

The National Marine Biological  
Analytical Quality Control Scheme

Summary of CSEMP Own Sample Audits  
1999 to 2008

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## 1. Introduction

Thomson Unicomarine was commissioned by the National Marine Biological Analytical Quality Control (NMBAQC) Committee to produce summary tables for all NMBAQC scheme Own Samples relating to Clean Seas Environment Monitoring Programme (CSEMP) stations sampled from 1999 to 2008.

### 1.1 The CSEMP

The UK National Marine Monitoring Plan (NMMP) was established in 1991, as the UK's contribution to the international programme of the Monitoring Master Plan of the North Sea Task Force. The objectives of the plan were to examine, initially spatial and secondly temporal, trends in physico-chemical parameters and in benthic community data of estuaries and coasts around the UK in relation to pollution. The NMMP became the CSEMP in 2006 ([NMBAQC website](#), 2012). Monitoring for the NMMP/CSEMP has been undertaken by a number of Competent Monitoring Authorities (CMAs): EA (Environment Agency), CEFAS (Centre for Environment, Fisheries and Aquaculture Science, SEPA (Scottish Environment Protection Agency), FRS (Fisheries Research Services), EHS (Environment & Heritage Service), AFBI (Agri-Food and Biosciences Institute).

CSEMP provides a coordinated approach to environmental monitoring in the UK's coastal and estuarine areas. The programme fulfils the UK's commitment to European directives including its mandatory monitoring requirements under the Oslo and Paris Convention (OSPAR) Joint Assessment Monitoring Programme (JAMP).

The general aims of CSEMP are to

1. Detect long-term spatial and temporal trends in physical, biological and chemical variables at selected estuarine and coastal sites
2. Support consistent standards in national and international monitoring programmes for marine environmental quality
3. Establish appropriate protective regulatory measures
4. Coordinate and optimise marine monitoring in the UK
5. Provide a high quality chemical and biological data set from the UK's marine environment

There are approximately 80 core stations monitored to determine long-term trends around the UK coastline. Data are also collected from a number of opportunistic stations increasing the spatial coverage of the monitoring network. Contaminants are measured in waters, sediments and biota to assess their distribution and fate in the environment. Biological effects are also measured to determine the response of organisms to contaminants.

Data are quality assured using internal and external programmes. The participating laboratories subscribe to the Quality Assurance of Information for Marine Environmental Monitoring in Europe

(QUASIMEME), the Biological Effects Quality Assurance in Monitoring Programmes (BEQUALM) or the NMBAQC inter-laboratory proficiency-testing schemes and perform internal quality assurance.

The principal output from the coordinated monitoring is an annual submission of quality assured data to the International Council for the Exploration of the Seas (ICES) ([BODC/MERMAN website](#), 2012).

## 1.2 The NMBAQC scheme

The stimulus to erect a national quality control scheme for benthic sample analysis was the UK NMMP in 1991. With samples from around the UK analysed by a number of Government and commercial laboratories the need for standardization was apparent and the NMBAQC Committee was given the task of erecting and managing a UK national scheme; the NMBAQC scheme commenced in 1994/95. The scheme initially focused on benthic infaunal invertebrate communities monitored under NMMP and addressed biological determinands relating to identification, specimen enumeration, biomass determination and particle size analysis. While the NMBAQC scheme originally aimed at problems within laboratories contributing to the NMMP database other marine laboratories (including consultancies) recognised the value of such a scheme and signed up as participants.

The Scheme has subsequently grown in membership, boundaries and components; now over 60 laboratories participate in the Scheme from all over Europe in a range of exercises including phytoplankton, fish and particle size analysis. The Scheme is also attracting interest from other biogeographical regions and is set to expand further in future years.

The Benthic Invertebrate Component has four modules, covering a range of training and audit elements. The modules are:

Ring Test (RT) – training and intercalibration exercises

Laboratory Reference (LR) – training and intercalibration exercises

Macrobenthic Sample (MB) – training and intercalibration exercises

Own Sample (OS) – training, intercalibration and audit exercises

Further details of these modules can be found on the [NMBAQC scheme website](#). The Own Sample module is explained in more detail below.

### *1.2.1 The Own Sample (OS) module*

The primary objective of the Own Sample (OS) module is to ensure consistency of extraction and identification of taxa from marine macrobenthos samples.

The OS exercises comprise full sample audits (extraction, enumeration, identification and biomass estimations); results are used to assess the suitability of data from a particular laboratory and project for the purposes of comparability with data from other sources. The exercise imposes pass/fail criteria (see [Benthic Invertebrate Component Scheme Standards, 2010](#)) and failing NMMP/CSEMP samples are required to conduct remedial action upon the remaining sample replicates. 'Failing' samples upon successful completion of remedial action are re-flagged as 'Pass – Remedial Action'.

Initially Thomson Unicomarine Ltd. requests a data matrix of completed suitable sample data (those from NMMP/CSEMP locations, where possible, and for which residue material is available) from each laboratory. Thomson Unicomarine Ltd. selects three samples from these data for examination. The laboratory sends all parts of each sample, labelled in sealed pots.

Reporting, in the form of individual interim reports for participating laboratories, compares extraction efficiency, identification accuracy, enumeration accuracy and biomass estimates. Participating laboratory *vs.* Thomson Unicomarine Ltd. data set for each sample are compared using the Bray-Curtis similarity index (untransformed).

## **2. Flagging of Benthic Invertebrate Data on the Merman database**

Benthic marine invertebrate data has been collected for the NMMP/CSEMP programme since 1993 and is now collated in the Merman database. The UK CMAs annually submit their own benthic invertebrate data direct to Merman along with information indicating whether that data has passed appropriate quality assurance. The NMBAQC scheme commenced in 1994 with the aim of providing appropriate Quality Assurance for NMMP/CSEMP data. Data sets from each CMA for each calendar sampling year are audited and flagged with a block Pass or Fail. The standards and targets for achieving an "AQC Pass" have evolved over the years:

Year 1 (1994-95) – RT & MB samples circulated but no auditing of actual NMMP samples.

Year 2 (95-96) – Auditing of a single OS sample per CMA lab.

Five standard targets introduced for the OS sample but no overall Pass/Fail.

Year 3 (96-97) – Auditing of three OS samples per CMA lab.

Three standard targets for each OS (giving total of 9 targets)

Overall Pass if any 6 of the 9 targets achieved.

Year 8 (2001-02) – Auditing of three OS samples per CMA lab.

Three standard targets for each OS.

Pass/Fail applied to each audited sample based on Bray Curtis Similarity Index.

In practice where one or more of the audited samples fails then the whole year's CSEMP data set for the relevant CMA remains with an overall Fail flag. However remedial action procedures were introduced in Year 8 allowing CMAs to rectify data issues and elevate their data set from a Fail to a Pass provided the required remedial actions were completed.

The Merman database only provides information on each CMA indicating whether each year's data set has achieved an AQC Pass or Fail. This report provides more detailed information on which NMMP/CSEMP stations are monitored by which CMA, which samples were selected for audit under the OS exercises for each year and how those individual samples performed in the audit. Insufficient detail is available for audits prior to sampling year 1999 so only results from 1999 onwards are presented.

### **3. Audit of CSEMP Stations 1999 to 2008**

Tables and maps included in this report only include CSEMP sample data; OS audits relating to non-CSEMP samples have been excluded. In addition, twenty-three CSEMP OS audit samples have been excluded due to incomplete sample information (Table 3).

# TABLES

Table 1. TU CSEMP No. Index.

TU CSEMP No.	Old Station Code	New Station Name	Region Code	Stratum Code	Sampling Strategy	CMA	ICES Station Type	Minimum Year	Maximum Year
1	15se	Inner Solway	IrishSea	SolwayEstuary	FI	SEPA	Estuary	2006	
2	25se	Solway Firth @ NMMP site 25	IrishSea	BalcaryPoint	SF	FRS	Coast	1993	
3	35se	N Ailsa Craig	Clyde	FirthCOuterOffshore	FI	FRS	Coast	1993	
4	45se	CMT5, Nth of Cumbrae	Clyde	FirthCInnerCumbraes	FI	SEPA	Coast	1993	2007
5	55se	CMT7, off Cloch Point	Clyde	FirthCInnerDunoon	SF	SEPA	Coast	1993	
6	65se	Port Glasgow	Clyde	ClydeEstuaryOuter	FI	SEPA	Estuary	1993	
7	70se	Irvine Bay	Clyde	IrvineBay	FI	SEPA	Coast	1993	2007
8	75se	Erskine	Clyde	ClydeEstuaryInner	FI	SEPA	Estuary	1993	
9	76se	Loch Linnhe (South)	MinchMalin	LochLinnheS	FI	SEPA	Estuary	1993	2005
10	85se	North Minch - NMMP site	MinchMalin	TheMinchNorth	FI	FRS	Coast	1999	2008
11	95se	Inner Moray Firth - NMMP site	MorayF	WhitenessHead	FI	FRS	Coast	1999	2008
12	105se	Outer Moray Firth - NMMP site	MorayF	MoFOpenSea	FI	FRS	Open Sea	1999	2008
13	115se	Broughty Castle	EScotland	LowerTayEstuary	FI	SEPA	Estuary	1993	1993
14	135se	Flisk	EScotland	UpperTayEstuary	FI	SEPA	Estuary	1993	1993
15	145se	Balmerino	EScotland	UpperTayEstuary	FI	SEPA	Estuary	1993	1993
16	155se	Tay to Montrose - NMMP site	EScotland	EScIntermediate	FI	FRS	Open Sea	1999	
17	165se	Montrose Bank	EScotland	EScOpenSea	FI	FRS	Open Sea	1999	2008
18	175se	Kingston Hudds	Forth	FirthFInnerOffshore	SF	SEPA	Coast	1989	
19	176se	Cromarty Firth	MorayF	OuterCromartyFirth	SF	SEPA	Estuary	2003	
20	205se	Forth (RA)	Forth	MiddleForthEstuary	SF	SEPA	Estuary	1985	
21	208se	Forth (KC)	Forth	LowerForthEstuary	FI	SEPA	Estuary	1985	
22	210se	Tweed	TyneTees	Tweed	FI	EA NE	Estuary	1999	
23	215se	Scotswood Bridge	TyneTees	Tyne	FI	EA NE	Estuary	1994	1998
24	220se	Northumberland Coast 1	TyneTees	HolyBudl	FI	EA NE	Coast	1999	2001
25	221se	Northumberland Coast 2	TyneTees	HolyBudl	FI	EA NE	Coast	2001	
26	225se	Tyne (Hebburn)	TyneTees	Tyne	FI	EA NE	Estuary	1994	
27	235se	Tyne (Ferry)	TyneTees	Tyne	FI	EA NE	Estuary	1994	
28	245se	Off Tyne	TyneTees	TTInter	FI	CEFAS	Open Sea	1993	
29	255se	South Hylton	TyneTees	Wear	FI	EA NE	Estuary	1992	1997
30	265se	Wear (Alexandra Bridge)	TyneTees	Wear	FI	EA NE	Estuary	1992	2003
31	266se	Wear (Low Southwick)	TyneTees	Wear	FI	EA NE	Estuary	2002	
32	270se	Durham Coast	TyneTees	TTInter	FI	EA NE	Open Sea	1999	
33	275se	Wear (Sandy Point) 1	TyneTees	Wear	FI	EA NE	Estuary	1994	2003
34	276se	Wear (Sandy Point) 2	TyneTees	Wear	FI	EA NE	Estuary	2003	
35	285se	Off Tyne/Teess	HumWash	HWOpenSeaNE	FI	CEFAS	Open Sea	1994	
36	295se	Off Tees	TyneTees	TTInter	FI	CEFAS	Open Sea	1993	
37	305se	Teess (Billingham)	TyneTees	Teess	FI	EA NE	Estuary	1994	
38	315se	Teess (Seal Sands Industry)	TyneTees	Teess	FI	EA NE	Estuary	1994	
39	325se	Teess mouth	TyneTees	Teess	FI	EA NE	Estuary	1994	
40	335se	Spurn Head	HumWash	SYorkLinc	FI	EA NE	Coast	1992	1994
41	345se	Off Humber / Wash	HumWash	HWOpenSeaS	FI	CEFAS	Open Sea	1994	
42	355se	Humber (Old site)	HumWash	Humber	FI	EAAng	Estuary	1992	1994
43	356se	Humber (Inside Spurn Head)	HumWash	Humber	FI	EAAng	Estuary	1999	
44	357se	Humber (Grimsby Road)	HumWash	Humber	FI	EAAng	Estuary	1999	
45	358se	Humber (Sunk Island)	HumWash	Humber	FI	EAAng	Estuary	1999	
46	365se	North Killingholme	HumWash	SYorkLinc	FI	EAAng	Coast	1992	1994
47	376se	Humber	HumWash	HWInter	FI	CEFAS	Open Sea	1993	
48	386se	Wash	HumWash	Owash	FI	CEFAS	Coast	2000	
49	388se	Wash (Off Boston)	HumWash	Owash	FI	EAAng	Coast	1999	
50	389se	Wash (Cork Hole)	HumWash	Owash	FI	EAAng	Coast	1999	2001
51	390se	Blackwater	Anglia	Oblackwat	FI	EAAng	Coast	1999	
52	391se	Wash (Off Kings Lynn)	HumWash	Owash	FI	EAAng	Coast	2002	
53	395se	Southern Bight	Anglia	AnOpenSea	FI	CEFAS	Open Sea	1994	1994
54	415se	415se	HumWash	GtOuse	FI	EAAng	Estuary	1994	1995



Table 1. TU CSEMP No. Index.

TU CSEMP No.	Old Station Code	New Station Name	Region Code	Stratum Code	Sampling Strategy	CMA	ICES Station Type	Minimum Year	Maximum Year
55	425se	425se	HumWash	GtOuse	FI	EAAng	Estuary	1994	1995
56	435se	Thames (Woolwich)	Anglia	ThameEst	FI	EATha	Estuary	1994	
57	445se	West Thurrock	Anglia	ThameEst	FI	EATha	Estuary	1994	1997
58	455se	Thames (Mucking)	Anglia	ThameEst	FI	EATha	Estuary	1994	
59	465se	Thames (Warp)	Anglia	Essex	FI	CEFAS	Coast	1996	1996
60	466se	Thames 1	Anglia	Nkent	FI	CEFAS	Coast	2000	
61	475se	Thames (Gabbard)	Anglia	AnOpenSea	FI	CEFAS	Open Sea	1993	
62	484se	Channel	EastChan	ECInterE	FI	CEFAS	Open Sea	2001	
63	485se	South Varne (old)	EastChan	ECInterE	FI	CEFAS	Open Sea	1994	1994
64	495se	Selsey Bill	EastChan	ECInterW	FI	CEFAS	Open Sea	1994	1994
65	505se	Southampton Water	EastChan	SouthanWa	FI	EASou	Estuary	1992	
66	515se	E Brambles Buoy	EastChan	Solent	FI	EASou	Coast	1992	1999
67	525se	Hook Buoy	EastChan	Solent	FI	EASou	Coast	1992	1999
68	526se	Medway (Burham)	Anglia	Medway	FI	EASou	Estuary	1999	
69	527se	Medway (Sun Pier)	Anglia	Medway	FI	EASou	Estuary	1999	
70	535se	Central Channe	EastChan	ECOpenSeaW	FI	CEFAS	Open Sea	1993	1995
71	536se	Lyme Bay	EastChan	ECInterW	FI	CEFAS	Open Sea	1997	
72	545se	Tamar (Warren Point)	WestChan	PlymSo	FI	EA SW	Estuary	1990	1993
73	555se	Tamar (Warren Point)	WestChan	PlymSo	FI	EA SW	Estuary	1990	
74	565se	Tamar (Hamoaze)	WestChan	PlymSo	FI	EA SW	Estuary	1990	
75	566se	Poole Harbour (Upper South Deep	EastChan	PooleHar	FI	EA SW	Estuary	1999	
76	567se	Poole Harbour (Wytch)	EastChan	PooleHar	FI	EA SW	Estuary	1999	
77	575se	Off Tamar 1	WestChan	Plymco	FI	CEFAS	Coast	1994	2008
78	576se	Off Tamar 2	WestChan	PlymSo	FI	EA SW	Estuary	1999	
79	585se	Off Plymouth Sound	WestChan	WCInter	FI	CEFAS	Open Sea	1994	1994
80	595se	Western Approaches	WestChan	WCOpenSea	FI	CEFAS	Open Sea	1994	1994
81	605se	Celtic Deep	Severn	SeOpenSeaW	FI	CEFAS	Open Sea	1993	
82	615se	Severn	Severn	OBrishChanN	FI	CEFAS	Coast	1994	1995
83	625se	Severn (Purton)	Severn	Severn	FI	EAWal	Estuary	1994	
84	635se	Severn (Bedwin)	Severn	Severn	FI	EAWal	Estuary	1994	
85	645se	Severn (Peterstone)	Severn	Severn	FI	EAWal	Estuary	1994	
86	646se	Milford Haver	Severn	MilfordHav	FI	EAWal	Estuary	1999	
87	647se	Dovey	CardBay	Dyfleri	FI	EAWal	Estuary	1999	
88	648se	Mawddach	CardBay	Mawddac	FI	EAWal	Estuary	1999	
89	655se	Cardigan Bay	CardBay	CBInter	FI	CEFAS	Open Sea	1993	
90	665se	Off Cardigan Bay	CardBay	CBOpenSea	FI	CEFAS	Open Sea	1993	
91	675se	Hawarden Bridge	IrishSea	DeeNWales	FI	EAWal	Estuary	1995	1998
92	685se	U/S Flint	IrishSea	DeeNWales	FI	EAWal	Estuary	1995	1998
93	690se	Dee	IrishSea	DeeNWales	FI	EAWal	Estuary	1999	
94	695se	Buoy No2	IrishSea	DeeNWales	FI	EAWal	Estuary	1995	1998
95	705se	Liverpool Bay (Burbo Light	IrishSea	LiverpoolBay	FI	CEFAS	Coast	1993	1996
96	715se	Liverpool Bay	IrishSea	IrSIntermediateE	FI	CEFAS	Open Sea	1993	
97	745se	745se	IrishSea	Mersey	FI	EA NW	Estuary	1994	1995
98	755se	Mersey (Seacombe Ferry	IrishSea	Mersey	FI	EA NW	Estuary	1994	2008
99	756se	Mersey (Gladstone	IrishSea	Mersey	FI	EA NW	Estuary	2005	
100	765se	Mersey Channe	IrishSea	LiverpoolBay	FI	EA NW	Coast	1994	
101	766se	Ribble	IrishSea	Ribble	FI	EA NW	Estuary	1999	2006
102	767se	Morecombe Bay	IrishSea	MorecambeBay	FI	EA NW	Coast	1999	2006
103	768se	Cumbria Coast	IrishSea	Cumbria	FI	EA NW	Coast	1999	
104	769se	Ribble	IrishSea	Ribble	FI	EA NW	Estuary	2007	
105	775se	Irish Sea CEFAS	IrishSea	IrSIntermediateE	FI	CEFAS	Open Sea	1993	1993
106	785se	Off Lune / Wyre	IrishSea	MorecambeBay	FI	CEFAS	Coast	1993	1994
107	795se	Off Morecambe Bay	IrishSea	IrSIntermediateE	FI	CEFAS	Open Sea	1993	1994
108	805se	SE Isle of Man	IrishSea	IrSOpenSea	FI	CEFAS	Open Sea	1993	

Table 1. TU CSEMP No. Index.

TU CSEMP No.	Old Station Code	New Station Name	Region Code	Stratum Code	Sampling Strategy	CMA	ICES Station Type	Minimum Year	Maximum Year
109	806se	Irish Sea NMP4	IrishSea	IrSGyreIntermed	FI	AFBI	Open Sea	1998	
110	807se	Irish Sea AFBI	IrishSea	IrSGyreOpenSea	FI	AFBI	Open Sea	1998	
111	808se	Irish Sea Buoy	IrishSea	SISOpenSea	FI	AFBI	Open Sea	1998	
112	809se	Strangford Lough	IrishSea	StrangfordLoughS	FI	AFBI	Coast	1998	
113	815se	Dundrum Bay AFBI	IrishSea	IrSGyreIntermed	FI	AFBI	Open Sea	1993	
114	820se	Bann Estuary	MinchMalin	BannEstuary	FI	EHS	Estuary	1993	
115	825se	Belfast Lough Outer	IrishSea	BelfastLoughOutr	FI	EHS	Coast	1993	
116	835se	Belfast Lough Inner	IrishSea	BelfastLoughInnr	FI	EHS	Coast	1993	
117	845se	Belfast Lough	IrishSea	BelfastLoughInnr	FI	EHS	Coast	1993	
118	855se	Belfast Lough Inter	IrishSea	BelfastLoughOutr	FI	EHS	Coast	1993	
119	865se	North Channe	IrishSea	IrSIntermediateW	FI	AFBI	Open Sea	1993	
120	875se	North Antrim Coast	MinchMalin	MMSIntermediate	FI	AFBI	Open Sea	1993	
121	880se	Lough Foyle	MinchMalin	FoyleFaughanE	FI	EHS	Estuary	1993	
122		Skelmorlie	Clyde	FirthCInnerCumbraes	FI	FRS	Coast	1999	
123		East of Strone Point	Clyde	FirthCInnerDunoon	SF	SEPA	Coast	2006	
124		Lunderston Bay	Clyde	FirthCInnerDunoon	SF	SEPA	Coast	2006	
125		Weymss Point	Clyde	FirthCInnerDunoon	SF	SEPA	Coast	2006	
126		E of Toward (UIFM 2)	Clyde	FirthCInnerDunoon	SF	SEPA	Coast	2006	
127		Holy Loch	Clyde	FirthCInnerDunoon	FI	FRS	Coast	1999	
128		FOC @ East of Brodick, mid channel	Clyde	FirthCMiddleOffsho	SF	SEPA	Coast	1993	
129		Firth of Clyde Middle Offshore Sout	Clyde	FirthCMiddleOffsho	SF	SEPA	Coast	2006	
130		Firth of Clyde Middle Offshore	Clyde	FirthCMiddleOffsho	SF	SEPA	Coast	2006	
131		FOC @ 5km SW of Lady Isle	Clyde	FirthCMiddleOffsho	SF	SEPA	Coast	2006	
132		FOC @ 7km off Whiting Bay	Clyde	FirthCMiddleOffsho	SF	SEPA	Coast	2006	
133		Garroch Head	Clyde	FirthCMiddleOffsho	FI	FRS	Coast	1992	
134		SE of Ailsa Craig	Clyde	FirthCOuterOffshore	SF	SEPA	Coast	2006	
135		SW Ailsa Craig	Clyde	FirthCOuterOffshore	SF	SEPA	Coast	2006	
136		E of Johnston's Point	Clyde	FirthCOuterOffshore	SF	SEPA	Coast	2006	
137		NE of Ailsa Craig	Clyde	FirthCOuterOffshore	SF	SEPA	Coast	2006	
138		Irvine Bay	Clyde	IrvineBay	FI	FRS	Coast	2000	
139		Hunterston	Clyde	LargsChanne	FI	FRS	Coast	1999	
140		Pladda	Clyde	SouthArran	FI	FRS	Coast	1992	
141		St. Andrews	EScotland	CarnoustieFifeN	FI	FRS	Coast	2003	
142		Tay to Montrose - Intermediate	EScotland	ESIntermediate	FI	FRS	Open Sea	1999	
143		Tay to Montrose - Scurdieness Ness to Deils Hea	EScotland	Scurdieness	SR	FRS	Coast	1999	
144		Tay to Montrose - Deils Head to Carnousti	EScotland	TheDeilsHeac	SR	FRS	Coast	1999	
145		East Shetland	EShetland	ESIntermediate	FI	FRS	Open Sea	1999	
146		Fladen NW	Fladen	FlaOpenSea	FI	FRS	Open Sea	1999	
147		Fladen NE	Fladen	FlaOpenSea	FI	FRS	Open Sea	1999	
148		Fladen SW	Fladen	FlaOpenSea	FI	FRS	Open Sea	1999	
149		Fladen SE	Fladen	FlaOpenSea	FI	FRS	Open Sea	1999	
150		Fairway Buoy	Forth	FirthFInnerOffshore	SF	SEPA	Coast	2007	
151		Firth of Forth 49	Forth	FirthFInnerOffshore	SF	SEPA	Coast	2006	
152		Firth of Forth 38	Forth	FirthFInnerOffshore	SF	SEPA	Coast	2007	
153		Firth of Forth 33	Forth	FirthFInnerOffshore	SF	SEPA	Coast	2006	
154		Tancred	Forth	LowerForthEstuary	FI	FRS	Estuary	2004	
155		FEEAP Station 2 Bel 54	Forth	MiddleForthEstuary	SF	SEPA	Estuary	2001	
156		FEEAP Station S4 Bel 25	Forth	MiddleForthEstuary	SF	SEPA	Estuary	2001	
157		FEEAP Station S5 SEPA 23	Forth	MiddleForthEstuary	SF	SEPA	Estuary	2001	
158		Outer Humber	HumWash	HWInter	FI	CEFAS	Open Sea	1998	
159		Solway Firth 1	IrishSea	BalcaryPoint	SF	SEPA	Coast	2006	
160		Solway Firth 3	IrishSea	BalcaryPoint	SF	SEPA	Coast	2006	
161		Solway Firth 4	IrishSea	BalcaryPoint	SF	SEPA	Coast	2006	
162		Solway Firth 7	IrishSea	BalcaryPoint	SF	SEPA	Coast	2006	

Table 1. TU CSEMP No. Index.

TU CSEMP No.	Old Station Code	New Station Name	Region Code	Stratum Code	Sampling Strategy	CMA	ICES Station Type	Minimum Year	Maximum Year
163		BL7	IrishSea	BelfastLoughInn	FI	EHS	Coast	2005	
164		Colonsay	MinchMalin	Colonsay	FI	FRS	Coast	1999	
165		Broad Bay	MinchMalin	MeallGea	FI	FRS	Coast	1999	
166		Sea of the Hebrides	MinchMalin	SeaOfHebrides	SR	FRS	Coast	1999	
167		East of the Small Isles	MinchMalin	SndJura200029	SF	SEPA	Coast	2006	
168		East of BroSDale Islanc	MinchMalin	SndJura200029	SF	SEPA	Coast	2006	
169		East of Claggain Bay	MinchMalin	SndJura200029	SF	SEPA	Coast	2006	
170		West of Glenacardoch Point	MinchMalin	SndJura200029	SF	SEPA	Coast	2006	
171		West of Bellochantuy Bay	MinchMalin	SndJura200029	SF	SEPA	Coast	2006	
172		North Minch	MinchMalin	TheMinchNorth	SR	FRS	Coast	1999	
173		South Minch	MinchMalin	TheMinchSouth	SR	FRS	Coast	1999	
174		Southern Moray Firth	MorayF	MoFIntermediateS	SR	FRS	Open Sea	1999	
175		Inner Moray Firth	MorayF	MorayFirthOffshoi	SR	FRS	Coast	1999	
176		Cromarty Firth @ dispersed 1	MorayF	OuterCromartyFirth	SF	SEPA	Estuary	2006	
177		Cromarty Firth @ dispersed 2	MorayF	OuterCromartyFirth	SF	SEPA	Estuary	2006	
178		Cromarty Firth @ dispersed 3	MorayF	OuterCromartyFirth	SF	SEPA	Estuary	2006	
179		Cromarty Firth @ dispersed 4	MorayF	OuterCromartyFirth	SF	SEPA	Estuary	2006	
180		West Shetland - Burra Haaf	WShetland	WShIntermediate	FI	FRS	Open Sea	1999	

Table 2. Sampling Strategies.

Competent Monitoring Authority (CMA)	Sampling Year and Strategies									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Agriculture Food & Biosciences Institute (AFBI), Northern Ireland	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Centre for Environment, Fisheries and Aquaculture Science (CEFAS)	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Environment Agency (EA), England	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Environment Agency (EA), Wales	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Marine Science Scotland (MSS; formerly FRS)	FI	FI	FI	FI	FI	FI	FI	SR	SR	SR
Northern Ireland Environment Agency (NIEA; formerly EHS & IRTU)	FI	FI	FI	FI	FI	FI	FI	FI	FI	FI
Scottish Environmental Protection Agency (SEPA)	FI	FI	FI	FI	FI	FI	FI	SF	SF	SF

**Key:**

FI = Fixed

FS = Stratified Fixed

SR = Stratified Random

Table 4. 1999 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SW	55	5	1999	CMT7 99.1; Cloch Point; Day Grab; Shelly mud, 80m, rich fauna; 1mm sieve mesh	93.13	
SEPA SW	70	7	1999	IBH 99.1; Irvine Bay; Day Grab; Mud, 40m, moderate fauna; 1mm sieve mesh	94.57	
SEPA SW	76	9	1999	Linnhe 99.1; Lismore Deep; Day Grab; Deep mud, 100m, highly impoverished fauna; 1mm sieve mesh	90.32	
SEPA SE	175	18	1999	KH 5; Firth of Forth; Van Veen Grab; Shelly mud + sand; 1mm sieve mesh	94.48	
SEPA SE	175	18	1999	KH 1; Firth of Forth; Van Veen Grab; Shelly mud + sand; 1mm sieve mesh	95.65	
SEPA SE	205	20	1999	RA 3; Lower Forth Estuary; Van Veen Grab; Muddy sand; 1mm sieve mesh	89.29	RA?
EA NE	235	27	1999	1 x Ferry Crossing, Tyne; 17 March 1999; Smooth mud; 0.5 & 1mm sieve mesh	99.23	
EA NE	270	32	1999	1 x Seaham, Offshore; 17 March 1999; Sandy; ??mm sieve mesh	90.38	
EA NE	325	39	1999	1 x Philips Approach Buoy, Tees; 24 March 1999; Sandy mud; ??mm sieve mesh	98.13	
EA Thames	435	56	1999	WW3/99,4/1MM; Woolwich; Day Grab; Mud; 1mm sieve mesh	97.56	
EA Thames	455	58	1999	MK3/99,3/1MM; Mucking; Day Grab; Mud; 1mm sieve mesh	98.7	
EA Thames	455	58	1999	MK3/99,2/500; Mucking; Day Grab; Mud; 0.5mm sieve mesh	97.27	
EA S	515	66	1999	EB 1:1 99; Smp C; East Brambles; Day Grab?; Sieve mesh?	87.15	RA?
EA S	526	68	1999	BUR 99; Smp 3; Burham, Medway; Day Grab?; Sieve mesh?	98.56	
EA S	527	69	1999	SP99; Smp 3; Sun Pier, Medway; Day Grab?; Sieve mesh?	98.24	
CEFAS	605	81	1999	Cirolana 3a/99; 103C; NMMP605 Celtic Deep; Soft mud; PLEASE SPECIFY SIEVE MESH.	89.52	RA?
CEFAS	815	113	1999	Cirolana 3a/99; 120D; NMMP815 Dundrum Bay; Soft mud; PLEASE SPECIFY SIEVE MESH.	70.87	RA?

Table 4. 1999 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SW	55	5	1999	CMT7 99.1; Cloch Point; Day Grab; Shelly mud, 80m, rich fauna; 1mm sieve mesh	93.13	
SEPA SW	70	7	1999	IBH 99.1; Irvine Bay; Day Grab; Mud, 40m, moderate fauna; 1mm sieve mesh	94.57	
SEPA SW	76	9	1999	Linnhe 99.1; Lismore Deep; Day Grab; Deep mud, 100m, highly impoverished fauna; 1mm sieve mesh	90.32	
SEPA SE	175	18	1999	KH 5; Firth of Forth; Van Veen Grab; Shelly mud + sand; 1mm sieve mesh	94.48	
SEPA SE	175	18	1999	KH 1; Firth of Forth; Van Veen Grab; Shelly mud + sand; 1mm sieve mesh	95.65	
SEPA SE	205	20	1999	RA 3; Lower Forth Estuary; Van Veen Grab; Muddy sand; 1mm sieve mesh	89.29	RA?
EA NE	235	27	1999	1 x Ferry Crossing, Tyne; 17 March 1999; Smooth mud; 0.5 & 1mm sieve mesh	99.23	
EA NE	270	32	1999	1 x Seaham, Offshore; 17 March 1999; Sandy; ??mm sieve mesh	90.38	
EA NE	325	39	1999	1 x Philips Approach Buoy, Tees; 24 March 1999; Sandy mud; ??mm sieve mesh	98.13	
EA Thames	435	56	1999	WW3/99,4/1MM; Woolwich; Day Grab; Mud; 1mm sieve mesh	97.56	
EA Thames	455	58	1999	MK3/99,3/1MM; Mucking; Day Grab; Mud; 1mm sieve mesh	98.7	
EA Thames	455	58	1999	MK3/99,2/500; Mucking; Day Grab; Mud; 0.5mm sieve mesh	97.27	
EA S	515	66	1999	EB 1:1 99; Smp C; East Brambles; Day Grab?; Sieve mesh?	87.15	RA?
EA S	526	68	1999	BUR 99; Smp 3; Burham, Medway; Day Grab?; Sieve mesh?	98.56	
EA S	527	69	1999	SP99; Smp 3; Sun Pier, Medway; Day Grab?; Sieve mesh?	98.24	
CEFAS	605	81	1999	Cirolana 3a/99; 103C; NMMP605 Celtic Deep; Soft mud; mesh size not specified	89.52	RA?
CEFAS	815	113	1999	Cirolana 3a/99; 120D; NMMP815 Dundrum Bay; Soft mud; mesh size not specified	70.87	RA?

Table 5. 2000 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SW	45	4	2000	Grab 1, CMT5 Cumbræ, NMP 2000; Day grab; mud/moderate fauna; 1mm sieve mesh.	94.12	
SEPA SW	70	7	2000	Grab 1, Stn. H Irvine Bay, NMP 2000; Day grab; Mud/rich fauna; 1mm sieve mesh.	90.39	
SEPA SW	76	9	2000	Grab 1, Loch Linnhe Deep, NMP 2000; Day grab; soft mud/very impoverished; 1mm sieve mesh.	96.67	
SEPA SE	175	18	2000	Rep. 5 KH, NMMP 2000, Van Veen, 1mm sieve mesh, shell / muddy sand.RA	97.43	
SEPA SE	175	18	2000	Rep. 2 KH, NMMP 2000, Van Veen, 1mm sieve mesh, shell / muddy sand.RA	96.68	
SEPA SE	175	18	2000	KH3; Firth of Forth; Van Veen; Shell, muddy sand; 1mm sieve mesh.	95.43	
SEPA SE	205	20	2000	RA5; Lower Forth Estuary; Van Veen; Muddy sand; 1mm sieve mesh.	92.82	
SEPA SE	205	20	2000	RA1 ; Lower Forth Estuary; Van Veen; Muddy sand; 1mm sieve mesh.	76.92	RA?
SEPA SE	208	21	2000	Rep. 2 KC, NMMP 2000, Van Veen, 1mm sieve mesh, muddy sand.RA	92.68	
EA NE	220	24	2000	NC0400MB, 220.1; Northumberland SAC, Budle Bay; Core; 1mm sieve mesh; Est. I-tidal mud.	95.24	
EA NE	225	26	2000	TY0300MB, 225.3; Hebburn; Day grab; 1mm sieve mesh; Estuarine subtidal mud.	99.55	
EA NE	235	27	2000	TY0300MB, 235.1; Ferry crossing; Day grab; 0.5mm sieve mesh; Estuarine subtidal mud.	93.98	
EA Thames	435	56	2000	External audit - Thames woolwich B NMMP 2000	97.4	
EA Thames	435	56	2000	External audit - Thames woolwich D NMMP 2000	94.12	
EA Thames	455	58	2000	External audit - Thames mucking E NMMP 2000	98.08	
EA S	505	65	2000	Rep. E, DOC00; Dockhead, Southampton Water; Day Grab; 0.5mm sieve mesh.	95.9	
EA S	527	69	2000	Rep. E, SUNP00; Sun Pier, Medway; Day Grab; 0.5mm sieve mesh.	91.22	
EA S	527	69	2000	Rep. A, SUNP00; Sun Pier, Medway; Day Grab; 0.5mm sieve mesh.	92.57	
EA SW	565	74	2000	1 x Tamar 2000 NMMP; Hamoaze Rep. B; 1mm sieve mesh. - external audit	98.95	
EA SW	765	100	2000	ME0300MB, 765.1; Channel C1 Buoy; Day grab; 1mm sieve mesh; Estuarine subtidal mud.Donated OS to EA NE	98.99	
EA SW	767	102	2000	MO0300MB, 767.1; North Bay; Day grab; 0.5mm sieve mesh; Estuarine subtidal mud.Donated OS to EA NE	84.62	RA?
EA SW	768	103	2000	CU0300MB, 768.1; St. Bees; Day grab; 1mm sieve mesh; Estuarine subtidal mud.Donated OS to EA NE	91.09	

Table 6. 2001 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SW	45	4	2001	CMT5.2; NMMP2001 site 45; Day grab; 1.0mm sieve mesh; clayey mud.	96.43	
SEPA SW	55	5	2001	CMT7.2; NMMP2001 site 55; Day grab; 1.0mm sieve mesh; shelly mud.	94.27	
SEPA SW	76	9	2001	Lismore.2; NMMP2001 site 76-Loch Linnhe; Day grab; 1.0mm sieve mesh; very soft mud.	96.77	
SEPA SE	175	18	2001	Rep.3; NMMP2001; 175 - Kingston Hudds (KH); Van Veen; 1.0mm sieve mesh; sandy.	96.91	
SEPA SE	208	21	2001	Rep.3; NMMP2001; 208 - Kincardine (KC); Van Veen; 0.5mm sieve mesh; sand+shell overlying fine mud.	93.74	
EA NE	225	26	2001	Rep.B; NMMP2001 225 - Hebburn; Day grab; mud; >0.5mm sieve mesh.	96.69	
EA NE	235	27	2001	Rep.B; NMMP2001 235 - Ferry Crossing; Day grab; mud; >0.5mm sieve mesh.	99.07	
EA NE	275	33	2001	Rep.B; NMMP2001 275 - Sandy Pt.; Day grab; mud; >0.5mm sieve mesh.	98.14	
EA Ang	356	43	2001	Rep.C 356; Inside Spurn; NMMP2001; Day grab; >0.5mm sieve mesh; soft mud.	97.52	
EA Ang	357	44	2001	Rep.C 357; Grimsby Roads; NMMP2001; Day grab; >0.5mm sieve mesh; mud.	99.43	
EA Ang	358	45	2001	Rep.C 358; Sunk Island; NMMP2001; Day grab; >0.5mm sieve mesh; fine sand with mud.	92.86	
EA Thames	435	56	2001	Rep. 3 WW, NMMP 2001, Day Grab, 0.5-1mm sieve mesh	96.94	
EA Thames	455	58	2001	Rep. 3 MK, NMMP 2001, Day Grab, 1mm sieve mesh	98.84	
EA Thames	455	58	2001	Rep. 1 MK, NMMP 2001, Day Grab, 0.5-1mm sieve mesh	95.4	
EA S	505	65	2001	Dock Head Rep.C; NMMP2001 site 505; Day grab; >0.5mm sieve mesh; gravel/sand/mud.	86.15	RA - pass
EA S	526	68	2001	Burham Rep.C; NMMP2001 site 526; Core; >0.5mm sieve mesh; estuarine mud.	98.43	
EA S	527	69	2001	Sun Pier Rep.C; NMMP2001 site 527; Day grab; >0.5mm sieve mesh; estuarine mud.	96.78	
CEFAS	536	71	2001	536 Rep.E; NMMP2001; Day grab; Lyme Bay; 1.0mm sieve mesh; muddy sand.	99.61	
CEFAS	536	71	2001	536 Rep.C; NMMP2001; Day grab; Lyme Bay; 1.0mm sieve mesh; muddy sand.	98.56	
EA SW	555	73	2001	555 Rep.5; NMMP2001; Warren Point; Day grab; 0.5mm sieve mesh.	98.67	
EA SW	565	74	2001	565 Rep.3; NMMP2001; Hamoaze; Day grab; 0.5mm sieve mesh.	99.24	
EA SW	566	75	2001	566 Rep.2; NMMP2001; Upper South Deep; Core; 0.5mm sieve mesh.	99.37	
CEFAS	605	81	2001	605 Rep.A; NMMP2001; Celtic Deep; Day grab; 1.0mm sieve mesh; muddy sand.	72.58	RA - pass
EA Cardiff	635	84	2001	Rep.E; NMMP2001 635 - Bedwin; Day Grab; >0.5mm sieve mesh.	98.06	
EA Cardiff	645	85	2001	Rep.E; NMMP2001 645 - Peterstone; Day Grab; >0.5mm sieve mesh.	94.44	
EA Cardiff	646	86	2001	Rep.E; NMMP2001 646 - Cosheston Pt.; Day Grab; >0.5mm sieve mesh.	n/a	Sample not received
NIEA_EHS	825	115	2001	External Audit:IS1 B (2001 NMMP)	89.86	External Audit - RA - pass
NIEA_EHS	845	117	2001	External Audit:BL5 C (2001 NMMP)	96.74	External audit
NIEA_EHS	880	121	2001	External Audit:Kild A (2001 NMMP)	92.41	External audit
Contractor 1	245	28	2001	46E (8068WLN), NMMP 245 off Tyne, mesh size not specified, no biomass data supplied.	92.68	
Contractor 1	345	41	2001	4B (8070WLN), NMMP 345 off Humber, mesh size not specified, no biomass data supplied.	91.36	
Contractor 1	805	108	2001	63 (8049WLN), NMMP 805 Isle of Man, mesh size not specified, no biomass data supplied.	93.63	
AFBI_DARDNI	806	109	2001	EXT - NMMP 4, Rep.A	100	External audit
AFBI_DARDNI	865	119	2001	EXT - NMMP 2, Rep.A	90.36	External audit
AFBI_DARDNI	875	120	2001	EXT - NMMP 1, Rep.A	78.95	External Audit - RA-pass



Table 7. 2002 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
Contractor 2	25	2	2002	Macro 1, Scotland; 2002 NMMP25; Day Grab; 0.5 & 1mm sieve mesh.	99.35	
Contractor 2	35	3	2002	Macro 1, Scotland; 2002 NMMP35; Day Grab; 0.5 & 1mm sieve mesh.	95.65	
SEPA SW	55	5	2002	Rep 3, CMT 7, off Cloch Pt. - 2002 NMMP55; Day Grab; 1mm sieve mesh.	96.77	
SEPA SW	55	5	2002	Rep 3, CMT 7, off Cloch Pt. - 2002 NMMP55; Day Grab; 1mm sieve mesh.	83.74	RA?
SEPA SW	70	7	2002	Rep 1, Stn H, Irvine Bay - 2002 NMMP70; Day Grab; 1mm sieve mesh.	90.72	
SEPA SE	175	18	2002	Rep5; 2002 NMMP175; Kingston Hudds(KH); Van Veen; 1mm sieve mesh	97.35	
SEPA SE	175	18	2002	Rep1; 2002 NMMP175; Kingston Hudds(KH); Van Veen; 1mm sieve mesh	93.29	
SEPA SE	176	19	2002	Rep.4; NMMP2002; Trial Site - Cromarty Firth; Van Veen; 0.5mm sieve mesh; muddy sand	91.23	
SEPA SE	208	21	2002	Rep4; 2002 NMMP208; Kincardine(KC); Van Veen; 0.5mm sieve mesh.	94.12	
EA NE	210	22	2002	Rep B; NMMP2002 210; Yarrow Slake(Tweed 02); Core; 0.5mm sieve mesh.	96.68	
CEFAS	245	28	2002	Rep C, 2002 NMMP245, NSTF14; Day Grab; 1mm sieve mesh.	95.89	
EA NE	265	30	2002	Rep B; NMMP2002 265; Alexandra Bridge (Wenm02); Day grab; 0.5mm sieve mesh	92.27	
EA NE	315	38	2002	Rep A; NMMP2002 315; No 23 Buoy (Tenmp02); Day grab; 0.5mm sieve mesh.	77.38	RA?(transcription error- DH opinion)
CEFAS	345	41	2002	Rep C, 2002 NMMP345, NSTF53; Day Grab; 1mm sieve mesh.	95.82	
EA Ang	357	44	2002	RepC; 2002 NMMP357; Grimsby Roads; Day grab; 0.5mm sieve mesh	98.76	
EA Ang	358	45	2002	RepC; 2002 NMMP358; Sunk Island; Day grab; 0.5mm sieve mesh.	92.31	
EA Ang	388	49	2002	RepC; 2002 NMMP388; off Boston(WW19); Day grab; 1mm sieve mesh	99.5	
Contractor 3	389	52	2002	RepB; 2002 NMMP391; Cork Hole -W45B;0.5 & 1mm sieve mesh.	92.5	
EA Thames	435	56	2002	Rep 5; 2002 NMMP435; Woolwich, Thames; Day grab; 0.5 & 1mm sieve mesh	96.21	
EA Thames	435	56	2002	Rep 2; 2002 NMMP435; Woolwich, Thames; Day grab; 0.5 & 1mm sieve mesh	98.26	
EA Thames	455	58	2002	Rep 4; 2002 NMMP455; Mucking, Thames; Day grab; 0.5 & 1mm sieve.	98.72	
EA S	505	65	2002	RepA; NMMP2002 505; Dock Head; Day grab; 0.5mm sieve mesh.	95.23	
EA S	526	68	2002	RepA; NMMP2002 526; Burham; Core; 0.5mm sieve mesh.	96.92	
EA S	527	69	2002	RepA; NMMP2002 527; Sun Pier; Day grab; 0.5mm sieve mesh.	95.97	
EA SW	565	74	2002	External audit - Rep B; 2002NMMP 565; Hamoaze; Day grab; 0.5mm sieve mesh.	97.92	External audit
EA SW	566	75	2002	External audit - Rep D; 2002NMMP 566; Upper South Deep; Core; 0.5mm sieve mesh.	99.37	External audit
EA SW	576	78	2002	External audit - Rep C; 2002NMMP 576; Jennycliffe Bay; Day grab; 1mm sieve mesh	96.48	External audit
CEFAS	605	81	2002	Rep C, 2002 NMMP605, Celtic Deep; Day Grab; 1mm sieve mesh.	97.62	
EA Cardiff	625	83	2002	RepD; NMMP2002 625; Purton; Box core; 0.5mm sieve mesh.	89.55	RA?
EA Cardiff	647	87	2002	RepB; NMMP2002 647; Ynys-hir, Dovey; Hand core; 0.5mm sieve mesh	83.33	RA?
EA Cardiff	648	88	2002	RepE; NMMP2002 648; Bontddu; Box Core; 0.5mm sieve mesh.	73.75	RA?
AFBI DARDNI	807	110	2002	External audit - 2002 NMMP807; NMP5 Rep A; 1mm sieve mesh.	98.11	External audit
AFBI DARDNI	808	111	2002	External audit - 2002 NMMP808; NMP5 Rep A; 1mm sieve mesh	100	External audit
NIEA EHS	825	115	2002	External Audit:IS1 C (2002 NMMP)	99.54	External audit
NIEA EHS	845	117	2002	External Audit:BL5 C (2002 NMMP)	98.54	External audit
NIEA EHS	880	121	2002	External Audit:Kild C (2002 NMMP)	98.2	External audit

Table 8. 2003 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SW	45	4	2003	Rep.E, 2003_NMMP45; CMT5-N. of Cumbrae; Day grab; 1mm sieve; Clayey mud	100	
SEPA SW	55	5	2003	Rep.E, 2003_NMMP55; CMT7-off Cloch Pt.; Day grab; 1mm sieve; Shelly mud	96.42	
SEPA SW	76	9	2003	Rep.E, 2003_NMMP76; Loch Linnhe; Day grab; 1mm sieve; Very soft mud	94.55	
Marine Scotland_FRS	85	10	2003	Smp 85 D1, 2003NMMP; Day Grab; >1mm sieve mesh.	(99.19)	Samples not received; These samples have subsequently been audited as extra own samples for audit (via Contractor 2). The results will be stated in the year 13 annual report in the remedial action section.
Marine Scotland_FRS	95	11	2003	Smp 95 A1, 2003NMMP; Day Grab; >1mm sieve mesh.	(98.70)	Samples not received; These samples have subsequently been audited as extra own samples for audit (via Contractor 2). The results will be stated in the year 13 annual report in the remedial action section.
Marine Scotland_FRS	105	12	2003	Smp 105 D1, 2003NMMP; Day Grab; >1mm sieve mesh.	(98.67)	Samples not received; These samples have subsequently been audited as extra own samples for audit (via Contractor 2). The results will be stated in the year 13 annual report in the remedial action section.
SEPA SE	175	18	2003	Rep C, 2003_NMMP175; Kingston Hudds (KH); Van Veen; 0.5 & 1mm sieve mesh	91.48	
SEPA SE	176	19	2003	Rep C, 2003_NMMP trial site; Cromarty Firth; Van Veen; 0.5 & 1mm sieve mesh	98.82	
SEPA SE	208	21	2003	Rep C, 2003_NMMP208; Kincardine (KC); Van Veen; 0.5 & 1mm sieve mesh	90.48	
EA NE	220	25	2003	Rep C; NMMP2003 221; Budle Bay;0.1m2 core;0.5mm sieve mesh	82.37	
CEFAS	245	28	2003	RepC; 2003_NMMP245; NSTF14, Off Tyne; Day Grab; Sandy mud; 1mm sieve mesh	100	
EA NE	270	32	2003	Rep C; NMMP2003 270; Off Seaham; Day grab; 1mm sieve mesh.	98.44	
EA NE	315	38	2003	Rep C; NMMP2003 315; No.23 Buoy; Day grab; 0.5mm sieve mesh	71.38	
CEFAS	345	41	2003	RepC; 2003_NMMP345; NSTF53, Off Humber; Day Grab; Muddy sand; 1mm sieve mesh	98.90	
EA Ang	356	43	2003	RepE, 2003_NMMP356; Inside Spurn Head; Day grab; 0.5mm sieve; Soft mud.	99.4	
EA Ang	358	45	2003	RepE, 2003_NMMP358; Sunk Island; Day grab; 0.5mm sieve; Fine mud + sand	100	
EA Ang	388	49	2003	RepE, 2003_NMMP388; WW19; Day grab; 1mm sieve; Soft sandy mud	99.02	
Contractor 4	390	51	2003	Rep5; NMMP2003 390; Blackwater; Day grab; 0.5 & 1mm sieve mesh	90.22	
Contractor 3	389	52	2003	Rep.C, 2003_NMMP391; Cork Hole - W45C;0.5&1mm sieve	95.58	
EA Thames	435	56	2003	Rep. 1, 2003_NMMP435; Woolwich, Thames; Day grab; 0.5mm sieve	98.62	
EA Thames	455	58	2003	Rep. 5, 2003_NMMP455; Mucking, Thames; Day grab; 0.5mm sieve	98	
EA Thames	455	58	2003	Rep. 1, 2003_NMMP455; Mucking, Thames; Day grab; 0.5mm sieve	98.78	
EA S	505	65	2003	External audit - Rep D, 2003_NMMP505; Dockhead; Day Grab; 0.5mm sieve mesh	98.62	External audit
EA S	526	68	2003	Rep B; NMMP2003 526; Burham; Core; 0.5 & 1mm sieve mesh	98.45	
EA S	527	69	2003	Rep B; NMMP2003 527; Sun Pier; Day grab; 0.5mm sieve mesh.	96.1	
CEFAS	536	71	2003	RepC; 2003_NMMP536; Lyme Bay; Day Grab; Slightly muddy sand; 1mm sieve mesh	98.52	
EA SW	565	74	2003	External audit - Rep C, Hamoaze, Tamar - 2003_NMMP565; Day Grab; 0.5mm sieve mesh	99.70	External audit
EA SW	567	76	2003	External audit - Rep E, Wytch, Poole - 2003_NMMP567; Core; 0.5mm sieve mesh	100	External audit
EA SW	576	78	2003	External audit - Rep A, Jennycliffe Bay, Tamar - 2003_NMMP576; Day Grab; 1mm sieve mesh	98.92	External audit
EA Cardiff	646	86	2003	Rep E; NMMP2003 646; Coshaston Pt.; Day grab; 1mm sieve mesh	100	
EA Cardiff	648	88	2003	Rep E; NMMP2003 648; Bontddu; Core; 0.5mm sieve mesh	91.96	
EA Cardiff	690	93	2003	Rep E; NMMP2003 690; Mostyn Bank; Day grab; 0.5mm sieve mesh	92.75	
AFBI_DARDNI	806	109	2003	External audit - NMP4 Rep A (32696) - 2003_NMMP806; 1mm sieve mesh.	100	External audit
NIEA_EHS	825	115	2003	External audit - 2003_NMMP825; IS1 Rep D; 0.5 & 1mm sieve mesh	97.85	External audit
NIEA_EHS	845	117	2003	External audit - 2003_NMMP845; BL5 Rep D; 0.5 & 1mm sieve mesh	99.6	External audit
AFBI_DARDNI	865	119	2003	External audit - NC2 NMP2 Rep B (32687) - 2003_NMMP865; 1mm sieve mesh.	100	External audit
AFBI_DARDNI	875	120	2003	External audit - NC1 NMP1 Rep E (32685) - 2003_NMMP875; 1mm sieve mesh.	96.30	External audit
NIEA_EHS	880	121	2003	External audit - 2003_NMMP880; Kild Rep C; 0.5 & 1mm sieve mesh	98.86	External audit

Table 9. 2004 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SW	45	4	2004	45 NMMP2004; CMT5; Rep. B; Day grab; 1mm sieve mesh; clayey mud.	96.97	
SEPA SW	55	5	2004	55 NMMP2004; CMT7; Rep. B; Day grab; 1mm sieve mesh; shelly mud.	85.11	RA completed
SEPA SW	70	7	2004	70 NMMP2004; St.H Irvine Bay; Rep. B; Day Grab; 1mm sieve mesh; soft mud.	90.72	
Contractor 2	95	11	2004	Rep A, Moray Firth, Intermediate - 2004 NMMP95; Day Grab; 0.5 & 1mm sieve mesh.	98.17	
Contractor 2	105	12	2004	Rep A, Moray Firth, Offshore - 2004 NMMP105; Day Grab; 0.5 & 1mm sieve mesh.	96.70	
Contractor 2	165	17	2004	Rep A, Forth/Tay, Offshore - 2004 NMMP165; Day Grab; 0.5 & 1mm sieve mesh.	99.01	0.5-1mm residue unpreserved; >1mm audit only
SEPA SE	175	18	2004	Rep C, Kingston Hudds (KH), Forth - 2004 NMMP175; Grab; 0.5 & 1mm sieve mesh.	97.97	RA Pass - ext id of Pholoe found in favour of PL change from 87.61 to 97.97 BCSI
SEPA SE	176	19	2004	Rep C, Cromarty Firth - 2004 NMMP176(?); Grab; 0.5 & 1mm sieve mesh.	97.55	
SEPA SE	208	21	2004	Rep C, Kincardine (KC), Forth - 2004 NMMP208; Grab; 0.5 & 1mm sieve mesh.	91.97	
EA NE	235	27	2004	Rep D, Ferry Crossing, Tyne - 2004 NMMP235; Day Grab; 0.5 & 1mm sieve mesh.	92.08	flags not applicable - no residue
EA NE	305	37	2004	Rep A, Bamlett's Bight, Tees - 2004 NMMP305; Day Grab; 0.5 & 1mm sieve mesh.	93.94	flags not applicable - no residue
EA NE	325	39	2004	Rep E, Phillips Buoy, Tees - 2004 NMMP325; Day Grab; 0.5 & 1mm sieve mesh.	86.17	flags not applicable - no residue
CEFAS	345	41	2004	Rep C, Off Humber - 2004 NMMP345; Day Grab; 1mm sieve mesh.	100	
EA Ang	356	43	2004	Rep B, Inside Spurn - 2004 NMMP356; Day Grab; 0.5mm sieve mesh.	99.73	
EA Ang	357	44	2004	Rep B, Grimsby Roads - 2004 NMMP357; Day Grab; 0.5mm sieve mesh.	99.77	
EA Ang	388	49	2004	Rep B, WW19 - 2004 NMMP388; Day Grab; 1mm sieve mesh.	98.52	
EA Thames	435	56	2004	435 NMMP2004; Woolwich; Rep. B; Day grab; 0.5-1mm and >1mm sieve fractions; fine mud/clay.	98	
EA Thames	435	56	2004	435 NMMP2004; Woolwich; Rep. A; Day grab; 0.5-1mm and >1mm sieve fractions; fine mud/clay.	99.12	
EA Thames	455	58	2004	455 NMMP2004; Mucking; Rep. B; Day grab; 0.5-1mm and >1mm sieve fractions; fine mud/clay.	99.14	
EA S	505	65	2004	Rep D, Dockhead - 2004 NMMP505; Day Grab; 0.5 & 1mm sieve mesh.	96.23	
EA S	505	65	2004	Rep B, Dockhead - 2004 NMMP505; Day Grab; 0.5 & 1mm sieve mesh.	93.61	
EA S	526	68	2004	Rep D, Burham - 2004 NMMP526; Core; 0.5 & 1mm sieve mesh.	99.68	
CEFAS	536	71	2004	Rep D, Lyme Bay - 2004 NMMP536; Day Grab; 1mm sieve mesh.	95.86	
EA SW	555	73	2004	Rep C, Warren Point, Tamar - 2004 NMMP555; Day Grab; 0.5-1 & 1mm sieve fractions - External OS audit.	99.69	External audit
EA SW	565	74	2004	Rep E, Hamoaze, Tamar - 2004 NMMP565; Day Grab; 0.5-1 & >1mm sieve fractions - External OS audit.	99.77	External audit
EA SW	566	75	2004	Rep B, Upper South Deep, Poole - 2004 NMMP566; Core; 0.5-1 & >1mm sieve fractions.	99.04	
CEFAS	605	81	2004	Rep E, Celtic Deep - 2004 NMMP605; Day Grab; 1mm sieve mesh.	98.85	
EA NW(Warrington)	755	98	2004	Rep E, Mersey - 2004 NMMP755; Day Grab; 0.5mm sieve mesh.	93.64	
EA NW(Warrington)	766	101	2004	Rep B, Ribble - 2004 NMMP766; Day Grab; 0.5 & 1.0 mm sieve mesh.	100	
EA NW(Warrington)	767	102	2004	Rep D, Morecambe Bay - 2004 NMMP767; Day Grab; 1mm sieve mesh.	87.5	RA?
AFBI_DARDNI	806	109	2004	Rep D, NMP4 - 2004 NMMP806; Day Grab; 1mm sieve mesh - external audit.	80	ext; RA PASS
AFBI_DARDNI	807	110	2004	Rep C, NMP5 - 2004 NMMP807; Day Grab; 1mm sieve mesh - external audit.	100	External audit
AFBI_DARDNI	815	113	2004	Rep E, NMP3 - 2004 NMMP815; Day Grab; 1mm sieve mesh - external audit.	100	External audit
NIEA_EHS	825	115	2004	External audit - IS1 Rep A - 2004 NMMP825; 0.5 & 1mm sieve mesh.	100	External audit
NIEA_EHS	845	117	2004	External audit - BL5 Rep D - 2004 NMMP845; 0.5 & 1mm sieve mesh.	99.46	External audit
NIEA_EHS	880	121	2004	External audit - KILD Rep E - 2004 NMMP880; 0.5 & 1mm sieve mesh.	97.33	External audit

Table 10. 2005 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SW	45	4	2005	Rep A, CMT5 - 2005 NMMP45; Day Grab; 1mm sieve mesh, clayey mud.	98.04	
SEPA SW	70	7	2005	Rep A, St. H Irvine Bay - 2005 NMMP70; Day Grab; 1mm sieve mesh, soft mud.	98.63	
SEPA SW	76	9	2005	Rep A, Loch Linnhe - 2005 NMMP76; Day Grab; 1mm sieve mesh, very soft mud.	88.89	RA completed 22/08/07
Marine Scotland_FRS	85	10	2005	Rep C, 2005NMMP_85; Day Grab; >1mm sieve mesh.	97.5	V. late reception
Marine Scotland_FRS	95	11	2005	Rep C, 2005NMMP_95; Day Grab; >1mm sieve mesh.	100	V. late reception
Marine Scotland_FRS	165	17	2005	Rep C, 2005NMMP_165; Day Grab; >1mm sieve mesh.	96.7	V. late reception
SEPA SE	175	18	2005	Rep D, Kingston Hudds (KH), Forth - 2005 NMMP175; Grab; 1mm sieve mesh.	96.9	received v. late
SEPA SE	176	19	2005	Rep D, Cromarty Firth - 2005 NMMP176; Grab; 0.5 & 1mm sieve mesh.	96.1	received v. late
SEPA SE	208	21	2005	Rep D, Kincardine (KC), Forth - 2005 NMMP208; Grab; 0.5 & 1mm sieve mesh.	98.6	received v. late
CEFAS	245	28	2005	Rep E, 2005 NMMP245; NSTF14; Day Grab; 1.0mm sieve mesh; sandy mud.	90.1	received v. late
EA Ang	357	44	2005	Rep A, Grimsby Roads - 2005 NMMP357; Day Grab; 0.5mm sieve mesh.	99.55	
EA Ang	358	45	2005	Rep A, Sunk Island - 2005 NMMP358; Day Grab; 0.5mm sieve mesh.	100.00	
EA Ang	388	49	2005	Rep A, Off Boston - 2005 NMMP388; Day Grab; 1mm sieve mesh.	97.07	
EA Thames	435	56	2005	Rep C, Woolwich, 2005NMMP_435; Day Grab; 0.5 & >1mm sieve mesh.	98.40	
EA Thames	455	58	2005	Rep C, Mucking, 2005NMMP_455; Day Grab; 0.5 & >1mm sieve mesh.	98.70	
EA Thames	455	58	2005	Rep B, Mucking, 2005NMMP_455; Day Grab; 0.5 & >1mm sieve mesh.	99.37	
EA S	505	65	2005	Rep B, Dockhead - 2005_NMMP505; Day Grab; 0.5 & >1mm sieve mesh.	deemed fail	Residue disposed; exclude from main stats; faunal audit completed privately
EA S	526	68	2005	Rep B, Burham - 2005_NMMP526; Core; 0.5 & >1mm sieve mesh.	deemed fail	Residue disposed/incomplete; exclude from main stats; faunal audit completed privately
EA S	527	69	2005	Rep B, Sun Pier - 2005_NMMP527; Day Grab; 0.5 & >1mm sieve mesh.	deemed fail	Residue disposed; exclude from main stats; faunal audit completed privately
EA SW	555	73	2005	Rep A, Warren Point, Tamar - 2005 NMMP555; Day Grab; 0.5-1 & >1mm sieve fractions.	97.18	
EA SW	565	74	2005	Rep A, Hamoaze, Tamar - 2005 NMMP565; Day Grab; 0.5-1 & >1mm sieve fractions.	96.88	
EA SW	567	76	2005	Rep A, Wytch, Poole - 2005 NMMP567; Core; 0.5-1 & >1mm sieve fractions.	98.57	
CEFAS	605	81	2005	Rep E, 2005 NMMP605; Celtic Deep; Day Grab; 1.0mm sieve mesh; muddy fine sand.	86	RA - pass (completed 4/3/08)
EA Cardiff	625	83	2005	Rep A, Purton - 2005 NMMP625; Hand Corer; 0.5mm sieve mesh; impoverished sand.	97.8	
EA Cardiff	635	84	2005	Rep A, Bedwin - 2005 NMMP635; Day Grab; 0.5mm sieve mesh; littoral muds.	97.3	
EA Cardiff	645	85	2005	Rep A, Peterstone - 2005 NMMP645; Day Grab; 0.5mm sieve mesh; sublittoral mud.	98.2	
Contractor 3	646	86	2005	Rep A, Milford Haven - 2005 NMMP646; Day Grab; 1mm sieve mesh.	96.61	
Contractor 3	647	87	2005	Rep A, Dovey - 2005 NMMP647; Hand Corer; 0.5mm sieve mesh.	90.20	
Contractor 3	648	88	2005	Rep A, Mawddach - 2005 NMMP648; Hand Corer; 0.5mm sieve mesh.	80	RA - PASS Completed 22/10/07
EA NW(Warrington)	765	100	2005	Rep C, Mersey, Channel C1 Buoy - 2005 NMMP765; Day Grab; 0.5 & 1mm sieve mesh.	99.5	
EA NW(Warrington)	767	102	2005	Rep C, Morcambe Bay, North Bay - 2005 NMMP767; Day Grab; 0.5mm sieve mesh.	100	
EA NW(Warrington)	768	103	2005	Rep C, Cumbria Coast, St. Bees - 2005 NMMP768; Day Grab; 1mm sieve mesh.	98.5	
CEFAS	805	108	2005	Rep E, 2005 NMMP805; SE IOM; Day Grab; 1.0mm sieve mesh; muddy fine sand.	90.1	received v. late
AFBI DARDNI	806	109	2005	Smp. NMP4A, 2005; Coastal NMMP; Day Grab; 1mm sieve mesh.	100	External audit
AFBI DARDNI	807	110	2005	Smp. NMP5D, 2005; Coastal NMMP; Day Grab; 1mm sieve mesh.	100	External audit
NIEA EHS	820	114	2005	Rep C, BR3, Bann Estuary - 2005 NMMP820; Day Grab; 0.5 & 1mm sieve mesh - external audit.	99.26	External audit
AFBI DARDNI	865	119	2005	Smp. NMP2A, 2005; Coastal NMMP; Day Grab; 1mm sieve mesh.	96.067	External audit
NIEA EHS	880	121	2005	Rep A, Kilderry, Lough Foyle - 2005 NMMP880; Day Grab; 0.5 & 1mm sieve mesh - external audit.	99.65	External audit
NIEA EHS	-	163	2005	Rep A, BL7 - 2005 Belfast Lough; Day Grab; 0.5 & 1mm sieve mesh - external audit.	99.91	External audit
Contractor 4	390	51	2005?	Rep I (A & B), Blackwater NMMP; Day Grab; 0.5 & 1.0mm sieve mesh.	98.59	
Contractor 4	576	78	2005?	Rep D, Jennycliffe, Tamar - NMMP576; Day Grab; 1.0mm sieve mesh.	98.94	
Contractor 4	576	78	2005?	Rep B, Jennycliffe, Tamar - NMMP576; Day Grab; 1.0mm sieve mesh.	97.93	

Table 11. 2006 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
SEPA SE	175	18	2006	Stn. 49, Firth of Forth Outer (KH) NMMP 2006; 1mm sieve mesh.	88.412	RA Pass (30/04/09)
SEPA SE	176	19	2006	Cromarty Firth NMMP 2006 - Rep. E; 0.5mm & 1mm sieve mesh	99.637	External audit
SEPA SE	208	21	2006	Rep C, Lower Forth Estuary (KC) NMMP 2006; 1mm sieve mesh	98.57	
EA NE	275	34	2006	Rep. C, Sandy Point; 2006_CSEMP276; Day Grab; 0.5mm mesh.	99.312	External audit
EA NE	315	38	2006	Rep. E, No.23 Buoy; 2006_CSEMP315; Day Grab; 0.5mm mesh.	99.671	External audit
EA NE	325	39	2006	Rep. A, Phillips Buoy; 2006_CSEMP325; Day Grab; 0.5mm mesh.	100	External audit
CEFAS	345	41	2006	Smp. D; 345_CSEMP2006; NSTF53; 1mm sieve mesh; Sandy mud.	96.575	received v. late
CEFAS	345	41	2006	Smp. A; 345_CSEMP2006; NSTF53; 1mm sieve mesh; Sandy mud.	98.592	received v. late
EA Ang	356	43	2006	Rep D, 2006_NMMP356; Inside Spurn; Day Grab; 0.5mm sieve mesh	98.908	
EA Ang	357	44	2006	Rep B, 2006_NMMP357; Grimsby Roads; Day Grab; 0.5mm sieve mesh	99.164	
EA Ang	358	45	2006	Rep C, 2006_NMMP358; Sunk Island; Day Grab; 0.5mm sieve mesh	100	
EA Thames	435	56	2006	Rep B, 2006NMMP_435; Woolwich; Day Grab; 0.5 & 1mm sieve mesh	96.13	
EA Thames	435	56	2006	Rep A, 2006NMMP_435; Woolwich; Day Grab; 0.5 & 1mm sieve mesh	87.84	RA - pass (completed 17/06/09)
EA Thames	455	58	2006	Rep C, 2006NMMP_455; Mucking; Day Grab; 0.5 & 1mm sieve mesh	98.88	
EA S	505	65	2006	Rep. A Dockhead_2006; CSEMP505; 0.5 & 1mm sieve mesh	93.615	
EA S	526	68	2006	Rep. A Burham_2006; CSEMP526; 0.5 & 1mm sieve mesh.	82.528	RA completed (via Contractor 3)17/08/09 - in-house review of oligochaete enumeration & manaer/parlit id mix up
EA S	527	69	2006	Rep. A Sunpier_2006; CSEMP 527; 0.5 & 1mm sieve mesh	91.756	
CEFAS	536	71	2006	Smp. C; 536_CSEMP2006; Lyme Bay; 1mm sieve mesh; Muddy sand	99.6	received v. late
EA SW	555	73	2006	Rep B, Warren Point - 2006_NMMP555; Day Grab; 0.5mm sieve mesh	98.729	External audit
EA SW	565	74	2006	Rep C, Hamoaze - 2006_NMMP565; Day Grab; 0.5mm sieve mesh	99.449	External audit
EA SW	566	75	2006	Rep A, Upper South Deep - 2006_NMMP566; Core; 0.5mm sieve mesh	95.829	
EA Cardiff	625	83	2006	Rep D, Purton - 2006_NMMP625; Day Grab?; ??mm sieve mesh	98.462	
EA Cardiff	635	84	2006	Rep A, Bedwin - 2006_NMMP635; Day Grab?; ??mm sieve mesh	99.314	
EA Cardiff	690	93	2006	Rep E, Mostyn - 2006_NMMP690; Day Grab?; ??mm sieve mesh	98.276	
EA NW(Warrington)	755	98	2006	Rep. A, Seacombe Ferry; 2006_CSEMP755; Day Grab; 0.5mm mesh.	99.451	External audit
EA NW(Warrington)	766	101	2006	Rep. E, u/s 11m Post; 2006_CSEMP766; Day Grab; 0.5mm mesh.	100	External audit
EA NW(Warrington)	767	102	2006	Rep. D, North Bay; 2006_CSEMP767; Day Grab; 0.5mm mesh.	100	External audit
AFBI_DARDNI	808	111	2006	NMPBUOY1 Rep E; 2006_CSEMP808; 1mm mesh.	100	External Audit - selected by Tim Mackie 28/02/08
NIEA_EHS	809	112	2006	Smp. Green Island E, 2006; Transitional NMMP; Day Grab; 0.5 & 1mm sieve mesh	99.59	External audit
AFBI_DARDNI	815	113	2006	NMP3 Rep B; 2006_CSEMP815; 1mm mesh.	93.333	External Audit - selected by Tim Mackie 28/02/08
NIEA_EHS	825	115	2006	Smp. IS1 C, 2006; Transitional NMMP; Day Grab; 0.5 & 1mm sieve mesh	100.00	External audit
AFBI_DARDNI	865	119	2006	NMP2 Rep B; 2006_CSEMP865; 1mm mesh.	97.414	External Audit - selected by Tim Mackie 28/02/08
NIEA_EHS	-	163	2006	Smp. BL7 B, 2006; Transitional NMMP; Day Grab; 0.5 & 1mm sieve mesh	99.28	External audit
SEPA SW	-	170	2006	Smp. 425913; Loc. 324063; Sound of Jura 11km W of Glenacardoch Point; 2006; 1mm sieve mesh	69.173	RA completed 02/09/09/08/07
SEPA SW	-	136	2006	Smp. 435811; Loc. 323134; FOC @ 10km E of Johnston's Point; 2006; 1mm sieve mesh	86.555	RA completed 02/09/09/08/08
SEPA SW	55	5	2006	Smp. 435707; Loc. 124115; Firth of Clyde @ CMT 7, NW of Cloch Point; 2006; 1mm sieve mesh	91.93	
Marine Scotland_FRS	-	173	2006	Smp.58/2006, CSEMP2006; MinchMalin_TheMinchSouth_se01; Day Grab; 1mm sieve mesh	100	
Marine Scotland_FRS	-	149	2006	Smp.22/2006, CSEMP2006; Fladen_FlaOpenSea_se02; Day Grab; 1mm sieve mesh	100	
Marine Scotland_FRS	-	143	2006	Smp. 4/2006, CSEMP2006; East Scotland_Scurdianness_se01; Day Grab; 1mm sieve mesh	99.20	

Table 12. 2007 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
EA NE	225	26	2007	Rep A, 2007_CSEMP225; Hebburn; Day Grab; 0.5 mm sieve mesh.	99.74	External audit sample selected by Luke Martina (25/03/09)
CEFAS	245	28	2007	Rep. E, 245_CSEMP2007; NSTF14; Day Grab; 1mm sieve mesh; Sandy mud.	92.03	
EA NE	270	32	2007	Rep C, 2007_CSEMP270; Off Seaham; Day Grab; 1mm sieve mesh.	99.79	External audit sample selected by Luke Martina (25/03/09)
EA Ang	356	43	2007	Rep E, 2007CSEMP_356; Inside Spurn; Day Grab; 0.5mm sieve mesh.	98.81	EA analysis
EA Thames	435	56	2007	Rep D, 2007NMMP_435; Woolwich; Day Grab; 0.5mm sieve mesh.	87.50	RA completed 17/12/09
EA Thames	455	58	2007	Rep E, 2007NMMP_455; Mucking; Day Grab; 0.5mm sieve mesh.	99.18	
EA Thames	455	58	2007	Rep C, 2007NMMP_455; Mucking; Day Grab; 0.5mm sieve mesh.	98.60	
EA S	505	65	2007	Rep. C, 2007CSEMP_505; Dockhead; Day Grab; 0.5mm sieve mesh.	93.38	Analysis by Contractor 5
EA S	526	68	2007	Rep. D, 2007CSEMP_526; Burham; Day Grab; 0.5mm sieve mesh.	99.73	Analysis by Contractor 5
EA SW	567	76	2007	Rep D, 2007CSEMP_567; Wytch; Core; 0.5mm sieve mesh.	97.16	EA analysis
EA SW	576	78	2007	Rep A, 2007CSEMP_576; Off Tamar, Jennycliffe; Day Grab; 1mm sieve mesh.	98.91	External audit sample selected by Luke Martina (25/03/09)
EA NMMT	625	83	2007	Rep E, 2007CSEMP_625; Purton; Day Grab; 0.5 mm sieve mesh.	100.00	Analysis by Contractor 7
EA Cardiff	635	84	2007	Rep A, 2007CSEMP_635; Bedwin; Day Grab; 0.5 mm sieve mesh.	94.36	Analysis by Contractor 7
EA NW(Warrington)	756	99	2007	Rep C, 2007_CSEMP756; Gladstone, Mersey; Day Grab; 0.5 mm sieve mesh.	df	Analysis by Contractor 8
EA NW(Warrington)	768	103	2007	Rep E, 2007_CSEMP768; St. Bees; Day Grab; 1mm sieve mesh.	df	Analysis by Contractor 8
AFBI_DARDNI	808	111	2007	Smp. NMP6 (BUOY1) B, CSEMP2007; 1mm sieve mesh.	98.63	External Audit; Sample selected by Tim Mackie 28 July 2009
NIEA_EHS	809	112	2007	GIP - rep D; 2007NMMP; 0.5 & 1mm mesh.	99.897	External Audit
NIEA_EHS	845	117	2007	BL5 - rep A; 2007NMMP; 0.5 & 1mm mesh.	99.591	External Audit
AFBI_DARDNI	865	119	2007	Smp. NMP2 B, CSEMP2007; 1mm sieve mesh.	94.957	External Audit; Sample selected by Tim Mackie 28 July 2009
AFBI_DARDNI	875	120	2007	Smp. NMP1 A, CSEMP2007; 1mm sieve mesh.	100	External Audit; Sample selected by Tim Mackie 28 July 2009
NIEA_EHS	880	121	2007	Kild - rep A; 2007NMMP; 0.5 & 1mm mesh.	99.371	External Audit
SEPA SW	-	171	2007	Smp.694894/Loc.324064; Sound of Jura, SOJ@14km W of Bellochantuy Bay (13/06/07); Day Grab; 1mm; Sandy mud.	82.99	RA completed 25/06/10
SEPA SW	-	128	2007	Smp.652604/Loc.338799; Strata B, FOC@ E of Brodick, mid channel (18/04/07); Day Grab; 1mm; Brown mud (sticky)	88.06	RA completed 07/06/10
SEPA SW	-	125	2007	Smp.709454/Loc.339002; Strata A, FOC@Wemyss Point, mid channel (20/06/07); Day Grab; 1mm; Mud.	86.40	RA completed 23/06/10
Marine Scotland_FRS	-	166	2007	Rep E, 2007_CSEMP_LM1; Minch Malin, Sea of Hebrides_se01; Day Grab; 1mm sieve mesh.	96.05	
Marine Scotland_FRS	-	174	2007	Rep E, 2007_CSEMP_MF3; Moray Firth Intermediate S_se01; Day Grab; 1mm sieve mesh.	94.83	
Marine Scotland_FRS	-	174	2007	Rep C, 2007_CSEMP_MF2; Moray Firth Intermediate S_se01; Day Grab; 1mm sieve mesh.	98.26	
SEPA SE	-	152	2007	Stn. 38 (637264); Firth of Forth Spatial Survey (306982).	93.75	
SEPA SE	-	176	2007	Disp. Site 1-D (668400); Cromarty Firth (329989).	92.25	

Table 13. 2008 CSEMP OS Audits.

CMA/Contractor	CSEMP Station	TU CSEMP No.	Year	Code/sample description supplied	BCSI	Notes
EA (all regions)	210	22	2008	2008CSEMP_210 – Yarrow Slake (Rep_D)	99.479	External Audit received 22/12/10
EA (all regions)	221	25	2008	2008CSEMP_221 – Budle Bay (Rep_C)	99.673	External Audit received 22/12/10
CEFAS	245	28	2008	Rep. B, 245_CSEMP2008; NSTF14; Day Grab; 1mm sieve mesh; Sandy mud.	76.98	RA - pass (completed 2/8/10)
EA (all regions)	270	32	2008	2008CSEMP_270 – Off Seaham (Rep_D)	100	External Audit received 22/12/10
CEFAS	345	41	2008	Rep. A, 345_CSEMP2008; NSTF53; Day Grab; 1mm sieve mesh; Muddy sand.	99.22	
EA (all regions)	358	45	2008	Rep D, Sunk Island-2008_CSEMP358	90.323	Processed by EA Anglia
EA (all regions)	390	51	2008	Rep A, Blackwater-2008_CSEMP390	94.118	Analysis by Contractor 5
EA (all regions)	435	56	2008	Rep C, Woolwich-2008_CSEMP435	100	Processed by EA Thames
EA (all regions)	505	65	2008	Rep E, Dock Head-2008_CSEMP505	97.96	Analysis by Contractor 6
EA (all regions)	555	73	2008	2008CSEMP_555 – Warren Point (Rep_E)	99.575	External Audit received 22/12/10
EA (all regions)	566	75	2008	2008CSEMP_566 – Upper South Deep (Rep_D)	99.265	External Audit received 22/12/10
EA (all regions)	645	85	2008	Rep C, Peterstone-2008_CSEMP645	100	Analysis by Contractor 7
EA (all regions)	648	88	2008	Rep D, Bontddu-2008_CSEMP648	94.444	Analysis by Contractor 7
EA (all regions)	768	103	2008	2008CSEMP_768 – St. Bees (Rep_E)	99.794	External Audit received 22/12/10
AFBI_DARDNI	806	109	2008	2008CSEMP_806 – NMP4 (Rep_A)(LR44387)	95.833	External Audit; Sample selected by Tim Mackie 29 July 2010
AFBI_DARDNI	807	110	2008	2008CSEMP_807 – NMP5 (Rep_A)(LR44392)	100	External Audit; Sample selected by Tim Mackie 29 July 2010
NIEA_EHS	809	112	2008	GIP Rep B, CSEMP 2008; 0.5 & 1mm sieve mesh.	99.658	External Audit; Sample selected by Tim Mackie 28 July 2009
NIEA_EHS	845	117	2008	BL5 Rep E, CSEMP 2008; 0.5 & 1mm sieve mesh.	99.506	External Audit; Sample selected by Tim Mackie 28 July 2009
AFBI_DARDNI	865	119	2008	2008CSEMP_865 – NMP2 (Rep_A)(LR44377)	100	External Audit; Sample selected by Tim Mackie 29 July 2010
NIEA_EHS	880	121	2008	KD Rep E, CSEMP 2008; 0.5 & 1mm sieve mesh.	99.46	External Audit; Sample selected by Tim Mackie 28 July 2009
SEPA S (SW)	-	132	2008	FOC @ 7km off Whiting Bay; 323124; CSEMP2008; Day grab; 1mm sieve mesh; Soft grey mud.	100	
SEPA S (SW)	-	123	2008	Firth of Clyde @ East of Strone Point; 339003; CSEMP2008; Day grab; 1mm sieve mesh; Grey mud.	88.89	RA completed 31/08/10
SEPA S (SW)	-	169	2008	Sound of Jura @ 10km East of Claggain Bay; 324062; CSEMP2008; Day grab; 1mm sieve mesh; Brown/grey soft mud.	47.06	RA completed 17/07/10
Marine Scotland_FRS	-	180	2008	SHET 1.5; CSEMP 2008; WShetland_WShIntermediate_se01 (subsampling E), ?sample type?; ?sieve mesh?	93.953	
Marine Scotland_FRS	-	180	2008	SHET 1.4; CSEMP 2008; WShetland_WShIntermediate_se01 (subsampling D), ?sample type?; ?sieve mesh?	92.147	
Marine Scotland_FRS	-	174	2008	MF 2.7; CSEMP 2008; MorayF_MoFIntermediateS_se01 (subsampling G), ?sample type?; ?sieve mesh?	95.935	

# Figures



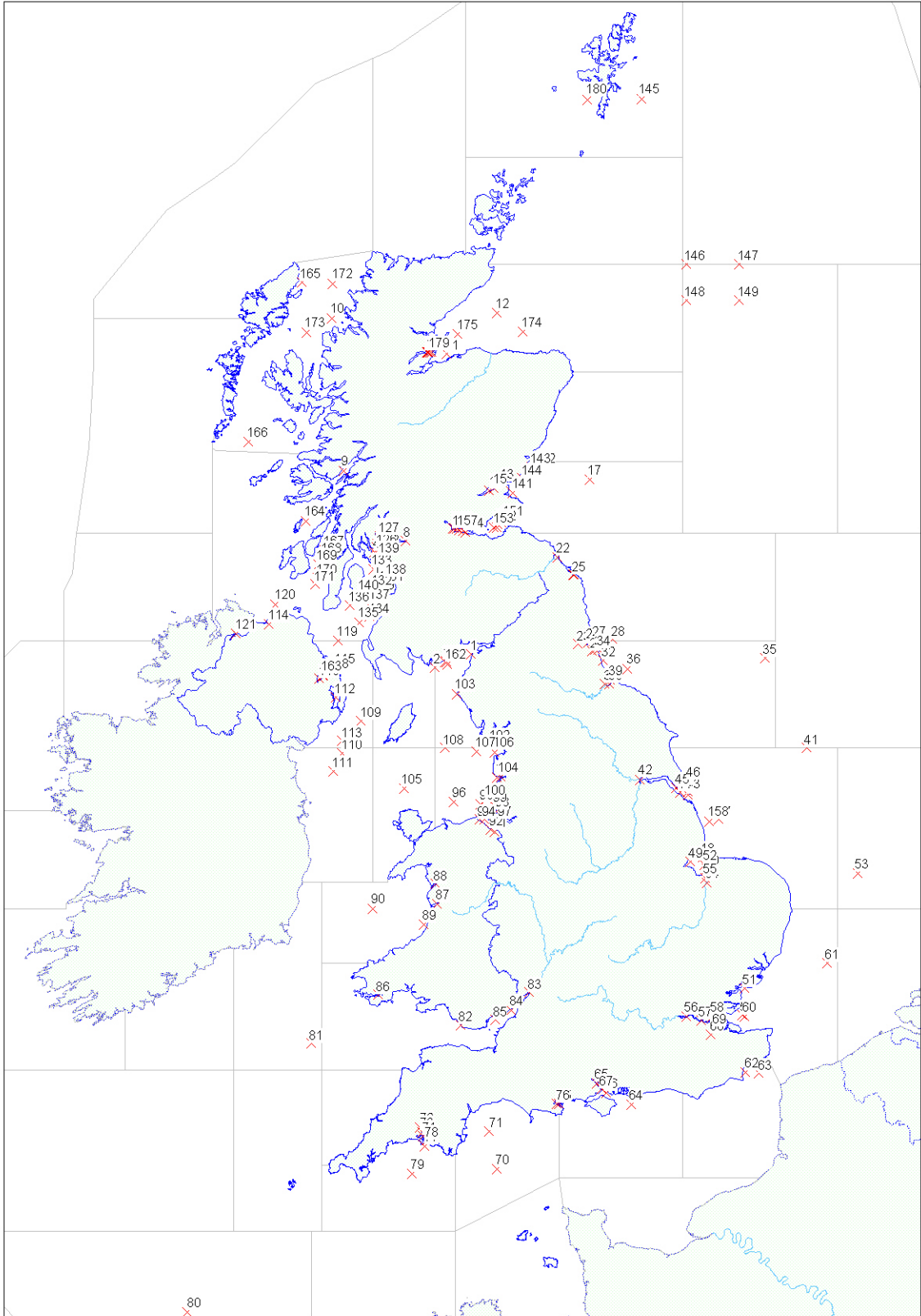


Figure 1. CSEMP Stations.

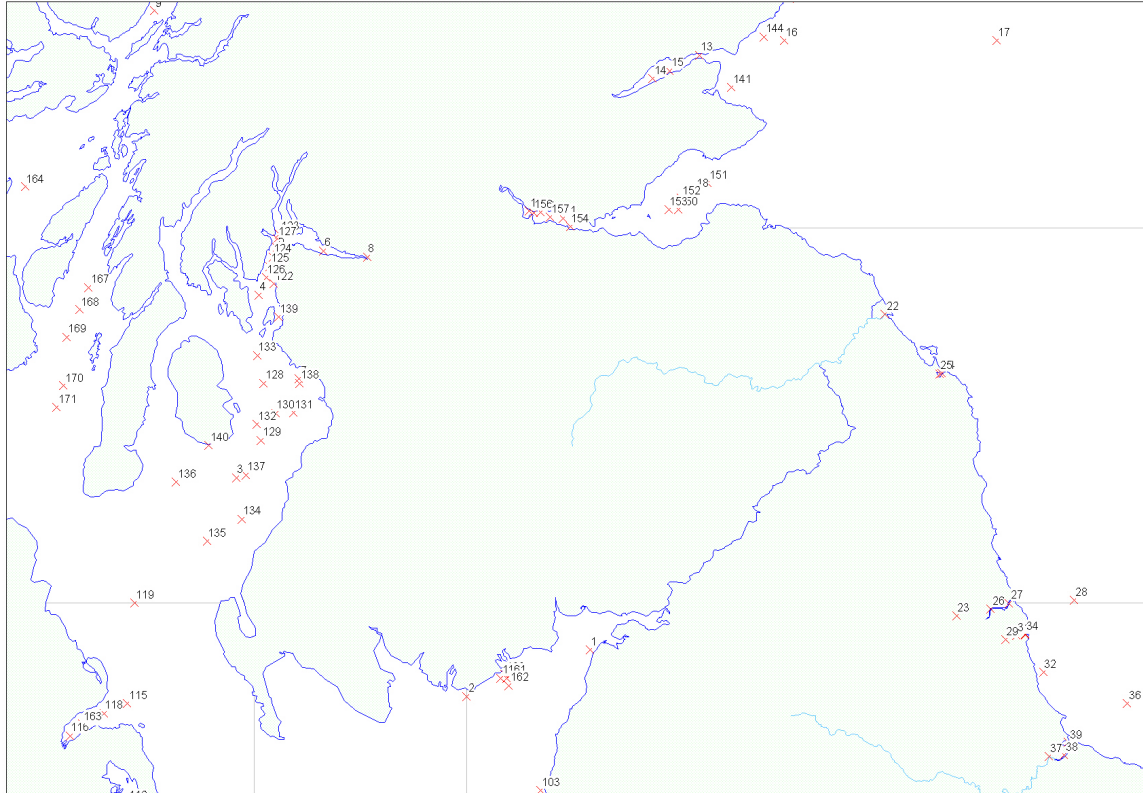


Figure 2. CSEMP Stations (southern Scotland).

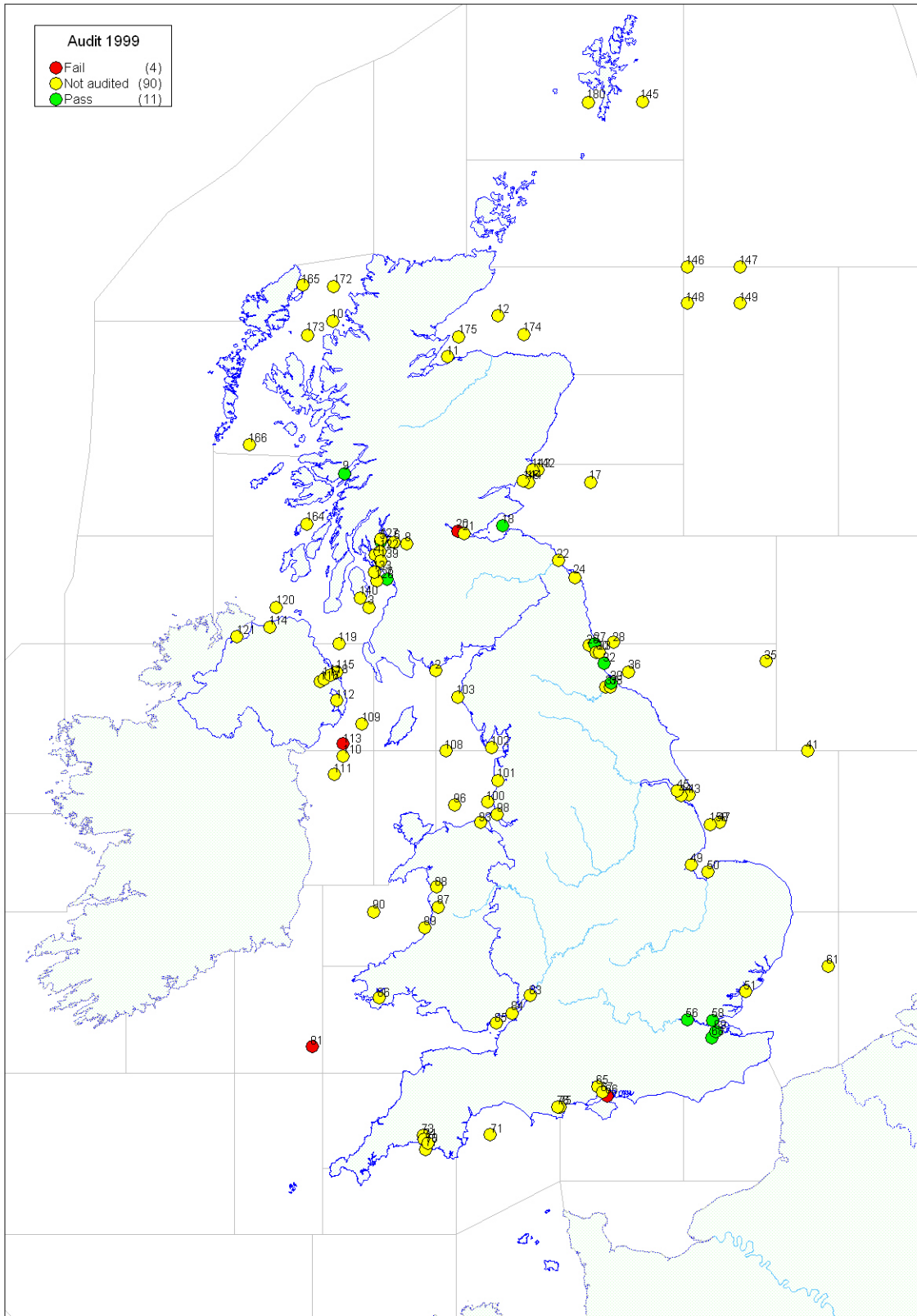


Figure 3. 1999 CSEMP OS Audits.

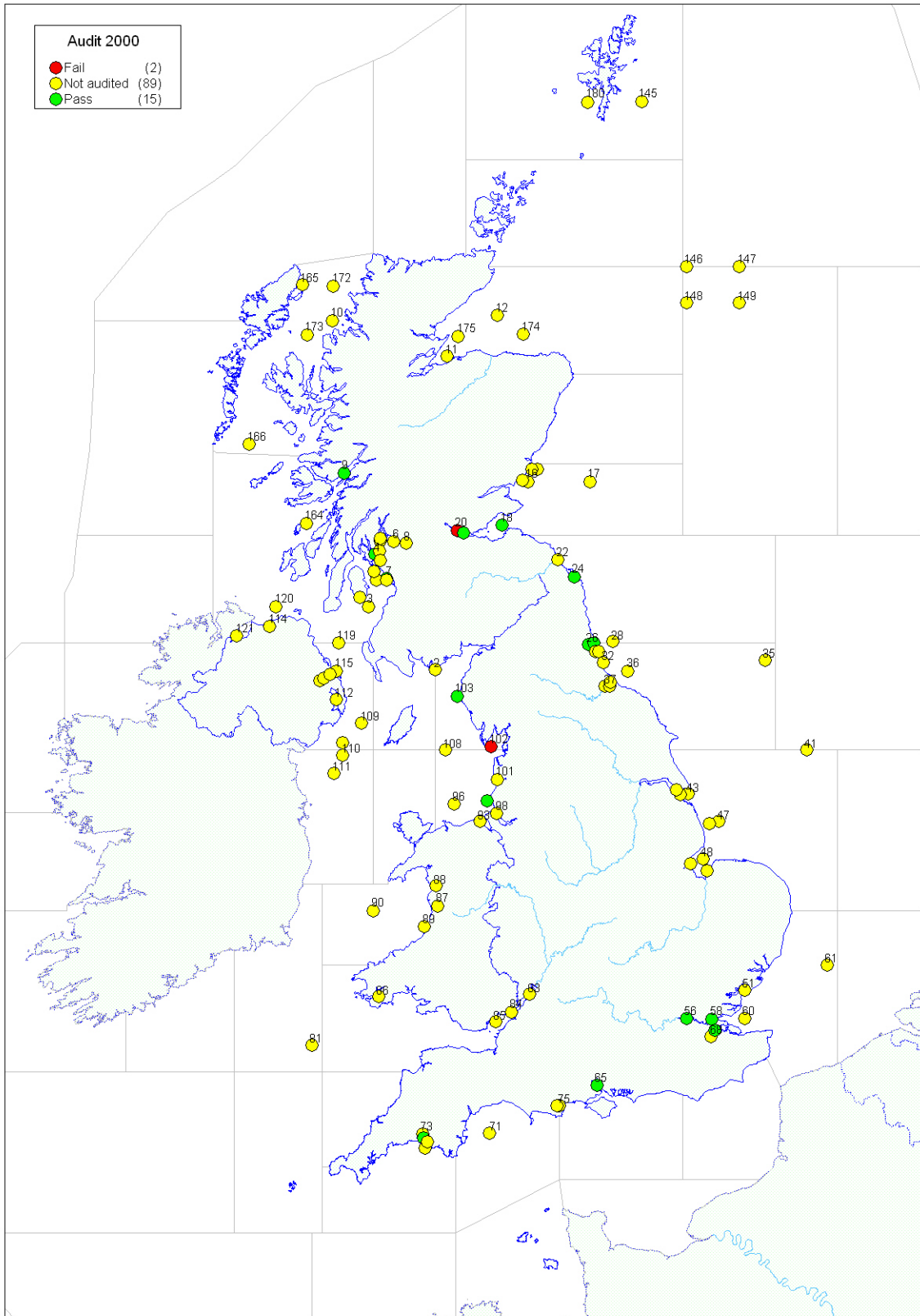


Figure 4. 2000 CSEMP OS Audits.



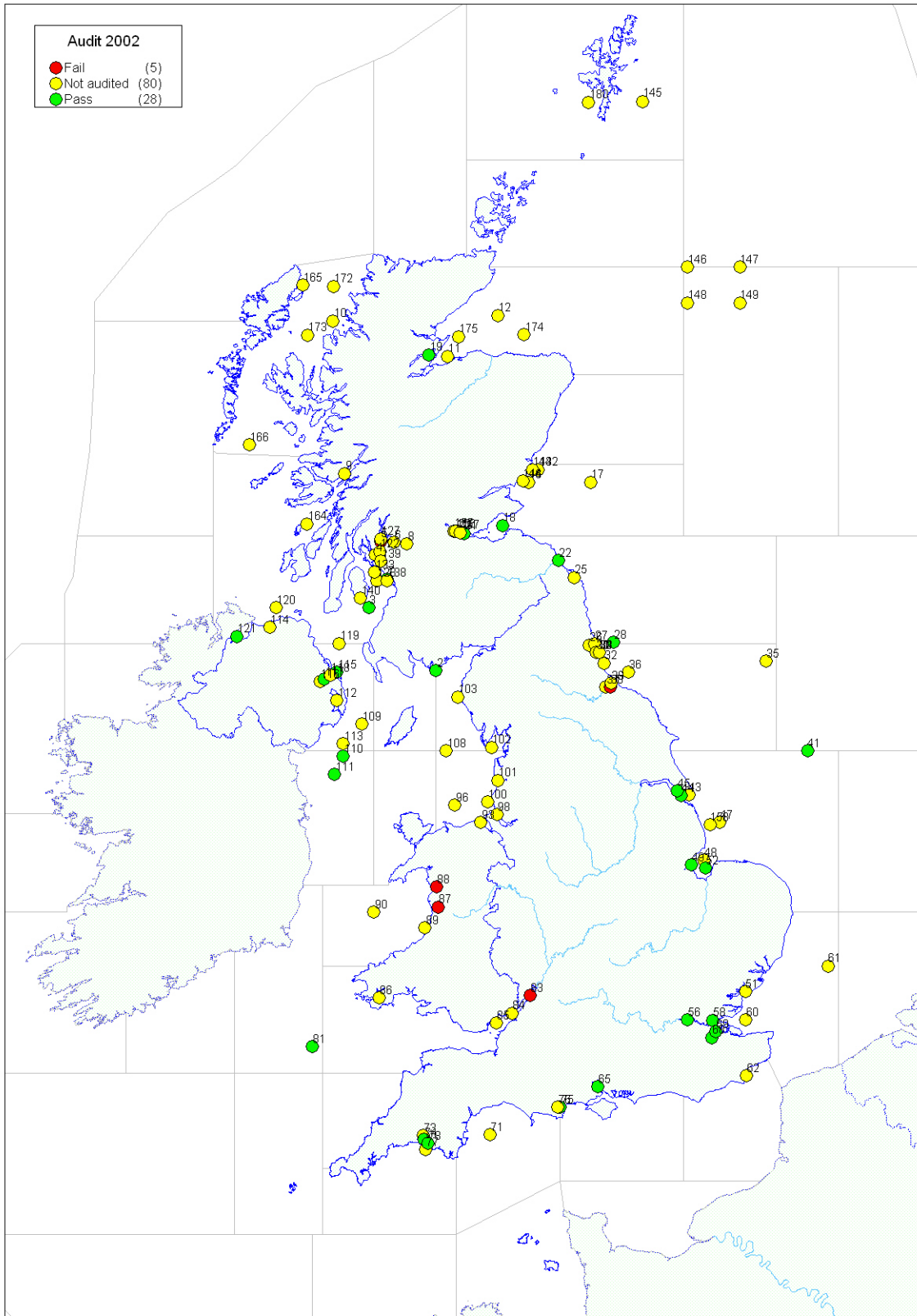


Figure 6. 2002 CSEMP OS Audits.

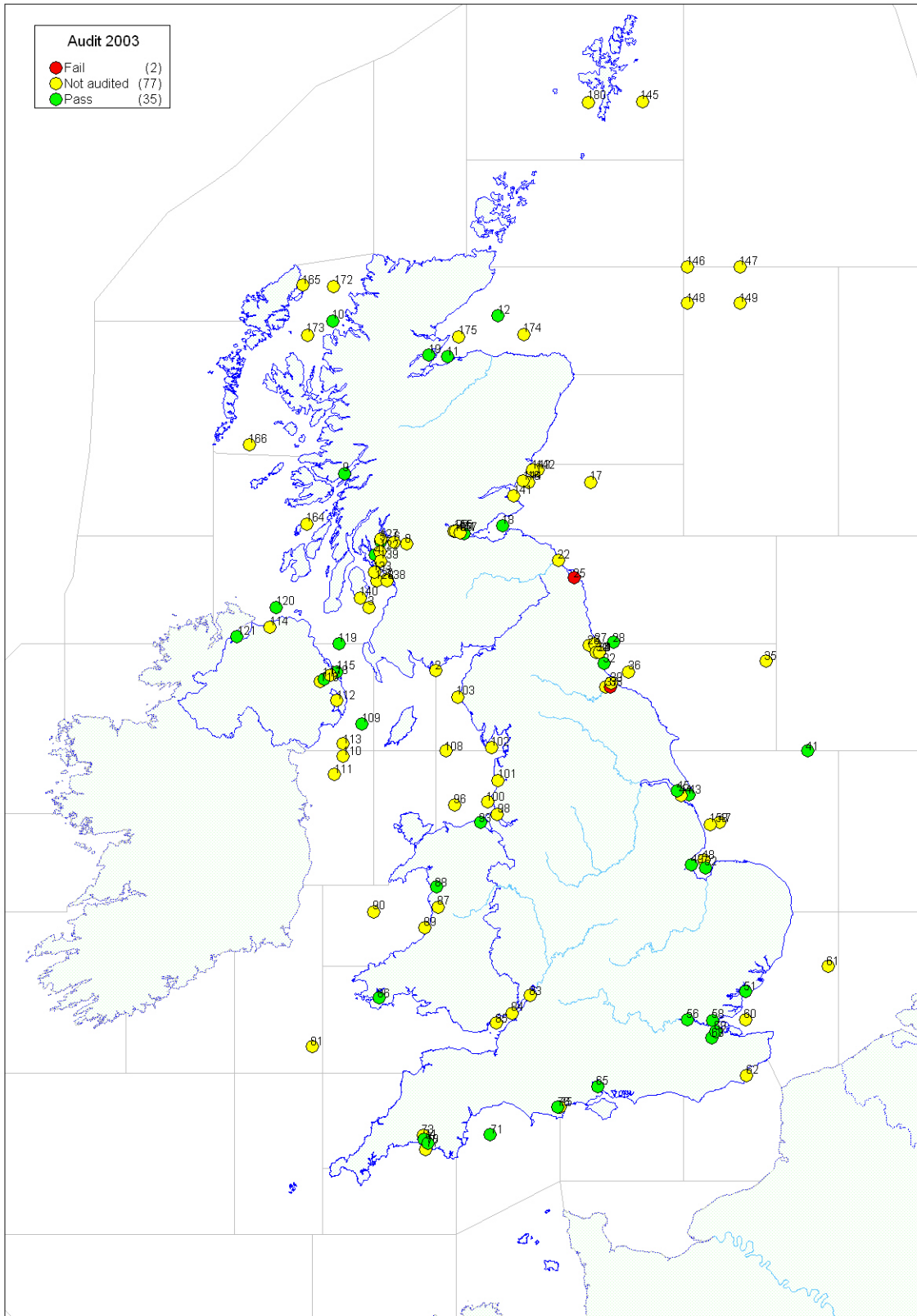


Figure 7. 2003 CSEMP OS Audits.

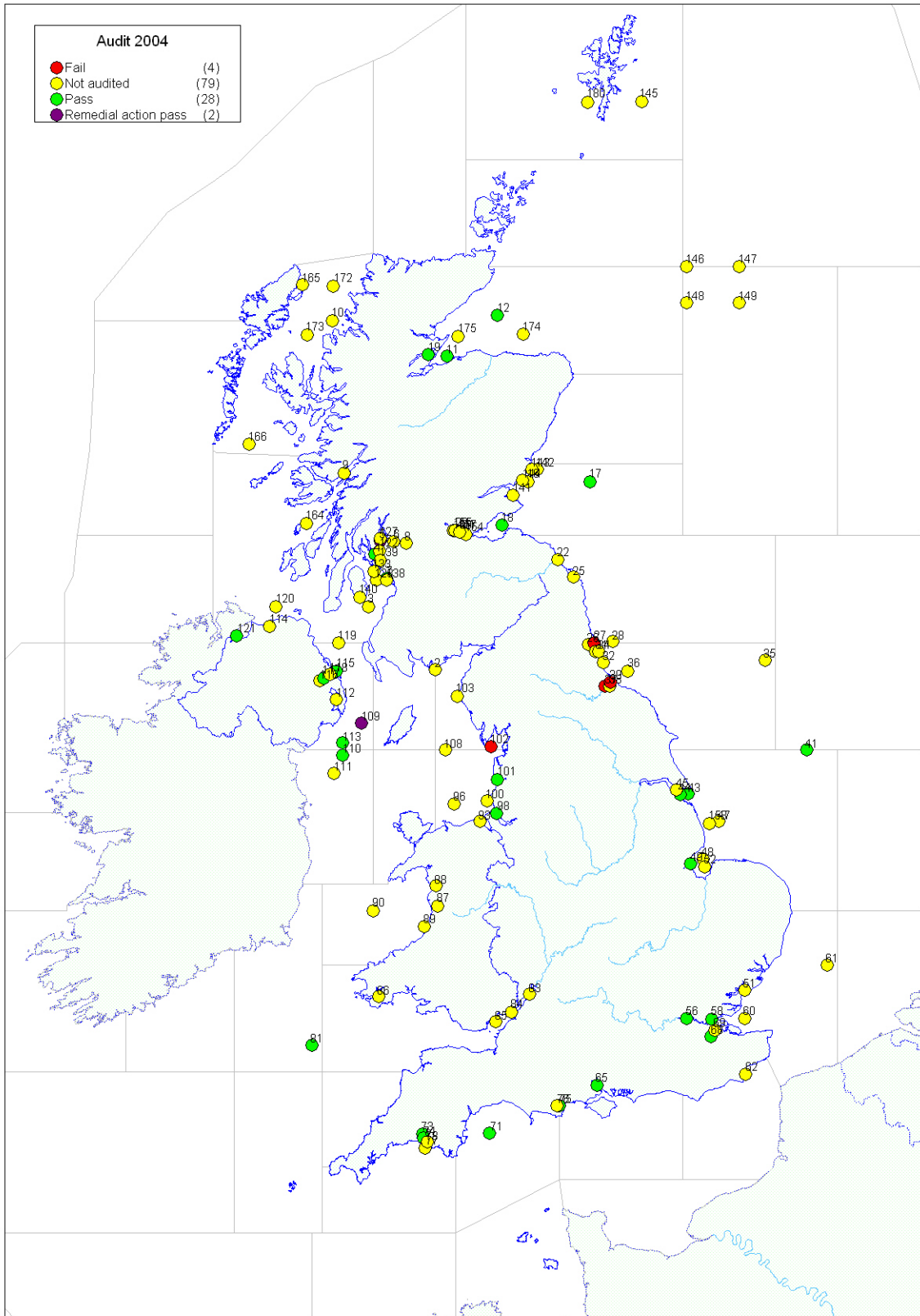


Figure 8. 2004 CSEMP OS Audits.



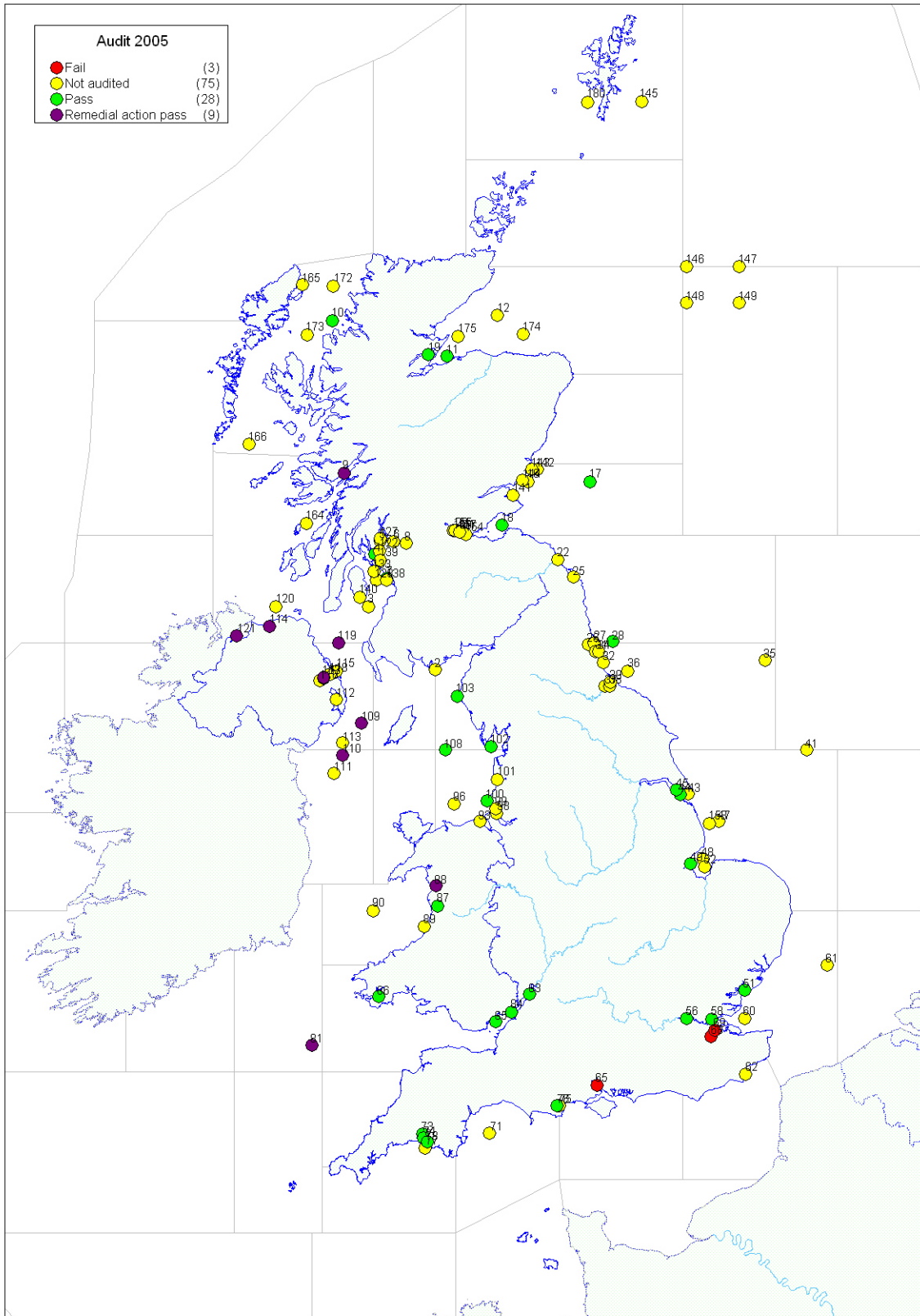


Figure 9. 2005 CSEMP OS Audits.

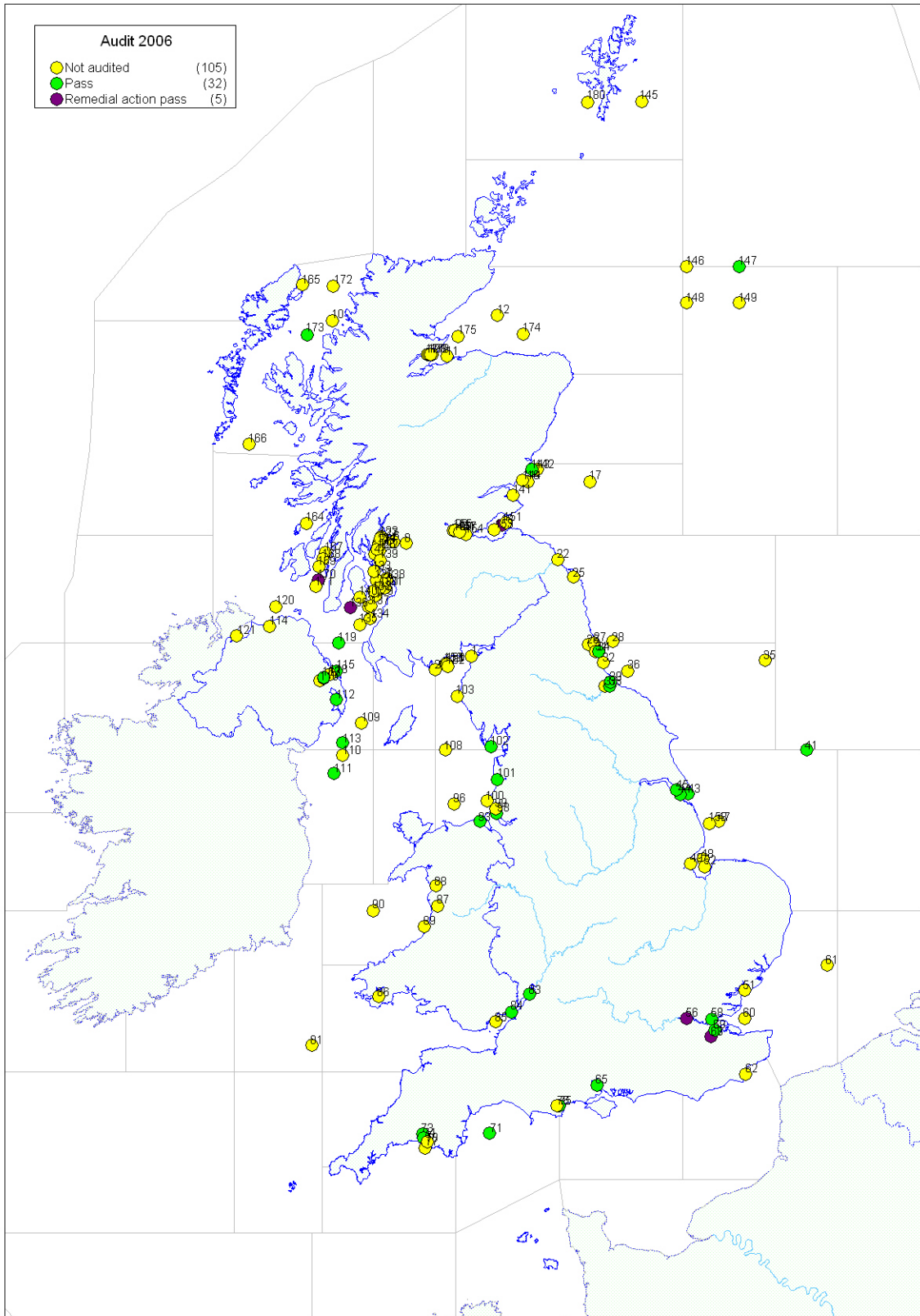


Figure 10. 2006 CSEMP OS Audits.

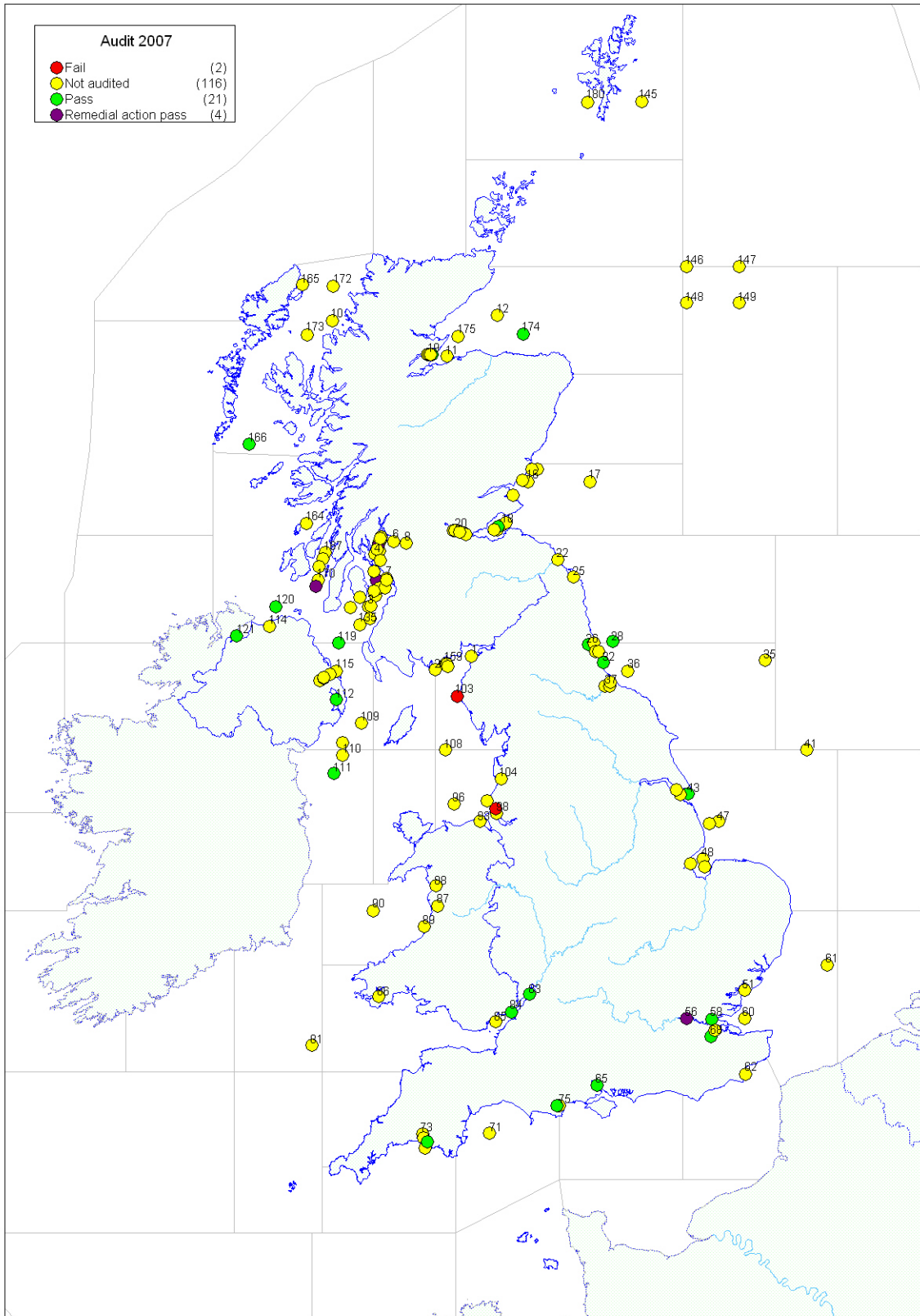


Figure 11. 2007 CSEMP OS Audits.

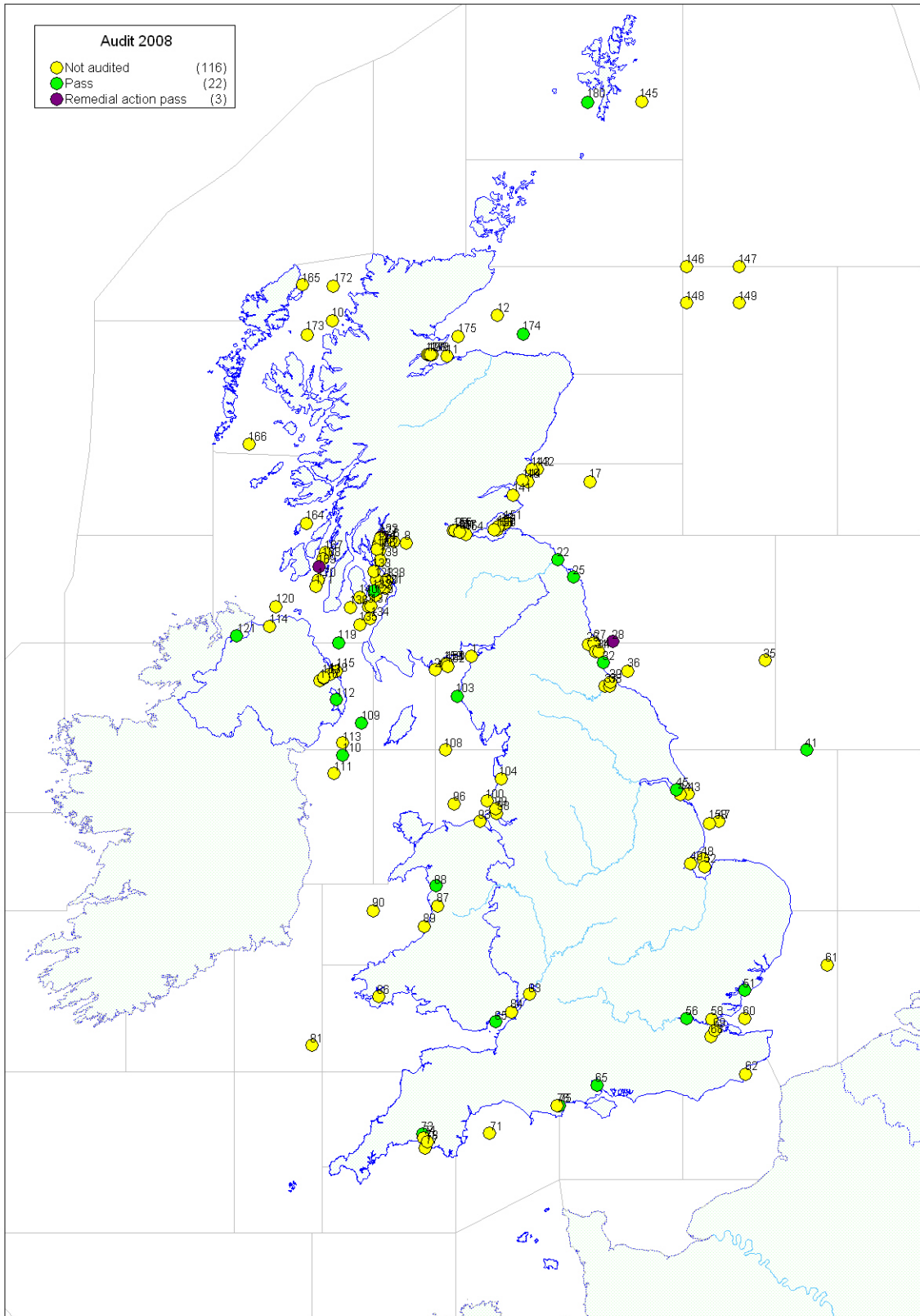


Figure 12. 2008 CSEMP OS Audits.

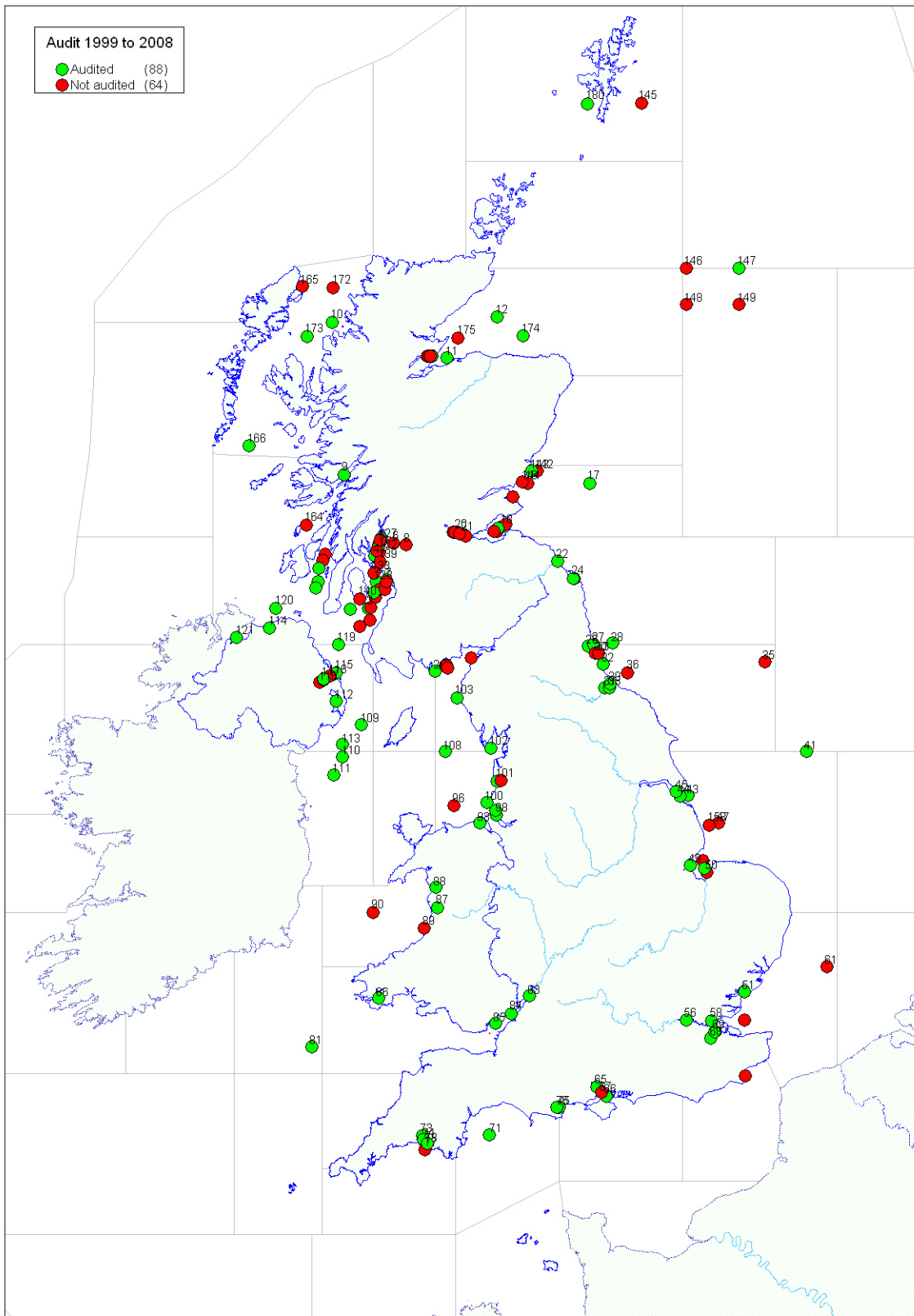


Figure 13. Summary of CSEMP OS Audits 1999 to 2008.