Application for Consent to conduct
Marine Scientific Research

Date: 13.03.2019

1. General Information

1.1 Cruise name and/or number: CE18019
BSH North Sea Summer Survey

1.2 Sponsoring Institution(s):	
Name:	Federal Maritime and Hydrographic Agency (BSH)
Address:	20305 Hamburg, P.O. Box 301220, Germany
Name of Director:	Monika Breuch-Moritz

1.3 Scientist in charge of the Project:	
Name:	Holger Klein
Country:	Germany
Affiliation:	BSH
Address:	20305 Hamburg P.O.Box 301220, GERMANY
Telephone:	+49 (0) 40 3190 3220
Fax:	+49 (0) 40 3190 5000
Email:	Holger.klein@bsh.de
Website (for CV and photo):	-

1.4 Entity(ies)/Participant(s) from coastal State involved in the planning of the project:	
Name:	
Affiliation:	
Address:	
Telephone:	
Fax:	
Email:	
Website (for CV and photo):	

2. Description of Project

2.1 Nature and objectives of the project:
Annual BSH North Sea Summer Survey The surveys were realised since 1998 at a time when thermal stratification is expected to be at its maximum and phytoplankton production has passed its maximum. The surveys include seven coast to coast East-West sections between 54° and 60° N, additional stations between 54° N and the entrance of the English Channel, and Stations in the English Channel (every 2 years). With the exception of the first survey in 1998 all surveys served a fixed station grid for vertical CTD profiles and water samples. Objective of the cruise is the determination of the oceanographic and chemical status of the North Sea during summer.

2.2 If designated as part of a larger scale project, then provide the name of the project and the Organisation responsible for coordinating the project:

2.3 Relevant previous or future research projects:
Annual BSH North Sea Summer Surveys: Cruise 307 of R/V Gauss, July 2001 Cruise 385 of R/V Gauss, July 2002 Cruise 405 of R/V Gauss, August 2003 Cruise 425 of R/V Gauss, August 2004

Cruise 446 of R/V Gauss, August 2005
Cruise 463 of R/V Gauss, August 2006
Cruise 273 of R/V Pelagia, August 2007
Cruise 293 of R/V Pelagia, July/August 2008
Cruise 311 of R/V Pelagia, August/September 2009
Cruise 323 of R/V Pelagia, August/September 2010
Cruise 11010 of R/V Celtic Explorer, August 2011
Cruise 12011 of R/V Celtic Explorer, August 2012
Cruise 13012 of R/V Celtic Explorer, August/September 2013
Cruise 14012 of R/V Celtic Explorer, August 2014
Cruise 15013a of R/V Celtic Explorer, August/September 2015
Cruise 16011a of R/V Celtic Explorer, August/September 2016
Cruise 17013a of R/V Celtic Explorer, August/September 2017
Cruise 18019 of R/V Celtic Explorer, August/September 2018

2.4 Previous publications relating to the project:
Cruise reports, BSH reports on state of the North Sea: https://www.bsh.de/DE/PUBLIKATIONEN/Meer_und_Umwelt/Nordseezustand_Aktuell/nordseezustand-aktuell_node.html González-Pola, C., Larsen, K. M. H., Fratantoni, P., and Beszczynska-Möller, A. (Eds). 2018. ICES Report on Ocean Climate 2017. ICES Cooperative Research Report No. 345. 119 pp. http://doi.org/

3. Geographical Areas

3.1 Indicate geographical areas in which the project is to be conducted (with reference in Latitude and longitude in decimal degrees, including coordinates of cruise/track/way points/sampling stations). Please provide coordinates in a separate excel spreadsheet.
51.4°N – 60.0°N; 006.0°W – 011.5°E

3.2 Attach chart(s) at an appropriate scale (1 page, high-resolution) showing the geographical Areas of the intended work and, as far as practicable, the location and depth of sampling Stations, the tracks of survey lines, and the locations of installations and equipment.
Please see below!

4. Methods and means to be used

4.1 Particulars of vessel:	
Name:	Celtic Explorer
Type/Class:	Multipurpose Research Vessel
Nationality (Flag State):	Irish
Identification Number (IMO/Lloyds No.):	D100 A1 ICE CLASS ID + UMS +SCM DP (CM)
Owner:	Marine Institute
Operator:	P&O Maritime Services
Overall length (meters):	65.5
Maximum draught:	5.7m
Displacement/Gross Tonnage:	2425T
Propulsion:	2 x 1530 KW, 1000Rpm, 1 x 1020 KW, 1000 Rpm
Cruising & maximum speed:	10 & 16 knots
Call sign:	EI GB
INMARSAT number and method and capability of communication (including emergency frequencies):	00353 91 423397 / 00353 91 423433 00870 763066743 00 353 87 9678520 / 00 353 86 1735500
Name of Master:	Antony Hobin/Denis Rowan

Number of Crew:	13-15
Number of Scientists on board:	12-14 max

4.2 Particulars of Aircraft:	
Name:	
Make/Model:	
Nationality (flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall Length (meters):	
Propulsion:	
Cruising & Maximum speed:	
Registration No.:	
Call Sign:	
Method and capability of communication (including emergency frequencies):	
Name of Pilot:	
Number of crew:	
Number of scientists on board:	
Details of sensor packages:	
Other relevant information:	

4.3 Particulars of Autonomous Underwater Vehicle (AUV):	
Name:	
Manufacturer and make/model:	
Nationality (Flag State):	
Website for diagram & Specifications:	
Owner:	
Operator:	
Overall length (meters):	
Displacement/Gross tonnage:	
Cruising & Maximum speed:	
Range/Endurance:	
Method and capability of communication (including emergency frequencies):	
Details of sensor packages:	
Other relevant information:	

4.4 other craft in the project, including its use:

4.5 Particulars of methods, full description of scientific instruments to be used (for fishing gear specify type and dimension) and location			
Types of samples and Measurements:	Methods to be used:	Instruments to be used:	To be carried out within 12nm (yes or no):
T, S, nutrients, metals, oxygen, pH, radionuclides, chlorophyll.	water samplings	CTD with rosette sampler with, O_2- and transmission sensor. Thermosalinograph Different water samplers 1 – 270 l.	Yes
Currents	In-situ	vessel mounted ADCP	Yes
Transparency	In-situ	Secchi-Disk	Yes

4.6 Indicate nature and quantity of substances to be released into the marine environment:
None

4.7 Indicate whether drilling will be carried out. If yes, please specify:
No drilling or sediment samples in UK waters.

4.8 Indicate whether explosives will be used. If yes, please specify type and trade name, Chemical content, depth of trade class and stowage, size, depth of detonation, frequency of Detonation, and position in latitude and longitude:
None

5. Installations and Equipment

Details of installations and equipment (including dates of laying, servicing, method and Anticipated timeframe for recover, as far as possible exact locations and depth, and Measurements):
None

6. Dates

6.1 Expected dates of first entry into and final departure from the research area by the research vessel and/or other platforms:
First entry in UK waters 2019/08/29, departure from UK waters 2019/09/13
6.2 Indicate if multiple entries are expected:
Yes, please see attached map below.

7. Port Calls

7.1 Dates and Names of intended ports of call:
Bremerhaven, Germany, September 16th , 2019, no UK ports!

7.2 Any special logistical requirements at ports of call:
Mobile crane

7.3 Name/Address/Telephone of shipping agent (if available):

8. Participation of the representative of the coastal State

8.1 Modalities of the participation of the representative of the coastal State in the research Project:
Unfortunately not possible due to limited space on board.

8.2 Proposed dates and ports for embarkation/disembarkation:
-

9. Access to Data, Samples and Research Results

9.1 Expected dates of submission to coastal State of preliminary report, which should include the expected dates of submission of the data and research results:
November 2019

9.2 Anticipated dates of submission to the coastal State of the final report:
January 2020

9.3 Proposed means for access by coastal State to data (including format) and samples:
Data access via DOD (German Oceanographic Data Centre): HTTPS://WWW.BSH.DE/DE/DATEN/OZEANOGRAPHISCHES_DATENZENTRUM/OZEANOGRAPHISCHES_DATENZENTRUM_NODE.HTML

9.4 Proposed means to provide coastal State with assessment of data, samples and research results:
Within one year.

9.5 Proposed means to provide assistance in assessment or interpretation of data, samples And research results:
-

9.6 Proposed means of making results internationally available:
Cruise reports, BSH reports on state of the North Sea: https://www.bsh.de/DE/PUBLIKATIONEN/Meer_und_Umwelt/Nordseezustand_Aktuell/nordseezustand-aktuell_node.html González-Pola, C., Larsen, K. M. H., Fratantoni, P., and Beszczynska-Möller, A. (Eds). 2018. ICES Report on Ocean Climate 2017. ICES Cooperative Research Report No. 345. 119 pp. http://doi.org/

10. Other permits Submitted

10.1 Indicate other types of coastal state permits anticipated for this research (received or Pending): Netherlands, Denmark, Norway, Germany, Sweden

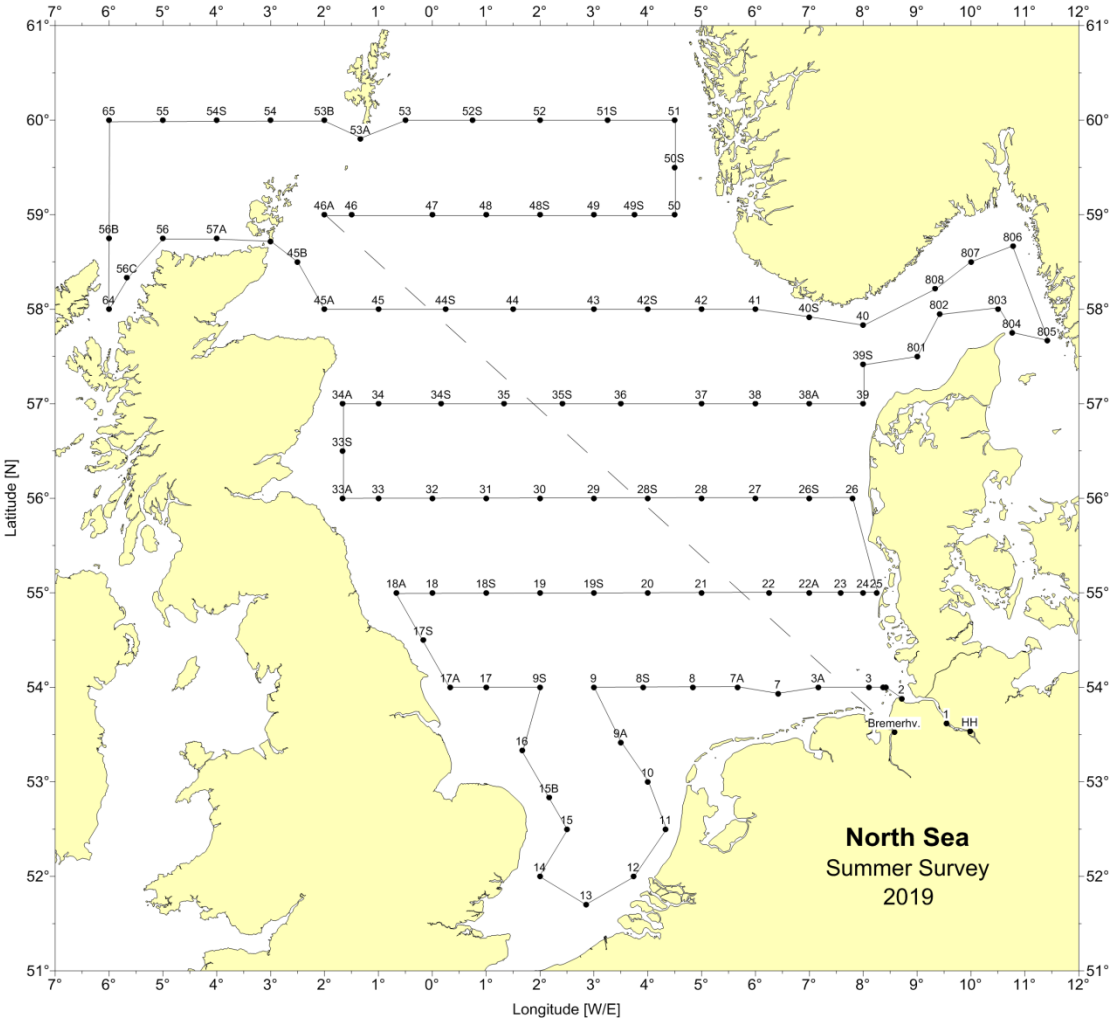
11. List of Supporting Documentation

11.1 List of attachments, such as additional forms required by the coastal State, etc.:
List of stations, list of hazardous substances and track plot

Signature:

Contact information of the focal point:
Name:
Country:
Affiliation:
Address:
Telephone:
Fax:
Email:

Trackplot


North Sea
Summer Survey
2019
Bremerhv.
HH
Latitude [N]
Longitude [W/E]

Station List

Station	Lat [°]	Lat [']	N/S	Lat [°]	Lon [']	E/W	Phi [°]	Lam [°]	State
Stade	53	37.1	N	009	32.8	E	53.62	009.55	D
Medem	53	52.8	N	008	43.0	E	53.88	008.72	D
GN003	54	00.0	N	008	06.5	E	54.00	008.11	D
GN003A	54	00.0	N	007	10.0	E	54.00	007.17	D
GN007	53	56.0	N	006	25.0	E	53.93	006.42	D
GN007A	54	00.0	N	005	40.0	E	54.00	005.67	NL
GN008	54	00.0	N	004	50.0	E	54.00	004.83	NL
GN008S	54	00.0	N	003	55.0	E	54.00	003.92	NL
GN009	54	00.0	N	003	00.0	E	54.00	003.00	NL
GN009A	53	25.0	N	003	30.0	E	53.42	003.50	NL
GN010	53	00.0	N	004	00.0	E	53.00	004.00	NL
GN011	52	30.0	N	004	20.0	E	52.50	004.33	NL
GN012	52	00.0	N	003	44.0	E	52.00	003.73	NL
GN013	51	42.2	N	002	51.4	E	51.70	002.86	NL
GN015	52	30.0	N	002	30.0	E	52.50	002.50	UK
GN015B	52	50.0	N	002	10.0	E	52.83	002.17	UK
GN016	53	20.0	N	001	40.0	E	53.33	001.67	UK
GN009S	54	00.0	N	002	00.0	E	54.00	002.00	UK
GN017	54	00.0	N	001	00.0	E	54.00	001.00	UK
GN017A	54	00.0	N	000	20.0	E	54.00	000.33	UK
GN017S	54	30.0	N	000	10.0	W	54.50	-000.17	UK
GN018A	55	00.0	N	000	40.0	W	55.00	-000.67	UK
GN018	55	00.0	N	000	00.0	E	55.00	000.00	UK
GN018S	55	00.0	N	001	00.0	E	55.00	001.00	UK
GN019	55	00.0	N	002	00.0	E	55.00	002.00	UK
GN019S	55	00.0	N	003	00.0	E	55.00	003.00	UK
GN020	55	00.0	N	004	00.0	E	55.00	004.00	UK
GN021	55	00.0	N	005	00.0	E	55.00	005.00	NL
GN022	55	00.0	N	006	15.0	E	55.00	006.25	D/NL
GN022A	55	00.0	N	007	00.0	E	55.00	007.00	D
GN023	55	00.0	N	007	35.0	E	55.00	007.58	D
GN024	55	00.0	N	008	00.0	E	55.00	008.00	D
GN025	55	00.0	N	008	15.0	E	55.00	008.25	D
GN026	56	00.0	N	007	48.0	E	56.00	007.80	DK
GN026A	56	00.0	N	007	00.0	E	56.00	007.00	DK
GN027	56	00.0	N	006	00.0	E	56.00	006.00	DK
GN028	56	00.0	N	005	00.0	E	56.00	005.00	DK
GN028S	56	00.0	N	004	00.0	E	56.00	004.00	UK
GN029	56	00.0	N	003	00.0	E	56.00	003.00	UK
GN030	56	00.0	N	002	00.0	E	56.00	002.00	UK
GN031	56	00.0	N	001	00.0	E	56.00	001.00	UK
GN032	56	00.0	N	000	00.0	E	56.00	000.00	UK
GN033	56	00.0	N	001	00.0	W	56.00	-001.00	UK
GN033A	56	00.0	N	001	40.0	W	56.00	-001.67	UK
GN033S	56	30.0	N	001	40.0	W	56.50	-001.67	UK
GN034A	57	00.0	N	001	40.0	W	57.00	-001.67	UK
GN034	57	00.0	N	001	00.0	W	57.00	-001.00	UK
GN034S	57	00.0	N	000	10.0	E	57.00	000.17	UK
GN035	57	00.0	N	001	20.0	E	57.00	001.33	UK
GN035S	57	00.0	N	002	25.0	E	57.00	002.42	UK/N
GN036	57	00.0	N	003	30.0	E	57.00	003.50	N
GN037	57	00.0	N	005	00.0	E	57.00	005.00	N
GN038	57	00.0	N	006	00.0	E	57.00	006.00	N
GN038A	57	00.0	N	007	00.0	E	57.00	007.00	DK

GN039	57	00.0	N	008	00.0	E	57.00	008.00	DK
GN039S	57	25.0	N	008	00.0	E	57.42	008.00	DK
GN801	57	30.0	N	009	00.0	E	57.50	009.00	DK
GN802	57	57.0	N	009	25.0	E	57.95	009.42	DK
GN803	58	00.0	N	010	30.0	E	58.00	010.50	DK
GN804	57	45.0	N	010	46.0	E	57.75	010.77	DK
GN805	57	40.0	N	011	25.0	E	57.67	011.42	S
GN806	58	40.0	N	010	47.0	E	58.67	010.78	S
GN807	58	30.0	N	010	00.0	E	58.50	010.00	N
GN808	58	13.0	N	009	20.0	E	58.22	009.33	N
GN040	57	50.0	N	008	00.0	E	57.83	008.00	N
GN040S	57	55.0	N	007	00.0	E	57.92	007.00	N
GN041	58	00.0	N	006	00.0	E	58.00	006.00	N
GN042	58	00.0	N	005	00.0	E	58.00	005.00	N
GN042S	58	00.0	N	004	00.0	E	58.00	004.00	N
GN043	58	00.0	N	003	00.0	E	58.00	003.00	N
GN044	58	00.0	N	001	30.0	E	58.00	001.50	UK
GN044S	58	00.0	N	000	15.0	E	58.00	000.25	UK
GN045	58	00.0	N	001	00.0	W	58.00	-001.00	UK
GN045A	58	00.0	N	002	00.0	W	58.00	-002.00	UK
GN045B	58	30.0	N	002	30.0	W	58.50	-002.50	UK
GN057A	58	45.0	N	004	00.0	W	58.75	-004.00	UK
GN056	58	45.0	N	005	00.0	W	58.75	-005.00	UK
GN056C	58	20.0	N	005	40.0	W	58.33	-005.67	UK
GN064	58	00.0	N	006	00.0	W	58.00	-006.00	UK
GN056B	58	45.0	N	006	00.0	W	58.75	-006.00	UK
GN065	60	00.0	N	006	00.0	W	60.00	-006.00	UK
GN055	60	00.0	N	005	00.0	W	60.00	-005.00	UK
GN054S	60	00.0	N	004	00.0	W	60.00	-004.00	UK
GN054	60	00.0	N	003	00.0	W	60.00	-003.00	UK
GN053B	60	00.0	N	002	00.0	W	60.00	-002.00	UK
GN053A	59	48.0	N	001	20.0	W	59.80	-001.33	UK
GN053	60	00.0	N	000	30.0	W	60.00	-000.50	UK
GN052S	60	00.0	N	000	45.0	E	60.00	000.75	UK
GN052	60	00.0	N	002	00.0	E	60.00	002.00	UK
GN051S	60	00.0	N	003	15.0	E	60.00	003.25	N/UK
GN051	60	00.0	N	004	30.0	E	60.00	004.50	N
GN050S	59	30.0	N	004	30.0	E	59.50	004.50	N
GN050	59	00.0	N	004	30.0	E	59.00	004.50	N
GN049S	59	00.0	N	003	45.0	E	59.00	003.75	N
GN049	59	00.0	N	003	00.0	E	59.00	003.00	N
GN048S	59	00.0	N	002	00.0	E	59.00	002.00	N
GN048	59	00.0	N	001	00.0	E	59.00	001.00	UK
GN047	59	00.0	N	000	00.0	E	59.00	000.00	UK
GN046	59	00.0	N	001	30.0	W	59.00	-001.50	UK
GN046A	59	00.0	N	002	00.0	W	59.00	-002.00	UK

List of Hazardous Substances

Celtic Explorer 2019 List of toxic/dangerous substances	percentage / concentration	CAS-No.	UN-No.	Extremly flammable	Highly flammable	Oxidizing	Extremly Toxic	Toxic	Harmful	Irritant	Corrosive	Dangerous for the environment	packing	quantity	total quantity
				F+	F	O	T+	T	Xn	Xi	C	N			
Inflameble liquids															
Acetone	-	67-64-1	1090		F					Xi			1 bottle	0.5 L	
													8 barrels	10 L	80.5 L
Hexane	-	110-54-3	1208		F				Xn			N	3 barrels	10 L	30 L
Pentan	-	109-66-0	1265	F+					Xn			N	6 barrels	10 L	60 L
Propanol	-	67-63-0	1219		F					Xi			1 bottle	250 mL	250 mL
Toxic substance															
mercuric chloride solution	< 20% HgCl	7487-94-7	2024				T+		Xn		C	N	2 bottles	500mL	1000 mL
Methanol	-	67-56-1	1230		F			T					16 bottles	2.5 L	40 L
cadmium (-colum)		7440-43-9	2570				T+					N	2 colums	20 g	40 g
Corrosives															
Ammonia solution	25%	1336-21-6	2672								C	N	8 bottles	2.5 L	
													5 bottles	2.5 L	32.5 L
Corrosive liquid			3264								C		1 bottle	2.5 L	2.5 L
Hydrochloric acid	20%	7647-01-0	1789								C		14 bottles	2.5 L	
	37%	7647-01-0	1789								C		10 bottles	2.5 L	
	37%	7647-01-0	1789								C		4 bottles	250 mL	
	37%	7647-01-0	1789								C		3 bottles	1 L	64 L
Hydrochloric acid -solution	0.01 Mol/L										C		9 ampoules	50 mL	450 mL
Hydrochloric acid with Sulfanilamide and N-(1-Naphthyl)-ethylen- diamine dihydrochloride	-	63-74-1 1465-25-4							Xi		C				< 0.02 KG < 0.02 KG
Imidazole-solution with Hydrochloric acid	<25%	288-32-4 7647-01-0	3263 1789								C C		2 bottles	1 L	
													16 bottles	0.2 L	5.2 L
Nitric acid	<66%	7697-37-2	2031								C		6 bottles	2.5 L	15 L
Sodium hydroxide solution (with Sodium iodide)	32%	1310-73-2 7681-82-5	1824 3077								C		4 bottles	500 mL	2 L
Sulfuric acid	28%	7664-93-9	2796								C		4 bottles	500 mL	2 L
Sulfuric acid with Ammoniumheptamolybdate and Antimony potassium tartrate	<28% - -	7664-93-9 12054-85-2 28300-74-5	2796						Xn Xn		C	 N	4 bottles	1 L	4 L < 0.02 KG < 0.02 KG
Other substances															
Ascorbic acid-solution with Glycerol	-	50-81-7 56-81-5											8 bottle	1000 mL	< 0.5 KG 7.5 L
Cleaning-solution contains Hydrochloric acid and Pepsin	3%	7647-01-0 9001-75-6	1789						Xn		C		2 bottles 3 bottles	250 mL 0.75 g	500 mL 2.25 g
Manganese(II) chloride -solution	3 Mol/L	13446-34-9	3077						Xn				4 bottles	500 mL	2 L
Nitrogen													2 bombs	50 L	100 L
Oxalic acid solution		6153-56-6	3261										3 bottles 4 bottles	1000 mL 0.2 L	3.8 L
Other substances															
pH-buffer 4.00													10 ampoules	50 mL	500 mL
pH-buffer 7.00													2 paks 10 ampoule	6 L 50 mL	6 L 500 mL
pH-buffer 9.00													10 ampoules	50 mL	500 mL
Potassium chloride	-	7447-40-7													0.2 KG
Potassium iodate	-	7758-05-6	1479			O				Xi					< 0.01 KG
Cleaning-solution RBS 50											C		1 bottle	1000 mL	1000 mL
Sodium thiosulfate -solution	0.1 Mol/L												6 ampoules	50 mL	300 mL