

# Environmental Protection Report

ALDRIN AND DIELDRIN  
CONCENTRATIONS IN THE  
NEWLYN CATCHMENT  
DURING 1991  
AN INTERIM REPORT

January 1992

FWI/92/002

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**NRA**

*National Rivers Authority*

*South West Region*

ALDRIN AND DIELDRIN CONCENTRATIONS IN THE NEWLYN CATCHMENT DURING 1991.

Technical Report No.  
FWI/92/002

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**ALDRIN AND DIELDRIN CONCENTRATIONS IN THE NEWLYN RIVER CATCHMENT DURING 1991.  
TECHNICAL REPORT No FWI/92/002**

**SUMMARY**

Following detection of high aldrin and dieldrin concentrations in fish and river water in the Newlyn Catchment in 1988 enhanced routine pesticide monitoring has been carried out in this catchment.

A reduction in aldrin and dieldrin concentrations was detected and reported in river water, sediments and fish in 1990 following the ban on the use of aldrin in May 1989 and changes in land-use in areas known to have been treated with aldrin historically.

A further reduction in aldrin and dieldrin concentrations in river water occurred during 1991 and no failure of the relevant Environmental Quality Standard (EQS) was recorded in the Newlyn Catchment in 1991. However, there was a marked increase in the sediment pesticide concentrations, including sites located upstream of the bulb fields treated with aldrin. However, these data require validation.

No further improvement in diversity was detected in the aquatic invertebrate communities of the sites downstream of the bulb fields in the Newlyn Catchment during 1991 when compared to the results of the 1990 survey.

**JA PROCTOR  
CATCHMENT PLANNING SCIENTIST  
JANUARY 1992**

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## ALDRIN AND DIELDRIN CONCENTRATIONS IN THE NEWLYN CATCHMENT DURING 1991.

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### 1. INTRODUCTION.

This report presents the results from the aldrin and dieldrin monitoring programme in the Newlyn River Catchment during 1991. This programme was set up to monitor pesticide concentrations following the identification of high pesticide residues in fish in the Newlyn Catchment in 1988 (Ref. 1). The programme involved sampling river water, sediments and aquatic invertebrate communities in the Newlyn Catchment (see Figure 1).

Land-use at Trereife Farm, which was identified as the principle source of aldrin and dieldrin, has changed from bulb fields to an agricultural theme park. A gravel car-park has been laid on the field nearest the Trereife Stream, which should help to prevent soil erosion and lead to further reductions in pesticide concentrations in the Trereife Stream downstream of these fields.

Aldrin and dieldrin concentrations have been compared with the Environmental Quality Standards (EQS) for List I Substances (EQS < 30 ng/l combined dieldrin and aldrin annual average concentration until January 1994).

### 2. METHODS.

#### 2.1. Monitoring of Pesticide Concentrations in River Water.

River water quality samples were taken from 5 sites within the Newlyn Catchment (see Figure 1) on 26 occasions during 1991.

#### 2.2. Monitoring of Pesticide Concentrations in Sediments.

A sediment sample was also collected from each of the same 5 sites in July 1991 together with a sample just downstream of the bulb fields (site 7 on Figure 1) and analysed at Countess Wear Laboratory.

#### 2.3. Aquatic Invertebrate Monitoring.

Aquatic invertebrate samples were taken during the summer in 1991 from 6 sites in the Newlyn Catchment (see Figure 1) and consisted of a 3 minute kick sample using a 1mm pond net in a riffle area of the site with a further 1 minute sampling of other habitats within the site.

### 3. RESULTS.

#### 3.1. Pesticide Concentrations in River Water.

Although some individual samples were greater than 30 ng/l, there were no failures of the EQS in the Newlyn Catchment in 1991 as the EQS is an annual

average of the combined aldrin and dieldrin concentrations.

The highest concentrations (up to 45.1 ng/l dieldrin and 44 ng/l aldrin) and the most frequent exceedance of the EQS value were recorded downstream of the bulb fields in the Trereife Stream prior to its confluence with the Newlyn River (see Figure 2). No aldrin or dieldrin was detected upstream of the bulb fields in the Trereife Stream or upstream of the confluence with the Trereife Stream in the Newlyn River. A dieldrin concentration in excess of the EQS was also recorded downstream at Stable Hobba (35 ng/l) in the Newlyn River when the dieldrin concentration in the Trereife Stream (site 7) was also high.

There was no obvious seasonal pattern in the pesticide data (see Figure 2) as had previously been detected in 1990 (Ref. 2). However, the four highest dieldrin concentrations and the peak aldrin concentration were all associated with rainfall. Previous studies have demonstrated the movement of aldrin and dieldrin during heavy rainfall (Ref. 3 and 4). However, lower dieldrin concentrations in the range 10-30 ng/l recorded in the Newlyn Catchment were not generally associated with rainfall.

Aldrin and dieldrin concentrations recorded during 1991 were lower than those detected in the Newlyn Catchment during 1990 (see Table 1.).

TABLE 1. Annual average dieldrin and aldrin concentrations in the Trereife Stream downstream of the bulb fields (in ng/l).

	Pesticide Concentrations (ng/l)	
	1990	1991
Dieldrin	30.1	16.9
Aldrin	11.5	5.1
Combined annual average (EQS)	41.6	22.0

There was an apparent increase in background concentrations of dieldrin and dieldrin during October 1991 compared to data obtained earlier in 1991 (Jan-Oct). This rise coincides with the transfer of analysis from South West Water Countess Wear laboratories to the NRA-SW Laboratories and reflects the change in detection limits.

### 3.2. Pesticide Concentrations in River Sediments.

Surprisingly, there was a marked increase in aldrin and dieldrin concentrations in the sediment samples from the Newlyn catchment in 1991 even at control sites compared to the reductions in concentrations found in 1990 (see Figure 3). This was an apparent reversal of the trend shown in 1990 when significant reductions in concentrations of aldrin and dieldrin in sediments had been recorded.

In 1988 and in 1990 dieldrin and aldrin concentrations at the upstream sites (Buryas Bridge and Dennis Place) remained at the limit of detection, whereas in 1991 significant pesticide concentrations were recorded at these upstream

control sites.

It appears there has been a significant pesticide input in the upper Trereife Stream and upper Newlyn River, possibly following land-use changes. This is in disagreement with the reduction in pesticide contamination in river water. Therefore, it is possible that the laboratory technique at Countess Wear laboratory has changed or was inaccurate.

The highest aldrin and dieldrin sediment concentrations were found in the Trereife Stream downstream of the bulb field. Similar aldrin and dieldrin concentrations to the 1990 levels were found in the Trereife Stream prior to the confluence with the Newlyn River, whereas concentrations had apparently greatly increased at Stable Hobba downstream in the Newlyn River.

### 3.3. Aquatic Invertebrates.

The results of the aquatic macroinvertebrate survey undertaken during the summer of 1991 showed there to be a restricted fauna downstream of the bulb fields and little change from the results of the previous survey in June 1990 (Ref.5).

RIVPACS (River InVertebrate Prediction And Classification System) was used to predict the species expected to be present for the summer season downstream of the bulb fields in the Trereife Stream (site 7 on Figure 1). RIVPACS is a computer model which allows a prediction to be made of the composition of the invertebrate community that would be expected for an unpolluted site according to its geographic location, and certain natural physical and chemical properties of the river (Ref 6). Although, care should be taken with RIVPAC's predictions in small streams as the database from which the predictions are made contains few small streams at present.

A major discrepancy between observed and predicted species was shown. RIVPACS predicted a high probability (86.7%) that Ephemerella ignita (a species suspected to be sensitive to aldrin and dieldrin) would be present, however, it was not recorded. As this species was abundant at other sites on the Newlyn river and present in the headwaters of the Trereife Stream it is thought that its absence was indicative of aldrin and dieldrin contamination.

## 4. CONCLUSIONS.

1. No failure with the EQS for combined aldrin and dieldrin concentrations was recorded in 1991 in river water in the Newlyn Catchment.
2. The highest dieldrin and aldrin concentrations in river water samples were found in the Trereife Stream downstream of the location of the aldrin treated bulb fields.
3. The peak concentration of dieldrin exceeded the EQS (annual average) in the Newlyn River at Stable Hobba downstream of the confluence with the Trereife Stream.

4. Average and peak aldrin and dieldrin concentrations in river water samples were lower in 1991 than in 1990 and in 1989.

5. There was a marked increase in aldrin and dieldrin concentrations in sediments at all sites in the Newlyn Catchment, including the sites located upstream of the bulb fields. However, these data require validation.

6. The highest sediment pesticide concentrations were found in the Trereife Stream downstream of the location of the aldrin treated bulb fields.

7. A restricted aquatic invertebrate fauna was found in the Trereife Stream downstream of the location of the aldrin treated bulb fields. This situation was similar to the results obtained in the previous survey in June 1990.

8. The absence of Ephemerella ignita downstream of the bulb fields in the Trereife Stream (site 7) was thought to indicate that the macroinvertebrate fauna was still being affected by dieldrin and aldrin contamination.

#### 5. RECOMMENDATIONS.

1. The present monitoring programme of pesticides in the Newlyn Catchment should be maintained for 1992.

- Action by Freshwater Scientist.

2. The accuracy of aldrin and dieldrin concentrations in sediment samples should be verified and the analyses should be repeated as soon as possible.

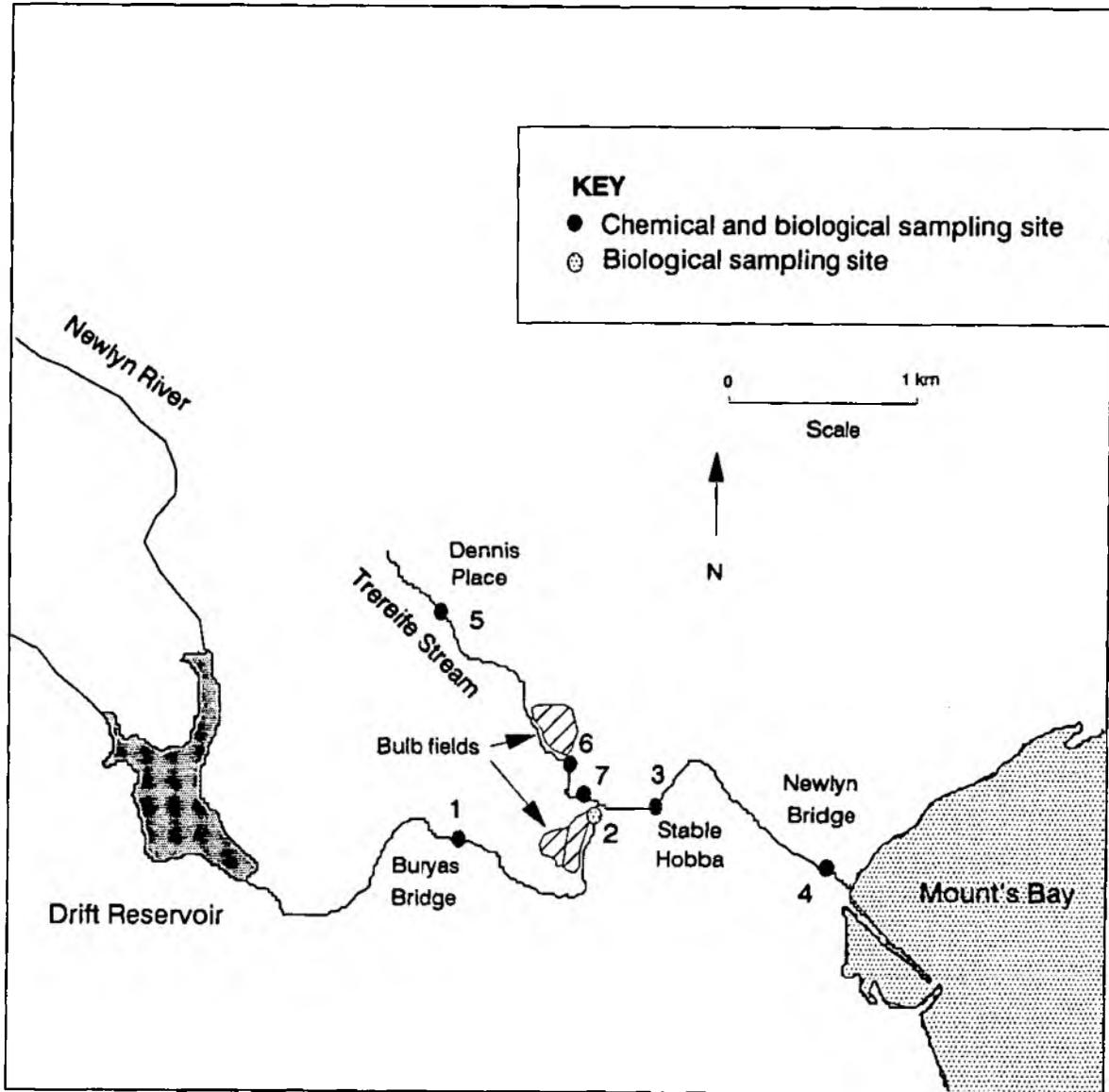
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6. REFERENCES.

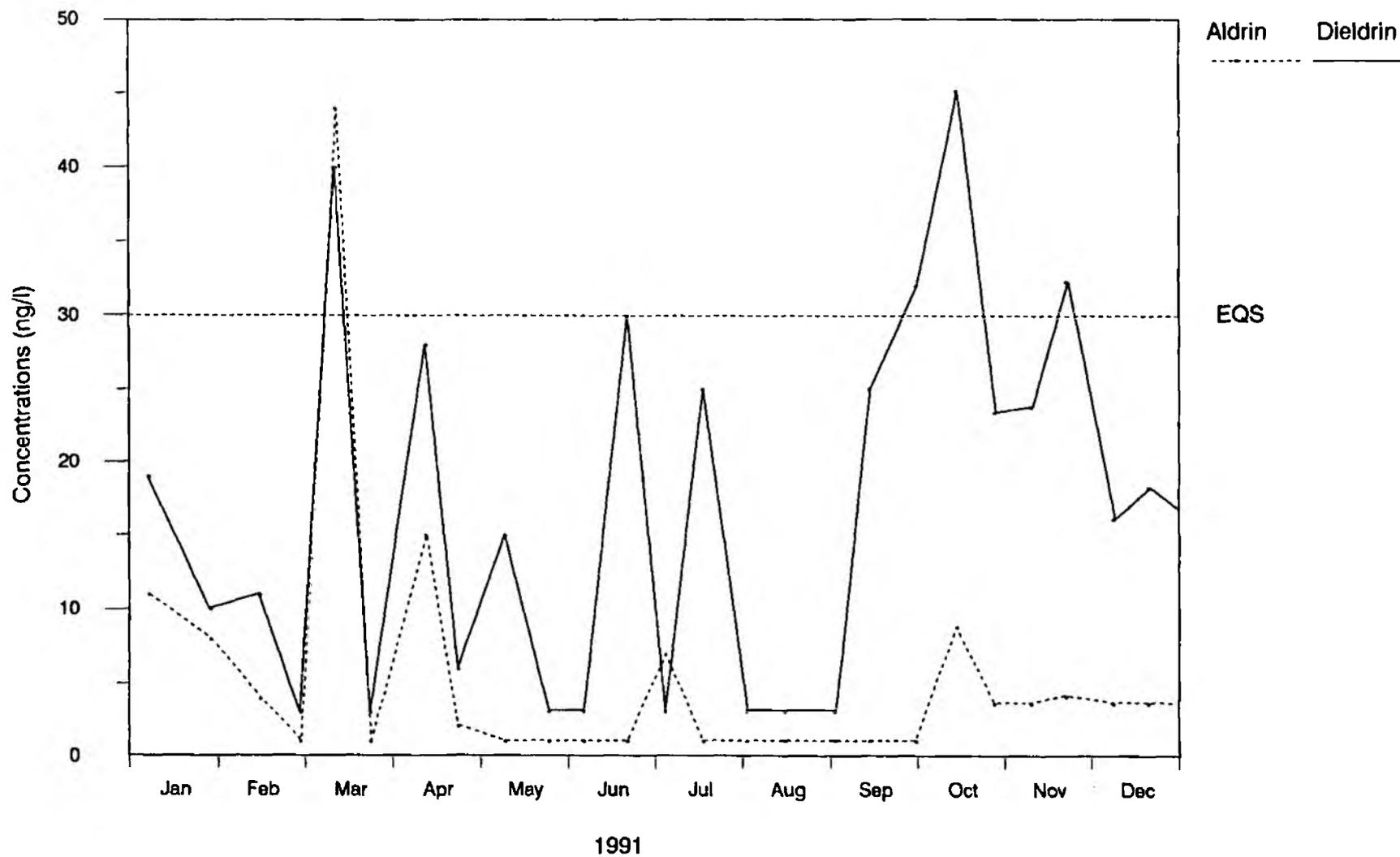
1. MILFORD, B.L. (1989).      Organo-chlorine pesticide residues in freshwater eels.
2. SMITH, R.P. (1990).      Reduction in aldrin and dieldrin concentrations in the Newlyn River.      FWI/90/025
3. MILFORD, B.L. (1989).      Water quality investigations in the Newlyn River Catchment.
4. HARROD, T.R. (1989).      Pesticide pathways and land use practices in the Newlyn River Catchment, Cornwall.      Report commissioned by the NRA-SW Region.
5. GEATCHES, T.R. (1990)      Biological Investigation of the Newlyn River, June 1990.      FWI/90/022
6. COX R., et al (1991)      River Invertebrate Prediction and Classification Program.      Institute of Freshwater ecology.

Appendix I. Routine water quality monitoring data (1991).  
(only data up to Sep 1991 is available on archive at the moment)

FIGURE 1. Sampling locations for river waters, sediments and macroinvertebrates.



**FIGURE 2. Aldrin and Dieldrin Concentrations in the Tereife Stream Downstream of the Bulb Fields (site 7) During 1991.**



# NEWLYN RIVER AT NEWLYN BRIDGE

## R21A005

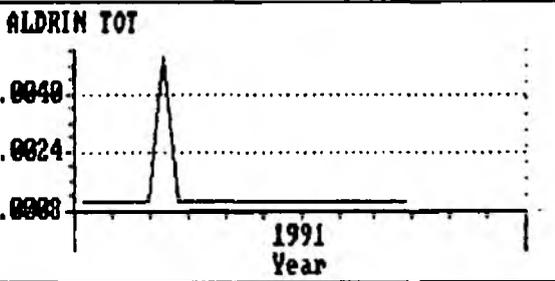
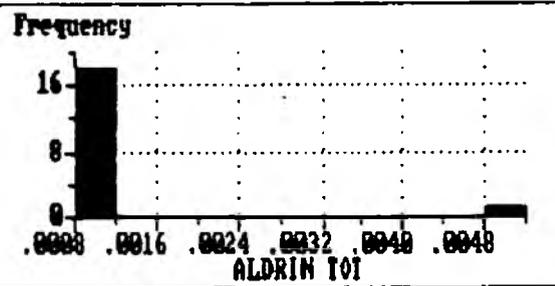
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28/01/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0040	0.0070			0.0010 LT	0.0020 LT
14/02/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0070			0.0010 LT	0.0020 LT
28/02/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0130			0.0010 LT	0.0020 LT
12/03/91	0.0050	0.0140	0.0030 LT	1.0000 LT		0.0010 LT	0.0200			0.0010 LT	0.0020 LT
24/03/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0010 LT			0.0010 LT	0.0020 LT
12/04/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0150			0.0010 LT	0.0020 LT
23/04/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0200			0.0010 LT	0.0020 LT
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24/05/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0070			0.0010 LT	0.0020 LT
05/08/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0260			0.0010 LT	0.0020 LT
20/08/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0080			0.0010 LT	0.0020 LT
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30/08/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0110			0.0010 LT	0.0020 LT
11/09/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0080			0.0010 LT	0.0020 LT
27/09/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0080			0.0010 LT	0.0020 LT

NEMLYN RIVER AT NEMLYN BRIDGE

ALDRIN TOT

7/ 1/91 to 27/ 9/91

Number of observations	19
Minimum	0.00100
Mean	0.00121
Maximum	0.00500
Standard deviation	0.000918
SDD	0.000970
Non-parametric estimate of:	
5 percentile	0.00100
10 percentile	0.00100
20 percentile	0.00100
Median	0.00100
80 percentile	0.00100
90 percentile	0.00100
95 percentile	0.00500

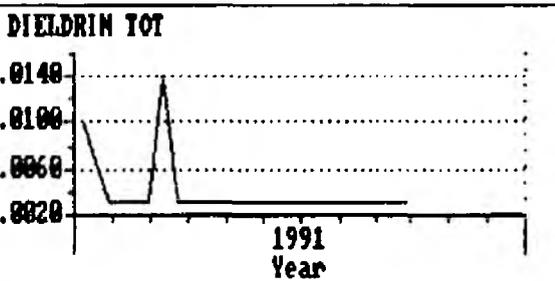
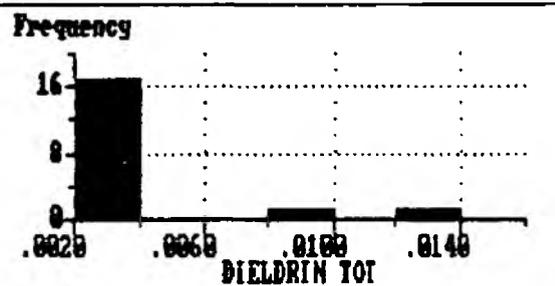


NEMLYN RIVER AT NEMLYN BRIDGE

DIELDRIN TOT

7/ 1/91 to 27/ 9/91

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Mean	0.00395
Maximum	0.01400
Standard deviation	0.002915
SDD	0.002926
Non-parametric estimate of:	
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20 percentile	0.00300
Median	0.00300
80 percentile	0.00300
90 percentile	0.01000
95 percentile	0.01400

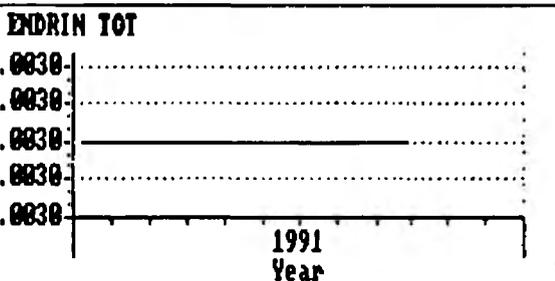
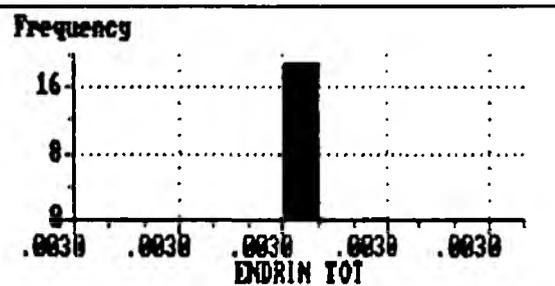


NEMLYN RIVER AT NEMLYN BRIDGE

ENDRIN TOT

7/ 1/91 to 27/ 9/91

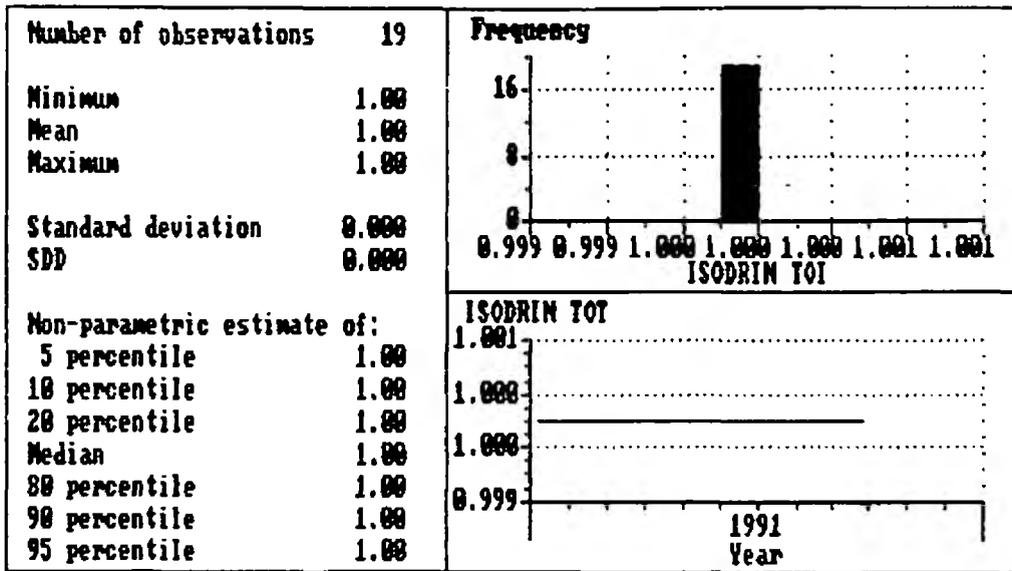
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Non-parametric estimate of:	
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10 percentile	0.00
20 percentile	0.00
Median	0.00
80 percentile	0.00
90 percentile	0.00
95 percentile	0.00



NEWLYN RIVER AT NEWLYN BRIDGE

ISODRIN TOT

7/ 1/91 to 27/ 9/91



# NEWLYN RIVER AT STABLE HOBBA R21A027

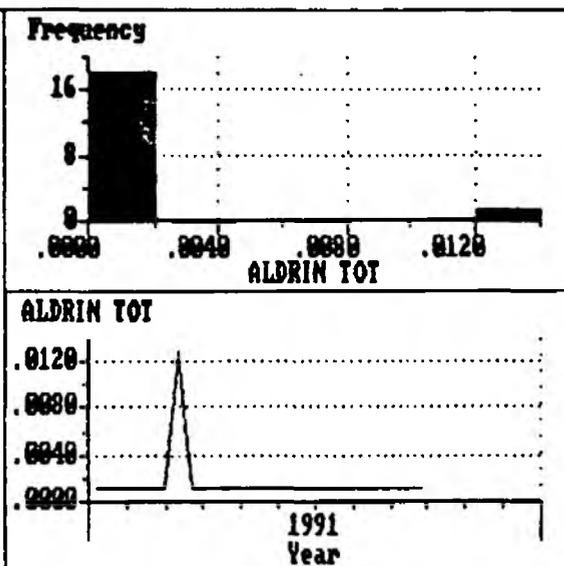
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12/04/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0200			0.0010 LT	0.0020 LT
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27/09/91	0.0010 LT	0.0040	0.0030 LT	1.0000 LT		0.0010 LT	0.0210			0.0010 LT	0.0020 LT

NEMLYN RIVER AT STABLE HOBBA

ALDRIN TOT

7/ 1/91 to 27/ 9/91

Number of observations	19
Minimum	0.00100
Mean	0.00163
Maximum	0.01300
Standard deviation	0.002753
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Non-parametric estimate of:	
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20 percentile	0.00100
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90 percentile	0.00100
95 percentile	0.01300

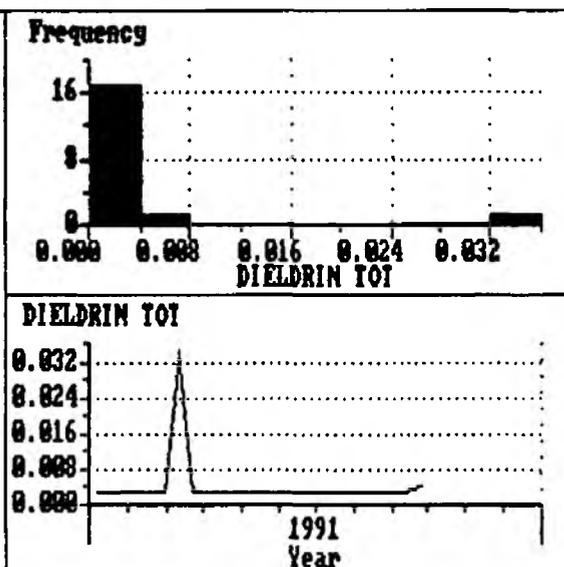


NEMLYN RIVER AT STABLE HOBBA

DIELDRIN TOT

7/ 1/91 to 27/ 9/91

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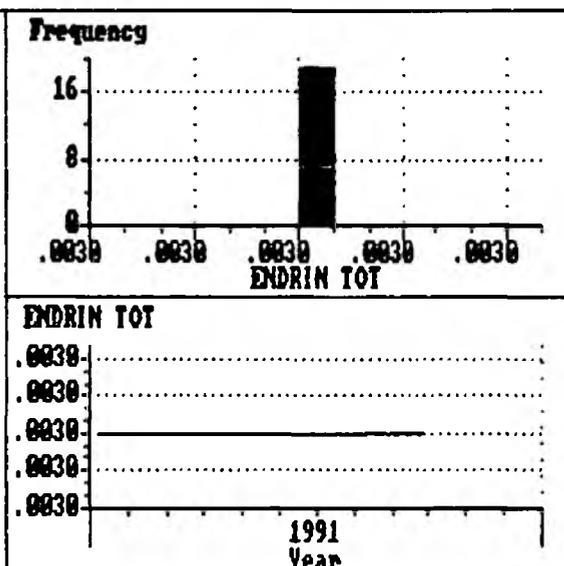


NEMLYN RIVER AT STABLE HOBBA

ENDRIN TOT

7/ 1/91 to 27/ 9/91

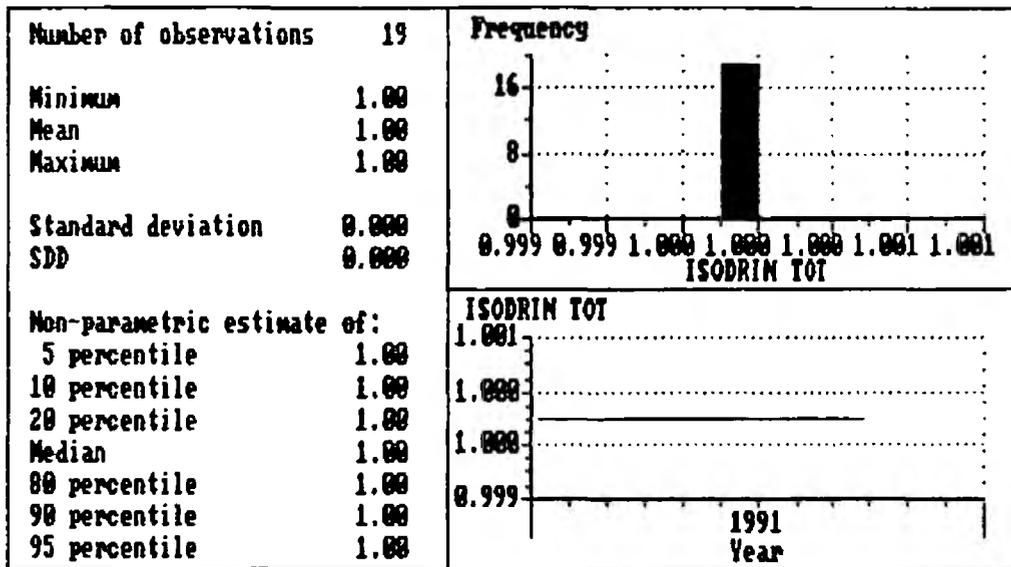
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10 percentile	0.00
20 percentile	0.00
Median	0.00
80 percentile	0.00
90 percentile	0.00
95 percentile	0.00



NEWLYN RIVER AT STABLE HOBBA

ISODRIN TOT

7/ 1/91 to 27/ 9/91



# NEWLYN RIVER AT BURYAS BRIDGE

## R21A004

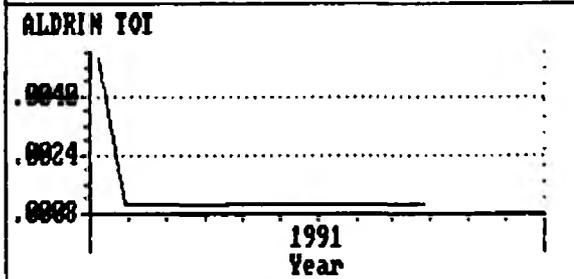
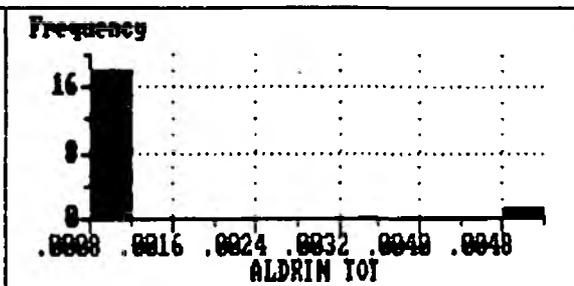
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13/08/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0150			0.0010 LT	0.0020 LT
30/08/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0180			0.0010 LT	0.0020 LT
11/09/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0010 LT			0.0010 LT	0.0020 LT
27/09/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0320			0.0010 LT	0.0020 LT

**NEMLYN RIVER AT BURYAS BRIDGE**

**ALDRIN TOT**

7/ 1/91 to 27/ 9/91

Number of observations	19
Minimum	0.00100
Mean	0.00121
Maximum	0.00500
Standard deviation	0.000918
SDD	0.000686
Non-parametric estimate of:	
5 percentile	0.00100
10 percentile	0.00100
20 percentile	0.00100
Median	0.00100
80 percentile	0.00100
90 percentile	0.00100
95 percentile	0.00500

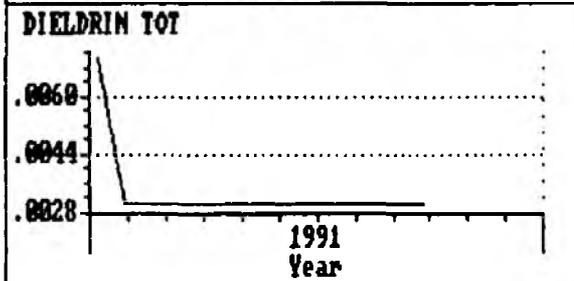
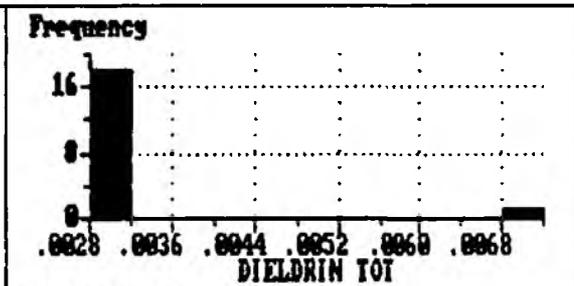


**NEMLYN RIVER AT BURYAS BRIDGE**

**DIELDRIN TOT**

7/ 1/91 to 27/ 9/91

Number of observations	19
Minimum	0.00300
Mean	0.00321
Maximum	0.00700
Standard deviation	0.000918
SDD	0.000686
Non-parametric estimate of:	
5 percentile	0.00300
10 percentile	0.00300
20 percentile	0.00300
Median	0.00300
80 percentile	0.00300
90 percentile	0.00300
95 percentile	0.00700

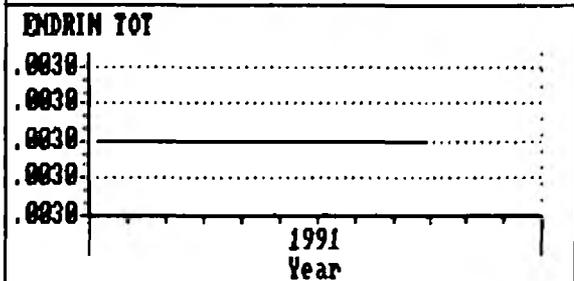
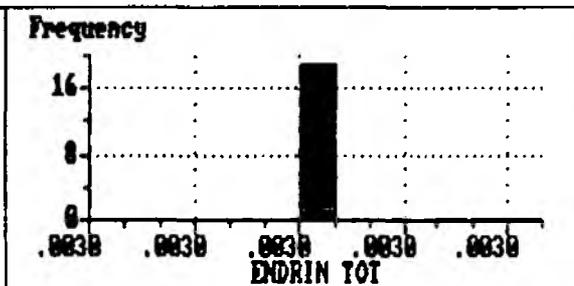


**NEMLYN RIVER AT BURYAS BRIDGE**

**ENDRIN TOT**

7/ 1/91 to 27/ 9/91

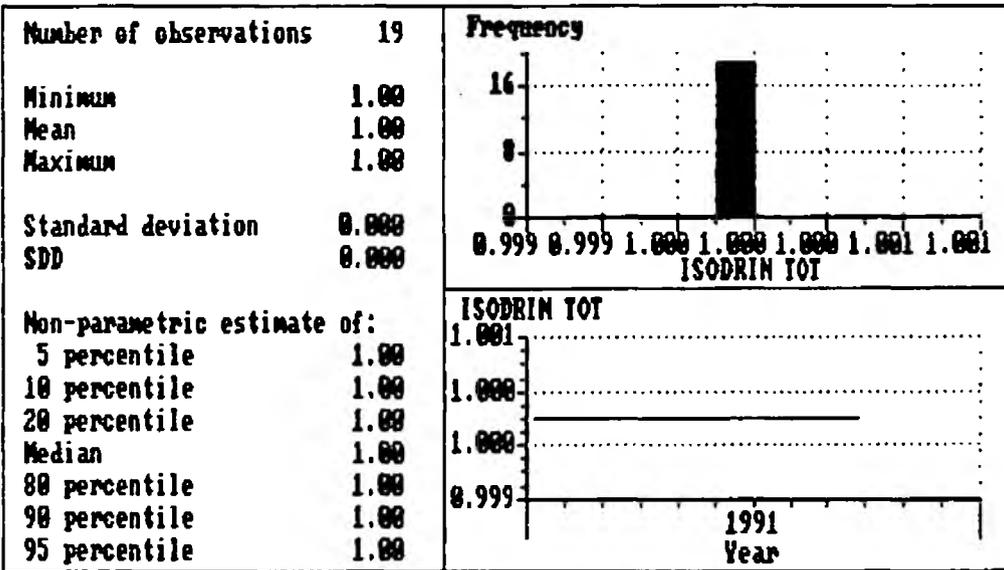
Number of observations	19
Minimum	0.00
Mean	0.00
Maximum	0.00
Standard deviation	0.000
SDD	0.000
Non-parametric estimate of:	
5 percentile	0.00
10 percentile	0.00
20 percentile	0.00
Median	0.00
80 percentile	0.00
90 percentile	0.00
95 percentile	0.00



NEWLYN RIVER AT BIRYAS BRIDGE

ISODRIN TOT

7/ 1/91 to 27/ 9/91



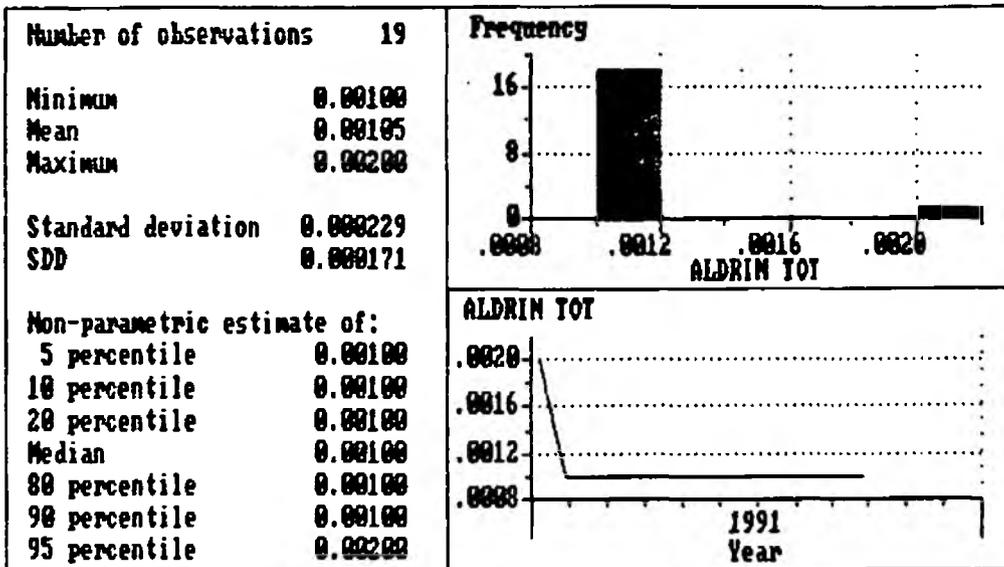
# TREREIFE STREAM AT DENNIS PLACE R21A019

DATE	ALDRIN TOTAL µg/l	DIELDRIN TOTAL µg/l	ENDRIN TOTAL µg/l	ISODRIN TOTAL µg/l	PCP µg/l	HCH ALPHA TOTAL µg/l	HCH GAMMA TOTAL µg/l	HCH GAMMA UNCONF. µg/l	TETRACHLORO -METHANE µg/l	HCH DELTA TOTAL µg/l	HCH BETA TOTAL µg/l
07/01/91	0.0020	0.0030	0.0030	1.0000		0.0130	0.0020			0.0010	0.0020
28/01/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
14/02/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
28/02/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
12/03/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
24/03/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
12/04/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0020			0.0010	0.0020
23/04/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
09/05/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
24/05/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
05/06/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0050			0.0010	0.0020
20/06/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0030			0.0010	0.0020
03/07/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
16/07/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
31/07/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0110			0.0010	0.0020
13/08/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
30/08/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
11/09/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020
27/09/91	0.0010	0.0030	0.0030	1.0000		0.0010	0.0010			0.0010	0.0020

TREEIFE STREAM AT DENNIS PLACE

ALDRIN TOT

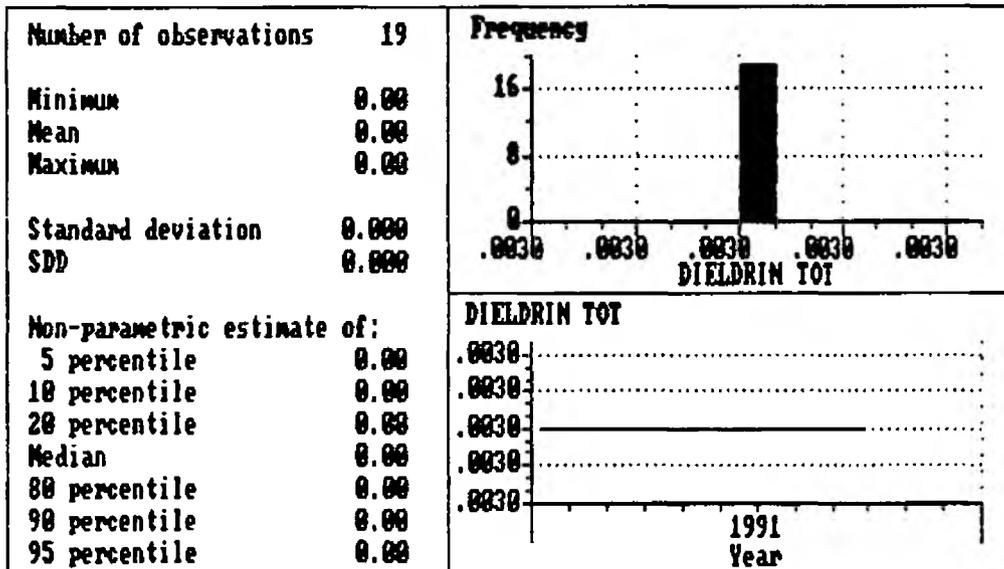
7/ 1/91 to 27/ 9/91



TREEIFE STREAM AT DENNIS PLACE

DIELDRIN TOT

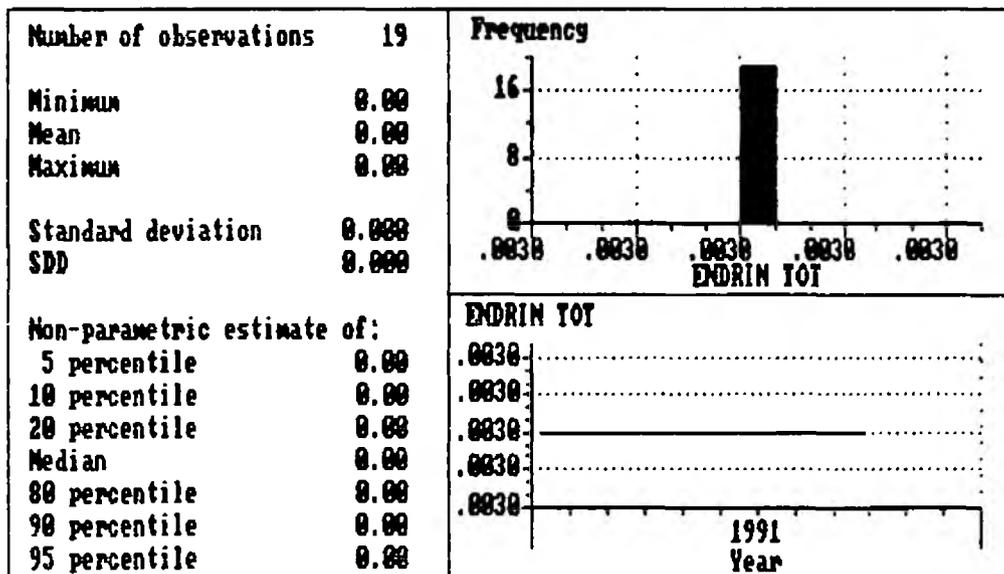
7/ 1/91 to 27/ 9/91



TREEIFE STREAM AT DENNIS PLACE

ENDRIN TOT

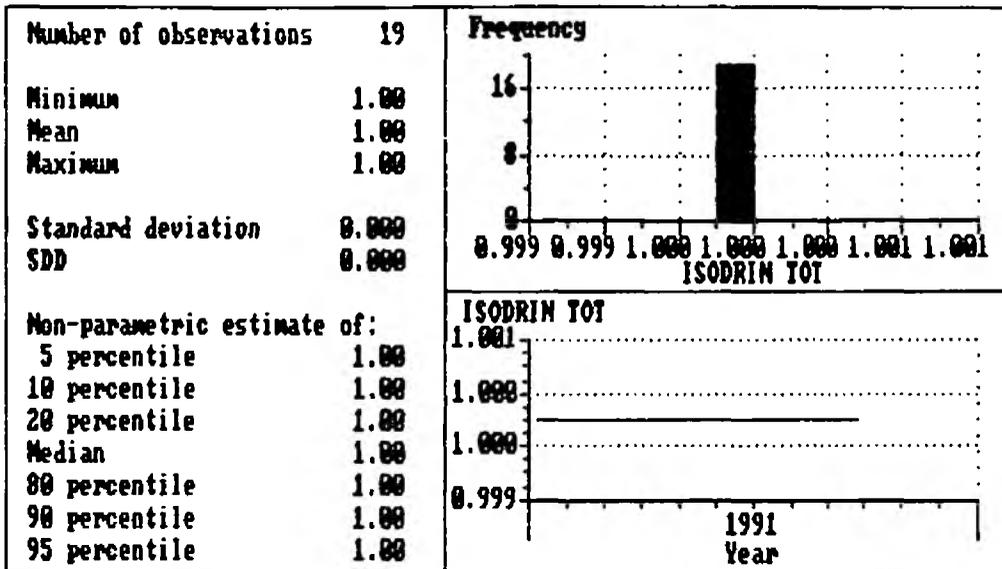
7/ 1/91 to 27/ 9/91



TREREIFE STREAM AT DENNIS PLACE

ISODRIN TOT

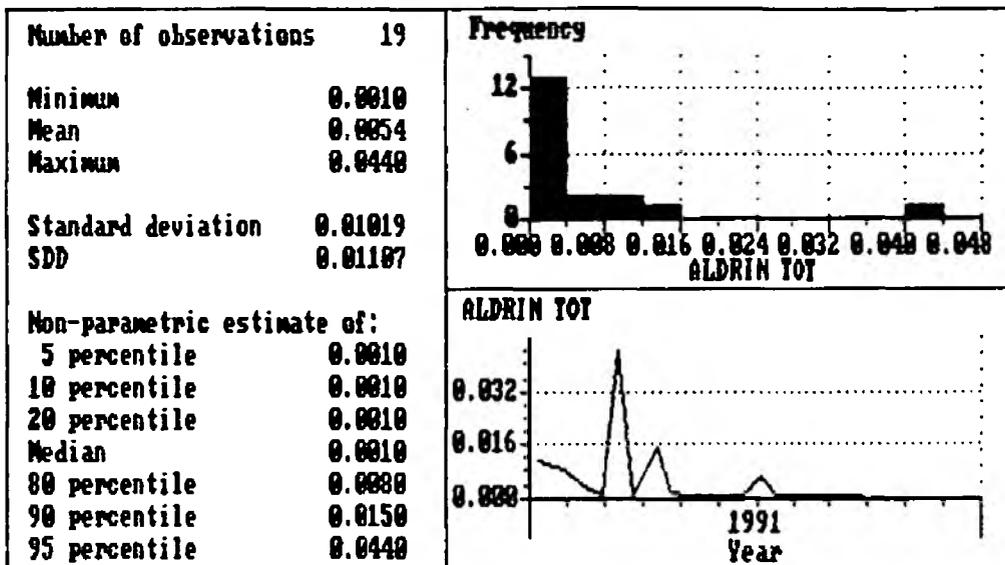
7/ 1/91 to 27/ 9/91



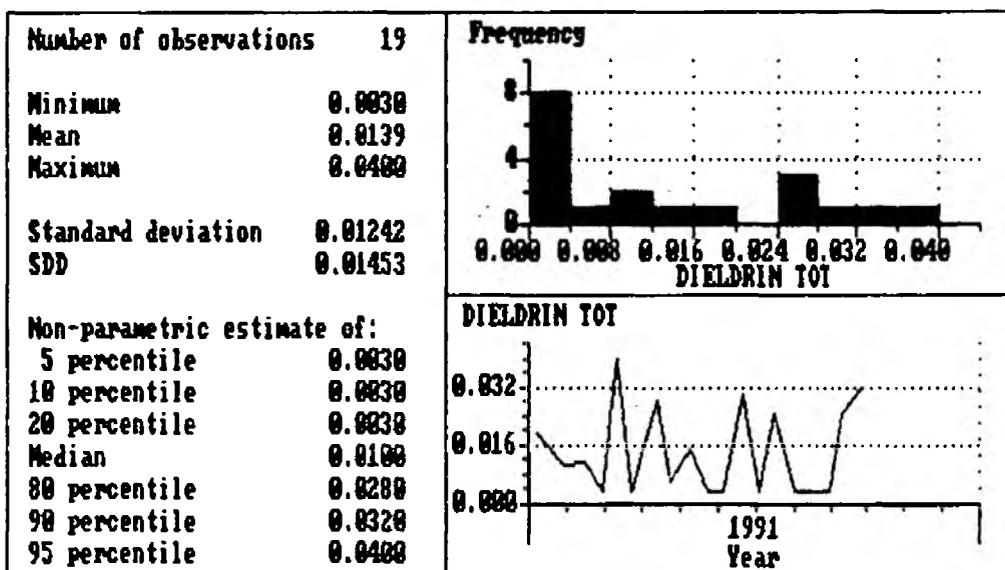
# TREREIFE STREAM PRIOR TO RIVER NEWLYN R21A020

DATE	ALDRIN TOTAL ug/l	DIELDRIN TOTAL ug/l	ENDRIN TOTAL ug/l	ISODRIN TOTAL ug/l	PCP ug/l	HCH ALPHA TOTAL ug/l	HCH GAMMA TOTAL ug/l	HCH GAMMA UNCONF. ug/l	TETRACHLORO -METHANE ug/l	HCH DELTA TOTAL ug/l	HCH BETA TOTAL ug/l
07/01/91	0.0110	0.0190	0.0030 LT	1.0000 LT		0.0110	0.0070			0.0010 LT	0.0020 LT
28/01/91	0.0080	0.0100	0.0030 LT	1.0000 LT		0.0040	0.0050			0.0010 LT	0.0020 LT
14/02/91	0.0040	0.0110	0.0030 LT	1.0000 LT		0.0010 LT	0.0040			0.0010 LT	0.0020 LT
28/02/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0010 LT			0.0010 LT	0.0020 LT
12/03/91	0.0440	0.0400	0.0030 LT	1.0000 LT		0.0060	0.0240			0.0010 LT	0.0020 LT
24/03/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0010 LT			0.0010 LT	0.0020 LT
12/04/91	0.0150	0.0280	0.0030 LT	1.0000 LT		0.0010 LT	0.0110			0.0010 LT	0.0020 LT
23/04/91	0.0020	0.0080	0.0030 LT	1.0000 LT		0.0010 LT	0.0130			0.0010 LT	0.0020 LT
09/05/91	0.0010 LT	0.0150	0.0030 LT	1.0000 LT		0.0010 LT	0.0210			0.0010 LT	0.0020 LT
24/05/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0130			0.0010 LT	0.0020 LT
05/06/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0290			0.0010 LT	0.0020 LT
20/06/91	0.0010 LT	0.0300	0.0030 LT	1.0000 LT		0.0010 LT	0.0140			0.0010 LT	0.0020 LT
03/07/91	0.0070	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0090			0.0010 LT	0.0020 LT
18/07/91	0.0010 LT	0.0250	0.0030 LT	1.0000 LT		0.0010 LT	0.0040			0.0010 LT	0.0020 LT
31/07/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0100			0.0010 LT	0.0020 LT
13/08/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0090			0.0010 LT	0.0020 LT
30/08/91	0.0010 LT	0.0030 LT	0.0030 LT	1.0000 LT		0.0010 LT	0.0070			0.0010 LT	0.0020 LT
11/09/91	0.0010 LT	0.0250	0.0030 LT	1.0000 LT		0.0010 LT	0.0070			0.0010 LT	0.0020 LT
27/09/91	0.0010 LT	0.0320	0.0030 LT	1.0000 LT		0.0010 LT	0.0070			0.0010 LT	0.0020 LT

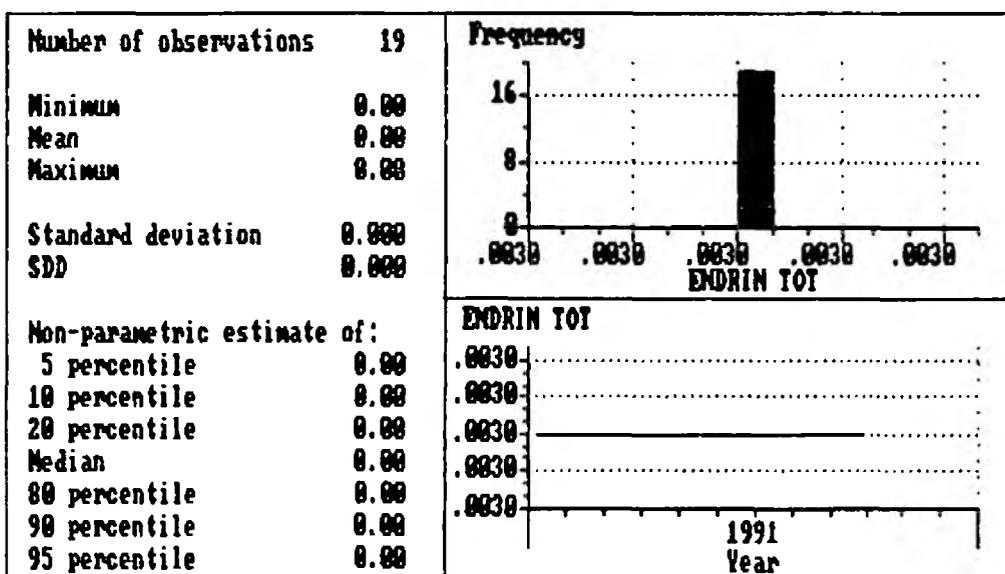
TREREIFE STREAM PRIOR TO RIVER NEMLYN ALDRIN TOT 7/ 1/91 to 27/ 9/91



TREREIFE STREAM PRIOR TO RIVER NEMLYN DIELDRIN TOT 7/ 1/91 to 27/ 9/91



TREREIFE STREAM PRIOR TO RIVER NEMLYN ENDRIN TOT 7/ 1/91 to 27/ 9/91



TREREIFE STREAM PRIOR TO RIVER NEWLYN ISODRIN TOT 7/ 1/91 to 27/ 9/91

Number of observations	19	
Minimum	1.00	
Mean	1.00	
Maximum	1.00	
Standard deviation	0.000	
SDD	0.000	
Non-parametric estimate of:		
5 percentile	1.00	
10 percentile	1.00	
20 percentile	1.00	
Median	1.00	
80 percentile	1.00	
90 percentile	1.00	
95 percentile	1.00	