

Environmental Protection Final Draft Report

1992 SURVEY OF BATHING WATER QUALITY

December 1992

TWU/92/17

Author: S Culling

Assistant Scientist (Tidal Waters)

C.V.M. Davies
Environmental Protection Manager



NRA

*National Rivers Authority
South West Region*

MONITORING OF TIDAL WATERS FOR BATHING WATER QUALITY DURING 1992

REPORT NO TWU/92/17

SUMMARY

The 1992 survey of Bathing Waters has been completed.

Of the 134 EC identified Bathing Waters monitored during 1992, 117 complied with the principle bacteriological parameters total and faecal coliforms. Seventeen bathing waters failed to meet these standards. Four of these seventeen waters have not failed in previous years.

S Culling
Assistant Scientist (Tidal Waters)
December 1992

ENVIRONMENT AGENCY



110028

CONTENTS

	Page Number
1. INTRODUCTION	1
2. 1992 SURVEY	
- EC Identified Bathing Waters	2
- Non Identified Bathing Waters	4
3. DoE POSTER SCHEME	4
4. AESTHETIC SURVEY	4
5. FUTURE WORK	4
APPENDICES	

1992 SURVEY OF BATHING WATER QUALITY

1. INTRODUCTION

- 1.1 The National Rivers Authority (NRA) is the competent authority, in England and Wales, for the implementation of the European Commission Directive Concerning the Quality of Bathing Water.
- 1.2 In the South West there are 135 bathing waters identified under the Directive. 134 of these were sampled in 1992 in accordance with the requirements of the Directive. Porthleven (East) remains inaccessible until the steps to the beach (destroyed in 1989 by a landslide) are replaced.
- 1.3 In April, the Department of the Environment, DoE, added Porthcothan bathing water (North Cornwall) to the list of EC identified bathing waters.
- 1.4 In accordance with the requirements of the Directive, monitoring of the EC waters commenced at the beginning of May. In addition, 35 popular, but non-identified waters were also sampled in accordance with the Directive during the bathing season, as part of a rolling programme of work.
- 1.5 Compliance of bathing waters with the requirements of the Directive is assessed by the DoE on a parameter by parameter basis. In the UK, compliance is principally assessed against the mandatory standards for total and faecal coliforms. For the 1992 survey, the DoE announced that compliance would only be assessed against confirmed data for these parameters. Confirmatory analysis (an extra stage in the analytical procedure) was subsequently carried out for total and faecal coliforms at all EC bathing waters.
- 1.6 The DoE passes all data to the European Commission who assess compliance with the Directive overall. The Commission may investigate any case where they have concerns over water quality.
- 1.7 Individual isolated failures may be caused by exceptional circumstances. In each case, the Authority must provide substantial reasoned arguments to support such a contention. In situations where discharges are adversely affecting the quality of a bathing water it is a Directive requirement that additional monitoring be undertaken. The Directive also requires that investigations are undertaken to establish the volume and nature of all polluting and potentially polluting discharges and their effects according to their distance from the bathing area.
- 1.8 The DoE considers that failure to comply with the physico chemical parameters of the Directive is significant only if the Authority can influence or control the cause of failure.

2. 1992 SURVEY

2.1 EC Identified Bathing Waters

- 2.1.1 Samples for this year's survey were collected at all locations between the beginning of May and end of September. NRA staff carried out the sampling. Analyses for bacteriological parameters where confirmation was required were contracted out to competent commercial laboratories. All other analysis was carried out at the NRA laboratory in Exeter.
- 2.1.2 17 of the 134 monitored EC bathing waters failed the Directive mandatory standards for the principal bacteriological parameters - total and faecal coliforms (Appendix 1, Figure 1). As a comparison, in 1991 28 waters failed the principal mandatory standards and in 1990, 15 waters failed - Appendix 4.
- 2.1.3 4 of these 17 unsatisfactory bathing waters, namely Dawlish Town, Torre Abbey, Porthcothan and Daymer Bay, have not failed in previous years. At 3 of these sites investigations have been carried out to identify the probable cause of these failures so that necessary improvements may be initiated. In 3 cases failures appear to have been caused by stream inputs. At Dawlish Town a storm sewage overflow may be implicated and further investigation is required to elucidate reasons for non compliance.
- 2.1.4 Little difference was found between the presumptive and confirmed data. Confirmation resulted in 6 individual samples complying with the mandatory standards which would otherwise have failed. These changes did not affect the overall compliance of any bathing water with the Directive Mandatory Standards. The DoE have stated that confirmatory analysis will be required for the 1993 bathing season.
- 2.1.5 Two spot checks for salmonellae bacteria were made at all EC identified bathing waters during 1992. Salmonellae were detected on one occasion at Lyme Regis (Cobb). Watcombe, Oddicombe, Shoalstone, Mothecombe, Wembury, Polstreath, Mounts Bay (Wherry Town), Porthtown, Instow, Saunton Sands, Ilfracombe (Tunnels), Ilfracombe (Hele) and Lynmouth (14 bathing waters). Salmonellae were detected on 2 occasions at Bovisand, Plymouth Hoe (East) Plymouth Hoe (West), though 3 samples were taken at these sites. Lyme Regis (Cobb), Mounts Bay (Wherrytown), Instow, and Ilfracombe (Hele) were the only sites which also failed the coliform parameters (Appendix 1).
- 2.1.6 As part of an on-going investigation into the occurrence and distribution of enteroviruses in the environment, two spot checks were made at the majority of EC Bathing Waters. These organisms are not necessarily harmful and may enter the environment via a number of routes.

Enteroviruses were detected at 89 sites. They were detected on both occasions at 33 sites. 14 sites which recorded positive enteroviruses results also failed coliform parameters and 7 sites failed all four mandatory microbiological parameters (Appendix 1).

- 2.1.7 Analysis of monitoring data since 1986 at certain locations has shown that samples may not always be collected over a range of tidal conditions. Sampling effort, during 1993 and in future years, will be directed to ensure that samples are collected over as many different tidal conditions as practically possible.
- 2.1.8 Physico-chemical measurements required by the Directive were made by observations at the time of sampling. Details of these observations are recorded in Appendix 2. No laboratory analysis was carried out to confirm any of the positive observations. DoE interpretation of the data is such that no failures will be reported to the European Commission, as all data is unconfirmed.
- 2.1.9 A waiver for transparency is still in force as it is clear that the high levels of turbidity commonly found around the coastline result from natural processes outside the control of this Authority. No analysis for transparency was carried out in 1992 as the waiver means that there is no requirement to report any data to the DoE.
- 2.1.10 Observations of sea colour indicate that unusual colourations may be present at certain locations around the region. In many cases these may be due to rough sea conditions. Investigation is required to establish the significance of these observations before any application for waiver is submitted to the DoE.
- 2.1.11 Surface active substances are detected by the observation of a lasting foam. Investigations have suggested that marine algae are commonly the cause. Detergents are not implicated in any instance. Laboratory methods to measure detergents in seawater should be available in time for the 1993 Bathing season.
- 2.1.12 Phenolic odours were detected on a single occasion at 1 site.
- 2.1.13 Mineral oils, indicated by the presence of a surface film were observed on more than one occasion at a single location. They were observed on single isolated occasions at a further 4 sites.
- 2.1.14 For pH, a minimum frequency of one on-site measurement per bathing season is required. Where the competent authority suspects that water quality (in terms of pH) may have deteriorated then the frequency must be increased. pH was measured and found to be satisfactory at all bathing waters in Devon. No data are available for waters in Cornwall.

2.2 Non Identified Bathing Waters

2.2.1 35 non identified bathing waters were monitored 20 times during May to September for total and faecal coliforms. (Appendix 3 and Figure 3).

3. DOE POSTER SCHEME

3.1 The DoE, in conjunction with local maritime authorities, has again run its poster scheme publicising water quality data at each identified bathing water during the summer season. The NRA provide the data for each site.

4. AESTHETIC SURVEY

4.1 During 1992, aesthetic survey work was carried out on beaches in the region. This followed on from last years major survey of 200 locations in the region.

4.2 Using data collected in 1991 the worst 2 categories of beach (in terms of the degree of aesthetic contamination) were investigated to determine whether a causal link with particular crude discharges existed.

4.3 2 pilot 'tracer' studies were carried out at Exmouth and Sharkham Point outfalls, using a "low tech" simple science approach. Records of tidal and weather conditions were also kept.

4.4 Specific aesthetic surveys were carried out at 2 sites where capital improvement schemes to the sewerage system have been commissioned. The objective was to see whether significant improvement of aesthetic quality had resulted.

4.5 Further work involved the removal of sewage debris from known worst category beaches to determine whether beaches are regularly contaminated, or only affected by particular tidal/weather conditions.

4.6 Additional work investigated grease/scum or lasting foam from beaches, with laboratory analysis to try and determine the origin of the foam.

4.5 All results from the above work are due to be fully reported shortly.

5. FUTURE WORK

5.1 A review of the measured water quality of each bathing water in the region has been completed. This has included an assessment of the data with the guideline standards of the Directive. The results of this work will be reported in 1993.

5.2 At present recommendations are under consideration for the identification of a further 7 popular bathing waters in the area.

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MICROBIOLOGICAL MONITORING

DISTRICT COUNCIL	BATHING WATER		X INDICATES FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS			
	MONITORING SITE	N.G.R.	TOTAL COLIFORMS	FAECAL COLIFORMS	SALMONELLAE	ENTEROVIRUSES
West Dorset D.C.	Lyme Regis, Cobb Beach	SY 3390 9185	X	X	X	X
West Dorset D.C.	Lyme Regis, Church Beach	SY 3436 9212	X	X		X
East Devon D.C.	Seaton	SY 2450 8985				
East Devon D.C.	Beer	SY 2315 8910				X
East Devon D.C.	Sidmouth, Town Beach	SY 1270 8720				
East Devon D.C.	Sidmouth, Jacobs Ladder	SY 1190 8695				
East Devon D.C.	Ladram Bay	SY 0972 8515				
East Devon D.C.	Budleigh Salterton	SY 0695 8190				X
East Devon D.C.	Sandy Bay	SY 0335 7980				X
East Devon D.C.	Exmouth	SY 0098 7995				
Teignbridge D.C.	Dawlish Warren	SX 9830 7875				X
Teignbridge D.C.	Dawlish, Town Beach	SX 9655 7680				X
Teignbridge D.C.	Dawlish, Coryton Cove	SX 9611 7606		X		X
Teignbridge D.C.	Teignmouth, Town Beach	SX 9430 7285				X
Teignbridge D.C.	Teignmouth, Holcombe Beach	SX 9565 7461				X
Teignbridge D.C.	Shaldon	SX 9350 7230				X
Teignbridge D.C.	Ness Cove	SX 9385 7170				X
Torquay B.C.	Maidencombe	SX 9278 6850				X
Torbay B.C.	Watcombe	SX 9262 6730			X	X
Torbay B.C.	Oddicombe	SX 9265 6585			X	
Torbay B.C.	Babbacombe	SX 9300 6545				X
Torbay B.C.	Redgate	SX 9350 6480				X
Torbay B.C.	Headfoot	SX 9305 6305				X
Torbay B.C.	Beacon Cove	SX 9195 6307				
Torbay B.C.	Torre Abbey	SX 9095 6351	X	X		
Torbay B.C.	Hollicombe	SX 8980 6215				
Torbay B.C.	Paignton, Paignton Sands	SX 8949 6063				
Torbay B.C.	Paignton, Preston Sands	SX 8964 6177				X

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MICROBIOLOGICAL MONITORING

DISTRICT COUNCIL	BATHING WATER		X INDICATES FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS			
	MONITORING SITE	N.G.R.	TOTAL COLIFORMS	FAECAL COLIFORMS	SALMONELLAE	ENTEROVIRUSES
Torbay B.C.	Goodrington	SX 8935 5940				
Torbay B.C.	Broadsands	SX 8970 5745				X
Torbay B.C.	Shoalstone	SX 9320 5662			X	
Torbay B.C.	St Mary's Bay	SX 9320 5510				X
South Hams D.C.	Dartmouth Castle and Sugary Cove	SX 8865 5020				X
South Hams D.C.	Blackpool Sands	SX 8550 4785				
South Hams D.C.	Slapton Sands, Monument	SX 8295 4430				
South Hams D.C.	Slapton Sands, Torcross	SX 8235 4195				X
South Hams D.C.	Mill Bay	SX 7407 3825				X
South Hams D.C.	Salcombe North Sands	SX 7310 3820				X
South Hams D.C.	Salcombe South Sands	SX 7285 3775				X
South Hams D.C.	Hope Cove	SX 6755 3975				X
South Hams D.C.	Thurlestone South	SX 6765 4170				X
South Hams D.C.	Thurlestone North	SX 6740 4210				
South Hams D.C.	Banham	SX 6623 4380				X
South Hams D.C.	Bigbury-on-Sea, South	SX 6510 4415				
South Hams D.C.	Bigbury-on-Sea, North	SX 6495 4430				
South Hams D.C.	Challaborough	SX 6492 4480				
South Hams D.C.	Mothecombe	SX 6105 4734			X	X
South Hams D.C.	Wembury	SX 5160 4850			X	
South Hams D.C.	Bovisand	SX 4930 5050			X	X
Plymouth C.C.	Plymouth Hoe, East	SX 4780 5370	X	X	X	X
Plymouth C.C.	Plymouth Hoe, West	SX 4750 5370	X	X	X	X
Caradon D.C.	Portwrinkle	SX 3590 5380				X
Caradon D.C.	Downderry	SX 3140 5380				
Caradon D.C.	Seaton	SX 3030 5430		X		X
Caradon D.C.	Millendreath	SX 2680 5410				X
Caradon D.C.	East Looe	SX 2570 5320				X
Restormel B.C.	Readymoney Cove	SX 1180 5110				X

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MICROBIOLOGICAL MONITORING

DISTRICT COUNCIL	BATHING WATER		X INDICATES FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS				
	MONITORING SITE	N.G.R.	TOTAL COLIFORMS	FAECAL COLIFORMS	SALMONELLAE	ENTEROVIRUSES	
Restormel B.C.	Polkerris	SX 0928 5210				X	
Restormel B.C.	Par	SX 0830 5330				X	
Restormel B.C.	Crinnis, Golflinks	SX 0630 5220				X	
Restormel B.C.	Crinnis, Leisure Centre	SX 0580 5210				X	
Restormel B.C.	Charlestown	SX 0420 5160				X	
Restormel B.C.	Duporth	SX 0350 5120				X	
Restormel B.C.	Porthpean	SX 0320 5070				X	
Restormel B.C.	Pentewan	SX 0180 4670				X	
Restormel B.C.	Polstreath	SX 0170 4540			X	X	
Restormel B.C.	Port Mellon	SX 0160 4390				X	
Restormel B.C.	Gorran Haven, Little Perhaver	SX 0130 4170					
Restormel B.C.	Gorran Haven, Vault	SX 0100 4080					
Restormel B.C.	Porthluney	SW 9730 4130					
Carrick D.C.	Pendower	SW 9050 3830					
Carrick D.C.	Gyllyngvase	SW 8090 3160				X	
Carrick D.C.	Swanpool	SW 8030 3130				X	
Carrick D.C.	Maen Porth	SW 7900 2960				X	
Kerrier D.C.	Porthallow	SW 7970 2330					
Kerrier D.C.	Porthoustock	SW 8070 2170					
Kerrier D.C.	Coverack	SW 7830 1840					
Kerrier D.C.	Kennack Sands	SW 7340 1650					
Kerrier D.C.	Polurrian Cove	SW 6680 1870				X	
Kerrier D.C.	Poldhu Cove	SW 6650 1980					
Kerrier D.C.	Gunwalloe Cove	SW 6540 2250				X	
Kerrier D.C.	Porthleven East	SW 6360 2470	←----- NO DATA ----->				
Kerrier D.C.	Porthleven West	SW 6320 2530				X	
Kerrier D.C.	Praa Sands East	SW 5850 2760					
Kerrier D.C.	Praa Sands West	SW 5770 2810				X	

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MICROBIOLOGICAL MONITORING

DISTRICT COUNCIL	BATHING WATER		X INDICATES FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS			
	MONITORING SITE	N.G.R.	TOTAL COLIFORMS	FAECAL COLIFORMS	SALMONELLAE	ENTEROVIRUSES
Penwith D.C.	Perran Sands	SW 5390 2930				
Penwith D.C.	Marazion and Mounts Bay, Little Holgus	SW 5130 3100				X
Penwith D.C.	Marazion and Mounts Bay, Heliport	SW 4850 3110				X
Penwith D.C.	Marazion and Mounts Bay, Penzance	SW 4750 2980				X
Penwith D.C.	Marazion and Mounts Bay, Wherry Town	SW 4670 2940	X	X	X	X
Penwith D.C.	Porthcurno	SW 3870 2230				
Penwith D.C.	Sennen	SW 3552 2645				X
Penwith D.C.	Porthmeor	SW 5150 4103				
Penwith D.C.	Porthgwidden	SW 5220 4110				X
Penwith D.C.	Porthminster	SW 5220 4025				
Penwith D.C.	Carbis Bay, Station Beach	SW 5280 3890				X
Penwith D.C.	Carbis Bay, Porth Kidney Sands	SW 5400 3850				X
Penwith D.C.	The Towans, Hayle	SW 5630 3950				X
Penwith D.C.	The Towans, Godrevy	SW 5810 4170				X
Kerrier D.C.	Porthreath	SW 6530 4550				X
Carrick D.C.	Porthtowan	SW 6915 4812			X	X
Carrick D.C.	Trevaunance Cove	SW 7230 5170	X	X		
Carrick D.C.	Perranporth, Village End	SW 7570 5480				X
Carrick D.C.	Perranporth, Penhale Sands	SW 7620 5700				
Carrick D.C.	Holywell Bay	SW 7650 5950				X
Restormel B.C.	Crantock	SW 7840 6080				X
Restormel B.C.	Fistral	SW 7960 6230				X
Restormel B.C.	Towan	SW 8100 6205				X
Restormel B.C.	Watergate	SW 8410 6490				
Restormel B.C.	Mawgan Porth	SW 8480 6740				X
North Cornwall D.C.	Porthcothan	SW 8570 7202	X	X		
North Cornwall D.C.	Treyarnon Bay	SW 8570 7390				
North Cornwall D.C.	Constantine Bay	SW 8580 7480				
North Cornwall D.C.	Mother Ivey's Bay	SW 8630 7600				X
North Cornwall D.C.	Harlyn Bay	SW 8770 7550				

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MICROBIOLOGICAL MONITORING

DISTRICT COUNCIL	BATHING WATER		X INDICATES FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS			
	MONITORING SITE	N.G.R.	TOTAL COLIFORMS	FAECAL COLIFORMS	SALMONELLAE	ENTEROVIRUSES
North Cornwall D.C.	Trevone Bay	SW 8920 7610				X
North Cornwall D.C.	Rock	SW 9274 7586				X
North Cornwall D.C.	Daymer Bay	SW 9280 7760		X		X
North Cornwall D.C.	Polzeath	SW 9360 7920				
North Cornwall D.C.	Widemouth Bay	SS 1980 0240				
North Cornwall D.C.	Bude, Summerleaze	SS 2040 0660				X
North Cornwall D.C.	Bude, Crooklets	SS 2030 0720				X
North Cornwall D.C.	Bude, Sandy Mouth	SS 2020 0990				
Torrige D.C.	Hartland Quay	SS 2230 2485				
Torrige D.C.	Westward Ho!	SS 4325 2940				X
North Devon D.C.	Instow	SS 4717 3044		X	X	X
North Devon D.C.	Saunton Sands	SS 4455 3760			X	X
North Devon D.C.	Croyde Bay	SS 4347 3930				X
North Devon D.C.	Woolacombe, Putsborough	SS 4475 4085				X
North Devon D.C.	Woolacombe, Village	SS 4582 4370				X
North Devon D.C.	Ilfracombe, Tunnels Beach	SS 5145 4780			X	X
North Devon D.C.	Ilfracombe, Hele Beach	SS 5355 4792		X	X	X
North Devon D.C.	Ilfracombe, Capstone Beach	SS 5182 4790	X	X		X
North Devon D.C.	Conbe Martin	SS 5772 4732		X		X
North Devon D.C.	Lynmouth	SS 7250 4975			X	X

APPENDIX 2

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MONITORING - PHYSICO-CHEMICAL PARAMETERS

DISTRICT COUNCIL	BATHING WATER		X INDICATES SAMPLE/OBSERVATION IMPLYING FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS					
	MONITORING SITE	N.G.R.	pH	TRANSPARENCY	COLOUR	MINERAL OILS	SURFACE-ACTIVE SUBSTANCES	PHENOLS
West Dorset D.C.	Lyme Regis, Cobb Beach	SY 3390 9185		ND				
West Dorset D.C.	Lyme Regis, Church Beach	SY 3436 9212		ND				
East Devon D.C.	Seaton	SY 2450 8985		ND				
East Devon D.C.	Beer	SY 2315 8910		ND				
East Devon D.C.	Sidmouth, Town Beach	SY 1270 8720		ND				
East Devon D.C.	Sidmouth, Jacobs Ladder	SY 1190 8695		ND				
East Devon D.C.	Ladram Bay	SY 0972 8515		ND				
East Devon D.C.	Budleigh Salterton	SY 0695 8190		ND				
East Devon D.C.	Sandy Bay	SY 0335 7980		ND				
East Devon D.C.	Exmouth	SY 0098 7995		ND				
Teignbridge D.C.	Dawlish Warren	SX 9830 7875		ND				
Teignbridge D.C.	Dawlish, Town Beach	SX 9655 7680		ND				
Teignbridge D.C.	Dawlish, Coryton Cove	SX 9611 7606		ND				
Teignbridge D.C.	Teignmouth, Town Beach	SX 9430 7285		ND				
Teignbridge D.C.	Teignmouth, Holcombe Beach	SX 9565 7461		ND				
Teignbridge D.C.	Shaldon	SX 9350 7230		ND	X			
Teignbridge D.C.	Ness Cove	SX 9385 7170		ND	X			
Torbay B.C.	Maidencombe	SX 9278 6850		ND			X	
Torbay B.C.	Watcombe	SX 9262 6730		ND			X	
Torbay B.C.	Oddicombe	SX 9265 6585		ND	X			
Torbay B.C.	Babbacombe	SX 9300 6545		ND				
Torbay B.C.	Redgate	SX 9350 6480		ND			X	
Torbay B.C.	Headfoot	SX 9305 6305		ND			X	
Torbay B.C.	Beacon Cove	SX 9195 6307		ND				
Torbay B.C.	Torre Abbey	SX 9095 6351		ND				
Torbay B.C.	Hollicombe	SX 8980 6215		ND				
Torbay B.C.	Paignton, Paignton Sands	SX 8949 6063		ND				
Torbay B.C.	Paignton, Preston Sands	SX 8964 6177		ND				

ND = No Data

APPENDIX 2

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MONITORING - PHYSICO-CHEMICAL PARAMETERS

DISTRICT COUNCIL	BATHING WATER		X INDICATES SAMPLE/OBSERVATION IMPLYING FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS					
	MONITORING SITE	N.G.R.	pH	TRANSPARENCY	COLOUR	MINERAL OILS	SURFACE-ACTIVE SUBSTANCES	PHENOLS
Torbay B.C.	Goodrington	SX 8935 5940		ND				
Torbay B.C.	Broadsands	SX 8970 5745		ND				
Torbay B.C.	Shoalstone	SX 9320 5662		ND				
Torbay B.C.	St Mary's Bay	SX 9320 5510		ND				
South Hams D.C.	Dartmouth Castle and Sugary Cove	SX 8865 5020		ND			X	
South Hams D.C.	Blackpool Sands	SX 8550 4785		ND			X	
South Hams D.C.	Slapton Sands, Monument	SX 8295 4430		ND				
South Hams D.C.	Slapton Sands, Torcross	SX 8235 4195		ND			X	
South Hams D.C.	Mill Bay	SX 7407 3825		ND				
South Hams D.C.	Salcombe North Sands	SX 7310 3820		ND	X			
South Hams D.C.	Salcombe South Sands	SX 7285 3775		ND				
South Hams D.C.	Hope Cove	SX 6755 3975		ND	X			
South Hams D.C.	Thurlestone, South	SX 6765 4170		ND	X		X	
South Hams D.C.	Thurlestone, North	SX 6740 4210		ND	X	X	X	
South Hams D.C.	Banham	SX 6623 4380		ND				
South Hams D.C.	Bigbury-on-Sea, South	SX 6510 4415		ND				
South Hams D.C.	Bigbury-on-Sea, North	SX 6495 4430		ND				
South Hams D.C.	Challaborough	SX 6492 4480		ND			X	
South Hams D.C.	Mothecombe	SX 6105 4734		ND			X	
South Hams D.C.	Wenbury	SX 5160 4850		ND				
South Hams D.C.	Bovisand	SX 4930 5050		ND				
Plymouth C.C.	Plymouth Hoe, East	SX 4780 5370		ND			X	
Plymouth C.C.	Plymouth Hoe, West	SX 4750 5370		ND	X	X	X	
Caradon D.C.	Portwrinkle	SX 3590 5380		ND				
Caradon D.C.	Downderry	SX 3140 5380		ND	X			
Caradon D.C.	Seaton	SX 3030 5430		ND	X			
Caradon D.C.	Millendreath	SX 2680 5410		ND	X			
Caradon D.C.	East Looe	SX 2570 5320		ND	X			

ND = No Data

APPENDIX 2

1991 SURVEY OF BATHING WATER QUALITY
RESULTS OF MONITORING - PHYSICO-CHEMICAL PARAMETERS

DISTRICT COUNCIL	BATHING WATER		X INDICATES SAMPLE/OBSERVATION IMPLYING FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS					
	MONITORING SITE	N.G.R.	pH	TRANSPARENCY	COLOUR	MINERAL OILS	SURFACE-ACTIVE SUBSTANCES	PHENOLS
Restormel B.C.	Readymoney Cove	SX 1180 5110		ND				
Restormel B.C.	Polkerris	SX 0928 5210		ND	X			
Restormel B.C.	Par	SX 0830 5330		ND	X			
Restormel B.C.	Crinnis, Golflinks	SX 0630 5220		ND				
Restormel B.C.	Crinnis, Leisure Centre	SX 0560 5210		ND				
Restormel B.C.	Charlestown	SX 0420 5160		ND				
Restormel B.C.	Duporth	SX 0350 5120		ND				
Restormel B.C.	Porthpean	SX 0320 5070		ND				
Restormel B.C.	Pentewan	SX 0180 4670		ND				
Restormel B.C.	Polstreath	SX 0170 4540		ND				
Restormel B.C.	Port Mellon	SX 0160 4390		ND				
Restormel B.C.	Gorran Haven, Little Penhaver	SX 0130 4170		ND				
Restormel B.C.	Gorran Haven, Vault	SX 0100 4080		ND		X		
Restormel B.C.	Porthluney	SW 9730 4130		ND				
Carrick D.C.	Pendower	SW 9050 3830		ND				
Carrick D.C.	Gyllyngvase	SW 8090 3160		ND			X	
Carrick D.C.	Swanpool	SW 8030 3130		ND				
Carrick D.C.	Maen Porth	SW 7900 2960		ND				
Kerrier D.C.	Porthallow	SW 7970 2330		ND				
Kerrier D.C.	Porthoustock	SW 8070 2170		ND				
Kerrier D.C.	Coverack	SW 7830 1840		ND		X		
Kerrier D.C.	Kennack Sands	SW 7340 1650		ND				
Kerrier D.C.	Polurrian Cove	SW 6680 1870		ND				
Kerrier D.C.	Poldhu Cove	SW 6650 1980		ND			X	
Kerrier D.C.	Gunwalloe Cove	SW 6540 2250		ND				
Kerrier D.C.	Porthleven, East	SW 6360 2470		ND	ND	ND	ND	ND
Kerrier D.C.	Porthleven, West	SW 6320 2530		ND				X
Kerrier D.C.	Praa Sands, East	SW 5850 2760		ND			X	
Kerrier D.C.	Praa Sands, West	SW 5770 2810		ND				

ND = No Data

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MONITORING - PHYSICO-CHEMICAL PARAMETERS

DISTRICT COUNCIL	BATHING WATER		X INDICATES SAMPLE/OBSERVATION IMPLYING FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS					
	MONITORING SITE	N.G.R.	pH	TRANSPARENCY	COLOUR	MINERAL OILS	SURFACE-ACTIVE SUBSTANCES	PHENOLS
Penwith D.C.	Perran Sands	SW 5390 2930		ND				
Penwith D.C.	Marazion and Mounts Bay, Little Holgus	SX 5130 3100		ND				
Penwith D.C.	Marazion and Mounts Bay, Heliport	SX 4850 3110		ND	X	X		
Penwith D.C.	Marazion and Mounts Bay, Penzance	SX 4750 2980		ND	X			
Penwith D.C.	Marazion and Mounts Bay, Wherry Town	SX 4670 2940		ND	X			
Penwith D.C.	Porthcurno	SW 3870 2230						
Penwith D.C.	Sennen	SW 3552 2645		ND				
Penwith D.C.	Porthmeor	SW 5150 4103		ND				
Penwith D.C.	Porthgwidde	SW 5220 4110		ND				
Penwith D.C.	Porthminster	SW 5220 4025		ND				
Penwith D.C.	Carbis Bay, Station Beach	SW 5280 3890		ND				
Penwith D.C.	Carbis Bay, Porth Kidney Sands	SW 5400 3850						
Penwith D.C.	The Towans, Hayle	SW 5630 3950						
Penwith D.C.	The Towans, Godrevy	SW 5810 4170		ND				
Kerrier D.C.	Portreath	SW 6530 4550		ND				
Carrick D.C.	Porthtowan	SW 6915 4812		ND			X	
Carrick D.C.	Trevaunance Cove	SW 7230 5170		ND				
Carrick D.C.	Perranporth, Village End	SW 7570 5480		ND			X	
Carrick D.C.	Perranporth, Penhale Sands	SW 7620 5700		ND			X	
Carrick D.C.	Holywell Bay	SW 7650 5950		ND			X	
Restormel B.C.	Crantock	SW 7840 6080					X	
Restormel B.C.	Fistral	SW 7960 6230		ND			X	
Restormel B.C.	Towan	SW 8100 6205		ND				
Restormel B.C.	Watergate	SW 8410 6490		ND			X	
Restormel B.C.	Mangan Porth	SW 8480 6740					X	
North Cornwall D.C.	Porthcothan	SW 8570 7202			X			
North Cornwall D.C.	Treyarnon Bay	SW 8570 7390		ND			X	
North Cornwall D.C.	Constantine Bay	SW 8580 7480		ND			X	
North Cornwall D.C.	Mother Ivey's Bay	SW 8630 7600		ND			X	

ND = No Data

APPENDIX 2

1992 SURVEY OF BATHING WATER QUALITY
RESULTS OF MONITORING - PHYSICO-CHEMICAL PARAMETERS

DISTRICT COUNCIL	BATHING WATER		X INDICATES SAMPLE/OBSERVATION IMPLYING FAILURE TO COMPLY WITH E.C. DIRECTIVE MANDATORY I STANDARDS					
	MONITORING SITE	N.G.R.	pH	TRANSPARENCY	COLOUR	MINERAL OILS	SURFACE-ACTIVE SUBSTANCES	PHENOLS
North Cornwall D.C.	Harlyn Bay	SW 8770 7550		ND				
North Cornwall D.C.	Trevone Bay	SW 8920 7610		ND				
North Cornwall D.C.	Rock	SW 9360 7550		ND				
North Cornwall D.C.	Daymer Bay	SW 9280 7760		ND				
North Cornwall D.C.	Polzeath	SW 9360 7920		ND				
North Cornwall D.C.	Widemouth Sand	SS 1980 0240		ND				
North Cornwall D.C.	Bude, Summerleaze	SS 2040 0660		ND	X			
North Cornwall D.C.	Bude, Crooklets	SS 2030 0720		ND				
North Cornwall D.C.	Bude, Sandy Mouth	SS 2020 0990		ND				
Torrige D.C.	Hartland Quay	SS 2230 2485		ND				
Torrige D.C.	Westward Ho!	SS 4325 2940		ND				
North Devon D.C.	Instow	SS 4717 3044		ND			X	
North Devon D.C.	Saunton Sands	SS 4455 3760		ND			X	
North Devon D.C.	Croyde Bay	SS 4347 3930		ND	X			
North Devon D.C.	Woolacombe, Putsborough	SS 4475 4085		ND	X		X	
North Devon D.C.	Woolacombe, Village	SS 4562 4370		ND	X		X	
North Devon D.C.	Ilfracombe, Tunnels Beach	SS 5145 4780		ND	X		X	
North Devon D.C.	Ilfracombe, Hele Beach	SS 5355 4792		ND	X			
North Devon D.C.	Ilfracombe, Capstone Beach	SS 5182 4790		ND				
North Devon D.C.	Combe Martin	SS 5772 4732		ND	X			
North Devon D.C.	Lynmouth	SS 7250 4975		ND				

ND = No Data

APPENDIX 3

MONITORING OF NON IDENTIFIED BATHING WATER DURING 1992

Bathing Water	NGR	'X' Indicates failure to comply with EC Directive Mandatory Standards	
		Total Coliforms	Faecal Coliforms
Lyme Regis (Monmouth Beach)	SY 3370 9156	X	X
Weston Mouth	SY 1640 8790		
Livermead Sands	SX 9045 6300	X	X
Saltern Cove	SX 8955 5850		
Man Sands	SX 9228 5345		
Strete Gate Beach	SX 8350 4580		
Ditchend Beach	SX 7432 3875		
Mouthwell Sands	SX 6755 4014		X
Jennycliffe Bay	SX 4915 5225		
Cawsand Bay	SX 4342 5020		
Whitsand Bay - Freathy	SX 3960 5205		
Spit Beach	SX 0710 5230	X	X
Carne Beach (Pendower)	SW 9051 3831		
Portscatho Beach	SW 8775 3525	X	X
Towan Beach	SW 8700 3290		
Loe Beach - Feock	SW 8260 3810		
Kynance Cove	SW 6835 1325		
Church Cove	SW 6610 2050		
Kennegy Sand	SW 5620 2825		
Prussia Cove (Bessy's Cove)	SW 5577 2785		
Marazion and Mounts Bay - Top Tieb	SW 5210 3040	X	X
Marazion and Mounts Bay - Chyandour	SW 4800 3100		X
St Levan Beach	SW 3818 2186		
Mill Bay - Landsend	SW 3576 2357		
Whitsand Bay, (Escalls Cliff)	SW 3625 2756		
Chapel Porth Beach	SW 6969 4960		
Great Western Beach	SW 8150 6190		
Tolcarne Beach (Newquay)	SW 8180 6215		
Lusty Glaze	SW 8240 6255		
Porth	SW 8293 6275		
Whipsiderry Beach	SW 8305 6310		
Trebarwith Strand Beach	SX 0482 8638		
Crackington Haven Beach	SX 1427 9690	X	X
Bucks Mills Beach	SS 3518 2375		
Lynmouth - Sea Pool	SS 7200 4995		

APPENDIX 4

SUMMARY SURVEY RESULTS (1986-1992) OF BATHING WATER QUALITY

BATHING WATERS FAILING TO MEET EC DIRECTIVE MANDATORY BACTERIOLOGICAL STANDARDS (1)

Site	Bathing Seasons(s) when failure recorded
Lyme Regis (Cobb)	1986, 1989, 1992
Lyme Regis (Church)	1987, 1988, 1989, 1990, 1991, 1992
Seaton (Devon)	1986, 1987
Budleigh Salterton	1987
Exmouth	1986
Dawlish (Town)	
Teignmouth (Town)	1986, 1987
Teignmouth (Holcombe)	1989
Shaldon	1986, 1987, 1988, 1991
Ness Cove	1986, 1991
Torre Abbey	
Hollicombe	1986
Paignton (Paignton Sands)	1988
Paignton (Preston Sands)	1988
Goodrington	1987
Dartmouth Castle + Sugary Cove	1986
Mill Bay	1987
Salcombe North Sands	1986, 1989, 1991
Salcombe South Sands	1986, 1988
Thurlestone (North)	1986, 1987, 1988, 1989, 1990, 1991
Bigbury-on-Sea (North)	1986
Challaborough	1987
Mothecombe	1986
Wembury	1986, 1987
Plymouth Hoe (East)	1986, 1987, 1988, 1990, 1991, 1992
Plymouth Hoe (West)	1986, 1987, 1988, 1990, 1991, 1992
Portwrinkle	1987
Dowderry	1987
Seaton (Cornwall)	1986, 1987, 1988
Millendreath	1989
East Looe	1986, 1989
Readymoney Cove	1986, 1987, 1991
Polkerris	1987
Par	1986
Crinnis (Golflinks)	1989
Charlestown	1986, 1988, 1989
Duport	1986, 1987, 1988, 1990
Pentewan	1986, 1987, 1988, 1989
Polstreath	1986

Site	Bathing Season(s) when failure recorded
Gorran Haven (Little Perhaver)	1986, 1987 1990
Pendower	1986
Gyllyngvase	1987
Swanpool	1987 1992
Maen Porth	1987
Porthluney	1991
Porthallow	1986, 1987, 1988, 1989, 1991
Coverack	1986 CND(2)
Polurrian Cove	1986
Porthleven (East)	1986 ND(3) ND(3) ND(3) ND(3)
Porthleven (West)	1986, 1987, 1988, 1990, 1991
Perran Sands	1991
Marazion + Mounts Bay (Little Holgus)	1986, 1987
Marazion + Mounts Bay (Heliport)	1986 1988, 1989, 1990, 1991
Marazion + Mounts Bay (Penzance)	1986, 1987, 1988, 1989, 1990, 1991
Marazion + Mounts Bay (Wherry Town)	1986, 1987, 1988, 1989, 1990, 1991, 1992
Porthmeor (St Ives)	1986
Porthgidden (St Ives)	1986, 1988, 1989, 1990, 1991
Porthminster (St Ives)	1989
Carbis Bay (Porth Kidney Sands)	1991
Trevaunance Cove (St Agnes)	1986, 1987, 1991, 1992
Perranporth (Village)	1987, 1991
Watergate	1991
Crantock	1986
Mawgan Porth	1986, 1987, 1989, 1990, 1991
Porthcothan	1992
Trevone Bay	1986, 1987, 1988, 1991
Rock	1986, 1987
Daymer Bay	1992
Bude (Summerlease)	1986, 1987, 1988, 1991
Bude (Crooklets)	1986, 1987, 1988, 1991
Westward Ho!	1986
Instow	1986, 1987, 1988, 1990, 1991, 1992
Saunton Sands	1986
Ilfracombe (Hele)	1987, 1991, 1992
Ilfracombe (Capstone)	1986, 1987, 1990 1992
Combe Martin	1986, 1987, 1988, 1989, 1991, 1992
Lynmouth	1986, 1987 1989, 1990, 1991

(1) 95 per cent compliance with EC Directive 'I' values for total coliforms (max. 10,000 per 100ml) and faecal coliforms (max. 2,000 per 100ml).

(2) Compliance not determined.

(3) No data.

Figure 3. Non Identified Bathing Waters

* Indicates failure to comply with principal E.C. mandatory bacteriological standards in 1992

§ Indicates other bathing waters which were monitored during 1992

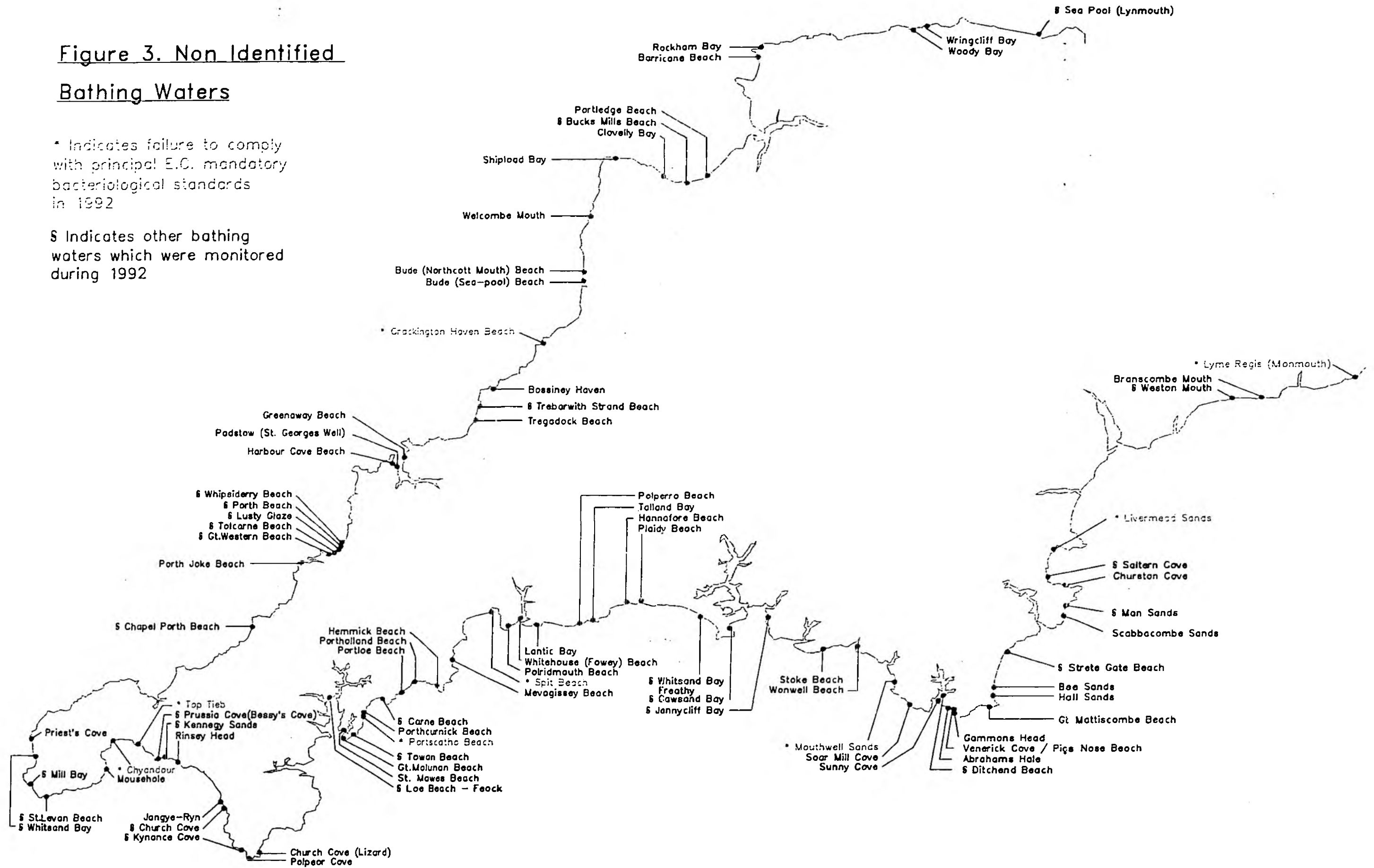


Figure 2.

E.C. Bathing Waters

* Indicates failure to comply with principal E.C. mandatory bacteriological standards in 1 or more years since 1986

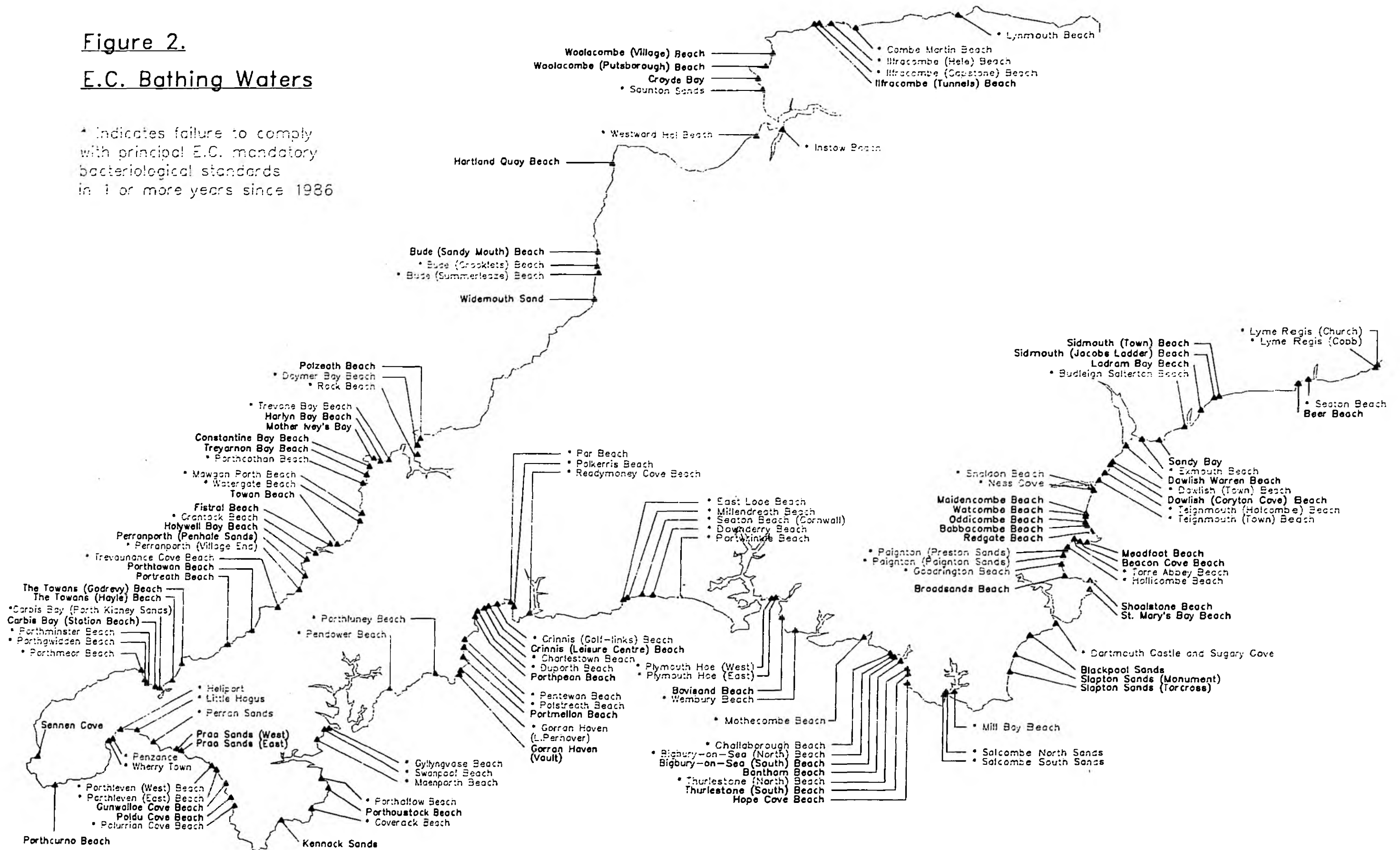
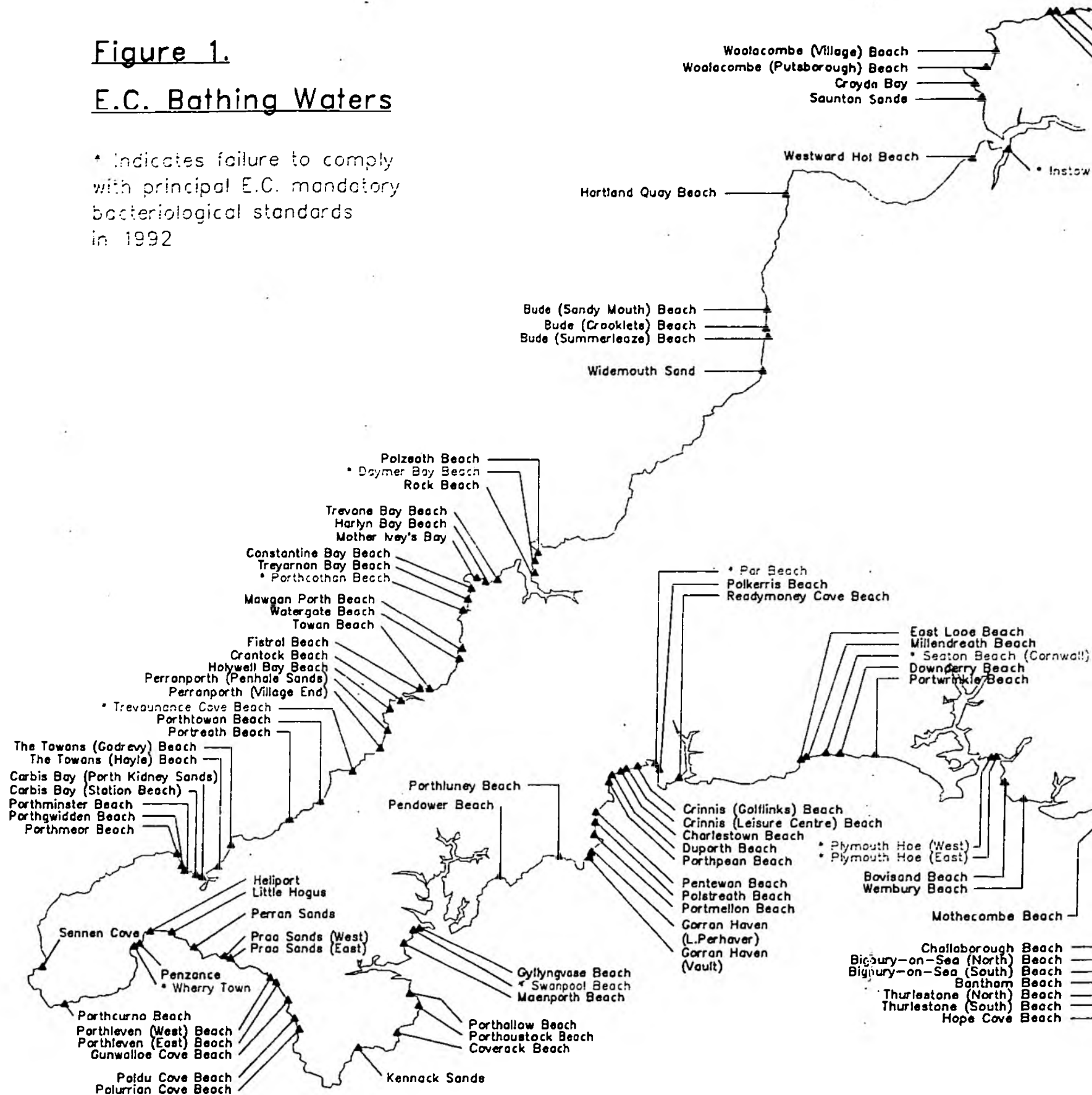
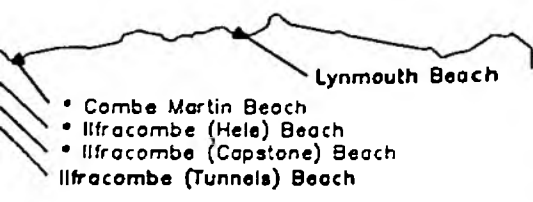


Figure 1.

E.C. Bathing Waters

* Indicates failure to comply with principal E.C. mandatory bacteriological standards in 1992





Beach

