

EA-SOUTH WEST BOX 12



ENVIRONMENT  
AGENCY

**ENVIRONMENT PROTECTION DEPARTMENT  
CORNWALL AREA**

**Pendower EC Bathing Beach  
Additional Monitoring Data Report  
FINAL REPORT**

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## Pendower EC Bathing Water Investigation Data Report

### 1. INTRODUCTION

#### 1.1 Background

The EC Designated Bathing Water at Pendower (81814989) on the south coast of Cornwall is sampled in accordance with the requirements of the EC Bathing Waters Directive (EC/76/100).

Table 1. Mandatory Bathing Water Directive exceedences since 1995.

Date	Time	High Tide	Total coliforms	Faecal coliforms	Faecal Strep	Salinity
	(BST)	(BST)	(No./100ml)	(No./100ml)	(No./100ml)	(g/kg)
30-Aug-97	14:40	04:43	5600	1960	1620	1.0
16-Sep-99	11:20	09:40	3300	3000	3100	32.6
15-Jun-01	11:05	13:00	8300	5670	2600	34.0

A previous investigation in 1991 and a desk study conducted in 2000 identified the Carne Stream as the source of bacterial contamination to the beach. Generally samples taken after or during rainfall events contained elevated numbers of indicator organisms, however this was not always the case.

#### 1.2 Objectives

To collate the routine bathing water and the 2000 investigations monitoring data from Pendower Beach and Carne Stream, analyse for trends and recommend an appropriate course of action.

#### 2.0 Results

Archived routine monitoring data from Pendower Bathing Beach and Carne Stream (1995 - 2001) are summarised in tables 2 - 8 (Appendix I). The results of three investigative sampling runs are given in table 9 (Appendix II).

### 3.0 DISCUSSION

#### 3.1 Routine Monitoring Data

Pendower Beach has not failed the mandatory bathing water standard, although single exceedences have occurred on three occasions. Since 1995, the beach has only failed the more stringent, guideline standards once. In 1999, a single sample exceeded the guideline standard following a significant rainfall event (24.2 mm in the 24 h prior to sampling). On the 15<sup>th</sup> June 2001 the bathing water exceeded the mandatory standard but a further investigation confirmed that samples may have become confused in the laboratory. Typically, the bacterial content of fresh water input to the beach has been seen to range between 1000 and 100,000 total coliforms and 300 to 30,000 faecal coliforms. Being small, the stream does not appear to have a significant influence on the bathing water. Any influence would be dependent on tidal



phase and stream flow. Typically, a salinity of >30 g/kg tds has been observed at this bathing water site and only under exceptional circumstances would there be sufficient bacteria in the stream to impact the bathing water.

We would expect this bathing water to continue passing the mandatory standards and to generally pass the more stringent guideline standards.

### **3.2 Investigations Monitoring 2001**

Three investigative surveys were carried out in the early part of the 2000 bathing season. The first two on 24<sup>th</sup> & 28<sup>th</sup> May 2000 were conducted at times of rainfall. Concentrations of indicator organisms were elevated, although consistent throughout the catchment. With regard to indicator organisms, the performance of Veryan STW appeared good, suggesting that it does not have a significant detrimental effect on the water quality of the Carne Stream (table 9).

## **4. CONCLUSIONS**

4.1 Pendower Beach has passed the bathing water guideline standard 6 out of the past 7 years.

4.2 The Carne Stream generally has elevated background concentrations of indicator organisms with occasion peaks. These peaks usually coincide with rainfall events.

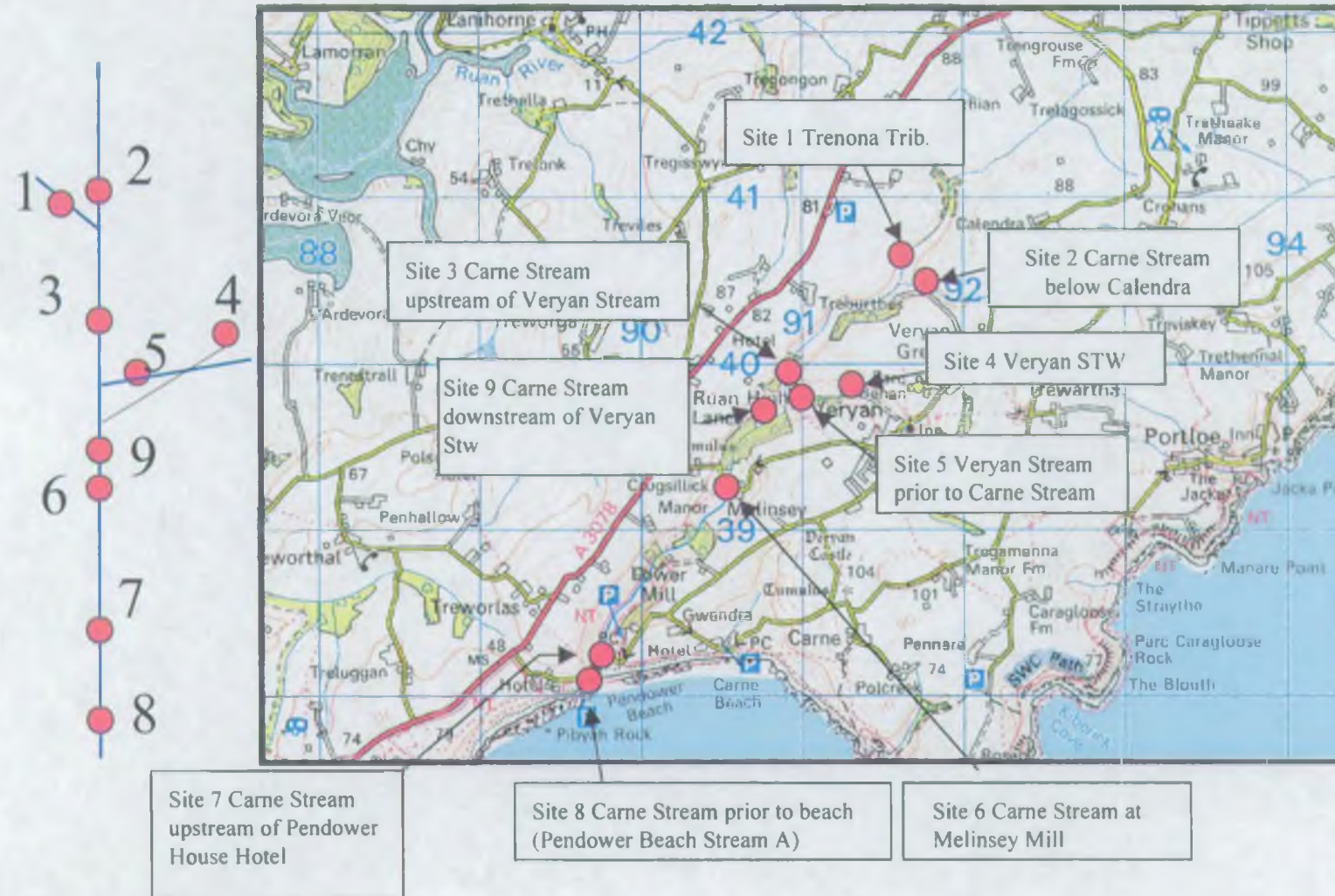
4.3 The Carne Stream does not appear to significantly influence bathing water quality at Pendower Beach, however this will be dependent on tidal phase and stream flow. The exceedence on 16<sup>th</sup> September 1999 was after a significant rainfall event which would have greatly increased stream flow.

## **5. RECOMMENDATIONS**

5.1 Should resources permit, Carne Stream would benefit from a catchment walkover survey, which have proved to be of significant value in the past. This should include hydrometric data to gain information on loadings of indicator organisms. This work ideally would be targetted at periods of significant rainfall.

**Action: EPr Team Leader – Investigations**

## Map1. Pendower Bathing Water Investigation 2000 Sample Sites



**APPENDIX I**

**Table 2 - Pendower Beach and Carne Stream Monitoring Data 1995**

Beach - URN: 81814989 NGR:SW89750 38120

Stream - URN: 81811904 NGR:SW 89750 38180

Date	Site	Time BST	Tide Time	Total Coliforms no/100ml	Faecal Coliforms no/100ml	Faecal Streptococci no/100ml	Salinity g/Kg ds	Rainfall Previous 24hrs	Rainfall
05-May-95	Beach	10:30	9.09	<1.0	<1.0	<1.0	33.5	0.0	0.0
05-May-95	Stream	10:35		1200.0	870.0	50.0	<1.0	0.0	0.0
14-May-95	Beach	14:00	5.16	<1.0	<1.0	<10.0	34.9	0.0	0.0
14-May-95	Stream	14:05		2100.0	450.0	160.0	<1.0	0.0	0.0
20-May-95	Beach	10:55	10.20	60.0	<10.0	<10.0	33.2	0.1	0.0
20-May-95	Stream	11:00		4000.0	2000.0	<10.0	<1.0	0.1	0.0
30-May-95	Beach	14:10	6.32	<10.0	<10.0	<10.0	34.6	0.3	0.0
30-May-95	Stream	14:15		52000.0	23000.0	3500.0	<1.0	0.3	0.0
09-Jun-95	Beach	17:30	2.01	<10.0	<10.0	<10.0	32.6	0.0	0.0
09-Jun-95	Stream	17:35		1800.0	1600.0	170.0	<1.0	0.0	0.0
17-Jun-95	Beach	10:35	9.06	130.0	110.0	10.0	34.9	0.8	1.9
17-Jun-95	Stream	10:40		880.0	450.0	160.0	<1.0	0.8	1.9
21-Jun-95	Beach	13:10	0.15	10.0	<10.0	<10.0	34.0	0.0	0.0
21-Jun-95	Stream	13:05		2100.0	800.0	30.0	<1.0	0.0	0.0
29-Jun-95	Beach	10:55	6.46	<10.0	<10.0	<10.0	34.6	0.0	0.0
29-Jun-95	Stream	10:50		2500.0	1100.0	230.0	<1.0	0.0	0.0
07-Jul-95	Beach	10:45	0.12	40.0	30.0	<10.0	34.5	0.0	0.0
07-Jul-95	Stream	10:50		3500.0	1600.0	170.0	<1.0	0.0	0.0
16-Jul-95	Beach	13:55	8.45	<10.0	<10.0	<10.0	34.9	1.5	0.0
16-Jul-95	Stream	14:00		2500.0	1760.0	330.0	<1.0	1.5	0.0
20-Jul-95	Beach	10:50	11.50	10.0	<10.0	<10.0	33.7	0.0	0.0
20-Jul-95	Stream	10:55		2200.0	840.0	180.0	<1.0	0.0	0.0
31-Jul-95	Beach	14:45	8.10	<1.0	1.0	50.0	34.6	0.0	2.5
31-Jul-95	Stream	14:50		35000.0	10000.0	180.0	<1.0	0.0	2.5
08-Aug-95	Beach	10:45	3.37	<10.0	10.0	<10.0	35.0	0.0	0.0
08-Aug-95	Stream	10:50		8400.0	3800.0	620.0	<1.0	0.0	0.0
16-Aug-95	Beach	16:55	9.36	30.0	<10.0	10.0	34.7	0.0	0.0
16-Aug-95	Stream	17:00		1300.0	800.0	240.0	<1.0	0.0	0.0
21-Aug-95	Beach	10:50	2.09	10.0	10.0	20.0	33.2	0.0	0.0
21-Aug-95	Stream	10:45		780.0	690.0	900.0	<1.0	0.0	0.0
29-Aug-95	Beach	14:25	7.45	<10.0	<10.0	<10.0	35.0	0.0	0.0
29-Aug-95	Stream	14:30		700.0	560.0	250.0	<1.0	0.0	0.0
06-Sep-95	Beach	10:45	3.33	<10.0	<10.0	<10.0	35.0	0.6	16.7
06-Sep-95	Stream	10:50		950.0	640.0	610.0	<1.0	0.6	16.7
10-Sep-95	Beach	14:00	6.32	640.0	440.0	180.0	34.6	7.7	13.4
10-Sep-95	Stream	14:05		>600000	240000.0	100000.0	<1.0	7.7	13.4
16-Sep-95	Beach	10:30	10.20	<10.0	<10.0	<10.0	34.2	0.0	0.0
16-Sep-95	Stream	10:25		6400.0	2900.0	1200.0	<1.0	0.0	0.0
29-Sep-95	Beach	14:30	8.46	<10.0	<10.0	<10.0	35.0	0.0	5.0
29-Sep-95	Stream	14:35		2000.0	800.0	260.0	<1.0	0.0	5.0

**Table 3 - Pendower Beach and Carne Stream Monitoring Data 1996**

Beach - URN: 81814989 NGR:SW89750 38120

Stream - URN: 81811904 NGR:SW 89750 38180

Date	Site	Time BST	Tide Time	Total Coliforms no/100ml	Faecal Coliforms no/100ml	Faecal Streptococci no/100ml	Salinity g/Kg tds	Rainfall Previous 24hrs	Rainfall
09-May-96	Beach	10:30	10.30	<10.0	<10.0	<10.0	32.5	0.0	0.0
09-May-96	Stream	10:25		<10.0	10.0	10.0	<1.0	0.0	0.0
15-May-96	Beach	14:05	4.26	78.0	30.0	<10.0	33.9	0.0	0.0
15-May-96	Stream	14:00		2700.0	900.0	140.0	<1.0	0.0	0.0
21-May-96	Beach	10:45	8.17	<10.0	<10.0	<10.0	34.8	6.2	9.2
21-May-96	Stream	10:50		4300.0	4100.0	340.0	<1.0	6.2	9.2
31-May-96	Beach	14:00	4.32	10.0	<10.0	<10.0	34.8	0.0	1.6
31-May-96	Stream	13:55		3500.0	2600.0	200.0	<1.0	0.0	0.0
07-Jun-96	Beach	10:30	10.20	<10.0	<10.0	<10.0	34.7	1.8	0.0
07-Jun-96	Stream	10:25		8800.0	4100.0	220.0	<1.0	1.8	0.0
15-Jun-96	Beach	14:10	5.30	<10.0	<10.0	<10.0	34.8	0.0	0.0
15-Jun-96	Stream	14:05		1460.0	890.0	480.0	<1.0	0.0	0.0
23-Jun-96	Beach	10:30	10.30	10.0	10.0	<10.0	34.5	0.0	0.0
23-Jun-96	Stream	10:25		2600.0	2500.0	170.0	<1.0	0.0	0.0
28-Jun-96	Beach	14:30	3.09	<10.0	<10.0	<10.0	35.0	0.0	0.0
28-Jun-96	Stream	14:35		2300.0	880.0	560.0	<1.0	0.0	0.0
06-Jul-96	Beach	10:30	9.58	<10.0	<10.0	<10.0	35.0	2.4	3.4
06-Jul-96	Stream	10:35		32000.0	11600.0	1400.0	<1.0	2.4	3.4
16-Jul-96	Beach	14:00	6.26	<10.0	<10.0	<10.0	35.0	0.0	0.0
16-Jul-96	Stream	14:05		2400.0	1040.0	370.0	<1.0	0.0	0.0
22-Jul-96	Beach	14:20	9.57	<10.0	<10.0	<10.0	31.3	0.0	0.0
22-Jul-96	Stream	14:25		8000.0	3000.0	390.0	<1.0	0.0	0.0
31-Jul-96	Beach	15:00	6.22	96.0	<10.0	<10.0	35.0	0.7	0.0
31-Jul-96	Stream	14:55		3200.0	2700.0	360.0	<1.0	0.7	0.0
07-Aug-96	Beach	10:30	12.10	350.0	320.0	<10.0	34.6	1.6	0.0
07-Aug-96	Stream	10:35		5200.0	4500.0	970.0	<1.0	1.6	0.0
16-Aug-96	Beach	14:55	7.09	10.0	<10.0	<10.0	32.8	0.0	0.0
16-Aug-96	Stream	14:50		2320.0	1910.0	210.0	<1.0	0.0	0.0
22-Aug-96	Beach	10:45	11.00	50.0	50.0	20.0	34.9	0.0	7.9
22-Aug-96	Stream	10:50		3200.0	1980.0	110.0	<1.0	0.0	7.9
27-Aug-96	Beach	14:50	4.36	<10.0	<10.0	<10.0	34.8	1.2	0.6
27-Aug-96	Stream	14:45		6500.0	4900.0	1190.0	<1.0	1.2	0.6
01-Sep-96	Beach	10:45	8.18	<10.0	<10.0	<10.0	34.3	0.0	0.0
01-Sep-96	Stream	10:50		1430.0	1030.0	250.0	<1.0	0.0	0.0
09-Sep-96	Beach	14:10	3.47	<10.0	<10.0	10.0	34.6	0.0	0.0
09-Sep-96	Stream	14:08		1010.0	700.0	360.0	<1.0	0.0	0.0
19-Sep-96	Beach	10:45	9.44	<10.0	<10.0	<10.0	34.9	0.0	5.4
19-Sep-96	Stream	10:50		2400.0	1480.0	340.0	<1.0	0.0	5.4
29-Sep-96	Beach	13:15	7.10	20.0	10.0	<10.0	35.0	2.0	1.6
29-Sep-96	Stream	13:20		3400.0	1040.0	400.0	<1.0	2.0	1.6

**Table 4 - Pendower Beach and Carne Stream Monitoring Data 1997**

Beach - URN: 81814989 NGR:SW89750 38120

Stream - URN: 81811904 NGR:SW 89750 38180

Date	Site	Time BST	Tide Time	Total Coliforms no/100ml	Faecal Coliforms no/100ml	Faecal Streptococci no/100ml	Salinity g/Kg tds	Rainfall Previous 24hrs	Rainfall
07-May-97	Beach	13:55	6.28	<10.0	10.0	10.0	34.9	5.8	3.5
07-May-97	Stream	14:00		900.0	650.0	200.0	<1.0	5.8	3.5
12-May-97	Beach	10:30	9.13	<10.0	<10.0	<10.0	35.3	2.1	0.0
12-May-97	Stream	10:35		2900.0	2000.0	170.0	<1.0	2.1	0.0
18-May-97	Beach	14:05	3.33	20.0	<10.0	<10.0	34.3	19.4	12.1
18-May-97	Stream	14:10		24000.0	24000.0	4300.0	<1.0	19.4	12.1
28-May-97	Beach	14:04	10.40	<10.0	<10.0	<10.0	35.3	0.0	0.0
28-May-97	Stream	14:00		1220.0	920.0	390.0	<1.0	0.0	0.0
03-Jun-97	Beach	13:50	4.35	340.0	243.0	90.0	33.9	12.6	0.0
03-Jun-97	Stream	13:55		30000.0	13800.0	5600.0	<1.0	12.6	0.0
12-Jun-97	Beach	10:30	10.60	<10.0	<10.0	<10.0	35.2	0.0	0.0
12-Jun-97	Stream	10:35		3500.0	3400.0	480.0	<1.0	0.0	0.0
20-Jun-97	Beach	14:00	5.46	<10.0	<10.0	<10.0	35.2	4.5	7.4
20-Jun-97	Stream	14:05		24000.0	12000.0	13800.0	<1.0	4.5	7.4
28-Jun-97	Beach	10:30	0.20	30.0	<10.0	20.0	34.6	1.6	0.0
28-Jun-97	Stream	10:35		3700.0	2500.0	440.0	<1.0	1.6	0.0
06-Jul-97	Beach	13:55	7.15	10.0	<10.0	<10.0	35.0	0.0	0.0
06-Jul-97	Stream	14:00		3500.0	770.0	290.0	<1.0	0.0	0.0
15-Jul-97	Beach	10:30	1.32	108.0	<10.0	<10.0	35.0	0.0	0.0
15-Jul-97	Stream	10:35		28000.0	24000.0	1060.0	<1.0	0.0	0.0
21-Jul-97	Beach	13:45	6.58	20.0	10.0	<10.0	33.9	0.0	0.0
21-Jul-97	Stream	13:50		6000.0	4800.0	420.0	<1.0	0.0	0.0
31-Jul-97	Beach	14:30	16.30	<10.0	<10.0	10.0	35.2	0.0	0.0
31-Jul-97	Stream	14:20		5600.0	2900.0	600.0	<1.0	0.0	0.0
08-Aug-97	Beach	13:15	9.07	10.0	30.0	<10.0	34.1	0.0	0.0
08-Aug-97	Stream	13:20		6600.0	3400.0	660.0	<1.0	0.0	0.0
16-Aug-97	Beach	10:30	16.40	30.0	10.0	10.0	34.7	0.0	1.8
16-Aug-97	Stream	10:20		3400.0	1420.0	520.0	<1.0	0.0	1.8
22-Aug-97	Beach	14:00	8.58	50.0	30.0	20.0	34.6	1.4	0.1
22-Aug-97	Stream	14:05		3200.0	2000.0	420.0	<1.0	1.4	0.1
30-Aug-97	Beach	14:40	4.43	5600.0	1960.0	1620.0	<1	15.7	8.5
30-Aug-97	Stream	14:45		640.0	280.0	130.0	33.1	15.7	8.5
08-Sep-97	Beach	13:50	9.43	<10.0	<10.0	<10.0	34.7	0.0	0.0
08-Sep-97	Stream	13:55		2500.0	950.0	480.0	<1.0	0.0	0.0
13-Sep-97	Beach	10:30	2.48	60.0	60.0	30.0	32.5	2.3	0.0
13-Sep-97	Stream	10:35		12000.0	240.0	270.0	<1.0	2.3	0.0
22-Sep-97	Beach	13:15	10.00	800.0	410.0	240.0	23.4	0.1	0.0
22-Sep-97	Stream	13:20		3300.0	1820.0	410.0	<1.0	0.1	0.0
30-Sep-97	Beach	10:30	5.37	100.0	40.0	40.0	33.9	0.0	0.0
30-Sep-97	Stream	10:28		1710.0	890.0	360.0	<1.0	0.0	0.0



**Table 5 - Pendower Beach and Carne Stream Monitoring Data 1998**

Beach - URN: 81814989 NGR:SW89750 38120

Stream - URN: 81811904 NGR:SW 89750 38180

Date	Site	Time BST	Tide Time	Total Coliforms no/100ml	Faecal Coliforms no/100ml	Faecal Streptococci no/100ml	Salinity g/Kg tds	Rainfall Previous 24hrs	Rainfall
06-May-98	Beach	12:35	2.43	380.0	30.0	10.0	29.5	0.0	0.0
06-May-98	Stream	12:40		No data	460.0	210.0	<1.0	0.0	0.0
15-May-98	Beach	12:45	8.10	<10.0	<10.0	<10.0	34.5	0.0	0.0
15-May-98	Stream	12:40		No data	690.0	130.0	<1.0	0.0	0.0
20-May-98	Beach	12:00	0.29	20.0	<10.0	<10.0	34.2	0.0	0.0
20-May-98	Stream	12:05		No data	780.0	270.0	<1.0	0.0	0.0
30-May-98	Beach	12:50	9.09	1960.0	1680.0	1030.0	33.5	11.6	13.1
30-May-98	Stream	12:55		No data	>30000.0	>30000.0	<1.0	11.6	13.1
07-Jun-98	Beach	12:20	4.30	120.0	40.0	50.0	32.9	5.5	0.1
07-Jun-98	Stream	12:25		No data	7000.0	460.0	<1.0	5.5	0.1
11-Jun-98	Beach	16:25	6.40	60.0	60.0	20.0	32.0	1.2	0.0
11-Jun-98	Stream	16:30		No data	480.0	430.0	<1.0	1.2	0.0
17-Jun-98	Beach	12:05	11.20	<10.0	10.0	20.0	32.7	0.0	0.0
17-Jun-98	Stream	12:10		No data	740.0	250.0	<1.0	0.0	0.0
25-Jun-98	Beach	12:20	6.57	130.0	100.0	<10.0	34.3	0.0	3.3
25-Jun-98	Stream	12:25		No data	6300.0	1040.0	<1.0	0.0	3.3
01-Jul-98	Beach	12:00	11.20	<10.0	<10.0	10.0	34.6	0.0	0.0
01-Jul-98	Stream	12:05		No data	2250.0	300.0	<1.0	0.0	0.0
15-Jul-98	Beach	16:10	10.20	<10.0	<10.0	<10.0	35.3	0.0	15.5
15-Jul-98	Stream	16:15		No data	2100.0	440.0	<1.0	0.0	15.5
19-Jul-98	Beach	12:05	1.43	70.0	20.0	30.0	34.0	0.0	20.5
19-Jul-98	Stream	12:10		No data	1460.0	320.0	<1.0	0.0	20.5
24-Jul-98	Beach	12:15	6.50	20.0	<10.0	<10.0	34.9	0.0	0.0
24-Jul-98	Stream	12:20		No data	3000.0	300.0	<1.0	0.0	0.0
07-Aug-98	Beach	12:00	5.41	10.0	<10.0	<10.0	34.7	0.0	0.0
07-Aug-98	Stream	12:05		No data	1680.0	330.0	<1.0	0.0	0.0
15-Aug-98	Beach	12:25	11.50	<10.0	<10.0	<10.0	34.4	2.9	0.0
15-Aug-98	Stream	12:30		No data	9200.0	540.0	<1.0	2.9	0.0
20-Aug-98	Beach	12:35	5.04	10.0	<10.0	<10.0	35.3	0.0	3.1
20-Aug-98	Stream	12:40		No data	2800.0	540.0	<1.0	0.0	3.1
27-Aug-98	Beach	12:45	9.15	20.0	<10.0	<10.0	33.7	0.0	0.0
27-Aug-98	Stream	12:50		No data	2300.0	340.0	<1.0	0.0	0.0
04-Sep-98	Beach	12:30	4.33	450.0	360.0	50.0	34.1	2.0	8.9
04-Sep-98	Stream	12:35		No data	17200.0	3800.0	<1.0	2.0	8.9
08-Sep-98	Beach	12:45	7.24	72.0	50.0	10.0	34.6	6.4	2.8
08-Sep-98	Stream	12:50		No data	2900.0	740.0	<1.0	6.4	2.8
17-Sep-98	Stream	12:25		No data	2200.0	250.0	<1.0	0.0	0.0
26-Sep-98	Stream	12:50		No data	>30000.0	>30000.0	<1.0	6.3	4.3

**Table 6 - Pendower Beach and Carne Stream Monitoring Data 1999**

Beach - URN: 81814989 NGR:SW89750 38120

Stream - URN: 81811904 NGR:SW 89750 38180

Date	Site	Time BST	Tide Time	Total Coliforms no/100ml	Faecal Coliforms no/100ml	Faecal Streptococci no/100ml	Salinity g/Kg tds	Rainfall Previous 24hrs	Rainfall
03-May-99	Beach	11:50	7.51	441.0	315.0	30.0	23.5	0.0	0.0
03-May-99	Stream	11:55		No data	1210.0	110.0	<1.0	0.0	0.0
08-May-99	Beach	11:15	10.50	50.0	10.0	10.0	34.8	1.0	5.3
08-May-99	Stream	11:18		No data	11300.0	560.0	<1.0	1.0	5.3
14-May-99	Beach	11:35	5.08	72.0	30.0	<10.0	34.5	0.0	0.0
14-May-99	Stream	11:40		No data	2000.0	180.0	<1.0	0.0	0.0
26-May-99	Beach	16:50	3.46	30.0	30.0	10.0	33.0	0.0	0.0
26-May-99	Stream	16:55		No data	1150.0	480.0	<1.0	0.0	0.0
01-Jun-99	Beach	10:45	7.30	<10.0	<10.0	<10.0	34.8	0.0	15.6
01-Jun-99	Stream	10:50		No data	5200.0	200.0	<1.0	0.0	15.6
07-Jun-99	Beach	13:35	11.60	1440.0	1500.0	1100.0	32.7	27.7	1.5
07-Jun-99	Stream	13:40		No data	480.0	190.0	<1.0	27.7	1.5
13-Jun-99	Beach	11:10	5.36	30.0	20.0	<10.0	34.5	0.0	0.0
13-Jun-99	Stream	11:15		No data	1200.0	80.0	<1.0	0.0	0.0
17-Jun-99	Beach	11:00	8.33	30.0	90.0	<10.0	33.8	0.0	0.0
17-Jun-99	Stream	11:03		No data	3000.0	160.0	<1.0	0.0	0.0
23-Jun-99	Beach	11:09	1.59	40.0	<10.0	20.0	33.1	0.0	0.0
23-Jun-99	Stream	11:12		No data	700.0	200.0	<1.0	0.0	0.0
05-Jul-99	Beach	11:40	10.30	1100.0	385.0	130.0	27.9	2.8	0.0
05-Jul-99	Stream	11:45		No data	1780.0	480.0	<1.0	2.8	0.0
12-Jul-99	Beach	15:00	5.22	10.0	10.0	<10.0	34.3	0.0	0.0
12-Jul-99	Stream	15:05		No data	4400.0	930.0	<1.0	0.0	0.0
17-Jul-99	Beach	10:55	859.00	<10.0	<10.0	150.0	33.3	0.0	0.0
17-Jul-99	Stream	10:57		No data	3400.0	740.0	<1.0	0.0	0.0
23-Jul-99	Beach	10:55	2.08	<10.0	<10.0	<10.0	34.0	0.0	0.0
23-Jul-99	Stream	11:00		No data	3000.0	110.0	<1.0	0.0	0.0
28-Jul-99	Beach	11:45	6.00	<10.0	<10.0	<10.0	35.4	0.0	0.0
28-Jul-99	Stream	11:50		No data	1290.0	2800.0	<1.0	0.0	0.0
04-Aug-99	Beach	11:05	10.60	40.0	10.0	10.0	34.4	1.8	10.4
04-Aug-99	Stream	11:11		No data	15000.0	10000.0	<1.0	1.8	10.4
12-Aug-99	Beach	11:55	6.49	10.0	20.0	<10.0	34.6	0.4	0.0
12-Aug-99	Stream	12:00		No data	5900.0	40.0	<1.0	0.4	0.0
21-Aug-99	Beach	10:55	1.11	40.0	20.0	70.0	34.6	0.0	0.5
21-Aug-99	Stream	11:00		No data	2100.0	470.0	<1.0	0.0	0.5
29-Aug-99	Beach	11:30	7.45	612.0	330.0	110.0	27.9	0.0	1.5
29-Aug-99	Stream	11:35		No data	2000.0	550.0	<1.0	0.0	1.5
10-Sep-99	Beach	11:00	6.31	20.0	10.0	20.0	35.0	0.0	0.0
10-Sep-99	Stream	11:05		No data	>20000.0	1880.0	<1.0	0.0	0.0
16-Sep-99	Beach	11:20	9.40	3300.0	3000.0	3100.0	32.6	24.2	3.0
16-Sep-99	Stream	11:25		No data	>20000.0	>20000.0	<1.0	24.2	3.0

**Table 7 - Pendower Beach and Carne Stream Monitoring Data 2000**

Beach - URN: 81814989 NGR:SW89750 38120

Stream - URN: 81811904 NGR:SW 89750 38180

Date	Site	Time BST	Tide Time	Total Coliforms no/100ml	Faecal Coliforms no/100ml	Faecal Streptococci no/100ml	Salinity g/Kg tds	Rainfall Previous 24hrs	Rainfall
04-May-00	Beach	11:05	6.19	<10.0	10.0	<10.0	34.1	0.0	0.0
04-May-00	Stream	11:10		No data	918.0	191.0	<1.0	0.0	0.0
10-May-00	Beach	11:20	11.10	<10.0	<10.0	<10.0	33.3	0.0	6.7
10-May-00	Stream	11:25		No data	5900.0	260.0	<1.0	0.0	6.7
15-May-00	Beach	16:25	4.18	<10.0	<10.0	<10.0	34.6	0.0	0.0
15-May-00	Stream	16:30		No data	1045.0	420.0	<1.0	0.0	0.0
28-May-00	Beach	15:10	1.10	36.0	10.0	55.0	34.4	10.2	1.0
28-May-00	Stream	15:20		No data	2500.0	1180.0	<1.0	10.2	1.0
03-Jun-00	Beach	11:20	6.40	470.0	300.0	18.0	34.8	0.0	1.1
03-Jun-00	Stream	11:25		No data	200.0	136.0	<1.0	0.0	1.1
09-Jun-00	Beach	11:23	12.00	<10.0	<10.0	<10.0	35.1	2.1	1.5
09-Jun-00	Stream	11:26		No data	1291.0	680.0	<1.0	2.1	1.5
15-Jun-00	Beach	12:17	5.18	<10.0	<10.0	<10.0	34.7	0.0	0.0
15-Jun-00	Stream	12:20		No data	1064.0	320.0	<1.0	0.0	0.0
22-Jun-00	Beach	12:45	9.22	<10.0	<10.0	<10.0	35.0	0.4	0.3
22-Jun-00	Stream	12:50		No data	5600.0	450.0	<1.0	0.4	0.3
28-Jun-00	Beach	12:05	2.47	<10.0	<10.0	<10.0	35.1	0.0	0.0
28-Jun-00	Stream	12:10		No data	2100.0	400.0	<1.0	0.0	0.0
03-Jul-00	Beach	12:45	6.57	<10.0	<10.0	18.0	34.6	0.0	19.9
03-Jul-00	Stream	12:50		No data	5800.0	1091.0	<1.0	0.0	19.9
12-Jul-00	Beach	11:45	3.10	47.0	10.0	18.0	34.2	0.0	0.0
12-Jul-00	Stream	11:50		No data	700.0	480.0	<1.0	0.0	0.0
18-Jul-00	Beach	15:50	7.09	<10.0	<10.0	<10.0	35.0	0.0	0.0
18-Jul-00	Stream	15:55		No data	1155.0	350.0	<1.0	0.0	0.0
24-Jul-00	Beach	12:00	11.00	10.0	<10.0	10.0	34.7	0.0	0.0
24-Jul-00	Stream	12:05		No data	5400.0	2100.0	<1.0	0.0	0.0
07-Aug-00	Beach	11:20	11.40	<10.0	<10.0	<10.0	35.1	0.0	0.0
07-Aug-00	Stream	11:25		No data	2900.0	1036.0	<1.0	0.0	0.0
18-Aug-00	Beach	11:35	8.00	14.0	10.0	<10.0	34.7	1.5	6.5
18-Aug-00	Stream	11:40		No data	2800.0	560.0	<1.0	1.5	6.5
23-Aug-00	Beach	12:15	11.40	<10.0	<10.0	<10.0	35.0	0.0	0.0
23-Aug-00	Stream	12:20		No data	2000.0	1273.0	<1.0	0.0	0.0
29-Aug-00	Beach	12:40	6.00	<10.0	<10.0	<10.0	34.8	0.0	0.0
29-Aug-00	Stream	12:35		No data	3700.0	460.0	<1.0	0.0	0.0
04-Sep-00	Beach	12:45	11.00	<10.0	<10.0	<10.0	33.8	0.0	1.0
04-Sep-00	Stream	12:50		No data	2500.0	440.0	<1.0	0.0	1.0
07-Sep-00	Beach	12:00	0.18	10.0	<10.0	<10.0	34.9	0.2	0.4
07-Sep-00	Stream	12:05		No data	1773.0	320.0	<1.0	0.2	0.4
12-Sep-00	Beach	12:25	5.38	10.0	<10.0	<10.0	35.0	0.0	0.0
12-Sep-00	Stream	12:30		No data	3600.0	1573.0	<1.0	0.0	0.0

**Table 8 - Pendower Beach and Carne Stream Monitoring Data 2001**

Beach - URN: 81814989 NGR:SW89750 38120

Stream - URN: 81811904 NGR:SW 89750 38180

Date	Site	Time BST	Tide Time	Total Coliforms no/100ml	Faecal Coliforms no/100ml	Faecal Streptococci no/100ml	Salinity g/Kg tds	Rainfall Previous 24hrs	Rainfall
03-May-01	Beach	14:45		<10.0	<10.0	<10.0	33.6	0.0	0.0
03-May-01	Stream	14:50		No data	500.0	27.0	<1.0	0.0	0.0
09-May-01	Beach	13:40	7.01	<10.0	<10.0	<10.0	34.6	0.0	0.0
09-May-01	Stream	13:45		No data	8100.0	1091.0	<1.0	0.0	0.0
14-May-01	Beach	13:15	10.30	370.0	155.0	18.0	34.0	0.0	0.0
14-May-01	Stream	13:20		No data	>20000.0	1700.0	<1.0	0.0	0.0
22-May-01	Beach	12:25	5.20	<10.0	<10.0	<10.0	34.7	0.0	0.0
22-May-01	Stream	12:30		No data	660.0	118.0	<1.0	0.0	0.0
02-Jun-01	Beach	11:00	3.11	<10.0	<10.0	<10.0	34.6	0.0	0.0
02-Jun-01	Stream	11:10		No data	480.0	127.0	<1.0	0.0	0.0
07-Jun-01	Beach	12:20	7.00	<10.0	<10.0	<10.0	34.7	0.0	0.0
07-Jun-01	Stream	12:25		No data	9100.0	2500.0	<1.0	0.0	0.0
15-Jun-01	Beach	11:05	13.00	8300.0	5670.0	2600.0	34.0	11.8	21.3
15-Jun-01	Stream	11:10		No data	55.0	18.0	<1.0	11.8	21.3
20-Jun-01	Beach	13:05	17.10	<10.0	<10.0	<10.0	34.4	0.0	0.0
20-Jun-01	Stream	13:10		No data	2700.0	>20000.0	<1.0	0.0	0.0
26-Jun-01	Beach	11:20	9.54	27.0	<10.0	10.0	33.8	0.0	0.0
26-Jun-01	Stream	11:30		No data	2800.0	570.0	<1.0	0.0	0.0
02-Jul-01	Beach	14:50	3.27	115.0	76.0	27.0	33.1	0.0	0.0
02-Jul-01	Stream	14:55		No data	4800.0	1182.0	<1.0	0.0	0.0
10-Jul-01	Beach	12:10	8.51	220.0	106.0	10.0	33.9	11.2	0.0
10-Jul-01	Stream	12:15		No data	6200.0	936.0	<1.0	11.2	0.0
14-Jul-01	Beach	12:20	11.50	36.0	10.0	<10.0	34.3	2.0	1.0
14-Jul-01	Stream	12:25		No data	8400.0	982.0	<1.0	2.0	1.0
20-Jul-01	Beach	10:25	5.24	<10.0	18.0	<10.0	34.4	0.0	6.7
20-Jul-01	Stream	11:30		No data	2000.0	530.0	<1.0	0.0	6.7
01-Aug-01	Beach	12:40	3.59	10.0	<10.0	27.0	34.3	0.0	0.0
01-Aug-01	Stream	12:45		No data	11800.0	370.0	<1.0	0.0	0.0
07-Aug-01	Beach	11:00	7.57	10.0	27.0	<10.0	34.7	4.9	1.2
07-Aug-01	Stream	11:05		No data	11000.0	1736.0	<1.0	4.9	1.2
16-Aug-01	Beach	14:10	2.59	<10.0	<10.0	<10.0	34.9	6.1	0.0
16-Aug-01	Stream	14:15		No data	8700.0	1055.0	<1.0	6.1	0.0
22-Aug-01	Beach	11:15	8.30	<10.0	<10.0	<10.0	34.1	1.3	0.0
22-Aug-01	Stream	11:20		No data	2400.0	310.0	<1.0	1.3	0.0
01-Sep-01	Beach	11:25	5.28	<10.0	<10.0	27.0	34.7	0.0	0.0
01-Sep-01	Stream	11:30		No data	2000.0	610.0	<1.0	0.0	0.0
06-Sep-01	Beach	15:20	7.54	<10.0	<10.0	<10.0	34.8	0.0	0.0
06-Sep-01	Stream	15:25		No data	1173.0	400.0	<1.0	0.0	0.0
14-Sep-01	Beach	12:30	15.20	<10.0	<10.0	<10.0	34.8	0.0	0.0
14-Sep-01	Stream	13:35		No data	1700.0	380.0	<1.0	0.0	0.0

**APPENDIX II**

Table 9  
 Pendower Bathing Water Investigation  
 Pendower Stream Monitoring

Date	Sample Point No.	URN	Description	NGR	Total Coliforms	Faecal Coliforms	Faecal Streptococci	Rainfall - Past 24hrs (mm)	Rainfall (mm)	Comments
24-May-00	1	81818803	Trenona Trib.	SW916405	760.0	720.0	530.0	5.5	3.9	
24-May-00	2	81818803	Came Stream Below Calendra	SW917404	882.0	440.0	100.0			
24-May-00	3	81818803	Pendower Stream U/s of Came Stream	SW908398	4600.0	3200.0	2100.0			
24-May-00	4	81811837	Veryan STW	SW913398	2200.0	918.0	118.0			
24-May-00	5	81811835	Came Stream	SW909397	2200.0	1082.0	730.0			U/S of STW outfall
24-May-00	6	81811817	Melinsey Mill	SW905393	1910.0	1373.0	845.0			U/S of road runoff
24-May-00	7	81818803	U/S Pendower House Hotel	SW897384	927.0	600.0	680.0			
24-May-00	8	81811904	Pendower Beach Steam A	SW897382	2600.0	620.0	660.0			
28-May-00	1	81818803	Trenona Trib.	SW916405	3000.0	2900.0	927.0	10.2	1.0	
28-May-00	2	81818803	Pendower Stream Below Calendra	SW917404	1100.0	864.0	200.0			
28-May-00	3	81818803	Pendower Stream U/s of Came Stream	SW908398	5200.0	5100.0	1227.0			
28-May-00	4	81811837	Veryan STW	SW913398	6000.0	3500.0	<1000.0			
28-May-00	5	81811835	Came Stream	SW909397	7000.0	6000.0	7700.0			U/S of STW outfall
28-May-00	6	81811817	Melinsey Mill	SW905393	5200.0	4600.0	3400.0			U/S of road runoff
28-May-00	7	81818803	U/S Pendower House Hotel	SW897384	4200.0	2400.0	1118.0			
28-May-00	8	81811904	Pendower Beach Steam A	SW897382	6400.0	5200.0	927.0			
28-May-00	9	81811835	Pendower Stream D/S Veryan STW	SW908397	5400.0	4600.0	3900.0			Above f/bridge, below o/f
03-Jun-00	1	81819999	Trenona Trib.	SW916405			182.0	0.0	1.1	
03-Jun-00	2	81819999	Pendower Stream Below Calendra	SW917404	480.0	350.0	100.0			
03-Jun-00	3	81819999	Pendower Stream U/s of Came Stream	SW908398			100.0			
03-Jun-00	4	81811837	Veryan STW	SW913398						
03-Jun-00	5	81819999	Came Stream	SW909397	936.0	740.0	1540.0			
03-Jun-00	6	81811817	Melinsey Mill (Came Stream)	SW905393	1218.0	420.0	200.0			
03-Jun-00	7	81819999	U/S Pendower House Hotel	SW897384	370.0	200.0	182.0			
03-Jun-00	8	81811904	Pendower Beach Steam A	SW897382		200.0	136.0			
03-Jun-00	9	81811835	Pendower Stream D/S Veryan STW	SW908397	1109.0	991.0	480.0			