

# Radiocaesium in the seas of northern Europe: 1962 - 69

A.J. Baxter and W.C. Camplin



**Fisheries Research Data Report No 31**  
Directorate of Fisheries Research, Lowestoft, 1993

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

DIRECTORATE OF FISHERIES RESEARCH

FISHERIES RESEARCH DATA REPORT  
NUMBER 31

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northern Europe: 1962-69**

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Lowestoft  
1993

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Data Rep., MAFF Direct. Fish. Res., Lowestoft, (31), 69 pp

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## ***SUMMARY***

A computer data base of measurements of caesium-134 and caesium-137 in sea water has been compiled. The measurements were carried out by the UK Ministry of Agriculture, Fisheries and Food and include data for the Irish Sea, Bristol Channel, English Channel, North Sea, Scottish waters and other parts of the marine environment of northern Europe. This report covers the sampling period 1962-69 and is the fourth in a series. Further information will be published as the data base is expanded. It is hoped that the information will be useful to scientists modelling radionuclide dispersion in the area. In order to assist in the development of new models, diskettes of the data in ASCII files are available, on request, from the first author. The data include the locations of sample collection, collection date, depth, salinity, concentration of activity and counting errors. Plots of the geographic scope of the data are also provided to assist the user.

### **1. INTRODUCTION**

This is the fourth report in a series covering radiocaesium concentrations in the seas of northern Europe. The first report covered the period 1980-1984 and included a brief history of the use of radiocaesium as a tracer of water movements and in hydrographic modelling studies of north European waters (Camplin and Steele, 1991). The second and third reports in the series covered the periods 1975-79 (Baxter, Camplin and Steele, 1992) and 1970-74 (Baxter and Camplin, 1993), respectively.

The purpose of this report is to fully document the results of measurements of radiocaesium in sea water collected between 1962 and 1969 inclusive and measured by the Fisheries Laboratory of the Ministry of Agriculture, Fisheries and Food (MAFF) in the United Kingdom. No data from samples collected before 1962 has been found. Further reports will be published in due course as the data base is expanded to include more recent MAFF data. The data included in this report is available on diskette from the principal author.

The report lists a brief description of the sampling methods used (Section 2) and the analytical procedures adopted (Section 3). The scope of the data set is described in Section 4 with the aid of figures showing the sampling locations.

### **2. METHODS OF SAMPLING AND PREPARATION**

Various sampling methods have been used to collect sea water. Surface samples were collected offshore from ships and at the shore. The offshore samples were obtained either by pumping through hoses or a dedicated shipboard supply, or by submerging water sampling bottles. Shore-line samples were collected using a bucket from within a few metres of the water's edge.

The sample size for radiocaesium analysis normally varied between 10 and 50 l depending on the anticipated concentration of radiocaesium in the sample. Sub-samples of approximately 250 ml were generally taken for salinity analysis. The radiocaesium samples were filtered through 0.22  $\mu\text{m}$  filter papers to remove particulates, and then acidified to a pH of between 1 and 2 using nitric or hydrochloric acid, depending on the method of ion exchange to be used. Reducing the pH of the sample facilitates the selective absorption of caesium onto the resin

during analysis. The samples were stored for periods of between a few hours to a year depending on the availability of the subsequent processing facilities.

### 3. MEASUREMENT OF ACTIVITY

The measurement of activity in the samples was accomplished by one of two methods, as described by Dutton (1970). The first method involved adding a caesium carrier to the filtered sample, before adjusting the pH using nitric acid. Scavenging of the caesium from solution was accomplished by coprecipitation with ammonium-duodeca-molybdophosphate (AMP). Alternatively, where high levels of radiocaesium and significant concentrations of zirconium-95 and niobium-95 in sea water were anticipated, the second method was used. The filtrate, which had been acidified using hydrochloric acid, was passed through cartridges containing potassium cobaltihexacyanoferrate (KCFC). The KCFC was transferred to tubs and the AMP sludge was prepared and packed into petri dishes for counting, using a NaI (TI) cylindrical crystal detector coupled to a 200-channel gamma spectrometer. These methods are either limited to use with sea water having radiocaesium levels of greater than 40 Bq m<sup>-3</sup>, or require very large volumes (> 50 litres) for low level samples.

Quality assurance of the detection method included regular recalibration of the detector using standard sources of known strength supplied by the Radiochemical Centre, Amersham, UK .

### 4. DATA FORMAT AND SCOPE

The data set is provided in Annexes 1-3 as follows:

shoreline sampling	(Annex 1);
routine offshore sampling	(Annex 2);
and non-routine offshore sampling	(Annex 3).

The data comprises the categories explained below:

Site name	A 'site' is a collection of locations where samples have been obtained. It is often named after a nuclear establishment or a particular vessel used to collect offshore samples. A 'site' does not refer to a unique geographical area.
Site number	Each 'site' is given an identifying number.
Station name	A 'station' is a name given to the position where samples have been taken. Not all positions have names.
Station number	Each 'station' within a 'site' is given a unique number.
Position	The position of each 'station' is recorded as latitude and longitude in integer degrees, minutes and seconds.
Sample depth	The depth at which samples have been taken is given in

Annexes 2 and 3 in metres. Surface samples are attributed to nominal depths of 0 or 3 m except where more accurate information is available. In Annex 3, the hash symbol (#) has been used to indicate where samples from different depths at the same position have been bulked for caesium analysis. All of the samples in Annex 1 were collected at the shoreline.

Station depth	For offshore positions, station depths are provided in metres. A blank entry indicates that no data are available.
Collection date	This is self explanatory.
Salinity	The salinity is recorded in practical salinity units (psu) (UNESCO, 1981) with 3 digits after the decimal point. Our judgement is that it is generally accurate to two digits after the decimal point. No salinity results are available for the period 1962 to 1969. 'NA' has been entered to indicate this.
Concentration of activity	The concentration of activity is given for caesium-134 and caesium-137 in Bq m <sup>-3</sup> . 'NA' means that no data are available. 'ND' means that a measurement was made but that no activity was detected in the sample using the method described. If a counting error of more than 60% was obtained, an 'ND' was entered. The errors quoted are counting errors of one standard deviation expressed as a percentage of the concentrations. Where no error data are available, the field is left blank. The concentrations are recorded with two digits after the decimal point though the accuracy of the measurement as indicated by the counting error is variable.
Ratio	This refers to the ratio of the concentration of caesium-137 over the concentration of caesium-134 where both radionuclides have been detected.
Sample number	This is a unique laboratory sample number for the year in which the sample was collected.

The scope of the data, which covers the period 1962-69, is described in Table 1. The shoreline positions in Annexes 1 and 2 are sorted in clockwise order around the coast of Britain beginning at the north-eastern most tip of the mainland. Data from cruises listed in Annex 3 are firstly sorted chronologically and are secondly grouped by cruise.

The locations of sampling positions in Annexes 1 and 2 are shown in Figures 1-4. A plot of the sampling positions for each of the cruises listed in Annex 3 is provided in Figures 5-13. The three annexes are available on diskette, each as a separate ASCII file with the same format as is shown in this report.

## Acknowledgements

*The initiative for much of this programme originated with Doug Jefferies, now in retirement, who worked for MAFF in Lowestoft for many years. Doug's infectious spirit and understanding of radioactivity in the environment were greatly admired by us all. Our debt to his efforts is great.*

*Assistance to Doug was provided by Ken Steele, now deceased, who co-authored earlier reports in this series. Ken's support role was invaluable and he is sadly missed by his colleagues.*

*We would also like to thank the many sampling, analytical and data preparation staff who took a part in producing these data over the years.*

## 5. REFERENCES

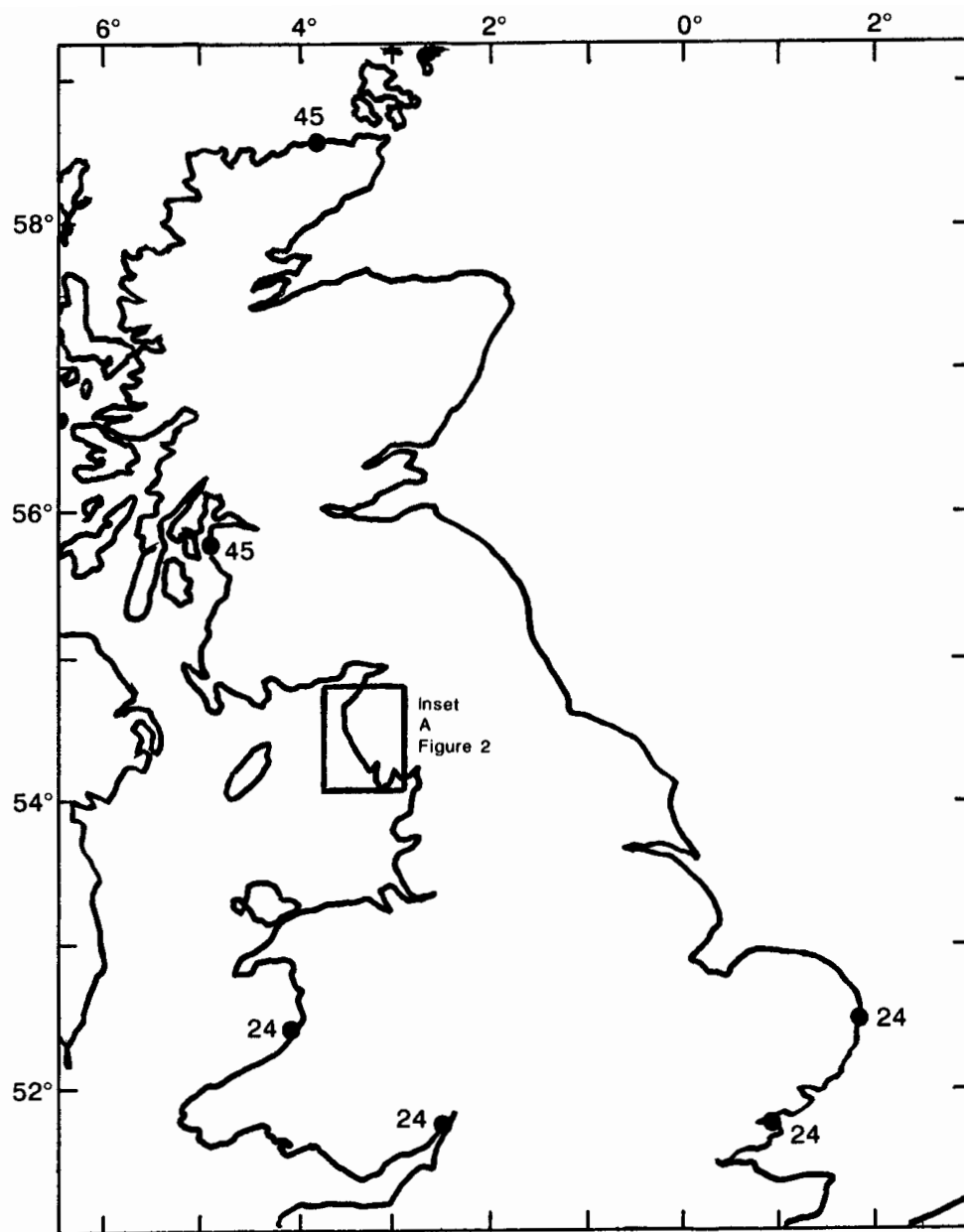
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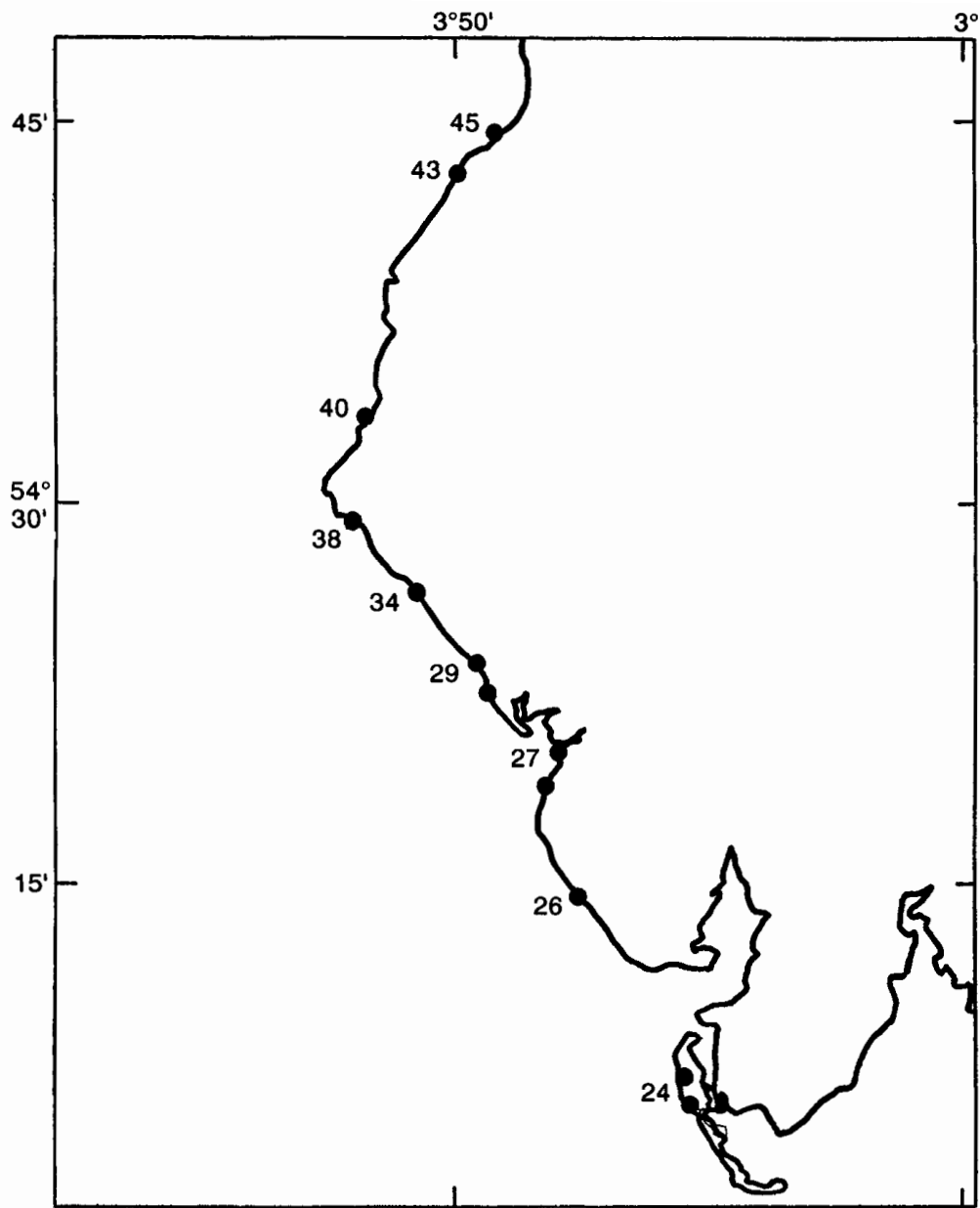
**Table 1. Scope of the data in Annexes 1-3**

Annex	Page	Site no.	Site Name	Station no.	Station name or cruise	Position		National Grid Reference		
						Latitude	Longitude	Sheet	Easting	Northing
1	24	12	Sizevell	18	Lowestoft Beach (SE)	52°27'10"N	1°44'20"E	134	540	905
1	24	7	Bradwell	103	Barrier Wall	51°44'44"N	0°53'30"E	168	996	92
1	24			5	PLZ	51°44'37"N	0°53'45"E	168	999	90
1	24	6	Berkeley	87	PLZ	51°41'37"N	2°29'47"W	162	657	996
1	24	1	Sellafield	75	Aberystwyth	52°24'59"N	4°5'12"W	135	581	819
1	24			30	Walney Island	54°6'7"N	3°16'10"W	96	170	681
1	24			74	Walney West Shore	54°7'5"N	3°16'17"W	96	169	699
1	26			28	Gutterby	54°14'56"N	3°23'26"W	96	94	846
1	27			58	Eskmeals	54°19'39"N	3°25'43"W	96	71	934
1	27			34	Eskmeals Newbiggin	54°20'3"N	3°23'59"W	96	90	941
1	29			24	Drigg Barn Scar	54°22'19"N	3°28'18"W	96	44	984
1	29			23	Seascale	54°23'36"N	3°29'6"W	89	36	8
1	34			20	Braystones South	54°26'0"N	3°32'8"W	89	4	53
1	38			17	St Bees	54°29'20"N	3°36'9"W	89	962	116
1	38			100	St Bees-W	54°29'20"N	3°36'26"W	89	959	116
1	40			39	W/A Shore	54°33'1"N	3°35'56"W	89	966	184
1	43			14	Maryport Outer Harbour	54°42'57"N	3°30'10"W	89	32	367
1	45			15	Maryport Shore	54°44'30"N	3°27'26"W	89	62	395
1	45	10	Hunterston	6	Fish Farm 1	55°43'25"N	4°53'42"W	63	182	516
1	45			1	PLZ (shore samples)	55°43'25"N	4°53'59"W	63	179	516
1	45	15	Dounreay	110	Sandside Bay	58°34'12"N	3°47'30"W	11	958	660
2	49	50	St Georges Channel	2	Fishguard-Rosslare 2					
2	49	37	File C	2	Liverpool-Dublin 1					
2	49	17	WA Sea Trip							
2	58	49	North Channel	2	Mid Channel					
2	58	46	NEA Weather Ships	1	Station A					
2	58			2	Station B					
2	58			4	Station D					
2	59	47	NEA Challenger Line	1	Challenger St 1					
2	59			2	Challenger St 2					
2	59			3	Challenger St 3					
2	59			4	Challenger St 4					
2	59	15	Dounreay	125	PLZ Offshore					
3	63	23	RV Cruise		/64					
3	63	23	RV Cruise		/65					
3	63	23	RV Cruise		/66					
3	63	23	RV Cruise		/67					
3	64	39	Clione		4/67					
3	64				9/67					
3	65	39	Clione		5/68					
3	65	40	Corella/Dawn Sky		13/68					
3	66	40	Corella/Dawn Sky		18/68					

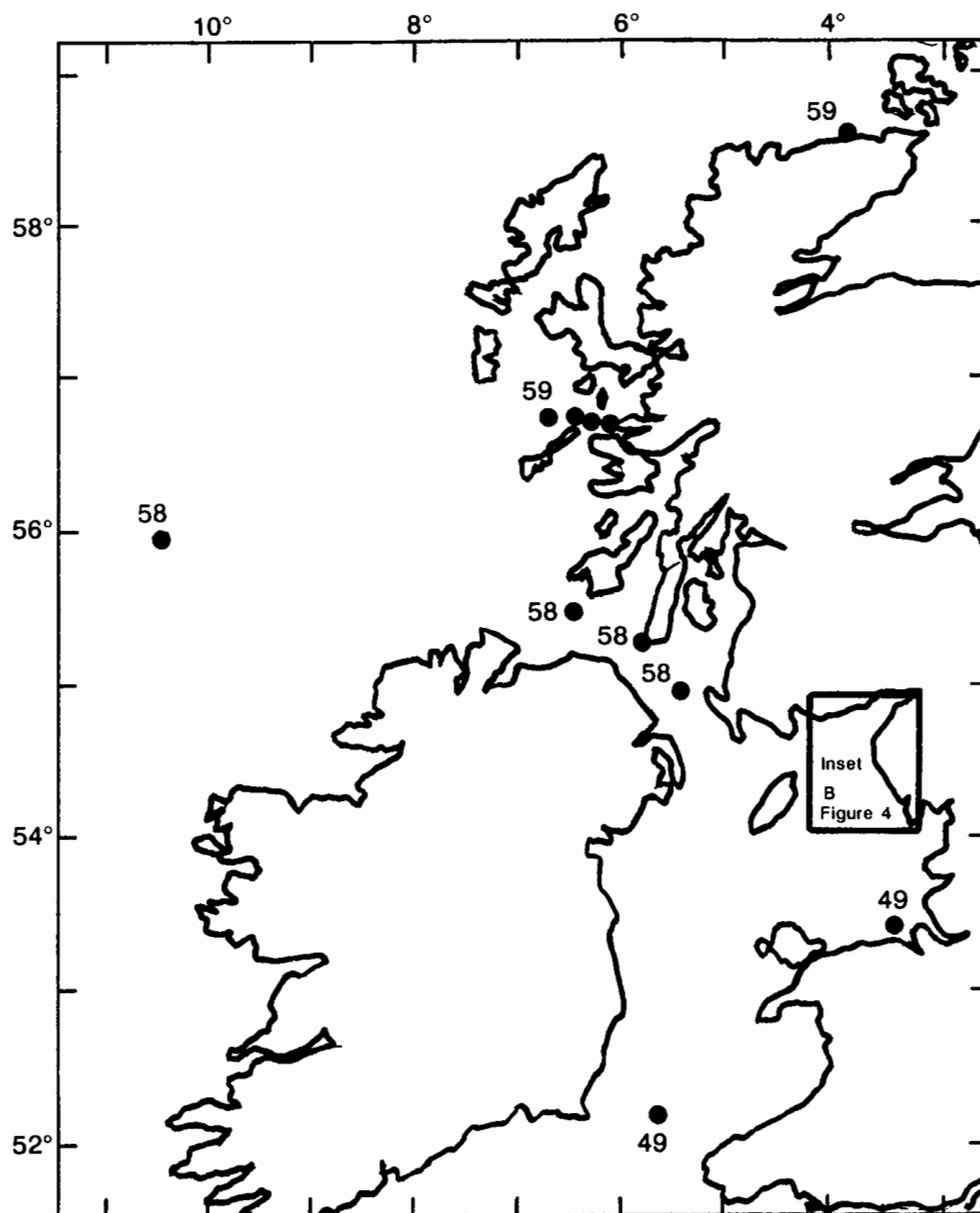
Notes: The 'site' numbers and names are used at DFR as a convenient tool to group samples together. They do not refer to a unique geographical area. Station names are prescribed when convenient. A station is given a unique number within a 'site' group. The station numbers are not shown for cruises in this table



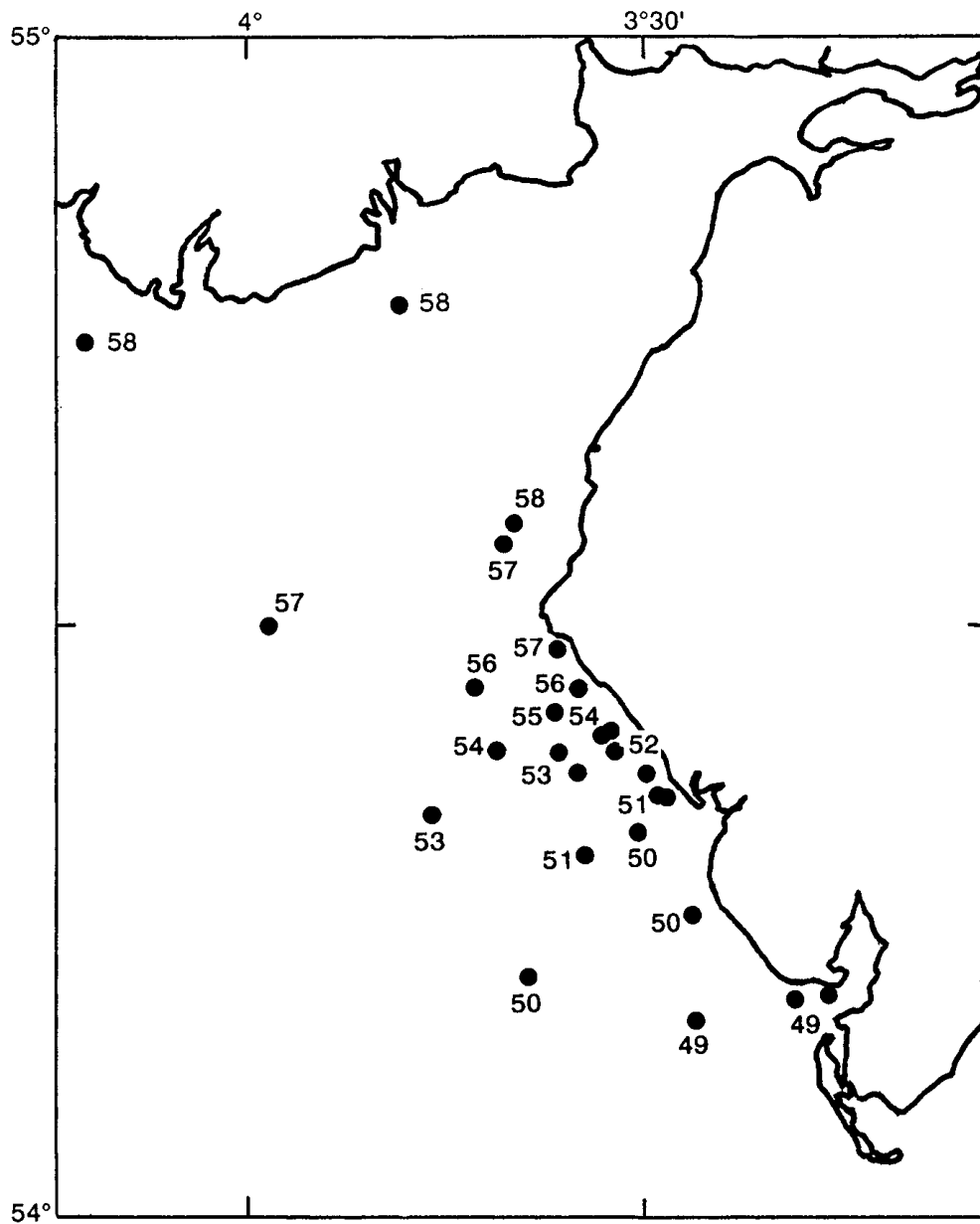
**Figure 1. Location of shoreline sampling positions from Annex 1. The numbers shown on this figure refer to page numbers in the report**



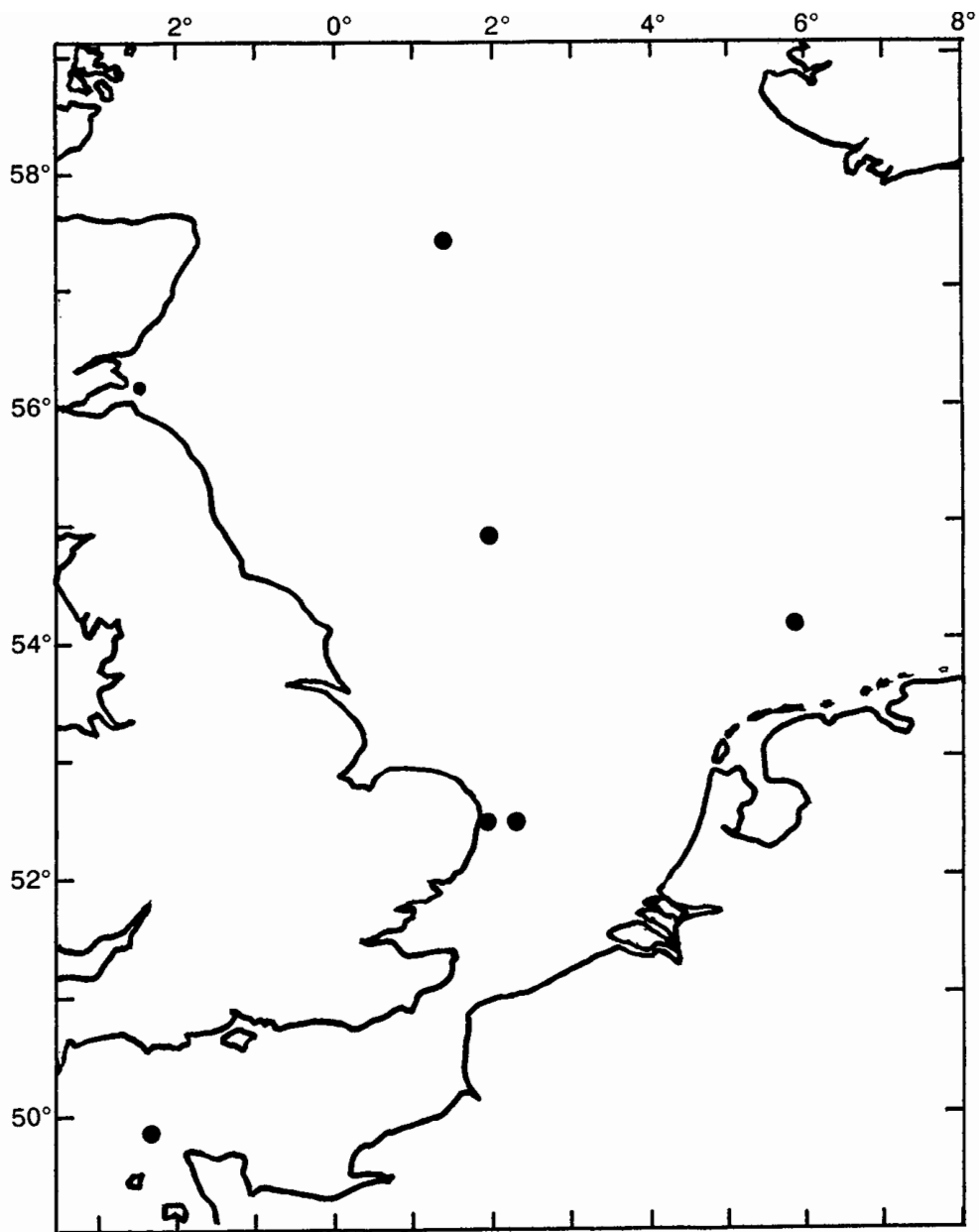
**Figure 2.** *Location of shoreline sampling positions from Annex 1 - Inset A.  
The numbers shown on this figure refer to page numbers in the report*



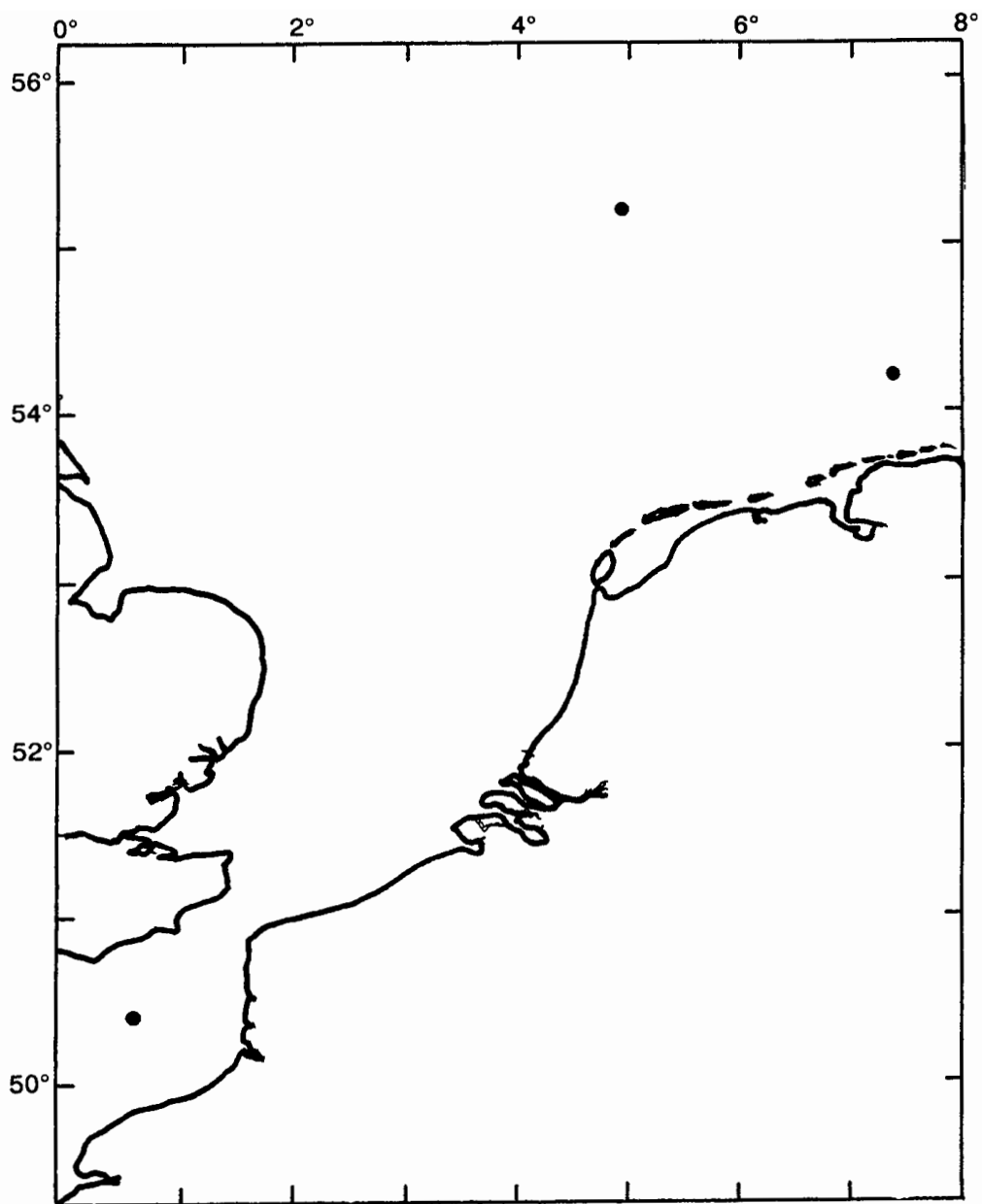
**Figure 3.** *Location of offshore sampling positions from Annex 2. The numbers shown on this figure refer to page numbers in the report*



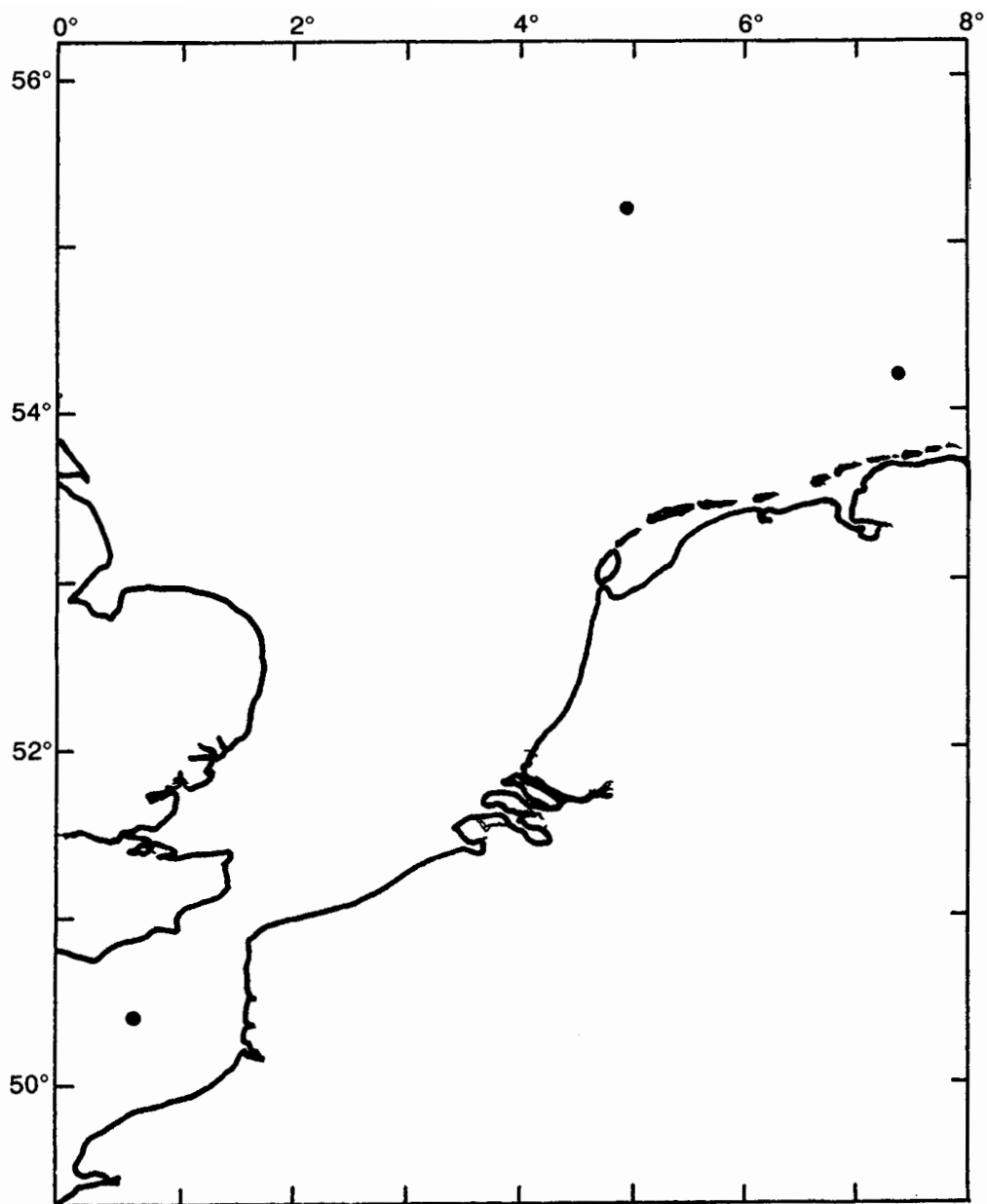
**Figure 4. Location of offshore sampling positions from Annex 2 - Inset B.**  
*The numbers shown on this figure refer to page numbers in the report*



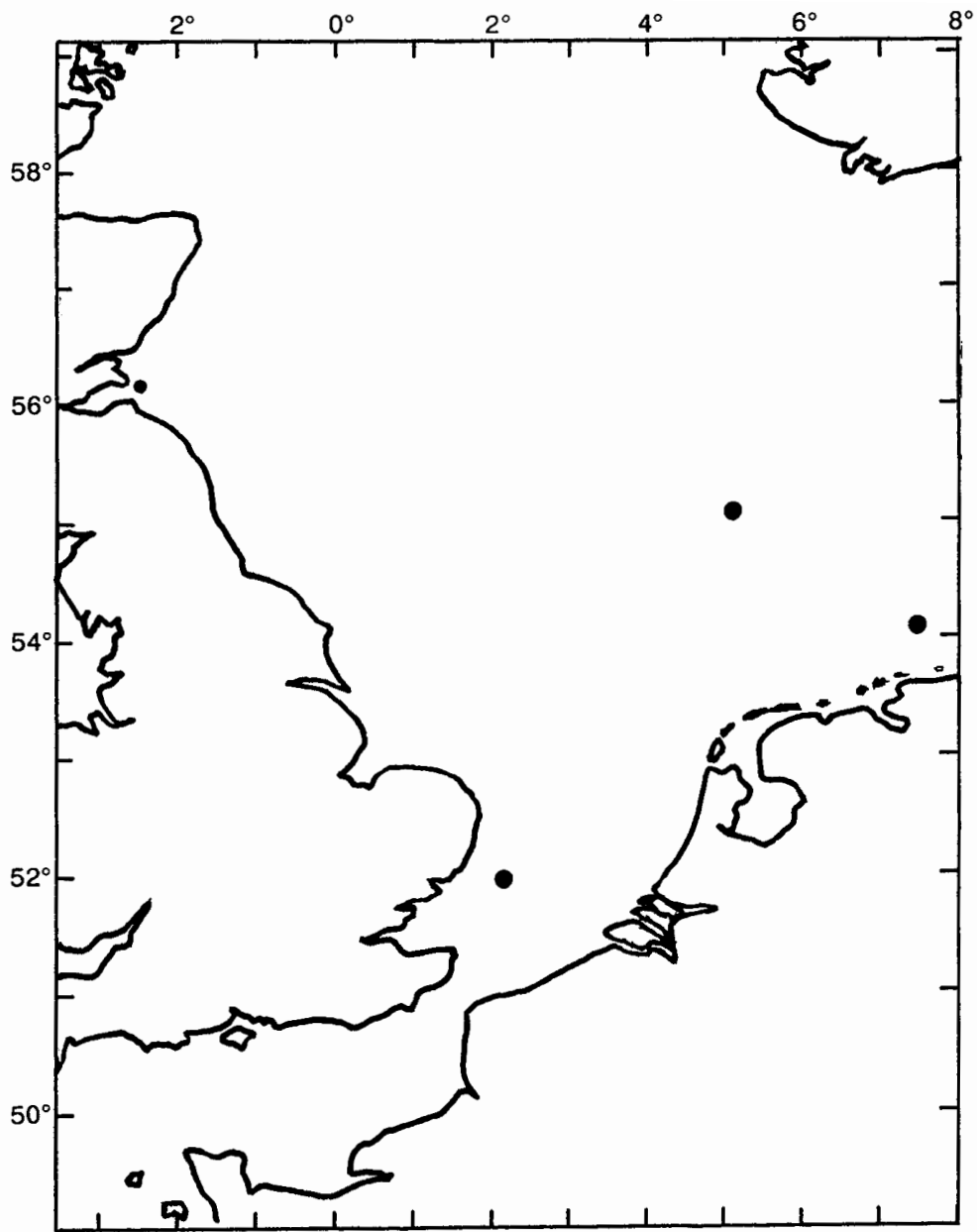
*Figure 5. Location of offshore sampling positions from RV Cruise 164*



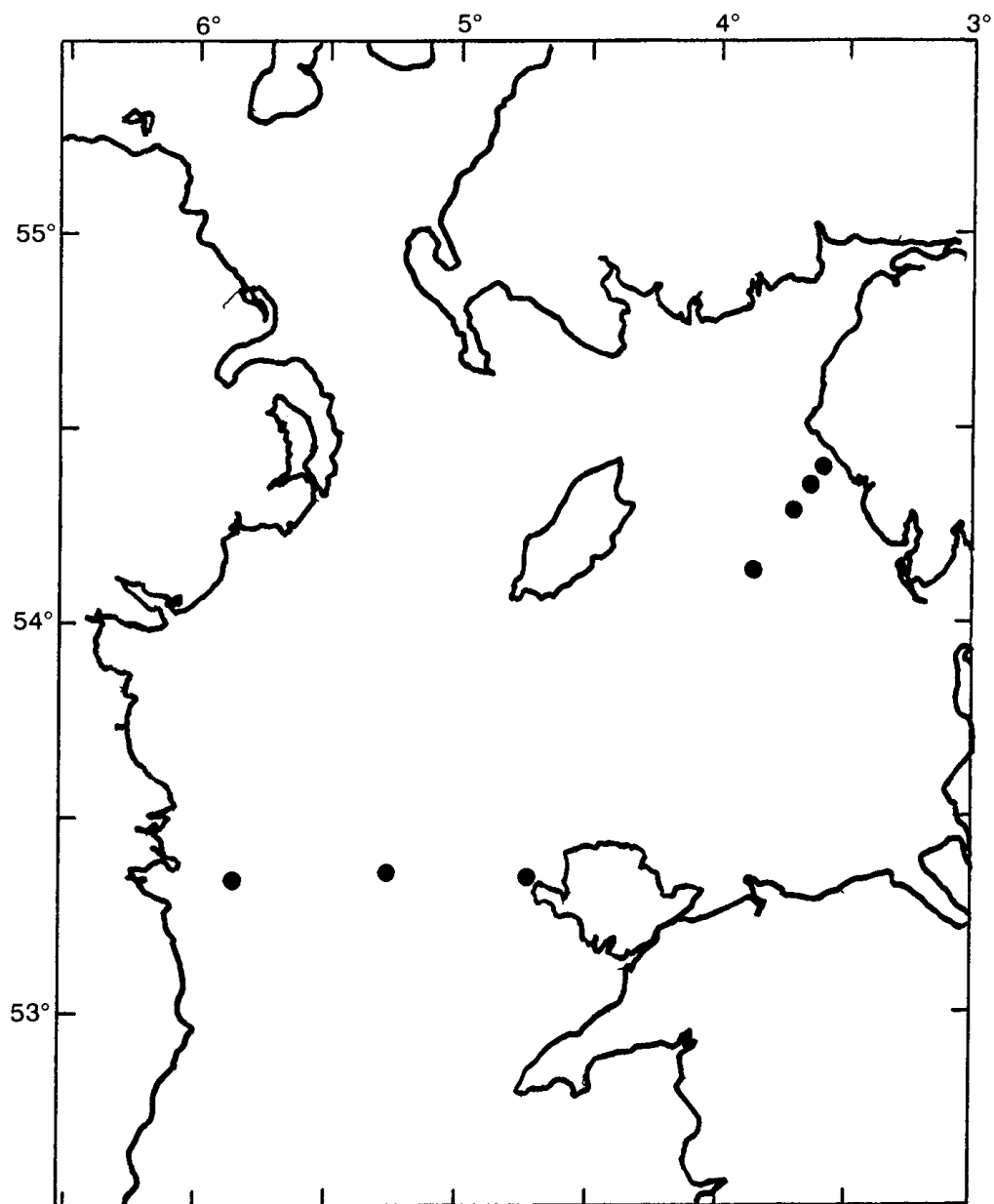
*Figure 6. Location of offshore sampling positions from RV Cruise 165*



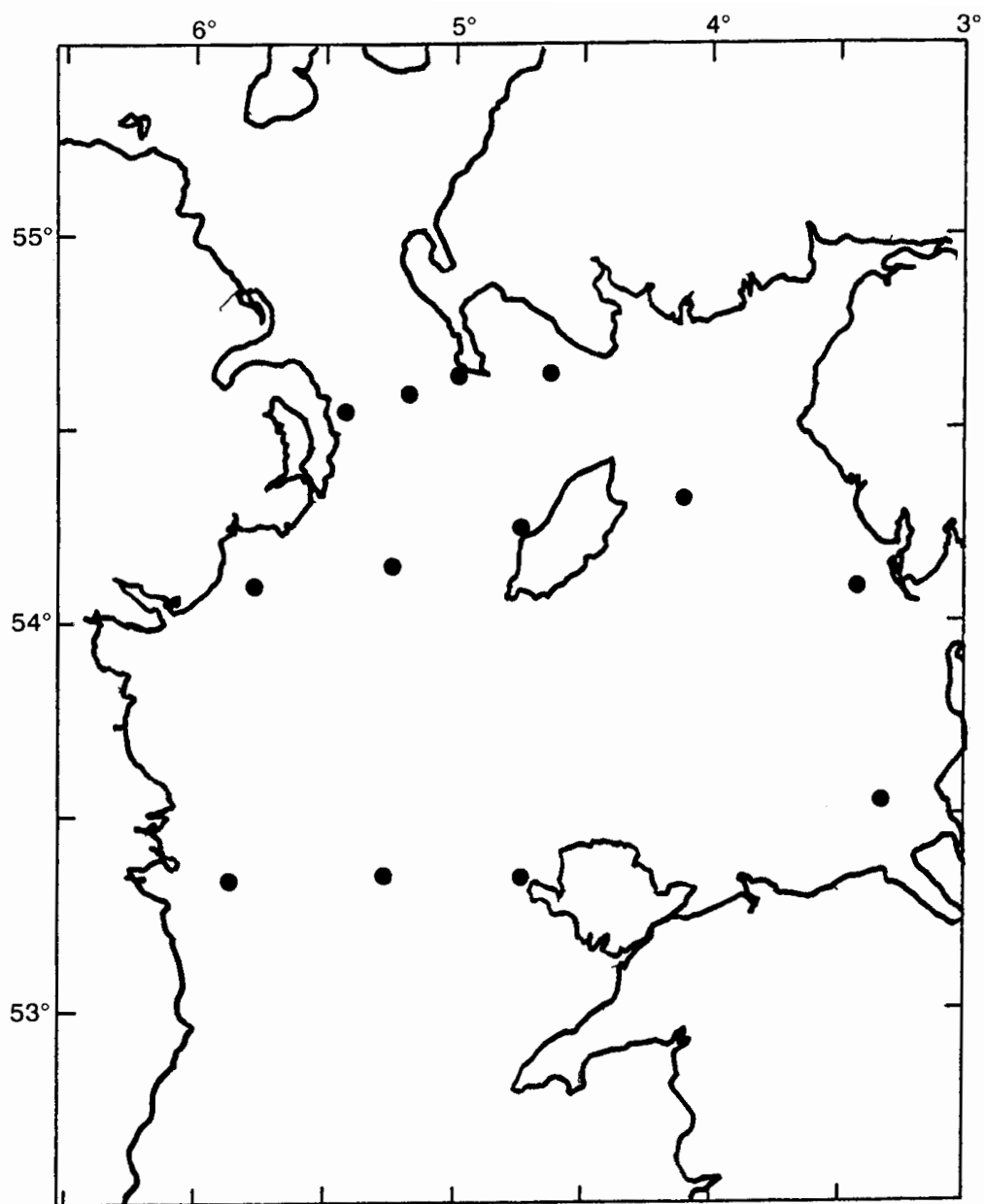
*Figure 7. Location of offshore sampling positions from RV Cruise 166*



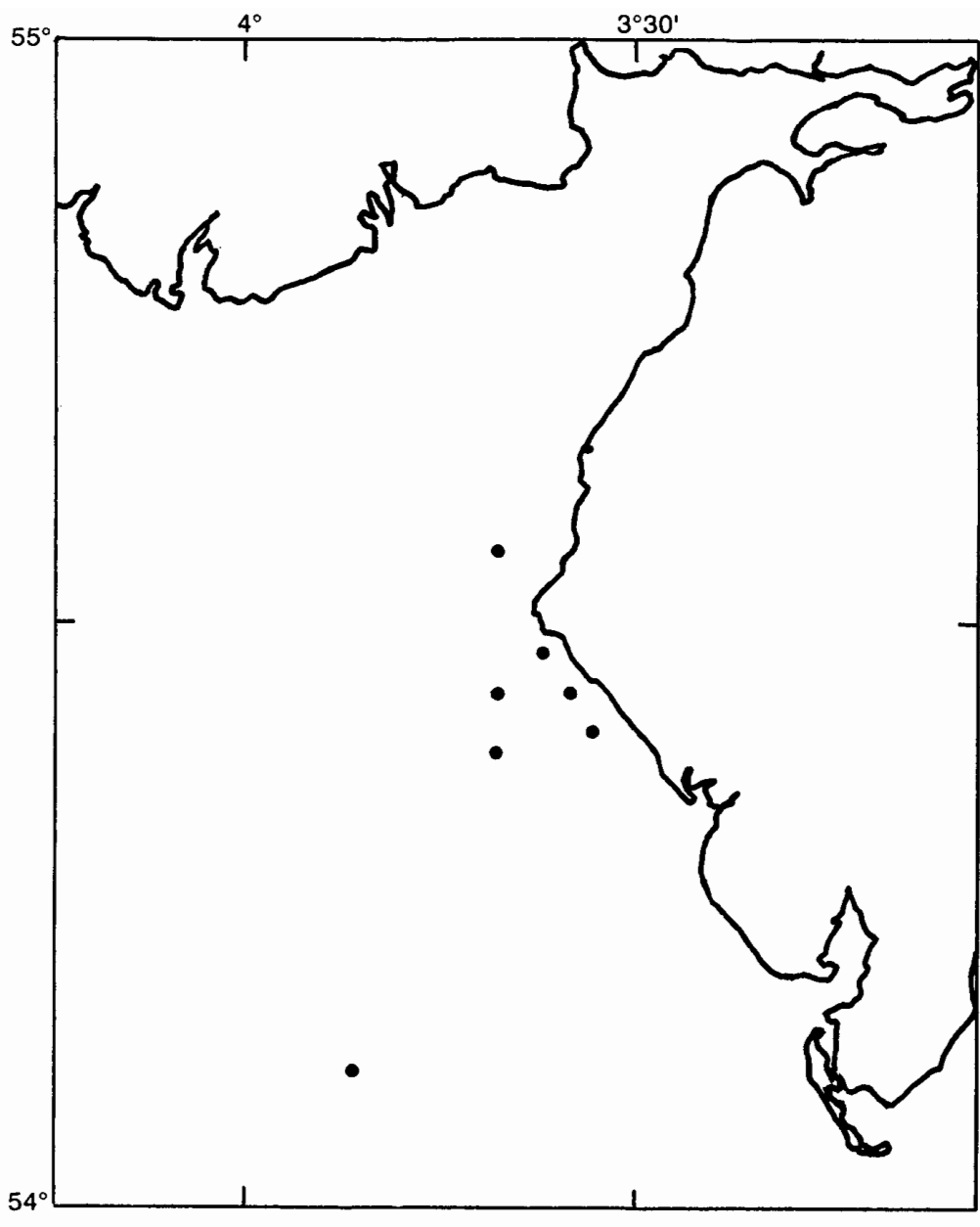
*Figure 8. Location of offshore sampling positions from RV Cruise 167*



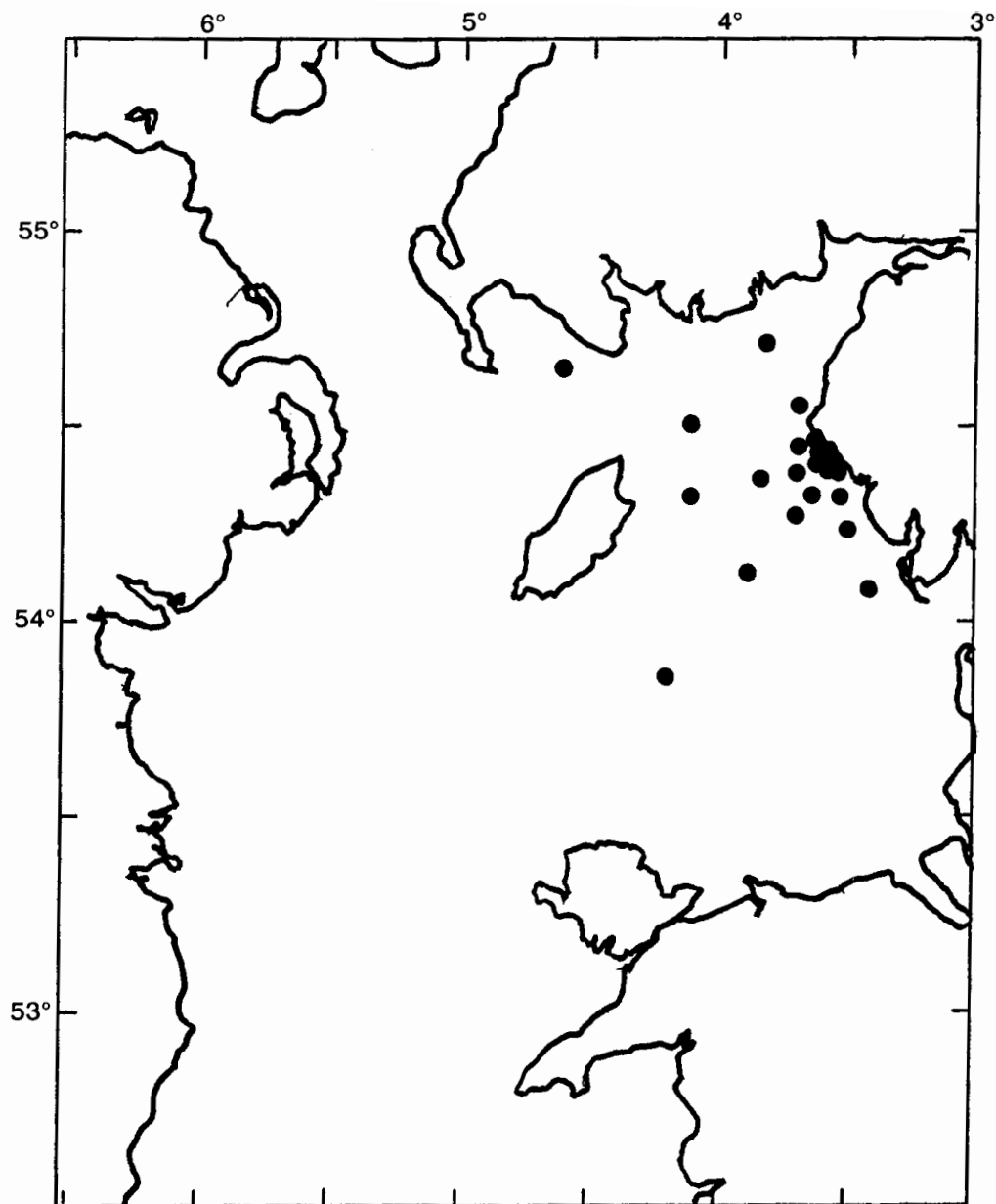
*Figure 9. Location of offshore sampling positions from Clione 4/67*



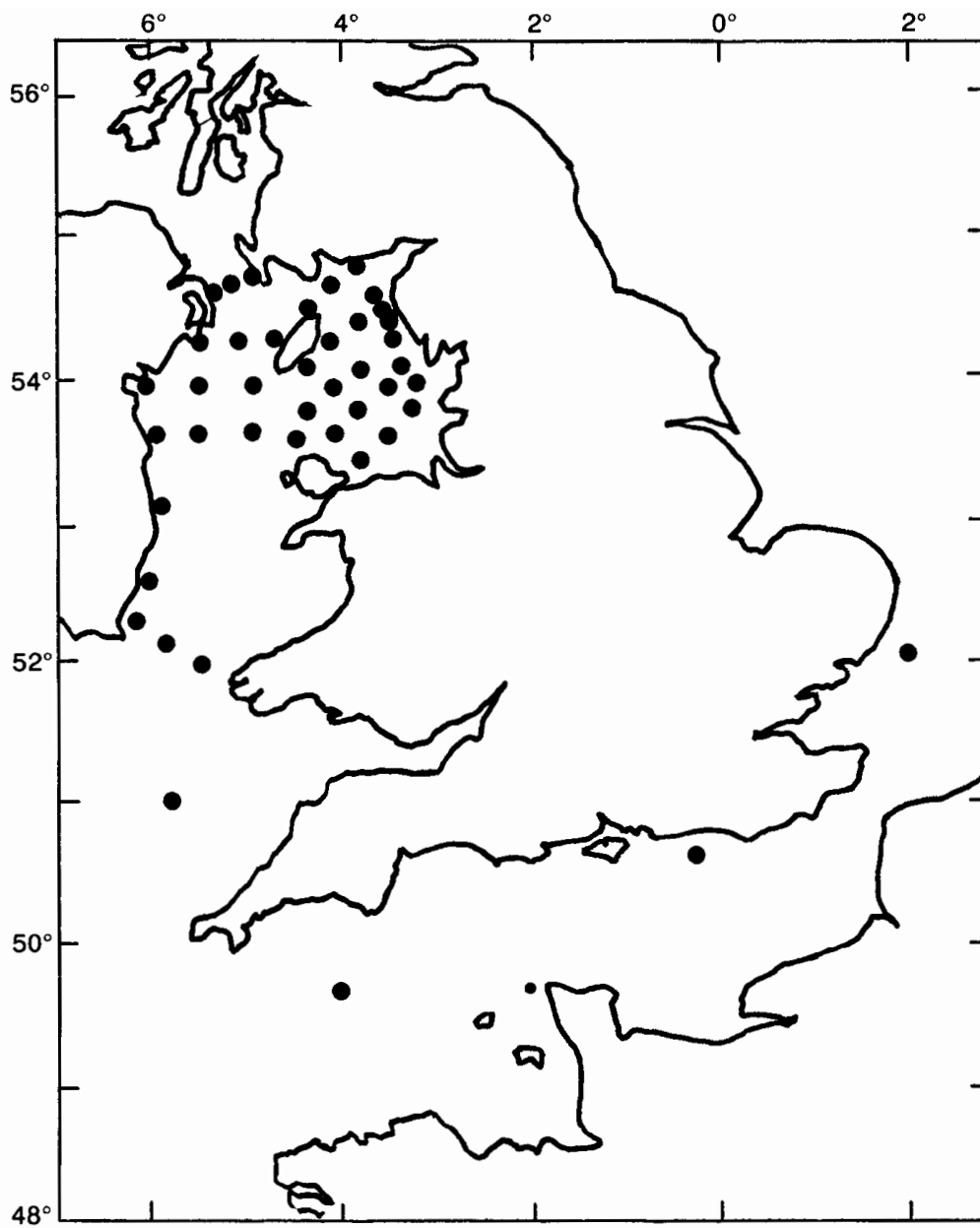
*Figure 10. Location of offshore sampling positions from Clione 9/67*



*Figure 11. Location of offshore sampling positions from Clione 5/68*



*Figure 12. Location of offshore sampling positions from Corella 13/68*



*Figure 13. Location of offshore sampling positions from Corella 18/69*

**ANNEX 1. CONCENTRATIONS OF  $^{134}\text{Cs}$  AND  $^{137}\text{Cs}$  IN FILTERED SEA WATER ( $\text{Bq m}^{-3}$ ):  
SHORELINE SAMPLING, 1962-69**

**Annex 1. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs		<sup>137</sup> Cs	Ratio	Sample no.
<i>Site 12 Sizewell</i>						
<i>Station 18 Lowestoft Beach (SE)</i>						
				52°27'10"N 1°44'20"E		
21/ 5/69	NA	ND		17.76+-	%	18
29/ 5/69	NA	ND		53.28+-	%	19
<i>Site 7 Bradwell</i>						
<i>Station 103 Barrier Wall</i>						
				51°44'44"N 0°53'30"E		
15/11/65	NA	ND		37.00+-	%	5
20/ 3/68	NA	95.46+-	%	233.47+-	%	2.4
20/ 3/68	NA	ND		294.52+-	%	6
20/ 3/68	NA	ND		247.90+-	%	7
20/ 3/68	NA	ND		288.23+-	%	8
20/ 3/68	NA	ND		282.31+-	%	9
20/ 3/68	NA	ND		277.13+-	%	10
27/ 3/68	NA	ND		275.28+-	%	11
<i>Site 7 Bradwell</i>						
<i>Station 5 PLZ</i>						
				51°44'37"N 0°53'45"E		
25/11/69	NA	ND		224.59+-	%	17
<i>Site 6 Berkeley</i>						
<i>Station 87 PLZ</i>						
				51°41'37"N 2°29'47"W		
15/12/69	NA	ND		30.34+-	%	16
<i>Site 1 Sellafield</i>						
<i>Station 75 Aberystwyth</i>						
				52°24'59"N 4° 5'12"W		
7/11/65	NA	ND		513.19+-	%	71
<i>Site 1 Sellafield</i>						
<i>Station 30 Walney Island</i>						
				54° 6' 7"N 3°16'10"W		
28/ 6/68	NA	ND		780.33+-	%	58
16/ 7/68	NA	ND		609.39+-	%	59
16/ 8/68	NA	ND		611.61+-	%	60
17/ 9/68	NA	ND		454.73+-	%	61
15/10/68	NA	ND		368.15+-	%	62
17/11/68	NA	ND		637.51+-	%	63
<i>Site 1 Sellafield</i>						
<i>Station 74 Walney West Shore</i>						
				54° 7' 5"N 3°16'17"W		
26/ 1/63	NA	ND		736.30+-	%	9
6/ 2/63	NA	ND		1118.88+-	%	14
21/ 2/63	NA	ND		659.34+-	%	21
10/ 3/63	NA	ND		335.96+-	%	29

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
23/ 3/63	NA	ND	384.06+-	⊗	36
7/ 4/63	NA	ND	404.41+-	⊗	50
10/ 4/63	NA	ND	389.98+-	⊗	43
20/ 4/63	NA	ND	399.23+-	⊗	57
4/ 5/63	NA	ND	277.87+-	⊗	64
25/ 5/63	NA	ND	297.48+-	⊗	71
8/ 6/63	NA	ND	253.45+-	⊗	78
22/ 6/63	NA	ND	156.88+-	⊗	85
7/ 7/63	NA	ND	167.61+-	⊗	92
24/ 7/63	NA	ND	159.84+-	⊗	99
10/ 8/63	NA	ND	285.27+-	⊗	106
8/ 9/63	NA	ND	216.08+-	⊗	119
21/ 9/63	NA	ND	347.80+-	⊗	126
7/10/63	NA	ND	334.85+-	⊗	133
23/10/63	NA	ND	315.24+-	⊗	140
7/11/63	NA	ND	147.26+-	⊗	147
23/11/63	NA	ND	143.19+-	⊗	154
7/12/63	NA	ND	299.70+-	⊗	168
7/12/63	NA	ND	202.39+-	⊗	161
11/ 1/64	NA	ND	168.35+-	⊗	7
26/ 1/64	NA	ND	200.54+-	⊗	14
8/ 2/64	NA	ND	502.83+-	⊗	21
23/ 2/64	NA	ND	461.39+-	⊗	28
7/ 3/64	NA	ND	280.09+-	⊗	35
21/ 3/64	NA	ND	239.02+-	⊗	42
8/ 4/64	NA	ND	633.44+-	⊗	49
25/ 4/64	NA	ND	455.10+-	⊗	56
10/ 5/64	NA	ND	268.99+-	⊗	63
24/ 5/64	NA	ND	240.87+-	⊗	70
7/ 6/64	NA	ND	344.47+-	⊗	77
20/ 6/64	NA	ND	299.70+-	⊗	84
8/ 7/64	NA	ND	274.54+-	⊗	91
25/ 7/64	NA	ND	413.66+-	⊗	98
8/ 8/64	NA	ND	743.33+-	⊗	105
23/ 8/64	NA	ND	445.85+-	⊗	111
5/ 9/64	NA	ND	486.18+-	⊗	118
23/ 9/64	NA	ND	600.14+-	⊗	124
10/10/64	NA	ND	559.07+-	⊗	130
25/10/64	NA	ND	740.37+-	⊗	136
8/11/64	NA	ND	732.23+-	⊗	142
22/11/64	NA	ND	725.94+-	⊗	148
6/12/64	NA	ND	693.75+-	⊗	154
16/12/64	NA	ND	395.90+-	⊗	160
9/ 1/65	NA	ND	284.16+-	⊗	184
23/ 1/65	NA	ND	280.46+-	⊗	190
6/ 2/65	NA	ND	236.80+-	⊗	172
17/ 2/65	NA	ND	394.05+-	⊗	178
6/ 3/65	NA	ND	278.61+-	⊗	160
24/ 3/65	NA	ND	219.78+-	⊗	166

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
10/ 4/65	NA	ND	258.63+-	⊗	148
24/ 4/65	NA	ND	372.59+-	⊗	154
8/ 5/65	NA	ND	295.26+-	⊗	136
22/ 5/65	NA	ND	231.99+-	⊗	142
5/ 6/65	NA	ND	283.79+-	⊗	130
10/ 7/65	NA	ND	271.58+-	⊗	119
21/ 7/65	NA	ND	412.18+-	⊗	124
7/ 8/65	NA	ND	443.63+-	⊗	107
21/ 8/65	NA	ND	321.53+-	⊗	113
8/ 9/65	NA	ND	1287.97+-	⊗	95
25/ 9/65	NA	ND	644.91+-	⊗	101
9/10/65	NA	ND	432.53+-	⊗	83
23/10/65	NA	ND	367.78+-	⊗	89
20/11/65	NA	ND	710.77+-	⊗	77
8/12/65	NA	ND	1124.43+-	⊗	60
22/12/65	NA	ND	720.02+-	⊗	65
12/ 1/66	NA	ND	404.41+-	⊗	247
26/ 1/66	NA	ND	445.85+-	⊗	248
9/ 2/66	NA	ND	516.89+-	⊗	249
23/ 2/66	NA	ND	470.27+-	⊗	250
9/ 3/66	NA	ND	334.48+-	⊗	251
30/ 3/66	NA	ND	503.94+-	⊗	252
13/ 4/66	NA	ND	451.77+-	⊗	253
27/ 4/66	NA	ND	436.60+-	⊗	254
11/ 5/66	NA	ND	401.45+-	⊗	255
25/ 5/66	NA	ND	362.60+-	⊗	256
15/ 6/66	NA	ND	449.18+-	⊗	257
29/ 6/66	NA	ND	477.67+-	⊗	258
13/ 7/66	NA	ND	470.27+-	⊗	259
27/ 7/66	NA	ND	614.20+-	⊗	260
10/ 8/66	NA	ND	444.74+-	⊗	261
31/ 8/66	NA	ND	386.65+-	⊗	262
14/ 9/66	NA	ND	323.75+-	⊗	263
28/ 9/66	NA	ND	489.14+-	⊗	264
12/10/66	NA	ND	496.91+-	⊗	265
26/10/66	NA	ND	282.68+-	⊗	266
9/11/66	NA	ND	819.18+-	⊗	267
30/11/66	NA	ND	653.05+-	⊗	268
12/12/66	NA	ND	657.86+-	⊗	269
11/ 1/67	NA	ND	499.50+-	⊗	119
22/ 1/67	NA	ND	370.00+-	⊗	123
<i>Site 1 Sellafield</i>					
<i>Station 28 Gutterby</i>					
			<i>54°14'56"N</i>	<i>3°23'26"W</i>	
16/ 7/68	NA	ND	822.51+-	⊗	53
16/ 8/68	NA	ND	671.92+-	⊗	54
17/ 9/68	NA	ND	459.54+-	⊗	55
15/10/68	NA	ND	424.39+-	⊗	56

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
12/11/68	NA	ND	594.96+-	%	57
<i>Site 1 Sellafield</i>					
<i>Station 58 Eskmeals</i>			54°19'39"N	3°25'43"W	
10/ 3/63	NA	ND	386.65+-	%	28
23/ 9/64	NA	ND	863.21+-	%	123
<i>Site 1 Sellafield</i>					
<i>Station 34 Eskmeals Newbiggin</i>			54°20' 3"N	3°23'59"W	
26/ 1/63	NA	ND	2645.87+-	%	8
6/ 2/63	NA	ND	1217.67+-	%	13
21/ 2/63	NA	ND	917.60+-	%	20
10/ 3/63	NA	ND	416.25+-	%	27
23/ 3/63	NA	ND	395.53+-	%	35
7/ 4/63	NA	ND	391.83+-	%	49
7/ 4/63	NA	ND	461.39+-	%	47
10/ 4/63	NA	ND	406.26+-	%	42
20/ 4/63	NA	ND	338.92+-	%	56
4/ 5/63	NA	ND	249.38+-	%	63
25/ 5/63	NA	ND	431.05+-	%	70
8/ 6/63	NA	ND	290.82+-	%	77
22/ 6/63	NA	ND	262.70+-	%	84
7/ 7/63	NA	ND	198.69+-	%	91
24/ 7/63	NA	ND	255.30+-	%	98
10/ 8/63	NA	ND	620.86+-	%	105
24/ 8/63	NA	ND	355.20+-	%	112
8/ 9/63	NA	ND	432.53+-	%	118
21/ 9/63	NA	ND	707.44+-	%	125
7/10/63	NA	ND	317.46+-	%	132
23/10/63	NA	ND	346.69+-	%	139
7/11/63	NA	ND	265.29+-	%	146
23/11/63	NA	ND	135.05+-	%	153
7/12/63	NA	ND	234.95+-	%	167
7/12/63	NA	ND	350.39+-	%	160
11/ 1/64	NA	ND	185.00+-	%	6
26/ 1/64	NA	ND	516.15+-	%	13
8/ 2/64	NA	ND	571.65+-	%	20
23/ 2/64	NA	ND	533.17+-	%	27
7/ 3/64	NA	ND	1064.49+-	%	34
21/ 3/64	NA	ND	273.80+-	%	41
8/ 4/64	NA	ND	1445.96+-	%	48
25/ 4/64	NA	ND	355.20+-	%	55
10/ 5/64	NA	ND	261.59+-	%	62
24/ 5/64	NA	ND	1481.11+-	%	69
7/ 6/64	NA	ND	1322.38+-	%	76
20/ 6/64	NA	ND	331.89+-	%	83
8/ 7/64	NA	ND	451.77+-	%	90

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
25/ 7/64	NA	ND	779.22+-	‰	97
8/ 8/64	NA	ND	885.78+-	‰	104
23/ 8/64	NA	ND	454.73+-	‰	110
5/ 9/64	NA	ND	1250.23+-	‰	117
10/10/64	NA	ND	851.74+-	‰	129
25/10/64	NA	ND	773.67+-	‰	135
8/11/64	NA	ND	1690.16+-	‰	141
22/11/64	NA	ND	1431.90+-	‰	147
6/12/64	NA	ND	668.59+-	‰	153
16/12/64	NA	ND	515.41+-	‰	159
9/ 1/65	NA	ND	330.78+-	‰	183
23/ 1/65	NA	ND	317.46+-	‰	189
6/ 2/65	NA	ND	287.49+-	‰	171
20/ 2/65	NA	ND	494.32+-	‰	177
6/ 3/65	NA	ND	256.78+-	‰	159
24/ 3/65	NA	ND	330.41+-	‰	165
10/ 4/65	NA	ND	581.64+-	‰	147
24/ 4/65	NA	ND	343.36+-	‰	153
8/ 5/65	NA	ND	273.43+-	‰	135
22/ 5/65	NA	ND	823.25+-	‰	141
5/ 6/65	NA	ND	299.70+-	‰	129
10/ 7/65	NA	ND	511.71+-	‰	118
21/ 7/65	NA	ND	466.20+-	‰	123
7/ 8/65	NA	ND	633.44+-	‰	106
21/ 8/65	NA	ND	580.90+-	‰	112
8/ 9/65	NA	ND	966.07+-	‰	94
25/ 9/65	NA	ND	943.13+-	‰	100
9/10/65	NA	ND	574.24+-	‰	82
23/10/65	NA	ND	1354.57+-	‰	88
7/11/65	NA	ND	1245.05+-	‰	70
20/11/65	NA	ND	2004.29+-	‰	76
8/12/65	NA	ND	678.58+-	‰	59
22/12/65	NA	ND	832.13+-	‰	64
1/ 1/66	NA	ND	435.12+-	‰	224
26/ 1/66	NA	ND	779.59+-	‰	225
9/ 2/66	NA	ND	493.58+-	‰	226
23/ 2/66	NA	ND	953.12+-	‰	227
9/ 3/66	NA	ND	329.67+-	‰	228
30/ 3/66	NA	ND	747.03+-	‰	229
13/ 4/66	NA	ND	720.39+-	‰	230
27/ 4/66	NA	ND	638.62+-	‰	231
11/ 5/66	NA	ND	436.97+-	‰	232
25/ 5/66	NA	ND	500.24+-	‰	233
15/ 6/66	NA	ND	724.09+-	‰	234
29/ 6/66	NA	ND	555.00+-	‰	235
17/ 7/66	NA	ND	615.31+-	‰	236
27/ 7/66	NA	ND	1811.15+-	‰	237
10/ 8/66	NA	ND	822.88+-	‰	238
31/ 8/66	NA	ND	884.67+-	‰	239

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
14/ 9/66	NA	ND	549.45+-	%	240
28/ 9/66	NA	ND	936.84+-	%	241
12/10/66	NA	ND	826.95+-	%	242
26/10/66	NA	ND	744.07+-	%	243
9/11/66	NA	ND	1051.54+-	%	244
30/11/66	NA	ND	429.20+-	%	245
14/12/66	NA	ND	378.14+-	%	246
11/ 1/67	NA	ND	407.00+-	%	118
22/ 1/67	NA	ND	328.56+-	%	122
<i>Site 1 Sellafield</i>					
<i>Station 24 Drigg Barn Scar</i>			<i>54°22'19"N 3°28'18"W</i>		
16/ 8/68	NA	ND	1535.13+-	%	47
17/ 9/68	NA	ND	638.99+-	%	48
15/10/68	NA	ND	1302.40+-	%	49
17/11/68	NA	ND	1731.23+-	%	50
<i>Site 1 Sellafield</i>					
<i>Station 23 Seascale</i>			<i>54°23'36"N 3°29' 6"W</i>		
8/ 1/62	NA	ND	166.87+-	%	5
22/ 1/62	NA	ND	186.48+-	%	6
7/ 2/62	NA	ND	335.96+-	%	7
20/ 2/62	NA	ND	426.98+-	%	8
8/ 3/62	NA	ND	805.86+-	%	9
22/ 3/62	NA	ND	682.28+-	%	10
8/ 4/62	NA	ND	1282.42+-	%	11
22/ 4/62	NA	ND	1522.18+-	%	12
8/ 5/62	NA	ND	1349.39+-	%	13
23/ 5/62	NA	ND	859.88+-	%	14
8/ 6/62	NA	ND	3173.86+-	%	15
22/ 6/62	NA	ND	1591.37+-	%	16
8/ 7/62	NA	ND	567.58+-	%	17
22/ 7/62	NA	ND	647.50+-	%	18
8/ 8/62	NA	ND	572.02+-	%	19
22/ 8/62	NA	ND	545.75+-	%	20
8/ 9/62	NA	ND	465.46+-	%	21
22/ 9/62	NA	ND	590.89+-	%	22
8/10/62	NA	ND	275.28+-	%	23
22/10/62	NA	ND	420.32+-	%	24
8/11/62	NA	ND	326.71+-	%	25
22/11/62	NA	ND	752.21+-	%	26
8/12/62	NA	ND	517.63+-	%	27
22/12/62	NA	ND	342.25+-	%	28
8/ 1/63	NA	ND	1412.29+-	%	1
21/ 1/63	NA	ND	1215.82+-	%	2
26/ 1/63	NA	ND	1767.49+-	%	7
21/ 2/63	NA	ND	1346.80+-	%	19

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
10/ 3/63	NA	ND	387.76+-	%	26
23/ 3/63	NA	ND	374.81+-	%	34
7/ 4/63	NA	ND	514.67+-	%	48
10/ 4/63	NA	ND	531.69+-	%	41
20/ 4/63	NA	ND	421.06+-	%	55
4/ 5/63	NA	ND	347.06+-	%	62
25/ 5/63	NA	ND	567.95+-	%	69
8/ 6/63	NA	ND	508.75+-	%	76
22/ 6/63	NA	ND	280.09+-	%	83
7/ 7/63	NA	ND	525.03+-	%	90
24/ 7/63	NA	ND	387.02+-	%	97
10/ 8/63	NA	ND	468.05+-	%	104
24/ 8/63	NA	ND	286.38+-	%	111
8/ 9/63	NA	ND	572.02+-	%	117
21/ 9/63	NA	ND	633.44+-	%	124
7/10/63	NA	ND	170.57+-	%	131
23/10/63	NA	ND	358.53+-	%	138
7/11/63	NA	ND	432.16+-	%	145
23/11/63	NA	ND	187.22+-	%	152
7/12/63	NA	ND	69.19+-	%	166
7/12/63	NA	ND	405.52+-	%	159
11/ 1/64	NA	ND	294.89+-	%	5
26/ 1/64	NA	ND	946.09+-	%	12
8/ 2/64	NA	ND	758.87+-	%	19
23/ 2/64	NA	ND	550.93+-	%	26
7/ 3/64	NA	ND	1111.85+-	%	33
21/ 3/64	NA	ND	636.40+-	%	40
8/ 4/64	NA	ND	1780.81+-	%	47
25/ 4/64	NA	ND	541.68+-	%	54
10/ 5/64	NA	ND	278.24+-	%	61
24/ 5/64	NA	ND	2734.30+-	%	68
7/ 6/64	NA	ND	1427.83+-	%	75
20/ 6/64	NA	ND	566.47+-	%	82
8/ 7/64	NA	ND	355.57+-	%	89
25/ 7/64	NA	ND	2440.15+-	%	96
5/ 8/64	NA	ND	631.96+-	%	161
8/ 8/64	NA	ND	1439.30+-	%	103
12/ 8/64	NA	ND	2086.06+-	%	162
19/ 8/64	NA	ND	590.89+-	%	163
26/ 8/64	NA	ND	382.58+-	%	164
2/ 9/64	NA	ND	1202.13+-	%	165
5/ 9/64	NA	ND	1538.46+-	%	116
9/ 9/64	NA	ND	1918.82+-	%	166
16/ 9/64	NA	ND	646.76+-	%	167
23/ 9/64	NA	ND	1092.61+-	%	168
30/ 9/64	NA	ND	2534.50+-	%	169
7/10/64	NA	ND	1122.95+-	%	170
14/10/64	NA	ND	1082.25+-	%	171
21/10/64	NA	ND	1092.24+-	%	172
28/10/64	NA	ND	1168.09+-	%	173

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
4/11/64	NA	ND	1729.01+-	%	174
11/11/64	NA	ND	2262.18+-	%	175
18/11/64	NA	ND	2123.80+-	%	176
25/11/64	NA	ND	1565.47+-	%	177
2/12/64	NA	ND	922.41+-	%	178
9/12/64	NA	ND	475.45+-	%	179
16/12/64	NA	ND	470.64+-	%	180
6/ 1/65	NA	ND	717.80+-	%	42
13/ 1/65	NA	ND	367.04+-	%	43
20/ 1/65	NA	ND	469.53+-	%	44
27/ 1/65	NA	ND	609.39+-	%	45
3/ 2/65	NA	ND	338.18+-	%	46
10/ 2/65	NA	ND	328.93+-	%	47
17/ 2/65	NA	ND	327.45+-	%	48
24/ 2/65	NA	ND	497.28+-	%	49
3/ 3/65	NA	ND	236.43+-	%	50
10/ 3/65	NA	ND	523.18+-	%	51
17/ 3/65	NA	ND	244.57+-	%	52
24/ 3/65	NA	ND	664.15+-	%	53
31/ 3/65	NA	ND	531.32+-	%	54
7/ 4/65	NA	ND	1291.67+-	%	29
8/ 4/65	NA	ND	286.75+-	%	32
14/ 4/65	NA	ND	794.02+-	%	30
21/ 4/65	NA	ND	429.57+-	%	31
5/ 5/65	NA	ND	463.61+-	%	33
12/ 5/65	NA	ND	584.97+-	%	34
19/ 5/65	NA	ND	2363.93+-	%	35
26/ 5/65	NA	ND	399.97+-	%	36
2/ 6/65	NA	ND	779.22+-	%	37
9/ 6/65	NA	ND	651.94+-	%	38
16/ 6/65	NA	ND	349.28+-	%	39
23/ 6/65	NA	ND	244.94+-	%	40
30/ 6/65	NA	ND	879.12+-	%	41
7/ 7/65	NA	ND	468.79+-	%	18
14/ 7/65	NA	ND	602.73+-	%	19
21/ 7/65	NA	ND	730.75+-	%	20
4/ 8/65	NA	ND	1191.40+-	%	21
11/ 8/65	NA	ND	828.80+-	%	22
18/ 8/65	NA	ND	1050.43+-	%	23
25/ 8/65	NA	ND	666.37+-	%	24
1/ 9/65	NA	ND	478.78+-	%	25
8/ 9/65	NA	ND	491.36+-	%	26
15/ 9/65	NA	ND	2598.14+-	%	27
29/ 9/65	NA	ND	1683.13+-	%	28
6/10/65	NA	ND	660.82+-	%	6
13/10/65	NA	ND	2352.83+-	%	7
20/10/65	NA	ND	2048.32+-	%	8
27/10/65	NA	ND	2496.76+-	%	9
3/11/65	NA	ND	1148.48+-	%	10
10/11/65	NA	ND	1861.84+-	%	11

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
17/11/65	NA	ND	1767.86+-	⊗	12
24/11/65	NA	ND	589.41+-	⊗	13
1/12/65	NA	ND	235.32+-	⊗	14
8/12/65	NA	ND	5542.60+-	⊗	15
15/12/65	NA	ND	1618.75+-	⊗	16
22/12/65	NA	ND	1851.11+-	⊗	17
12/ 1/66	NA	ND	852.85+-	⊗	210
19/ 1/66	NA	ND	687.83+-	⊗	211
26/ 1/66	NA	ND	1003.81+-	⊗	212
2/ 2/66	NA	ND	591.26+-	⊗	213
9/ 2/66	NA	ND	1525.51+-	⊗	214
16/ 2/66	NA	ND	2102.71+-	⊗	215
23/ 2/66	NA	ND	676.36+-	⊗	216
2/ 3/66	NA	ND	513.56+-	⊗	217
9/ 3/66	NA	ND	771.45+-	⊗	218
16/ 3/66	NA	ND	1672.77+-	⊗	219
23/ 3/66	NA	ND	1012.69+-	⊗	220
30/ 3/66	NA	ND	424.76+-	⊗	221
6/ 4/66	NA	ND	1088.54+-	⊗	222
13/ 4/66	NA	ND	2520.81+-	⊗	223
20/ 4/66	NA	ND	1241.72+-	⊗	195
27/ 4/66	NA	ND	548.71+-	⊗	196
4/ 5/66	NA	ND	593.48+-	⊗	197
11/ 5/66	NA	ND	540.57+-	⊗	198
18/ 5/66	NA	ND	383.69+-	⊗	199
25/ 5/66	NA	ND	1260.22+-	⊗	200
1/ 6/66	NA	ND	1499.24+-	⊗	201
8/ 6/66	NA	ND	688.20+-	⊗	202
15/ 6/66	NA	ND	431.79+-	⊗	203
22/ 6/66	NA	ND	630.11+-	⊗	204
29/ 6/66	NA	ND	505.79+-	⊗	205
6/ 7/66	NA	ND	1330.15+-	⊗	206
13/ 7/66	NA	ND	2617.01+-	⊗	207
20/ 7/66	NA	ND	2619.23+-	⊗	208
27/ 7/66	NA	ND	2148.22+-	⊗	209
3/ 8/66	NA	ND	1692.75+-	⊗	180
10/ 8/66	NA	ND	1116.29+-	⊗	181
17/ 8/66	NA	ND	847.67+-	⊗	182
24/ 8/66	NA	ND	2388.35+-	⊗	183
31/ 8/66	NA	ND	1936.21+-	⊗	184
7/ 9/66	NA	ND	1198.80+-	⊗	185
14/ 9/66	NA	ND	1048.95+-	⊗	186
21/ 9/66	NA	ND	1629.11+-	⊗	187
28/ 9/66	NA	ND	1263.55+-	⊗	188
5/10/66	NA	ND	1781.18+-	⊗	189
12/10/66	NA	ND	603.84+-	⊗	190
19/10/66	NA	ND	1083.73+-	⊗	191
26/10/66	NA	ND	1220.63+-	⊗	192
2/11/66	NA	ND	516.52+-	⊗	193
9/ /66	NA	ND	1880.34+-	⊗	194

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
16/11/66	NA	ND	389.98+-	%	175
23/11/66	NA	ND	630.85+-	%	176
30/11/66	NA	ND	381.47+-	%	177
7/12/66	NA	ND	547.97+-	%	178
14/12/66	NA	ND	753.69+-	%	179
11/ 1/67	NA	ND	399.60+-	%	67
18/ 1/67	NA	ND	367.04+-	%	68
25/ 1/67	NA	ND	403.30+-	%	69
1/ 2/67	NA	ND	333.00+-	%	70
8/ 2/67	NA	ND	414.40+-	%	71
15/ 2/67	NA	ND	1246.90+-	%	72
22/ 2/67	NA	ND	425.50+-	%	73
8/ 3/67	NA	ND	268.62+-	%	74
15/ 3/67	NA	ND	1073.00+-	%	75
22/ 3/67	NA	ND	595.70+-	%	76
29/ 3/67	NA	ND	321.90+-	%	77
5/ 4/67	NA	ND	418.10+-	%	78
12/ 4/67	NA	ND	510.60+-	%	79
19/ 4/67	NA	ND	518.00+-	%	80
26/ 4/67	NA	ND	891.70+-	%	81
3/ 5/67	NA	ND	267.51+-	%	82
10/ 5/67	NA	ND	210.16+-	%	83
17/ 5/67	NA	ND	246.05+-	%	84
24/ 5/67	NA	ND	202.39+-	%	85
31/ 5/67	NA	ND	215.34+-	%	86
7/ 6/67	NA	ND	306.36+-	%	87
14/ 6/67	NA	ND	1398.60+-	%	88
21/ 6/67	NA	ND	2009.10+-	%	89
28/ 6/67	NA	ND	2186.70+-	%	90
5/ 7/67	NA	ND	1998.00+-	%	91
12/ 7/67	NA	ND	4784.10+-	%	92
19/ 7/67	NA	ND	1235.80+-	%	93
26/ 7/67	NA	ND	1276.50+-	%	94
2/ 8/67	NA	ND	695.60+-	%	95
9/ 8/67	NA	ND	1172.90+-	%	96
16/ 8/67	NA	ND	1254.30+-	%	97
23/ 8/67	NA	ND	939.80+-	%	98
30/ 8/67	NA	ND	1509.60+-	%	99
6/ 9/67	NA	ND	503.20+-	%	100
13/ 9/67	NA	ND	1861.10+-	%	101
20/ 9/67	NA	ND	1117.40+-	%	102
27/ 9/67	NA	ND	421.80+-	%	103
4/10/67	NA	ND	228.29+-	%	104
13/10/67	NA	ND	469.90+-	%	105
20/10/67	NA	ND	421.80+-	%	106
27/10/67	NA	ND	212.38+-	%	107
3/11/67	NA	ND	758.50+-	%	108
10/11/67	NA	ND	310.43+-	%	109
17/11/67	NA	ND	2782.40+-	%	110
24/11/67	NA	ND	2242.20+-	%	111

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs		<sup>137</sup> Cs	Ratio	Sample no.	
1/12/67	NA	ND		20190.90+-	‰	112	
8/12/67	NA	ND		828.80+-	‰	113	
15/12/67	NA	ND		2375.40+-	‰	114	
22/12/67	NA	ND		1080.40+-	‰	115	
12/ 1/68	NA	ND		1329.78+-	‰	30	
23/ 1/68	NA	ND		933.14+-	‰	31	
6/ 2/68	NA	ND		785.14+-	‰	32	
20/ 2/68	NA	ND		7381.50+-	‰	33	
8/ 3/68	NA	ND		3110.96+-	‰	34	
26/ 3/68	NA	ND		1835.57+-	‰	35	
9/ 4/68	NA	ND		1179.56+-	‰	36	
23/ 4/68	NA	ND		1099.64+-	‰	37	
7/ 5/68	NA	ND		1299.81+-	‰	38	
24/ 5/68	NA	ND		1718.28+-	‰	39	
11/ 6/68	NA	ND		4506.60+-	‰	40	
25/ 6/68	NA	ND		2961.11+-	‰	41	
16/ 7/68	NA	ND		3010.32+-	‰	42	
16/ 8/68	NA	ND		2113.81+-	‰	43	
12/ 9/68	NA	ND		828.06+-	‰	44	
15/10/68	NA	ND		2773.89+-	‰	45	
15/11/68	NA	ND		2258.85+-	‰	46	
15/ 4/69	NA	2023.90+-	‰	4813.70+-	‰	2.4	1
26/ 4/69	NA	1583.97+-	‰	5046.80+-	‰	3.2	9
15/ 5/69	NA	1446.70+-	‰	4787.80+-	‰	3.3	2
18/ 5/69	NA	1354.20+-	‰	4565.80+-	‰	3.4	10
15/ 6/69	NA	853.22+-	‰	3119.10+-	‰	3.7	11
15/ 6/69	NA	1198.80+-	‰	3618.60+-	‰	3.0	3
15/ 7/69	NA	1224.70+-	‰	5638.80+-	‰	4.6	4
17/ 7/69	NA	864.69+-	‰	5339.10+-	‰	6.2	12
14/ 8/69	NA	911.31+-	‰	3640.80+-	‰	4.0	13
15/ 8/69	NA	980.50+-	‰	3862.80+-	‰	3.9	5
14/ 9/69	NA	2510.08+-	‰	8236.20+-	‰	3.3	14
15/ 9/69	NA	1979.50+-	‰	7215.00+-	‰	3.6	6
15/10/69	NA	1010.10+-	‰	3903.50+-	‰	3.9	7
16/10/69	NA	914.64+-	‰	3592.70+-	‰	3.9	15
15/11/69	NA	1180.30+-	‰	3640.80+-	‰	3.1	8

*Site 1 Sellafield*

*Station 20 Braystones South*

*54°26' 0"N 3°32' 8"W*

8/ 1/62	NA	ND		179.82+-	‰	29
22/ 1/62	NA	ND		293.41+-	‰	30
8/ 2/62	NA	ND		235.32+-	‰	31
22/ 2/62	NA	ND		182.41+-	‰	32
8/ 3/62	NA	ND		402.93+-	‰	33
22/ 3/62	NA	ND		1044.14+-	‰	34
8/ 4/62	NA	ND		783.29+-	‰	35
22/ 4/62	NA	ND		1134.79+-	‰	36
8/ 5/62	NA	ND		1774.15+-	‰	37

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
22/ 5/62	NA	ND	669.33+-	%	38
8/ 6/62	NA	ND	1428.20+-	%	39
22/ 6/62	NA	ND	1699.04+-	%	40
8/ 7/62	NA	ND	589.04+-	%	41
23/ 7/62	NA	ND	758.13+-	%	42
8/ 8/62	NA	ND	515.41+-	%	43
23/ 8/62	NA	ND	547.97+-	%	44
8/ 9/62	NA	ND	557.22+-	%	45
23/ 9/62	NA	ND	454.36+-	%	46
8/10/62	NA	ND	415.88+-	%	47
22/10/62	NA	ND	320.42+-	%	48
8/11/62	NA	ND	432.16+-	%	49
22/11/62	NA	ND	849.52+-	%	50
8/12/62	NA	ND	931.29+-	%	51
23/12/62	NA	ND	472.12+-	%	52
26/ 1/63	NA	ND	1175.12+-	%	6
21/ 2/63	NA	ND	1071.89+-	%	18
10/ 3/63	NA	ND	523.18+-	%	25
23/ 3/63	NA	ND	398.49+-	%	33
10/ 4/63	NA	ND	498.39+-	%	40
20/ 4/63	NA	ND	395.16+-	%	54
4/ 5/63	NA	ND	418.10+-	%	61
25/ 5/63	NA	ND	334.48+-	%	68
8/ 6/63	NA	ND	542.42+-	%	75
22/ 6/63	NA	ND	357.42+-	%	82
7/ 7/63	NA	ND	334.85+-	%	89
24/ 7/63	NA	ND	527.62+-	%	96
10/ 8/63	NA	ND	337.81+-	%	103
24/ 8/63	NA	ND	334.48+-	%	110
8/ 9/63	NA	ND	469.53+-	%	116
21/ 9/63	NA	ND	439.56+-	%	123
7/10/63	NA	ND	130.98+-	%	130
23/10/63	NA	ND	403.67+-	%	137
7/11/63	NA	ND	345.58+-	%	144
23/11/63	NA	ND	244.20+-	%	151
7/12/63	NA	ND	162.06+-	%	158
7/12/63	NA	ND	18.87+-	%	165
11/ 1/64	NA	ND	437.71+-	%	4
26/ 1/64	NA	ND	311.17+-	%	11
8/ 2/64	NA	ND	381.10+-	%	18
23/ 2/64	NA	ND	518.37+-	%	25
7/ 3/64	NA	ND	460.65+-	%	32
21/ 3/64	NA	ND	351.50+-	%	39
8/ 4/64	NA	ND	998.63+-	%	46
25/ 4/64	NA	ND	577.57+-	%	53
10/ 5/64	NA	ND	341.88+-	%	60
24/ 5/64	NA	ND	1986.16+-	%	67
7/ 6/64	NA	ND	1147.37+-	%	74
20/ 6/64	NA	ND	645.28+-	%	81

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
8/ 7/64	NA	ND	503.20+-	⊗	88
25/ 7/64	NA	ND	4863.65+-	⊗	95
8/ 8/64	NA	ND	1104.08+-	⊗	102
23/ 8/64	NA	ND	551.30+-	⊗	109
5/ 9/64	NA	ND	1170.31+-	⊗	115
23/ 9/64	NA	ND	782.92+-	⊗	122
10/10/64	NA	ND	1070.04+-	⊗	128
25/10/64	NA	ND	562.03+-	⊗	134
8/11/64	NA	ND	930.18+-	⊗	140
22/11/64	NA	ND	1359.01+-	⊗	146
6/12/64	NA	ND	494.32+-	⊗	152
16/12/64	NA	ND	605.32+-	⊗	158
9/ 1/65	NA	ND	586.82+-	⊗	182
23/ 1/65	NA	ND	484.33+-	⊗	188
6/ 2/65	NA	ND	284.16+-	⊗	170
20/ 2/65	NA	ND	179.82+-	⊗	176
6/ 3/65	NA	ND	176.12+-	⊗	158
24/ 3/65	NA	ND	393.68+-	⊗	164
10/ 4/65	NA	ND	862.47+-	⊗	146
24/ 4/65	NA	ND	215.34+-	⊗	152
8/ 5/65	NA	ND	812.89+-	⊗	134
22/ 5/65	NA	ND	614.57+-	⊗	140
5/ 6/65	NA	ND	367.04+-	⊗	128
10/ 7/65	NA	ND	434.01+-	⊗	117
21/ 7/65	NA	ND	1265.40+-	⊗	122
7/ 8/65	NA	ND	570.54+-	⊗	105
21/ 8/65	NA	ND	1060.42+-	⊗	111
8/ 9/65	NA	ND	637.88+-	⊗	93
25/ 9/65	NA	ND	1216.56+-	⊗	99
9/10/65	NA	ND	1025.27+-	⊗	81
23/10/65	NA	ND	2520.81+-	⊗	87
7/11/65	NA	ND	1532.91+-	⊗	69
20/11/65	NA	ND	1986.90+-	⊗	75
8/12/65	NA	ND	977.91+-	⊗	58
12/ 1/66	NA	ND	773.30+-	⊗	160
26/ 1/66	NA	ND	754.06+-	⊗	161
9/ 2/66	NA	ND	773.30+-	⊗	162
23/ 2/66	NA	ND	1641.69+-	⊗	163
9/ 3/66	NA	ND	850.63+-	⊗	164
30/ 3/66	NA	ND	463.98+-	⊗	165
13/ 4/66	NA	ND	1653.90+-	⊗	166
27/ 4/66	NA	ND	671.55+-	⊗	167
11/ 5/66	NA	ND	350.02+-	⊗	168
25/ 5/66	NA	ND	818.07+-	⊗	169
15/ 6/66	NA	ND	1303.88+-	⊗	170
29/ 6/66	NA	ND	930.18+-	⊗	171
13/ 7/66	NA	ND	2099.75+-	⊗	172
27/ 7/66	NA	ND	1404.89+-	⊗	173
10/ 8/66	NA	ND	1104.45+-	⊗	174

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
31/ 8/66	NA	ND	1413.77+-	%	152
14/ 9/66	NA	ND	821.03+-	%	153
28/ 9/66	NA	ND	1399.71+-	%	154
12/10/66	NA	ND	1208.79+-	%	155
26/10/66	NA	ND	672.29+-	%	156
9/11/66	NA	ND	621.97+-	%	157
23/11/66	NA	ND	351.87+-	%	158
12/12/66	NA	ND	542.05+-	%	159
1/ 1/67	NA	ND	138.75+-	%	124
22/ 1/67	NA	ND	444.00+-	%	125
5/ 2/67	NA	ND	902.80+-	%	126
19/ 2/67	NA	ND	654.90+-	%	127
8/ 3/67	NA	ND	444.00+-	%	128
26/ 3/67	NA	ND	338.92+-	%	129
9/ 4/67	NA	ND	305.62+-	%	130
23/ 4/67	NA	ND	367.04+-	%	131
7/ 5/67	NA	ND	344.10+-	%	132
24/ 5/67	NA	ND	381.10+-	%	133
11/ 6/67	NA	ND	1816.70+-	%	134
25/ 6/67	NA	ND	1591.00+-	%	135
9/ 7/67	NA	ND	2630.70+-	%	136
23/ 7/67	NA	ND	2075.70+-	%	137
6/ 8/67	NA	ND	1180.30+-	%	138
23/ 8/67	NA	ND	1283.90+-	%	139
10/ 9/67	NA	ND	913.90+-	%	140
24/ 9/67	NA	ND	921.30+-	%	141
9/10/67	NA	ND	865.80+-	%	142
24/10/67	NA	ND	377.40+-	%	143
7/11/67	NA	ND	429.20+-	%	144
21/11/67	NA	ND	895.40+-	%	145
5/12/67	NA	ND	6456.50+-	%	146
19/12/67	NA	ND	1209.90+-	%	147
12/ 1/68	NA	ND	487.66+-	%	64
23/ 1/68	NA	ND	826.58+-	%	65
6/ 2/68	NA	ND	2072.74+-	%	66
20/ 2/68	NA	ND	4743.40+-	%	67
8/ 3/68	NA	ND	3241.57+-	%	68
26/ 3/68	NA	ND	1912.90+-	%	69
9/ 4/68	NA	ND	1188.44+-	%	70
23/ 4/68	NA	ND	1585.82+-	%	71
7/ 5/68	NA	ND	2535.98+-	%	72
24/ 5/68	NA	ND	1998.74+-	%	73
11/ 6/68	NA	ND	5723.90+-	%	74
25/ 6/68	NA	ND	2729.12+-	%	75
16/ 7/68	NA	ND	3225.29+-	%	76
16/ 8/68	NA	ND	1632.81+-	%	77
17/ 9/68	NA	ND	1287.23+-	%	78
15/10/68	NA	ND	1972.47+-	%	79
15/11/68	NA	ND	3414.73+-	%	80

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
<i>Site 1 Sellafield</i>					
<i>Station 17 St Bees</i>					
			54°29'20"N 3°36' 9"W		
12/ 1/68	NA	ND	366.30+-	%	12
22/ 1/68	NA	ND	793.65+-	%	13
6/ 2/68	NA	ND	920.19+-	%	14
19/ 2/68	NA	ND	1369.00+-	%	15
12/ 3/68	NA	ND	683.76+-	%	16
26/ 3/68	NA	ND	1253.56+-	%	17
9/ 4/68	NA	ND	781.07+-	%	18
23/ 4/68	NA	ND	1383.43+-	%	19
7/ 5/68	NA	ND	1423.02+-	%	20
24/ 5/68	NA	ND	1352.35+-	%	21
11/ 6/68	NA	ND	1332.74+-	%	22
25/ 6/68	NA	ND	1364.19+-	%	23
15/ 7/68	NA	ND	1686.83+-	%	24
15/ 8/68	NA	ND	882.82+-	%	25
15/ 9/68	NA	ND	1321.27+-	%	26
15/10/68	NA	ND	1207.68+-	%	27
15/11/68	NA	ND	2615.16+-	%	28
15/12/68	NA	ND	3344.06+-	%	29
<i>Site 1 Sellafield</i>					
<i>Station 100 St Bees-W</i>					
			54°29'20"N 3°36'26"W		
26/ 1/63	NA	ND	1029.34+-	%	5
6/ 2/63	NA	ND	1230.62+-	%	12
21/ 2/63	NA	ND	440.30+-	%	17
10/ 3/63	NA	ND	346.32+-	%	24
23/ 3/63	NA	ND	437.71+-	%	32
7/ 4/63	NA	ND	337.81+-	%	46
10/ 4/63	NA	ND	386.65+-	%	39
20/ 4/63	NA	ND	370.74+-	%	53
4/ 5/63	NA	ND	365.93+-	%	60
25/ 5/63	NA	ND	526.88+-	%	67
8/ 6/63	NA	ND	379.62+-	%	74
22/ 6/63	NA	ND	311.54+-	%	81
7/ 7/63	NA	ND	231.99+-	%	88
24/ 7/63	NA	ND	346.32+-	%	95
10/ 8/63	NA	ND	196.10+-	%	102
24/ 8/63	NA	ND	258.26+-	%	109
8/ 9/63	NA	ND	437.71+-	%	115
21/ 9/63	NA	ND	307.47+-	%	122
7/10/63	NA	ND	153.92+-	%	129
23/10/63	NA	ND	395.16+-	%	136
7/11/63	NA	ND	230.88+-	%	143
23/11/63	NA	ND	270.10+-	%	150
7/12/63	NA	ND	238.28+-	%	157
7/12/63	NA	ND	173.16+-	%	164

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
11/ 1/64	NA	ND	674.51+-	%	3
26/ 1/64	NA	ND	163.17+-	%	10
8/ 2/64	NA	ND	145.41+-	%	17
23/ 2/64	NA	ND	391.46+-	%	24
7/ 3/64	NA	ND	173.90+-	%	31
21/ 3/64	NA	ND	2096.42+-	%	38
8/ 4/64	NA	ND	410.33+-	%	45
25/ 4/64	NA	ND	721.87+-	%	52
10/ 5/64	NA	ND	338.18+-	%	59
24/ 5/64	NA	ND	954.60+-	%	66
7/ 6/64	NA	ND	1077.44+-	%	73
20/ 6/64	NA	ND	363.71+-	%	80
8/ 7/64	NA	ND	493.21+-	%	87
25/ 7/64	NA	ND	823.25+-	%	94
8/ 8/64	NA	ND	241.24+-	%	101
23/ 8/64	NA	ND	715.21+-	%	108
5/ 9/64	NA	ND	550.56+-	%	114
23/ 9/64	NA	ND	805.86+-	%	121
10/10/64	NA	ND	1088.17+-	%	127
25/10/64	NA	ND	456.95+-	%	133
8/11/64	NA	ND	361.86+-	%	139
22/11/64	NA	ND	634.92+-	%	145
6/12/64	NA	ND	763.31+-	%	151
16/12/64	NA	ND	556.48+-	%	157
9/ 1/65	NA	ND	450.29+-	%	181
23/ 1/65	NA	ND	385.54+-	%	187
6/ 2/65	NA	ND	202.39+-	%	169
20/ 2/65	NA	ND	230.14+-	%	175
6/ 3/65	NA	ND	556.85+-	%	157
24/ 3/65	NA	ND	350.76+-	%	163
10/ 4/65	NA	ND	475.45+-	%	145
24/ 4/65	NA	ND	244.57+-	%	151
8/ 5/65	NA	ND	237.54+-	%	133
22/ 5/65	NA	ND	512.45+-	%	139
5/ 6/65	NA	ND	449.92+-	%	127
10/ 7/65	NA	ND	326.34+-	%	116
21/ 7/65	NA	ND	809.56+-	%	121
7/ 8/65	NA	ND	495.43+-	%	104
21/ 8/65	NA	ND	478.78+-	%	110
8/ 9/65	NA	ND	334.48+-	%	92
25/ 9/65	NA	ND	1344.21+-	%	98
9/10/65	NA	ND	665.26+-	%	80
23/10/65	NA	ND	1152.55+-	%	86
7/11/65	NA	ND	1320.90+-	%	68
20/11/65	NA	ND	2057.57+-	%	74
8/12/65	NA	ND	1505.53+-	%	57
22/12/65	NA	ND	2333.22+-	%	63
12/ 1/66	NA	ND	675.25+-	%	137
26/ 1/66	NA	ND	1137.01+-	%	138

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
9/ 2/66	NA	ND	877.64+-	‰	139
23/ 2/66	NA	ND	3015.87+-	‰	140
9/ 3/66	NA	ND	863.58+-	‰	141
30/ 3/66	NA	ND	405.89+-	‰	142
13/ 4/66	NA	ND	1052.28+-	‰	143
27/ 4/66	NA	ND	450.66+-	‰	144
11/ 5/66	NA	ND	843.60+-	‰	145
25/ 5/66	NA	ND	1007.14+-	‰	146
15/ 6/66	NA	ND	967.92+-	‰	147
29/ 6/66	NA	ND	531.69+-	‰	148
13/ 7/66	NA	ND	326.71+-	‰	149
27/ 7/66	NA	ND	501.35+-	‰	150
10/ 8/66	NA	ND	709.29+-	‰	151
31/ 8/66	NA	ND	835.46+-	‰	129
14/ 9/66	NA	ND	897.25+-	‰	130
28/ 9/66	NA	ND	546.49+-	‰	131
12/10/66	NA	ND	873.57+-	‰	132
26/10/66	NA	ND	1244.68+-	‰	133
9/11/66	NA	ND	512.08+-	‰	134
23/11/66	NA	ND	241.61+-	‰	135
12/12/66	NA	ND	206.83+-	‰	136
11/ 1/67	NA	ND	75.48+-	‰	43
22/ 1/67	NA	ND	762.20+-	‰	44
5/ 2/67	NA	ND	617.90+-	‰	45
19/ 2/67	NA	ND	595.70+-	‰	46
8/ 3/67	NA	ND	717.80+-	‰	47
26/ 3/67	NA	ND	304.14+-	‰	48
9/ 4/67	NA	ND	301.18+-	‰	49
23/ 4/67	NA	ND	157.62+-	‰	50
7/ 5/67	NA	ND	254.56+-	‰	51
24/ 5/67	NA	ND	392.20+-	‰	52
11/ 6/67	NA	ND	884.30+-	‰	53
25/ 6/67	NA	ND	773.30+-	‰	54
9/ 7/67	NA	ND	1139.60+-	‰	55
23/ 7/67	NA	ND	2331.00+-	‰	56
6/ 8/67	NA	ND	1102.60+-	‰	57
23/ 8/67	NA	ND	984.20+-	‰	58
10/ 9/67	NA	ND	673.40+-	‰	59
24/ 9/67	NA	ND	862.10+-	‰	60
9/10/67	NA	ND	1058.20+-	‰	61
24/10/67	NA	ND	536.50+-	‰	62
7/11/67	NA	ND	326.71+-	‰	63
21/11/67	NA	ND	323.75+-	‰	64
5/12/67	NA	ND	373.70+-	‰	65
19/12/67	NA	ND	762.20+-	‰	66

Site 1 Sellafield

Station 39 W/A Shore

54°33' 1"N 3°35'56"W

26/ 1/63	NA	ND	101.75+-	‰	4
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**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
6/ 2/63	NA	ND	375.55+-	%	11
21/ 2/63	NA	ND	93.24+-	%	16
10/ 3/63	NA	ND	582.01+-	%	23
23/ 3/63	NA	ND	418.10+-	%	31
7/ 4/63	NA	ND	334.48+-	%	45
10/ 4/63	NA	ND	305.62+-	%	38
20/ 4/63	NA	ND	357.79+-	%	52
4/ 5/63	NA	ND	296.37+-	%	59
25/ 5/63	NA	ND	212.75+-	%	66
8/ 6/63	NA	ND	223.11+-	%	73
22/ 6/63	NA	ND	224.22+-	%	80
7/ 7/63	NA	ND	217.93+-	%	87
24/ 7/63	NA	ND	296.00+-	%	94
10/ 8/63	NA	ND	209.79+-	%	101
24/ 8/63	NA	ND	329.67+-	%	108
8/ 9/63	NA	ND	281.57+-	%	114
21/ 9/63	NA	ND	233.84+-	%	121
7/10/63	NA	ND	170.94+-	%	128
23/10/63	NA	ND	438.45+-	%	135
7/11/63	NA	ND	270.10+-	%	142
23/11/63	NA	ND	191.29+-	%	149
7/12/63	NA	ND	234.58+-	%	163
7/12/63	NA	ND	204.24+-	%	156
11/ 1/64	NA	ND	260.85+-	%	2
26/ 1/64	NA	ND	164.65+-	%	9
8/ 2/64	NA	ND	68.08+-	%	16
23/ 2/64	NA	ND	155.03+-	%	23
7/ 3/64	NA	ND	92.50+-	%	30
21/ 3/64	NA	ND	1792.65+-	%	37
8/ 4/64	NA	ND	182.78+-	%	44
25/ 4/64	NA	ND	216.45+-	%	51
10/ 5/64	NA	ND	339.66+-	%	58
24/ 5/64	NA	ND	285.27+-	%	65
7/ 6/64	NA	ND	358.16+-	%	72
20/ 6/64	NA	ND	290.82+-	%	79
8/ 7/64	NA	ND	302.66+-	%	86
25/ 7/64	NA	ND	291.56+-	%	93
8/ 8/64	NA	ND	419.95+-	%	100
23/ 8/64	NA	ND	756.65+-	%	107
5/ 9/64	NA	ND	507.27+-	%	113
23/ 9/64	NA	ND	718.91+-	%	120
10/10/64	NA	ND	1046.36+-	%	126
25/10/64	NA	ND	238.28+-	%	132
8/11/64	NA	ND	189.44+-	%	138
22/11/64	NA	ND	408.85+-	%	144
6/12/64	NA	ND	418.47+-	%	150
16/12/64	NA	ND	438.08+-	%	156
9/ 1/65	NA	ND	398.86+-	%	180
23/ 1/65	NA	ND	240.50+-	%	186

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
6/ 2/65	NA	ND	223.11+-	‰	168
20/ 2/65	NA	ND	169.09+-	‰	174
6/ 3/65	NA	ND	217.93+-	‰	156
24/ 3/65	NA	ND	320.42+-	‰	162
10/ 4/65	NA	ND	295.26+-	‰	144
24/ 4/65	NA	ND	200.54+-	‰	150
8/ 5/65	NA	ND	208.68+-	‰	132
22/ 5/65	NA	ND	245.68+-	‰	138
5/ 6/65	NA	ND	339.66+-	‰	126
10/ 7/65	NA	ND	258.26+-	‰	115
7/ 8/65	NA	ND	308.21+-	‰	103
21/ 8/65	NA	ND	419.95+-	‰	109
8/ 9/65	NA	ND	223.85+-	‰	91
25/ 9/65	NA	ND	796.24+-	‰	97
9/10/65	NA	ND	756.28+-	‰	79
23/10/65	NA	ND	295.63+-	‰	85
7/11/65	NA	ND	317.46+-	‰	67
20/11/65	NA	ND	194.25+-	‰	73
8/12/65	NA	ND	245.68+-	‰	56
22/12/65	NA	ND	752.95+-	‰	62
12/ 1/66	NA	ND	551.67+-	‰	114
26/ 1/66	NA	ND	516.89+-	‰	115
9/ 2/66	NA	ND	718.91+-	‰	116
23/ 2/66	NA	ND	415.14+-	‰	117
9/ 3/66	NA	ND	754.06+-	‰	118
30/ 3/66	NA	ND	489.51+-	‰	119
13/ 4/66	NA	ND	233.84+-	‰	120
27/ 4/66	NA	ND	223.11+-	‰	121
11/ 5/66	NA	ND	513.19+-	‰	122
25/ 5/66	NA	ND	634.92+-	‰	123
15/ 6/66	NA	ND	496.17+-	‰	124
29/ 6/66	NA	ND	440.30+-	‰	125
13/ 7/66	NA	ND	314.13+-	‰	126
27/ 7/66	NA	ND	239.76+-	‰	127
10/ 8/66	NA	ND	199.43+-	‰	128
31/ 8/66	NA	ND	554.26+-	‰	106
14/ 9/66	NA	ND	667.11+-	‰	107
28/ 9/66	NA	ND	394.05+-	‰	108
12/10/66	NA	ND	420.69+-	‰	109
26/10/66	NA	ND	417.36+-	‰	110
9/11/66	NA	ND	259.00+-	‰	111
23/11/66	NA	ND	210.90+-	‰	112
12/12/66	NA	ND	78.07+-	‰	113
11/ 1/67	NA	ND	113.22+-	‰	117
22/ 1/67	NA	ND	436.60+-	‰	121
15/10/68	NA	ND	725.20+-	‰	51
15/11/68	NA	ND	1084.47+-	‰	52

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
<i>Site 1 Sellafield</i>					
<i>Station 14 Maryport Outer Harbour 54°42'57"N 3°30'10"W</i>					
26/ 1/63	NA	ND	124.32+-	%	3
6/ 2/63	NA	ND	138.38+-	%	10
21/ 2/63	NA	ND	70.30+-	%	15
10/ 3/63	NA	ND	212.38+-	%	22
23/ 3/63	NA	ND	360.38+-	%	30
7/ 4/63	NA	ND	332.26+-	%	44
10/ 4/63	NA	ND	327.82+-	%	37
20/ 4/63	NA	ND	321.53+-	%	51
25/ 5/63	NA	ND	193.51+-	%	65
8/ 6/63	NA	ND	157.62+-	%	72
22/ 6/63	NA	ND	170.94+-	%	79
7/ 7/63	NA	ND	221.63+-	%	86
24/ 7/63	NA	ND	190.92+-	%	93
10/ 8/63	NA	ND	190.92+-	%	100
24/ 8/63	NA	ND	120.99+-	%	107
8/ 9/63	NA	ND	236.06+-	%	113
21/ 9/63	NA	ND	201.28+-	%	120
7/10/63	NA	ND	162.43+-	%	127
23/10/63	NA	ND	169.46+-	%	134
7/11/63	NA	ND	137.27+-	%	141
23/11/63	NA	ND	59.94+-	%	148
7/12/63	NA	ND	187.22+-	%	155
7/12/63	NA	ND	198.69+-	%	162
11/ 1/64	NA	ND	218.67+-	%	1
26/ 1/64	NA	ND	172.79+-	%	8
8/ 2/64	NA	ND	118.03+-	%	15
23/ 2/64	NA	ND	105.82+-	%	22
7/ 3/64	NA	ND	93.98+-	%	29
21/ 3/64	NA	ND	97.31+-	%	36
8/ 4/64	NA	ND	138.75+-	%	43
25/ 4/64	NA	ND	125.06+-	%	50
10/ 5/64	NA	ND	226.81+-	%	57
24/ 5/64	NA	ND	257.89+-	%	64
7/ 6/64	NA	ND	258.26+-	%	71
20/ 6/64	NA	ND	271.58+-	%	78
8/ 7/64	NA	ND	230.51+-	%	85
25/ 7/64	NA	ND	254.93+-	%	92
8/ 8/64	NA	ND	408.48+-	%	99
23/ 8/64	NA	ND	301.92+-	%	106
5/ 9/64	NA	ND	384.80+-	%	112
23/ 9/64	NA	ND	409.22+-	%	119
10/10/64	NA	ND	224.96+-	%	125
25/10/64	NA	ND	282.68+-	%	131
8/11/64	NA	ND	225.70+-	%	137
22/11/64	NA	ND	544.27+-	%	143
6/12/64	NA	ND	253.82+-	%	149
16/12/64	NA	ND	414.77+-	%	155

**Annex 1 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
9/ 1/65	NA	ND	315.24+-	⊗	179
23/ 1/65	NA	ND	207.20+-	⊗	185
6/ 2/65	NA	ND	222.74+-	⊗	167
20/ 2/65	NA	ND	136.90+-	⊗	173
6/ 3/65	NA	ND	159.47+-	⊗	155
24/ 3/65	NA	ND	159.47+-	⊗	161
10/ 4/65	NA	ND	300.81+-	⊗	143
24/ 4/65	NA	ND	229.77+-	⊗	149
8/ 5/65	NA	ND	190.18+-	⊗	131
22/ 5/65	NA	ND	173.90+-	⊗	137
5/ 6/65	NA	ND	173.16+-	⊗	125
10/ 7/65	NA	ND	294.89+-	⊗	114
21/ 7/65	NA	ND	336.33+-	⊗	120
7/ 8/65	NA	ND	271.95+-	⊗	102
21/ 8/65	NA	ND	272.69+-	⊗	108
8/ 9/65	NA	ND	244.94+-	⊗	90
25/ 9/65	NA	ND	236.06+-	⊗	96
9/10/65	NA	ND	191.29+-	⊗	78
23/10/65	NA	ND	261.96+-	⊗	84
7/11/65	NA	ND	166.13+-	⊗	66
20/11/65	NA	ND	169.09+-	⊗	72
8/12/65	NA	ND	110.63+-	⊗	55
22/12/65	NA	ND	305.62+-	⊗	61
12/ 1/66	NA	ND	754.06+-	⊗	91
26/ 1/66	NA	ND	579.79+-	⊗	92
9/ 2/66	NA	ND	601.99+-	⊗	93
23/ 2/66	NA	ND	440.30+-	⊗	94
19/ 3/66	NA	ND	566.84+-	⊗	95
30/ 3/66	NA	ND	498.76+-	⊗	96
13/ 4/66	NA	ND	224.22+-	⊗	97
27/ 4/66	NA	ND	234.95+-	⊗	98
11/ 5/66	NA	ND	404.41+-	⊗	99
25/ 5/66	NA	ND	523.92+-	⊗	100
13/ 6/66	NA	ND	394.42+-	⊗	103
15/ 6/66	NA	ND	436.23+-	⊗	101
29/ 6/66	NA	ND	846.19+-	⊗	102
27/ 7/66	NA	ND	335.59+-	⊗	104
10/ 8/66	NA	ND	186.85+-	⊗	105
31/ 8/66	NA	ND	330.78+-	⊗	83
14/ 9/66	NA	ND	308.95+-	⊗	84
28/ 9/66	NA	ND	333.74+-	⊗	85
12/10/66	NA	ND	305.99+-	⊗	86
26/10/66	NA	ND	325.97+-	⊗	87
9/11/66	NA	ND	216.08+-	⊗	88
23/11/66	NA	ND	199.06+-	⊗	89
12/12/66	NA	ND	112.85+-	⊗	90
11/ 1/67	NA	ND	98.05+-	⊗	116
22/ 1/67	NA	ND	136.90+-	⊗	120

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
<i>Site 1 Sellafield</i>					
<i>Station 15 Maryport Shore</i>					
			54°44'30"N 3°27'26"W		
4/ 5/63	NA	ND	414.40+-	%	58
<i>Site 10 Hunterston</i>					
<i>Station 6 Fish Farm 1</i>					
			55°43'25"N 4°53'42"W		
10/ 2/67	NA	ND	59.94+-	%	1
4/ 4/67	NA	ND	51.43+-	%	2
<i>Site 10 Hunterston</i>					
<i>Station 1 PLZ (Shore Samples)</i>					
			55°43'25"N 4°53'59"W		
15/ 3/68	NA	ND	114.33+-	%	1
16/ 5/68	NA	ND	88.80+-	%	2
10/ 9/68	NA	ND	111.74+-	%	3
15/11/68	NA	ND	109.52+-	%	4
<i>Site 15 Dounreay</i>					
<i>Station 110 Sandside Bay</i>					
			58°34'12"N 3°47'30"W		
15/10/62	NA	ND	228.66+-	%	1
15/11/62	NA	ND	71.78+-	%	2
8/12/62	NA	ND	43.29+-	%	3
23/12/62	NA	ND	86.58+-	%	4
21/ 2/63	NA	ND	503.94+-	%	169
8/ 1/65	NA	ND	48.47+-	%	306
23/ 1/65	NA	ND	294.52+-	%	307
8/ 2/65	NA	ND	70.30+-	%	308
23/ 2/65	NA	ND	199.06+-	%	309
8/ 3/65	NA	ND	51.06+-	%	310
23/ 3/65	NA	ND	19.61+-	%	311
8/ 4/65	NA	ND	16.28+-	%	312
23/ 4/65	NA	ND	108.41+-	%	313
8/ 5/65	NA	ND	102.49+-	%	314
23/ 5/65	NA	ND	91.02+-	%	315
8/ 6/65	NA	ND	93.98+-	%	316
23/ 6/65	NA	ND	118.03+-	%	317
8/ 7/65	NA	ND	934.99+-	%	294
23/ 7/65	NA	ND	332.26+-	%	295
8/ 8/65	NA	ND	122.84+-	%	296
23/ 8/65	NA	ND	90.28+-	%	297
8/ 9/65	NA	ND	173.53+-	%	298
23/ 9/65	NA	ND	230.14+-	%	299
8/10/65	NA	ND	356.68+-	%	300
23/10/65	NA	ND	204.61+-	%	301
8/11/65	NA	ND	139.12+-	%	302

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
23/11/65	NA	ND	421.80+-	%	303
8/12/65	NA	ND	62.90+-	%	304
23/12/65	NA	ND	65.86+-	%	305
15/ 1/66	NA	ND	88.80+-	%	71
15/ 1/66	NA	ND	88.80+-	%	24
31/ 1/66	NA	ND	391.46+-	%	25
31/ 1/66	NA	ND	391.46+-	%	72
15/ 2/66	NA	ND	186.11+-	%	26
15/ 2/66	NA	ND	186.11+-	%	73
28/ 2/66	NA	ND	106.19+-	%	27
28/ 2/66	NA	ND	106.19+-	%	74
15/ 3/66	NA	ND	52.54+-	%	28
15/ 3/66	NA	ND	52.54+-	%	75
31/ 3/66	NA	ND	77.70+-	%	29
31/ 3/66	NA	ND	77.70+-	%	76
15/ 4/66	NA	ND	92.50+-	%	30
15/ 4/66	NA	ND	92.50+-	%	77
30/ 4/66	NA	ND	127.28+-	%	31
30/ 4/66	NA	ND	127.28+-	%	78
15/ 5/66	NA	ND	87.69+-	%	79
15/ 5/66	NA	ND	87.69+-	%	32
31/ 5/66	NA	ND	154.29+-	%	80
31/ 5/66	NA	ND	154.29+-	%	33
15/ 6/66	NA	ND	185.00+-	%	81
15/ 6/66	NA	ND	185.00+-	%	34
30/ 6/66	NA	ND	63.27+-	%	82
30/ 6/66	NA	ND	63.27+-	%	35
15/ 7/66	NA	ND	78.07+-	%	16
15/ 7/66	NA	ND	78.07+-	%	59
31/ 7/66	NA	ND	84.36+-	%	60
31/ 7/66	NA	ND	84.36+-	%	17
15/ 8/66	NA	ND	185.74+-	%	18
15/ 8/66	NA	ND	185.74+-	%	61
31/ 8/66	NA	ND	159.10+-	%	19
31/ 8/66	NA	ND	159.10+-	%	62
15/ 9/66	NA	ND	60.31+-	%	63
15/ 9/66	NA	ND	60.31+-	%	20
30/ 9/66	NA	ND	83.25+-	%	21
30/ 9/66	NA	ND	83.25+-	%	64
15/10/66	NA	ND	101.75+-	%	22
15/10/66	NA	ND	101.75+-	%	65
31/10/66	NA	ND	70.30+-	%	66
31/10/66	NA	ND	70.30+-	%	23
15/11/66	NA	ND	93.61+-	%	67
30/11/66	NA	ND	22.61+-	%	68
15/12/66	NA	ND	39.59+-	%	69
24/12/66	NA	ND	42.18+-	%	70
8/ 1/67	NA	ND	241.98+-	%	22
24/ 1/67	NA	ND	89.91+-	%	23

**Annex 1 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
shoreline sampling, 1962-69**

Collection date	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
22/ 2/67	NA	ND	120.25+-	‰	24
24/ 3/67	NA	ND	157.99+-	‰	25
8/ 4/67	NA	ND	116.92+-	‰	26
23/ 4/67	NA	ND	69.56+-	‰	27
8/ 5/67	NA	ND	545.75+-	‰	28
24/ 5/67	NA	ND	203.50+-	‰	29
8/ 6/67	NA	ND	69.56+-	‰	30
23/ 6/67	NA	ND	741.85+-	‰	31
8/ 7/67	NA	ND	94.72+-	‰	32
24/ 7/67	NA	ND	1408.59+-	‰	33
8/ 8/67	NA	ND	97.68+-	‰	34
24/ 8/67	NA	ND	348.54+-	‰	35
8/ 9/67	NA	ND	250.49+-	‰	36
23/ 9/67	NA	ND	335.22+-	‰	37
8/10/67	NA	ND	164.28+-	‰	38
24/10/67	NA	ND	551.67+-	‰	39
8/11/67	NA	ND	359.64+-	‰	40
23/11/67	NA	ND	37.74+-	‰	41
8/12/67	NA	ND	62.16+-	‰	42

**ANNEX 2. CONCENTRATIONS OF  $^{134}\text{Cs}$  AND  $^{137}\text{Cs}$  IN FILTERED SEA WATER ( $\text{Bq m}^{-3}$ ):  
ROUTINE OFFSHORE SAMPLING, 1962-69**

**Annex 2. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ): routine offshore sampling, 1962-69**

Collection date	Station	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
<i>Site 50 St Georges Channel</i>							
<i>Station 2 Fishguard-Rosslare 2</i>							
			52°10' 0"N	5°40' 0"W			
28/10/64		3	NA	ND	11.84+-	%	268
<i>Site 37 File C</i>							
<i>Station 2 Liverpool-Dublin 1</i>							
			53°23' 0"N	3°19' 0"W			
22/ 2/68		0	NA	ND	79.18+-	%	106
19/ 3/68		0	NA	ND	423.65+-	%	107
18/ 4/68		0	NA	ND	344.10+-	%	108
13/ 5/68		0	NA	ND	325.23+-	%	109
10/ 6/68		0	NA	ND	189.44+-	%	110
7/ 7/68		0	NA	ND	293.04+-	%	111
9/ 9/68		0	NA	ND	251.60+-	%	112
19/ 9/68		0	NA	ND	421.06+-	%	113
27/10/68		0	NA	ND	141.34+-	%	114
28/10/68		0	NA	ND	210.16+-	%	115
8/11/68		0	NA	ND	112.11+-	%	116
<i>Site 17 WA Sea Trip</i>							
<i>Station 26</i>							
			54°11' 30"N	3°16' 0"W			
24/ 5/64		0	NA	ND	351.50+-	%	203
27/ 8/64		0	NA	ND	417.73+-	%	226
19/ 5/65		0	NA	ND	310.80+-	%	219
13/ 8/65		0	NA	ND	260.85+-	%	243
3/ 3/66		0	NA	ND	314.50+-	%	273
<i>Site 17 WA Sea Trip</i>							
<i>Station 25</i>							
			54°11' 0"N	3°18' 24"W			
24/ 5/64		0	NA	ND	187.59+-	%	202
19/ 5/65		0	NA	ND	247.53+-	%	220
13/ 8/65		0	NA	ND	317.09+-	%	244
<i>Site 17 WA Sea Trip</i>							
<i>Station 7</i>							
			54°10' 30"N	3°26' 0"W			
15/ 8/63		0	NA	ND	158.36+-	%	198
15/11/63		0	NA	ND	180.56+-	%	219
8/ 3/64		0	NA	ND	111.74+-	%	200
24/ 5/64		0	NA	ND	175.75+-	%	201
27/ 8/64		0	NA	ND	570.17+-	%	224
21/11/64		0	NA	ND	362.60+-	%	264
19/ 5/65		0	NA	ND	222.74+-	%	221

**Annex 2 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
13/ 8/65	0	NA	ND	488.03+-	%	245
26/10/65	0	NA	ND	381.10+-	%	269
<i>Site 17 WA Sea Trip</i>						
<i>Station 6</i>						
			54°12' 0"N	3°38'36"W		
15/11/63	0	NA	ND	111.74+-	%	218
8/ 3/64	0	NA	ND	234.95+-	%	199
24/ 5/64	0	NA	ND	207.94+-	%	220
27/ 8/64	0	NA	ND	286.75+-	%	225
21/11/64	0	NA	ND	171.68+-	%	263
19/ 5/65	0	NA	ND	198.69+-	%	222
13/ 8/65	0	NA	ND	249.01+-	%	246
26/10/65	0	NA	ND	287.86+-	%	270
3/ 3/66	0	NA	ND	299.33+-	%	274
<i>Site 17 WA Sea Trip</i>						
<i>Station 8</i>						
			54°15'36"N	3°26'30"W		
3/ 3/63	0	NA	ND	555.74+-	%	170
16/ 5/63	0	NA	ND	223.85+-	%	183
15/ 8/63	0	NA	ND	514.67+-	%	199
15/11/63	0	NA	ND	217.56+-	%	220
8/ 3/64	0	NA	ND	658.60+-	%	198
24/ 5/64	0	NA	ND	514.30+-	%	204
27/ 8/64	0	NA	ND	244.94+-	%	227
21/11/64	0	NA	ND	1391.57+-	%	262
19/ 5/65	0	NA	ND	578.68+-	%	218
13/ 8/65	0	NA	ND	388.87+-	%	242
26/10/65	0	NA	ND	1713.84+-	%	268
3/ 3/66	0	NA	ND	346.32+-	%	272
18/ 5/66	0	NA	ND	255.30+-	%	304
28/10/66	0	NA	ND	685.61+-	%	306
<i>Site 17 WA Sea Trip</i>						
<i>Station 9</i>						
			54°19'42"N	3°30'30"W		
3/ 3/63	0	NA	ND	678.58+-	%	172
16/ 5/63	0	NA	ND	349.28+-	%	184
15/ 8/63	0	NA	ND	366.30+-	%	200
15/11/63	0	NA	ND	380.73+-	%	221
8/ 3/64	0	NA	ND	1320.90+-	%	196
24/ 5/64	0	NA	ND	683.39+-	%	206

**Annex 2 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity depth (m) (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
20/11/64	0	NA	ND	1974.69+-	%	260
19/ 5/65	0	NA	ND	1396.38+-	%	217
12/ 8/65	0	NA	ND	646.76+-	%	241
26/10/65	0	NA	ND	1033.41+-	%	267
3/ 3/66	0	NA	ND	338.92+-	%	271
18/ 5/66	0	NA	ND	284.16+-	%	303
25/10/66	0	NA	ND	667.85+-	%	323
<i>Site 17 WA Sea Trip</i>						
<i>Station 11</i>						
			54°18'24"N	3°34'30"W		
15/ 8/63	0	NA	ND	134.68+-	%	202
15/11/63	0	NA	ND	439.56+-	%	223
8/ 3/64	0	NA	ND	154.29+-	%	194
24/ 5/64	0	NA	ND	346.32+-	%	209
28/ 8/64	0	NA	ND	170.57+-	%	243
20/11/64	0	NA	ND	781.81+-	%	258
19/ 5/65	0	NA	ND	563.14+-	%	215
12/ 8/65	0	NA	ND	313.39+-	%	239
25/10/65	0	NA	ND	527.25+-	%	265
1/ 3/66	0	NA	ND	380.73+-	%	291
18/ 5/66	0	NA	ND	220.52+-	%	302
25/10/66	0	NA	ND	339.29+-	%	321
<i>Site 17 WA Sea Trip</i>						
<i>Station 10</i>						
			54°21'24"N	3°28'48"W		
3/ 3/63	0	NA	ND	1028.23+-	%	171
16/ 5/63	0	NA	ND	239.02+-	%	185
15/ 8/63	0	NA	ND	448.44+-	%	201
15/11/63	0	NA	ND	373.70+-	%	222
8/ 3/64	0	NA	ND	1462.98+-	%	195
24/ 5/64	0	NA	ND	1140.71+-	%	205
20/11/64	0	NA	ND	2402.04+-	%	259
19/ 5/65	0	NA	ND	1726.05+-	%	216
13/ 8/65	0	NA	ND	421.06+-	%	240
26/10/65	0	NA	ND	2418.32+-	%	266
3/ 3/66	0	NA	ND	396.27+-	%	270
25/10/66	0	NA	ND	888.00+-	%	322

**Annex 2 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity depth (m) (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
<i>Site 17 WA Sea Trip</i>						
<i>Station 12</i>						
			54°21'54"N	3°28'30"W		
3/ 3/63	0	NA	ND	832.87+-	%	174
16/ 5/63	0	NA	ND	413.66+-	%	186
15/ 8/63	0	NA	ND	147.26+-	%	203
15/11/63	0	NA	ND	660.82+-	%	224
8/ 3/64	0	NA	ND	869.50+-	%	193
24/ 5/64	0	NA	ND	764.05+-	%	208
28/ 8/64	0	NA	ND	271.21+-	%	242
20/11/64	0	NA	ND	701.89+-	%	257
27/ 3/65	0	NA	ND	404.78+-	%	203
19/ 5/65	0	NA	ND	1217.30+-	%	214
12/ 8/65	0	NA	ND	455.10+-	%	238
25/10/65	0	NA	ND	2195.58+-	%	264
1/ 3/66	0	NA	ND	778.85+-	%	290
18/ 5/66	0	NA	ND	351.50+-	%	301
25/10/66	0	NA	ND	826.95+-	%	320
<i>Site 17 WA Sea Trip</i>						
<i>Station 13</i>						
			54°22'36"N	3°30' 0"W		
3/ 3/63	0	NA	ND	1992.08+-	%	173
16/ 5/63	0	NA	ND	447.70+-	%	187
15/ 8/63	0	NA	ND	515.78+-	%	204
15/11/63	0	NA	ND	675.62+-	%	225
8/ 3/64	0	NA	ND	1324.60+-	%	192
24/ 5/64	0	NA	ND	2227.40+-	%	207
28/ 8/64	0	NA	ND	564.25+-	%	241
20/11/64	0	NA	ND	1095.94+-	%	256
27/ 3/65	0	NA	ND	324.12+-	%	202
19/ 5/65	0	NA	ND	1522.55+-	%	213
12/ 8/65	0	NA	ND	581.27+-	%	237
25/10/65	0	NA	ND	5945.90+-	%	263
1/ 3/66	0	NA	ND	1130.35+-	%	288
1/ 3/66	0	NA	ND	1063.38+-	%	289
18/ 5/66	0	NA	ND	908.35+-	%	300
25/10/66	0	NA	ND	1302.40+-	%	319
<i>Site 17 WA Sea Trip</i>						
<i>Station 16</i>						
			54°23'48"N	3°32' 6"W		
3/ 3/63	0	NA	ND	496.91+-	%	175
16/ 5/63	0	NA	ND	453.62+-	%	189

**Annex 2 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
15/ 8/63	0	NA	ND	301.92+-	%	207
15/11/63	0	NA	ND	2254.04+-	%	228
24/ 5/64	0	NA	ND	3512.41+-	%	210
28/ 8/64	0	NA	ND	1093.35+-	%	240
20/11/64	0	NA	ND	1457.43+-	%	255
27/ 3/65	0	NA	ND	403.67+-	%	201
18/ 5/65	0	NA	ND	1476.30+-	%	212
12/ 8/65	0	NA	ND	1176.23+-	%	236
25/10/65	0	NA	ND	4132.90+-	%	262
1/ 3/66	0	NA	ND	450.66+-	%	287
25/10/66	0	NA	ND	1421.91+-	%	316
<i>Site 17 WA Sea Trip</i>						
<i>Station 15</i>						
			$54^{\circ}22'30''\text{N}$	$3^{\circ}35' 6''\text{W}$		
16/ 5/63	0	NA	ND	317.83+-	%	188
15/ 8/63	0	NA	ND	156.14+-	%	206
15/11/63	0	NA	ND	404.04+-	%	227
8/ 3/64	0	NA	ND	106.93+-	%	191
24/ 5/64	0	NA	ND	542.79+-	%	213
20/11/64	0	NA	ND	640.84+-	%	254
1/ 3/66	0	NA	ND	1393.42+-	%	286
25/10/66	0	NA	ND	2035.74+-	%	318
<i>Site 17 WA Sea Trip</i>						
<i>Station 5</i>						
			$54^{\circ}20'24''\text{N}$	$3^{\circ}45'30''\text{W}$		
15/11/63	0	NA	ND	78.44+-	%	217
9/ 3/64	0	NA	ND	136.90+-	%	197
24/ 5/64	0	NA	ND	142.08+-	%	221
27/ 8/64	0	NA	ND	128.39+-	%	228
21/11/64	0	NA	ND	214.97+-	%	261
19/ 5/65	0	NA	ND	258.63+-	%	223
13/ 8/65	0	NA	ND	200.54+-	%	247
3/ 3/66	0	NA	ND	184.63+-	%	275
28/10/66	0	NA	ND	179.08+-	%	307
<i>Site 17 WA Sea Trip</i>						
<i>Station 18</i>						
			$54^{\circ}23'54''\text{N}$	$3^{\circ}36'36''\text{W}$		
3/ 3/63	0	NA	ND	74.37+-	%	177
16/ 5/63	0	NA	ND	313.02+-	%	191

**Annex 2 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
15/ 8/63	0	NA	ND	217.56+-	%	209
15/11/63	0	NA	ND	736.67+-	%	230
8/ 3/64	0	NA	ND	2046.47+-	%	190
24/ 5/64	0	NA	ND	3849.11+-	%	212
28/ 8/64	0	NA	ND	469.90+-	%	239
20/11/64	0	NA	ND	1776.74+-	%	253
27/ 3/65	0	NA	ND	464.35+-	%	200
18/ 5/65	0	NA	ND	1156.62+-	%	211
12/ 8/65	0	NA	ND	1692.38+-	%	233
25/10/65	0	NA	ND	4084.80+-	%	261
1/ 3/66	0	NA	ND	2640.69+-	%	285
25/10/66	0	NA	ND	1759.72+-	%	317
<i>Site 17 WA Sea Trip</i>						
<i>Station 14</i>						
<i>54°23'24"N 3°40'54"W</i>						
15/ 8/63	0	NA	ND	145.78+-	%	205
15/11/63	0	NA	ND	268.62+-	%	226
8/ 3/64	0	NA	ND	95.09+-	%	187
24/ 5/64	0	NA	ND	387.02+-	%	217
28/ 8/64	0	NA	ND	315.98+-	%	236
20/11/64	0	NA	ND	391.46+-	%	250
27/ 3/65	0	NA	ND	433.27+-	%	197
18/ 5/65	0	NA	ND	607.54+-	%	208
12/ 8/65	0	NA	ND	363.71+-	%	232
25/10/65	0	NA	ND	452.51+-	%	255
1/ 3/66	0	NA	ND	537.98+-	%	282
18/ 5/66	0	NA	ND	241.98+-	%	298
25/10/66	0	NA	ND	219.04+-	%	311
<i>Site 17 WA Sea Trip</i>						
<i>Station 17</i>						
<i>54°24' 6"N 3°33'24"W</i>						
3/ 3/63	0	NA	ND	970.51+-	%	176
16/ 5/63	0	NA	ND	412.18+-	%	190
15/ 8/63	0	NA	ND	567.95+-	%	208
15/11/63	0	NA	ND	798.83+-	%	229
8/ 3/64	0	NA	ND	1499.98+-	%	189
24/ 5/64	0	NA	ND	2295.11+-	%	211
28/ 8/64	0	NA	ND	1457.43+-	%	238
20/11/64	0	NA	ND	3364.04+-	%	252
27/ 3/65	0	NA	ND	440.30+-	%	199

**Annex 2 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity depth (m) (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
18/ 5/65	0	NA	ND	2552.26+-	%	210
12/ 8/65	0	NA	ND	4136.60+-	%	235
25/10/65	0	NA	ND	2773.89+-	%	260
1/ 3/66	0	NA	ND	662.67+-	%	284
18/ 5/66	0	NA	ND	365.93+-	%	299
25/10/66	0	NA	ND	3196.06+-	%	315
<i>Site 17 WA Sea Trip</i>						
<i>Station 24</i>						
			54°24'54"N	3°33' 0"W		
3/ 3/63	0	NA	ND	963.11+-	%	178
16/ 5/63	0	NA	ND	341.14+-	%	197
15/ 8/63	0	NA	ND	257.15+-	%	215
15/11/63	0	NA	ND	710.40+-	%	236
8/ 3/64	0	NA	ND	2815.70+-	%	188
24/ 5/64	0	NA	ND	4832.20+-	%	214
28/ 8/64	0	NA	ND	2069.04+-	%	237
20/11/64	0	NA	ND	2040.92+-	%	251
27/ 3/65	0	NA	ND	441.78+-	%	198
18/ 5/65	0	NA	ND	1927.70+-	%	209
12/ 8/65	0	NA	ND	1793.39+-	%	234
25/10/65	0	NA	ND	5217.00+-	%	259
25/10/65	0	NA	ND	5505.60+-	%	258
1/ 3/66	0	NA	ND	1461.50+-	%	283
25/10/66	0	NA	ND	2079.77+-	%	314
<i>Site 17 WA Sea Trip</i>						
<i>Station 19</i>						
			54°25'12"N	3°36'54"W		
3/ 3/63	0	NA	ND	86.95+-	%	180
16/ 5/63	0	NA	ND	234.21+-	%	192
15/ 8/63	0	NA	ND	247.53+-	%	210
15/11/63	0	NA	ND	242.72+-	%	231
8/ 3/64	0	NA	ND	696.71+-	%	186
24/ 5/64	0	NA	ND	659.71+-	%	216
28/ 8/64	0	NA	ND	751.10+-	%	235
20/11/64	0	NA	ND	525.03+-	%	249
27/ 3/65	0	NA	ND	186.85+-	%	196
18/ 5/65	0	NA	ND	1652.05+-	%	207
12/ 8/65	0	NA	ND	705.59+-	%	231
25/10/65	0	NA	ND	391.09+-	%	256
1/ 3/66	0	NA	ND	663.04+-	%	281
18/ 5/66	0	NA	ND	296.37+-	%	297

**Annex 2 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity depth (m) (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
25/10/66	0	NA	ND	852.11+-	%	312
<i>Site 17 WA Sea Trip</i>						
<i>Station 20</i>						
			54°26'30"N	3°34'54"W		
3/ 3/63	0	NA	ND	908.72+-	%	179
16/ 5/63	0	NA	ND	261.59+-	%	193
15/ 8/63	0	NA	ND	304.88+-	%	211
15/11/63	0	NA	ND	428.83+-	%	232
8/ 3/64	0	NA	ND	710.40+-	%	185
24/ 5/64	0	NA	ND	5120.80+-	%	215
28/ 8/64	0	NA	ND	909.09+-	%	234
20/11/64	0	NA	ND	637.88+-	%	248
27/ 3/65	0	NA	ND	390.72+-	%	195
18/ 5/65	0	NA	ND	1599.51+-	%	206
12/ 8/65	0	NA	ND	538.72+-	%	230
25/10/65	0	NA	ND	2657.34+-	%	257
1/ 3/66	0	NA	ND	954.23+-	%	280
17/ 5/66	0	NA	ND	1681.28+-	%	292
18/ 5/66	0	NA	ND	2617.75+-	%	296
25/10/66	0	NA	ND	1889.22+-	%	313
<i>Site 17 WA Sea Trip</i>						
<i>Station 21</i>						
			54°26'36"N	3°42'36"W		
3/ 3/63	0	NA	ND	88.43+-	%	182
16/ 5/63	0	NA	ND	119.14+-	%	194
15/ 8/63	0	NA	ND	159.47+-	%	212
15/11/63	0	NA	ND	239.02+-	%	233
8/ 3/64	0	NA	ND	94.35+-	%	183
24/ 5/64	0	NA	ND	488.40+-	%	218
28/ 8/64	0	NA	ND	719.28+-	%	233
20/11/64	0	NA	ND	324.86+-	%	246
27/ 3/65	0	NA	ND	197.21+-	%	193
18/ 5/65	0	NA	ND	1064.12+-	%	205
12/ 8/65	0	NA	ND	533.17+-	%	229
25/10/65	0	NA	ND	331.15+-	%	254
1/ 3/66	0	NA	ND	741.85+-	%	278
18/ 5/66	0	NA	ND	384.80+-	%	294
25/10/66	0	NA	ND	402.19+-	%	310

**Annex 2 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
<i>Site 17 WA Sea Trip</i>						
<i>Station 22</i>						
			<i>54°28'30"N 3°36'42"W</i>			
3/ 3/63	0	NA	ND	65.12+-	%	181
16/ 5/63	0	NA	ND	278.98+-	%	195
15/ 8/63	0	NA	ND	192.40+-	%	213
15/11/63	0	NA	ND	251.97+-	%	234
8/ 3/64	0	NA	ND	142.45+-	%	182
24/ 5/64	0	NA	ND	550.56+-	%	219
28/ 8/64	0	NA	ND	664.89+-	%	232
20/11/64	0	NA	ND	359.27+-	%	245
27/ 3/65	0	NA	ND	213.86+-	%	192
18/ 5/65	0	NA	ND	1056.72+-	%	204
12/ 8/65	0	NA	ND	1141.82+-	%	228
25/10/65	0	NA	ND	325.60+-	%	253
1/ 3/66	0	NA	ND	716.32+-	%	279
18/ 5/66	0	NA	ND	1535.13+-	%	295
25/10/66	0	NA	ND	506.53+-	%	309
<i>Site 17 WA Sea Trip</i>						
<i>Station 3</i>						
			<i>54°29'36"N 3°58' 0"W</i>			
15/11/63	0	NA	ND	157.99+-	%	216
8/ 3/64	0	NA	ND	842.49+-	%	184
24/ 5/64	0	NA	ND	239.02+-	%	222
27/ 8/64	0	NA	ND	153.92+-	%	229
21/11/64	0	NA	ND	353.72+-	%	244
27/ 3/65	0	NA	ND	550.93+-	%	194
19/ 5/65	0	NA	ND	328.93+-	%	224
13/ 8/65	0	NA	ND	296.74+-	%	248
10/11/65	0	NA	ND	360.01+-	%	271
3/ 3/66	0	NA	ND	181.30+-	%	276
28/10/66	0	NA	ND	292.30+-	%	308
<i>Site 17 WA Sea Trip</i>						
<i>Station 23</i>						
			<i>54°33'18"N 3°41' 0"W</i>			
16/ 5/63	0	NA	ND	280.46+-	%	196
15/ 8/63	0	NA	ND	132.09+-	%	214
15/11/63	0	NA	ND	240.13+-	%	235
8/ 3/64	0	NA	ND	91.02+-	%	181
28/ 8/64	0	NA	ND	640.47+-	%	231
20/11/64	0	NA	ND	371.85+-	%	247

**Annex 2 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
27/ 3/65	0	NA	ND	340.40+-	%	191
25/10/65	0	NA	ND	286.38+-	%	252
1/ 3/66	0	NA	ND	813.26+-	%	277
18/ 5/66	0	NA	ND	394.05+-	%	293
28/10/66	0	NA	ND	304.51+-	%	305
Site 17 WA Sea Trip						
Station 29		54°34' 0"N 3°40' 0"W				
24/ 5/64	0	NA	ND	268.99+-	%	223
28/ 8/64	0	NA	ND	577.57+-	%	230
21/ 5/65	0	NA	ND	160.21+-	%	227
14/ 8/65	0	NA	ND	331.52+-	%	251
Site 17 WA Sea Trip						
Station 28		54°45' 0"N 3°49' 20"W				
21/ 5/65	0	NA	ND	134.68+-	%	226
14/ 8/65	0	NA	ND	241.61+-	%	250
Site 17 WA Sea Trip						
Station 27		54°43' 0"N 4°13' 0"W				
21/ 5/65	0	NA	ND	149.48+-	%	225
13/ 8/65	0	NA	ND	205.35+-	%	249
Site 49 North Channel						
Station 2 Mid Channel		54°56' 0"N 5°28' 0"W				
20/ 9/64	3	NA	ND	51.06+-	%	267
Site 46 NEA weather ships						
Station 1 Station A		55°15' 0"N 5°50' 0"W				
12/12/67	0	NA	ND	74.37+-	%	148
Site 46 NEA weather ships						
Station 2 Station B		55°27' 0"N 6°30' 0"W				
12/12/67	0	NA	ND	65.49+-	%	149
Site 46 NEA weather ships						
Station 4 Station D		55°55' 0"N 10°30' 0"W				
13/12/67	0	NA	ND	17.39+-	%	150

**Annex 2 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity depth (m) (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
<i>Site 47 NEA Challenger line</i>						
<i>Station 1 Challenger St 1</i>						
		56°40' 0"N	6° 8' 0"W			
12/12/67	3	NA	ND	94.72+-	%	193
<i>Site 47 NEA Challenger line</i>						
<i>Station 2 Challenger St 2</i>						
		56°41' 0"N	6°18' 0"W			
12/12/67	3	NA	ND	74.37+-	%	194
<i>Site 47 NEA Challenger line</i>						
<i>Station 3 Challenger St 3</i>						
		56°44' 0"N	6°27' 0"W			
12/12/67	3	NA	ND	65.49+-	%	195
<i>Site 47 NEA Challenger line</i>						
<i>Station 4 Challenger St 4</i>						
		56°44' 0"N	6°45' 0"W			
12/12/67	3	NA	ND	17.39+-	%	196
<i>Site 15 Dounreay</i>						
<i>Station 125 PLZ Offshore</i>						
		58°35' 0"N	3°46' 0"W			
12/ 1/65	0	NA	ND	88.43+-	%	285
7/ 2/65	0	NA	ND	52.54+-	%	286
25/ 2/65	0	NA	ND	236.43+-	%	287
9/ 3/65	0	NA	ND	129.13+-	%	288
28/ 4/65	0	NA	ND	251.23+-	%	289
8/ 5/65	0	NA	ND	68.45+-	%	290
22/ 5/65	0	NA	ND	127.28+-	%	291
10/ 6/65	0	NA	ND	146.52+-	%	292
30/ 6/65	0	NA	ND	171.31+-	%	293
5/ 7/65	0	NA	ND	972.73+-	%	272
14/ 7/65	0	NA	ND	380.36+-	%	273
28/ 7/65	0	NA	ND	377.40+-	%	274
7/ 8/65	0	NA	ND	183.15+-	%	275
21/ 8/65	0	NA	ND	37.74+-	%	276
10/ 9/65	0	NA	ND	125.06+-	%	277
23/ 9/65	0	NA	ND	189.81+-	%	278
10/10/65	0	NA	ND	104.34+-	%	279
25/10/65	0	NA	ND	129.50+-	%	280
7/11/65	0	NA	ND	274.54+-	%	281
21/11/65	0	NA	ND	345.58+-	%	282
9/12/65	0	NA	ND	71.04+-	%	283
26/12/65	0	NA	ND	3.07+-	%	284
14/ 1/66	0	NA	ND	256.04+-	%	46
14/ 1/66	0	NA	ND	256.04+-	%	8
28/ 1/66	0	NA	ND	539.09+-	%	9
11/ 2/66	0	NA	ND	394.05+-	%	10

**Annex 2 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
routine offshore sampling, 1962-69**

Collection Station date	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
11/ 2/66	0	NA	ND	394.05+-	%	48
25/ 2/66	0	NA	ND	673.03+-	%	11
25/ 2/66	0	NA	ND	673.03+-	%	49
11/ 3/66	0	NA	ND	57.35+-	%	50
11/ 3/66	0	NA	ND	57.35+-	%	12
18/ 3/66	0	NA	ND	25.53+-	%	51
12/ 4/66	0	NA	ND	41.07+-	%	52
12/ 4/66	0	NA	ND	41.07+-	%	13
28/ 4/66	0	NA	ND	179.82+-	%	53
28/ 4/66	0	NA	ND	179.82+-	%	14
5/ 5/66	0	NA	ND	113.59+-	%	54
5/ 5/66	0	NA	ND	113.59+-	%	15
16/ 5/66	0	NA	ND	200.54+-	%	55
25/ 5/66	0	NA	ND	92.13+-	%	56
14/ 6/66	0	NA	ND	266.77+-	%	58
29/ 6/66	0	NA	ND	97.31+-	%	57
14/ 7/66	0	NA	ND	67.34+-	%	36
28/ 7/66	0	NA	ND	72.15+-	%	37
9/ 8/66	0	NA	ND	293.41+-	%	4
9/ 8/66	0	NA	ND	293.41+-	%	38
28/ 8/66	0	NA	ND	539.09+-	%	47
31/ 8/66	0	NA	ND	318.94+-	%	5
31/ 8/66	0	NA	ND	318.94+-	%	39
13/ 9/66	0	NA	ND	61.05+-	%	40
28/ 9/66	0	NA	ND	55.87+-	%	41
28/ 9/66	0	NA	ND	55.87+-	%	6
13/10/66	0	NA	ND	108.04+-	%	42
8/11/66	0	NA	ND	130.98+-	%	43
8/11/66	0	NA	ND	130.98+-	%	7
23/11/66	0	NA	ND	76.59+-	%	44
20/12/66	0	NA	ND	66.97+-	%	45
26/ 1/67	0	NA	ND	52.91+-	%	3
20/ 2/67	0	NA	ND	81.77+-	%	4
23/ 3/67	0	NA	ND	193.88+-	%	5
23/ 4/67	0	NA	ND	255.30+-	%	6
7/ 5/67	0	NA	ND	321.16+-	%	7
27/ 5/67	0	NA	ND	202.39+-	%	8
11/ 6/67	0	NA	ND	149.85+-	%	9
29/ 6/67	0	NA	ND	302.29+-	%	10
8/ 7/67	0	NA	ND	155.77+-	%	11
22/ 7/67	0	NA	ND	249.38+-	%	12
5/ 8/67	0	NA	ND	89.91+-	%	13
23/ 8/67	0	NA	ND	204.98+-	%	14
9/ 9/67	0	NA	ND	227.92+-	%	15
23/ 9/67	0	NA	ND	360.75+-	%	16
9/10/67	0	NA	ND	1111.11+-	%	17
21/10/67	0	NA	ND	496.91+-	%	18
8/11/67	0	NA	ND	560.92+-	%	19
23/11/67	0	NA	ND	415.88+-	%	20

**Annex 2 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ):  
routine offshore sampling, 1962-69**

Collection date	Station depth (m)	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
3/12/67		0	NA	ND	79.55+-	8	21

**ANNEX 3. CONCENTRATIONS OF  $^{134}\text{Cs}$  AND  $^{137}\text{Cs}$  IN FILTERED SEA WATER ( $\text{Bq m}^{-3}$ ):  
NON-ROUTINE OFFSHORE SAMPLING, 1962-69**

**Annex 3. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ): non-routine offshore sampling, 1962-69**

Station	Collection date	Position	Station depth (m)	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
<b>Site 23 RV Cruise</b>									
991	24/ 6/64	52°28' 30"N 2°18' 0"E	3	3	NA	ND	43.66+-	8	265
992	16/ 7/64	52°27' 36"N 1°44' 42"E	3	3	NA	ND	39.59+-	8	266
993	8/ 9/64	54° 9' 0"N 6° 0' 0"E	3	3	NA	ND	22.57+-	8	269
994	8/ 9/64	54°55' 0"N 2° 0' 0"E	3	3	NA	ND	28.49+-	8	270
995	22/10/64	57°30' 0"N 1°23' 0"E	3	3	NA	ND	16.28+-	8	271
996	10/11/64	49°50' 0"N 2°20' 0"W	3	3	NA	ND	9.99+-	8	272
<b>Site 23 RV Cruise</b>									
651	15/11/65	50°21' 0"N 0°34' 30"E	3	3	NA	ND	6.66+-	8	1
651	15/11/65	50°21' 0"N 0°34' 30"E	3	3	NA	ND	15.91+-	8	2
652	6/12/65	55°10' 0"N 4°58' 45"E	3	3	NA	ND	21.46+-	8	3
653	6/12/65	54°11' 0"N 7°25' 0"E	3	3	NA	ND	24.42+-	8	4
<b>Site 23 RV Cruise</b>									
661	2/11/66	50°21' 0"N 0°34' 30"E	3	3	NA	ND	10.73+-	8	2
662	6/12/66	55°10' 0"N 4°58' 45"E	3	3	NA	ND	17.02+-	8	3
663	6/12/66	54°11' 0"N 7°25' 0"E	3	3	NA	ND	16.28+-	8	1
<b>Site 23 RV Cruise</b>									
672	1/12/67	55°10' 0"N 4°58' 45"E	3	3	NA	ND	20.72+-	8	191
673	2/12/67	54°11' 0"N 7°25' 0"E	3	3	NA	ND	26.27+-	8	192
674	23/ 9/67	56° 9' 0"N 2°32' 30"W	3	3	NA	ND	32.93+-	8	189
675	5/10/67	52° 0' 0"N 2° 5' 0"E	3	3	NA	ND	27.75+-	8	190

**Annex 3 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>): non-routine offshore sampling 1962-69**

Station	Collection date	Position	Station depth (m)	Sampling depth (m)	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
<b>Site 39 Clione</b>									
4026	11/ 6/67	54°22' 30"N	22	#	NA	ND	657.49+-	⊗	186
4027	12/ 6/67	54°20' 30"N	32	#	NA	ND	382.95+-	⊗	185
4028	12/ 6/67	54°16' 15"N	42	#	NA	ND	492.10+-	⊗	188
4029	12/ 6/67	54° 7' 50"N	30	#	NA	ND	129.87+-	⊗	187
4035	12/ 6/67	53°19' 45"N	51	3	NA	ND	51.43+-	⊗	176
4035	12/ 6/67	53°19' 45"N	51	2	NA	ND	42.55+-	⊗	177
4035	12/ 6/67	53°19' 45"N	51	48	NA	ND	38.48+-	⊗	178
4036	12/ 6/67	53°20' 0"N	144	3	NA	ND	66.97+-	⊗	182
4036	12/ 6/67	53°20' 0"N	144	69	NA	ND	68.45+-	⊗	183
4036	12/ 6/67	53°20' 0"N	144	141	NA	ND	70.67+-	⊗	184
4037	12/ 6/67	53°19' 15"N	44	3	NA	ND	71.41+-	⊗	179
4037	12/ 6/67	53°19' 15"N	44	19	NA	ND	60.31+-	⊗	180
4037	12/ 6/67	53°19' 15"N	44	41	NA	ND	61.79+-	⊗	181
<b>Site 39 Clione</b>									
9061	30/ 9/67	54°32' 0"N	46	3	NA	ND	135.42+-	⊗	164
9061	30/ 9/67	54°32' 0"N	46	20	NA	ND	122.84+-	⊗	165
9061	30/ 9/67	54°32' 0"N	46	43	NA	ND	137.27+-	⊗	166
9062	30/ 9/67	54°35' 0"N	143	3	NA	ND	119.88+-	⊗	161
9062	30/ 9/67	54°35' 0"N	143	68	NA	ND	102.49+-	⊗	162
9062	30/ 9/67	54°35' 0"N	143	140	NA	ND	93.61+-	⊗	163
9063	30/ 9/67	54°38' 45"N	58	3	NA	ND	292.67+-	⊗	158
9063	30/ 9/67	54°38' 45"N	58	26	NA	ND	264.18+-	⊗	159
9063	30/ 9/67	54°38' 45"N	58	55	NA	ND	142.82+-	⊗	160
9064	29/ 9/67	54°38' 42"N	24	#	NA	ND	428.09+-	⊗	151
9065	29/ 9/67	54°14' 0"N	18	#	NA	ND	80.29+-	⊗	153
9066	29/ 9/67	54° 9' 30"N	115	#	NA	ND	115.81+-	⊗	154

**Annex 3 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>): non-routine offshore sampling 1962-69**

Station	Collection date	Position	Station depth (m)	Sampling depth (m)	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
9067	29/ 9/67	54° 5' 45"N	5° 46' 0"W	29	#	ND	93.24+-	%	155
9068	30/ 9/67	53° 19' 0"N	5° 52' 15"W	42	3	ND	50.32+-	%	173
9068	30/ 9/67	53° 19' 0"N	5° 52' 15"W	42	18	ND	50.69+-	%	174
9068	30/ 9/67	53° 19' 0"N	5° 52' 15"W	42	39	ND	42.92+-	%	175
9069	30/ 9/67	53° 20' 0"N	5° 16' 0"W	135	3	ND	32.93+-	%	170
9069	30/ 9/67	53° 20' 0"N	5° 16' 0"W	135	64	ND	40.70+-	%	171
9069	30/ 9/67	53° 20' 0"N	5° 16' 0"W	135	132	ND	46.99+-	%	172
9070	30/ 9/67	53° 20' 0"N	4° 43' 48"W	66	3	ND	43.66+-	%	167
9070	30/ 9/67	53° 20' 0"N	4° 43' 48"W	66	30	ND	30.34+-	%	168
9070	30/ 9/67	53° 20' 0"N	4° 43' 48"W	66	63	ND	28.49+-	%	169
9071	30/ 9/67	53° 31' 24"N	3° 21' 0"W	27	#	ND	128.39+-	%	157
9072	29/ 9/67	54° 5' 0"N	3° 25' 15"W	27	#	ND	204.24+-	%	156
9073	2/10/67	54° 19' 30"N	4° 6' 0"W	26	#	ND	94.72+-	%	152
<b>Site 39 Clione</b>									
5004	10/ 4/68	54° 24' 42"N	3° 33' 30"W	20	0	ND	2447.55+-	%	117
5005	10/ 4/68	54° 24' 0"N	3° 33' 30"W	24	0	ND	1988.75+-	%	122
5016	11/ 4/68	54° 26' 24"N	3° 35' 18"W	15	0	ND	2442.00+-	%	118
5017	11/ 4/68	54° 28' 30"N	3° 37' 24"W	10	0	ND	1292.78+-	%	119
5018	11/ 4/68	54° 26' 0"N	3° 41' 0"W	24	0	ND	763.31+-	%	121
5019	11/ 4/68	54° 33' 0"N	3° 41' 0"W	22	0	ND	610.87+-	%	120
5029	13/ 4/68	54° 23' 30"N	3° 41' 0"W	29	0	ND	683.02+-	%	123
5036	14/ 4/68	54° 7' 0"N	3° 52' 0"W	31	0	ND	209.05+-	%	124
<b>Site 40 Corella/Dawn Sky</b>									
13011	13/ 9/68	53° 50' 30"N	4° 11' 0"W	51	0	ND	79.92+-	%	100
13013	13/ 9/68	54° 5' 0"N	3° 25' 0"W	26	0	ND	318.94+-	%	105
13014	13/ 9/68	54° 14' 30"N	3° 29' 0"W	22	0	ND	380.36+-	%	104

**Annex 3 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>): non-routine offshore sampling 1962-69**

Station	Collection date	Position	Station depth (m)	Sampling depth (m)	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
13015	13/ 9/68	54°19'30"N	3°31' 0"W	22	0	ND	312.65+-	%	103
13016	13/ 9/68	54°22' 0"N	3°32' 0"W	22	0	ND	701.15+-	%	102
13017	13/ 9/68	54°23'45"N	3°32'30"W	22	0	ND	3870.20+-	%	101
13018	13/ 9/68	54°24'15"N	3°33'30"W	26	0	ND	527.99+-	%	96
13019	13/ 9/68	54°20'30"N	3°37'45"W	27	0	ND	304.14+-	%	97
13020	13/ 9/68	54°16' 0"N	3°42'30"W	37	0	ND	329.30+-	%	98
13021	14/ 9/68	54° 7'30"N	3°52' 0"W	26	0	ND	155.03+-	%	99
13022	14/ 9/68	54°19'30"N	4° 5'30"W	22	0	ND	263.81+-	%	95
13023	14/ 9/68	54°22' 0"N	3°49'30"W	44	0	ND	441.41+-	%	94
13024	14/ 9/68	54°23' 0"N	3°41' 0"W	31	0	ND	948.68+-	%	93
13025	14/ 9/68	54°24' 0"N	3°37' 0"W	26	0	ND	2308.43+-	%	92
13026	14/ 9/68	54°24' 0"N	3°33'30"W	24	0	ND	2870.09+-	%	91
13027	14/ 9/68	54°24'30"N	3°33' 0"W	18	0	ND	4125.50+-	%	81
13028	14/ 9/68	54°25' 0"N	3°37' 0"W	24	0	ND	1439.30+-	%	86
13029	14/ 9/68	54°26'30"N	3°35' 0"W	18	0	ND	745.55+-	%	82
13030	14/ 9/68	54°28' 0"N	3°37' 0"W	16	0	ND	619.38+-	%	83
13031	14/ 9/68	54°26' 0"N	3°41' 0"W	22	0	ND	756.65+-	%	87
13032	14/ 9/68	54°23' 0"N	3°33'30"W	22	0	ND	582.38+-	%	88
13034	14/ 9/68	54°33' 0"N	3°41' 0"W	22	0	ND	643.80+-	%	84
13035	14/ 9/68	54°42' 0"N	3°49' 0"W	26	0	ND	433.27+-	%	85
13036	14/ 9/68	54°30' 0"N	4° 5'45"W	60	0	ND	430.31+-	%	89
13037	15/ 9/68	54°38'45"N	4°36' 0"W	24	0	ND	337.44+-	%	90
<b>Site 40 Corella/Dawn Sky</b>									
18001	25/11/69	52° 0' 0"N	2° 0'30"E	26	3	ND	52.54+-	%	20
18002	26/11/69	50°36' 0"N	0°16' 0"W	55	3	ND	21.09+-	%	21
18003	26/11/69	49°41'45"N	2° 3' 0"W	29	3	ND	23.31+-	%	22
18004	26/11/69	49°40' 0"N	4° 0' 0"W	77	3	ND	12.58+-	%	23
18005	27/11/69	51° 0' 0"N	5°46' 0"W	86	3	ND	12.21+-	%	24

**Annex 3 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>): non-routine offshore sampling 1962-69**

Station	Collection date	Position	Station depth (m)	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
18006	27/11/69	52° 0' 0"N	70	NA	ND	20.35+-	8	28
18007	27/11/69	52° 8' 15"N	92	NA	ND	16.28+-	8	32
18008	27/11/69	52° 17' 30"N	38	NA	ND	12.58+-	8	36
18009	27/11/69	52° 34' 50"N	31	NA	ND	19.98+-	8	40
18016	28/11/69	53° 4' 0"N	27	NA	13.32+-	115.81+-	8.7	41
18016	28/11/69	53° 4' 0"N	27	NA	10.73+-	90.21+-	8.4	42
18016	28/11/69	53° 4' 0"N	27	NA	ND	104.71+-	8	43
18017	28/11/69	53° 34' 20"N	27	NA	15.91+-	110.63+-	7.0	46
18018	29/11/69	53° 34' 0"N	106	NA	17.39+-	113.22+-	6.5	50
18019	29/11/69	53° 34' 0"N	48	NA	15.54+-	101.01+-	6.5	51
18020	29/11/69	53° 54' 0"N	66	NA	10.73+-	111.37+-	10.4	52
18021	29/11/69	53° 54' 0"N	106	NA	16.28+-	115.81+-	7.1	57
18022	29/11/69	53° 54' 0"N	27	NA	18.50+-	121.73+-	6.6	60
18023	30/11/69	54° 14' 0"N	26	NA	10.36+-	101.38+-	9.8	63
18024	29/11/69	54° 14' 0"N	121	NA	22.57+-	113.96+-	5.0	67
18025	29/11/69	54° 15' 0"N	33	NA	12.95+-	103.23+-	8.0	71
18026	30/11/69	54° 32' 30"N	46	NA	15.17+-	109.89+-	7.2	72
18026	30/11/69	54° 32' 30"N	46	NA	ND	129.50+-	8	73
18026	30/11/69	54° 32' 30"N	46	NA	39.59+-	98.05+-	2.5	74
18027	30/11/69	54° 35' 0"N	137	NA	22.57+-	112.11+-	5.0	75
18027	30/11/69	54° 35' 0"N	137	NA	50.69+-	169.09+-	3.3	76
18027	30/11/69	54° 35' 0"N	137	NA	73.26+-	99.90+-	1.4	77
18028	30/11/69	54° 39' 0"N	49	NA	7.03+-	79.92+-	11.4	78
18028	30/11/69	54° 39' 0"N	49	NA	38.85+-	80.29+-	2.1	79
18028	30/11/69	54° 39' 0"N	49	NA	22.20+-	101.75+-	4.6	80
18031	2/12/69	54° 27' 20"N	35	NA	193.88+-	769.97+-	4.0	84
18032	2/12/69	54° 36' 0"N	49	NA	227.55+-	864.32+-	3.8	88
18034	2/12/69	54° 44' 0"N	16	NA	134.68+-	525.40+-	3.9	92
18035	1/12/69	54° 23' 30"N	15	NA	3339.99+-	11723.82+-	3.5	96
18037	3/12/69	54° 26' 30"N	18	NA	557.59+-	1989.86+-	3.6	101

**Annex 3 continued. Concentrations of <sup>134</sup>Cs and <sup>137</sup>Cs in filtered sea water (Bq m<sup>-3</sup>): non-routine offshore sampling 1962-69**

Station	Collection date	Position	Station depth (m)	Salinity (psu)	<sup>134</sup> Cs	<sup>137</sup> Cs	Ratio	Sample no.
18038	2/12/69	54°33' 0"N 3°41' 0"W	22	NA	86.21+-	364.08+-	4.2	105
18042	2/12/69	54°22' 0"N 3°32' 0"W	18	NA	2174.12+-	7748.54+-	3.6	106
18042	2/12/69	54°22' 0"N 3°32' 0"W	18	NA	2085.32+-	7643.09+-	3.7	107
18042	2/12/69	54°22' 0"N 3°32' 0"W	18	NA	441.78+-	1437.82+-	3.3	108
18044	3/12/69	54°22' 0"N 3°49' 30"W	37	NA	108.04+-	411.07+-	3.8	112
18045	3/12/69	54°14' 30"N 4° 7' 0"W	20	NA	124.69+-	566.10+-	4.5	116
18047	3/12/69	54°14' 30"N 3°29' 15"W	18	NA	569.80+-	2176.71+-	3.8	117
18047	3/12/69	54°14' 30"N 3°29' 15"W	18	NA	651.20+-	2510.08+-	3.9	118
18047	3/12/69	54°14' 30"N 3°29' 15"W	18	NA	586.45+-	2187.07+-	3.7	119
18048	3/12/69	54° 4' 15"N 3°24' 0"W	20	NA	495.43+-	1814.48+-	3.7	120
18048	3/12/69	54° 4' 15"N 3°24' 0"W	20	NA	396.64+-	1392.31+-	3.5	121
18048	3/12/69	54° 4' 15"N 3°24' 0"W	20	NA	502.09+-	1982.46+-	3.9	122
18049	3/12/69	54° 2' 0"N 3°49' 30"W	48	NA	303.77+-	1161.43+-	3.8	126
18050	3/12/69	54° 4' 0"N 4°23' 30"W	31	NA	56.24+-	178.34+-	3.2	130
18051	3/12/69	53°54' 15"N 4° 7' 0"W	49	NA	38.11+-	187.96+-	4.9	134
18052	3/12/69	53°54' 15"N 3°32' 45"W	24	NA	266.77+-	1143.30+-	4.3	135
18052	3/12/69	53°54' 15"N 3°32' 45"W	24	NA	264.18+-	1109.63+-	4.2	136
18052	3/12/69	53°54' 15"N 3°32' 45"W	24	NA	185.37+-	806.60+-	4.4	137
18053	3/12/69	53°54' 15"N 3°16' 0"W	15	NA	358.53+-	1186.22+-	3.3	138
18053	3/12/69	53°54' 15"N 3°16' 0"W	15	NA	238.65+-	964.22+-	4.0	140
18054	3/12/69	53°44' 15"N 3°16' 0"W	16	NA	426.98+-	1521.44+-	3.6	141
18054	3/12/69	53°44' 15"N 3°16' 0"W	16	NA	395.16+-	1447.44+-	3.7	143
18055	3/12/69	53°44' 15"N 3°50' 0"W	38	NA	256.41+-	846.19+-	3.3	144
18055	3/12/69	53°44' 15"N 3°50' 0"W	38	NA	212.75+-	860.99+-	4.0	145
18055	3/12/69	53°44' 15"N 3°50' 0"W	38	NA	182.78+-	692.64+-	3.8	146
18056	4/12/69	53°44' 0"N 4°23' 45"W	48	NA	58.83+-	256.41+-	4.4	150
18057	4/12/69	53°32' 30"N 4°32' 30"W	53	NA	24.79+-	156.88+-	6.3	154
18058	4/12/69	53°34' 0"N 4° 7' 0"W	42	NA	104.34+-	462.50+-	4.4	157
18059	4/12/69	53°24' 0"N 3°50' 0"W	20	NA	109.89+-	540.94+-	4.9	158
18059	4/12/69	53°24' 0"N 3°50' 0"W	20	NA	105.82+-	530.95+-	5.0	159

**Annex 3 continued. Concentrations of  $^{134}\text{Cs}$  and  $^{137}\text{Cs}$  in filtered sea water ( $\text{Bq m}^{-3}$ ): non-routine offshore sampling 1962-69**

Station	Collection date	Position	Station depth (m)	Sampling depth (m)	Salinity (psu)	$^{134}\text{Cs}$	$^{137}\text{Cs}$	Ratio	Sample no.
18059	4/12/69	53°24' 0"N 3°50' 0"W	20	17	NA	105.08+-	558.70+-	5.3	160
18060	4/12/69	53°34' 15"N 3°33' 30"W	30	3	NA	212.75+-	938.69+-	4.4	161
18060	4/12/69	53°34' 15"N 3°33' 30"W	30	15	NA	208.68+-	956.08+-	4.6	162
18060	4/12/69	53°34' 15"N 3°33' 30"W	30	27	NA	196.47+-	907.98+-	4.6	163
18061	2/12/69	54°24' 30"N 3°33' 0"W	18	3	NA	2804.97+-	9406.14+-	3.4	97

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ISSN 0264-5130