,777'	62° 01,908'	78	on deck
123-1	31.10.	22:17	CTD	46° 43,776'	62° 01,909'	76	in the water
123-1		22:21	CTD	46° 43,776'	62° 01,908'	77	max depth/on ground
123-1		22:25	CTD	46° 43,777'	62° 01,908'	77	on deck
124-1		22:54	MBES (EM712)	46° 43,151'	62° 03,341'	98	profile start
125-1		23:09	Parasound P70	46° 42,551'	62° 04,736'	99	profile start
124-1	01.11.	10:55	MBES (EM712)	46° 34,256'	62° 12,730'	49	profile end
125-1		10:55	Parasound P70	46° 34,211'	62° 12,701'	49	profile end
126-1		11:01	CTD	46° 34,132'	62° 12,582'	49	in the water
126-1		11:06	CTD	46° 34,132'	62° 12,581'	49	max depth/on ground
126-1		11:08	CTD	46° 34,132'	62° 12,581'	49	on deck
121-1		12:19	OBEM	46° 42,600'	62° 01,987'	60	hydrophone in water
121-1		12:20	OBEM	46° 42,622'	62° 02,003'	61	released
121-1		12:26	OBEM	46° 42,745'	62° 02,140'	61	OBEM on deck
121-2		12:36	OBEM	46° 42,923'	62° 02,143'	72	released
121-2		12:45	OBEM	46° 42,870'	62° 02,337'	75	OBEM on deck
121-3		12:54	OBEM	46° 42,879'	62° 02,724'	52	released
121-3		13:02	OBEM	46° 43,032'	62° 02,515'	76	OBEM on deck
121-4		13:12	OBEM	46° 42,984'	62° 02,929'	82	released
121-4		13:20	OBEM	46° 43,185'	62° 02,773'	34	OBEM on deck
121-5		13:30	OBEM	46° 43,192'	62° 03,097'	49	released
121-5		13:38	OBEM	46° 43,343'	62° 02,996'	91	OBEM on deck
121-6		13:46	OBEM	46° 43,361'	62° 03,323'	77	released
121-6		13:52	OBEM	46° 43,496'	62° 03,270'	75	OBEM on deck
121-7		14:05	OBEM	46° 43,588'	62° 01,954'	39	released
121-7		14:17	OBEM	46° 43,468'	62° 02,119'	78	OBEM on deck
121-8		14:31	OBEM	46° 43,407'	62° 02,199'	89	released
121-8		14:41	OBEM	46° 43,278'	62° 02,293'	67	OBEM on deck
121-9		14:49	OBEM	46° 43,266'	62° 02,479'	90	released
121-9		15:11	OBEM	46° 43,206'	62° 02,459'	83	OBEM on deck
121-10		15:25	OBEM	46° 43,052'	62° 02,782'	71	released
121-10		15:28	OBEM	46° 43,054'	62° 02,814'	58	OBEM on deck
121-11		15:33	OBEM	46° 42,988'	62° 02,922'	89	released
121-11		15:42	OBEM	46° 42,901'	62° 03,031'	82	OBEM on deck
121-12		15:47	OBEM	46° 42,839'	62° 03,120'	88	released
121-12		15:56	OBEM	46° 42,736'	62° 03,177'	72	OBEM on deck
121-12		15:58	OBEM	46° 42,711'	62° 03,175'	119	hydrophone on deck
127-1		16:15	GC	46° 42,488'	62° 03,922'	80	core barrel length = 3m – deployed

127-1		16:17	GC	46° 42,488'	62° 03,922'	68	max depth/on ground
127-1		16:26	GC	46° 42,488'	62° 03,922'	121	on deck
127-2		16:34	GC	46° 42,485'	62° 03,928'	121	core barrel length = 3m – deployed
127-2		16:36	GC	46° 42,484'	62° 03,927'	121	max depth/on ground
127-2		16:45	GC	46° 42,484'	62° 03,928'	121	on deck
128-1		17:06	GC	46° 43,029'	62° 03,720'	94	core barrel length = 3m – deployed
128-1		17:08	GC	46° 43,030'	62° 03,721'	94	max depth/on ground
128-1		17:16	GC	46° 43,029'	62° 03,721'	94	on deck
128-2		17:22	GC	46° 43,025'	62° 03,726'	94	core barrel length = 3m – deployed
128-2		17:24	GC	46° 43,025'	62° 03,726'	94	max depth/on ground
128-2		17:31	GC	46° 43,025'	62° 03,726'	94	on deck
129-1		21:17	CTD	46° 34,838'	62° 56,458'	46	in the water
129-1		21:21	CTD	46° 34,838'	62° 56,458'	46	max depth/on ground
129-1		21:25	CTD	46° 34,839'	62° 56,458'	46	on deck
130-1		21:34	MBES (EM712)	46° 34,600'	62° 58,066'	45	profile start
131-1		21:35	Parasound P70	46° 34,594'	62° 58,117'	45	profile start
130-1		14:58	MBES (EM712)	46° 32,282'	63° 00,476'	41	profile end
131-1		14:58	Parasound P70	46° 32,274'	63° 00,474'	41	profile end
132-1		15:03	CTD	46° 32,264'	63° 00,469'	41	in the water
132-1		15:07	CTD	46° 32,263'	63° 00,468'	41	max depth/on ground
132-1		15:10	CTD	46° 32,264'	63° 00,469'	41	on deck
133-1		15:48	OBEM	46° 32,614'	63° 05,190'	44	OBEM82 – deployed
133-2		16:01	OBEM	46° 32,701'	63° 05,448'	48	OBEM83 – deployed
133-3		16:16	OBEM	46° 32,783'	63° 05,702'	50	OBEM84 – deployed
133-4		16:27	OBEM	46° 32,866'	63° 05,957'	50	OBEM85 – deployed
133-5	02.11.	16:40	OBEM	46° 32,950'	63° 06,215'	47	OBEM86 – deployed
133-6		16:55	OBEM	46° 33,032'	63° 06,467'	46	OBEM87 – deployed
133-7		17:06	OBEM	46° 33,115'	63° 06,722'	47	OBEM88 – deployed
133-8		17:16	OBEM	46° 33,198'	63° 06,977'	51	OBEM89 – deployed
133-9		17:26	OBEM	46° 33,282'	63° 07,232'	48	OBEM90 – deployed
133-10		17:35	OBEM	46° 33,365'	63° 07,486'	46	OBEM91 – deployed
133-11		17:51	OBEM	46° 33,442'	63° 07,737'	45	OBEM92 – deployed
133-12		18:03	OBEM	46° 33,523'	63° 07,989'	44	OBEM93 – deployed
134-1		18:14	CSEM	46° 33,528'	63° 08,217'	44	USBL – hydrophone in water
134-1		18:46	CSEM	46° 33,400'	63° 08,529'	44	in the water
134-1		19:00	CSEM	46° 33,381'	63° 08,466'	44	recording start
134-1	03.11.	03:45	CSEM	46° 33,385'	63° 08,016'	44	recording interrupted
134-1		03:51	CSEM	46° 33,387'	63° 08,022'	44	on deck
134-1		04:06	CSEM	46° 33,387'	63° 08,022'	44	in the water
134-1		04:11	CSEM	46° 33,388'	63° 08,023'	44	measurements - continue
134-1		12:27	CSEM	46° 33,542'	63° 07,585'	46	recording end
134-1		12:29	CSEM	46° 33,542'	63° 07,585'	46	hydrophone on deck
134-1		12:32	CSEM	46° 33,542'	63° 07,585'	46	on deck
133-12		13:01	OBEM	46° 33,615'	63° 07,858'	45	hydrophone in water
133-12		13:02	OBEM	46° 33,615'	63° 07,858'	45	released
133-12		13:11	OBEM	46° 33,539'	63° 07,997'	44	OBEM on deck
133-11		13:20	OBEM	46° 33,365'	63° 07,801'	45	released
133-11		13:27	OBEM	46° 33,503'	63° 07,707'	46	OBEM on deck
133-10		13:35	OBEM	46° 33,512'	63° 07,288'	47	released
133-10		13:44	OBEM	46° 33,374'	63° 07,492'	46	OBEM on deck
133-9		13:52	OBEM	46° 33,179'	63° 07,246'	47	released
133-9		13:55	OBEM	46° 33,192'	63° 07,240'	48	Release hook does not open
133-8		14:12	OBEM	46° 33,326'	63° 06,838'	51	released
133-8		14:20	OBEM	46° 33,207'	63° 06,989'	51	OBEM on deck

133-7		14:29	OBEM	46° 33,007'	63° 06,787'	46	released
133-7		14:36	OBEM	46° 33,162'	63° 06,715'	48	OBEM on deck
133-6		14:48	OBEM	46° 33,151'	63° 06,338'	46	released
133-6		14:57	OBEM	46° 33,049'	63° 06,485'	46	OBEM on deck
133-2		15:00	OBEM	46° 32,985'	63° 06,510'	45	released
133-2		15:12	OBEM	46° 32,729'	63° 05,415'	47	OBEM on deck
133-5		15:28	OBEM	46° 33,051'	63° 06,086'	49	released
133-5		15:35	OBEM	46° 32,942'	63° 06,213'	47	OBEM on deck
133-4		15:46	OBEM	46° 32,752'	63° 06,046'	48	released
133-4		15:52	OBEM	46° 32,893'	63° 05,940'	50	OBEM on deck
133-3		16:00	OBEM	46° 32,884'	63° 05,590'	51	released
133-3		16:05	OBEM	46° 32,860'	63° 05,593'	51	Release hook does not open
133-1		16:23	OBEM	46° 32,703'	63° 05,060'	45	released
133-1		16:34	OBEM	46° 32,648'	63° 05,183'	45	OBEM on deck
133-3		17:12	OBEM	46° 32,781'	63° 05,699'	50	OBEM rescue with CAGEM frame + hook + camera
133-3		18:16	OBEM	46° 32,779'	63° 05,693'	51	OBEM on hook
133-3		18:26	OBEM	46° 32,779'	63° 05,693'	51	OBEM on deck
133-9		18:49	OBEM	46° 33,276'	63° 07,221'	49	OBEM rescue with CAGEM frame + hook + camera
133-9		19:14	OBEM	46° 33,279'	63° 07,222'	49	OBEM on hook
133-9		19:22	OBEM	46° 33,279'	63° 07,222'	49	OBEM and CAGEM frame on deck
135-1		16:33	ESV	45° 28,903'	27° 51,765'	2699	XCTD – deployed
135-1		16:43	ESV	45° 28,909'	27° 51,748'	2692	station end
136-1		17:05	CSEM	45° 28,911'	27° 51,749'	2727	USBL – hydrophone in water
136-1		17:41	CSEM	45° 28,911'	27° 51,750'	2713	MARTEMIS – deployed
136-1		18:35	CSEM	45° 28,911'	27° 51,749'	2700	MARTEMIS – on deck (short circuit)
136-1		19:05	CSEM	45° 28,911'	27° 51,750'	2730	on deck
136-2	08.11.	19:06	CSEM	45° 28,911'	27° 51,749'	2731	USBL still deployed from stn 136-1
136-2		19:53	CSEM	45° 28,912'	27° 51,750'	2721	MARTEMIS – deployed
136-2		21:03	CSEM	45° 28,911'	27° 51,749'	2717	MARTEMIS – on deck (mechanical problems)
136-2		21:41	CSEM	45° 28,911'	27° 51,748'	2688	on deck
137-1		22:32	CTD	45° 28,436'	27° 50,822'	3036	USBL – hydrophone in water
137-1		22:36	CTD	45° 28,437'	27° 50,821'	3050	USBL – deployed
137-1		23:46	CTD	45° 28,452'	27° 50,854'	3033	Max depth = 2906m
137-1		00:32	CTD	45° 28,344'	27° 50,828'	3028	Haul up to 2000m
137-1		01:39	CTD	45° 28,190'	27° 50,764'	3036	max depth/on ground
137-1	09.11.	01:43	CTD	45° 28,190'	27° 50,764'	3025	Haul up to 2888m
137-1		02:53	CTD	45° 27,920'	27° 50,704'	2992	max depth/on ground
137-1		04:00	CTD	45° 27,920'	27° 50,703'	2948	on deck
137-1		04:00	CTD	45° 27,920'	27° 50,705'	2994	USBL – hydrophone on deck