



**ENVIRONMENT PROTECTION SECTION
CORNWALL AREA**

FINAL REPORT

**INVESTIGATION INTO ELEVATED
BACTERIAL LEVELS AT STENNACK
CULVERT**

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INVESTIGATION INTO ELEVATED BACTERIAL LEVELS AT STENNACK CULVERT

1. INTRODUCTION

1.1. Background

The Stennack stream rises a short distance South of Bussow Reservoir and continues for approximately four kilometres, through St Ives and issues onto Porthminster Beach (URN 82215326), close to the lifeboat station (points 1 & 2 Fig.1.). Through the town of St Ives, most of the stream is culverted. Routine monitoring during the 2000 bathing season revealed exceptionally high bacterial counts in the stream water flowing from the culvert onto Porthminster Beach. Subsequent samples taken in November 2000 and March 2001 (Table 1), revealed a potential area of contamination between Stennack Post Office (NGR SW 51335 40274) (point 3 Fig.1.) and Stennack School (NGR SW51508 40322) (point 5 Fig.1.).

Fig.1. St Ives showing course of Stennack Stream above ground, sampling points and outfall.



Key:-

- 1 Lifeboat station
- 2 Stream outfall
- 3 Upstream end of Rosewell Terrace culvert (opp. Post Office)
- 4 Downstream end of Rosewell Terrace culvert
- 5 Stennack School

1.2. Objectives

To identify the source of bacterial contamination to the Stennack Stream.



2. METHODS

- 2.1. A desk top study of existing data indicated elevated bacterial counts (Table 1) from a possible area of contamination between Stennack Post Office and Stennack School (points 3 & 5 Fig.1.).
- 2.2. A subsequent walkover of the area indicated a likely source of contamination in a short (ca. 100 m) culverted section, adjacent to Rosewell Terrace (NGR SW5135040279 to NGR SW5144640300).
- 2.3. An investigation was carried out on 04/10/01 to ascertain whether the source of contamination was within this culverted section. A series of samples were taken from upstream and downstream of the culvert (points 3 & 4 Fig.1.), between 08:30 hrs and 10:30 hrs.

3. RESULTS

Table 1. Bacterial counts, Stennack Stream, opposite Post Office and Stennack School. (CFU/100ml).

Date	Total Coliforms		Faecal Coliforms		Faecal Streptococci	
	Opposite Stennack P.O.	Opposite School	Opposite Stennack P.O.	Opposite School	Opposite Stennack P.O.	Opposite School
30/11/00	350	8000	145	1463	64	350
16/03/01	340	2600	90	1360	118	5200

Table 2. Bacterial counts from Stennack Stream, samples taken upstream and downstream of Rosewell Terrace culvert. (CFU/100ml)

Time	Total Coliforms		Faecal Coliforms		Faecal Streptococci	
	U/S	D/S	U/S	D/S	U/S	D/S
08:30	2200	>200000	630	>200000	1218	>20000
09:00	3300	191000	590	91000	1300	>20000
09:30	2600	117000	510	110000	1173	7800
10:00	17000	108000	420	58000	630	4400
10:30	2400	76000	410	51000	1064	6800

4. DISCUSSION

4.1 Water discharging from the Rosewell Terrace culvert has been shown to be significantly more contaminated in respect of all three bacterial parameters than water entering the culvert (Table 2). This was the case throughout the duration of the survey.

5. CONCLUSIONS

5.1 There is a significant source of faecal bacteria located within the confines of the Rosewell Terrace culvert.

6. RECOMMENDATION

Liaise with SWWS Ltd. to determine appropriate action to resolve this issue.

Action: EP (West) Field Team.