

ENVIRONMENT AGENCY



128931

NRA: WALES 62

BATHING WATERS REPORT

1990

NRA WELSH REGION

1990 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 Government currently uses the E.coli and total coliforms "I" standards as the basis for determining UK compliance with the Directive. Additional microbiological "I" standards concern the occurrence of Salmonella, and enteroviruses and in Welsh Region a limited sampling programme is undertaken for these determinands. Physico-chemical "I" standard parameters are tested as indicated in Appendix 1. The occurrence of faecal streptococci is also examined and compared with the **non mandatory** "G" standard as no "I" standard exists for this parameter.

2. SAMPLING PROGRAMME

- 2.1 The 50 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 1990 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. 1990 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 yet 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 50 "designated" bathing waters are reported in Appendix 4. These results, together with those from elsewhere in the UK have been 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 50 "designated" Welsh bathing waters in 1990. These results indicate that overall 35 (70%) complied with the combined standard.
- 3.5 Table 1(b) summarises Salmonella sample statistics and compliance with the "I" value for the 50 "designated" Welsh bathing waters in 1990. The results indicate that 21 bathing waters (42%) complied with the Directive standard.
- 3.6 Table 1(c) summarises entero-virus sample statistics and compliance with the "I" value for the 50 "designated" Welsh bathing waters in 1990. The results indicate that 36 (72%) complied with the Directive standard.
- 3.7 Table 1(d) summarises the compliance for all the "I" value standards for the "designated" bathing waters.
- 3.8 Table 1(e) summarises faecal streptococci sample statistics and compliance with the "G" value for the 29 "designated" Welsh bathing waters tested in 1990. This indicates that 10 (34%) complied with the standard for the Directive. The reduced number of bathing waters relates to AQC protocol problems which resulted in the results for the Northern Division having to be deleted.

4. 1990 MONITORING PROGRAMME FOR BATHING WATERS NOT IDENTIFIED UNDER THE TERMS OF THE BATHING WATERS DIRECTIVE

4.1 A total of 113 "non-designated" bathing waters were monitored during 1990. These results have been reported to the W0. 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 summary statistical details for this monitoring programme.

4.2 The compliance of each of these waters with the E.coli and total coliform standards ("I" values) of the Bathing Waters Directive is shown in Table 2(a). This shows that overall 72 (64%) of the "non-designated" bathing waters complied with the combined coliform requirements of the Directive in 1990.

4.3 The compliance of the "non-designated" bathing waters with the faecal streptococci "G" standard of the Bathing Waters Directive is shown in Table 2(b). This shows that 10 of the 50 bathing waters tested (20%) complied with this Directive standard in 1990. As with the "designated" bathing waters AQC protocol problems resulted in the Northern Division results being deleted.

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 an "EC Bathing Waters Improvement Strategy" has been drawn up by NRA Welsh Region to identify and prioritise the remedial works required at "designated" bathing waters to ensure compliance with the E.coli and total coliform standards by 1995. The requirements for remedial works at non-designated beaches are currently being reviewed.

Table 3 compares the compliance of the "designated" bathing waters over the period 1986 - 1990 (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 3 indicates those bathing waters which are included in the Dwr Cymru cyf. investment programme designed to facilitate compliance by the UK with its obligations under the EC Bathing Waters Directive.

5.2 Table 4 gives details of remedial measures which have been completed in 1990.

6. SUMMARY

- 6.1 A total of 35 out of the 50 "designated" bathing waters complied with the E.coli and total coliform "I" standards specified in the Directive (70% of the total).
- 6.2 A total of 72 out of the 113 "non designated" bathing waters sampled in 1990 complied with the E.coli and total coliform "I" standards specified in the Directive (64% of the total).
- 6.3 Summary table showing compliance with the combined E.coli and total coliform standards: -

Bathing Water	Number	Number which Pass	Percent Pass
EC	50	35	70%
non EC	113	72	64%

Figure 1

LOCATION OF "DESIGNATED" BATHING WATER SAMPLING SITES AROUND WALES

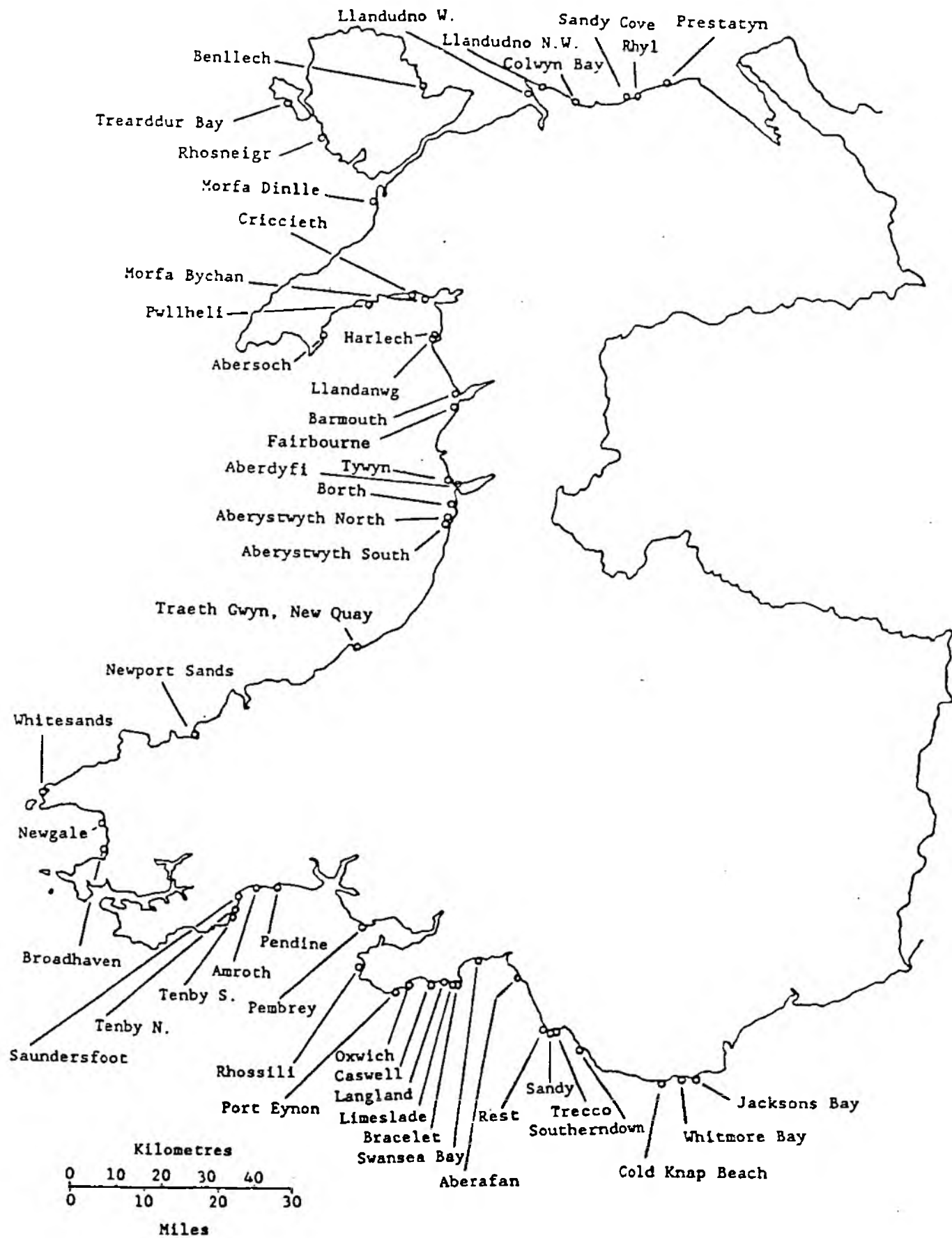


Table 1a

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>Pass/Fail</u>
<u>South East</u>							
Jacksons Bay	21	5	F	21	1	P	F
Whitmore Bay	21	2	F	21	1	P	F
Cold Knap Beach	21	3	F	21	2	F	F
<u>South West</u>							
Southerndown Beach	22	0	P	22	0	P	P
Trecco Bay	22	1	P	22	0	P	P
Sandy Bay	22	2	F	22	0	P	F
Rest Bay	22	0	P	22	0	P	P
Aberafan Slip	22	1	P	22	1	P	P
Swansea Bay	22	4	F	22	0	P	F
Bracelet Bay	21	0	P	21	0	P	P
Limeslade Bay	21	1	P	21	0	P	P
Langland Bay	21	0	P	21	0	P	P
Caswell Bay	22	0	P	22	0	P	P
Oxwich Bay	22	0	P	22	0	P	P
Port Eynon Bay	22	0	P	22	0	P	P
Rhossili Beach	22	1	P	22	0	P	P
Pembrey Beach	21	0	P	21	0	P	P
Pendine Beach	20	0	P	20	0	P	P
Amroth Beach	20	0	P	20	0	P	P
Saundersfoot Beach	20	2	F	20	0	P	F
Tenby N. Beach	20	0	P	20	0	P	P
Tenby S. Beach	20	0	P	20	0	P	P
Broadhaven	21	0	P	21	0	P	P
Newgale Beach	21	0	P	21	0	P	P
Whitesands	21	0	P	21	0	P	P
Newport Sands N.	20	0	P	20	0	P	P
Traeth Gwyn, New Quay	22	0	P	22	0	P	P
Aberystwyth S. Beach	25	2	F	25	2	F	F
Aberystwyth N. Beach	25	0	P	25	0	P	P
<u>North</u>							
Aberdyfi	22	2	F	22	0	P	F
Borth	23	0	P	23	0	P	P
Tywyn	22	0	P	22	0	P	P
Fairbourne Beach	22	0	P	22	0	P	P
Barmouth	22	0	P	22	0	P	P
Llandanwg Beach	22	1	P	22	0	P	P
Harlech	22	1	P	22	0	P	P
Morfa Bychan	22	0	P	22	0	P	P
Criccieth Beach E.	22	4	F	22	1	P	F
Pwllheli Beach	22	0	P	22	0	P	P
Abersoch	22	0	P	22	0	P	P
Morfa Dinlle	22	1	P	22	0	P	P
Benllech	22	5	F	22	0	P	F
Trearddur Bay	22	0	P	22	0	P	P
Rhosneigr	22	0	P	22	0	P	P
Llandudno W.	22	8	F	22	4	F	F
Llandudno N.W.	22	3	F	22	0	P	F
Colwyn Bay	22	0	P	22	0	P	P
Sandy Cove	21	5	F	21	3	F	F
Rhyl	21	7	F	21	5	F	F
Prestatyn	21	4	F	21	2	F	F

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	3	F
Whitmore Bay	5	2	F
Cold Knap Beach	5	1	F
<u>South West</u>			
Southerndown Beach	5	0	P
Trecco Bay	5	1	F
Sandy Bay	5	2	F
Rest Bay	5	2	F
Aberafan Slip	5	0	P
Swansea Bay	5	2	F
Bracelet Bay	5	2	F
Limeslade Bay	5	2	F
Langland Bay	5	0	P
Caswell Bay	5	0	P
Oxwich Bay	5	0	P
Port Eynon Bay	5	0	P
Rhossili Beach	5	0	P
Pembrey Beach	5	0	P
Pendine Beach	5	1	F
Amroth Beach	5	1	F
Saundersfoot Beach	5	1	F
Tenby N. Beach	5	1	F
Tenby S. Beach	5	0	P
Broadhaven	5	0	P
Newgale Beach	5	1	F
Whitesands	5	0	P
Newport Sands N.	5	1	F
Traeth Gwyn, New Quay	5	0	P
Aberystwyth S. Beach	6	1	F
Aberystwyth N. Beach	6	0	P
<u>North</u>			
Aberdyfi	1	0	P
Borth	5	1	F
Tywyn	6	0	P
Fairbourne Beach	6	1	F
Barmouth	6	0	P
Llandanwg Beach	7	0	P
Harlech	7	1	F
Morfa Bychan	6	0	P
Criccieth Beach E.	6	2	F
Pwllheli Beach	6	0	P
Abersoch	6	1	F
Morfa Dinlle	7	0	P
Benllech	7	1	F
Trearddur Bay	6	2	F
Rhosneigr	1	0	P
Llandudno W.	6	2	F
Llandudno N.W.	6	1	F
Colwyn Bay	6	3	F
Sandy Cove	7	2	F
Rhyl	7	3	F
Prestatyn	7	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	0	P
Sandy Bay	2	0	P
Rest Bay	2	0	P
Aberafan Slip	2	1	F
Swansea Bay	2	0	P
Bracelet Bay	2	0	P
Limeslade Bay	2	1	F
Langland Bay	2	1	F
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	1	F
Amroth Beach	2	0	P
Saundersfoot Beach	2	0	P
Tenby N. Beach	2	0	P
Tenby S. Beach	2	1	F
Broadhaven	2	0	P
Newgale Beach	2	0	P
Whitesands	2	1	F
Newport Sands N.	2	0	P
Traeth Gwyn, New Quay	2	1	F
Aberystwyth S. Beach	3	1	F
Aberystwyth N. Beach	3	0	P
<u>North</u>			
Aberdyfi	1	0	P
Borth	2	0	P
Tywyn	2	0	P
Fairbourne Beach	2	0	P
Barmouth	2	0	P
Llandanwg Beach	2	2	F
Harlech	2	0	P
Morfa Bychan	1	1	F
Criccieth Beach E.	2	1	F
Pwllheli Beach	2	0	P
Abersoch	2	0	P
Morfa Dinlle	2	0	P
Benllech	2	1	F
Trearddur Bay	2	1	F
Rhosneigr	1	0	P
Llandudno W.	2	0	P
Llandudno N.W.	2	0	P
Colwyn Bay	2	1	F
Sandy Cove	2	0	P
Rhyl	2	0	P
Prestatyn	2	0	P

Table 1d

COMPLIANCE OF "DESIGNATED" BATHING WATERS WITH EACH "I" VALUE PARAMETER

<u>Bathing Water</u>	<u>E. Coli</u>	<u>Tot. Coliforms</u>	<u>EC Compliance of E. Coli and Tot. Coliforms</u>	<u>Salmonella</u>	<u>Enteroviruses</u>	<u>pH</u>	<u>Transparency</u>	<u>Colour Change</u>	<u>Mineral Oils</u>	<u>Surf. Act. Subs.</u>	<u>Phenols</u>
<u>South East</u>											
Jacksons Bay	F	P	F	F	P	P	F	P	P	P	P
Whitmore Bay	F	P	F	F	P	P	F	P	P	P	P
Cold Knap Beach	F	F	F	F	P	P	F	P	P	P	P
<u>South West</u>											
Southerndown Beach	P	P	P	P	P	P	F	P	P	P	P
Trecco Bay	P	P	P	F	P	P	F	P	P	P	P
Sandy Bay	F	P	F	F	P	P	F	P	P	P	P
Rest Bay	P	P	P	F	P	P	F	P	P	P	P
Aberafan Slip	P	P	P	P	F	P	F	P	P	P	P
Swansea Bay	F	P	F	F	P	P	F	P	P	P	P
Bracelet Bay	P	P	P	F	P	P	F	P	P	P	P
Limeslade Bay	P	P	P	F	F	P	F	P	P	P	P
Langland Bay	P	P	P	P	F	P	F	P	P	P	P
Caswell Bay	P	P	P	P	P	P	P	P	P	P	P
Oxwich Bay	P	P	P	P	P	P	F	P	P	P	P
Port Eynon Bay	P	P	P	P	P	P	F	P	P	P	P
Rhossili Beach	P	P	P	P	P	P	F	P	P	P	P
Pembrey Beach	P	P	P	P	P	P	F	P	P	P	P
Pendine Beach	P	P	P	F	F	P	F	P	P	P	P
Amroth Beach	P	P	P	F	P	P	F	P	P	P	P
Saundersfoot Beach	F	P	F	F	P	P	F	P	P	P	P
Tenby N. Beach	P	P	P	F	P	P	F	P	P	P	P
Tenby S. Beach	P	P	P	P	F	P	F	P	P	P	P
Broadhaven	P	P	P	P	P	P	F	P	P	P	P
Newgale Beach	P	P	P	F	P	P	F	P	P	P	P
Whitesands	P	P	P	P	F	P	F	P	P	P	P
Newport Sands N.	P	P	P	F	P	P	F	P	P	P	P
Traeth Gwyn, New Quay	P	P	P	P	F	P	F	P	P	P	P
Aberystwyth S. Beach	F	F	F	F	F	P	F	P	P	P	P
Aberystwyth N. Beach	P	P	P	P	P	P	F	P	P	P	P
<u>North</u>											
Aberdyfi	F	P	F	P	P	P	F	P	P	P	P
Borth	P	P	P	F	P	P	F	P	P	P	P
Tywyn	P	P	P	P	P	P	F	P	P	P	P
Fairbourne Beach	P	P	P	F	P	P	F	P	P	P	P
Barmouth	P	P	P	P	P	P	F	P	P	P	P
Llandanwg Beach	P	P	P	P	F	P	F	P	P	P	P
Harlech	P	P	P	F	P	P	F	P	P	P	P
Morfa Bychan	P	P	P	P	F	P	F	P	P	P	P
Criccieth Beach E.	F	P	F	F	F	P	F	P	P	P	P
Pwllheli Beach	P	P	P	P	P	P	F	P	P	P	P
Abersoch	P	P	P	F	P	P	F	P	P	P	P
Morfa Dinlle	P	P	P	P	P	P	F	P	P	P	P
Benllech	F	P	F	F	F	P	F	P	P	P	P
Trearddur Bay	P	P	P	F	F	P	F	P	P	P	P
Rhosneigr	P	P	P	P	P	P	F	P	P	P	P

Table 1e

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	21	18	F
Whitmore Bay	21	17	F
Cold Knap Beach	21	4	F
<u>South West</u>			
Southerndown Beach	22	3	F
Trecco Bay Central	22	6	F
Sandy Bay Central	22	11	F
Rest Bay	22	3	F
Aberafan Slip	22	6	F
Swansea Bay	22	12	F
Bracelet Bay	21	1	P
Limeslade Bay	21	2	P
Langland Bay	21	2	P
Caswell Bay	22	4	F
Oxwich Bay	22	5	F
Port Eynon	22	2	P
Rhossili Beach	22	2	P
Pembrey Beach	21	0	P
Pendine Beach	20	2	P
Amroth Beach	20	5	F
Saundersfoot Beach	20	11	F
Tenby N. Beach	20	6	F
Tenby S. Beach	20	8	F
Broadhaven	21	8	F
Newgale Beach	21	0	P
Whitesands	21	3	F
Newport Sands N.	20	3	F
Traeth Gwyn, New Quay	22	2	P
Aberystwyth S. Beach	25	10	F
Aberystwyth N. Beach	25	2	P

Northern Division results have been deleted due to AQC protocol problems.

Table 2a

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>Pass/Fail</u>	
<u>South East</u>								
Penarth Beach	21	13	F	21	2	F	F	/
St Mary's Well Bay	21	5	F	21	1	P	F	/
Watchhouse Bay	21	5	F	21	1	P	F	/
Fontygary Bay	21	1	P	21	0	P	P	✓
<u>South West</u>								
Llantwit Major	25	1	P	25	0	P	P	✓
Broughton Beach	22	0	P	22	0	P	P	✓
Ogmore Central	22	8	F	22	6	F	F	/
Margam Sands	22	1	P	22	0	P	P	✓
Aberafan E.	22	1	P	22	0	P	P	✓
Aberafan W.	22	2	F	22	2	F	F	/
Jersey Marine	20	0	P	20	0	P	P	✓
Llanelli Beach	21	18	F	21	18	F	F	✓
Burry Port Beach	21	0	P	21	0	P	P	✓
Pendine Beach	20	0	P	20	0	P	P	✓
Amroth Beach E.	20	0	P	20	0	P	P	✓
Amroth Beach W.	20	0	P	20	0	P	P	✓
Saundersfoot E.	20	2	F	20	0	P	F	✓
Saundersfoot W.	20	0	P	20	0	P	P	✓
Tenby N. Beach	15	0	P	15	0	P	P	✓
Tenby S. (39022)	20	0	P	20	0	P	P	✓
Tenby S. (39023)	20	0	P	20	0	P	P	✓
Tenby S. (39025)	20	0	P	20	0	P	P	✓
Manorbier Beach	20	2	F	20	1	P	F	✓
Manorbier Beach W.	20	0	P	20	0	P	P	✓
Freshwater East E.	20	0	P	20	0	P	P	✓
Freshwater East	20	0	P	20	0	P	P	✓
West Angle Bay	20	0	P	20	0	P	P	✓
Llanreath Bay	20	0	P	20	0	P	P	✓
Dale	20	0	P	20	0	P	P	✓
Little Haven	21	0	P	21	0	P	P	✓
Gelliswick	20	0	P	20	0	P	P	✓
Newgale S.	21	0	P	21	0	P	P	✓
Newgale N.	21	2	F	21	0	P	F	✓
Goodwick Harbour	20	0	P	20	0	P	P	✓
Goodwick Beach	20	0	P	20	0	P	P	✓
Newport Sands	20	0	P	20	0	P	P	✓
Poppit Sands (39067)	20	0	P	20	0	P	P	✓
Poppit Sands (39068)	20	0	P	20	0	P	P	✓
Aberporth Beach	22	3	F	22	3	F	F	✓
Aberporth E.	22	9	F	22	7	F	F	✓
Tresaith	22	2	F	22	1	P	F	✓
Llangranog Bay	22	6	F	22	1	P	F	✓
Newquay S. Beach	22	1	P	22	1	P	P	✓
Llanina Beach	22	1	P	22	3	F	F	✓
Little Quay	22	0	P	22	0	P	P	✓
Aberaeron S.	22	0	P	22	0	P	P	✓
Aberaeron (39083)	22	2	F	22	1	P	F	✓
Aberaeron (39427)	22	9	F	22	3	F	F	✓

Table 2a (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>Pass/Fail</u>
Aberystwyth S.	22	9	F	22	3	F	F
Clarach	21	8	F	21	4	F	F ✓
<u>North</u>							
Ynyslas N Groyne	21	0	P	21	0	P	P
Ynyslas E.	21	2	F	21	1	P	F ✓
Aberdyfi (20170)	22	3	F	22	0	P	F ✓
Aberdyfi (20172)	22	2	F	22	0	P	F ✓
Llwyngwril	21	5	F	21	2	F	F
Barmouth	22	0	P	22	0	P	P ✓
Talybont	22	0	P	22	0	P	P
Llanenddwyn	22	0	P	22	0	P	P
Morfa Bychan	22	1	P	22	0	P	P
Criccieth	22	2	F	22	1	P	F
Plas Menai	22	0	P	22	0	P	P
Pen-Y-Chain	22	0	P	22	0	P	P
Morfa Aberech	22	0	P	22	0	P	P
Pwllheli	22	0	P	22	0	P	P
Traeth Crugan	22	0	P	22	0	P	P
Llanbedrog	22	4	F	22	0	P	F
Abersoch	22	1	P	22	0	P	P
Aberdaron	21	1	P	21	0	P	P
Porth Neigwl	20	0	P	20	0	P	P
Porth Oer	21	0	P	21	0	P	P
Porth Iago	21	0	P	21	0	P	P
Porth Colman	21	0	P	21	0	P	P
Porth Tywyn	21	0	P	21	0	P	P
Porth Dinllaen	21	2	F	21	2	F	F
Porth Nefyn	21	0	P	21	1	P	P
Trefor	21	0	P	21	0	P	P
Aberdesach	21	1	P	21	1	P	P
Dinas Dinlle	22	0	P	22	0	P	P
Port Dinorwic	23	2	F	23	2	F	F
Llanfairfechan	22	0	P	22	0	P	P
Carreg Wen	20	1	P	20	1	P	P
Morfa Conwy	22	2	F	22	0	P	F
Penmaenmawr E.	22	1	P	22	0	P	P
Penmaenmawr (23006)	22	1	P	22	0	P	P
Penmaenmawr (23005)	22	4	F	22	3	F	F
Deganwy	22	12	F	22	6	F	F
Penryn Bay	22	4	F	22	1	P	F
Llandudno W.	22	9	F	22	6	F	F
Colwyn Bay (25042)	22	2	F	22	1	P	F
Colwyn Bay (25041)	22	1	P	22	0	P	P
Llanddulas	22	1	P	22	0	P	P
Abergele	21	3	F	21	1	P	F
Kinmel Bay	21	8	F	21	4	F	F
Rhyl	21	5	F	21	4	F	F
Ffrith	21	4	F	21	2	F	F
Prestatyn, Barkby	21	1	P	21	1	P	P
Point of Ayr	21	0	P	21	0	P	P
Traeth Llugwy	22	0	P	22	0	P	P
Traeth Bychan	22	2	F	22	1	P	F
Benllech	22	0	P	22	0	P	P
Beaumaris Pier	22	1	P	22	0	P	P

Table 2a (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>Pass/ Fail</u>
Beaumaris	22	7	F	22	5	F	F
Llanddona	22	0	P	22	0	P	P
Niwbrwch	22	0	P	22	0	P	P
Malltraeth	22	0	P	22	0	P	P
Rhosneigr (27534)	22	1	P	22	0	P	P
Silver Bay	22	0	P	22	0	P	P
Borth Wen	22	2	F	22	1	P	F
Porth-Y-Garan	22	0	P	22	0	P	P
Penrhos Beach	22	6	F	22	2	F	F
Porth Tywyn Mawr 27547	22	0	P	22	0	P	P
Church Bay	22	1	P	22	1	P	P
Cemaes Bay	22	2	F	22	1	P	F

Table 2b

COMPLIANCE OF "NON-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>			
Penarth Beach	21	19	F
St Mary's Well Bay	21	20	F
Watchhouse Bay	21	14	F
Fontygary Bay	21	3	F
<u>South West</u>			
Llantwit Major	25	6	F
Broughton Beach	22	1	P
Ogmore Central	22	11	F
Margam Sands	22	2	FP
Aberafan E.	22	10	F
Aberafan W.	22	9	F
Jersey Marine	20	6	F
Llanelli Beach	21	17	F
Burry Port Beach	21	3	F
Pendine Beach	20	3	F
Amroth Beach E.	20	0	P
Amroth Beach W.	20	3	F
Saundersfoot E.	20	10	F
Saundersfoot W.	20	7	F
Tenby N. Beach	15	0	P
Tenby S. (39022)	20	7	F
Tenby S. (39023)	20	6	F
Tenby S. (39025)	20	5	F
Manorbier Beach	20	4	F
Manorbier Beach W.	20	3	F
Freshwater East E.	20	1	P
Freshwater East	20	4	F
West Angle Bay	20	3	F
Llanreath Bay	20	7	F
Dale	20	5	F
Little Haven	21	9	F
Gelliswick	20	5	F
Newgale S.	21	1	P
Newgale N.	21	8	F
Goodwick Harbour	20	2	FP
Goodwick Beach	20	2	P
Newport Sands	20	0	P
Poppit Sands (39067)	20	0	P
Poppit Sands (39068)	20	1	P
Aberporth Beach	22	10	F
Aberporth E.	22	14	F
Tresaith	22	9	F
Llangranog Bay	22	14	F
Newquay S. Beach	22	7	F
Llanina Beach	22	3	F
Little Quay	22	5	F
Aberaeron S.	22	2	P
Aberaeron 4th Groyne	22	6	F

Table 2b (contd)

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number Failures</u>	<u>Pass/ Fail</u>
Aberaeron Beach N.	22	13	F
Aberystwyth S.	22	13	F
Clarach	21	9	F

Northern Division results have been deleted due to AQC protocol problems.

Table 3

COMPARISON OF 1986 TO 1990 COMPLIANCE FOR EC BATHING WATERS WITH "I" VALUES FOR E. COLI AND TOTAL COLIFORMS

<u>Bathing Water</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>Included in Dwr Cymru cyf Programme</u>
<u>South East</u>						
Jacksons Bay	F	F	F	F	F	*
Whitmore Bay	F	F	F	F	F	*
Cold Knap Beach	F	F	F	P	F	*
<u>South West</u>						
Southerndown Beach	F	P	F	P	P	*
Trecco Bay	F	F	P	F	P	*
Sandy Bay	F	F	F	P	F	*
Rest Bay	F	P	P	P	P	*
Aberafan Slip	F	P	P	P	P	*
Swansea Bay	F	F	F	P	F	*
Bracelet Bay	P	P	P	P	P	*
Limeslade Bay	F	F	P	F	P	*
Langland Bay	F	P	P	F	P	*
Caswell Bay	P	F	P	P	P	*
Oxwich Bay	F	P	P	P	P	*
Port Eynon Bay	P	P	P	P	P	
Rhossili Beach	F	P	P	P	P	*
Pembrey Beach	P	P	P	P	P	
Pendine Beach	P	P	P	P	P	
Amroth Beach	F	F	P	P	P	*
Saundersfoot Beach	P	F	P	P	F	*
Tenby N. Beach	F	F	F	P	P	*
Tenby S. Beach	F	F	P	P	P	
Broadhaven	F	P	P	P	P	*
Newgale Beach	F	P	P	P	P	*
Whitesands	P	P	P	P	P	
Newport Sands N.	P	P	P	P	P	
Traeth Gwyn, New Quay	P	P	P	P	P	
Aberystwyth S. Beach	F	F	P	P	F	*
Aberystwyth N. Beach	P	P	P	P	P	
<u>North</u>						
Aberdyfi	**				F	
Borth	P	P	P	P	P	
Tywyn	F	P	P	P	P	*
Fairbourne Beach	P	P	P	P	P	*
Barmouth	P	P	P	P	P	*
Llandanwg Beach	P	P	P	P	P	*
Harlech	F	P	P	P	P	*
Morfa Bychan	F	F	P	P	P	
Criccieth Beach E.	P	F	P	P	F	*
Pwllheli Beach	P	P	P	P	P	*
Abersoch	F	P	F	P	P	
Morfa Dinlle	*		P	P	P	
Benllech	P	F	P	P	F	*
Trearddur Bay	F	F	P	P	P	*
Rhosneigr	**				P	
Llandudno W.	F	F	F	F	F	*
Llandudno N.W.	P	P	P	P	F	

Table 3 (contd)

<u>Bathing Water</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>Included in Dwr Cymru cyf Programme</u>
Colwyn Bay	P	P	P	P	P	*
Sandy Cove	F	F	F	F	F	*
Rhyl	F	F	F	F	F	*
Prestatyn	F	P	P	P	F	

* 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.

** These two sites were "designated" from 1990, analysis of samples taken in previous years shows that both sites would have failed in 1988 and both would have passed in 1989.

Table 4

REMEDIAL ACTIONS REQUIRED TO MEET THE LONG TERM OBJECTIVE COMPLETED IN 1990

Scheme

Bathing Water affected

Barry West Outfall (November 1990)

Jacksons Bay, Whitmore Bay and Cold Knap Beach
Compliance of these three bathing waters not guaranteed until Lavernock, Barry East and Penarth outfalls have been improved (scheduled for between 1991 and 1995)

Irongate Pumping Station

Trecco Bay, Sandy Bay and Rest Bay

Aberystwyth Pumping Station Fine Screens

Aberystwyth North and South beaches. Screens became operational. This has reduced aesthetic impact but will not affect bacteriological quality

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 allow consecutive samples taken at statistically valid intervals to 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 allow consecutive samples taken at statistically valid intervals to 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>
<u>Microbiological</u>		
<u>E.coli</u>	2000/100 ml	100/100 ml
Total coliforms	10000/100 ml	500/100 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	0.3 mg / litre
Surface Active Substances	No lasting foam	0.3 mg / litre
Phenols	No specific odour (0.05 mg / litre)	0.005 mg / litre
Transparency	Extinction depth of 1m for Secchi disc - equivalent to 6.665 ftu (turbidity)	Extinction depth of 2m - equivalent turbidity value not yet calculated
Tarry Residues and Persistent Floating Solids	-	Must be 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 Knap 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
Traeth Gwyn, New Quay	39080	38700
Aberystwyth South Beach	39091	38800
Aberystwyth North Beach	39093	38900
<u>North</u>		
Aberdyfi	20171	39050
Borth, Opposite Hotel	20023	39000
Tywyn Main Beach Access	20019	39100
Fairbourne 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
Rhosneigr	27536	39990
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 WATERS SITES SAMPLED IN 1990

<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	39153
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 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
Manobier Beach W.	39028
Freshwater East E.	39029
Freshwater East	39030
West Angle Bay	39032
Llanreath Bay	86106
Dale	39040
Little Haven (Slip)	39043
Gelliswick	39037
Newgale S.	39047
Newgale N.	39049
Goodwick harbour S.	39058
Goodwick Beach	39059
Newport Sands S.	39064
Poppit Sands	39067
Poppit Sands	39068
Aberporth Beach	39072
Aberporth E.	83502
Tresaith	39073
Llangranog Bay Centre	39075
Newquay S. Beach	39079
Llanina Beach	39146
Little Quay, Central Groyne	39081
Aberaeron S.	39082
Aberaeron 4th Groyne	39083
Aberaeron Beach N.	39427
Aberystwyth S.	39090
Clarach S. of River	39095

Appendix 3 (contd.)

Bathing WaterSample Point NumberNorth

Ynyslas N Groyne	20022
Ynyslas 300m East Tywyi Bach	20399
Aberdyfi Beach	20170
Aberdyfi Beach	20172
Llwyngwriil	20189
Barmouth	20181
Talybont	20026
Llanenddwyn	20027
Morfa Bychan, Black Rock Sands	22540
Criccieth West Beach, Opp. Lon Parc	22541
Plas Menai	23290
Pen-Y-Chain	22544
Morfa Aberech	22545
Pwllheli	22546
Traeth Crugan	22548
Llanbedrog	22549
Abersoch	22550
Aberdaron	22553
Porth Neigwl	23331
Porth Oer	22555
Porth Iago	22556
Porth Colman	22557
Porth Tywyn	22558
Porth Dinllaen	22559
Porth Nefyn	22560
Trefor	22561
Aberdesach	22562
Dinas Dinlle	23244
Port Dinorwic	23252
Llanfairfechan	23245
Carreg Wen	23253
Morfa Conwy	23246
Penmaenmawr E.	22995
Penmaenmawr, off Dwygfylchi	23006
Penmaenmawr, off Dwygfylchi	23005
Deganwy	25034
Penryn Bay	25045
Llandudno W. Shore	25033
Colwyn Bay	25042
Colwyn Bay E.	25041
Llanddulas	3597
Abergele, Pantri Cafe	3601
Kinmel Bay	3605
Rhyl Splash Point	3610
Ffrith	3611
Prestatyn, Barkby Beach	3614
Point of Ayr Lighthouse	3617
Traeth Llugwy	27528
Traeth Bychan	27527
Benllech, 50m N. of Craig Dwllan	27827
Beaumaris, 150m W. of Beaumaris Pier	27828
Beaumaris, Opp. Swimming Baths	27829
Llanddona	27562
Niwbwrch	27537
Malltraeth	27556

Appendix 3 (contd.)

Bathing Water

Sample Point Number

Rhosneigr, Opp. Beach Road	27534
Silver Bay	27541
Borth Wen	27542
Porth-Y-Garan	27543
Penrhos Beach	27817
Porth Tywyn Mawr	27547
Church Bay	27548
Cemaes Bay	27529

Appendix 4

SUMMARY DATA FOR "DESIGNATED" BATHING WATERS

<u>Bathing Water</u>	<u>E.Coli</u>		<u>Total Coliforms</u>	
	<u>No. Samples</u>	<u>Range (a)</u>	<u>No. Samples</u>	<u>Range (a)</u>
<u>South East</u>				
Jacksons Bay	21	<100-5700	21	500-12600
Whitmore Bay	21	300-8000	21	400-14000
Cold Knap Beach	21	<100-10000	21	100-18000
<u>South West</u>				
Southerndown Beach	22	<10-1420	22	20-5600
Trecco Bay	22	<100-6300	22	300-9600
Sandy Bay	22	<100-4100	22	100-8900
Rest Bay	22	<10-1200	22	100-5000
Aberafan Slip	22	<10-2500	22	60-11400
Swansea Bay	22	<100-9000	22	<100-9000
Bracelet Bay	21	30-950	21	100-2400
Limeslade Bay	21	<100-2400	21	200-4400
Langland Bay	21	<10-600	21	10-3300
Caswell Bay	22	<10-700	22	20-3100
Oxwich Bay	22	<2-1800	22	2-8000
Port Eynon Bay	22	<1-1900	22	<2-3000
Rhossili Beach	22	<2-2400	22	<2-3000
Pembrey Beach	21	<2-120	21	2-210
Pendine Beach	20	<10-470	20	<10-580
Amroth Beach	20	<10-1530	20	10-1900
Saundersfoot Beach	20	<100-3200	20	<100-5000
Tenby N. Beach	20	<10-1140	20	<10-1140
Tenby S. Beach	20	<10-530	20	10-550
Broadhaven	21	<10-1700	21	<10-2000

<u>Salmonella</u>		<u>Viruses</u>		<u>Faecal Strep.</u>	
<u>No.</u> <u>Samples</u>	<u>+ve</u> <u>Result</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(b)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
5	3	2	0	21	56-740
5	2	2	0	21	60-594
5	1	2	0	21	10-768
5	0	2	0	22	2-1300
5	1	2	0	22	<5-475
5	2	2	0	22	5-1160
5	2	2	0	22	<5-220
5	0	2	0-3	22	2-296
5	2	2	0	22	6-920
5	2	2	0	21	<2-156
5	2	2	0-3	21	<2-114
5	0	2	0-3	21	<2-856
5	0	2	0	22	<2-830
5	0	2	0	22	<1-600
5	0	2	0	22	1-400
5	0	2	0	22	<1-555
5	0	2	0	21	<1-42
5	1	2	0-1	20	<1-213
5	1	2	0	20	1-1000
5	1	2	0	20	5-1850
5	1	2	0	20	<2-370
5	0	2	0-1	20	<2-402
5	0	2	0	21	<2-492

Appendix 4 (contd)

<u>Bathing Water</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	21	<5-165	21	<5-300	5	1	2	0	21	1-82
Whitesands	21	<5-1500	21	<5-2250	5	0	2	0-1	21	<1-600
Newport Sands N.	20	<10-750	20	<10-830	5	1	2	0	20	1-230
Traeth Gwyn, New Quay	22	<5-650	22	<10-1000	5	0	2	0-3	22	<1-176
Aberystwyth S. Beach	25	<10-6000	25	20-32000	6	1	3	0-2	25	2-1024
Aberystwyth N. Beach	25	<10-800	25	20-5200	6	0	3	0	25	<2-360
<u>North</u>										
Aberdyfi	22	10-7300	22	30-8800	1	0	1	0		
Borth	23	<5-750	23	<5-800	5	1	2	0		
Tywyn	22	<10-1090	22	<10-7900	6	0	2	0		
Fairbourne Beach	22	<10-940	22	<10-1560	6	1	2	0		
Barmouth	22	<10-740	22	<10-800	6	0	2	0		
Llandanwg Beach	22	<10-2400	22	<10-3200	7	0	2	1-9		
Harlech	22	<10-2400	22	<10-5600	7	1	2	0		
Morfa Bychan	22	<10-720	22	10-1000	6	0	1	1		
Criccieth Beach E.	22	<10-8900	22	10-17000	6	2	2	0-2		
Pwllheli Beach	22	<10-200	22	<10-440	6	0	2	0		
Abersoch	22	<10-1670	22	<10-5100	6	1	2	0		
Morfa Dinlle	22	<10-2300	22	<10-2400	7	0	2	0		
Benllech	22	10-6300	22	30-6600	7	1	2	0-2		
Trearddur Bay	22	<10-1260	22	<10-1450	6	2	2	0-1		
Rhosneigr	22	<10-560	22	<10-660	1	0	1	0		
Llandudno W.	22	30-18600	22	30->30000	6	2	2	0		
Llandudno N.W.	22	20-5300	22	90-6800	6	1	2	0		
Colwyn Bay	22	<10-1150	22	20-5500	6	3	2	0-2		
Sandy Cove	21	40-7600	21	70-13400	7	2	2	0		
Rhyl	21	10-10100	21	190-30500	7	3	2	0		
Prestatyn	21	<10-12500	21	<10-13400	7	1	2	0		

(a) = No./100 ml

(b) = PFU/10 litres

SUMMARY DATA FOR "NON-DESIGNATED" BATHING WATERS

<u>Bathing Water</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	21	1100-9300	21	2100-18000	21	24-1000
St Mary's Well Bay	21	600-7800	21	1900-16000	21	36-1184
Watchhouse Bay	21	100-12000	21	400-19000	21	52-1000
Fontygary Bay	21	70-2800	21	130-3700	21	2-310
<u>South West</u>						
Llantwit Major	25	<10-2600	25	10-6000	25	<5-2250
Broughton Beach	22	<2-460	22	4-800	22	<1-207
Ogmore Central	22	80-20000	22	200-30000	22	6-1540
Margam Sands	22	<100-3800	22	<100-7500	22	<2-142
Aberafan E.	22	<10-3000	22	40-7500	22	2-3000
Aberafan W.	22	<10-2500	22	70-12000	22	<2-2000
Jersey Marine	20	<100-1800	20	<100-8700	20	2-222
Llanelli Beach	21	1000-162000	21	3000-600000	21	70-4300
Burry Port Beach	21	<10-1520	21	10-2800	21	1-203
Pendine Beach	20	<10-600	20	<10-870	20	<1-240
Amroth Beach E.	20	<10-480	20	<10-980	20	<1-47
Amroth Beach W.	20	<10-1500	20	<10-500	20	<1-268
Saundersfoot E.	20	<100-3100	20	<100-5600	20	6-454
Saundersfoot W.	20	30-800	20	70-1600	20	4-538
Tenby N. Beach	15	<10-730	15	<10-1440	15	1-67
Tenby S. (39022)	20	<10-1030	20	<10-1140	20	<2-740
Tenby S. (39023)	20	<10-1200	20	20-2500	20	<2-1132
Tenby S. (39025)	20	<1-1420	20	10-1770	20	2-800
Manorbier Beach	20	<100-6100	20	<100-11500	20	<2-540
Manorbier Beach W.	20	<10-1150	20	10-3300	20	<2-357
Freshwater East E.	20	<10-50	20	<10-100	20	<1-120
Freshwater East	20	<10-300	20	<10-600	20	<1-185
West Angle Bay	20	<10-200	20	<10-220	20	<2-512
Llanreath Bay	20	<10-360	20	20-4200	20	<2-832
Dale	20	<10-1300	20	10-5600	20	<2-648
Little Haven	21	<100-800	21	<100-1600	21	<5-940
Gelliswick	20	<10-1600	20	20-7400	20	<2->1600
Newgale S.	21	<10-900	21	<10-900	21	<1-134
Newgale N.	21	<10-3000	21	<10-4500	21	1-500
Goodwick Harbour	20	<10-1700	20	<10-2300	20	<1-352
Goodwick Beach	20	<10-1060	20	30-2000	20	2-622
Newport Sands	20	<10-400	20	10-540	20	<1-99
Poppit Sands (39067)	20	<10-120	20	<10-240	20	<1-68
Poppit Sands (39068)	20	<10-1100	20	<10-1180	20	<2-230
Aberporth Beach	22	<10-11000	22	<100-38000	22	<2-7400
Aberporth E.	22	<100-48000	22	100-360000	22	<5-5000
Tresaith	22	<10-3500	22	30-16000	22	2-1224
Llangranog Bay	22	<100-13600	22	<100-13600	22	5-1320
Newquay S. Beach	22	<5-2500	22	10-14000	22	<1-800
Llanina Beach	22	<1-3800	22	10-25000	22	<1-704
Little Quay	22	<2-176	22	2-550	22	<1-202
Aberaeron S.	22	<10-500	22	<100-8400	22	<5-355
Aberaeron 4th Groyne	22	<10-5600	22	<10-11500	22	<5-615

Appendix 5 (contd)

<u>Bathing Water</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>
Aberaeron Beach N.	22	30-22600	22	30->30000	22	<5-3000
Aberystwyth S.	22	<100-16400	22	<100-19000	22	<2-1400
Clarach	21	<100-9400	21	100-14000	21	2-800
<u>North</u>						
Ynyslas N. Groyne	21	<10-800	21	<10-900		
Ynyslas	21	<100-9800	21	<100-10200		
Aberdyfi (20170)	22	<10-5100	22	40-9800		
Aberdyfi (20172)	22	30-4900	22	70-5700		
Llwyngwriil	21	10-12000	21	10-19400		
Barmouth	22	<10-490	22	<10-740		
Talybont	22	<10-300	22	<10-520		
Llanenddwyn	22	<10-400	22	<10-400		
Morfa Bychan	22	<10-2100	22	<10-3000		
Criccieth	22	<10-3600	22	<10-10200		
Plas Menai	22	20-790	22	100-3500		
Pen-Y-Chain	22	<10-360	22	<10-800		
Morfa Aberech	22	<10-880	22	<10-1320		
Pwllheli	22	<10-1330	22	10-2250		
Traeth Crugan	22	<10-200	22	<10-230		
Llanbedrog	22	<10-5700	22	<10-8200		
Abersoch	22	<10-2210	22	<10-2210		
Aberdaron	21	<10-7500	21	<10-9900		
Porth Neigwl	20	<10-220	20	<10-220		
Porth Oer	21	<10-370	21	<10-370		
Porth Iago	21	<10-1330	21	<10-1540		
Porth Colman	21	<10-490	21	<10-520		
Porth Tywyn	21	<10-860	21	<10-2700		
Porth Dinllan	21	<10-10000	21	<10-20000		
Porth Nefyn	21	<10-1490	21	<10-15600		
Trefor	21	<10-230	21	<10-3300		
Aberdesach	21	<10-3200	21	<10->30000		
Dinas Dinlle	22	<10-600	22	<10-650		
Port Dinorwic	23	10-8800	23	90-29600		
Llanfairfechan	22	<10-850	22	<10-2000		
Carreg Wen	20	100-5100	20	110-11500		
Morfa Conwy	22	<10-4900	22	10-5900		
Penmaenmawr E.	22	<10-5900	22	<10-8500		
Penmaenmawr (23006)	22	<10-3000	22	20-3800		
Penmaenmawr (23005)	22	<10-9500	22	10-14700		
Deganwy	22	200->100000	22	460->100000		
Penryn Bay	22	160-7800	22	260-11400		
Llandudno W. Shore	22	40->30000	22	40-36800		
Colwyn Bay	22	10-38000	22	30-38000		
Colwyn Bay E.	22	20-2200	22	80-7600		
Llanddulas	22	<10-2700	22	30-5000		
Abergele	21	10-22300	21	60-31800		
Kinmel Bay	21	70-10900	21	100-12300		
Rhyl	21	40-9300	21	60-13700		
Ffrith	21	10-9400	21	30-14600		
Prestatyn, Barkby	21	<10-2100	21	<10-12100		
Point of Ayr	21	<10-860	21	10-1630		
Traeth Llugwy	22	<10-860	22	<10-1270		

Appendix 5 (contd)

	<u>E.Coli</u>	<u>Total Coliforms</u>
Traeth Bychan	22 <10->6000	22 10->12000
Benllech	22 10-2000	22 20-3500
Beaumaris	22 <10->30000	22 <10->30000
Beaumaris Pier	22 <10-3000	22 90-3000
Llanddona	22 <10-570	22 <10-570
Niwbrwch	22 <10-7800	22 <10-950
Malltraeth	22 <10-1120	22 <10-1580
Rhosneigr (27534)	22 <10-2200	22 <10-2800
Silver Bay	22 <10-260	22 <10-260
Borth Wen	22 <10-7400	22 <10-12700
Porth-Y-Garan	22 <10-520	22 <10-800
Penrhos Beach	22 <10-8600	22 <10-23300
Porth Tywyn Mawr	22 <10-1070	22 <10-1230
Church Bay	22 <10-5200	22 <10-10400
Cemaes Bay	22 10-9200	22 60-10900

(a) - No./100 ml

1990 BATHING WATERS REPORT

PART II

1. INTRODUCTION

1.1 Part II of the Bathing Waters Report contains information regarding compliance with the "G" standards for those parameters for which "I" standards also exist, ie E.coli and total coliforms. Compliance with the "G" standards is **not** mandatory but the Directive states that Member States should "endeavour" to observe them as guidelines.

1.2 The "G" standard compliance is specified in Appendix 1 of the main report. These standards are currently being considered by the Government as part of the forthcoming Bathing Waters (Classification) Regulations although no final decision has yet been made.

2. BATHING WATERS IDENTIFIED AS FALLING WITHIN THE TERMS OF THE DIRECTIVE

2.1 Table 5 summarises E.coli and total coliform sample statistics and compliance with the "G" values for the 50 "designated" Welsh bathing waters in 1990. These results indicate that overall 7 (14%) complied with the combined standard.

3. BATHING WATERS NOT IDENTIFIED AS FALLING WITHIN THE TERMS OF THE DIRECTIVE

3.1 The compliance of the "non-designated" bathing waters with the E.coli/total coliform "G" standard of the Bathing Waters Directive is shown in Table 6. This shows that 20 (18%) complied with this Directive standard in 1990.

4. SUMMARY

4.1 Summary table showing compliance with the combined E.coli and total coliform "G" and "I" standards:-

Bathing Water	Number	"I" Standard Pass		"G" Standard Pass	
		Number	Percent	Number	Percent
EC	50	35	70%	7	14%
non EC	113	72	64%	20	18%

Table 6

COMPLIANCE OF "NON-DESIGNATED" BATHING WATERS WITH "G" 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>Pass/ Fail</u>
<u>South East</u>							
Penarth Beach	21	21	F	21	21	F	F
St Mary's Well Bay	21	21	F	21	21	F	F
Watchhouse Bay	21	20	F	21	19	F	F
Fontygary Bay	21	18	F	21	14	F	F
<u>South West</u>							
Llantwit Major	25	20	F	25	12	F	F
Broughton Beach	22	3	P	22	1	P	P
Ogmore Central	22	18	F	22	19	F	F
Margam Sands	22	13	F	22	10	F	F
Aberafan E.	22	13	F	22	13	F	F
Aberafan W.	22	14	F	22	14	F	F
Jersey Marine	20	16	F	20	14	F	F
Llanelli Beach	21	21	F	21	21	F	F
Burry Port Beach	21	13	F	21	6	F	F
Pendine Beach	20	7	F	20	2	FP	F
Amroth Beach E. -	20	2	P	20	1	P	P
Amroth Beach W.	20	8	F	20	0	P	F
Saundersfoot E.	20	10	F	20	8	F	F
Saundersfoot W.	20	16	F	20	8	F	F
Tenby N. Beach -	15	4	FP	15	1	P	FP
Tenby S. (39022)	20	7	F	20	5	F	F
Tenby S. (39023)	20	6	F	20	3	P	F
Tenby S. (39025)	20	6	F	20	1	P	F
Manorbier Beach	20	7	F	20	6	F	F
Manorbier Beach W.	20	2	P	20	3	P	FP
Freshwater East E.-	20	0	P	20	0	P	P
Freshwater East	20	7	F	20	1	P	F
West Angle Bay -	20	2	P	20	0	P	P
Llanreath Bay	20	9	F	20	1	P	F
Dale	20	9	F	20	7	F	F
Little Haven	21	12	F	21	7	F	F
Gelliswick	20	10	F	20	8	F	F
Newgale S. -	21	2	FP	21	1	P	FP
Newgale N.	21	13	F	21	11	F	F
Goodwick Harbour	20	8	F	20	2	FL	F
Goodwick Beach	20	11	F	20	4	FD	F
Newport Sands	20	2	FP	20	1	P	FP
Poppit Sands (39067)	20	1	P	20	0	P	P
Poppit Sands (39068)	20	2	P	20	1	P	P
Aberporth Beach	22	13	F	22	11	F	F
Aberporth E.	22	18	F	22	17	F	F
Tresaith	22	11	F	22	7	F	F
Llangranog Bay	22	17	F	22	15	F	F
Newquay S. Beach	22	8	F	22	7	F	F
Llanina Beach	22	6	F	22	6	F	F
Little Quay	22	4	P	22	1	P	FP
Aberaeron S. -	22	3	P	22	4	P	P
Aberaeron (39083)	22	9	F	22	9	F	F
Aberaeron (39427)	22	15	F	22	13	F	F

FS

P P

P

P

P

P

P

P

P

P

P

P

P

Table 6 (contd)

	<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>Pass/Fail</u>
<u>Bathing Water</u>							
Aberystwyth S.	22	15	F	22	15	F	F
Clarach	21	14	F	21	16	F	F
<u>North</u>							
Ynyslas N Groyne —	21	4	P	21	2	P	P
Ynyslas E.	21	10	F	21	9	F	F
Aberdyfi (20170)	22	11	F	22	9	F	F
Aberdyfi (20172)	22	15	F	22	11	F	F
Llwyngwril	21	17	F	21	14	F	F
Barmouth	22	7	F	22	1	P	F
Talybont	22	6	F	22	1	P	F
Llanenddwyn	22	4	FP	22	0	P	FP
Morfa Bychan	22	14	F	22	5	F	F
Criccieth	22	14	F	22	12	F	F
Plas Menai	22	16	F	22	8	F	F
Pen-Y-Chain —	22	1	P	22	1	P	P
Morfa Aberech	22	7	F	22	5	F	F
Pwllheli	22	9	F	22	8	F	F
Traeth Crugan —	22	4	P	22	0	P	P
Llanbedrog	22	8	F	22	7	F	F
Abersoch	22	5	F	22	5	F	F
Aberdaron	21	1	P	21	1	P	P
Porth Neigwl —	20	1	P	20	0	P	P
Porth Oer	21	5	F	21	0	P	F
Porth Iago —	21	1	P	21	1	P	P
Porth Colman	21	8	F	21	1	P	F
Porth Tywyn —	21	4	FP	21	2	P	FP
Porth Dinllaen	21	9	F	21	8	F	F
Porth Nefyn	21	8	F	21	6	F	F
Trefor —	21	3	FP	21	1	P	FP
Aberdesach —	21	3	P	21	2	P	P
Dinas Dinlle —	22	4	P	22	1	P	P
Port Dinorwic	23	20	F	23	19	F	F
Llanfairfechan	22	6	F	22	6	F	F
Carreg Wen	20	18	F	20	13	F	F
Morfa Conwy	22	20	F	22	13	F	F
Penmaenmawr E.	22	7	F	22	6	F	F
Penmaenmawr (23006)	22	9	F	22	5	F	F
Penmaenmawr (23005)	22	15	F	22	12	F	F
Deganwy	22	22	F	22	21	F	F
Penryn Bay	22	22	F	22	17	F	F
Llandudno W.	22	21	F	22	18	F	F
Colwyn Bay (25042)	22	14	F	22	9	F	F
Colwyn Bay (25041)	22	18	F	22	12	F	F
Llanddulas	22	16	F	22	9	F	F
Abergele	21	17	F	21	14	F	F
Kinmel Bay	21	19	F	21	18	F	F
Rhyl	21	19	F	21	16	F	F
Ffrith	21	13	F	21	12	F	F
Prestatyn, Barkby	21	10	F	21	8	F	F
Point of Ayr	21	12	F	21	8	F	F
Traeth Llugwy	22	9	F	22	4	P	F
Traeth Bychan	22	12	F	22	9	F	F
Benllech	22	13	F	22	5	F	F
Beaumaris Pier	22	15	F	22	9	F	F

Table 6 (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>Pass/ Fail</u>
Beaumaris	22	18	F	22	15	F	F
Llanddona	22	8	F	22	3	P	F
Niwbrwch	22	7	F	22	2	P	F
Malltraeth	22	2	P	22	3	P	P
Rhosneigr (27534)	22	13	F	22	6	F	F
Silver Bay	22	1	P	22	0	P	P
Borth Wen	22	10	F	22	7	F	F
Porth-Y-Garan	22	7	F	22	3	P	F
Penrhos Beach	22	10	F	22	10	F	F
Porth Tywyn Mawr	22	5	F	22	1	P	F
Church Bay	22	2	P	22	1	P	P
Cemaes Bay	22	19	F	22	11	F	F