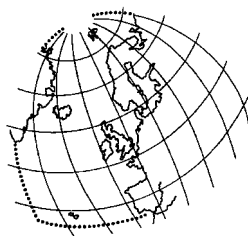


Biodiversity Series

Dumping of Wastes at Sea in 2004



OSPAR Commission
2006

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the "OSPAR Convention") was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l'Espagne.

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Report on Dumping Permits Issued in 2004

Table 1 Overview of number of permits issued, tonnes licensed and tonnes dumped in 2004

Contracting Party	Number of permits issued for waste category					Number of operations regulated by other means	Tonnes licensed (dry weight)	Tonnes dumped (dry weight)	Notes
	Dredged material	Inert material	Fish waste	Vessels or aircraft	Others				
Belgium	0	0	0	0	0			22 029 402	(1)
Denmark	15	0	0	0	0	0	3 505 000	4 656 310	
France	98							37 383 837	(1)
Germany	15					4	9 451 000		(1)
							9 923 000	9 724 000	(2) (3)
Iceland	12	0	0	0	0		566 617	566 617	(1)
Ireland	8						2 217 587	763 282	(1) (2) (3) (4)
The Netherlands	5					numerous	16 605 000 m ³	11 336 603	(1) (2)
Portugal	5	1	NI	2			367 732	907 232	
							539 500		
Norway	42						724 085	1 933 688	(1)
		8					120 000		(2)
				3					(3)
Spain	6		0	0		0		4 902 990	(1) (2) (3) (4)
Sweden	5			1			155 610	2 752 400	(1) (2)
UK	107						24 113 943	15 770 462	(1) (2) (3)

NI = No information

GP = general permit

Table 2 Specific reporting on permits issued in 2004*

Contracting Party	Number of permits issued * per waste category				Contaminants Material of concern		Tonnes dumped ** (dry weight)	Reasons for classification
	Dredged material	Inert Material	Vessels or aircraft	Others	Type	Level 2 (mg/kg)		
France	3				Hg, Cu, Cd	0,8; 90; 2	(280 + 1 825+30) = 2 135	
Ireland								(1)
Norway	42	8	3				1 205 213	(1)
Portugal	NA	1	3				39 000	(1)
Sweden			1		TBT & Zn		0	(1) (2)
UK	1							(1)

* The number of permits in this column includes the operations regulated by other means

** For dredged material the tonnes dumped refer to material exceeding level 2
for inert material - numbers of permits issued in total and tonnes dumped in total

Amounts of Wastes Dumped at Sea in 2004

Part I

Table 3a Details of deposit sites and dumping methods

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
Belgium													
B/1	x				Pas van het Zand			x		x	629 966		
B/1	x				CDNB Zeebrugge			x		x	283 436		
B/1	x				Scheur Oost			x		x	385 981		
B/1	x				Scheur West			x		x	527 178		
B/3	x				Pas van het Zand			x		x	1 168 448		
B/3	x				CDNB Zeebrugge			x		x	103 991		
B/3	x				Scheur Oost			x		x	460 292		
B/3	x				Scheur West			x		x	93 302		
B/6	x				Haven en voorhaven Zeebrugge	x				x	1 321 836		
B/6	x				CDNB Zeebrugge			x		x	1 664 050		
B/6	x				Haven Blankenberge	x				x	17 511		
B/9	x				Toegangsgeul Oostende			x		x	273 178		
B/9	x				Haven Oostende	x				x	191 129		
B/99	x				Toegangsgeul Nieuwpoort			x		x	8 886		
B/99	x				Haven Nieuwpoort	x				x	63 042		
B/int1	x				Drempel van Vlissingen		x			x	408 176	2 693,96	
B/int1	x				Honte Sloehaven		x			x	57 408	378,89	
B/int1	x				Drempel van Borssele		x			x	1 651 986	6 360,15	
B/int1	x				Pas van Terneuzen		x			x	58 132	261,59	
B/int1	x				Overloop Hansweert opw		x			x	60 876	91,31	
B/int1	x				Gat van Ossensisse		x			x	56 600	96,22	
B/int1	x				Drempel van Hansweert		x			x	669 374	1 071	
B/int2	x				Drempel van Borssele		x			x	532 160	2 048,82	
B/int2	x				Pas van Terneuzen		x			x	271 098	1 219,94	
B/int2	x				Put van Terneuzen		x			x	186 462	1 100,13	
B/int2	x				Overloop Hansweert opwt		x			x	148 718	223,08	
B/int2	x				Drempel van Hansweert		x			x	757 278	1 211,64	
B/int2	x				Drempel van Valkenisse		x			x	151 764	303,53	
B/int4	x				Drempel van Hansweert		x			x	511 614	818,58	
B/int4	x				Drempel van Walsoorden		x			x	130 878	104,70	
B/int4	x				Overloop van Valkenisse 50-54		x			x	36 048	61,28	
B/int4	x				Overloop van Valkenisse 54-58		x			x	64 404	51,52	
B/int4	x				Overloop Valkenisse 58-62		x			x	112 576	168,86	
B/int4	x				Drempel van Valkenisse		x			x	428 654	857,31	
B/int4	x				Drempel van Bath		x			x	471 000	546,36	
B/int7	x				Drempel van Hansweert		x			x	113 350	192,70	
B/int7	x				Drempel van Walsoorden		x			x	1 308 136	2 093,02	
B/int7	x				Overloop Valkenisse 50-54		x			x	220 596	176,48	

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
B/int7	x				Overloop Valkenisse 54-58		x			x	35 488	60,33	
B/int7	x				Overloop Vlakenisse (58-62)		x			x	35 502	28,40	
B/int7	x				Drempel van Valkenisse		x			x	106 184	159,28	
B/int7	x				Nauw van Bath		x			x	180 324	209,18	
B/int9	x				Drempel van Hansweert		x			x	41 536	66,46	
B/int9	x				Drempel van Walsoorden		x			x	119 984	95,99	
B/int9	x				Overloop Valkenisse 58-62		x			x	7 176	10,76	
B/int9	x				Nauw van Bath		x			x	183 080	212,37	
B/int13	x				Drempel van Hansweert		x			x	535 088	856,14	
B/int13	x				Drempel van Walsoorden		x			x	105 470	84,38	
B/int13	x				Overloop Valkenisse 50-54		x			x	35 536	60,41	
B/int13	x				Overloop Valkenisse 54-58		x			x	73 448	58,76	
B/int13	x				Overloop Valkenisse 58-62		x			x	63 350	95,03	
B/int13	x				Drempel van Valkenisse		x			x	383 544	767,09	
B/int13	x				Drempel van Bath		x			x	473 486	549,24	
B/int14	x				Drempel van Hansweert		x			x	276 682	442,69	
B/int14	x				Drempel van Valkenisse		x			x	436 826	873,65	
B/int14	x				Drempel van Bath		x			x	195 706	227,02	
B/int0	x				Containerkaai Noord		x			x	17 278	347,29	
B/int0	x				Drempel van Zandvliet		x			x	435 556	7 491,56	
B/int0	x				Toegangsgeul Zandvliet		x			x	83 326	4 524,60	
B/int0	x				Drempel van Frederik		x			x	187 902	4 857,27	
B/int0	x				Drempel van Lillo		x			x	166 556	2 423,39	
B/int0	x				Drempel van de Parel		x			x	2 006	8,43	
B/int1bis	x				Drempel van Zandvliet		x			x	179 602	3 089,15	
B/int1bis	x				Drempel van Frederik		x			x	33 514	866,34	
B/int1bis	x				Drempel van Lillo		x			x	52 944	770,34	
B/int1bis	x				Drempel van de Parel		x			x	192 448	808,28	
B/int1bis	x				Drempel van Krankeloon		x			x	125 300	613,97	
B/int11	x				Containerkaai Noord		x			x	114 908	2 309,65	
B/int11	x				Dr. van Zandvliet		x			x	81 608	1 403,66	
B/int11	x				Toeg. Zandvlietluis		x			x	97 724	5 306,41	
B/int11	x				Dr. van Frederik		x			x	59 218	1 530,79	
B/int11	x				Toeg. Boudewijnsluis		x			x	34 150	2 002,90	
B/int11	x				Drempel van de Parel		x			x	51 256	215,28	
B/int12	x				Containerkaai Noord		x			x	114 774	2 306,96	
B/int12	x				Dr. van Zandvliet		x			x	457 416	7 867,56	
B/int12	x				Toeg. Zandvlietluis		x			x	173 130	9 400,96	
B/int12	x				Dr. van Frederik		x			x	240 924	6 227,89	
B/int12	x				Dr. van Lillo		x			x	134 890	1 962,65	
B/int12	x				Toeg. Boudewijnsluis		x			x	39 256	2 302,36	
B/int12	x				Dr. van de Parel		x			x	65 792	276,33	
Total											22 029 402	95 902,27	

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
Denmark													
FRB08	x				Gilleleje Harbour Bassin2	x				x	1 800		
FRB08	x				Gilleleje Harbour Bassin3A	x				x	45 000		
FRB10	x				Hornbæk Harbour	x				x	900		
FRB16	x				Hundested Harbour Syd	x				x	63 000		
FRB18	x				Lynæs Lystbådehavn	x				x	1 800		
FRB18	x				Kulhuse Bådehavn	x				x	54 000		
NJL01	x				Aså forhavn	x				x	3 520		
NJL01	x				Voraå, sejltrede og indsejling	x				x	3 150		
NJL02	x				Attrup, forhavn og indsejling	x				x	700		
NJL03	x				Frederikshavn, forhavn	x				x	9 550		
NJL03	x				Hirsholm Harbour	x				x	5 470		
NJL05	x				Egense, indsejling og sejltrede	x				x	2 700		
NJL07	x				Gjøl sejltrede	x				x	2 450		
NJL11	x				Haverslev, forhavn og indsejling	x				x	840		
NJL13	x				Hirtshals Harbour, indsejling	x				x	513 000		
NJL25	x				Mariager Fjord, indsejlingen		x			x	53 390		
NJL26	x				Nibe Harbour	x				x	16 320		
NJL31	x				Frederikshavn	x				x	5 500		
NJL37	x				Strandby Havn	x				x	6 260		
NJL41	x				Sæby, indsejlingen			x		x	9 000		
NJL45	x				Øster Hurup	x				x	2 420		
NJL50	x				Ålbæk Forhavn	x				x	18 000		
RIB01	x				Grådyb Barre, sejltrede			x		x	553 000		
RIB01	x				Esbjerg Harbour, sejltrede		x				74 000		
RIB02	x				Grådyb Barre, sejltrede			x		x	553 000		
RIB02	x				Esbjerg Harbour, sejltrede		x				74 000		
RIB03	x				Esbjerg Harbour	x				x	298 500		
RIB03	x				Slunden			x		x	10 900		
RIB04	x				Esbjerg Harbour	x				x	298 500		
RIB04	x				Slunden			x		x	10 900		
RIB08	x				Grådyb Barre			x		x	1 232 000		
RIN05	x				Thyborøn Yderhavn	x				x	8 680		
RIN05	x				Sælhundeholmløb			x		x	22 200		
RIN10	x				Hvide Sande, indsejling	x				x	510		
RIN22	x				Ringkøbing Fjord, sejlløb			x		x	7 200		
RIN24	x				Skaven Havn	x				x	3 660		
RIN25	x				Stauning Fjord, sejlløb		x			x	11 340		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
RIN25	x				Stauni g Fjord, sejløb		x			x	11 340		
SJL09	x				Rømø Harbour	x				x	56 320		
VIB04	x				Amtøft Lystbådehavn	x				x	1 180		
VIB09	x				Hanstholm Harbour	x				x	55 660		
VSJ39	x				Odden	x		x		x	6 210		
AAR01	x				Anholt Harbour	x				x	9 680		
AAR10	x				Grenaa Harbour	x				x	495 000		
AAR12	x				Hou Lystbådehavn	x				x	910		
AAR26	x				Randers Fjord		x			x	116 850		
Total											4 656 310		

France													
F/05902	x				Vidage ouest nord (Dunkerque)	x				x	1 116 000	22 458	
F/05901	x				Vidage ouest sud (Dunkerque)						145 229	0	
F/05904	x				Vidage est (Dunkerque)	x				x	298 000	7 450	
F/06201	x				Calais	x				x	527 300	9 697	
F/06202	x				Boulogne	x				x	647 140	12 578	
F/07601	x				Dépôt du Kannick (Rouen)		x			x	2 730 400	18 840	
F/07602	x				Dépôt d'Octeville (Le Havre)	x				x	15 451 700	483 632	
F/07603	x				Dieppe	x					168 200	1 993	
F/07606	x				Tréport	x					36 200	717	
F/01405	x				Estran Deauville	x					21 048	366	
F/01401	x				Caen Ouistreham	x		x		x	207 890	2 303	
F/01408	x				Estran Courseules sur Mer				x		25 468	974	
F/01402	x				Port en Bessin	x					14 400	86	
F/05004	x				Dielette	x				x	13 000	0	
F/05005					Nord-ouest cap Levi (Cherbourg)	x					35 000	18 865	
F/04401	x				La Lambarde (Nantes St Nazaire)		x			x	4 949 000	0	
F/04412	x				Pornic-Noëveillard	x				x	9 500	295	
F/08501	x				Noirmoutier en l'Île, l'Herbaudière, Pilier Nord	x				x	21 048	758	
F/08503	x				La Barre-de-Monts, Fromentine, S.W.	x				x	66 111	0	
F/08505	x				Saint-Gilles-Croix-de-Vie, Ouest	x					29 467	582	
F/08508	x				Les Sables d'Olonne, N.W.			x			46 445	658	
F/08511	x				Talmont-St Hilaire, Bourgenay	x				x	2 795	0	
F/01701					Depot du Lavardin (La Rochelle et La Pallice)	x				x	119 000	2 444	
F/01702	x				Fosse d'Aix (Fouras, Aix et St Denis d'Oleron)	x				x	2 000	40	
F/01706	x				Rejet Pointe des Minimes (Port des Minimes)						62 000	1 364	
F/01707	x				Rejet en Charente (Rochefort-Tonnay Charente)	x				x	146 000	2 764	

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
F/01709	x				Coureau de la Pallice						1 400	0	
F/01710	x				Lit de la Gironde (Royan)	x				x	30 000	540	
F/03301 F/03302 F/03305 F/03306 F/3307	x				Zone 1-1, 1-2 , 1-5, 1-6 (Bordeaux)		x			x	1 527 000	10 588	
F/03307 F/03308 F/03311	x				Zone 1-8, 2-1, 2-4 (Bordeaux)		x			x	3 130 000	46 693	
F/03313 F/03316 F/03317	x				Zone 3-2, 3-5, 3-7 (Bordeaux)		x			x	3 387 000	54 717	
F/03319	x				Zone 4-3 (Bordeaux)		x			x	602 000	0	
F/03318	x				Zone 4-1 (Bordeaux)		x			x	190 000	0	
F/03310 F/03320	x				Bouées d'atterrissage Nord (Bayonne)		x				1 057 296	1 741	
F/06401	x				Bayonne	x				x	568 770	12 533	
F/06405	x				Anglet	x					30	1	
Total											37 383 837	715 677	

Germany													(1)
D12	x				Husum harbour	x				x	36 000		
D13	x				Harbour and outer harbour of Büsum	x				x	12 000		
D14	x				Elbe estuary / navigation channel; outer port of the lock to the "Nord-Ostsee-Kanal" (Kiel-Canal); inner part of "Nord-Ostsee-Kanal"	x	x			x	4 376 000		(2)
D15	x				Weser estuary / navigation channel		x			x	334 000		(3)
D17	x				Jade bay / navigation channel	x	x			x	2 029 000	24,35	(4)
D20	x				Outer harbour of Hooksiel	x				x	27 000	0,22	
D21	x				Wangerooge harbour	x				x	4 000	0,05	
D22	x				Spiekeroog harbour	x				x	23 000	0,37	
D30	x				Norderney harbour	x				x	24 000	0,59	
D32	x				Norddeich harbour	x				x	20 000	0,48	
D34	x				Ems estuary / navigation channel		x			x	2 614 000	54,90	(5)
D41	x				Niedersachsenbrücke Wilhelmshaven (approach channel and seaward mooring berth)	x	x			x	58 000	0,43	
D42	x				Niedersachsenbrücke Wilhelmshaven (landward mooring berth)	x	x			x	5 000	0,05	
D43	x				Bensersiel harbour	x				x	38 000	0,57	
D45	x				Approach channel of Juist harbour	x				x	11 000	0,10	
D50	x				Baltrum harbour	x				x	2 000	0,04	
D51	x				Langeoog harbour, Bensersiel harbour and approach channel to Bensersiel harbour	x				x	6 000	0,10	
D54	x				Friedrichskoog harbour	x				x	102 000		
D55	x				Amrum/Wottdün harbuor	x				x	3 000		
Total											9 724 000	82,250	

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged Harbour Estuary Sea			dredging operation type capital maintenance		(in metric tonnes) dry weight Tot. org. carbon notes		
Iceland													
IS 16	x					x			x		122 000		
IS 33	x					x			x		4 880		
IS 36	x					x			x		15 860		
IS 38	x					x			x		8 540		
IS 41	x					x			x		3 050		
IS 44	x					x			x		34 160		
IS 46	x					x			x		61 000		
IS 47	x					x			x		9 760		
IS 51	x					x				x	30 500		
IS 52	x					x			x		170 800		
IS 52	x					x				x	13 054		
IS 53	x					x				x	44 213		
IS 54	x					x			x		48 800		
Total											566 617		

Ireland													
IRL 6	x				Liffey/Dublin Bay	x			x		88 734		
IRL 6		x			Liffey/Dublin Bay	x			x		165 716		(1)
IRL 8	x				Suir/Barrow Estuary	x	x			x	213 588		
IRL 17	x				Cork Harbour	x				x	39 089		
IRL 20	x				Boyne Estuary		x			x	21 142		
IRL 29	x				Shannon Estuary		x			x	15 262		
IRL 33					Shannon Estuary	x				x	27 570		
IRL 45	x				Shannon Estuary	x	x			x	9 638		
IRL 47	x				Boyne Estuary		x			x	122 371		
IRL 48	x				Dundalk Harbour/Bay	x	x			x	60 172		
Total											763 282		

Netherlands													
NL-6	x				Scheveningen Harbour	x				x	198 890	ND	
NL-7	x				IJmuiden Harbour	x				x	2 201 223	ND	
NL-8	x				Rotterdam Harbour	x				x	5 186 702	ND	
NL-10	x				Eastern Scheldt Harbours	x				x	21 381	0,049	
NL-11	x				Western Scheldt Harbours	x				x	3 420 875	3,944	
NL-13	x				Waddensea West Harbours	x				x	307 532	ND	
NL-14	x				Waddensea East Harbours	x				x	NI	ND	(1)
NL-15	x				Ems-Dollard Harbours	x				x	NI	ND	(1)
Total											11 336 603	3,993	

Norway													
N1/Østfold	x				Oslofjord	x				x	1 800		
N2/Østfold	x				Oslofjord	x				x	1 800		
N3/Østfold	x				Oslofjord	x				x	1 800		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
N4/Østfold	x				Oslofjord	x				x	1 200		
N5/Østfold	x				Oslofjord	x				x	240		
N6/Østfold	x				Oslofjord	x				x	1 920		
N7/Østfold	x				Oslofjord	x				x	336		
N8/Østfold	x				Oslofjord	x				x	540		
N9/Oslo Akershus	x				Oslofjord	x				x	1 574		
N10/Oslo Akershus	x				Oslofjord	x				x	912		
N11/Oslo Akershus		x			Oslofjord	x				x	24 300		(2)
N12/Vestfold	x				Oslofjord	x				x	400		
N13/Vestfold	x				Oslofjord	x				x	8 000		
N14/Vestfold	x				Oslofjord	x				x	1 040		
N15/Vestfold	x				Oslofjord	x				x	80		
N16/Vestfold	x				Oslofjord	x				x	1 040		
N17/Vestfold	x				Oslofjord	x				x	3 200		
N18/Vestfold	x				Oslofjord	x				x	960		
N19/Vestfold	x				Oslofjord	x				x	1 280		
N20/Vestfold	x				Oslofjord	x				x	640		
N21/Vestfold	x				Oslofjord	x				x	16 000		
N22/Buskerud	x				Oslofjord	x				x	233 920		
N23/Buskerud	x				Skagerak	x				x	2 480		
N24/Vest-Agder	x				Skagerak	x				x	1 000		
N25/Vest-Agder	x				Skagerak	x				x	250		(3)
N26/Rogaland				x	North Sea								(3)
N27/Rogaland				x	North Sea								
N28/Hordaland	x				North Sea	x				x	115		
N29/Hordaland	x				North Sea	x				x	12 576		
N30/Hordaland		x			North Sea	x				x	91 624		(2)
N31/Hordaland		x			North Sea	x				x	1 015 332		(2)
N32/Hordaland		x			North Sea	x				x	26 323		(2)
N33/Hordaland		x			North Sea	x				x	4 050		(2)
N34/Møre & Romsdal		x			Norwegian Sea			x			3 200		(2)
N35/Møre & Romsdal	x				Norwegian Sea	x				x	2 300		
N36/Møre & Romsdal	x				Norwegian Sea	x				x	80		
N37/Møre & Romsdal	x				Norwegian Sea	x				x	8 000		
N38/Sør-Trøndelag	x				Norwegian Sea	x				x	4 800		
N39/Sør-Trøndelag	x				Norwegian Sea	x				x	160		
N40/Sør-Trøndelag	x				Norwegian Sea	x				x	3 200		
N41/Sør-Trøndelag	x				Norwegian Sea	x				x	320		
N42/Sør-Trøndelag	x				Norwegian Sea	x				x	43 000		
N43/Nord-Trøndelag	x				Norwegian Sea	x				x	26 600		
N44/Nordland	x				Norwegian Sea	x				x	992		
N45/Nordland		x			Norwegian Sea	x				x	1 760		(2)
N46/Nordland		x			Norwegian Sea	x				x	4 624		(1) (2)
N47/Nordland	x				Norwegian Sea	x				x	4 800		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
N48/Nordland		x			Norwegian Sea	x				x	34 000		(2)
N49/Nordland	x				Norwegian Sea	x				x	6 400		
N50/Nordland	x				Norwegian Sea	x				x	11 200		
N51/Troms	x				Barents Seax					x	36 800		
N52/Troms	x				Barents Seax					x	1 040		
N53/Finmark	x				Barents Seax					x	283 680		
N54/Finmark				x	Barents Sea								(3)
N55/Finmark				x	Barent Sea								(3)
Total											1 933 688		

Portugal													
P/1	x				Leixões	x				x	28600		
P/2	x				Peniche	x				x	21932		
P/3		x			Lisboa		x			x	539500		
P/4	x				Lisboa	x				x	23400		
P/5	x				Portimão	x				x	252200		
P/6	x				V.R.St Ant.	x				x	41600		
P/7				x	P. Varzim								(1)
P/8				x	P. Delgada								(2)
Total											907 232		

Spain													
E/2	x				Bilbao	x	x			x	29 301	178,91	
E/3	x				Santander	x			x	x	477 974	6,15	
E/5	x				Avilés	x	x		x	x	398 890	ND	
E/8	x				Vilagarcía	x			x		1 197 487	ND	
E/9	x				Vigo	x			x		7 956	ND	
E/10	x				Huelva	x			x	x	2 181 421	569,50	
E/11	x				Sevilla	x				x	485 931		
E/12	x				Cádiz	x			x		124 029	6 573,54	
Total											4 902 990	7 328,10	

Sweden													
SWE/14	x				Halmstad, Kattegat	x				x	551 300	1%	(1)
SWE/11		x			Göteborg, Kattegat			x	x		48 000	0%	(2)
SWE/11	x				Göteborg, Kattegat	x				x	2 120 000		(3)
SWE/10	x				Göteborg, Kattegat	x				x	7 100		(4)
SWE/17					Ringhals, Kattegat	x				x	26 000		(5)
Total											2 752 400		

United Kingdom													
CR021	x				Moray Firth	x		x		x	0		
CR030	x				Moray Firth	x				x	7 080		
CR031	x				Grampian Coast			x		x	330		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
CR040	x				Spey Bay/Moray Firth	x				x	7 099		
CR050	x				Grampian Coast	x				x	4 110		
CR060	x				Grampian Coast	x				x	0		
CR070	x				Grampian Coast	x				x	2 048		
CR110	x				Dee River	x				x	54 998		
DM001	x				Cumbria Coast	x				x	897		(1)
DV010	x				Kent Coast	x				x	264 121		
DV011	x				Kent Coast	x				x	0		
DV040	x				Rother River and Kent Coast	x				x	19 913		
FI120	x				Shetland Coast	x			x		0		
FI125	x				Shetland Coast	x			x		0		
FO010	x				South Esk River	x				x	20 919		
FO020	x				Tayside Coast	x				x	5 991		
FO028	x				Firth of Tay	x				x	24 881		
FO036	x				Firth of Tay	x				x	0		
FO038	x				Firth Of Forth	x				x	23 788		
FO041	x				Firth Of Forth	x				x	41 960		
FO044	x				Firth Of Forth	x				x	479 626		
FO048	x				Firth Of Forth	x				x	0		
FO051	x				Fife Coast	x				x	14 717		
FO080	x				Tweed River	x				x	4 851		
HE020	x				Hebrides Sea	x				x	0		
HE040	x				Inver River	x				x	193		
HE050	x				Loch Broom		x			x	0		
HE070	x				Loch Nevis	x				x	10 576		
HE080	x				Hebrides Sea, Isle of Muck	x				x	0		
HU015	x				Humberside Coast	x				x	6 584		
HU020	x				Humber River	x	x			x	128 816		
HU030	x				Humber River	x	x	x		x	715 788		
HU040	x				Humber River	x				x	1 529		
HU041	x				Humber River	x				x	8 455		
HU046	x				Humber River		x			x	14 800		
HU060	x				Humber River	x	x	x	x	x	2 068 278		
HU080	x				Humber River	x	x			x	2 122 956		
HU090	x				Humber River	x	x			x	325 772		
HU143	x				Great Ouse River	x	x			x	55 933		
HU150	x				Yare River	x	x	x		x	16 085		
HU170	x				Witham River	x	x	x		x	30 508		
HU199	x				Orwell River			x		x	0		
IS040	x				Anglesey Coast	x				x	0		
IS055	x				Conwy River	x				x	5 306		
IS101	x				Dee River, Wales		x			x	0		
IS110	x				Mersey River	x	x			x	145 365		
IS120	x				Mersey River/Liverpool Bay	x	x	x		x	112 769		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	notes
IS128	x				Mersey River		x			x	3 566		
IS140	x				Mersey River	x	x	x		x	1 366 453		
IS150	x				Mersey River/Liverpool Bay	x	x	x		x	0		
IS170	x				Wyre River	x				x	650 130		
IS180	x				Cumbria Coast	x				x	0		
IS192	x				Lune River	x				x	5 352		
IS200	x				Morecambe Bay	x				x	229 644		
IS205	x				Cumbria Coast	x		x		x	553 206		
IS230	x				Cumbria Coast	x			x		0		
IS240	x				Cumbria Coast	x		x		x	0		
IS241	x				Cumbria Coast	x				x	12 447		
IS400	x				Douglas Harbour, Isle of Man	x				x	1 200		
IS591	x				Lagan River	x	x			x	2 454		
IS650	x				Down Coast	x				x	8 207		
IS671	x				Carlingford Lough	x				x	9 743		
LU010	x				Camel River	x				x	1 344		
LU070	x				Avon River	x	x			x	60 116		
LU080	x				Avon River	x	x			x	58 856		
LU083	x				Avon River	x	x			x	33 795		
LU084	x				Avon River	x	x			x	18 264		
LU085	x				Avon River	x	x			x	44 992		
LU086	x				Avon River	x	x			x	1 791		
LU110	x				Taff R./Severn Est.	x				x	224 142		
LU115	x				Severn Estuary	x				x	16 045		
LU125	x				Neath River	x				x	0		
LU130	x				Tawe & Neath Rivers/Swansea Bay	x	x	x		x	949 633		
LU140	x				Usk River	x	x			x	44 059		
LU190	x				Milford Haven	x				x	1 924		
MA010	x				Loch Ryan	x				x	3 373		
MA018	x				Firth Of Clyde	x				x	0		
MA021	x				Firth Of Clyde	x				x	13 116		
MA050	x				Firth Of Clyde	x				x	22 552		
MA501	x				Foyle River	x				x	12 091		
MA545	x				Foyle River	x				x	46 639		
PL021	x				Tamar River	x				x	0		
PL031	x				Tamar River & Kingsbridge Estuary	x	x		x	x	105 165		
PL060	x				Fowey River/Cornwall Coast South	x	x			x	0		
PL072	x				Penrhyn River	x				x	0		
PL075	x				Falmouth Harbour/Truro River	x	x			x	607		
PO070	x				Teign River	x				x	0		
PO090	x				Teign River	x				x	0		
TH005	x				Waveney River	x				x	40 864		
TH034	x				Orwell River	x	x		x	x	36 820		
TH037	x				Orwell River	x				x	19 311		

OSPAR-codes	categories of waste				dredged material						total quantity		
Deposit site	dredged material	inert material	fish waste	vessels/ aircraft	origin name of watersystem	type of areas dredged			dredging operation type		(in metric tonnes)		notes
						Harbour	Estuary	Sea	capital	maintenance	dry weight	Tot. org. carbon	
TH052	x				Orwell/Stour Rivers + Essex/Suffolk Coast	x	x	x		x	1 861 784		
TH053	x				Orwell River	x				x	17 717		
TH054	x				Orwell/Stour Rivers		x		x		73 204		
TH062	x				Blackwater River		x			x	517		
TH070	x				Thames River		x	x		x	251 738		
TH073	x				Kent Coast	x				x	3 167		
TH080	x				Thames Estuary			x	x		0		
TH140	x				Kent Coast	x				x	57 319		
TH207	x				Orwell River	x				x	55 057		
TH208	x				Orwell River	x				x	54 375		
TH209	x				Orwell River	x				x	19 353		
TH210	x				Orwell River	x				x	0		
TH211	x				Orwell River	x				x	140 083		
TY025	x				Coquet River		x			x	378		
TY042	x				Northumberland Coast	x				x	89 499		
TY070	x				Tyne River	x	x			x	55 052		
TY081	x				Tyne River	x	x			x	16 937		
TY090	x				Wear River	x	x			x	127 497		
TY130	x				Durham Coast	x				x	6 405		
TY150	x				Tees River/Hartlepool Bay	x	x	x		x	0		
TY160	x				Tees River/Hartlepool Bay	x	x	x		x	810 247		
TY180	x				Esk River	x		x		x	43 051		
TY181	x				Esk River	x		x			0		
TY190	x				North Yorkshire Coast	x				x	5 037		
WI010	x				Ouse River (E.Sussex)	x			x	x	127 157		
WI020	x				East Sussex Coast	x				x	27 784		
WI031	x				Sussex Coast	x		x		x	25 476		
WI035	x				Sussex Coast			x		x	2 330		
WI045	x				Chichester Harbour	x	x			x	0		
WI060	x				So'ton Water, IoW, Portsmouth...	x	x	x	x	x	525 065		
WI080	x				So'ton Water, IoW etc.	x				x	9 692		
WI090	x				So'ton Water, IoW etc.	x				x	2 147		
WI110	x				Poole Harbour	x	x	x		x	17 456		
Total											15 770 462		

Table 3b Total loads (methods of determination indicated in Part II)

OSPAR-codes	in tonnes														in kilogrammes																
	Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	g-HCH	DDT	TBT	DBT	other/ notes		
Belgium																															
B/1	0,176	0,063	6,93	21,671	4,807	12,41	6,741	38,68			0,328											0						0,016			
B/1	0,113	0,048	5,13	18,905	4,393	10,317	5,388	33,729			0,281											0						0,010			
B/1	0,058	0,023	3,412	9,457	1,737	4,863	3,103	15,285			0,1											0						0,006			
B/1	0,079	0,032	4,66	12,916	2,372	6,642	4,239	20,876			0,137											0						0,008			
B/3	0,327	0,117	12,853	40,195	8,915	23,018	12,502	71,743			0,608											0						0,029			
B/3	0,042	0,018	1,882	6,936	1,612	3,785	2,142	12,375			0,103											0						0,004			
B/3	0,069	0,028	4,069	11,277	2,071	5,8	3,701	18,228			0,12											0						0,007			
B/3	0,014	0,006	0,825	2,286	0,42	1,176	0,75	3,695			0,024											0						0,001			
B/6	0,753	0,278	2,379	94,643	26,172	52,609	28,419	18,374			1,877											0						0,076			
B/6	0,666	0,283	30,119	110,992	25,793	60,571	34,279	198,022			1,647											0						0,056			
B/6	0,006	0,003	0,305	1,066	0,288	0,611	0,332	1,804			0,027											0						0,001			
B/9	0,052	0,025	2,642	9,097	2,008	4,808	2,786	15,571			0,112											0						0,017			
B/9	0,107	0,036	3,154	11,277	4,396	7,607	3,517	26,185			0,344											0						0,012			
B/99	0,001	0	0,046	0,111	0,022	0,05	0,033	0,215			0,001											0						0,000			
B/99	0,025	0,007	0,82	3,032	0,971	1,935	0,946	5,68			0,061																0,002				
B/int1	<d.l.	<d.l.	4,49	8,57	<d.l.	2,37	1,14	8,16														0,29				<d.l.					
B/int1	<d.l.	<d.l.	0,63	1,21	<d.l.	0,33	0,16	1,15														0,04				<d.l.					
B/int1	<d.l.	<d.l.	12,64	34,69	3,55	15,53	8,51	56,99														<d.l.				<d.l.					
B/int1	<d.l.	<d.l.	0,81	1,22	<d.l.	0,76	0,27	2,5														<d.l.				<d.l.					
B/int1	<d.l.	<d.l.	0,44	0,85	<d.l.	0,29	0,13	1,16														<d.l.				<d.l.					
B/int1	<d.l.	<d.l.	0,62	1,02	<d.l.	1,37	0,11	1,36														<d.l.				<d.l.					
B/int1	<d.l.	<d.l.	3,85	8,03	<d.l.	0	1,54	12,05														<d.l.				<d.l.					
B/int2	<d.l.	<d.l.	4,07	11,18	1,14	3,52	2,74	18,36														<d.l.				<d.l.					
B/int2	<d.l.	<d.l.	3,8	5,69	<d.l.	1,31	1,25	11,66														<d.l.				<d.l.					
B/int2	<d.l.	<d.l.	1,06	1,83	0,58	0,7	0,82	5,03														<d.l.				<d.l.					
B/int2	<d.l.	<d.l.	1,09	2,08	<d.l.	1,55	0,33	2,83														<d.l.				<d.l.					
B/int2	<d.l.	<d.l.	4,35	9,09	<d.l.	0,68	1,74	13,63														<d.l.				<d.l.					
B/int2	<d.l.	<d.l.	0,97	1,82	<d.l.	0	0,44	3,19														<d.l.				<d.l.					
B/int4	<d.l.	<d.l.	2,94	6,14	<d.l.	1,05	1,18	9,21														<d.l.				<d.l.					
B/int4	<d.l.	<d.l.	0,58	1,44	<d.l.	<d.l.	0,26	2,22														<d.l.				<d.l.					
B/int4	<d.l.	<d.l.	0,17	0,31	<d.l.	0,14	0,29	0,61														<d.l.				<d.l.					
B/int4	<d.l.	<d.l.	0,28	0,9	<d.l.	<d.l.	0,17	1,16														<d.l.				<d.l.					
B/int4	<d.l.	<d.l.	0,45	0,89	<d.l.	<d.l.	0,43	1,69														<d.l.				<d.l.					
B/int4	<d.l.	<d.l.	2,74	5,14	<d.l.	1,91	1,24	9														<d.l.				<d.l.					
B/int4	<d.l.	<d.l.	2,85	4,75	4,24	4,65	1,66	12,91														<d.l.				<d.l.					
B/int7	<d.l.	<d.l.	1,25	2,04	<d.l.	0,67	0,22	2,72														<d.l.				<d.l.					
B/int7	<d.l.	<d.l.	7,52	15,7	<d.l.	2,68	3,01	23,55														<d.l.				<d.l.					
B/int7	<d.l.	<d.l.	0,97	2,43	<d.l.	<d.l.	0,44	3,75														<d.l.				<d.l.					
B/int7	<d.l.	<d.l.	0,16	0,31	<d.l.	0,13	0,29	0,6														<d.l.				<d.l.					
B/int7	<d.l.	<d.l.	0,15	0,5	<d.l.	<d.l.	0,1	0,64														<d.l.				<d.l.					
B/int7	<d.l.	<d.l.	0,42	0,84	<d.l.	<d.l.	0,4	1,59														<d.l.				<d.l.					
B/int7	<d.l.	<d.l.	1,09	1,82	1,62	1,78	0,63	4,94														<d.l.				<d.l.					
B/int9	<d.l.	<d.l.	0,24	0,5	<d.l.	0,09	0,1	0,75														<d.l.				<d.l.					
B/int9	<d.l.	<d.l.	0,53	1,32	<d.l.	<d.l.	0,24	2,04														<d.l.				<d.l.					
B/int9	<d.l.	<d.l.	0,03	0,06	<d.l.	<d.l.	0,03	0,11														<d.l.				<d.l.					
B/int9	<d.l.	<d.l.	1,11	1,85	1,65	1,81	0,64	5,02														<d.l.				<d.l.					
B/int13	<d.l.	<d.l.	3,08	6,42	<d.l.	1,1	1,23	9,63														<d.l.				<d.l.					
B/int13	<d.l.	<d.l.	0,46	1,16	<d.l.	<d.l.	0,21	1,79														<d.l.				<d.l.					
B/int13	<d.l.	<d.l.	0,16	0,31	<d.l.	0,14	0,29	0,6														<d.l.				<d.l.					
B/int13	<d.l.	<d.l.	0,32	1,03	<d.l.	<d.l.	0,2	1,32														<d.l.				<d.l.					
B/int13	<d.l.	<d.l.	0,25	0,5	<d.l.	<d.l.	0,24	0,95														<d.l.				<d.l.					
B/int13	<d.l.	<d.l.	2,45	4,6	<d.l.	1,71	1,11	8,05														<d.l.				<d.l.					
B/int13	<d.l.	<d.l.	2,87	4,77	4,26	4,68	1,67	12,97														<d.l.				<d.l.					
B/int14	<d.l.	<d.l.	1,59	3,32	<d.l.	0,57	0,64	4,98														<d.l.				<d.l.					
B/int14	<d.l.	<d.l.	2,8	5,24	<d.l.	1,94	1,27	9,17														<d.l.				<d.l.					

OSPAP-codes	in tonnes													in kilogrammes														
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	g-HCH	DDT	TBT	DBT	other/ notes
RIB04	0,000	0,000		0,037	0,021	0,037		0,143																				
RIB08																												
RIN05	0,000	0,000	0,038	0,073	0,052	0,084	0,060	0,282																				
RIN05	0,001	0,000	0,052	0,107	0,049	0,057	0,066	0,066																		0,000		
RIN10	0,000	0,000	0,001	0,003	0,002	0,003	0,002	0,014			0,000														0,000			
RIN22			0,010	0,012	0,009	0,020	0,170	0,079																				
RIN24	0,000			0,001	0,005		0,076																					
RIN25					0,022		0,034	0,160																				
SJL09	0,003	0,003	0,300		0,260	0,450	0,370	2,100																		0,001		
VIB04	0,000	0,000	0,003	0,006	0,009	0,002	0,006	0,008																				
VIB09	0,001	0,001		0,052	0,057	0,071	0,028	0,201																				
VSJ39																												
AAR01	0,001	0,000	0,011	0,043	0,029	0,658	0,028	0,163																				
AAR10	0,010	0,006	0,248	0,990	0,693	1,584	0,693	3,811																				
AAR12	0,000		0,000	0,001	0,001	0,001	0,001	0,004																				
AAR26				0,035			0,175	0,409																				
Total	14,538	3,091	261,170	814,543	255,419	504,705	234,520	1 920,947																		0,005		

[illegible]

OSPAP-codes	in tonnes														in kilogrammes														
	Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCb	g-HCH	DDT	TBT	DBT	other/notes
F/03313 F/03316 F/03317		1	0	25	135	43	74	61	356	NI	1	NI	2124	1558	3	7	11	12	12	11	8	65	65	NI	NI		NI	<DL	<DL
F/03319		0	0	3	2	0	0	0	7	NI	NI	NI	<DL	136	NI	NI	NI	NI	NI	NI	NI			NI	NI		NI	NI	NI
F/03318		0	0	2	9	3	5	4	23	NI	NI	NI	<DL	28	0	0	0	0	0	0	0			NI	NI		NI	NI	NI
F/03310 F/03320		0	0	1	3	1	3	3	10	0	0	0	123	28	NI	NI	NI	NI	NI	NI	NI			NI	NI		NI	<DL	<DL
F/06401		0	1	0	2	1	2	1	6	NI	<DL	<DL	40	109	<DL	<DL	<DL	<DL	<DL	<DL	<DL			NI	NI		NI	<DL	<DL
F/06405		0	0	0	0	0	0	0	0	<DL	0	0	NI	NI	<DL	<DL	<DL	<DL	<DL	<DL	<DL			NI	NI		NI	<DL	<DL
Total		2,714	1,837	84,685	414,121	127,376	211,073	195,577	1 179,187	0,000	1,458	0,075	7 427,903	4 208,317	5,913	11,645	21,262	22,723	19,321	18,654	11,832	111,351	104,828	0,000	0,000	0,000	0,000	1,153	0,965

[illegible]

Ireland																												
Irl 6	0,050	0,017	0,350	1,410	3,070	5,350	1,690	14,190	ND	0,290	0,370	ND	ND	0,007	0,060	0,040	0,060	0,090	0,070	0,050	0,430	-	<d.l.	<d.l.	<d.l.	8,780	<1,070	(1)
Irl 8	0,070	0,012	1,430	6,130	1,330	4,390	2,440	16,900	ND	0,160	0,250	ND	ND	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	-	-	<d.l.	<d.l.	<d.l.	<0,750	<0,490	(2)
Irl 17	<0,014	0,010	0,230	1,060	1,620	2,760	0,810	9,700	ND	0,036	0,047	ND	ND	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	-	-	<d.l.	<d.l.	<d.l.	9,780	<0,440	(3)
Irl 20	0,015	0,003	0,250	0,890	0,670	0,850	0,740	3,030	ND	ND	ND	ND	ND	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	-	-	<d.l.	<d.l.	<d.l.	0,680	<0,130	
Irl 29	<d.l.	0,001	0,026	0,340	0,340	0,380	0,380	0,720	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	ND	ND	ND	<d.l.	ND	
Irl 33	0,008	0,001	0,242	0,870	0,230	0,500	0,570	1,580	ND	ND	ND	ND	ND	<d.l.	0,39	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	0,390	-	<d.l.	<d.l.	<d.l.	0,830	<d.l.	(3)
Irl 45	0,004	0,001	0,075	0,410	0,150	0,360	0,240	1,870	ND	0,001	0,001	ND	ND	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	-	-	<d.l.	<d.l.	<d.l.	<0,190	0,570	
Irl 47	0,007	0,001	0,450	0,850	0,230	0,570	0,640	2,630	ND	ND	ND	ND	ND	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	-	-	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	
Irl 48	<d.l.	0,004	0,680	0,460	0,760	0,750	0,650	5,850	ND	ND	ND	ND	ND	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	-	-	<d.l.	<d.l.	<d.l.	0,340	0,900	(3)
Total	0,168	0,049	3,733	12,420	8,400	15,910	8,160	56,470		0,487	0,668			0,007	0,060	0,040	0,060	0,090	0,070	0,050	0,820					21,350	3,600	

Netherlands																												
NL-6	0,076	0,043	3,142	7,717	5,092	7,717	3,302	30,629	25,458	NI	0,073	ND	ND	0,070	0,070	0,070	0,070	0,070	0,070	0,497	NI	0,500	0,000	0,500	2,251	ND		
NL-7	0,800	0,600	24,000	60,000	28,000	56,000	30,000	209,000	160,000	NI	1,400	ND	ND	3,300	1,500	2,100	1,900	2,800	4,300	2,000	17,900	NI	1,500	1,500	6,700	23,000	ND	
NL-8	6,980	5,830	27,110	87,830	54,210	88,180	40,250	308,210	359,830	NI	6,310	ND	ND	NI	NI	NI	NI	NI	NI	94,300	NI	14,370	NI	NI	48,610	ND	(1)	
NL-10	0,009	0,003	0,315	0,942	0,458	0,691	0,361	2,219	2,059	NI	0,028	ND	ND	0,000	0,000	0,000	0,000	0,000	0,000	0,000	NI	0,000	0,000	0,000	ND	ND		
NL-11	1,762	0,588	47,954	149,562	53,948	105,103	48,735	317,965	418,201	NI	5,017	ND	ND	4,000	5,000	6,000	5,000	7,000	8,000	5,000	42,000	NI	5,000	4,000	10,000	ND	ND	
NL-13	0,100	0,100	4,000	10,000	5,000	10,000	5,000	28,000	22,000	NI	0,300	ND	ND	1,000	1,000	2,000	1,000	2,000	2,000	2,000	11,000	NI	0,000	0,000	0,000	4,000	ND	
NL-14	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	ND	ND	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	ND	(2)
NL-15	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	ND	ND	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	ND	(2)
Total	9,727	7,164	106,521	316,051	146,708	267,691	127,648	896,023	987,548	0,000	13,128			8,370	7,570	10,170	7,970	11,870	14,370	9,070	165,697		21,370	5,500	17,200	77,861		

[illegible]

OSPAP-codes	in tonnes													in kilogrammes															
Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	g-HCH	DDT	TBT	DBT	other/ notes	
N10	0,000	0,036				18,240							0,00																
N12	0,000	0,000				0,002							0,02																
N13	0,000	0,000				0,004							0																
N14	0,000	0,000	0,000			0,009							0																
N15	<0,000	0,000	0,000			0,000																				0,001			
N16	0,000	0,000				0,012																				0,006			
N17		0,000				0,008																							
N18		0,000				0,008																							
N19	0,001	0,000				0,011																							
N21	0,003	0,010				0,126						0,21															0,53		
N22	0,008	0,003				1,920																							
N23	0,001	0,000				0,030																							
N42	0,001	0,001	0,200	1,600	4,100	2,100	1	10			0,2	1															130		
N47	<0,001	<0,000				<0,345																							
N49	<0,003	<0,000				<0,032																							
Total	0,018	0,113	0,200	1,600	4,100	54,327	1,000	10,000			0,200		1,230														130,007		

Spain																												
E/2	0,045	0,014	0,310	0,556	0,775	1,053	0,230	4,495			0,03344			0,10	0,11	0,28	0,07	0,56	0,72	0,72		2,56						(1)(2)(3)(4)
E/3	0,591	0,185	NI	5,679	11,514	33,081	6,623	83,663			ND			ND	ND	ND	ND	ND	ND	ND	ND	ND						
E/5	2,056	0,840		1,012	13,841	10,113	57,272	0,703	180,466		ND			ND	ND	ND	ND	ND	ND	ND	ND	ND						
E/8	0,061	0,814	48,664	342,412	174,215	115,089	161,428	481,464		ND				ND	ND	ND	ND	ND	ND	ND	ND	ND						
E/9	ND	ND	ND	ND	ND	ND	ND	ND		ND				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
E/10	ND	ND	ND	ND	ND	ND	ND	ND		ND				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
E/11	ND	ND	ND	ND	ND	ND	ND	ND		ND				ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
E/12	0,000	0,040	0,271	3,985	3,434	2,933	1,976	10,102		ND				0,00	0,00	0,00	ND	ND	0,00	0,00		0,00						
Total	2,753	1,893	50,256	366,472	200,050	209,428	170,960	760,190		0,033				0,102	0,107	0,283	0,068	0,561	0,722	0,717	0,000	2,56						

Sweden																													
SWE/14	0,09	0,008	4,000	9,000	4,000	6,000	5,000	36,000					0,5	0,3	<d.l.	<d.l.	ND	<d.l.	<d.l.	<d.l.	<d.l.	NI	ND	ND		ND	ND	ND	(1)
SWE/11	0,2	0,2																				16					67		
SWE/10	0	0																				0,1							
Total	0,290	0,208	4,000	9,000	4,000	6,000	5,000	36,000					0,500	0,300								16,100					67,000		

[illegible]

[illegible]

OSPAR-codes	in tonnes														in kilogrammes															
	Deposit site	Cd	Hg	As	Cr	Cu	Pb	Ni	Zn	Oil	ΣPAH9	Total PAH	N	P	CB 28	CB 52	CB 101	CB 118	CB 138	CB 153	CB 180	ΣPCB7	Total CB	HCB	g-HCH	DDT	TBT	DBT	other/ notes	
PL031		0,036	0,092	5,642	4,975	17,759	15,554	3,572	26,331	16,6	0,739	14,511				0,300	0,300	0,400	0,500	0,200	0,200	2,800	5,400				1,200	5,000		
PL060																														
PL072																														
PL075		0,000	0,000	0,008	0,020	0,032	0,027	0,015	0,076																			0,100		
PO070																														
PO090																														
TH005		0,013	0,008	0,410	1,646	1,910	2,358	0,745	5,315																		0,200	8,100		
TH034		0,018	0,011	0,538	2,344	3,050	2,739	1,013	6,998	26,3	0,126	0,313									0,100						2,600	3,300		
TH037		0,004	0,002	0,250	0,702	0,271	0,433	0,397	1,062	0,9	0,006	0,019																0,100		
TH052		0,582	0,151	19,802	80,919	29,210	49,670	40,130	126,641																		9,900	39,400		
TH053		0,004	0,002	0,234	0,652	0,255	0,409	0,371	0,993	0,9	0,006	0,020																0,100		
TH054		0,012	0,007	1,033	2,913	1,078	1,835	1,584	5,007																		0,400	1,500		
TH062		0,000	0,000	0,009	0,037	0,019	0,020	0,024	0,074																					
TH070		0,007	0,006	1,550	2,682	0,453	1,698	1,216	4,577	2,7	0,010	0,028															0,400	0,400		
TH073		0,001	0,001	0,059	0,236	0,133	0,129	0,126	0,460	0,7	0,004	0,012															0,100	1,400		
TH080																														
TH140		0,007	0,006	0,666	1,049	1,284	1,367	0,740	4,111																		2,600	0,800		
TH207		0,012	0,006	0,711	1,998	0,768	1,230	1,129	3,020	2,6	0,015	0,055																0,400		
TH208		0,012	0,006	0,704	1,976	0,761	1,219	1,117	2,989	2,6	0,015	0,055																0,400		
TH209		0,004	0,002	0,251	0,705	0,272	0,436	0,399	1,067	0,9	0,006	0,020																0,100		
TH210																														
TH211		0,033	0,015	1,735	4,955	1,847	2,943	2,759	7,383	5,2	0,031	0,111															0,100	0,700		
TY025				0,005	0,027	0,006	0,010	0,018	0,022																					
TY042		0,020	0,022	1,922	5,790	3,607	6,312	3,274	13,192	280,9	0,995	6,632			0,200	0,200	0,200	0,200	0,300	0,300	0,200	1,400	3,300				3,600	1,100		
TY070		0,107	0,025	1,013	3,272	3,976	13,728	1,950	33,471	146,6	0,866	3,410															2,300	14,800		
TY081		0,032	0,016	0,311	0,979	2,535	4,063	0,592	11,091	42,2	0,257	0,996				0,100	0,200	0,100	0,100	0,100	0,100	0,100	0,200			1,600	30,100			
TY090		0,057	0,016	1,584	3,711	2,520	18,437	2,227	21,179																		1,800	1,800		
TY130		0,001	0,001	0,103	0,128	0,103	0,272	0,096	0,588																			0,300		
TY150																														
TY160		0,982	1,185	19,030	111,367	87,262	267,011	31,392	347,236	1146,7	22,629	112,619			3,300	2,800	1,700	1,300	1,500	1,700	3,600	10,200	51,300				44,500	84,800		
TY180		0,014	0,011	0,681	2,107	1,208	2,631	1,103	6,469																			0,700	0,900	
TY181																														
TY190		0,001	0,001	0,085	0,182	0,121	0,322	0,104	0,563																			0,200	1,700	
WI010		0,023	0,008	1,277	3,800	1,492	2,565	1,834	7,281																			1,200	1,700	
WI020		0,004	0,002	0,341	1,028	0,378	0,639	0,457	1,821																			0,100	0,300	
WI031		0,005	0,683	0,432	0,003	0,301	4,005	1,431	0,343	4,8	0,031	0,061															0,200	1,200		
WI035		0,000	0,000	0,106	0,094	0,016	0,039	0,052	0,135																					
WI045																														
WI060		0,063	0,080	7,861	20,023	15,825	15,630	10,185	45,895	35,1	0,282	0,694			0,300	0,200	0,300	0,300	0,400	0,300	0,200	0,300	4,700				14,600	58,600		
WI080		0,002	0,001	0,190	0,445	0,316	0,337	0,193	1,068																			0,200	0,200	
WI090		0,000	0,000	0,045	0,114	0,197	0,104	0,057	0,287	0,1																		0,100	0,300	
WI110		0,007	0,005	0,176	0,919	0,656	0,715	0,292	2,003																			0,800	4,400	
Total		5,498	5,600	314,884	915,987	533,186	1 225,448	428,388	2 705,385	1946,824	28,469	145,532			23,100	12,500	12,600	10,400	14,000	16,700	13,400	144,700	264,800				286,000	1 026,000		

PART II

GENERAL INFORMATION

The continental decimal system is used throughout this report. Empty cells indicate that no information was available. Italic numbers are used when the measured/calculated value was smaller than the actual number given in the cell.

ADDITIONAL INFORMATION

(Referring to Part II of the Format for Annual Reporting on Dumping Operations at Sea adopted at BDC 2001)

1. Deposit site

Germany

The following dumping sites were notified for the first time by the Federal Republic of Germany:

- “Tidal water, Krabbenloch/Neufahrwasser” in the vicinity of the harbour Friedrichskoog; notified by the Federal German State Schleswig Holstein (new OSPAR-Code D/54);
- “Rütergat, Norderaue” in the vicinity of the island Amrum; notified by the Federal German State Schleswig Holstein (new OSPAR-Code D/55)

Iceland

The following sites were not used in 2004: IS 2, IS 4, IS 5, IS 25, IS 29, IS 35, IS 39, IS 42 and IS 61.

Ireland

The locations of the deposit sites in Ireland are indicated in Part II-Figure 3 and their co-ordinates in Table 1 to that figure.

Norway

Number of deposit sites per county in Norway for 2004 in the OSPAR Convention area:

Number County	2003			
	Dredged material	Inert material	Fish waste	Other waste (ships and bulky waste)
1 Østfold	8			
2 Akershus/Oslo	2	1		
3 Vestfold	10			
4 Buskerud	2			
5 Telemark	0			
6 Aust-Agder	0			
7 Vest-Agder	2			
8 Rogaland	0			2
9 Hordaland	2	4		
10 Sogn og Fjordane	0			
11 Møre og Romsdal	3			
12 Sør-Trøndelag	5			
13 Nord-Trøndelag	1			
14 Nordland	4	3		
15 Troms	2			
16 Finnmark	1			2
Total	42	9		4

Portugal

Areas of dumping at sea in 2004:

Code	Areas	Zone	Dumping points		Category of material	Quantity	
			Long. W	Lat. N		1 000 m3	1 000 tonnes
P/3	Lisboa	Sea	09° 22' 00''	38° 38' 00''	Clean dredged material (Class 1)	415	539,5
P/2	Peniche	Sea	09° 25' 00''	39° 19' 00''	Dredged material with	16,87	21,93
P/4	Lisboa	Sea	09° 09' 30''	38° 41' 40''	Traceable contamination (Class 2)	18	23,4
P/1	Leixões	Sea	08° 51' 30''	41° 09' 00''	Dredged material with	22	28,6
P/5	Portimão	Sea	08° 31' 30''	37° 01' 48''	low contamination	194	252,2
P/6	V. R. S. António	Sea	07° 24' 30''	37° 04' 15''	(Class 3)	32	41,6
P/7	Póvoa Varzim	Sea	09° 13' 00''	41° 21' 30''	Metallic platform		
P/8	Ponta Delgada	Sea	26° 30' 00''	37° 30' 00''	Metallic container		

Sweden

The deposit sites for Sweden are as follows:

SWE/1	Vinga	N 57° 38' 11'', E 11° 48' 11''
SWE/2	Hakefjorden	N 57° 41' 11'', E 11° 45' 11''
SWE/3	Varberg	N 57° 06' 9'', E 12° 08' 9''

SWE/14 is a new deposit site for 2004.

United Kingdom

The following list shows the new dumping sites for 2003:

Site		Degrees & Decimal Mins		Decimal degrees		Site Shape
Code	Name	Latitude	Longitude	Latitude	Longitude	
HE070	Loch Nevis	57 01.850 N	05 42.600 W	57.0383	-5.7100	Circle
HU199	North West Shipwash	51 54.740 N	01 34.210 E	51.9123	1.5702	Polygon
		51 53.790 N	01 33.900 E	51.8965	1.5650	Polygon
		51 52.700 N	01 33.970 E	51.8783	1.5662	Polygon
		51 52.200 N	01 33.160 E	51.8700	1.5527	Polygon
		51 54.490 N	01 33.480 E	51.9082	1.5580	Polygon
PL072	Falmouth Marina	50 09.890 N	05 05.150 W	50.1648	-5.0858	Polygon
		50 09.840 N	05 05.090 W	50.1640	-5.0848	Polygon
		50 09.890 N	05 05.090 W	50.1648	-5.0848	Polygon
		50 09.840 N	50 05.150 W	50.1640	-50.0858	Polygon
TH054	Area 108/3	51 47.880 N	01 39.890 E	51.7980	1.6648	Polygon
		51 42.030 N	01 39.890 E	51.7005	1.6648	Polygon
		51 42.030 N	01 33.300 E	51.7005	1.5550	Polygon
		51 45.030 N	01 37.960 E	51.7505	1.6327	Polygon

Site		Degrees & Decimal Mins		Decimal degrees		Site Shape
Code	Name	Latitude	Longitude	Latitude	Longitude	
TH080	North Edinburgh Channel	51 33.610 N	01 17.290 E	51.5602	1.2882	Polygon
		51 33.680 N	01 18.400 E	51.5613	1.3067	Polygon
		51 33.660 N	01 18.810 E	51.5610	1.3135	Polygon
		51 33.490 N	01 19.810 E	51.5582	1.3302	Polygon
		51 33.270 N	01 20.480 E	51.5545	1.3413	Polygon
		51 32.960 N	01 20.400 E	51.5493	1.3400	Polygon
		51 33.220 N	01 19.570 E	51.5537	1.3262	Polygon
		51 33.330 N	01 18.830 E	51.5555	1.3138	Polygon
		51 33.350 N	01 18.340 E	51.5558	1.3057	Polygon
		51 33.330 N	01 17.370 E	51.5555	1.2895	Polygon

2. Method of determination

France

Definition of assumptions made in calculating quantities of dry matter in Table 3a

Relationship between the saturated density of the mixture ρ_{sat} and the concentration of dry matter ρ_{ms} :

These two parameters are connected through the following relationship:

$$\rho_{ms} = \frac{\rho_{ss}}{(\rho_{ss} - \rho_o)} \times (\rho_{sat} - \rho_o) \text{ in which:}$$

- ρ_{sat} = density of the mixture (in kg/m³)
- ρ_{ms} = concentration of dry matter in the mixture (in kg dry matter/m³)
- ρ_o = density of water at 4°C (in kg/m³)
- ρ_{ss} = density of the dry sediment (in kg/m³).

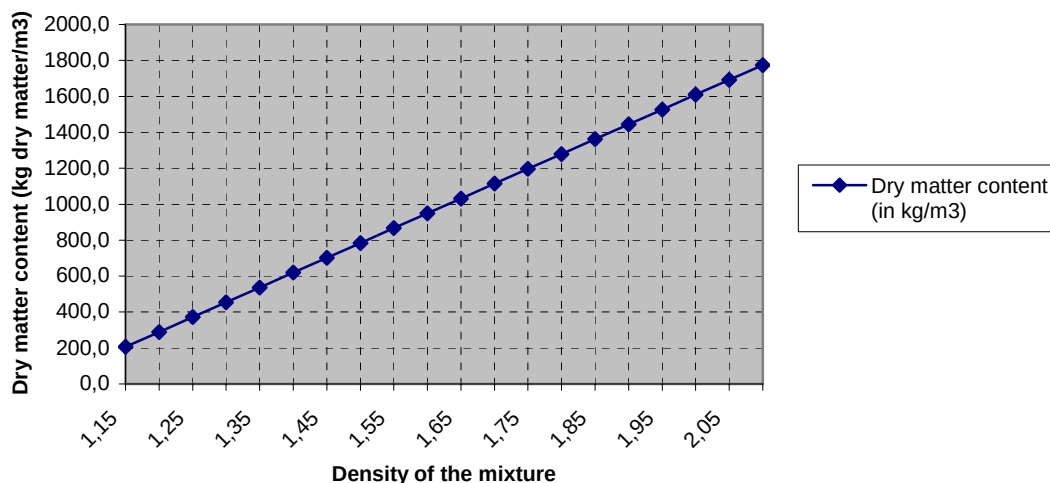
Assuming that $\rho_{ss} = 2\,600 \text{ kg/m}^3$ and $\rho_o = 1\,025 \text{ kg/m}^3$, the following simplified formula is obtained:

$$\rho_{ms} = 1\,650,8 \times (d - 1\,025)$$

where d is the density of the mixture.

This can be represented graphically as follows:

Estimation of dry matter content as a function of the density



Calculation of quantities of dry matter deposited

If the volume in situ to be dredged is known, an approximate calculation of the quantities of dry matter dredged can be carried out using the following assumptions according to the situation encountered:

Type of material	Mean density in situ	Density for calculation	Dry matter content (kg dry matter/m ³)
Fresh sludge	1,1 to 1,3	1,2	288,9
Consolidated sludge	1,3 to 1,6	1,45	701,6
Sand	1,6 to 2	1,8	1 279,4

In practice, data relating to the mean densities in situ of the sediments dredged in the principal French ports are known and listed by the Groupement d'Interêt Economique Dragages-Ports (Port-dredging Economic Interest Grouping).

If the volume in the hoppers is known, an approximate calculation of the quantities of dry matter dredged can be carried out using the following assumptions according to the situation encountered:

Type of dredging	Type of material	Mean density in the Hoppers	Density for calculation	Dry matter content (kg dry matter/m ³)
Trailer Suction dredge	Liquid sludge	1,2	1,2	288,9
	Consolidated sludge	1,25 to 1,35	1,3	454,0
	Sand	1,8	1,8	1 279,4
Mechanical dredge	Fresh sludge	1,15 to 1,25	1,2	288,9
	Consolidated sludge	1,3 to 1,4	1,35	536,5
	Sand	1,8	1,8	1 279,4

Hydrocarbons

Hydrocarbons (Table 3b) are analysed on 2mm fraction of marin sediments, by extraction with CC14 in Infra Red.

Germany

For Germany where necessary, the quantities in Table 3a have been converted from cubic metres into tonnes. The following conversion factors (specific gravity) have been used:

in case of silt: 1,2

in case of sand: 1,8

in case of lacking information: 1,5

in cases where no dry weight (DW) was indicated, the DW was estimated to be 50% (in order to calculate the annual load from the concentration given).

DDT:

From 2002 onwards, the figure given under DDT reflects the "pp-DDT-portion". In the preceding years, the sum of DDT, DDD and DDE components was taken as the basis. Therefore, the quantity given for 2004 is lower compared to the preceding years, except the year 2002.

Total PAH:

Like in the preceding years, the figure under total PAH reflects the sum of PAH₆.

Ireland

PCB and OC determination:

Sample plus surrogate standards are extracted with DCM/Acetone by ASE. The solvent extract is reduced in volume and cleaned up using High Resolution Size Exclusion Chromatography (SEC/GPC). The extract is further cleaned up on Florisil and Silica columns. The cleaned up extract is analysed by GCMS in SIM mode.

PAH determination:

The sediment sample is extracted with an Accelerated Solvent Extraction system using a Dichloromethane/Acetone (50/50) solvent mixture. The extract is cleaned up with Gel Permeation chromatography and Silica gel and analysed via GC/MS in SIM mode.

Extractable hydrocarbons:

Sediment is extracted with pentane, dried and analysed by fluorescence spectroscopy.

In many cases the material dumped at particular sites originates from more than one area. Sediment analysis is carried out by independent laboratories and consequently the limits of detection vary.

The limits of detection requested from laboratories are:

Contaminant	Concentration	Units (dry weight)	Contaminant	Concentration	Units (dry weight)
Hg	0,05	mg kg ⁻¹	CB28	1,0	µg kg ⁻¹
As	1,0	mg kg ⁻¹	CB52	1,0	µg kg ⁻¹
Cd	0,1	mg kg ⁻¹	CB101	1,0	µg kg ⁻¹
Cu	5,0	mg kg ⁻¹	CB118	1,0	µg kg ⁻¹
Pb	5,0	mg kg ⁻¹	CB138+163	1,0	µg kg ⁻¹
Zn	10,0	mg kg ⁻¹	CB153	1,0	µg kg ⁻¹
Cr	5,0	mg kg ⁻¹	CB180	1,0	µg kg ⁻¹
Ni	15	mg kg ⁻¹	DDE pp	1,0	µg kg ⁻¹
TBT & DBT	0,01	mg kg ⁻¹	DDT pp	1,0	µg kg ⁻¹
PAHs	20	µg kg ⁻¹	DDD pp	1,0	µg kg ⁻¹
			Dieldrin	1,0	µg kg ⁻¹
			Lindane	1,0	µg kg ⁻¹
			HCB	1,0	µg kg ⁻¹

The limits of detection achieved are:

	Irl 6	Irl 8	Irl 17	Irl 20	Irl 29	Irl 33	Irl 45	Irl 47	Irl 48
Hg (mg kg ⁻¹)	-	-	-	-	-	0,05	-	-	0,03
As (mg kg ⁻¹)	-	-	-	-	-	-	-		0,05
Cd (mg kg ⁻¹)	-	0,05	0,04	-	0,1	-	-		0,05
Cu (mg kg ⁻¹)	-	-	-	-	-	-	-		0,05
Pb (mg kg ⁻¹)	-	-	-	-	-	-	-		0,05
Zn (mg kg ⁻¹)	-	-	-	-	-	-	-		0,05
Cr (mg kg ⁻¹)	-	-	-	-	-	-	-		0,05
Ni (mg kg ⁻¹)	-	-	-	-	-	-	-		0,05
TBT (mg kg ⁻¹)	0,01-0,02	0,001-0,02	0,01	0,001	0,01	0,001	0,001	0,001	0,02
DBT (mg kg ⁻¹)	0,01-0,02	0,001	0,001-0,01	0,001	-	0,001	0,001	0,001	0,02
CB28 (ug kg ⁻¹)	1,0	0,01-3,4	1,0-8,7	2,8	-	5,0-7,0	7,0	2,8	1,0
CB52 (ug kg ⁻¹)	1,0	0,01-3,4	1,0-8,7	2,8	-	5,0-7,0	7,0	2,8	1,0
CB101 (ug kg ⁻¹)	1,0	0,01-3,4	1,0-8,7	2,8	-	5,0-7,0	7,0	2,8	1,0
CB118 (ug kg ⁻¹)	1,0	0,01-3,4	1,0-8,7	2,8	-	5,0-7,0	7,0	2,8	1,0
CB138 (ug kg ⁻¹)	1,0	0,01-3,4	1,0-8,7	2,8	-	5,0-7,0	7,0	2,8	1,0
CB153 (ug kg ⁻¹)	1,0	0,01-3,4	1,0-8,7	2,8	-	5,0-7,0	7,0	2,8	1,0
CB180 (ug kg ⁻¹)	1,0	0,01-3,4	1,0-8,7	2,8	-	5,0-7,0	7,0	2,8	1,0
DDE pp (ug kg ⁻¹)	1,0	0,01-3,4	6,7	2,8	-	5,0-7,0	7,0	2,8	1,0
DDT pp (ug kg ⁻¹)	1,0	0,01-3,4	6,7	2,8	-	5,0-7,0	7,0	2,8	1,0
TDE pp (ug kg ⁻¹)	1,0	0,01-3,4	6,7	2,8	-	5,0-7,0	7,0	2,8	1,0
DDT op (ug kg ⁻¹)	1,0	0,01-3,4	6,7	2,8	-	5,0-7,0	7,0	2,8	1,0
Dieldrin (ug kg ⁻¹)	1,0	0,01-3,4	6,7	2,8	-	5,0-7,0	7,0	2,8	1,0
g-HCH (ug kg ⁻¹)	1,0	0,01-3,4	6,7	2,8	-	5,0-7,0	7,0	2,8	1,0
HCB (ug kg ⁻¹)	1,0	0,01-3,4	6,7	2,8	-	5,0-7,0	7,0	2,8	1,0

Notes:

Units are all dry weight.

Where ranges are given this indicates that different labs testing sediments from various locations dumped at one dumpsite achieved varying detection limits.

Notes:

In some instances the material dumped at a particular site can comprise sediment dredged from various dredging locations. Often a contaminant may be detected in the sediment from one location dumped at a dumpsite whilst the same contaminant from another location (dumped at the same site) is below the detection limits. In such cases the amount of the substance dumped is given as a maximum (e.g. 0,10 tonnes + <0,02 tonnes is quoted as <0,12 tonnes).

Spain

With regard to the grain size fraction analysed, in all cases it has been smaller than 0,063 mm.

With respect to the methods of determination used, they have been the following ones:

Sample preparation

- Drying of the sample at 60°C during 24h.
- Sieving of the sample with a 2 mm sieve.
- Separation, when done, of the smaller than 0,063 mm fraction, using water and a 0,063 mm plastic sieve.
- Homogenisation and grinding of the sample in an agate mortar.
- Determination of the humidity by drying at 105°C up to constant weight.

Heavy metals analysis

For Cd, Pb, Cu, Zn, Ni and Cu:

- Acid digestion with nitric acid in a microwave oven.
- Quantitative determination by atomic absorption spectrophotometry, in flame or in graphite chamber, depending on the sample concentration.

For As:

- Acid digestion in microwave oven with nitric acid.
- Previous reduction of the sample.
- Determination by hydride generation matched to an atomic absorption spectrophotometer.

For Hg:

- Acid digestion in microwave oven with nitric acid.
- Determination by cold steam technique matched to atomic absorption spectrophotometry.

Poly-chlorinated-biphenyls

- Extraction of homogenised and grinded sample with a methylene chloride:hexane (1:1) mixture.
- Extract concentration and passing through an anhydrous sodium sulphate column.
- Sulphur elimination by purification with powder of copper.
- Extract purification in column, avoiding the organochlorated compounds with a mixture of ethylic ether in hexane at successive concentrations of 6, 15 and 50%, ending with pure hexane.
- Quantitative determination by gas chromatography with electron capture detector, using an HP-S capillary column of 0,22 mm inner diameter.

Polyaromatic hydrocarbons

- Extraction by means of decantation, mixture with acetone:hexane (1:1) and ultrasounds.
- Purification by means of decantation with salt saturated with sodium sulfate.
- Determination using gas chromatography with a 60 mm capillary column, BOD5 and flame ionization detector.
- Confirmation, when necessary, by means of mass chromatography.

Organic matter

For this parameter we have used two types of techniques.

As volatile solids:

- Drying of the sample at 105°C, grinding in a mortar and combustion in muffle at 550°C up to constant weight.
- Determination of total quantity as (formula used in our "Recommendations for the management of dredged material in the ports of Spain"):

$$TOC \text{ mass (tn)} = \frac{0,35 \times \text{Volatile solids concentration (\%)} \times \text{dumped mass (tn)}}{100}$$

As Total organic carbon (TOC):

- Drying at 105°C, elimination of the inorganic carbon with HCL and determination by means of calcination and detection of CO₂ with an infrared detector (Elementary analysis).
- Determination of the total quantity as:

$$TOC \text{ mass (tn)} = \frac{TOC \text{ concentration (\%)} \times \text{dumped mass (tn)}}{100}$$

United Kingdom

Total PCBs measured consists of the following congeners:

CB 18	CB 49	CB 110	CB 149	CB 170
CB 28	CB 52	CB 118	CB 151	CB 180
CB 31	CB 66	CB 128	CB 153	CB 183
CB 44	CB 101	CB 138	CB 156	CB 187
CB 47	CB 105	CB 141	CB 158	CB 194

Total PAHs measured consists of the following PAH compounds:

2, 3 Benzantracene	Benzo[ghi]perylene	Fluoranthene
Acenaphene	Benzo [k] fluoranthene	Fluorene
Acenaphthylene	C1-Naphthalenes	Indeno[123-cd]pyrene
Anthracene	C1- Phenanthrenes	Naphthalene
Benzo[a]anthracene	C2-Naphthalenes	Perylene
Benzo[a]pyrene	C3-Naphthalenes	Phenanthrene
Benzo [b] fluoranthene	Chrysene	Pyrene
Benzo[e]pyrene	Dibenzo[a,h]anthracene	

All analyses of dredged material on <2mm fraction. Methods of determination as specified in reports listed below:

- Allchin, C.A., Kelly, C.A. and Portmann, J.P. (1989) Methods of analysis for chlorinated hydrocarbons in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (6), 25 pp.
- Jones, B.R. and Laslett, R.E. (1994) Methods for analysis of trace metals in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (11), 29 pp.

- Kelly, C.A., Law, R.J., and Emerson, H.S. (2000) Methods of analysing hydrocarbons and polycyclic aromatic hydrocarbons (PAH) in marine samples. Science Series, Aquatic Environmental Protection: Analytical Methods, CEFAS Lowestoft. (12), 18pp.
- Law, R.J., Fileman, T.W. and Portmann, J.P. (1988) Methods of analysis of hydrocarbons in marine and other samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (2), 25 pp.
- Waldock, M.J., Waite, M.E., Miller, D., Smith, D.J. and Law, R.J. (1989) The determination of total tin and organotin compounds in environmental samples. Aquatic Environmental Protection: Analytical Methods, MAFF Directorate of Fisheries Research, Lowestoft, (4), 25 pp.

3. Toxicity

Ireland

Toxicity testing carried out on sediments dumped at the following location:

IRL 17: Whole sediment bioassay - *Corophium volutator* (10-day exposure) - 3 samples – 5%, 2,5% and 17,5% mortality

4. Quality assurance of analyses of dumped material

a. Do the laboratories carrying out the analyses undertake:

Contracting Parties responding "Yes" to this question are indicated under the respective columns with their country abbreviation.

	All	None	Some
(i) the analysis of blank samples and laboratory reference materials with each batch of samples of waste and other material dumped in the maritime area that is analysed by that laboratory;	B, F, NL, IE ¹ IS, UK Mostly yes for IE ³	IE ² (PSD, H ₂ O), density)	D, IE ² (all other non subcontracted work)
(ii) periodic comparative analysis of laboratory reference materials and certified reference materials;	B, F, NL, IE ¹ IS, UK Mostly yes for IE ³	IE ² - as above	D, IE ² - as above IE ³
(iii) the compilation of quality control charts based upon the data resulting from the analyses of the laboratory reference materials and certified reference materials, and the use of those quality control charts to monitor analytical performance in relation to all samples of dumped wastes or other materials;	B, NL, IS IE ¹ , UK Mostly no for IE ³	IE ² - not for sediment	D, IE ³
(iv) periodic participation in interlaboratory comparison exercises, including, where possible, international comparison exercises;	B, F (partly) NL, IE ¹ IS, UK Mostly yes for IE ³	IE ² - not for sediment	D, IE ³
Do the laboratories carrying out the analyses undertake: <i>Contracting Parties responding "Yes" to this question are indicated under the respective columns with their country abbreviation.</i>	All	None	Some

a. Do the laboratories carrying out the analyses undertake: <i>Contracting Parties responding "Yes" to this question are indicated under the respective columns with their country abbreviation.</i>		All	None	Some
(v) periodic participation in national and, where possible, international laboratory proficiency schemes, under which:				
	• participating laboratories are asked to analyse samples of substances which are provided by the organisers of the scheme;	B,F (only in national comparison exercises), NL, UK IE ¹	IE ² - not for sediment	D, IE ³ - not for sediment
	• the composition of those samples is not disclosed in advance;	IE ¹		
	• the results of the scheme for each participating laboratory are made available to all participating laboratories.	IE ¹ Mostly no for IE ³		

- b. If reporting "Some" in the table above, please indicate which parts of the data set are not subject to the full range of QA procedures.

In Germany, several laboratories, often commercial laboratories, are involved in analyses of dredged material. Most of these laboratories are accredited and apply the QA procedures (i) to (v).

- c. Describe any practical action taken to apply the QA procedures described above (e.g. participation in interlaboratory comparison exercises and international QA/QC schemes).

Belgium has reported that their laboratories follow the EN ISO/IEC 17025.

- d. Are any special difficulties encountered in applying Quality Assurance procedures?

Belgium has encountered no difficulty.

Notes to table on Quality Assurance of dumped material

Ireland has reported that dredge sediments are carried out by a number of laboratories:

IE¹ laboratory responsible for carrying out approximately 60% of all analyses;

IE² signifies laboratory responsible for carrying out approximately 20% of all analyses;

IE² represents combined answers from laboratories responsible for carrying out the remaining 20% of analyses.

Norway: the Country Administrations have often not filled in information on quality assurance of analyses for dumped material. Reporting in this respect is very inconsistent. Norway has therefore not filled in point a. in the table. In general well established laboratories are used, but formal quality assurance is often missing.

FOOTNOTES TO ALL TABLES

Table 1

Belgium

- (1) No permits were issued in 2004 since permits issued in 2003 are valid for 2 years.

France

- (1) 98 permits historically issued, 45 in use in 2004.

Germany

- (1) This quantity refers to sand.
(2) This quantity refers to silt.
(3) Permits for dredging/dumping of dredged material are issued by the competent authorities of the Federal States (Länder). Permits are not issued for dredging/dumping activities of the German Federal Water and Shipping Directorate (the Directorate does not issue permits for its own activities). However the dredging/dumping activities of the Directorate are governed by national regulations which are in accordance with OSPAR and LC requirements.

Iceland

- (1) According to Icelandic law, dumping of vessels and aircrafts are not permitted.

Ireland

- (1) Eight permits were issued in 2004, including two five-year permits. Dumping only took place for seven of these. Dumping was carried out in 2004 under a 5-year permit issued in 2002. Finally, dumping was also carried out in 2004 under two permits issued in 2003 following extensions of their period of validity.
(2) The quantity licenced in 2004 includes a quantity licenced under a five-year permit. The quantity licenced does not include that licenced under the five permit issued in 2002. The total quantity licenced under the 5 yr permit in question would have been reported as licenced in 2002.
(3) Permits are issued on a wet weight basis. The dry licenced amounts are estimated using the moisture content of the dumped material to "back calculate" the dry licenced tonnages.
(4) The actual amounts dumped can vary considerably from the amount licenced, particularly in cases where five-year permits are granted.

The Netherlands

- (1) Permits issued for dumping of dredged materials in national waters are numerous and are not taken into account in the overview of total amounts licensed in tables 1 and 2 but are specified in table 3.
(2) Permits issued for dumping of dredged materials at sea are licensed in cubic metres (not metric tonnes).

Norway

- (1) Illegal dumping (no permit given) of 4 624 tonnes of clean **sjellsand** sand, table 3a, site 46.
(2) Inert materials are mainly rocks. In addition some shellsand and sand.
(3) Dumping of 4 wooden hulled vessels, 3 in category: 0-50 ft and 1 in category: 50-150 ft. One of the smaller vessels "Finnmark 4" was illegally dumped (without permission).

Spain

- (1) In six cases the disposal operations of dredging works started (and licensed) in previous years (Bilbao 1981; Santander 2003; Avilés 2001; Huelva & Cádiz 2003).
(2) In one case (Ferrol Harbour) the permit corresponds to the proper Port Authority because the disposal has been done within their waters.
(3) In one case (Vilagarcia de Arousa) the permit corresponds to 2004.

- (4) The dumping sites E/1 y E/2 have been done under a general permit of the Maritime Authority for the dredged material disposal of Pasajes & Bilbao Harbours respectively.

Sweden

- (1) All 5 permits are to be reported also to HELCOM. Tonnes licenced are calculated assuming $1,3 \times m^3 = \text{tonnes}$.
- (2) No dumping of inert material of terrestrial origin was licenced. Inert material of marine origin, if any, is reported as dredged material.

United Kingdom

- (1) UK licensed tonnages are usually on a wet weight basis. These are the estimated dry weight equivalents.
- (2) A significant number of UK dredged material licences are now issued for 3 years, including some with very large tonnages.
- (3) 6 000 tonnes dry weight of fish waste was licensed for deposit in the sea in 2003 under a 3 year licence i.e. 2 000 tonnes per annum. The material was licensed for deposit directly onto the intertidal zone but is not dumping under the terms of the Convention. 1,834 tonnes of fish waste was deposited under this licence during 2004.

Table 2

Ireland

- (1) A small amount of sediment (<6000 tonnes), quite heavily contaminated by PAHs, were dredged from a berth in a port. The berth was over-dredged to create a pit, and the contaminated sediments were placed in the pit and capped with 2m of clean material. In another case, elevated levels of lead and mercury were found in one sample. Resampling and additional sampling indicated that the result was either a one-off or a laboratory error.

Norway

- (1) Wooden hulled vessels

Sweden

- (1) For divers' training.
- (2) The pollutant concentrations in the material licensed according to the 5 permits are considered to be low (Sweden does not issue permits according to a "level 2"). None of the permits issued in 2004 did result in dumping during the same year.

United Kingdom

- (1) Disposal site TY081 – 8 320 tonnes dredged material with higher concentrations than Action Level 2 for Zinc and TBT was placed at this site and capped with clean material. As the operation only started in mid-December 2004 and continued to April 2005, further details will be provided in next year's report

Table 3 a

Germany

- (2) Additional quantity of 4 659 000 tonnes sand, exempt from chemical analysis.
- (3) Additional quantity of 1 811 000 tonnes sand, exempt from chemical analysis.
- (4) Additional quantity of 264 000 tonnes sand, exempt from chemical analysis.
- (5) Additional quantity of 2 718 000 tonnes sand, exempt from chemical analysis.

Ireland

- (1) The inert material dumped at IRL 6 consisted of rock and gravel.

Netherlands

- (1) The amounts for deposit sites NL 14 and 15 (Waddensea E Harbours and Ems-Dollard Harbours) were not available at the time of reporting.

Norway

- (1) Illegal dumping (no permit given) of 4 624 tonnes of clean **sjellsand** sand, table 3a, site 46.
- (2) Inert materials are mainly rocks. In addition some shellsand and sand.
- (3) Dumping of 4 wooden hulled vessels, 3 in category: 0-50 ft and 1 in category: 50-150 ft. One of the smaller vessels "Finnmark 4" was illegally dumped (without permission).

Portugal

- (1) Metallic (mainly steel platform).
- (2) Steel tank.

Sweden

- (1) Dumping permit issued in 2003. The amount is based on a conversion factor of 1,4 tonnes/m³. To be reported also to HELCOM.
- (2) Blasted solid rock. Dumping permit issued in 2002. The amount is a very rough estimate based on the volume 24 225 m³. To be reported also to HELCOM
- (3) Dumping permit issued in 2001 and 2002. The amount is based on a conversion factor of 1,6 tonnes/m³. To be reported also to HELCOM.
- (4) Same dumping permit as above. The amount is based on a conversion factor of 1,6 tonnes/m³. To be reported also to HELCOM.
- (5) Dumping permit issued in 2002. The amount is based on a conversion factor of 1,3 tonnes/m³. To be reported also to HELCOM.

United Kingdom

- (1) DM001 was a deposit site at Harrington Harbour off the North-West coast of England.

Table 3 b

Germany

- (1) The figures for the total load in Table 3b for the sites 14, 15, 17 and 34 have been calculated on the basis of the silt fraction only. The quantity of the associated sand fraction which is exempted from analysis according to § 5.2 of the OSPAR Guidelines for the Management of Dredged Material (Ref. No.: 1998-20) is given as additional information in the footnotes to Table 3a.

Iceland

- (1) No samples exceeded level 2 and in general, analysed values are within the range observed in unpolluted sediments in the relevant region. Therefore, calculation of loads are not considered relevant.

Netherlands

- (1) Individual PCBs are determined but not reported since a limit is introduced for sum PCB 7.
- (2) The amounts for deposit sites NL 14 and 15 (Waddensea E Harbours and Ems-Dollard Harbours) were not available at the time of reporting.

Norway

- (1) In most cases loads have not been determined as analyses have not been carried out. Most permits are given in areas where there is no reason to expect contamination of sediments. Instead of making a table full of "ND = not determined", Norway has only included those sites where loads have been calculated.

Spain

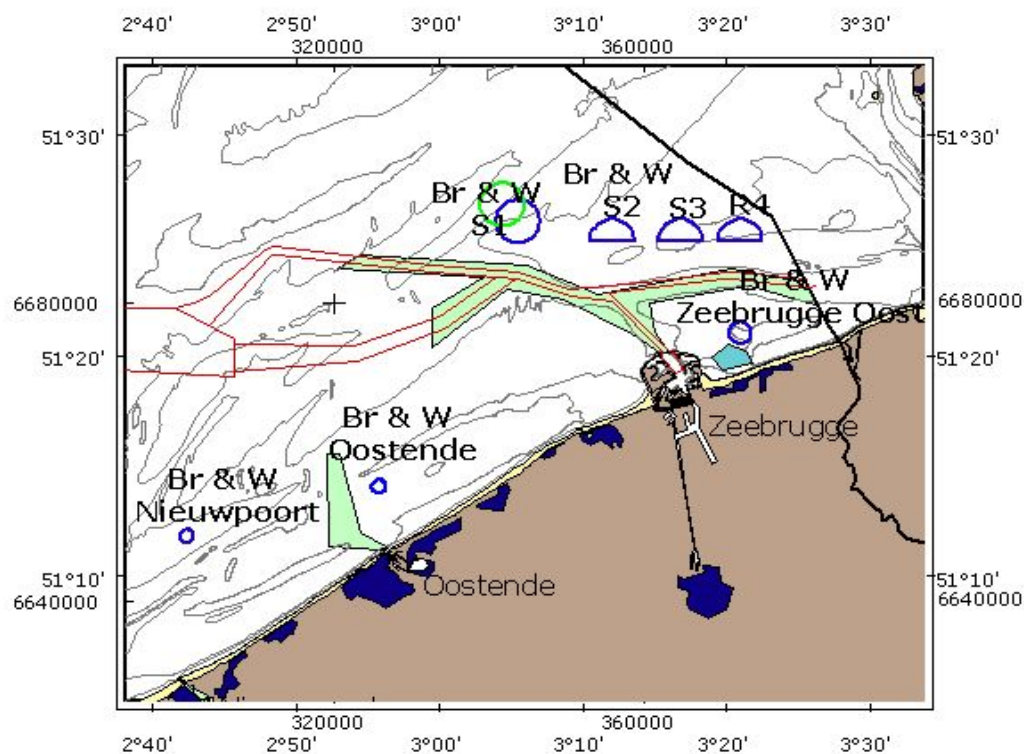
- (1) Detection limits for PCBs = 0,001 mg/kg
- (2) Detection limits or PAHS = 0,1 mg/kg
- (3) The dredged materials for Santander (E/3) and Avilés (0 10-71) (E/5) & Huelva Ports (H 05-25) (E/10) sites were materials exempt from chemicals characterisation because it was composed by clean sands.

LEGEND TO ALL TABLES

NA	Not applicable
ND	Not determined
NI	No information
DL	Detection limit

Figure 1a - Dumping sites of dredged material in Belgium in 2004

Dumping and dredging sites



**Figure 1b Dumping of dredged material carried out in Belgium in 2004
at B/INT 0-5, 6-9 (Internal waters)**

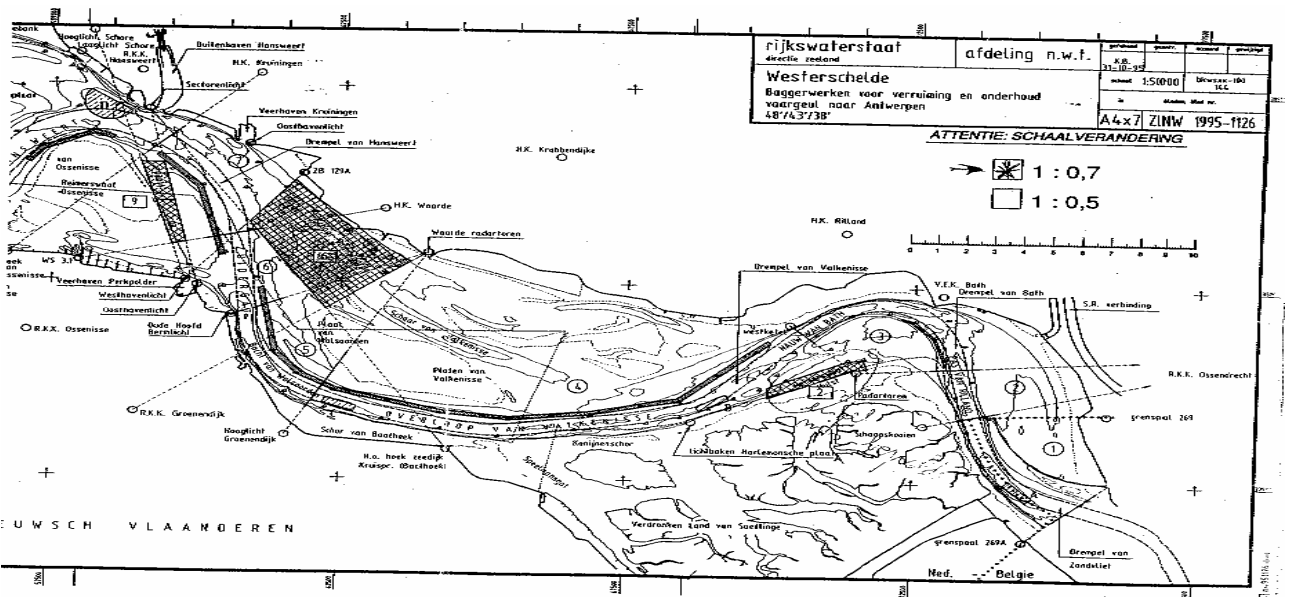
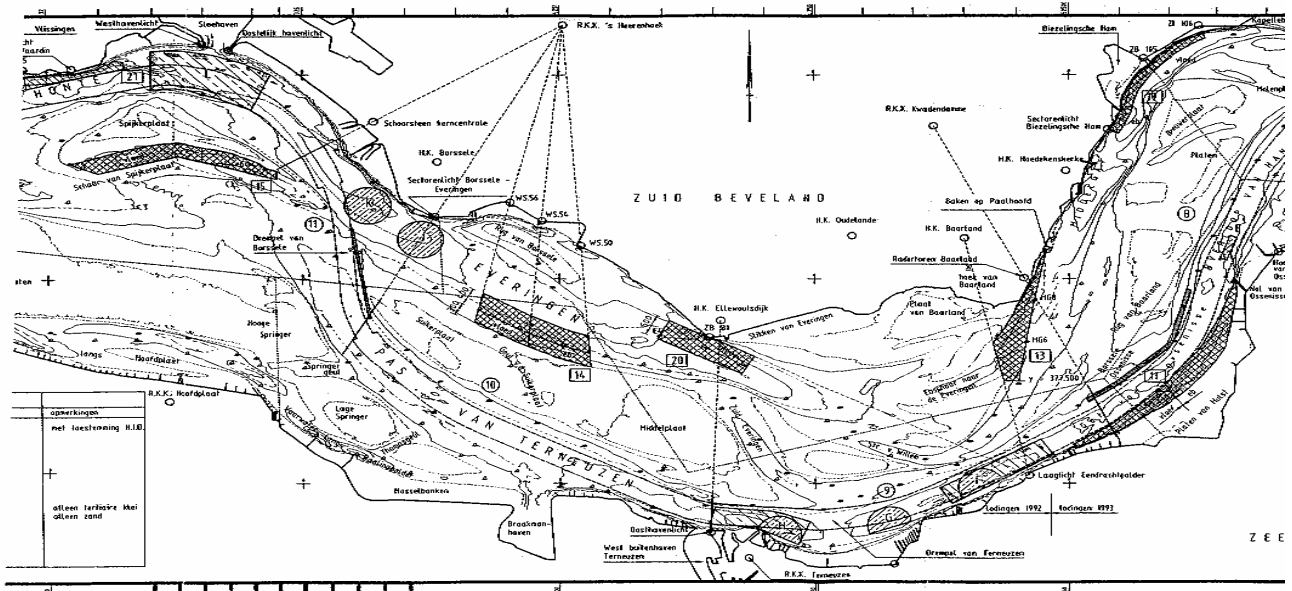
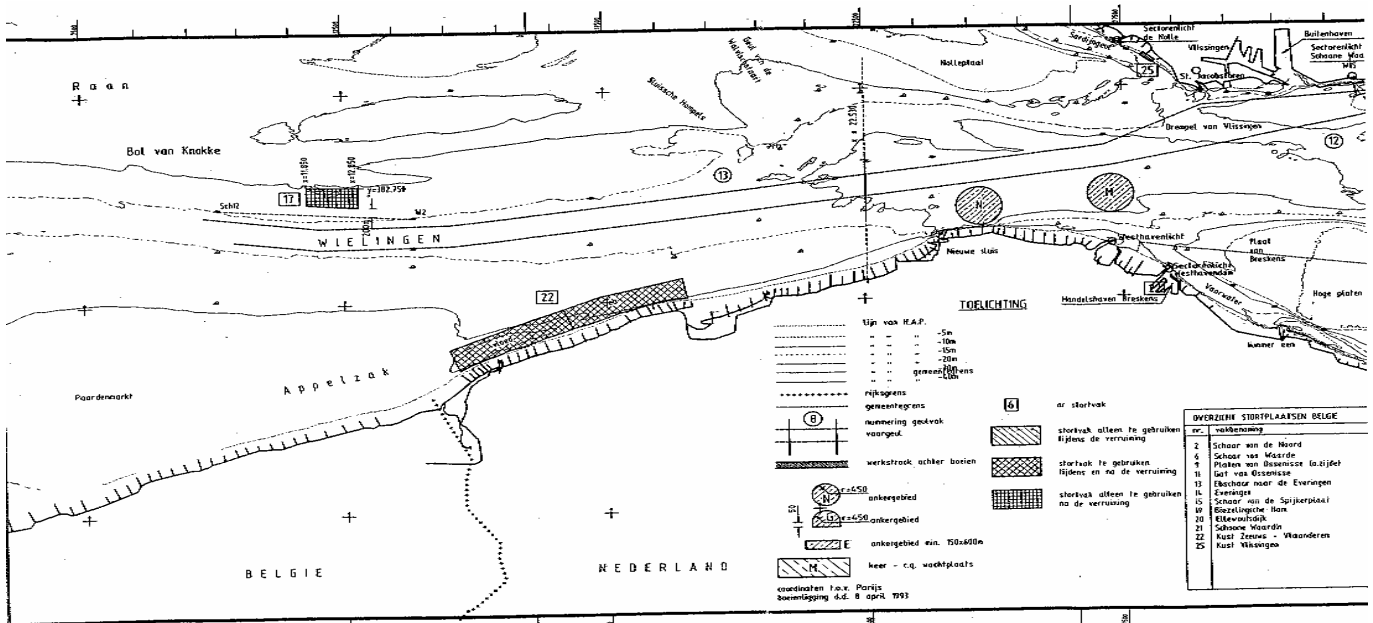


Figure 2a: Dumping sites of dredged material in France in 2004 (Atlantique)



Figure 2b: Dumping sites of dredged material in France in 2004 (Manche)



Figure 3: Dumping sites of dredged material in Germany in 2004

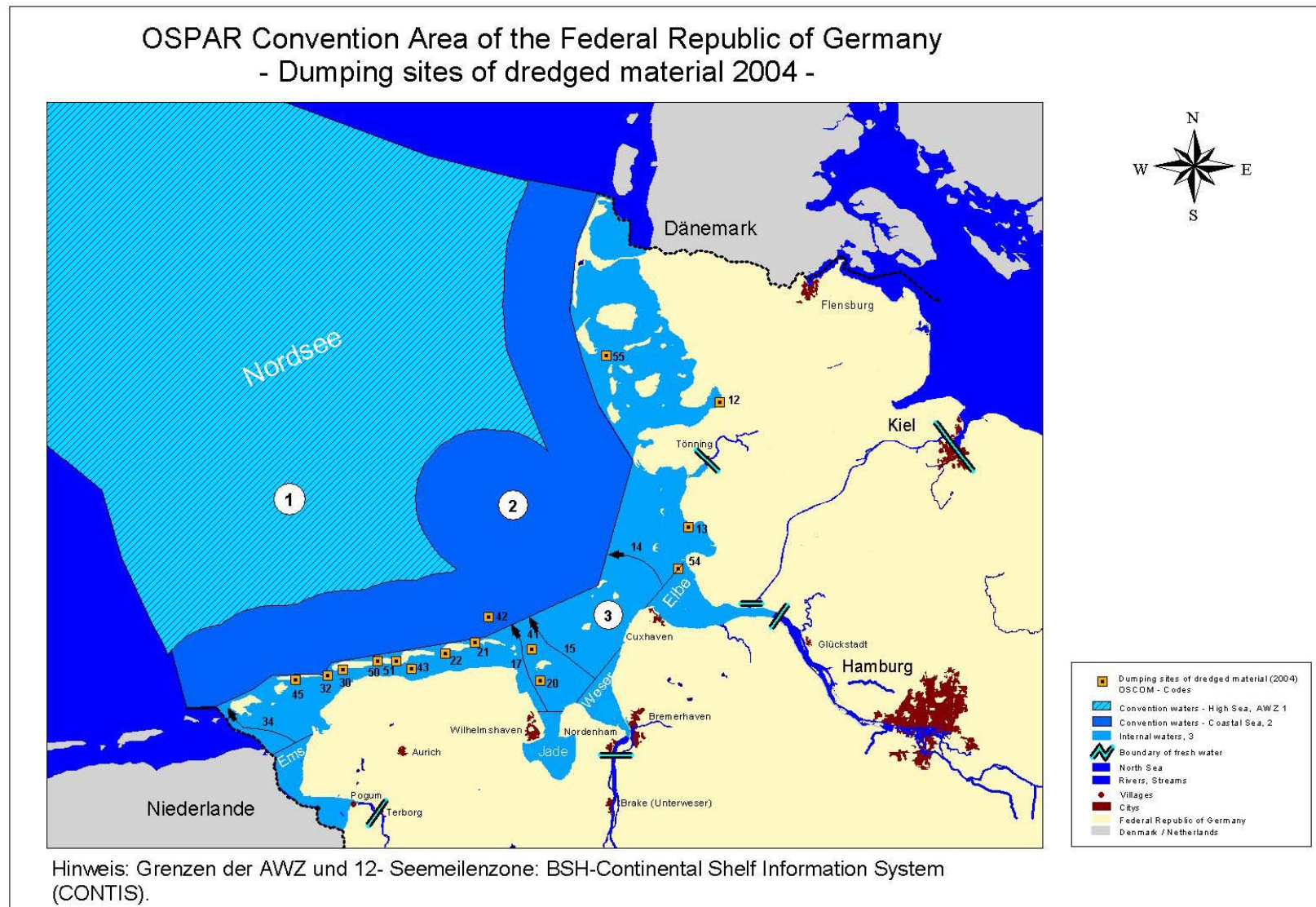
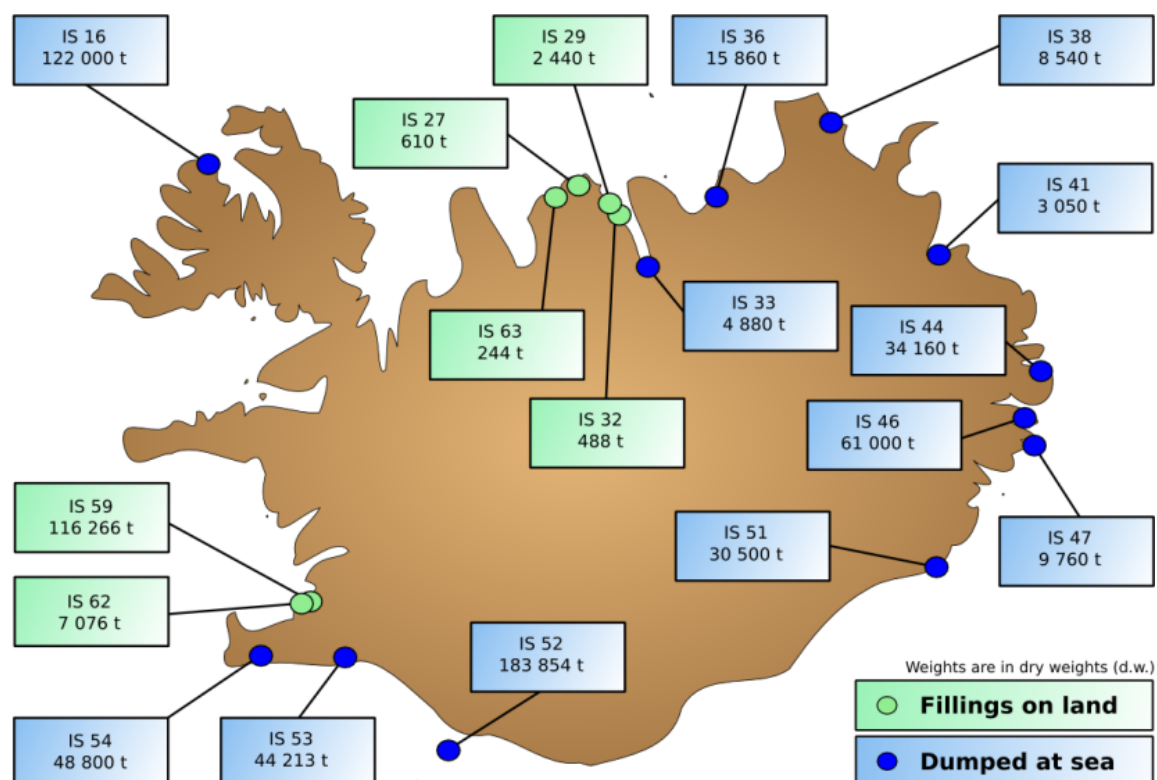


Figure 4:

Disposal of dredged material in Iceland 2004



The figure shows approximate positions of dumping sites for dredged material in Iceland, 2004. Dumping sites are labelled using OSPAR codes, weights are given in dry weights (metric tonnes).

Figure 5: Dumping sites of dredged material in Ireland in 2004

Co-ordinates of the sites are given in Table 1.

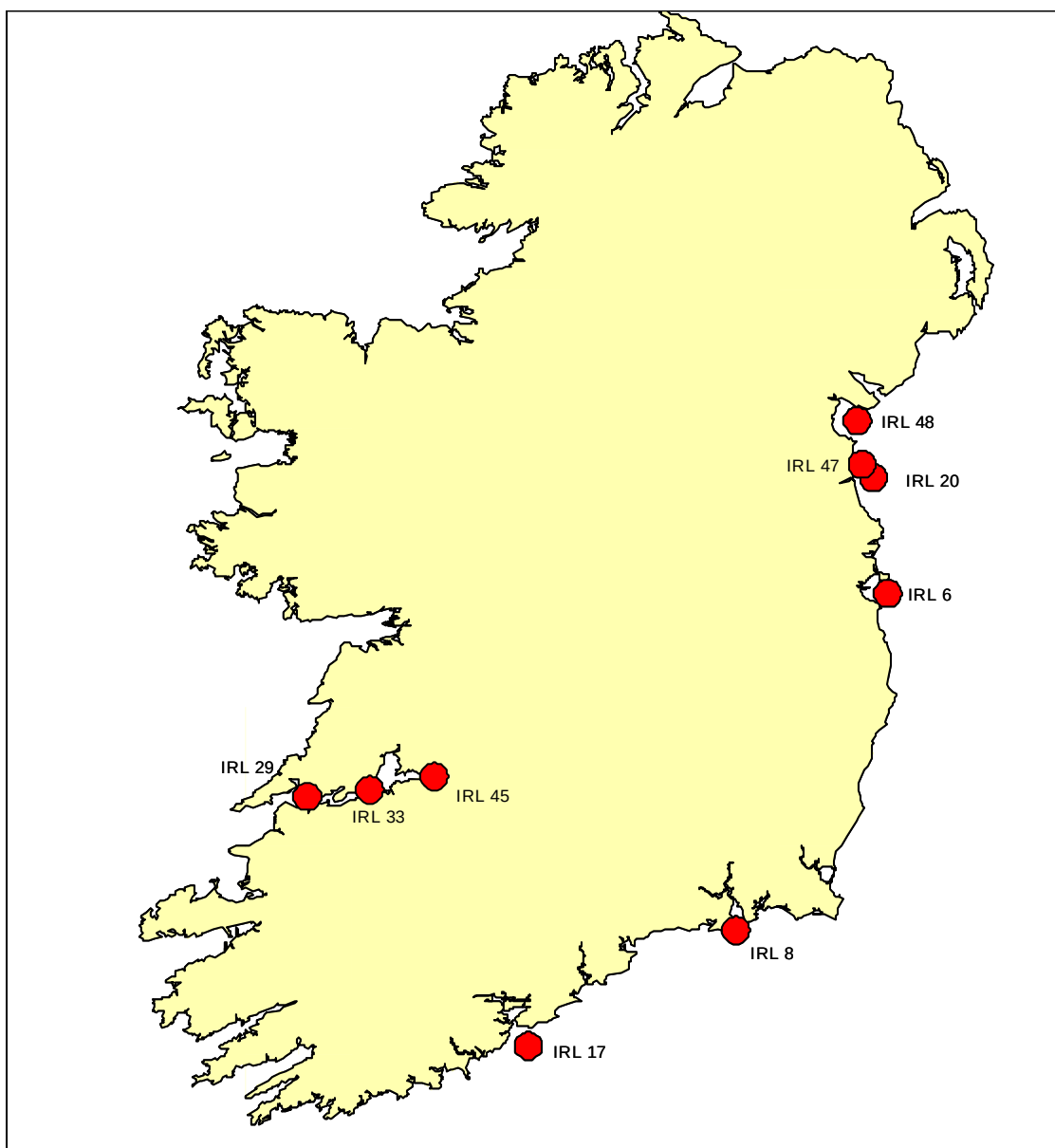


Table 1.

Site No.	Latitude	Longitude
Irl 6	53.32	-6.05
Irl 8	52.13	-6.95
Irl 17	51.72	-8.18
Irl 20	53.75	-6.18
Irl 29	52.60	-9.480
Irl 33	52.622	-9.143
Irl 45	52.674	-8.736
Irl 47	53.764	-6.224
Irl 48	53.934	-6.215

Figure 7 - Dumping sites of dredged material in Norway in 2004

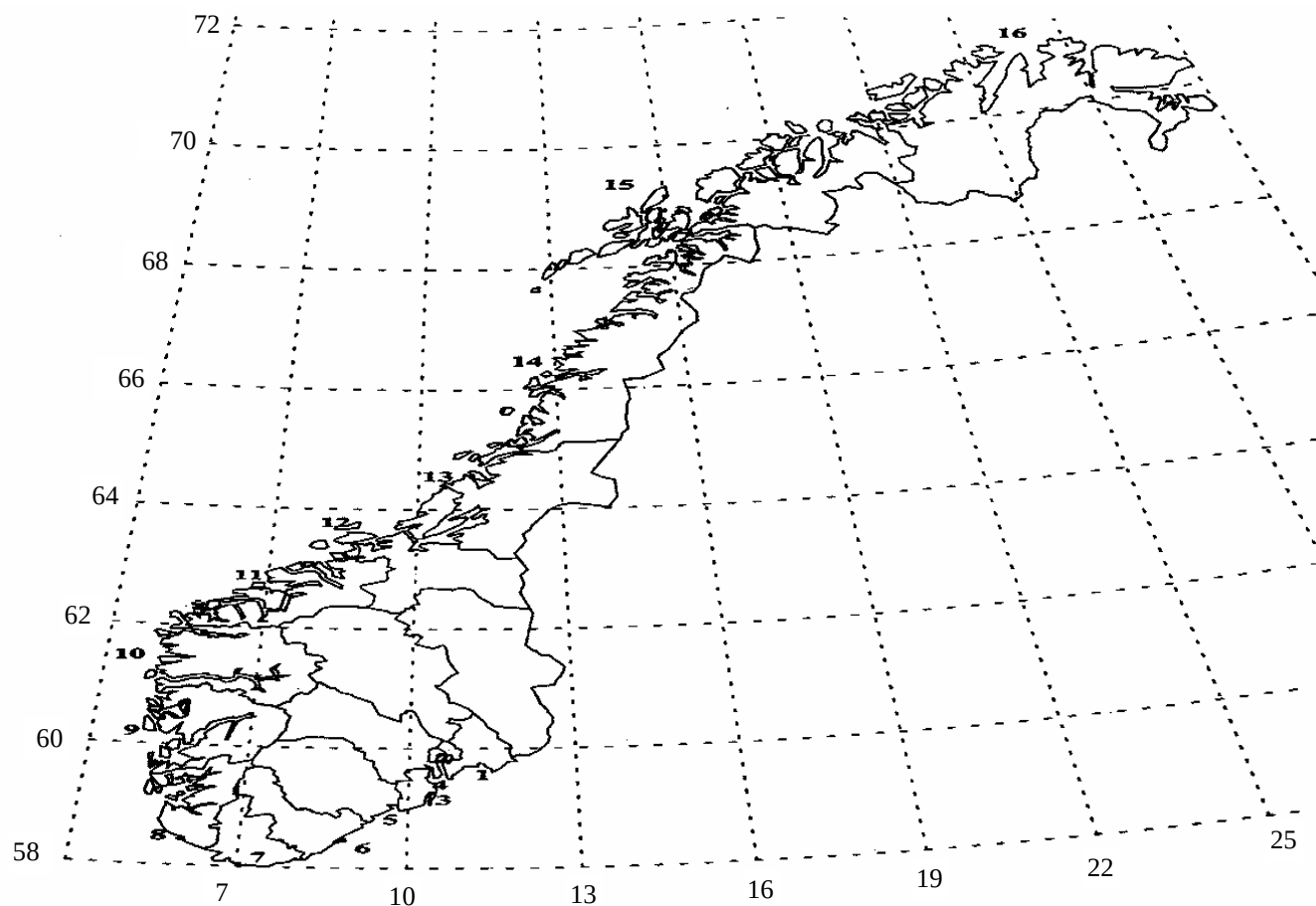
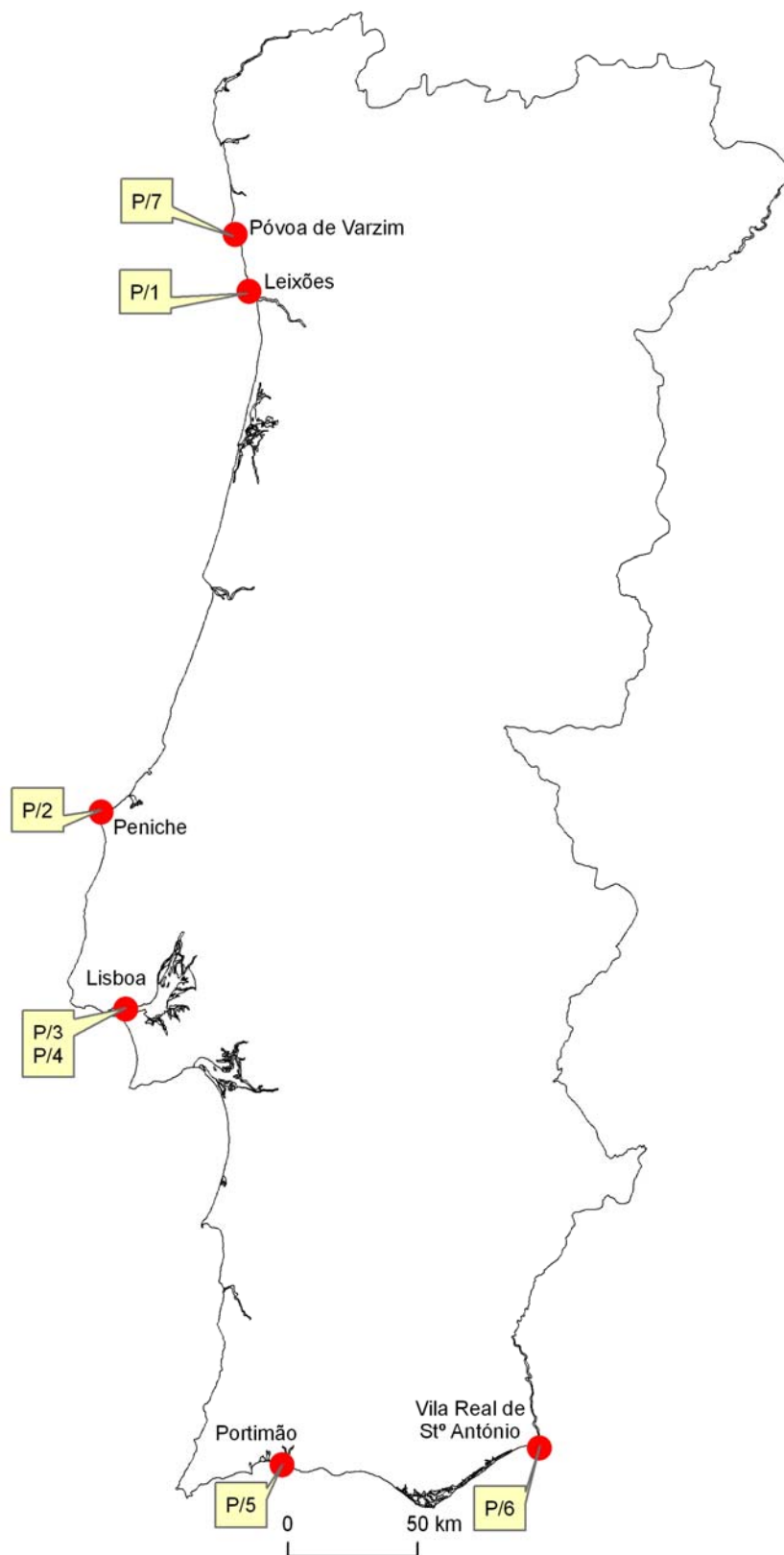


Figure 1. Map of Norway showing latitude (58-72°N, left side) and longitude (7-25°E, bottom). The different counties along the coast are indicated.

1: Østfold, 2: Akershus/Oslo, 3: Vestfold, 4: Buskerud, 5: Telemark, 6: Aust-Agder, 7: Vest-Agder, 8: Rogaland, 9: Hordaland, 10: Sogn og fjordane, 11: Møre og Romsdal, 12: Sør-Trøndelag, 13 Nord-Trøndelag, 14: Nordland, 15 Troms, 16: Finnmark.

Dredged material:	N/ 1-4, 7, 9, 11-16	Total amounts: 724 085 tonne
Inert material:	N/ 2, 9, 11, 14	Total amounts: 1 205 213 tonnes
Fish waste		
Other waste:	N/ 8, 16 - ships	

Figure 8a: Dumping sites of dredged material in Portugal in 2004 (mainland)



**Figure 8b: Dumping sites of dredged material in Portugal in 2004
(Azores-Ponta Delgada)**

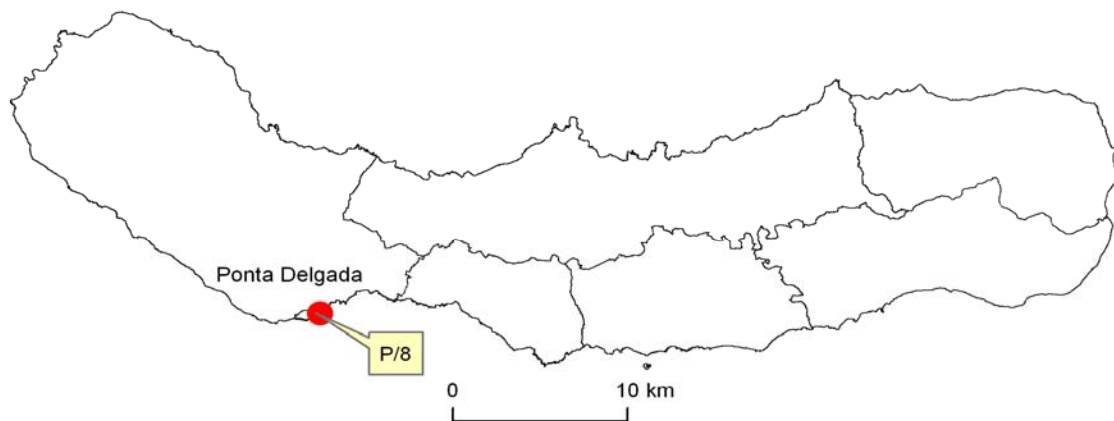


Figure 9a - Dumping sites of dredged material in the UK in 2004 (Northeastern England)

Marine disposal sites in Northeastern England. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

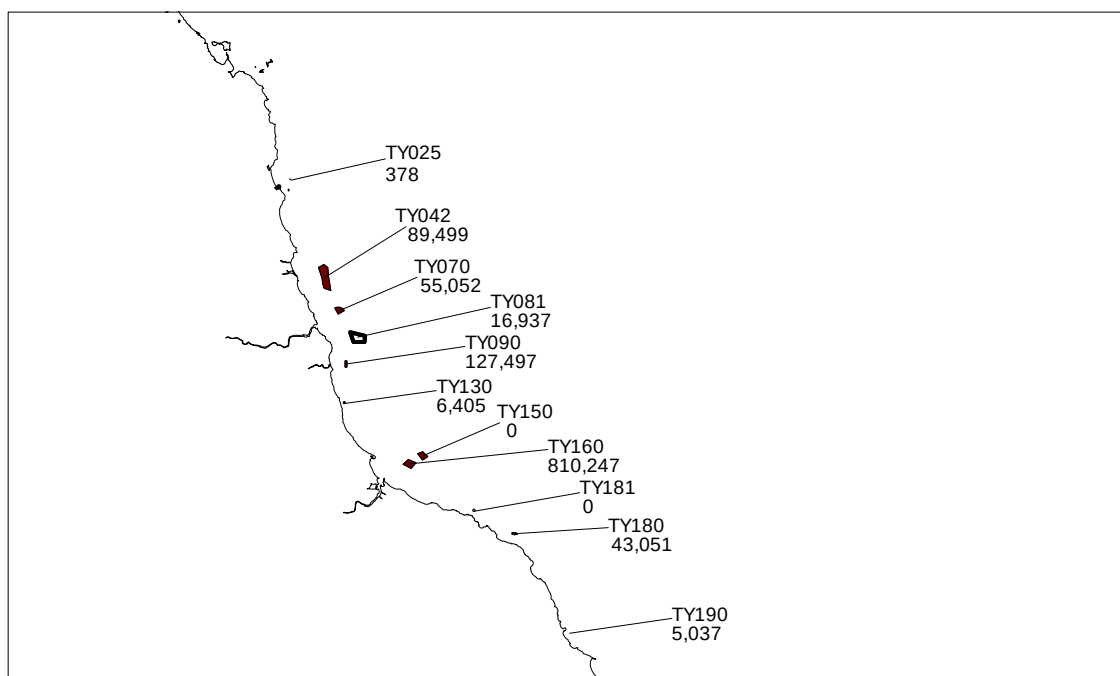


Figure 9b - Dumping sites of dredged material in the UK in 2004 (Eastern England)

Marine disposal sites in Eastern England. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

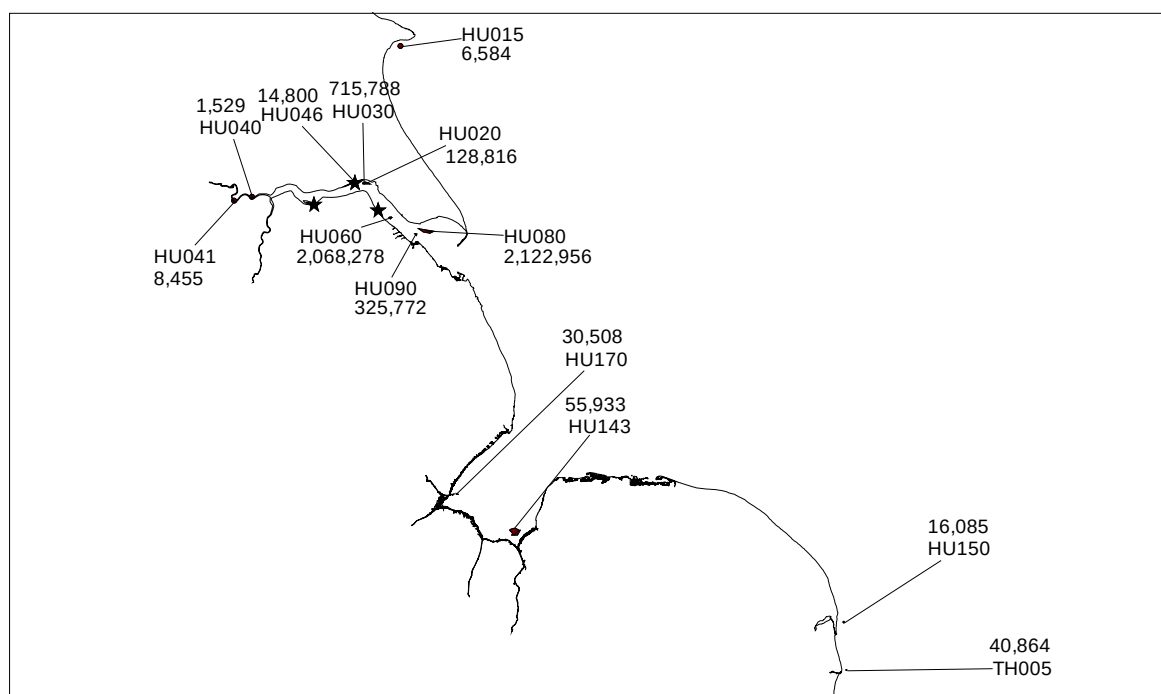


Figure 9c - Dumping sites of dredged material in the UK in 2004 (Southeastern England)

Marine disposal sites in Southeastern England. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

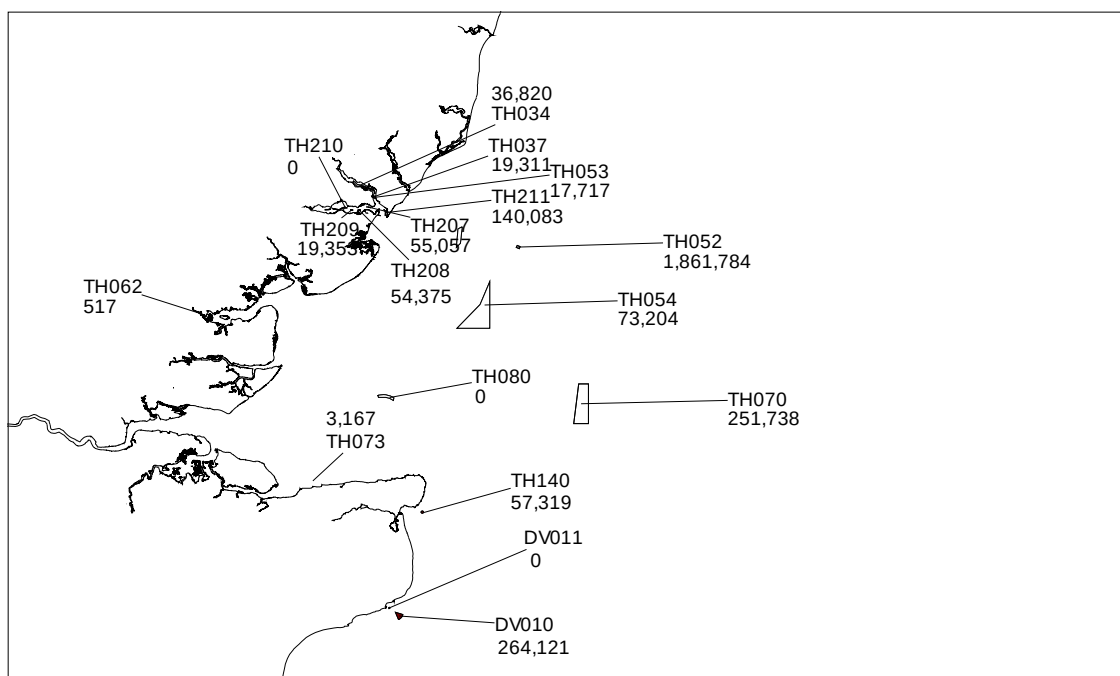


Figure 9d - Dumping sites of dredged material in the UK in 2004 (Southern England)

Marine disposal sites in Southern England. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

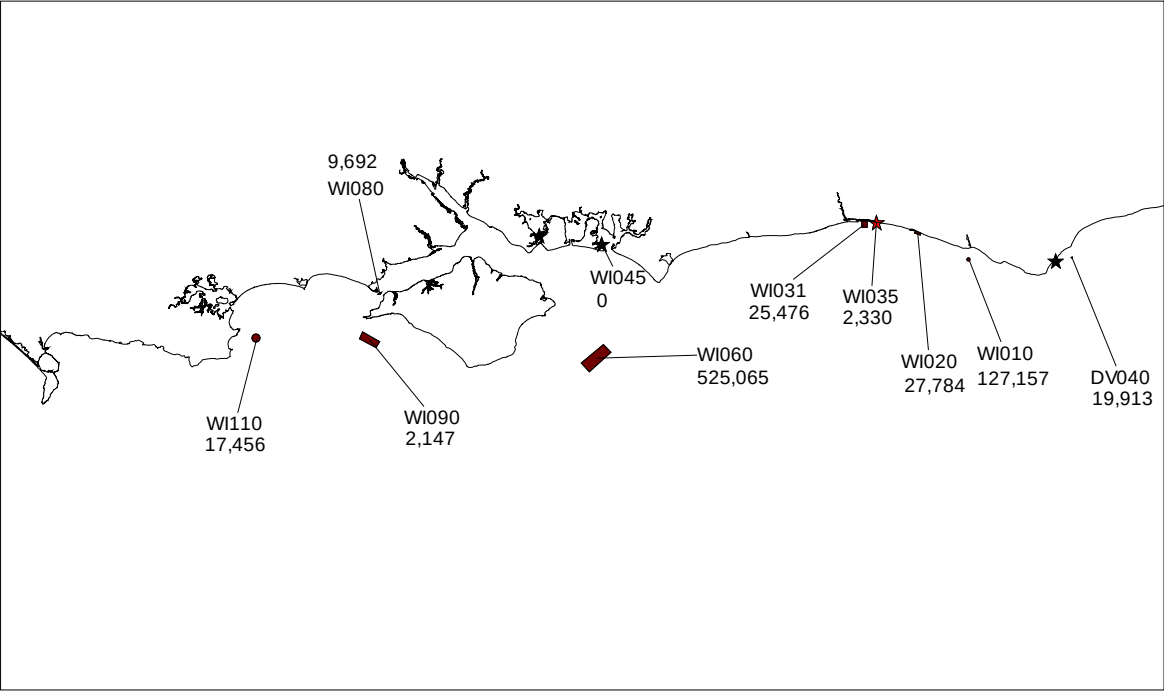


Figure 9e - Dumping sites of dredged material in the UK in 2004 (Southwestern England)

Marine disposal sites in Southwestern England. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

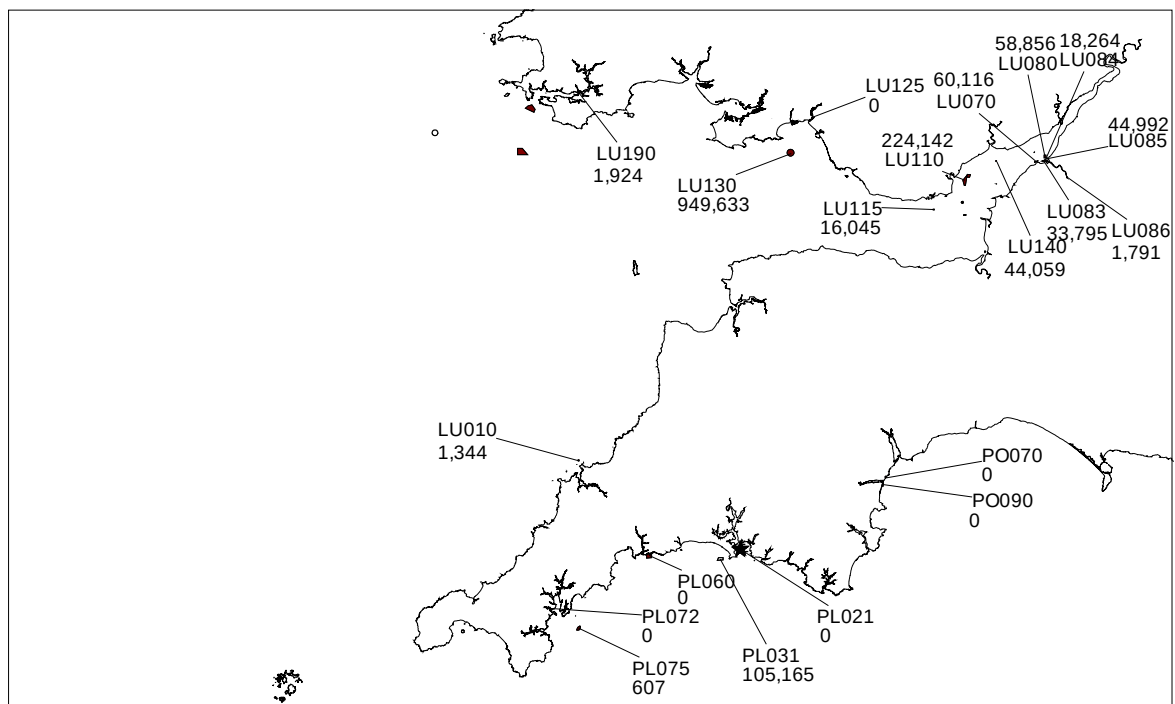


Figure 9f- Dumping sites of dredged material in the UK in 2004 (Irish Sea)

Marine disposal sites in the Irish Sea. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

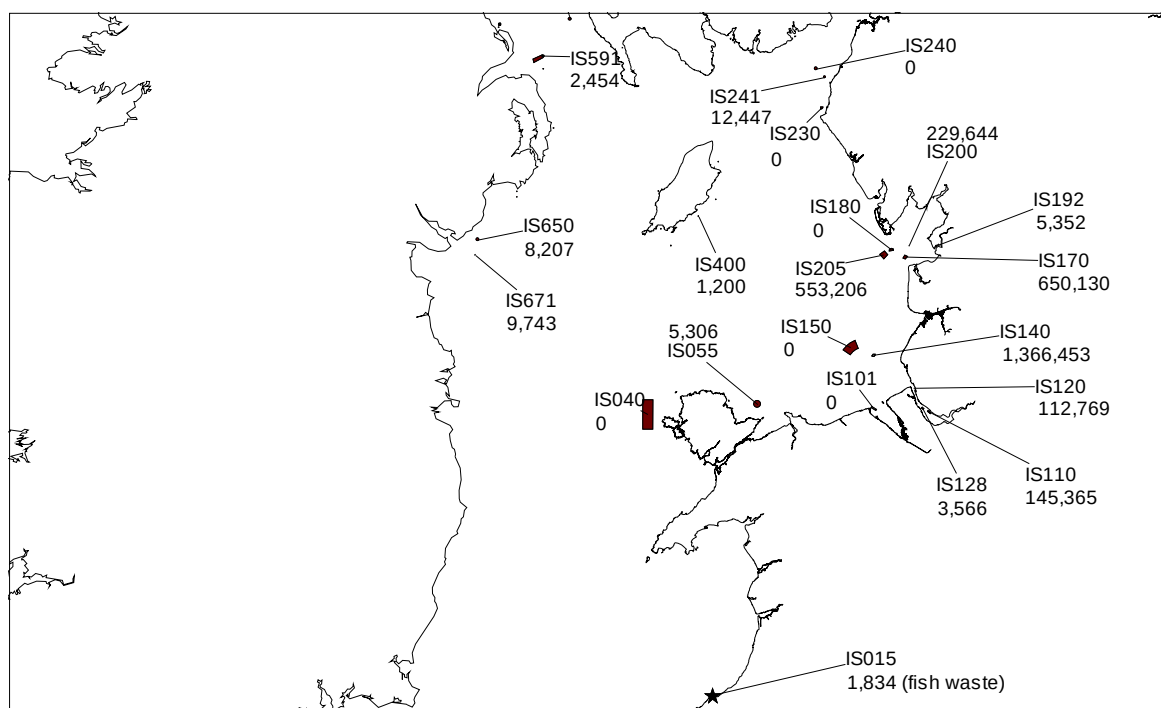


Figure 9g - Dumping sites of dredged material in the UK in 2004 (Western Scotland)

Marine disposal sites in Western Scotland. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

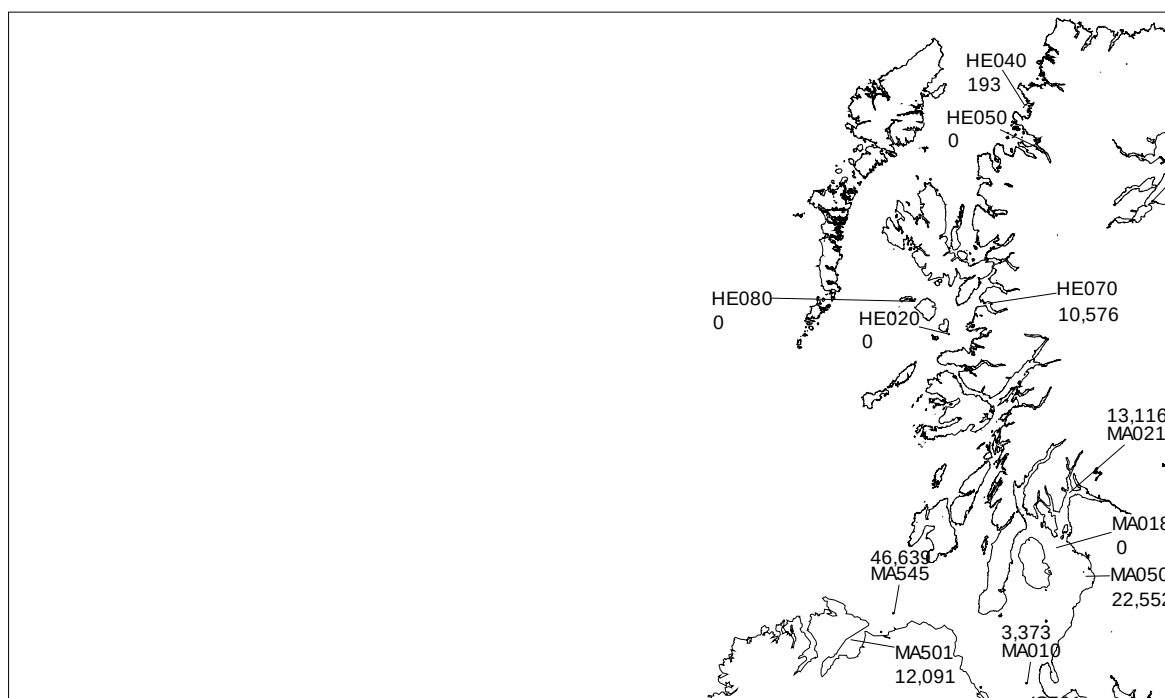


Figure 9h - Dumping sites of dredged material in the UK in 2004 (Northern Scotland)

Marine disposal sites in Northern Scotland. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

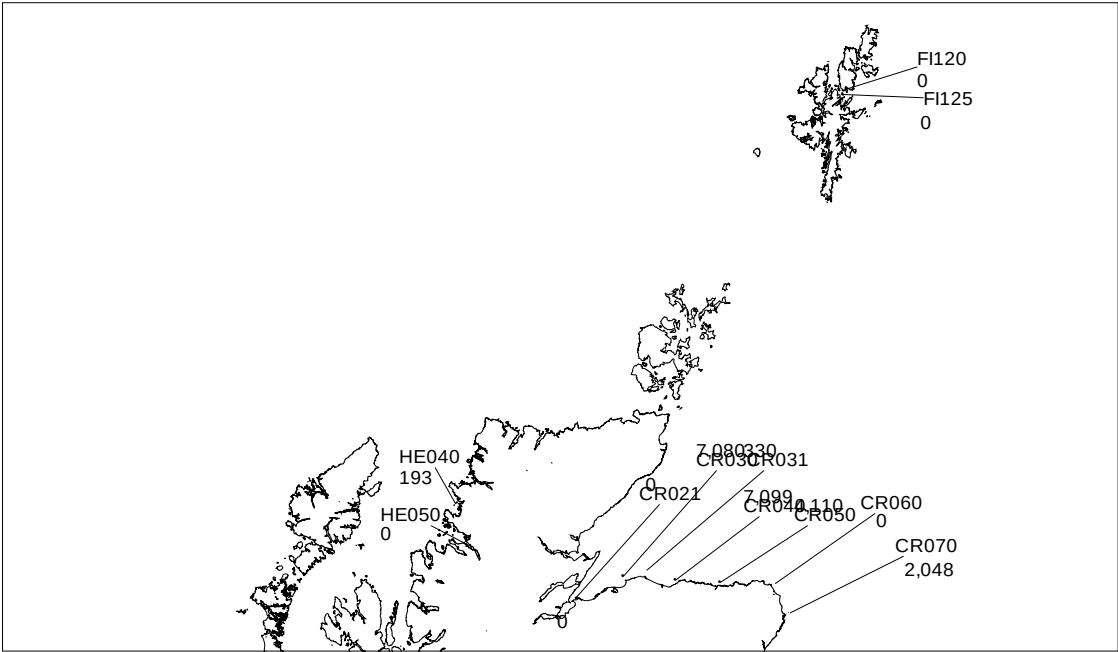


Figure 9i - Dumping sites of dredged material in the UK in 2004 (Eastern Scotland)

Marine disposal sites in Eastern Scotland. Site codes and quantities deposited in tonnes dry weight, in 2004. All tonnages are for dredged material unless otherwise stated.

