

NATIONAL RIVERS AUTHORITY
AWDURDOD AFONYDD CENEDLAETHOL

WELSH REGION
RHANBARTH CYMRU



NRA

Guardians of the Water Environment
Diogelwyr Amgylchedd Dŵr

NRA Wales 71

BATHING WATERS REPORT

1992

National Rivers Authority	
Information Centre	
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Session No	<u>DEPT</u>

ENVIRONMENT AGENCY



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NRA WELSH REGION

1992 BATHING WATER SURVEY

1. BACKGROUND

- 1.1 EC Directives are agreements between the EC and Member States. Thus the interpretation of them at national level, their adoption into national law, and accountability for compliance with the terms of the directives, lies entirely with national governments.
- 1.2 The EC Bathing Waters Directive (76/160/EEC) was intended primarily to safeguard public health and the environment by reducing the pollution of bathing waters and protecting such waters against further deterioration. Under the Water Act 1989, the NRA has been given the responsibility to carry out the necessary monitoring programmes in relation to certain water-related directives, which include the Bathing Waters directive, in England and Wales. The results from these monitoring programmes in Wales are submitted to the Welsh Office (WO) and the Department of the Environment (DoE). It is for such Government Departments, however, to interpret this and other such EC Directives within England and Wales, and it follows from the preceding paragraph that only they can assess 'compliance' or otherwise with the Directives.
- 1.3 When Directive (76/160/EEC) was first adopted, only a limited number of bathing waters were identified by the UK Government. A large list of bathing waters has since been added to the initial list, and all these are included in the Government's report to the EC. If bathing waters have not been included in this report then they do not come within the terms of the Directive and thus, by definition, cannot be said to comply, or fail to comply, with its conditions. A number of non-identified bathing waters are, however, routinely monitored by the NRA and the results are included in this report for comparison.
- 1.4 The Directive specifies a range of water quality standards which should be achieved in identified bathing waters and indicates the required monitoring frequency. These standards fall into two categories, mandatory (I) and guideline (G) standards, details of the requirements for compliance with which are given in Appendix 1.
- 1.5 The Bathing Waters (Classification) Regulations 1991 was published as a Statutory Instrument on 9th August 1991, bringing the regulations into UK law. The "Notice" and "Directions" were received in 1992.

- 1.6 The Government currently uses the faecal 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. Physico-chemical "I" standard parameters are tested as indicated in Appendix 1. The occurrence of faecal streptococci is also examined, although this parameter only has a non-mandatory "G" standard in the Directive. Welsh Region has been granted a derogation for transparency at all its bathing waters from 1991.

2. SAMPLING PROGRAMME

- 2.1 The 51 bathing waters in the Welsh region currently identified by the UK Government as falling within the scope of the Directive are displayed on Figure 1 and listed in Appendix 2. 50 of these bathing waters are in Wales and one, West Kirby, is in England.
- 2.2 The Government requires that these bathing waters are monitored in accordance with the requirements of the Bathing Waters Directive and the data reported to the WO and DOE by November of each year. This report summarises the results of the monitoring carried out during the 1992 bathing season.
- 2.3 Non-identified bathing waters (Appendix 3) are monitored in order to establish the impact of local discharges and to ensure that the water quality in these areas does not deteriorate.
- 2.4 A full report on the current status of Directive 76/160/EEC compliance in England and Wales will be published by the NRA in 1993.

3. 1992 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 Guidance has been issued by DOE indicating the frequency of monitoring required for each parameter. This guidance has been used to develop the monitoring programme within Welsh Region. DOE specified that faecal and total coliforms should be analysed for on at least 20 occasions during the bathing season and that the NRA are to report "confirmed" faecal and total coliform results instead of the "presumptive" results which had been reported in previous years *. The test for Salmonella is to be carried out twice during the bathing season and the test for enteroviruses is to be carried out twice, but only at the bathing waters which failed to achieve the faecal / total coliform standards during the previous bathing season. pH is only required to be measured once during the season and the physicochemical parameters are to be assessed on at least 20 occasions during the bathing season.

* "Confirmation" of the Coliform test requires further analysis of all samples to substantiate the result.

- 3.3 Summary data on quality collected from the 51 identified 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 "confirmed" faecal and total coliform sample statistics and compliance, as reported by the DOE, with the "I" values for the 51 identified Welsh Region bathing waters in 1992. These results indicate that overall 39 (76%) complied with the combined standard.
- 3.5 Table 1(b) summarises Salmonella sample statistics for the 51 identified Welsh Region bathing waters in 1992. The results indicate that at 35 (69%) no Salmonella were identified.
- 3.6 Table 1(c) summarises entero-virus sample statistics for the 6 identified Welsh Region bathing waters sampled for enterovirus in 1992. The results indicate that at 0 (0 %) no entero-virus were identified.
- 3.7 Table 1(d) summarises faecal streptococci sample statistics for the 51 identified Welsh Region bathing waters tested in 1992. The results indicate that 16 (31%) had <three samples with a value >100 faecal streptococci per 100 ml with no consecutive failures.

4. 1992 MONITORING PROGRAMME FOR BATHING WATERS NOT IDENTIFIED UNDER THE TERMS OF THE BATHING WATERS DIRECTIVE

- 4.1 A total of 150 non-identified bathing waters were monitored during 1992. 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 with sampling was provided by some Local Authorities. Appendix 5 gives summary statistical details for this monitoring programme. Due to limited resources it was not possible to report "confirmed" faecal and total coliform results for all samples. Only those samples which exceeded the 2000/100ml faecal coliform standard or the 10000/100ml total coliform standard were "confirmed".
- 4.2 A summary of the analysis at each of these waters for Faecal Coliforms and total coliforms is shown in Table 2(a). This shows that 114 (76%) had <two samples with a value >2000/100 ml for Faecal Coliforms and that 127 (85%) had <two samples with a value >10000/100 ml for total coliforms. A total of 113 non-identified bathing waters (75%) had <two samples with >2000 Faecal Coliforms and >10000 total coliforms per 100 ml.
- 4.3 A summary of the analysis for faecal streptococci is shown in Table 2(b). The results show that 36 (24%) had <three samples with a value of >100 faecal streptococci per 100 ml with no consecutive failures.

5. REMEDIAL MEASURES REQUIRED TO MEET LONG TERM OBJECTIVE

- 5.1 The long term objective is for all identified 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 identified bathing waters to ensure that Dwr Cymru discharges are consistent with compliance, at most bathing waters, with the faecal and total coliform standards by the end of 1995. The requirements for remedial works at non-identified bathing waters are being reviewed.

Table 3 compares the compliance of the identified bathing waters over the period 1986 - 1992 (the assessment was carried out differently prior to 1986 and therefore cannot be included). It is important to realise that slightly different criteria were used for 1986 and 1987 where a look up table approach, which also entailed reduced sampling effort, was adopted by the Government. Therefore care must be taken when making any comparison of compliance between 1986/87 and subsequent years. It should also be noted that 1986 - 1991 figures show compliance using "presumptive" results whereas 1992 figures show "confirmed" results.

It must be emphasised that compliance is considered an unreliable indication of trends due to the statistical limitations of such a small data set. Variation in compliance from year to year therefore does not necessarily indicate genuine improvements or deteriorations.

In addition Table 3 indicates those bathing waters which are included in the Dwr Cymru cyf. investment programme designed to meet compliance by the UK with its obligations under the EC Bathing Waters Directive.

None of the schemes listed in Table 3 were completed during 1992.

6. SUMMARY

- 6.1 As reported by the DOE, a total of 39 out of the 51 identified bathing waters complied with the faecal and total coliform "I" standards specified in the Directive (76%).
- 6.2 Of the 150 non-identified bathing waters sampled in 1992, 113 had <two samples with >2000 faecal and >10000 total coliforms per 100 ml (75%).
- 6.3 Summary table showing compliance with the combined faecal and total coliform standards:- (All samples were "confirmed" for identified waters, but at non identified waters only those samples which exceeded the 2000/100ml faecal coliform standard or the 10000/100ml total coliform standard were "confirmed".)

Bathing Water	Number	Number with <two samples with >2000 faecal and >10000 total coliforms per 100 ml	Percent
EC	51	39	76%
non EC	150	113	75%

Figure 1

LOCATION OF IDENTIFIED BATHING WATER SAMPLING SITES IN WELSH REGION

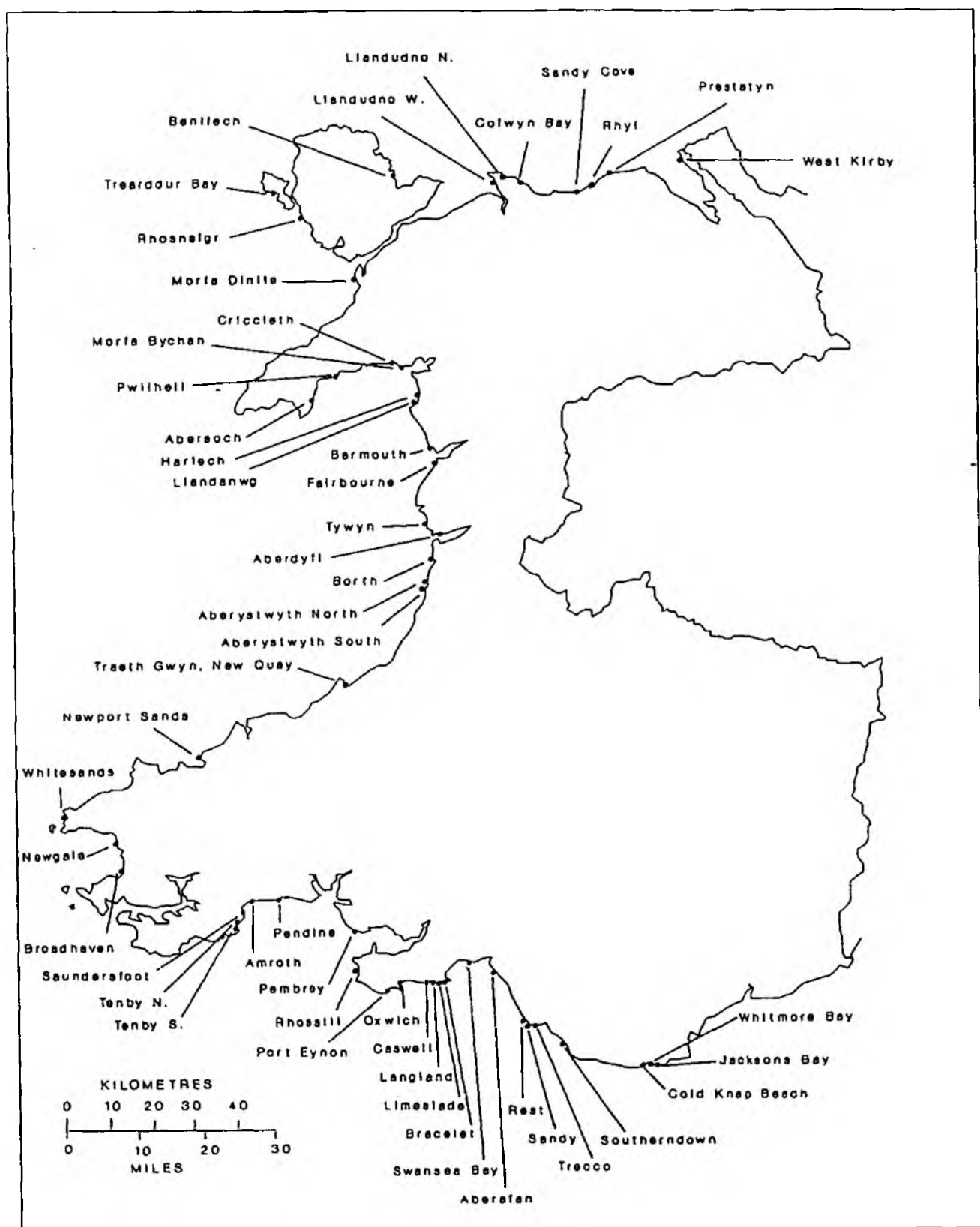


Table 1a

COMPLIANCE. AS COMPUTED BY THE DOE. OF IDENTIFIED BATHING WATERS WITH "I" VALUES FOR "CONFIRMED" FAECAL AND TOTAL COLIFORMS

<u>Bathing Water</u>	<u>Faecal Coliform</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	1	P	21	1	P	P
<u>South West</u>							
Southerndown Beach	22	0	P	22	0	P	P
Trecco Bay	22	0	P	22	0	P	P
Sandy Bay	22	0	P	22	1	P	P
Rest Bay	22	0	P	22	0	P	P
Aberafan Slip	22	1	P	22	0	P	P
Swansea Bay	22	4	F	22	2	F	F
Bracelet Bay	22	1	P	22	1	P	P
Limeslade Bay	22	0	P	22	0	P	P
Langland Bay	22	1	P	22	1	P	P
Caswell Bay	22	2	F	22	1	P	F
Oxwich Bay	22	0	P	22	0	P	P
Port Eynon Bay	22	0	P	22	0	P	P
Rhossili Beach	22	0	P	22	0	P	P
Pembrey Beach	21	0	P	21	0	P	P
Pendine Beach	20	1	P	20	0	P	P
Amroth Beach	20	1	P	20	0	P	P
Saundersfoot Beach	20	0	P	20	1	P	P
Tenby N. Beach	20	0	P	20	1	P	P
Tenby S. Beach	20	0	P	20	0	P	P
Broadhaven	20	0	P	20	0	P	P
Newgale Beach	20	0	P	20	0	P	P
Whitesands	20	0	P	20	0	P	P
Newport Sands N.	20	0	P	20	0	P	P
Traeth Gwyn, New Quay	20	0	P	20	1	P	P
Aberystwyth S. Beach	20	3	F	20	0	P	F
Aberystwyth N. Beach	20	1	P	20	0	P	P
<u>North</u>							
Aberdyfi	22	5	F	22	4	F	F
Borth	20	0	P	20	0	P	P
Tywyn	22	0	P	22	0	P	P
Fairbourne Beach	22	0	P	22	0	P	P
Barmouth	22	1	P	22	0	P	P
Llandanwg Beach	23	0	P	23	0	P	P
Harlech	23	1	P	23	1	P	P
Morfa Bychan	23	2	F	23	0	P	F
Criccieth Beach E.	23	2	F	23	1	P	F
Pwllheli Beach	22	0	P	22	0	P	P
Abersoch	22	1	P	22	0	P	P
Morfa Dinlle	21	0	P	21	0	P	P
Benllech	24	1	P	24	0	P	P
Trearddur Bay	22	0	P	22	0	P	P
Rhosneigr	22	0	P	22	0	P	P
Llandudno W.	22	3	F	22	2	F	F
Llandudno N.	22	0	P	22	0	P	P
Colwyn Bay	22	1	P	22	0	P	P
Sandy Cove/Kinmel Bay	23	2	F	23	1	P	F
Rhyl	23	7	F	23	5	F	F
Prestatyn	23	0	P	23	0	P	P
W. Kirby	22	4	F	22	2	F	F

Table 1b

ANALYSIS OF IDENTIFIED BATHING WATERS RESULTS FOR SALMONELLA

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

Table 1c

ANALYSIS OF IDENTIFIED BATHING WATERS RESULTS FOR ENTERO-VIRUS

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of Positive Results</u>
<u>South East</u>		
Jacksons Bay	2	1
Whitmore Bay		
Cold Knap Beach		
<u>South West</u>		
Southerndown Beach		
Trecco Bay		
Sandy Bay		
Rest Bay		
Aberafan Slip		
Swansea Bay		
Bracelet Bay		
Limeslade Bay		
Langland Bay		
Caswell Bay		
Oxwich Bay		
Port Eynon Bay		
Rhossili Beach		
Pembrey Beach		
Pendine Beach		
Amroth Beach		
Saundersfoot Beach		
Tenby N. Beach		
Tenby S. Beach		
Broadhaven		
Newgale Beach		
Whitesands		
Newport Sands N.		
Traeth Gwyn, New Quay		
Aberystwyth S. Beach		
Aberystwyth N. Beach		
<u>North</u>		
Aberdyfi		
Borth		
Tywyn		
Fairbourne Beach		
Barmouth		
Llandanwg Beach		
Harlech		
Morfa Bychan		
Criccieth Beach E.		
Pwllheli Beach		
Abersoch		
Morfa Dinlle		
Benllech	2	1
Trearddur Bay		
Rhosneigr		
Llandudno W.	2	2
Llandudno N.		
Colwyn Bay		
Sandy Cove/Kinmel Bay	2	1
Rhyl	2	2
Prestatyn		
West Kirby	2	1

Table 1d

ANALYSIS OF IDENTIFIED BATHING WATERS RESULTS FOR FAECAL STREPTOCOCCI

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
<u>South East</u>		
Jacksons Bay	21	17
Whitmore Bay	21	15
Cold Knap Beach	21	2
<u>South West</u>		
Southerndown Beach	22	4
Trecco Bay Central	22	4
Sandy Bay Central	22	6
Rest Bay	22	3
Aberafan Slip	22	8
Swansea Bay	22	13
Bracelet Bay	22	8
Limeslade Bay	22	9
Langland Bay	22	6
Caswell Bay	22	6
Oxwich Bay	22	1
Port Eynon	22	1
Rhossili Beach	22	1
Pembrey Beach	22	0
Pendine Beach	20	3
Amroth Beach	20	2
Saundersfoot Beach	20	6
Tenby N. Beach	20	0
Tenby S. Beach	20	2
Broadhaven	20	0
Newgale Beach	20	2
Whitesands	20	0
Newport Sands N.	20	2
Traeth Gwyn, New Quay	20	2
Aberystwyth S. Beach	20	8
Aberystwyth N. Beach	20	6
<u>North</u>		
Aberdyfi	22	11
Borth	20	2
Tywyn	22	1
Fairbourne Beach	21	2
Barmouth	22	3
Llandanwg Beach	23	3
Harlech	22	3
Morfa Bychan	23	5
Criccieth Beach E.	23	8
Pwllheli Beach	22	4
Abersoch	22	5
Morfa Dinlle	21	1
Benllech	24	7
Trearddur Bay	22	6
Rhosneigr	22	0
Llandudno W.	22	5
Llandudno N.	21	4
Colwyn Bay	22	6
Sandy Cove/Kinmel Bay	23	7
Rhyl	23	11
Prestatyn	23	4
West Kirby	23	13

Table 2a

ANALYSIS OF NON-IDENTIFIED BATHING WATERS RESULTS FOR FAECAL AND TOTAL COLIFORMS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No. Samples</u>	<u>No.with >2000 per 100 ml</u>	<u>No. Samples</u>	<u>No.with >10000 per 100 ml</u>
<u>South East</u>				
Penarth Yacht	21	7	21	0
St Marys Well Bay	21	3	21	3
Little Island	21	0	21	0
Watchouse Bay	21	1	21	1
Fontygary Bay	21	0	21	0
Limpert Bay	21	0	21	0
<u>South West</u>				
Llantwit Major	24	0	24	0
Ogmore Central	22	1	22	1
Margam Sands	22	0	22	0
Aberafan E.	22	0	22	0
Aberafan W.	22	0	22	1
Jersey Marine E.	21	1	21	0
Jersey Marine	21	0	21	0
Jersey Marine W.	21	2	21	1
SB, Black Pill	21	1	21	0
SB, Knap Rock	22	1	22	0
SB, Mumbles	22	0	22	0
Langland	22	0	22	0
Fall Bay	22	0	22	0
Broughton	22	0	22	0
Llanelli	22	13	22	13
Burry Port	22	0	22	0
Llanstephan	20	8	20	7
Pendine West	20	1	20	1
Amroth E.	20	0	20	0
Saundersfoot E.	20	0	20	1
Saundersfoot W.	20	1	20	0
Tenby N.	20	0	20	0
Tenby S. (39022)	20	0	20	0
Tenby S. (39023)	20	0	20	0
Tenby S. (39025)	20	0	20	0
Lydstep	20	0	20	0
Skrinkle	20	0	20	0
Manorbier	20	0	20	0
Manorbier W.	20	0	20	0
Freshwater East E.	20	0	20	0
Freshwater E.	20	0	20	0
Barafundle Bay	20	0	20	0
Broadhaven S.	20	0	20	0
Dale	20	0	20	0
Gelliswick	20	0	20	0
Little Haven	20	0	20	0
Druidston Haven	20	0	20	0
Nolton Haven	20	1	20	0

Table 2a (contd)

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No.</u> <u>Samples</u>	<u>No. with >2000</u> <u>per 100 ml</u>	<u>No.</u> <u>Samples</u>	<u>No. with >10000</u> <u>per 100 ml</u>
Solva	20	1	20	0
Caerfai	20	0	20	0
Porthclais	20	3	20	3
Aberreiddy	20	0	20	0
Porthgain	20	0	20	0
Abercastle	20	0	20	0
Goodwick Harbour S.	20	0	20	0
Goodwick Beach	20	0	20	0
Fishguard Harbour	20	0	20	0
Newport Sands	20	0	20	0
Poppit Sands (39067)	20	1	20	0
Poppit Sands (39068)	20	0	20	0
Patch	20	2	20	0
Gwbert	20	5	20	2
Mwnt Aberporth	20	0	20	0
Aberporth Slip	20	4	20	3
Aberporth E.	20	1	20	0
Tresaith	20	0	20	0
Penbryn	20	0	20	0
Llangranog	20	1	20	0
Cwmtudu	20	0	20	0
Newquay N.	20	2	20	1
Newquay S.	20	0	20	0
Llanina	20	0	20	0
Little Quay(Cei Bach)	20	0	20	0
Gilfach yr Halen	20	0	20	0
Aberaeron S.	20	0	20	0
Aberaeron N.	20	4	20	2
Aberaeron	20	1	20	0
Aberaeron Harbour	20	5	20	5
Aberarth	20	0	20	0
Llanon	20	1	20	0
Llansantffraid	20	0	20	0
Llanrhystud S.	20	0	20	0
Morfa Bychan	20	1	20	0
Tanybwllch	20	0	20	0
Aberystwyth Slip	20	3	20	2
Aberystwyth S.	20	3	20	3
Clarach Bay S.	20	3	20	2
Clarach Bay N.	20	2	20	2
<u>North</u>				
Ynyslas	20	0	20	0
Ynyslas Est.	20	1	20	0
Aberdyfi (20172)	21	1	21	0
Aberdyfi (20170)	21	4	21	2
Llwyngwril	21	4	21	0
Barmouth	21	1	21	1

Table 2a (contd)

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No.</u> <u>Samples</u>	<u>No. with >2000</u> <u>per 100 ml</u>	<u>No.</u> <u>Samples</u>	<u>No. with >10000</u> <u>per 100 ml</u>
Llanaber	21	0	21	0
Tal-y-Bont	21	1	21	0
Garreg Wen	21	7	21	5
Morfa Bychan(Bl.Rck.Snds)	21	0	21	0
Criccieth (23141)	21	1	21	0
Criccieth (22541)	21	2	21	0
Pen-y-Chain	22	0	22	0
Morfa Abererch	22	0	22	0
Pwllheli	22	1	22	1
Traeth Crugan	22	0	22	0
Llanbedrog	22	1	22	0
Abersoch (22550)	22	0	22	0
Abersoch (22586)	22	0	22	0
Porth Neigwl	22	0	22	0
Aberdaron	22	1	22	0
Porth Oer	22	0	22	0
Porth Iago	22	0	22	0
Porth Colmon	22	0	22	0
Porth Tywyn	22	0	22	0
Porth Dinllaen	22	0	22	1
Porth Nefyn	22	0	22	0
Trefor	22	1	22	0
Aberdesach	22	0	22	0
Plas Menai	21	0	21	0
Dinas Dinlle Tyn Lon	21	2	21	0
Portdinorwic	21	3	21	1
Menai Br.Pier	21	0	21	0
Aberffraw	22	0	22	0
Porth Gwr Mawr	22	8	22	9
Porth Eilian	21	2	21	2
Porth Moelfre	21	1	21	5
Traeth Bychan	21	1	21	0
Rhosneigr Beach Rd	22	2	22	0
Centre Traeth Crigyll	22	1	22	1
Newry Beach Holyhead	22	0	22	0
Benllech	21	0	21	0
Beaumaris (27829)	21	3	21	2
Beaumaris (27828)	21	3	21	0
Llanfairfechan	21	0	21	0
Penmeanmawr (22996)	21	0	21	0
Penmeanmawr (22995)	21	0	21	0
Penmeanmawr (23006)	21	1	21	0
Penmeanmawr (23005)	20	2	20	0
Deganwy	21	5	21	2
Llandudno W Shore	21	3	21	2
Llandudno N Shore (25026)	21	1	21	0
Llandudno N Shore (25185)	22	0	22	0
Penrhyn Bay	21	7	21	7
Colwyn Bay (25042)	21	0	21	0
Colwyn Bay (25041)	21	1	21	0
Llanddulas	21	3	21	0
Abergele/Pensarn (3600)	21	0	21	0
Abergele/Pensarn (3601)	21	0	21	0
Kinmel Bay	22	3	22	3

Table 2a (contd)

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No.</u> <u>Samples</u>	<u>No.with >2000</u> <u>per 100 ml</u>	<u>No.</u> <u>Samples</u>	<u>No.with >10000</u> <u>per 100 ml</u>
Rhyl	22	4	22	2
Prestatyn	22	0	22	0
Point of Ayr L'house	22	1	22	0
West Kirby Marine Lake	21	0	21	0
Caldy Croft Drive	21	6	21	1
Thurstaston Station Rd	21	7	21	1

* All samples with numbers in excess of 2000 per 100ml for Faecal Coliforms, and 10000 per 100ml for Total Coliforms were "confirmed".

Table 2b

ANALYSIS OF NON-IDENTIFIED BATHING WATERS RESULTS FOR FAECAL STREPTOCOCCI

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
<u>South East</u>		
Penarth Yacht	21	19
St Marys Well Bay	21	20
Little Island	21	11
Watchouse Bay	21	11
Fontygary Bay	21	7
Limpert Bay	21	0
<u>South West</u>		
Llantwit Major	24	7
Ogmore Central	22	9
Margam Sands	22	6
Aberafan E.	22	9
Aberafan W.	22	9
Jersey Marine E.	21	11
Jersey Marine	21	10
Jersey Marine W.	21	8
SB, Black Pill	21	17
SB, Knap Rock	22	12
SB, Mumbles	22	15
Langland	22	4
Fall Bay	22	0
Broughton	22	1
Llanelli	22	16
Burry Port	22	5
Llanstephan	20	14
Pendine West	20	3
Amroth E.	20	4
Saundersfoot E.	20	5
Saundersfoot W.	20	7
Tenby N.	20	2
Tenby S. (39022)	20	2
Tenby S. (39023)	20	4
Tenby S. (39025)	20	1
Lydstep	20	0
Skrinkle	20	0
Manorbier	20	1
Manorbier W.	20	0
Freshwater East E.	20	3
Freshwater E.	20	3
Barafundle Bay	20	0
Broadhaven S.	20	0
Dale	20	2
Gelliswick	20	7
Little Haven	20	7
Druidston Haven	20	2
Nolton Haven	20	5

Table 2b (contd)

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
Solva	20	10
Caerfai	20	0
Porthclais	20	12
Abereddy	20	1
Porthgain	20	10
Abercastle	20	8
Goodwick Harbour S.	20	0
Goodwick Beach	20	6
Fishguard Harbour	20	6
Newport Sands	20	3
Poppit Sands (39067)	20	2
Poppit Sands (39068)	20	1
Patch	20	11
Gwbirt	20	14
Mwnt	20	2
Aberporth Slip	20	7
Aberporth E.	20	9
Tresaith	20	7
Penbryn	20	4
Llangrannog	20	13
Cwmtudu	20	7
Newquay N.	20	6
Newquay S.	20	3
Llanina	20	2
Little Quay(Cei Bach)	20	2
Gilfach yr Halen	20	2
Aberaeron S.	20	6
Aberaeron N.	20	14
Aberaeron	20	8
Aberaeron Harbour	20	14
Aberarth	20	8
Llanon	20	7
Llansantffraid	20	3
Llanrhystud S.	20	1
Morfa Bychan	20	3
Tanybwllch	20	2
Aberystwyth Slip	20	11
Aberystwyth S.	20	8
Clarach Bay S.	20	9
Clarach Bay N.	20	6
<u>North</u>		
Ynyslas	20	1
Ynyslas Est.	20	9
Aberdyfi (20172)	21	7
Aberdyfi (20170)	21	9
Llwyngwril	21	7
Barmouth	21	3

Table 2b (contd)

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
Llanaber	21	2
Tal-y-Bont	21	3
Garreg Wen	21	14
Morfa Bychan(Bl.Rck.Snds)	21	3
Criccieth (23141)	21	5
Criccieth (22541)	21	7
Pen-y-Chain	22	0
Morfa Abererch	22	1
Pwllheli	22	6
Traeth Crugan	22	5
Llanbedrog	21	7
Abersoch (22550)	22	6
Abersoch (22586)	22	5
Porth Neigwl	22	1
Aberdaron	22	2
Porth Oer	22	2
Porth Iago	22	0
Porth Colmon	22	1
Porth Tywyn	22	1
Porth Dinllaen	22	7
Porth Nefyn	22	5
Trefor	22	4
Aberdesach	22	2
Plas Menai	21	1
Dinas Dinlle Tyn Lon	21	1
Portdinorwic	21	3
Menai Br.Pier	21	9
Aberffraw	22	7
Porth Gwr Mawr	22	16
Porth Eilian	21	5
Porth Moelfre	21	8
Treath Bychan	21	8
Rhosneigr Beach Rd	22	8
Centre Traeth Crigyll	22	6
Newry Beach Holyhead	22	4
Benllech	21	6
Beaumaris (27829)	21	6
Beaumaris (27828)	21	8
Llanfairfechan	21	6
Penmeanmawr (22996)	21	3
Penmeanmawr (22995)	21	3
Penmeanmawr (23006)	21	3
Penmeanmawr (23005)	21	5
Deganwy	21	9
Llandudno W Shore	21	9
Llandudno N Shore (25026)	21	9
Llandudno N Shore (25185)	22	3
Penrhyn Bay	21	11
Colwyn Bay (25042)	21	3
Colwyn Bay (25041)	21	7
Llanddulas	21	13
Abergele/Pensarn (3600)	21	5
Abergele/Pensarn (3601)	21	4
Kinmel Bay	22	10

Table 2b (contd)

<u>Bathing Water</u>	<u>Number Samples</u>	<u>Number of samples >100/100 ml</u>
Rhyl	22	12
Prestatyn	22	8
Point of Ayr L'house	22	7
West Kirby Marine Lake	21	4
Caldy Croft Drive	21	17
Thurstaston Station Rd	21	16

Table 3

COMPARISON OF 1986 TO 1992 COMPLIANCE FOR IDENTIFIED BATHING WATERS WITH "I" VALUES FOR FAECAL AND TOTAL COLIFORMS AS REPORTED BY THE DOE

<u>Bathing Water</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992#</u>	<u>Included in Dwr Cymru cyf Programme</u>
<u>South East</u>								
Jacksons Bay	F	F	F	F	F	F	F	x
Whitmore Bay	F	F	F	F	F	P	F	x
Cold Knap Beach	F	F	F	P	F	P	P	x
<u>South West</u>								
Southerndown Beach	F	P	F	P	P	P	P	x
Trecco Bay	F	F	P	F	P	P	P	x
Sandy Bay	F	F	F	P	F	P	P	x
Rest Bay	F	P	P	P	P	P	P	x
Aberafan Slip	F	P	P	P	P	P	P	x
Swansea Bay	F	F	F	P	F	P	F	x
Bracelet Bay	P	P	P	P	P	P	P	x
Limeslade Bay	F	F	P	F	P	P	P	x
Langland Bay	F	P	P	F	P	P	P	x
Caswell Bay	P	F	P	P	P	P	F	x
Oxwich Bay	P	P	P	P	P	P	P	x
Port Eynon Bay	P	P	P	P	P	P	P	
Rhossili Beach	F	P	P	P	P	P	P	x
Pembrey Beach	P	P	P	P	P	P	P	
Pendine Beach	P	P	P	P	P	P	P	
Amroth Beach	F	F	P	P	P	P	P	x
Saundersfoot Beach	P	F	P	P	F	P	P	x
Tenby N. Beach	P	F	F	P	P	P	P	x
Tenby S. Beach	F	P	P	P	P	P	P	
Broadhaven	F	P	P	P	P	P	P	x
Newgale Beach	F	P	P	P	P	P	P	x
Whitesands	P	P	P	P	P	P	P	
Newport Sands N.	P	P	P	P	P	P	P	
Traeth Gwyn, New Quay	P	P	P	P	P	P	P	
Aberystwyth S. Beach	F	F	P	P	F	P	F	x
Aberystwyth N. Beach	P	P	P	P	P	P	P	x
<u>North</u>								
Aberdyfi	**				F	P	F	x
Borth	P	P	P	P	P	P	P	
Tywyn	F	P	P	P	P	P	P	x
Fairbourne Beach	P	P	P	P	P	P	P	x
Barmouth	P	P	P	P	P	P	P	x
Llandanwg Beach	P	P	P	P	P	P	P	x
Harlech	P	P	P	P	P	P	P	x
Morfa Bychan	F	F	P	P	P	P	F	
Criccieth Beach E.	P	F	P	P	F	P	F	x
Pwllheli Beach	P	P	P	P	P	P	P	x
Abersoch	P	P	F	P	P	P	P	
Morfa Dinlle	*		P	P	P	P	P	
Benllech	P	F	P	P	F	F	P	x
Trearddur Bay	F	F	P	P	P	P	P	x
Rhosneigr	**				P	P	P	
Llandudno W.	F	F	F	F	F	F	F	x
Llandudno N.	P	P	P	P	F	P	P	

Table 3 (contd)

<u>Bathing Water</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>Included in</u> <u>Dwr Cymru cyf</u> <u>Programme</u>
Colwyn Bay	P	P	P	P	P	P	P	x
Sandy Cove/Kinmel Bay	F	F	F	F	F	F	F	x
Rhyl	F	F	F	F	F	F	F	x
Prestatyn	F	P	P	P	F	P	P	
W. Kirby	***					F	F	
Total No. Waters	47	47	48	48	50	51	51	
Total No. Pass	23	28	37	40	35	45	39	
% Pass	49	60	77	83	70	88	76	

* 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 identified 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.

*** This site was identified from 1991. It is situated in England but falls within the Welsh Region of the NRA.

Samples were subject to "confirmation" of analysis compared with previous years "presumptive" results.

1986 data from WWA 1986 Bathing Water Survey Report

1987 data from WWA 1987 Bathing Water Survey Report

1988 data from WWA 1988 Bathing Water Survey Report

1989 data from Welsh Region NRA 1989 Bathing Waters Report

1990 data from Welsh Region NRA 1990 Bathing Waters Report

1991 data from Welsh Region NRA 1991 Bathing Waters Report

NB Amendments have been made to this table to correct errors reported in the 1989 Bathing Waters Report.

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>		
Faecal coliforms	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

* Welsh Region has been granted a derogation for transparency at all its bathing waters so is not required to comply with these standards.

Appendix 2

IDENTIFIED 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 Shore	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
W. Kirby, Dee Lane	3646	40750

NON-IDENTIFIED BATHING WATERS SITES SAMPLED IN 1992Bathing WaterSample Point NumberSouth East

Penarth Yacht	19029
St Marys Well Bay	19032
Little Island	19056
Watchouse Bay	68603
Fontygary Bay	19038
Limpert Bay	19147

South West

Llantwit Major	74050
Ogmore Central	19043
Margam Sands	19135
Aberafan E.	19050
Aberafan W.	19052
Jersey Marine E.	74026
Jersey Marine	39153
Jersey Marine W.	39097
SB, Black Pill	39101
SB, Knap Rock	39103
SB, Mumbles	39104
Langland	39107
Fall Bay	74096
Broughton	74025
Llanelli	39001
Burry Port	39003
Llanstephan	39008
Pendine West	39011
Amroth E.	39012
Saundersfoot E.	39016
Saundersfoot W.	39019
Tenby N.	39021
Tenby S.	39022
Tenby S.	39023
Tenby S.	39025
Lydstep	39026
Skrinkle	39423
Manorbier	39027
Manorbier W.	39028
Freshwater East E.	39029
Freshwater E.	39030
Barafundle Bay	39136
Broadhaven S.	32422
Dale	39040
Gelliswick	39037
Little Haven	39043
Druidston Haven	39141
Nolton Haven	39046

Appendix 3 (contd)

Bathing WaterSample Point Number

Solva	39050
Caerfai	39142
Porthclais	32686
Abereiddy	39053
Porthgain	32685
Abercastle	39056
Goodwick Harbour S.	39058
Goodwick Beach	39059
Fishguard Harbour	39060
Newport Sands	39064
Poppit Sands	39067
Poppit Sands	39068
Patch	32424
Gwbert	83515
Mwnt	32425
Aberporth Slip	39072
Aberporth E.	83502
Tresaith	39073
Penbryn	39147
Llangrannog	39075
Cwmtudu	32426
Newquay N.	39077
Newquay S.	39079
Llanina	39146
Little Quay(Cei Bach)	39081
Gilfach yr Halen	32427
Aberaeron S.	39082
Aberaeron N.	39083
Aberaeron	39427
Aberaeron Harbour	39426
Aberarth	32428
Llanon	32429
Llansantffraid	32430
Llanrhystud S.	39087
Morfa Bychan (Black Rock Sands)	32431
Tanybwlech	32432
Aberystwyth Slip	82103
Aberystwyth S.	39090
Clarach Bay S.	39095
Clarach Bay N.	39096

North

Ynyslas	20022
Ynyslas Est.	20399
Aberdyfi (20172)	20172
Aberdyfi (20170)	20170
Llwyngwrl	20189
Barmouth	20181

Appendix 3 (contd)

<u>Bathing Water</u>	<u>Sample Point Number</u>
Llanaber	20025
Tal-y-Bont	20026
Garreg Wen	23253
Morfa Bychan	22540
Criccieth (23141)	23141
Criccieth (22541)	22541
Pen-y-Chain	22544
Morfa Abererch	22545
Pwllheli	22546
Traeth Crugan	22548
Llanbedrog	22549
Abersoch (22550)	22550
Abersoch (22586)	22586
Porth Neigwl	23331
Aberdaron	22553
Porth Oer	22555
Porth Iago	22556
Porth Colmon	22557
Porth Tywyn	22558
Porth Dinllaen	22559
Porth Nefyn	22560
Trefor	22561
Aberdesach	22562
Plas Menai	23290
Dinas Dinlle Tyn Lon	23244
Portdinorwic	23252
Menai Br. Pier	27568
Aberffraw	27538
Porth Gwr Mawr	27544
Porth Eilian	27549
Porth Moelfre	27561
Treath Bychan	27527
Rhosneigr Beach Road	27534
Centre Traeth Crigyll	27557
Newry Beach Holyhead	27559
Benllech	27827
Beaumaris (27829)	27829
Beaumaris (27828)	27828
Llanfairfechan	23245
Penmeanmawr (22996)	22996
Penmeanmawr (22995)	22995
Penmeanmawr (23006)	23006
Penmeanmawr (23005)	23005
Deganwy	25034
Llandudno W Shore	25033
Llandudno N Shore (25026)	25026
Llandudno N Shore (25185)	25185
Penrhyn Bay	25045
Colwyn Bay (25042)	25042
Colwyn Bay (25041)	25041
Llanddulas	3597
Abergele/Pensarn (3600)	3600
Abergele/Pensarn (3601)	3601
Kinmel Bay	3605

Appendix 3 (contd)

Bathing Water

Sample Point Number

Rhyl	3610
Prestatyn	3614
Point of Ayr L'house	3617
West Kirby Marine Lake	3647
Caldy Croft Drive	3648
Thurstaston Station Road	3649

Appendix 4

SUMMARY DATA FOR IDENTIFIED BATHING WATERS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
<u>South East</u>				
Jacksons Bay	21	46-4500	21	140-11430
Whitmore Bay	21	90-9800	21	167-12000
Cold Knap Beach	21	45-11800	21	120-12100
<u>South West</u>				
Southerndown Beach	22	5-1840	22	50-5600
Trecco Bay	22	2-250	22	12-3870
Sandy Bay	22	8-1620	22	32-35000
Rest Bay	22	2-1800	22	15-7300
Aberafan Slip	22	2-2200	22	10-4800
Swansea Bay	22	<5-5700	22	20-18400
Bracelet Bay	22	10-4800	22	90-19200
Limeslade Bay	22	1-1400	22	40-9000
Langland Bay	22	10-6000	22	40-26000
Caswell Bay	22	<2-8400	22	15-25000
Oxwich Bay	22	1-400	22	<2-1400
Port Eynon Bay	22	<1-104	22	1-700
Rhossili Beach	22	1-1200	22	2-1200
Pembrey Beach	21	<1-200	21	<1-2500
Pendine Beach	20	4-2600	20	4-2900
Amroth Beach	20	<2-3000	20	<5-3200
Saundersfoot Beach	20	<2-1680	20	<5-10600
Tenby N. Beach	20	<1-200	20	<2-12400
Tenby S. Beach	20	<2-1200	20	<2-3100
Broadhaven	20	<1-96	20	2-164

SalmonellavirusesFaecal Strep.

<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>
2	1	2	0-3	21	50-1540
2	1	0		21	5-725
2	1	0		21	2-4000
2	0	0		22	<2-730
2	0	0		22	2-345
2	1	0		22	6-610
2	1	0		22	2-154
2	1	0		22	2-415
2	1	0		22	2-2020
2	1	0		22	<2-1264
2	0	0		22	<2-432
2	1	0		22	<2-984
2	1	0		22	<2-261
2	0	0		22	<1-304
2	0	0		22	<1-129
2	1	0		22	<1-102
2	0	0		22	<1-32
2	0	0		20	<1-544
2	0	0		20	1-430
2	0	0		20	2-512
2	0	0		20	<1-39
2	0	0		20	<1-207
2	0	0		20	<1-73

Appendix 4 (contd)

	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>	
<u>Bathing Water</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
Broadhaven	20	<1-96	20	2-164
Newgale Beach	20	<1-100	20	<1-100
Whitesands	20	1-30	20	<2-65
Newport Sands N.	20	2-800	20	6-1600
Traeth Gwyn, New Quay	20	2-1100	20	2-13600
Aberystwyth S. Beach	20	25-2700	20	90-7800
Aberystwyth N. Beach	20	10-3300	20	50-8800
<u>North</u>				
Aberdyfi	22	30->30000	22	30->30000
Borth	20	2-1620	20	2-2000
Tywyn	22	<10-790	22	<10-1270
Fairbourne Beach	22	<10-2000	22	<10-3800
Barmouth	22	<10-3400	22	<10-3700
Llandanwg Beach	23	<10-1130	23	<10-1890
Harlech	23	<10-4900	23	<10-11500
Morfa Bychan	23	<10-2700	23	<10-5900
Criccieth Beach E.	23	<10-8500	23	<10-14700
Pwllheli Beach	22	<10-1980	22	<10-4900
Abersoch	22	<10-3100	22	<10-3100
Morfa Dinlle	21	<10-600	21	<10-1040
Benllech	24	10-3400	24	10-5700
Trearddur Bay	22	<10-510	22	<10-510
Rhosneigr	22	<10-400	22	<10-420
Llandudno W.	22	<10-10900	22	40->20000
Llandudno N.	22	<10-560	22	30-750
Colwyn Bay	22	20-3700	22	50-3900
Sandy Cove/Kinmel Bay	23	<10-2670	23	40-18630
Rhyl	23	<10-8800	23	<10-23000
Prestatyn	23	<10-1480	23	20-3300
W. Kirby	22	<10-12600	22	<10-17500

(a) = No./100 ml

(b) = PFU/10 litres

* Coliform results "confirmed"

<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>
2	0	0		20	<1-73
2	0	0		20	<1-200
2	0	0		20	<1-13
2	0	0		20	1-148
2	0	0		20	<1-544
2	1	0		20	2-520
2	1	0		20	4-440
2	0	0		22	8->1000
2	0	0		20	<2-284
2	0	0		22	<2-336
2	0	0		21	<2->600
2	0	0		22	<2-406
2	0	0		23	<2-354
2	0	0		22	<2-354
2	0	0		23	<2-832
2	1	0		23	<2->1000
2	0	0		22	<2-326
2	0	0		22	<2->400
2	0	0		21	<2-102
2	0	2	0-2	24	4->600
2	0	0		22	<2-382
2	0	0		22	<2-60
2	0	2	10-18	22	2->1000
2	0	0		21	<2-324
2	0	0		22	16->600
2	1	2	0-35	23	6->600
2	0	2	1-30	23	2-910
2	0	0		23	2-206
2	1	2	0-1	23	<2->1000

Appendix 5

SUMMARY DATA FOR NON-IDENTIFIED BATHING WATERS *

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
<u>South East</u>						
Penarth Yacht	21	<10-3400	21	800-10000	21	65-1440
St Marys Well Bay	21	200-4400	21	800-26000	21	10-1400
Little Island	21	60-1570	21	100-9200	21	10-1600
Watchouse Bay	21	110-2100	21	300-14800	21	15-7500
Fontygary Bay	21	90-1120	21	200-4800	21	10-190
Limpert Bay	21	5-655	21	40-7900	21	<2-100
<u>South West</u>						
Llantwit Major	24	<10-980	24	110-3900	24	8-1760
Ogmore Central	22	20-2500	22	200-20000	22	6-965
Margam Sands	22	5-700	22	40-4400	22	<2-275
Aberafan E.	22	2-1440	22	10-6200	22	<2-795
Aberafan W.	22	5-2000	22	<10-12000	22	5-1840
Jersey Marine E.	21	10-3900	21	70-5600	21	<5-940
Jersey Marine	21	10-1500	21	100-9400	21	5-800
Jersey Marine W.	21	10-3100	21	70-12000	21	10-1310
SB, Black Pill	21	10-4000	21	<100-8800	21	10-1680
SB, Knap Rock	22	40-2300	22	<100-8600	22	5-750
SB, Mumbles	22	100-1400	22	200-3000	22	<2-880
Langland	22	5-580	22	40-6800	22	2-162
Fall Bay	22	<1-276	22	1-400	22	<1-56
Broughton	22	<1-800	22	<2-1200	22	<1-148
Llanelli	22	<100-280000	22	1000-350000	22	<10-7460
Burry Port	22	<10-1600	22	30-4000	22	<2-190
Llanstephan	20	20-7300	20	110-48000	20	<5-2000
Pendine West	20	<5-2500	20	<10-10200	20	1-2200
Amroth E.	20	<10-800	20	10-1440	20	<5-375
Saundersfoot E.	20	<5-860	20	10-10800	20	<2-335
Saundersfoot W.	20	5-3000	20	30-5000	20	2-1440
Tenby N.	20	2-840	20	15-1600	20	<1-240
Tenby S. (39022)	20	2-340	20	5-350	20	<2-250
Tenby S. (39023)	20	4-292	20	5-560	20	<2-396
Tenby S. (39025)	20	4-108	20	5-340	20	<1-398
Lydstep	20	<2-158	20	5-168	20	<1-56
Skrinkle	20	2-180	20	2-180	20	<1-59
Manorbier	20	2-54	20	4-80	20	<1-106
Manorbier W.	20	<1-52	20	<2-80	20	<1-42
Freshwater East E.	20	<1-1600	20	2-2800	20	<1-1800
Freshwater E.	20	2-2000	20	2-3000	20	<1-750
Barafundle Bay	20	4-70	20	6-120	20	<1-21
Broadhaven S.	20	<1-73	20	<2-208	20	<1-35
Dale	20	<5-715	20	<10-1300	20	<2-148
Gelliswick	20	2-950	20	10-1000	20	<2-355
Little Haven	20	<2-670	20	15-1500	20	<2-636
Druidston Haven	20	<2-256	20	<5-640	20	<1-1152
Nolton Haven	20	<5-2800	20	10-5200	20	2-1710

Appendix 5 (contd)

	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
<u>Bathing Water</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
Solva	20	<10-2300	20	50-2700	20	<10-1760
Caerfai	20	1-160	20	<2-188	20	<1-58
Porthclais	20	40-6700	20	170-49000	20	10-10000
Abereddy	20	<1-72	20	1-150	20	<1-130
Porthgain	20	<10-1600	20	20-3600	20	5-1200
Abercastle	20	<10-2000	20	10-5000	20	2-540
Goodwick Harbour S.	20	<5-370	20	<10-720	20	<2-66
Goodwick Beach	20	5-910	20	20-4000	20	<5-305
Fishguard Harbour	20	20-1140	20	100-3600	20	2-455
Newport Sands	20	<2-375	20	2-600	20	<1-344
Poppit Sands (39067)	20	2-2250	20	5-6000	20	<2-480
Poppit Sands (39068)	20	<2-1500	20	5-3000	20	<2-408
Patch	20	<10-2500	20	100-9400	20	<5-940
Gwbirt	20	<100-13100	20	100-21600	20	<10-4400
Mwnt	20	1-256	20	2-366	20	<1-163
Aberporth Slip	20	10-160000	20	80-660000	20	10-7520
Aberporth E.	20	60-3700	20	<100-8600	20	5-1840
Tresaith	20	5-1000	20	30-4100	20	2-1680
Penbryn	20	5-1600	20	10-5000	20	4-1540
Llangrannog	20	70-3700	20	<100-8000	20	10-1610
Cwmtudu	20	8-1340	20	20-4700	20	2-460
Newquay N.	20	<5-5200	20	30-13300	20	2-3000
Newquay S.	20	<5-250	20	10-880	20	<2-442
Llanina	20	4-900	20	<10-900	20	<2-372
Little Quay(Cei Bach)	20	<2-700	20	5-1120	20	<1-244
Gilfach yr Halen	20	5-1500	20	<10-5000	20	<2-620
Aberaeron S.	20	<2-210	20	5-360	20	4-570
Aberaeron N.	20	10-6000	20	100-24000	20	10->15000
Aberaeron	20	<10-3420	20	20-4000	20	5-2000
Aberaeron Harbour	20	100-43000	20	100-130000	20	10-29600
Aberarth	20	2-800	20	5-2300	20	2-690
Llanon	20	<2-5000	20	5-8400	20	4-6000
Llansantffraid	20	<2-1500	20	5-2500	20	<1-360
Llanrhystud S.	20	<1-535	20	<1-1180	20	<1-104
Morfa Bychan(Bl.Rck.Snds)	20	5-3000	20	20-6400	20	2-736
Tanybwllch	20	<5-1600	20	<10-3400	20	<2-492
Aberystwyth Slip	20	100-6700	20	600-63000	20	10-2310
Aberystwyth S.	20	10-6200	20	30-15700	20	4-4200
Clarach Bay S.	20	<100-6000	20	200-39000	20	2-1880
Clarach Bay N.	20	<5-10000	20	5-26800	20	<2-1820
<u>North</u>						
Ynyslas	20	<2-1200	20	<5-2500	20	1-332
Ynyslas Est.	20	<10-2700	20	<10-6000	20	2-816
Aberdyfi (20172)	21	10-3900	21	30-6900	21	2->600
Aberdyfi (20170)	21	10-7700	21	20-17600	21	12->1000
Llwyngwrl	21	<10-6500	21	20-8700	21	<2->600
Barmouth	21	<10-9600	21	<10-10900	21	<2->600

Appendix 5 (contd)

<u>Bathing Water</u>	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
Llanaber	21	<10-600	21	<10-980	21	<2-138
Tal-y-Bont	21	<10-2970	21	<10-5000	21	2->800
Garreg Wen	21	20-6500	21	110-19600	21	8-686
Morfa Bychan	21	<10-760	21	<10-1470	21	<2-488
Criccieth (23141)	21	<10-2120	21	<10-5300	21	<2-506
Criccieth (22541)	21	<10-3600	21	<10-6300	21	<2->600
Pen-y-Chain	22	<10-150	22	<10-560	22	<2-86
Morfa Abererch	22	<10-840	22	<10-3100	22	<2-200
Pwllheli	22	<10-13300	22	<10-15600	22	<2->400
Traeth Crugan	22	<10-1460	22	<10-2700	22	<2-454
Llanbedrog	22	<10-5100	22	<10-8400	21	<2->400
Abersoch (22550)	22	<10-880	22	<10-1060	22	<2-650
Abersoch (22586)	22	<10-801	22	<10-1000	22	<2->500
Porth Neigwl	22	<10-80	22	<10-120	22	<0.1->400
Aberdaron	22	<10-2080	22	<10-3600	22	<2->600
Porth Oer	22	<10-490	22	<10-820	22	<2-168
Porth Iago	22	<10-150	22	<10-270	22	<0.1-50
Porth Colmon	22	<10-1870	22	<10-2400	22	<2-412
Porth Tywyn	22	<10-220	22	<10-380	22	<2-152
Porth Dinllaen	22	<10-1920	22	<10-11700	22	<2->600
Porth Nefyn	22	<10-380	22	<10-1030	22	2-406
Trefor	22	<10-4500	22	<10-7400	22	<2->600
Aberdesach	22	<10-810	22	10-840	22	<2->600
Plas Menai	21	<10-420	21	20-760	21	<2-264
Dinas Dinlle Tyn Lon	21	<10-440	21	<10-440	21	<2-156
Portdinorwic	21	<10-13200	21	100-18100	21	4-290
Menai Br. Pier	21	50-1460	21	150-4600	21	4-268
Aberffraw	22	<10-830	22	10-890	22	<2-262
Porth Gwr Mawr	22	<10->300	22	<10->300	22	2->1000
Porth Eilian	21	<10-15100	21	<10-17600	21	<2->600
Porth Moelfre	21	10->27000	21	40->30000	21	<2->600
Treath Bychan	21	<10-2500	21	10-4600	21	<2->600
Rhosneigr Beach Rd	22	<10-5600	22	10-7000	22	<2->1000
Centre Traeth Crigyll	22	<10-8000	22	<10-18000	22	<2->600
Newry Beach Holyhead	22	<10-1710	22	<10-2300	22	<2->1000
Benllech	21	<10-1240	21	10-5100	21	<2->600
Beaumaris (27829)	21	<10-7700	21	20-12400	21	<2->600
Beaumaris (27828)	21	10-8800	21	50-9600	21	<2->600
Llanfairfechan	21	<10-830	21	10-2500	21	<2->600
Penmeanmawr (22996)	21	<10-930	21	<10-2700	21	<2-222
Penmeanmawr (22995)	21	<10-1790	21	<10-5400	21	<2-400
Penmeanmawr (23006)	21	<10-2800	21	<10-4600	21	<2-490
Penmeanmawr (23005)	20	<10-4600	20	<10-6400	21	<2-422
Deganwy	21	60-5130	21	120-11200	21	8-410
Llandudno W Shore	21	20-7100	21	140-14300	21	6->600
Llandudno N Shore (25026)	21	<10-6200	21	30-8600	21	2->600
Llandudno N Shore (25185)	22	10-930	22	40-1050	22	4-542
Penrhyn Bay	21	160->30000	21	270->30000	21	8-980
Colwyn Bay (25042)	21	<10-990	21	40-1700	21	<2->600
Colwyn Bay (25041)	21	<10-3500	21	10-3900	21	<2->600
Llanddulas	21	<10-6200	21	60-9400	21	<10->600
Abergele/Pensarn (3600)	21	20-950	21	50-1930	21	4-298
Abergele/Pensarn (3601)	21	20-1390	21	50-3600	21	<10-346
Kinmel Bay	22	<10-10400	22	70-12100	22	2->1000

Appendix 5 (contd)

	<u>Faecal Coliforms</u>		<u>Total Coliforms</u>		<u>Faecal Strep.</u>	
	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>	<u>No.</u> <u>Samples</u>	<u>Range</u> <u>(a)</u>
<u>Bathing Water</u>						
Rhyl	22	40-4900	22	80-11200	22	<2->1000
Prestatyn	22	20-1120	22	40-3300	22	2-294
Point of Ayr L'house	22	<10-5600	22	40-6200	22	<2-544
West Kirby Marine Lake	21	<10-1890	21	<10-6200	21	<2->600
Caldy Croft Drive	21	<10-10100	21	20-27000	21	16->1000
Thurstaston Station Rd	21	260-5000	21	370-17300	21	2->1000

(a) - No./100 ml

* "Confirmed" results reported for those Coliform samples exceeding 2000 per 100ml for Faecal coliforms and 10,000 per 100ml for Total Coliforms.