

## **APPENDIX 6.6**

### **Pesticide Removal Data and Graphs**

1917

1917



**APPENDIX 6.6**  
**PESTICIDE REMOVAL DATA AND GRAPHS**  
**EXPLANATORY NOTES**

For Buckfast Day 65 = 23rd July 1992 and Day 295 = 10th March 1993.

For Haworth Day 157 = 8th October 1992 and Day 323 = 23rd March 1993.

Pesticide removal rates (A --> B; B --> C and A --> C) are given where available.

All results are reported in ug/l, as % in the case of removal rates.

"NA" indicates that the result was not available and applies mainly to the tables referring to Lindane. On many occasions the analyst was able to quantify lindane in Sample A (feed), but the high levels of contaminating compounds in the treated effluent masked any residual pesticide that may have been present.

Pesticide data for the period up to Christmas 1992 is also presented in the form of bar charts.

It is quickly apparent from inspection of the tables that, on many occasions, a sample of C was not submitted for analysis. This was a result of the analytical facility at Canterbury having a maximum potential to realistically analyse 4 samples per week ie A and B from Buckfast and A and B from Haworth. Also, at the end of January 1993, Buckfast Reactor 1 was relocated and Reactor 2 became non-operational (hence no Sample C).

When no sample A or B was available the calculation in the spreadsheet has resulted in the printing of "ERROR" this should be ignored.

In addition, when no sample B or C was available, but there is a result for Sample A, the calculation in the spreadsheet prints 100% removal this also should be ignored.

## HAWORTH PILOT PLANT

## PESTICIDE REMOVAL

DAY NO	PROPETAMPHOS					
	A (ug/l)	B (ug/l)	C (ug/l)	% REM (A - B)	% REM (B - C)	% REM (A - C)
157	899	19	5	97.89	73.68	99.44
169	782	11	5	98.59	54.55	99.36
184	1265	30		97.63	100.00	100.00
191	490	29		94.08	100.00	100.00
198	1081	127		88.25	100.00	100.00
205	822	160		80.54	100.00	100.00
212	1038	253	83	75.63	67.19	92.00
226	763	1200	569	-57.27	52.58	25.43
254	407	395	204	2.95	48.35	49.88
268	211	334		-58.29	100.00	100.00
275	232	96	42	58.62	56.25	81.90
282	305	277	43	9.18	84.48	85.90
303	295	235	121	20.34	48.51	58.98
310	NA	219	60	ERROR	72.60	ERROR
317	357	90	21	74.79	76.67	94.12
323	645	317	48	50.85	84.86	92.56

HAWORTH PILOT PLANT

PESTICIDE REMOVAL

DAY NO	DIAZINON					
	A (ug/l)	B (ug/l)	C (ug/l)	% REM (A - B)	% REM (B - C)	% REM (A - C)
157	1968	328	148	83.33	54.88	92.48
169	1187	396	316	66.64	20.20	73.38
184	570	424		25.61	100.00	100.00
191	923	276		70.10	100.00	100.00
198	1919	1166		39.24	100.00	100.00
205	1058	619		41.49	100.00	100.00
212	1197	823	382	31.24	53.58	68.09
226	1284	1210	898	5.76	25.79	30.06
254	819	444	336	45.79	24.32	58.97
268	324	941		-190.43	100.00	100.00
275	357	281	682	21.29	-142.70	-91.04
282	476	759	767	-59.45	-1.05	-61.13
303	580	468	511	19.31	-9.19	11.90
310	NA	586	611	ERROR	-4.27	ERROR
317	268	617	573	-130.22	7.13	-113.81
323	899	661	509	26.47	23.00	43.38

HAWORTH PILOT PLANT

PESTICIDE REMOVAL

DAY NO	LINDANE			% REM (A - B)	% REM (B - C)	% REM (A - C)
	A (ug/l)	B (ug/l)	C (ug/l)			
157	2.4	.2	.2	91.67	.00	91.67
169	1.8	.2	.2	88.89	.00	88.89
184	5.1	.2	.2	96.08	.00	96.08
191	4	.7		82.50	100.00	100.00
198	4.3	4.5		-4.65	100.00	100.00
205	2.4	.9		62.50	100.00	100.00
212	10.2	1.1	1	89.22	9.09	90.20
226				ERROR	ERROR	ERROR
254				ERROR	ERROR	ERROR
268				ERROR	ERROR	ERROR
275	9.8	NA	NA	100.00	ERROR	100.00
282	5.6	NA	NA	100.00	ERROR	100.00
303	5.6	NA	NA	100.00	ERROR	100.00
310	NA	NA	NA	ERROR	ERROR	ERROR
317	17.4	NA	NA	100.00	ERROR	100.00
323	38.2	NA	NA	100.00	ERROR	100.00

BUCKFAST PILOT PLANT

PESTICIDE REMOVAL

DAY NO	PROPETAMPHOS					
	A (ug/l)	B (ug/l)	C (ug/l)	% REM (A - B)	% REM (B - C)	% REM (A - C)
65	67.1	6.1	8.1	90.91	-32.79	87.93
107	505	59	32	88.32	45.76	93.66
121	845	191	143	77.40	25.13	83.08
135	390	10	72	97.44	-620.00	81.54
148	336	41	53	87.80	-29.27	84.23
176	1052	514		51.14	100.00	100.00
183	1633	1180		27.74	100.00	100.00
204	2320	112		95.17	100.00	100.00
253	595	270		54.62	100.00	100.00
288	563	316		43.87	100.00	100.00
295	528	179		66.10	100.00	100.00

BUCKFAST PILOT PLANT

PESTICIDE REMOVAL

DAY NO	DIAZINON					
	A (ug/l)	B (ug/l)	C (ug/l)	% REM (A - B)	% REM (B - C)	% REM (A - C)
65	337	70	52	79.23	25.71	84.57
107	1377	155	121	88.74	21.94	91.21
121	1486	360	273	75.77	24.17	81.63
135	702	443	574	36.89	-29.57	18.23
148	581	514	880	11.53	-71.21	-51.46
176	2386	982		58.84	100.00	100.00
183	2647	1714		35.25	100.00	100.00
204	7286	571		92.16	100.00	100.00
253	1263	419		66.83	100.00	100.00
288	1295	999		22.86	100.00	100.00
295	749	797		-6.41	100.00	100.00

BUCKFAST PILOT PLANT

PESTICIDE REMOVAL

DAY NO	LINDANE					
	A (ug/l)	B (ug/l)	C (ug/l)	% REM (A - B)	% REM (B - C)	% REM (A - C)
65	1.9	.1	.2	94.74	-100.00	89.47
107	4.7	.5	.7	89.36	-40.00	85.11
121	1.8	.1	.1	94.44	.00	94.44
135	1.8	.1	.1	94.44	.00	94.44
148	2.7	.1	.1	96.30	.00	96.30
176	3.3	1.9		42.42	100.00	100.00
183	4.2	3.3		21.43	100.00	100.00
204	3.1	.2		93.55	100.00	100.00
253				ERROR	ERROR	ERROR
288	12.2	NA		100.00	ERROR	100.00
295	60.9	NA		100.00	ERROR	100.00

# Buckfast Pilot Plant

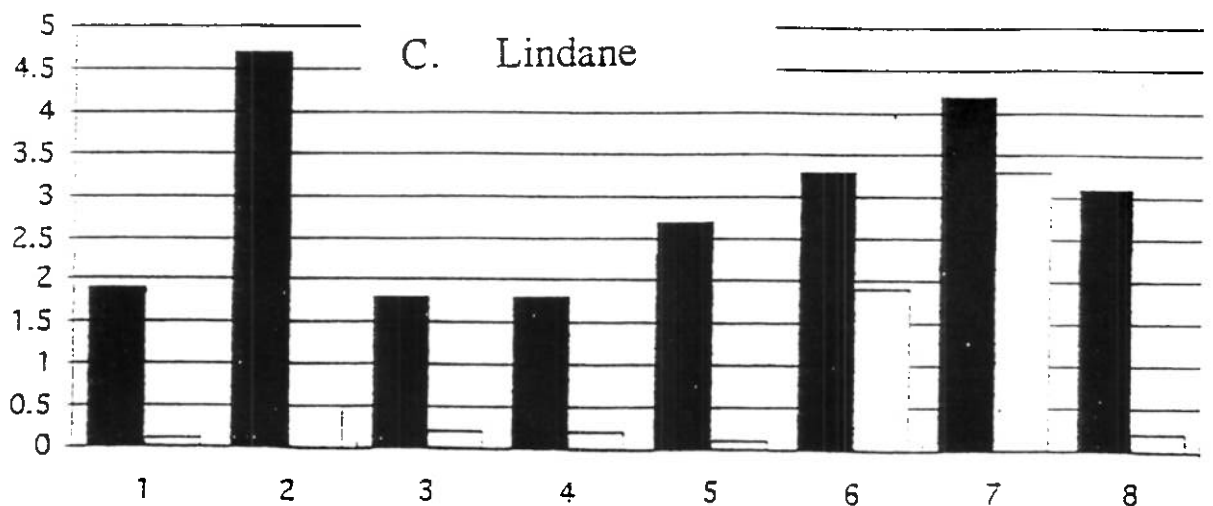
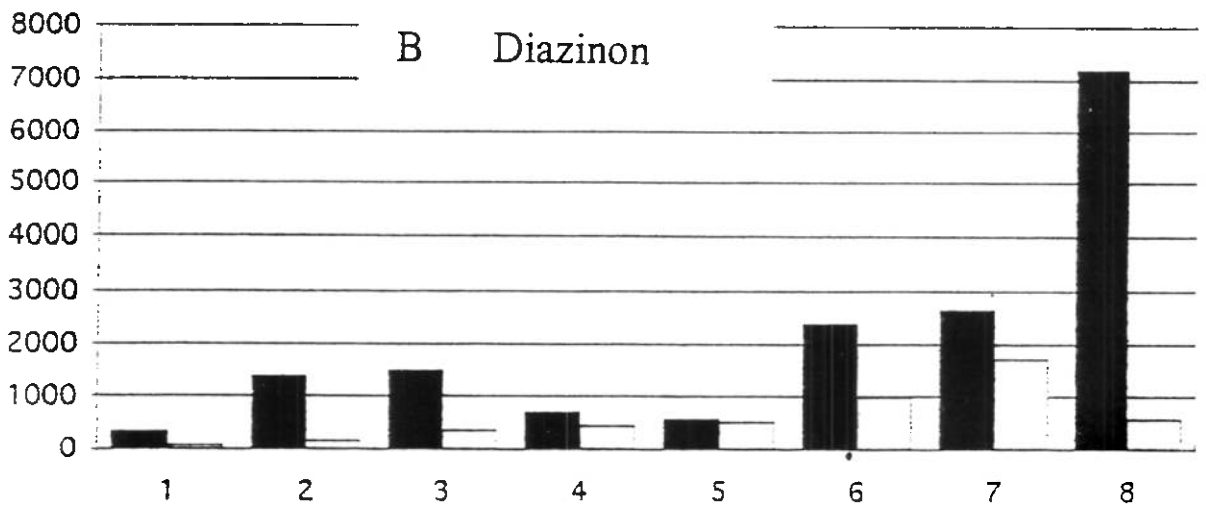
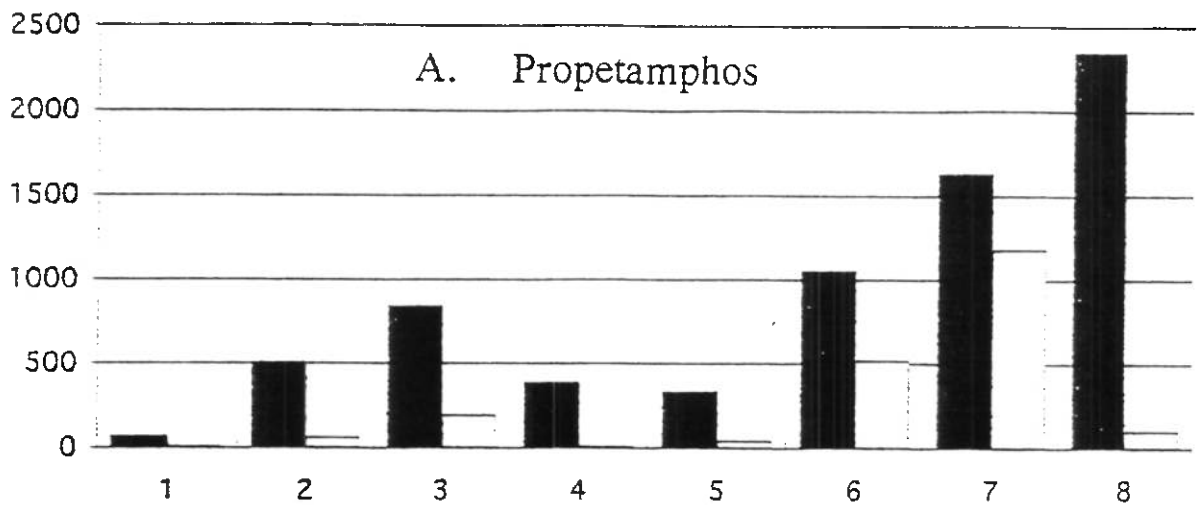
## Pesticide Analysis

(Propelamylas, Diazinon & Chlorpyrifos)

<u>Sample Set</u>	<u>Day No</u>	<u>Date</u>
1	65	23/07/92
2	107	03/08/92
3	121	17/09/92
4	135	01/10/92
5	148	14/10/92
6	176	11/11/92
7	183	18/11/92
8	204	09/12/92

# PESTICIDE ANALYSIS OF SAMPLES FROM BUCKFAST PILOT PLANT

Solid columns represent feed pesticide concentration, open columns effluent pesticide concentration



Haworth's Pilot Plant

Pesticide Analysis Dates

<u>Sample Lot</u>	<u>Bay No</u>	<u>Date</u>
1	157	03/10/92
2	169	20/10/92
3	184	04/11/92
4	191	11/11/92
5	198	18/11/92
6	205	25/11/92
7	212	02/12/92

# PESTICIDE ANALYSIS OF SAMPLES FROM HAWORTH PILOT PLANT

Solid columns represent feed pesticide concentration, open columns effluent pesticide concentration

