

ENVIRONMENT AGENCY



128928

NRA: WALES 62

**BATHING WATERS REPORT**

**1989**

**CONFIDENTIAL**

PL/SP/SR05/SP0290 - January 1990

E C BATHING WATERS 1989 - E COLI & TOTAL COLIFORM "G" VALUES

80% of samples required to conform with standard for bathing waters  
to be classified as "Pass"

Bathing Water	No. Samples	No. No. Fail	E Coli			Total Coliforms				Overall Pass/Fail
			Range	Ave.	Pass/Fail	No. Fail	Range	Ave.	Pass/Fail	
<u>South East</u>										
Jacksons Bay	22	22	200- 4600	1236	F	21	500- 6800	2450	F	F
Whitmore Bay	22	18	100-10800	1250	F	21	200-12700	2600	F	F
Cold Knap Beach	22	17	<100- 1200	472	F	18	100- 4900	1332	F	F
<u>South West</u>										
Southerndown Beach	22	17	20- 1300	332	F	14	100-20000	2345	F	F
Trecco Bay	22	17	<100- 5100	873	F	19	100- 6400	2009	F	F
Sandy Bay	22	20	<100- 1600	614	F	19	100- 7800	1973	F	F
Rest Bay	22	17	20- 700	260	F	12	100- 1800	700	F	F
Aberafan Slip	22	13	10- 1080	281	F	9	10- 5000	1082	F	F
Swansea Bay	21	14	<100- 6800	690	F	10	<100-15000	1281	F	F
Bracelet Bay	22	16	<10- 2000	464	F	15	100- 9000	1573	F	F
Limeslade Bay	22	19	<100- 6000	1088	F	17	100-15000	2977	F	F
Langland Bay	22	13	50-10000	819	F	15	<100-13000	2025	F	F
Caswell Bay	22	16	30- 1400	368	F	9	50- 3800	755	F	F
Oxwich Bay	22	5	<2- 1400	118	F	1	<10- 2250	182	P	F
Port Eynon Bay	22	9	5- 1400	162	F	2	10- 4500	364	P	F
Rhossili Beach	22	3	2- 400	65	F	0	6- 440	81	P	F
Pembrey Beach	22	1	<2- 136	23	P	0	<2- 180	32	P	P
Pendine Beach	20	5	<10- 380	73	F	0	20- 400	104	P	F
Amroth Beach	20	5	<10- 900	94	F	2	<10- 1200	144	P	F
Saundersfoot Beach	20	10	<100- 3100	470	F	9	<100- 7600	1365	F	F
Tenby N Beach	21	11	10- 1200	174	F	1	10- 1240	203	P	F
Tenby S Beach	22	6	<10- 850	152	F	3	10- 900	209	P	F
Broadhaven	20	9	30- 600	184	F	3	40- 1700	289	P	F
Newgale Beach	20	4	<5- 300	56	P	0	5- 320	73	P	F
Whitesands	20	1	<5- 300	29	P	0	<10- 300	50	P	F
Newport Sands N.	20	3	5- 800	71	P	1	<10- 920	99	P	F
Newquay S. Beach	22	5	<5- 250	58	F	1	<10- 800	158	P	F
Aberystwyth S. Beach	22	12	<10- 1980	456	F	13	<100- 8600	1637	F	F
Aberystwyth N. Beach	22	7	<10- 1200	155	F	5	10- 3400	407	F	F
<u>North</u>										
Borth	22	8	<5- 1100	172	F	3	<5- 1100	217	P	F
Tywyn	21	10	1- 1690	268	F	6	6- 2100	505	F	F
Fairbourne Beach	21	6	0- 210	56	F	1	3- 580	115	P	F
Barmouth	21	4	1- 2000	142	P	2	11- 2000	203	P	F
Llandanwg Beach	21	5	0- 1370	158	F	7	3- 5360	829	F	F
Harlech	20	6	0- 750	134	F	6	12- 1800	409	F	F
Morfa Bychan	22	7	0- 860	150	F	5	0- 5100	509	F	F
Criccieth Beach E.	22	12	4- 1230	308	F	13	28- 5310	1190	F	F
Pwllheli Beach	22	3	0- 450	53	P	1	0- 2300	186	P	P
Abersoch	22	4	0- 1370	182	P	4	1- 1420	254	P	P
Morfa Dinlle	22	3	0- 1400	128	F	3	0- 1760	264	F	F
Benllech	21	9	1- 1980	230	F	5	21- 2230	415	F	F
Trearddur Bay	21	3	0- 510	66	P	1	0- 520	101	P	P
Llandudno W.	21	15	1-21300	2678	F	19	50->30000	6355	F	F
Llandudno N.W.	21	10	1- 9600	698	F	8	10- 9600	885	F	F
Colwyn Bay	21	14	4- 1420	338	F	10	70- 8800	1358	F	F
Sandy Cove	21	15	9- 1600	541	F	17	50-19700	3898	F	F
Rhyl	21	18	23- 7600	1559	F	18	320->40000	7409	F	F
Prestatyn	21	8	12- 660	191	F	11	50- 6100	1131	F	F

## NRA WELSH REGION

### 1989 BATHING WATER SURVEY

#### 1. BACKGROUND

- 1.1 The EC Bathing Waters Directive (76/160/EEC) is intended to safeguard public health and the environment by reducing pollution of bathing waters and protecting such waters against further deterioration.
- 1.2 The Directive identifies a range of water quality standards which should be achieved in waters subject to the Directive and indicates the required monitoring frequency. These standards fall into two categories, mandatory (I) and guideline (G) standards, details of the requirements for compliance are given in Appendix 1. The "I" standards most commonly applied relate to E.coli and Coliform bacteria and require that 95% of all samples taken at a minimum of fortnightly intervals through the bathing season should contain fewer than 2,000 E.coli per 100ml. and 10,000 total coliforms per 100ml. The Government currently uses the E.coli and total coliforms standards as the basis for determining UK compliance with the Directive. Additional "I" standards concern the occurrence of Salmonella, enteroviruses and a range of physico-chemical standards. The occurrence of faecal streptococci and tarry residues and persistent floating solids are also examined although they are non mandatory "G" standards.

#### 2. SAMPLING PROGRAMME

- 2.1 The 48 bathing waters in the Welsh region identified as falling within the scope of the Directive are displayed on Figure 1 and listed in Appendix 2. Whilst these bathing waters are not formally designated, colloquially they are referred to as such, and for brevity the term "designated" is used in this report.
- 2.2 The Government requires that these bathing waters are monitored in accordance with the requirements of the Bathing Waters Directive and the raw data reported to the Welsh Office (WO) and DOE by November of each year. This report summarises the results of the monitoring carried out during the 1989 bathing season.
- 2.3 In addition to this monitoring programme, the NRA also monitors bathing water quality at many other sites in order to establish the impact of unsatisfactory discharges and to ensure that bathing water quality does not deteriorate. The results of this monitoring programme are also reported. (Appendix 3 lists the bathing waters in this category).

3. 1989 MONITORING PROGRAMME FOR BATHING WATERS IDENTIFIED AS FALLING WITHIN THE TERMS OF THE BATHING WATERS DIRECTIVE
- 3.1 Monitoring is confined to the period 1st May - 30th September, which includes two weeks sampling prior to the DOE identified bathing season (15 May - 30th September).
- 3.2 DOE has not issued formal detailed implementation advice for this Directive. The monitoring programme was therefore developed using informal guidance from DOE and previous years' experience incorporating detailed comment from HMIP on specific aspects. As in previous years some assistance with sampling was provided by Local Authorities.
- 3.3 Summary data on quality collected from the 48 "designated" bathing waters are reported in Appendix 4. These results, together with those from elsewhere in the UK will be published by the Government.
- 3.4 Table 1(a) summarises E. coli and total coliform sample statistics and compliance with the "I" values for the 48 "designated" Welsh bathing waters in 1989. These results indicate that overall 40 (83%) complied with the combined standard.
- 3.5 Table 1(b) summarises Salmonella sample statistics and compliance with the "I" value for the 48 "designated" Welsh bathing waters in 1989. The results indicate that 26 bathing waters (54%) complied with the Directive standard.
- 3.6 Table 1(c) summarises entero-viruse sample statistics and compliance with the "I" value for the 48 "designated" Welsh bathing waters in 1989. The results indicate that 27 (56%) complied with the Directive standard.
- 3.7 Table 1(d) summarises the sample statistics and compliance for all the mandatory "I" values for the 48 "designated" Welsh bathing waters in 1989. Only 1 (2%) fully complied with the requirements of the Directive. However, it is considered that the failures for Surface Active Substances and Colour Change are not a true reflection of the situation but rather, that the apparent failures were due to a misinterpretation of these two subjective standards. In addition, the Welsh region results for Transparency are likely to be the subject of a request for a derogation order under Article 8 of the Directive, as they are considered a consequence of elevated suspended solids caused by the high tidal range rather than an indication of pollution
- 3.8 Table 2 summarises faecal streptococci sample statistics and compliance with the "G" value for the 48 "designated" Welsh bathing waters in 1989. This indicates that 17 (35%) complied with the standard for the Directive.

4. 1989 MONITORING PROGRAMME FOR BATHING WATERS NOT IDENTIFIED UNDER THE TERMS OF THE BATHING WATERS DIRECTIVE

4.1 A total of 83 "non-designated" bathing waters were also monitored during 1989. These results have been reported to the WO. Wherever resources allowed, monitoring was undertaken at at least fortnightly intervals and, as in past years assistance was provided by some Local Authorities. Appendix 5 gives statistical details for this monitoring programme.

4.2 The compliance of each of these waters with the E.coli/total coliform standards ("I" values) of the Bathing Waters Directive is shown in Table 3. This shows that overall 59 (71%) of the "non-designated" bathing waters complied with the combined coliform requirements of the Directive in 1989.

5. REMEDIAL MEASURES REQUIRED TO MEET LONG TERM OBJECTIVE

5.1 The long term objective is for all "designated" bathing waters to comply with the standards laid down in the Directive. In order to facilitate this a "Bathing Waters Improvement" strategy is currently being devised by NRA Welsh Region to identify remedial work required at "designated" bathing waters (and subsequently at "non-designated" bathing waters) to ensure compliance with the E.coli and total coliform standards by 1995.

Table 4 compares the compliance of the "designated" bathing waters over the period 1986 - 1989 (the assessment was carried out differently prior to 1986 and therefore cannot be included). It must be emphasised that this is considered an unreliable indication of trends due to the statistical limitations of such a small data set. In addition Table 4 indicates those bathing waters which have been identified by Dwr Cymru cyf. to the DOE for inclusion in the investment programme designed to facilitate compliance by the UK with its obligations under the Bathing Waters Directive.

5.2 Table 5 gives details of remedial measures which have either been completed, or have been commenced in 1989.

6. SUMMARY

6.1 A total of 40 out of the 48 "designated" bathing waters (83% of the total) complied with the E.coli and total coliform standards specified in the Directive.

6.2 A total of 59 out of the 83 "non designated" bathing waters (71% of the total) complied with the E.coli and total coliform standards specified in the Directive.

Figure 1

LOCATION OF "DESIGNATED" BATHING WATER SAMPLING SITES AROUND WALES

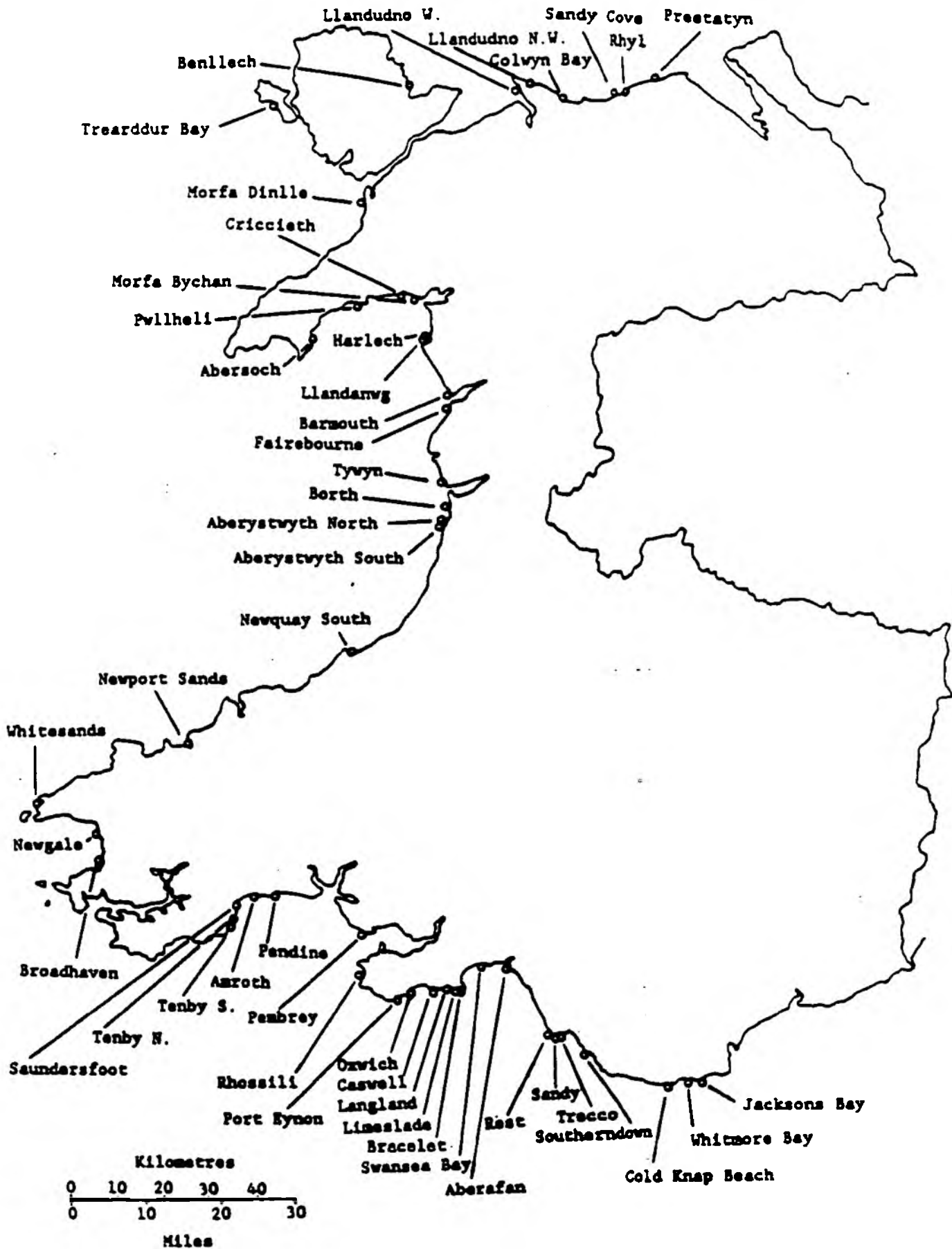


Table 1a

COMPLIANCE OF "DESIGNATED" BATHING WATERS WITH "I" VALUES FOR E. COLI AND TOTAL COLIFORMS

<u>Bathing Water</u>	<u>E.coli</u>			<u>Total Coliforms</u>			<u>Overall</u>		
	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>
<u>South East</u>									
Jacksons Bay	22	3	F	22	0	P	22	3	F
Whitmore Bay	22	2	F	22	1	P	22	2	F
Cold Knap Beach	22	0	P	22	0	P	22	0	P
<u>South West</u>									
Southerndown Beach	22	0	P	22	1	P	22	1	P
Trecco Bay	22	3	F	22	0	P	22	3	F
Sandy Bay	22	0	P	22	0	P	22	0	P
Rest Bay	22	0	P	22	0	P	22	0	P
Aberafan Slip	22	0	P	22	0	P	22	0	P
Swansea Bay	21	1	P	21	1	P	21	1	P
Bracelet Bay	22	0	P	22	0	P	22	0	P
Limeslade Bay	22	2	F	22	1	P	22	3	F
Langland Bay	22	2	F	22	1	P	22	2	F
Caswell Bay	22	0	P	22	0	P	22	0	P
Oxwich Bay	22	0	P	22	0	P	22	0	P
Port Eynon Bay	22	0	P	22	0	P	22	0	P
Rhossili Beach	22	0	P	22	0	P	22	0	P
Pembrey Beach	22	0	P	22	0	P	22	0	P
Pendine Beach	20	0	P	20	0	P	20	0	P
Amroth Beach	20	0	P	20	0	P	20	0	P
Saundersfoot Beach	20	1	P	20	0	P	20	1	P
Tenby N. Beach	21	0	P	21	0	P	21	0	P
Tenby S. Beach	22	0	P	22	0	P	22	0	P
Broadhaven	20	0	P	20	0	P	20	0	P
Newgale Beach	20	0	P	20	0	P	20	0	P
Whitesands	20	0	P	20	0	P	20	0	P
Newport Sands N.	20	0	P	20	0	P	20	0	P
Newquay S. Beach	22	0	P	22	0	P	22	0	P
Aberystwyth S. Beach	22	0	P	22	0	P	22	0	P
Aberystwyth N. Beach	22	0	P	22	0	P	22	0	P
<u>North</u>									
Borth	22	0	P	22	0	P	22	0	P
Tywyn	21	0	P	21	0	P	21	0	P
Fairebourne Beach	21	0	P	21	0	P	21	0	P
Barmouth	21	0	P	21	0	P	21	0	P
Llandanwg Beach	21	0	P	21	0	P	21	0	P
Harlech	20	0	P	20	0	P	20	0	P
Morfa Bychan	22	0	P	22	0	P	22	0	P
Criccieth Beach E.	22	0	P	22	0	P	22	0	P
Pwllheli Beach	22	0	P	22	0	P	22	0	P
Abersoch	22	0	P	22	0	P	22	0	P
Morfa Dinlle	22	0	P	22	0	P	22	0	P
Benllech	21	0	P	21	0	P	21	0	P
Trearddur Bay	21	0	P	21	0	P	21	0	P
Llandudno W.	21	5	F	21	5	F	21	5	F
Llandudno N.W.	21	1	P	21	0	P	21	1	P
Colwyn Bay	21	0	P	21	0	P	21	0	P
Sandy Cove	21	0	P	21	3	F	21	3	F
Rhyl	21	6	F	21	3	F	21	6	F
Prestatyn	21	0	P	21	0	P	21	0	P

Table 1b

COMPLIANCE OF "DESIGNATED" BATHING WATERS WITH "I" VALUE FOR SALMONELLA

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number Failures</u>	<u>Pass/ Fail</u>
<u>South East</u>			
Jacksons Bay	5	4	F
Whitmore Bay	5	1	F
Cold Knap Beach	5	1	F
<u>South West</u>			
Southerndown Beach	5	2	F
Trecco Bay	5	0	P
Sandy Bay	5	1	F
Rest Bay	5	0	P
Aberafan Slip	5	0	P
Swansea Bay	5	1	F
Bracelet Bay	5	1	F
Limeslade Bay	5	1	F
Langland Bay	5	2	F
Caswell Bay	5	1	F
Oxwich Bay	5	1	F
Port Eynon Bay	5	0	P
Rhossili Beach	5	0	P
Pembrey Beach	8	0	P
Pendine Beach	6	0	P
Amroth Beach	5	0	P
Saundersfoot Beach	5	2	F
Tenby N. Beach	5	1	F
Tenby S. Beach	4	0	P
Broadhaven	5	0	P
Newgale Beach	5	0	P
Whitesands	5	0	P
Newport Sands N.	5	0	P
Newquay S. Beach	5	1	F
Aberystwyth S. Beach	5	2	F
Aberystwyth N. Beach	5	1	F
<u>North</u>			
Borth	5	1	F
Tywyn	4	0	P
Fairebourne Beach	4	0	P
Barmouth	4	1	F
Llandanwg Beach	4	2	F
Harlech	4	0	P
Morfa Bychan	4	1	F
Criccieth Beach E.	4	0	P
Pwllheli Beach	4	0	P
Abersoch	4	0	P
Morfa Dinlle	4	0	P
Benllech	4	0	P
Trearddur Bay	4	0	P
Llandudno W.	4	0	P
Llandudno N.W.	4	0	P
Colwyn Bay	4	0	P
Sandy Cove	4	0	P
Rhyl	4	1	F
Prestatyn	4	1	F



Table 1c

COMPLIANCE OF "DESIGNATED" BATHING WATERS WITH "I" VALUE FOR ENTERO-VIRUS

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number Failures</u>	<u>Pass/Fail</u>
<u>South East</u>			
Jacksons Bay	2	0	P
Whitmore Bay	2	0	P
Cold Knap Beach	2	0	P
<u>South West</u>			
Southerndown Beach	2	0	P
Trecco Bay	2	1	F
Sandy Bay	2	1	F
Rest Bay	2	0	P
Aberafan Slip	2	0	P
Swansea Bay	2	1	F
Bracelet Bay	2	0	P
Limeslade Bay	2	1	F
Langland Bay	2	0	P
Caswell Bay	2	0	P
Oxwich Bay	2	0	P
Port Eynon Bay	2	0	P
Rhossili Beach	2	0	P
Pembrey Beach	2	0	P
Pendine Beach	2	0	P
Amroth Beach	2	0	P
Saundersfoot Beach	2	0	P
Tenby N. Beach	2	1	F
Tenby S. Beach	2	0	P
Broadhaven	2	0	P
Newgale Beach	2	1	F
Whitesands	2	1	F
Newport Sands N.	2	1	F
Newquay S. Beach	2	0	P
Aberystwyth S. Beach	2	0	P
Aberystwyth N. Beach	2	1	F
<u>North</u>			
Borth	2	0	P
Tywyn	2	1	F
Fairebourne Beach	2	1	F
Barmouth	2	0	P
Llandanwg Beach	2	2	F
Harlech	2	0	P
Morfa Bychan	2	1	F
Criccieth Beach E.	2	0	P
Pwllheli Beach	2	2	F
Abersoch	2	0	P
Morfa Dinlle	2	2	F
Benllech	2	1	F
Trearddur Bay	2	1	F
Llandudno W.	2	1	F
Llandudno N.W.	2	1	F
Colwyn Bay	2	2	F
Sandy Cove	2	0	P
Rhyl	2	0	P
Prestatyn	2	1	F

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Table 1d

COMPLIANCE OF EACH "I" VALUE FOR  
"DESIGNATED" BATHING WATERS

<u>Bathing Water</u>	<u>E. Coli</u>	<u>Tot. Coli.</u>	<u>Salmonella</u>	<u>Viruses</u>	<u>pH</u>	<u>Mineral Oils</u>	<u>Surf. Act. Subs.</u>	<u>Phenols</u>	<u>Colour Change</u>	<u>Transparency</u>	<u>Overall "I" Value Compliance</u>
<u>South East</u>											
Jacksons Bay	F	P	F	P	P	P	P	P	P	F	F
Whitmore Bay	F	P	F	P	P	P	P	P	P	F	F
Cold Knap Beach	P	P	F	P	P	P	P	P	P	F	F
<u>South West</u>											
Southerndown Beach	P	P	F	P	P	P	F	P	P	F	F
Trecco Bay	F	P	P	F	P	P	P	P	F	F	F
Sandy Bay	P	P	F	F	P	P	F	P	F	F	F
Rest Bay	P	P	P	P	P	P	F	P	P	F	F
Aberafan Slip	P	P	P	P	P	F	F	P	F	F	F
Swansea Bay	P	P	F	F	P	P	F	P	F	F	F
Bracelet Bay	P	P	F	P	P	P	P	P	F	F	F
Limeslade Bay	F	P	F	F	P	P	P	P	F	F	F
Langland Bay	F	P	F	P	P	P	P	P	P	F	F
Caswell Bay	P	P	F	P	P	P	F	P	P	F	F
Oxwich Bay	P	P	F	P	P	P	F	P	F	F	F
Port Eynon Bay	P	P	P	P	P	P	F	P	F	F	F
Rhossili Beach	P	P	P	P	P	P	F	P	F	F	F
Pembrey Beach	P	P	P	P	P	P	F	P	F	F	F
Pendine Beach	P	P	P	P	P	P	F	P	P	F	F
Amroth Beach	P	P	P	P	P	P	F	P		F	F
Saundersfoot Beach	P	P	F	P	P	P	P	P	P	F	F
Tenby N. Beach	P	P	F	F	P	P	P	P	P	F	F
Tenby S. Beach	P	P	P	P	P	P	P	P	P	F	F
Broadhaven	P	P	P	P	P	P	P	P		P	P
Newgale Beach	P	P	P	F	P	P	P	P		F	F
Whitesands	P	P	P	F	P	P	P	P		P	F
Newport Sands N.	P	P	P	F	P	P	F	P		F	F
Newquay S. Beach	P	P	F	P	P	P	F	P	F	F	F
Aberystwyth S.	P	P	F	P	P	P	P	P	P	F	F
Aberystwyth N.	P	P	F	F	P	P	P	P	P	F	F
<u>North</u>											
Borth	P	P	F	P	P	P	P	P	P	F	F
Tywyn	P	P	P	F	P	P	P	P	P	F	F
Fairebourne Beach	P	P	P	F	P	P	P	P	P	F	F
Barmouth	P	P	F	P	P	P	P	P	P	F	F
Llandanwg Beach	P	P	F	F	P	P	P	P	P	F	F
Harlech	P	P	P	P	P	P	P	P	P	F	F
Morfa Bychan	P	P	F	F	P	P	F	P	F	F	F
Criccieth Beach E.	P	P	P	P	P	P	P	P	F	F	F
Pwllheli Beach	P	P	P	F	P	P	P	P	P	F	F
Abersoch	P	P	P	P	P	P	P	P	P	F	F
Morfa Dinlle	P	P	P	F	P	P	P	P	P	F	F
Benllech	P	P	P	F	P	P	P	P	F	F	F
Trearddur Bay	P	P	P	F	P	P	P	P	P	P	F
Llandudno W.	F	F	P	F	P	P	P	P	F	F	F
Llandudno N.W.	P	P	P	F	P	P	P	P	F	F	F
Colwyn Bay	P	P	P	F	P	P	F	P	F	F	F
Sandy Cove	P	F	P	P	P	P	F	P	F	F	F
Rhyl	F	F	F	P	P	P	F	P	F	F	F
Prestatyn	P	P	F	F	P	P	F	P	F	F	F

Table 2

COMPLIANCE OF "DESIGNATED" BATHING WATERS WITH "G" VALUE FOR FAECAL STREPTOCOCCI

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number Failures</u>	<u>Pass/ Fail</u>
<u>South East</u>			
Jacksons Bay	22	19	F
Whitmore Bay	22	18	F
Cold Knap Beach	22	8	F
<u>South West</u>			
Southerndown Beach	22	8	F
Trecco Bay Central	22	10	F
Sandy Bay Central	22	17	F
Rest Bay	22	5	F
Aberafan Slip	22	6	F
Swansea Bay	21	10	F
Bracelet Bay	22	6	F
Limeslade Bay	22	5	F
Langland Bay	22	7	F
Caswell Bay	22	13	F
Oxwich Bay	22	4	F
Port Eynon	22	7	F
Rhossili Beach	22	0	P
Pembrey Beach	22	0	P
Pendine Beach	20	0	P
Amroth Beach	20	3	F
Saundersfoot Beach	20	11	F
Tenby N. Beach	21	12	F
Tenby S. Beach	22	7	F
Broadhaven	19	4	F
Newgale Beach	20	1	P
Whitesands	20	1	P
Newport Sands N.	20	0	P
Newquay S. Beach	22	0	P
Aberystwyth S. Beach	22	9	F
Aberystwyth N. Beach	22	5	F
<u>North</u>			
Borth	22	6	F
Tywyn	20	2	P
Fairebourne Beach	20	0	P
Barmouth	20	2	P
Llandanwg Beach	21	2	P
Harlech	20	3	F
Morfa Bychan	21	2	P
Criccieth Beach	21	4	F
Pwllheli Beach	21	1	P
Abersoch	21	4	F
Morfa Dinlle	22	1	P
Benllech	21	2	P
Trearddur Bay	21	2	P
Llandudno W.	21	5	F
Llandudno N.W.	21	4	F
Colwyn Bay	21	4	F
Sandy Cove	21	6	F
Rhyl	21	10	F
Prestatyn	21	1	P

Table 3

COMPLIANCE OF "NON-DESIGNATED" BATHING WATERS WITH "I" VALUES FOR  
E. COLI, AND TOTAL COLIFORMS

<u>Bathing Water</u>	<u>E. Coli</u>			<u>Total Coliforms</u>			<u>Overall</u>		
	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/Fail</u>
<u>South East</u>									
Penarth Beach	22	7	F	22	2	F	22	7	F
St Mary's Well Bay	22	8	F	22	1	P	22	8	F
Watchhouse Bay	22	8	F	22	4	F	22	8	F
Fontygary Bay	22	0	P	22	0	P	22	0	P
<u>South West</u>									
Llantwit Major	28	0	P	28	0	P	28	0	P
Broughton Beach	22	0	P	22	0	P	22	0	P
Ogmore Central	22	1	P	22	4	F	22	4	F
Margam Sands	22	0	P	22	0	P	22	0	P
Aberafan E.	22	0	P	22	0	P	22	0	P
Aberafan W.	22	0	P	22	0	P	22	0	P
Jersey Marine E.	8	0	P	8	0	P	8	0	P
Jersey Marine	17	0	P	17	0	P	17	0	P
Jersey Marine W.	8	1	F	8	1	F	8	1	F
Swansea Bay (39098)	9	0	P	9	0	P	9	0	P
Swansea Bay (39100)	9	3	F	9	2	F	9	3	F
Swansea Bay (39101)	9	0	P	9	0	P	9	0	P
Swansea Bay (39102)	8	2	F	8	2	F	8	2	F
Swansea Bay (39103)	10	2	F	10	0	P	10	2	F
Swansea Bay (39104)	10	4	F	10	0	P	10	4	F
Llanelli Beach	22	17	F	22	17	F	22	17	F
Burry Port Beach	22	0	P	22	0	P	22	0	P
Pendine Beach	20	0	P	20	0	P	20	0	P
Amroth Beach E.	20	0	P	20	0	P	20	0	P
Amroth Beach W.	20	0	P	20	0	P	20	0	P
Saundersfoot E.	20	0	P	20	0	P	20	0	P
Saundersfoot Slip	19	8	F	19	15	F	19	15	F
Saundersfoot W.	20	0	P	20	0	P	20	0	P
Tenby N. Beach	19	0	P	19	0	P	19	0	P
Tenby S. (39022)	19	0	P	19	0	P	19	0	P
Tenby S. (39023)	19	0	P	19	0	P	19	0	P
Tenby S. (39025)	19	0	P	19	0	P	19	0	P
Manorbier Beach	18	3	F	18	1	F	18	3	F
Manorbier Beach W.	18	0	P	18	0	P	18	0	P
Freshwater East E.	17	0	P	17	0	P	17	0	P
Freshwater East	18	0	P	18	0	P	18	0	P
Newgale S.	20	0	P	20	0	P	20	0	P
Newgale N.	20	0	P	20	0	P	20	0	P
Goodwick Harbour	20	0	P	20	0	P	20	0	P
Goodwick Beach	20	0	P	20	0	P	20	0	P
Newport Sands	20	0	P	20	0	P	20	0	P
Poppit Sands (39067)	20	0	P	20	0	P	20	0	P
Poppit Sands (39068)	19	0	P	19	0	P	19	0	P
Tresaith	22	1	P	22	0	P	22	1	P
Penbryn Beach	8	0	P	8	0	P	8	0	P
Llangranog Bay	22	4	F	22	0	P	22	4	F
Newquay S. Beach	22	0	P	22	0	P	22	0	P
Llanina Beach	8	0	P	8	0	P	8	0	P
Little Quay	21	0	P	21	0	P	21	0	P
Aberystwyth S.	22	7	F	22	3	F	22	7	F
Aberystwyth Harbour	22	4	F	22	2	F	22	4	F
Clarach	22	4	F	22	3	F	22	4	F

Table 3 (contd)

<u>Bathing Water</u>	<u>E. Coli</u>			<u>Total Coliforms</u>			<u>Overall</u>		
	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/ Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/ Fail</u>	<u>No. Samples</u>	<u>No. Fail</u>	<u>Pass/ Fail</u>
<u>North</u>									
Aberdovey (20170)	21	0	P	21	0	P	21	0	P
Aberdovey (20171)	21	0	P	21	0	P	21	0	P
East of Aberdovey	21	0	P	21	0	P	21	0	P
Llwyngwriil	21	2	F	21	1	P	21	2	F
Barmouth	20	2	F	20	1	P	20	2	F
Criccieth	22	2	F	22	2	F	22	2	F
Llanbedrog	22	0	P	22	0	P	22	0	P
Abersoch	22	0	P	22	0	P	22	0	P
Aberdaron	22	0	P	22	0	P	22	0	P
Porth Dinllaen	22	0	P	22	1	P	22	1	P
Porth Nefyn	22	0	P	22	1	P	22	1	P
Plas Menai	21	0	P	21	1	P	21	1	P
Llanfairfechan	22	0	P	22	0	P	22	0	P
Penmaenmawr (23005)	22	3	F	22	4	F	22	5	F
Penmaenmawr (23006)	22	0	P	22	1	P	22	1	P
Llanddulas	21	0	P	21	0	P	21	0	P
Abergegle	21	1	P	21	1	P	21	2	P
Kinmel Bay	21	2	F	21	3	F	21	3	F
Rhyl	21	0	P	21	1	P	21	1	P
Ffrith	21	0	P	21	1	P	21	1	P
Point of Ayr	21	0	P	21	0	P	21	0	P
Beaumaris	22	4	F	22	4	F	22	4	F
Beaumaris Pier	22	4	F	22	3	F	22	4	F
Aberffraw	21	0	P	21	0	P	21	0	P
Rhosneigr (27536)	21	0	P	21	0	P	21	0	P
Rhosneigr (27534)	21	0	P	21	0	P	21	0	P
Cemmaes Bay	21	1	P	21	0	P	21	1	P
Traeth Llugwy	21	0	P	21	0	P	21	0	P
Traeth Bychan	21	0	P	21	0	P	21	0	P
Benllech	21	0	P	21	0	P	21	0	P
Red Wharf Bay	22	3	F	22	2	F	22	3	F
Llandonna	22	0	P	22	0	P	22	0	P

Table 4

COMPARISON OF 1986 TO 1989 COMPLIANCE FOR EC BATHING WATERS FOR E. COLI AND TOTAL COLIFORMS

<u>Bathing Water</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>INCLUDED IN DOE INVEST. PROGRAMME</u>
<u>South East</u>					
Jacksons Bay	F	F	F	F	*
Whitmore Bay	F	F	F	F	*
Cold Knap Beach	F	F	F	P	*
<u>South West</u>					
Southerndown Beach	F	P	F	P	*
Trecco Bay	F	F	P	F	*
Sandy Bay	F	F	F	P	*
Rest Bay	F	P	P	P	*
Aberafan Slip	F	P	P	P	*
Swansea Bay	F	F	F	P	*
Bracelet Bay	P	P	P	P	*
Limeslade Bay	F	F	P	F	*
Langland Bay	F	P	P	F	*
Caswell Bay	P	F	P	P	*
Oxwich Bay	F	P	P	P	*
Port Eynon Bay	P	P	P	P	*
Rhossili Beach	F	P	P	P	*
Pembrey Beach	P	P	P	P	*
Pendine Beach	P	P	P	P	*
Amroth Beach	F	F	P	P	*
Saundersfoot Beach	P	F	P	P	*
Tenby N. Beach	F	F	F	P	*
Tenby S. Beach	F	F	P	P	*
Broadhaven	F	P	P	P	*
Newgale Beach	F	P	P	P	*
Whitesands	P	P	P	P	*
Newport Sands N.	P	P	P	P	*
Newquay S. Beach	P	P	P	P	*
Aberystwyth S. Beach	F	F	P	P	*
Aberystwyth N. Beach	P	P	P	P	*
<u>North</u>					
Borth	P	P	P	P	*
Tywyn	F	P	P	P	*
Fairebourne Beach	P	P	P	P	*
Barmouth	P	P	P	P	*
Llandanwg Beach	P	P	P	P	*
Harlech	F	P	P	P	*
Morfa Bychan	F	F	P	P	*
Criccieth Beach E.	P	F	P	P	*
Pwllheli Beach	P	P	P	P	*
Abersoch	F	P	F	P	*
Morfa Dinlle	**	**	P	P	*
Benllech	P	F	P	P	*
Trearddur Bay	F	F	P	P	*
Llandudno W.	F	F	F	F	*
Llandudno N.W.	P	P	P	P	*
Colwyn Bay	P	P	P	P	*
Sandy Cove	F	F	F	F	*
Rhyl	F	F	F	F	*
Prestatyn	F	P	P	P	*

\*\* This site was identified as falling within the scope of the Bathing Waters directive from 1988, however 1986 and 1987 samples confirm that it would have passed during those two years.

Table 5

REMEDIAL ACTIONS REQUIRED TO MEET THE LONG TERM OBJECTIVE :-

(A) COMPLETED IN 1989

Scheme

Bathing Water affected

Newton Point Pumping Station

Trecco Bay and Sandy Bay

(B) COMMENCED IN 1989

Scheme

Bathing Water affected

Barry West Outfall

Jacksons Bay, Whitmore Bay and  
Cold Knap Beach

New Outfall

Llandudno West

**CRITERIA FOR ASSESSING COMPLIANCE WITH EC BATHING WATERS DIRECTIVE STANDARDS**

1. Article 3 of the EC Directive on the quality of bathing waters (76/160/EEC) requires member states to set bathing water quality standards no less stringent than those specified as "I" values in the Annex to the Directive. Article 3 also requires member states to endeavour to observe "G" values as guidelines, whether or not there is a corresponding "I" value.
2. Article 5 sets out the detailed requirements for compliance.

For "I" value determinands:-

- a) 95% of the samples must comply with the "I" value
- b) The 5% not complying with the "I" value must not:-
  - (i) exceed 1.5 x "I" value except for microbiological determinands and pH, and
  - (ii) consecutive samples taken at statistically valid intervals must not exceed the "I" value, ie. "I" value failures must be of short duration.

For "G" value determinands:-

- a) 90% of the samples must conform with the "G" value (80% in the case of total coliform and faecal coliform parameters).
- b) The 10 (or 20%) not complying with the "G" value must not:-
  - (i) exceed 1.5 x "G" value except for microbiological determinands pH and Dissolved Oxygen, and
  - (ii) consecutive samples taken at statistically valid intervals must not exceed the "G" value, ie. "G" value failures should be of short duration.

**Quality Standards for Bathing Waters used in this Report**

<u>Parameter</u>	<u>Imperative Standard</u>	<u>Guide Standard</u>
<b><u>Microbiological</u></b>		
<u>E.coli</u>	2000/100 ml	
Total coliforms	10000/100 ml	
Faecal streptococci		100/100 ml
Salmonella	0 / litre	
Enteroviruses	0 PFU/10 litres	



## Appendix 1 (contd)

<u>Parameter</u>	<u>Imperative Standard</u>	<u>Guide Standard</u>
<u>Physico-chemical</u>		
pH	6 - 9	
Colour	No abnormal change in colour	
Mineral Oils	No film visible on water surface and no odour	
Surface Active Substances	No lasting foam	
Phenols	No specific odour	
Transparency	Extinction depth of 1m for Secchi disc - equivalent to 6.665 ftu (turbidity)	
Tarry Residues and Persistent Floating Solids		Absent

## Appendix 2

"DESIGNATED" BATHING WATER SAMPLE POINT AND DOE REFERENCE NUMBERS

<u>Bathing Water</u>	<u>Sampling Point Number</u>	<u>DOE Reference Number</u>
<u>South East</u>		
Jacksons Bay Beach, Barry	19055	36100
Whitmore Bay Central, Barry	19034	36200
Cold Knapp Beach, Barry	19037	36300
<u>South West</u>		
Southerndown Beach (Centre)	19100	36400
Trecco Bay Central, Porthcawl	19114	36500
Sandy Bay Central, Porthcawl	19117	36600
Rest Bay, Porthcawl	19122	36700
Aberafan Slip	19051	36800
Swansea Bay at Slip	74006	36900
Bracelet Bay, Mumbles Head	39105	37000
Limeslade Bay	39106	37100
Langland Bay West	39109	37200
Caswell Bay Central	39111	37300
Oxwich Bay West End	39123	37400
Port Eynon Bay West	39127	37500
Rhossili Beach at Hillend	74010	37600
Pembrey Beach, Cefn Sidan	39005	37700
Pendine Beach East	39010	37800
Amroth Beach Central	39013	37900
Saundersfoot Beach Slip	39017	38000
Tenby North Beach, Gosker Rock	39020	38100
Tenby South Beach, Old Outfall	39024	38200
Broadhaven Centre	84231	38300
Newgale Beach Centre	39048	38400
Whitesands Centre	84232	38500
Newport Sands North	39065	38600
Newquay South Beach	39080	38700
Aberystwyth South Beach	39091	38800
Aberystwyth North Beach	39093	38900
<u>North</u>		
Borth, Opposite Hotel	20023	39000
Tywyn Main Beach Access	20019	39100
Fairebourne Beach	20402	39200
Barmouth Coastguard Station	20014	39300
Llandanwg, Centre of Beach	20028	39400
Harlech, North of Beach Access	22596	39500
Morfa Bychan, Black Rock Sands	22539	39600
Criccieth Beach East	23142	39700
Pwllheli Beach	22589	39800
Abersoch, South End	22552	39900
Morfa Dinlle	22564	39970
Benllech	27551	40100
Trearddur Bay	27532	40000
Llandudno West Shore	25032	40200
Llandudno North West	25046	40300
Colwyn Bay, Op. Railway Underpass	25049	40400
Sandy Cove, Kinmel Bay	3604	40500
Rhyl, High Street	3608	40600
Prestatyn Central, West Car Park	3612	40700

## Appendix 3

"NON-DESIGNATED" BATHING WATER SITES SAMPLED IN 1989

<u>Bathing Water</u>	<u>Sample Point Number</u>
<u>South East</u>	
Penarth Beach, Yacht Club	19029
St Mary's Well Bay Beach	19032
Watchhouse Bay Beach, Barry	68603
Fontygary Bay Beach, Rhoose	19038
<u>South West</u>	
Llantwit Major Beach	74050
Broughton Beach	74025
Ogmore Central	19043
Margam Sands, Opp. Steel Works	19135
Aberafan E.	19050
Aberafan W.	19052
Jersey Marine E.	74026
Jersey Marine	39153
Jersey Marine W.	39097
Swansea Bay, W. of West Pier	39098
Swansea Bay, Opp. University	39100
Swansea Bay, Opp. Black Pill	39101
Swansea Bay, Opp. Norton	39102
Swansea Bay, Mumbles Knap Rock	39103
Swansea Bay, Mumbles Head Pier	39104
Llanelli Beach, 4th Groyne	39001
Burry Port Beach E.	39003
Pendine Beach W.	39011
Amroth Beach E.	39012
Amroth Beach W.	39014
Saundersfoot Beach E.	39016
Saundersfoot Harbour Slip	39018
Saundersfoot W. Beach	39019
Tenby N. Beach, at Lifeboat Slip	39021
Tenby S. Beach, at St Catherine's Island	39022
Tenby S. Beach, Off Atlantic Hotel Steps	39023
Tenby S. Beach, Opp. Footpath to Kiln Park	39025
Manorbier Beach	39027
Manorbier Beach W.	39028
Freshwater East E.	39029
Freshwater East	39030
Newgale S.	39047
Newgale N.	39049
Goodwick Harbour S.	39058
Goodwick Beach	39059
Newport Sands S.	39064
Poppit Sands	39067
Poppit Sands	39068
Tresaith	39073
Penbryn Beach	39147
Llangranog Bay Centre	39075
Newquay S. Beach	39079
Llanina Beach	39146
Little Quay, Central Groyne	39081
Aberystwyth S.	39090
Aberystwyth Harbour	82103
Clarach, S. of River	39095

## Appendix 3 (contd)

Bathing WaterSample Point NumberNorth

Aberdovey Beach	20170
Aberdovey Beach	20171
Beach East of Aberdovey	20172
Llwyngwrl	20189
Barmouth	20181
Criccieth West Beach, Opp. Lon Parc	22541
Llanbedrog	22549
Abersoch	22550
Aberdaron	22553
Porth Dinllaen	22559
Porth Nefyn Centre	22560
Plas Menai	23290
Llanfairfechan, Opp. Shore Road	23245
Penmaenmawr, Off Dwygyfylchi	23005
Penmaenmawr, Off Dwygyfylchi	23006
Llanddulas at Outfall	3597
Abergegle, Pantri Cafe	3601
Kinmel Bay	3605
Rhyl Splash Point	3610
Ffrith	3611
Point of Ayr Lighthouse	3617
Beaumaris, Opp. Swimming Baths	27829
150m West of Beaumaris Pier	27828
Aberffraw North End	27538
Rhosneigr, Adj. Porth Sur	27536
Rhosneigr, Opp. Beach Road	27534
Cemmaes Bay, Centre	27529
Traeth Llugwy	27528
Traeth Bychan	27527
Benllech, 50m N. of Craig Dwllan	27827
Red Wharf Bay	27552
Llandonna	27562

## Appendix 4

STATISTICAL DATA FOR "DESIGNATED" BATHING WATERS

<u>Bathing Water</u>	<u>"I" Values</u>						<u>"G" Value</u>			
	<u>E.Coli</u>		<u>Total Coliforms</u>		<u>Salmonella</u>		<u>Viruses</u>		<u>Faecal Strep.</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>+ve Result</u>	<u>No. Samples</u>	<u>Range (b)</u>	<u>No. Samples</u>	<u>Range (a)</u>
<u>South East</u>										
Jacksons Bay	22	200-4600	22	500-6800	5	4	2	0	22	60-976
Whitmore Bay	22	100-10800	22	200-12700	5	1	2	0	22	26-920
Cold Knap Beach	22	<100-1200	22	100-4900	5	1	2	0	22	14-256
<u>South West</u>										
Southerndown Beach	22	20-1300	22	100-20000	5	2	2	0	22	8-712
Trecco Bay	22	<100-5100	22	100-6400	5	0	2	0-1	22	16-586
Sandy Bay	22	<100-1600	22	100-7800	5	1	2	0-1	22	30-548
Rest Bay	22	20-700	22	100-1800	5	0	2	0	22	2-630
Aberafan Slip	22	10-1080	22	10-5000	5	0	2	0	22	<2-416
Swansea Bay	21	<100-6800	21	<100-15000	5	1	2	0-2	21	8-1760
Bracelet Bay	22	<10-2000	22	100-9000	5	1	2	0	22	1-256
Limeslade Bay	22	<100-6000	22	100-15000	5	1	2	0-1	22	<2-374
Langland Bay	22	50-10000	22	<100-13000	5	2	2	0	22	2-500
Caswell Bay	22	30-1400	22	50-3800	5	1	2	0	22	<2-1090
Oxwich Bay	22	<2-1400	22	<10-2250	5	1	2	0	22	1->400
Port Eynon Bay	22	5-1400	22	10-4500	5	0	2	0	22	<2-464
Rhossili Beach	22	2-400	22	6-440	5	0	2	0	22	0-80
Pembrey Beach	22	<2-136	22	<2-180	8	0	2	0	22	0-31
Pendine Beach	20	<10-380	20	20-400	6	0	2	0	20	0-80
Amroth Beach	20	<10-900	20	<10-1200	5	0	2	0	20	0-133
Saundersfoot Beach	20	<100-3100	20	<100-7600	5	2	2	0	21	<5-610
Tenby N. Beach	21	10-1200	21	10-1240	5	1	2	0-1	20	<2-642
Tenby S. Beach	22	<10-850	22	10-900	4	0	2	0	22	1-800
Broadhaven	20	30-600	20	40-1700	5	0	2	0	19	<2-180

## Appendix 4 (contd)

<u>Bathing Water</u>	<u>"I" Values</u>						<u>"G" Value</u>			
	<u>E.Coli</u>		<u>Total Coliforms</u>		<u>Salmonella</u>		<u>Viruses</u>		<u>Faecal Strep.</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>+ve Result</u>	<u>No. Samples</u>	<u>Range (b)</u>	<u>No. Samples</u>	<u>Range (a)</u>
Newgale Beach	20	<5-300	20	5-320	5	0	2	0-1	20	0-164
Whitesands	20	<5-300	20	<10-300	5	0	2	0-2	20	0-179
Newport Sands N.	20	5-800	20	<10-920	5	0	2	0-1	20	0-100
Newquay S. Beach	22	<5-250	22	<10-800	5	1	2	0	22	1-84
Aberystwyth S. Beach	22	<10-1980	22	<100-8600	5	2	2	0	22	2-800
Aberystwyth N. Beach	22	<10-1200	22	10-3400	5	1	2	0-1	22	0-148
<u>North</u>										
Borth	22	<5-1100	22	<5-1100	5	1	2	0	22	0-530
Tywyn	21	1-1690	21	6-2100	4	0	2	0-1	20	2-102
Fairebourne Beach	21	0-210	21	3-580	4	0	2	0-1	20	0-42
Barmouth	21	1-2000	21	11-2000	4	1	2	0	20	0-204
Llandanwg Beach	21	0-1370	21	3-5360	4	2	2	1-2	21	0-242
Harlech	20	0-750	20	12-1800	4	0	2	0	20	0-224
Morfa Bychan	22	0-860	22	0-5100	4	1	2	0-1	21	0->400
Criccieth Beach E.	22	4-1230	22	28-5310	4	0	2	0	21	4-152
Pwllheli Beach	22	0-450	22	0-2300	4	0	2	2-8	21	0-176
Abersoch	22	0-1370	22	1-1420	4	0	2	0	21	0-232
Morfa Dinlle	22	0-1400	22	0-1760	4	0	2	1-2	22	0-174
Benllech	21	1-1980	21	21-2230	4	0	2	0-4	21	0-338
Trearddur Bay	21	0-510	21	0-520	4	0	2	0-1	21	0-213
Llandudno W.	21	1-21300	21	50->30000	4	0	2	0-3	21	4->800
Llandudno N.W.	21	1-9600	21	10-9600	4	0	2	0-3	21	0-223
Colwyn Bay	21	4-1420	21	70-8800	4	0	2	3-10	21	4->200
Sandy Cove	21	9-1600	21	50-19700	4	0	2	0	21	2->400
Rhyl	21	23-7600	21	320->40000	4	1	2	0	21	11-538
Prestatyn	21	12-660	21	50-6100	4	1	2	0-2	21	0-102

(a) = No./100 ml

(b) = PFU/10 litres

STATISTICAL DATA FOR "NON-DESIGNATED" BATHING WATERS

<u>Bathing Water</u>	<u>"I" Values</u>				<u>"G" Value</u>	
	<u>E. Coli</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>
<u>South East</u>						
Penarth Beach	22	700-8600	22	1500-14000	22	120-722
St Mary's Well Bay	22	600-9200	22	1800-18900	22	80-980
Watchhouse Bay	22	<100-30000	22	400-40000	22	64-800
Fontygary Bay	22	50-2000	22	<100-2200	22	6-242
<u>South West</u>						
Llantwit Major	28	<10-2000	28	30-4000	28	2-650
Broughton Beach	22	<2-1200	22	6-2000	22	<1-444
Ogmore Central	22	30-4500	22	400-26000	22	22-800
Margam Sands	22	10-600	22	<100-8000	22	1-206
Aberafan E.	22	<10-980	22	10-8000	21	2-292
Aberafan W.	22	10-1800	22	10-6400	22	<2-306
Jersey Marine E.	8	20-1200	8	120-4900	8	3-340
Jersey Marine	17	<10-1800	17	20-7000	16	0-336
Jersey Marine W.	8	<100-20000	8	100-36000	8	1-960
Swansea Bay (39098)	9	<100-900	9	100-2200	9	9-420
Swansea Bay (39100)	9	<100-12000	9	<100-14000	9	<1-2400
Swansea Bay (39101)	9	<100-1200	9	<100-4400	9	2-1900
Swansea Bay (39102)	8	<1-36000	8	100-48000	8	2-430
Swansea Bay (39103)	10	<1-6800	10	<100-8900	10	4-1900
Swansea Bay (39104)	10	200-3000	10	300-7000	10	21-1700
Llanelli Beach	22	<1000-82000	22	2000-134000	22	20-4800
Burry Port Beach	22	<10-1200	22	30-3000	22	0-1409
Pendine Beach	20	<10-1500	20	20-1500	20	1-166
Amroth Beach E.	20	<10-230	20	<10-420	20	0-690
Amroth Beach W.	20	<10-400	20	10-460	20	0-225
Saundersfoot E.	20	<100-1900	20	<100-4000	20	10-760
Saundersfoot Slip	19	200-18000	19	1000-160000	19	80-2400
Saundersfoot W.	20	10-1200	20	10-1400	20	1-1018
Tenby N. Beach	19	<10-900	19	<10-1300	19	1-448
Tenby S. (39022)	19	<10-320	19	<10-360	19	<2-240
Tenby S. (39023)	19	<10-300	19	10-320	19	0-240
Tenby S. (39025)	19	<10-380	19	10-540	19	<2-214
Manorbier Beach	18	<10-7000	18	20-17000	18	<2-800
Manorbier Beach W.	18	<10-1200	18	20-6800	18	<2-348
Freshwater East E.	17	<10-220	17	<10-410	17	<2-128
Freshwater East	18	<10-760	18	<10-800	18	0-200
Newgale S.	20	<10-500	20	10-500	20	0-140
Newgale N.	20	<10-1000	20	<10-1500	20	0-106
Goodwick Harbour	20	<10-800	20	10-1600	20	3-106
Goodwick Beach	20	50-1800	20	<100-4400	20	2-968
Newport Sands	20	5-1120	20	5-1240	20	2-157
Poppit Sands (39067)	20	<10-840	20	<10-1800	20	0-119
Poppit Sands (39068)	19	<10-670	19	20-4000	19	<2-1200
Tresaith	22	<10-2500	22	10-3600	13	6-214
Penbryn Beach	8	<10-150	8	20-500	8	4-80
Llangranog Bay	22	<100-3400	22	<100-6800	13	<5-860
Newquay S. Beach	22	<10-540	22	20-2000	22	0-483

## Appendix 5 (contd)

<u>Bathing Water</u>	<u>"I" Values</u>				<u>"G" Value</u>	
	<u>E. Coli</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>
Llanina Beach	8	<10-530	8	<100-1600	8	4-97
Little Quay	21	<2-300	21	10-1200	21	0-217
Aberystwyth S.	22	<100-12000	22	<100-15000	22	<2-978
Aberystwyth Harbour	22	100-4600	22	900-12000	22	20-692
Clarach	22	<100-6800	22	<100-13000	12	6-430
<u>North</u>						
Aberdovey (20170)	21	0-2000	21	1-3900	21	0-186
Aberdovey (20171)	21	0-1300	21	13-2000	21	0-228
East of Aberdovey	21	2-1030	21	6-5100	21	0->400
Llwyngwriil	21	2->10000	21	21->10000	21	8->1000
Barmouth	20	0-20600	20	0->100000	20	0->800
Criccieth	22	0-19200	22	6-35600	21	0->500
Llanbedrog	22	0-1910	22	3-5100	20	2->400
Abersoch	22	1-310	22	1-2700	21	2->400
Aberdaron	22	0-510	22	1-1830	21	0-166
Porth Dinllaen	22	0-560	22	0->10000	22	0->500
Porth Nefyn	22	0-1630	22	0->10000	22	0-350
Plas Menai	21	0-910	21	10->20000	21	0-406
Llanfairfechan	22	0-500	22	10-3780	21	0->300
Penmaenmawr (23005)	22	0-3100	22	23->20000	21	2->700
Penmaenmawr (23006)	22	1-1330	22	80->20000	21	0-172
Llanddulas	21	1-1430	21	43->5000	21	6->400
Abergegle	21	17-3200	21	96->20000	21	4-164
Kinmel Bay	21	1-3500	21	43->30000	21	6-272
Rhyl	21	1-1700	21	270-11100	21	0-202
Ffrith	21	2-1050	21	12->20000	21	0-164
Point of Ayr	21	7-750	21	60-4610	21	0-108
Beaumaris	22	0->40000	22	0->40000	22	0->800
Beaumaris Pier	22	0->30000	22	50->50000	22	1->800
Aberffraw	21	0-180	21	0-670	21	0-84
Rhosneigr (27536)	21	0-41	21	0-930	21	0-34
Rhosneigr (27534)	21	0-810	21	0-4000	21	0->600
Cemmaes Bay	21	1-3010	21	130-5100	21	2->600
Traeth Llugwy	21	0-720	21	0-9300	21	0-286
Traeth Bychan	21	0-730	21	0-5100	20	0->500
Benllech	21	2-570	21	10-910	21	0-72
Red Wharf Bay	22	0-6600	22	8->40000	21	0-344
Llandonna	22	0-860	22	2-5100	22	0-262

(a) - No./100 ml