Environmental Protection
Final Draft Report

REGIONAL WATER QUALITY MONITORING AND SURVEILLANCE PROGRAMME FOR 1994

EC SURFACE WATER ABSTRACTION DIRECTIVE

November 1993
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REGIONAL WATER QUALITY MONITORING AND SURVEILLANCE PROGRAMME FOR 1994

EC SURFACE-WATER ABSTRACTION DIRECTIVE

TECHNICAL REPORT NUMBER : FWS/93/020

SUMMARY

The water quality monitoring programme described in this technical note was established by the National Rivers Authority (South Western) in February 1991 to fulfil the legal requirements under the EC Surface Water Abstraction Directives 75/440/EEC and 79/869/EEC, and the UK Surface Waters (Classification) Regulations 1989, Statutory Instrument 1989/1148.

The programme is carried out, also, to fulfil the current initial monitoring requirements under the EC Nitrate Directive.

The 1994 monitoring programme is a continuation of the 1993 programme. Fifty four abstraction intakes operated by South West Water Services Limited, and two operated by Wessex Water Services Limited, for public drinking water supply in the Devon and Cornwall Areas are monitored in 1994. The 1994 programme complies with the requirements of the two Directives concerning the determinands monitored, methods of measurement and frequencies of sampling and analysis.

All abstraction intakes are sampled routinely and evenly over a year. The data generated from this programme can be used to provide additional information to support the routine river chemical programme.

1994 PROGRAMME SUMMARY

Number of Sampling Locations	Number of Samples	Number of Determinands
56	672	38,752

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November 1993

CONTENTS

1. INTRODUCTION

1.1 This is a water quality monitoring programme established by the National Rivers Authority (South Western) in 1991 to fulfil the legal requirements under the EC Surface Water Abstraction Directives.

1.2 It is carried out, also, to fulfil the current initial monitoring requirements under the EC Nitrate Directive in respect of surfacewaters used for potable abstraction.

1.3 Sampling was commenced in February 1991 after receiving a definitive and agreed list of abstraction intakes from the South West Water Services Ltd.

1.4 The 1994 monitoring programme is developed from the 1993 programme. The abstraction intakes, guideline and mandatory determinands monitored remain the same as in 1993. The sampling frequencies for the categories III determinands (Appendix 1) are increased from 1 to 4 per annum to follow the national guideline for monitoring of water quality.

1.5 There are two EC Directives which apply to the water quality requirements for the uses of surface water for potable supply.

1.6 The first Directive, 75/440/EEC, concerning the "quality required of surface water intended for the abstraction of drinking water", gives a list of determinands which must be measured and standards which must be met according to the specified level of drinking water treatment. The three categories of treatment methods and the list of associated parameters and standards are given in Annex I and II of the Directive and Annex II is reproduced in Appendix 1 of this report.

1.7 The second Directive, 79/869/EEC, establishes the methods of measurement and the frequencies of sampling and analysis of surface water abstracted for potable supply. The minimum annual sampling frequencies for each of the determinands given in 75/440/EEC are set with respect to both the level of treatment and the size of the population served. These are reproduced in Appendix 2.

1.8 The requirements of Directive 75/440/EEC were translated into UK legislation via Section 104(i) of the 1989 Water Act (now Section 82 of the 1991 Water Resources Act) by the Surface Waters

(Classification) Regulations 1989, Statutory Instrument (SI) 1989/1148. These Regulations came into force on 1 September 1989 and defined three classifications DW1, DW2 and DW3.

1.9 In May 1992, guidance on the designation of sampling locations had been received from the DoE. Those intakes identified as "permanent" sources, and those which are used seasonally or sporadically (for example, for a few days every month) have been designated. Abstraction points which are only used in emergency, or only for a few days a year are not included under the EC and UK requirements and will not be monitored.

1.12 A total of 52 "permanent" abstraction intakes and 4 "seasonal" intakes are monitored in 1994.

2. THE 1994 MONITORING PROGRAMME

2.1 The 1994 programme is a continuation of the 1993 programme and is designed to comply with the requirements of the EC Directives (75/440/EEC and 79/869/EEC) and the UK Regulations.

2.2 The sampling frequencies for category III determinands will be increase from 1 per annum in 1993 to 4 per annum in 1994.

2.3 Locations Monitored

2.3.1 The NRA monitors 54 surface water abstraction intakes operated by the South West Water Services Ltd in the Devon and Cornwall Areas. (32 Devon Area and 22 in Cornwall Area). Fifty of them are "permanent" sources and four are "seasonal".

In addition, two "permanent" surface water abstraction intakes operated by the Wessex Water Services Ltd. in the Devon Area are monitored. They are Wimbleball and Otterhead Reservoirs.

2.3.2 There are, therefore, a total of 56 intakes monitored in the Devon and Cornwall Areas, which include 24 reservoir intakes and 32 river intakes.

2.3.3 In the case of river abstractions, water quality is monitored at the river intakes. In the case of reservoir abstractions, water quality is monitored at the depth(s) from which water is abstracted.

2.4 Determinands Monitored

2.4.1 All the determinands given by the Directive 75/440/EEC are monitored in 1994, except:

1. Nitrogen by Kjeldahl method, Substances extractable with chloroform and Odour. This is because of the methodology is not currently available in NRA (SW) laboratory, and also the standards are not mandatory for these determinands;

2. Total extractable organic chlorine, Beryllium and Cobalt. This is because no standards for these determinands are given in the Directive.

2.4.2 In addition to those determinands dictated by the Directive, the following determinands are monitored:

Total Hardness, Reactive dissolved silicate, Magnesium, Carbon tetrachloride, Chloroform and some pesticides (Appendix 3).

2.4.3 Certain sampling locations monitored under this programme are not covered by the routine river chemical programme, therefore, it serves dual functions of complying the EC requirements and generating routine chemical data.

2.4.4 The first three determinands in 2.4.2 are routinely monitored under the Quality Assessment of River Waters monitoring programme. They are included in this programme to provide extra information, with minimal cost, to support the routine programme.

2.5 Sampling Frequency

2.5.1 The annual sampling frequencies are set as 12 for category I parameters and 4 for categories II and III parameters respectively for all abstraction intakes. This is to fulfil the sampling frequencies recommended by Directive 75/440/EEC and the national guidelines.

2.5.2 The sampling frequencies mentioned in 2.5.1 are considered to be the minimum frequencies to generate data which can be used and interpreted with reasonable confidence for the protection of surface waters intended for the abstraction of drinking water.

3. PROGRAMME INFORMATION

3.1 Number of Samples Scheduled in 1994

Table 3.1 summarises the number of samples scheduled in the 1994 programme for Devon and Cornwall Areas.

Table 3.1 Number of Samples and Determinands for Devon and Cornwall Areas.

	Devon Area	Cornwall Area	TOTAL
Number of Locations	34	22	56
Annual Sampling Frequency			
Category I	12	12	12
Category II	4	4	4
Category III	4	4	4
Number of Samples			
Category I	408	264	672
Category II	136	88	224
Category III	136	88	224
Number of Determinands	23,528	15,224	38,752

3.2 A list of determinands and frequency monitored is given in Appendix 3.

4. THE 1994 MONITORING PROGRAMME SCHEDULE

4.1 Tables summarising the schedule of sampling and analysis are given in section 6.

4.2 Explanation of the 1993 Sampling and Analysis Schedule

4.2.1 District

4.2.1.1 The potable water abstractions and supplies in the Devon and Cornwall Areas are historically divided into six operational districts (Fal, Fowey, Tamar, Taw, Dart and Exe), although recently there has been some amalgamation.

4.2.1.2 Abstraction intakes in the Fal, Fowey, Tamar district (except the Butterbrook Reservoir and the River Erme intake) and the Roadford Reservoir in the Taw district are sampled by the Cornwall Area survey team. The other intakes are sampled by the Devon Area survey team.

4.2.1.3 The Cornwall Area is responsible for sampling 22 abstraction intakes and the Devon Area is responsible for 34.

4.2.2 Abstraction Points

4.2.2.1 All the abstraction intakes monitored are the "permanent" and "seasonal' intakes operated by the South West Water Services Ltd and the Wessex Water Services Ltd in the Devon and Cornwall Areas for public drinking water supply.

4.2.3 NGR

4.2.3.1 Ordnance Survey National Grid Reference

4.2.4 URN - User Reference Number

4.2.4.1 An internal referencing system for monitoring sites. The first letter indicated the type of site; R indicates a river and reservoir site. This is followed by a two digit code (from 01 to 32) defining the river catchment, and a letter defining the sub-catchment (a

conveniently sized area which may be the catchment of a tributary, or merely a conveniently sized portion of a large catchment). The final three-digit code defines a particular site in the sub-catchment.

4.2.4.2 An URN is assigned to each river intake sampling site, the location of which is given by its NGR.

4.2.4.3 In the case of reservoir intakes, an URN is assigned to each water draw-off depth at the abstraction site (e.g. draw-off tower), the location of which is given by its NGR.

4.2.5 ARG - Analysis Required Group

4.2.5.1 This is a suite of Determinand (including method type) used to request a particular set of analyses for a Sample. e.g. an ARG for pesticides will contain Determinand/Methods that measure a set of individual pesticides.

4.2.5.2 The ARGs used in this programme are:

1. Devon Area Survey Team

   S091 : Category I determinands,
   S093 : Category I, II and III determinands (excluding pesticides)
   S355 : Insecticides
   S371 : Herbicides

2. Cornwall Area Survey Team

   S091 : Category I determinands,
   S374 : Category I, II and III determinands (excluding pesticides and bacteriological determinands),
   S368 : Bacteriological determinands only,
   S355 : Insecticides,
   S371 : Herbicides.

4.2.5.3 Since bacteriological samples collected by Cornwall Area are unable to be analysed by the Exeter Laboratory within six hours of collection, a separate ARG for bacteriological determinands is used by the Cornwall Area for the samples to be analysed in a contract laboratory at Truro.

4.2.5.4 Lists of determinands included in the ARGs of the 1994 monitoring

Programme are given in Appendix 4.

4.2.6 Footnotes

4.2.6.1 Insecticide samples are collected between May and August inclusive.

4.4.6.2 Two herbicide samples are collected between March and May inclusive, and two between September and November inclusive.

4.4.6.3 The ARGs of S091 and S093 (or S091, S374, S368) are sampled evenly over a year such that the Category I determinands are sampled monthly and the Category II and III determinands are sampled quarterly.

4.4.6.4 When water is abstracted from more than one draw-off level in a reservoir (blending of raw water), samples are taken and analysed separately from each level used for abstraction (separate samples).

4.4.6.5 The Devon and Cornwall Survey Officers should liaise between themselves and the laboratory about the timing for sampling ARGs S355 and S371 to ensure that there is sufficient laboratory capacity before sampling commences.

5. ENDORSEMENT

The contents of this programme has been agreed by the Water Quality Planner, Field Controller and Laboratory Controller.

6. SCHEDULE OF SAMPLING AND ANALYSIS

6.1 Schedules of sampling and analysis for Devon and Cornwall Areas are given in Tables 6.1a and 6.1b.

6.2 Detail information concerning reservoir sampling is given in Table 6.2.

EC SURFACE WATER ABSTRACTION DIRECTIVE SAMPLING PROGRAMME 1994 - DEVON AREA LAST UPDATE ; 3-11-1993

* REFER TO RESERVOIR SAMPLING INFORMATION BY : K. LEE

DISTRICT	ABSTRACTION POINTS	NGR	URN	SAMPLING FREQUENCY (PER YEAR)			
				ARG S091	ARG S093	ARG S355#	ARG S371#
TAMAR	Butterbrook Reservoir	SX 6456 5930	*	8	4	4	4
	River Erme	SX 6403 6317	R09B025	8	4	4	4
TAW	Meldon Reservoir	SX 5636 9169	*	8	4	4	4
	Wistlandpound Reservoir	SS 6436 4148	*	8	4	4	4
	Lower Slade Reservoir	SS 5063 4574	*	8	4	4	4
	Melbury Reservoir	SS 3864 2015	*	8	4	4	4
	West Okement River	SX 5604 8983	R29D054	8	4	4	4
	River Torridge	SS 4821 1911	R29B043	8	4	4	4
	River Yeo (Bideford)	SS 4478 2281	R29A025	8	4	4	4
	River Yeo at Loxhore	SS 6096 3658	R30H018	8	4	4	4
	Bratton Stream	SS 6131 3666	R30H017	8	4	4	4
	River Bray at Leehamford	SS 6774 3992	R30G016	8	4	4	4
	Brockemburrow Intake	SS 6629 4175	R30G017	8	4	4	4
	River Taw at NewBridge	SS 5823 2613	R30B017	8	4	4	4
	West Ilkerton River	SS 7047 4759	R32A011	8	4	4	4
	Spreycott spring	SS 6537 3974	R30H016	8	4	4	4
DART	Avon Dam	SX 679 651	*	8	4	4	4
	Fernworthy Reservoir	SX 6706 8430	*	8	4	4	4
	Kennick Reservoir	SX 8067 8386	*	8	4	4	4
	Trenchford Reservoir	SX 8066 8238	*	8	4	4	4
	Venford Reservoir	SX 686 711	*	8	4	4	4
	Thornes Intake at Kenton	SX 9041 8069	R05A030	8	4	4	4
	River Dart at Littlehempston	SX 8005 6163	R07B063	8	4	4	4
	Swincombe Intake	SX 6325 7187	R07B058	8	4	4	4
	Bala Brook	SX 6715 6294	R08B025	8	4	4	4
EXE	Squabmoor Reservoir	SY 0402 8393	*	8	4	4	4
	River Axe at Whitford	SY 2618 9532	R02B026	8	4	4	4
	Budleigh Brook	SY 0732 8418	R04A001	8	4	4	4
	River Exe at Pynes Intake	SX 9300 9710	R05D012	8	4	4	4
	River Exe at Bolham	SS 9488 1519	R05E033	8	4	4	4
	Sheldon Stream	ST 1057 0887	R05C044	8	4	4	4
	Holyford Pond on Holyford Brook	SY 2350 9220	*	8	4	4	4
Wessex plc	Otterhead Reservoir	ST 2260 1320	*	8	4	4	4
Wessex plc	Wimbleball Reservoir	SS 9654 2935	*	8	4	4	4

NOTE :

1. The programme above is based on the sampling frequency of :
   DET GROUP A1 = 12 PER YEAR DET GROUP A2 = 4 PER YEAR DET GROUP A3 = 4 PER YEAR
   INSECTICIDES = 4 PER YEAR HERBICIDES = 4 PER YEAR
2. ARG : * S091 = DET GROUP A1 * S093 = DET GROUP A1+A2+A3
   S355 = DET GROUP INSECTICIDES ..... All samples taken between May and August inclusive
   S371 = DET GROUP HERBICIDES ..... 2 samples between March and May inclusive; and
   2 samples between September and November inclusive
   * ARG S091 and S093 should NOT be sampled on the same day
3. Sampling for the ARG S091, S093 should be evenly spreaded over a year such that det group A1 is sampled monthly and det group A2 and A3 are sampled seasonaly.
4. When water is abstracted from more than one draw-off level from a reservoir (blending of raw water), samples should be taken and analysed separately from each operating leve (Do not blend samples).
5. Liaison between Survey Officers and confirmation with Lab. before sampling ARGs S355, S371 to avoid Lab. overloading

Table 6.1a EC Surface Water Abstraction Directive Sampling and Analysis Schedule 1994 - Devon Area.

Table 6.1b EC Surface Water Abstraction Directive Sampling and Analysis Schedule 1994 - Cornwall Area.

EC SURFACE WATER ABSTRACTION DIRECTIVE SAMPLING PROGRAMME 1994 - CORNWALL AREA (LAST UPDATE : 3-11-1992)

* REFER TO RESERVOIR SAMPLING INFORMATION BY : K. LEE

DISTRICT	ABSTRACTION POINTS	NGR	URN	SAMPLING FREQUENCY (PER YEAR) ARG S091	ARG S374	ARG S368	ARG S355#	ARG S371#
FAL	College Reservoir	SW 773 335	*	8	4	4	4	4
	Argal Reservoir	SW 763 328	*	8	4	4	4	4
	Stithians Reservoir	SW 7190 3639	*	8	4	4	4	4
	Drift Reservoir	SW 4399 2873	*	8	4	4	4	4
	Boswyn Reservoir	SW 6592 3629	*	8	4	4	4	4
	River Hayle	SW 5495 3490	R22B023	8	4	4	4	4
	River Cober at Wendron	SW 6752 3104	R20A016	8	4	4	4	4
FOWEY	Colliford Reservoir	SX 179 711	*	8	4	4	4	4
	Crowdy Reservoir	SX 1397 8327	*	8	4	4	4	4
	Delank R	SX 1358 7655	R25C003	8	4	4	4	4
	River Fowey at Trekeivesteps	SX 2272 6986	R15B053	8	4	4	4	4
	River Fowey at Restomel	SX 0971 6247	R15B054	8	4	4	4	4
	River Porth at Rialton	SX 8487 6230	R25A025	8	4	4	4	4
TAMAR	Burrator Reservoir	SX 5513 6803	*	8	4	4	4	4
	Upper Tamar Lake	SS 289 118	*	8	4	4	4	4
	River Yealm	SX 6170 6202	R10B025	8	4	4	4	4
	Ford Brook	SX 6123 6184	R10B027	8	4	4	4	4
	Deavonport leat (Dousland)	SX 5500 6837	R11B032	8	4	4	4	4
	River Tavy at Lopwell	SX 4751 6503	R12C027	8	4	4	4	4
	River Tamar at Gunnislake	SX 4337 7235	R12E035	8	4	4	4	4
	Broadall Lake (R.Yealm)	SX 6128 6196	R10B026	8	4	4	4	4
TAW	Roadford Reservoir	SX 425 901	*	8	4	4	4	4

NOTE :

1. The programme above is based on the sampling frequency of :
   DET GROUP A1 = 12 PER YEAR — INSECTICIDES = 4 PER YEAR
   DET GROUP A2 = 4 PER YEAR — HERBICIDES = 4 PER YEAR
   DET GROUP A3 = 4 PER YEAR

2. ARG : * S091 = DET GROUP A1
   * S374 = DET GROUP A1+A2+A3 (NO BACTI)
   S368 = BACTI ONLY
   S355 = DET GROUP INSECTICIDES ..... All samples taken between May and August inclusive
   S371 = DET GROUP HERBICIDES ..... 2 samples between March and May inclusive; and
   2 samples between September and November inclusive

   * ARG S374 and S091 should NOT be sampled on the same day.

3. Sampling for the ARG S091, S374 and S368 should be evenly spreaded over a year such that det group A1 is sampled monthly and det group A2 and A3 sampled seasonaly.

4. When water is abstracted from more than one draw-off level from a reservoir (blending of raw water), samples should be taken and analysed separately from each operating level (Do not blend samples).

5. Liaison between Survey Officers and confirmation with Lab. before sampling ARGs S355, S371 to avoid Lab. overloading.

EC SURFACE WATER ABSTRACTION DIRECTIVE SAMPLING PROGRAMME 1994
RESERVOIR SAMPLING

ABS_MON_RESERVOIR

RESERVOIR SAMPLE SHOULD BE TAKEN AT THE CURRENT DRAW OFF LEVEL

* PERSON TO MAKE FIRST CONTACT

DISTRICT	ABSTRACTION POINT	NGR		DRAW OFF LEVEL m A.O.D.	m BELOW OVERFLOW WEIR	URN	SAMPLING LOCATION	CONTACT PERSON
FAL	ARGAL	SW 763 328	OVERFLOW	82.30	0.00	-	SAMPLES CAN BE	WATER TREATMENT WORKS OPERATOR * :
			FIRST	79.55	2.75	R19A044	TAKEN FROM THE	
			SECOND	76.20	6.10	R19A045	WALKWAY ALONG	COLLEGE/ARGAL:
			THIRD	73.76	8.54	R19A046	THE TOP OF	0326-73515
							THE DAMS OF	
							THE FOUR	
	COLLEGE RESERVOIR	SW 773 335	OVERFLOW	69.98	0.00	-	RESERVOIRS	
			FIRST	69.07	0.91	R19A047		
			SECOND	67.85	2.13	R19A048		
	STITHIANS RESERVOIR	SW 719 363	OVERFLOW	162.15	0.00	-		STITHIANS:
			FIRST	156.97	5.18	R19E024		0209-860457
			SECOND	150.88	11.27	R19E025		
	DRIFT RESERVOIR	SW 439 287	OVERFLOW	83.82	0.00	-		DRIFT:
			FIRST	79.55	4.27	R21A032		0736-63597 OR 50069
			SECOND	74.68	9.14	R21A033		
	BOSWYN	SW 659 363	OVERFLOW	160.93	0.00	-		BOSWYN:
			FIRST	154.84	6.09	R23A060		0209-831316
								FURTHER ASSISTANCE CONTACT
								MR. MARK ANDREW
								0872-76131 EXT.217
FOWEY	COLLIFORD RESERVOIR	SX 179 711	OVERFLOW	254.00	0.00	-	COLLIFORD:	MR. ELLACOTT *
			FIRST	250.00	4.00	R15B050	FROM DRAW OFF	0726 - 626249
			SECOND	245.00	9.00	R15B051	TOWER	OR
			THIRD	237.00	17.00	R15B052		MR. D. DUNGWORTH
								WATER OPERATION CONTROLLER
	CROWDY RESERVOIR	SX 128 832	OVERFLOW	-	0.00	-	CROWDY:	0726 - 66766 EXT. 240
			FIRST	-	4.80	R25B056	FROM DAM WALL	
			SECOND	-	7.77	R25B055		

Table 6.2 EC Surface Water Abstraction Directive - Reservoir Sampling Information.

EC SURFACE WATER ABSTRACTION DIRECTIVE SAMPLING PROGRAMME 1994
RESERVOIR SAMPLING

ABS_MON_RESERVOIR

RESERVOIR SAMPLE SHOULD BE TAKEN AT THE CURRENT DRAW OFF LEVEL

* PERSON TO MAKE FIRST CONTACT

DISTRICT	ABSTRACTION POINT	NGR		DRAW OFF LEVEL m A.O.D.	DRAW OFF LEVEL m BELOW OVERFLOW WEIR	URN	SAMPLING LOCATION	CONTACT PERSON
EXE	SQUABMOOR RESERVOIR	SY 040 839	OVERFLOW	80.41	0.00	-	SQUABMOOR:	MR. MARSHALL *
			FIRST	75.53	4.88	R04B045	BOAT NEEDED	0392 - 445544 EXT 2847
								OR
	HOLYFORD POND	ST 2350 9220	SURFACE		0.5	R02A004	FROM DAM	MR. K.A. BARRETT
								TREATMENT WORKS CONTROLLER
WESSEX PLC	WIMBLEBALL RESERVOIR	SS 965 293	OVERFLOW	235.61	0.00	-	WIMBLEBALL:	0392 - 445544 EXT 2189
			FIRST	229.30	6.31	R05G017	FROM VALVE	
			SECOND	220.90	14.71	R05G016	TOWER BRIDGE	
			THIRD	208.30	27.31	R05G015		
	OTTERHEAD RESERVOIR	ST 2260 1320	FLOATING DRAW OFF			R04B052	BY THE VALVE TOWER	
TAW	MELDON RESERVOIR	SX 563 917	OVERFLOW	275.40	0.00	-	MELDON:	MR. HEAVEN *
			FIRST	269.75	5.65	R29D058	POSSIBLE FROM	0271 - 76126
			SECOND	262.13	13.72	R29D057	VERTICAL WALL	FOR ARRANGEMENT
			THIRD	254.51	20.89	R29D056		OR
			FOURTH	246.89	28.51	R29D055		MR. P. BENTLEY
								WATER OPERATIONS CONTROLLER
	LOWER SLADE RESERVOIR	SS 506 458	OVERFLOW	112.22	0.00	-	LOWER SLADE:	0271 - 76126 EXT 210
			FIRST	109.47	2.75	R31A019	BOAT NEEDED	
			SECOND	106.39	5.83	R31A018		
			THIRD	104.72	7.50	R31A017		
	WISTLANDPOUND RESERVOIR	SS 643 415	OVERFLOW	243.93	0.00	-	WISTLANDPOUND:	
			FIRST	237.05	6.88	R30H021	BOAT NEEDED	
			SECOND	230.65	13.28	R30H020		
			THIRD	219.52	24.41	R30H019		
	MELBURY RESERVOIR	SS 387 202	OVERFLOW	155.45	0.00	-	POSSIBLE FROM	
			FIRST	152.79	2.66	R29A022	DAM FOR 1st	
			SECOND	150.34	5.11	R29A023	DRAW OFF.	
			THIRD	147.89	7.56	R29A024	BOAT NEEDED	
							FOR OTHERS	
	ROADFORD RESERVOIR	SX 425 901	OVERFLOW	126.4	0.00	-	FORM TAPS	ROADFORD RESERVOIR IS OPERATED BY
			FIRST	117.4	9.00	R12G092		TAMAR DISTRICT
			SECOND	109.9	16.50	R12G093		SUPERINTENDENT TONY MEDLAND *
			THIRD	95.4	31.00	R12G094		028-882298

Table 6.2 Continue.

EC SURFACE WATER ABSTRACTION DIRECTIVE SAMPLING PROGRAMME 1994
RESERVOIR SAMPLING

ABS_MON_RESERVOIR

RESERVOIR SAMPLE SHOULD BE TAKEN AT THE CURRENT DRAW OFF LEVEL

* PERSON TO MAKE FIRST CONTACT

DISTRICT	ABSTRACTION POINT	NGR		DRAW OFF LEVEL m A.O.D.	m BELOW OVERFLOW WEIR	URN	SAMPLING LOCATION	CONTACT PERSON
TAMAR	BUTTERBROOK RESERVOIR	SX 646 593	OVERFLOW	-	0.00	-	POSSIBLE TO	SUPERINTENDENT *
			FIRST	-	6.1	R09B024	SAMPLE FROM	GEORGE COTON
							DAM	0752-537287
	BURRATOR RESERVOIR	SX 551 680	OVERFLOW	218.85	0.00	-	FROM A	SUPERINTENDENT *
			FIRST	196.45	22.40	R11B029	COMMON SAMPLING	LASH BROOK
			SECOND	194.89	23.96	R11B030	TAP	0822-852638
			THIRD	194.59	24.26	R11B031		
	UPPER TAMAR LAKE	SS 289 118	OVERFLOW	149.5	0.00	-	FROM SAMPLING	SUPERINTENDENT *
			FIRST	146.27	3.23	R12L021	TAPS	TONY MEDLAND
			SECOND	141.7	7.80	R12L020		028-882298
								OR
								WATER OPERATION CONTROLLER
								MR. J. PITT 0752-225241
DART	AVON DAM	SX 679 651	OVERFLOW	-	0.00	-	FROM BOAT	SUPERINTENDENT *
			FIRST	-	6.10	R08B022		COLIN HAWKINS
			SECOND	-	12.19	R08B023		0364-73119
			THIRD	-	18.29	R08B024		
	VENFORD RESERVOIR	SX 686 711	OVERFLOW	-	0.00	-	POSSIBLE FROM	SUPERINTENDENT *
			FIRST	-	3.05	R07B059	DAM	BILL PICE
			SECOND	-	6.10	R07B060	EASIER FROM	0364-3207
			THIRD	-	9.14	R07B061	BOAT	
			FOURTH	-	12.19	R07B062		
	FERNWORTHY RESERVOIR	SX 670 843	OVERFLOW	-	0.00	-	FROM BOAT	SUPERINTENDENT *
			FIRST	-	4.57	R06C063		JOHN STEVENS
			SECOND	-	7.92	R06C064		0647-7504
			THIRD	-	14.63	R06C065		
	TRENCHFORD RESERVOIR	SX 806 823	OVERFLOW	-	0.00	-	POSSIBLE FROM	SUPERINTENDENT *
			FIRST	-	4.57	R06C060	VALVE TOWER	JOHN STEVENS
			SECOND	-	8.84	R06C061		0647-7504
			THIRD	-	13.11	R06C062		
	KENNICK RESERVOIR	SX 807 838	OVERFLOW	-	0.00	-	POSSIBLE FROM	SUPERINTENDENT *
			FIRST	-	2.44	R06C066	VALVE TOWER	JOHN STEVENS
			SECOND	-	4.88	R06C067		0647-7504
			THIRD	-	7.32	R06C068		
								FOR FURTHER ASSISTANCE
								MR. BEIGHTON
								0803-556281

Table 6.2 Continue.

APPENDICES

APPENDIX 1

75/440/EEC ANNEX II

EC SURFACE WATER ABSTRACTION DIRECTIVE DETERMINAND STANDARDS

DETERMINANDS	UNITS	A1 G	A1/DW1 I	A2 G	A2/DW2 I	A3 G	A3/DW3 I
pH (LOWER)		6.5		5.5		5.5	
pH (UPPER)		8.5		9		9	
COLORATION	mg/l Pt	10	20	50	100	50	200
TOTAL SS	mg/l SS	25					
TEMPERATURE	deg C	22	25	22	25	22	25
CONDUCTIVITY	uS/cm 20C	1000		1000		1000	
ODOUR	D.F. 25C	3		10		20	
NITRATES	mg/l NO3	25	50		50		50
	mg/l N	5.65	11.3		11.3		11.3
FLUORIDES	mg/l F	1	1.5	1.7		1.7	
IRON (DISSOLVED)	mg/l Fe	0.1	0.3	1	2	1	
MANGANESE (TOTAL)	mg/l Mn	0.05		0.1		1	
COPPER (TOTAL)	mg/l Cu	0.02	0.05	0.05		1	
ZINC (TOTAL)	mg/l Zn	0.5	3	1	5	1	5
BORON (TOTAL)	mg/l B	1		1		1	
ARSENIC (TOTAL)	mg/l As	0.01	0.05		0.05	0.05	0.1
CADMIUM (TOTAL)	mg/l Cd	0.001	0.005	0.001	0.005	0.001	0.005
CHROMIUM (TOTAL)	mg/l Pb		0.05		0.05		0.05
LEAD (TOTAL)	mg/l Pb		0.05		0.05		0.05
SELENIUM (TOTAL)	mg/l Se		0.01		0.01		0.01
MERCURY (TOTAL)	mg/l Hg	0.0005	0.001	0.0005	0.001	0.0005	0.001
BARIUM (TOTAL)	mg/l Ba		0.1		1		1
CYANIDE	mg/l CN		0.05		0.05		0.05
SULPHATES	mg/l SO4	150	250	150	250	150	250
	mg/l S	50	83.3	50	83.3	50	83.3
CHLORIDES	mg/l Cl	200		200		200	
SURFACTANTS (ANION)	mg/l (LaurylSO4)	0.2		0.2		0.5	
	mg/l Monoxol O.T	0.31		0.31		0.31	
PHOSPHATES (TOTAL)	mg/l P2O5	0.4		0.7		0.7	
	mg/l P	0.087		0.087		0.087	
PHENOLS (TOTAL)	mg/l C6H5OH		0.001	0.001	0.005	0.001	0.1
HYDROCARBONS	mg/l		0.05		0.2	0.5	1
PAH'S	mg/l		0.0002		0.0002		0.0001
PESTICIDES (TOTAL)	mg/l		0.001		0.0025		0.005
COD	mg/l O2					30	
DO (LOWER)	% sat	70		50		30	
BOD	mg/l O2	3		5		7	
NITROGEN (KJELDAHL)	mg/l N	1		2		3	
AMMONIA (TOTAL)	mg/l NH4	0.05		1	1.5	2	4
	mg/l N	0.039		0.78	1.17	1.56	3.11
SUBS EXT CHLF	mg/l SEC	0.1		0.2		0.5	
TOTAL COLIFORMS	No/100ml	50		5000		50000	
FAECAL COLIFORMS	No/100ml	20		2000		20000	
FAECAL STREPTOCOCCI	No/100ml	20		1000		10000	
SALMONELLA	Abs/Prs	0/5L		0/1L			

APPENDIX 2

79/869/EEC ANNEX II

ANNEX II

Minimum annual frequency of sampling and analysis for each parameter in Directive 75/440/EEC

Population served	A1(*)			A2(*)			A3(*)		
	I(**)	II(**)	III(**)	I(**)	II(**)	III(**)	I(**)	II(**)	III(**)
≤ 10,000	(***)	(***)	(***)	(***)	(***)	(***)	2	1	(***)(1)
> 10,000 to ≤ 30,000	1	1	(***)	2	1	(***)	3	1	1
> 30,000 to ≤ 100,000	2	1	(***)	4	2	1	6	2	1
> 100,000	3	2	(***)	8	4	1	12	4	1

(*) Quality of surface waters. Annex II Directive 75/440/EEC.
(**) Classification of parameters according to frequency.
(***) Frequency to be determined by the competent national authorities.

(1) Assuming that such surface water is intended for the abstraction of drinking water, the Member States are recommended to carry out at least annual sampling of this category of water (A3, III, 10,000).

CATEGORIES

I		II		III	
Parameter		Parameter		Parameter	
1	pH	10	Dissolved iron	8	Fluorides
2	Coloration	11	Manganese	14	Boron
3	Total Suspended Solids	12	Copper	19	Arsenic
4	Temperature	13	Zinc	20	Cadmium
5	Conductivity	27	Sulphates	21	Total chromium
6	Odour	29	Surfactants	22	Lead
7	Nitrates	31	Phenols	23	Selenium
28	Chlorides	38	Nitrogen by Kjeldahl method	24	Mercury
30	Phosphates	43	Total coliforms	25	Barium
35	Chemical oxygen demand (COD)	44	Faecal coliforms	26	Cyanide
36	Dissolved oxygen saturation rate			32	Dissolved or emulsified hydrocarbons
37	Biochemical oxygen demand (BODs)			33	Polycyclic aromatic hydrocarbons
39	Ammonium			34	Total pesticides
				40	Substances extractable with chloroform
				45	Faecal streptococci
				46	Salmonella

APPENDIX 3

DETERMINAND MONITORED IN 1994

EC Surface Water Abstraction Directive - Monitoring Programme 1994

Determinands Scheduled for Sampling and Analysis

Code	Determinand	Unit	Location	Frequency
61	pH	pH	56	12
62	Conductivity	µS/cm	56	12
68	Turbidity	FTU	56	12
72	Colour	Hazen	56	12
76	Temperature	°C	56	12
81	Dissolved Oxygen	% Sat.	56	12
82	Dissolved Oxygen	mg/l	56	12
85	BOD-ATU	mg/l	56	12
92	COD	mg/l	56	12
99	TOC	mg/l	56	12
105	Mercury	µg/l	56	4
108	Cadmium	µg/l	56	4
111	Total Ammonia	mg/l	56	12
116	TON	mg/l	56	12
117	Nitrate	mg/l	56	12
118	Nitrite	mg/l	56	12
135	S.S. (105°C)	mg/l	56	12
158	Total Hardness	mg/l	56	12
172	Chloride ion	mg/l	56	12
174	Cyanide	mg/l	56	4
177	Fluoride	mg/l	56	4
180	Orthophosphate	mg/l	56	12
182	Silicate R.D.	mg/l	56	12
183	Sulphate	mg/l	56	12
192	Total Phosphate	mg/l	56	12
207	Sodium	mg/l	56	12
211	Potassium	mg/l	56	12
215	Copper	mg/l	56	4
237	Magnesium	mg/l	56	12
241	Calcium	mg/l	56	12
245	Zinc	mg/l	56	4
257	Barium	mg/l	56	4
283	Boron	mg/l	56	4
328	Lead	mg/l	56	4
352	Vanadium	mg/l	56	4
375	Chromium	mg/l	56	4
379	Selenium	mg/l	56	4
403	Manganese	mg/l	56	4
419	Iron dissolved	mg/l	56	4
429	Nickel	mg/l	56	4
461	Detergent Anion	mg/l	56	4
718	Benzo-a-pyrene	ng/l	56	4
942	Faecal Streptococci	No/100ml	56	4
979	Phenol Total	µg/l	56	4
1049	Carbontrachloride	µg/l	56	4
1066	Hydrocarbon oil	mg/l	56	4
1181	Weather Temp		56	12

EC Surface Water Abstraction Directive - Monitoring Programme 1994

Determinands Scheduled for Sampling and Analysis

Code	Determinand	Unit	Location	Frequency
1183	Weather Prec		56	12
3081	Isodrin	ng/l	56	4
3082	HCB Total	ng/l	56	4
3083	HCBD	ng/l	56	4
3107	Propetamphos	ng/l	56	4
3114	Chlorotoluron	µg/l	56	4
3117	Isoproturon	µg/l	56	4
3118	Linuron	µg/l	56	4
3125	Cyfluthrin	ng/l	56	4
3130	Metoxuron	µg/l	56	4
3167	Tributyltin	ng/l	56	4
3267	Flow		56	12
3270	1,2,3-TCB	ng/l	56	4
3271	1,2,4-TCB	ng/l	56	4
3272	1,2-DCE	µg/l	56	4
3273	1,3,5-TCB	ng/l	56	4
3276	Aldrin	ng/l	56	4
3277	Atrazine	ng/l	56	4
3278	Benzo-b-fluoranthene	ng/l	56	4
3279	Benzo-ghi-perylene	ng/l	56	4
3280	Benzo-k-fluoranthene	ng/l	56	4
3286	Chlorpyriphos	ng/l	56	4
3287	cis-chlordane	ng/l	56	4
3289	Chlorfenvinphos	ng/l	56	4
3294	DDE-PP'	ng/l	56	4
3295	DDE-OP'	ng/l	56	4
3296	DDT-OP'	ng/l	56	4
3297	DDT-PP'	ng/l	56	4
3298	Diazinon	ng/l	56	4
3301	Dieldrin	ng/l	56	4
3303	Endosulfan A	ng/l	56	4
3304	Endosulfan B	ng/l	56	4
3306	Endrin	ng/l	56	4
3309	Fluoranth	ng/l	56	4
3310	HCH-alpha	ng/l	56	4
3311	HCH-beta	ng/l	56	4
3312	HCH-delta	ng/l	56	4
3313	HCH-gamma	ng/l	56	4
3315	Heptachlor	ng/l	56	4
3316	Indeno-1,2,3(CD)-pyrene	ng/l	56	4
3323	PCP	ng/l	56	4
3324	Parathion	ng/l	56	4
3327	Simazine	ng/l	56	4
3328	Tetrachloroethylene	µg/l	56	4
3329	TDE-OP'	ng/l	56	4
3330	TDE-PP'	ng/l	56	4
3334	Trichloroethylene	µg/l	56	4

EC Surface Water Abstraction Directive - Monitoring Programme 1994

Determinands Scheduled for Sampling and Analysis

Code	Determinand	Unit	Location	Frequency
3335	Trifluralin	ng/l	56	4
3341	4-chloro-2-methyphenol	µg/l	56	4
3342	4-chloro-3-methyphenol	µg/l	56	4
3343	2,4-dimethylphenol	µg/l	56	4
3373	Chloroform	µg/l	56	4
3382	Salmonella	P/A	56	4
3399	Chloroxuron	µg/l	56	4
3400	Monuron	µg/l	56	4
3425	Atrazine desethyl	ng/l	56	4
3427	Atrazine desisopropyl	ng/l	56	4
3436	Triallate	ng/l	56	4
3437	Parathion-ethyl	ng/l	56	4
3438	cis-heptachlor epoxide	ng/l	56	4
3439	trans-heptachlor epoxide	ng/l	56	4
3440	trans-peremethrin	ng/l	56	4
3441	cis-peremethrin	ng/l	56	4
3701	Vinclozolin	ng/l	56	4
7356	Arsenic	µg/l	56	4
9813	Phenol HPLC	µg/l	56	4
9814	2-chlorophenol	µg/l	56	4
9815	4-chlorophenol	µg/l	56	4
9933	Pre. Coliforms	No/100ml	56	4
9935	Pre. E. Coli	No/100ml	56	4
	Total Number of Determinand Samples =			38,752

APPENDIX 4

ANALYSIS REQUIRED GROUPS (ARGs)

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S091

Code	Determinand	Unit	Location	Frequency
61	pH	pH	56	8
62	Conductivity	µS/cm	56	8
68	Turbidity	FTU	56	8
72	Colour	Hazen	56	8
76	Temperature	°C	56	8
81	Dissolved Oxygen	% Sat.	56	8
82	Dissolved Oxygen	mg/l	56	8
85	BOD-ATU	mg/l	56	8
92	COD	mg/l	56	8
99	TOC	mg/l	56	8
111	Total Ammonia	mg/l	56	8
116	TON	mg/l	56	8
117	Nitrate	mg/l	56	8
118	Nitrite	mg/l	56	8
135	S.S. (105°C)	mg/l	56	8
158	Total Hardness	mg/l	56	8
172	Chloride ion	mg/l	56	8
180	Orthophosphate	mg/l	56	8
182	Silicate R.D.	mg/l	56	8
183	Sulphate	mg/l	56	8
192	Total Phosphate	mg/l	56	8
207	Sodium	mg/l	56	8
211	Potassium	mg/l	56	8
237	Magnesium	mg/l	56	8
241	Calcium	mg/l	56	8
1181	Weather Temp		56	8
1183	Weather Prec		56	8
3267	Flow		56	8

Total Number of Determinand Samples = 12544

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S093

Code	Determinand	Unit	Location	Frequency
61	pH	pH	34	4
62	Conductivity	µS/cm	34	4
68	Turbidity	FTU	34	4
72	Colour	Hazen	34	4
76	Temperature	°C	34	4
81	Dissolved Oxygen	% Sat.	34	4
82	Dissolved Oxygen	mg/l	34	4
85	BOD-ATU	mg/l	34	4
92	COD	mg/l	34	4
99	TOC	mg/l	34	4
105	Mercury	µg/l	34	4
108	Cadmium	µg/l	34	4
111	Total Ammonia	mg/l	34	4
116	TON	mg/l	34	4
117	Nitrate	mg/l	34	4
118	Nitrite	mg/l	34	4
135	S.S. (105°C)	mg/l	34	4
158	Total Hardness	mg/l	34	4
172	Chloride ion	mg/l	34	4
174	Cyanide	mg/l	34	4
177	Fluoride	mg/l	34	4
180	Orthophosphate	mg/l	34	4
182	Silicate R.D.	mg/l	34	4
183	Sulphate	mg/l	34	4
192	Total Phosphate	mg/l	34	4
207	Sodium	mg/l	34	4
211	Potassium	mg/l	34	4
215	Copper	mg/l	34	4
237	Magnesium	mg/l	34	4
241	Calcium	mg/l	34	4
245	Zinc	mg/l	34	4
257	Barium	mg/l	34	4
283	Boron	mg/l	34	4
328	Lead	mg/l	34	4
352	Vanadium	mg/l	34	4
375	Chromium	mg/l	34	4
379	Selenium	mg/l	34	4
403	Manganese	mg/l	34	4
419	Iron dissolved	mg/l	34	4
429	Nickel	mg/l	34	4
461	Detergent Anion	mg/l	34	4
718	Benzo-a-pyrene	ng/l	34	4
942	Faecal Streptococci	No/100ml	34	4
979	Phenol Total	µg/l	34	4
1049	Carbontrachloride	µg/l	34	4
1066	Hydrocarbon oil	mg/l	34	4
1181	Weather Temp		34	4

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S093

Code	Determinand	Unit	Location	Frequency
1183	Weather Prec		34	4
3167	Tributyltin	ng/l	34	4
3267	Flow		34	4
3272	1,2-DCE	µg/l	34	4
3278	Benzo-b-fluoranthene	ng/l	34	4
3279	Benzo-ghi-perylene	ng/l	34	4
3280	Benzo-k-fluoranthene	ng/l	34	4
3309	Fluoranth	ng/l	34	4
3316	Indeno-1,2,3(CD)-pyrene	ng/l	34	4
3324	Parathion	ng/l	34	4
3328	Tetrachloroethylene	µg/l	34	4
3334	Trichloroethylene	µg/l	34	4
3341	4-chloro-2-methyphenol	µg/l	34	4
3342	4-chloro-3-methyphenol	µg/l	34	4
3343	2,4-dimethylphenol	µg/l	34	4
3373	Chloroform	µg/l	34	4
3382	Salmonella	P/A	34	4
7356	Arsenic	µg/l	34	4
9813	Phenol HPLC	µg/l	34	4
9814	2-chlorophenol	µg/l	34	4
9815	4-chlorophenol	µg/l	34	4
9933	Pre. Coliforms	No/100ml	34	4
9935	Pre. E. Coli	No/100ml	34	4

Total Number of Determinand Samples = 9520

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S374

Code	Determinand	Unit	Location	Frequency
61	pH	pH	22	4
62	Conductivity	µS/cm	22	4
68	Turbidity	FTU	22	4
72	Colour	Hazen	22	4
76	Temperature	°C	22	4
81	Dissolved Oxygen	% Sat.	22	4
82	Dissolved Oxygen	mg/l	22	4
85	BOD-ATU	mg/l	22	4
92	COD	mg/l	22	4
99	TOC	mg/l	22	4
105	Mercury	µg/l	22	4
108	Cadmium	µg/l	22	4
111	Total Ammonia	mg/l	22	4
116	TON	mg/l	22	4
117	Nitrate	mg/l	22	4
118	Nitrite	mg/l	22	4
135	S.S. (105°C)	mg/l	22	4
158	Total Hardness	mg/l	22	4
172	Chloride ion	mg/l	22	4
174	Cyanide	mg/l	22	4
177	Fluoride	mg/l	22	4
180	Orthophosphate	mg/l	22	4
182	Silicate R.D.	mg/l	22	4
183	Sulphate	mg/l	22	4
192	Total Phosphate	mg/l	22	4
207	Sodium	mg/l	22	4
211	Potassium	mg/l	22	4
215	Copper	mg/l	22	4
237	Magnesium	mg/l	22	4
241	Calcium	mg/l	22	4
245	Zinc	mg/l	22	4
257	Barium	mg/l	22	4
283	Boron	mg/l	22	4
328	Lead	mg/l	22	4
352	Vanadium	mg/l	22	4
375	Chromium	mg/l	22	4
379	Selenium	mg/l	22	4
403	Manganese	mg/l	22	4
419	Iron dissolved	mg/l	22	4
429	Nickel	mg/l	22	4
461	Detergent Anion	mg/l	22	4
718	Benzo-a-pyrene	ng/l	22	4
979	Phenol Total	µg/l	22	4
1049	Carbontrachloride	µg/l	22	4
1066	Hydrocarbon oil	mg/l	22	4
1181	Weather Temp		22	4
1183	Weather Prec		22	4

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S374

Code	Determinand	Unit	Location	Frequency
3167	Tributyltin	ng/l	22	4
3267	Flow		22	4
3272	1,2-DCE	µg/l	22	4
3278	Benzo-b-fluoranthene	ng/l	22	4
3279	Benzo-ghi-perylene	ng/l	22	4
3280	Benzo-k-fluoranthene	ng/l	22	4
3309	Fluoranth	ng/l	22	4
3316	Indeno-1,2,3(CD)-pyrene	ng/l	22	4
3324	Parathion	ng/l	22	4
3328	Tetrachloroethylene	µg/l	22	4
3334	Trichloroethylene	µg/l	22	4
3341	4-chloro-2-methyphenol	µg/l	22	4
3342	4-chloro-3-methyphenol	µg/l	22	4
3343	2,4-dimethylphenol	µg/l	22	4
3373	Chloroform	µg/l	22	4
7356	Arsenic	µg/l	22	4
9813	Phenol HPLC	µg/l	22	4
9814	2-chlorophenol	µg/l	22	4
9815	4-chlorophenol	µg/l	22	4

Total Number of Determinand Samples = 5808

EC Surface Water Abstraction Directive – Monitoring Programme 1994

ARG S355

Code	Determinand	Unit	Location	Frequency
3081	Isodrin	ng/l	56	4
3082	HCB Total	ng/l	56	4
3083	HCBD	ng/l	56	4
3107	Propetamphos	ng/l	56	4
3125	Cyfluthrin	ng/l	56	4
3270	1,2,3-TCB	ng/l	56	4
3271	1,2,4-TCB	ng/l	56	4
3273	1,3,5-TCB	ng/l	56	4
3276	Aldrin	ng/l	56	4
3286	Chlorpyriphos	ng/l	56	4
3287	cis-chlordane	ng/l	56	4
3289	Chlorfenvinphos	ng/l	56	4
3294	DDE-PP'	ng/l	56	4
3295	DDE-OP'	ng/l	56	4
3296	DDT-OP'	ng/l	56	4
3297	DDT-PP'	ng/l	56	4
3298	Diazinon	ng/l	56	4
3301	Dieldrin	ng/l	56	4
3303	Endosulfan A	ng/l	56	4
3304	Endosulfan B	ng/l	56	4
3306	Endrin	ng/l	56	4
3310	HCH-alpha	ng/l	56	4
3311	HCH-beta	ng/l	56	4
3312	HCH-delta	ng/l	56	4
3313	HCH-gamma	ng/l	56	4
3315	Heptachlor	ng/l	56	4
3329	TDE-OP'	ng/l	56	4
3330	TDE-PP'	ng/l	56	4
3335	Trifluralin	ng/l	56	4
3436	Triallate	ng/l	56	4
3437	Parathion-ethyl	ng/l	56	4
3438	cis-heptachlor epoxide	ng/l	56	4
3439	trans-heptachlor epoxide	ng/l	56	4
3440	trans-peremethrin	ng/l	56	4
3441	cis-peremethrin	ng/l	56	4
3701	Vinclozolin	ng/l	56	4

Total Number of Determinand Samples = 8064

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S355

Code	Determinand	Unit	Location	Frequency
3081	Isodrin	ng/l	56	4
3082	HCB Total	ng/l	56	4
3083	HCBD	ng/l	56	4
3107	Propetamphos	ng/l	56	4
3125	Cyfluthrin	ng/l	56	4
3270	1,2,3-TCB	ng/l	56	4
3271	1,2,4-TCB	ng/l	56	4
3273	1,3,5-TCB	ng/l	56	4
3276	Aldrin	ng/l	56	4
3286	Chlorpyriphos	ng/l	56	4
3287	cis-chlordane	ng/l	56	4
3289	Chlorfenvinphos	ng/l	56	4
3294	DDE-PP'	ng/l	56	4
3295	DDE-OP'	ng/l	56	4
3296	DDT-OP'	ng/l	56	4
3297	DDT-PP'	ng/l	56	4
3298	Diazinon	ng/l	56	4
3301	Dieldrin	ng/l	56	4
3303	Endosulfan A	ng/l	56	4
3304	Endosulfan B	ng/l	56	4
3306	Endrin	ng/l	56	4
3310	HCH-alpha	ng/l	56	4
3311	HCH-beta	ng/l	56	4
3312	HCH-delta	ng/l	56	4
3313	HCH-gamma	ng/l	56	4
3315	Heptachlor	ng/l	56	4
3329	TDE-OP'	ng/l	56	4
3330	TDE-PP'	ng/l	56	4
3335	Trifluralin	ng/l	56	4
3436	Triallate	ng/l	56	4
3437	Parathion-ethyl	ng/l	56	4
3438	cis-heptachlor epoxide	ng/l	56	4
3439	trans-heptachlor epoxide	ng/l	56	4
3440	trans-peremethrin	ng/l	56	4
3441	cis-peremethrin	ng/l	56	4
3701	Vinclozolin	ng/l	56	4

Total Number of Determinand Samples = 8064

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S371

Code	Determinand	Unit	Location	Frequency
3114	Chlorotoluron	µg/l	56	4
3117	Isoproturon	µg/l	56	4
3118	Linuron	µg/l	56	4
3130	Metoxuron	µg/l	56	4
3277	Atrazine	ng/l	56	4
3323	PCP	ng/l	56	4
3327	Simazine	ng/l	56	4
3399	Chloroxuron	µg/l	56	4
3400	Monuron	µg/l	56	4
3425	Atrazine desethyl	ng/l	56	4
3427	Atrazine desisopropyl	ng/l	56	4

Total Number of Determinand Samples = 2464

EC Surface Water Abstraction Directive - Monitoring Programme 1994

ARG S368

Code	Determinand	Unit	Location	Frequency
942	Faecal Streptococci	No/100ml	22	4
3382	Salmonella	P/A	22	4
9933	Pre. Coliforms	No/100ml	22	4
9935	Pre. E. Coli	No/100ml	22	4

Total Number of Determinand Samples = 352