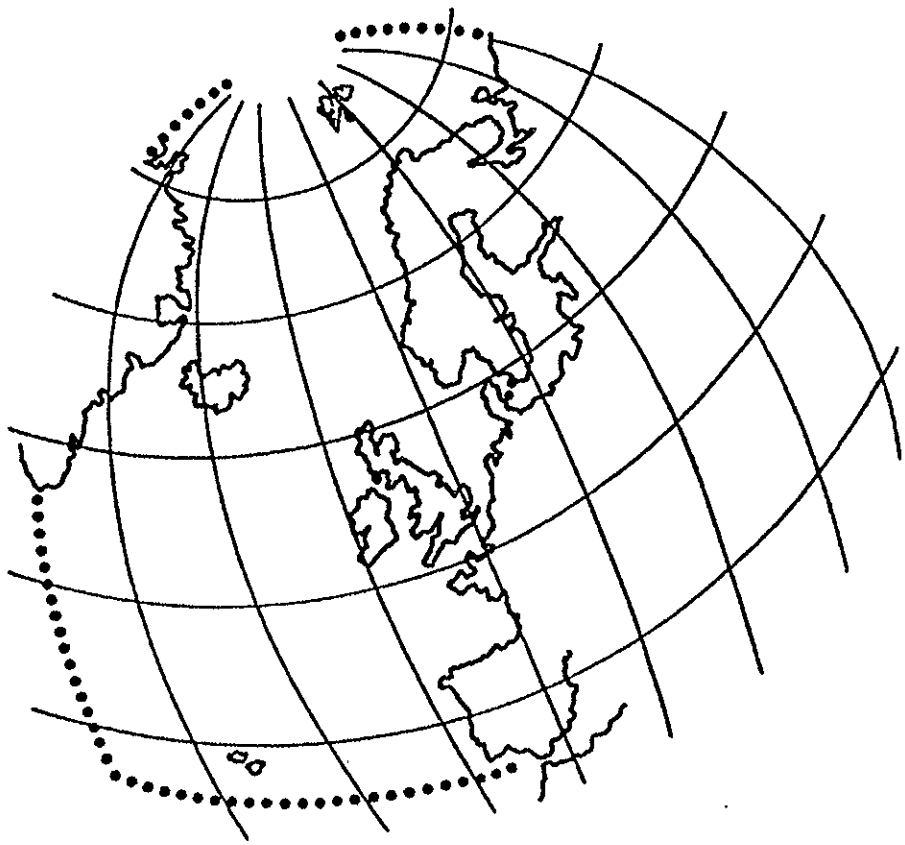
Dumping at Sea
in
1991 and 1992



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Dumping at Sea in 1991 and 1992

Contents

A. DUMPING PERMITS AND APPROVALS ISSUED

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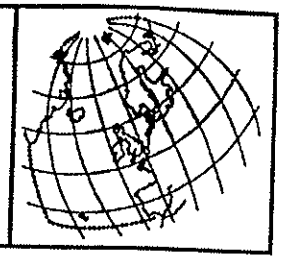


Report on the Permits and Approvals Issued in 1991 for the Dumping of Wastes at Sea

Contents

Introduction

All information summarised in this report relates to permits and approvals for dumping in the maritime area of the Oslo Convention, ie, the high seas and territorial waters of Contracting Parties to the Oslo Convention. In anticipation of an extension of the scope of the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, dumping licences for internal waters have also been notified in some cases. Such information has been included in Tables 2 and 4 to 11 in separate, shaded lines. Information on dumping in internal waters, however, is not included in the totals. The report only relates to permits issued in 1991. Permits issued in previous years which had not expired in 1991 are excluded. Throughout this report, the continental decimal system is used. Tonnages in Table 2 (except for ships) and concentrations in Tables 4 to 11 are wet weight based.

Permits issued

In 1991 Contracting Parties issued permits in accordance with Article 7 of the Oslo Convention for the waste categories:

- dredged material;
- sewage sludge; and
- "other wastes".

The category "other wastes" consists of the sub-categories:

a. chemical wastes, slurries, including fly ash;
b. inert materials of natural origin including rock, colliery and mining waste, peat etc;
c. bulky wastes, eg scrap metal, tar like substances;
d. waste from fish processing;
e. ships;
f. offshore installations and structures; and
g. muds from oil and gas exploration, extraction activities.

An overview of the information received on dumping permits and approvals issued in 1991 is at Table 1.

Belgium, Denmark, Ireland, the Netherlands and the United Kingdom issued dumping permits for dredged material in 1991. Other Contracting Parties (France and Germany) reported dumping operations of dredged material in the maritime area in 1991. These countries do not issue formal licences for the dumping of dredged material for administrative or legal reasons, however, these operations are carried out by the competent authorities or under their auspices in line with the provisions of the Oslo Convention. Dumping of dredged material in Finland (outside the maritime area), Iceland, Norway and Sweden was carried out exclusively in internal waters (Table 1). Iceland, Norway and Sweden do not issue permits, however their dumping operations are carried out under the control of the national authorities.

Licences for the dumping of sewage sludge were issued by the United Kingdom (Table 1). Ireland did not issue licences for the dumping of sewage sludge in 1991 since the relevant licences which would have been due in 1991 had already been issued in 1990.

Permits for the dumping of "other wastes" in the maritime area in 1991 related to the sub-category chemical wastes, slurries, including fly ash (Ireland, Spain, United Kingdom) as well as to the sub-category inert materials of natural origin (United Kingdom: minestone and mine tailings) and to the sub-category waste from fish processing. Iceland issued six permits for the dumping of ships in 1991 (total of 1 129 tonnes) which have not been included in Tables 4 to 11. Three of these licences (total of 540 tonnes) were not carried out.

Table 2 gives an overview of the number of permits issued per country. For all three waste categories together, 147 permits were issued (1990: 156). Broken down into waste categories, 116 licences were issued for the dumping of dredged material (1990: 118) 15 licences were issued for the dumping of sewage sludge (1990: 22) and 16 licences were issued for "other wastes" including six licences for the dumping of ships (1990: 16, including 1 licence for the dumping of a ship).

Amounts licensed

The amounts of dredged material licensed for dumping at sea vary considerably from year to year. In this waste category, trends cannot be expected because, apart from new projects which require capital dredging, the need for maintenance dredging is dependent on natural variations in transport and sedimentation of fluvial and marine sediments.

The total amount of sewage sludge licensed by the United Kingdom for dumping at sea was 8,9 million tonnes compared to 9,1 million tonnes in 1990. This represents a decrease of 0,2 million tonnes compared to the quantity licensed by the United Kingdom in 1990.

On the basis of the tonnages licensed, the total amount of "other wastes" licensed for dumping at sea decreased from 5,6 million tonnes in 1990 to 4,9 million tonnes. Of this reduction 0,2 million tonnes are attributable to Ireland and 0,5 million tonnes to the United Kingdom.

Specific permits under Article 6 of the Convention were not issued in 1991 (Table 3).

Concentration ranges of Annex I and Annex II metals

All concentration ranges in Tables 4 to 11 represent total concentrations and are related to the wet weight (ww). Tables 4 to 11 do not refer to the licences for the dumping of ships since relevant information was not available and the quantities of Annex I and II substances dumped with these ships are deemed negligible.

Table 4 shows the ranges of total concentration of the Annex I metal cadmium in permits issued in 1991. The upper concentration limit given in Table 4 represents the cadmium trace concentration in the sense of the Oslo Convention ie 4,5 mg total Cd/kg ww. It is derived from the Prior Consultation Procedure (PCP) which is applicable for liquid industrial (ie liquid chemical) wastes only. All other wastes are exempt from the PCP. The majority of the licences

for all three categories fall into the two concentration bands ≤1 mg/kg ww. Only three licences fall into the concentration bands between >1 and ≤3 mg/kg ww.

Table 5 shows the ranges of total concentration of the Annex I metal mercury. The upper concentration limit given in Table 5 represents the trace concentration for mercury, again taken from the PCP and thus only applicable to liquid industrial wastes. The majority of the licences for all three categories fall into the two concentration bands ≤0,3 mg/kg. Concentrations >0,3 mg/kg are in particular associated with dredged material. The concentration of 1 mg/kg ww was exceeded by one licence (1,7 mg/kg ww).

Tables 6 to 11 refer to Annex II metals notably arsenic (Table 7), chromium (Table 8), copper (Table 9), lead (Table 6), nickel (Table 10) and zinc (Table 11). A threshold of "significant quantity" has been defined for all these elements in accordance with Article 6 of the Convention. Significant quantities of the elements listed are concentrations >1000 mg/kg ww with the exception of lead for which that concentration has been reduced to >500 mg/kg ww.

The majority of lead concentrations licensed (Table 6) fall into the two concentration bands ≤ 100 mg/kg ww. About 12% of all lead concentrations licensed fall into the concentration band >100 - 500 mg/kg ww. These are mainly associated with dredged material.

The licensed concentrations of all other Annex II elements, viz arsenic, chromium, copper, nickel and zinc (Table 7 - 11) fall again mainly into the two concentration bands ≤ 100 mg/kg ww and never exceed 500 mg/kg ww. Concentrations of chromium, copper and zinc in the range >100 - 500 mg/kg ww are mainly associated with dredged material. It should be noted that arsenic was determined in only 21 % of all licences (Table 7).

Summary

The number of dumping permits issued in 1991 totalled 147 (1990: 156).

The amounts of dredged material licensed for dumping follow very much the need for dredging operations on the basis of natural events such as transport and sedimentation of fluvial and marine sediments. The amount of sewage sludge for which dumping licences were issued in 1991 decreased compared to 1990 due to the fact that Ireland did not issue licences in 1991 and a decrease by 0,2 million tonnes in the quantities licensed by the United Kingdom. Licensed amounts in the category "other wastes" decreased by 0,7 million tonnes, attributable to Ireland and the United Kingdom.

Most of the licences issued fall into the lower concentration bands of Annex I substances (Cd: ≤1 mg/kg ww; Hg: ≤0,3 mg/kg ww). Concentrations of Annex II substances licensed fall mainly in the range ≤100 mg/kg ww. Medium level concentrations (>100 - 500 mg/kg ww) of Annex II substances (Cr, Cu, Pb and Zn) are mainly associated with dredged material. Concentrations of Annex II substances in the range >500 and ≤1000 mg/kg ww did not occur.

Table 1. Information received on dumping permits and approvals issued in 1991

Country	Dredged Material		Sewage Sludge		Other Wastes*	
	Maritime area	Internal waters	Maritime area	Internal waters	Maritime area	Internal waters
Belgium	+	A	-	-	-	-
Denmark	+	+	-	-	-	-
Finland	-	(+)	-	-	-	-
France	A	A	-	-	-	-
Germany	A	A	-	-	-	-
Iceland	-	B	-	-	5	-
Ireland	+	+	-	-	1	1
Netherlands	+	A	-	-	-	-
Norway	-	B	-	-	-	B: 2/3/4/5
Portugal	NI	NI	-	-	-	-
Spain	NI	NI	-	-	1	-
Sweden	-	B	-	-	-	-
United Kingdom	+	+	+	+	1/2/4	2

- No permits issued
\+ Permits issued
(+) Permits issued for areas outside the maritime area of the Oslo Convention
A No permits issued, however, dumping operations were carried out under the control of the national/regional authorities
B No permits issued, dumping operations were exclusively carried out in internal waters under the control of the national authorities
NI No information received
*) 1 = Chemical wastes, slurries, including fly ash
2 = Inert materials of natural origin including rock, colliery and mining waste, peat etc
3 = Bulky wastes eg, scrap metal, tar-like substances
4 = Waste from fish processing
5 = Ships
6 = Offshore installations and structures
7 = Muds from oil and gas exploration, extraction activities

Table 2. Permits issued by each country in 1991

Validity (years):	<1	1	>1-2	>2-3	>=3	Total number	(Renewals)	Total amount licensed (Tonnes)
DREDGED MATERIAL								
Belgium	-	-	4	-	-	4	-	101 196 000 (7)
(1)	-	-	-	-	-	-	-	-
Denmark	3	-	2	1	1	7	1	44 2000
(1)	5	-	-	-	2	7	4	444 500
Ireland	5	3	-	-	-	8	5	1 254 000
(1)	3	-	-	-	-	3	2	52 000
Netherlands	-	-	1	2	-	3	3	54 144 400
(1)	-	-	-	-	-	-	-	-
Portugal	No information received							
Spain	No information received							
United Kingdom	28	63	3	-	-	94	59	27 829 320
(1)	13	51	-	-	-	64	48	35 907 045
Total: (2)	36	66	10	3	1	116	68	184 865 720
SEWAGE SLUDGE								
Ireland	-	-	-	-	-	-	-	0
(1)	-	-	-	-	-	-	-	0
United Kingdom	5	10	-	-	-	15	15	8 873 569
(1)	-	1	-	-	-	1	1	2 500 000
Total: (2)	5	10	-	-	-	15	15	8 873 569
OTHER WASTES								
Iceland	6	-	-	-	-	6	-	1 129 (6)
(1)	-	-	-	-	-	-	-	-
Ireland	1	-	-	-	-	1	1	560 000 (3)
(1)	-	1	-	-	-	1	1	3 300 (3)
Spain	1	-	-	-	-	1	1	700 800 (3)
(1)	-	-	-	-	-	-	-	-
United Kingdom	1	2	-	-	-	3	3	705 000 (3)
	1	3	-	-	-	4	3	2 950 000 (4)
	1	-	-	-	-	1	-	300 (5)
(1)	-	4	-	-	-	4	4	2 300 000 (4)
Total: (2)	5	5	-	-	-	16	8	4 916 100

1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing
6) Ships
7) Maximum 50 598 000 (wet) tonnes per year

Table 3. Specific permits issued in 1991 in accordance with Article 6 of the Oslo Convention

Country	Substances dumped	Concentrations of Annex I and II substances (mg/kg wet weight)								Amount licensed (tonnes)	Period of validity (month)	Dumping site	Depth at dumping site (metres)	Distance from the nearest coast (nautical miles)
		Cd	Hg	As	Cr	Cu	Ni	Pb	Zn					
No specific permits were issued in 1991														

Table 4. Concentration ranges of cadmium in dumping permits issued in 1991

Concentration range: (mg/kg)	=<0,1 Cd	>0,1 - 1 Cd	>1 - 2 Cd	>2 - 3 Cd	>3 - 4,5* Cd	>4,5* Cd	Not determined Cd	
DREDGED MATERIAL								
Belgium	-	-	-	-	-	-	4	
(1)	-	-	-	-	-	-	-	
Denmark	1	2	-	-	-	-	4	
(1)	1	4	-	-	-	-	2	
Ireland	-	6	2	-	-	-	-	
(1)	-	3	-	-	-	-	-	
Netherlands	-	3	-	-	-	-	-	
(1)	-	-	-	-	-	-	-	
Portugal	No information received							
Spain	No information received							
United Kingdom	46	45	1	-	-	-	2	
(1)	34	21	3	1	-	-	5	
Total (2)	47	56	3	-	-	-	10	
SEWAGE SLUDGE								
Ireland	-	-	-	-	-	-	-	
(1)	-	-	-	-	-	-	-	
United Kingdom	2	13	-	-	-	-	-	
(1)	-	1	-	-	-	-	-	
Total (2)	2	13	-	-	-	-	-	
OTHER WASTES								
Ireland	1	-	-	-	-	-	-	(3)
(1)	1	-	-	-	-	-	-	(3)
Spain	1	-	-	-	-	-	-	(3)
(1)	-	-	-	-	-	-	-	
United Kingdom	1	2	-	-	-	-	-	(3)
	4	-	-	-	-	-	-	(4)
	-	-	-	-	-	-	1	(5)
(1)	-	-	-	-	-	-	4	
Total (2)	7	2	-	-	-	-	1	

*) 4,5 mg total Cd/kg ww equals the upper limit of trace metals in the sense of the Oslo Convention
1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

Table 5. Concentration ranges of mercury in dumping permits issued in 1991

Concentration range: (mg/kg)	=<0,1 Hg	>0,1 - 0,3 Hg	>0,3 - 0,5 Hg	>0,5 - 0,7 Hg	>0,7 - 1,0* Hg	>1,0* Hg	Not determined Hg	
DREDGED MATERIAL								
Belgium	-	-	-	-	-	-	4	
(1)	-	-	-	-	-	-	-	
Denmark	3	-	-	-	-	-	4	
(1)	3	2	-	-	-	-	2	
Ireland	7	1	-	-	-	-	-	
(1)	3	-	-	-	-	-	-	
Netherlands	-	3	-	-	-	-	-	
(1)	-	-	-	-	-	-	-	
Portugal	No information received							
Spain	No information received							
United Kingdom	37	41	7	2	4	1	2	
(1)	31	23	2	2	-	1	5	
Total (2)	47	45	7	2	4	1	10	
SEWAGE SLUDGE								
Ireland	-	-	-	-	-	-	-	
(1)	-	-	-	-	-	-	-	
United Kingdom	6	8	1	-	-	-	-	
(1)	1	-	-	-	-	-	-	
Total (2)	6	8	1	-	-	-	-	
OTHER WASTES								
Ireland	1	-	-	-	-	-	-	(3)
(1)	1	-	-	-	-	-	-	(3)
Spain	1	-	-	-	-	-	-	(3)
(1)	-	-	-	-	-	-	-	
United Kingdom	2	1	-	-	-	-	-	(3)
	4	-	-	-	-	-	-	(4)
	-	-	-	-	-	-	1	(5)
(1)	-	-	-	-	-	-	4	(4)
Total (2)	8	1	-	-	-	-	1	

*) 1 mg total Hg/kg ww equals the upper limit of trace metals in the sense of the Oslo Convention
1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

Table 6. Concentration ranges of lead in dumping permits issued in 1991

Concentration range: (mg/kg)	=<10 Pb	>10 - 100 Pb	>100 - 500 Pb	> 500 Pb	Not determined Pb	
DREDGED MATERIAL						
Belgium	-	-	-	-	4	
(1)	-	-	-	-	-	
Denmark	3	-	-	-	4	
(1)	4	1	-	-	2	
Ireland	1	7	-	-	-	
(1)	-	3	-	-	-	
Netherlands	-	3	-	-	-	
(1)	-	-	-	-	-	
Portugal	No information received					
Spain	No information received					
United Kingdom	16	62	14	-	2	
(1)	12	44	3	-	3	
Total (2)	20	72	14	-	10	
SEWAGE SLUDGE						
Ireland	-	-	-	-	-	
(1)	-	-	-	-	-	
United Kingdom	6	9	-	-	-	
(1)	1	-	-	-	-	
Total (2)	6	9	-	-	-	
OTHER WASTES						
Ireland	-	-	-	-	1	(3)
(1)	1	-	-	-	-	(3)
Spain	1	-	-	-		(3)
(1)	-	-	-	-	-	
United Kingdom	2	1	-	-	-	(3)
	1	-	3	-	-	(4)
	-	-	-	-	1	(5)
(1)	-	-	-	-	4	(4)
Total (2)	4	1	3	-	2	

1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

Table 7. Concentration ranges of arsenic in dumping permits issued in 1991

Concentration range: (mg/kg)	=<10 As	>10 - 100 As	>100 - 500 As	>500 - 1000 As	> 1000 As	Not determined As	
DREDGED MATERIAL							
Belgium	-	-	-	-	-	4	
(1)	-	-	-	-	-	-	
Denmark	-	-	-	-	-	7	
(1)	3	-	-	-	-	4	
Ireland	8	-	-	-	-	-	
(1)	3	-	-	-	-	-	
Netherlands	3	-	-	-	-	-	
(1)	-	-	-	-	-	-	
Portugal	No information received						
Spain	No information received						
United Kingdom	9	-	-	-	-	85	
(1)	8	1	-	-	-	55	
Total (2)	20	-	-	-	-	96	
SEWAGE SLUDGE							
Ireland	-	-	-	-	-	-	
(1)	-	-	-	-	-	-	
United Kingdom	7	-	-	-	-	8	
(1)	1	-	-	-	-	-	
Total (2)	7	-	-	-	-	8	
OTHER WASTES							
Ireland	-	-	-	-	-	1	(3)
(1)	1	-	-	-	-	-	(3)
Spain	-	-	-	-	-	1	(3)
(1)	-	-	-	-	-	-	
United Kingdom	2	-	-	-	-	1	(3)
	-	-	-	-	-	4	(4)
	-	-	-	-	-	1	(5)
(1)	-	-	-	-	-	4	(4)
Total (2)	2	-	-	-	-	8	

1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

Table 8. Concentration ranges of chromium in dumping permits issued in 1991

Concentration range: (mg/kg)	=<10 Cr	>10 - 100 Cr	>100 - 500 Cr	>500 - 1000 Cr	> 1000 Cr	Not determined Cr	
DREDGED MATERIAL							
Belgium	-	-	-	-	-	4	
	-	-	-	-	-	-	
Denmark	2	-	-	-	-	5	
(1)	2	1	-	-	-	4	
Ireland	2	6	-	-	-	-	
(1)	-	3	-	-	-	-	
Netherlands	-	3	-	-	-	-	
(1)	-	-	-	-	-	-	
Portugal	No information received						
Spain	No information received						
United Kingdom	12	79	1	-	-	2	
(1)	9	48	2	-	-	3	
Total (2)	16	88	1	-	-	11	
SEWAGE SLUDGE							
Ireland	-	-	-	-	-	-	
(1)	-	-	-	-	-	-	
United Kingdom	13	2	-	-	-	-	
(1)	-	1	-	-	-	-	
Total (2)	13	2	-	-	-	-	
OTHER WASTES							
Ireland	-	-	-	-	-	1	(3)
(1)	1	-	-	-	-	-	(3)
Spain	-	1	-	-	-	-	(3)
(1)	-	-	-	-	-	-	
United Kingdom	3	-	-	-	-	-	(3)
	4	-	-	-	-	-	(4)
	-	-	-	-	-	1	(5)
(1)	-	-	-	-	-	4	(4)
Total (2)	7	1	-	-	-	2	

1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

Table 9. Concentration ranges of copper in dumping permits issued in 1991

Concentration range: (mg/kg)	=<10 Cu	>10 - 100 Cu	>100 - 500 Cu	>500 - 1000 Cu	> 1000 Cu	Not determined Cu	
DREDGED MATERIAL							
Belgium	-	-	-	-	-	4	
(1)	-	-	-	-	-	-	
Denmark	2	1	-	-	-	4	
(1)	2	1	-	-	-	2	
Ireland	2	6	-	-	-	-	
(1)	1	-	-	-	-	-	
Netherlands	-	3	-	-	-	-	
(1)	-	-	-	-	-	-	
Portugal	No information received						
Spain	No information received						
United Kingdom	21	65	6	-	-	2	
(1)	20	39	-	-	-	5	
Total (2)	25	75	6	-	-	10	
SEWAGE SLUDGE							
Ireland	-	-	-	-	-	-	
(1)	-	-	-	-	-	-	
United Kingdom	2	13	-	-	-	-	
(1)	-	1	-	-	-	-	
Total (2)	2	13	-	-	-	-	
OTHER WASTES							
Ireland	1	-	-	-	-	-	(3)
(1)	1	-	-	-	-	-	(3)
Spain	1	-	-	-	-	-	(3)
(1)	-	-	-	-	-	-	
United Kingdom	2	1	-	-	-	-	(3)
	1	-	3	-	-	-	(4)
	-	-	-	-	-	1	(5)
(1)	-	-	-	-	-	4	(4)
Total (2)	5	1	3	-	-	1	

1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

Table 10. Concentration ranges of nickel in dumping permits issued in 1991

Concentration range: (mg/kg)	=<10 Ni	>10 - 100 Ni	>100 - 500 Ni	>500 - 1000 Ni	> 1000 Ni	Not determined Ni	
DREDGED MATERIAL							
Belgium	-	-	-	-	-	4	
(1)	-	-	-	-	-	-	
Denmark	2	-	-	-	-	5	
(1)	3	-	-	-	-	4	
Ireland	3	5	-	-	-	-	
(1)	1	2	-	-	-	-	
Netherlands	1	2	-	-	-	-	
(1)	-	-	-	-	-	-	
Portugal	No information received						
Spain	No information received						
United Kingdom	39	53	-	-	-	2	
(1)	29	29	-	-	-	6	
Total (2)	45	60	-	-	-	11	
SEWAGE SLUDGE							
Ireland	-	-	-	-	-	-	
(1)	-	-	-	-	-	-	
United Kingdom	14	1	-	-	-	-	
(1)	1	-	-	-	-	-	
Total (2)	14	1	-	-	-	-	
OTHER WASTES							
Ireland	-	-	-	-	-	1	(3)
(1)	1	-	-	-	-	-	(3)
Spain	-	1	-	-	-	-	(3)
(1)	-	-	-	-	-	-	
United Kingdom	2	-	-	-	-	1	(3)
	1	3	-	-	-	-	(4)
	-	-	-	-	-	1	(5)
(1)	-	-	-	-	-	4	(4)
Total (2)	3	4	-	-	-	3	

1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

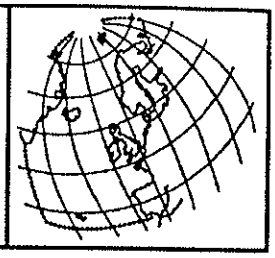
Table 11. Concentration ranges of zinc in dumping permits issued in 1991

Concentration range: (mg/kg)	=<10 Zn	>10 - 100 Zn	>100 - 500 Zn	>500 - 1000 Zn	> 1000 Zn	Not determined Zn	
DREDGED MATERIAL							
Belgium	-	-	-	-	-	4	
(1)	-	-	-	-	-	-	
Denmark	1	1	1	-	-	4	
(1)	1	2	2	-	-	2	
Ireland	-	4	4	-	-	-	
(1)	-	3	-	-	-	-	
Netherlands	-	2	1	-	-	-	
(1)	-	-	-	-	-	-	
Portugal	No information received						
Spain	No information received						
United Kingdom	4	63	25	-	-	2	
(1)	2	44	13	-	-	1	
Total (2)	5	70	31	-	-	10	
SEWAGE SLUDGE							
Ireland	-	-	-	-	-	-	
(1)	-	-	-	-	-	-	
United Kingdom	-	15	-	-	-	-	
(1)	-	1	-	-	-	-	
Total (2)	-	15	-	-	-	-	
OTHER WASTES							
Ireland	1	-	-	-	-	-	(3)
(1)	1	-	-	-	-	-	(3)
Spain	1	-	-	-	-	-	(3)
(1)	-	-	-	-	-	-	
United Kingdom	2	1	-	-	-	-	(3)
	-	1	3	-	-	-	(4)
	-	-	-	-	-	1	(5)
(1)	-	-	-	-	-	4	(4)
Total (2)	4	2	3	-	-	1	

1) Dumping permits for internal waters
2) The total does not include permits for internal waters
3) Chemical wastes, slurries, including fly ash
4) Inert material of natural origin (mine tailings)
5) Wastes from fish processing

Oslo and Paris Commissions

1995



Report on the Permits and Approvals Issued in 1992 for the Dumping of Wastes at Sea

Contents

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Introduction

All information summarised in this report relates to permits and approvals for dumping in the maritime area of the Oslo Convention, ie, the high seas and territorial waters of Contracting Parties to the Oslo Convention. In anticipation of an extension of the scope of the Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, dumping licences for internal waters have also been notified in some cases. Such information has been included in Tables 2 and 4 to 11 in separate, shaded lines. Information on dumping in internal waters, however, is not included in the totals. The report only relates to permits issued in 1992. Permits issued in previous years which had not expired in 1992 are excluded. Throughout this report, the continental decimal system is used. Tonnages in Table 2 and concentrations in Tables 4 to 11 are wet weight based.

Permits issued

In 1992 Contracting Parties issued permits in accordance with Article 7 of the Oslo Convention for the waste categories:

- dredged material;
- sewage sludge;
- "other wastes".

The category "other wastes" consists of the sub-categories:

a. chemical wastes, slurries, including fly ash;
b. inert materials of natural origin including rock, colliery and mining waste, peat etc;
c. bulky wastes, eg scrap metal, tar like substances;
d. waste from fish processing;
e. ships;
f. offshore installations and structures; and
g. muds from oil and gas exploration, extraction activities.

An overview of the information received on dumping permits and approvals issued in 1992 is at Table 1.

Denmark, Ireland, Spain and the United Kingdom issued dumping permits for dredged material in 1992. Other Contracting Parties (France and Germany) reported dumping operations of dredged material in the maritime area in 1992. These countries do not issue formal licences for the dumping of dredged material for administrative or legal reasons, however, these operations are carried out by the competent authorities or under their auspices in line with the provisions of the Oslo Convention. Dumping of dredged material in Finland (outside the maritime area), Iceland, Norway and Sweden was carried out exclusively in internal waters (Table 1).

Licences for the dumping of sewage sludge were issued by Ireland and the United Kingdom (Table 1).

Permits for the dumping of "other wastes" in Convention waters in 1992 were issued by Ireland and the United Kingdom for the sub-category chemical wastes, slurries, including fly ash and the sub-category inert materials of natural origin.

Table 2 gives an overview of the number of permits issued per country. For all three waste categories together, 144 permits were issued (1990: 156; 1991: 147). Broken down into waste categories, 117 licences were issued for the dumping of dredged material (1990: 118; 1991: 116) 16 licences were issued for the dumping of sewage sludge (1990: 22; 1991: 15) and 11 licences were issued for "other wastes" (1990: 16; 1991: 16).

Amounts licensed

The amounts of dredged material licensed for dumping at sea vary considerably from year to year. In this waste category, trends cannot be expected because, apart from new projects which require capital dredging, the need for maintenance dredging is dependent on natural variations in transport and sedimentation of fluvial and marine sediments.

The total amount of sewage sludge licensed for dumping at sea was 9,5 million tonnes. This apparent increase from 8,8 million tonnes in 1991 is because Ireland did not issue any permits in 1991 for the dumping of sewage sludge at sea (the dumping was covered by an existing permit) but issued two permits in 1992. The quantity of sewage sludge licensed for dumping at sea by the United Kingdom decreased slightly from 8,9 million tonnes in 1991 to 8,8 million tonnes in 1992.

On the basis of the tonnages licensed, the total amount of "other wastes" licensed for dumping at sea decreased from 4,9 million tonnes in 1991 to 3,3 million tonnes in 1992. Of this reduction 0,1 million tonnes are attributable to Ireland and 0,8 million tonnes to the United Kingdom. No information was received from Spain (wastes from TiO_2 production were dumped until 31 May 1993)

Specific permits under Article 6 of the Convention were not issued in 1992 (Table 3).

Concentration ranges of Annex I and Annex II metals

All concentration ranges in Tables 4 to 11 represent total concentrations and are related to the wet weight (ww).

Table 4 shows the ranges of total concentration of the Annex I metal cadmium in permits issued in 1992. The upper concentration limit given in Table 4 represents the cadmium trace concentration in the sense of the Oslo Convention ie 4,5 mg total Cd/kg ww. It is derived from the Prior Consultation Procedure (PCP) which is applicable for liquid industrial (i.e. liquid chemical) wastes only. All other wastes are exempt from the PCP. The majority of the licences for all three categories fall into the two concentration bands ≤1 mg/kg ww. Only four licences fall into the concentration bands between >1 and ≤3 mg/kg ww. No licences fall into the two concentration bands >3 mg/kg ww.

Table 5 shows the ranges of total concentration of the Annex I metal mercury. The upper concentration limit given in Table 5 represents the trace concentration for mercury, again taken from the PCP and thus only applicable to liquid industrial wastes. The majority of the licences for all three categories fall into the two concentration bands ≤0,3 mg/kg. Concentrations >0,3 mg/kg are in particular associated with dredged material.

Tables 6 to 11 refer to Annex II metals notably arsenic (Table 7), chromium (Table 8), copper (Table 9), lead (Table 6), nickel (Table 10) and zinc (Table 11). A threshold of "significant quantity" has been defined for all these elements in accordance with Article 6 of the Convention. Significant quantities of the elements listed are concentrations >1000 mg/kg ww with the exception of lead for which that concentration has been reduced to >500 mg/kg ww.

The majority of lead concentrations licensed (Table 6) fall into the two concentration bands≤ 100 mg/kg ww. About 11% of all lead concentrations licensed fall into the concentration band >100 - 500 mg/kg ww. These are mainly associated with dredged material.

The licensed concentrations of all other Annex II elements, viz arsenic, chromium, copper, nickel and zinc (Table 7 - 11) fall again mainly into the two concentration bands ≤100 mg/kg ww. Concentrations of copper and zinc in the range >100 - 500 mg/kg ww are mainly associated with dredged material. It should be noted that arsenic was determined in only 21 % of all licences (Table 7).

Summary

The number of dumping permits issued in 1992 totalled 144.

The amounts of dredged material licensed for dumping follow the need for dredging operations on the basis of natural events such as transport and sedimentation of fluvial and marine sediments. The amount of sewage sludge for which dumping licences were issued in 1992 increased in relation to 1991, attributable to licences issued by Ireland. Licensed amounts in the category "other wastes" decreased by 1,6 million tonnes, attributable to Ireland and the United Kingdom (and the lack of information from Spain).

Most of the licences issued fall into the lower concentration bands of Annex I substances (Cd: ≤1 mg/kg ww; Hg: ≤0,3 mg/kg ww). Concentrations of Annex II substances licensed fall mainly in the range ≤100 mg/kg ww. Medium level concentrations (>100 - 500 mg/kg ww) of Annex II substances (Cu, Pb and Zn) are mainly associated with dredged material. With the exception of one licence, concentrations of Annex II substances in the range >500 and ≤1000 mg/kg ww did not occur.

Table 1. Information received on dumping permits and approvals issued in 1992

Country	Dredged Material		Sewage Sludge		Other Wastes*	
	Maritime area	Internal waters	Maritime area	Internal waters	Maritime area	Internal waters
Belgium	-	-	-	-	-	-
Denmark	+	+	-	-	-	-
Finland	-	(+)	-	-	-	-
France	A	A	-	-	-	-
Germany	A	A	-	-	-	-
Iceland	-	B	-	-	-	-
Ireland	+	+	+	-	1, 2	1
Netherlands	-	A	-	-	-	-
Norway	-	B	-	-	-	B: 2, 3, 4, 5
Portugal	NI	NI	-	-	-	-
Spain	+	+	-	-	NI	NI
Sweden	-	+	-	-	-	-
United Kingdom	+	+	+	+	1, 2	2

\- No permits issued
\+ Permits issued
(+) Permits issued for areas outside the maritime area of the Oslo Convention
A No permits issued, however, dumping operations were carried out under the control of the national/regional authorities
B No permits issued, dumping operations were exclusively carried out in internal waters under the control of the national authorities
NI No information received
*) 1 = Chemical wastes, slurries, including fly ash
2 = Inert materials of natural origin including rock, colliery and mining waste, peat etc
3 = Bulky wastes eg, scrap metal, tar-like substances
4 = Waste from fish processing
5 = Ships
6 = Offshore installations and structures
7 = Muds from oil and gas exploration, extraction activities

Table 2. Permits issued by each country in 1992

Validity (years):	<1	1	>1-2	>2-3	>=3	Total number	(Renewals)	Total amount licensed (Tonnes)
DREDGED MATERIAL								
Denmark	4	-	6	-	3	13	4	4 174 500
(1)	-	-	2	2	2	6	2	125 925
Ireland	3	4	-	-	-	7	7	520 000
(1)	7	4	-	-	-	11	8	497 300
Portugal	No information received							
Spain	-	2	-	-	-	2		419 380
(1)	-	9	-	-	-	9		2 667 270
Sweden								
(1)	No information received on permit validity							12 090
United Kingdom	16	79	-	-	-	95	69	29 259 823
(1)	10	66	1	-	-	77	50	34 505 395
Total: (2)	23	85	6	-	3	117	80	34 373 703
SEWAGE SLUDGE								
Ireland	-	2	-	-	-	2	2	670 000
United Kingdom	3	10	1	-	-	14	14	8 785 000
(1)	-	1	-	-	-	1	1	2 500 000
Total: (2)	3	12	1	-	-	16	16	9 455 000
OTHER WASTES								
Ireland	1	1	-	-	-	2		421 600 (3)
	1	-	-	-	-	1		5 000 (4)
(1)	-	1	-	-	-	-		3 300 (3)
Spain	No information received (but wastes from Ti02 production were dumped until 31 May 1993)							
United Kingdom	5	-	-	-	-	5	3	155 604 (3)
	-	3	-	-	-	3	3	2 700 000 (4)
(1)	-	4	-	-	-	4	4	2 300 000 (4)
Total: (2)	7	4	-	-	-	11	6	3 282 204

1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

Table 3. Specific permits issued in 1992 in accordance with Article 6 of the Oslo Convention

Country	Substances dumped	Concentrations of Annex I and II substances (mg/kg wet weight)							Amount licensed (tonnes)	Period of validity (month)	Dumping site	Depth at dumping site (metres)	Distance from the nearest coast (nautical miles)
		Cd	Hg	As	Cr	Cu	Ni	Pb	Zn				
		No specific permits were issued in 1992											

Table 4. Concentration ranges of cadmium in dumping permits issued in 1992

Concentration range: (mg/kg)	=<0,1 Cd	>0,1 - 1 Cd	>1 - 2 Cd	>2 - 3 Cd	>3 - 4,5* Cd	>4,5* Cd	Not determined Cd	
DREDGED MATERIAL								
Denmark	2	4	-	-	-	-	7	
(1)	-	2		-	-	-	4	
Ireland	-	6	-	1	-	-	-	
(1)	-	8	1	-	-	-	2	
Portugal	No information received							
Spain	No information received							
United Kingdom	46	42	3	-	-	-	4	
(1)	36	27	2	-	-	-	12	
Total (2)	48	52	3	1	-	-	11	
SEWAGE SLUDGE								
Ireland	-	2	-	-	-	-	-	
United Kingdom	5	9	-	-	-	-	-	
(1)	1	-	-	-	-	-	-	
Total (2)	5	11	-	-	-	-	-	
OTHER WASTES								
Ireland	2	-	-	-	-	-	-	(3)
	-	-	-	-	-	-	1	(4)
(1)	1	-	-	-	-	-	-	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)							
United Kingdom	3	2	-	-	-	-	-	(3)
	3	-	-	-	-	-	-	(4)
(1)	-	-	-	-	-	-	4	(4)
Total (2)	8	2	-	-	-	-	1	

* 4,5 mg total Cd/kg ww equals the upper limit of trace metals in the sense of the Oslo Convention
1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

Table 5. Concentration ranges of mercury in dumping permits issued in 1992

Concentration range: (mg/kg)	=<0,1 Hg	>0,1 - 0,3 Hg	>0,3 - 0,5 Hg	>0,5 - 0,7 Hg	>0,7 - 1,0* Hg	>1,0* Hg	Not determined Hg	
DREDGED MATERIAL								
Denmark	7	-	-	-	-	-	6	
(1)	2	-	-	-	-	-	4	
Ireland	4	3	-	-	-	-	-	
(1)	2	2	-	-	-	-	2	
Portugal	No information received							
Spain	No information received							
United Kingdom	35	44	7	3	2	-	4	
(1)	25	33	2	1	-	1	12	
Total (2)	46	47	7	3	2	-	10	
SEWAGE SLUDGE								
Ireland	-	-	2	-	-	-	-	
United Kingdom	9	4	1	-	-	-	-	
(1)	1	-	-	-	-	-	-	
Total (2)	9	4	3	-	-	-	-	
OTHER WASTES								
Ireland	2	-	-	-	-	-	-	(3)
	-	-	-	-	-	-	1	(4)
(1)	1	-	-	-	-	-	-	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)							
United Kingdom	4	1	-	-	-	-	-	(3)
	3	-	-	-	-	-	-	(4)
(1)	-	-	-	-	-	-	4	(4)
Total (2)	9	1	-	-	-	-	1	

* 1 mg total Hg/kg ww equals the upper limit of trace metals in the sense of the Oslo Convention
1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

Table 6. Concentration ranges of lead in dumping permits issued in 1992

Concentration range: (mg/kg)	=<10 Pb	>10 - 100 Pb	>100 - 500 Pb	> 500 Pb	Not determined Pb	
DREDGED MATERIAL						
Denmark	7	1	-	-	5	
(1)	1	1	-	-	4	
Ireland	-	7	-	-	-	
(1)	3	6	-	-	2	
Portugal	No information received					
Spain	No information received					
United Kingdom	20	57	14	-	4	
(1)	11	31	3	-	12	
Total (2)	27	65	14	-	9	
SEWAGE SLUDGE						
Ireland	-	2	-	-	-	
United Kingdom	7	7	-	-	-	
(1)	1	-	-	-	-	
Total (2)	7	9	-	-	-	
OTHER WASTES						
Ireland	1	-	-	-	1	(3)
	-	-	-	-	1	(4)
(1)	1	-	-	-	-	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)					
United Kingdom	4	1	-	-	-	(3)
	1	-	2	-	-	(4)
(1)	-	-	-	-	4	(4)
Total (2)	6	1	2	-	2	

* 1 mg total Hg/kg ww equals the upper limit of trace metals in the sense of the Oslo Convention

1) Dumping permits for internal waters

2) The total does not include permits for internal waters

3) Chemical wastes, slurries, including fly ash

4) Inert material of natural origin (mine tailings)

Table 7. Concentration ranges of arsenic in dumping permits issued in 1992

Concentration range: (mg/kg)	=<10 As	>10 - 100 As	>100 - 500 As	>500 - 1000 As	> 1000 As	Not determined As	
DREDGED MATERIAL							
Denmark	4	-	-	-	-	9	
(1)	2	-	-	-	-	4	
Ireland	7	-	-	-	-	-	
(1)	7	2	-	-	-	2	
Portugal	No information received						
Spain	No information received						
United Kingdom	8	-	-	-	-	87	
(1)	5	-	-	-	-	72	
Total (2)	19	-	-	-	-	96	
SEWAGE SLUDGE							
Ireland	2	-	-	-	-	-	
United Kingdom	6	-	-	-	-	8	
(1)	1	-	-	-	-	-	
Total (2)	8	-	-	-	-	8	
OTHER WASTES							
Ireland	-	-	-	-	-	2	(3)
	-	-	-	-	-	1	(4)
(1)	-	-	-	-	-	1	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)						
United Kingdom	3	-	-	-	-	2	(3)
	-	-	-	-	-	3	(4)
(1)	-	-	-	-	-	4	(4)
Total (2)	3	-	-	-	-	8	

1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

Table 8. Concentration ranges of chromium in dumping permits issued in 1992

Concentration range: (mg/kg)	=<10 Cr	>10 - 100 Cr	>100 - 500 Cr	>500 - 1000 Cr	> 1000 Cr	Not determined Cr	
DREDGED MATERIAL							
Denmark	6	2	-	-	-	5	
(1)	1	1	-	-	-	4	
Ireland	2	5	-	-	-	-	
(1)	2	7	-	-	-	2	
Portugal	No information received						
Spain	No information received						
United Kingdom	10	81	-	-	-	4	
(1)	9	56	-	-	-	12	
Total (2)	18	88	-	-	-	9	
SEWAGE SLUDGE							
Ireland	1	1	-	-	-	-	
United Kingdom	11	3	-	-	-	-	
(1)	-	1	-	-	-	-	
Total (2)	12	4	-	-	-	-	
OTHER WASTES							
Ireland	-	-	-	-	-	2	(3)
	-	-	-	-	-	1	(4)
(1)	1	-	-	-	-	-	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)						
United Kingdom	5	-	-	-	-	-	(3)
	3	-	-	-	-	-	(4)
(1)	-	-	-	-	-	4	(4)
Total (2)	8	-	-	-	-	11	

1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

Table 9. Concentration ranges of copper in dumping permits issued in 1992

Concentration range: (mg/kg)	=<10 Cu	>10 - 100 Cu	>100 - 500 Cu	>500 - 1000 Cu	> 1000 Cu	Not determined Cu	
DREDGED MATERIAL							
Denmark	6	2	-	-	-	5	
(1)	1	1	-	-	-	4	
Ireland	-	7	-	-	-	-	
(1)	7	2	-	-	-	2	
Portugal	No information received						
Spain	No information received						
United Kingdom	25	60	6	-	-	4	
(1)	20	44	1	-	-	12	
Total (2)	31	69	6	-	-	9	
SEWAGE SLUDGE							
Ireland	-	2	-	-	-	-	
United Kingdom	2	12	-	-	-	-	
(1)	-	1	-	-	-	-	
Total (2)	2	14	-	-	-	-	
OTHER WASTES							
Ireland	2	-	-	-	-	-	(3)
	-	-	-	-	-	1	(4)
(1)	1	-	-	-	-	-	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)						
United Kingdom	4	1	-	-	-	-	(3)
	1	-	2	-	-	-	(4)
(1)	-	-	-	-	-	4	(4)
Total (2)	7	1	2	-	-	1	

1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

Table 10. Concentration ranges of nickel in dumping permits issued in 1992

Concentration range: (mg/kg)	=<10 Ni	>10 - 100 Ni	>100 - 500 Ni	>500 - 1000 Ni	> 1000 Ni	Not determined Ni	
DREDGED MATERIAL							
Denmark	4	-	-	-	-	9	
(1)	-	1	-	-	-	5	
Ireland	4	3	-	-	-	-	
(1)	4	3	-	-	-	2	
Portugal	No information received						
Spain	No information received						
United Kingdom	42	48	-	-	-	5	
(1)	33	32	-	-	-	12	
Total (2)	50	51	-	-	-	14	
SEWAGE SLUDGE							
Ireland	2	-	-	-	-	-	
United Kingdom	14	-	-	-	-	-	
(1)	1	-	-	-	-	-	
Total (2)	16	-	-	-	-	-	
OTHER WASTES							
Ireland	-	-	-	-	-	2	(3)
	-	-	-	-	-	1	(4)
(1)	1	-	-	-	-	-	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)						
United Kingdom	4	-	-	-	-	1	(3)
	1	2	-	-	-	-	(4)
(1)	-	-	-	-	-	4	(4)
Total (2)	5	2	-	-	-	4	

1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

Table 11. Concentration ranges of zinc in dumping permits issued in 1992

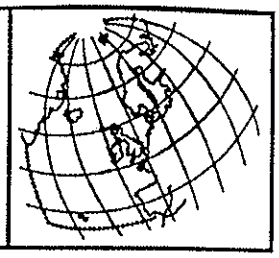
Concentration range: (mg/kg)	=<10 Zn	>10 - 100 Zn	>100 - 500 Zn	>500 - 1000 Zn	> 1000 Zn	Not determined Zn	
DREDGED MATERIAL							
Denmark	2	4	-	-	-	7	
(1)	-	2	-	-	-	4	
Ireland	-	2	5	-	-	-	
(1)	-	9	-	-	-	2	
Portugal	No information received						
Spain	No information received						
United Kingdom	1	63	26	1	-	4	
(1)	2	51	12	-	-	12	
Total (2)	3	69	31	1	-	11	
SEWAGE SLUDGE							
Ireland	-	2	-	-	-	-	
United Kingdom	-	14	-	-	-	-	
(1)	-	1	-	-	-	-	
Total (2)	-	16	-	-	-	-	
OTHER WASTES							
Ireland	-	1	-	-	-	1	(3)
	-	-	-	-	-	1	(4)
(1)	1	-	-	-	-	-	(3)
Spain	No information received (but wastes from TiO2 production were dumped until 31 May 1993)						
United Kingdom	4	1	-	-	-	-	(3)
	-	1	2	-	-	-	(4)
(1)	-	-	-	-	-	4	(4)
Total (2)	4	3	2	-	-	2	

1 Dumping permits for internal waters
2 The total does not include permits for internal waters
3 Chemical wastes, slurries, including fly ash
4 Inert material of natural origin (mine tailings)

B. AMOUNTS OF WASTES DUMPED AT SEA

Oslo and Paris Commissions

1995



Report on the Amounts of Wastes Dumped at Sea in 1991

Contents

Introduction

Contracting Parties to the Oslo Convention are obliged to report by 30 June each year to the Secretariat of the Oslo Commission on all dumping operations in the previous year. All dumping of wastes in the high seas and in the territorial waters of Contracting Parties has to be notified to the Commission.

In June 1989 the Oslo Commission decided to phase out the dumping of industrial wastes in the North Sea by the end of 1989, and in other parts of the maritime area by the end of 1995[1] except for inert materials of natural origin, and except for those industrial wastes for which it can be shown to the Commission through the Prior Justification Procedure both that there are no practical alternatives on land and that the materials cause no harm in the marine environment. In 1990 the Oslo Commission decided to phase out the dumping of sewage sludge at sea by the end of 1998 at the latest[2]. As a consequence of these decisions the quantities dumped in the two categories are expected to decrease over the next few years.

In 1991 Contracting Parties dumped wastes of the following categories:

(i) dredged material;

(ii) sewage sludge; and

(iii) "other wastes".

The category "other wastes" consists of the following sub-categories:

a. chemical wastes, slurries, including fly ash;

b. inert materials of natural origin including rock, colliery and mining waste, peat etc;

c. bulky wastes, eg scrap metal, tar-like substances;

d. waste from fish processing;

e. ships;

f. offshore installations and structures; and

g. muds from oil and gas exploration, extraction activities.

The first two of these sub-categories correspond to the category "industrial wastes" reported prior to 1990. In 1991 wastes falling into the sub-categories a - e were dumped.

Nine Contracting Parties have reported on dumping operations carried out in Oslo Convention waters in 1991. Broken down into waste categories, eight countries reported dumping of dredged material, two countries dumped sewage sludge and four countries reported the dumping of other wastes (Table 1). A summary of dredged material dumped is given at Tables 2a-b and the corresponding details can be found at Table 5. Table 3 gives an overview of the sewage sludge dumped whilst the relevant details are given at Table 6. An overview of other wastes dumped is given at Tables 4a-f. Table 4a gives an overview of the chemical wastes dumped in 1991 and the corresponding details are given at Table 7.

1 OSCOM Decision 89/1 on the Reduction and Cessation of Dumping Industrial Wastes at Sea
2 OSCOM Decision 90/1 on the Cessation of Dumping of Sewage Sludge at Sea

In anticipation of an amendment to the Oslo Convention with regard to dumping in internal waters, eleven countries also reported on these dumping operations. It has to be noted that reported dumping operations in internal waters are not a new addition to environmental impact. On the contrary they are long existing loads the reporting of which is not an obligation for Contracting Parties. The information on dumping in internal waters included in this report is given on a voluntary basis and may be incomplete.

Voluntary reports on dumping in internal waters in 1991 were provided by eleven Contracting Parties with regard to the dumping of dredged material in internal waters, by one country on the dumping of sewage sludge in internal waters and by three countries with regard to other wastes (Table 1).

The figures reported hereafter are all given in continental notation and, in general, relate to dumping within the maritime area of the Oslo Convention only. Amounts dumped are reported as wet tonnes. Quantities dumped in internal waters, although shown in the tables and mentioned where applicable, have not, in general, been taken into account for comparisons with previous years.

Dredged material dumped in 1991

As in previous years, the total amounts of dredged material dumped in 1991 were allocated to a table showing the dumping of harbour dredgings (Table 2a) and a table giving an overview of the dumping of dredged material from estuaries and navigation channels (Table 2b). Details of the dumping of dredged material are given at Table 5. For some of the dredging activities the Netherlands provided information on the total load of contaminants and the anthropogenic load. The difference between the two amounts constitutes the natural load. This information can be found at an Annex to Table 5.

The total amount dumped in both categories was 109,5 million tonnes and thus substantially higher than in 1990 (68,7 million tonnes). Belgium, Denmark, France, Germany, Ireland, the Netherlands, Spain and the United Kingdom dumped dredged material in both the maritime area and their internal waters. Iceland, Norway and Sweden dumped dredged material exclusively in their internal waters. Dumping of dredged material in internal waters accounts for roughly 105,7 million tonnes. Finland also dumped dredged material in its internal waters. Since the Finnish internal waters are outside the maritime area this was not taken into account.

The amount of heavy metals deposited in the marine environment with dredged material is considerable. However, much of the trace metal content is of natural origin and many operations simply relocate the material rather than constituting fresh input to the environment. Dumping locations for dredged material are shown at Figures 1 to 8, and 9b to 11i.

Sewage sludge dumped in 1991

With regard to the United Kingdom, the dumping of sewage sludge within the maritime area (8,0 million tonnes, Table 3) in 1991 was higher than in 1990, (7,7 million tonnes) whilst the amount dumped in internal waters (1,7 million tonnes) remained unchanged. The Irish dumping of sewage sludge (maritime area only) increased from 0,29 million tonnes in 1990 to 0,34 million tonnes. The input amounts of Annex I and Annex II substances remained more or less of the same order of magnitude as in 1990. Oil, nitrogen and phosphorus inputs from the

dumping of sewage sludge were also reported in some cases (cf Table 6). Dumping locations for sewage sludge are shown in Figures 6, 9a, 11a - 11f(1), 11h and 11i.

Other wastes dumped in 1991

Chemical wastes, slurries, including fly ash

Table 4a gives an overview of the chemical wastes dumped in 1991. The amounts dumped in 1991 (1,28 million tonnes) are 0,33 million tonnes lower than in 1990 (1,61 million tonnes). Spain reduced its dumping of waste from the production of TiO_2 from 0,51 million tonnes in 1990 to 0,44 million tonnes in 1991. The United Kingdom reduced its dumping of liquid chemical wastes (cf Table 7) from 0,21 million tonnes in 1990 to 0,19 million tonnes in 1991 but its dumping of fly ash in 1991 (0,3 million tonnes) was virtually unaltered from that in 1990 (0,27 million tonnes). Ireland decreased its dumping of liquid chemical wastes from 0,62 million tonnes in 1990 to 0,35 million tonnes in 1991. An overview of the toxicity of liquid chemical wastes and slurries dumped in 1991 is given at Table 4b. Dumping sites for chemical wastes are shown in Figures 6, 11d and 11e.

Inert materials of natural origin

In 1991 the United Kingdom dumped 2,2 million tonnes (1990: 2,4 million tonnes) of inert materials of natural origin such as rock and tailings within the maritime area (cf Table 4c). The United Kingdom dumped another 2 million tonnes of such material in its internal waters (1990: 2,3 million tonnes). Norway dumped 0,28 million m^3 of inert materials in its internal waters. Dumping sites for inert materials of natural origin are shown in Figures 8 and 11e.

Bulky wastes

Norway dumped 1 776 tonnes (1990: 362 tonnes) and 37 613 m^3 of bulky wastes such as iron scrap, cables, wires and concrete in its internal waters (Table 4d). The relevant dumping locations are shown in Figure 8.

Waste from fish processing

Norway dumped 26 tonnes (1990: 489 tonnes) of fish wastes in its internal waters in 1991 and the United Kingdom 460 tonnes of fish wastes in the maritime area (Table 4e). For the relevant dumping locations (Norway only) see Figure 8.

Ships

Iceland dumped three wooden ships (1990: 1) within the maritime area. Norway dumped a total of 59 ships (1990: 85) in its internal waters (Table 4f). All chemicals and removable parts were removed prior to dumping. Dumping locations (Norway only) are shown in Figure 8.

Summary

In 1991 eight Contracting Parties dumped 109,5 million tonnes of dredged material within the maritime area which is substantially more than in 1990. The amount of contaminants arising from dredged material in harbours, estuaries and open sea areas are variable as a result of, *inter alia*, local geology, hydrography, sedimentation, port use and other inputs.

Dumping of dredged material in internal waters was reported by eleven countries. It amounts to roughly 105,7 million tonnes and thus represents 49% of the total (215,2 million tonnes) of all dredge spoil disposal within the maritime area plus internal waters in 1991.

The amount of sewage sludge dumped within the maritime area during 1991 (8,4 million tonnes) was slightly higher than in 1990 (8 million tonnes). Annex I and II substances dumped remained more or less of the same order of magnitude as in 1990. In some cases oil, nitrogen and phosphorus inputs with sewage sludge were also reported.

The amount of chemical wastes, slurries, including fly ash dumped in 1991 (1,28 million tonnes) was 0,33 million tonnes lower than in 1990. Whilst Ireland, Spain and the United Kingdom decreased the dumping of liquid chemical wastes, the dumping of fly ash (the United Kingdom) was unchanged at 0,3 million tonnes.

The dumping of inert materials of natural origin within the maritime area decreased slightly compared to 1990 (1990: 2,4 million tonnes, 1991: 2,2 million tonnes).

Contracting Parties also reported on the dumping of bulky wastes, waste from fish processing, and laid-up ships. The quantities involved may be considerable in some cases. However, inputs of hazardous substances into the marine environment via these dumping activities should be negligible.

Table 1. **Information received on the amounts of wastes dumped in 1991**

Country	Dredged Material		Sewage Sludge		Other Wastes*	
	Maritime area	Internal waters	Maritime area	Internal waters	Maritime area	Internal waters
Belgium	+	+	-	-	-	-
Denmark	+	+	-	-	-	-
Finland	-	(+)	-	-	-	-
France	+	+	-	-	-	-
Germany	+	+	-	-	-	-
Iceland	-	+	-	-	5	-
Ireland	+	+	+	-	1	1
Netherlands	+	+	-	-	-	-
Norway	-	+	-	-	-	2/3/4/5
Portugal	NI	NI	-	-	-	-
Spain	+	+	-	-	1	-
Sweden	-	+	-	-	-	-
United Kingdom	+	+	+	+	1/2/4	2

NI No information received
\+ Wastes dumped
(+) Wastes dumped (outside the maritime area of the Oslo Convention)
\- No wastes dumped
*) 1 = Chemical wastes, slurries, including fly ash
2 = Inert materials of natural origin including rock, colliery and mining waste, peat etc
3 = Bulky wastes eg, scrap metal, tar-like substances
4 = Waste from fish processing
5 = Ships
6 = Offshore installations and structures
7 = Muds from oil and gas exploration, extraction activities

Table 2a. Dredged material (tonnes) from harbour areas dumped in 1991

Country	Amount dumped	Annex I substances --> Cd	Hg	PCBs	Annex II substances --> As	Cr	Cu	Ni	Pb	Zn	PAH	Origin	Internal waters	Remarks
Belgium	13 073 178	18,90	3,12	0,09	102,0	324,8	178,7	172,1	435,7	1 052,8	NI	HARBOUR	NO	4
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES	
Denmark	2 114 200	0,04	0,007	NI	0,03	0,3	1,5	0,2	0,6	13,5	NI	HARBOUR/SEA	NO	
	757 630	0,25	0,06	NI	1,5	9,0	12,4	2,7	10,4	55,8	NI	HARBOUR	YES	
France	9 102 600	2,91	2,90 <	0,05	51,6	348,2	114,8	94,9	235,4	648,1	0,2	HARBOUR	NO	3
	4 348 721	0,99	0,33	0,02	20,2	66,2	23,4	37,3	59,9	140,3	8,8	HARBOUR/ESTUARY	YES	3
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	3 686 000	< 2,10	0,34 <	0,01	4,3	92,3	24,0	23,5	74,6	176,1	NI	HARBOUR	YES	
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	302 638	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR	YES	
Ireland	274 720	0,22	0,02 <	DL	1,3	2,7	6,2	3,1	6,7	22,1	NI	HARBOUR/ESTUARY	NO	
	454 140	0,35	0,03 <	DL	1,3	2,5	7,9	3,3	6,6	14,0	NI	HARBOUR/ESTUARY	YES	
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	381 940	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR	YES	5
Netherlands	18 363 200	5,70	2,30	0,21 (1)	89,2	403,9	169,0	132,6	299,7	1 114,7	5,9	HARBOUR	NO	2
	9 496 808	2,93	1,01	0,11 (1)	41,4	111,7	63,2	43,8	111,1	408,8	5,3	HARBOUR	YES	
Portugal	No information received												NO	
	No information received												YES	
Spain	5 833 074	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR	NO	3
	2 283 979	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR	YES	3
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	12 400	0,002	0,005	0,001	NI	NI	NI	NI	NI	NI	NI	HARBOUR/ESTUARY	YES	
United Kingdom	5 768 005	1,28	1,42	NI	2,2	168,5	130,3	71,9	224,5	479,1	NI	HARBOUR	NO	
	22 920 662	4,36	3,72	NI	6,8	736,7	454,6	274,0	773,0	2 284,7	NI	HARBOUR	YES	
Total (5):	54 528 977	29,0	9,8	0,3	246	1 248	601	475	1 203	3 330	6,1			
Grand total:	99 175 294	40,0	15,5	0,5	322	2 267	1 186	859	2 238	6 410	20,1			

NI = No information
NA = Not applicable
DL = Detection limit
1) Sum of 7 CBs
2) Amount dumped calculated by applying conversion factor 1,15 (m3 --> t)
3) Amount dumped partly calculated by applying conversion factor 1,3 (m3 --> t)
4) Amount dumped calculated by applying conversion factor 1,6 (dry t --> wet t)
5) Total amount dumped but excluding dumping in internal waters

Table 2b. Dredged material (tonnes) from estuaries and navigation channels dumped in 1991

Country	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH			
Belgium	23 655 094	27,39	4,05	0,09	157,5	432,0	149,5	265,0	476,8	1 233,8	NI	NAVIGATION CHANNEL/SEA		3
	16 802 584	0,91	0,13	0,02	22,1	22,4	14,0	34,9	50,5	177,9	NI	ESTUARY		4
Denmark	2 932 200	0,38	0,18	NI	NI	32,9	16,2	0,003	33,2	127,4	NI	SEA	NO	
	220 800	0,01	0,001	NI	0,08	0,4	0,2	0,2	0,4	0,8	NI	SEA	YES	
France	13 881 959	0,005	0,001 <	0,04	1,6	415,9	384,5	228,5	396,5	1 342,2	NI	ESTUARY	NO	2
	988 423	0,05	0,007 <	0,003	3,4	1,4	1,9	2,2	1,2	7,4	NI	ESTUARY	YES	2
Germany	26 000	0,020	0,006	NI	0,1	1,4	0,5	0,5	1,4	3,3	NI	SEA	NO	
	42 536 000	0,01	0,005	NI	0,1	1,0	0,4	0,4	1,0	2,3	NI	ESTUARY/SEA	YES	
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES	
Ireland	501 692	0,52 <	0,08 <	DL	2,6	6,3	10,2	7,0	26,2	47,1	NI	ESTUARY	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES	
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES	
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NI	YES	1
Portugal	No information received												NO	
	No information received												YES	
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NI	YES	1
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO	
	21 300	0,0001	3,00E-07	0,00004	NI	NI	NI	NI	NI	NI	NI	ESTUARY/SEA	YES	
United Kingdom	13 973 103	2,2	2,5	NI	0,5	344,5	233,7	193,0	331,9	763,5	NI	ESTUARY/SEA	NO	
	533 301	0,3	0,1	NI	0,05	10,8	9,2	4,0	14,1	58,7	NI	ESTUARY/SEA	YES	
Total (5):	54 970 048	30,5	6,8	0,1	162	1 200	795	694	1 266	3 517	NI			
Grand total:	116 072 456	31,8	7,1	0,1	188	1 269	820	736	1 333	3 744	NI			

NA = Not applicable
NI = No information
DL = Detection limit
1) Amount dumped calculated by applying conversion factor 1,15 (m3 --> t)
2) Amount dumped calculated by applying conversion factor 1,3 (m3 --> t)
3) Amount dumped calculated by applying conversion factor 1,6 (dry t --> wet t)
4) Amount dumped calculated by applying an average factor of 1,46 (range 1,3 to 1,62) for dry-t --> wet-t conversion
5) Total amount dumped but excluding dumping in internal waters

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Table 3. Sewage sludge (tonnes) dumped in 1991

Country	Amount dumped	Annex I substances -->								Annex II substances -->						Other substances			Internal waters
		Cd	Hg	HCB	HCH	PCB	Al-drin	Diel-drin	En-drin	As	Cr	Cu	Ni	Pb	Zn	Oil	N	P	
Ireland	339 890	0,042	0,010	< 0,001	< 0,005	< 0,008	< 0,004 *	<--	<--	0,06	0,6	2,2	0,8	3,0	6,6	NI	NI	NI	NO
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	YES
United Kingdom	8 036 989	1,963	0,995	NI	0,004	0,015	NI	0,002	0	0,2	70	129	18	111	293	3	5 285	1 355	NO
	1 698 500	0,190	0,061	NI	NI	NI	NI	NI	NI	0,5	34	55	2	15	32	NI	NI	NI	YES
Total (1):	8 376 879	2,0	1,0	< 0,001	< 0,01	< 0,02	< 0,006 *	<--	<--	0,3	71	132	19	114	300	3	5 285	1 355	
Grand total:	10 075 379	2,2	1,1	< 0,001	< 0,01	< 0,02	< 0,006 *	<--	<--	0,8	104	167	21	128	332	3	5 285	1 355	

NI = No information
1) Total amount dumped but excluding dumping in internal waters
*) Total Drins

Table 4a. Other wastes - chemical wastes, slurries, including fly ash, (tonnes) dumped in 1991

Country	Amount dumped	Annex I substances -->			Annex II substances -->						Toxicity tests	Internal waters
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn		
Ireland	345 671	< 0,04	< 0,04	NA	NA	NA	0,060	NA	NA	2,0	(1)	NO
	3 300	< 0,0003	0	NA	0	0,004	0,006	0	< 0,003	0,02	NA	YES
Spain	443 158	0,03	0,001	NA	0,3	17,7	0,4	3,2	3,2	41,6	(1)	NO
	0	0	0	0	0	0	0	0	0	0	0	YES
United Kingdom	492 999	0,09	0,06	NA	3,1	3,3	6,1	0,5	12,5	6,1	(1)	NO
	0	0	0	0	0	0	0	0	0	0	0	YES
Total (2):	1 281 828	0,16	0,10	NA	3,4	21,0	6,6	3,7	15,7	49,7		
Grand total:	1 285 128	0,16	0,10	NA	3,4	21,0	6,6	3,7	15,7	49,7		

Country	Amount dumped	Substances/compounds not listed in Annexes I and II -->																Internal waters
		Al	Ca	Fe	K	Mg	Mn	Na	Ti	V	Phenols	Acids	H2SO4	Alkalis	Oil	N	P	
Ireland	345 671	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NO
	3 300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES
Spain	443 158	NA	NA	21 108	NA	NA	NA	NA	673	NA	NA	NA	57 060	NA	NA	NA	NA	NO
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	YES
United Kingdom	492 999	NA	NA	4	NA	NA	NA	NA	NA	NA	16	0	56 217	27 374	NA	9 161	NA	NO
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	YES
Total (2):	1 281 828	0	0	21 112	0	0	0	0	673	0	16	0	113 277	27 374	0	9 161	0	
Grand total:	1 285 128	0	0	21 112	0	0	0	0	673	0	16	0	113 277	27 374	0	9 161	0	

NA = Not applicable
1) See Table 4b
2) Total amount dumped but excluding dumping in internal waters

Table 4b. Toxicity of liquid chemical wastes and slurries dumped in 1991

Country	Dumping site	Amount dumped [t]	Description of waste	96 hr LC50 (ppm) to brown shrimp (Crangon crangon) and/or other organisms
Ireland	IRL/3	621 080	Organic liquid derived from fermentation, recovery and synthesis	Crangon: 3,2 % v/v S. gairdnerii: 5,5 % v/v
	IRL/4	3 300	Infant nutritional manufacture effluent	ND
Spain	ES/1/4	510 877	Effluent from Ti02 pigment manufacture, pH 0,5	Carcinus maenas: 950, Carcinus mediterraneus: 750; 5 % mortality of A. salina after 36 h exposure to diluted effluent (1/5000).
United Kingdom	TY050	3 952	Aqueous residues from preparation of para-amino-phenol	250 Agonus; 2 600 Crangon
		27 374	Aqueous residues from preparation of para-amino-phenol	250 Agonus; 1 800 Crangon
	TY110	160 619	Acid ammonium sulphate effluent from methyl methacrylate production	235 Agonus; 235 Crangon

ND = Not detected

Table 4c. Other wastes - inert materials of natural origin (tonnes) dumped in 1991

Country	Dumping site	General description of waste	Amount dumped [t]	[m3]	Annex I substances --> Cd	Hg	Any other	Annex II substances --> As	Cr	Cu	Ni	Pb	Zn	Internal waters
Norway	N/2	Clay	NI	45 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/4	Rock	NI	900	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/7	Rock, sediment etc.	NI	237 500	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
United Kingdom	UK/TY070	Tailings	39 145		0,004	0,001	NI	ND	0,3	0,4	0,3	0,2	0,6	NO
	UK/TY070	Rock	55 723		0,006	0,006	NI	ND	0,6	6,7	2,2	8,4	16,7	NO
	UK/TY080	Tailings	439 878		0,044	0,009	NI	ND	3,3	4,4	3,7	1,9	6,4	NO
	UK/TY080	Rock	719 321		0,072	0,072	NI	ND	7,2	86,3	28,8	107,9	215,8	NO
	UK/TY090	Tailings	394 432		0,039	0,080	NI	ND	2,9	3,9	3,3	1,7	5,7	NO
	UK/TY090	Rock	531 899		0,053	0,053	NI	ND	5,3	63,8	21,3	79,8	162,8	NO
	UK/IS095	Rock	85 336		ND	ND	NI	ND	ND	ND	ND	ND	ND	YES
	UK/TY031	Rock	494 741		ND	ND	NI	ND	ND	ND	ND	ND	ND	YES
	UK/TY121	Rock	759 414		ND	ND	NI	ND	ND	ND	ND	ND	ND	YES
	UK/TY122	Rock	709 917		ND	ND	NI	ND	ND	ND	ND	ND	ND	YES
Total (1):			2 180 398	-	0,2	0,2	NI	ND	19,5	165,5	59,6	199,8	408,0	
Grand total:			4 229 806	283 400	0,2	0,2	NI	NI	19,5	165,5	59,6	199,8	408,0	

1) Total amount dumped but excluding dumping in internal waters
NI = No information
ND = Not determined

Table 4d. Other wastes - bulky wastes (tonnes) dumped in 1991

Country	Dumping site	General description of waste	Amount dumped [t]	[m3]	Annex I substances --> Cd	Hg	Any other	Annex II substances --> As	Cr	Cu	Ni	Pb	Zn	Internal waters
Norway	N/6	Concrete	NI	4 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/7	Steel constructions	NI	33 600	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/7	Wires, cables	80-90		NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/7	Concrete	1 576		NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/7	800 empty Acetylen bottles	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/8	Boiler	NI	12,5	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/8	Iron scrap	100		NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/9	Iron mast	100		NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/10	Wire	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	YES
	Total:		1 776	37 613	NI	NI	NI	NI	NI	NI	NI	NI	NI	

NI = No information

Table 4e. Other wastes - wastes from fish processing (tonnes) dumped in 1991

Country	Dumping site	General description of waste	Amount dumped [t]	Internal waters
Norway	N/14	Fish waste	26	YES
United Kingdom	UK/AT090	Fish waste	460	NO
	Maritime area:	Total:	460	
	Internal Waters:	Total:	26	

Table 4f. Other wastes - ships dumped in 1991

Country	Dumping site	General description of waste (number of ships + brt)	Amount dumped [t]	Internal waters
Iceland	IS/	162 grt, steel	220	NO
	IS/	124 grt, steel	233	NO
	IS/	104 grt, wood	136	NO
Norway	N/2	2 < 100 grt, not specified	NI	YES
	N/3	1 < 100 grt, wood	NI	YES
	N/4	2 < 100 grt, wood	NI	YES
	N/5	1 < 100 grt, wood	NI	YES
Note:	N/6	2 < 10 grt, wood	NI	YES
All chemicals and		6: 100-200 grt, wood	NI	YES
removable parts		1 > 200 grt, steel	NI	YES
were removed	N/7	5 < 100 grt, wood	NI	YES
prior to dumping.	N/8	6 not specified	NI	YES
		1 < 100 grt, steel	NI	YES
		1: 100-200 grt, wood	NI	YES
	N/9	3 < 100 grt: 2 wood, 1 not specified	NI	YES
	N/10	2 < 100 grt, wood	NI	YES
		6: 100-200 grt, wood	NI	YES
	N/11	2 < 100 grt, steel	NI	YES
	N/12	1 not specified	NI	YES
	N/13	12 not specified of which: 2 < 100 grt,	NI	YES
		2 > 200 grt, 8: 100-200 grt	NI	YES
	N/14	2 < 100 grt wood	NI	YES
	N/15	1 < 100 grt,wood	NI	YES
		2: 100-200 grt, wood	NI	YES
	Maritime area:	3 ships	589	
	Internal Waters:	59 ships	NI	

NI = No information

Table 5. Dredged material (tonnes) dumped in 1991

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
1 B/6	2 384 005	3,700	0,419	0,019	20,3	80,9	42,8	31,6	96,7	234,8	NI	HARBOUR		NO	4
2 B/9	4 474 358	7,900	1,300	0,045	39,4	124,7	92,8	66,3	218,7	472,0	NI	HARBOUR		NO	4
3 B/9	6 214 814	7,300	1,400	0,027	42,3	119,2	43,1	74,2	120,3	346,0	NI	HARBOUR		NO	4
4 B/6	122 064	0,067	0,007	0,0003	0,6	1,3	0,5	0,9	2,0	4,3	NI	NAVIGATION CHANNEL		NO	4
5 B/1	1 904 742	2,100	0,185	0,006	12,1	31,9	10,2	19,0	40,1	88,5	NI	NAVIGATION CHANNEL		NO	4
6 B/1	4 690 608	5,300	0,454	0,015	29,9	78,6	25,2	46,9	98,8	217,8	NI	NAVIGATION CHANNEL		NO	4
7 B/3	1 158 635	1,400	0,259	0,005	8,0	22,4	8,1	14,0	22,7	65,2	NI	NAVIGATION CHANNEL		NO	4
8 B/3	3 272 763	3,900	0,732	0,014	22,5	63,4	22,9	39,5	64,0	184,1	NI	NAVIGATION CHANNEL		NO	4
9 B/3	996 174	1,100	0,097	0,003	6,4	16,7	5,4	10,0	21,0	46,3	NI	NAVIGATION CHANNEL		NO	4
10 B/3	1 998 493	2,200	0,194	0,006	12,7	33,5	10,7	20,0	42,1	92,8	NI	NAVIGATION CHANNEL		NO	4
11 B/2	20 424	0,023	0,002	0,0001	0,1	0,3	0,1	0,2	0,4	0,9	NI	NAVIGATION CHANNEL		NO	4
12 B/1	3 646 861	4,300	0,816	0,016	25,1	70,7	25,5	44,0	71,3	205,1	NI	SEA		NO	4
13 B/1	3 934 011	4,700	0,880	0,017	27,0	76,2	27,5	47,5	77,0	221,3	NI	SEA		NO	4
14 B/6	1 910 318	2,300	0,427	0,008	13,1	37,0	13,4	23,0	37,4	107,5	NI	SEA		NO	4
15 B/INT1	865 561	0,095	0,023	0,001	1,4	2,3	2,3	1,7	4,2	12,4	NI	ESTUARY		YES	5
16 B/INT2	882 625	0,097	0,024	0,010	1,5	2,3	2,4	1,8	4,3	12,7	NI	ESTUARY		YES	5
17 B/INT4	7 164 417	0,338	0,005	0,002	9,3	6,1	2,8	20,8	17,7	63,6	NI	ESTUARY		YES	5
18 B/INT5	430 839	0,021	0,009	0,000	0,6	0,4	0,2	1,6	1,1	3,8	NI	ESTUARY		YES	5
19 B/INT7	348 486	0,010	0,004	0,000	0,5	0,3	0,2	1,5	0,9	3,0	NI	ESTUARY		YES	5
20 B/INT6B	7 110 656	0,352	0,067	0,005	8,8	11,0	6,1	7,5	22,3	82,3	NI	ESTUARY		YES	5
21 DK/AAR-07	20 700	NI	NI	NI	NI	NI	NI	NI	NI	0,06	NI	HARBOUR		NO	
22 DK/AAR-09	5 000	0,0003	NI	NI	NI	0,009	NI	NI	NI	NI	NI	HARBOUR		NO	
23 DK/AAR-10	36 000	0,007	0,001	NI	NI	0,2	0,2	0,1	NI	1,0	NI	HARBOUR		NO	
24 DK/AAR-11	20 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	HARBOUR		NO	
25 DK/NJL-10	50 000	< 0,025	0,005	NI	NI	NI	1,0	NI	0,4	11,4	NI	HARBOUR		NO	
26 DK/RIB-01	1 764 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	HARBOUR		NO	
27 DK/RIB-01	191 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	HARBOUR/SEA	NI	NO	
28 DK/RIN-04	19 500	0,003	0,001	NI	0,03	0,1	0,3	0,1	0,2	0,9	NI	HARBOUR		NO	
29 DK/RIN-06	8 000	0,00035	0,00009	NI	0,005	0,02	0,02	0,01	0,01	0,1	NI	HARBOUR		NO	
30 DK/NJL-03	3 700	0,001	0,0002	NI	0,01	0,04	0,1	0,03	0,51	0,19	NI	HARBOUR		YES	

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
31 DK/NJL-03	90 000	< 0,060	0,012	NI	NI	NI	2,4	NI	0,90	11,76	NI	HARBOUR		YES	
32 DK/NJL-03	70 000	< 0,070	0,014	NI	NI	NI	2,8	NI	1,05	13,72	NI	HARBOUR		YES	
33 DK/NJL-03	146 000	< 0,016	< 0,008	NI	0,8	1,4	1,2	0,72	1,12	5,44	NI	HARBOUR		YES	
34 DK/NJL-04	9 000	0,019	0,001	NI	NI	0,8	2,2	NI	0,98	NI	NI	HARBOUR		YES	
35 DK/NJL-06	13 600	0,021	0,001	NI	NI	0,1	0,3	NI	0,15	0,94	NI	HARBOUR		YES	
36 DK/RIB-03	125 000	0,022	0,011	NI	NI	1,9	1,2	NI	1,94	7,45	NI	HARBOUR		YES	
37 DK/RIB-04	165 000	0,029	0,014	NI	NI	2,5	1,6	NI	2,52	9,69	NI	HARBOUR		YES	
38 DK/RIN-01	36 400	0,004	0,001	NI	0,3	0,9	0,3	0,73	0,51	1,62	NI	HARBOUR		YES	
39 DK/SJ-01	98 930	0,005	0,002	NI	0,4	1,3	0,4	0,69	0,72	5,04	NI	HARBOUR		YES	
40 DK/NJL-01	55 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		NO	
41 DK/NJL-09	170 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		NO	
42 DK/NJL-10	555 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		NO	
43 DK/RIB-01	1 000 000	0,178	0,085	NI	NI	15,6	9,9	NI	15,7	60,4	NI	SEA		NO	
44 DK/RIB-01	3 300	0,00007	0,00003	NI	NI	0,004	0,001	0,003	0,004	0,024	NI	SEA		NO	
45 DK/RIB-02	1 100 000	0,198	0,095	NI	NI	17,3	6,3	NI	17,5	67,1	NI	SEA		NO	
46 DK/RIN-07	48 900	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		NO	
47 DK/NJL-02	3 600	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		YES	
48 DK/NJL-02	5 400	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		YES	
49 DK/NJL-05	7 000	< 0,001	< 0,0004	NI	NI	0,03	0,04	NI	< 0,04	0,2	NI	SEA		YES	
50 DK/NJL-07	52 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		YES	
51 DK/NJL-08	2 700	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		YES	
52 DK/RIN-01	42 400	< 0,003	0,001	NI	0,08	0,3	0,1	0,2	0,3	0,6	NI	SEA		YES	
53 DK/RIN-02	19 200	0,002	< 0,0001	NI	NI	0,03	0,02	0,05	0,02	0,03	NI	SEA		YES	
54 DK/RIN-05	88 500	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	SEA		YES	
55 F/	84 500	0,034	0,254	0,00001	0,5	4,0	1,5	0,7	1,2	6,9	NI	HARBOUR		NO	3
56 F/1	823 940	0,399	0,117	0,006	6,9	29,8	11,1	7,3	36,7	62,9	NI	HARBOUR		NO	3
57 F/2	182 390	0,089	0,024	< 0,001	1,6	6,9	1,8	1,3	5,4	12,4	NI	HARBOUR		NO	3
58 F/3	2 001 870	0,567	0,138	< 0,024	12,0	61,4	13,3	15,9	38,8	87,1	NI	HARBOUR		NO	3
59 F/4a	551 200	0,081	0,046	0,002	3,1	12,0	3,7	3,5	9,1	28,7	0,052	HARBOUR		NO	3

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
60 F/5	1 483 360	0,305	0,248	0,006	5,0	32,9	6,8	17,0	14,3	46,2	0,130	HARBOUR		NO	
61 F/6	414 640	0,163	0,022	0,00001	0,7	5,8	3,3	1,9	4,0	21,4	NI	HARBOUR		NO	
62 F/7	57 900	0,014	0,003 <	0,0003	0,2	1,1	0,5	0,3	0,8	2,3	NI	HARBOUR		NO	
63 F/8	189 800	0,085	0,050	0,0002	0,3	3,6	2,1	0,4	6,2	10,7	NI	HARBOUR		NO	
64 F/8	3 094 000	0,874	1,750 <	0,003	16,3	157,7	63,8	29,4	104,6	323,2	NI	HARBOUR		NO	3
65 F/10	219 000	0,305	0,248	0,006	5,0	32,9	6,8	17,0	14,3	46,2	NI	HARBOUR		NO	
66 F/	39 000	< 0,015	0,005	0,00001	0,7	0,7	0,6	0,3	1,1	3,8 <	8,640	HARBOUR		YES	3
67 ~F/18	816 400	0,123	0,053	0,0002	10,9	26,6	9,2	12,0	25,9	40,4	NI	HARBOUR/ESTUARY	NI	YES	3
68 ~F/18	2 652 000	0,305	0,248	0,007	5,0	32,9	6,8	17,0	14,3	46,2	0,130	HARBOUR		YES	3
69 ~F/23	577 200	0,459	0,026	NI	0,2	0,5	3,5	5,1	10,1	26,8	NI	HARBOUR		YES	3
70 ~F/23	28 860	0,008	NI	NI	0,1	0,3	1,2	0,2	0,8	2,5	NI	HARBOUR		YES	3
71 ~F/23	220 350	0,075	NI	NI	3,2	5,1	2,0	2,8	7,5	19,8	NI	HARBOUR		YES	3
72 ~F/25	14 911	0,003	0,001 <	0,015	0,1	0,1	0,2	0,1	0,2	0,7	NI	HARBOUR		YES	3
73 F/9	4 781 959	EX	EX	0,006	EX	EX	EX	EX	EX	EX	NI	ESTUARY		NO	3
74 F/12	9 100 000	0,005	0,001 <	0,030	1,6	415,9	384,5	228,5	396,5	1342,2	NI	ESTUARY		NO	3
75 F/14	988 423	0,046	0,007 <	0,003	3,4	1,4	1,9	2,2	1,2	7,4	NI	ESTUARY		YES	3
76 D/38	26 000	0,020	0,006	NI	0,1	1,4	0,5	0,5	1,4	3,3	NI	SEA		NO	
77 D/10	106 000	0,010	0,009	NI	0,07	1,1	0,4	0,3	0,6	3,8	NI	HARBOUR		YES	
78 D/12	170 000	0,024	0,022	NI	0,2	6,1	4,1	1,4	2,0	11,4	NI	HARBOUR		YES	
79 D/13	83 000	< 0,001	0,007	NI	0,01	0,6	0,3	0,3	0,6	1,9	NI	HARBOUR		YES	
80 D/13	60 000	< 0,001	0,005	NI	0,01	0,5	0,2	0,2	0,4	1,4	NI	HARBOUR		YES	
81 D/17	1 678 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
82 D/18	17 000	0,006	0,001	NI	0,07	0,2	0,08	0,1	0,3	0,6	NI	HARBOUR		YES	
83 D/19	92 000	< 0,050	0,006	NI	0,7	1,2	0,5	0,6	1,2	3,7	NI	HARBOUR		YES	
84 D/25	89 000	EX	EX	NI	EX	EX	EX	EX	EX	EX	NI	HARBOUR		YES	
85 D/32	32 000	0,007	0,020	NI	0,2	1,6	0,5	0,6	1,6	3,3	NI	HARBOUR		YES	
86 D/36	9 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR		YES	
87 D/37	1 350 000	< 2,000	0,470 <	0,010 (1)	3,2	81,0	18,0	20,0	68,0	150,0	NI	HARBOUR		YES	
88 D/14	18 132 000	EX+	EX+	NI	EX+	EX+	EX+	EX+	EX+	EX+	NI	ESTUARY		YES	
89 D/15	1 135 000	EX+	EX+	NI	EX+	EX+	EX+	EX+	EX+	EX+	NI	ESTUARY		YES	

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
90 D/17	15 724 000	EX+	EX+	NI	EX+	EX+	EX+	EX+	EX+	EX+	NI	ESTUARY		YES	
91 D/34	7 422 000	EX+	EX+	NI	EX+	EX+	EX+	EX+	EX+	EX+	NI	ESTUARY		YES	
92 D/26	94 000	EX	EX	NI	EX	EX	EX	EX	EX	EX	NI	SEA		YES	
93 D/30	18 000	0,014	0,005	NI	0,07	1,0	0,4	0,4	1,0	2,3	NI	SEA		YES	
94 D/35	11 000	EX	EX	NI	EX	EX	EX	EX	EX	EX	NI	SEA		YES	
95 IS/1	5 520	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
96 IS/2	39 670	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
97 IS/3	31 658	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
98 IS/4	16 820	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
99 IS/5	34 170	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
100 IS/6	24 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
101 IS/7	134 800	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
102 IS/8	16 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	6
103 IRL/	7 500	< 0,002	< 0,0002	< DL	0,02	0,1	0,2	0,1	0,3	0,8	NI	HARBOUR		NO	
104 IRL/	21 020	0,032	< 0,002	< DL	0,1	0,2	0,9	0,4	1,3	3,2	NI	HARBOUR		NO	
105 IRL/	34 700	< 0,024	< 0,002	< DL	0,1	0,2	1,7	0,1	0,9	3,6	NI	HARBOUR		NO	
106 IRL/	211 500	0,160	< 0,016	< DL	1,0	2,2	3,4	2,4	4,2	14,5	NI	HARBOUR/ESTUARY	NI	NO	
107 IRL/	473 692	0,474	0,076	< DL	2,5	6,0	10,1	6,8	26,1	46,4	NI	ESTUARY		NO	
108 IRL/	28 000	0,045	< 0,002	NA	0,1	0,3	0,1	0,2	0,1	0,7	NI	ESTUARY		NO	
109 IRL/	71 460	0,007	0,021	< DL	0,7	1,1	1,1	1,0	1,0	4,5	NI	HARBOUR		YES	
110 IRL/	326 980	0,317	0,002	< DL	0,4	0,9	6,4	1,7	4,2	6,7	NI	HARBOUR/ESTUARY	NI	YES	
111 IRL/	31 500	0,026	0,003	< DL	0,2	0,4	0,3	0,3	0,7	1,7	NI	HARBOUR		YES	
112 IRL/	24 200	< 0,001	< 0,001	< DL	0,04	0,4	0,2	0,3	0,6	1,2	NI	HARBOUR		YES	
113 N/1	8 450	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
114 N/2	84 500	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
115 N/3	27 170	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
116 N/4	8 905	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
117 N/5	325	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
118 N/6	5 850	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
119 N/7	14 300	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
120 N/10	89 700	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
121 N/13	2 600	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
122 N/14	140 140	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
123 NL/5	12 040 500	4,200	1,600	0,150 (I)	63,0	285,0	128,0	87,0	205,0	783,0	3,500	HARBOUR		NO	2
124 NL/6	522 100	0,200	0,100	0,010 (I)	3,2	13,9	6,0	15,6	4,7	39,7	0,300	HARBOUR		NO	2
125 NL/7	5 800 600	1,300	0,600	0,050 (I)	23,0	105,0	35,0	30,0	90,0	292,0	2,100	HARBOUR		NO	2
126 NL/11	4 983 163	2,300	0,700	0,07 (I)	33	69,9	47,4	31,4	75,6	293,5	4,000	HARBOUR		YES	2
127 NL/13	50 371	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR		YES	2
128 NL/13	90 996	0,030	0,010	0 (I)	0,4	1,8	0,8	0,4	1,5	6,3	0,052	HARBOUR		YES	2
129 NL/13	1 150 000	0,600	0,300	0,039 (I)	8	40	15	12	34	109,0	1,200	HARBOUR		YES	2
130 NL/13-14	298 976	0,050	0,050	0 (I)	1,6	6,7	2,4	1,6	5,6	19,0	0,140	HARBOUR		YES	2
131 NL/14	803 809	0,200	0,110	0,007 (I)	5	20	9	8	16	62,0	0,600	HARBOUR		YES	2
132 NL/14	14 505	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	HARBOUR		YES	2
133 NL/14	34 989	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR		YES	2
134 NL/15	2 070 000	0,240	0,240	0,007 (I)	5,7	25,8	7,2	7,8	16,7	70,4	0,720	HARBOUR		YES	2
Portugal: No information received															
135 E/10	763 074	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		NO	3
136 E/12	5 070 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		NO	3
137 E/1	156 091	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
138 E/2	793 826	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
139 E/3	780 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
140 E/5	248 950	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
141 E/6	64 935	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
142 E/7	93 694	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
143 E/8	78 283	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3
144 E/11	70 200	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	3

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
145 S/2	2 300	0,0002	0,0001	0,0001	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
146 S/2	10 100	0,002	0,005	0,001	NI	NI	NI	NI	NI	NI	NI	HARBOUR/ESTUARY	NI	YES	
147 S/1	20 000	EX	EX	EX	EX	EX	EX	EX	EX	EX	NI	ESTUARY		YES	
148 S/2	1 300	0,0001	3,00E-07	0,00004	NI	NI	NI	NI	NI	NI	NI	SEA		YES	
149 UK/CR040	3 234	0,000	0,000	NI	0,01	0,02	0,05	0,01	0,04	0,2	NI	HARBOUR		NO	
150 UK/CR050	2 295	0,001	0,001	NI	0,02	0,06	0,9	0,03	0,2	0,7	NI	HARBOUR		NO	
151 UK/CR060	2 360	ND	ND	NI	ND	ND	ND	ND	ND	ND	NI	HARBOUR		NO	
152 UK/CR070	7 225	0,004	0,007	NI	0,01	0,2	1,3	0,1	0,7	3,1	NI	HARBOUR		NO	
153 UK/CR080	1 275	0,001	0,001	NI	0,001	0,03	0,2	0,01	0,1	0,6	NI	HARBOUR		NO	
154 UK/CR110	405 330	0,075	0,027	NI	0,9	4,4	3,6	2,8	10,5	16,6	NI	HARBOUR		NO	
155 UK/DV010	853 313	0,081	0,084	NI	ND	16,8	9,0	7,6	15,6	38,4	NI	HARBOUR		NO	
156 UK/DV030	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR/ESTUARY		NO	
157 UK/FI005	99 359	0,010	0,010	NI	ND	2,5	1,5	0,8	2,0	5,0	NI	HARBOUR		NO	
158 UK/FI100	6 574	ND	ND	NI	ND	ND	ND	ND	ND	ND	NI	HARBOUR		NO	
159 UK/FO010	148 410	0,024	0,006	NI	0,7	1,6	0,3	0,8	1,0	1,9	NI	HARBOUR		NO	
160 UK/FO020	3 960	0,000	0,000	NI	0,02	0,2	0,08	0,1	0,1	0,2	NI	HARBOUR		NO	
161 UK/HU015	4 094	0,000	0,001	NI	ND	0,07	0,1	0,1	0,1	0,2	NI	HARBOUR		NO	
162 UK/HU125	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		NO	
163 UK/HU138	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		NO	
164 UK/HU150	24 454	0,002	0,001	NI	0,1	0,3	0,2	0,1	0,3	0,9	NI	HARBOUR/ESTUARY	50:50	NO	
165 UK/HU160	205 745	0,026	0,013	NI	ND	3,5	5,1	1,7	3,1	8,6	NI	HARBOUR/SEA	44:56	NO	
166 UK/IS040	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		NO	
167 UK/IS042	10 400	0,001	0,001	NI	ND	0,3	0,2	0,1	0,3	0,9	NI	HARBOUR		NO	
168 UK/IS055	1 740	0,001	0,000	NI	ND	0,03	0,04	0,02	0,1	0,2	NI	HARBOUR		NO	
169 UK/IS140	1 985 210	0,592	1,390	NI	ND	59,6	42,5	37,5	83,2	261,9	NI	HARBOUR/ESTUARY/SEA	49:32:19	NO	
170 UK/IS150	2 200	0,000	0,002	NI	ND	0,07	0,04	0,04	0,1	0,3	NI	HARBOUR/ESTUARY/SEA	50:30:20	NO	
171 UK/IS180	358 971	0,039	0,043	NI	ND	7,9	4,7	5,0	6,5	15,4	NI	HARBOUR/ESTUARY	0:100	NO	
172 UK/IS205	8 023 565	0,883	0,963	NI	ND	176,5	104,3	112,3	144,4	345,0	NI	ESTUARY		NO	
173 UK/IS210	641 529	0,070	0,076	NI	ND	13,9	8,2	8,8	11,4	27,6	NI	HARBOUR/ESTUARY	5:95	NO	
174 UK/IS400	10 947	0,012	0,000	NI	0,02	0,2	0,2	0,1	0,9	1,3	NI	HARBOUR		NO	

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
175 UK/IS410	1 270	0,001	0,000	NI	0,003	0,03	0,02	0,02	0,1	0,1	NI	HARBOUR		NO	
176 UK/IS420	10 254	0,006	0,000	NI	0,02	0,02	0,2	0,1	0,7	0,9	NI	HARBOUR		NO	
177 UK/IS430	576	0,001	0,000	NI	0,001	0,01	0,01	0,01	0,1	0,1	NI	HARBOUR		NO	
178 UK/IS440	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		NO	
179 UK/IS450	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		NO	
180 UK/IS500	10 774	0,001	0,003	NI	ND	0,06	0,08	0,1	0,1	0,3	NI	HARBOUR		NO	
181 UK/IS595	321 345	0,055	0,101	NI	ND	1,8	1,6	2,3	1,5	3,7	NI	ESTUARY		NO	
182 UK/IS635	1 580	0,000	0,000	NI	ND	0,04	0,02	0,01	0,03	0,1	NI	HARBOUR		NO	
183 UK/IS650	41 650	0,003	0,002	NI	ND	0,03	0,05	0,03	0,04	0,2	NI	HARBOUR		NO	
184 UK/IS670	1 000	0,000	0,000	NI	ND	0,03	0,02	0,01	0,02	0,1	NI	HARBOUR		NO	
185 UK/LU170	12 138	0,001	0,002	NI	ND	0,4	0,2	0,2	0,4	1,0	NI	HARBOUR/ESTUARY	100:0	NO	
186 UK/MA015	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		NO	
187 UK/MA520	70 000	0,011	0,005	NI	ND	0,07	0,06	0,3	0,04	0,2	NI	HARBOUR/ESTUARY	59:41	NO	
188 UK/MA540	68 000	0,018	0,008	NI	ND	0,1	0,2	0,2	0,2	0,9	NI	HARBOUR		NO	
189 UK/MA581	2 000	0,000	0,000	NI	ND	0,003	0,001	0,02	0,01	0,02	NI	HARBOUR		NO	
190 UK/PL030	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR/ESTUARY		NO	
191 UK/PL060	123 551	0,014	0,022	NI	ND	1,3	5,2	0,9	2,6	8,2	NI	HARBOUR		NO	
192 UK/PO070	34 300	0,003	0,000	NI	ND	0,3	0,1	0,2	0,3	1,3	NI	HARBOUR/ESTUARY	66:34	NO	
193 UK/PO075	300	0,000	0,000	NI	ND	0,01	0,01	0,01	0,02	0,04	NI	ESTUARY		NO	
194 UK/TH040	730 585	0,059	0,122	NI	ND	19,2	15,0	8,9	14,8	33,1	NI	HARBOUR/ESTUARY	48:52	NO	
195 UK/TH043	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR/SEA		NO	
196 UK/TH045	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR/ESTUARY		NO	
197 UK/TH070	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR/ESTUARY/SEA		NO	
198 UK/TH140	91 860	0,009	0,010	NI	ND	1,3	0,9	0,6	1,1	4,0	NI	HARBOUR/ESTUARY	50:50	NO	
199 UK/TY042	226 860	0,027	0,035	NI	ND	5,2	4,6	3,6	5,6	16,4	NI	HARBOUR		NO	
200 UK/TY070	112 404	0,089	0,026	NI	ND	2,3	9,8	1,8	20,6	32,2	NI	HARBOUR/ESTUARY/SEA	84:16:0	NO	
201 UK/TY081	133 983	0,108	0,036	NI	ND	3,4	5,6	2,1	18,4	27,8	NI	HARBOUR/ESTUARY/SEA	20:80:0	NO	
202 UK/TY090	133 270	0,034	0,025	NI	ND	3,7	4,3	2,4	20,1	22,7	NI	HARBOUR/ESTUARY	100:0	NO	
203 UK/TY130	57 000	0,011	0,014	NI	ND	1,4	1,9	1,0	3,6	4,2	NI	HARBOUR		NO	
204 UK/TY150	33 918	0,004	0,006	NI	ND	1,0	1,2	0,7	1,8	4,1	NI	HARBOUR/ESTUARY/SEA	100:0:0	NO	
205 UK/TY155	1 272 336	0,115	0,051	NI	ND	16,5	10,2	16,5	10,2	31,8	NI	SEA		NO	

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
206 UK/TY160	2 136 151	0,876	0,684	NI	ND	131,7	95,3	29,5	149,4	245,4	NI	HARBOUR/ESTUARY/SEA	45:37:18	NO	
207 UK/TY180	78 025	0,010	0,009	NI	0,9	1,6	1,3	1,0	2,7	6,4	NI	HARBOUR/SEA	50:50	NO	
208 UK/TY190	8 000	0,001	0,002	NI	ND	0,1	0,3	0,1	0,5	0,9	NI	HARBOUR		NO	
209 UK/WI010	244 296	0,018	0,017	NI	ND	5,9	2,7	1,9	3,2	9,8	NI	HARBOUR/ESTUARY	100:0	NO	
210 UK/WI031	183 164	0,028	0,023	NI	ND	3,5	1,7	1,5	4,2	11,5	NI	HARBOUR		NO	
211 UK/WI060	798 329	0,109	0,088	NI	ND	23,7	18,9	10,7	13,7	46,0	NI	HARBOUR/ESTUARY/SEA	45:42:13	NO	
212 UK/WI090	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		NO	
213 UK/CR023	81 920	0,008	0,001	NI	0,05	0,1	0,06	0,1	0,2	0,1	NI	SEA		YES	
214 UK/CR027	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
215 UK/CR030	9 696	0,001	0,000	NI	0,01	0,04	0,0	0,01	0,04	0,1	NI	HARBOUR		YES	
216 UK/CR130	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	ESTUARY		YES	
217 UK/FI015	18 654	0,006	0,000	NI	0,08	0,5	0,4	0,4	1,2	1,4	NI	HARBOUR		YES	
218 UK/FI080	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
219 UK/FO021	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
220 UK/FO023	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
221 UK/FO024	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
222 UK/FO025	360	0,000	0,000	NI	0,0	0,002	0,003	0,002	0,004	0,01	NI	HARBOUR		YES	
223 UK/FO037	651 951	ND	ND	NI	ND	ND	ND	ND	ND	ND	NI	HARBOUR		YES	
224 UK/FO038	179 101	0,008	0,007	NI	0,06	0,4	0,3	0,2	0,7	1,4	NI	HARBOUR		YES	
225 UK/FO041	25 601	0,014	0,019	NI	0,2	0,9	0,7	0,3	1,4	2,8	NI	HARBOUR		YES	
226 UK/FO042	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
227 UK/FO043	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
228 UK/FO044	737 328	0,096	0,459	NI	5,5	33,2	17,7	9,3	22,8	53,4	NI	HARBOUR		YES	
229 UK/FO047	0	0,000	0,000	NI	0,0	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
230 UK/FO048	5 396	0,004	0,003	NI	0,03	0,2	0,1	0,1	0,3	0,6	NI	HARBOUR		YES	
231 UK/HE040	28 500	0,009	0,009	NI	ND	0,6	0,6	0,6	1,4	2,6	NI	HARBOUR		YES	
232 UK/HU020	2 154 130	0,325	0,324	NI	0,0	88,4	53,9	30,2	86,4	260,7	NI	HARBOUR		YES	
233 UK/HU025	603 000	0,090	0,090	NI	ND	24,7	15,1	8,4	24,1	73,0	NI	HARBOUR		YES	
234 UK/HU030	99 580	0,015	0,015	NI	ND	4,1	2,5	1,4	4,0	12,0	NI	HARBOUR		YES	
235 UK/HU040	49 715	0,039	0,014	NI	ND	3,2	1,9	1,2	3,2	7,9	NI	HARBOUR		YES	
236 UK/HU041	13 880	0,013	0,004	NI	ND	0,9	0,6	0,3	0,9	2,3	NI	HARBOUR		YES	

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
237 UK/HU055	33 860	0,007	0,003	NI	ND	3,0	0,7	0,6	0,9	3,9	NI	HARBOUR/ESTUARY	33:67	YES	
238 UK/HU060	1 347 612	0,186	0,196	NI	ND	55,4	32,3	19,1	53,9	156,3	NI	HARBOUR		YES	
239 UK/HU080	4 811 300	0,722	0,722	NI	ND	197,3	120,3	67,4	192,5	582,2	NI	HARBOUR		YES	
240 UK/HU090	519 925	0,078	0,078	NI	ND	21,3	13,0	7,3	20,8	62,9	NI	HARBOUR		YES	
241 UK/HU110	2 440 100	0,366	0,366	NI	ND	100,0	61,0	34,2	97,6	295,3	NI	HARBOUR		YES	
242 UK/HU116	190 000	0,017	0,008	NI	ND	2,9	1,5	2,5	1,7	7,8	NI	SEA		YES	
243 UK/HU130	29 932	0,004	0,004	NI	ND	0,9	0,5	0,5	1,0	2,6	NI	HARBOUR		YES	
244 UK/HU136	1 578	0,000	0,000	NI	ND	0,05	0,03	0,03	0,1	0,1	NI	HARBOUR		YES	
245 UK/HU140	40 410	0,005	0,004	NI	ND	0,9	0,4	0,4	1,1	2,2	NI	HARBOUR		YES	
246 UK/IS030	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
247 UK/IS110	210 044	0,420	0,147	NI	ND	6,3	9,7	ND	15,8	34,7	NI	HARBOUR/ESTUARY	33:67	YES	
248 UK/IS120	9 150	0,002	0,006	NI	ND	0,3	0,2	0,2	0,4	1,2	NI	HARBOUR/ESTUARY/SEA	50:30:20	YES	
249 UK/IS127	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	ESTUARY		YES	
250 UK/IS170	562 902	0,068	0,045	NI	ND	4,8	2,2	3,2	3,6	16,9	NI	HARBOUR		YES	
251 UK/IS200	220 827	0,022	0,028	NI	ND	3,2	2,1	1,8	3,4	11,3	NI	HARBOUR		YES	
252 UK/IS230	67 968	0,100	0,026	NI	ND	2,5	1,1	1,1	5,9	17,7	NI	HARBOUR		YES	
253 UK/IS240	125 397	0,124	0,014	NI	ND	6,5	2,5	1,9	3,1	17,6	NI	HARBOUR		YES	
254 UK/IS250	20 756	0,003	0,001	NI	ND	0,5	0,2	0,3	0,4	1,2	NI	ESTUARY		YES	
255 UK/IS620	2 300	0,000	0,000	NI	ND	0,1	0,04	0,02	0,05	0,1	NI	HARBOUR		YES	
256 UK/LU055	24 900	0,002	0,005	NI	ND	0,7	0,4	0,4	0,9	2,4	NI	HARBOUR		YES	
257 UK/LU070	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR/ESTUARY		YES	
258 UK/LU080	2 287 500	0,229	0,412	NI	ND	45,8	27,5	22,5	58,3	203,6	NI	HARBOUR/ESTUARY	100:0	YES	
259 UK/LU100	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	ESTUARY		YES	
260 UK/LU110	995 262	0,307	0,140	NI	ND	20,1	13,7	10,2	31,8	87,8	NI	HARBOUR		YES	
261 UK/LU130	2 681 221	0,382	0,375	NI	ND	56,3	33,9	26,5	64,2	192,1	NI	HARBOUR/ESTUARY	98:2	YES	
262 UK/LU140	993 800	0,199	0,169	NI	ND	25,8	13,9	12,9	36,8	99,4	NI	HARBOUR		YES	
263 UK/LU200	93 624	0,034	0,017	NI	ND	1,7	1,3	1,1	2,3	8,4	NI	HARBOUR		YES	
264 UK/MA016	8 623	0,001	0,001	NI	ND	0,2	0,1	0,1	0,2	0,4	NI	HARBOUR		YES	
265 UK/MA021	319 210	0,362	0,082	NI	0,9	23,7	24,4	5,8	35,6	74,0	NI	HARBOUR		YES	
266 UK/MA025	6 750	0,000	0,000	NI	0,02	0,2	0,02	0,3	0,05	0,2	NI	HARBOUR		YES	
267 UK/MA040	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	

Table 5. (continued)

Dumping site	Amount dumped	Annex I substances -->			Annex II substances -->							Origin	Ratio %	Internal waters	Remarks
		Cd	Hg	PCBs	As	Cr	Cu	Ni	Pb	Zn	PAH				
268 UK/MA050	30 199	0,003	0,001	NI	0,01	0,8	0,3	0,5	0,4	1,2	NI	HARBOUR		YES	
269 UK/MA060	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
270 UK/MA080	5 300	ND	ND	NI	ND	ND	ND	ND	ND	ND	NI	HARBOUR		YES	
271 UK/MA600	400	0,000	0,000	NI	ND	0,001	0,0	0,003	0,002	0,01	NI	HARBOUR		YES	
272 UK/PL005	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	ESTUARY		YES	
273 UK/PL019	77	0,000	0,000	NI	ND	0,001	0,001	0,001	0,001	0,003	NI	HARBOUR		YES	
274 UK/PL090	20 160	0,002	0,000	NI	ND	0,2	0,1	0,2	0,2	0,9	NI	ESTUARY		YES	
275 UK/TH048	670	0,000	0,000	NI	ND	0,02	0,02	0,01	0,03	0,1	NI	HARBOUR		YES	
276 UK/TH065	17 760	0,002	0,002	NI	ND	0,5	0,2	0,2	0,3	0,9	NI	HARBOUR		YES	
277 UK/TH073	3 146	0,001	0,001	NI	ND	0,05	0,1	0,05	0,1	0,3	NI	HARBOUR		YES	
278 UK/TH101	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	ESTUARY		YES	
279 UK/WI035	6 002	0,001	0,000	NI	ND	0,1	0,04	0,1	0,1	0,3	NI	HARBOUR		YES	
280 UK/WI080	129 949	0,013	0,019	NI	ND	2,8	4,1	1,0	3,5	7,5	NI	HARBOUR		YES	
281 UK/WI100	0	0,000	0,000	NI	ND	0,0	0,0	0,0	0,0	0,0	NI	HARBOUR		YES	
282 UK/WI110	535 937	0,394	0,018	NI	ND	5,3	2,0	3,5	3,6	11,7	NI	HARBOUR		YES	

NI = No information
ND = Not determined
DL = Detection limit
EX = Exempt from measurement
EX+ = Partly exempt from measurement, rest NI
1) Sum of CBs measured
2) Amount dumped calculated by applying conversion factor 1,15 (m3 --> t)
3) Amount dumped calculated by applying conversion factor 1,3 (m3 --> t)
4) Amount dumped calculated by applying conversion factor 1,6 (dry t --> wet t)
5) Amount dumped calculated by applying an average factor of 1,46 (range 1,3 to 1,62) for dry-t --> wet-t conversion
6) Part of the amount reported was used in land fill

Annex to Table 5. Dredged material (tonnes) dumped in 1991 - contaminants as total load and anthropogenic load

Dumping site	Amount dumped	Annex I substances		Annex II substances -->							Other substances			Origin
		Cd	Hg	As	Cr	Cu	Ni	Pb	Zn	PAH	Oil	N	P	
NL/5	12 040 500	4,2	1,6	63	285	128	87	205	783	3,5	588	10 850	4 000	HARBOUR
anthropogenic load:		3,0	0,6	21	0	28	0	95	355	3,5	484	-	-	
NL/6	522 100	0,2	0,1	3,2	13,9	6	15,6	4,7	39,7	0,3	39	-	-	HARBOUR
anthropogenic load:		0,1	0,0	0,4	0	0	0	8	15,7	0,3	31	-	-	
NL/7	5 800 600	1,3	0,6	23	105	35	30	90	292	2,1	117	4 854	1 694	HARBOUR
anthropogenic load:		0,9	0,3	7	0	0	0	50	143	2,1	74	-	-	

Dumping site	Amount dumped	Annex I substances -->	CBs with IUPAC Nos:							Origin
		7CBs	28	52	101	118	138	153	180	
NL/5	12 040 500	0,15	0,02	0,02	0,02	0,02	0,02	0,03	0,02	HARBOUR
anthropogenic load:		0,15	0,02	0,02	0,02	0,02	0,02	0,03	0,02	
NL/6	522 100	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	HARBOUR
anthropogenic load:		0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	
NL/7	5 800 600	0,05	0,01	0,01	0,01	0,01	0,01	0,01	0,01	HARBOUR
anthropogenic load:		0,05	0,01	0,01	0,01	0,01	0,01	0,01	0,01	

Table 6. Sewage sludge (tonnes) dumped in 1991

	Dumping site	Amount dumped	Annex I substances -->							Annex II substances -->						Other substances			Internal waters
			Cd	Hg	HCB	HCH	PCB	Aldrin	Dieldrin	Endrin	As	Cr	Cu	Ni	Pb	Zn	Oil	N	P	
1	IRL/1	49 760	0,006	0,002 <	0,0004 <	0,001 <	0,001 <	0,001 *	<--	<--	0,009	0,092	0,316	0,124	0,446	0,967	NI	NI	NI	NO
2	IRL/2	290 130	0,036	0,009 <	0,0004 <	0,004 <	0,007 <	0,003 *	<--	<--	0,054	0,536	1,837	0,724	2,597	5,627	NI	NI	NI	NO
3	UK/FO030	115 575	0,019	0,017	NI	NI	NI	NI	NI	NI	0,019	0,474	2,242	0,138	2,069	5,085	NI	NI	NI	NO
4	UK/FO050	169 960	0,028	0,025	NI	NI	NI	NI	NI	NI	0,028	0,697	3,297	0,202	3,042	7,478	NI	NI	NI	NO
5	UK/HU100	114 738	0,050	0,016	0,000	0,000	0,002	NI	0,000	NI	0,021	2,056	2,877	1,278	2,321	7,073	NI	NI	NI	NO
6	UK/IS070	1 879 500	0,803	0,191	NI	NI	NI	NI	NI	NI	ND	43,959	39,308	6,370	35,104	107,059	NI	4 505	881	NO
7	UK/IS590	302 370	0,036	0,038	NI	NI	NI	NI	NI	NI	ND	2,222	3,387	0,475	2,542	11,352	NI	NI	NI	NO
8	UK/LU050	12 619	0,003	0,002	0,000	0,000	0,000	NI	0,000	NI	ND	0,094	0,214	0,037	0,232	0,527	NI	0	0	NO
9	UK/LU160	265 811	0,066	0,036	0,000	0,002	0,012	NI	0,000	NI	ND	1,918	4,858	0,711	5,269	11,019	NI	145	89	NO
10	UK/PL020	57 322	0,007	0,004	0,000	0,000	0,000	NI	0,000	NI	0,008	0,110	0,773	0,087	0,288	1,180	NI	62	12	NO
11	UK/PO030	38 456	0,013	0,006	NI	NI	NI	NI	NI	NI	0,005	0,221	0,416	0,119	0,350	1,308	3,3	45	15	NO
12	UK/PO050	0	0,000	0,000	NI	NI	NI	NI	NI	NI	0,000	0,000	0,000	0,000	0,000	0,000	0	0	0	NO
13	UK/TH042	233 817	0,027	0,046	0,000	0,002	0,000	NI	0,002	NI	ND	0,950	4,922	0,492	2,623	8,091	NI	528	357	NO
14	UK/TH050	3 983 592	0,818	0,548	NI	NI	NI	NI	NI	NI	0,152	15,311	54,410	6,772	50,930	118,035	NI	NI	NI	NO
15	UK/TY060	601 035	0,042	0,037	0,000	0,000	0,001	NI	0,000	NI	0,002	0,783	6,000	0,423	3,851	8,820	NI	NI	NI	NO
16	UK/TY110	0	0,000	0,000	0,000	0,000	0,000	NI	0,000	NI	0,000	0,000	0,000	0,000	0,000	0,000	NI	NI	NI	NO
17	UK/WI060	262 194	0,051	0,029	NI	NI	NI	NI	NI	NI	ND	1,132	6,768	0,566	1,942	6,386	NI	NI	NI	NO
18	UK/MA018	1 698 500	0,190	0,061	NI	NI	NI	NI	NI	NI	0,485	33,630	35,498	2,377	14,505	31,761	NI	NI	NI	YES

NI = No Information
*) Total Drins

Table 7. Other wastes - chemical wastes, slurries, including fly ash, (tonnes) dumped in 1991

	Dumping site	General description of waste	Amount dumped	Annex I substances -->			Annex II substances -->						Toxicity tests	Internal waters
				Cd	Hg	PCB	As	Cr	Cu	Ni	Pb	Zn		
1	IRL/3	Organic liquid from fermentation etc.	345 671	< 0,035	< 0,035	NA	NA	NA	0,060	NA	NA	2,000	YES	NO
2	IRL/4	Infant nutritional manufacture effluent	3 300	< 0,0003	0,000	NA	0,000	0,004	0,006	0,000	< 0,003	0,020	NA	YES
3	ES/1/4	Wastes from TiO2 production	443 158	0,030	0,001	NA	0,300	17,700	0,400	3,200	3,200	41,600	YES	NO
4	UK/HU100	Aqueous organic	0	0,000	0,000	NA	ND	0,000	0,000	0,000	0,000	0,000	NA	NO
7	UK/TY041	Ash	301 054	0,060	0,060	NA	3,010	3,010	6,021	ND	12,042	6,021	NA	NO
8	UK/TY050	Aqueous organic	31 326	0,002	0,000	NA	ND	0,016	0,010	0,013	0,169	0,009	YES	NO
9	UK/TY090	Ash	0	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	NA	NO
10	UK/TY110	Aqueous Salts	160 619	0,032	0,002	NA	0,122	0,305	0,088	0,438	0,322	0,064	YES	NO

	Dumping site	General description of waste	Amount dumped	Substances/compounds not listed in Annexes I and II -->															
				Al	Ca	Fe	K	Mg	Mn	Na	Ti	V	Phenols	Acids	H2SO4	Alkalis	Oil	N	P
1	IRL/	Organic liquid from fermentation etc.	345 671	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	IRL/	Infant nutritional manufacture effluent	3 300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	ES/1/4	Wastes from TiO2 production	443 158	NA	NA	21108	NA	NA	NA	NA	673	NA	NA	NA	57 060	NA	NA	NA	NA
4	UK/HU100	Aqueous organic	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	NA	0	NA	NA	NA
7	UK/TY041	Ash	301 054	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	NA	0	NA	NA	NA
8	UK/TY050	Aqueous organic	31 326	NA	NA	NA	NA	NA	NA	NA	NA	NA	15,663	0	NA	27 374	NA	NA	NA
9	UK/TY090	Ash	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	UK/TY110	Aqueous Salts	160 619	NA	NA	4,497	NA	NA	NA	NA	NA	NA	NA	0	56 217	0	NA	9 161	NA

NI = No information
ND = Not determined
NA = Not applicable

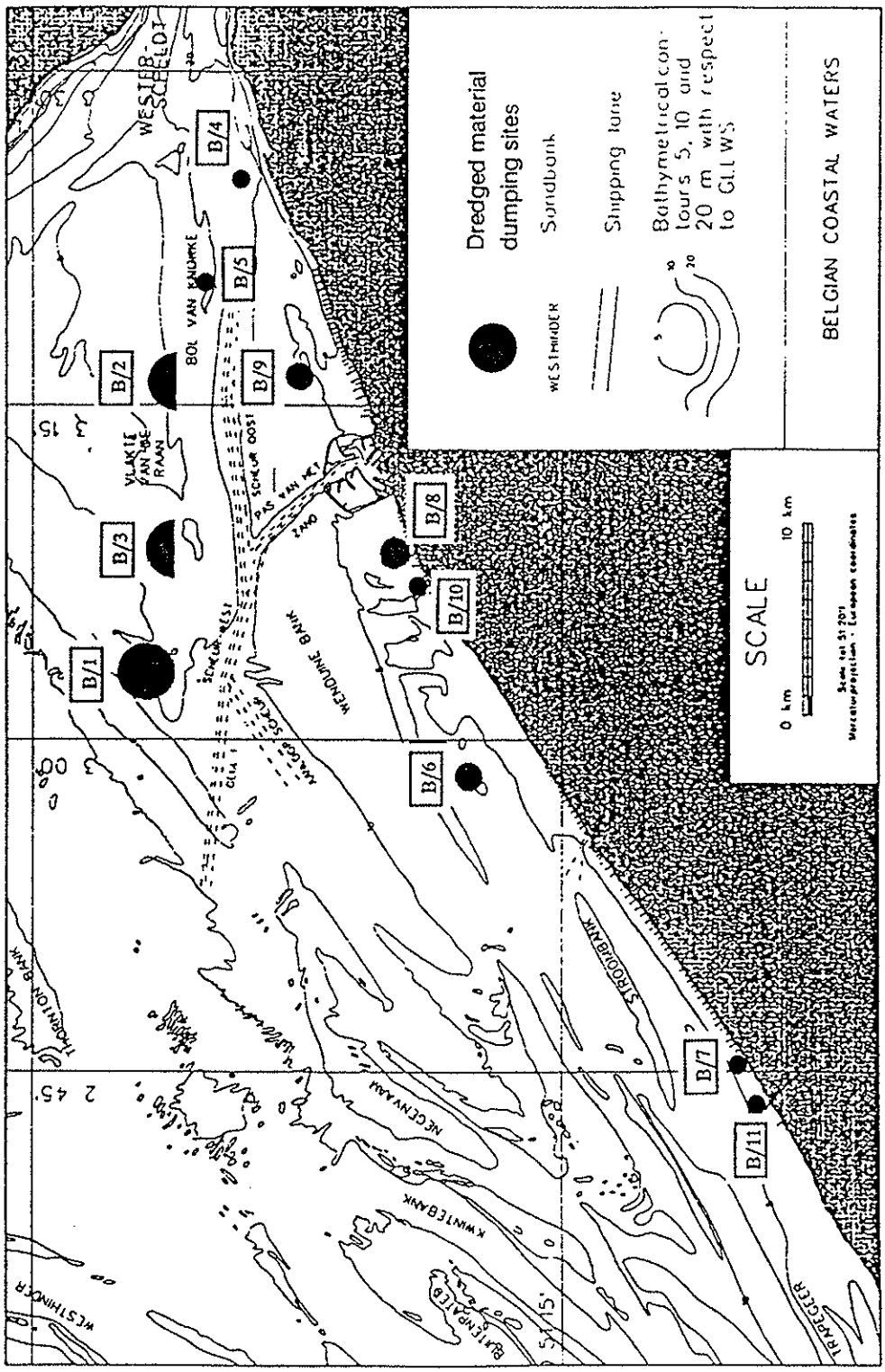


Figure 1a Approximate positions of the dumping sites for dredged material used by Belgium:

Sites within the maritime area used in 1991: B/1 - B/3, B/6 and B/9

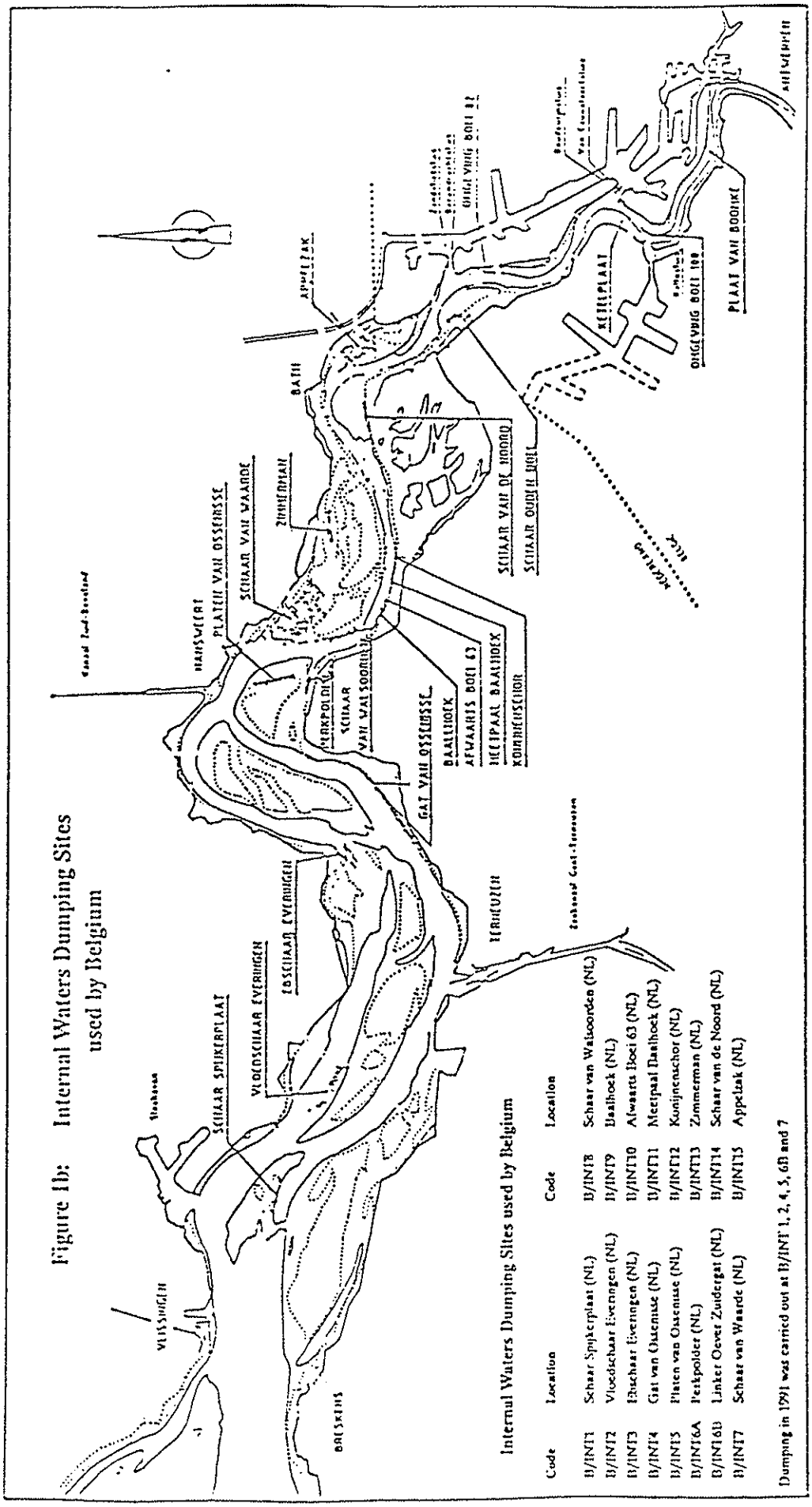


Figure 1b: Internal Waters Dumping Sites
used by Belgium
SCHAAR SPIJKERPLAAT
VLOEDSCHAAR EVERINGEN
EBSCHAAR EVERINGEN
SCHAAR VAN WAARDE
ZIMMERMAN
BATH
APPELZAK
PLATEN VAN OSSENISSE
GAT VAN OSSENISSE
BAALHOEK
AFWAARTS BOEI 63
MEETPAAL BAALHOEK
KONIJNENSCHOR
SCHAAR VAN DE NOORD
SCHAAR OUDE HAAK
KEETPLAAT
PLAAT VAN BOOMKE
Internal Waters Dumping Sites used by Belgium
Code Location Code Location
B/INT1 Schaar Spijkerplaat (NL) B/INT8 Schaar van Walsoorden (NL)
B/INT2 Vloedschaar Everingen (NL) B/INT9 Baalhoek (NL)
B/INT3 Ebschaar Everingen (NL) B/INT10 Afwaarts Boei 63 (NL)
B/INT4 Gat van Ossenisse (NL) B/INT11 Meetpaal Baalhoek (NL)
B/INT5 Platen van Ossenisse (NL) B/INT12 Konijnenschor (NL)
B/INT6A Perkpolder (NL) B/INT13 Zimmerman (NL)
B/INT6B Linker Oever Zuidergat (NL) B/INT14 Schaar van de Noord (NL)
B/INT7 Schaar van Waarde (NL) B/INT15 Appelzak (NL)
Dumping in 1991 was carried out at B/INT 1, 2, 4, 5, 6B and 7

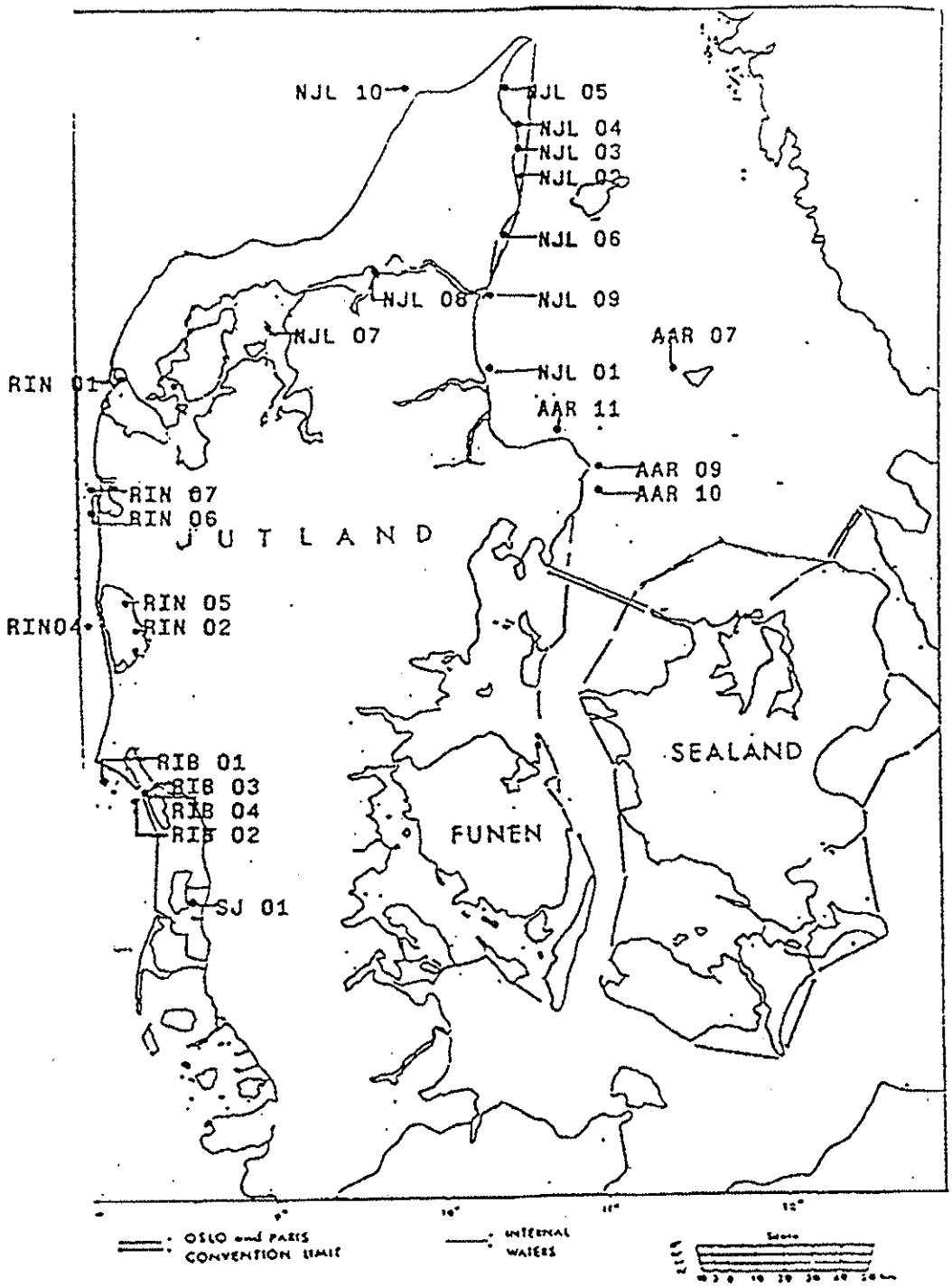


Figure 2 Approximate positions of the dumping sites for dredged material used by Denmark

Sites within the maritime area used in 1991: AAR 07, AAR 09 - AAR 11, NJL 01, NJL 09, NJL 10, RIB 01, RIB 02, RIN 04, RIN 06, RIN 07

Sites in internal waters used in 1991: NJL 02 - NJL 08, RIB 03, RIB 04, RIN 01, RIN 02, RIN 05, SJ 01

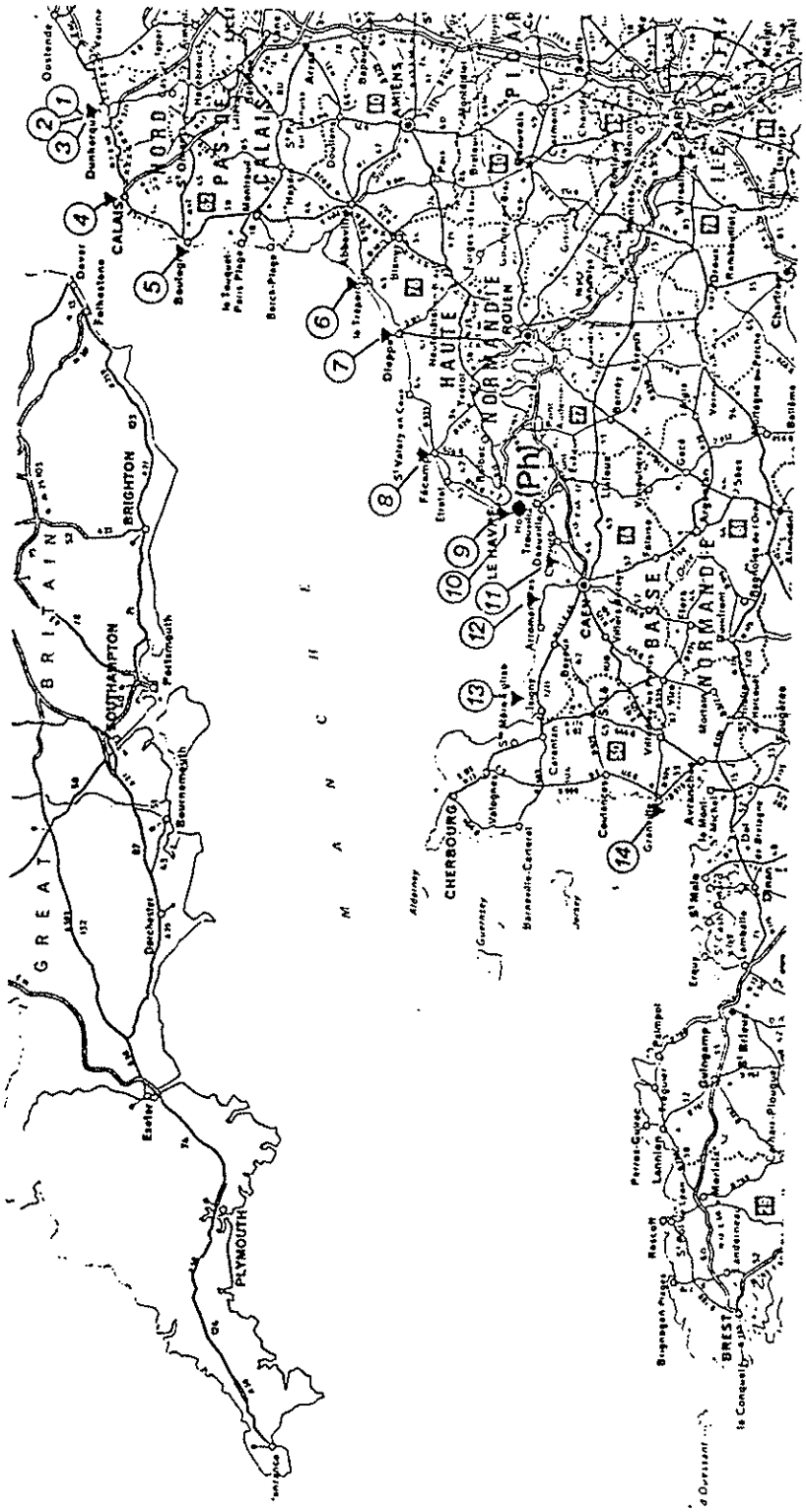


Figure 3a: Approximate positions of the dumping sites for dredged material used by France: English Channel and North Sea

Sites within the maritime area used in 1991: F/1 to F/3, F/4a, F/5 to F/8, F/10, F/12
Sites in internal waters used in 1991: F/14
(Original map: Michelin / France départementale et administrative)

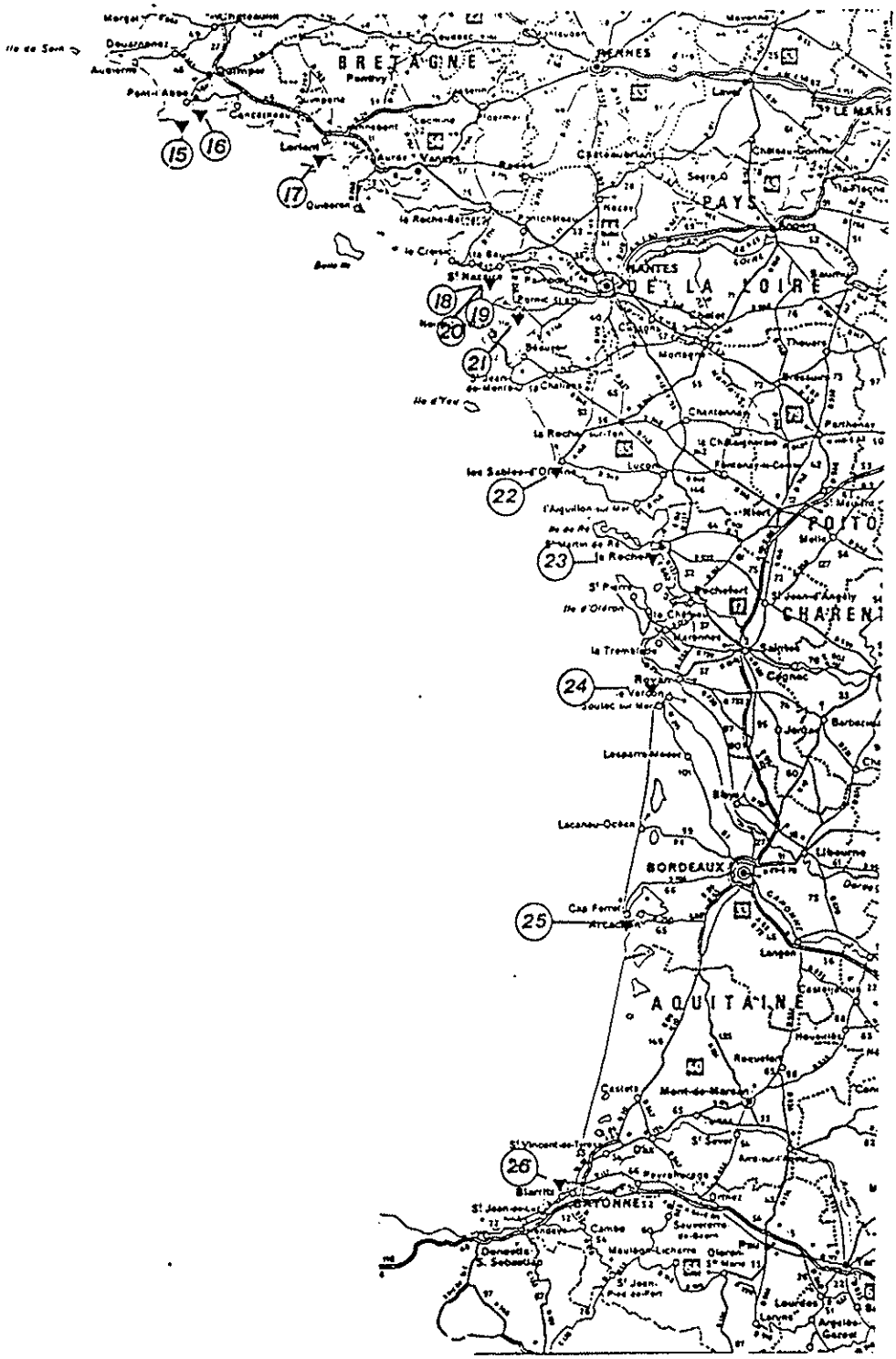


Figure 3b: Approximate positions of the dumping sites for dredged material used by France: Atlantic Ocean

Sites within the maritime area used in 1991: None
Sites in internal waters used in 1991: Locations near F/18, F/23, F/25
(Original map: Michelin / France départementale et administrative)

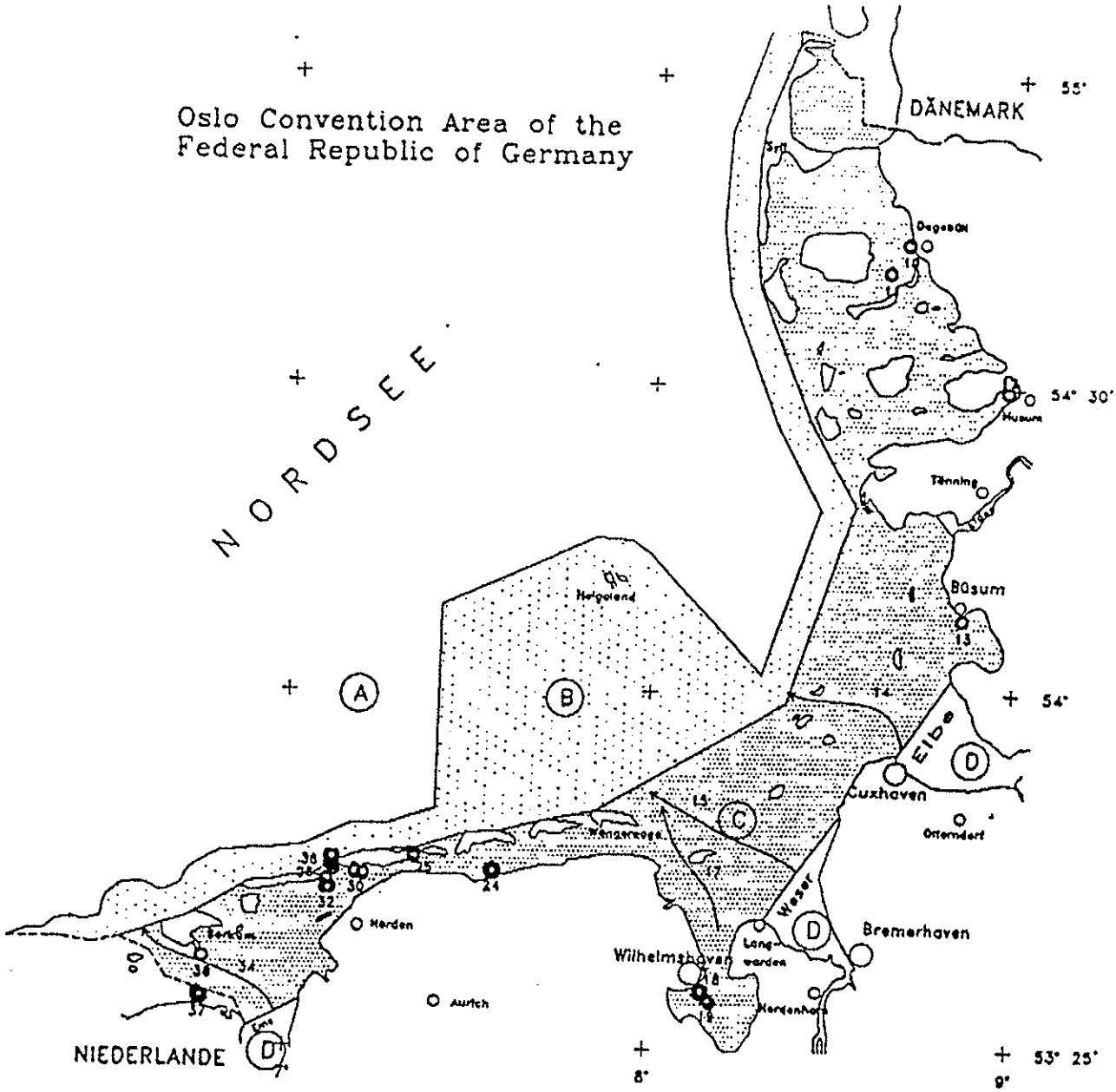


Figure 4: Approximate positions of the dumping sites for dredged materials used by the Federal Republic of Germany

Sites within the maritime area used in 1991: D/38

Sites in internal waters used in 1991: D/10, D/12 - D/15, D/17 - D/19, D/25, D/26, D/30, D/32, D/34 - D/37

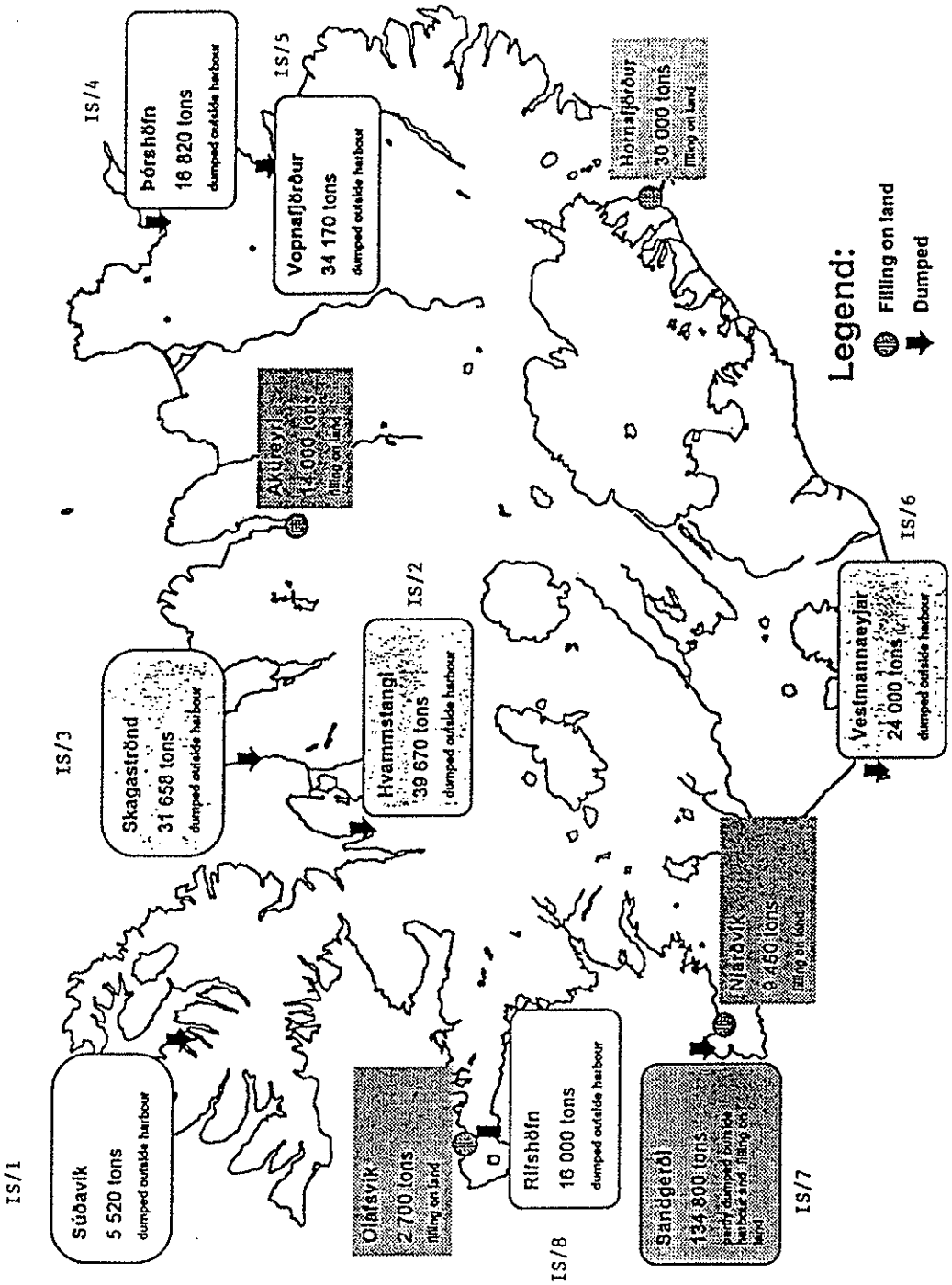


Figure 5: Approximate position of the dumping sites for dredged material used by Iceland

Sites in internal waters used in 1991: IS/1 - IS/8

Land-fill sites not to be counted as dumping.

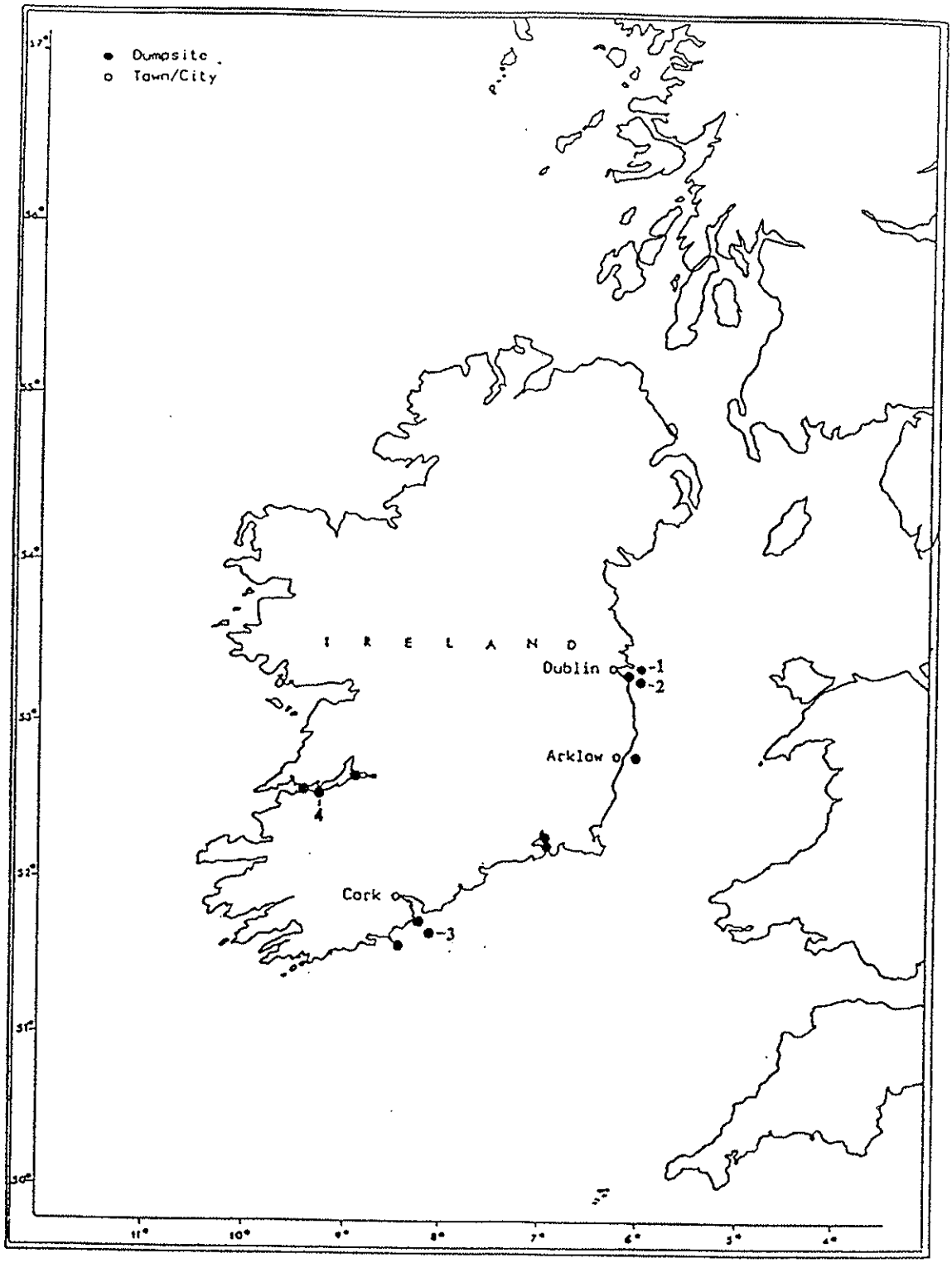


Figure 6: Approximate positions of the dumping sites used by Ireland

Sites used in 1991:

Dredged materials:	Not numbered
Sewage sludge:	Nos 1 and 2
Chemical waste:	No. 3 (maritime area)
	No. 4 (internal waters)

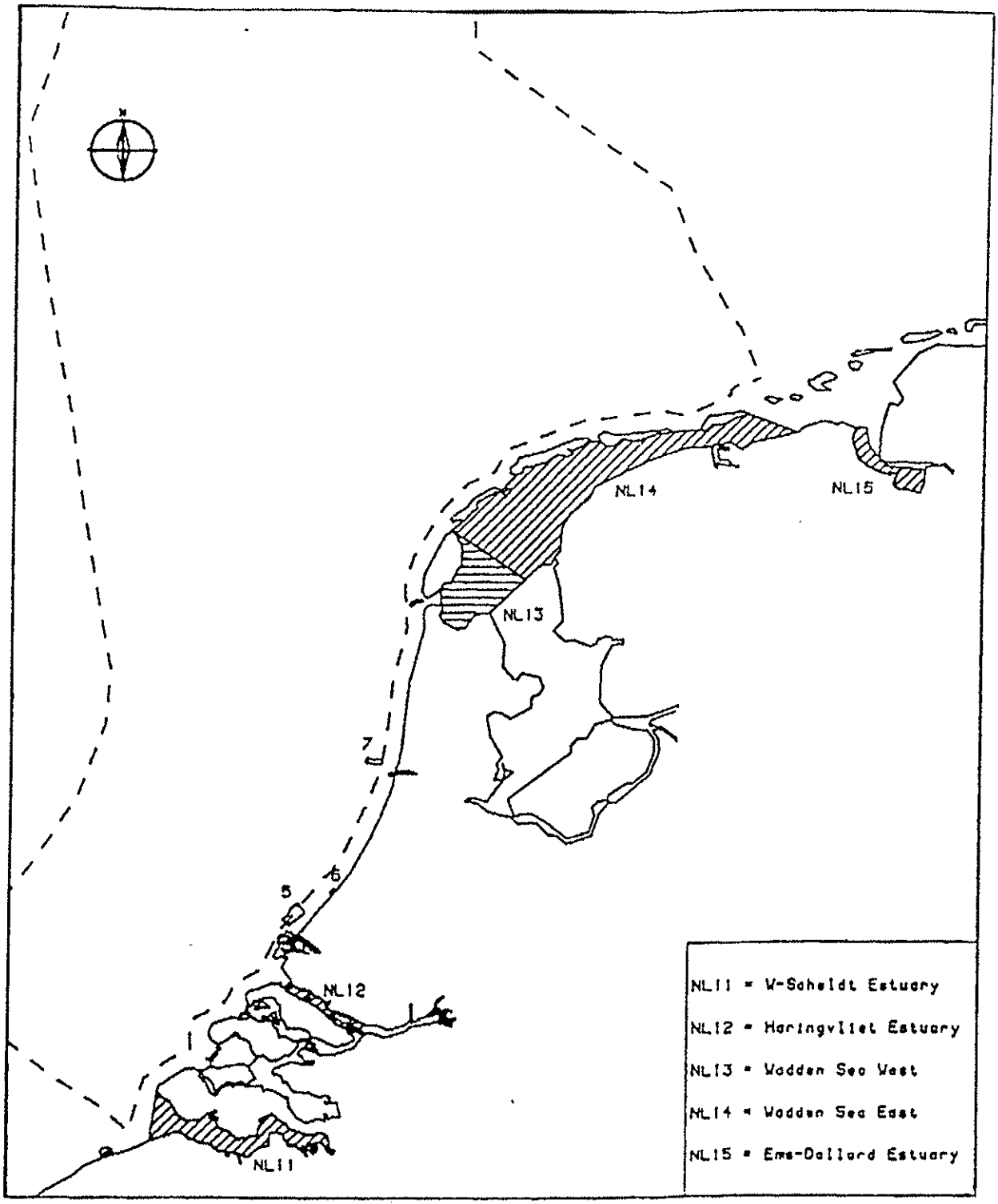


Figure 7: Approximate positions of the dumping sites for dredged materials used by the Netherlands

Sites within the maritime area used in 1991: NL/5 - NL/7

Sites in internal waters used in 1991: NL 11, NL 13 - NL 15

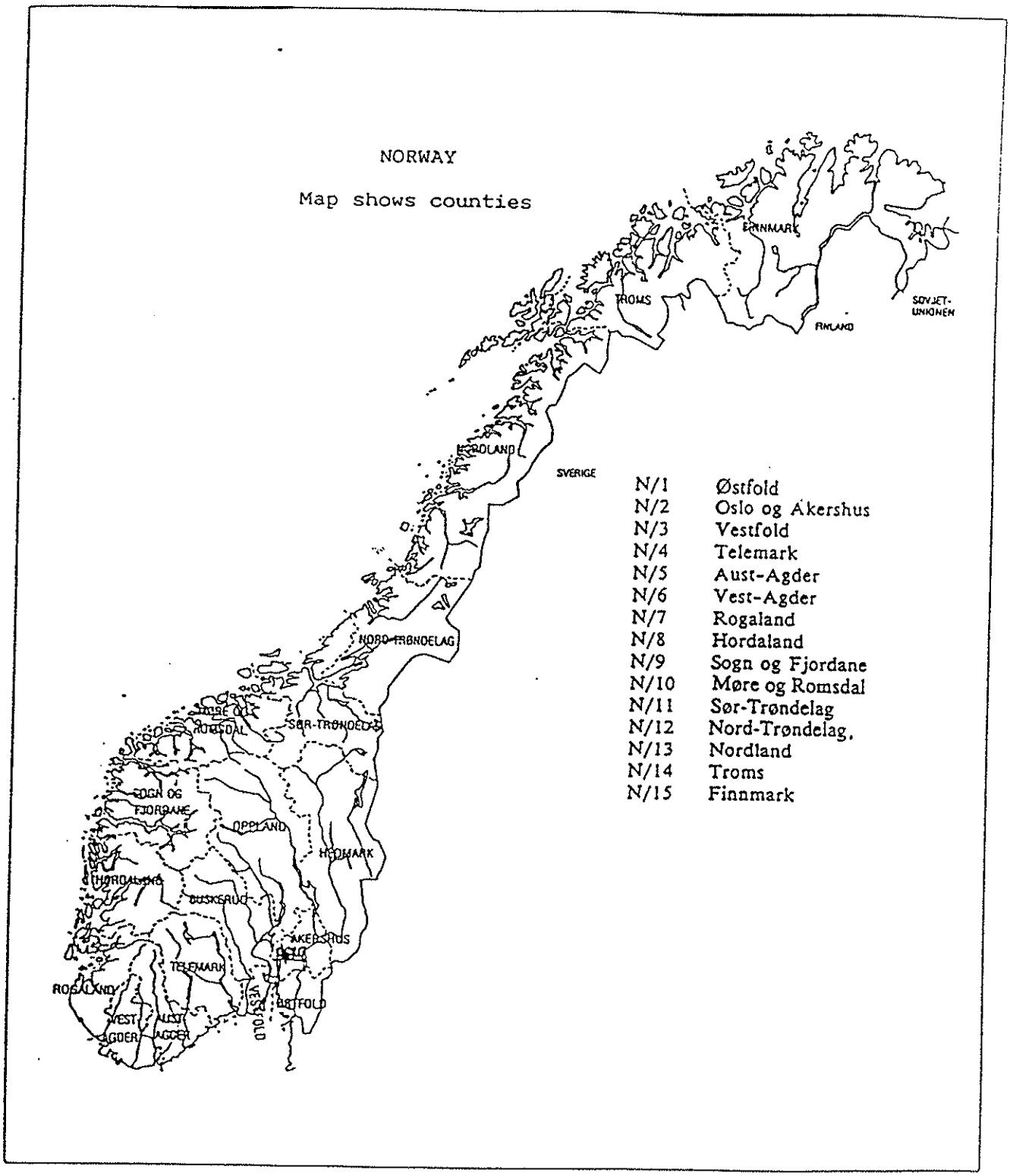


Figure 8: Norwegian counties in the internal waters of which wastes were dumped in 1991

Dredged materials:	N/1 to N/7, N/10 and N/13 to N/14
Inert materials:	N/2, N/4, N/7
Bulky wastes:	N/6, N/7, N/8, N/9, N/10
Fish wastes:	N/14
Ships:	N/2, N/3, N/4, N/5, N/6, N/7, N/8, N/9, N/10, N/11, N/12, N/13, N/14, N/15

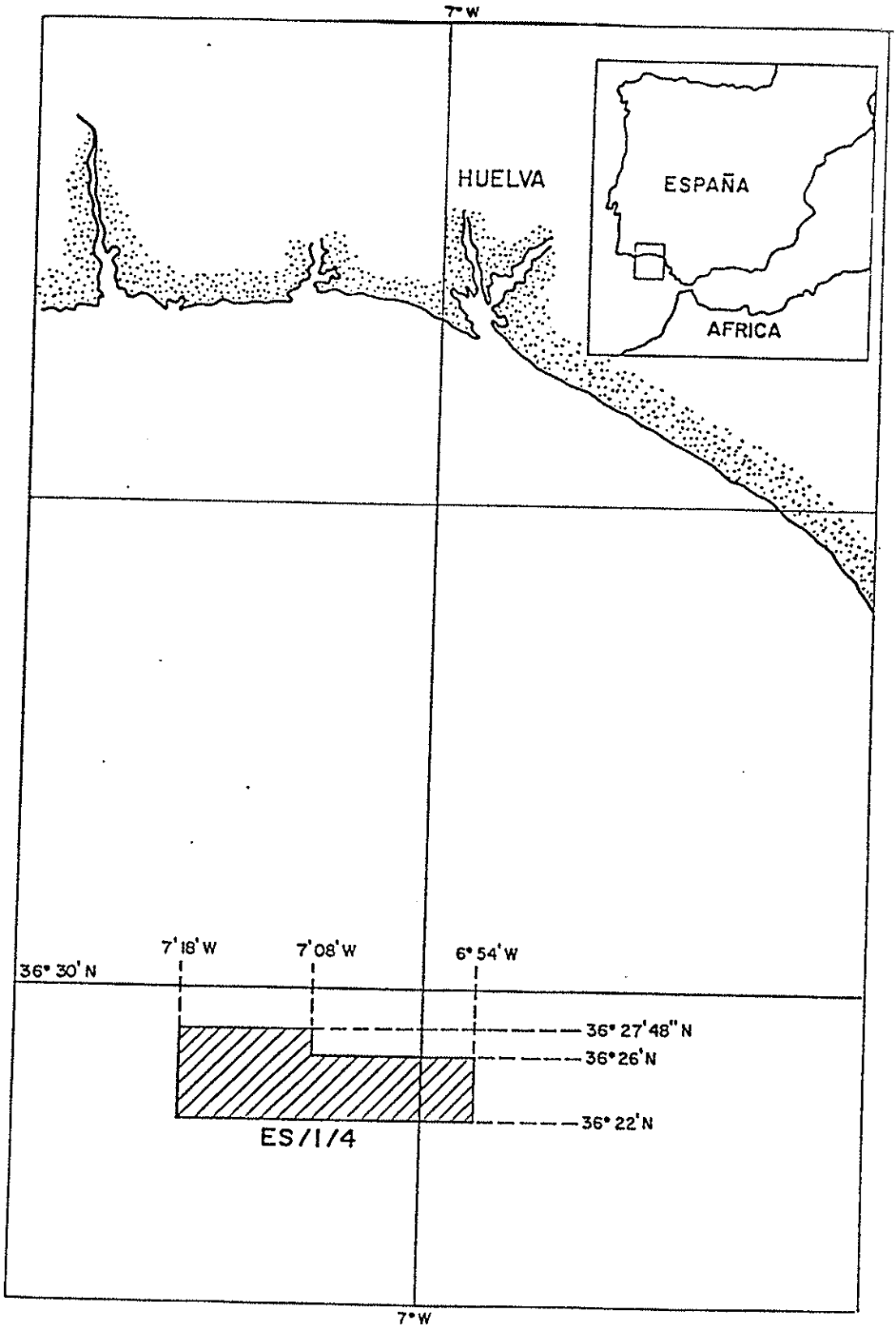


Figure 9a: Approximate position of the dumping site for industrial waste used by Spain

1	Pasajes	7	La Coruña
2	Bilbao	8	Villagarcia
3	Santander	9	Marin
4	Gijon	10	Huelva
5	Aviles	11	Sevilla
6	Ferrol	12	Cadiz

Figure 9b: Approximate positions of the dumping sites for dredged material used by Spain

Sites within the maritime area used in 1991: 10, 12
Sites in internal waters used in 1991: 1, 2, 3, 5, 6, 7, 8, 11

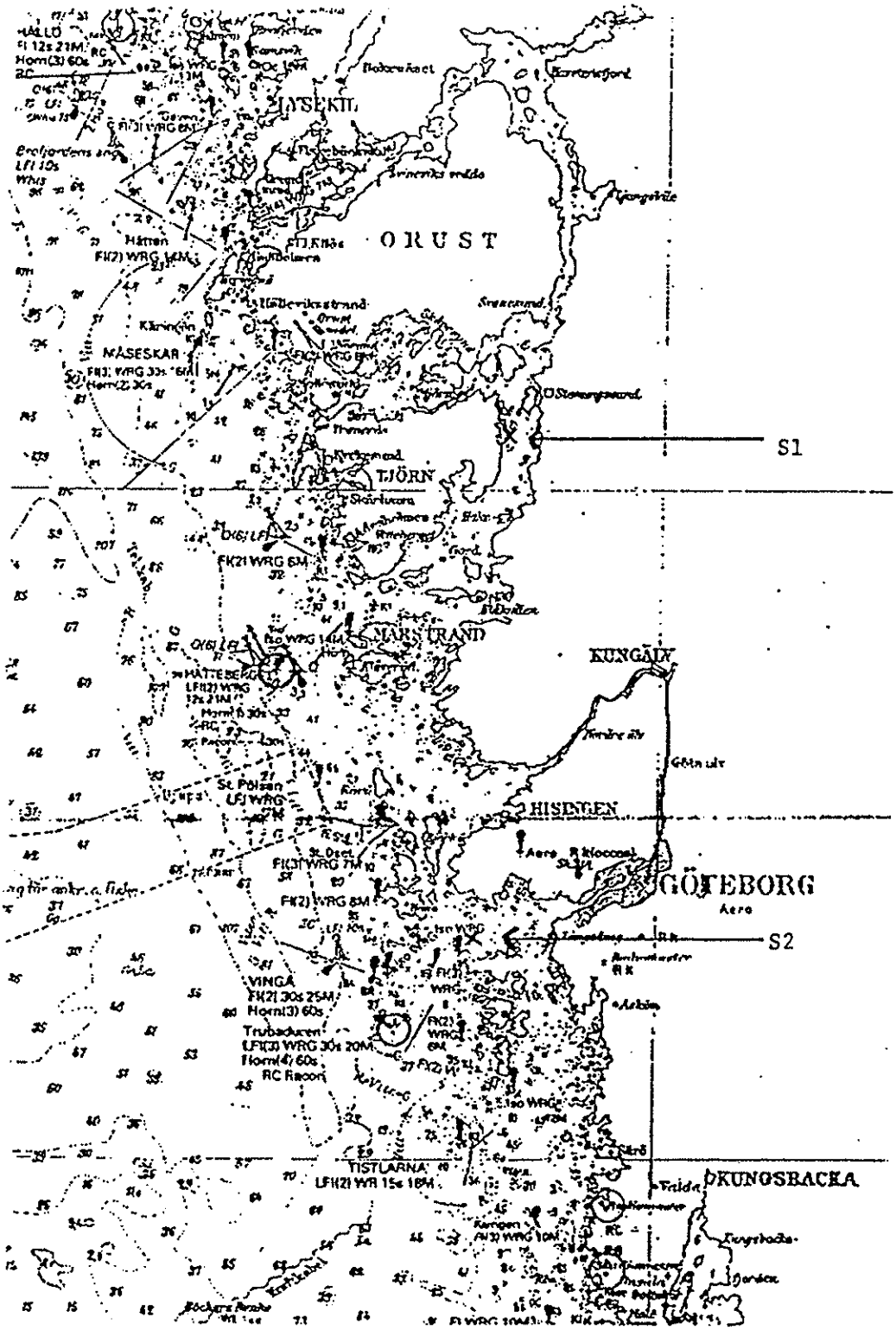


Figure 10: Approximate positions of the dumping sites for dredged materials used by Sweden

Sites in internal waters used in 1991: S/1, S/2

South—West England and South Wales

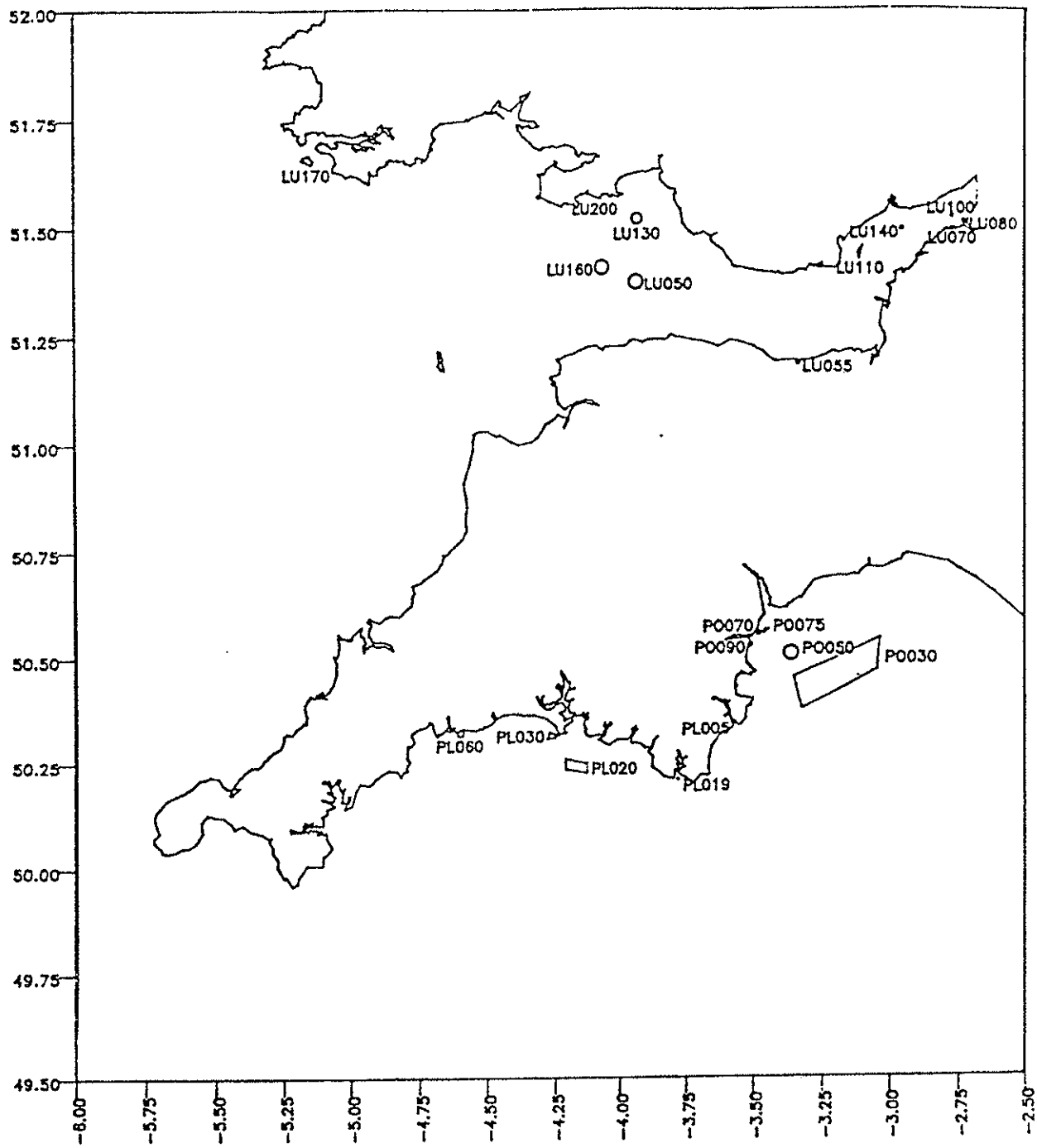


Figure 11a: Approximate positions of the dumping sites used by the United Kingdom (South-west England and South Wales)

Sites within the maritime area used in 1991:

Dredged material: LU170, PL030, PL060,PO070, PO075

Sewage sludge: LU050, LU160, PL020, PO030, PO050

Sites in internal waters used in 1991:

Dredged material: LU055, LU070, LU080, LU100, LU110, LU130, LU140, LU200, PL005, PL019, PL090

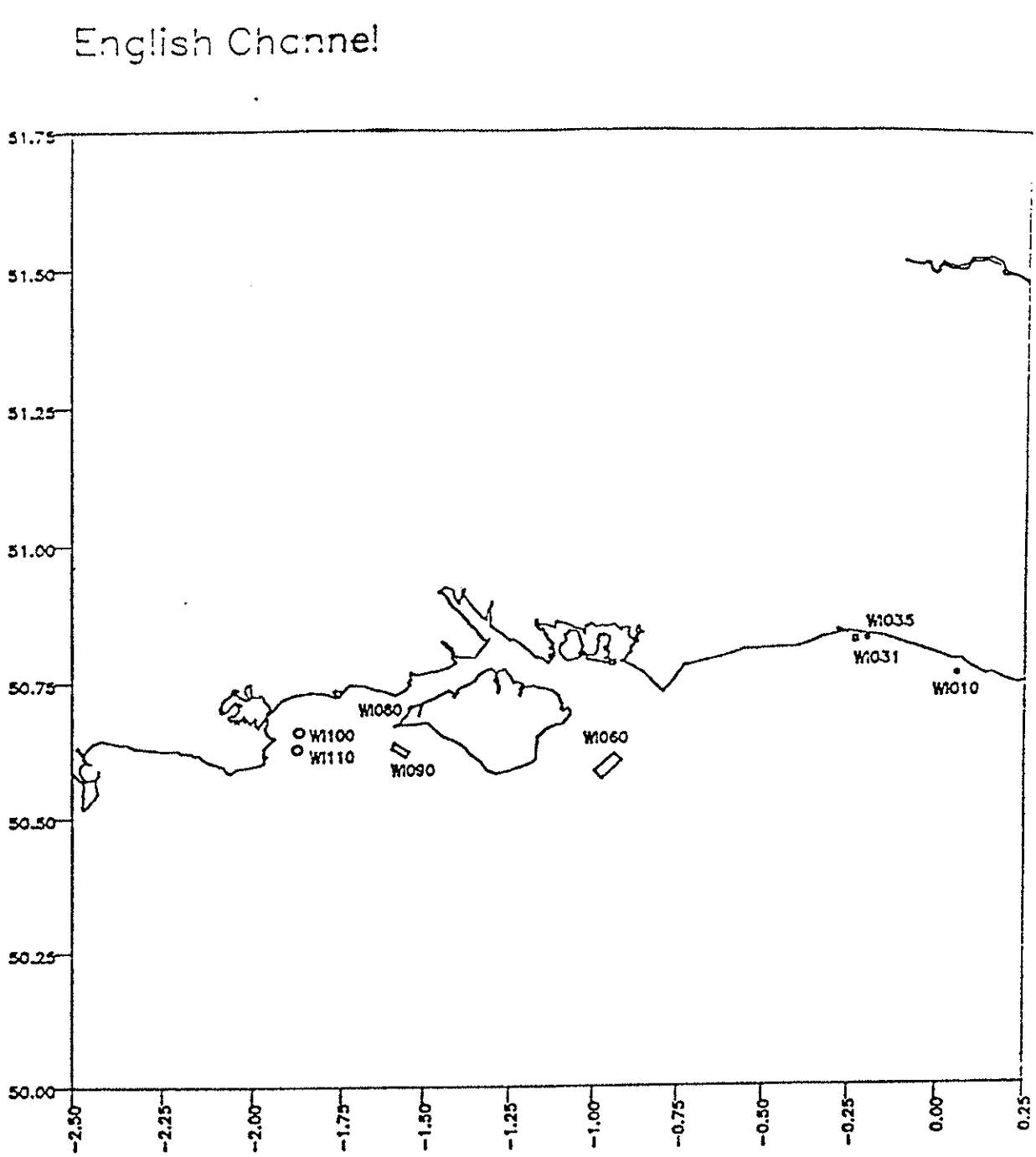


Figure 11b: Approximate positions of the dumping sites used by the United Kingdom (English Channel)

Sites within the maritime area used in 1991:

Dredged material: WI010, WI031, WI060, WI090

Sewage sludge: WI060

Sites in internal waters used in 1991:

Dredged material: WI035, WI080, WI100, WI110

South-Eastern England

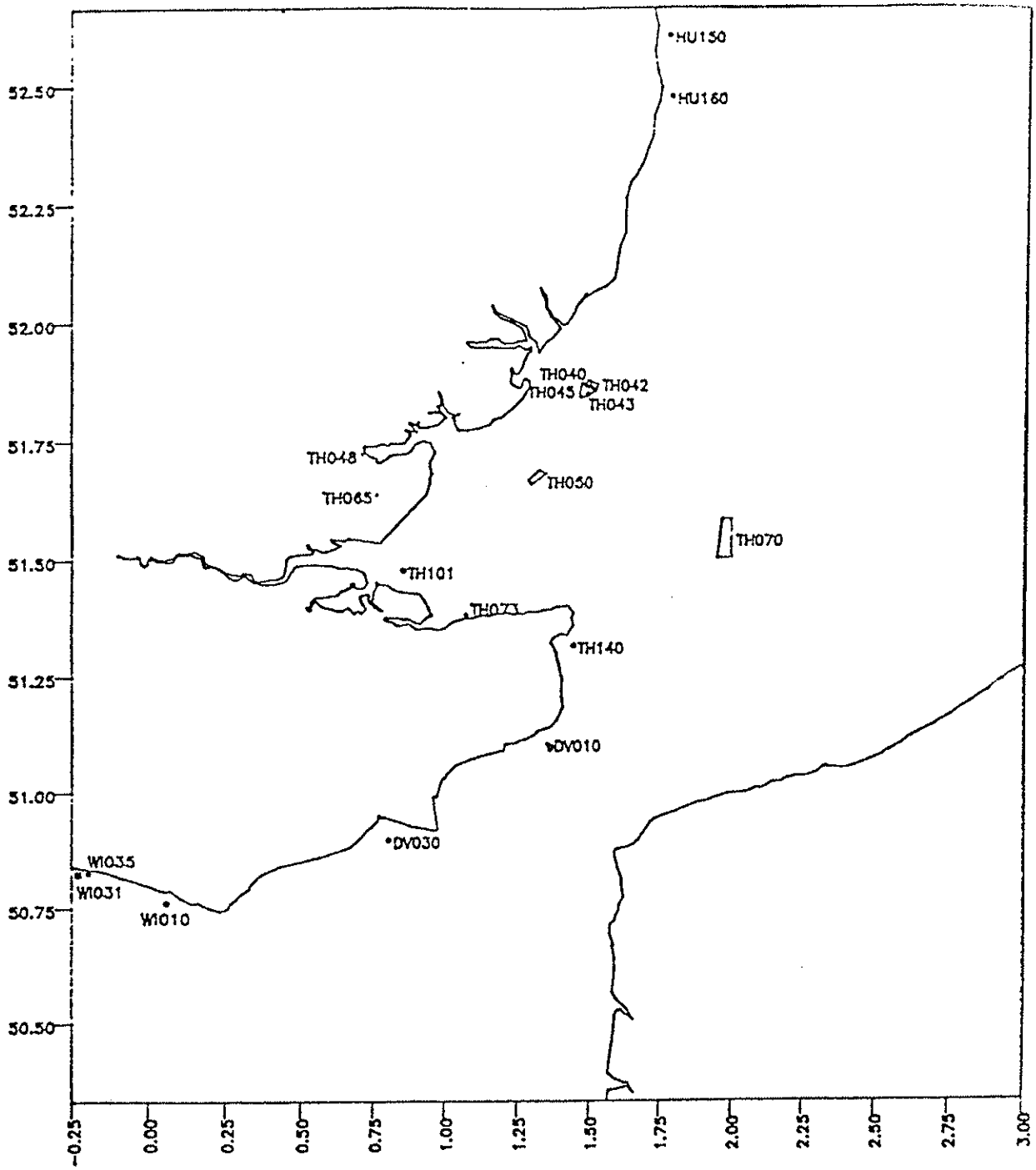


Figure 11c: Approximate positions of the dumping sites used by the United Kingdom (South-eastern England)

Sites within the maritime area used in 1991:

Dredged material: DV010, DV030, TH040, TH043, TH045, TH070, TH140

Sewage sludge: TH042, TH050

Sites in internal waters used in 1991:

Dredged material: TH048, TH065, TH073, TH101

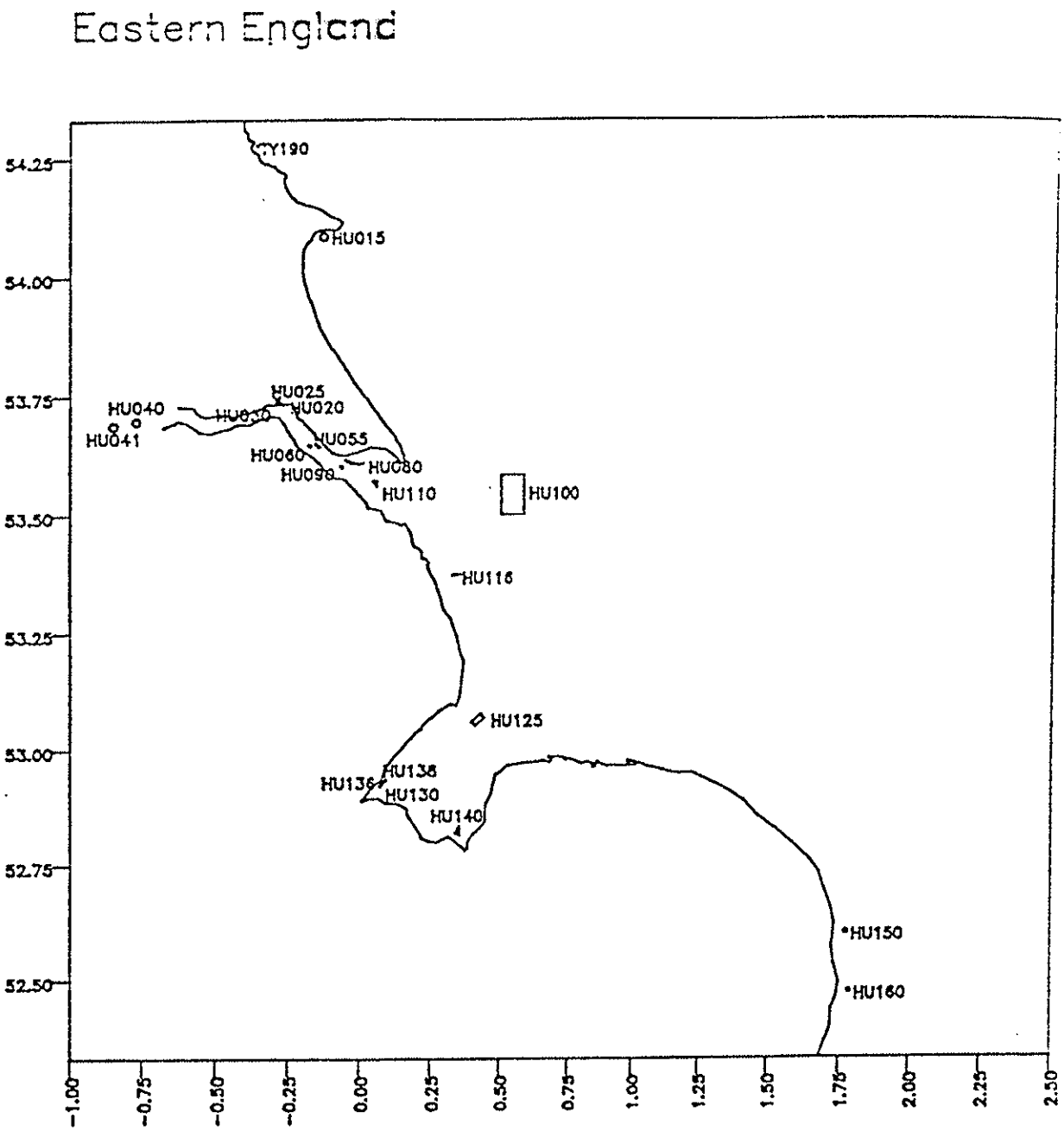


Figure 11d: Approximate positions of the dumping sites used by the United Kingdom (Eastern England)

Sites within the maritime area used in 1991:

Dredged material: HU015, HU125, HU138, HU150, HU160

Sewage sludge: HU100

Other waste: HU100

Sites in internal waters used in 1991:

Dredged material: HU020, HU025, HU030, HU040, HU041, HU055, HU060, HU080, HU090, HU110, HU116, HU130, HU136, HU140

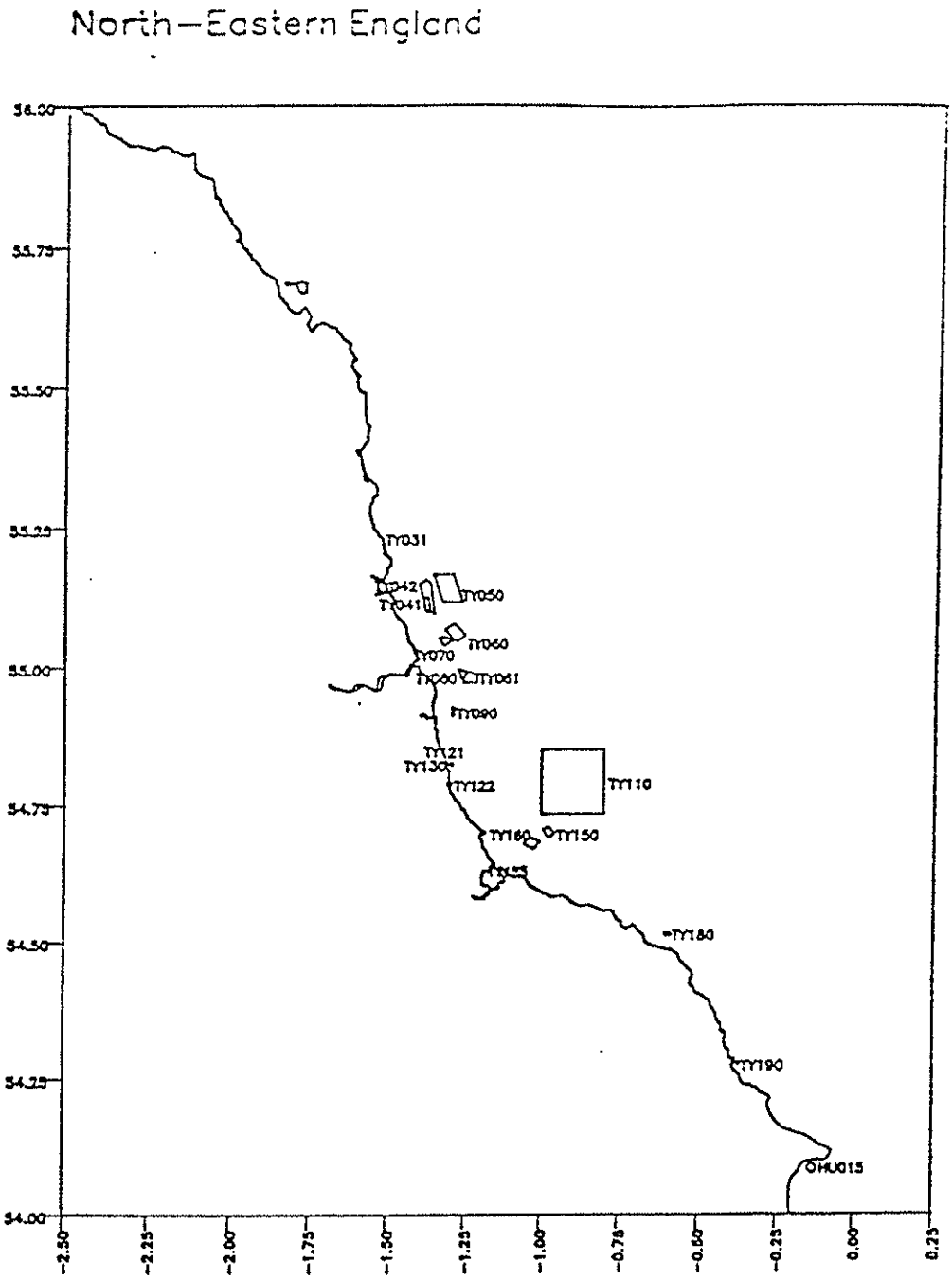


Figure 11e: Approximate positions of the dumping sites used by the United Kingdom (North-eastern England)

Sites within the maritime area used in 1991:

Dredged material:	TY042, TY070, TY081, TY090, TY130, TY150, TY155, TY160, TY180, TY190,
Sewage sludge:	TY060, TY110
Other waste:	TY041, TY050, TY070, TY080, TY090, TY110

Sites in internal waters used in 1991:

Other waste:	TY031, TY121, TY122

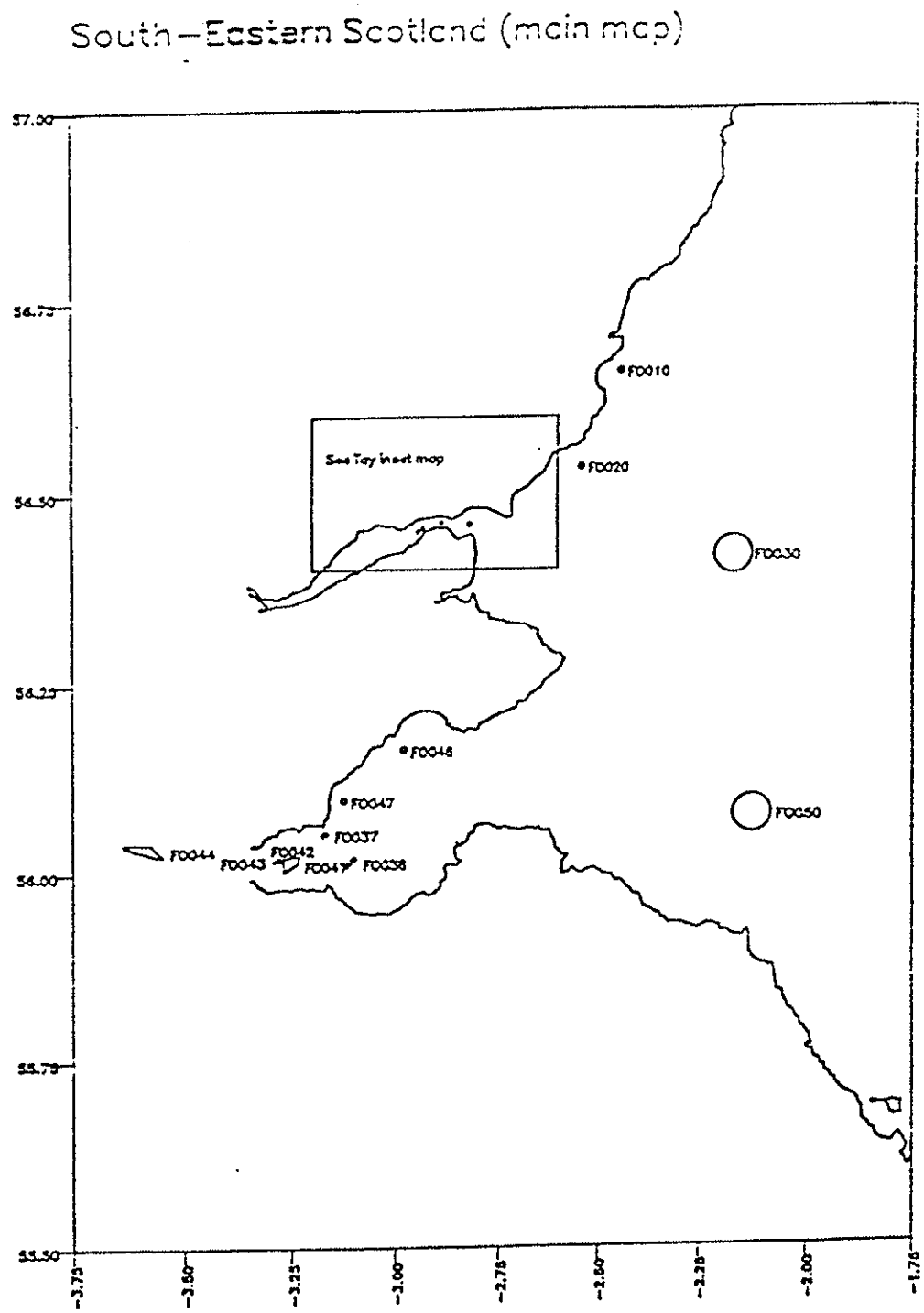


Figure 11f(1): Approximate positions of the dumping sites used by the United Kingdom (South-eastern Scotland: main map)

Sites within the maritime area used in 1991:

Dredged material: FO010, FO020

Sewage sludge: FO030, FO050

Sites in internal waters used in 1991:

Dredged material: FO037, FO038, FO041, FO042, FO043, FO044, FO047, FO048

South–Eastern Scotland (Tay inset)

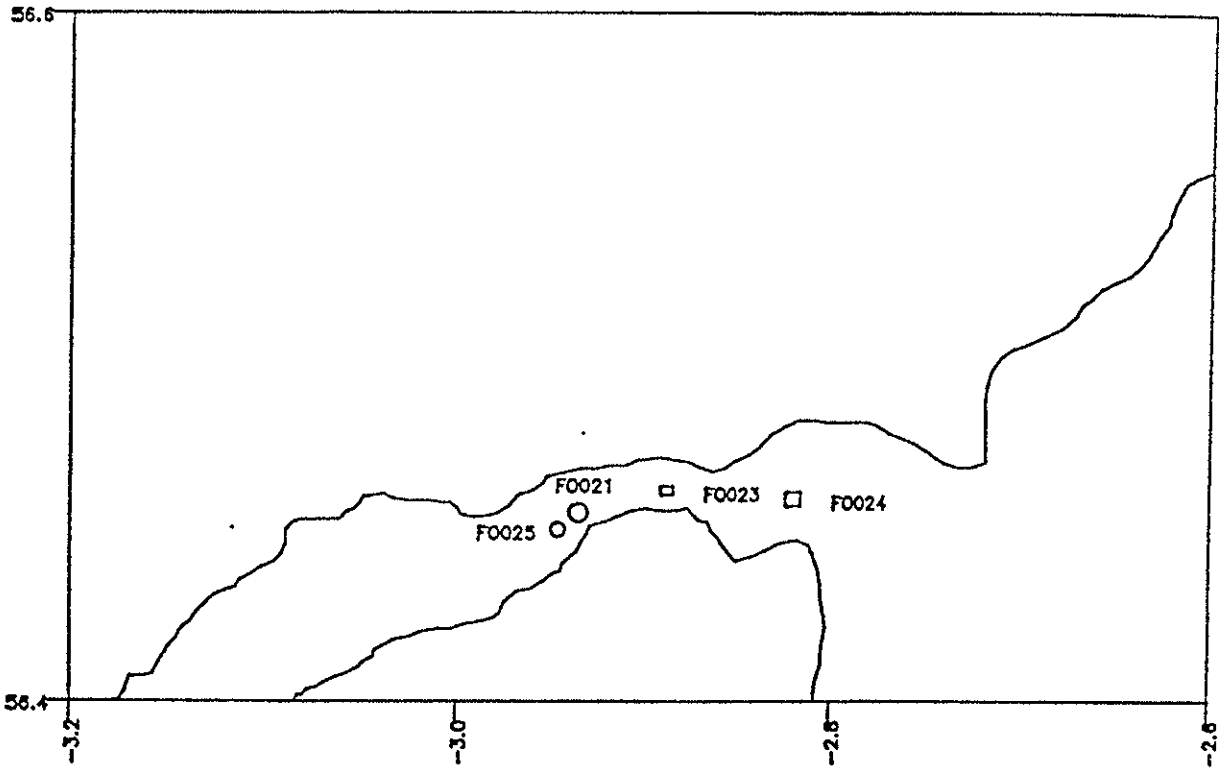


Figure 11f(2): Approximate positions of the dumping sites used by the United Kingdom (South-eastern Scotland: Tay inset)

Sites in internal waters used in 1991:

Dredged material: FO021, FO023, FO024, FO025

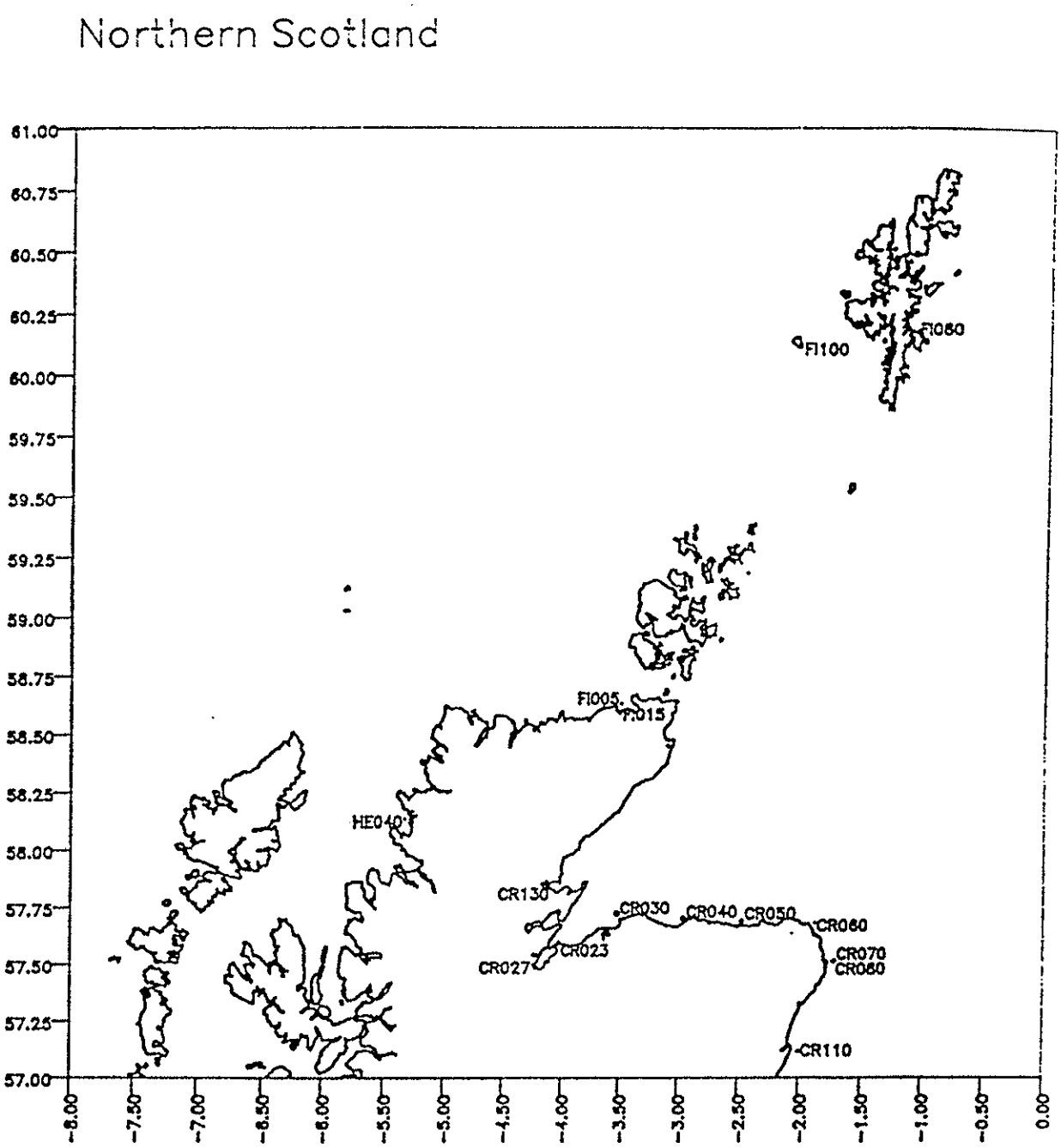


Figure 11g: Approximate positions of the dumping sites used by the United Kingdom (Northern Scotland)

Sites within the maritime area used in 1991:

Dredged material: CR040, CR050, CR060, CR070, CR080, CR110, FI005, FI100,

Sites in internal waters used in 1991:

Dredged material: CR023, CR027, CR030, CR130, FI015, FI080, HE040

South-West Scotland and Northern Ireland

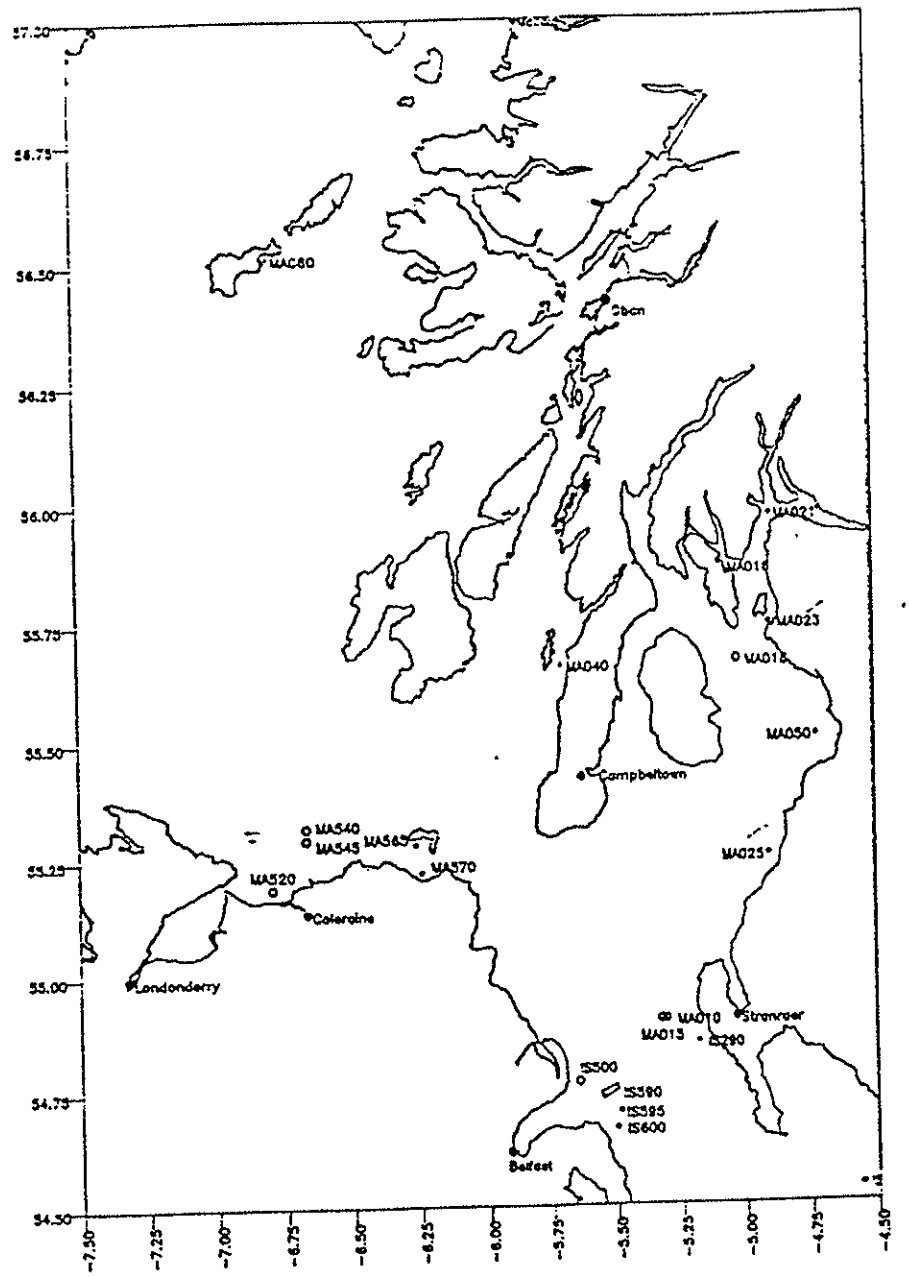


Figure 11h: Approximative positions of the dumping sites used by the United Kingdom (South-west Scotland and Northern Ireland)

Sites in maritime area used in 1991:

Dredged material: MA015, MA520, MA540, MA581

Sites in internal waters used in 1991:

Dredged material: MA016, MA021, MA025, MA040, MA050, MA060, MA080, MA600

Sewage sludge: MA018

Irish Sea

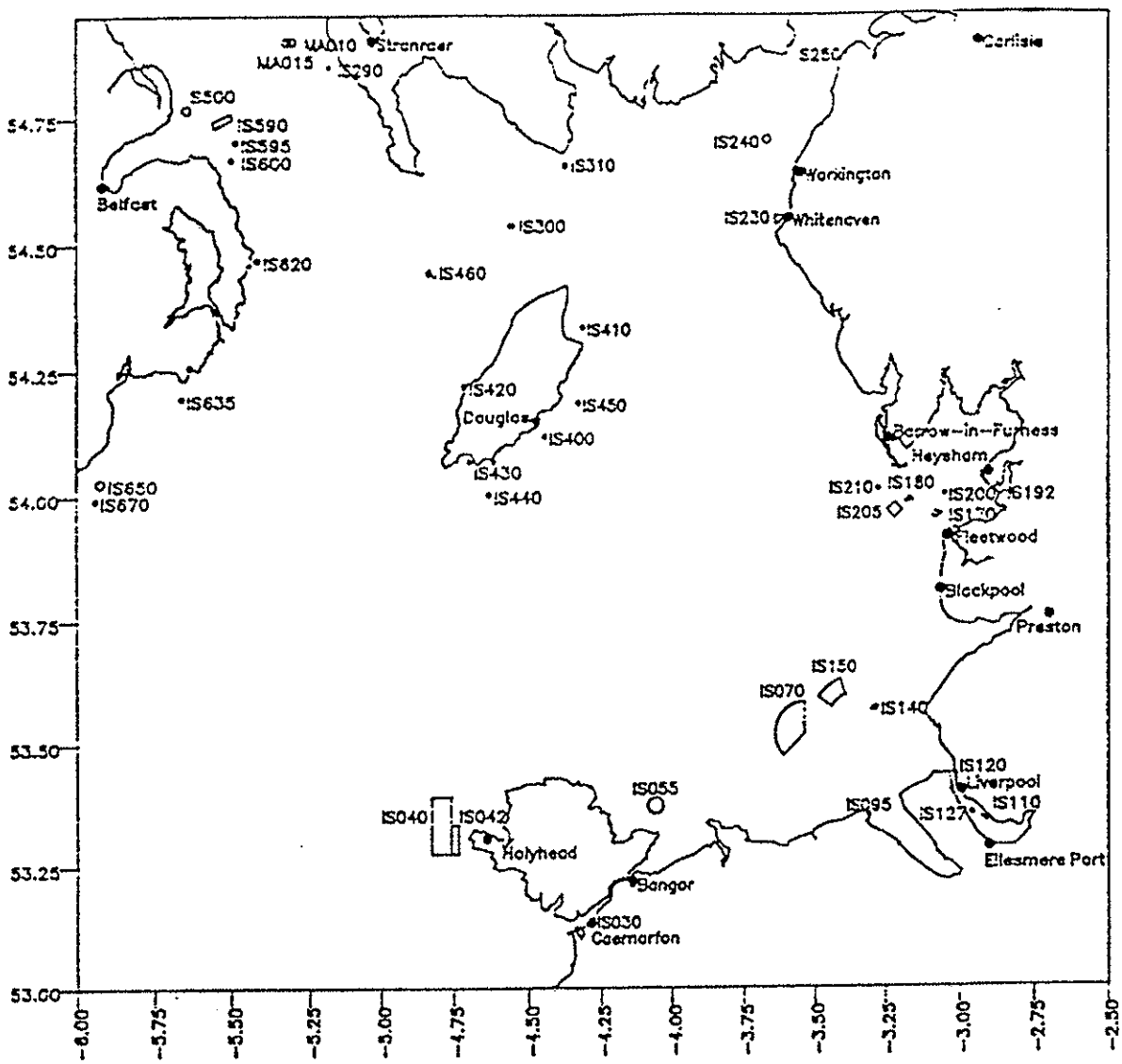


Figure 11i: Approximative positions of the dumping sites used by the United Kingdom (Irish Sea)

Sites in maritime area used in 1991:

Dredged material: IS040, IS042, IS055, IS140, IS150, IS180, IS205, IS210, IS400, IS410, IS420, IS430, IS440, IS450, IS500, IS595, IS635, IS650, IS670

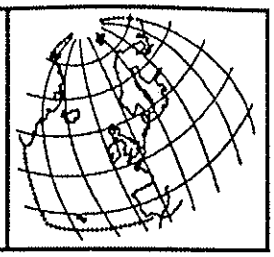
Sewage sludge: IS070, IS590

Sites in internal waters used in 1991:

Dredged material: IS030, IS110, IS120, IS127, IS170, IS200, IS230, IS240, IS250, IS620

Oslo and Paris Commissions

1995



Report on the Amounts of Wastes Dumped at Sea in 1992

Contents

Introduction

Contracting Parties to the Oslo Convention are obliged to report by 30 June each year to the Secretariat of the Oslo Commission on all dumping operations in the previous year. All dumping of wastes in the high seas and in the territorial waters of Contracting Parties has to be notified to the Commission.

In June 1989, the Oslo Commission decided to phase out the dumping of industrial wastes in the North Sea by the end of 1989, and in other parts of the maritime area by the end of 1995[3] except for inert materials of natural origin, and except for those industrial wastes for which it can be shown to the Commission through the Prior Justification Procedure both that there are no practical alternatives on land and that the materials cause no harm in the marine environment. In 1990 the Oslo Commission decided to phase out the dumping of sewage sludge at sea by the end of 1998 at the latest[4]. As a consequence of these decisions the quantities dumped in the two categories are expected to decrease over the next few years.

In 1992 Contracting Parties dumped wastes of the following categories:

(i) dredged material;

(ii) sewage sludge; and

(iii) "other wastes".

The category "other wastes" consists of the following sub-categories:

a. chemical wastes, slurries, including fly ash;

b. inert materials of natural origin including rock, colliery and mining waste, peat etc;

c. bulky wastes, eg scrap metal, tar-like substances;

d. waste from fish processing;

e. ships;

f. offshore installations and structures; and

g. muds from oil and gas exploration, extraction activities.

The first two of these sub-categories correspond to the category "industrial wastes" reported prior to 1990. In 1992 wastes falling into the sub-categories a - e were dumped.

Eight Contracting Parties reported on dumping operations carried out in Oslo Convention waters in 1992. Broken down into waste categories, eight countries reported the dumping of dredged material, two countries dumped sewage sludge and three countries reported the dumping of other wastes (Table 1). A summary of the information on dredged material dumped is given at Tables 2a-b and the corresponding details can be found at Tables 5a-b. Table 3 gives an overview of the information on sewage sludge dumped whilst the relevant details are given at Table 6. An overview of the information on other wastes dumped is given at Tables 4a-f. Table 4a gives an overview of the chemical wastes dumped in 1992 and the corresponding details are given at Table 7.

3 OSCOM Decision 89/1 on the Reduction and Cessation of Dumping Industrial Wastes at Sea
4 OSCOM Decision 90/1 on the Cessation of Dumping of Sewage Sludge at Sea

In anticipation of an amendment to the Oslo Convention with regard to dumping in internal waters, eleven countries also reported on these dumping operations. It has to be noted that reported dumping operations in internal waters are not a new addition to environmental impact. On the contrary they are long existing loads the reporting of which is not an obligation for Contracting Parties. The information on dumping in internal waters included in this report is given on a voluntary basis and may be incomplete.

Voluntary reports on dumping in internal waters in 1992 were provided by eleven Contracting Parties with regard to the dumping of dredged material, by one country on the dumping of sewage sludge and by three countries with regard to other wastes (Table 1).

The figures reported hereafter are all given in continental notation and, in general, relate to dumping within the maritime area of the Oslo Convention only. Amounts dumped are reported as wet tonnes. Quantities dumped in internal waters, although shown in the tables and mentioned where applicable, have not, in general, been taken into account for comparisons with previous years.

Dredged material dumped in 1992

As in previous years, the total amounts of dredged material dumped in 1992 were allocated to a table showing the dumping of harbour dredgings (Table 2a) and a table giving an overview of the dumping of dredged material from estuaries and navigation channels (Table 2b). Details of the dumping of dredged material are given at Table 5a (inorganic substances) and Table 5b (organic substances). For some of the dredging activities the Netherlands provided information on the total load of contaminants and the anthropogenic load. The difference between the two amounts constitutes the natural load. This information can be found at an Annex to Table 5. Dumping locations for dredged material are shown in Figures 1 to 8 and 9b to 11i.

The total amount dumped in both categories was 92,4 million tonnes and thus substantially lower than in 1991 (109,5 million tonnes). Belgium, Denmark, France, Germany, Ireland, the Netherlands, Spain and the United Kingdom dumped dredged material in both the maritime area and their internal waters. Iceland, Norway and Sweden dumped dredged material exclusively in their internal waters. Dumping of dredged material in internal waters accounts for roughly 92,8 million tonnes. Finland also dumped dredged material in its internal waters. Since the Finnish internal waters are outside the maritime area this was not taken into account.

The amount of heavy metals deposited in the marine environment with dredged material is considerable. However, much of the trace metal content is of natural origin and many operations simply relocate the material rather than constituting fresh input to the environment.

Sewage sludge dumped in 1992

With regard to the United Kingdom, the dumping of sewage sludge within the maritime area in 1992 (8,3 million tonnes; Table 3) was higher than in 1991 (8,0 million tonnes), whilst the amount dumped in internal waters (1,7 million tonnes) remained unchanged. The Irish dumping of sewage sludge (maritime area only) increased from 0,34 million tonnes in 1991 to 0,38 million tonnes. The input amounts of Annex I and Annex II substances remained more or less in the same order of magnitude as in 1991. Oil, nitrogen and phosphorus inputs from the

dumping of sewage sludge were also reported in some cases (cf Table 6(2)). Dumping locations for sewage sludge are shown in Figures 6, 11a-f(1), 11h and 11i.

Other wastes dumped in 1992

Chemical wastes, slurries, including fly ash

Table 4a gives an overview of the chemical wastes dumped in 1992. The amounts dumped in 1992 (1,03 million tonnes) are 0,25 million tonnes lower than in 1991 (1,28 million tonnes). The dumping of wastes from the production of TiO_2 carried out by Spain was 0,51 million tonnes in 1992, higher than in 1991 (0,44 million tonnes) and is thus back to the 1990 level. The United Kingdom reduced its dumping of liquid chemical wastes (cf Table 7) from 0,19 million tonnes in 1991 to 0,17 million tonnes in 1992. The United Kingdom's dumping of fly ash in 1992 (0,23 million tonnes) was less than in 1991 (0,3 million tonnes). Ireland decreased its dumping of liquid chemical wastes from 0,35 million tonnes in 1991 to 0,11 million tonnes in 1992. An overview of the toxicity of liquid chemical wastes and slurries dumped in 1992 is given at Table 4b. Dumping sites for chemical wastes are shown in Figures 6, 9a, 11d and 11e.

Inert materials of natural origin

In 1992 the United Kingdom dumped 1,8 million tonnes (1991: 2,2 million tonnes) of inert materials of natural origin such as rock and tailings within the maritime area (cf Table 4c). The United Kingdom dumped another 1,7 million tonnes of such material in its internal waters (1991: 2 million tonnes). Norway dumped 0,24 million tonnes and 8 700 m^3 of inert materials in its internal waters. Ireland dumped about 4 800 tonnes of inert materials in its internal waters. Dumping sites for inert materials of natural origin are shown in Figures 6, 8, 11e and 11i.

Bulky wastes

In 1992, Norway dumped 51 tonnes (1991: 1 776 tonnes) and 600 m^3 (1991: 37 613 m^3) of bulky wastes such as iron scrap, cables, wires and concrete in its internal waters (Table 4d). The relevant dumping locations are shown in Figure 8.

Waste from fish processing

In 1992, Norway dumped 14 567 tonnes (1991: 26 tonnes) of fish wastes in its internal waters (cf Table 4e). For the relevant dumping location see Figure 8.

Ships

Norway dumped a total of 34 ships (1991: 59) in its internal waters (Table 4f). All chemicals and removable parts were removed prior to dumping. Dumping locations are shown in Figure 8.

Summary

In 1992 eight Contracting Parties dumped 92,4 million tonnes of dredged material in the maritime area which is substantially less than in 1991. The amount of contaminants arising from dredged material in harbours, estuaries and open sea areas are variable as a result of, *inter alia*, local geology, hydrography, sedimentation, port use and other inputs.

Dumping of dredged material in internal waters was reported by eleven countries. It amounts to roughly 92,8 million tonnes and thus represents 50% of the total (185,2 million tonnes) of all dredged spoil disposals in the maritime area plus internal waters in 1992.

The amount of sewage sludge dumped in the maritime area during 1992 (8,7 million tonnes) was higher than in 1991 (8,4 million tonnes). Annex I and II substances dumped remained more or less in the same order of magnitude as in 1991. In some cases oil, nitrogen and phosphorus inputs with sewage sludge were also reported.

The amount of chemical wastes, slurries, including fly ash dumped in 1992 (1,03 million tonnes) was 0,25 million tonnes lower than in 1991. Whilst amounts dumped by Ireland and the United Kingdom decreased, the amounts dumped by Spain increased, back to the level of 1990.

The dumping of inert materials of natural origin within the maritime area decreased compared to 1991 (1991: 2,2 million tonnes, 1992: 1,8 million tonnes).

Contracting Parties also reported on the dumping of bulky wastes, waste from fish processing (substantially higher than in 1991), and laid-up ships (fewer than in 1991). The quantities involved may be considerable in some cases. However, inputs of hazardous substances into the marine environment via these dumping activities should be negligible.

Table 1. Information received on the amounts of wastes dumped in 1992

Country	Dredged Material		Sewage Sludge		Other Wastes*	
	Maritime area	Internal waters	Maritime area	Internal waters	Maritime area	Internal waters
Belgium	+	+	-	-	-	-
Denmark	+	+	-	-	-	-
Finland	-	(+)	-	-	-	-
France	+	+	-	-	-	-
Germany	+	+	-	-	-	-
Iceland	-	+	-	-	-	-
Ireland	+	+	+	-	1	1/2
Netherlands	+	+	-	-	-	-
Norway	-	+	-	-	-	2/3/4/5
Portugal	No information received		-	-	-	-
Spain	+	+	-	-	1	-
Sweden	-	+	-	-	-	-
United Kingdom	+	+	+	+	1/2	2

\+ Wastes dumped
(+) Wastes dumped (outside the maritime area)
\- No wastes dumped
*) 1 = Chemical wastes, slurries, including fly ash
2 = Inert materials of natural origin including rock, colliery and mining waste, peat etc
3 = Bulky wastes eg, scrap metal, tar-like substances
4 = Waste from fish processing
5 = Ships
6 = Offshore installations and structures
7 = Muds from oil and gas exploration, extraction activities

Table 2a. Dredged material (tonnes) from harbour areas dumped in 1992

Country	Amount dumped	Annex I substances --> ◇ Cd	◇ Hg	◇ T-CB	◇ PCBs	Annex II substances --> ◇ As	◇ Cr	◇ Cu	◇ Ni	◇ Pb	◇ Zn	◇ T-PAH	Origin	Internal waters	Remarks
Belgium	5 913 154	10	1,5	0,04	NA	51,4	177,7	116,7	84,2	271,3	608,9	ND	HARBOUR/SEA CHANNEL	NO	4
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	YES	
Denmark	222 570	0,01	0,002	NI	NI	0,1	0,5	0,4	0,1	0,4	2,7	NI	HARBOUR	NO	
	620 220	0,07	0,03	NI	0,00006	0,02	6,8	5,6	0,04	4,9	32,3	NI	HARBOUR	YES	
France	7 454 411	2,40	0,64	NI	0,074	30,2	154,3	65,0	46,7	118,9	296,1	0,4	HARBOUR	NO	2
	793 845	0,13	0,04	0,12	0,002	3,0	9,2	12,2	4,4	15,6	139,1	0,2	HARBOUR	YES	2
Germany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	HARBOUR	NO	
	1 940 000	0,86	0,144	0,004	NI	12,9	88,3	24,4	43,2	50,9	159,8		HARBOUR/SEA CHANNEL	YES	6
Ireland	243 130	< 0,21	< 0,02	NA	< DL	1,2	2,4	6,9	2,5	7,4	23,2	NI	HARBOUR/ESTUARY	NO	
	99 814	< 0,02	< 0,02	NA	0,0001	0,7	1,5	1,1	1,1	1,4	4,9	NI	HARBOUR	YES	
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	HARBOUR	NO	
	163 626	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR	YES	
Netherlands	14 437 100	5,44	1,88	0,14	NA	72,3	270,7	130,1	107,0	266,0	867,5	8,4	HARBOUR	NO	1
	9 955 874	3,80	1,70	0,064	NA	58,0	214,0	103,0	77,0	183,0	663,0	6,1	HARBOUR	YES	1
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	HARBOUR	NO	
	285 858	0,009	0,01	NA	0	0	0	0,4	0	4,8	0,7	0,4	HARBOUR	YES	
Portugal	No information received													NO	
	No information received													YES	
Spain	5 619 488	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR	NO	2
	2 604 270	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR	YES	2
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	HARBOUR	NO	
	20 890	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR	YES	
United Kingdom	5 506 274	1,2	1,0	NI	NI	1,6	167,3	119,2	60,0	193,4	404,9	NI	HARBOUR/ESTUARY/SEA	NO	
	17 246 567	3,6	2,8	NI	NI	5,8	550,6	339,6	203,1	548,6	1 603,1	NI	HARBOUR/ESTUARY/SEA	YES	
Total (5)	39 396 126	19,3	5,1	0,2	0,1	157	773	438	301	857	2 203	8,8			
Grand total:	73 127 040	27,8	9,8	0,4	0,1	237	1 644	924	629	1 667	4 826	15,5			

DL= Detection limit
NA= Not applicable
NI= No information
1) Amount dumped calculated by applying conversion factor 1,15 (m3 --> t)
2) Amount dumped calculated by applying conversion factor 1,3 (m3 --> t)
3) Amount dumped calculated by applying an average factor of 1,46 (range 1,3 to 1,62) for dry-t --> wet-t conversion
4) Amount dumped calculated by applying conversion factor 1,6 (dry t --> wet t)
5) Total amount dumped but excluding dumping in internal waters
6) Including 1 349 000 tonnes from the Netherlands
T-CB = Total of CBs with IUPAC nos 28, 52, 101, 118, 138, 153, 180
T-PAH = Total of ANT, BAA, BAP, BBF, BGHIP, BKF, CHR, FLU, ICDP, NAP, PA (or unspecified)

Table 2b. Dredged material (tonnes) from estuaries and navigation channels dumped in 1992

Country	Amount dumped	Annex I substances --> <> Cd	> Hg	> T-CB	> PCBs	Annex II substances --> <> As	> Cr	> Cu	> Ni	> Pb	> Zn	> T-PAH	Origin	Internal waters	Remarks*
Belgium	27 606 290	32,3	5,2	0,1	NA	185,5	512,2	179,3	315,5	552,5	1468,9	ND	SEA/SEA CHANNEL	NO	4
	14 536 173	1,6	0,2	ND	0,007	26,1	39,4	13,7	20,8	48,3	136,5	ND	ESTUARY	YES	3
Denmark	3 576 178	0,006	0,003	NI	NI	NI	0,4	0,04	0,1	0,2	0,9		SEA	NO	
	152 400	0,003	0,001	NI	NI	0,004	0,1	0,1	0,2	0,2	0,9		SEA	YES	
France	16 965 104	3,3	0,5	ND	ND	8,8	229,3	ND	136,5	236,5	709,4	NI	ESTUARY	NO	2
	2 168 465	0,03	0,002	NI	0,0005	0,2	0,7	0,3	0,3	0,6	1,7	NI	ESTUARY/SEA	YES	2
Germany	24 000	0,02	0,006	NI	NI	0,09	1,3	0,5	0,5	1,3	3,2	NI	SEA CHANNEL	NO	
	40 496 000	0,07	0,02	NI	NI	0,44	4,8	1,7	1,8	4,8	10,9	NI	ESTUARY/SEA/SEA CHANNEL	YES	
Ireland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	NO	
	146 145	0,1	<0,0051	NA <	DL	0,4	1,1	0,5	0,7	0,6	2,8	NI	ESTUARY	YES	
Iceland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	YES	
Netherlands	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	NO	
	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	ESTUARY	YES	
Norway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	YES	
Portugal	No information received													NO	
	No information received													YES	
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	YES	
Sweden	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	NO	
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ESTUARY	YES	
United Kingdom	4 806 144	1,6	1,1	NI	NI	0,082	147,9	103,0	46,0	190,0	378,8	NI	ESTUARY/SEA	NO	
	1 602 961	0,4	0,2	NI	NI	0,1	31,2	24,3	12,0	37,9	92,0	NI	ESTUARY/SEA	YES	
Total (5)	52 977 716	37,3	6,8	0,1	NI	194	891	283	499	980	2 561	NI			
Grand total:	112 079 860	39,6	7,2	0,1	0,008	222	968	323	534	1 073	2 806	NI			

DL = Detection limit
NA = Not applicable
NI = No information
1) Amount dumped calculated by applying conversion factor 1,15 (m3 --> t)
2) Amount dumped calculated by applying conversion factor 1,3 (m3 --> t)
3) Amount dumped calculated by applying an average factor of 1,46 (range 1,3 to 1,62) for dry-t --> wet-t conversion
4) Amount dumped calculated by applying conversion factor 1,6 (dry t --> wet t)
5) Total amount dumped but excluding dumping in internal waters
T-CB = Total of CBs with IUPAC nos 28, 52, 101, 118, 138, 153, 180
T-PAH = Total of ANT, BAA, BAP, BBF, BGHIP, BKF, CHR, FLU, ICDP, NAP, PA (or unspecified)

Table 3. Sewage sludge (tonnes) dumped in 1992

Country	Amount dumped	Annex I substances --> ◇ Cd	◇ Hg	◇ HCB	◇ g-HCH	◇ PCBs	◇ Dieldrin	◇ DDT	Internal waters
Ireland	380 397	0,025	0,015	< 0,001	*< 0,006	< 0,070	*< 0,019	*< 0,003	NO
	0	0	0	0	0	0	0	0	YES
United Kingdom	8 298 894	1,793	0,914	0 *	0,002	0,026 *	0,003 *	0,001	NO
	1 686 000	0,162	0,052	NI	NI	NI	NI	NI	YES
Total (1):	8 679 291	1,8	0,9	0,001	0,008	0,1	0,02	0,004	
Grand total:	10 365 291	2,0	1,0	0,001	0,008	0,1	0,02	0,004	

Country	Amount dumped	Annex II substances --> ◇ As	◇ Cr	◇ Cu	◇ Ni	◇ Pb	◇ Zn	Other substances --> ◇ Oil	◇ N	◇ P	Internal waters
Ireland	380 397	0,07	0,5	2,7	0,4	2,7	7,5	NI	NI	NI	NO
	0	0	0	0	0	0	0	0	0	0	YES
United Kingdom	8 298 894	0,83	65	133	17	102	296	NI	5 179	1 327	NO
	1 686 000	0,41	29	30	2	12	27	NI	NI	NI	YES
Total (1):	8 679 291	0,9	66	136	17	105	304	NI	5 179	1 327	
Grand total:	10 365 291	1,3	95	166	19	117	331	NI	5 179	1 327	

NI = No information

*) Number summarises the group of compounds

1) Total amount dumped but excluding dumping in internal waters

Table 4a. Other wastes - chemical wastes, slurries, including fly ash (tonnes), dumped in 1992

Country	Amount dumped	Annex I substances --> ◇ Cd	◇ Hg	◇ PCBs	◇ O-X	Annex II substances --> ◇ As	◇ Cr	◇ Cu	◇ Ni	◇ Pb	◇ Zn	Toxicity tests	Internal waters
Ireland	108 642	< 0,011	< 0,001	NA	0,272	NA	NA	0,010	0,001	NA	0,160	(1)	NO
	3 050	< 0,0003	0	NA	NA	0	0,001	0,003	0	0,002	0,016	NA	YES
Spain	511 846	0,0005	0,001	NA	NA	0,2	27,0	0,8	4,0	10,8	63,2	(1)	NO
	0	0	0	0	0	0	0	0	0	0	0	NA	YES
United Kingdom	412 378	0,073	0,048	NA	NA	2,320	2,683	4,752	0,299	9,444	4,688	(1)	NO
	0	0	0	0	0	0	0	0	0	0	0	NA	YES
Total (2):	1 032 866	0,08	0,05	NA	0,27	2,5	29,7	5,6	4,3	20,2	68,0		
Grand Total:	1 035 916	0,08	0,05	NA	0,27	2,5	29,7	5,6	4,3	20,2	68,1		

Country	Amount dumped	Substances/compounds not listed in Annexes I and II --> ◇ Fe	◇ Ti	◇ Phenols	Acids	H2SO4	Alkalis	◇ N	◇ P	Toxicity tests	Internal waters
Ireland	108 642	NA	NA	NA	NA	NA	1 500	NA	NA	(1)	NO
	3 050	NA	NA	NA	NA	NA	NA	1,2	0,3	NA	YES
Spain	511 846	NI	1 058	NA	NA	50 804	NA	NA	NA	(1)	NO
	0	0	0	0	0	0	0	0	0	NA	YES
United Kingdom	412 378	4,1	NA	16,0	148 658	NA	32 067	8 729	NA	(1)	NO
	0	0	0	0	0	0	0	0	0	NA	YES
Total (2):	1 032 866	4,1	1 058	16,0	148 658	50 804	33 567	8 729	NA		
Grand Total:	1 035 916	4,1	1 058	16,0	148 658	50 804	33 567	8 731	0,3		

NA = Not applicable
NI = No information
1) See Table 4b
2) Total amount but excluding dumping in internal waters

Table 4b. Toxicity of liquid chemical wastes and slurries dumped in 1992

Country	Dumping site	Amount dumped [t]	Description of waste	96 hr LC50 (ppm) to brown shrimp (Crangon crangon) and/or other organisms
Ireland	IRL/2	107 142	Organic liquid derived from fermentation, recovery and synthesis	Crangon: 8,4 % v/v Salmo gairdnerii: 1,72 % v/v
	IRL/2	1 500	Spent caustic	Crangon: 0,34 % v/v Artemia salina: 3,5 % v/v
	IRL/3	3 050	Infant nutritional manufacture effluent	NA
Spain	ES/1/4	511 846	Effluent from Ti02 pigment manufacture, pH 0,5	Carcinus maenas: 950, Carcinus mediterraneus: 750; 5 % mortality of A. salina after 36 h exposure to diluted effluent (1/5000).
United Kingdom	TY050	32 067	Aqueous residues from preparation of para-amino-phenol. Treated residues of the previous waste deriving from the wet air oxidation plant may be disposed of at sea during that plant's comissioning phase, if required	250 Agonus; 1 800 Crangon
	TY110	148 658	Acid ammonium sulphate effluent from methyl methacrylate production	235 Agonus; 235 Crangon

NA = Not applicable

Table 4c. Other wastes - inert materials of natural origin (tonnes) dumped in 1992

Country	Dumping site	General description of waste	Amount dumped [t]	[m3]	Annex I substances <> Cd	<> Hg	Annex II substances --> <> As	<> Cr	<> Cu	<> Ni	<> Pb	<> Zn	Internal waters
Ireland	IRL/	Rock	4 838		EX	EX	EX	EX	EX	EX	EX	NI	YES
Norway	N/5	Rock		600	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/8	Coarse sand, rock		8 100	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/10	Rock	215 000		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/11	Rock	26 000		NI	NI	NI	NI	NI	NI	NI	NI	YES
United Kingdom	UK/TY070	Rock	0		0	0	0	0	0	0	0	0	NO
	UK/TY080	Rock	578 899		0,058	0,058	NI	5,8	69,5	23,2	86,8	173,7	NO
	UK/TY090	Rock	424 040		0,042	0,042	NI	4,2	50,9	17,0	63,6	129,8	NO
	UK/TY070	Tailings	0		0	0	0	0	0	0	0	0	NO
	UK/TY080	Tailings	453 699		0,045	0,009	NI	3,4	4,5	3,8	2,0	6,6	NO
	UK/TY090	Tailings	306 454		0,031	0,006	NI	2,3	3,1	2,5	1,3	4,4	NO
	UK/IS095	Rock	99 169		ND	ND	ND	ND	ND	ND	ND	ND	YES
	UK/TY031	Rock	511 169		ND	ND	ND	ND	ND	ND	ND	ND	YES
	UK/TY121	Rock	362 012		ND	ND	ND	ND	ND	ND	ND	ND	YES
	UK/TY122	Rock	682 632		ND	ND	ND	ND	ND	ND	ND	ND	YES
Total (1):			1 763 092		0,176	0,115	NI	15,7	128,0	46,4	153,7	314,4	
Grand total:			3 663 912	8 700	0,176	0,115	NI	15,7	128,0	46,4	153,7	314,4	

NI = No information
ND = Not determined

Table 4d. Other wastes - bulky wastes (tonnes) dumped in 1992

Country	Dumping site	General description of waste	Amount dumped [t]	[m3]	Annex I substances <> Cd	<> Hg	Annex II substances --> <> As	<> Cr	<> Cu	<> Ni	<> Pb	<> Zn	Internal waters
Norway	N/7	Wires/cable (600 m)	NI		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/7	Gas bottles (2000)	NI		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/8	Wire (iron)	2,8		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/9	Mast (iron)	8		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/9	Iron scrap	18		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/12	Plates of eternite	1		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/13	Concrete		600	NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/13	Sea cable	21		NI	NI	NI	NI	NI	NI	NI	NI	YES
	N/13	Steel pipe (460 m)	NI		NI	NI	NI	NI	NI	NI	NI	NI	YES
Total (1):			50,8	600	NI	NI	NI	NI	NI	NI	NI	NI	

NI = No information

Table 4e. Other wastes - wastes from fish processing (tonnes) dumped in 1992

Country	Dumping site	General description of waste	Amount dumped [t]	Internal waters
Norway	N/13	Fish waste	12 000	YES
	N/15	Fish waste	2 567	YES
	Maritime area:	**Total:**	0	
	Internal Waters:	**Total:**	14 567	

NI = No information

Table 4f. Other wastes - ships dumped in 1992

Country	Dumping site	General description of waste (number of ships + brt)	Amount dumped [t]	Internal waters
Norway	N/2	2 < 100 brt, wood	NI	YES
		1 < 100 brt, steel	NI	YES
	N/4	1 < 100 brt, steel	NI	YES
	N/7	2 < 100 brt, wood	NI	YES
		1 > 100 brt, wood	NI	YES
		2 > 100 brt, steel	NI	YES
	N/8	3 < 100 brt, wood	NI	YES
Note:		4 < 100 brt, steel	NI	YES
All chemicals and	N/9	4 < 100 brt, not specified	NI	YES
removable parts	N/10	2 < 100 brt, wood	NI	YES
were removed		1: brt not specified, wood	NI	YES
prior to dumping.		1: 100-200 brt, steel	NI	YES
	N/12	1 < 100 brt, wood	NI	YES
	N/13	1 < 100 brt, wood	NI	YES
		1: 100-200 brt, steel	NI	YES
		1 > 200 brt, steel	NI	YES
	N/14	1 < 50 brt, wood	NI	YES
		2 < 100 brt, wood	NI	YES
		1 < 100 brt, steel	NI	YES
	N/15	1 < 100 brt,wood	NI	YES
		1: not specified	NI	YES
	Maritime area:	None		
	Internal Waters:	34 ships	NI	

NI = No information

Table 5a. Dredged material (tonnes) dumped in 1992

	Dumping site	Amount dumped	Annex I substances --> Cd	Hg	Annex II substances --> As	Cr	Cu	Ni	Pb	Zn	Other substances --> N	P	Origin	Ratio %	Internal waters	Remarks
1	B/6	2 130 912	3,3	0,4	18,1	72,3	38,2	28,2	86,4	209,9	NI	NI	HARBOUR		NO	4
2	B/9	3 782 242	6,7	1,1	33,3	105,4	78,5	56,0	184,9	399,0	NI	NI	HARBOUR/SEA CHANNEL	NI	NO	4
3	B/1	3 780 965	4,5	0,8	26,0	73,3	26,5	45,6	74,0	212,7	NI	NI	SEA CHANNEL		NO	4
4	B/1	3 544 058	4,2	0,8	24,4	68,7	24,8	42,8	69,3	199,4	NI	NI	SEA CHANNEL		NO	4
5	B/1	1 656 294	1,9	0,2	10,6	27,7	8,9	16,6	34,9	76,9	NI	NI	SEA CHANNEL		NO	4
6	B/1	4 609 038	5,2	0,4	29,4	77,2	24,8	46,1	97,1	214,0	NI	NI	SEA CHANNEL		NO	4
7	B/3	817 405	1,0	0,2	5,6	15,8	5,7	9,9	16,0	46,0	NI	NI	SEA CHANNEL		NO	4
8	B/3	2 719 322	3,2	0,6	18,7	52,7	19,0	32,8	53,2	153,0	NI	NI	SEA CHANNEL		NO	4
9	B/3	864 054	1,0	0,1	5,5	14,5	4,6	8,6	18,2	40,1	NI	NI	SEA CHANNEL		NO	4
10	B/3	1 280 306	1,4	0,1	8,2	21,4	6,9	12,8	27,0	59,5	NI	NI	SEA CHANNEL		NO	4
11	B/6	1 141 136	1,4	0,3	7,8	22,1	8,0	13,8	22,3	64,2	NI	NI	SEA		NO	4
12	B/6	74 117	0,04	0,004	0,3	0,8	0,3	0,6	1,2	2,6	NI	NI	SEA CHANNEL		NO	4
13	B/9	7 119 595	8,5	1,6	49,0	138,0	49,8	85,9	139,3	400,5	NI	NI	SEA CHANNEL		NO	4
14	B/INT1	656 905	0,070	0,009	1,9	2,5	0,7	1,0	2,7	7,2	NI	NI	ESTUARY		YES	3
15	B/INT1	127 102	0,006	0,0009	0,5	0,4	0,03	0,08	0,5	1,3	NI	NI	ESTUARY		YES	3
16	B/INT2	680 605	0,072	0,009	2,0	2,6	0,8	1,0	2,8	7,5	NI	NI	ESTUARY		YES	3
17	B/INT2	137 443	0,007	0,0009	0,6	0,4	0,03	0,09	0,6	1,4	NI	NI	ESTUARY		YES	3
18	B/INT3	217 861	0,010	0,0008	0,4	0,4	0,1	0,1	0,6	1,5	NI	NI	ESTUARY		YES	3
19	B/INT3	68 705	0,002	0,005	0,09	0,1	0,02	0,06	0,2	0,4	NI	NI	ESTUARY		YES	3
20	B/INT4	578 380	0,016	0,0004	1,5	1,3	0,2	0,3	1,9	4,2	NI	NI	ESTUARY		YES	3
21	B/INT4	3 268 350	0,157	0,012	5,4	5,6	2,1	2,2	8,5	22,4	NI	NI	ESTUARY		YES	3
22	B/INT4	764 587	0,021	0,005	0,9	1,4	0,2	0,6	1,8	4,7	NI	NI	ESTUARY		YES	3
23	B/INT7	90 511	0,002	NI	0,2	0,2	0,03	0,05	0,3	0,7	NI	NI	ESTUARY		YES	3
24	B/INT7	593 255	0,028	0,002	1,0	1,0	0,4	0,4	1,5	4,1	NI	NI	ESTUARY		YES	3
25	B/INT7	742 759	0,020	0,005	0,9	1,4	0,2	0,6	1,7	4,6	NI	NI	ESTUARY		YES	3
26	B/INT7	1 033 172	0,059	0,0009	1,5	2,4	0,3	2,1	2,7	7,8	NI	NI	ESTUARY		YES	3
27	B/INT6B	792 361	0,045	0,0007	1,1	1,8	0,2	1,6	2,1	6,0	NI	NI	ESTUARY		YES	3
28	B/INT6B	2 080 506	0,577	0,002	3,6	4,1	0,9	2,7	7,1	15,7	NI	NI	ESTUARY		YES	3
29	B/INT6B	2 700 555	0,527	0,157	4,3	13,9	7,4	7,8	13,1	47,2	NI	NI	ESTUARY		YES	3
30	B/INT14	3 116	0,001	NI	0,006	0,006	0,001	0,004	0,01	0,02	NI	NI	ESTUARY		YES	3
31	DK/AAR-09	18 000	0,0009	NI	NI	0,03	NI	NI	NI	NI	NI	NI	HARBOUR		NO	
32	DK/AAR-13	3 500	EX	EX	EX	EX	EX	EX	EX	0,01	NI	NI	HARBOUR		NO	
33	DK/FRB-04	1 200	0,0003	0,0001	NI	0,007	0,02	NI	0,02	NI	NI	NI	HARBOUR		NO	
34	DK/FRB-04	460	0,00002	0,00002	NI	0,0007	0,003	NI	0,003	NI	NI	NI	HARBOUR		NO	
35	DK/NJL-10	2 400	0,001	0,0002	NI	NI	0,05	NI	0,02	0,3	NI	NI	HARBOUR		NO	
36	DK/NJL-10	95 400	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		NO	
37	DK/NJL-10	59 800	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		NO	
38	DK/RIB-01	3 200	0,0004	0,0002	EX	0,04	0,04	NI	0,03	0,208	NI	NI	HARBOUR		NO	
39	DK/RIB-01	630	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		NO	

Table 5a. (continued)

	Dumping site	Amount dumped	Annex I substances --> ◇ Cd	◇ Hg	Annex II substances --> ◇ As	◇ Cr	◇ Cu	◇ Ni	◇ Pb	◇ Zn	◇ N	◇ P	Origin	Ratio %	Internal waters	Remarks
40	DK/RIB-02	16 000	0,002	0,001	NI	0,2	0,2	NI	0,2	1,0	NI	NI	HARBOUR		NO	
41	DK/RIN-04	8 000	0,002	0,0003	0,03	0,05	0,002	0,04	0,05	0,4	NI	NI	HARBOUR		NO	
42	DK/RIN-06	850	0,0002	0,00004	0,004	0,008	0,020	0,006	0,006	0,05	NI	NI	HARBOUR		NO	
43	DK/VIB-02	13 130	0,003	0,0005	0,1	0,2	0,1	0,1	0,07	0,8	NI	NI	HARBOUR		NO	
44	DK/NJL-01	53 400	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		NO	
45	DK/NJL-10	769 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		NO	
46	DK/RIB-01	840 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		NO	
47	DK/RIB-01	4 000	0,00009	0,00003	NI	0,005	0,002	0,004	0,005	0,03	NI	NI	SEA		NO	
48	DK/RIB-01	5 500	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		NO	
49	DK/RIB-02	1 700 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		NO	
50	DK/RIN-05	30 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		NO	
51	DK/RIN-07	20 700	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		NO	
52	DK/VIB-01	153 578	0,006	0,003	NI	0,3	0,04	0,1	0,2	0,9	NI	NI	SEA		NO	
53	DK/NJL-03	6 600	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		YES	
54	DK/RIB-03	250 000	0,035	0,016	NI	3,4	2,8	NI	2,5	16,3	NI	NI	HARBOUR		YES	
55	DK/RIB-04	243 000	0,034	0,015	NI	3,3	2,7	NI	2,4	15,8	NI	NI	HARBOUR		YES	
56	DK/RIN-01	4 545	< DL	0,00005	NI	0,02	0,009	0,01	0,01	0,05	NI	NI	HARBOUR		YES	
57	DK/SJ-02	116 000	0,0003	0,00009	0,02	0,05	0,02	0,03	0,03	0,2	NI	NI	HARBOUR		YES	
58	DK/VSJ-03	75	0,00001	0,000004	0,00006	0,0003	0,02	NI	0,02	0,003	NI	NI	HARBOUR		YES	
59	DK/AAR-12	110 000	NI	NI	NI	0,03	NI	0,2	NI	0,4	NI	NI	SEA		YES	
60	DK/NJL-02	3 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		YES	
61	DK/NJL-05	13 000	0,001	0,0006	NI	0,07	0,09	NI	0,1	0,3	NI	NI	SEA		YES	
62	DK/NJL-05	4 900	0,0008	0,0004	0,004	0,0008	0,01	0,008	0,02	0,02	NI	NI	SEA		YES	
63	DK/RIN-09	14 700	0,0008	0,0001	NI	0,02	0,03	0,05	0,04	0,2	NI	NI	SEA		YES	
64	DK/VSJ-02	3 050	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		YES	
65	DK/VSJ-03	3 750	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA		YES	
66	F/2	1 043 900	0,243	0,072	4,8	21,4	8,7	5,1	25,5	42,2	905,9	316,3	HARBOUR		NO	2
67	F/3	1 966 770	0,422	0,121	12,9	47,2	13,7	11,6	35,2	85,1	2 078,0	862,4	HARBOUR		NO	2
68	F/4a	554 790	0,211	0,034	2,2	9,6	4,0	1,7	6,4	35,3	NI	NI	HARBOUR		NO	
69	F/5	543 126	0,379	0,074	0,4	0,4	0,7	1,0	0,2	0,6	NI	NI	HARBOUR		NO	
70	F/6	220 000	0,059	0,015	0,5	3,6	4,0	1,2	3,0	14,9	271,6	1,9	HARBOUR		NO	
71	F/7	41 691	0,005	0,002	0,1	0,7	0,3	0,2	0,5	1,5	NI	NI	HARBOUR		NO	
72	F/8	1 452 100	1,050	0,317	9,3	70,0	33,2	25,1	47,5	113,2	2 038,9	62,2	HARBOUR		NO	2
73	F/8	73 333	0,029	0,003	0,1	1,3	0,4	0,9	0,5	3,1	63,4	1,2	HARBOUR		NO	
74	F/10	1 558 700	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR		NO	2
75	F/9	10 205 104	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	ESTUARY		NO	2
76	F/12	6 760 000	3,347	0,462	8,8	229,3	ND	136,5	236,5	709,4	NI	NI	ESTUARY		NO	2
77	~F/23-24?	20 475	0,006	ND	0,09	0,3	0,1	0,14	< 0,04	0,9	15,0	13,5	HARBOUR		YES	2
78	~F/23-24?	10 400	0,001	ND	0,02	0,06	0,03	0,05	0,2	0,4	8,0	2,1	HARBOUR		YES	2

Table 5a. (continued)

	Dumping site	Amount dumped	Annex I substances --> <> Cd	<> Hg	Annex II substances --> <> As	<> Cr	<> Cu	<> Ni	<> Pb	<> Zn	<> N	<> P	Origin	Ratio %	Internal waters	Remarks
79	~F/7-8?	10 660	0,002	0,003	0,5	0,3	0,06	0,08	0,4	0,3	5,4	5,5	HARBOUR		YES	2
80	F/?	27 300	0,019	0,004	0,2	1,5	1,9	0,5	1,0	8,1	77,7	0,0	HARBOUR		YES	2
81	F/?	10 660	0,002	0,003	0,5	0,3	0,06	0,08	0,4	0,3	5,4	5,5	HARBOUR		YES	2
82	~F/17?	106 600	0,018	0,021	0,7	2,3	3,4	0,9	3,8	10,3	112,7	27,0	HARBOUR		YES	2
83	~F/18?	24 700	0,006	0,001	ND	ND	2,5	ND	0,7	4,4	41,2	14,2	HARBOUR		YES	2
84	F/21	117 000	0,013	0,010	ND	ND	1,6	ND	3,9	115,1	177,5	60,7	HARBOUR		YES	2
85	~F/22?	13 650	0,0005	< 0,0008	0,06	ND	0,08	0,08	0,2	0,4	NI	NI	HARBOUR		YES	2
86	~F/23?	452 400	0,060	ND	1,0	4,7	2,4	2,6	5,0	18,8	346,0	111,5	HARBOUR		YES	2
87	~F/23-24?	26 455	0,032	ND	0,1	0,2	0,1	0,1	0,3	0,8	13,5	5,3	ESTUARY		YES	2
88	~F/18?	192 400	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	ESTUARY		YES	2
89	~F/18?	1 899 300	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	ESTUARY		YES	2
90	F/?	50 310	0,001	0,002	0,1	0,5	0,2	0,2	0,3	1,0	NI	NI	SEA		YES	2
91	D/38	24 000	0,019	0,006	0,09	1,3	0,5	0,5	1,3	3,2	NI	NI	SEA CHANNEL		NO	
92	D/10	140 000	0,010	0,028	0,06	2,2	0,4	0,5	1,0	3,4	NI	NI	HARBOUR		YES	
93	D/12	123 000	0,030	0,027	0,2	4,9	1,6	0,8	1,8	6,0	NI	NI	HARBOUR		YES	
94	D/13	75 000	0,006	0,019	0,2	1,6	0,3	0,6	1,4	2,9	NI	NI	HARBOUR		YES	
95	D/18	8 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		YES	
96	D/19	50 000	0,006	0,007	0,5	1,5	0,4	0,5	1,5	2,9	NI	NI	HARBOUR		YES	
97	D/20	4 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		YES	
98	D/32	41 000	0,027	0,010	0,3	2,0	0,7	0,8	2,0	4,3	NI	NI	HARBOUR		YES	
99	D/36	9 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		YES	
100	D/37	1 349 000	< 0,740	0,029	11,0	73,0	20,0	39,0	40,0	132,0	NI	NI	HARBOUR		YES	5
101	D/39	18 000	0,023	0,013	0,2	1,0	0,3	0,3	0,9	3,8	NI	NI	HARBOUR		YES	
102	D/40	63 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
103	D/22	60 000	0,015	0,011	0,6	2,1	0,6	0,8	2,3	4,5	NI	NI	HARBOUR/SEA CHANNEL	NI	YES	
104	D/14	17 490 000	EX+	EX+	EX+	EX+	EX+	EX+	EX+	EX+	NI	NI	ESTUARY		YES	
105	D/15	1 042 000	EX+	EX+	EX+	EX+	EX+	EX+	EX+	EX+	NI	NI	ESTUARY	NI	YES	
106	D/17	13 031 000	EX+	EX+	EX+	EX+	EX+	EX+	EX+	EX+	NI	NI	ESTUARY		YES	
107	D/34	8 633 000	EX+	EX+	EX+	EX+	EX+	EX+	EX+	EX+	NI	NI	ESTUARY		YES	
108	D/11	31 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	SEA		YES	
109	D/25	23 000	0,011	0,005	0,2	1,1	0,3	0,4	1,1	2,1	NI	NI	SEA CHANNEL		YES	
110	D/26	178 000	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	SEA CHANNEL		YES	
111	D/30	68 000	0,054	0,017	0,3	3,7	1,4	1,4	3,7	8,8	NI	NI	SEA CHANNEL		YES	
112	IRL/	59 550	< 0,096	< 0,007	0,4	0,7	2,7	1,17	3,9	9,8	NI	NI	HARBOUR/ESTUARY	NI	NO	
113	IRL/	1 080	0,0004	< 0,0001	0,01	0,02	0,02	0,01	0,02	0,1	NI	NI	HARBOUR		NO	
114	IRL/	145 500	< 0,088	< 0,015	0,6	1,6	2,4	1,2	2,5	10,6	NI	NI	HARBOUR/ESTUARY	NI	NO	
115	IRL/	37 000	< 0,024	< 0,002	0,2	0,2	1,8	0,2	1,0	2,7	NI	NI	HARBOUR/ESTUARY	NI	NO	
116	IRL/	53 900	0,006	0,016	0,6	0,8	0,8	0,8	0,8	3,4	NI	NI	HARBOUR		YES	

Table 5a. (continued)

	Dumping site	Amount dumped	Annex I substances --> ◇ Cd	◇ Hg	Annex II substances --> ◇ As	◇ Cr	◇ Cu	◇ Ni	◇ Pb	◇ Zn	◇ N	◇ P	Origin	Ratio %	Internal waters	Remarks
117	IRL/	750	EX	EX	EX	EX	EX	EX	EX	EX	NI	NI	HARBOUR		YES	
118	IRL/	33 764	< 0,014	< 0,003	0,1	0,6	0,2	0,2	0,6	1,3	NI	NI	HARBOUR		YES	
119	IRL/	7 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
120	IRL/	4 400	< 0,003	< 0,0004	0,02	0,04	0,02	0,05	0,04	0,1	NI	NI	HARBOUR		YES	
121	IRL/	58 460	0,007	0,0002	0,0002	0,1	0,1	0,09	0,3	0,7	NI	NI	ESTUARY		YES	
122	IRL/	87 685	0,141	< 0,005	0,4	0,9	0,3	0,6	0,3	2,1	NI	NI	ESTUARY		YES	
123	IS/1	14 350	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
124	IS/2	19 128	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
125	IS/3	7 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
126	IS/4	102 148	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
127	IS/5	21 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	
128	NL/5	10 527 100	4,4	1,4	52	179	94	76	198	640	11 390	4 200	HARBOUR		NO	1
129	NL/6	195 500	0,09	0,04	1,3	4,7	2,1	1	4	14,5	NI		HARBOUR		NO	1
130	NL/7	3 714 500	0,95	0,44	19	87	34	30	64	213	6 300	2 500	HARBOUR		NO	1
131	NL/11	3 975 588	1,7	0,7	24	53	37	20	58	208	NI	NI	HARBOUR		YES	1
132	NL/13	1 150 000	0,6	0,3	8	40	15	12	34	109	NI	NI	HARBOUR		YES	1
133	NL/14	2 683 236	1	0,4	16	83	38	29	65	241	NI	NI	HARBOUR		YES	1
134	NL/15	2 157 400	0,5	0,3	10	38	13	16	26	105	NI	NI	HARBOUR		YES	1
135	N/1	600	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
136	N/2	2 730	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
137	N/3	5 018	0,003	0,001	0	0	0	0	0,05	0	NI	NI	HARBOUR		YES	
138	N/4	1 500	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
139	N/6	5 200	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
140	N/7	66 000	0	0,009	0	0	0	0	4,6	0	NI	NI	HARBOUR		YES	
141	N/9	1 950	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
142	N/10	126 000	0,006	0,002	0	0	0,4	0	0,2	0,7	NI	NI	HARBOUR		YES	
143	N/11	18 200	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
144	N/12	30	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
145	N/13	6 630	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
146	N/14	13 000	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
147	N/15	39 000	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
	Portugal	No information available														
148	E/10	143 780	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		NO	2
149	E/12	5 475 708	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		NO	2
150	E/1	156 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2
151	E/2	819 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2
152	E/3	928 200	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2
153	E/4	13 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2
154	E/5	463 424	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2
155	E/7	163 886	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2
156	E/9	8 710	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2
157	E/11	52 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	HARBOUR		YES	2

Table 5a. (continued)

	Dumping site	Amount dumped	Annex I substances --> <> Cd	<> Hg	Annex II substances --> <> As	<> Cr	<> Cu	<> Ni	<> Pb	<> Zn	<> N	<> P	Origin	Ratio %	Internal waters	Remarks
158	S/1	12 090	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR		YES	
159	S/2	6 900	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR		YES	
160	S/3	1 900	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	HARBOUR		YES	
161	UK/CR031	17 000	0,002	0,002	NI	0,4	0,3	0,1	0,3	0,9	NI	NI	SEA		NO	
162	UK/CR040	22 775	0,003	0,003	0,08	0,2	0,3	0,06	0,3	1,2	NI	NI	HARBOUR		NO	
163	UK/CR050	17 000	0,009	0,006	0,1	0,4	7,0	0,2	1,3	5,5	NI	NI	HARBOUR		NO	
164	UK/CR060	77 830	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	HARBOUR		NO	
165	UK/CR070	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
166	UK/CR080	37 826	0,023	0,036	0,03	1,0	6,6	0,3	3,9	16,2	NI	NI	HARBOUR		NO	
167	UK/CR110	431 442	0,065	0,036	0,8	4,6	5,7	4,0	18,4	21,0	NI	NI	HARBOUR		NO	
168	UK/DV010	309 426	0,028	0,037	ND	5,6	3,1	3,1	4,7	12,2	NI	NI	HARBOUR		NO	
169	UK/FI005	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
170	UK/FI100	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
171	UK/FI110	15 470	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	SEA		NO	
172	UK/FO010	79 165	0,008	0,003	0,4	0,8	0,2	0,4	0,5	1,0	NI	NI	HARBOUR		NO	
173	UK/FO020	28 080	0,003	0,003	0,1	1,1	0,5	0,4	0,8	1,7	NI	NI	HARBOUR		NO	
174	UK/FO080	8 889	0,001	0,001	ND	0,2	0,1	0,07	0,2	0,4	NI	NI	ESTUARY		NO	
175	UK/HU015	35 040	0,003	0,008	ND	0,6	0,8	0,5	1,1	2,1	NI	NI	HARBOUR		NO	
176	UK/HU125	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR/ESTUARY	0:0	NO	
177	UK/HU138	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
178	UK/HU145	47 971	0,001	0,001	ND	0,6	0,2	0,4	0,2	1,0	NI	NI	SEA		NO	
179	UK/HU150	27 648	0,002	0,001	0,2	0,4	0,3	0,1	0,9	1,8	NI	NI	HARBOUR/ESTUARY	50:50	NO	
180	UK/HU160	104 335	0,020	0,013	ND	2,3	1,7	0,1	2,4	5,8	NI	NI	HARBOUR/SEA	100:0	NO	
181	UK/HU161	151 789	0,005	0,002	ND	1,7	0,5	1,1	1,2	3,3	NI	NI	SEA		NO	
182	UK/IS040	3 500	0,001	0,001	ND	0,08	0,1	0,08	0,2	0,4	NI	NI	HARBOUR		NO	
183	UK/IS042	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
184	UK/IS055	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
185	UK/IS140	1 575 240	0,410	0,406	ND	31,0	23,6	8,6	45,6	116,2	NI	NI	HARBOUR/ESTUARY/SEA	49:32:9	NO	
186	UK/IS150	14 900	0,002	0,003	ND	0,3	0,2	0,09	0,4	1,0	NI	NI	HARBOUR/ESTUARY/SEA	50:30:20	NO	
187	UK/IS180	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		NO	
188	UK/IS205	834 836	0,092	0,100	ND	18,4	10,9	11,7	15,0	35,9	NI	NI	ESTUARY		NO	
189	UK/IS210	75 660	0,008	0,009	ND	1,7	1,0	1,1	1,4	3,3	NI	NI	HARBOUR/ESTUARY	0:100	NO	
190	UK/IS290	0	0	0	ND	0	0	0	0	0	NI	NI	HARBOUR		NO	
191	UK/IS300	11 206	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	SEA		NO	
192	UK/IS310	114 825	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	SEA		NO	
193	UK/IS400	11 628	0,007	0	0,02	0,2	0,2	0,1	0,7	1,1	NI	NI	HARBOUR		NO	
194	UK/IS410	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
195	UK/IS420	7 962	0,005	0	0,02	0,1	0,1	0,08	0,5	0,7	NI	NI	HARBOUR		NO	

Table 5a. (continued)

	Dumping site	Amount dumped	Annex I substances --> Cd	Hg	Annex II substances --> As	Cr	Cu	Ni	Pb	Zn	N	P	Origin	Ratio %	Internal waters	Remarks
196	UK/IS430	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
197	UK/IS440	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
198	UK/IS450	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	
199	UK/IS460	17 000	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	SEA		NO	
200	UK/IS500	1 215	0	0	ND	0,007	0,009	0,008	0,009	0,04	NI	NI	HARBOUR		NO	
201	UK/IS595	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		NO	
202	UK/IS635	2 430	0	0	ND	0,06	0,04	0,02	0,05	0,1	NI	NI	HARBOUR		NO	
203	UK/IS650	17 510	0,001	0,001	ND	0,01	0,02	0,01	0,02	0,07	NI	NI	HARBOUR		NO	
204	UK/IS670	1 000	0	0	ND	0,03	0,02	0,008	0,02	0,05	NI	NI	HARBOUR		NO	
205	UK/LU101	26 360	0,003	0,007	ND	0,5	0,3	0,3	0,7	2,4	NI	NI	HARBOUR		NO	
206	UK/LU170	156 000	0,025	0,037	ND	2,7	1,6	1,7	3,3	10,1	NI	NI	HARBOUR/ESTUARY	100:0	NO	
207	UK/MA010	22 378	0,002	0,002	ND	0,6	0,3	0,2	0,4	1,1	NI	NI	HARBOUR		NO	
208	UK/MA015	30 000	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	HARBOUR		NO	
209	UK/MA520	89 000	0,013	0,007	ND	0,09	0,08	0,4	0,05	0,3	NI	NI	HARBOUR		NO	
210	UK/MA540	414 160	0,112	0,051	ND	0,9	1,0	1,0	1,2	5,5	NI	NI	ESTUARY		NO	
211	UK/MA545	348 086	0,205	0,132	ND	0,8	1,8	0,8	1,0	3,6	NI	NI	ESTUARY		NO	
212	UK/PL030	69 540	0,015	0,019	ND	0,9	5,4	0,8	3,7	7,6	NI	NI	HARBOUR/ESTUARY	5:95	NO	
213	UK/PL060	144 373	0,017	0,025	ND	1,5	6,1	1,1	3,0	9,4	NI	NI	HARBOUR		NO	
214	UK/PO070	41 210	0,001	0	ND	0,3	0,1	0,2	0,3	1,2	NI	NI	ESTUARY		NO	
215	UK/PO075	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		NO	
216	UK/PO076	0	0	0	0	0	0	0	0	0	NI	NI	SEA		NO	
217	UK/TH040	1 203 658	0,107	0,084	ND	31,6	14,2	17,9	18,8	54,7	NI	NI	HARBOUR/ESTUARY	99,5:0,5	NO	
218	UK/TH043	135 950	0,012	0,001	ND	3,8	1,1	2,6	0,8	4,8	NI	NI	HARBOUR		NO	
219	UK/TH045	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		NO	
220	UK/TH070	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR/ESTUARY	0:0	NO	
221	UK/TH140	80 320	0,007	0,009	ND	1,2	0,8	0,5	1,0	3,4	NI	NI	HARBOUR/SEA	62:38	NO	
222	UK/TY042	120 714	0,014	0,016	ND	2,8	2,2	1,8	2,4	6,8	NI	NI	HARBOUR		NO	
223	UK/TY070	83 566	0,037	0,017	ND	1,7	2,2	1,2	6,5	13,8	NI	NI	HARBOUR/ESTUARY	0:100	NO	
224	UK/TY081	190 267	0,106	0,042	ND	4,3	5,6	2,7	17,4	37,5	NI	NI	HARBOUR/ESTUARY	0,5:99,5	NO	
225	UK/TY090	24 399	0,008	0,004	ND	0,6	1,2	0,5	3,2	4,7	NI	NI	HARBOUR/ESTUARY	55:45	NO	
226	UK/TY130	52 618	0,011	0,013	ND	1,3	1,8	0,9	3,4	3,9	NI	NI	HARBOUR		NO	
227	UK/TY150	32 570	0,007	0,008	ND	1,3	1,2	0,6	2,0	4,2	NI	NI	HARBOUR/ESTUARY/SEA	92:5:3	NO	
228	UK/TY155	0	0	0	0	0	0	0	0	0	NI	NI	SEA		NO	
229	UK/TY160	1 956 322	1,369	0,900	ND	165,3	95,5	28,8	195,6	326,7	NI	NI	HARBOUR/ESTUARY/SEA	46:36:18	NO	
230	UK/TY180	70 875	0,009	0,008	ND	1,5	1,2	0,9	2,4	5,8	NI	NI	HARBOUR/SEA	27:79	NO	
231	UK/TY190	8 080	0,001	0,002	ND	0,09	0,3	0,09	0,5	0,9	NI	NI	HARBOUR		NO	
232	UK/WI010	166 497	0,010	0,013	ND	4,7	1,7	1,4	2,2	6,8	NI	NI	HARBOUR/ESTUARY	100:0	NO	
233	UK/WI020	45 240	0,002	0,002	ND	0,6	0,3	0,3	0,4	1,4	NI	NI	HARBOUR		NO	
234	UK/WI031	90 559	0,016	0,014	ND	1,7	1,0	0,8	2,7	6,1	NI	NI	HARBOUR/SEA	92:8	NO	
235	UK/WI060	609 078	0,032	0,081	ND	13,1	11,8	5,8	10,3	28,1	NI	NI	HARBOUR/ESTUARY/SEA	35:52:13	NO	
236	UK/WI090	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		NO	

Table 5a. (continued)

	Dumping site	Amount dumped	Annex I substances --> Cd	Hg	Annex II substances --> As	Cr	Cu	Ni	Pb	Zn	N	P	Origin	Ratio %	Internal waters	Remarks
237	UK/CR019	74 281	0,007	0,007	ND	1,7	1,0	0,6	1,4	3,5	NI	NI	HARBOUR		YES	
238	UK/CR023	195 666	0,020	0,003	0,1	0,3	0,2	0,2	0,4	0,3	NI	NI	SEA		YES	
239	UK/CR024	2 650	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	HARBOUR		YES	
240	UK/CR026	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		YES	
241	UK/CR030	14 592	0,001	0,001	0,01	0,06	0,02	0,01	0,06	0,1	NI	NI	HARBOUR		YES	
242	UK/FI055	133 900	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	SEA		YES	
243	UK/FO021	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
244	UK/FO023	9 429	0,001	0,001	0,02	0,1	0,1	0,05	0,1	0,3	NI	NI	HARBOUR		YES	
245	UK/FO024	7 863	0,001	0,001	0,02	0,1	0,1	0,1	0,2	0,4	NI	NI	HARBOUR		YES	
246	UK/FO025	8 784	0,001	0	0,006	0,1	0,07	0,04	0,10	0,2	NI	NI	HARBOUR		YES	
247	UK/FO026	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		YES	
248	UK/FO027	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		YES	
249	UK/FO035	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
250	UK/FO036	800 991	0,080	0,080	ND	20,0	12,0	6,4	16,0	40,1	NI	NI	HARBOUR		YES	
251	UK/FO037	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
252	UK/FO038	29 546	0,007	0,018	0,2	1,3	0,6	0,4	0,8	1,8	NI	NI	HARBOUR		YES	
253	UK/FO041	103 452	0,025	0,064	0,5	4,5	2,2	1,3	2,9	6,5	NI	NI	HARBOUR/ESTUARY	100:0	YES	
254	UK/FO042	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR/ESTUARY	100:0	YES	
255	UK/FO043	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR/ESTUARY	100:0	YES	
256	UK/FO044	773 796	0,051	0,436	4,6	22,1	17,3	7,1	19,0	41,6	NI	NI	HARBOUR		YES	
257	UK/FO047	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
258	UK/FO048	1 700	0	0,001	0,009	0,07	0,04	0,02	0,05	0,1	NI	NI	HARBOUR		YES	
259	UK/FO051	15 616	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	HARBOUR		YES	
260	UK/FO052	72 162	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	ESTUARY		YES	
261	UK/HU020	2 940 236	0,441	0,442	ND	120,8	73,3	41,3	118,2	355,8	NI	NI	HARBOUR		YES	
262	UK/HU025	162 350	0,024	0,024	ND	6,7	4,1	2,3	6,5	19,6	NI	NI	HARBOUR		YES	
263	UK/HU030	24 000	0,004	0,004	ND	1,0	0,6	0,3	1,0	2,9	NI	NI	HARBOUR		YES	
264	UK/HU040	41 010	0,024	0,011	ND	2,3	1,4	1,1	2,6	7,0	NI	NI	HARBOUR		YES	
265	UK/HU041	7 855	0,005	0,002	ND	0,4	0,3	0,2	0,5	1,3	NI	NI	HARBOUR		YES	
266	UK/HU055	641 559	0,041	0,080	ND	25,4	16,4	11,3	24,8	62,8	NI	NI	HARBOUR/ESTUARY	0:100	YES	
267	UK/HU060	1 764 605	0,254	0,261	ND	73,6	43,4	25,0	72,1	210,6	NI	NI	HARBOUR		YES	
268	UK/HU080	3 190 200	0,479	0,479	ND	130,8	79,8	44,7	127,6	386,0	NI	NI	HARBOUR		YES	
269	UK/HU090	740 310	0,111	0,111	ND	30,4	18,5	10,4	29,6	89,6	NI	NI	HARBOUR		YES	
270	UK/HU110	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
271	UK/HU116	0	0	0	0	0	0	0	0	0	NI	NI	SEA		YES	
272	UK/HU136	51 950	0,007	0,006	ND	1,4	0,8	0,8	1,6	4,4	NI	NI	HARBOUR		YES	
273	UK/HU140	40 402	0,005	0,003	ND	0,9	0,4	0,4	1,0	2,0	NI	NI	HARBOUR/ESTUARY	67:33	YES	

Table 5a. (continued)

	Dumping site	Amount dumped	Annex I substances --> ◇ Cd	◇ Hg	Annex II substances --> ◇ As	◇ Cr	◇ Cu	◇ Ni	◇ Pb	◇ Zn	◇ N	◇ P	Origin	Ratio %	Internal waters	Remarks
274	UK/IS030	0	0	0	0	0	0	0	0	0	NI	NI	HARBOUR		YES	
275	UK/IS110	233 103	0,466	0,163	ND	7,0	10,7	0	17,5	38,5	NI	NI	HARBOUR/ESTUARY	33:67	YES	
276	UK/IS120	8 000	0,001	0,002	ND	0,2	0,1	0,05	0,2	0,5	NI	NI	HARBOUR/ESTUARY/SEA	50:30:20	YES	
277	UK/IS127	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		YES	
278	UK/IS170	547 714	0,066	0,044	ND	4,7	2,1	3,1	3,5	16,4	NI	NI	HARBOUR		YES	
279	UK/IS192	4 860	0,001	0,001	ND	0,1	0,05	0,04	0,1	0,3	NI	NI	HARBOUR		YES	
280	UK/IS200	383 639	0,038	0,050	ND	5,6	3,7	3,1	5,8	19,6	NI	NI	HARBOUR		YES	
281	UK/IS230	31 140	0,056	0,009	ND	2,4	0,8	0,4	0,9	5,5	NI	NI	HARBOUR		YES	
282	UK/IS240	112 962	0,078	0,018	ND	5,2	2,1	1,5	3,2	14,8	NI	NI	HARBOUR		YES	
283	UK/IS250	0	0	0	0	0	0	0	0	0	NI	NI	ESTUARY		YES	
284	UK/IS600	7 216	0,001	0,001	ND	0,2	0,1	0,06	0,1	0,4	NI	NI	HARBOUR		YES	
285	UK/IS620	2 890	0	0	ND	0,07	0,04	0,02	0,06	0,1	NI	NI	HARBOUR		YES	
286	UK/LU055	16 940	0,001	0,003	ND	0,4	0,2	0,2	0,4	1,4	NI	NI	HARBOUR		YES	
287	UK/LU070	25 980	0,003	0,007	ND	0,5	0,3	0,3	0,7	2,4	NI	NI	HARBOUR		YES	
288	UK/LU110	1 078 748	0,262	0,191	ND	23,6	15,1	11,6	33,0	89,6	NI	NI	HARBOUR		YES	
289	UK/LU115	0	0	0	ND	0	0	0	0	0	NI	NI	HARBOUR		YES	
290	UK/LU130	1 632 692	0,197	0,219	ND	31,8	18,6	15,1	35,5	108,3	NI	NI	HARBOUR/ESTUARY	97:3	YES	
291	UK/LU140	601 595	0,084	0,100	ND	15,2	10,0	7,8	20,4	58,9	NI	NI	HARBOUR		YES	
292	UK/LU200	106 720	0,038	0,019	ND	1,9	1,5	1,3	2,7	9,6	NI	NI	HARBOUR		YES	
293	UK/MA016	0	0	0	ND	0	0	0	0	0	NI	NI	HARBOUR		YES	
294	UK/MA021	428 643	0,152	0,036	0,506	12,3	10,1	2,4	15,1	31,7	NI	NI	HARBOUR/ESTUARY	25:75	YES	
295	UK/MA023	409 024	0,041	0,041	ND	10,2	6,1	3,3	8,2	20,5	NI	NI	HARBOUR		YES	
296	UK/MA025	8 512	0	0	0,018	0,3	0,03	0,3	0,06	0,2	NI	NI	HARBOUR		YES	
297	UK/MA040	0	0	0	ND	0	0	0	0	0	NI	NI	HARBOUR		YES	
298	UK/MA050	22 368	0,002	0,001	0,021	0,1	0,2	0,2	0,2	0,8	NI	NI	HARBOUR		YES	
299	UK/MA080	0	0	0	ND	0	0	0	0	0	NI	NI	HARBOUR		YES	
300	UK/MA565	3 080	ND	ND	ND	ND	ND	ND	ND	ND	NI	NI	HARBOUR		YES	
301	UK/MA570	4 500	0	0	ND	0,1	0,07	0,04	0,09	0,2	NI	NI	HARBOUR		YES	
302	UK/PL019	2 315	0	0	ND	0,03	0,03	0,02	0,05	0,1	NI	NI	HARBOUR		YES	
303	UK/PO090	11 620	0	0	ND	0,09	0,04	0,07	0,09	0,4	NI	NI	ESTUARY		YES	
304	UK/TH048	550	0	0	ND	0,02	0,01	0,008	0,02	0,05	NI	NI	HARBOUR		YES	
305	UK/TH061	44 200	0,004	0,003	ND	0,7	0,4	0,5	0,5	1,5	NI	NI	HARBOUR		YES	
306	UK/TH065	21 800	0,002	0,002	ND	0,5	0,3	0,2	0,4	1,0	NI	NI	HARBOUR		YES	
307	UK/TH073	7 271	0,002	0,002	ND	0,1	0,1	0,1	0,3	0,6	NI	NI	HARBOUR		YES	
308	UK/TH145	18 980	0,001	0,001	ND	0,3	0,2	0,1	0,2	1,3	NI	NI	HARBOUR		YES	
309	UK/WI035	5 016	0,001	0	ND	0,1	0,03	0,06	0,1	0,2	NI	NI	SEA		YES	
310	UK/WI080	115 166	0,014	0,018	ND	2,5	3,8	1,2	3,1	7,7	NI	NI	HARBOUR/ESTUARY/SEA	98,7:1:0,3	YES	
311	UK/WI110	1 103 379	0,921	0,036	ND	11,8	4,3	8,10	7,4	25,3	NI	NI	HARBOUR		YES	

DL = Detection limit
NI = No information
ND = Not determined
EX = Exempt from measurement
EX+ = Partly exempt from measurement, rest NI
1) Amount dumped calculated by applying conversion factor 1,15 (m3 --> t)
2) Amount dumped calculated by applying conversion factor 1,3 (m3 --> t)
3) Amount dumped calculated by applying an average factor of 1,46 (range 1,3 to 1,62) for dry-t --> wet-t conversion
4) Amount dumped calculated by applying conversion factor 1,6 (dry t --> wet t)
5) Material dredged in the Netherlands and dumped in internal German waters

Table 5b. Dredged material (tonnes) dumped in 1992

	Dumping site	Amount dumped	Annex I --> ICES CB primary list --> <> CB28	> CB52	> CB101	> CB118	> CB138	> CB153	> CB180	> T-CB	<> PCBs	<> Annex II T-PAH	<> Others Oil	Origin	Ratio %	Internal waters	Remarks
1	B/6	2 130 912	0,0006	0,0013	0,0019	0,0026	0,0021	0,0028	0,0008	0,0121	NA	NI	NI	HARBOUR		NO	4
2	B/9	3 782 242	0,0087	0,0024	0,0031	0,0050	0,0045	0,0052	0,0024	0,0313	NA	NI	NI	HARBOUR/SEA CHANNEL	NI	NO	4
3	B/1	3 780 965	0,0009	0,0016	0,0021	0,0038	0,0033	0,0038	0,0014	0,0169	NA	NI	NI	SEA CHANNEL		NO	4
4	B/1	3 544 058	0,0009	0,0015	0,0020	0,0035	0,0031	0,0035	0,0013	0,0158	NA	NI	NI	SEA CHANNEL		NO	4
5	B/1	1 656 294	0,0002	0,0005	0,0007	0,0012	0,0012	0,0012	0,0004	0,0054	NA	NI	NI	SEA CHANNEL		NO	4
6	B/1	4 609 038	0,0006	0,0014	0,0020	0,0033	0,0033	0,0033	0,0012	0,0151	NA	NI	NI	SEA CHANNEL		NO	4
7	B/3	817 405	0,0002	0,0004	0,0004	0,0008	0,0007	0,0008	0,0003	0,0036	NA	NI	NI	SEA CHANNEL		NO	4
8	B/3	2 719 322	0,0007	0,0012	0,0015	0,0027	0,0024	0,0027	0,0010	0,0122	NA	NI	NI	SEA CHANNEL		NO	4
9	B/3	864 054	0,0001	0,0002	0,0004	0,0006	0,0006	0,0006	0,0002	0,0027	NA	NI	NI	SEA CHANNEL		NO	4
10	B/3	1 280 306	0,0002	0,0004	0,0005	0,0009	0,0009	0,0009	0,0003	0,0041	NA	NI	NI	SEA CHANNEL		NO	4
11	B/6	1 141 136	0,0002	0,0004	0,0006	0,0011	0,0010	0,0011	0,0004	0,0048	NA	NI	NI	SEA		NO	4
12	B/6	74 117	0	0	0	0,0001	0	0,0001	0	0,0002	NA	NI	NI	SEA CHANNEL		NO	4
13	B/9	7 119 595	0,0017	0,0031	0,0040	0,0071	0,0062	0,0071	0,0026	0,0318	NA	NI	NI	SEA CHANNEL		NO	4
14	B/INT1	656 905	NI	NI	NI	NI	NI	NI	NI	NI	0,0004	NI	NI	ESTUARY		YES	3
16	B/INT2	680 605	NI	NI	NI	NI	NI	NI	NI	NI	0,0004	NI	NI	ESTUARY		YES	3
21	B/INT4	3 268 350	NI	NI	NI	NI	NI	NI	NI	NI	0,0006	NI	NI	ESTUARY		YES	3
24	B/INT7	593 255	NI	NI	NI	NI	NI	NI	NI	NI	0,0001	NI	NI	ESTUARY		YES	3
28	B/INT6B	2 080 506	NI	NI	NI	NI	NI	NI	NI	NI	0,0001	NI	NI	ESTUARY		YES	3
29	B/INT6B	2 700 555	NI	NI	NI	NI	NI	NI	NI	NI	0,0057	NI	NI	ESTUARY		YES	3
34	DK/FRB-04	460	NI	NI	NI	NI	NI	NI	NI	NI	NI		0,091	HARBOUR		NO	
57	DK/SJ-02	116 000	NI	NI	NI	NI	NI	NI	NI	NI	0,00006			HARBOUR		YES	
66	F/2	1 043 900	NI	NI	NI	NI	NI	NI	NI	NI	0,0410	0,1545	NI	HARBOUR		NO	2
67	F/3	1 966 770	NI	NI	NI	NI	NI	NI	NI	NI	< 0,0110	0,1585	NI	HARBOUR		NO	2
68	F/4a	554 790	NI	NI	NI	NI	NI	NI	NI	NI	0,0035	0,0002	NI	HARBOUR		NO	
69	F/5	543 126	NI	NI	NI	NI	NI	NI	NI	NI	0,0037	0,0584	NI	HARBOUR		NO	
70	F/6	220 000	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	2,526	HARBOUR		NO	
73	F/8	73 333	NI	NI	NI	NI	NI	NI	NI	NI	0,0010	NI	0,339	HARBOUR		NO	
79	~F/7-8?	10 660	NI	NI	NI	NI	NI	NI	NI	0,0576	NA	NI	NI	HARBOUR		YES	2
80	F/	27 300	NI	NI	NI	NI	NI	NI	NI	NI	< 0,0021	NI	NI	HARBOUR		YES	2
81	F/	10 660	NI	NI	NI	NI	NI	NI	NI	0,0576	NA	NI	NI	HARBOUR		YES	2
82	~F/17?	106 600	NI	NI	NI	NI	NI	NI	NI	NI	ND	0,2290	NI	HARBOUR		YES	2
90	F/	50 310	NI	NI	NI	NI	NI	NI	NI	NI	0,0005	NI	NI	SEA		YES	2
100	D/37	1 349 000	NI	NI	NI	NI	NI	NI	NI <	0,0040	NI	NI	NI	HARBOUR		YES	

Table 5b. (continued)

	Dumping site	Amount dumped	Annex I --> ICES CB primary list --> <> CB28 > CB52 > CB101 > CB118 > CB138 > CB153 > CB180 > T-CB <> PCBs	Annex II <> T-PAH	Others <> Oil	Origin	Ratio %	Internal waters	Remarks
112	IRL/	59 550	NI NI NI NI NI NI NI NI 0	NI	NI	HARBOUR/ESTUARY	NI	NO	
113	IRL/	1 080	NI NI NI NI NI NI NI NI < DL	NI	NI	HARBOUR		NO	
114	IRL/	145 500	NI NI NI NI NI NI NI NI < DL	NI	NI	HARBOUR/ESTUARY	NI	NO	
115	IRL/	37 000	NI NI NI NI NI NI NI NI < DL	NI	NI	HARBOUR/ESTUARY	NI	NO	
116	IRL/	53 900	NI NI NI NI NI NI NI NI < DL	NI	NI	HARBOUR		YES	
117	IRL/	750	NI NI NI NI NI NI NI NI EX	NI	NI	HARBOUR		YES	
118	IRL/	33 764	NI NI NI NI NI NI NI NI 0,0001	NI	NI	HARBOUR		YES	
119	IRL/	7 000	NI NI NI NI NI NI NI NI NI	NI	NI	HARBOUR		YES	
120	IRL/	4 400	NI NI NI NI NI NI NI NI < DL	NI	NI	HARBOUR		YES	
121	IRL/	58 460	NI NI NI NI NI NI NI NI < DL	NI	NI	ESTUARY		YES	
122	IRL/	87 658	NI NI NI NI NI NI NI NI < DL	NI	NI	ESTUARY		YES	
128	NL/5	10 527 100	0,01 0,01 0,02 0,01 0,02 0,02 0,01 0,11 NI	6,8	897	HARBOUR		NO	
129	NL/6	195 500	0 0 0 0 0 0 0 0 NI	0,14	12	HARBOUR		NO	
130	NL/7	3 714 500	0 0 0,01 0,01 0,01 0,01 0,01 0,03 NI	1,44	87	HARBOUR		NO	
131	NL/11	3 975 588	0,002 0,003 0,005 0,003 0,006 0,006 0,003 0,025 NA	3,2	418	HARBOUR		YES	1
132	NL/13	1 150 000	0,006 0,003 0,006 0,006 0,006 0,006 0,006 0,039 NA	1,2	47	HARBOUR		YES	1
133	NL/14	2 683 236	0 0 0 0 0 0 0 0 NA	1,1	92	HARBOUR		YES	1
134	NL/15	2 157 400	0 0 0 0 0 0 0 0 NA	0,6	54	HARBOUR		YES	1
135	N/1	600	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
136	N/2	2 730	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
137	N/3	5 018	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
138	N/4	1 500	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
139	N/6	5 200	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
140	N/7	66 000	NI NI NI NI NI NI NI NI 0	0,41	NI	HARBOUR		YES	
141	N/9	1 950	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
142	N/10	126 000	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
143	N/11	18 200	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
144	N/12	30	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
145	N/13	6 630	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
146	N/14	13 000	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	
147	N/15	39 000	NI NI NI NI NI NI NI NI 0	0	NI	HARBOUR		YES	

DL = Detection limit
NI = No information
ND = Not determined
EX = Exempt from measurement
EX+ = Partly exempt from measurement, rest NI
T-CB = Total of the CBs listed
PCBs = PCBs on a technical formulation basis
T-PAH = Total of ANT, BAA, BAP, BBF, BGHIP, BKF, CHR, FLU, ICDP, NAP, PA (or unspecified)
1) Amount dumped calculated by applying conversion factor 1,15 (m3 --> t)
2) Amount dumped calculated by applying conversion factor 1,3 (m3 --> t)
3) Amount dumped calculated by applying an average factor of 1,46 (range 1,3 to 1,62) for dry-t --> wet-t conversion
4) Amount dumped calculated by applying conversion factor 1,6 (dry t --> wet t)

Annex to Table 5. Dredged material (tonnes) dumped in 1992 - contaminants as total load and anthropogenic load

Dumping site	Amount dumped	Annex I substances --> ICES CB primary list --> ◇ Cd	◇ Hg	◇ HCB	◇ CB28	◇ CB52	◇ CB101	◇ CB118	◇ CB138	◇ CB153	◇ CB180	◇ 7CBs	Other substances --> ◇ Oil	◇ N	◇ P	
NL/5	10 527 100	4,4	1,4	0,01	0,01	0,01	0,02	0,01	0,02	0,02	0,01	0,11	897	11 390	4 200	HARBOUR
anthropogenic load:		3,1	0,4	0,01	0,01	0,01	0,02	0,01	0,02	0,02	0,01	0,11	802	-	-	
NL/6	195 500	0,1	0	0	0	0	0	0	0	0	0	0	12	-	-	HARBOUR
anthropogenic load:		0,1	0	0	0	0	0	0	0	0	0	0	6,8	-	-	
NL/7	3 714 500	1	0,4	0,01	0	0	0,01	0,01	0,01	0,01	0,01	0,03	87	6 300	2 500	HARBOUR
anthropogenic load:		0,5	0,1	0,01	0	0	0,01	0,01	0,01	0,01	0,01	0,03	51	-		
NL/11	3 975 588	1,7	0,7	0,002	0,002	0,003	0,005	0,003	0,006	0,006	0,003	0,025	418	-	-	HARBOUR
anthropogenic load:		0,6	0,3	0,002	0,002	0,003	0,005	0,003	0,006	0,006	0,003	0,025	21			
NL/13	1 150 000	0,6	0,3	0	0,006	0,003	0,006	0,006	0,006	0,006	0,006	0,039	47	-	-	HARBOUR
anthropogenic load:		0,4	0,2	0	0,006	0,003	0,006	0,006	0,006	0,006	0,006	0,039	30			
NL/14	2 683 236	1	0,4	0	0	0	0	0	0	0	0	0	92	-	-	HARBOUR
anthropogenic load:		0,6	0,1	0	0	0	0	0	0	0	0	0	43			
NL/15	2 157 400	0,5	0,3	0	0	0	0	0	0	0	0	0	54	-	-	HARBOUR
anthropogenic load:		0,3	0,1	0	0	0	0	0	0	0	0	0	20			

Dumping site	Amount dumped	Annex II substances --> PAH (11) --> < As	< Cr	< Cu	< Ni	< Pb	< Zn	< ANT	< BAA	< BAP	< BBF	< BGHIP	< BKF	< CHR	< FLU	< ICDP	< NAP	< PA	< 11 PAHs	
NL/5	10 527 100	52	179	94	76	198	640	0,6	0,4	0,5	0,5	0,6	0,4	0,6	1,1	0,6	0,7	0,7	6,8	HARBOUR
anthropogenic load:		7	0	0	0	81	225	0,6	0,4	0,5	0,5	0,6	0,4	0,6	1,1	0,6	0,7	0,7	6,8	
NL/6	195 500	1	4,7	2	1	4	15	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,03	0,01	0,02	0,02	0,14	HARBOUR
anthropogenic load:		1	0	0	0	1,9	7	0,01	0,01	0,01	0,01	0,01	0,01	0,02	0,03	0,01	0,02	0,02	0,14	
NL/7	3 714 500	19	87	34	30	64	213	0,11	0,14	0,14	0,11	0,14	0,14	0,11	0,23	0,15	0,03	0,14	1,44	HARBOUR
anthropogenic load:		4	0	0	0	26	83	0,11	0,14	0,14	0,11	0,14	0,14	0,11	0,23	0,15	0,03	0,14	1,44	
NL/11	3 975 588	24	53	37	20	58	208	0,1	0,3	0,3	0,5	0,3	0,2	0,3	0,6	0,3	0,2	0,2	3,2	HARBOUR
anthropogenic load:		10	1	11	0	25	14	0,1	0,3	0,3	0,5	0,3	0,2	0,3	0,6	0,3	0,2	0,2	3,2	
NL/13	1 150 000	8	40	15	12	34	109	0,06	0,12	0,14	NI	0,11	0,06	0,13	0,3	0,11	0,06	0,13	1,2	HARBOUR
anthropogenic load:		2	1	1	8	20	56	0,06	0,12	0,14	NI	0,11	0,06	0,13	0,3	0,11	0,06	0,13	1,2	
NL/14	2 683 236	16	83	38	29	65	241	0	0	0,1	0	0,1	0,2	0	0,4	0,1	0	0,1	1,1	HARBOUR
anthropogenic load:		5	0	10	0	35	139	0	0	0,1	0	0,1	0,2	0	0,4	0,1	0	0,1	1,1	
NL/15	2 157 400	10	38	13	16	26	105	0	0,1	0,1	0,1	0	0	0,1	0,1	0,1	0	0,1	0,6	HARBOUR
anthropogenic load:		3	0	0	0	10	41	0	0,1	0,1	0,1	0	0	0,1	0,1	0,1	0	0,1	0,6	

Table 6(1). Sewage sludge (tonnes) dumped in 1992

	Dumping site	Amount dumped	Annex I substances -->												Internal waters
			<>	Cd	<>	Hg	<>	HCB	<>	g-HCH	<>	PCBs	<>	Dieldrin	<>	DDT	
1	IRL/1	380 397		0,025		0,015	<	0,001	*<	0,006	<	0,07	*<	0,019	*<	0,003	NO
2	UK/FO030	107 265		0,018		0,016		NI		NI		NI		NI		NI	NO
3	UK/FO050	191 260		0,032		0,028		NI		NI		NI		NI		NI	NO
4	UK/HU100	135 892		0,064		0,016		NI		0		0,001		0		0	NO
5	UK/IS070	1 901 447		0,714		0,19		NI		NI		0,023		0,002		NI	NO
6	UK/IS590	261 000		0,04		0,023		NI		NI		NI		NI		NI	NO
7	UK/LU050	12 955		0,003		0,002		0		0		0		0		0	NO
8	UK/LU160	217 652		0,049		0,029		NI		0		0		NI		NI	NO
9	UK/PL020	41 969		0,004		0,003		0		0		0		NI		0	NO
10	UK/PO030	54 026		0,019		0,009		0		0		0		0		0	NO
11	UK/PO050	1 639		0,001		0		0		0		0		0		0	NO
12	UK/TH042	265 524		0,03		0,039		0	*	0,001		0		0		0	NO
13	UK/TH050	4 279 686		0,747		0,491		NI		NI		NI		NI		NI	NO
14	UK/TY060	565 986		0,034		0,046		0		0,001		0,002		0,001	*	0,001	NO
15	UK/TY110	0		0		0		0		0		0		0		0	NO
16	UK/WI060	262 593		0,038		0,022		NI		NI		NI		NI		NI	NO
17	UK/MA018	1 686 000		0,162		0,052		NI		NI		NI		NI		NI	YES

NI = No information
ND = Not determined
*) Number summarises the group of compounds

Table 6(2). Sewage sludge (tonnes) dumped in 1992

	Dumping site	Amount dumped	Annex II substances -->						Other substances -->			Internal waters
			As	Cr	Cu	Ni	Pb	Zn	Oil	N	P	
1	IRL/1	380 397	0,07	0,5	2,7	0,4	2,7	7,5	NI	NI	NI	NO
2	UK/FO030	107 265	0,02	0,4	2,1	0,1	2,0	4,8	NI	NI	NI	NO
3	UK/FO050	191 260	0,03	0,8	3,8	0,2	3,5	8,6	NI	NI	NI	NO
4	UK/HU100	135 892	0,09	2,6	3,4	1,5	2,9	8,3	NI	NI	NI	NO
5	UK/IS070	1 901 447	0	37,1	37,6	5,8	29,9	104,3	NI	3870,9	794,4	NO
6	UK/IS590	261 000	0,03	2,2	3,4	0,5	2,9	9,6	NI	NI	NI	NO
7	UK/LU050	12 955	ND	0,1	0,2	0,0	0,2	0,5	NI	NI	NI	NO
8	UK/LU160	217 652	ND	1,0	3,8	0,5	3,9	8,8	NI	92,0	56,1	NO
9	UK/PL020	41 969	0,01	0,1	0,5	0,1	0,2	0,9	NI	65,0	16,8	NO
10	UK/PO030	54 026	0,01	0,5	0,6	0,2	0,5	2,0	NI	58,0	19,0	NO
11	UK/PO050	1 639	0	0,0	0,0	0,0	0,0	0,1	NI	1,7	0,5	NO
12	UK/TH042	265 524	0	1,2	5,3	0,6	2,7	9,2	NI	666,6	296,0	NO
13	UK/TH050	4 279 686	0,65	17,0	60,3	7,1	48,1	124,3	NI	NI	NI	NO
14	UK/TY060	565 986	0	0,7	5,8	0,4	3,4	8,8	NI	NI	NI	NO
15	UK/TY110	0	0	0	0	0	0	0	0,0	0,0	0,0	NO
16	UK/WI060	262 593	ND	0,9	5,9	0,4	1,5	5,5	NI	424,8	144,1	NO
17	UK/MA018	1 686 000	0,41	28,7	30,3	2,0	12,3	27,0	NI	NI	NI	YES

NI = No information
ND = Not determined

Table 7. Other wastes - chemical wastes, slurries, including fly ash (tonnes), dumped in 1992

	Dumping site	General description of waste	Amount dumped	Annex I substances -->				Annex II substances -->						Toxicity tests	Internal waters
				Cd	Hg	PCBs	O-X	As	Cr	Cu	Ni	Pb	Zn		
1	IRL/2	Organic liquid from fermentation etc.	107 142	< 0,011	< 0,001	NA	0,270	NA	NA	0,01	NA	NA	0,16	YES	NO
2	IRL/2	Spent caustic	1 500	0	0	NA	0,002	NA	NA	NA	0,001	0	NA	YES	NO
3	IRL/3	Infant nutritional manufacture effluent	3 050	< 0,0003	0	NA	NA	0	0,001	0,003	0	<0,002	0,016	NA	YES
4	ES/1/4	Wastes from TiO2-production	511 846	0,0005	0,001	NA	NA	0,2	27	0,8	4	10,8	63,2	YES	NO
5	TY041	Ash	231 653	0,046	0,046	NA	NA	2,32	2,317	4,633	0	9,266	4,633	NA	NO
6	HU100	Aqueous organic	0	0	0	0	0	0	0	0	0	0	0	NA	NO
7	TY050	Aqueous organic	32 067	0,001	0,001	NA	NA	ND	0,032	0,01	0	0,028	0,002	YES	NO
8	TY110	Aqueous salts	148 658	0,026	0,001	NA	NA	0	0,334	0,11	0,3	0,15	0,053	YES	NO

	Dumping site	General description of waste	Amount dumped	Substances/compounds not listed in Annexes I and II -->								Toxicity tests	Internal waters
				Fe	Ti	Phenols	Acids	H2SO4	Alkalis	N	P		
1	IRL/2	Organic liquid from fermentation etc.	107 142	NA	NA	NA	NA	NA	NA	NA	NA	YES	NO
2	IRL/2	Spent caustic	1 500	NA	NA	NA	NA	NA	1 500	NA	NA	YES	NO
3	IRL/3	Infant nutritional manufacture effluent	3 050	NA	NA	NA	NA	NA	NA	1,8	0,3	NA	YES
4	ES/1/4	Wastes from TiO2-production	511 846	NI	1 058	NA	NA	50 804	NA	NA	NA	YES	NO
5	TY041	Ash	231 653	NA	NA	NA	0	NA	0	NA	NA	NA	NO
6	HU100	Aqueous organic	0	0	0	0	0	0	0	0	0	NA	NO
7	TY050	Aqueous organic	32 067	NA	NA	16,0	0	NA	32 067	NA	NA	YES	NO
8	TY110	Aqueous salts	148 658	4,1	NA	NA	148 658	NA	0	8 729	NA	YES	NO

NI = No information
NA = Not applicable

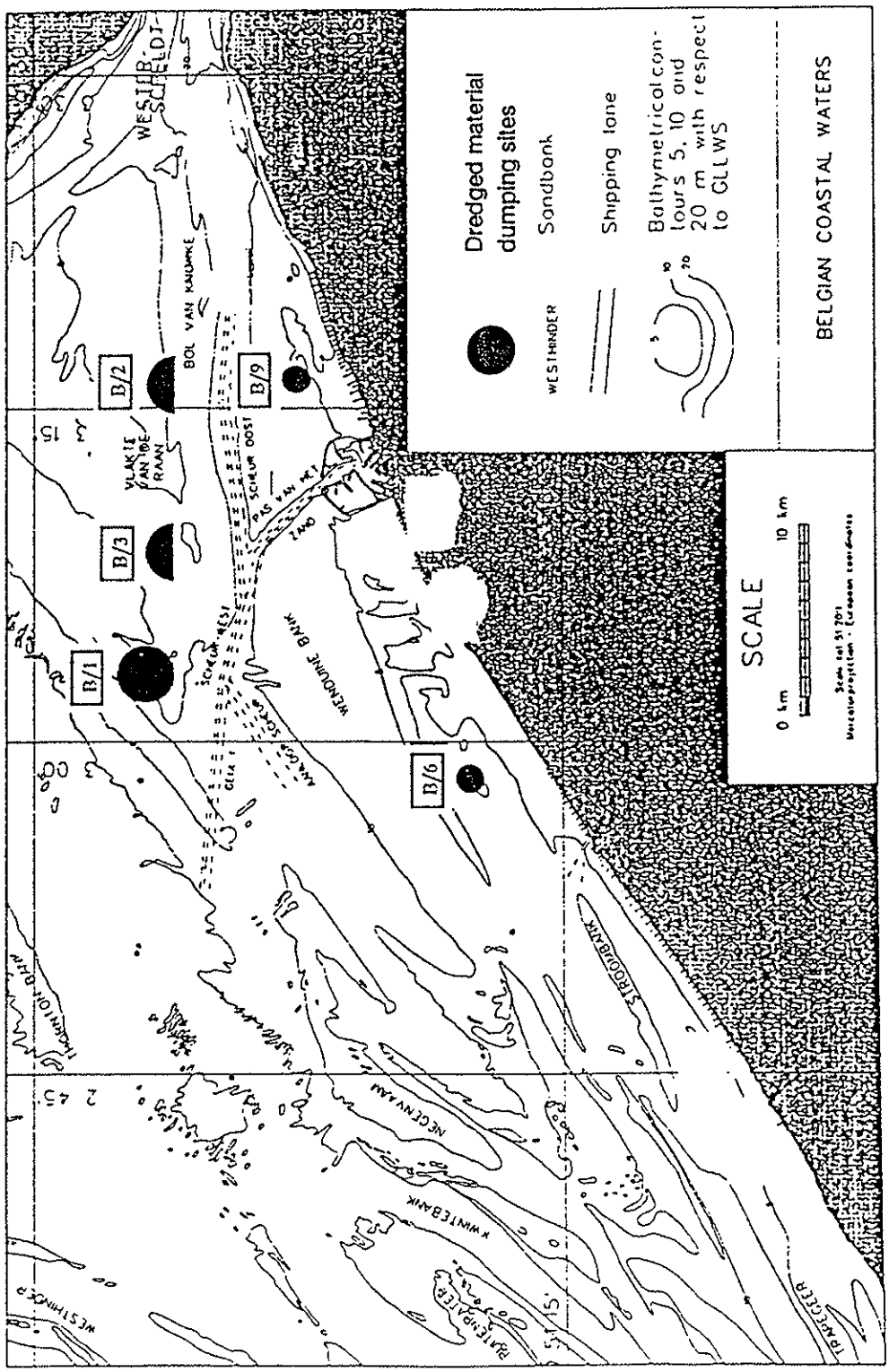


Figure 1a: Approximate positions of the dumping sites for dredged material used by Belgium:

Sites used in 1992: B/1, B/3, B/6 and B/9

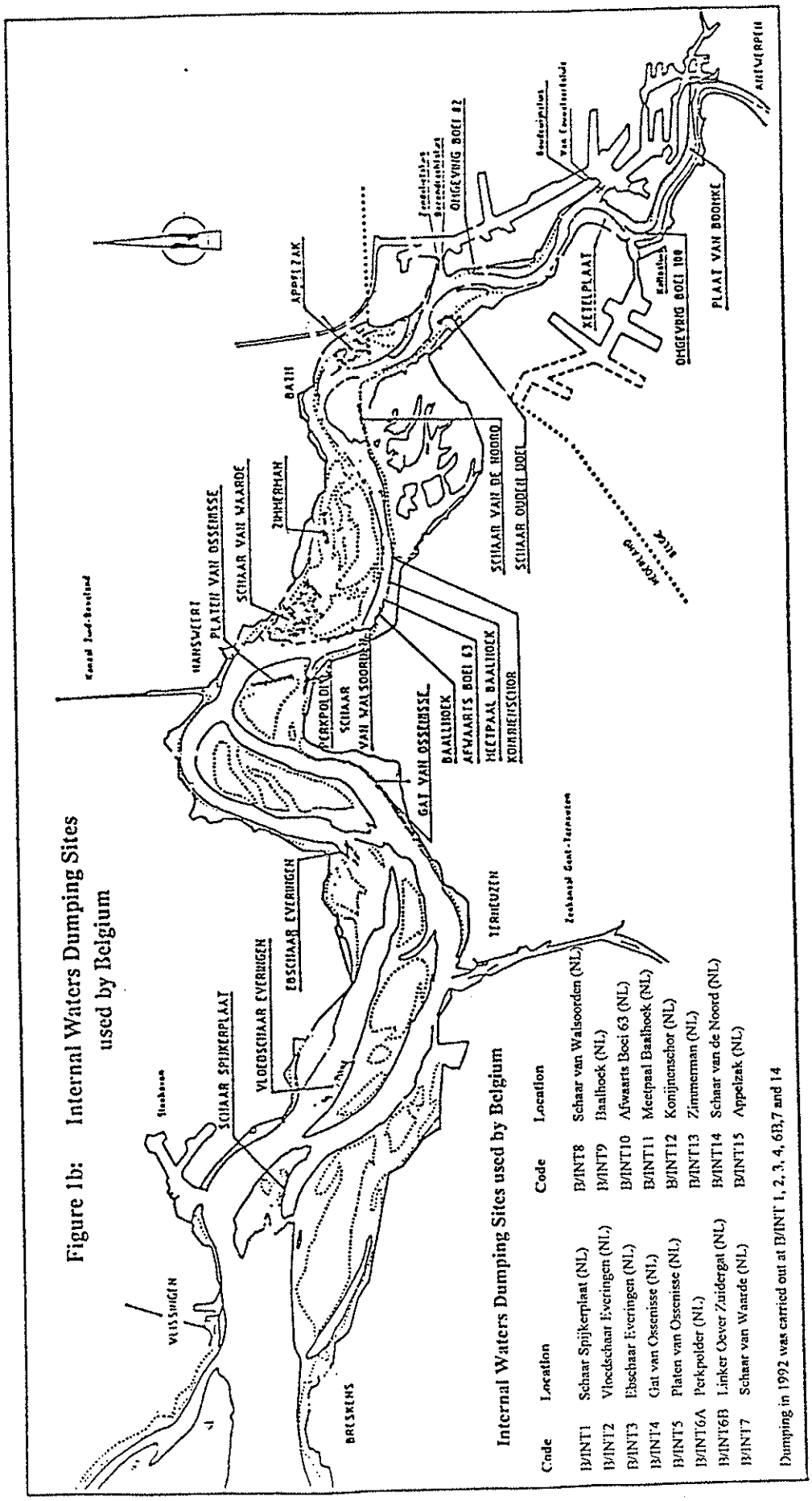


Figure 1b: Internal Waters Dumping Sites used by Belgium
SCHAAR SPIJKERPLAAT
VLOEDSCHAAR EVERINGEN
EBSCHAAR EVERINGEN
PERKPOLDER
SCHAAR VAN WALSOORDEN
PLATEN VAN OSSENISSE
SCHAAR VAN WAARDE
ZIMMERMAN
BATH
APPELZAK
GAT VAN OSSENISSE
BAALHOEK
AFWAARTS BOEI 63
MEETPAAL BAALHOEK
KONIJNENSCHOR
SCHAAR VAN DE NOORD
SCHAAR OUDE DOEL
KEILEPLAAT
OMGEVING BOEI 108
PLAAT VAN BOOMKE
OMGEVING BOEI 82
VLISSINGEN
BRESKENS
TERNEUZEN
ANTWERPEN
Internal Waters Dumping Sites used by Belgium
Code Location Code Location
B/INT1 Schaar Spijkerplaat (NL) B/INT8 Schaar van Walsoorden (NL)
B/INT2 Vloedschaar Everingen (NL) B/INT9 Baalhoek (NL)
B/INT3 Ebschaar Everingen (NL) B/INT10 Afwaarts Boei 63 (NL)
B/INT4 Gat van Ossenisse (NL) B/INT11 Meetpaal Baalhoek (NL)
B/INT5 Platen van Ossenisse (NL) B/INT12 Konijnenschor (NL)
B/INT6A Perkpolder (NL) B/INT13 Zimmerman (NL)
B/INT6B Linker Oever Zuidergat (NL) B/INT14 Schaar van de Noord (NL)
B/INT7 Schaar van Waarde (NL) B/INT15 Appelzak (NL)
Dumping in 1992 was carried out at B/INT 1, 2, 3, 4, 6B,7 and 14

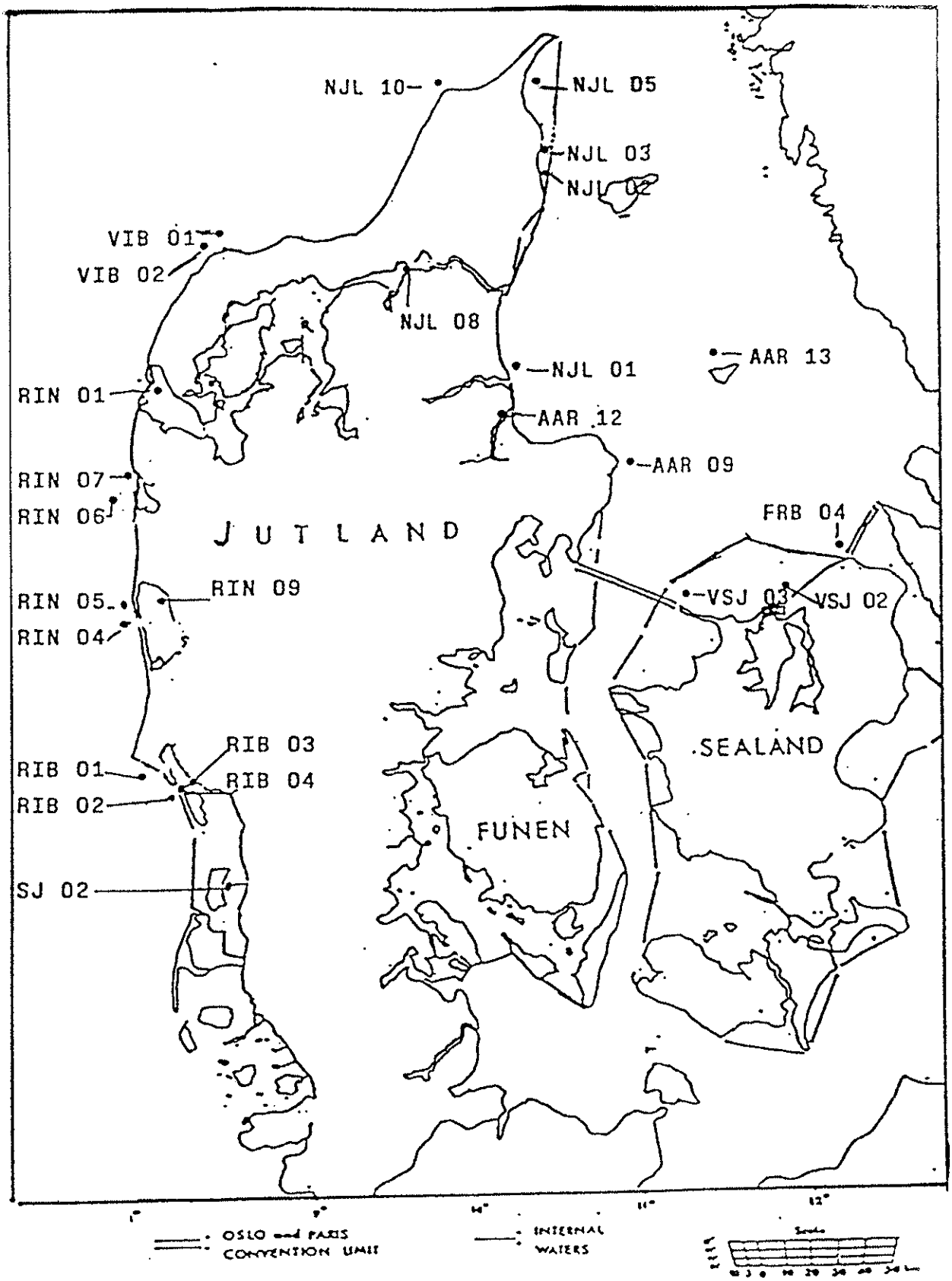


Figure 2: Approximate positions of the dumping sites for dredged material used by Denmark in 1992

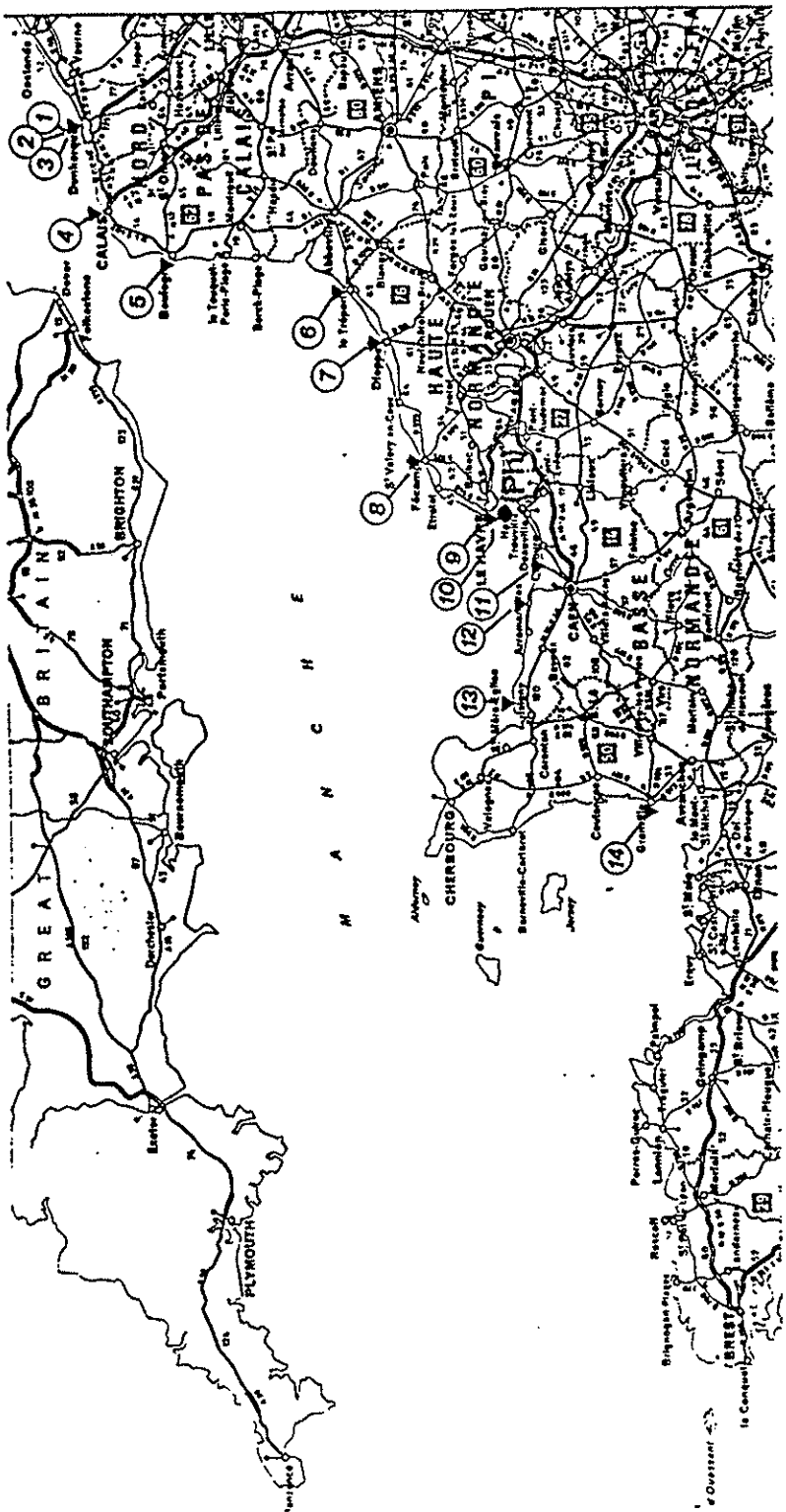


Figure 3a: Approximate positions of the dumping sites for dredged material used by France: English Channel and North Sea

Sites used in 1992: maritime area F/2, F/3, F/4a, F/5 to F/10, F/12
Between F/7-8
Internal waters:
(Original map: Michelin / France départementale et administrative)

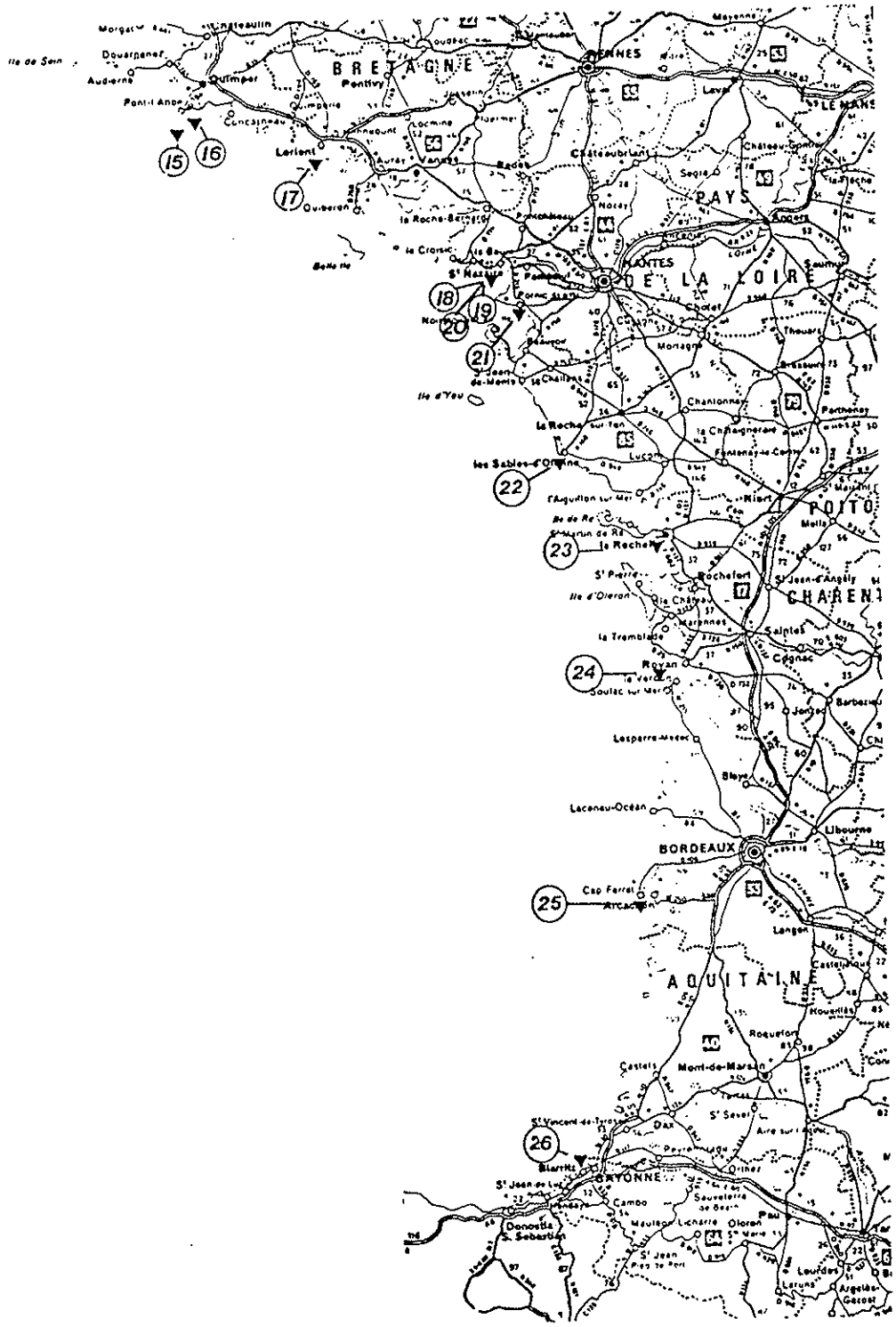


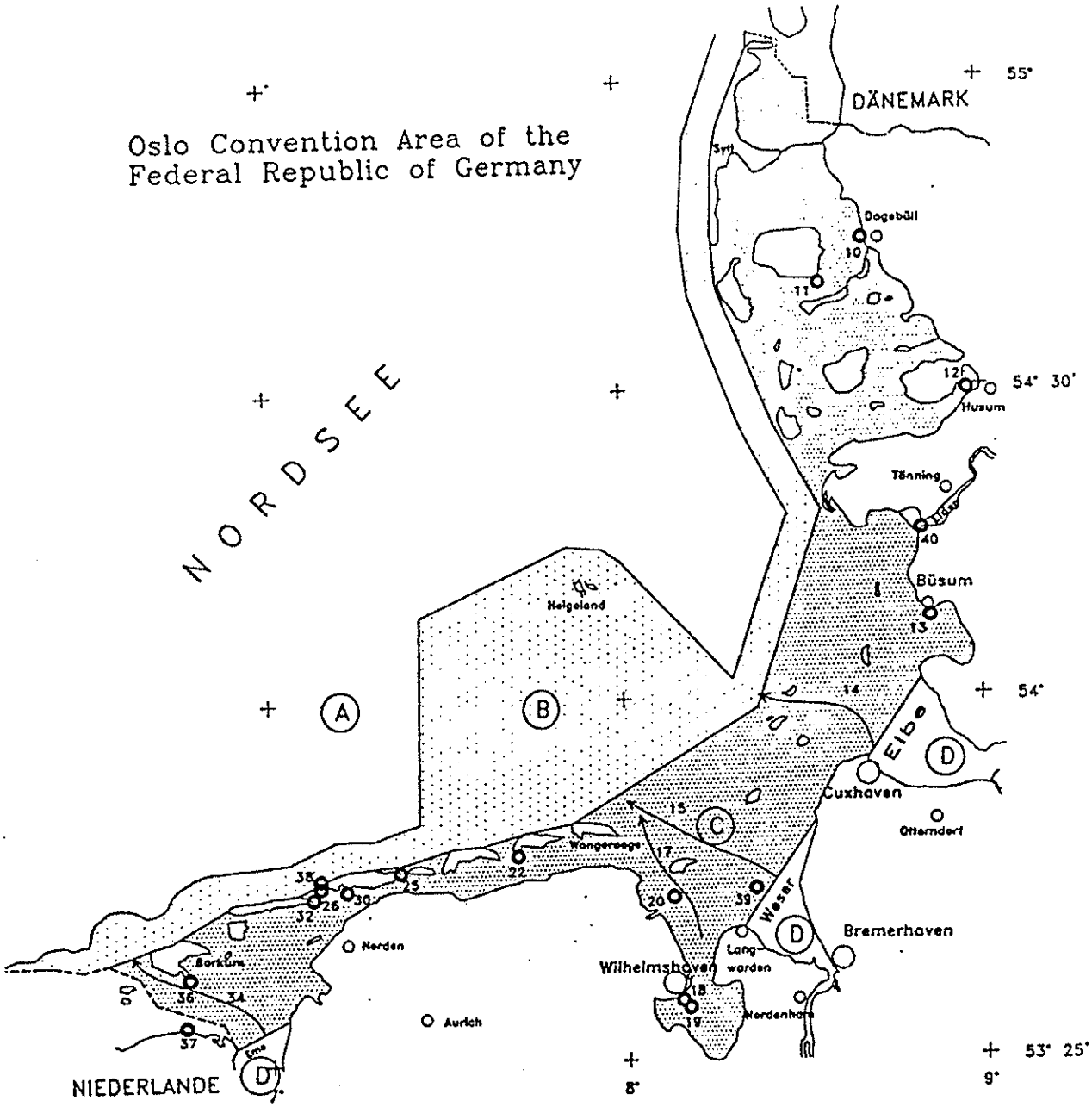
Figure 3b: Approximate positions of the dumping sites for dredged material used by France: Atlantic Ocean

Sites used in 1992:

maritime area

Internal waters: Near F/17, F/18, F/21-F/23, between F/23-24

(Original map: Michelin / France départementale et administrative)



Dumping of dredged materials

A, B = Maritime area
C, D = Internal waters
O = sites of dumping of dredged materials (1992)

Figure 4: Approximate positions of dumping sites for dredged materials used by the Federal Republic of Germany

Sites used in 1992

maritime area	D/38
Internal waters	D/10-D/15, D/17-D/20, D/22, D/25, D/26, D/30, D/32, D/34, D/36, D/37, D/39, D/40

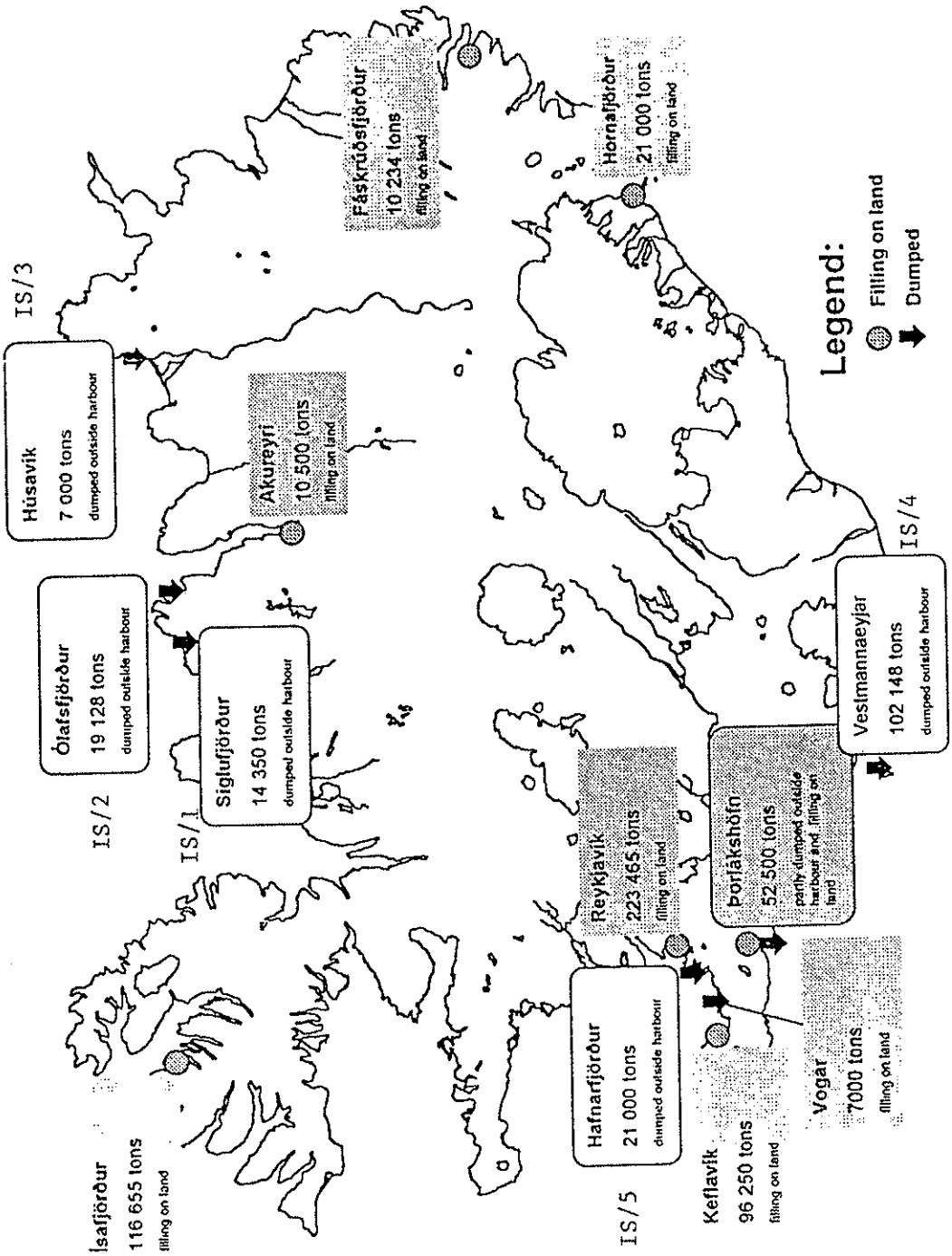


Figure 5: Approximate position of the dumping sites for dredged material used by Iceland

Internal waters: IS/1 - IS/5
Land-fill sites not to be counted as dumping.

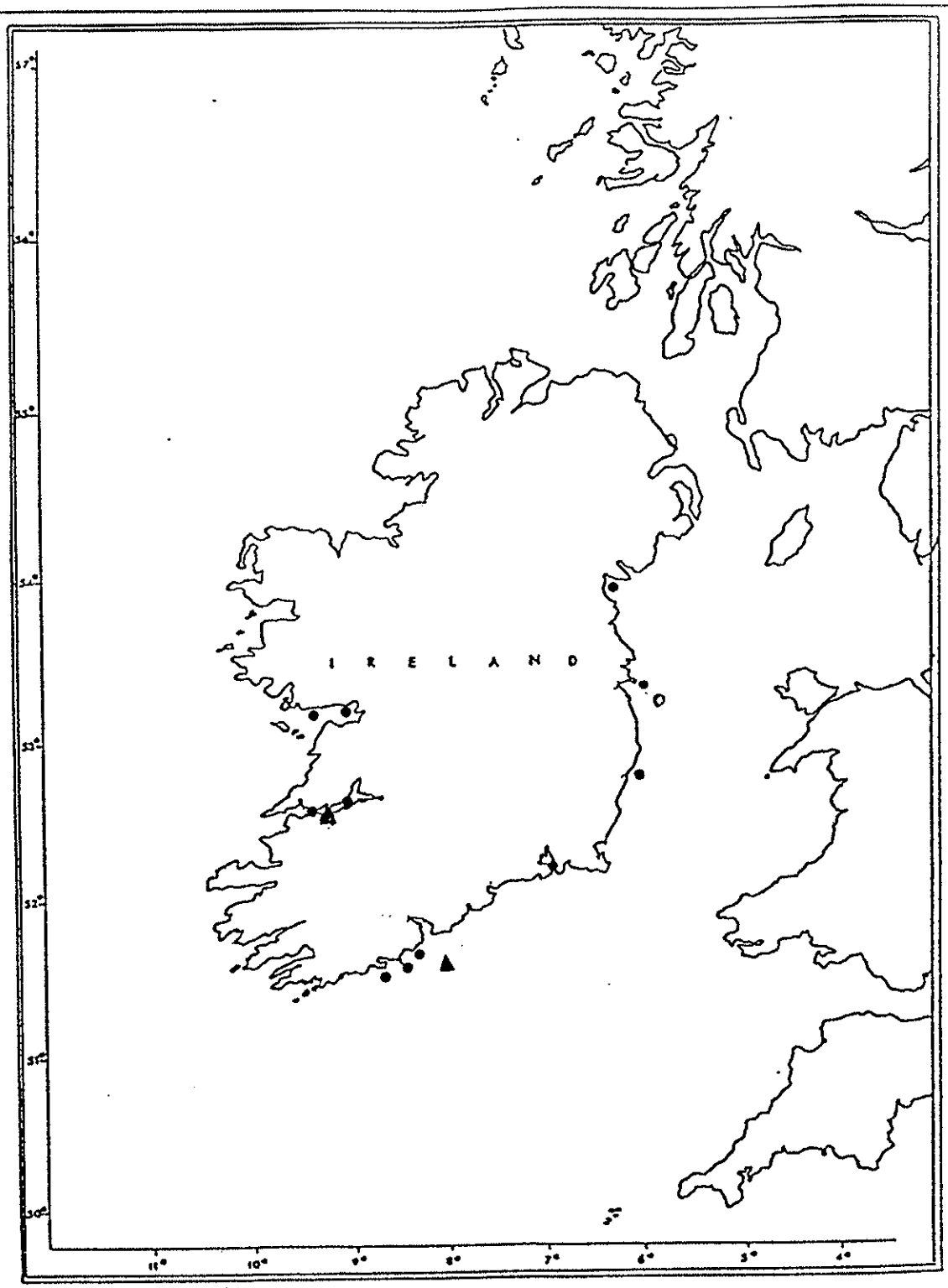


Figure 6: Approximate positions of the dumping sites used in 1992 by Ireland

Industrial waste ▲

Sewage sludge o

Dredged materials ●

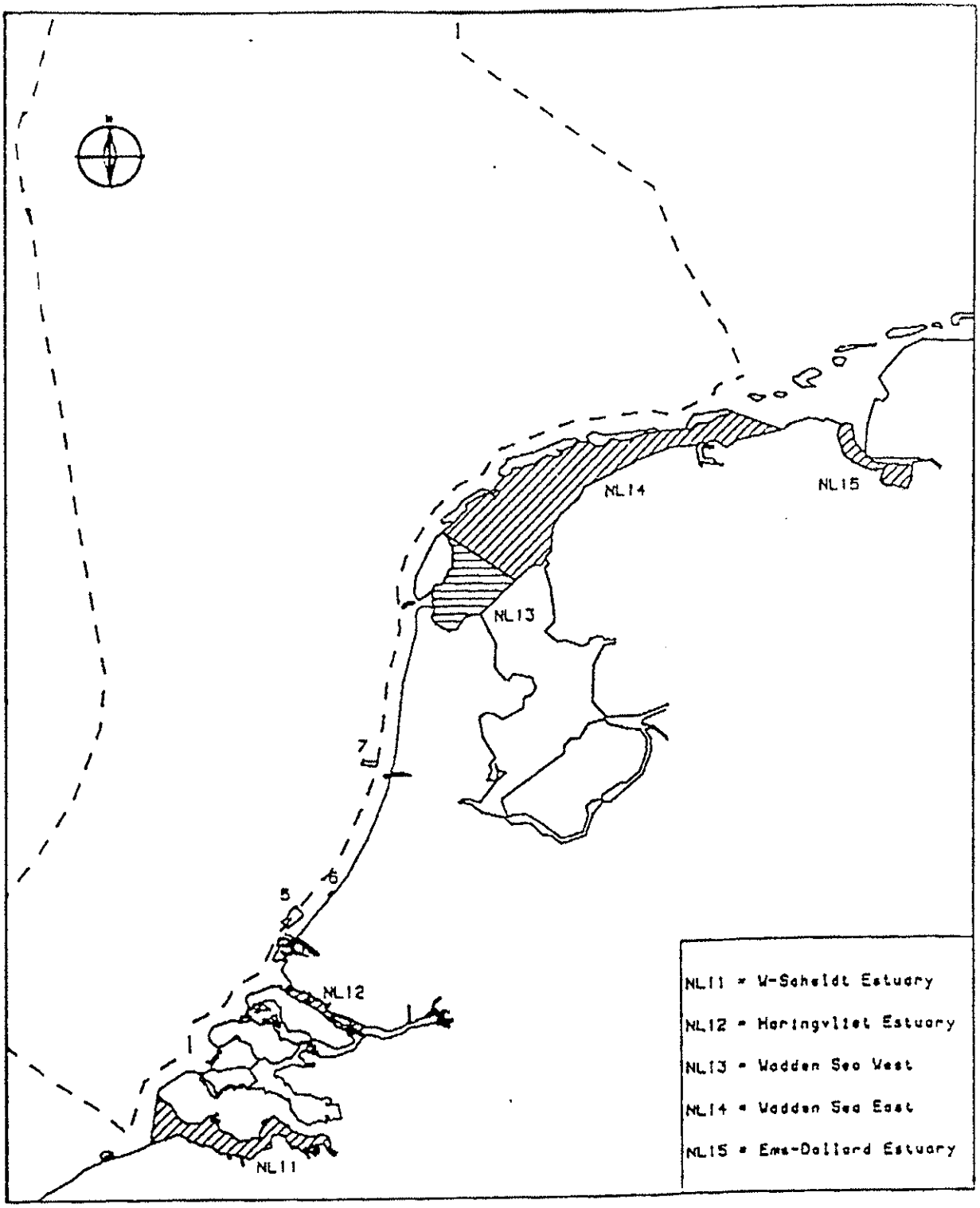


Figure 7: Approximate positions of the dumping sites for dredged materials used by the Netherlands

Sites used in 1992:

maritime area NL/5 - NL/7

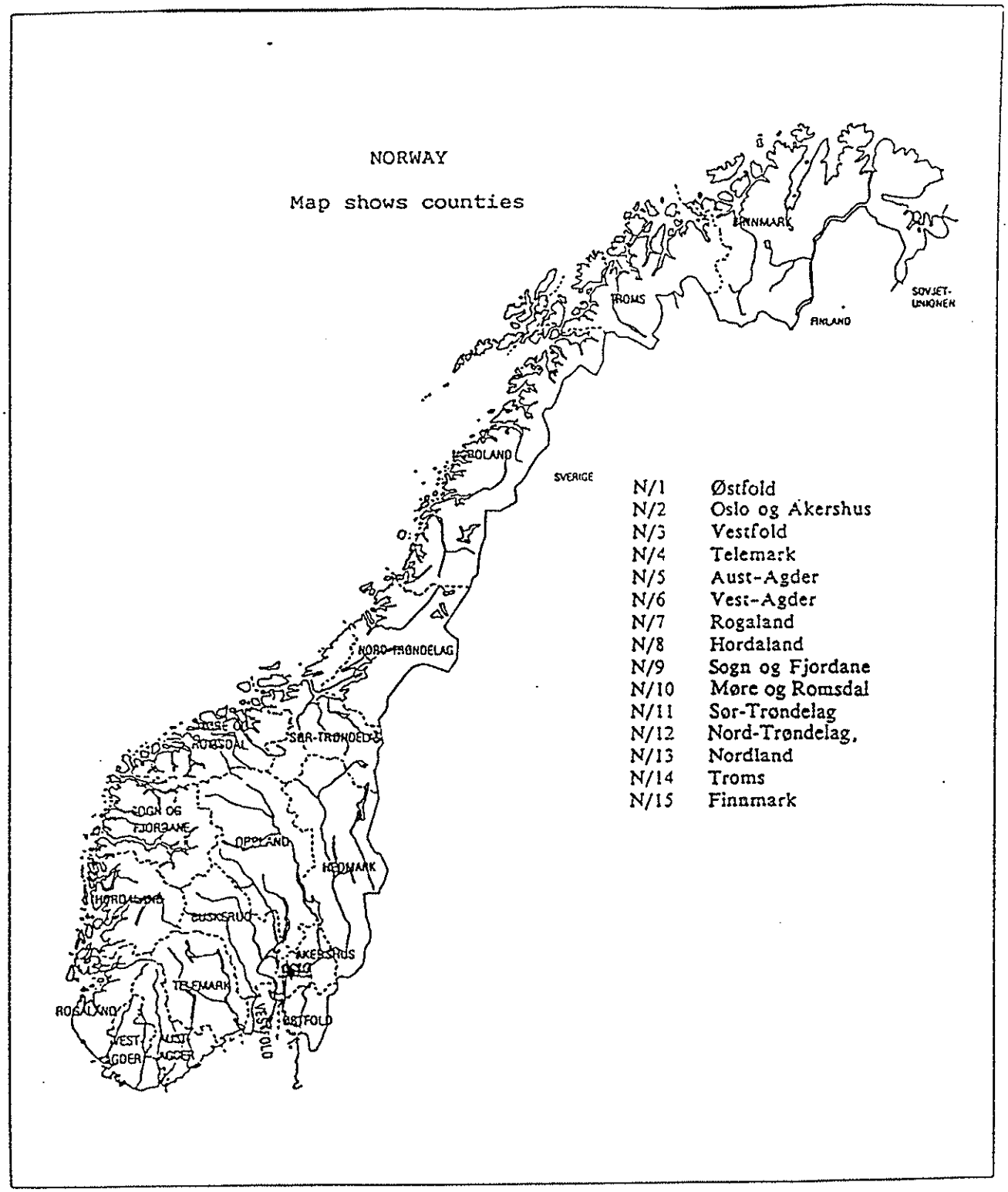


Figure 8: Norwegian counties in the internal waters of which wastes were dumped

Dredged materials:	N/1 to N/4, N/6, N/7 and N/9 to N/15
Inert materials:	N/5, N/8, N/10, N11
Bulky Wastes:	N/7 to N/9, N12, N/13
Fish wastes:	N/13, N15
Ships:	N/2, N/4, N/7 to N/10 and N/12 to N/15

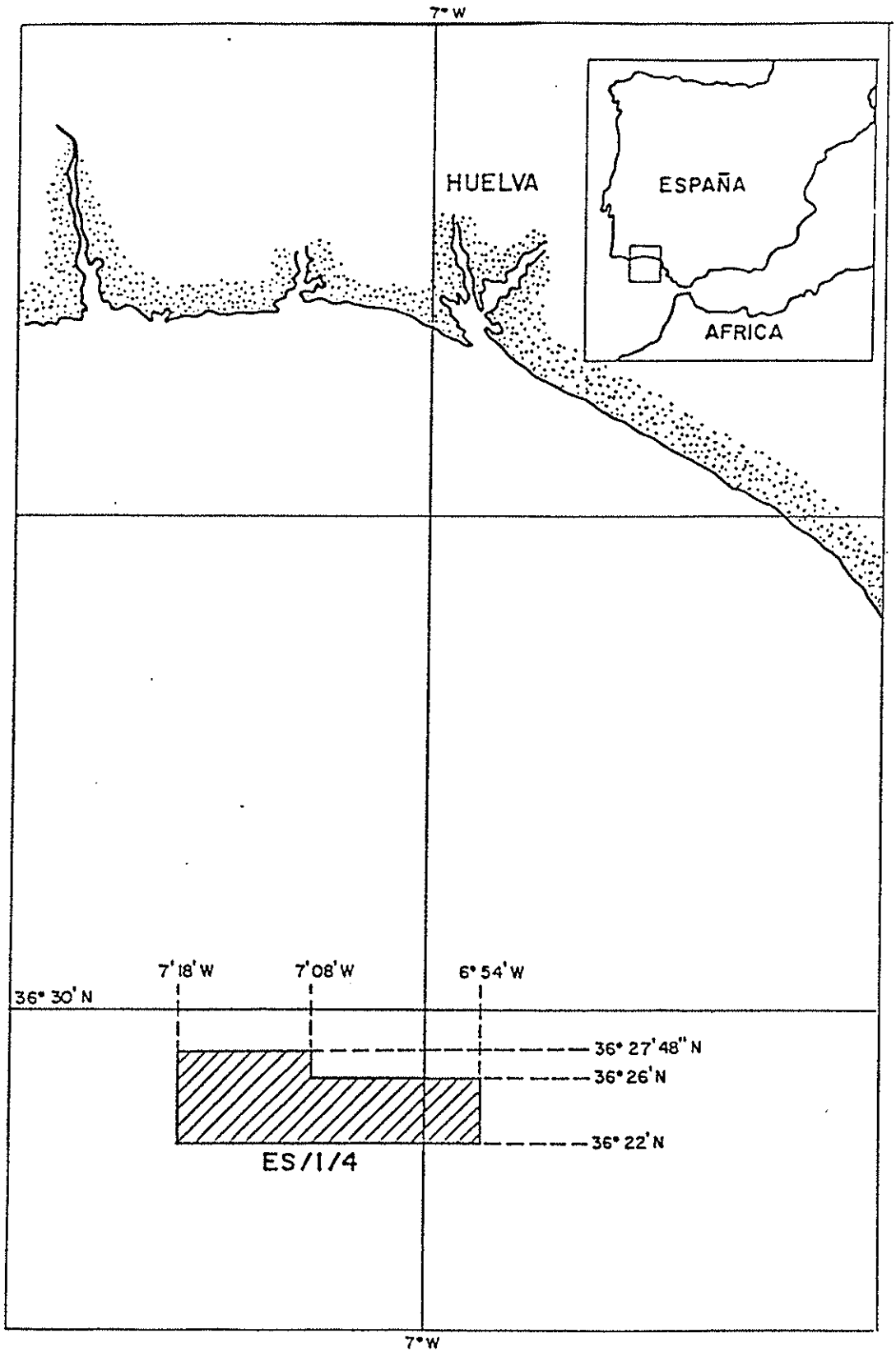
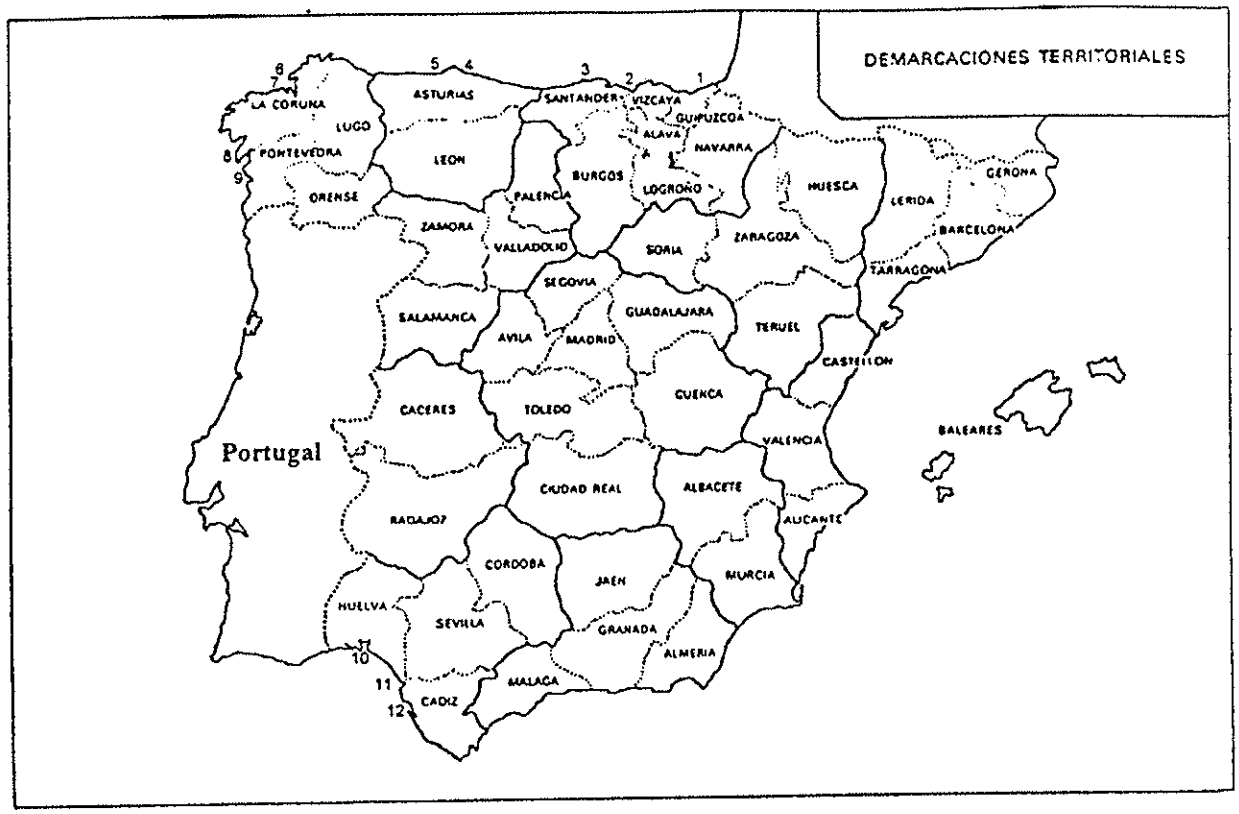


Figure 9a: Approximate position of the dumping site for industrial waste used in 1992 by Spain



1 Pasajes
2 Bilbao
3 Santander
4 Gijon
5 Aviles
6 Ferrol
7 La Coruña
8 Villagarcia
9 Marin
10 Huelva
11 Sevilla
12 Cadiz

Figure 9b: Approximate positions of the dumping sites for dredged material used by Spain

Sites used in 1992:

Maritime area:	10, 12
Internal waters:	1, 2, 3, 4, 5, 7, 9, 11

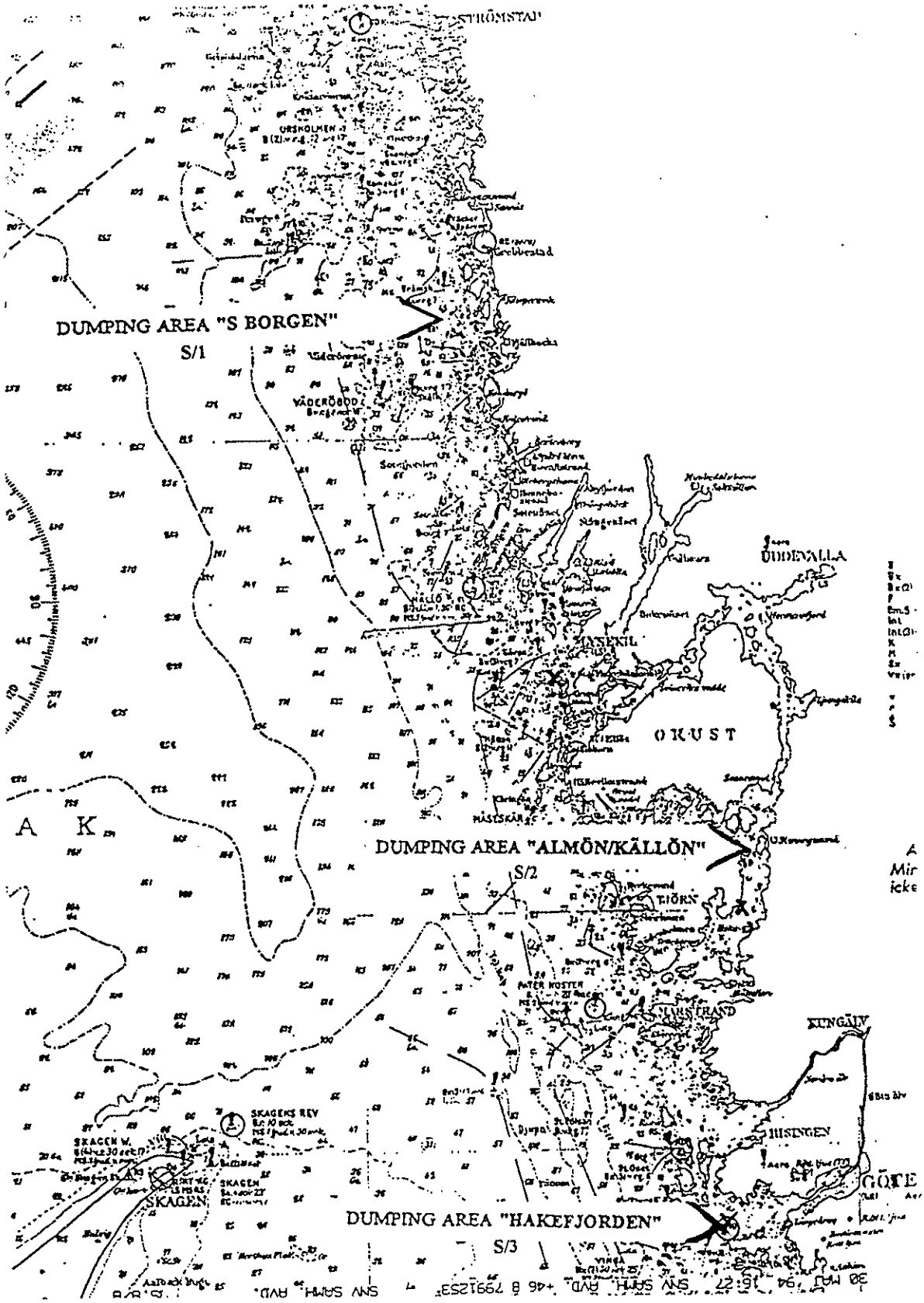


Figure 10: Approximate positions of the dumping sites for dredged materials used in 1992 by Sweden

Internal waters: S/1, S/2, S/3

South-West England and South Wales

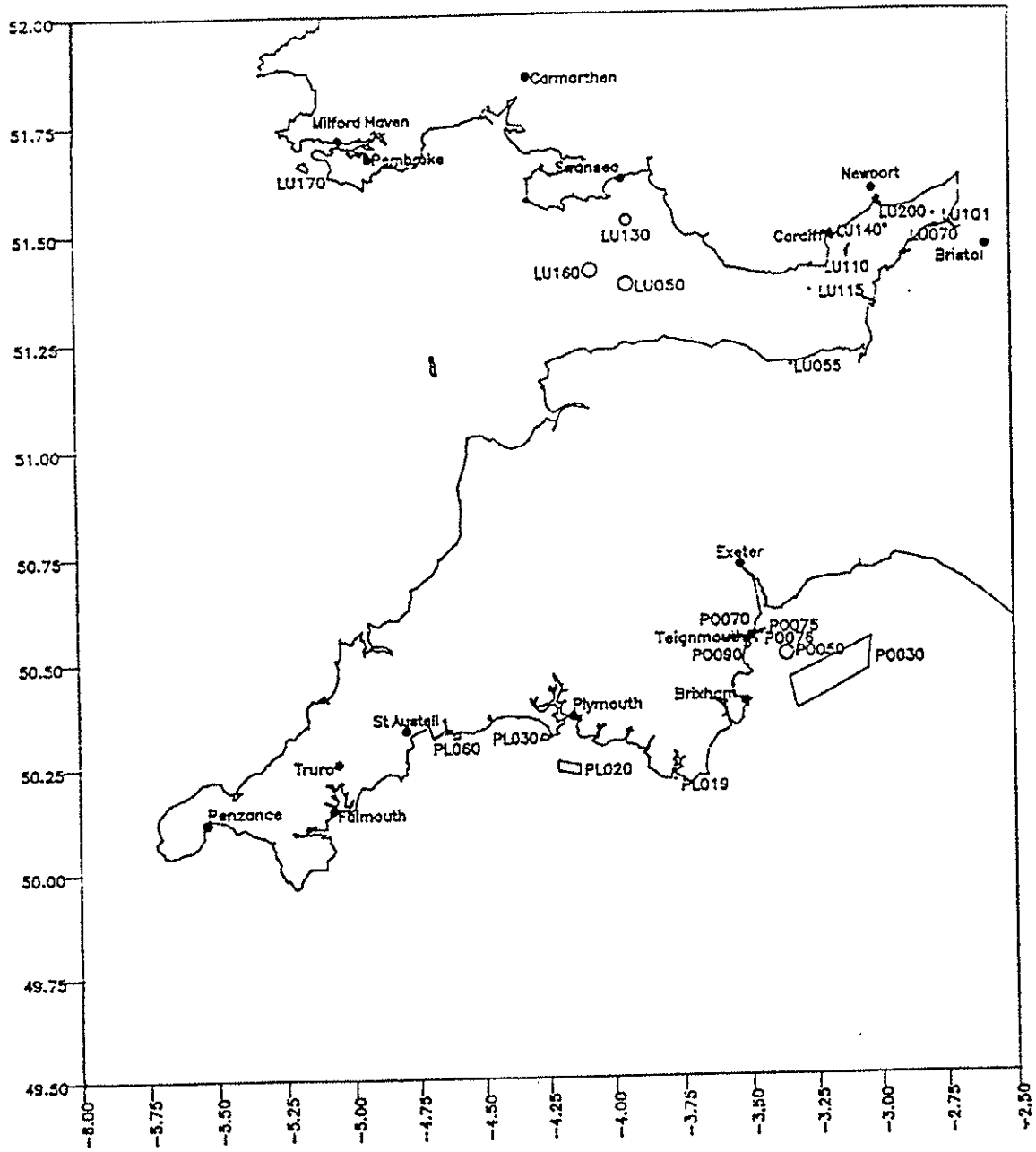


Figure 11a: Approximate positions of dumping sites used by the United Kingdom south-west England and South Wales)

Sites in maritime area used in 1992:

Dredged material: LU101, LU170, PL030, PL060, PO070, PO075, PO076

Sewage sludge: LU050, LU160, PL020, PO030, PO050

Sites in internal waters used in 1992:

Dredged material: LU055, LU070, LU110, LU115, LU130, LU140, LU200, PL019, PL090

English Channel

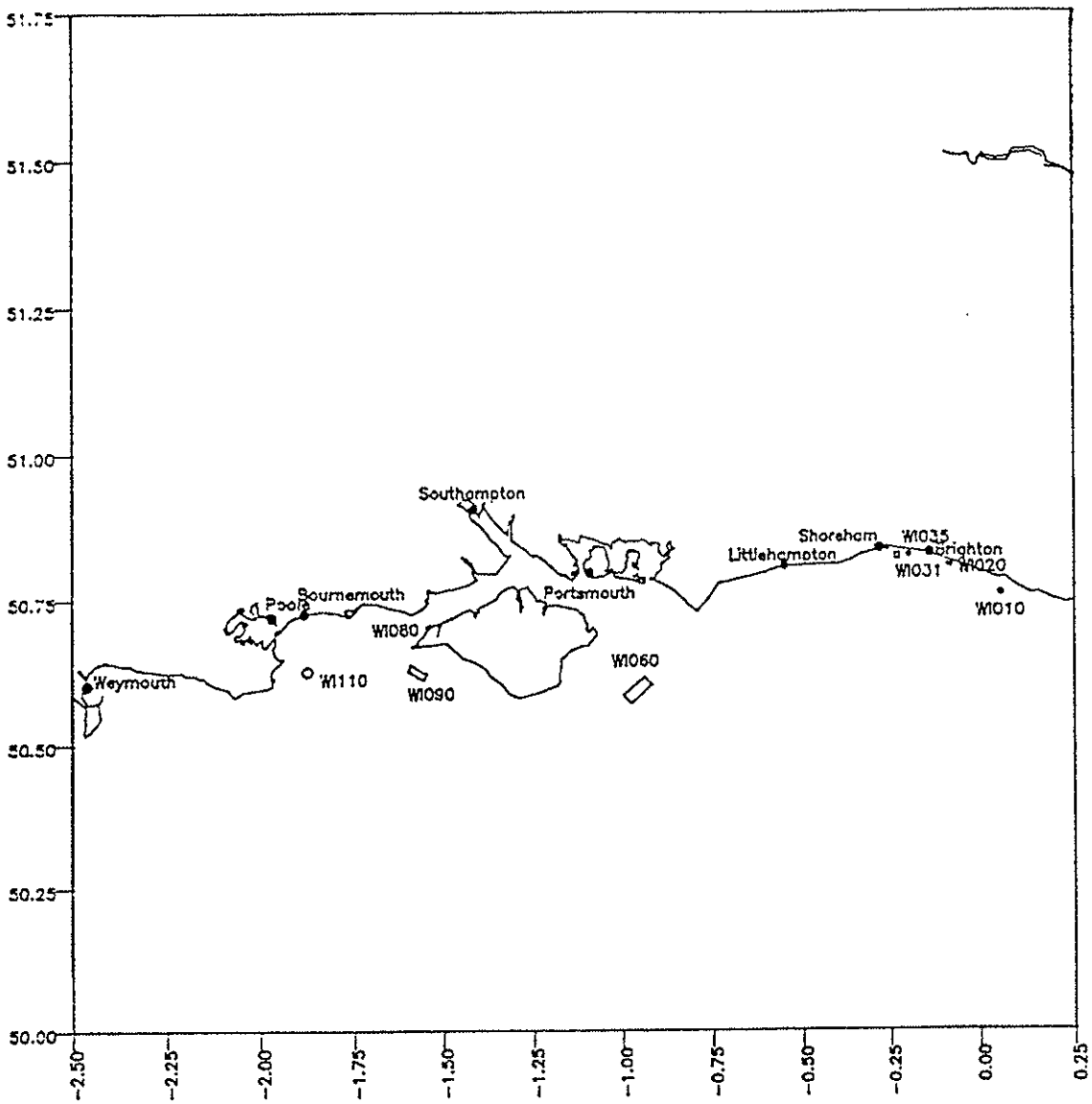


Figure 11b: Approximate positions of the dumping sites used by the United Kingdom (English Channel)

Sites in maritime area used in 1992:

Dredged material: WI010, WI020, WI031, WI060, WI090

Sewage sludge: WI060

Sites in internal waters used in 1992:

Dredged material: WI035, WI080, WI110

South-Eastern England

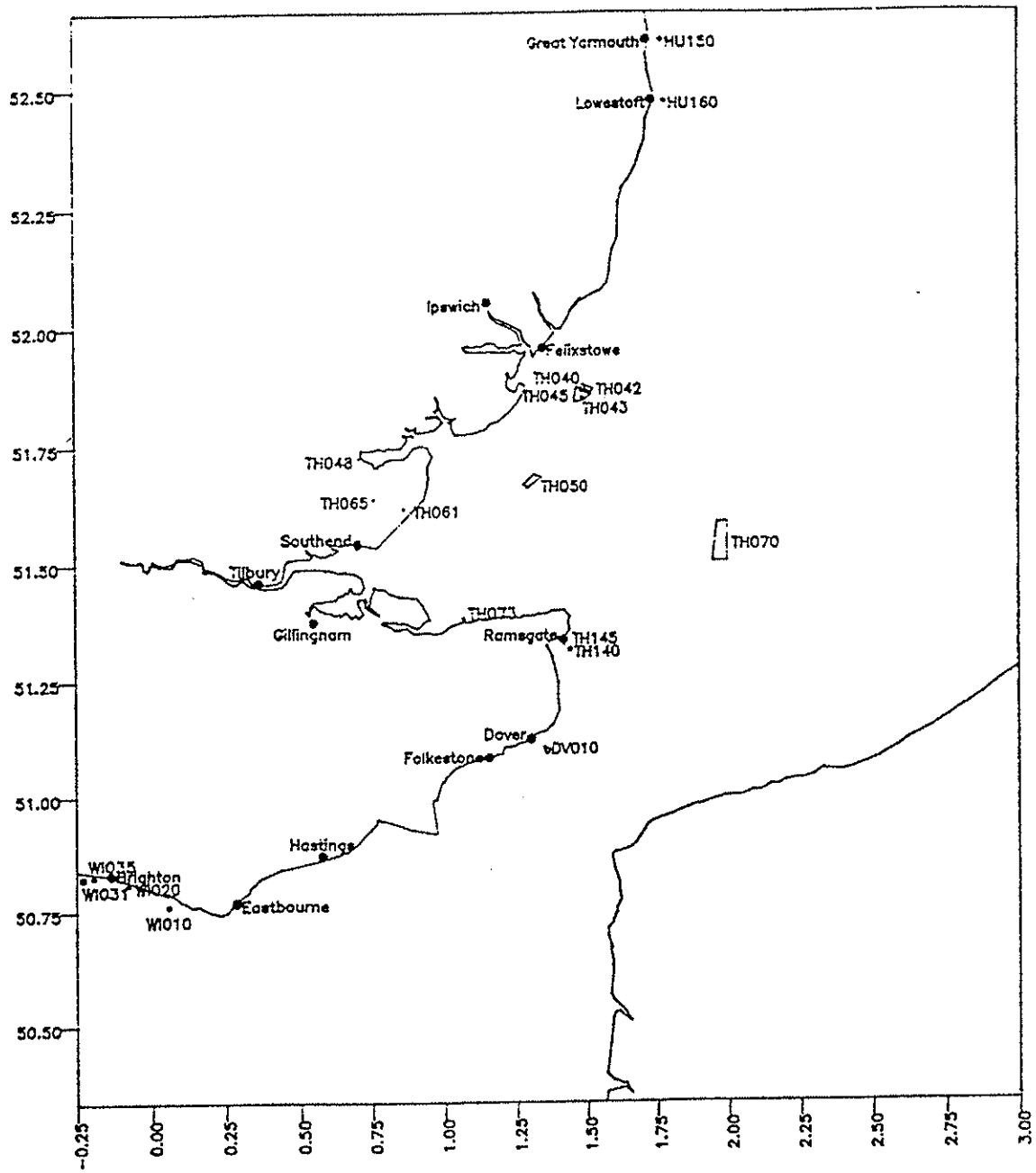


Figure 11c: Approximate positions of the dumping sites used by the United Kingdom (South-eastern England)

Sites in maritime area used in 1992:

Dredged material: DV010, TH040, TH043, TH045, TH070, TH140

Sewage sludge: TH042, TH050

Sites in internal waters used in 1992:

Dredged material: TH048, TH061, TH065, TH073, TH145

Eastern England

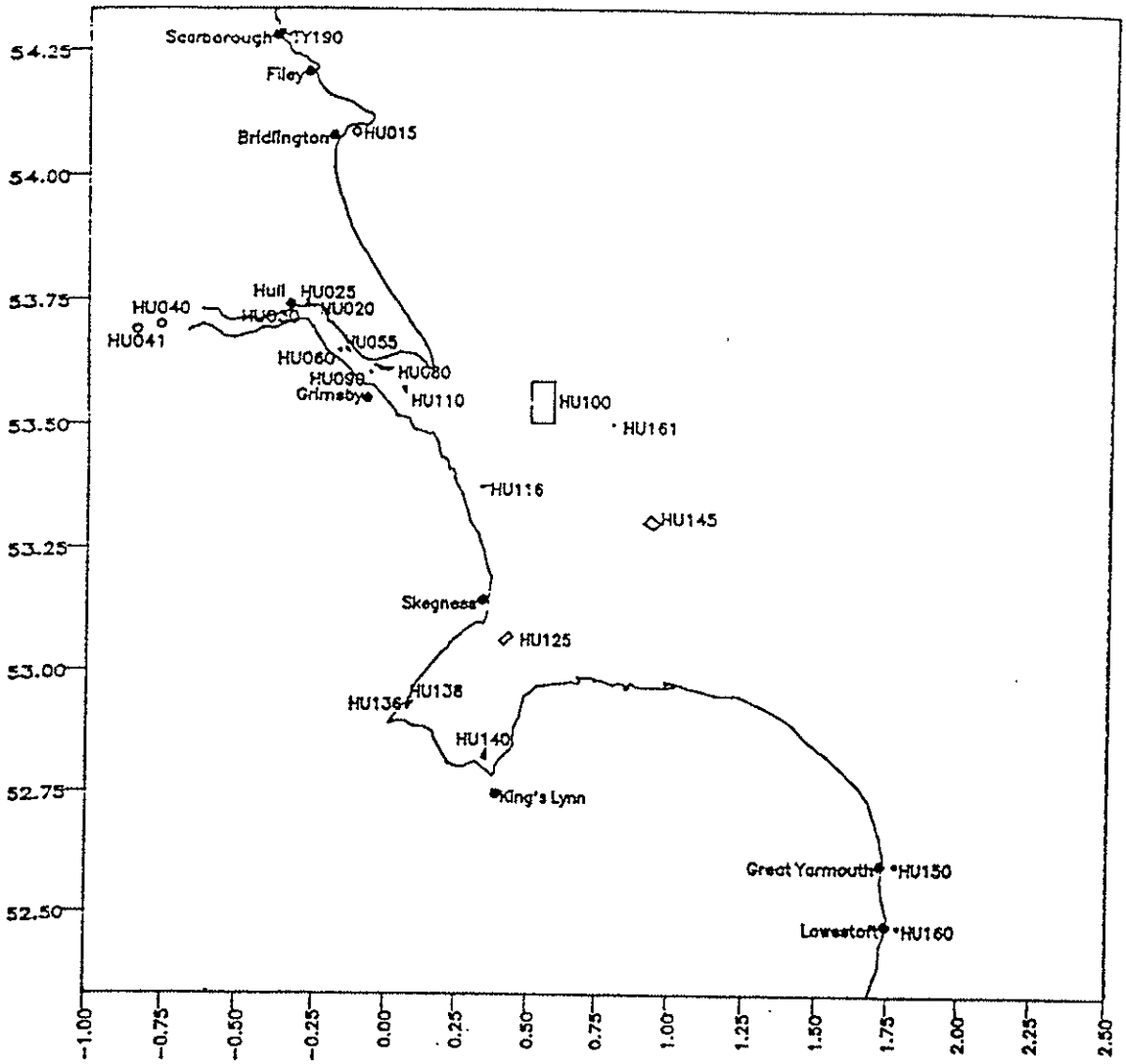


Figure 11d: Approximate positions of the dumping sites used by the United Kingdom (Eastern England)

Sites in maritime area used in 1992:

Dredged material:	HU015, HU125, HU138, HU145, HU150, HU160, HU161
Sewage sludge:	HU100
Other waste:	HU100

Sites in internal waters used in 1992:

Dredged material:	HU020, HU025, HU030, HU040, HU041, HU055, HU060, HU080, HU090, HU110, HU116, HU136, HU140

North-Eastern England

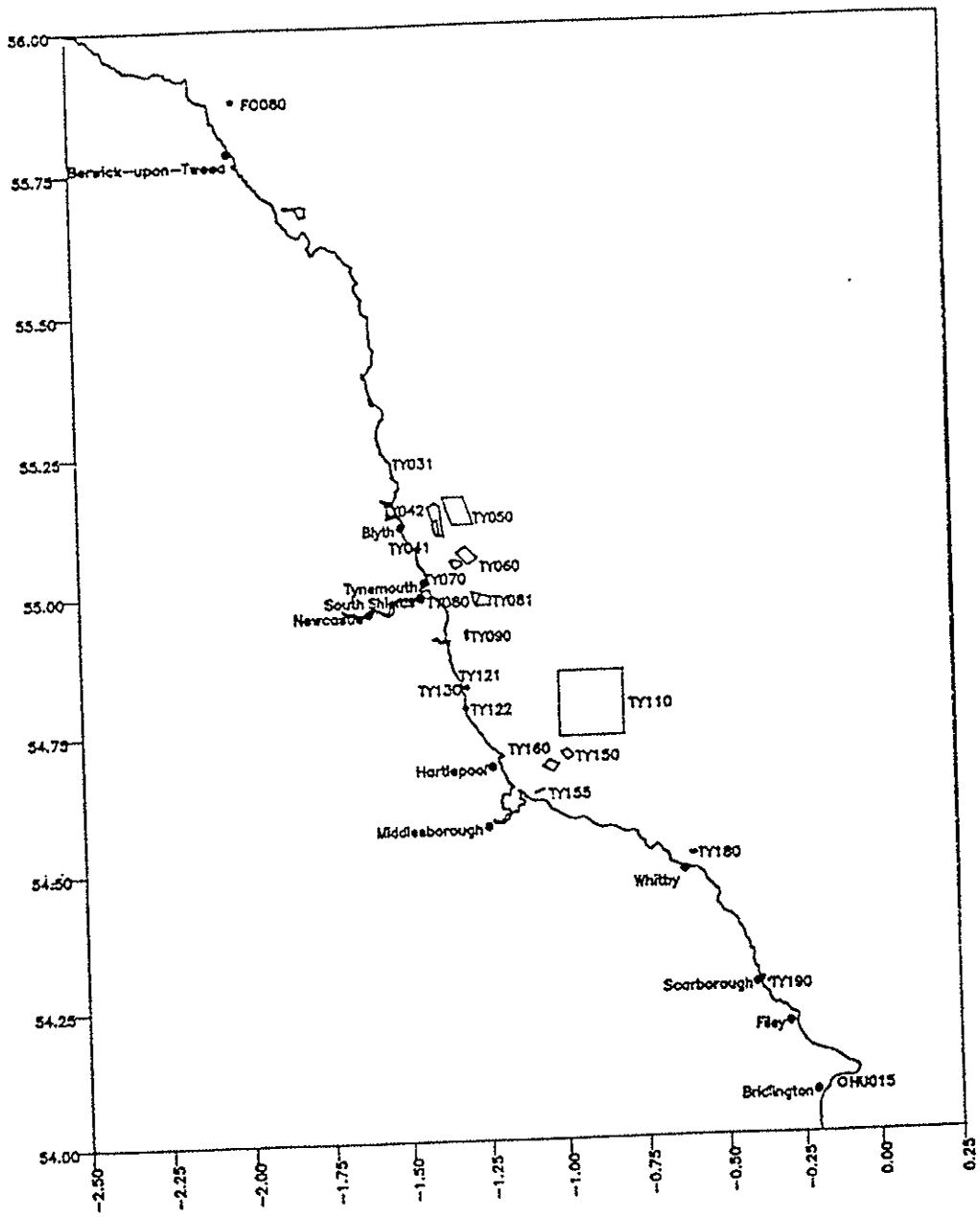


Figure 11e: Approximate positions of the dumping sites used by the United Kingdom (North-eastern England)

Sites in maritime area used in 1992:

Dredged material: TY042, TY070, TY081, TY090, TY130, TY150, TY155, TY160, TY180, TY190

Sewage sludge: TY060, TY110

Other waste: TY041, TY050, TY070, TY080, TY090, TY110

Sites in internal waters used in 1992:

Dredged material: TY031, TY121, TY122

South-Eastern Scotland (main map)

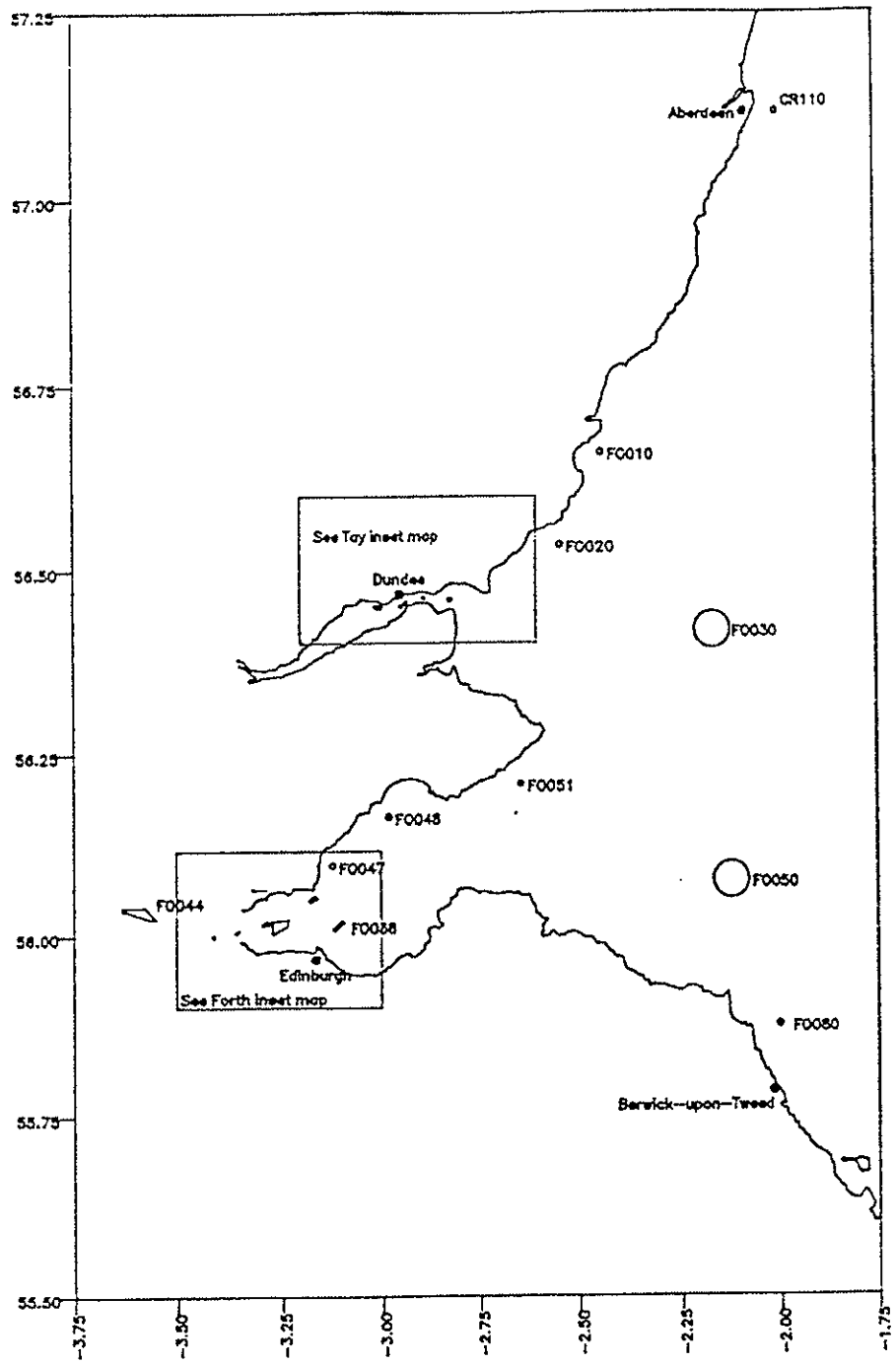


Figure 11f(1): Approximate positions of the dumping sites used by the United Kingdom (South-eastern Scotland: main map)

Sites in maritime area used in 1992:.

Dredged material: FO010, FO020, FO080

Sewage sludge: FO030, FO050

Sites in internal waters used in 1992:

Dredged material: FO048, FO051

South-Eastern Scotland (Tay inset)

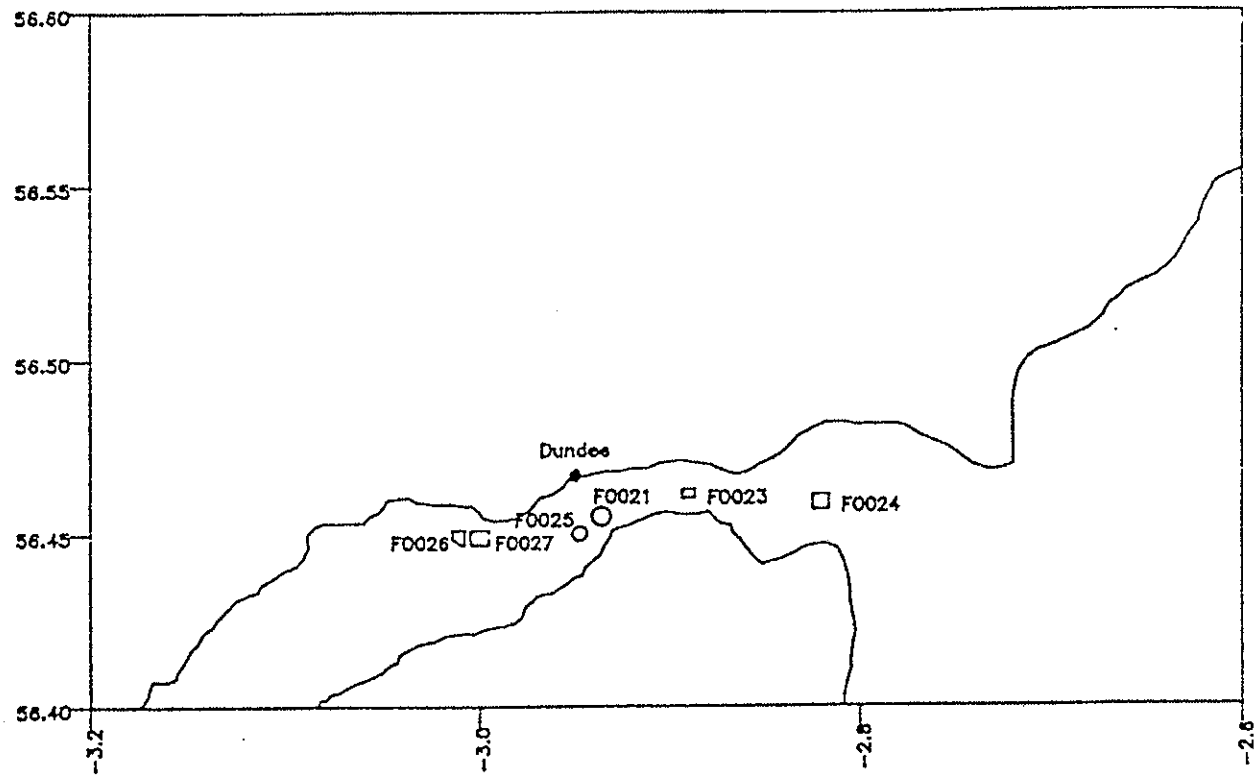


Figure 11f(2): Approximate positions of the dumping sites used by the United Kingdom (South-eastern Scotland: Tay inset)

Sites in internal waters used in 1992:

Dredged material: FO021, FO023, FO024, FO025, FO026, FO027

South-Eastern Scotland (Forth inset)

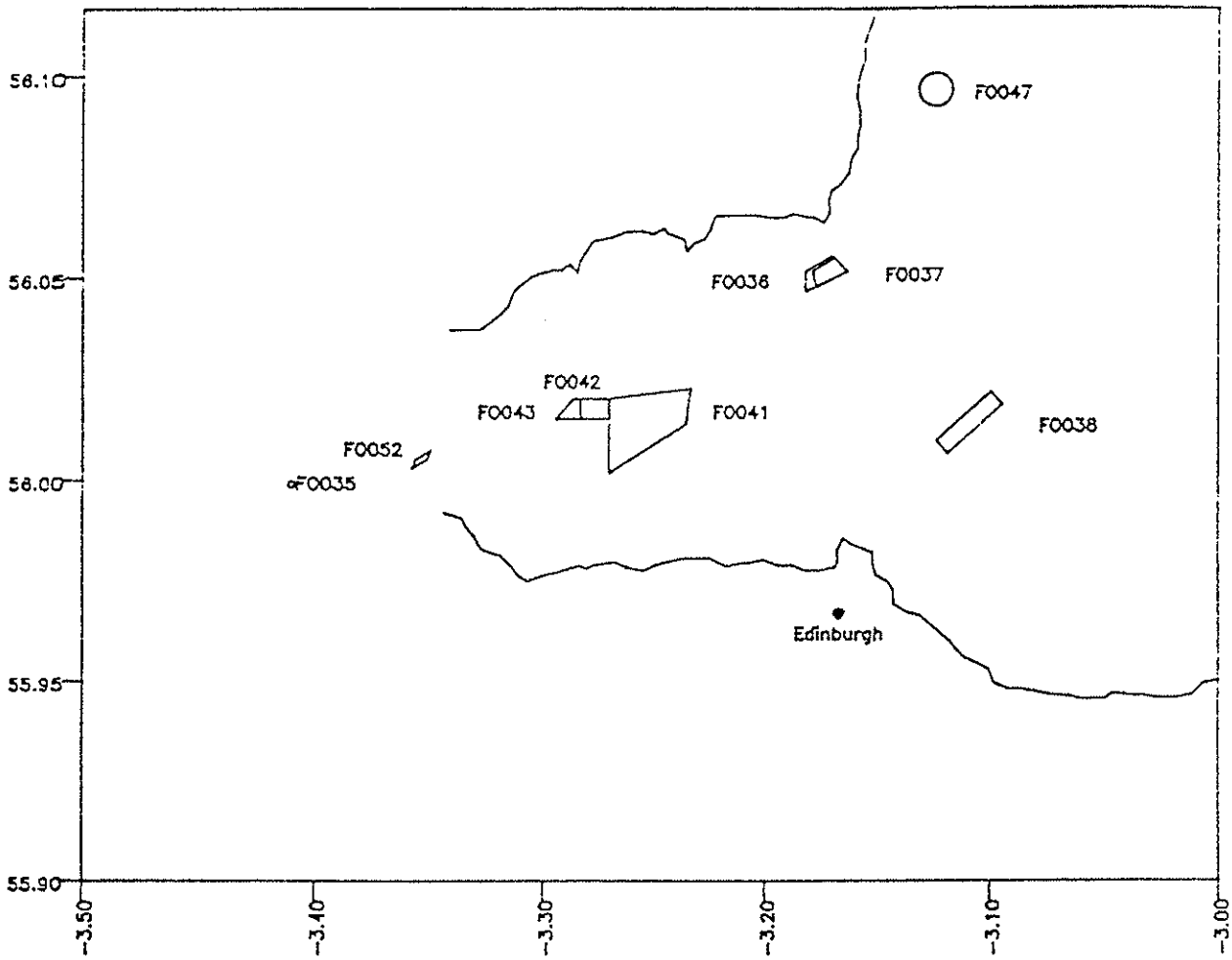


Figure 11f(3): Approximate positions of the dumping sites used by the United Kingdom (South-eastern Scotland: Forth inset)

Sites in internal waters used in 1992:

Dredged material: FO035, FO036, FO037, FO038, FO041, FO042, FO043, FO047, FO052

Northern Scotland

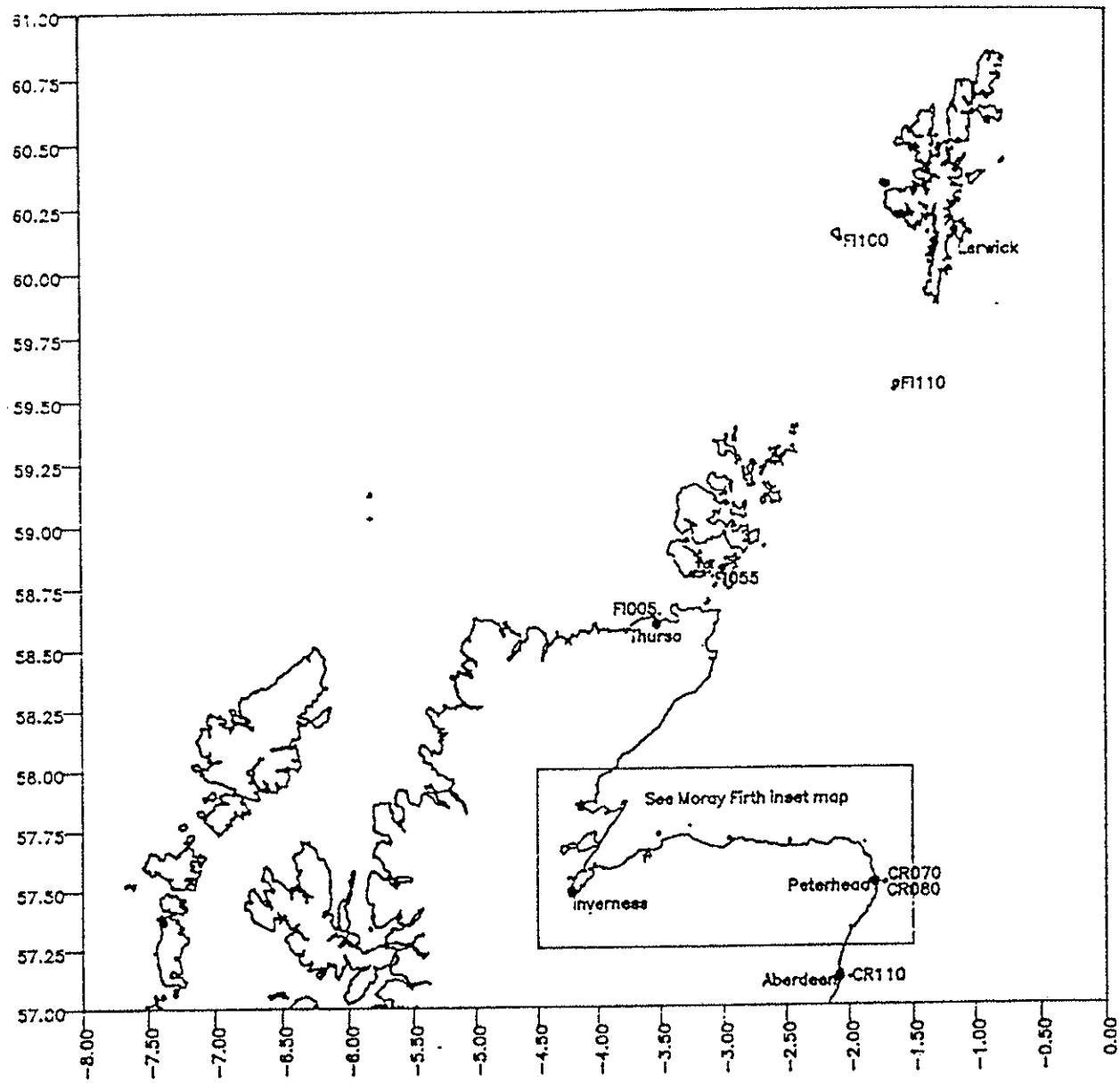


Figure 11g(1): Approximate positions of the dumping sites used by the United Kingdom (Northern Scotland)

Sites in maritime area used in 1992:

Dredged material: CR110, FI005, FI100, FI110

Sites in internal waters used in 1992:

Dredged material: FI055

Northern Scotland (Moray Firth inset)

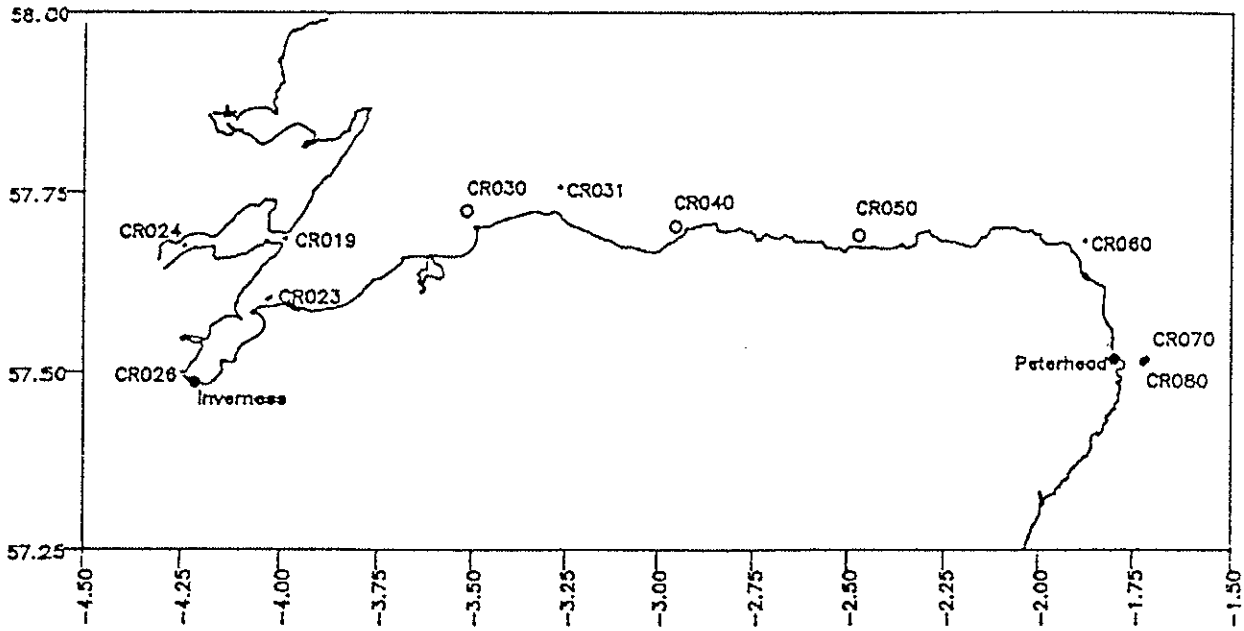


Figure 11g(2): Approximate positions of the dumping sites used by the United Kingdom (Northern Scotland: Moray Firth inset)

Sites in maritime area used in 1992:

Dredged material: CR031, CR040, CR050, CR060, CR070, CR080

Sites in internal waters used in 1992:

Dredged material: CR019, CR023, CR024, CR026, CR030

South-West Scotland and Northern Ireland

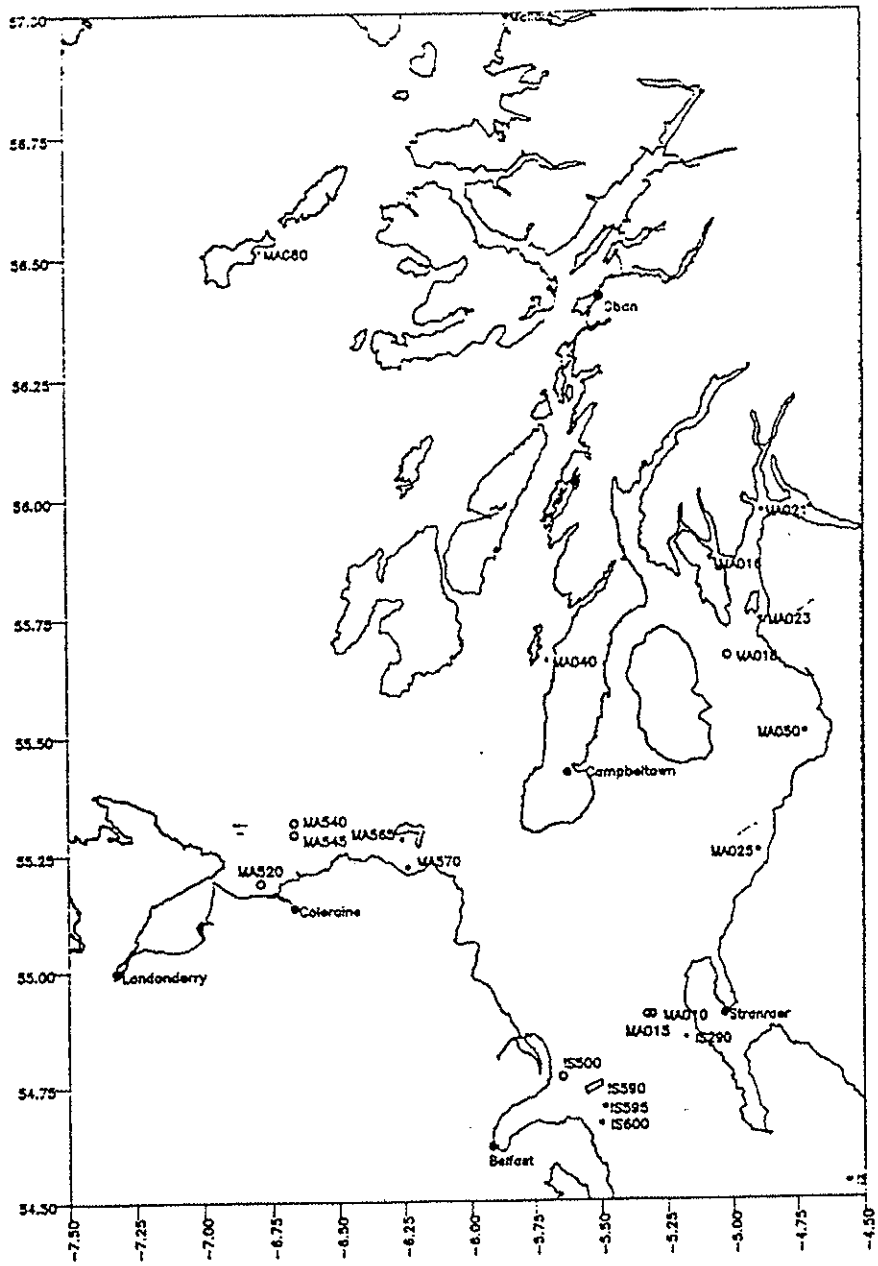


Figure 11h: Approximate positions of the dumping sites used by the United Kingdom (South-west Scotland and Northern Ireland)

Sites in maritime area used in 1992:

Dredged material: MA010, MA015, MA520, MA540, MA545

Sites in internal waters used in 1992:

Dredged material: MA016, MA021, MA023, MA025, MA040, MA050, MA080, MA565, MA570

Sewage sludge: MA018

Irish Sea

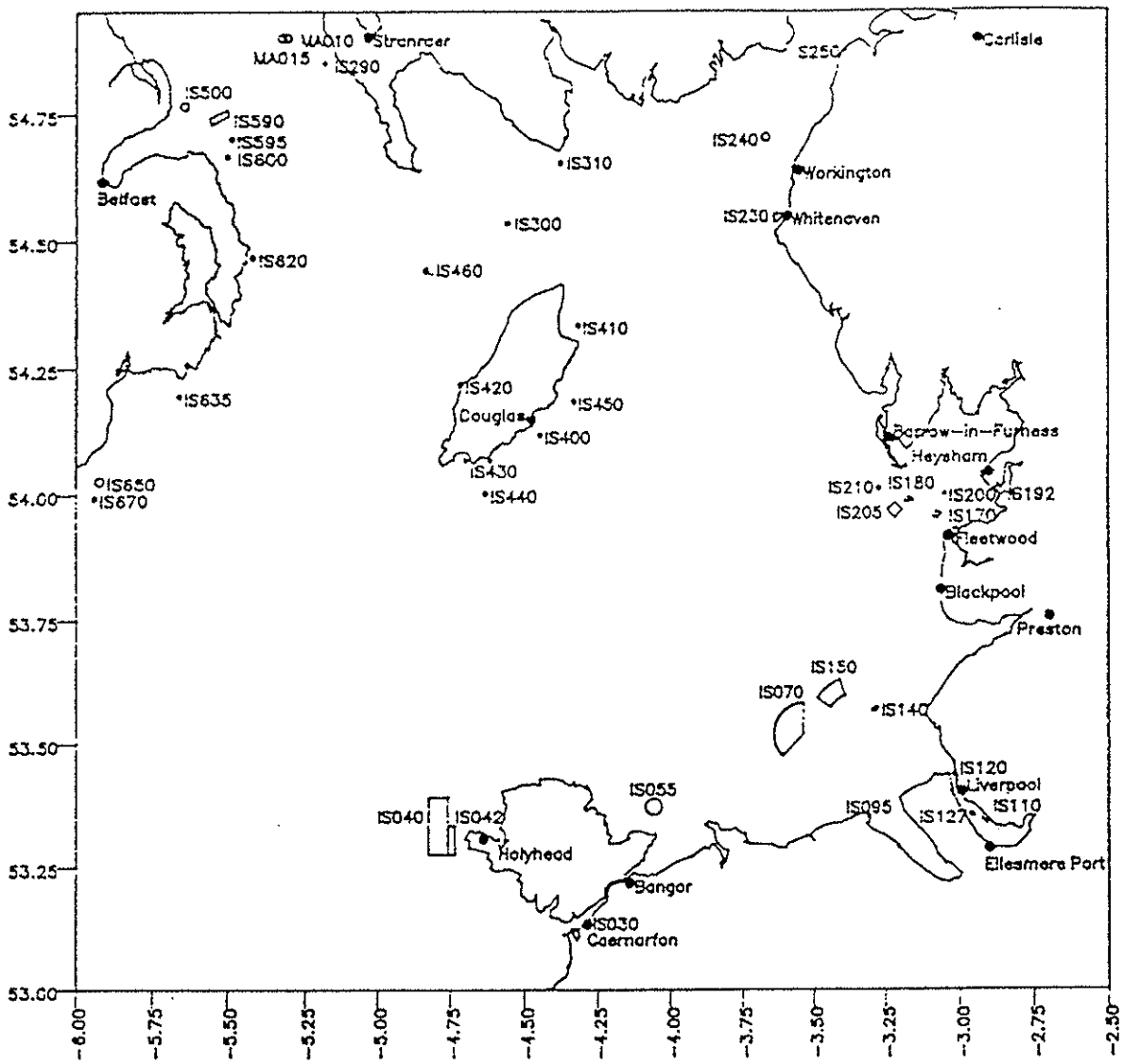


Figure 11i Approximate positions of the dumping sites used by the United Kingdom (Irish Sea)

Sites in maritime area used in 1992:

Dredged material: IS040, IS042, IS055, IS140, IS150, IS180, IS205, IS210, IS290, IS300, IS310, IS400, IS410, IS420, IS430, IS440, IS450, IS460, IS500, IS595, IS635, IS650, IS670

Sewage sludge: IS070, IS590

Sites in internal waters used in 1992:

Dredged material: IS030, IS110, IS120, IS127, IS170, IS192, IS200, IS230, IS240, IS250, IS600, IS620

Other wastes: IS095