

Project 001

# Sources of Farm Pollution and Impact on River Quality

Volume II - Appendices

WRc plc

Project Record 001/13/W



**NRA**

*National Rivers Authority*

## APPENDICES

- APPENDIX A LIST OF PARTICIPANTS IN THE NATIONAL ASSESSMENT EXERCISE
- APPENDIX B FARM POLLUTION QUESTIONNAIRE USED IN THE NATIONAL ASSESSMENT EXERCISE
- APPENDIX C EXPLANATORY NOTES ON THE FORM OF POLLUTION INCIDENT DATA REQUESTED FOR THE NATIONAL ASSESSMENT EXERCISE
- APPENDIX D ESTIMATION OF WASTE LOADINGS AND POLLUTION RISK FROM LIVESTOCK
- APPENDIX E RECENT NWC DOWNGRADINGS DUE WHOLLY OR PARTIALLY TO FARM POLLUTION
- APPENDIX F DEVELOPMENT OF RAPID APPRAISAL METHODS
- APPENDIX G TESTING OF RAPID APPRAISAL METHOD
- APPENDIX H INVESTIGATION OF POLLUTION PROCESSES
- APPENDIX I SALMONID RECOLONIZATION STUDIES

ENVIRONMENT AGENCY



010207

APPENDIX A

LIST OF PARTICIPANTS IN THE NATIONAL ASSESSMENT EXERCISE

| REGION           | CONSULTATION                   | DATA COLLATION  |
|------------------|--------------------------------|-----------------|
| NRA Anglian      | Alan Barnden                   | Geoff Taylor    |
| NRA North West   | David Griffiths                | David Griffiths |
| NRA Northumbrian | Bob Pailor<br>Jim Lancaster    | Jim Lancaster   |
| NRA Severn Trent | Bob Harvey                     |                 |
| NRA South West   | Clem Davies<br>Geoff Bateman   | Neil Pallister  |
| NRA Southern     | Keith Loy                      |                 |
| NRA Thames       | John Haines                    | Tania Woodward  |
| NRA Welsh        | Bob Merriman                   | Frank Jones     |
| NRA Wessex       | David Palmer                   | Brian Frankling |
| NRA Yorkshire    | Brian Ogden                    | Gerard Morris   |
| Clyde RPB        |                                |                 |
| Forth RPB        | William Halcrow<br>Rod Wallace |                 |
| Highland RPB     | Duncan Buchanan                |                 |
| North East RPB   | David Mackay                   |                 |
| Solway RPB       | W T Welsh                      |                 |
| Tay RPB          | Ron Allcock                    |                 |
| Tweed RPB        | Ian Currie                     |                 |
| DoE N Ireland    | E Hagan                        |                 |



**APPENDIX B**

**FARM POLLUTION QUESTIONNAIRE USED IN THE NATIONAL ASSESSMENT EXERCISE**

**THE ASSESSMENT AND CONTROL OF FARM POLLUTION**  
**A QUESTIONNAIRE FOR POLLUTION CONTROL OFFICERS**

1. What geographical area are you responsible for?

**REGIONAL FARMING PRACTICES**

2. How important is livestock farming in your area?
3. Please describe the geographical distribution of livestock farming in your area, using quantitative data where possible and indicating livestock type (eg pigs, beef cattle, dairy cattle, sheep, poultry) and management practice (eg intensive livestock units, extensive).
4. What sheepdip formulations are used in your area? (Use quantitative data on usage if available, otherwise indicate relative usage of each formulation).
5. How frequently are contractors used by farmers to undertake sheepdipping operations?

**REGIONAL POLLUTION PROBLEMS**

6. Please describe the geographical distribution of pollution problems from livestock farming in your area, indicating:
- a) the farming practices (eg intensive beef cattle farming, intensive pig farming) responsible; and
  - b) the critical sources of pollution (eg slurry, silage, sheepdip, yard washings, etc).

**POLLUTION RISK ASSESSMENT**

7. What factors are considered in assessing pollution risk at the following stages:
- a) Storage (eg slurry, silage, sheepdip, farm chemicals)?
  - b) Treatment (if any)?
  - c) Disposal (eg slurry, yard washings, sheepdip)?

8. What techniques are used for quantifying pollution risk on farm premises?

9. How is information on pollution risk reported and acted upon?

#### **RIVER QUALITY MONITORING**

10. How is chemical river quality usually monitored in problem areas?

11. Is biological monitoring used?

If so, how?

12. What action is taken to monitor water quality after notification of a pollution incident?

#### **POLLUTION INCIDENTS**

13. Is there a documented strategy for immediate remedial action following a pollution incident?

14. How is a 'pollution incident' defined in your area?

15. Are incidents graded in terms of severity?

If so, how?

16. Is there a defined protocol for the reporting of pollution incidents?

17. Is information on pollution incidents stored in a computer archive?

If so, is the archive system used for the purpose of pollution control?

## **POLLUTION CONTROL**

18. Is current pollution control legislation adequate?

If not, how is it deficient?

If it is adequate, are continuing farm pollution problems caused by:

i) interpretation of the legislation?

ii) difficulties in gathering conclusive scientific evidence?

iii) other reasons? (please specify)

19. Do successful prosecutions generally result in improved water quality?

20. How effective do you think educational campaigns, or educational visits targeted at problem farms, are in reducing farm pollution?

21. Which waste control technologies do you think offer most potential for pollution abatement?

22. What aspects of catchment management, such as the the establishment of protection zones, do you think offer most potential?

23. How useful do you think catchment management models currently under development will be to pollution control staff?

## **Sheepdipping controls**

24. What constraints on sheepdipping methods are imposed on farmers/contractors by your NRA region?

25. Is the location of sheepdipping sites specified or recommended by your region?

If so, on what basis?

26. What rules for the safe disposal of spent sheepdip chemicals by farmers/contractors are laid down by your region?

APPENDIX C

EXPLANATORY NOTES ON THE FORM OF POLLUTION INCIDENT DATA  
REQUESTED FOR THE NATIONAL ASSESSMENT EXERCISE

## C.1 INCIDENT TYPE

Pollution incident data was requested for 1988 and 1989, indicating the National Grid Reference of each incident, incident type and incident severity. For incident type, it was requested that the categories below, based in the annual Farm Wastes Report (FWR) (NRA/MAFF 1989), were followed.

| STUDY CODE | FWR CODE | DESCRIPTION                                                                                        |
|------------|----------|----------------------------------------------------------------------------------------------------|
| 01         | 1(a)     | CATTLE - Slurry stores/waste collection tanks                                                      |
| 02         | (b)      | CATTLE - Solids stores                                                                             |
| 03         | (c)      | CATTLE - Yard washings                                                                             |
| 04         | (d)      | CATTLE - Dairy/parlour washings                                                                    |
| 05         | (e)      | CATTLE - Land run-off                                                                              |
| 06         | (f)      | CATTLE - Treatment system failure                                                                  |
| 07         | (g)      | CATTLE - Silage                                                                                    |
| 08         | 2(a)     | PIGS - Slurry stores                                                                               |
| 09         | (b)      | PIGS - Yard washings                                                                               |
| 10         | (c)      | PIGS - Land run-off                                                                                |
| 11         | (d)      | PIGS - Treatment system failure                                                                    |
| 12         | 3        | Poultry                                                                                            |
| 13         | 4        | Sheepdips                                                                                          |
| 14         |          | Other                                                                                              |
| 15         | 5 or 10  | Where it is unclear from the records whether the incident was due to cattle or pig slurry.         |
| 16         | 1 or 8   | Where it is unclear from the records whether the incident was due to a cattle or pig slurry store. |

## C.2 INCIDENT SEVERITY

It was requested that either the new national incident categories were followed, ie:

Major  
Significant  
Minor

or alternatively the FWR categories of:

Serious

Minor

It was assumed that the FWR grade of severity roughly equates with national incident categories 'Major' and 'Significant' combined, and that the 'Minor' categories are roughly comparable.

The criteria for these grades are given below (an incident only has to satisfy one of the criteria to be included in a category):

#### **National incident categories**

##### **Major (1)**

- a) Potential or actual persistent effect on water quality or aquatic life.
- b) Closure of potable water, industrial or agricultural abstraction necessary.
- c) Extensive fish kill (>50).
- d) Excessive or repeated breaches of consent conditions.
- e) Extensive remedial actions necessary.
- f) Major effect on amenity value.

##### **Significant (2)**

- a) Notification to abstractors necessary.
- b) Fish kill (<50).
- c) Measurable effect on invertebrate life.
- d) Water unfit for stock.
- e) Bed of watercourse contaminated.
- f) Amenity value reduced by odour or appearance.
- g) Breach of consent conditions.



### Minor (3)

Suspected or probable pollution which on investigation proves unlikely to be capable of substantiation or to have no noticeable effect.

### FWR categories

#### Serious

- a) Downgrading of the class of any watercourse classified in the River Quality Survey by more than 10% over 0.5 km.
- b) Interference with water abstraction through quantity or quality.
- c) Fish mortality.
- d) Significant interference with legitimate use of water, including stock watering.
- e) Adverse effect on any SSSI, nature reserve or area of high conservation interest.

#### Minor

Any incident attributed to a discharge arising from farming activities that does not satisfy any of the above criteria.

### C.3 REFERENCES

NRA/MAFF (1989) Water pollution from farm waste 1989 - England and Wales. NRA, London.

APPENDIX D

ESTIMATION OF WASTE LOADINGS AND POLLUTION RISK FROM LIVESTOCK

## D1. LIVESTOCK DATA

The categories of livestock and land use used in the MAFF/DAFS/DANI agricultural census summaries were combined to produce the following simplified categories:

| Dairy cattle                              | MAFF code          | DAFS code           |
|-------------------------------------------|--------------------|---------------------|
| 1. $\geq 2$ years and all heifers in calf | 70+72+74+75+(82/2) | 100+102+104+106+111 |
| 2. 6 months to 2 years                    | 85+88              | 115+119             |
| 3. $< 6$ months                           | 91                 | 121                 |
| <b>Beef cattle</b>                        |                    |                     |
| 4. $\geq 2$ years and all heifers in calf | 71+73+76+77        | 101+103+105+107     |
| 5. 1 to 2 years                           | 80+(82/2)+83+86    | 110+112+114+116     |
| 6. $< 1$ year                             | 87+89+90           | 118+120             |
| <b>Pigs</b>                               |                    |                     |
| 7. Fattening pigs                         | 111-(100+101+102)  | 157-(146+147+148)   |
| 8. Dry sow                                | 102                | 148                 |
| 9. Sow + litter                           | 100+101            | 146+147             |
| <b>Poultry</b>                            |                    |                     |
| 10. Broilers                              | 127                | 164                 |
| 11. Laying hens, ducks, geese             | (137-127)+129+130  | 170-164             |
| <b>Available land</b>                     |                    |                     |
| 12. Total crops and fallow, pasture       | 4+5+6+7            | 46+47               |
| <b>Sheep</b>                              |                    |                     |
| 13. All sheep except lambs $< 6$ months   | 119-118            | 145-144             |

## D2. ORGANIC WASTE OUTPUT

### Volumetric waste output of fresh excreta (faeces + urine):

The volumetric outputs, in terms of fresh undiluted slurry, were estimated for categories 1 to 11 above from interpolations of tabulated data in ADAS Advisory booklet 2081 (MAFF 1986b). This booklet gives estimates of waste output for different livestock types at given weights (for cattle) and different breeding status (for pigs). To extract volumetric outputs from the above categories of cattle, the average weight of animals in each category had to be estimated. The average weights and estimated volumetric outputs are given below:

| CATEGORY | AVERAGE WEIGHT<br>(kg) | AVERAGE OUTPUT<br>(l day <sup>-1</sup> ) |
|----------|------------------------|------------------------------------------|
| [1]      | 520                    | 42                                       |
| [2]      | 250                    | 20                                       |
| [3]      | 150                    | 12                                       |
| [4]      | 540                    | 44                                       |
| [5]      | 375                    | 25                                       |
| [6]      | 175                    | 12                                       |
| [7]      | -                      | 9 *                                      |
| [8]      | -                      | 4.5 *                                    |
| [9]      | -                      | 15 *                                     |
| [10]     | -                      | 59 (per 1000)                            |
| [11]     | -                      | 114 (per 1000)                           |

\* These values vary considerably depending upon feeding method.

### Volumetric waste loading:

The following calculations, based on the above waste outputs, provide estimates of the volumetric loading on land potentially available for slurry spreading in any one catchment.

$$\begin{array}{lcl} \text{DAIRY -} & ([1] \times 42) + ([2] \times 20) + ([3] \times 12) & \\ \text{(D)} & \frac{\text{-----}}{1000 \times [12]} & \text{in m}^3 \text{ fresh undiluted excreta} \\ & & \text{day}^{-1} \text{ ha}^{-1} \text{ available land} \end{array}$$

$$\begin{array}{lcl} \text{BEEF -} & ([4] \times 44) + ([5] \times 25) + ([6] \times 12) & \\ \text{(B)} & \frac{\text{-----}}{1000 \times [12]} & \end{array}$$

$$\begin{array}{lcl} \text{PIGS -} & ([7] \times 9) + ([8] \times 4.5) + ([9] \times 15) & \\ (\text{Pi}) & \frac{\text{-----}}{1000 \times [12]} & \text{in m}^3 \text{ fresh undiluted excreta} \\ & & \text{day}^{-1} \text{ ha}^{-1} \text{ available land} \end{array}$$

$$\begin{array}{lcl} \text{POULTRY -} & ([10] \times 59) + ([11] \times 114) & \\ (\text{Po}) & \frac{\text{-----}}{1,000,000 \times [12]} & \end{array}$$

#### Biological Oxygen Demand (BOD) loading:

From estimates of BOD levels in slurries given in ADAS advice booklet 2200 (MAFF 1985a), total BOS loading was calculated as follows:

$$(\text{Dx}20,000) + (\text{Bx}20,000) + (\text{Pix}30,000) + (\text{Pox}35,000) \text{ in mg BOD day}^{-1} \text{ ha}^{-1} \text{ available land}$$

and

$$\begin{array}{lcl} (\text{Dx}20,000) + (\text{Bx}20,000) + (\text{Pix}30,000) + (\text{Pox}35,000) \times \frac{\text{available land}}{\text{catchment area}} & & \\ & & \text{in mg BOD day}^{-1} \\ & & \text{ha}^{-1} \text{ catchment} \end{array}$$

A range of BOD levels is given in the booklet for typical slurries from different livestock types, but since the estimates in this analysis are based on undiluted slurry the upper limit of each range was taken.

#### Nutrient loading:

ADAS booklet 2081 (MAFF 1986b) gives typical nutrient contents of fresh and undiluted slurries from different livestock types. These were used to calculate nitrogen and phosphorus loads on each catchment as follows:

i) Nitrogen loading:

$(Dx5)+(Bx5)+(Pix5)+(Pox14)$  in kg N day<sup>-1</sup> ha<sup>-1</sup> available land

ii) Phosphate loading:

$(Dx2)+(Bx2)+(Pix2)+(Pox11)$  in kg P205 day<sup>-1</sup> ha<sup>-1</sup> available land

### D3. SHEEPDIP LOADING

As outlined in the main text (see section 4.2.2), certain assumptions made by Littlejohn and Melvin (1989) were used in the following estimations. These are that: a dipper volume of 2700 litres (2.7m<sup>3</sup>) is used, and 300 sheep are dipped in one day; replenishments of 15% of the dipper volume are made twice a day (every 100 sheep); and completely fresh dip solution is made each day. This gives a total daily usage of sheepdip of 3.57m<sup>3</sup> for every 300 sheep. Assuming that the manufacturer's recommended dilutions are used, this is equivalent to a daily usage of 1.25 kg propetamphos for every 300 sheep. This allows the following estimates to be made:

$\frac{([13] \times (3.57/300))}{\text{catchment area (ha)}}$  in m<sup>3</sup> sheepdip solution per dipping period  
per ha catchment

$\frac{([13] \times (1.25/300))}{\text{catchment area (ha)}}$  in m<sup>3</sup> 'propetamphos equivalent' per dipping  
period per ha catchment

The amount of waste phenolic compounds, which are used in conjunction with propetamphos, can be estimated by multiplying propetamphos usage by 2.5.

### D4. POLLUTION RISK

#### ORGANIC POLLUTION RISK

The following weighting factors (W) were used in order to combine individual factors to produce an index of overall risk.

| FACTOR                                           | W    |
|--------------------------------------------------|------|
| Total volumetric waste loading                   | 0.76 |
| Slope                                            | 0.08 |
| Rainfall                                         | 0.08 |
| Winter Rainfall Acceptance Potential (6 - class) | 0.08 |

#### **SHEEPDIP POLLUTION RISK**

The following weighting factors were used to produce an overall index of pollution risk from spent sheepdip.

| FACTOR                                             | W    |
|----------------------------------------------------|------|
| Volumetric waste loading over whole catchment area | 0.76 |
| Slope                                              | 0.08 |
| Rainfall                                           | 0.08 |
| Winter Rainfall Acceptance Potential (6 - class)   | 0.08 |

#### **D5. REFERENCES**

MAFF (1985a) Advice on avoiding pollution from manures and other slurry wastes. Advice booklet 2200. MAFF Publications.

MAFF (1986b) Profitable uses of farm manures. Advice booklet 2081. MAFF Publications.

Littlejohn, J.W. and Melvin, M.A.L. (1989) A theoretical evaluation of the pollution potential of sheep dip preparations. *Environmental Technology Letters* 10, 1051-1056.

APPENDIX E

RECENT NWC DOWNGRADINGS DUE WHOLLY OR PARTIALLY TO FARM POLLUTION



A list of river stretches, by region, is given below where NWC class is, or has been in the recent past (1988 or 1989), downgraded due wholly or partially to livestock farming. Only whole class downgradings are considered due to the uncertainties of class designation.

| River                                                                                                              | Length affected<br>(km) | NWC class of affected<br>stretch | NWC class upstream | Cause of downgrading                    |
|--------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------|--------------------|-----------------------------------------|
| <b>NRA ANGLIAN REGION</b>                                                                                          |                         |                                  |                    |                                         |
| Tove                                                                                                               | 4                       | 3                                | U                  | agriculture (general)                   |
| Padbury Brook                                                                                                      | 3                       | 3                                | 1B                 | cattle + sewage                         |
|                                                                                                                    | 4                       | 2                                | U                  |                                         |
| Sabiston                                                                                                           | 8                       | 3                                | 2                  | sewage + pigs + bacon factory           |
| Stowlangtoff Brook                                                                                                 | 8                       | 3                                | 1B                 | sewage + pigs                           |
| Dove/Waveney                                                                                                       | 8                       | 3                                | U                  | pigs                                    |
|                                                                                                                    | 2                       | 3                                | U                  | pigs ?                                  |
|                                                                                                                    | 3                       | 3                                | U                  | pigs                                    |
| N Kelsey Beck                                                                                                      | 6                       | 3                                | 1B                 | ducks                                   |
| Tud                                                                                                                | 10                      | 3                                | U                  | pigs/cattle                             |
| <b>TOTAL</b>                                                                                                       | <b>56</b>               |                                  |                    |                                         |
| <b>NRA NORTHUMBRIAN REGION</b>                                                                                     |                         |                                  |                    |                                         |
| None known                                                                                                         |                         |                                  |                    |                                         |
| <b>NRA YORKSHIRE REGION</b>                                                                                        |                         |                                  |                    |                                         |
|                                                                                                                    |                         |                                  | *                  |                                         |
| Wiske (1988)                                                                                                       | 24.1                    | 2                                | 1B                 | Intermittent but regular farm incidents |
| The Stoll (1988)                                                                                                   | 6.4                     | 2                                | 1B                 | As above                                |
| Willow Beck (1988)                                                                                                 | 4.8                     | 2                                | 1B                 | As above                                |
| Crimble Brook (1988)                                                                                               | 2.9                     | 2                                | 1B                 | Silage                                  |
| Weeton Beck                                                                                                        | 4.5                     | 2                                | 1B                 | General farm pollution                  |
| Mires Beck                                                                                                         | 7.9                     | 2                                | 1B                 | Agricultural drainage                   |
| <b>TOTAL</b>                                                                                                       | <b>50.6</b>             |                                  |                    |                                         |
| * where the upstream reach is unclassified, or, adjacent stretches where the river is unaffected by farm pollution |                         |                                  |                    |                                         |

# Appendix E continued/2

## NRA SEVERN TRENT REGION

|                     |              |   |    |
|---------------------|--------------|---|----|
| Sarnwen Brook       | 0.8          | 3 | U  |
|                     | 4.7          | 3 | 3  |
| Tetchill Brook      | 4.5          | 3 | U  |
| Newness Brook       | 2.0          | 3 | U  |
| Rea Brook           | 3.0          | 2 | U  |
| River Roden         | 6.0          | 2 | U  |
| Soulton Brook       | 2.7          | 2 | U  |
| Leigh Brook         | 2.5          | 2 | 1B |
| Battlefield Brook   | 5.0          | 2 | U  |
| Horsebere Brook     | 6.0          | 3 | U  |
| Red Brook           | 5.3          | 2 | U  |
| Ley Brook           | 5.0          | 2 | U  |
| Wam Brook           | 2.5          | 3 | U  |
| Carr Brook          | 2.0          | 2 | U  |
| Heath End Brook     | 1.8          | 2 | U  |
| Burton Brook        | 4.6          | 2 | U  |
| Countesthorpe Brook | 0.5          | 2 | 1B |
| Dalby Brook         | 7.5          | 2 | U  |
| River Whipling      | 3.2          | 2 | 2  |
| Car Dyke            | 9.0          | 2 | 2  |
| Broad Bridge Dyke   | 1.5          | 2 | U  |
| River Arrow         | 6.0          | 2 | U  |
| River Wreake/Eye    | 19.2         | 2 | U  |
| River Blythe        | 26.7         | 2 | U  |
|                     | -----        |   |    |
| <b>TOTAL</b>        | <b>132.0</b> |   |    |

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Farm drainage/septic tanks  
Farm drainage/septic tanks  
Farm drainage  
Farm drainage  
Farm drainage and STW  
Farm drainage  
Farm drainage  
Farm and STW  
Farm and storm overflows  
Farm and industrial  
Agricultural problems  
Agricultural problems  
Farm pollutions  
Farm effluents  
Farm effluents  
Farm waste and sewer dyke  
Farm drainage, STW and storm overflows  
Agricultural run-off  
Agricultural run-off  
Farm drainage and STW  
Agricultural problems  
Suspected farm source  
Suspected farm source  
Suspected farm source

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Appendix E continued/3

**NRA WELSH REGION**

|                           |      |     |    |
|---------------------------|------|-----|----|
| Afon Bach (R Clwyd)       | 0.6  | 2   | U  |
| Aldford Brook (R Dee)     | 3.7  | 3   | 2  |
| Worthenbury Brook (R Dee) | 2.7  | 4   | 3  |
|                           | 3.9  | 2   | 3  |
| River Dulas               | 6.0  | 2   | U  |
| Olway Brook (Usk)         | 8.0  | 2   | U  |
| Trothy (Wye)              | 12.9 | 2   | 1B |
| Worm Brook (Wye)          | 9.4  | 2   | 1B |
|                           | 6.8  | 3   | 1B |
| Jury Brook (Wye)          | 5.8  | 2   | 1B |
| Garren Brook (Wye)        | 13.8 | 2   | 1B |
| Rudlace Brook (Wye)       | 4.0  | 2   | 1B |
| How Caple Brook (Wye)     | 5.8  | 2   | 1B |
| River Lodon (Wye)         | 18.0 | 2   | 1B |
| Hackley Brook (Wye)       | 5.0  | 2   | 1B |
| Withington Lakes (Wye)    | 3.8  | 2-4 | 2  |
|                           | 1.4  | 3   | 2  |
| Withington Marsh (Wye)    | 6.8  | 3   | 1B |
| Moreton Brook (Wye)       | 8.8  | 2   | 1B |
| Wellington Brook (Wye)    | 4.8  | 2   | 1B |
| Bodenham Brook (Wye)      | 6.1  | 2   | 1A |
| Main Ditch (Wye)          | 13.0 | 2   | 1B |
| Ridgemoor Brook (Wye)     | 5.6  | 2   | 1B |
| River Enig (Wye)          | 6.9  | 2   | 1A |
| W Cleddau                 | 3.2  | 2   | 1B |
| E Cleddau                 | 3.5  | 2   | 1B |
| Syfynewy                  | 11.1 | 2   | U  |
| Anghof                    | 2.9  | 2   | U  |
| Aeron                     | 3.2  | 2   | U  |
| Mydyr                     | 3.2  | 3   | U  |

**TOTAL 190.7**

Dairy effluents/slurry  
Dairy effluents/slurry  
Dairy effluents/slurry & silage  
Dairy effluents/slurry & silage  
Dairy effluents/slurry  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle/pigs  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Cattle  
Livestock  
Probably slurry  
Probably slurry  
Probably slurry  
Probably slurry  
Probably slurry  
Probably slurry

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APPENDIX F

DEVELOPMENT OF RAPID APPRAISAL METHODS

Contents:

- F1 Spot sample data for 55 sites in West Wales sampled in 1990
- F2 Composition of sewage fungus from 55 sites in West Wales\*
- F3 Environmental data from 55 sites\*
- F4 HABSCORE data from 55 sites\*
- F5 Invertebrate data for 55 sites\*+
- F6 Chemical data from 51 sites in Devon\*
- F7 Environmental data from 51 sites in Devon\*
- F8 Invertebrate data for Devon (family level)\*+
- F9 Invertebrate data for Devon (species level)\*+
- F10 Environmental data for Welsh summer key\*
- F11 Invertebrate data for Welsh summer key\*+

KEY: \* Data held on tape  
+ Maitland P.S. (1977) A coded checklist of animals  
occurring in freshwater in the British Isles. ITE  
publication (NCC) 12, Hope Terrace, Edinburgh

F1 Spot sample data for 55 sites in West Wales sampled in 1990

Site numbering corresponds to Figure 5.1 in the main text







2

19-MAR-90

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

3034023

SIHQD-HSL-FCRQ

SAMPLE ANALYSIS REPORT

Llanelli Lab

INVESTIGATIONS TEAM SAMPLES :

SAMPLING POINT : 190102

DATE TAKEN : 05-MAR-90

TIME : 11:00 hrs. LAB REFERENCE : E 61915

ADDRESS :

SAMPLER'S COMMENTS

ABRIC SURVEY SITE 1

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0001      | PH                            | 7.6    | PH UNITS        |
| 0002      | CONDUCTIVITY 20 C             | 177    | US/CM           |
| 0003      | TEMPERATURE WATER             | 9      | DEGREES CELSIUS |
| 0004      | OXYGEN DISSOLVED % SATURATION | 91     | %               |
| 0005      | OXYGEN DISSOLVED              | 0.5    | MG/L            |
| 0006      | DOO 5 MIN                     | 1.3    | MG/L            |
| 0007      | AMMONIA                       | 0.01   | MG/L            |
| 0008      | NITROGEN TOTAL OXIDISED       | 2.5    | MG/L            |
| 0009      | NITRATE                       | 1.0    | MG/L            |
| 0010      | TOTAL SUSPENDED SOLIDS 105    | 11     | MG/L            |
| 0011      | HARDNESS TOTAL                | 50     | MG/L            |
| 0012      | CHLORIDE ION                  | 24.4   | MG/L            |
| 0013      | CALCIUM CHLORIDE              | 0.05   | MG/L            |
| 0014      | MAGNESIUM DISSOLVED           | 5.53   | MG/L            |
| 0015      | CALCIUM DISSOLVED             | 10.98  | MG/L            |

Site 3

Afon Cwman

3

21/3/90

14.35 hrs

DEC CODE

DESCRIPTION

RESULT

UNITS

0061

pH

7.1

pH units

0062

Conductivity

105

$\mu S/cm$

0076

Temp Water

10.5

$^{\circ}C$

0081

Oxygen Diss % sat

95.2

%

0082

Oxygen Diss

10.6

mg/l

0085

BOS SATU

1.4

0111

Ammonia

0.08

0116

Nitrogen Total Ammonia

1.33

0118

Nitrate

0.016

9135

TSS 105

44

0158

Manganese Total

33.4

0172

Chloride Ion

16.7

0180

Ortho-phosphate

< 0.05

0235

Magnesium Diss

2.74

0239

Calcium Diss

8.87

mg/l



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503023 NATIONAL RIVERS AUTHORITY - S.W. DIVISION 19-MAR-90

SAMPLE ANALYSIS REPORT

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES : Llanelli Lab

DATE TAKEN : 05-MAR-90

TIME : 13:30 hrs.

LAB REFERENCE : E 61916

ADDRESS :

SAMPLER'S COMMENTS

AGRIC SURVEY SITE 8

| TEST CODE | DESCRIPTION                   | RESULT | UNITS |
|-----------|-------------------------------|--------|-------|
| 0062      | CONDUCTIVITY 20 C             | 126    | US/cm |
| 0001      | OXYGEN DISSOLVED % SATURATION | 93.6   | %     |
| 0002      | OXYGEN DISSOLVED              | 10.8   | mg/l  |
| 0005      | DOO 5 ATU                     | 1.1    | mg/l  |
| 0111      | AMMONIA                       | 0.07   | mg/l  |
| 0116      | NITROGEN TOTAL OXIDISED       | 2.7    | mg/l  |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | < 5    | mg/l  |
| 0150      | HAZARDOUS TOTAL               | 10.7   | mg/l  |
| 0172      | CHLORIDE ION                  | 18.9   | mg/l  |
| 0209      | ORTHOPHOSPHATE                | 0.05   | mg/l  |
| 0235      | MAGNESIUM DISSOLVED           | 3.48   | mg/l  |
| 0239      | CALCITUM DISSOLVED            | 8.96   | mg/l  |



SW2003

NATIONAL RIVERS AUTHORITY - S.W. DIVISION  
Sampling Run Maintenance13-AUG-90  
Page 2 of

Officer's Id : WRC1 Date of Run : 20-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: E630  
Arg(1) : 3F52 Arg(2) : Arg(3) : Status : T

## DETERMINAND &amp; METHOD DETAILS (QUERY ONLY)

| Det. Meth<br>Code Code | Description                            | Exc Qual<br>Code | Result<br>Value | In- Pri<br>Sit |
|------------------------|----------------------------------------|------------------|-----------------|----------------|
| 61 3                   | pH nutrient associated                 |                  | 7               | 4              |
| 6 6                    | Conductometric measurement non potable |                  | 314             | 4              |
| 76 2                   | Insitu determinand                     |                  | 10              | Y 4            |
| 81 1                   | Calculated determinand                 |                  | 95              | 4              |
| 12 12                  | Titration                              |                  | 10.7            | 4              |
| 85 11                  | Diss.oxygen measurement                |                  | 1.6             | 4              |
| 111 50                 | Low Range Nutrients (Potable & Envir.) |                  | .07             | 4              |
| 115 50                 | Low Range Nutrients (Potable & Envir.) |                  | 6.86            | 4              |
| 118 50                 | Low Range Nutrients (Potable & Envir.) | S                | .03             | 4              |
| 135 10                 | Gravimetry                             |                  | 29              | 4              |
| 138 1                  | Calculated determinand                 | S                | 149             | 4              |
| 172 50                 | Low Range Nutrients (Potable & Envir.) | S                | 42              | 4              |

Char Mode: Replace Page 2

Count: 12

2003

NATIONAL RIVERS AUTHORITY - S.W. DIVISION  
Sampling Run Maintenance13-AUG-90  
Page 2 of

Officer's Id : WRC1 Date of Run : 20-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: E630  
Arg(1) : 3F52 Arg(2) : Arg(3) : Status : T

## DETERMINAND &amp; METHOD DETAILS (QUERY ONLY)

| Det. Meth<br>Code Code | Description                              | Exc Qual<br>Code | Result<br>Value | In- Pri<br>Sit |
|------------------------|------------------------------------------|------------------|-----------------|----------------|
| 180 50                 | Low Range Nutrients (Potable & Envir.)   |                  | .05             | 4              |
| 235 72                 | Plasma spectrometry - direct T.Hard.(P4) | S                | 9.67            | 4              |
| 249 72                 | Plasma spectrometry - direct T.Hard.(P4) | S                | 43.8            | 4              |

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Count: \*15

SW2003

NATIONAL RIVERS AUTHORITY - S.W. DIVISION  
Sampling Run Maintenance

13-MAR-90  
Page 2

Officer's Id : WRC1 Date of Run : 21-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: 100  
Arg(1) : 3F52 Arg(2) : Arg(3) : Status : T

## DETERMINAND &amp; METHOD DETAILS (QUERY ONLY)

| Det. Meth<br>Code Code | Description                            | Exc Qual<br>Code | Result<br>Value | In- Pri<br>Sit |
|------------------------|----------------------------------------|------------------|-----------------|----------------|
| 61 3                   | pH nutrient associated                 |                  | 7.1             |                |
| 62 6                   | Conductometric measurement non potable |                  | 193             | 4              |
| 76 2                   | Insitu determinand                     |                  | 11              | Y 4            |
| 81 1                   | Calculated determinand                 |                  | 102             |                |
| 82 12                  | Titration                              |                  | 11.2            | 4              |
| 85 11                  | Diss.oxygen measurement                |                  | .8              |                |
| 111 50                 | Low Range Nutrients (Potable & Envir.) | <                | .01             |                |
| 116 50                 | Low Range Nutrients (Potable & Envir.) |                  | 4.73            | 4              |
| 118 50                 | Low Range Nutrients (Potable & Envir.) | S                | .03             | 4              |
| 135 10                 | Gravimetry                             |                  | 15              |                |
| 158 1                  | Calculated determinand                 |                  | 66.9            | 4              |
| 172 50                 | Low Range Nutrients (Potable & Envir.) |                  | 30.5            | 4              |

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Count: 12

SW2003

NATIONAL RIVERS AUTHORITY - S.W. DIVISION  
Sampling Run Maintenance

13-MAR-90  
Page 2

Officer's Id : WRC1 Date of Run : 21-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: 100  
Arg(1) : 3F52 Arg(2) : Arg(3) : Status : T

## DETERMINAND &amp; METHOD DETAILS (QUERY ONLY)

| Det. Meth<br>Code Code | Description                              | Exc Qual<br>Code | Result<br>Value | In- Pri<br>Sit |
|------------------------|------------------------------------------|------------------|-----------------|----------------|
| 180 50                 | Low Range Nutrients (Potable & Envir.)   |                  | .05             |                |
| 235 72                 | Plasma spectrometry - direct T.Hard.(P4) | S                | 6.26            | 4              |
| 239 72                 | Plasma spectrometry - direct T.Hard.(P4) |                  | 16.5            |                |

8 SAMPLE ANALYSIS REQUEST

10 SAMPLING POINT : 190102

12 DATE TAKEN : 08-MAR-90 INVESTIGATIONS TEAM SAMPLES : Lancelotti Lab

14 TIME : 13:30 hrs.

16 ADDRESS : LAB REFERENCE : E 61933

18

20 SAMPLE COMMENTS

22 SITE 391

24

26 DESCRIPTION

28 PH

30 CONDUCTIVITY 20 C

32 TEMPERATURE WATER

34 OXYGEN DISSOLVED % SATURATION

36 OXYGEN DISSOLVED

38 BOD 5 @ 20

39 AMMONIA

41 NITROGEN TOTAL OXIDISED

43 NITRATE

45 TOTAL SUSPENDED SOLIDS 105

47 HAPPESS TOTAL

49 CHLORIDE ION

41 BICARBONATE

43 MAGNESIUM DISSOLVED

45 CALCIUM DISSOLVED

47

49

51

53

55

57



NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

SAMPLE ANALYSIS REPORT

INVESTIGATIONS TEAM SAMPLES :

Llonelli Lab

SAMPLING POINT : 190102

DATE TAKEN : 00-MAR-90

TIME : 12:00 hrs.

LAB REFERENCE : E 61932

ADDRESS :

SAMPLER'S COMMENTS

SITE 59A

DESCRIPTION

RESULT

UNITS

CONDUCTIVITY 20 C

150

US/CM

TEMPERATURE WATER

77

DEGREES CELSIUS

OXYGEN DISSOLVED % SATURATION

77

%

OXYGEN DISSOLVED

1.1

MG/L

BOD 5 ATU

2.7

MG/L

NITROGEN TOTAL OXIDISED

5

MG/L

NITRATE

5

MG/L

TOTAL SUSPENDED SOLIDS 105

54.7

MG/L

HARDNESS TOTAL

19.2

MG/L

CHLORIDE ION

19.2

MG/L

PHOSPHATE

5.13

MG/L

MAGNESIUM DISSOLVED

5.13

MG/L

IRON DISSOLVED

5.13

MG/L



(9)

4 003023 NATIONAL RIVERS AUTHORITY - S.W. DIVISION 19-MAR-90 4

6

8 SAMPLE ANALYSIS REPORT Simon Hallacrou 8

10 SAMPLING POINT : 190102 INVESTIGATIONS TEAM SAMPLES : Lionelli Lab 10

12 DATE TAKEN : 07-MAR-90 12

14 TIME : 11:30 hrs. LAB REFERENCE : E 61931 14

16 ADDRESS : 16

18

20 SAMPLER'S COMMENTS 20

22 AGRIC. SITE 61 22

24

| 26        | 26                            | 26     | 26              | 26 |
|-----------|-------------------------------|--------|-----------------|----|
| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |    |
| 0061      | pH                            | 7      | pH units        | 28 |
| 0062      | CONDUCTIVITY 20 C             | 193    | uS/cm           | 28 |
| 0076      | TEMPERATURE WATER             | 9      | DEGREES CELSIUS | 30 |
| 0081      | OXYGEN DISSOLVED % SATURATION | 91     | %               | 30 |
| 0082      | OXYGEN DISSOLVED              | 10.5   | mg/l            | 32 |
| 0085      | BOD 5 ATU                     | 1.1    | mg/l            | 32 |
| 0111      | AMMONIA                       | 0.01   | mg/l            | 34 |
| 0113      | NITROGEN TOTAL OXIDISED       | 3.6    | mg/l            | 34 |
| 0118      | NITRATE                       | 0.007  | mg/l            | 36 |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | < 5    | mg/l            | 36 |
| 0158      | HARDNESS TOTAL                | 52.8   | mg/l            | 38 |
| 0172      | CHLORIDE ION                  | 31.5   | mg/l            | 38 |
| 0235      | MAGNESIUM DISSOLVED           | 6.21   | mg/l            | 40 |
| 0239      | CALCIUM DISSOLVED             | 12.22  | mg/l            | 42 |
| 44        |                               |        |                 | 44 |
| 46        |                               |        |                 | 46 |
| 48        |                               |        |                 | 48 |
| 50        |                               |        |                 | 50 |
| 52        |                               |        |                 | 52 |
| 54        |                               |        |                 | 54 |
| 56        |                               |        |                 | 56 |
| 58        |                               |        |                 | 58 |
| 60        |                               |        |                 | 60 |
| 62        |                               |        |                 | 62 |
| 64        |                               |        |                 | 64 |

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| 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 | 2101 | 2102 | 2103 | 2104 | 2105 | 2106 | 2107 | 2108 | 2109 | 2110 | 2111 | 2112 | 2113 | 2114 | 2115 | 2116 | 2117 | 2118 | 2119 | 2120 | 2121 | 2122 | 2123 | 2124 | 2125 | 2126 | 2127 | 2128 | 2129 | 2130 | 2131 | 2132 | 2133 | 2134 | 2135 | 2136 | 2137 | 2138 | 2139 | 2140 | 2141 | 2142 | 2143 | 2144 | 2145 | 2146 | 2147 | 2148 | 2149 | 2150 | 2151 | 2152 | 2153 | 2154 | 2155 | 2156 | 2157 | 2158 | 2159 | 2160 | 2161 | 2162 | 2163 | 2164 | 2165 | 2166 | 2167 | 2168 | 2169 | 2170 | 2171 | 2172 | 2173 | 2174 | 2175 | 2176 | 2177 | 2178 | 2179 | 2180 | 2181 | 2182 | 2183 | 2184 | 2185 | 2186 | 2187 | 2188 | 2189 | 2190 | 2191 | 2192 | 2193 | 2194 | 2195 | 2196 | 2197 | 2198 | 2199 | 2200 | 2201 | 2202 | 2203 | 2204 | 2205 | 2206 | 2207 | 2208 | 2209 | 2210 | 2211 | 2212 | 2213 | 2214 | 2215 | 2216 | 2217 | 2218 | 2219 | 2220 | 2221 | 2222 | 2223 | 2224 | 2225 | 2226 | 2227 | 2228 | 2229 | 2230 | 2231 | 2232 | 2233 | 2234 | 2235 | 2236 | 2237 | 2238 | 2239 | 2240 | 2241 | 2242 | 2243 | 2244 | 2245 | 2246 | 2247 | 2248 | 2249 | 2250 | 2251 | 2252 | 2253 | 2254 | 2255 | 2256 | 2257 | 2258 | 2259 | 2260 | 2261 | 2262 | 2263 | 2264 | 2265 | 2266 | 2267 | 2268 | 2269 | 2270 | 2271 | 2272 | 2273 | 2274 | 2275 | 2276 | 2277 | 2278 | 2279 | 2280 | 2281 | 2282 | 2283 | 2284 | 2285 | 2286 | 2287 | 2288 | 2289 | 2290 | 2291 | 2292 | 2293 | 2294 | 2295 | 2296 | 2297 | 2298 | 2299 | 2300 | 2301 | 2302 | 2303 | 2304 | 2305 | 2306 | 2307 | 2308 | 2309 | 2310 | 2311 | 2312 | 2313 | 2314 | 2315 | 2316 | 2317 | 2318 | 2319 | 2320 | 2321 | 2322 | 2323 | 2324 | 2325 | 2326 | 2327 | 2328 | 2329 | 2330 | 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | 2344 | 2345 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | 2358 | 2359 | 2360 | 2361 | 2362 | 2363 | 2364 | 2365 | 2366 | 2367 | 2368 | 2369 | 2370 | 2371 | 2372 | 2373 | 2374 | 2375 | 2376 | 2377 | 2378 | 2379 | 2380 | 2381 | 2382 | 2383 | 2384 | 2385 | 2386 | 2387 | 2388 | 2389 | 2390 | 2391 | 2392 | 2393 | 2394 | 2395 | 2396 | 2397 | 2398</ |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|

[illegible]

12 Before this book was sent into the field, the first 100,000 copies of the book were sold.

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18 ~~SECRET~~

22 中国城市经济体制改革与对外开放

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|------|-------------------|-----|-------|
| 0062 | CONDUCTIVITY 20 C | 235 | uS/cm |
|------|-------------------|-----|-------|

|      |                               |      |   |
|------|-------------------------------|------|---|
| 0001 | OXYGEN DISSOLVED % SATURATION | 89.7 | % |
|------|-------------------------------|------|---|

|      |           |     |      |
|------|-----------|-----|------|
| 0005 | BOD 5 ATU | 1.4 | mg/l |
|------|-----------|-----|------|

|      |                         |     |      |
|------|-------------------------|-----|------|
| 0116 | NITROGEN TOTAL OXIDISED | 3.1 | mg/l |
|------|-------------------------|-----|------|

|      |                            |   |   |      |
|------|----------------------------|---|---|------|
| 0135 | TOTAL SUSPENDED SOLIDS 105 | < | 5 | mg/l |
|------|----------------------------|---|---|------|

|      |              |      |      |
|------|--------------|------|------|
| 0172 | CHLORIDE ION | 38.2 | mg/l |
|------|--------------|------|------|

|      |                     |      |      |
|------|---------------------|------|------|
| 0235 | MAGNESIUM DISSOLVED | 5.79 | mg/l |
|------|---------------------|------|------|

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5143023 NATIONAL RIVERS AUTHORITY - S.W. DIVISION 19-MAR-90

SAMPLE ANALYSIS REPORT

SAMPLING POINT : 190102 INVESTIGATIONS TEAM SAMPLES :  
DATE TAKEN : 06-MAR-90  
TIME : 10:00 hrs. LAB REFERENCE : E 61922  
ADDRESS :

SAMPLER'S COMMENTS

AGRIC. SITE 6

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 00651     | CONDUCTIVITY 20 C             | 194    | US/CM           |
| 00876     | TEMPERATURE WATER             | 9      | DEGREES CELSIUS |
| 00811     | OXYGEN DISSOLVED % SATURATION | 91     | %               |
| 00842     | OXYGEN DISSOLVED              | 10.3   | MG/L            |
| 00855     | ECOD 5 ATU                    | 1.2    | MG/L            |
| 00811     | NITROGEN TOTAL OXIDISED       | 3.9    | MG/L            |
| 0116      | NITROGEN TOTAL OXIDISED       | 0.032  | MG/L            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 13     | MG/L            |
| 0172      | CHLORIDE ION                  | 29.6   | MG/L            |
| 0180      | ORTHOPHOSPHATE                | 0.05   | MG/L            |
| 0235      | MAGNESIUM DISSOLVED           | 5.96   | MG/L            |
| 0237      | CALCIUM DISSOLVED             | 15.49  | MG/L            |

11

SM3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halfacre

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 06-MAR-90

TIME : 11:30 hrs.

LAB REFERENCE : E 61923

ADDRESS :

## SAMPLER'S COMMENTS

AGRIC. SITE 14

| ITEM CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.4    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 166    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 10     | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 80.8   | %               |
| 0082      | OXYGEN DISSOLVED              | 9.1    | mg/l            |
| 0085      | BOD 5 ATU                     | 0.9    | mg/l            |
| 0111      | AMMONIA                       | 0.04   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 4.3    | mg/l            |
| 0138      | NITRATE                       | 0.022  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 8      | mg/l            |
| 0158      | HARDNESS TOTAL                | 55.1   | mg/l            |
| 0172      | CHLORIDE ION                  | 25.2   | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 5.27   | mg/l            |
| 0232      | CALCIUM DISSOLVED             | 13.42  | mg/l            |



SW3023
NATIONAL RIVERS AUTHORITY - S.W. DIVISION
15-MAR-90

13

SAMPLE ANALYSIS REPORT
Simon Halfacree

SAMPLING POINT : 190102
INVESTIGATIONS TEAM SAMPLES :
Llanelli Lab

DATE TAKEN : 02-MAR-90
LAB REFERENCE : E 61776

TIME : 14:00 hrs.

ADDRESS :

SAMPLER'S COMMENTS

SITE 2

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | PH                            | 7.3    | PH Units        |
| 0062      | CONDUCTIVITY 20 C             | 219    | uS/cm           |
| 0073      | TEMPERATURE WATER             | 6      | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 90.9   | %               |
| 0082      | OXYGEN DISSOLVED              | 11.3   | mg/l            |
| 0085      | COD 5 ATU                     | 1.2    | mg/l            |
| 0111      | AMMONIA                       | 0.07   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 7.7    | mg/l            |
| 0118      | NITRITE                       | 0.04   | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | mg/l            |
| 0150      | HARDNESS TOTAL                | 66     | mg/l            |
| 0172      | CHLORIDE ION                  | 27.4   | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 4.2    | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 12.5   | mg/l            |

SW3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

14

## SAMPLE ANALYSIS REPORT

Simon Halfacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 02-MAR-90

TIME : 10:45 hrs.

LAB REFERENCE : E 61777

ADDRESS :

## SAMPLER'S COMMENTS

SITE 15<sup>10</sup> → 15

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.3    | pH-units        |
| 0062      | CONDUCTIVITY 20 C             | 210    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 6      | Degrees Celsius |
| 0001      | OXYGEN DISSOLVED % SATURATION | 90.1   | %               |
| 0082      | OXYGEN DISSOLVED              | 11.2   | mg/l            |
| 0085      | BOD 5 ATU                     | 1.8    | mg/l            |
| 0111      | AMMONIA                       | 0.43   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 6.9    | mg/l            |
| 0118      | NITRATE                       | 0.023  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 8      | mg/l            |
| 0158      | HARDNESS TOTAL                | 60.5   | mg/l            |
| 0172      | CHLORIDE ION                  | 28.1   | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 4.4    | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 12     | mg/l            |

0.35 u/s 0.48 fcl



SN3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

## SAMPLE ANALYSIS REPORT

BIRON-HALL FACTORY

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 12-MAR-90

TIME : 10:50 hrs.

LAB REFERENCE : E 62009

ADDRESS :

## SAMPLER'S COMMENTS

SITE 3

| ITEM CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.6    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 177    | US/CM           |
| 0075      | TEMPERATURE WATER             | 0.5    | DEGREES CELSIUS |
| 0001      | OXYGEN DISSOLVED % SATURATION | 93.3   | %               |
| 0002      | OXYGEN DISSOLVED              | 10.9   | MG/L            |
| 0005      | BOD 5 ATU                     | 0.8    | MG/L            |
| 0111      | AMMONIA                       | 0.14   | MG/L 0.185 (CO) |
| 0116      | NITROGEN TOTAL OXIDISED       | 6.2    | MG/L            |
| 0118      | NITRATE                       | 0.033  | MG/L            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | MG/L            |
| 0150      | HARDNESS TOTAL                | 54.7   | MG/L            |
| 0172      | CHLORIDE ION                  | 23.3   | MG/L            |
| 0188      | ORTHOPHOSPHATE                | 0.05   | MG/L            |
| 0235      | MAGNESIUM DISSOLVED           | 5.24   | MG/L            |
| 0239      | CALCIUM DISSOLVED             | 13.28  | MG/L            |

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SW3023 NATIONAL RIVERS AUTHORITY - S.W. DIVISION

SAMPLE ANALYSIS REPORT

SAMPLING POINT : 190102

DATE TAKEN : 07-MAR-90

TIME : 15:45 hrs.

ADDRESS :

SAMPLER'S COMMENTS

AGRIC. SITE 29

19-MAR-90

Simon Halfacree

INVESTIGATIONS TEAM SAMPLES :

LAB REFERENCE : E 61930

Llanelli Lab

16

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | PH                            | 8.5    | PH units        |
| 0062      | CONDUCTIVITY 20 C             | 225    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 8.5    | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 88.2   | %               |
| 0082      | OXYGEN DISSOLVED              | 10.3   | mg/l            |
| 0085      | BOD 5 ATU                     | 0.7    | mg/l            |
| 0113      | AMMONIA                       | 13.24  | mg/l (255-2e)   |
| 0116      | NITROGEN TOTAL OXIDISED       | 11.2   | mg/l            |
| 0118      | NITRITE                       | 0.029  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | mg/l            |
| 0158      | HARDNESS TOTAL                | 65.8   | mg/l            |
| 0172      | CHLORIDE ION                  | 25     | mg/l            |
| 0180      | 0180 - POTASSIUM              | 0.005  | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 5.39   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 12.42  | mg/l            |



003023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halford

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 07-MAR-90

TIME : 14:30 hrs.

LAB REFERENCE : E 41928

ADDRESS :

SAMPLER'S COMMENTS

AGRIC. SITE 7

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.3    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 230    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 10     | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 79     | %               |
| 0082      | OXYGEN DISSOLVED              | 8.9    | mg/l            |
| 0085      | BOD 5 AT 20                   | 0.9    | mg/l            |
| 0111      | AMMONIA                       | 1.01   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 7.9    | mg/l            |
| 0118      | NITRITE                       | 0.027  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | mg/l            |
| 0150      | HARDNESS TOTAL                | 21     | mg/l            |
| 0172      | CHLORIDE ION                  | 26.3   | mg/l            |
| 0100      | ORTHO PHOSPHATE               | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 5.1    | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 20.05  | mg/l            |

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

SU3023

ANALYSIS REPORT

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 12-MAR-90

TIME : 14:40 hrs. LAB REFERENCE : E 62011

ADDRESS :

SAMPLER'S COMMENTS

SITE 13

DESCRIPTION

RESULTS

UNITS

0001 CONDUCTIVITY 20 C

203

US/CM

0002 TEMPERATURE WATER

86.7

%

0003 OXYGEN DISSOLVED % SATURATION

100

%

0004 pH

1

mg/l

0005 AMMONIA

0.01

mg/l

0006 NITROGEN TOTAL OXIDISED

6.5

mg/l

0007 NITRATE

0.02

mg/l

0008 TOTAL SUSPENDED SOLIDS 105

6

mg/l

0009 TURBIDITY

23

mg/l

0010 CHLORIDE ION

25.1

mg/l

0011 ORTHO PHOSPHATE

0.05

mg/l

0012 MAGNESIUM DISSOLVED

2.7

mg/l

0013 CALCIUM DISSOLVED

24.79

mg/l



11

SAMPLE ANALYSIS REPORT

Simon-Hallford

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 12-MAR-90

TIME : 13:00 hrs.

LAB REFERENCE : E 62010

ADDRESS :

SAMPLER'S COMMENTS

SITE 12

| ITEM CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | PH                            | 7.5    | PH units        |
| 0062      | CONDUCTIVITY 20 C             | 171    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 8.5    | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 95     | %               |
| 0082      | OXYGEN DISSOLVED              | 11.1   | mg/l            |
| 0085      | BOD 5 ATU                     | 0.7    | mg/l            |
| 0111      | AMMONIA                       | 0.01   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 4.8    | mg/l            |
| 0118      | NITRITE                       | 0.011  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 7      | mg/l            |
| 0150      | HARDNESS TOTAL                | 62.3   | mg/l            |
| 0172      | CHLORIDE ION                  | 22.6   | mg/l            |
| 0180      | ORTHOPHOSPHATE                | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 2.53   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 20.77  | mg/l            |

# SAMPLE ANALYSIS REPORT

THIS REPORT IS FOR THE USE OF THE NATIONAL RIVERS AUTHORITY ONLY

19-MAR-90

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

STATION HALFACRE

Lloneilli Lab

INVESTIGATIONS TEAM SAMPLES :

DATE TAKEN : 07-MAR-90

LAB REFERENCE : E 61929

TIME : 11:15 hrs.

ADDRESS :

SAMPLER'S COMMENTS

AGRIC. SITE 10

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | PH                            | 11.3   | PH UNITS        |
| 0062      | CONDUCTIVITY 20 C             | 113    | US/CM           |
| 0076      | TEMPERATURE WATER             | 18.3   | DEGREES CELSIUS |
| 0081      | OXYGEN DISSOLVED % SATURATION | 98.5   | %               |
| 0082      | OXYGEN DISSOLVED              | 11.5   | MG/L            |
| 0085      | ECOD 5 ATU                    | 1.1    | MG/L            |
| 0111      | AMMONIA                       | 0.01   | MG/L            |
| 0116      | NITROGEN TOTAL OXIDISED       | 3      | MG/L            |
| 0118      | RAIIRIL                       | 0.003  | MG/L            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | MG/L            |
| 0150      | HARDNESS TOTAL                | 26.1   | MG/L            |
| 0172      | CHLORIDE ION                  | 17.2   | MG/L            |
| 0180      | ORTHO PHOSPHATE               | 0.03   | MG/L            |
| 0235      | MAGNESIUM DISSOLVED           | 2.43   | MG/L            |
| 0239      | CALCIUM DISSOLVED             | 5.47   | MG/L            |

corrected

20

SU3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

## SAMPLER ANALYSIS REPORT

Simon Halyachan

(21)

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 02-MAR-90

TIME : 13:40 hrs.

LAB REFERENCE : E 61781

ADDRESS :

SAMPLER'S COMMENTS

SITE 58

| TEST CODE | DESCRIPTION                   | RESULT | UNITS          |
|-----------|-------------------------------|--------|----------------|
| 0061      | pH                            | 7.3    | pH units       |
| 0062      | CONDUCTIVITY 20 C             | 196    | uS/cm          |
| 0076      | TEMPERATURE WATER             | 8      | Degree Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 76.1   | %              |
| 0082      | OXYGEN DISSOLVED              | 9      | mg/l           |
| 0085      | BOD 5 ATU                     | 1.8    | mg/l           |
| 0111      | AMMONIA                       | 0.18   | mg/l           |
| 0116      | NITROGEN TOTAL OXIDISED       | 3.1    | mg/l           |
| 0118      | NITRITE                       | 0.049  | mg/l           |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | < 5    | mg/l           |
| 0150      | HARDNESS TOTAL                | 50     | mg/l           |
| 0172      | CHLORIDE ION                  | 31.8   | mg/l           |
| 0180      | ORTHO PHOSPHATE               | 0.09   | mg/l           |
| 0235      | MAGNESIUM DISSOLVED           | 3.1    | mg/l           |
| 0239      | CALCIUM DISSOLVED             | 18.1   | mg/l           |



003023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

22

## SAMPLE ANALYSIS REPORT

Simon Halfacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 01-MAR-90

TIME : 14:30 hrs.

LAB REFERENCE : E 61771

ADDRESS :

## SAMPLER'S COMMENTS

SITE 39

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.7    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 95     | uS/cm           |
| 0076      | TEMPERATURE WATER             | 5      | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 73.2   | %               |
| 0082      | OXYGEN DISSOLVED              | 9.1    | mg/l            |
| 0085      | BOD 5 ATU                     | 1.6    | mg/l            |
| 0111      | AMMONIA                       | 0.01   | mg/l < 0.01     |
| 0115      | NITROGEN TOTAL OXIDISED       | 0.5    | mg/l            |
| 0119      | NITRITE                       | 0.002  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | mg/l            |
| 0158      | HARDNESS TOTAL                | 27.5   | mg/l            |
| 0172      | CHLORIDE ION                  | 18.8   | mg/l            |
| 0186      | ORTHOPHOSPHATE                | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 1.78   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 8.1    | mg/l            |

6103023 NATIONAL RIVERS AUTHORITY S.W. DIVISION

SAMPLE ANALYSIS REPORT

Simon Halfacre

12 SAMPLING POINT: 190102 INVESTIGATIONS FROM SAMPLES

14 DATE TAKEN: 08 APR 90

16 REFERENCE: 54507

18 ADDRESS:

22 SAMPLER'S COMMENTS:

24 AGRIC SURVEY SITE 19

26 DET CODE DESCRIPTION RESULT UNITS

0061 pH 6.3 pH units

0062 CONDUCTIVITY 20.1  $\mu S/cm$

0076 TEMPERATURE WATER 5.5 Degrees Celsius

0081 OXYGEN DISSOLVED SATURATION 98.5 %

0082 OXYGEN DISSOLVED 12.4 mg/l

0083 BOD 5 DAY 0.01 mg/l

0111 AMMONIA < 0.01 mg/l

0112 NITRATE 0.007 mg/l

0145 TOTAL SUSPENDED SOLIDS 10.7 mg/l

0158 HARDNESS TOTAL 43.4 mg/l

0172 CHLORIDE ION 19.9 mg/l

0180 ORTHO - PHOSPHATE < 0.05 mg/l

0193 MAGNESIUM DISSOLVED 3.7 mg/l

0239 CALCIUM DISSOLVED 11.6 mg/l



503023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halfagrec

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 01-MAR-90

TIME : 16:00 hrs.

LAB REFERENCE : E 61772

ADDRESS :

## SAMPLER'S COMMENTS

SITE 40

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.5    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 85     | uS/cm           |
| 0076      | TEMPERATURE WATER             | 6      | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 69.2   | %               |
| 0082      | OXYGEN DISSOLVED              | 8.6    | mg/l            |
| 0085      | BOD 5 ATU                     | 1.5    | mg/l            |
| 0111      | AMMONIA                       | 0.01   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 1.11   | mg/l            |
| 0119      | NITRITE                       | 0.002  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | mg/l            |
| 0158      | HARDNESS TOTAL                | 24.3   | mg/l            |
| 0172      | CHLORIDE ION                  | 13.4   | mg/l            |
| 0180      | ORTHO-PHOSPHATE               | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 2.13   | mg/l            |
| 0249      | CALCIUM DISSOLVED             | 6.22   | mg/l            |

|    |                         |                                           |                     |
|----|-------------------------|-------------------------------------------|---------------------|
| 4  | 503023                  | NATIONAL RIVERS AUTHORITY - S.W. DIVISION | 19-MAR-90           |
| 6  |                         |                                           |                     |
| 8  | SAMPLE ANALYSIS REPORT  |                                           | Simon Halfacree     |
| 10 |                         |                                           |                     |
| 12 | SAMPLING POINT : 190102 | INVESTIGATIONS TEAM SAMPLES :             | Llanelli Lab        |
| 14 | DATE TAKEN : 06-MAR-90  |                                           |                     |
| 16 | TIME : 16:00 hrs.       | LAB REFERENCE : E 61925                   |                     |
| 18 | ADDRESS :               |                                           |                     |
| 20 |                         |                                           |                     |
| 22 | SAMPLER'S COMMENTS      |                                           |                     |
| 24 | AGRIC. SITE 35          |                                           |                     |
| 26 |                         |                                           |                     |
| 28 | CODE                    | DESCRIPTION                               | RESULT UNITS        |
| 30 | 0061                    | PH                                        | 7.5 pH units        |
| 32 | 0062                    | CONDUCTIVITY 20 C                         | 120 uS/cm           |
| 34 | 0076                    | TEMPERATURE WATER                         | 9.5 Degrees Celsius |
| 36 | 0081                    | OXYGEN DISSOLVED % SATURATION             | 76.3 %              |
| 38 | 0082                    | OXYGEN DISSOLVED                          | 8.7 mg/l            |
| 40 | 0085                    | BOD 5 AT 20                               | 1.2 mg/l            |
| 42 | 0111                    | AMMONIA                                   | 0.01 mg/l           |
| 44 | 0116                    | NITROGEN TOTAL OXIDISED                   | 3.2 mg/l            |
| 46 | 0119                    | NITRITE                                   | 0.003 mg/l          |
| 48 | 0135                    | TOTAL SUSPENDED SOLIDS 105                | 5 mg/l              |
| 50 | 0158                    | HARDNESS TOTAL                            | 34.1 mg/l           |
| 52 | 0172                    | CHLORIDE ION                              | 20.5 mg/l           |
| 54 | 0180                    | ORTHOPHOSPHATE                            | 0.05 mg/l           |
| 56 | 0235                    | MAGNESIUM DISSOLVED                       | 3.22 mg/l           |
| 58 | 0239                    | CALCIUM DISSOLVED                         | 8.45 mg/l           |
| 60 |                         |                                           |                     |
| 62 |                         |                                           |                     |
| 64 |                         |                                           |                     |



SN3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90 !

## SAMPLE ANALYSIS REPORT

Simon Halliwell

(26)

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 05-MAR-90

TIME : 13:40 hrs.

LAB REFERENCE : E 61920

ADDRESS :

## SAMPLER'S COMMENTS

AGRIC. SITE 17A.

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.3    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 129    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 9      | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 89.3   | %               |
| 0082      | OXYGEN DISSOLVED              | 10.3   | mg/l            |
| 0085      | BOD 5 ATU                     | 1.7    | mg/l            |
| 0111      | AMMONIA                       | 0.3    | mg/l 0.155 fscj |
| 0116      | NITROGEN TOTAL OXIDISED       | 3.6    | mg/l            |
| 0118      | NITRITE                       | 0.002  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 17     | mg/l            |
| 0150      | HARDNESS TOTAL                | 47.5   | mg/l            |
| 0172      | CHLORIDE ION                  | 20.9   | mg/l            |
| 0180      | ORTHOPHOSPHATE                | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.47   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 13.32  | mg/l            |

4  
5W3023 NATIONAL RIVERS AUTHORITY - S.W. DIVISION 19-MAR-90

8 SAMPLE ANALYSIS REPORT

Simon Halliwell

10 SAMPLING POINT : 190102 INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

12 DATE TAKEN : 05-MAR-90

14 TIME : 10:57 hrs. LAB REFERENCE : E 61918

16 ADDRESS :

20 SAMPLER'S COMMENTS

22 AGRIC. SITE 16

| 24        | 26                            | 28        | 30              | 32 | 34     | 36 | 38 | 40 | 42 |
|-----------|-------------------------------|-----------|-----------------|----|--------|----|----|----|----|
| TEST CODE | DESCRIPTION                   | RESULT    | UNITS           |    |        |    |    |    |    |
| 0061      | pH                            | 7.3       | pH units        |    |        |    |    |    |    |
| 0062      | CONDUCTIVITY 20 C             | 142       | uS/cm           |    |        |    |    |    |    |
| 0076      | TEMPERATURE WATER             | No Result | Degrees Celsius |    |        |    |    |    |    |
| 0081      | OXYGEN DISSOLVED % SATURATION | No Result | %               |    |        |    |    |    |    |
| 0082      | OXYGEN DISSOLVED              | 9.9       | mg/l            |    |        |    |    |    |    |
| 0085      | BOD 5 ATU                     | 0.8       | mg/l            |    |        |    |    |    |    |
| 0111      | AMMONIA                       | 0.01      | mg/l            |    | 0.0150 |    |    |    |    |
| 0116      | NITROGEN TOTAL OXIDISED       | 4.2       | mg/l            |    |        |    |    |    |    |
| 0118      | NITRITE                       | 0.004     | mg/l            |    |        |    |    |    |    |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 12        | mg/l            |    |        |    |    |    |    |
| 0150      | HARDNESS TOTAL                | 52        | mg/l            |    |        |    |    |    |    |
| 0172      | CHLORIDE ION                  | 18.8      | mg/l            |    |        |    |    |    |    |
| 0180      | ORTHO - PHOSPHATE             | 0.05      | mg/l            |    |        |    |    |    |    |
| 0235      | MAGNESIUM DISSOLVED           | 3.78      | mg/l            |    |        |    |    |    |    |
| 0239      | CALCIUM DISSOLVED             | 14.62     | mg/l            |    |        |    |    |    |    |

SN3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Hattacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 05-MAR-90

TIME : 12:15 hrs.

LAB REFERENCE : E 61919

ADDRESS :

## SAMPLER'S COMMENTS

AGRIC. SITE 17

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.3    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 142    | uS/cm           |
| 0070      | TEMPERATURE WATER             | 2.5    | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 95.6   | %               |
| 0082      | OXYGEN DISSOLVED              | 10.9   | mg/l            |
| 0085      | BOD 5 ATU                     | 1.3    | mg/l            |
| 0111      | AMMONIA                       | 0.19   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 3.6    | mg/l            |
| 0118      | NITRITE                       | 0.01   | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 11     | mg/l            |
| 0150      | HARDNESS TOTAL                | 49.2   | mg/l            |
| 0172      | CHLORIDE ION                  | 19.7   | mg/l            |
| 0100      | ORTHO PHOSPHATE               | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.69   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 13.62  | mg/l            |



SN3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halliwell

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 06-MAR-90

TIME : 13:00 hrs.

LAB REFERENCE : E 61926

ADDRESS :

## SAMPLER'S COMMENTS

AGRIC. SITE 36

| TEST CODE | DESCRIPTION                   | RESULT | UNITS            |
|-----------|-------------------------------|--------|------------------|
| 0061      | pH                            | 7.3    | pH units         |
| 0062      | CONDUCTIVITY 20 C             | 182    | uS/cm            |
| 0076      | TEMPERATURE WATER             | 9.5    | Degrees Celsius  |
| 0081      | OXYGEN DISSOLVED % SATURATION | 97.4   | %                |
| 0082      | OXYGEN DISSOLVED              | 10.1   | mg/l             |
| 0085      | BOD 5 ATU                     | 0.3    | mg/l             |
| 0111      | AMMONIA                       | 0.03   | mg/l (0.06 f.c.) |
| 0113      | NITROGEN TOTAL OXIDISED       | 3.5    | mg/l             |
| 0118      | NITRATE                       | 0.014  | mg/l             |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | < 5    | mg/l             |
| 0150      | HARDNESS TOTAL                | 57.4   | mg/l             |
| 0172      | CHLORIDE ION                  | 28.8   | mg/l             |
| 0180      | ORTHO PHOSPHATE               | 0.05   | mg/l             |
| 0235      | MAGNESIUM DISSOLVED           | 3.92   | mg/l             |
| 0239      | CALCIUM DISSOLVED             | 16.54  | mg/l             |



SN3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

SAMPLE ANALYSIS REPORT

Simon Halfacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 05-MAR-90

TIME : 11:00 hrs.

LAB REFERENCE : E 61924

ADDRESS :

SAMPLER'S COMMENTS

AGRIC. SITE 24

| INT CODE | DESCRIPTION                   | RESULT | UNITS           |
|----------|-------------------------------|--------|-----------------|
| 0061     | pH                            | 7.4    | pH units        |
| 0062     | CONDUCTIVITY 20 C             | 198    | uS/cm           |
| 0076     | TEMPERATURE WATER             | 9      | Degrees Celsius |
| 0081     | OXYGEN DISSOLVED % SATURATION | 97.1   | %               |
| 0082     | OXYGEN DISSOLVED              | 11.2   | mg/l            |
| 0085     | BOD 5 ATU                     | 1.3    | mg/l            |
| 0111     | AMMONIA                       | 0.01   | mg/l            |
| 0116     | NITROGEN TOTAL OXIDISED       | 5.2    | mg/l            |
| 0118     | NITRITE                       | 0.009  | mg/l            |
| 0135     | TOTAL SUSPENDED SOLIDS 105    | 5      | mg/l            |
| 0158     | HARDNESS TOTAL                | 62.2   | mg/l            |
| 0172     | CHLORIDE ION                  | 28     | mg/l            |
| 0180     | ORTHO-PHOSPHATE               | 0.05   | mg/l            |
| 0235     | MAGNESIUM DISSOLVED           | 5.15   | mg/l            |
| 0239     | CALCIUM DISSOLVED             | 19.22  | mg/l            |

30

SW2003

NATIONAL RIVERS AUTHORITY - S.W. DIVISION  
Sampling Run Maintenance

13-AUG-90  
Page 2 of 2

Officer's Id : WRC1 Date of Run : 23-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: E63733  
Arg(1) : 3P52 Arg(2) : Arg(3) : Status : T

| DETERMINAND & METHOD DETAILS (QUERY ONLY) |                                        |                  |                 |            |     |            |  |
|-------------------------------------------|----------------------------------------|------------------|-----------------|------------|-----|------------|--|
| Det. Meth<br>Code Code                    | Description                            | Exc Qual<br>Code | Result<br>Value | In-<br>Sit | Pri | Sta<br>tus |  |
| 3                                         | pH nutrient associated                 |                  | 6.9             |            | 4   | E          |  |
| 6                                         | Conductometric measurement non potable |                  | 175             |            | 4   | V          |  |
| 76                                        | Insitu determinand                     |                  | 9               | Y          | 4   | E          |  |
| 81                                        | Calculated determinand                 |                  | 97.9            |            | 4   | E          |  |
| 12                                        | Titration                              |                  | 11.3            |            | 4   | E          |  |
| 11                                        | Diss.oxygen measurement                |                  | 1               |            | 4   | E          |  |
| 111                                       | Low Range Nutrients (Potable & Envir.) |                  | .04             |            | 4   | E          |  |
| 116                                       | Low Range Nutrients (Potable & Envir.) |                  | 2.53            |            | 4   | E          |  |
| 118                                       | Low Range Nutrients (Potable & Envir.) | S                | .022            |            | 4   | E          |  |
| 35                                        | Gravimetry                             |                  | < 5             |            | 4   | E          |  |
| 158                                       | Calculated determinand                 |                  | 55.6            |            | 4   | V          |  |
| 172                                       | Low Range Nutrients (Potable & Envir.) |                  | 25.7            |            | 4   | E          |  |

Char Mode: Replace Page 2

Count: 12

SW2003

NATIONAL RIVERS AUTHORITY - S.W. DIVISION  
Sampling Run Maintenance

13-AUG-90  
Page 2 of 2

Officer's Id : WRC1 Date of Run : 23-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: E63733  
Arg(1) : 3P52 Arg(2) : Arg(3) : Status : T

| DETERMINAND & METHOD DETAILS (QUERY ONLY) |                                          |                  |                 |            |     |            |  |
|-------------------------------------------|------------------------------------------|------------------|-----------------|------------|-----|------------|--|
| Det. Meth<br>Code Code                    | Description                              | Exc Qual<br>Code | Result<br>Value | In-<br>Sit | Pri | Sta<br>tus |  |
| 180                                       | Low Range Nutrients (Potable & Envir.)   |                  | < .05           |            | 4   | E          |  |
| 35                                        | Plasma spectrometry - direct T.Hard.(P4) | S                | 4.73            |            | 4   | E          |  |
| 39                                        | Plasma spectrometry - direct T.Hard.(P4) |                  | 14.5            |            | 4   | E          |  |

\* Char Mode: Replace Page 2

Count: \*15

|    |                         |                                           |                           |    |
|----|-------------------------|-------------------------------------------|---------------------------|----|
| 2  |                         |                                           |                           | 2  |
| 4  |                         |                                           |                           | 4  |
| 6  | SUS023                  | NATIONAL RIVERS AUTHORITY - S.W. DIVISION | 21-MAR-90                 | 6  |
| 8  | SAMPLE ANALYSIS REPORT  |                                           | Simon-Halfacree           | 8  |
| 10 |                         |                                           |                           | 10 |
| 12 | SAMPLING POINT : 190102 | INVESTIGATIONS TEAM SAMPLES :             | Llanelli Lab              | 12 |
| 14 | DATE TAKEN : 14-MAR-90  |                                           |                           | 14 |
| 16 | TIME : 14:00 hrs.       | LAB REFERENCE : E 62470                   |                           | 16 |
| 18 | ADDRESS :               |                                           |                           | 18 |
| 20 |                         |                                           |                           | 20 |
| 22 | SAMPLER'S COMMENTS      |                                           |                           | 22 |
| 24 | SITE 28                 |                                           |                           | 24 |
| 26 | TEST CODE               | DESCRIPTION                               | RESULT UNITS              | 26 |
| 28 | 0001                    | pH                                        | 7.6 pH units              | 28 |
| 30 | 0002                    | CONDUCTIVITY 20 C                         | 167 uS/cm                 | 30 |
| 32 | 0003                    | TEMPERATURE WATER                         | No Result Degrees Celsius | 32 |
| 34 | 0001                    | OXYGEN DISSOLVED % SATURATION             | No Result %               | 34 |
| 36 | 0002                    | OXYGEN DISSOLVED                          | 11.1 mg/l                 | 36 |
| 38 | 0005                    | BOD 5 ATU                                 | 1.1 mg/l                  | 38 |
| 40 | 0111                    | AMMONIA                                   | 0.06 mg/l                 | 40 |
| 42 | 0114                    | NITROGEN TOTAL OXIDISED                   | 3.58 mg/l                 | 42 |
| 44 | 0110                    | NITRATE                                   | 0.029 mg/l                | 44 |
| 46 | 0135                    | TOTAL SUSPENDED SOLIDS 105                | 10 mg/l                   | 46 |
| 48 | 0150                    | HARDNESS TOTAL                            | 54.1 mg/l                 | 48 |
| 50 | 0172                    | CHLORIDE ION                              | 27.5 mg/l                 | 50 |
| 52 | 0180                    | ORTHO-PHOSPHATE                           | 0.08 mg/l                 | 52 |
| 54 | 0235                    | MAGNESIUM DISSOLVED                       | 4.86 mg/l                 | 54 |
| 56 | 0239                    | CALCIUM DISSOLVED                         | 13.67 mg/l                | 56 |
| 58 |                         |                                           |                           | 58 |
| 60 |                         |                                           |                           | 60 |
| 62 |                         |                                           |                           | 62 |
| 64 |                         |                                           |                           | 64 |



SM3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

21-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halliwell

33

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 14-MAR-90

TIME : 12:00 hrs.

LAB REFERENCE : E 62469

ADDRESS :

## SAMPLER'S COMMENTS

SITE 27

TEST CODE

DESCRIPTION

RESULT

UNITS

0061

pH

7.7

pH units

0062

CONDUCTIVITY 20 C

183

uS/cm

0076

TEMPERATURE WATER

No Result

Degrees Celsius

0081

OXYGEN DISSOLVED % SATURATION

No Result

%

0082

OXYGEN DISSOLVED

11.3

mg/l

0085

BOD 5 AT 20

1

mg/l

0111

AMMONIA

0.03

mg/l

0116

NITROGEN TOTAL OXIDISED

3.41

mg/l

0118

NITRATE

0.022

mg/l

0135

TOTAL SUSPENDED SOLIDS 105

&lt;

mg/l

0158

HARDNESS TOTAL

0.2

mg/l

0172

CHLORIDE ION

29.5

mg/l

0180

ORTHO PHOSPHATE

0.06

mg/l

0235

MAGNESIUM DISSOLVED

5.29

mg/l

0239

CALCIUM DISSOLVED

16.07

mg/l

2  
4  
6 SW3023 NATIONAL RIVERS AUTHORITY - S.W. DIVISION 21-MAR-90  
8 SAMPLE ANALYSIS REPORT SIMON H311acree  
10  
12 SAMPLING POINT : 190102 INVESTIGATIONS TEAM SAMPLES : Llanelli Lab  
14 DATE TAKEN : 14-MAR-90  
16 TIME : 11:00 hrs. LAB REFERENCE : E 62468  
18 ADDRESS :  
20  
22 SAMPLER'S COMMENTS  
24 SITE 26  
26  
28  
30  
32  
34  
36  
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40  
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34

| TEST CODE | DESCRIPTION                   | RESULT    | UNITS           |
|-----------|-------------------------------|-----------|-----------------|
| 0061      | pH                            | 7.7       | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 193       | uS/cm           |
| 0076      | TEMPERATURE WATER             | No Result | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | No Result | %               |
| 0082      | OXYGEN DISSOLVED              | 11.5      | mg/l            |
| 0085      | BOD 5 ATU                     | 1.4       | mg/l            |
| 0119      | AMMONIA                       | 0.08      | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 3.5       | mg/l            |
| 0118      | NITRITE                       | 0.029     | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 7         | mg/l            |
| 0150      | HARDNESS TOTAL                | 63.8      | mg/l            |
| 0172      | CHLORIDE ION                  | 31        | mg/l            |
| 0180      | ORTHO - PHOSPHATE             | 0.11      | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 5.24      | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 16.93     | mg/l            |



610023 NATIONAL RIVERS AUTHORITY STATION DIVISION 18 APR 90

SAMPLE ANALYSTS REPORT

Simon Halfacre

SAMPLING POINT 190102 INVESTIGATIONS TEAM SAMPLES

DATE TAKEN 05 APR 90

TIME 1500 HRS LAB REFERENCE G6520R

ADDRESS

SAMPLE COMMENTS

BRIC SURVEY SITE 37

| DET CODE | DESCRIPTION                   | RESULT | UNITS           |
|----------|-------------------------------|--------|-----------------|
| 0061     | pH                            | 6.5    | pH units        |
| 0072     | CONDUCTIVITY 20°C             | 144    | µS/cm           |
| 0076     | TEMPERATURE WATER             | 6.5    | Degrees Celsius |
| 0001     | OXYGEN DISSOLVED % SATURATION | 70.6   | %               |
| 0082     | OXYGEN DISSOLVED              | 12.1   | mg/l            |
| 0085     | BOD 5 AT 20°C                 | 0.3    | mg/l            |
| 0111     | AMMONIA                       | 0.05   | mg/l            |
| 0116     | NITROGEN TOTAL OXIDISED       | 2.93   | mg/l            |
| 0118     | NITRITE                       | 0.007  | mg/l            |
| 0135     | TOTAL SUSPENDED SOLIDS 105    | 6      | mg/l            |
| 0158     | HARDNESS TOTAL                | 45.2   | mg/l            |
| 0172     | THEOPHON                      | 22.7   | mg/l            |
| 0180     | ORTHO - PHOSPHATE             | 0.06   | mg/l            |
| 0235     | MAGNESIUM DISSOLVED           | 4.5    | mg/l            |
| 0239     | CALCIUM DISSOLVED             | 10.7   | mg/l            |

175 (30)

SW2003 NATIONAL RIVERS AUTHORITY S.W. DIVISION 13-AUG-90  
Sampling Run Maintenance Page 2 of 2

Officer's Id : WRC1 Date of Run : 23-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: E63734  
Arg(1) : 3F52 Arg(2) : Arg(3) : Status : T

| DETERMINAND & METHOD DETAILS (QUERY ONLY) |                                        |          |        |         |     |  |
|-------------------------------------------|----------------------------------------|----------|--------|---------|-----|--|
| Det. Meth                                 | Description                            | Exc Qual | Result | In- Pri | Sta |  |
| Code Code                                 |                                        | Code     | Value  | Sit     | tus |  |
| 61 3                                      | pH nutrient associated                 |          | 6.3    | 4       | E   |  |
| 62 6                                      | Conductometric measurement non potable |          | 142    | 4       | V   |  |
| 76 2                                      | Insitu determinand                     |          | 8      | Y 4     | E   |  |
| 81 1                                      | Calculated determinand                 |          | 88.8   | 4       | E   |  |
| 82 12                                     | Tilcal ion                             |          | 10.5   | 4       | E   |  |
| 85 11                                     | Diss.oxygen measurement                |          | .2     | 4       | E   |  |
| 111 50                                    | Low Range Nutrients (Potable & Envir.) |          | .14    | 4       | E   |  |
| 116 50                                    | Low Range Nutrients (Potable & Envir.) |          | 2.31   | 4       | E   |  |
| 118 50                                    | Low Range Nutrients (Potable & Envir.) | S        | .034   | 4       | E   |  |
| 135 10                                    | Gravimetry                             |          | < 5    | 4       | E   |  |
| 158 1                                     | Calculated determinand                 |          | 45.2   | 4       | V   |  |
| 172 50                                    | Low Range Nutrients (Potable & Envir.) |          | 21.2   | 4       | E   |  |

Char Mode: Replace Page 2 Count: 12

SW2003 NATIONAL RIVERS AUTHORITY - S.W. DIVISION 13-AUG-90  
Sampling Run Maintenance Page 2 of 2

Officer's Id : WRC1 Date of Run : 23-MAR-90 Officer's Run No: 1  
Sampling Point: 190102 INVESTIGATIONS TEAM SAMPLES : Lab.Ref.: E63734  
Arg(1) : 3F52 Arg(2) : Arg(3) : Status : T

| DETERMINAND & METHOD DETAILS (QUERY ONLY) |                                          |          |        |         |     |  |
|-------------------------------------------|------------------------------------------|----------|--------|---------|-----|--|
| Det. Meth                                 | Description                              | Exc Qual | Result | In- Pri | Sta |  |
| Code Code                                 |                                          | Code     | Value  | Sit     | tus |  |
| 180 50                                    | Low Range Nutrients (Potable & Envir.)   |          | .05    | 4       | E   |  |
| 235 72                                    | Plasma spectrometry - direct T.Hard.(P4) | S        | 3.75   | 4       | E   |  |
| 239 72                                    | Plasma spectrometry - direct T.Hard.(P4) |          | 11.92  | 4       | E   |  |

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63023 NATIONAL RIVERS AUTHORITY SAN DIVISION 19-APR-90

SAMPLE ANALYSIS REPORT

Simon Holmsted

25000000 POINT 190102 INVESTIGATIONS TEAM SAMPLES

Lab

DATE TAKEN 06 APR 90

TIME 1500 LAB REFERENCE E165213

ADDRESS

SAMPLE COMMENTS

24000000 SITE 22

| DEL CODE | DESCRIPTION                   | RESULT | UNITS           |
|----------|-------------------------------|--------|-----------------|
| 0061     | pH                            | 6.8    | pH units        |
| 0062     | CONDUCTIVITY @ 20 C           | 203    | US/cm           |
| 0076     | TEMPERATURE WATER             | 6.5    | Degrees Celsius |
| 0081     | OXYGEN DISSOLVED % SATURATION | 98.4   | %               |
| 0082     | OXYGEN DISSOLVED              | 12.2   | mg/l            |
| 0085     | BOD 5 @ 20 C                  | 0.02   | mg/l            |
| 0111     | AMMONIA                       | 0.01   | mg/l            |
| 0116     | NITROGEN TOTAL OXIDISED       | 0.31   | mg/l            |
| 0118     | NITRITE                       | 0.01   | mg/l            |
| 0135     | TOTAL SUSPENDED SOLIDS        | 5      | mg/l            |
| 0138     | HARDNESS TOTAL                | 63.8   | mg/l            |
| 0172     | CHLORIDE TDN                  | 32.1   | mg/l            |
| 0180     | ORTHO - PHOSPHATE             | 0.05   | mg/l            |
| 0235     | MAGNESIUM DISSOLVED           | 5.5    | mg/l            |
| 0239     | CALCIUM DISSOLVED             | 16.5   | mg/l            |

32

NATIONAL RIVERS AUTHORITY - G.W. DIVISION - 18 APR 90

SAMPLE ANALYSIS REPORT

Simon Halfacre

SAMPLE NO POINT 1 190102 INVESTIGATIONS TEAM SAMPLES

DATE TAKEN 05 APR 90

TIME 16:30 HRS LAB REFERENCE F 65206

ADDRESS

SAMPLE COMMENTS

AGRICULTURE SITE

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 6      | pH units        |
| 0062      | CONDUCTIVITY 20°C             | 134    | µS/cm           |
| 0076      | TEMPERATURE WATER             | 6.5    | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 95.3   | %               |
| 0082      | OXYGEN DISSOLVED              | 11.7   | mg/l            |
| 0085      | BOD 5 SATU                    | 0.5    | mg/l            |
| 0111      | AMMONIA                       | 0.04   | mg/l            |
| 0112      | NITROGEN TOTAL OXIDISED       | 1.06   | mg/l            |
| 0118      | NITRITE                       | 0.015  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 9      | mg/l            |
| 0158      | HARDNESS TOTAL                | 37.5   | mg/l            |
| 0172      | CHLORIDE ION                  | 26.2   | mg/l            |
| 0100      | ORTHO - PHOSPHATE             | < 0.05 | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.6    | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 9.1    | mg/l            |

38



6:003033 NATIONAL RIVERS AUTHORITY SAN DIVISION 18 APR 90

SAMPLE ANALYSIS REPORT

Simon Halfacree

12 SAMPLING POINT 490102 INVESTIGATIONS TEAM SAMPLES

14 DATE TAKEN 06 MAR 90

16 TIME 12:50 HRS LAB REFERENCE 67212

18 ADDRESS

22 SAMPLES REQUIRED 15

24 ANALYSIS SURVEY 911521

| DET CODE | DESCRIPTION                   | RESULT | UNITS           |
|----------|-------------------------------|--------|-----------------|
| 0061     | pH                            | 6.7    | pH units        |
| 0072     | CONDUCTIVITY 20°C             | 193    | µS/cm           |
| 0076     | TEMPERATURE WATER             | 6.5    | Degrees Celsius |
| 0081     | OXYGEN DISSOLVED % SATURATION | 103    | %               |
| 0082     | OXYGEN DISSOLVED              | 12.6   | mg/l            |
| 0085     | SULPHATE                      | 0.2    | mg/l            |
| 0113     | AMMONIA                       | < 0.01 | mg/l            |
| 0114     | NITROGEN TOTAL OXIDISED       | 1.97   | mg/l            |
| 0118     | NITRITE                       | 0.008  | mg/l            |
| 0135     | TOTAL SUSPENDED SOLIDS 105    | 63.7   | mg/l            |
| 0158     | HARDNESS TOTAL                | 137.6  | mg/l            |
| 0172     | CHLORIDE ION                  | 0.05   | mg/l            |
| 0180     | IRIDIO - PHOSPHATE            | 5.13   | mg/l            |
| 0239     | CALCIUM DISSOLVED             | 16.8   | mg/l            |



NATIONAL RIVERS AUTHORITY 5th DIVISION

18 APR 90

SAMPLE ANALYSIS REPORT

Simon Halfacre

INVESTIGATIONS TEAM SAMPLES

190100

08 APR 90

LAB REFERENCE

65214

ADDRESS

SAMPLES COMMENTS

ANALYTICAL SURVEY SITE 3A

| DET CODE | DESCRIPTION | RESULT | UNITS |
|----------|-------------|--------|-------|
|----------|-------------|--------|-------|

|      |    |     |          |
|------|----|-----|----------|
| 0061 | pH | 6.9 | pH units |
|------|----|-----|----------|

|      |              |     |       |
|------|--------------|-----|-------|
| 0062 | CONDUCTIVITY | 150 | US/cm |
|------|--------------|-----|-------|

|      |                   |     |                 |
|------|-------------------|-----|-----------------|
| 0076 | TEMPERATURE WATER | 4.5 | Degrees Celsius |
|------|-------------------|-----|-----------------|

|      |                  |      |      |
|------|------------------|------|------|
| 0081 | OXYGEN DISSOLVED | 12.2 | mg/l |
|------|------------------|------|------|

|      |                   |      |      |
|------|-------------------|------|------|
| 0082 | OXYGEN SATURATION | 12.2 | mg/l |
|------|-------------------|------|------|

|      |       |      |      |
|------|-------|------|------|
| 0085 | BOD 5 | 0.01 | mg/l |
|------|-------|------|------|

|      |         |       |      |
|------|---------|-------|------|
| 0111 | AMMONIA | 0.005 | mg/l |
|------|---------|-------|------|

|      |                |       |      |
|------|----------------|-------|------|
| 0116 | NITROGEN TOTAL | 0.005 | mg/l |
|------|----------------|-------|------|

|      |         |       |      |
|------|---------|-------|------|
| 0118 | NITRITE | 0.005 | mg/l |
|------|---------|-------|------|

|      |                        |      |      |
|------|------------------------|------|------|
| 0135 | TOTAL SUSPENDED SOLIDS | 48.9 | mg/l |
|------|------------------------|------|------|

|      |                |      |      |
|------|----------------|------|------|
| 0158 | HARDNESS TOTAL | 0.05 | mg/l |
|------|----------------|------|------|

|      |          |      |      |
|------|----------|------|------|
| 0172 | CHLORIDE | 0.05 | mg/l |
|------|----------|------|------|

|      |                |      |      |
|------|----------------|------|------|
| 0180 | ORTHOPHOSPHATE | 0.05 | mg/l |
|------|----------------|------|------|

|      |                     |      |      |
|------|---------------------|------|------|
| 0235 | MAGNESIUM DISSOLVED | 12.2 | mg/l |
|------|---------------------|------|------|

|      |                   |      |      |
|------|-------------------|------|------|
| 0239 | CALCIUM DISSOLVED | 12.2 | mg/l |
|------|-------------------|------|------|

SW3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

## SAMPLE ANALYSIS REPORT

SIMON HOLTJEDER

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 01-MAR-90

TIME : 12:15 hrs.

LAB REFERENCE : E 61769

ADDRESS :

SAMPLER'S COMMENTS

SITE 19

| TEST CODE | DESCRIPTION                   | RESULT | UNITS             |
|-----------|-------------------------------|--------|-------------------|
| 0051      | pH                            | 7.9    | pH units          |
| 0062      | CONDUCTIVITY 20 C             | 209    | uS/cm             |
| 0076      | TEMPERATURE WATER             | 7      | Degrees Celsius   |
| 0081      | OXYGEN DISSOLVED % SATURATION | 83.3   | %                 |
| 0082      | OXYGEN DISSOLVED              | 10.1   | mg/l              |
| 0085      | BOD 5 ATU                     | 1.9    | mg/l              |
| 0111      | AMMONIA                       | 0.12   | mg/l (0.125 mg/l) |
| 0116      | NITROGEN TOTAL OXIDISED       | 1.9    | mg/l              |
| 0110      | NITRITE                       | 0.023  | mg/l              |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 9      | mg/l              |
| 0158      | HARDNESS TOTAL                | 22.3   | mg/l              |
| 0172      | CHLORIDE ION                  | 22.6   | mg/l              |
| 0180      | ORTHO PHOSPHATE               | 8.22   | mg/l              |
| 0235      | MAGNESIUM DISSOLVED           | 4.23   | mg/l              |
| 0237      | CALCIUM DISSOLVED             | 30     | mg/l              |

03023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halfacrer

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 01-MAR-90

TIME : 10:45 hrs.

LAB REFERENCE : E 61770

ADDRESS :

SAMPLER'S COMMENTS

SITE 20

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0021      | pH                            | 7.7    | pH units        |
| 0032      | CONDUCTIVITY 20 C             | 213    | uS/cm           |
| 0026      | TEMPERATURE WATER             | 7      | Degrees Celsius |
| 0001      | OXYGEN DISSOLVED % SATURATION | 88.3   | %               |
| 0002      | OXYGEN DISSOLVED              | 10.7   | mg/l            |
| 0005      | BOD 5 ATU                     | 1.3    | mg/l            |
| 0111      | AMMONIA                       | 0.14   | mg/l (0.15 g/l) |
| 0116      | NITROGEN TOTAL OXIDISED       | 1.7    | mg/l            |
| 0110      | NITRITE                       | 0.016  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 6      | mg/l            |
| 0158      | HARDNESS TOTAL                | 24.7   | mg/l            |
| 0172      | CHLORIDE ION                  | 21.8   | mg/l            |
| 0180      | ORTHOPHOSPHATE                | 0.06   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.71   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 31.8   | mg/l            |



SN3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

08-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halfacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 01-MAR-90

TIME : 14:20 hrs.

LAB REFERENCE : E 61157

ADDRESS :

## SAMPLER'S COMMENTS

SITE 50A

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.5    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 241    | uS/cm           |
| 0073      | TEMPERATURE WATER             | 6.8    | Degrees Celsius |
| 0001      | OXYGEN DISSOLVED % SATURATION | 82.9   | %               |
| 0082      | OXYGEN DISSOLVED              | 10.1   | mg/l            |
| 0005      | BOD 5 ATU                     | 2.4    | mg/l            |
| 0111      | AMMONIA                       | 0.24   | mg/l (0.35 g/l) |
| 0116      | NITROGEN TOTAL OXIDISED       | 1.65   | mg/l            |
| 0118      | NITRITE                       | 0.08   | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | .6     | mg/l            |
| 0158      | HARDNESS TOTAL                | 84.7   | mg/l            |
| 0172      | CHLORIDE ION                  | 24.6   | mg/l            |
| 0180      | ORTHOPHOSPHATE                | 0.11   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.17   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 28.7   | mg/l            |

SAMPLE ANALYSIS REPORT

Simon Halford

SAMPLING POINT : 170102 INVESTIGATIONS TEAM SAMPLES : Llanelli Lab  
DATE TAKEN : 01-MAR-90  
TIME : 13:00 hrs. LAB REFERENCE : E 61156  
ADDRESS :

44

SAMPLER'S COMMENTS

SITE 50

| TEST CODE | DESCRIPTION                   | RESULT    | UNITS           |
|-----------|-------------------------------|-----------|-----------------|
| 0061      | pH                            | 7.6       | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 241       | uS/cm           |
| 0076      | TEMPERATURE WATER             | 6.5       | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 85.5      | %               |
| 0082      | OXYGEN DISSOLVED              | 10.5      | mg/l            |
| 0085      | BOD 5 ATU                     | 3         | mg/l            |
| 0111      | AMMONIA                       | 0.36      | mg/l (0.3954)   |
| 0116      | NITROGEN TOTAL OXIDISED       | 1.64      | mg/l            |
| 0118      | NITRITE                       | No Result | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 8         | mg/l            |
| 0158      | HARDNESS TOTAL                | 21.3      | mg/l            |
| 0172      | CHLORIDE ION                  | No Result | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.15      | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.31      | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 23.1      | mg/l            |



SW3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

08-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halford

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 01-MAR-90

TIME : 11:30 hrs.

LAB REFERENCE : E 61155

ADDRESS :

SAMPLER'S COMMENTS

SITE 49

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.7    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 252    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 5.5    | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 90.6   | %               |
| 0082      | OXYGEN DISSOLVED              | 11.4   | mg/l            |
| 0085      | BOD 5 ATU                     | 2      | mg/l            |
| 0113      | AMMONIA                       | 0.13   | mg/l (5.0)      |
| 0116      | NITROGEN TOTAL OXIDISED       | 2.02   | mg/l            |
| 0118      | NITRITE                       | 0.061  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | < 5    | mg/l            |
| 0158      | HARDNESS TOTAL                | 82     | mg/l            |
| 0172      | CHLORIDE ION                  | 26.9   | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.15   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.41   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 27.2   | mg/l            |

SW3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

08-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halpern

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 27-FEB-90

TIME : 12:00 hrs.

LAB REFERENCE : E 61098

ADDRESS :

## SAMPLER'S COMMENTS

SITE 46 NANT CWMFFRWD TRIB

| TEST CODE | DESCRIPTION                   | RESULT    | UNITS           |
|-----------|-------------------------------|-----------|-----------------|
| 0061      | PH                            | 7.3       | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 230       | uS/cm           |
| 0076      | TEMPERATURE WATER             | 8.4       | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | No Result | %               |
| 0082      | OXYGEN DISSOLVED              | 0         | mg/l            |
| 0085      | BOD 5 ATU                     | 1.8       | mg/l            |
| 0111      | AMMONIA                       | 0.48      | mg/l 0.565-20/  |
| 0116      | NITROGEN TOTAL OXIDISED       | 1         | mg/l            |
| 0118      | NITRITE                       | 0.017     | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | < 5       | mg/l            |
| 0158      | HARDNESS TOTAL                | 25.4      | mg/l            |
| 0172      | CHLORIDE ION                  | 29.4      | mg/l            |
| 0180      | ORTHOPHOSPHATE                | 0.08      | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 2.85      | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 25.5      | mg/l            |



SW3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

08-MAR-90

## SAMPLE ANALYSIS REPORT

Simon Halfacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 01-MAR-90

TIME : 10:30 hrs.

LAB REFERENCE : E 61154

ADDRESS :

## SAMPLER'S COMMENTS

SITE 47

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.5    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 230    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 5      | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 91     | %               |
| 0082      | OXYGEN DISSOLVED              | 11.6   | mg/l            |
| 0085      | BOD 5 ATU                     | 1.4    | mg/l            |
| 0111      | AMMONIA                       | 0.28   | mg/l (0.32 f50) |
| 0116      | NITROGEN TOTAL OXIDISED       | 1.64   | mg/l            |
| 0118      | NITRITE                       | 0.047  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5      | mg/l            |
| 0150      | HARDNESS TOTAL                | 74.2   | mg/l            |
| 0172      | CHLORIDE ION                  | 28     | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.06   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 2.92   | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 24.9   | mg/l            |

10 APR 90

SAMPLE ANALYSIS REPORT

Simon Halfacre

INVESTIGATIONS TEAM SAMPLES

04 APR 90

LAB REFERENCE 65019

SAMPLE COMMENTS

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| DET CODE | DESCRIPTION                   | RESULT | UNITS           |
|----------|-------------------------------|--------|-----------------|
| 0061     | pH                            | 7.6    | pH units        |
| 0062     | CONDUCTIVITY                  | 199    | US/CM           |
| 0076     | TEMPERATURE WATER             | 11     | Degrees Celsius |
| 0081     | OXYGEN DISSOLVED % SATURATION | 109    | %               |
| 0082     | OXYGEN DISSOLVED              | 12     | mg/l            |
| 0085     | SODIUM                        | 0.18   | mg/l            |
| 0111     | AMMONIA                       | 0.05   | mg/l            |
| 0114     | NITROGEN TOTAL OYDISEN        | 1.93   | mg/l            |
| 0118     | NITRITE                       | 0.019  | mg/l            |
| 0135     | TOTAL SUSPENDED SOLIDS        | 5      | mg/l            |
| 0158     | HARDNESS TOTAL                | 79.4   | mg/l            |
| 0172     | CHLORIDE TOTAL                | 31     | mg/l            |
| 0190     | ORTHO - PHOSPHATE             | <      | 0.05 mg/l       |
| 0335     | MAGNESIUM DISSOLVED           | 4.0    | mg/l            |
| 0239     | CALCIUM DISSOLVED             | 23.9   | mg/l            |



MAR-90

S.W. ADVIS

NATIONAL RESOURCES AUTHORITY

023

SAMPLE ANALYSIS REPORT

## INVESTIGATIONS TEAM SAMPLES :

SAMPLING POINT : 190102

Llanelli Lab

DATE TAKEN : 02-MAR-90

TIME : 10:30 hrs. LAB REFERENCE : E 61778

ADDRESS :

## SAMPLER'S COMMENTS

SITE 45

## TEST CODE DESCRIPTION RESULT UNITS

0053 CONDUCTIVITY 20 C

548 US/CM

0026 TEMPERATURE WATER

DEGREES CELSIUS

0081 OXYGEN DISSOLVED % SATURATION

80.9 %

0082 OXYGEN DISSOLVED

19.4 MG/L

0085 ROD 5 ATU

2.3 MG/L

0034 AMMONIA

0.07 MG/L

0116 NITROGEN TOTAL OXIDISED

4.5 MG/L

0118 NITRATE

0.18 MG/L

0135 TOTAL SUSPENDED SOLIDS 105

9 MG/L

0158 HARDNESS TOTAL

124 MG/L

0172 CHLORIDE ION

121 MG/L

0180 ORTHO-PHOSPHATE

0.7 MG/L

0335 MAGNESIUM DISSOLVED

3.4 MG/L

0239 CALCIUM DISSOLVED

0.4 MG/L

649

SN3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

08-MAR-90

150

## SAMPLE ANALYSIS REPORT

Simon Halfacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 28-FEB-90

TIME : 12:00 hrs.

LAB REFERENCE : E 61099

ADDRESS :

## SAMPLER'S COMMENTS

SITE 42 PONTGARREG U/S CLUNPARFAITHS FARM DISCHARGE

| TEST CODE | DESCRIPTION                   | RESULT      | UNITS           |
|-----------|-------------------------------|-------------|-----------------|
| 0061      | pH                            | 7.2         | pH Units        |
| 0062      | CONDUCTIVITY 20 C             | 124         | uS/cm           |
| 0076      | TEMPERATURE WATER             | 8.5         | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 84.8        | %               |
| 0082      | OXYGEN DISSOLVED              | 9.9         | mg/l            |
| 0085      | BOD 5 ATU                     | 1.8         | mg/l            |
| 0111      | AMMONIA                       | 0.27 (0.34) | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 1.4         | mg/l            |
| 0118      | NITRITE                       | 0.008       | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5           | mg/l            |
| 0158      | HARDNESS TOTAL                | 28.2        | mg/l            |
| 0172      | CHLORIDE ION                  | 22.2        | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.02        | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 1.63        | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 8.6         | mg/l            |

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STATION RIVER AUTHORITY W. DIVISION 08-1-90

SAMPLE ANALYSIS REPORT

Simon Halfacre

SAMPLING POINT : 190102 INVESTIGATIONS TEAM SAMPLES : Llanelli Lab

DATE TAKEN : 20-FEB-90

TIME : 15:00 hrs. LAB REFERENCE : E 61100

ADDRESS :

SAMPLER'S COMMENTS

SITE A PONTGARREG

| TEST CODE | DESCRIPTION                   | RESULT     | UNITS           |
|-----------|-------------------------------|------------|-----------------|
| 0061      | pH                            | 7.2        | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 117        | uS/cm           |
| 0076      | TEMPERATURE WATER             | 8          | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 83.3       | %               |
| 0082      | OXYGEN DISSOLVED              | 10.2       | mg/l            |
| 0085      | BOD 5 ATU                     | 0.9        | mg/l            |
| 0111      | AMMONIA                       | 0.13(0.08) | mg/l 0.17 g/l   |
| 0116      | NITROGEN TOTAL OXIDISED       | 2          | mg/l            |
| 0118      | NITRITE                       | 0.008      | mg/l 0          |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | < 5        | mg/l            |
| 0158      | HARDNESS TOTAL                | 22.7       | mg/l            |
| 0172      | CHLORIDE ION                  | 19.1       | mg/l            |
| 0180      | ORTHOPHOSPHATE                | < 0.05     | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 1.7        | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 8.3        | mg/l            |



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W3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

SAMPLE ANALYSIS REPORT

Simon Halfacree

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 02-MAR-90

TIME : 12:00 hrs.

LAB REFERENCE : E 61779

ADDRESS :

SAMPLER'S COMMENTS

SITE 40

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0061      | pH                            | 7.5    | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 153    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 6.5    | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 72.5   | %               |
| 0082      | OXYGEN DISSOLVED              | 8.2    | mg/l            |
| 0085      | BOD 5 ATU                     | 2.4    | mg/l            |
| 0111      | AMMONIA                       | 0.39   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 4.3    | mg/l            |
| 0118      | NITRITE                       | 0.028  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 11     | mg/l            |
| 0150      | HARDNESS TOTAL                | 46.2   | mg/l            |
| 0172      | CHLORIDE ION                  | 39.2   | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.05   | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 2.8    | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 13.9   | mg/l            |

52

0.37 u/g/l

0.39 u/g/l



CW3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

15-MAR-90

53

## SAMPLE ANALYSIS REPORT

Simon Halfacre

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 02-MAR-90

TIME : 11:00 hrs.

LAB REFERENCE : E 61780

ADDRESS :

## SAMPLER'S COMMENTS

SITE 55

| TEST CODE | DESCRIPTION                   | RESULT | UNITS           |
|-----------|-------------------------------|--------|-----------------|
| 0041      | pH                            | 7.4    | pH units        |
| 0042      | CONDUCTIVITY 20 C             | 159    | uS/cm           |
| 0076      | TEMPERATURE WATER             | 8      | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | 92.5   | %               |
| 0082      | OXYGEN DISSOLVED              | 11.5   | mg/l            |
| 0085      | BOD 5 ATU                     | 0.7    | mg/l            |
| 0111      | AMMONIA                       | 0.25   | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 2.5    | mg/l            |
| 0118      | NITRITE                       | 0.024  | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 9      | mg/l            |
| 0156      | HARDNESS TOTAL                | 42.9   | mg/l            |
| 0172      | CHLORIDE ION                  | 25     | mg/l            |
| 0180      | ORTHO - PHOSPHATE             | 0.005  | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 3.4    | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 11.6   | mg/l            |

NW3023

NATIONAL RIVERS AUTHORITY -- S.W. DIVISION

19-MAR-90

## SAMPLE ANALYSIS REPORT

SAMPLER'S COMMENTS

54

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

L10nel-i Lab

DATE TAKEN : 09-MAR-90

TIME : 11:30 hrs.

LAB REFERENCE : E 61934

ADDRESS :

## SAMPLER'S COMMENTS

SITE 51

| TEST CODE | DESCRIPTION                   | RESULT    | UNITS           |
|-----------|-------------------------------|-----------|-----------------|
| 0061      | pH                            | 6.9       | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 294       | uS/cm           |
| 0076      | TEMPERATURE WATER             | No Result | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | No Result | %               |
| 0082      | OXYGEN DISSOLVED              | 10.5      | mg/l            |
| 0085      | BOD 5 ATU                     | 0.6       | mg/l            |
| 0116      | AMMONIA                       | 0.37      | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 3.8       | mg/l            |
| 0116      | NITRITE                       | 0.106     | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 9         | mg/l            |
| 0150      | HARDNESS TOTAL                | 115       | mg/l            |
| 0172      | CHLORIDE ION                  | 33.1      | mg/l            |
| 0186      | ORTHOPHOSPHATE                | 0.09      | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 10.32     | mg/l            |
| 0237      | CALCIUM DISSOLVED             | 29.1      | mg/l            |



SW3023

NATIONAL RIVERS AUTHORITY - S.W. DIVISION

19-MAR-90

55

## SAMPLE ANALYSIS REPORT

Simon Halliwell

SAMPLING POINT : 190102

INVESTIGATIONS TEAM SAMPLES :

Llanelli Lab

DATE TAKEN : 09-MAR-90

TIME : 10:00 hrs.

LAB REFERENCE : E 61935

ADDRESS :

## SAMPLER'S COMMENTS

SITE 52

| TEST CODE | DESCRIPTION                   | RESULT    | UNITS           |
|-----------|-------------------------------|-----------|-----------------|
| 0061      | pH                            | 7.3       | pH units        |
| 0062      | CONDUCTIVITY 20 C             | 166       | uS/cm           |
| 0076      | TEMPERATURE WATER             | No Result | Degrees Celsius |
| 0081      | OXYGEN DISSOLVED % SATURATION | No Result | %               |
| 0082      | OXYGEN DISSOLVED              | 11.5      | mg/l            |
| 0085      | BOD 5 ATU                     | 0.7       | mg/l            |
| 0110      | AMMONIA                       | 0.01      | mg/l            |
| 0116      | NITROGEN TOTAL OXIDISED       | 2.6       | mg/l            |
| 0118      | NITRITE                       | 0.003     | mg/l            |
| 0135      | TOTAL SUSPENDED SOLIDS 105    | 5         | mg/l            |
| 0158      | HARDNESS TOTAL                | 50.6      | mg/l            |
| 0172      | CHLORIDE ION                  | 25.2      | mg/l            |
| 0180      | ORTHO PHOSPHATE               | 0.05      | mg/l            |
| 0235      | MAGNESIUM DISSOLVED           | 4.65      | mg/l            |
| 0239      | CALCIUM DISSOLVED             | 12.63     | mg/l            |

F2 Composition of sewage fungus from 55 sites in West Wales

Tape storage details:-

APPENDIX\F\F2\README.TXT

The file in this directory, Walfungi.dat, contains data on composition of sewage fungus from 55 sites in West wales. Data is in ASCII format.



F3 Environmental data from 55 sites in West Wales

Tape Storage details:-

APPENDIX\F\F3\README.TXT

The file in this directory, Wale.dat, contains environmental data from Welsh catchments. Data for each of the sites is saved in a row/column matrix and is in ASCII format.

F4 HABSCORE data from 55 sites

APPENDIX\F\F4\README.TXT

Tape storage details:-

This subdirectory contains data collected from 55 sites for habscore analysis. All sites are located in West Wales, data is stored in ASCII format.

F5 Invertebrate data for 55 sites in West Wales

Tape storage details:-

APPENDIX\F\F5\README.TXT

The four files in this directory, \*.dat, contain invertebrate data from West Wales catchments. Data is structured within each file as follows:

Site ref, NGR, Date  
Invertebrate code, abundance,

Reference to decode invertebrate names Maitland (1977).

Site numbering corresponds to Figure 5.1 in the main text

F6 Chemical data from 51 sites in Devon



3/91

ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

SOUTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT KIRKHAMPTON 1 TRIB LAMBERAL WATER

REF:-

SEND TO:-

SAMPLE TAKEN ON 03 03 91 AT 1210 BY NRA J.MURRAY-BLIGH

SAMPLE REF NO. 46271 ANALYSIS COMMENCED ON 05 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
USEOTHER UNSPECIFIED UNSPECIFIED  
OBSERVATIONS

## RESULTS OF ANALYSIS

| TERMINAL AND UNITS                                                  | VALUE |
|---------------------------------------------------------------------|-------|
| as pH units                                                         | 7.1   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     | 238.  |
| OXYGEN DISSOLVED as $\text{mg}/\text{l O}$                          | 10.1  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 5.7   |
| TOTAL ORGANIC CARBON as $\text{mg}/\text{l C}$                      | 7.7   |
| NITROGEN AMMONIACAL AS $\text{mg}/\text{l N}$                       | .85   |
| NITRATE as $\text{mg}/\text{l N}$                                   | 1.0   |
| NITRITE as $\text{ug}/\text{l N}$                                   | 122.  |
| SUSPENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                   | 39.   |
| SUSPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$             | 28.   |
| ALKALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 | 41.   |
| CHLORIDE as $\text{mg}/\text{l Cl}$                                 | 31.1  |
| PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                         | .17   |
| SILICATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$           | 3.9   |
| SULFATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                    | 15.1  |

C.B. Buckley  
CHIEF SCIENTIST

Chemistry

ING POINT KIRKHAMPTON 2 LAMBERAL WATER

REF:--

SEND TO:--

(2)

TAKEN ON 03 03 91 AT 1415 BY NRA J. MURRAY-ELIGH

REF NO. 46272 ANALYSIS COMMENCED ON 05 03 91 AT LAB NO. 12

LAL SAMPLED 2F

OF SAMPLE Single spot sample

SE

ER UNSPECIFIED UNSPECIFIED  
ATIONS

## RESULTS OF ANALYSIS

| TERMINAL AND UNITS                            | VALUE |
|-----------------------------------------------|-------|
| pH units                                      | 7.0   |
| ACTIVITY at 20 C as uS/cm                     | 185.  |
| DISSOLVED as mg/l O                           | 10.6  |
| MICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 2.4   |
| ORGANIC CARBON as mg/l C                      | 6.0   |
| EN AMMONIACAL AS mg/l N                       | .34   |
| E as mg/l N                                   | 2.4   |
| E as ug/l N                                   | 25.   |
| DED SOLIDS at 105 C as mg/l                   | 27.   |
| DED SOLIDS (ASH) at 500 C as mg/l             | 19.   |
| NITY at pH 4.5 as mg/l CaCO3                  | 25.   |
| DE as mg/l Cl                                 | 31.7  |
| PHOSPHATE (TOTAL) as mg/l P                   | .06   |
| TE REACTIVE DISSOLVED as mg/l SiO2            | 4.6   |
| TE (DISSOLVED) as mg/l SO4                    | 8.1   |

C.B. Buckley  
CHIEF SCIENTISTphosphorus sample also 3  
5 21.11  
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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

TH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

PILING POINT CROSS GATE TRIB OF TAMAR

(3)

REF:-

SEND TO:-

FILE TAKEN ON 07 03 91 AT 1315 BY NRA J MURRAY BLIGH

FILE REF NO. 46900 ANALYSIS COMMENCED ON 07 03 91 AT LAB NO. 12

SERIAL SAMPLED 2F  
E OF SAMPLE Single spot sampleVER  
ATIONS

## RESULTS OF ANALYSIS

| TERMIN AND UNITS                                 | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.5   |
| DUCTIVITY at 20 C as $\mu S/cm$                  | 241.  |
| GEN DISSOLVED as mg/l O                          | 10.5  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | .8    |
| AN ORGANIC CARBON as mg/l C                      | 4.8   |
| ROGEN AMMONIACAL AS mg/l N                       | .12   |
| RATE as mg/l N                                   | 2.7   |
| RATE as $\mu g/l$ N                              | 65.   |
| PENDED SOLIDS at 105 C as mg/l                   | 11.   |
| PENDED SOLIDS (ASH) at 500 C as mg/l             | 7.    |
| ACTIVITY at pH 4.5 as mg/l $CaCO_3$              | 46.   |
| ORIDE as mg/l Cl                                 | 32.3  |
| HO-PHOSPHATE (TOTAL) as mg/l P                   | .07   |
| TE REACTIVE DISSOLVED as mg/l $SiO_2$            | 5.3   |
| HATE (DISSOLVED) as mg/l $SO_4$                  | 13.3  |

C.B. Buckley  
CHIEF SCIENTIST

91

ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RLS)

SOUTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT WISHERDOWN WOOD TRIBE OF ROADFORD

(4)

REF:-

SEND TO:-

SAMPLE TAKEN ON 07 03 91 AT 1140 BY ~~MRA~~ J MURRAY BLIGH

SAMPLE REF NO. 46899 ANALYSIS COMMENCED ON 07 03 91 AT LAE NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSE

OBSERVATIONS

## RESULTS OF ANALYSIS

| TERMIN AND UNITS                                 | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 6.5   |
| DUCTIVITY at 20 C as $\mu S/cm$                  | 112.  |
| GEN DISSOLVED as mg/l O                          | 10.5  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 0.    |
| AL ORGANIC CARBON as mg/l C                      | 3.2   |
| ROGEN AMMONIACAL AS mg/l N                       | .02   |
| RATE as mg/l N                                   | 1.3   |
| RITE as $\mu g/l$ N                              | 12.   |
| PENDED SOLIDS at 105 C as mg/l                   | 4.    |
| PENDED SOLIDS (ASH) at 500 C as mg/l             | 3.    |
| ALINITY at pH 4.5 as mg/l $CaCO_3$               | 5.    |
| ORIDE as mg/l Cl                                 | 22.7  |
| IO-PHOSPHATE (TOTAL) as mg/l P                   | <.01  |
| CATE REACTIVE DISSOLVED as mg/l $SiO_2$          | 5.1   |
| HATE (DISSOLVED) as mg/l $SO_4$                  | 7.4   |

C.E. Buckley  
CHIEF SCIENTIST





ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

ST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT GALA WATER TRIB OF TAMAR

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1600 BY NRA J MURRY-ELIGH

SAMPLE REF NO. 45919 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSE

TEMPERATURE COLD DRY  
PRESERVATION

6

| RESULTS OF ANALYSIS                                 |       |
|-----------------------------------------------------|-------|
| DETERMINAND AND UNITS                               | VALUE |
| pH units                                            | 7.3   |
| CONDUCTIVITY at 20 C as $\mu S/cm$                  | 212.  |
| OXYGEN DISSOLVED as mg/l O                          | 11.1  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.0   |
| TOTAL ORGANIC CARBON as mg/l C                      | 2.3   |
| NITROGEN AMMONIACAL AS mg/l N                       | .03   |
| NITRATE as mg/l N                                   | 4.3   |
| NITRITE as $\mu g/l$ N                              | 11.   |
| SUSPENDED SOLIDS at 105 C as mg/l                   | 7.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             | 6.    |
| ALKALINITY at pH 4.5 as mg/l $CaCO_3$               | 25.   |
| CHLORIDE as mg/l Cl                                 | 30.5  |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                    | .01   |
| DISSOLVED SILICA REACTIVE DISSOLVED as mg/l $SiO_2$ | 4.7   |
| SULFATE (DISSOLVED) as mg/l $SO_4$                  | 15.0  |

C.B. Buckley  
CHIEF SCIENTIST

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

JOHNS WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT BRADBRIDGE TRIBE OF TAMAR

REF:-

SEND TO:-

SAMPLE TAKEN ON 03 03 91 AT 1515 BY NRA J.MURRAY-BLIGH

SAMPLE REF NO. 46273 ANALYSIS COMMENCED ON 05 03 91 AT LAB NO. 12

SERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
DOSE

(7)

SUBSTRATE UNSPECIFIED UNSPECIFIED  
OBSERVATIONS

RESULTS OF ANALYSIS

| TERMINAND AND UNITS                              | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.0   |
| CONDUCTIVITY at 20 C as uS/cm                    | 158.  |
| IRON DISSOLVED as mg/l O                         | 10.8  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 4.8   |
| ORGANIC CARBON as mg/l C                         | 8.2   |
| ROGEN AMMONIACAL AS mg/l N                       | .45   |
| RATE as mg/l N                                   | 2.2   |
| TE as ug/l N                                     | 46.   |
| PENDED SOLIDS at 105 C as mg/l                   | 300.  |
| PENDED SOLIDS (ASH) at 500 C as mg/l             | 265.  |
| INITY at pH 4.5 as mg/l CaCO3                    | 21.   |
| BRIDE as mg/l Cl                                 | 32.9  |
| HO-PHOSPHATE (TOTAL) as mg/l P                   | .11   |
| ATE REACTIVE DISSOLVED as mg/l SiO2              | 2.9   |
| ATE (DISSOLVED) as mg/l SO4                      | 11.4  |

C.B. Buckley  
CHIEF SCIENTIST

Sewage fungus

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

PLING POINT BLACK TORRINGTON TRIBE OF TORRIDGE

REF:-

SEND TO:-

PLE TAKEN ON 28 02 91 AT 1300 BY NRA J MURRY-BLIGH

PLE REF NO. 45912 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

ERIAL SAMPLED 2F  
E OF SAMPLE Single spot sample  
POSETHER COLD DRY  
QUATIONS

| TERMINAND AND UNITS                                              | RESULTS OF ANALYSIS | VALUE |
|------------------------------------------------------------------|---------------------|-------|
| as pH units                                                      |                     | 7.4   |
| DUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     |                     | 209.  |
| GEN DISSOLVED as $\text{mg}/\text{l O}$                          |                     | 9.5   |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ |                     | 1.1   |
| AL ORGANIC CARBON as $\text{mg}/\text{l C}$                      |                     | 3.9   |
| ROGEN AMMONIACAL AS $\text{mg}/\text{l N}$                       |                     | .07   |
| RATE as $\text{mg}/\text{l N}$                                   |                     | 1.7   |
| RITE as $\text{ug}/\text{l N}$                                   |                     | 20.   |
| PENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                   |                     | 23.   |
| PENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$             |                     | 19.   |
| ALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 |                     | 35.   |
| IRIDE as $\text{mg}/\text{l Cl}$                                 |                     | 33.1  |
| IO-PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                   |                     | .03   |
| CATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$            |                     | 5.9   |
| _ATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                    |                     | 12.2  |

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CHIEF SCIENTIST

INFLOW



ANALYTICAL REPORT  
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LABDAMS SYSTEM (RL51)

WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

NG POINT MILTON DAMEREL TRIBE OF WALDON

REF:-

SEND TO:-

LE TAKEN ON 27 02 91 AT 1650 BY -NRA J.MURRY-ELIGH

E REF NO. 45578 ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

IAL SAMPLED 2F

OF SAMPLE Single spot sample

POSE

HER

ERVATIONS

T E R M I N A N D A N D U N I T S

R E S U L T S O F A N A L Y S I S

V A L U E

|                                                  |      |
|--------------------------------------------------|------|
| PH units                                         | 7.4  |
| DUCTIVITY at 20 C as uS/cm                       | 203. |
| N DISSOLVED as mg/l O                            | 10.8 |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 2.5  |
| L ORGANIC CARBON as mg/l C                       | 3.2  |
| GEN AMMONIACAL AS mg/l N                         | .49  |
| ATE as mg/l N                                    | 6.1  |
| ITE as ug/l N                                    | 54.  |
| ENDED SOLIDS at 105 C as mg/l                    | 8.   |
| ENDED SOLIDS (ASH) at 500 C as mg/l              | 5.   |
| LINITY at pH 4.5 as mg/l CaCO3                   | 28.  |
| IDE as mg/l Cl                                   | 27.8 |
| D-PHOSPHATE (TOTAL) as mg/l P                    | .10  |
| CATE REACTIVE DISSOLVED as mg/l SiO2             | 5.6  |
| ATE (DISSOLVED) as mg/l SO4                      | 9.6  |

SAMPLE COLLECTION GRAB

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CHIEF SCIENTIST11  
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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT WHIDDON TRIB OF LEW

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1200 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45909 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PROPOSE

10

OTHER  
OBSERVATIONS

| DETERMINAND AND UNITS                              | RESULTS OF ANALYSIS | VALUE |
|----------------------------------------------------|---------------------|-------|
| as pH units                                        |                     | 7.2   |
| CONDUCTIVITY at 20 C as uS/cm                      |                     | 152.  |
| OXYGEN DISSOLVED as mg/l O                         |                     | 11.3  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O   |                     | 1.2   |
| TOTAL ORGANIC CARBON as mg/l C                     |                     | 2.5   |
| TROGEN AMMONIACAL AS mg/l N                        |                     | .04   |
| TRATE as mg/l N                                    |                     | 2.6   |
| TRITE as ug/l N                                    |                     | 15.   |
| SUSPENDED SOLIDS at 105 C as mg/l                  |                     | 7.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l            |                     | 6.    |
| HARDNESS at pH 4.5 as mg/l CaCO3                   |                     | 18.   |
| CHLORIDE as mg/l Cl                                |                     | 24.5  |
| THIO-PHOSPHATE (TOTAL) as mg/l P                   |                     | .02   |
| DISSOLVED SILICATE REACTIVE DISSOLVED as mg/l SiO2 |                     | 4.7   |
| SULFATE (DISSOLVED) as mg/l SO4                    |                     | 11.5  |

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CHIEF SCIENTIST

ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

TH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT PATHACOTT TRIB OF LEW

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1500 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45916 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

SERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WEATHER

COLD

DRY

REMARKS

11

| DETERMINAND AND UNITS                             | RESULTS OF ANALYSIS | VALUE |
|---------------------------------------------------|---------------------|-------|
| as pH units                                       |                     | 7.0   |
| INDUCTIVITY at 20 C as uS/cm                      |                     | 143.  |
| GEN DISSOLVED as mg/l O                           |                     | 10.9  |
| UCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |                     | 1.1   |
| TAL ORGANIC CARBON as mg/l C                      |                     | 2.3   |
| ROGEN AMMONIACAL AS mg/l N                        |                     | .03   |
| TRATE as mg/l N                                   |                     | 2.2   |
| TRITE as ug/l N                                   |                     | 11.   |
| SPENDED SOLIDS at 105 C as mg/l                   |                     | 7.    |
| SPENDED SOLIDS (ASH) at 500 C as mg/l             |                     | 5.    |
| KALINITY at pH 4.5 as mg/l CaCO3                  |                     | 14.   |
| ORIDE as mg/l Cl                                  |                     | 21.9  |
| THO-PHOSPHATE (TOTAL) as mg/l P                   |                     | .01   |
| LICATE REACTIVE DISSOLVED as mg/l SiO2            |                     | 4.9   |
| HATE (DISSOLVED) as mg/l SO4                      |                     | 10.8  |

C.B. Buckley  
CHIEF SCIENTIST

# CERTIFIED

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT MEDLAND BROOK TRIB OF TORRIDGE 5

REF:--

SEND TO:--

SAMPLE TAKEN ON 26 02 91 AT 1205 BY ~~NR6 MURRAY BLIGH~~

SAMPLE REF NO. 45353 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSE

12

WEATHER COLD DRY  
OBSERVATIONS

## RESULTS OF ANALYSIS

| DETERMINAND AND UNITS                               | VAL  |
|-----------------------------------------------------|------|
| pH as pH units                                      | 7.2  |
| CONDUCTIVITY at 20 C as US/cm                       | 188  |
| OXYGEN DISSOLVED as mg/l O                          | 10.7 |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.0  |
| TOTAL ORGANIC CARBON as mg/l C                      | 2.7  |
| NITROGEN AMMONIACAL AS mg/l N                       | .06  |
| NITRATE as mg/l N                                   | 4.6  |
| NITRITE as ug/l N                                   | 16   |
| SUSPENDED SOLIDS at 105 C as mg/l                   | 7    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             | 5    |
| ALKALINITY at pH 4.5 as mg/l CaCO3                  | 19   |
| CHLORIDE as mg/l Cl                                 | 27.6 |
| ORTHO-PHOSPHATE (TOTAL) as mg/l P                   | .04  |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2            | 4.5  |
| SULPHATE (DISSOLVED) as mg/l SO4                    | 12.0 |

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CHIEF SCIENTIST

(DRIFT = 14)



ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

ING POINT TRIBE OF LEW TORRIDGE 6

REF:-

SEND TO:-

LE TAKEN ON 26 02 91 AT 1345 BY NRA J MURRAY-ELIGH

REF NO. 45354 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

SAMPLED 2F  
OF SAMPLE Single spot sample  
USEHER COLD DRY  
RVATIONS

| RESULTS OF ANALYSIS                                             |       |
|-----------------------------------------------------------------|-------|
| TERMINAND AND UNITS                                             | VALUE |
| pH units                                                        | 7.0   |
| CTIVITY at 20 C as $\mu\text{S}/\text{cm}$                      | 144.  |
| DISSOLVED as $\text{mg}/\text{l O}$                             | 10.5  |
| HEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 1.1   |
| ORGANIC CARBON as $\text{mg}/\text{l C}$                        | 2.7   |
| AMMONIACAL AS $\text{mg}/\text{l N}$                            | .05   |
| AL as $\text{mg}/\text{l N}$                                    | 2.5   |
| ITE as $\text{ug}/\text{l N}$                                   | 13.   |
| ED SOLIDS at 105 C as $\text{mg}/\text{l}$                      | 7.    |
| ENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$             | 5.    |
| LINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 | 13.   |
| R as $\text{mg}/\text{l Cl}$                                    | 23.6  |
| PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                     | .02   |
| CATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$           | 4.6   |
| H (DISSOLVED) as $\text{mg}/\text{l SO}_4$                      | 10.3  |

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CHIEF SCIENTIST

ANALYTICAL REPORT LABDAMS SYSTEM (RL5)  
CERTIFIED

TH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT LOOSEHAM BRIDGE TRIB OF YEO TORRIDGE 7

REF:-

SEND TO:-

SAMPLE TAKEN ON 26 02 91 AT 1550 BY NRA J MURRAY-ELIGH

SAMPLE REF NO. 45355 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSEWEATHER COLD DRY  
OBSERVATIONS

| RESULTS OF ANALYSIS                                 |       |
|-----------------------------------------------------|-------|
| DETERMINAND AND UNITS                               | VALUE |
| pH as pH units                                      | 7.5   |
| CONDUCTIVITY at 20 C as uS/cm                       | 303.  |
| OXYGEN DISSOLVED as mg/l O                          | 11.6  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.4   |
| TOTAL ORGANIC CARBON as mg/l C                      | 3.8   |
| NITROGEN AMMONIACAL AS mg/l N                       | 1.1   |
| NITRATE as mg/l N                                   | 11.4  |
| NITRITE as ug/l N                                   | 49.   |
| SUSPENDED SOLIDS at 105 C as mg/l                   | 23.   |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             | 17.   |
| ALKALINITY at pH 4.5 as mg/l CaCO3                  | 43.   |
| CHLORIDE as mg/l Cl                                 | 37.0  |
| ORTHO-PHOSPHATE (TOTAL) as mg/l P                   | 0.4   |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2            | 4.8   |
| SULPHATE (DISSOLVED) as mg/l SO4                    | 11.6  |

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CHIEF SCIENTIST

5/91

ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

SOUTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SMITHLAND TORRIDGE 8

REF:-

SEND TO:-

SAMPLE TAKEN ON 27 02 91 AT 1150 BY NRA J.MURRY-BLIGH

SAMPLE REF NO. 45576 ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WEATHER

REMARKS

(15)

## RESULTS OF ANALYSIS

| TERMIN AND UNITS                                                    | VALUE |
|---------------------------------------------------------------------|-------|
| pH as pH units                                                      | 7.6   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     | 291.  |
| OXYGEN DISSOLVED as $\text{mg}/\text{l O}$                          | 11.5  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 2.4   |
| DY-ORGANIC CARBON as $\text{mg}/\text{l C}$                         | 5.5   |
| NITROGEN AMMONIACAL AS $\text{mg}/\text{l N}$                       | .12   |
| NITRATE as $\text{mg}/\text{l N}$                                   | 4.0   |
| NITRATE as $\text{ug}/\text{l N}$                                   | 38.   |
| SUSPENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                   | 19.   |
| SUSPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$             | 13.   |
| ALKALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 | 62.   |
| CHLORIDE as $\text{mg}/\text{l Cl}$                                 | 38.2  |
| ORTHO-PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                   | .05   |
| OLYATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$             | 5.5   |
| ULPHATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                    | 14.9  |

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CHIEF SCIENTIST

ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RLS)

TH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT STROYWORTHY STREAM TRIBE OF TORRIDGE

REF:-

SEND TO:-

SAMPLE TAKEN ON 27 02 91 AT 1410 BY NRA J.MURRY-BLIGH

SAMPLE REF NO. 45577 ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WEATHER

OBSERVATIONS

| RESULTS OF ANALYSIS                                 |       |
|-----------------------------------------------------|-------|
| DETERMINAND AND UNITS                               | VALUE |
| pH as pH units                                      | 7.2   |
| CONDUCTIVITY at 20 C as $\mu S/cm$                  | 195   |
| OXYGEN DISSOLVED as mg/l O                          | 11.1  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.8   |
| TOTAL ORGANIC CARBON as mg/l C                      | 3.1   |
| NITROGEN AMMONIACAL as mg/l N                       | 1.2   |
| NITRATE as mg/l N                                   | 4.6   |
| NITRITE as $\mu g/l$ N                              | 20    |
| SUSPENDED SOLIDS at 105 C as mg/l                   | 16    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             | 11    |
| ALKALINITY at pH 4.5 as mg/l $CaCO_3$               | 29    |
| CHLORIDE as mg/l Cl                                 | 28.4  |
| ORTHO-PHOSPHATE (TOTAL) as mg/l P                   | 0.09  |
| SILICATE REACTIVE DISSOLVED as mg/l $SiO_2$         | 5.9   |
| SULPHATE (DISSOLVED) as mg/l $SO_4$                 | 10.8  |

CONTS 100

DIAGRAM 100

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CHIEF SCIENTIST

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

MEETING POINT TAW 1 TRIE OF TAW AT ALLER BRIDGE

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1055 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45907 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

REFERENCE

ANALYST  
SIGNATURES

RESULTS OF ANALYSIS

| DETERMINAND AND UNITS                            | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.3   |
| NEUTRALITY at 20 C as uS/cm                      | 255.  |
| TOTAL DISSOLVED as mg/l O                        | 11.8  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.2   |
| TOTAL ORGANIC CARBON as mg/l C                   | 3.1   |
| TRICHLORAMMONIACAL AS mg/l N                     | .45   |
| TRICHLORAMMONIACAL AS mg/l N                     | 8.7   |
| TRICHLORAMMONIACAL AS mg/l N                     | 39.   |
| SPENDED SOLIDS at 105 C as mg/l                  | 4.    |
| SPENDED SOLIDS (ASH) at 500 C as mg/l            | 3.    |
| ALKALINITY at pH 4.5 as mg/l CaCO3               | 34.   |
| CHLORIDE as mg/l Cl                              | 35.7  |
| THIO-PHOSPHATE (TOTAL) as mg/l P                 | .07   |
| LITHIUM REACTIVE DISSOLVED as mg/l SiO2          | 5.3   |
| LITHIUM (DISSOLVED) as mg/l SO4                  | 13.6  |

C.B. Buckley  
CHIEF SCIENTIST

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WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT TAW 2 GISSAGE LAKE TRIE

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1150 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45908 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

SERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample  
PURPOSE

OTHER

OBSERVATIONS

| RESULTS OF ANALYSIS                                |       |
|----------------------------------------------------|-------|
| TERMINAND AND UNITS                                | VALUE |
| as pH units                                        | 7.4   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$    | 218.  |
| TOTAL DISSOLVED as mg/l O                          | 11.6  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O   | 1.1   |
| TOTAL ORGANIC CARBON as mg/l C                     | 3.6   |
| NITROGEN AMMONIACAL AS mg/l N                      | .02   |
| AMMONIA as mg/l N                                  | 5.9   |
| AMMONIA as $\mu\text{g}/\text{l N}$                | 27.   |
| SUSPENDED SOLIDS at 105 C as mg/l                  | 6.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l            | 5.    |
| ALKALINITY at pH 4.5 as mg/l $\text{CaCO}_3$       | 30.   |
| CHLORIDE as mg/l Cl                                | 32.3  |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                   | .03   |
| SILICATE REACTIVE DISSOLVED as mg/l $\text{SiO}_2$ | 5.8   |
| SULFATE (DISSOLVED) as mg/l $\text{SO}_4$          | 13.8  |

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page 1

(BMW P-176) 2

2

ANALYTICAL REPORT LABDAMS SYSTEM (RL51)  
**CERTIFIED**

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

ING POINT TAW 3 TRIB BELOW CHURCHLAND FARM

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1330 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45913 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
 TYPE OF SAMPLE Single spot sample  
 DOSE

WEATHER COLD DRY  
 OBSERVATIONS

RESULTS OF ANALYSIS

| TERMINAND AND UNITS                                 | VALUE |
|-----------------------------------------------------|-------|
| pH as pH units                                      | 7.4   |
| DUCTIVITY at 20 C as uS/cm                          | 193.  |
| OXYGEN DISSOLVED as mg/l O                          | 11.8  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.0   |
| TOTAL ORGANIC CARBON as mg/l C                      | 1.8   |
| NITROGEN AMMONIACAL AS mg/l N                       | .02   |
| NITRATE as mg/l N                                   | 5.5   |
| NITRITE as ug/l N                                   | 19.   |
| SUSPENDED SOLIDS at 105 C as mg/l                   | 22.   |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             | 18.   |
| HARDNESS at pH 4.5 as mg/l CaCO3                    | 25.   |
| CHLORIDE as mg/l Cl                                 | 27.1  |
| ORTHO-PHOSPHATE (TOTAL) as mg/l P                   | .03   |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2            | 5.6   |
| SULPHATE (DISSOLVED) as mg/l SO4                    | 11.1  |

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

NORTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT TAW 4 TRIBE OF BRAY AT FULLCROOK

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1510 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45918 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSEWEATHER COLD DRY  
REMARKS

| TERMINAND AND UNITS                                 |  | RESULTS OF ANALYSIS | VALUE |
|-----------------------------------------------------|--|---------------------|-------|
| pH as pH units                                      |  |                     | 7.4   |
| CONDUCTIVITY at 20 C as uS/cm                       |  |                     | 231.  |
| OXYGEN DISSOLVED as mg/l O                          |  |                     | 11.5  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |  |                     | .8    |
| TOTAL ORGANIC CARBON as mg/l C                      |  |                     | 2.3   |
| NITROGEN AMMONIACAL AS mg/l N                       |  |                     | .09   |
| NITRATE as mg/l N                                   |  |                     | 7.4   |
| NITRITE as ug/l N                                   |  |                     | 27.   |
| SUSPENDED SOLIDS at 105 C as mg/l                   |  |                     | 8.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             |  |                     | 5.    |
| ALKALINITY at pH 4.5 as mg/l CaCO3                  |  |                     | 31.   |
| CHLORIDE as mg/l Cl                                 |  |                     | 29.5  |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                    |  |                     | .02   |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2            |  |                     | 4.3   |
| SULFATE (DISSOLVED) as mg/l SO4                     |  |                     | 10.4  |

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CHIEF SCIENTISTpH 7.4  
10Total = 16  
15.2

ANALYTICAL REPORT  
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LABDAMS SYSTEM (RL51)

EST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT TAW 5 TRIBE OF YEO BELOW WM BARTON

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1620 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45921 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

SERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PROPOSE

ATHER COLD DRY

OBSERVATIONS

| DETERMINAND AND UNITS                            | RESULTS OF ANALYSIS | VALUE |
|--------------------------------------------------|---------------------|-------|
| as pH units                                      |                     | 7.0   |
| CONDUCTIVITY at 20 C as uS/cm                    |                     | 99.   |
| IRON DISSOLVED as mg/l O                         |                     | 11.2  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |                     | 1.0   |
| TOTAL ORGANIC CARBON as mg/l C                   |                     | .6    |
| NITROGEN AMMONIACAL AS mg/l N                    |                     | .01   |
| NITRATE as mg/l N                                |                     | 2.0   |
| NITRITE as ug/l N                                |                     | <5.   |
| SUSPENDED SOLIDS at 105 C as mg/l                |                     | 4.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l          |                     | 3.    |
| ALKALINITY at pH 4.5 as mg/l CaCO3               |                     | 9.    |
| CHLORIDE as mg/l Cl                              |                     | 15.0  |
| PHOSPHATE (TOTAL) as mg/l P                      |                     | <.01  |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2         |                     | 3.5   |
| SULPHATE (DISSOLVED) as mg/l SO4                 |                     | 6.1   |

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BMW = 160



ANALYTICAL REPORT  
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LABDAMS SYSTEM (RL51)

DOUTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT FLYIDON BRIDGE TAW 6

REF:

SEND TO:

SAMPLER TAKEN ON 08 03 91 AT 1440 BY NRA J.MURRAY-BLIGH

SAMPLER REF NO. 47106 ANALYSIS COMMENCED ON 08 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSE

22

OTHER UNSPECIFIED UNSPECIFIED  
OBSERVATIONS

## RESULTS OF ANALYSIS

| TERMINAL AND UNITS                               | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.2   |
| DUCTIVITY at 20 C as uS/cm                       | 107.  |
| GEN DISSOLVED as mg/l O                          | 8.5   |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.4   |
| AL ORGANIC CARBON as mg/l C                      | .8    |
| ROGEN AMMONIACAL AS mg/l N                       | .04   |
| RATE as mg/l N                                   | 1.7   |
| ITE as ug/l N                                    | 15.   |
| ENDED SOLIDS at 105 C as mg/l                    | 6.    |
| ENDED SOLIDS (ASH) at 500 C as mg/l              | 2.    |
| CLINITY at pH 4.5 as mg/l CaCO3                  | 19.   |
| RIDE as mg/l Cl                                  | 13.1  |
| PHOSPHATE (TOTAL) as mg/l P                      | .03   |
| CATE REACTIVE DISSOLVED as mg/l SiO2             | 4.3   |
| ATE (DISSOLVED) as mg/l SO4                      | 5.5   |

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RLSI)

SOUTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

PLING POINT HOLE WATER TAW 7

REF:

SEND TO:

SAMPLE TAKEN ON 08 03 91 AT 1115 BY NRA J.MURRAY-BLIGH

SAMPLE REF NO. 47107 ANALYSIS COMMENCED ON 08 03 91 AT LAB NO. 12

SERIAL SAMPLED 2F  
PE OF SAMPLE Single spot sample  
DOSE

23

ATHER UNSPECIFIED UNSPECIFIED  
RVATIONS

RESULTS OF ANALYSIS

| TERMINAND AND UNITS                              | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 6.9   |
| DUCTIVITY at 20 C as US/cm                       | 83.   |
| GEN DISSOLVED as mg/l O                          | 9.9   |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.4   |
| ORGANIC CARBON as mg/l C                         | .9    |
| ROGEN AMMONIACAL AS mg/l N                       | .04   |
| RATE as mg/l N                                   | 1.4   |
| ITE as ug/l N                                    | 10.   |
| ENDED SOLIDS at 105 C as mg/l                    | 2.    |
| ENDED SOLIDS (ASH) at 500 C as mg/l              | 1.    |
| INITY at pH 4.5 as mg/l CaCO3                    | 9.    |
| RIDE as mg/l Cl                                  | 13.5  |
| PHOSPHATE (TOTAL) as mg/l P                      | .01   |
| STATE REACTIVE DISSOLVED as mg/l SiO2            | 3.8   |
| PHATE (DISSOLVED) as mg/l SO4                    | 5.1   |

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REPORT 71

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ANALYTICAL REPORT  
CERTIFIED

LABORATORY

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

PLING POINT TAW 8 TRIB OF TAW BELOW DEPTFORD FARM

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1414 BY NRA J MURRY-BLIGH

SAMPLE REF NO. 45915 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

SERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

TEMPERATURE COLD DRY

OBSERVATIONS

24

| TERMINAND AND UNITS                                 | RESULTS OF ANALYSIS | VALUE |
|-----------------------------------------------------|---------------------|-------|
| as pH units                                         |                     | 7.2   |
| CONDUCTIVITY at 20 C as uS/cm                       |                     | 173.  |
| OXYGEN DISSOLVED as mg/l O                          |                     | 10.6  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |                     | 2.0   |
| TOTAL ORGANIC CARBON as mg/l C                      |                     | 2.2   |
| NITROGEN AMMONIACAL AS mg/l N                       |                     | .04   |
| NITRATE as mg/l N                                   |                     | 4.2   |
| NITRITE as ug/l N                                   |                     | 12.   |
| SUSPENDED SOLIDS at 105 C as mg/l                   |                     | 7.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             |                     | 6.    |
| ALKALINITY at pH 4.5 as mg/l CaCO3                  |                     | 20.   |
| CHLORIDE as mg/l Cl                                 |                     | 25.3  |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                    |                     | .02   |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2            |                     | 6.2   |
| SULPHATE (DISSOLVED) as mg/l SO4                    |                     | 9.0   |

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

NORTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT EXE 1 TRIE OF CULM AT STAPLEY

REF:-

SEND TO:-

SAMPLE TAKEN ON 26 02 91 AT 1605 BY NRA J MURRAY-BLIGH

SAMPLE REF NO. 45361 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

TEMPERATURE COLD DRY

OBSERVATIONS

## RESULTS OF ANALYSIS

| TERMINAND AND UNITS                              | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.3   |
| CONDUCTIVITY at 20 C as uS/cm                    | 144.  |
| OXYGEN DISSOLVED as mg/l O                       | 10.7  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.1   |
| TOTAL ORGANIC CARBON as mg/l C                   | 2.1   |
| NITROGEN AMMONIACAL AS mg/l N                    | .02   |
| NITRATE as mg/l N                                | 4.2   |
| NITRITE as ug/l N                                | 13.   |
| SUSPENDED SOLIDS at 105 C as mg/l                | 6.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l          | 3.    |
| CALCINITY at pH 4.5 as mg/l CaCO3                | 18.   |
| CHLORIDE as mg/l Cl                              | 18.4  |
| THIO-PHOSPHATE (TOTAL) as mg/l P                 | .05   |
| DISSOLVED REACTIVE DISSOLVED as mg/l SiO2        | 13.6  |
| PHOSPHATE (DISSOLVED) as mg/l SO4                | 8.1   |

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image fungus

Chemistry

MPLING POINT RIVER LEAVER E3181 BRIDGE EXE 2

REF:-

SEND TO:-

MPLE TAKEN ON 28 02 91 AT 1245 BY NRA J MURRY-BLIGH

MPLE REF NO. 45911 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WEATHER COLD DRY

OBSERVATIONS

26

## RESULTS OF ANALYSIS

| DETERMINAND AND UNITS                                               | VALUE |
|---------------------------------------------------------------------|-------|
| pH as pH units                                                      | 7.7   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     | 435   |
| OXYGEN DISSOLVED as $\text{mg}/\text{l O}$                          | 10.4  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 2.3   |
| TOTAL ORGANIC CARBON as $\text{mg}/\text{l C}$                      | 6.0   |
| NITROGEN AMMONIACAL AS $\text{mg}/\text{l N}$                       | .40   |
| NITRATE as $\text{mg}/\text{l N}$                                   | 11.8  |
| NITRITE as $\text{ug}/\text{l N}$                                   | 90    |
| SUSPENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                   | 11    |
| SUSPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$             | 8     |
| ALKALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 | 104   |
| CHLORIDE as $\text{mg}/\text{l Cl}$                                 | 41.6  |
| ORTHO-PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                   | .16   |
| SILICATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$           | 7.1   |
| SULPHATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                   | 40.6  |

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W. W. Services  
Water & Sewer  
Hydrogeology  
Environmental

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03/91 ANALYTICAL REPORT LABDAMS SYSTEM (RL51)  
CERTIFIED  
SOUTH WEST WATER SERVICES LIMITED AREA EAST LABORATORY  
Chemistry

WATER POINT R C CLYST TRACK BY HOUSE EXE 3

REF:-

SEND TO:-

SAMPLE TAKEN ON 06 03 91 AT 1345 BY NRA J MURRAY BLIGH

SAMPLE REF NO. 46901 ANALYSIS COMMENCED ON 07 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
REFERENCE

(27)

OTHER  
SITUATIONS

# RESULTS OF ANALYSIS

| DETERMINAND AND UNITS                            | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.3   |
| CONDUCTIVITY at 20 C as $\mu S/cm$               | 477.  |
| IRON DISSOLVED as mg/l O                         | 8.9   |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.2   |
| TOTAL ORGANIC CARBON as mg/l C                   | 9.5   |
| NITROGEN AMMONIACAL AS mg/l N                    | .23   |
| AMMONIA as mg/l N                                | 10.9  |
| AMMONIA as $\mu g/l$ N                           | 278.  |
| PENETRATED SOLIDS at 105 C as mg/l               | 85.   |
| PENETRATED SOLIDS (ASH) at 500 C as mg/l         | 69.   |
| ALKALINITY at pH 4.5 as mg/l $CaCO_3$            | 96.   |
| CHLORIDE as mg/l Cl                              | 39.5  |
| PHOSPHATE (TOTAL) as mg/l P                      | .32   |
| DISSOLVED REACTIVE DISSOLVED as mg/l $SiO_2$     | 8.2   |
| SULFATE (DISSOLVED) as mg/l $SO_4$               | 48.3  |

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"house" on map

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SOUTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT EXE 4 TRIS OF MADFORD MINOR RDBR

REF:-

SEND TO:-

28

SAMPLE TAKEN ON 26 02 91 AT 1745 BY NRA J MURRAY-BLIGH

SAMPLE REF NO. 45362 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WEATHER COLD DRY

OBSERVATIONS

| D E T E R M I N A N D A N D U N I T S               |  | RESULTS OF ANALYSIS |
|-----------------------------------------------------|--|---------------------|
| pH as pH units                                      |  | 7.5                 |
| CONDUCTIVITY at 20 C as uS/cm                       |  | 105                 |
| OXYGEN DISSOLVED as mg/l O                          |  | 7.2                 |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |  | 1.2                 |
| TOTAL ORGANIC CARBON as mg/l C                      |  | 3.2                 |
| NITROGEN AMMONIACAL as mg/l N                       |  | 0.03                |
| NITRATE as mg/l N                                   |  | 3.2                 |
| NITRITE as ug/l N                                   |  | 0.                  |
| SUSPENDED SOLIDS at 105 C as mg/l                   |  | 4.                  |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             |  | 2.                  |
| ALKALINITY at pH 4.5 as mg/l CaCO3                  |  | 21.                 |
| CHLORIDE as mg/l Cl                                 |  | 21.5                |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                    |  | 0.04                |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2            |  | 10.2                |
| SULPHATE (DISSOLVED) as mg/l SO4                    |  | 10.7                |

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Plonobis sp  
salis fuliginosa

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

H WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

LING POINT EXE 5 TRIB OF MADFORD BRIDGE OF TRACK

REF:-

SEND TO:-

29

MPLE TAKEN ON 04 03 91 AT 1445 BY NRA J.MURRAY-ELIGH

MPLE REF NO. 46274 ANALYSIS COMMENCED ON 05 03 91 AT LAB NO. 12

TERIAL SAMPLED 2F  
PE OF SAMPLE Single spot sample  
USEATHER UNSPECIFIED UNSPECIFIED  
EVATIONS

## RESULTS OF ANALYSIS

| TERMINAND AND UNITS                              | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.1   |
| CTIVITY at 20 C as uS/cm                         | 201.  |
| GEN DISSOLVED as mg/l O                          | 11.1  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 4.3   |
| ORGANIC CARBON as mg/l C                         | 5.6   |
| ROGEN AMMONIACAL AS mg/l N                       | .48   |
| RATE as mg/l N                                   | 5.2   |
| TE as ug/l N                                     | 39.   |
| PENDED SOLIDS at 105 C as mg/l                   | 26.   |
| PENDED SOLIDS (ASH) at 500 C as mg/l             | 17.   |
| INITY at pH 4.5 as mg/l CaCO3                    | 27.   |
| BRIDE as mg/l Cl                                 | 24.2  |
| HO-PHOSPHATE (TOTAL) as mg/l P                   | .30   |
| ATE REACTIVE DISSOLVED as mg/l SiO2              | 10.2  |
| HATE (DISSOLVED) as mg/l SO4                     | 12.1  |

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT EXE 6 TRIB OF MADFORD U/S GARWELL FARM

REF:-

SEND TO:-

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SAMPLE TAKEN ON 06 03 91 AT 1225 BY NRA J MURRAY ELIGH

SAMPLE REF NO. 46902 ANALYSIS COMMENCED ON 07 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PROPOSE

OBSERVATIONS

## RESULTS OF ANALYSIS

| DETERMINAND AND UNITS                              | VALUE |
|----------------------------------------------------|-------|
| pH units                                           | 7.4   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$    | 200.  |
| OXYGEN DISSOLVED as mg/l O                         | 8.3   |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O   | 1.4   |
| TOTAL ORGANIC CARBON as mg/l C                     | 6.3   |
| NITROGEN AMMONIACAL AS mg/l N                      | .07   |
| NITRATE as mg/l N                                  | 4.2   |
| NITRITE as $\mu\text{g}/\text{l}$ N                | 93.   |
| SUSPENDED SOLIDS at 105 C as mg/l                  | 10.   |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l            | 6.    |
| HARDNESS at pH 4.5 as mg/l $\text{CaCO}_3$         | 34.   |
| CHLORIDE as mg/l Cl                                | 21.3  |
| THIO-PHOSPHATE (TOTAL) as mg/l P                   | .11   |
| SILICATE REACTIVE DISSOLVED as mg/l $\text{SiO}_2$ | 8.4   |
| SULPHATE (DISSOLVED) as mg/l $\text{SO}_4$         | 11.8  |

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ANALYTICAL REPORT  
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LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT DANES BROOK EXE 7

REF:-

SEND TO:-

(31)

SAMPLE TAKEN ON 26 02 91 AT 1250 BY NRA J MURRAY-ELIGH

SAMPLE REF NO. 45363 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample  
PROPOSE

WATER COLD DRY

OBSERVATIONS

| RESULTS OF ANALYSIS                                              |       |
|------------------------------------------------------------------|-------|
| DETERMINAND AND UNITS                                            | VALUE |
| as pH units                                                      | 6.4   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                  | 20.   |
| IRON DISSOLVED as $\text{mg}/\text{l O}$                         | 10.6  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 1.0   |
| TOTAL ORGANIC CARBON as $\text{mg}/\text{l C}$                   | 1.4   |
| NITROGEN AMMONIACAL AS $\text{mg}/\text{l N}$                    | .01   |
| NITRATE as $\text{mg}/\text{l N}$                                | .8    |
| NITRITE as $\text{ug}/\text{l N}$                                | <5.   |
| SUSPENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                | 1.    |
| SUSPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$          | 1.    |
| CALCINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$               | 5.    |
| SILICA as $\text{mg}/\text{l SiO}_2$                             | 11.4  |
| ORTHOPHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                 | .01   |
| DISSOLVED REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$       | 2.9   |
| SULFATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                 | 4.6   |

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

TH. WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT TRIB OF BATHERM EXE 8

REF:-

SEND TO:-

32

SAMPLE TAKEN ON 26 02 91 AT 1415 BY NRA J MURRAY-ELIGH

SAMPLE REF NO. 45364 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSE

WEATHER COLD DRY

OBSERVATIONS

RESULTS OF ANALYSIS

| TERMINAND AND UNITS                               | VALUE |
|---------------------------------------------------|-------|
| pH units                                          | 7.6   |
| CONDUCTIVITY at 20 C as uS/cm                     | 197.  |
| OXYGEN DISSOLVED as mg/l O                        | 10.6  |
| ICHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | .8    |
| TOTAL ORGANIC CARBON as mg/l C                    | 1.0   |
| ITROGEN AMMONIACAL AS mg/l N                      | .01   |
| ITRATE as mg/l N                                  | 4.8   |
| ITRITE as ug/l N                                  | 9.    |
| SPENDED SOLIDS at 105 C as mg/l                   | 24.   |
| SPENDED SOLIDS (ASH) at 500 C as mg/l             | 20.   |
| KALINITY at pH 4.5 as mg/l CaCO3                  | 42.   |
| ILORIDE as mg/l Cl                                | 21.8  |
| ITHO-PHOSPHATE (TOTAL) as mg/l P                  | .04   |
| LICATE REACTIVE DISSOLVED as mg/l SiO2            | 4.6   |
| PHATE (DISSOLVED) as mg/l SO4                     | 11.5  |

C.B. Buckley  
CHIEF SCIENTIST

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT R. WOLF (OTTER) ST129022

REF:-

SEND TO:-

33

SAMPLE TAKEN ON 25 02 91 AT 1604 BY NRA J. MURRY-BLIGH

SAMPLE REF NO. 45151 ANALYSIS COMMENCED ON 26 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

EXPOSE

WEATHER COLD DRY

OBSERVATIONS

| TERMINAND AND UNITS                              |  | RESULTS OF ANALYSIS | VALUE |
|--------------------------------------------------|--|---------------------|-------|
| pH as pH units                                   |  |                     | 7.9   |
| CONDUCTIVITY at 20 C as $\mu S/cm$               |  |                     | 289.  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |  |                     | 1.5   |
| CHEMICAL OXYGEN DEMAND (total) as mg/l O         |  |                     | 16.   |
| NITROGEN AMMONIACAL AS mg/l N                    |  |                     | .04   |
| NITRATE as mg/l N                                |  |                     | 3.5   |
| NITRITE as $\mu g/l$ N                           |  |                     | 21.   |
| SUSPENDED SOLIDS at 105 C as mg/l                |  |                     | 9.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l          |  |                     | 7.    |
| ALKALINITY at pH 4.5 as mg/l $CaCO_3$            |  |                     | 76.   |
| CHLORIDE as mg/l Cl                              |  |                     | 26.4  |
| PHOSPHATE (TOTAL) as mg/l P                      |  |                     | .08   |
| SILICATE REACTIVE DISSOLVED as mg/l $SiO_2$      |  |                     | 10.5  |
| SULPHATE (DISSOLVED) as mg/l $SO_4$              |  |                     | 18.4  |

OXYGEN DISSOLVED (mg/l)

11.5

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

AMPLING POINT OTTER 2 BROAD HENBURY

REF:-

SEND TO:-

34

AMPLE TAKEN ON 25 02 91 AT 1606 BY NRA J.MURRY-BLIGH

AMPLE REF. NO. 45148 ANALYSIS COMMENCED ON 26 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WATHER COLD DRY

OBSERVATIONS

| RESULTS OF ANALYSIS                              |       |
|--------------------------------------------------|-------|
| DETERMINAND AND UNITS                            | VALUE |
| as pH units                                      | 7.9   |
| CONDUCTIVITY at 20 C as uS/cm                    | 229.  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.6   |
| CHEMICAL OXYGEN DEMAND (total) as mg/l O         | 20.   |
| TROGEN AMMONIACAL AS mg/l N                      | .02   |
| TRATE as mg/l N                                  | 2.7   |
| TRITE as ug/l N                                  | 11.   |
| SPENDED SOLIDS at 105 C as mg/l                  | 7.    |
| SPENDED SOLIDS (ASH) at 500 C as mg/l            | 6.    |
| CALINITY at pH 4.5 as mg/l CaCO3                 | 64.   |
| CHLORIDE as mg/l Cl                              | 23.5  |
| CHD-PHOSPHATE (TOTAL) as mg/l P                  | .06   |
| DISSOLVED REACTIVE DISSOLVED as mg/l SiO2        | 7.4   |
| PHATE (DISSOLVED) as mg/l SO4                    | 10.3  |

DISSOLVED OXYGEN mg/l

11.2

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CHIEF SCIENTIST

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT TRIB OF LUPPITT BR LUPPITT &amp; HILLARD FM

REF:-

SEND TO:-

SAMPLE TAKEN ON 28 02 91 AT 1500 BY NRA J MURRY-BLIGH

PI REF NO. 45917 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

SAMPLED 2F  
TYPE OF SAMPLE Single spot sampleTEMPERATURE COLD DRY  
CONTAINER OTTER 3

| TERMIN AND UNITS                                 | RESULTS OF ANALYSIS | VALUE |
|--------------------------------------------------|---------------------|-------|
| pH units                                         |                     | 7.6   |
| CONDUCTIVITY at 20 C as uS/cm                    |                     | 166.  |
| CHLORIDE DISSOLVED as mg/l Cl                    |                     | 11.0  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |                     | .8    |
| TOTAL ORGANIC CARBON as mg/l C                   |                     | 2.5   |
| AMMONIA NITROGEN AMMONIACAL AS mg/l N            |                     | .03   |
| NITRATE as mg/l N                                |                     | 2.5   |
| NITRITE as ug/l N                                |                     | 6.    |
| SUSPENDED SOLIDS at 105 C as mg/l                |                     | 5.    |
| ASHED SOLIDS (ASH) at 500 C as mg/l              |                     | 3.    |
| ALKALINITY at pH 4.5 as mg/l CaCO3               |                     | 34.   |
| CHLORIDE as mg/l Cl                              |                     | 17.6  |
| PHOSPHATE (TOTAL) as mg/l P                      |                     | .01   |
| DISSOLVED SILICA REACTIVE DISSOLVED as mg/l SiO2 |                     | 12.0  |
| SULFATE (DISSOLVED) as mg/l SO4                  |                     | 11.2  |

C.B. Buckley  
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ANALYTICAL REPORT  
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LABDAMS SYSTEM (RL51)

H. WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

MPLING POINT OTTER 4 NEAR UPOTTERY

REF:-

SEND TO:-

36

MPLE TAKEN ON 27 02 91 AT 1531 BY NRA J. MURRY-BLIGH

MPLE REF NO. 45574 ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

TERIAL SAMPLED 2F

PE OF SAMPLE Single spot sample  
RPOSEATHER  
SERVATIONS

| TERMINAND AND UNITS                                              | RESULTS OF ANALYSIS | VALUE |
|------------------------------------------------------------------|---------------------|-------|
| as pH units                                                      |                     | 7.7   |
| DUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     |                     | 222.  |
| YGEN DISSOLVED as $\text{mg}/\text{l O}$                         |                     | 11.6  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ |                     | 1.6   |
| TOTAL ORGANIC CARBON as $\text{mg}/\text{l C}$                   |                     | 4.4   |
| TROGEN AMMONIACAL AS $\text{mg}/\text{l N}$                      |                     | .13   |
| TRATE as $\text{mg}/\text{l N}$                                  |                     | 4.3   |
| TRITE as $\text{ug}/\text{l N}$                                  |                     | 39.   |
| SPENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                  |                     | 25.   |
| SPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$            |                     | 16.   |
| KALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                |                     | 54.   |
| FLORIDE as $\text{mg}/\text{l Cl}$                               |                     | 24.6  |
| THO-PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                  |                     | .07   |
| LICATE-REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$          |                     | 11.1  |
| ILPHATE-(DISSOLVED) as $\text{mg}/\text{l SO}_4$                 |                     | 14.7  |

C.B. Buckley  
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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

IN POINT TRIB OF TALE HASKINS FARM OTTER 5

REF:-

SEND TO:-

E TAKEN ON 28 02 91 AT 1408 BY NRA J MURRY-BLIGH

E REF NO. 45914 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

IAL SAMPLED 2F  
OF SAMPLE Single spot sample

ER COLD DRY

VISIONS

RESULTS OF ANALYSIS

| PARAMETER AND UNITS                              | VALUE |
|--------------------------------------------------|-------|
| pH units                                         | 7.9   |
| CONDUCTIVITY at 20 C as uS/cm                    | 377.  |
| TOTAL DISSOLVED as mg/l O                        | 6.9   |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.1   |
| ORGANIC CARBON as mg/l C                         | 3.2   |
| AMMONIACAL AS mg/l N                             | .03   |
| NITRATE as mg/l N                                | 7.6   |
| NITRITE as ug/l N                                | 20.   |
| UNFLOCCULATED SOLIDS at 105 C as mg/l            | 8.    |
| UNFLOCCULATED SOLIDS (ASH) at 500 C as mg/l      | 6.    |
| ALKALINITY at pH 4.5 as mg/l CaCO3               | 91.   |
| CHLORIDE as mg/l Cl                              | 48.0  |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                 | .08   |
| REACTIVE DISSOLVED as mg/l SiO2                  | 6.3   |
| SULFATE (DISSOLVED) as mg/l SO4                  | 15.6  |

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT TRIBE OF OTTER BLANNICOMBE OTTER 6

REF:-

SEND TO:-

(38)

SAMPLE TAKEN ON 28 02 91 AT 1615 BY NRA J MURRY-ELIGH

SAMPLE REF NO. 45920 ANALYSIS COMMENCED ON 01 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSE

WATHER COLD DRY  
OBSERVATIONS

| TERMINAND AND UNITS                              | RESULTS OF ANALYSIS | VALUE |
|--------------------------------------------------|---------------------|-------|
| as pH units                                      |                     | 7.5   |
| CONDUCTIVITY at 20 C as uS/cm                    |                     | 165.  |
| OXYGEN DISSOLVED as mg/l O                       |                     | 10.5  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |                     | 1.1   |
| TOTAL ORGANIC CARBON as mg/l C                   |                     | 2.6   |
| NITROGEN AMMONIACAL AS mg/l N                    |                     | .03   |
| AMMONIA as mg/l N                                |                     | 2.1   |
| NITRITE as ug/l N                                |                     | 16.   |
| SUSPENDED SOLIDS at 105 C as mg/l                |                     | 9.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l          |                     | 6.    |
| ALKALINITY at pH 4.5 as mg/l CaCO3               |                     | 32.   |
| CHLORIDE as mg/l Cl                              |                     | 20.9  |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                 |                     | .02   |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2         |                     | 10.3  |
| SULPHATE (DISSOLVED) as mg/l SO4                 |                     | 8.6   |

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CHIEF SCIENTIST

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WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT OTTER 7 TOP OF CATCHMENT

REF:-

SEND TO:-

(39)

SAMPLE TAKEN ON 27 02 91 AT 1500 BY NRA J. MURRY-ELIGH

REF NO. 45575 ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

OTHER

OBSERVATIONS

| TERMINAL AND UNITS                                               | RESULTS OF ANALYSTS | VALUE |
|------------------------------------------------------------------|---------------------|-------|
| as pH units                                                      |                     | 7.7   |
| DUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     |                     | 200.  |
| DISSOLVED as $\text{mg}/\text{l O}$                              |                     | 11.2  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ |                     | 1.3   |
| AL ORGANIC CARBON as $\text{mg}/\text{l C}$                      |                     | 2.3   |
| EN AMMONIACAL AS $\text{mg}/\text{l N}$                          |                     | .04   |
| ATE as $\text{mg}/\text{l N}$                                    |                     | 3.4   |
| RITE as $\text{ug}/\text{l N}$                                   |                     | 21.   |
| ENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                    |                     | 9.    |
| ENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$              |                     | 4.    |
| ALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 |                     | 51.   |
| ODE as $\text{mg}/\text{l Cl}$                                   |                     | 19.9  |
| HU-PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                   |                     | .07   |
| ICATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$           |                     | 12.2  |
| TE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                      |                     | 15.0  |

C.E. Buckley  
CHIEF SCIENTIST

*John P. Strathairn*  
*James Pearson*

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (R151

OTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT OTTER 8 TRIB OF OTTER MINOF RD CROSSING

REF:-

SEND TO:-

SAMPLE TAKEN ON 06 03 91 AT 1620 BY NRA J MURRAY BLIGH

SAMPLE REF NO. 46903 ANALYSIS COMMENCED ON 07 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F  
TYPE OF SAMPLE Single spot sample  
PURPOSEWEATHER  
OBSERVATIONS OTTERTON NORTH STAR

## RESULTS OF ANALYSIS

| DETERMINAND AND UNITS                               | VALUE |
|-----------------------------------------------------|-------|
| pH as pH units                                      | 7.    |
| CONDUCTIVITY at 20 C as uS/cm                       | 423.  |
| OXYGEN DISSOLVED as mg/l O                          | 10.2  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.    |
| TOTAL ORGANIC CARBON as mg/l C                      | 6.0   |
| NITROGEN AMMONIACAL AS mg/l N                       | .12   |
| NITRATE as mg/l N                                   | 10.   |
| NITRITE as ug/l N                                   | 168.  |
| SUSPENDED SOLIDS at 105 C as mg/l                   | 27.   |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             | 23.   |
| ALKALINITY at pH 4.5 as mg/l CaCO3                  | 56.   |
| CHLORIDE as mg/l Cl                                 | 55.2  |
| ORTHO-PHOSPHATE (TOTAL) as mg/l P                   | .19   |
| SILICATE REACTIVE DISSOLVED as mg/l SiO2            | 7.4   |
| SULPHATE (DISSOLVED) as mg/l SO4                    | 24.8  |

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ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

H WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

AMPLING POINT THE GISSAGE-GITTISHAM

REF:-

SEND TO:-

AMPLE TAKEN ON 04 03 91 AT 1345 BY NRA J.MURRAY-ELIGH

SAMPLE REF NO. 46275 ANALYSIS COMMENCED ON 05 03 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

REMARKS UNSPECIFIED UNSPECIFIED

OBSERVATIONS

## RESULTS OF ANALYSIS

| DETERMINAND AND UNITS                              | VALUE |
|----------------------------------------------------|-------|
| pH as pH units                                     | 7.4   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$    | 228.  |
| CHLORIDE DISSOLVED as mg/l Cl                      | 10.9  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O   | 5.6   |
| TOTAL ORGANIC CARBON as mg/l C                     | 13.1  |
| AMMONIUM AMMONIACAL AS mg/l N                      | 0.20  |
| NITRATE as mg/l N                                  | 2.4   |
| NITRITE as $\mu\text{g}/\text{l}$ N                | 28.   |
| SUSPENDED SOLIDS at 105 C as mg/l                  | 106.  |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l            | 86.   |
| ALKALINITY at pH 4.5 as mg/l $\text{CaCO}_3$       | 54.   |
| CHLORIDE as mg/l Cl                                | 25.1  |
| PHOSPHATE (TOTAL) as mg/l P                        | 0.30  |
| SILICATE REACTIVE DISSOLVED as mg/l $\text{SiO}_2$ | 8.7   |
| SULFATE (DISSOLVED) as mg/l $\text{SO}_4$          | 10.3  |

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CHIEF SCIENTIST



ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL5)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT AXE 1 TRIE OF AXE AT SECTOR

REF: -

SEND TO: -

SAMPLE TAKEN ON 26 02 91 AT 1530 BY NRA J MURRAY-BLIGH

SAMPLE REF NO. 45356 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WEATHER COLD DRY

OBSERVATIONS

| RESULTS OF ANALYSIS                                                 |       |
|---------------------------------------------------------------------|-------|
| DETERMINAND AND UNITS                                               | VALUE |
| pH as pH units                                                      | 7.4   |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     | 240.  |
| OXYGEN DISSOLVED as $\text{mg}/\text{l O}$                          | 10.2  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 1.0   |
| TOTAL ORGANIC CARBON as $\text{mg}/\text{l C}$                      | 4.7   |
| NITROGEN AMMONIACAL AS $\text{mg}/\text{l N}$                       | 0.02  |
| NITRATE as $\text{mg}/\text{l N}$                                   | 5.4   |
| NITRITE as $\text{ug}/\text{l N}$                                   | 18.   |
| SUSPENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                   | 11.   |
| SUSPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$             | 7.    |
| ALKALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 | 27.   |
| CHLORIDE as $\text{mg}/\text{l Cl}$                                 | 31.8  |
| ORTHOPHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                    | 0.04  |
| SILICATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$           | 8.6   |
| SULPHATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                   | 19.8  |

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91

ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT AXE 2 BELOW BAGLEY FARM

REF:-

SEND TO:-

43

SAMPLE TAKEN ON 27 02 91 AT 1230 BY

[REDACTED]

E REF NO. 45571

ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

SPECIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

OBSERVATIONS

OBSERVATIONS

## RESULTS OF ANALYSIS

TERMINAND AND UNITS

VALUE

|                                                                  |      |
|------------------------------------------------------------------|------|
| as pH units                                                      | 7.8  |
| CONDUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                  | 283. |
| TOTAL DISSOLVED as $\text{mg}/\text{l O}$                        | 11.3 |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 1.6  |
| TOTAL ORGANIC CARBON as $\text{mg}/\text{l C}$                   | 5.4  |
| GEN. AMMONIACAL AS $\text{mg}/\text{l N}$                        | .04  |
| FRATE as $\text{mg}/\text{l N}$                                  | 3.6  |
| FRITE as $\text{ug}/\text{l N}$                                  | 78.  |
| UNDEPOSED SOLIDS at 105 C as $\text{mg}/\text{l}$                | 9.   |
| SPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$            | 5.   |
| CALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                | 61.  |
| IDE as $\text{mg}/\text{l Cl}$                                   | 32.9 |
| MO-PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                   | .02  |
| ICATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$           | 8.1  |
| ICATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                   | 32.3 |

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ANALYTICAL REPORT  
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LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT AXE 3 TRIB NEAR TRILL

REF: \_\_\_\_\_

SEND TO: \_\_\_\_\_

(44)

SAMPLE TAKEN ON 26.02.91 AT 1430 BY: NRA J MURRAY-BLIGH

SAMPLE REF NO. 45357 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

ATERIAL SAMPLED 2F  
YPE OF SAMPLE Single spot sample  
URPOSE

EATHER COLD DRY

PRESERVATIONS

## RESULTS OF ANALYSIS

| TERMINAND AND UNITS                                                | VALUE |
|--------------------------------------------------------------------|-------|
| as pH units                                                        | 7.9   |
| DUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                       | 318.  |
| YGEN DISSOLVED as $\text{mg}/\text{l O}$                           | 11.7  |
| OCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU: as $\text{mg}/\text{l O}$ | .7    |
| TOTAL ORGANIC CARBON as $\text{mg}/\text{l C}$                     | 3.6   |
| TROGEN AMMONIACAL as $\text{mg}/\text{l N}$                        | .01   |
| TRATE as $\text{mg}/\text{l N}$                                    | 1.7   |
| TRITE as $\mu\text{g}/\text{l N}$                                  | 6.    |
| SPENDED SOLIDS at 105 C as $\text{mg}/\text{l}$                    | 7.    |
| SPENDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$              | 5.    |
| KALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                  | 87.   |
| LORIDE as $\text{mg}/\text{l Cl}$                                  | 37.9  |
| THO-PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                    | .03   |
| LICATE REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$            | 7.4   |
| PHATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                     | 15.7  |

C.B. Buckley  
CHIEF SCIENTIST

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**ANALYTICAL REPORT**  
**CERTIFIED**

LABDAMS SYSTEM (RL51)

SOUTH WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT AXE 4 TRIE FROM WHITWELL FARM

REF:-

SEND TO:-

(45)

SAMPLE TAKEN ON 26 02 91 AT 1210 BY NRA J MURRAY-BLIGH

SAMPLE REF NO. 45358 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

STERIAL SAMPLED 2F

E OF SAMPLE Single spot sample

URPOSE

OTHER COLD DRY

ERVATIONS

RESULTS OF ANALYSTS

| ETERMINAND AND UNITS                            | VALUE |
|-------------------------------------------------|-------|
| PH units                                        | 7.4   |
| DUCTIVITY at 20 C as uS/cm                      | 313.  |
| YGEN DISSOLVED as mg/l O                        | 11.1  |
| HEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.0   |
| AL ORGANIC CARBON as mg/l C                     | 3.1   |
| ROGEN AMMONIACAL AS mg/l N                      | .03   |
| ITE as mg/l N                                   | 10.6  |
| RITE as ug/l N                                  | 22.   |
| PENDED SOLIDS at 105 C as mg/l                  | 7.    |
| ENDED SOLIDS (ASH) at 500 C as mg/l             | 2.    |
| ALINITY at pH 4.5 as mg/l CaCO3                 | 29.   |
| ORIDE as mg/l Cl                                | 41.8  |
| -PHOSPHATE (TOTAL) as mg/l P                    | .06   |
| ILICATE REACTIVE DISSOLVED as mg/l SiO2         | 10.7  |
| PHATE (DISSOLVED) as mg/l SO4                   | 16.9  |

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36

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WASp

(BWWP-110)

ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

SOUTH WEST WATER SERVICES, LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT: AXE 5 TRIB AT WHITWELL

REF: 1

SEND TO: -

(46)

SAMPLE TAKEN ON 26 02 91 AT 1306 BY NRA J MURRAY-BLIGH

SAMPLE REF NO: 45359 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

WEATHER COLD DRY

OBSERVATIONS

| DETERMINAND AND UNITS                               | RESULTS OF ANALYSIS | VALUE |
|-----------------------------------------------------|---------------------|-------|
| pH as pH units                                      |                     | 8.2   |
| CONDUCTIVITY at 20 C as $\mu S/cm$                  |                     | 572.  |
| OXYGEN DISSOLVED as mg/l O                          |                     | 10.8  |
| BIOCHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O |                     | 1.2   |
| TOTAL ORGANIC CARBON as mg/l C                      |                     | 4.6   |
| NITROGEN AMMONIACAL AS mg/l N                       |                     | .01   |
| NITRATE as mg/l N                                   |                     | 10.1  |
| NITRITE as $\mu g/l$ N                              |                     | 24.   |
| SUSPENDED SOLIDS at 105 C as mg/l                   |                     | 8.    |
| SUSPENDED SOLIDS (ASH) at 500 C as mg/l             |                     | 7.    |
| ALKALINITY at pH 4.5 as mg/l $CaCO_3$               |                     | 156.  |
| CHLORIDE as mg/l Cl                                 |                     | 44.4  |
| ORTHOPHOSPHATE (TOTAL) as mg/l P                    |                     | .15   |
| SILICATE REACTIVE DISSOLVED as mg/l $SiO_2$         |                     | 12.4  |
| PHOSPHATE (DISSOLVED) as mg/l $PO_4$                |                     | 51.8  |

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CHIEF SCIENTIST

Assp

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19



ANALYTICAL REPORT  
CERTIFIED

LABDAMS SYSTEM (RL51)

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT AXE 6 TRIB OF YARTY

REF:-

SEND TO:-

(47)

SAMPLE TAKEN ON 26 02 91 AT 1700 BY NRA J. MURRAY-BLIGH

SAMPLE REF NO. 45360 ANALYSIS COMMENCED ON 27 02 91 AT LAB NO. 12

SERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

EXPOSE

WATHER COLD DRY

OBSERVATIONS

## RESULTS OF ANALYSIS

| TERMINAND AND UNITS                              | VALUE |
|--------------------------------------------------|-------|
| as pH units                                      | 7.8   |
| DUCTIVITY at 20 C as US/cm                       | 288.  |
| GEN DISSOLVED as mg/l O                          | 10.7  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O | 1.7   |
| TOTAL ORGANIC CARBON as mg/l C                   | 6.1   |
| ROGEN AMMONIACAL AS mg/l N                       | .17   |
| TRATE as mg/l N                                  | 2.1   |
| TRITE as ug/l N                                  | 66.   |
| PENDED SOLIDS at 105 C as mg/l                   | 250.  |
| PENDED SOLIDS (ASH) at 500 C as mg/l             | 205.  |
| KALINITY at pH 4.5 as mg/l CaCO3                 | 79.   |
| ORIDE as mg/l Cl                                 | 23.0  |
| THO-PHOSPHATE (TOTAL) as mg/l P                  | .24   |
| LICATE REACTIVE DISSOLVED as mg/l SiO2           | 10.6  |
| PHATE (DISSOLVED) as mg/l SO4                    | 13.3  |

C.B. Buckley  
CHIEF SCIENTISTAshida  
C. B. Buckley5. 4 11  
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# ANALYTICAL REPORT CERTIFIED

LABDAMS SYSTEM (RL51)

H WEST WATER SERVICES LIMITED

AREA - EAST LABORATORY

Chemistry

SAMPLING POINT AXE 7 TOP OF YARTY

REF: -

SEND TO: -

SAMPLE TAKEN ON 27 02 91 AT 1415 BY NRA J. MURRY-BLIGH

SAMPLE REF. NO. 45572 ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

MATERIAL SAMPLED 2F

TYPE OF SAMPLE Single spot sample

PURPOSE

REMARKS

OBSERVATIONS

| DETERMINAND AND UNITS                                | RESULTS OF ANALYSIS | VALUE |
|------------------------------------------------------|---------------------|-------|
| as pH units                                          |                     | 7.5   |
| INDUCTIVITY at 20°C as US/cm                         |                     | 172.  |
| OXYGEN DISSOLVED as mg/l O                           |                     | 11.1  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as mg/l O     |                     | 1.3   |
| TOTAL ORGANIC CARBON as mg/l C                       |                     | 3.3   |
| NITROGEN AMMONIACAL AS mg/l N                        |                     | .01   |
| NITRATE as mg/l N                                    |                     | 4.2   |
| NITRITE as ug/l N                                    |                     | 49.   |
| SUSPENDED SOLIDS at 105°C as mg/l                    |                     | 8.    |
| SUSPENDED SOLIDS (ASH) at 500°C as mg/l              |                     | 3.    |
| ALKALINITY at pH 4.5 as mg/l CaCO <sub>3</sub>       |                     | 27.   |
| CHLORIDE as mg/l Cl                                  |                     | 20.9  |
| THIO-PHOSPHATE (TOTAL) as mg/l P                     |                     | .02   |
| SILICATE REACTIVE DISSOLVED as mg/l SiO <sub>2</sub> |                     | 13.1  |
| SULPHATE (DISSOLVED) as mg/l SO <sub>4</sub>         |                     | 14.6  |

C.B. Buckley  
CHIEF SCIENTIST

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CERTIFIED

WEST WATER SERVICES LIMITED

AREA EAST LABORATORY

Chemistry

SAMPLING POINT AXE SITE 8 TRIE AT CHACKWAY

REF:-

SEND TO:-

SAMPLE TAKEN ON 27 02 91 AT 1130 BY NRA J. MURRY-BLIGH

REF NO. 45573 ANALYSIS COMMENCED ON 28 02 91 AT LAB NO. 12

DETAILED SAMPLED 2F  
 TYPE OF SAMPLE Single spot sample  
 PURPOSE

OTHER  
 OBSERVATIONS

| RESULTS OF ANALYSIS                                              |       |
|------------------------------------------------------------------|-------|
| TERM IN AND UNITS                                                | VALUE |
| as pH units                                                      | 8.2   |
| DUCTIVITY at 20 C as $\mu\text{S}/\text{cm}$                     | 473.  |
| DISSOLVED as $\text{mg}/\text{l O}$                              | 10.8  |
| CHEMICAL OXYGEN DEMAND 5 DAY TOTAL ATU as $\text{mg}/\text{l O}$ | 1.3   |
| ORGANIC CARBON as $\text{mg}/\text{l C}$                         | 3.1   |
| AMMONIACAL AS $\text{mg}/\text{l N}$                             | .02   |
| as $\text{mg}/\text{l N}$                                        | 11.3  |
| as $\text{ug}/\text{l N}$                                        | 53.   |
| POUNDED SOLIDS at 105 C as $\text{mg}/\text{l}$                  | 7.    |
| POUNDED SOLIDS (ASH) at 500 C as $\text{mg}/\text{l}$            | 3.    |
| ALINITY at pH 4.5 as $\text{mg}/\text{l CaCO}_3$                 | 185.  |
| as $\text{mg}/\text{l Cl}$                                       | 25.2  |
| PHOSPHATE (TOTAL) as $\text{mg}/\text{l P}$                      | .08   |
| ICATE, REACTIVE DISSOLVED as $\text{mg}/\text{l SiO}_2$          | 12.1  |
| PHATE (DISSOLVED) as $\text{mg}/\text{l SO}_4$                   | 28.4  |

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 CHIEF SCIENTIST

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F7 Environmental data from 51 sites in Devon

Tape storage details:-

APPENDIX\F\F7\README.TXT

The file in this directory, DEV.dat, contains environmental data from Devon catchments. Data for each of the 45 sites is saved in a row/column matrix and is in ASCII format.

F8 Invertebrate data for Devon Family Level

Tape storage details:-

APPENDIX\F\F8\README.TXT

The file in this directory, devfam.dat, contains invertebrate data from Devon catchments. Data is structured within each file as follows:

Site ref, NGR, Date  
Invertebrate code, abundance,

Reference to decode invertebrate names, Maitland (1977).

Site numbering corresponds to Figure 5.6 and Table 5.9 in the main text



F9 Invertebrate data for Devon (species level)

Tape storage details:-

APPENDIX\F\F9\README.TXT

The file in this directory, devspec.dat, contains invertebrate data from Devon catchments. Data is structured within each file as follows:

Site ref, NGR, Date  
Invertebrate code, abundance,

Reference to decode invertebrate names Maitland (1977)

F10 Environmental data for Welsh summer key

Tape storage details:-

APPENDIX\F\F10\README.TXT

The file in this directory, Welshsum.dat, contains environmental data for Welsh Summer Key. Data for each of the 50 sites is saved in a row/column matrix and is in ASCII format.

F11 Invertebrate data for Welsh Summer Key

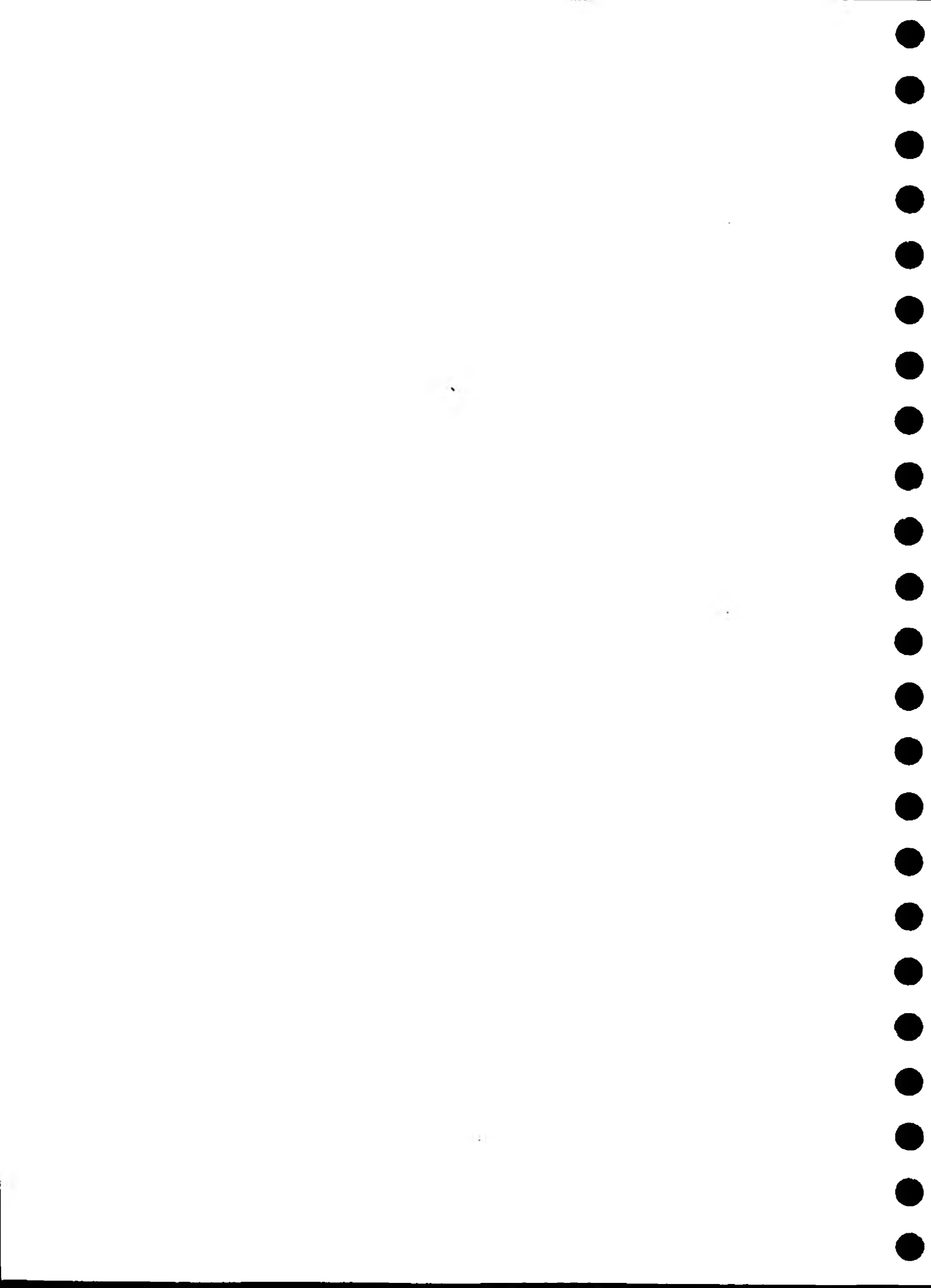
Tape storage details:-

APPENDIX\F\F11\README.TXT

The file in this directory, summkey.dat, contains invertebrate data from Welsh catchments. Data is structured within each file as follows:

Site ref, NGR, Date  
Invertebrate code, abundance,

Reference to decode invertebrate names Maitland (1977)



APPENDIX G

TESTING OF RAPID APPRAISAL METHOD



## Contents

- G1 Environmental and biotic data for 146 sites in West Wales\*
- G2 Catchment Maps 1991
- G3 Catchment Maps 1992
- G4 Farm visit Sheets
- G5 Environmental data for Yorkshire catchments\*
- G6 Environmental data for Cheshire catchments\*
- G7 RIVPACS output for Upper Weaver site\*

key: \* Data held on tape

G1 Environmental and biotic data for 146 sites in West Wales

Tape storage details:-

APPENDIX\G\G1\README.TXT

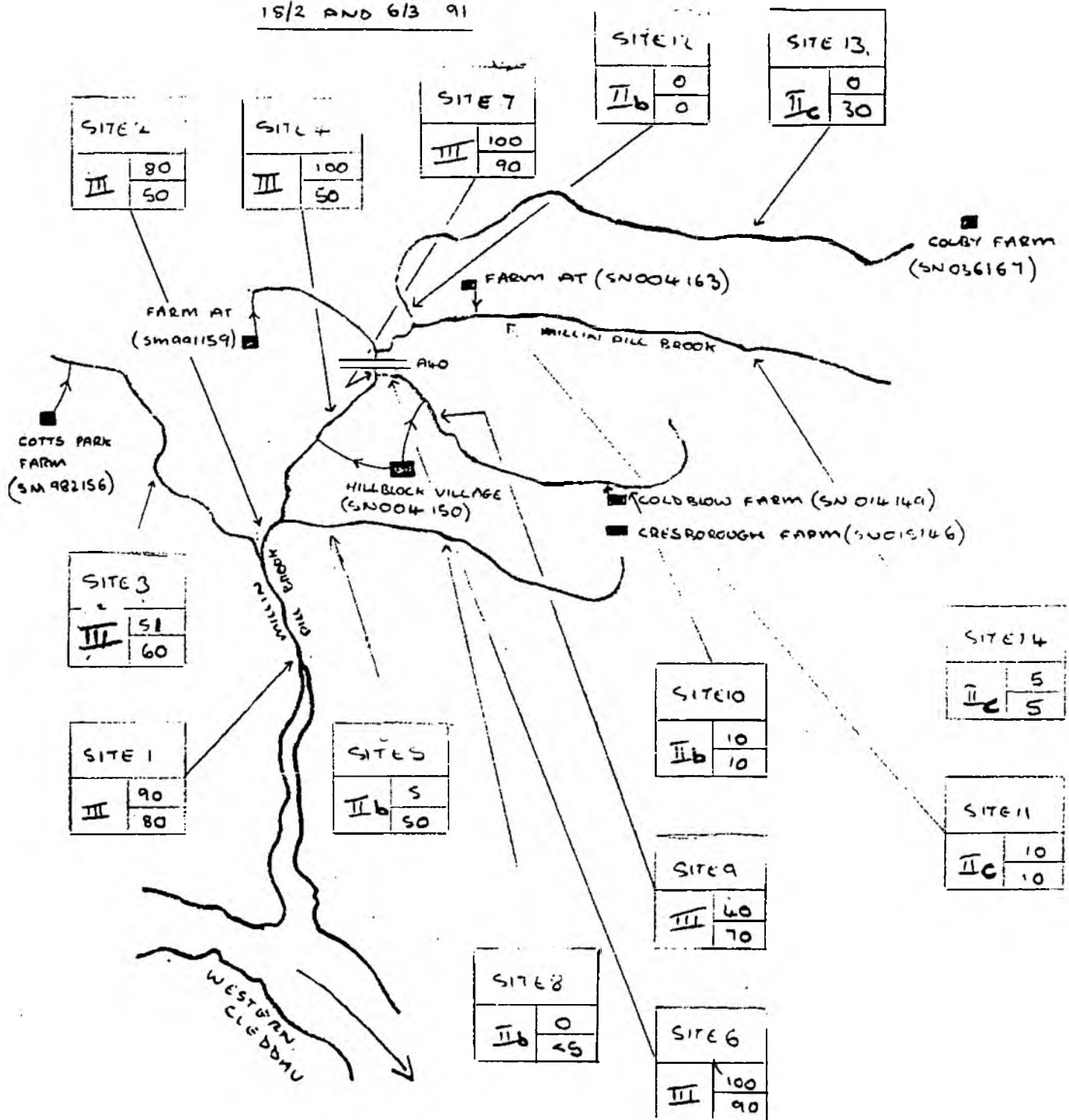
The file in this directory, Wale\_s.dat, contains environmental and biotic data from West Wales catchments. Data for each of the 146 sites is saved in a row/column matrix and is in ASCII format.

G2 Catchment Maps 1991

# WRC/NRA AGRICULTURAL POLLUTION PROJECT

## MILLIN PILL BROOK CATCHMENT SURVEY

15/2 AND 6/3 91



→ INPUT

| SITE | SITE NUMBER |
|------|-------------|
| I    | 0           |
| I    | 0           |

% SEWAGE FUNGUS ABOVE STONES

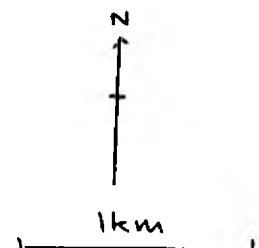
% " " BELOW STONES (> 6cm)

POLLUTION GROUP

I = UNPOLLUTED

II = MILD / HISTORIC / UPSTREAM POLLUTION

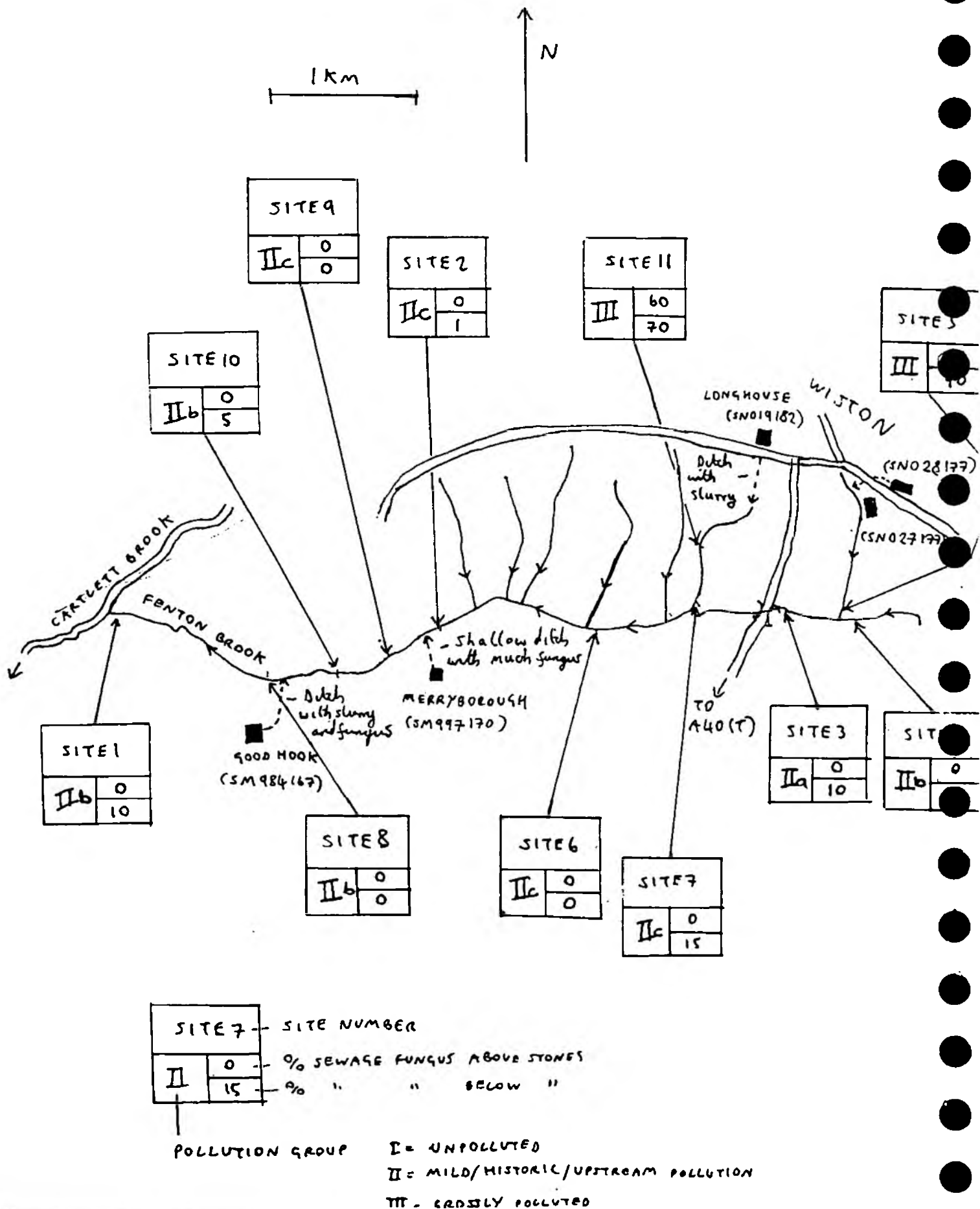
III = GROSSLY POLLUTED



# WRC/NRA FARM POLLUTION STUDY

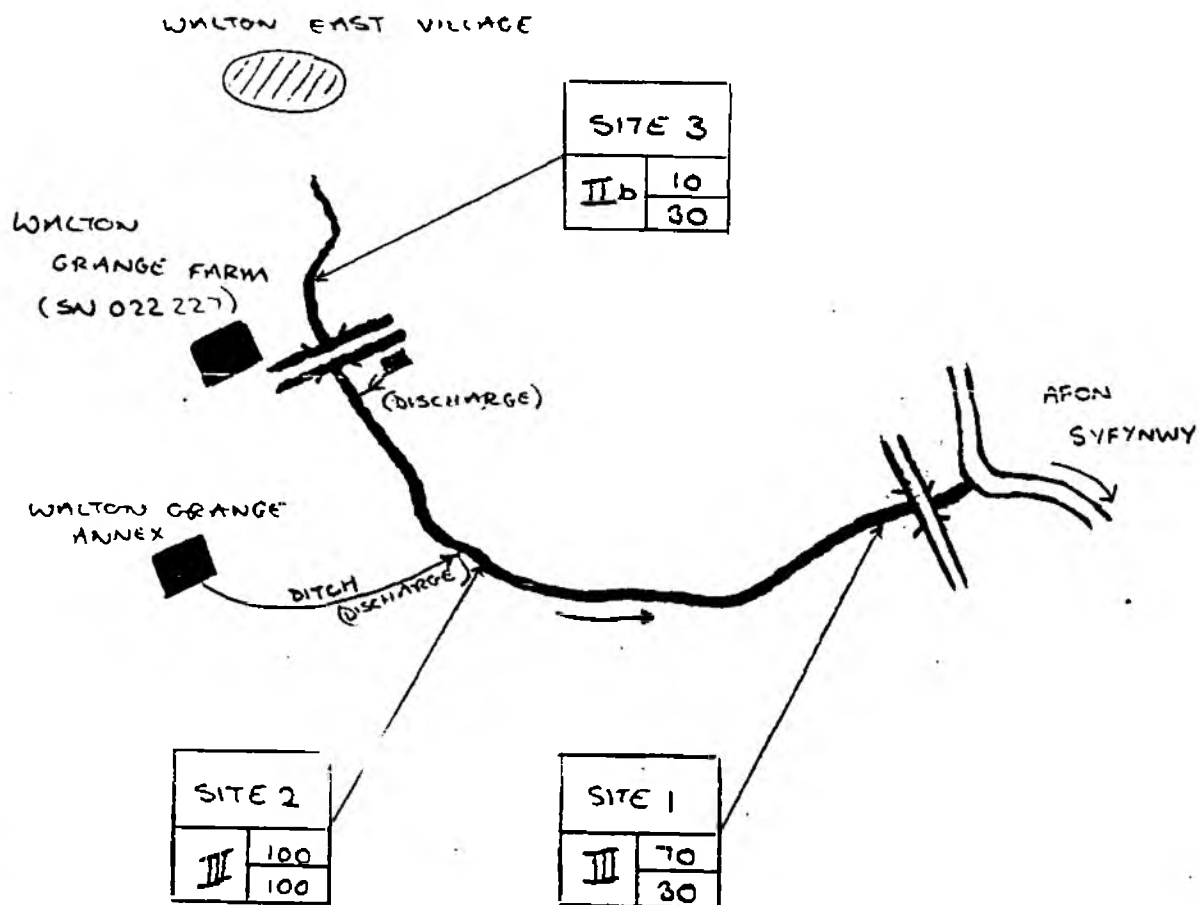
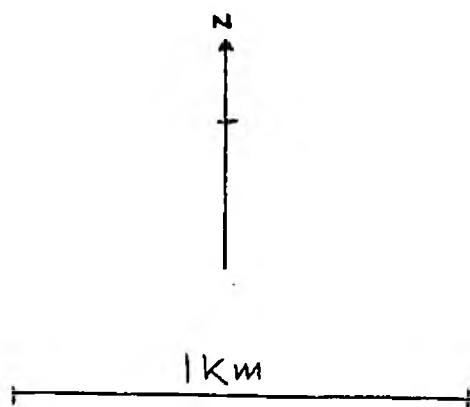
## FENTON BROOK CATCHMENT SURVEY

18/2, 11, 15 and 27/3/91





# SLADE BROOK CATCHMENT SURVEY 25/2/91



| SITE 2 |     |
|--------|-----|
| II     | 100 |
|        | 100 |

| SITE 1 |    |
|--------|----|
| III    | 70 |
|        | 30 |

| SITE 3 |    |
|--------|----|
| IIb    | 10 |
|        | 30 |

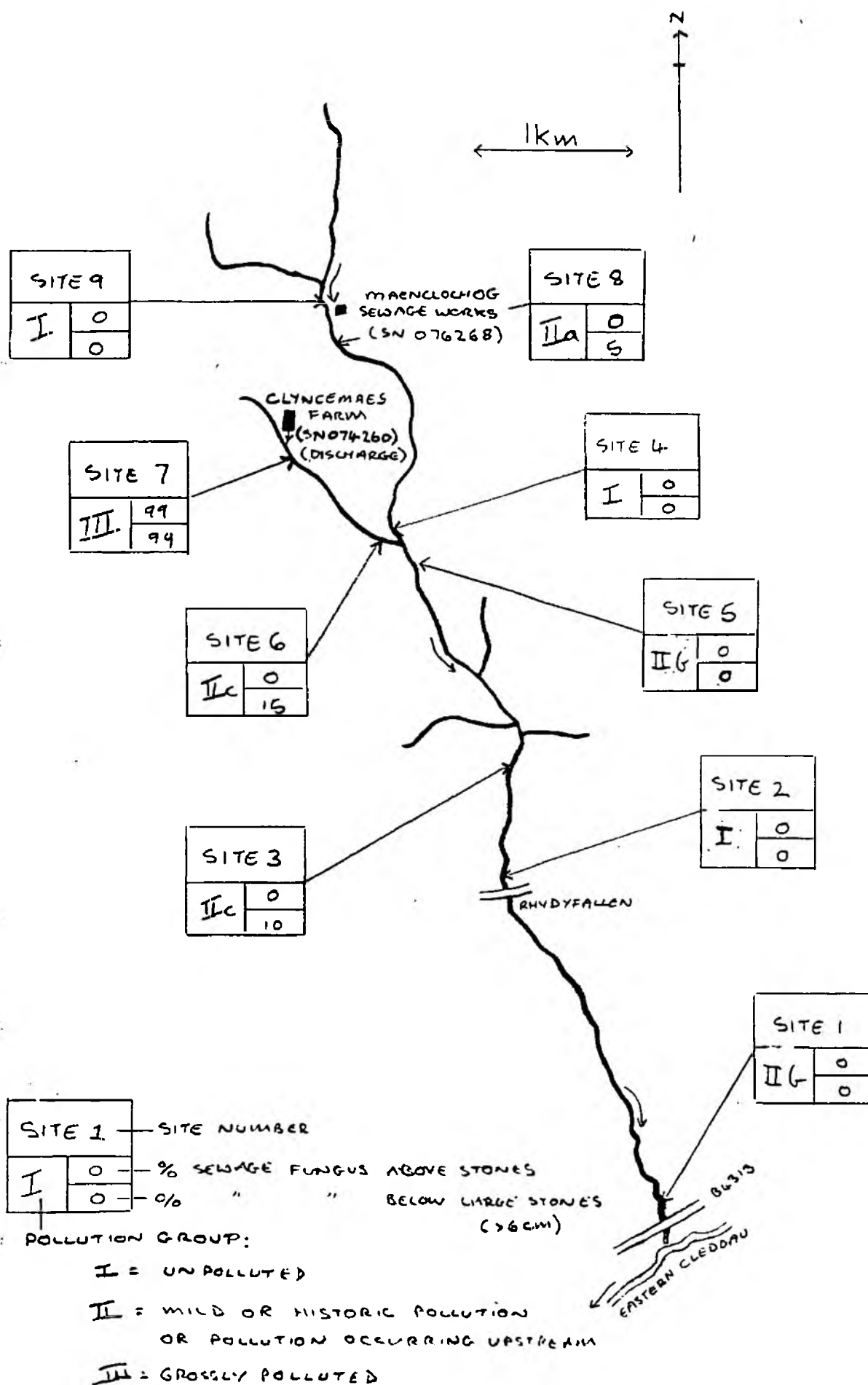
| SITE 1 |    |
|--------|----|
| II     | 70 |
|        | 30 |

SITE 1 — SITE NO.  
 II — 70 — % SEWAGE FUNGUS ABOVE STONES  
 30 — % " " BELOW STONES (>6cm)  
 POLLUTION GROUP

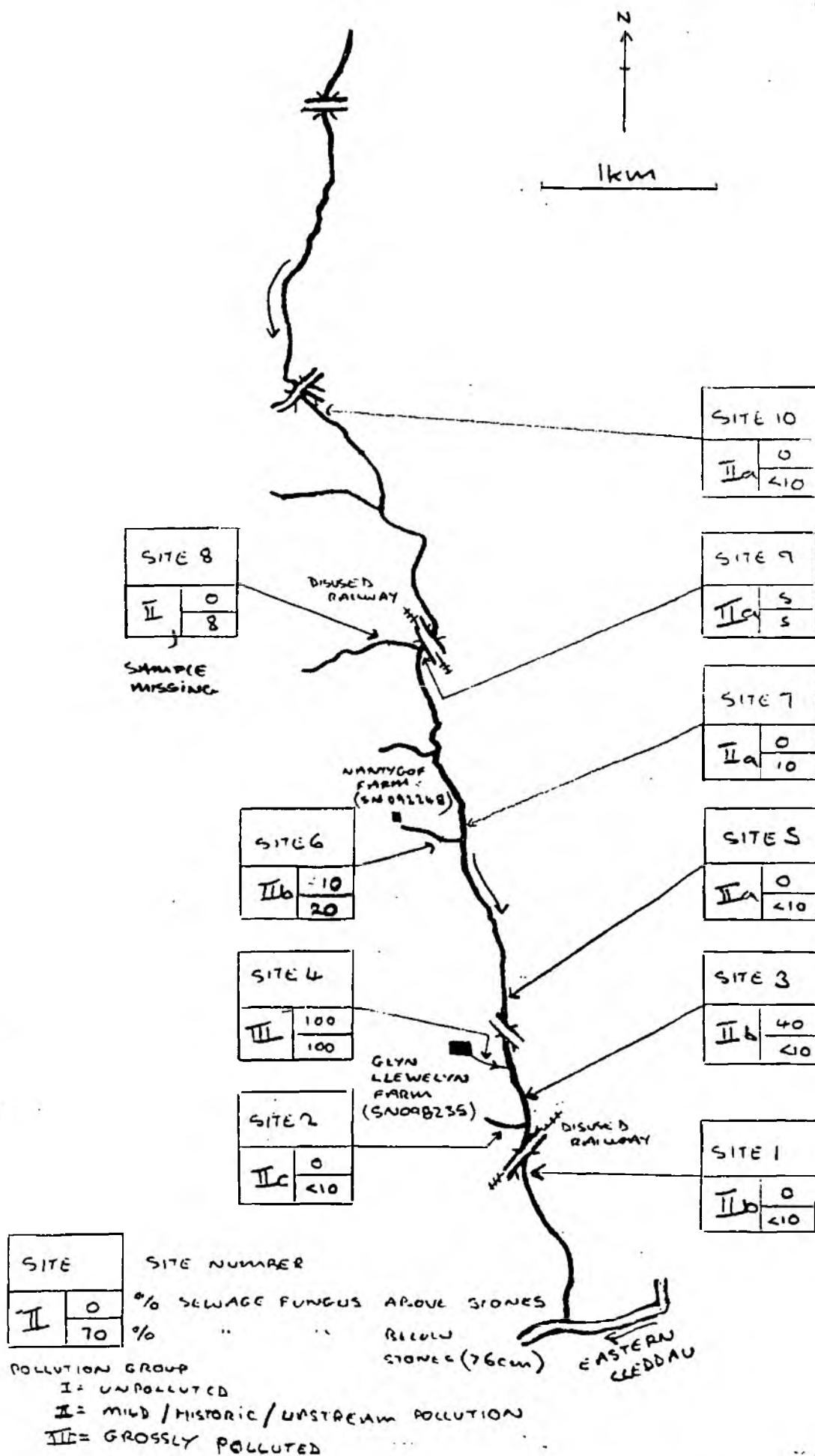
- I = UNPOLLUTED.
- II = MILD OR HISTORIC POLLUTION OR POLLUTION OCCURRING UPSTREAM.
- III = GROSSLY POLLUTED.

# RHYDYFALLEN STREAM CATCHMENT SURVEY

18/2/91



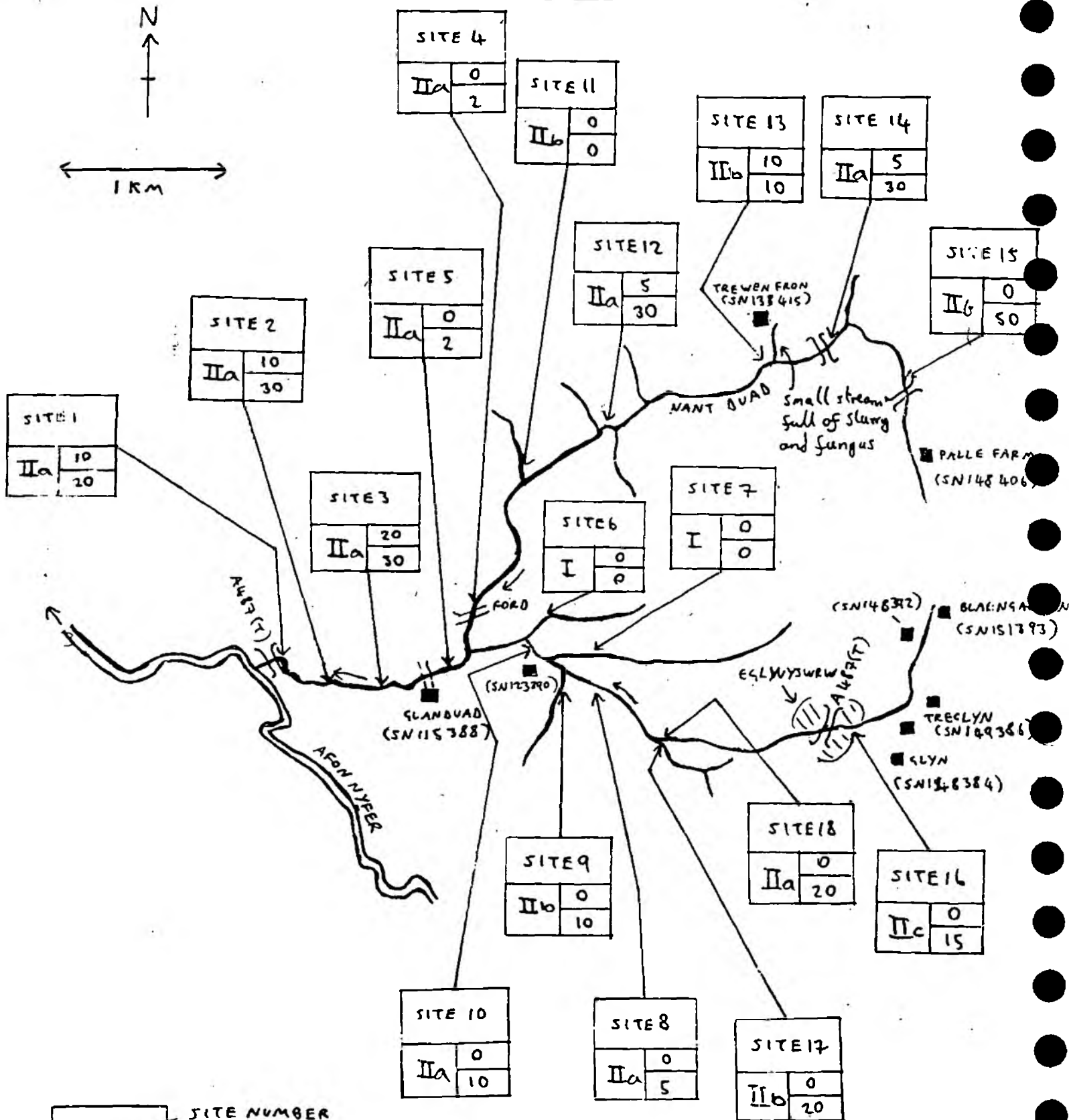
WRE/NRA AGRICULTURAL POLLUTION PROJECT  
LLAN-Y-CEFYN BROOK CATCHMENT SURVEY 19/2/91



# WRC/NRA AGRICULTURAL POLLUTION PROJECT

## NANT DUAD CATCHMENT SURVEY

13820/2/91 and 6/3/91



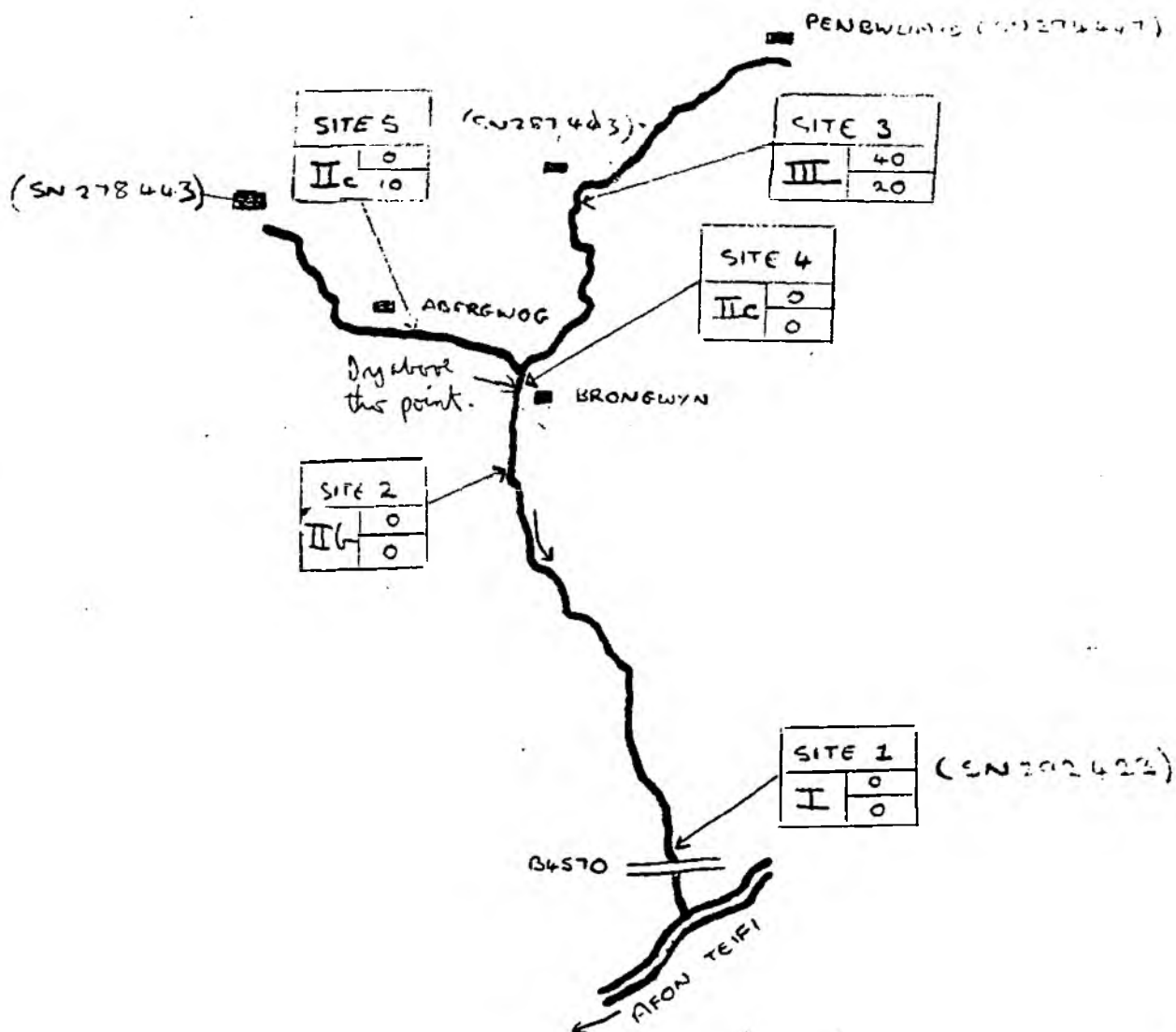
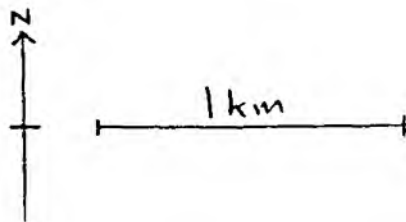
|        |    |                              |  |
|--------|----|------------------------------|--|
| SITE 2 |    | SITE NUMBER                  |  |
| II     | 10 | % SEWAGE FUNGUS ABOVE STONES |  |
|        | 30 | % " " BELOW STONES           |  |

POLLUTION GROUP : I = UNPOLLUTED

II = MILD/HISTORIC/UPSTREAM POLLUTION

III = GROSSLY POLLUTED

# NANT COY CATCHMENT SURVEY 7/2/91



|        |    |                             |  |
|--------|----|-----------------------------|--|
| SITE 1 |    | SITE NUMBER                 |  |
| I      | 40 | % SEWAGE FINDS ABOVE STONES |  |
|        | 0  | % " " BELOW STONES          |  |

POLLUTION GROUP (I, II, III)

I = UNPOLLUTED

II = MILD OR HISTORIC POLLUTION OR POLLUTION OCCURRING UPSTREAM

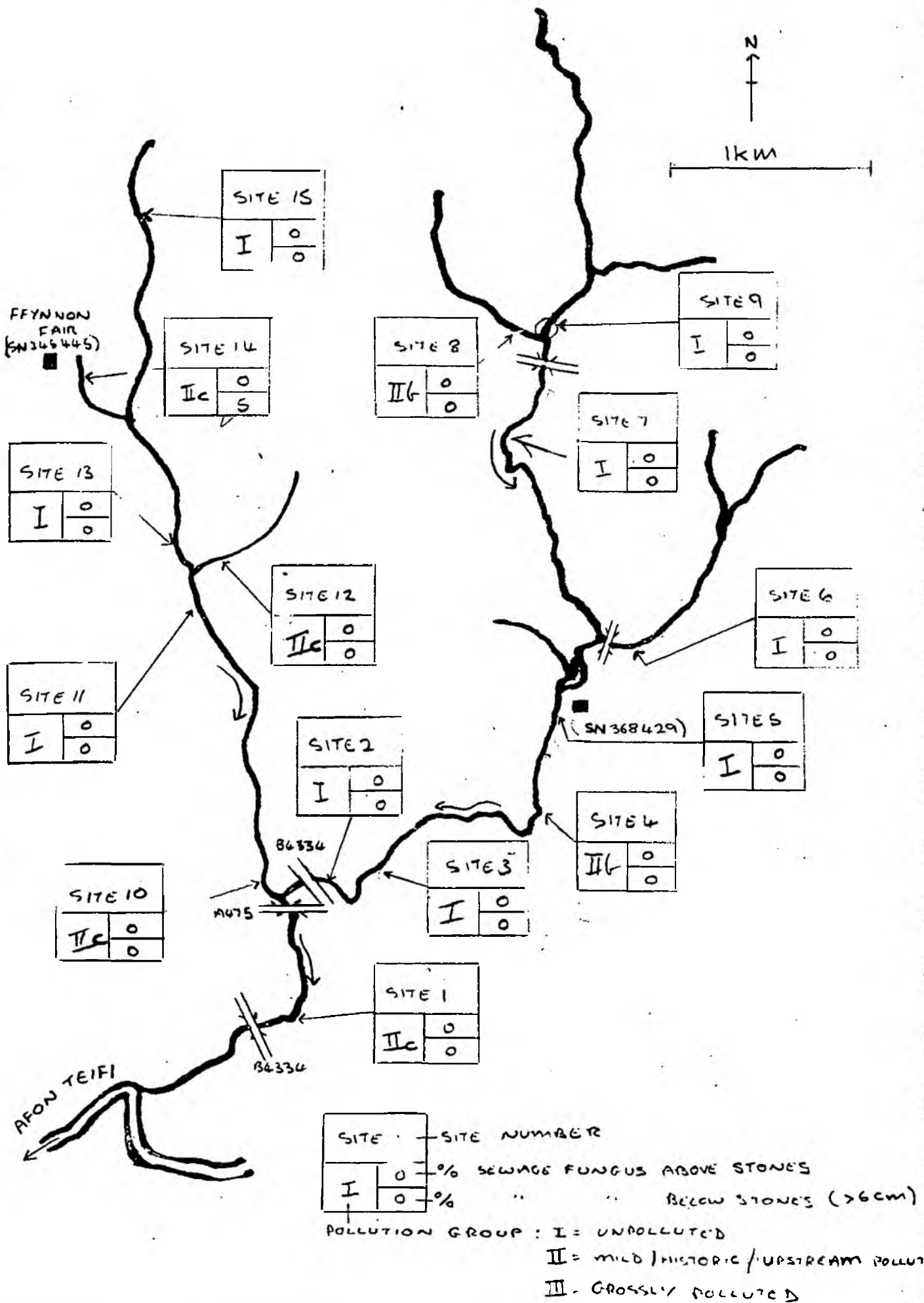
III = GROSSLY POLLUTED



# WRC/NRA AGRICULTURAL POLLUTION PROJECT

## NANT CWERCHYR CATCHMENT SURVEY

13/8/14/2/91



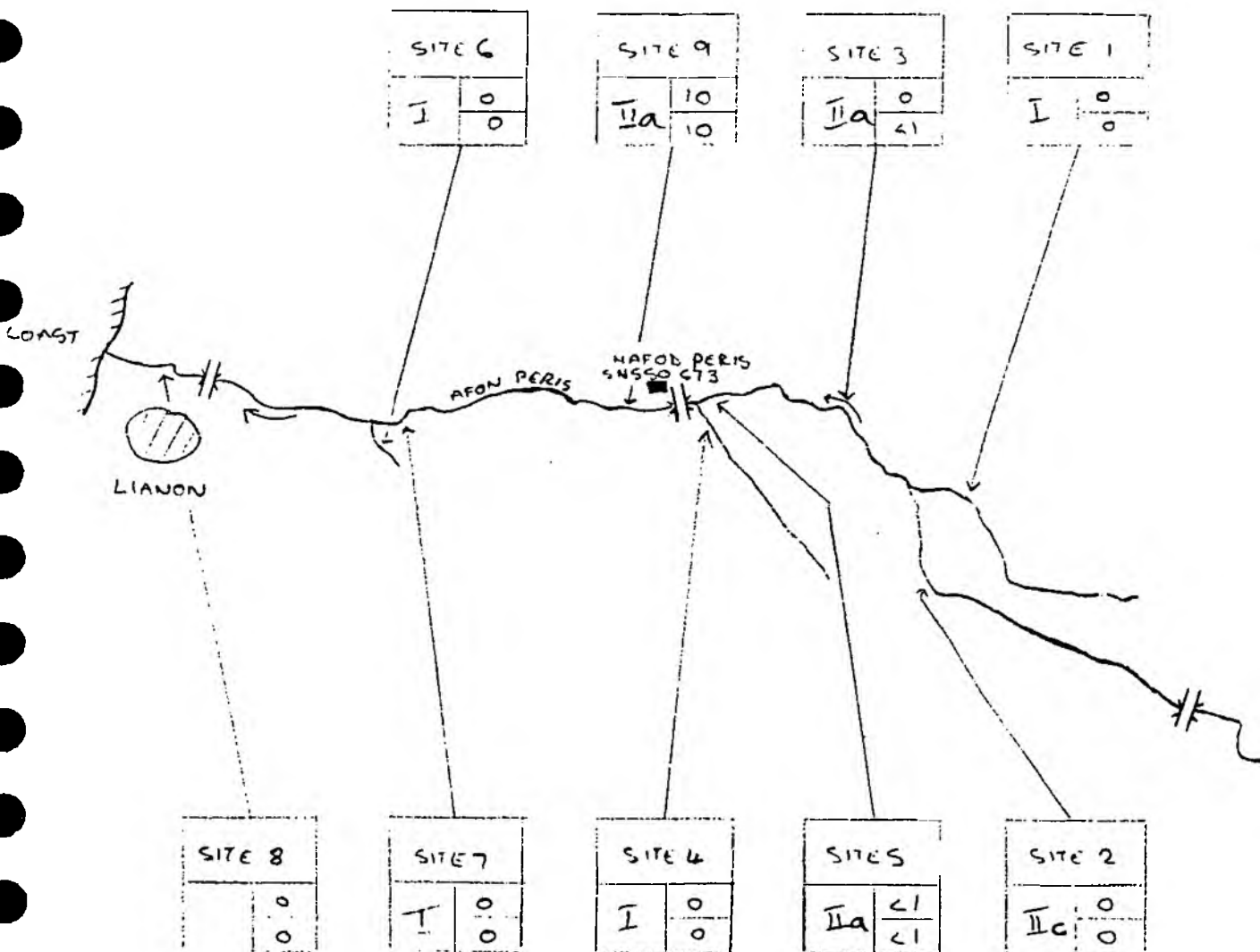
# WRC / NRA FARM POLLUTION STUDY

## AFON PERIS CATCHMENT SURVEY

28/2/91



1km



| SITE | SITE NUMBER |
|------|-------------|
| I    | 0           |
|      | 0           |

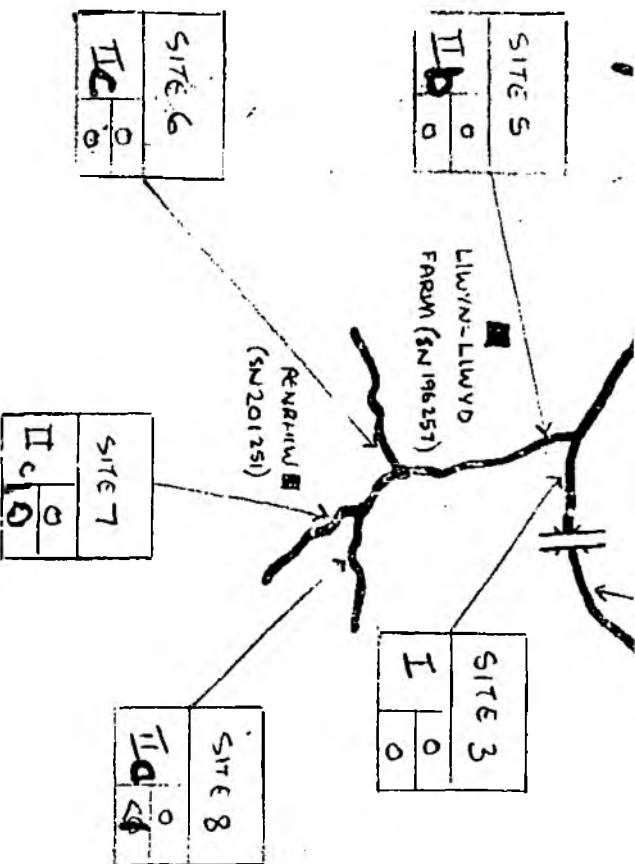
% SEWAGE FUNGUS COVER ABOVE STONES  
% " " " BELOW STONES

POLLUTION GROUP

I = UNPOLLUTED

II = MILD / HISTORIC / UPSTREAM POLLUTION

III = GROSSLY POLLUTED



| SITE 1 |   |   | SITE NUMBER                        |
|--------|---|---|------------------------------------|
| I      | 0 | 0 | % SPRING FUNGUS COVER ABOVE STONES |
|        | 0 | 4 |                                    |
|        |   |   | %                                  |

below STONES (>6cm)

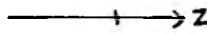
POLLUTION GROUP

I: UN POLLUTED

II: MODERATE HISTORIC POLLUTION OR POLLUTION OCCURRING UPSIDE DOWN

III: GROSSLY POLLUTED

AFON TIGEN CATCHMENT SURVEY 2022/2/29

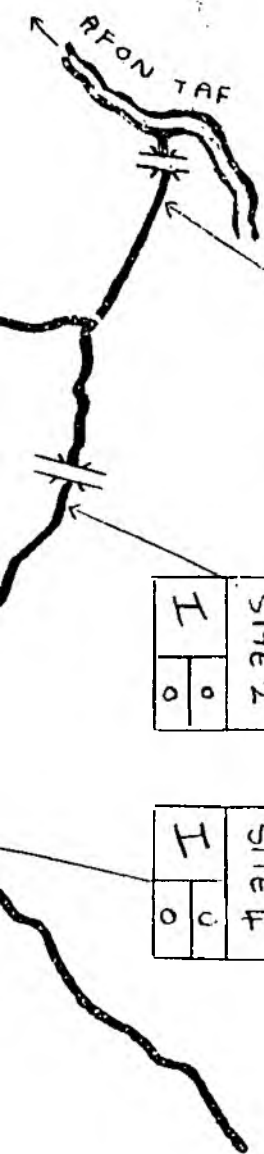


1 km

|        |   |
|--------|---|
| SITE 1 |   |
| I      | 0 |
|        | 0 |

|        |   |
|--------|---|
| SITE 2 |   |
| I      | 0 |
|        | 0 |

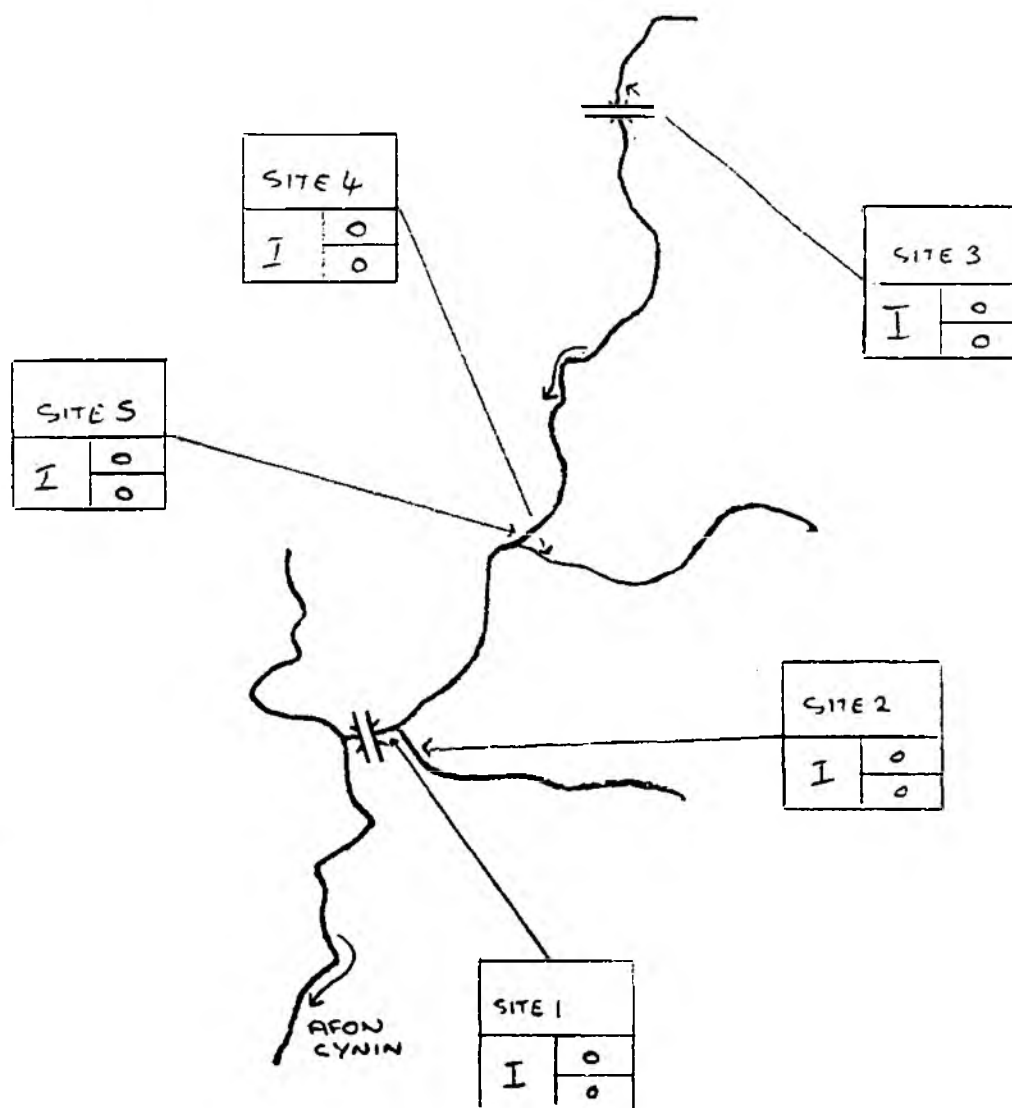
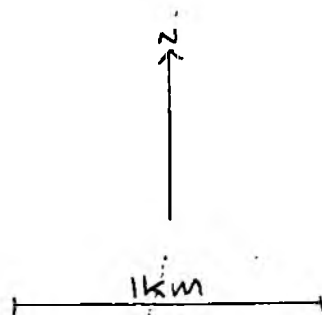
|        |   |
|--------|---|
| SITE 4 |   |
| I      | 0 |
|        | 0 |



# WRC/NRA AGRICULTURAL POLLUTION PROJECT

## TRIB OF AFON CYNIN CATCHMENT SURVEY

20/2 & 6/3 91



| SITE | SITE NUMBER |                               |
|------|-------------|-------------------------------|
| I    | 0           | % SEWAGE FENCUS AFONIC STONES |
|      | 0           | % " " " " " "                 |

POLLUTION GROUP I: UNPOLLUTED

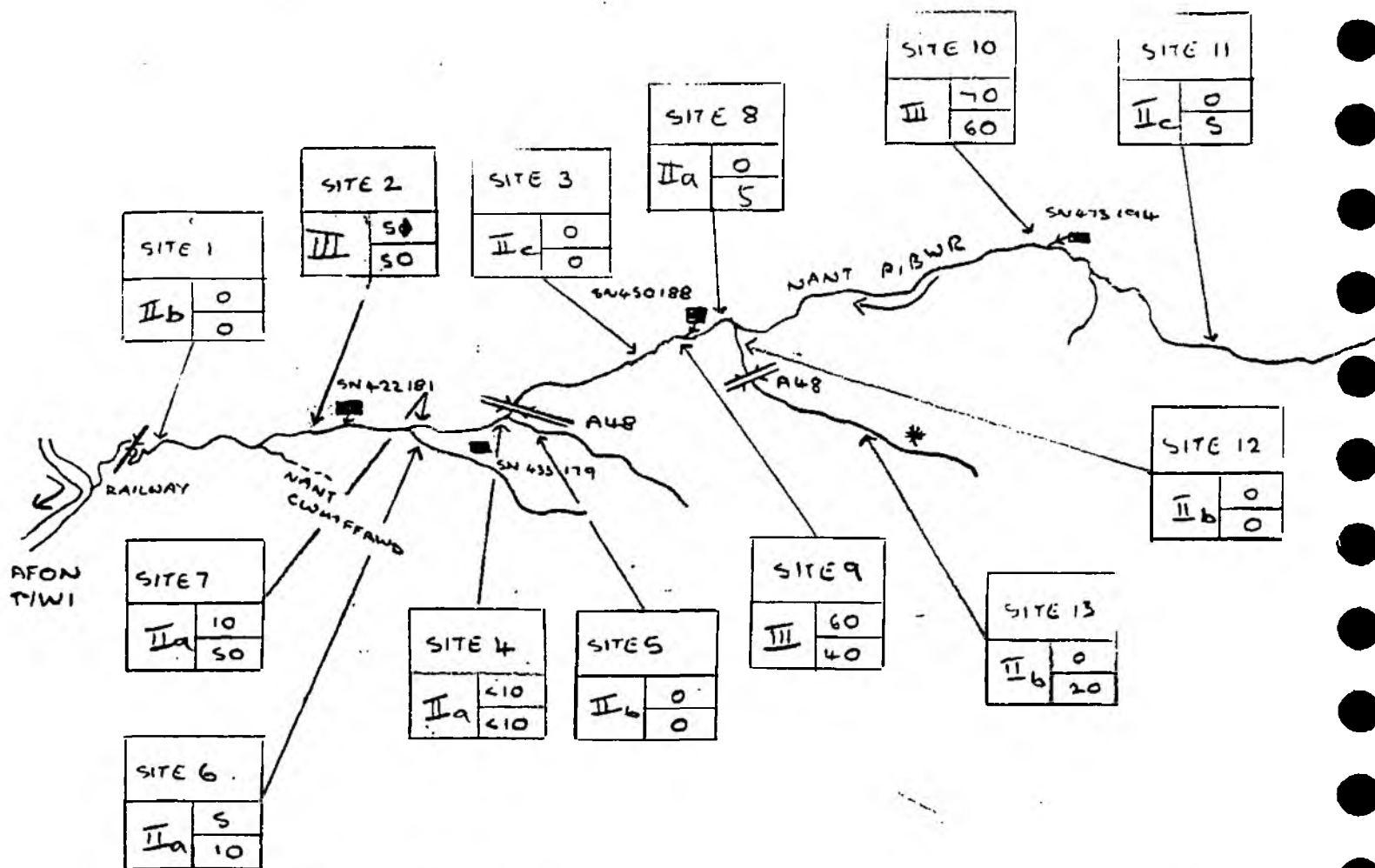
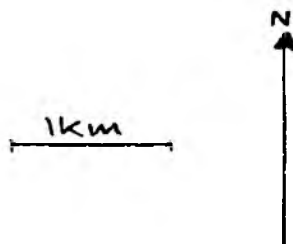
II = MILD/HISTORIC/UPSTREAM POLLUTION

III = GROSSLY POLLUTED

# WRC/NRA AGRICULTURAL POLLUTION PROJECT

## NANT PIBWR CATCHMENT SURVEY

12/2/91



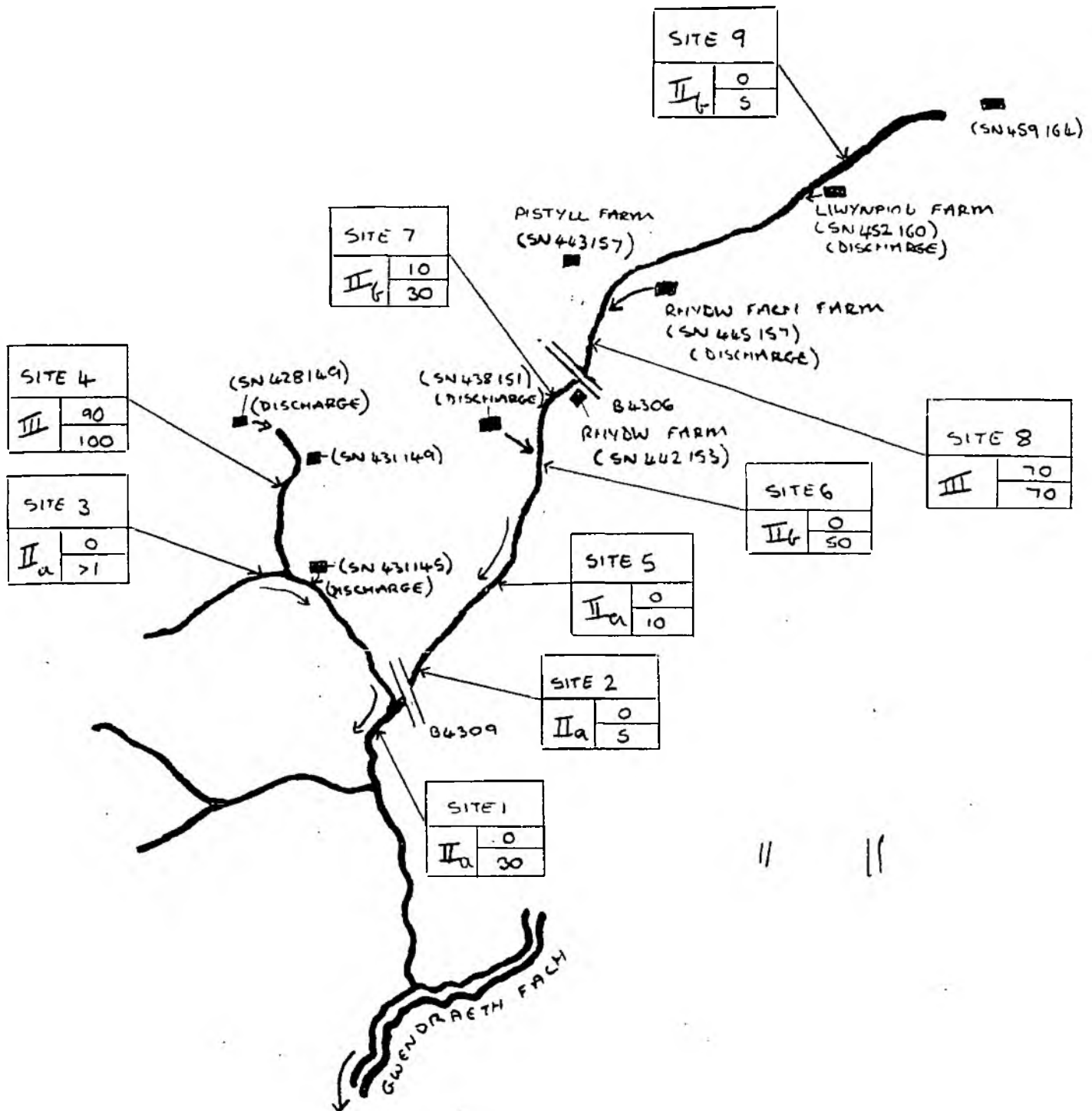
|         |                              |
|---------|------------------------------|
| → INPUT |                              |
| SITE    | SITE NUMBER                  |
| I       | % SEWAGE FUNGUS ABOVE STONES |
| II      | % " " BELOW STONES           |

POLLUTION GROUP I: UNPOLLUTED.  
 II: MILD/HISTORIC/UPSTREAM POLLUTION  
 III: GROSSLY POLLUTED



# NANT RHWDW CATCHMENT SURVEY

14 8 20 / 2 / 91



|        |                                 |
|--------|---------------------------------|
| SITE 1 | SITE NUMBER                     |
| II     | % SEWAGE FUNGUS ABOVE STONES    |
| 0      | % " " BELOW LARGE STONES (>6CM) |
| 30     |                                 |

POLLUTION GROUP

G3 Catchment Maps 1992

## MILLIN PILL BROOK CATCHMENT SURVEY

|         |   |
|---------|---|
| SITE 12 |   |
| 1       | 0 |
|         | 0 |

|         |   |
|---------|---|
| SITE 13 |   |
| 1       | 0 |
|         | 0 |

|        |         |
|--------|---------|
| SITE 7 |         |
| 26     | 0<br>13 |

|        |                |
|--------|----------------|
| SITE 4 |                |
| 26     | $\frac{0}{17}$ |

|        |   |
|--------|---|
| size 2 |   |
| 2b     | 0 |
|        | 3 |

|            |    |
|------------|----|
| EXTRA SITE |    |
| 26         | 0  |
|            | 10 |

COTTIS PARK  
FARM  
(SM 982 156)

Format  
(Sm 091159)

Also

WILD DILL BROTH

Form at  
SNO21157

COLBY F. [REDACTED]  
(SN 036167)

COLD BLOW FARM  
CRESBOROUGH FARM

|        |               |
|--------|---------------|
| SITE 3 |               |
| 2b.    | $\frac{0}{7}$ |

|        |        |
|--------|--------|
| SITE 1 |        |
| 2-b    | 0<br>9 |

|       |               |
|-------|---------------|
| SITES |               |
| 26    | $\frac{0}{3}$ |

|           |
|-----------|
| SITE 10   |
| 2a 0<br>3 |

SITE 14

26

|         |   |
|---------|---|
| SITE 11 |   |
| 2b      | 0 |
|         | 0 |

| Site A |   |
|--------|---|
| 1      | 0 |
|        | 0 |

|        |   |
|--------|---|
| SITE 8 |   |
| 1      | 0 |
|        | 0 |

|        |   |
|--------|---|
| SITE 6 |   |
| 26     | 0 |
|        | 0 |

→ INPUT

SITE

I 00

SITE NUMBER

-% SEWAGE FUNGUS ABOVE STONES

Revised 5/20/65 (76cm)

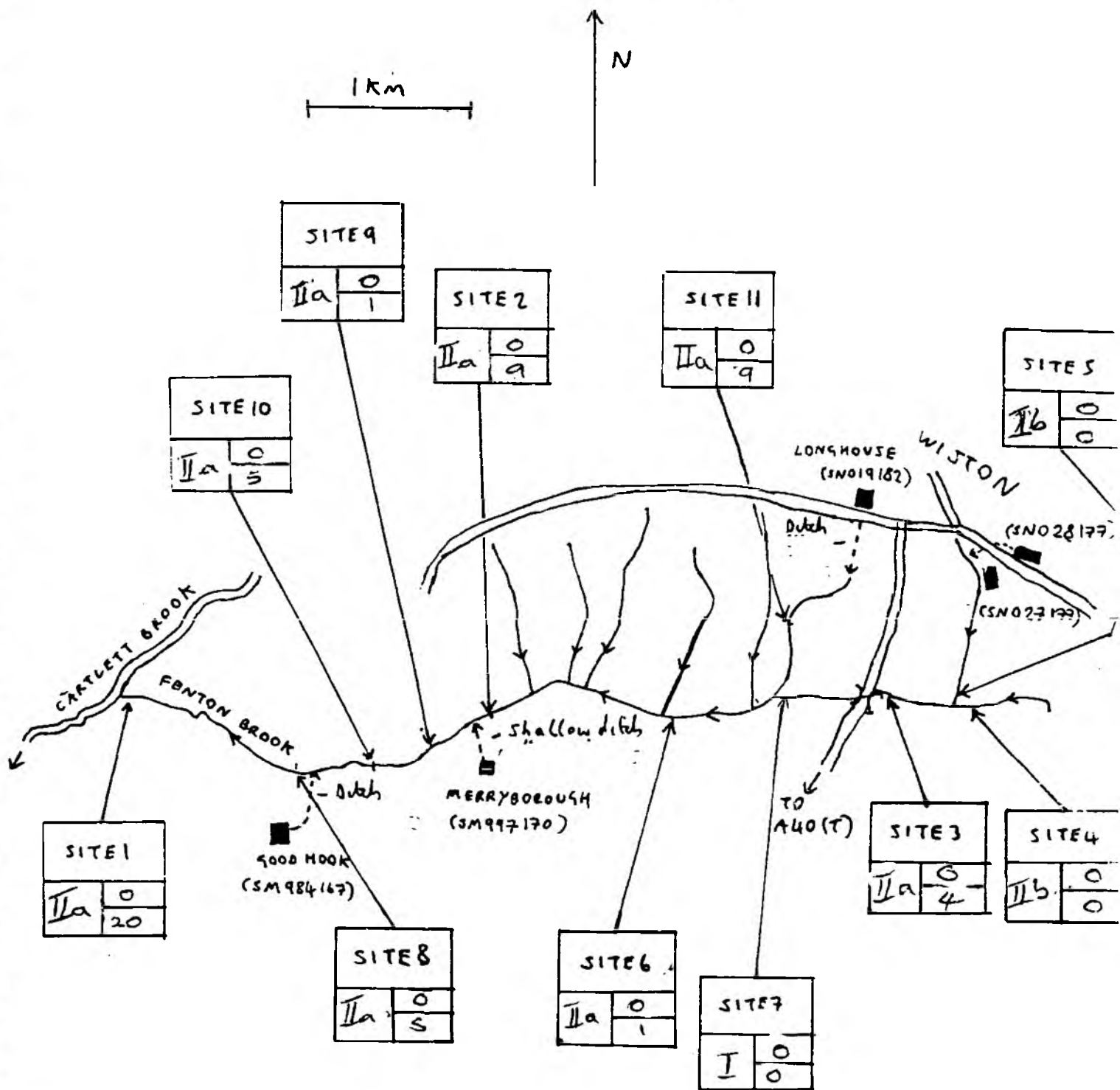
POLLUTION GROUP:

I = UNPOLLUTED  
IIa = MILD INPUT NO IMPACT ON FAUNA  
IIb = MODERATE / HISTORIC POLLUTION, IMPACT ON FAUNA  
IIc = " " " SERIOUS IMPACT ON FAUNA  
III = GROSS POLLUTION SERIOUS IMPACT ON FAUNA

# WRC/NRA FARM POLLUTION STUDY

## FENTON BROOK CATCHMENT SURVEY

20827/2/92



|        |             |                              |
|--------|-------------|------------------------------|
| SITE 7 | SITE NUMBER |                              |
| II     | 0           | % SEWAGE FUNGUS ABOVE STONES |
|        | 15          | % " " BELOW "                |

POLLUTION GROUP - I = UNPOLLUTED

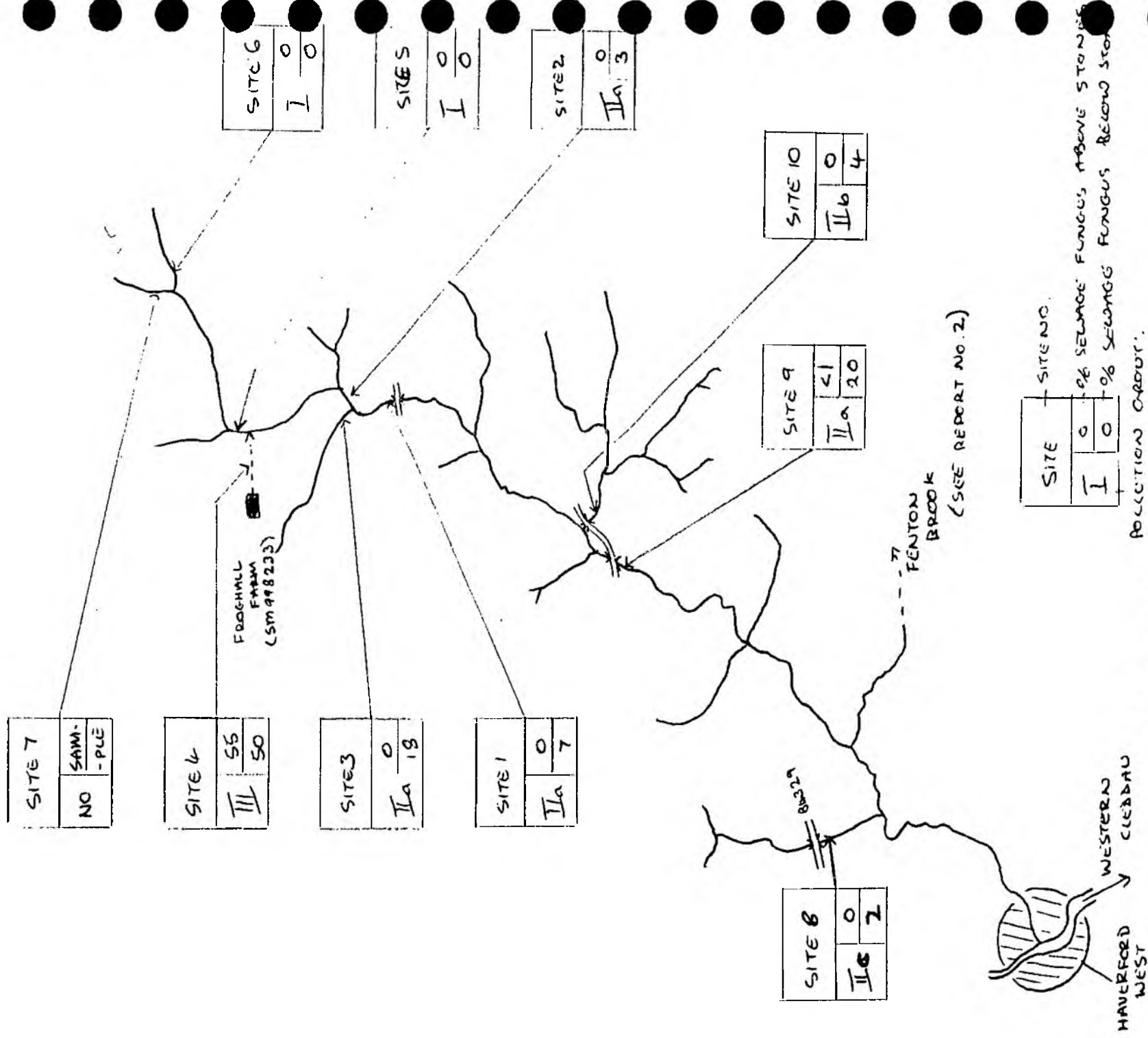
IIa: MODERATE HISTORIC POLLUTION IMPACT ON FAUNA  
 IIb: MODERATE HISTORIC POLLUTION IMPACT ON FLORA  
 IIc: MODERATE HISTORIC POLLUTION SERIOUS IMPACT ON FAUNA

CROSS POLLUTION  
 FROM OTHER  
 ON CANAL

# WRC/NRA AGRICULTURAL POLLUTION PROJECT

## CARLETT BROOK CATCHMENT SURVEY

27/2 & 2/3 92



| SITE | SITE NO. |
|------|----------|
| I    | 0        |
| II   | 0        |
| III  | 0        |

% SEWAGE FUNGUS ABOVE STONES  
% SEWAGE FUNGUS BELOW STONES

POLLUTION GRADU:

I UNPOLLUTED

IIa MILD INPUT, NO IMPACT ON FAUNA

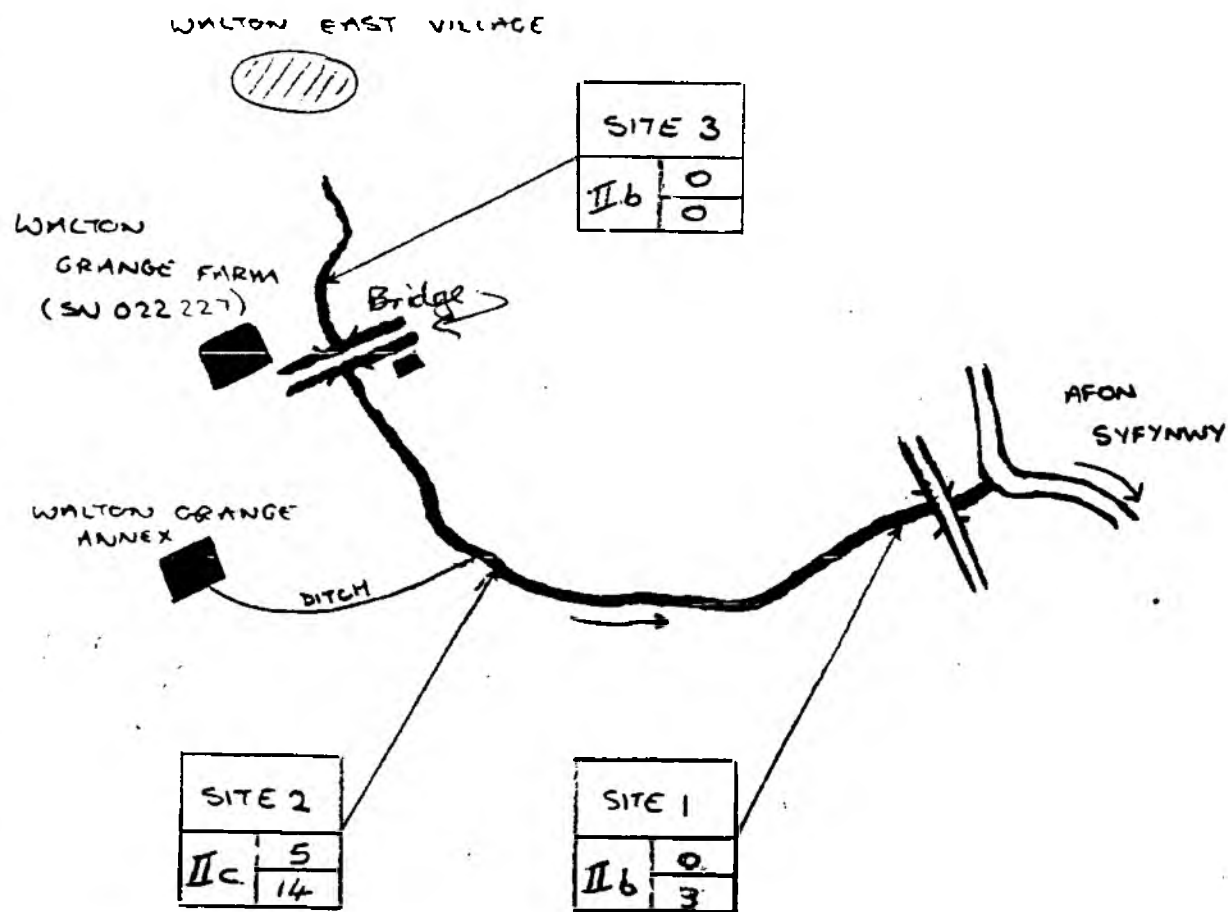
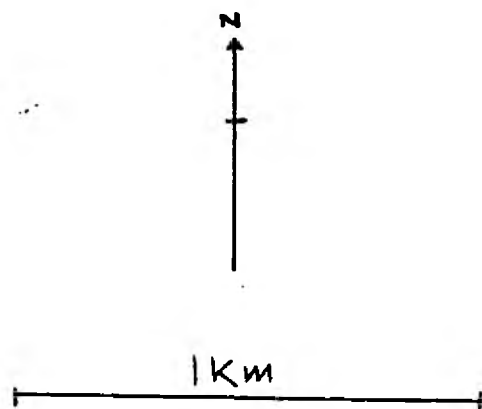
IIb MODERATE HISTORIC INPUT, IMPACT ON FAUNA

IIc MODERATE HISTORIC INPUT, SERIOUS IMPACT ON FAUNA

III GROSS POLLUTION SERIOUS IMPACT ON FAUNA

# SLADE BROOK CATCHMENT SURVEY

27/2 & 3/3 92



|        |    |
|--------|----|
| SITE 2 |    |
| IIc    | 5  |
|        | 14 |

|        |   |
|--------|---|
| SITE 1 |   |
| IIb    | 0 |
|        | 3 |

|        |   |
|--------|---|
| SITE 1 |   |
| 2b     | 0 |
|        | 3 |

SITE NO.

% SEWAGE FUNGUS ABOVE STONES

% " " " " BELOW STONES (>6cm)

POLLUTION GROUP

I = UNPOLLUTED

IIa = MILD INPUT NO IMPACT ON FAUNA

IIb = MODERATE/HISTORIC POLLUTION, IMPACT ON FAUNA

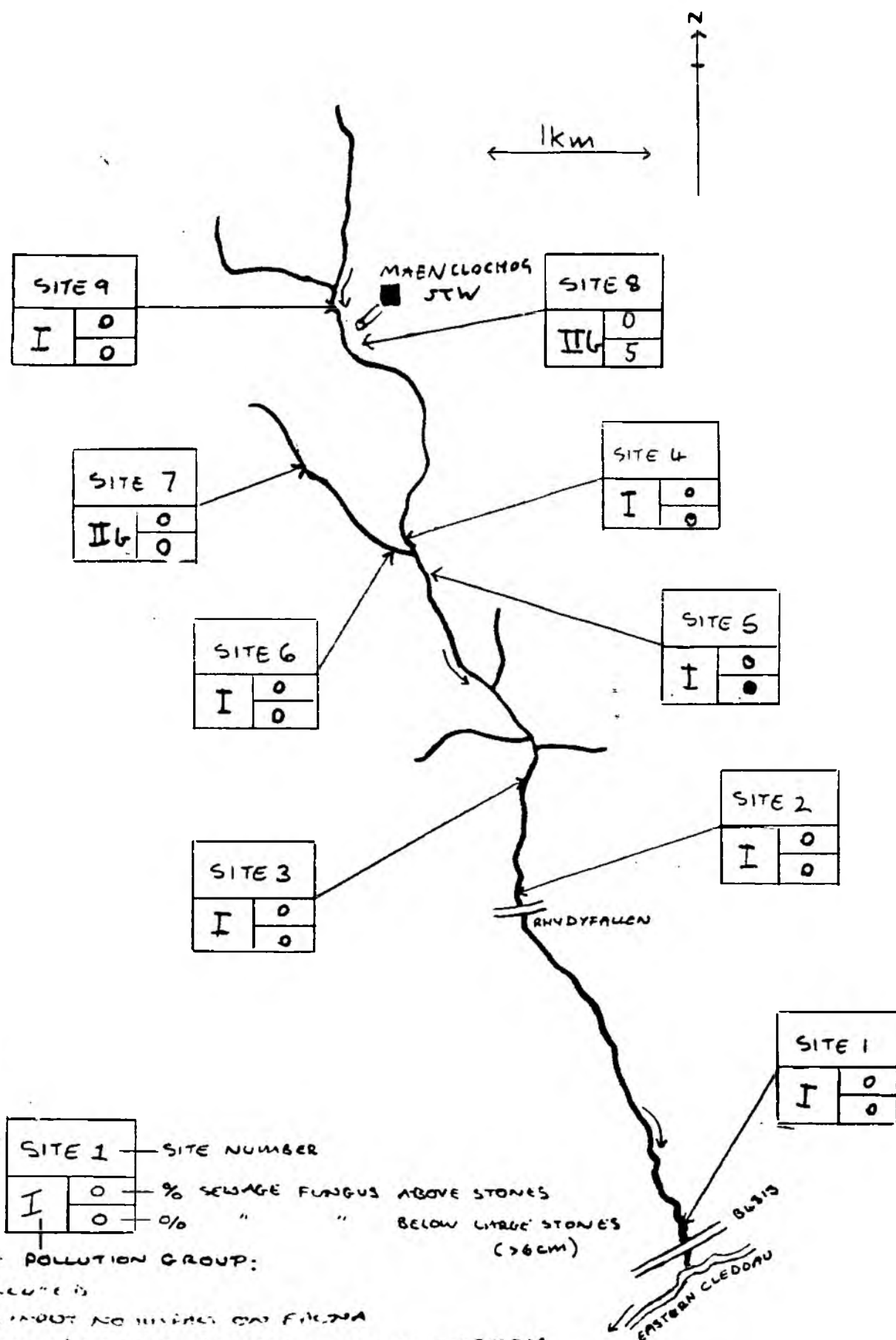
IIc = MODERATE/HISTORIC POLLUTION, SERIOUS IMPACT ON FAUNA

III = GROSS POLLUTION SERIOUS IMPACT ON FAUNA



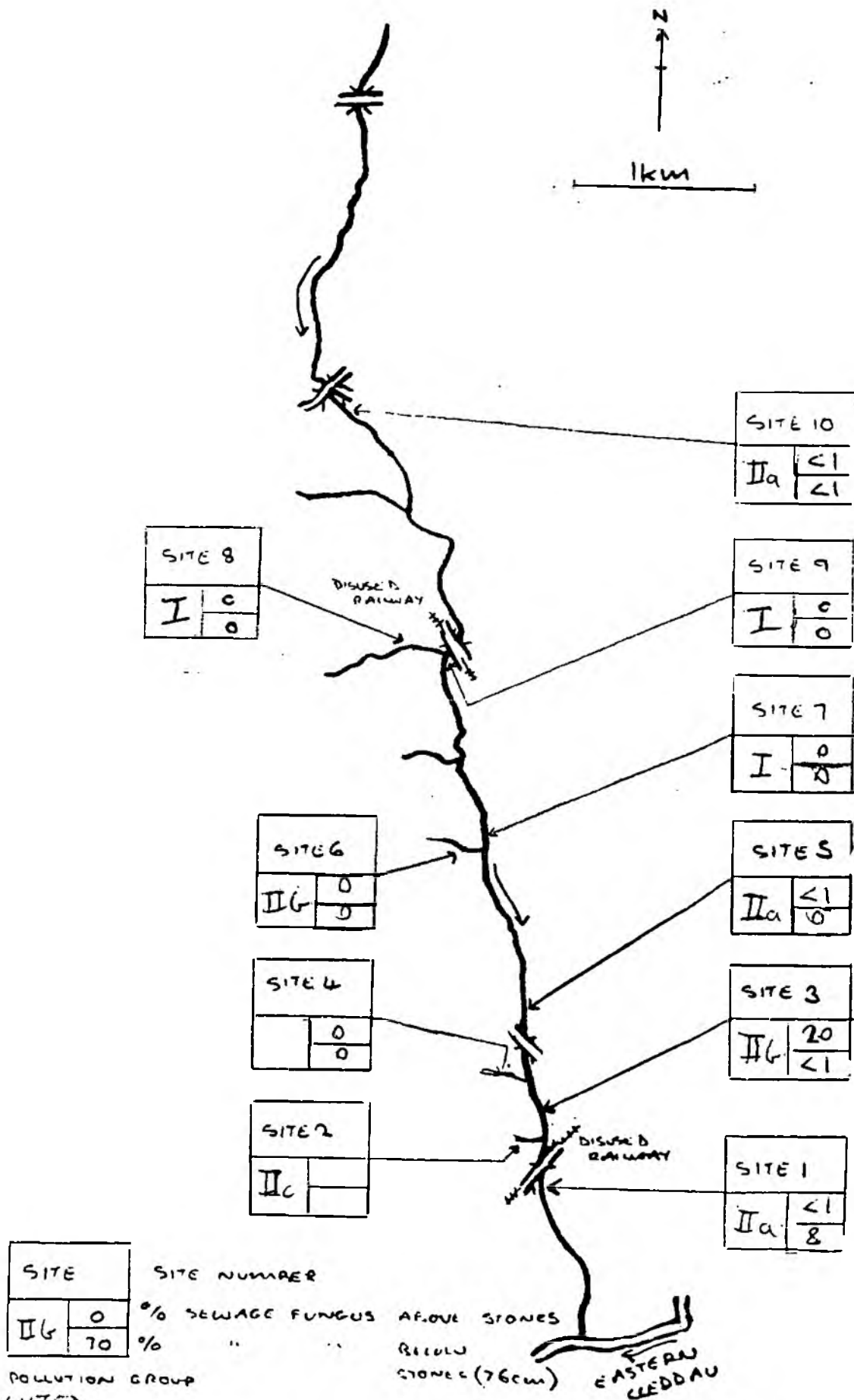
# RHYDYFALLEN STREAM CATCHMENT SURVEY

5



WRE/NPA AGRICULTURAL POLLUTION PROJECT  
 LLAN-Y-CEFYN BROOK CATCHMENT SURVEY 26/2 & 2/3

⑥



I = UNPOLLUTED

IIa = MILD INPUT, NO IMPACT ON FAUNA

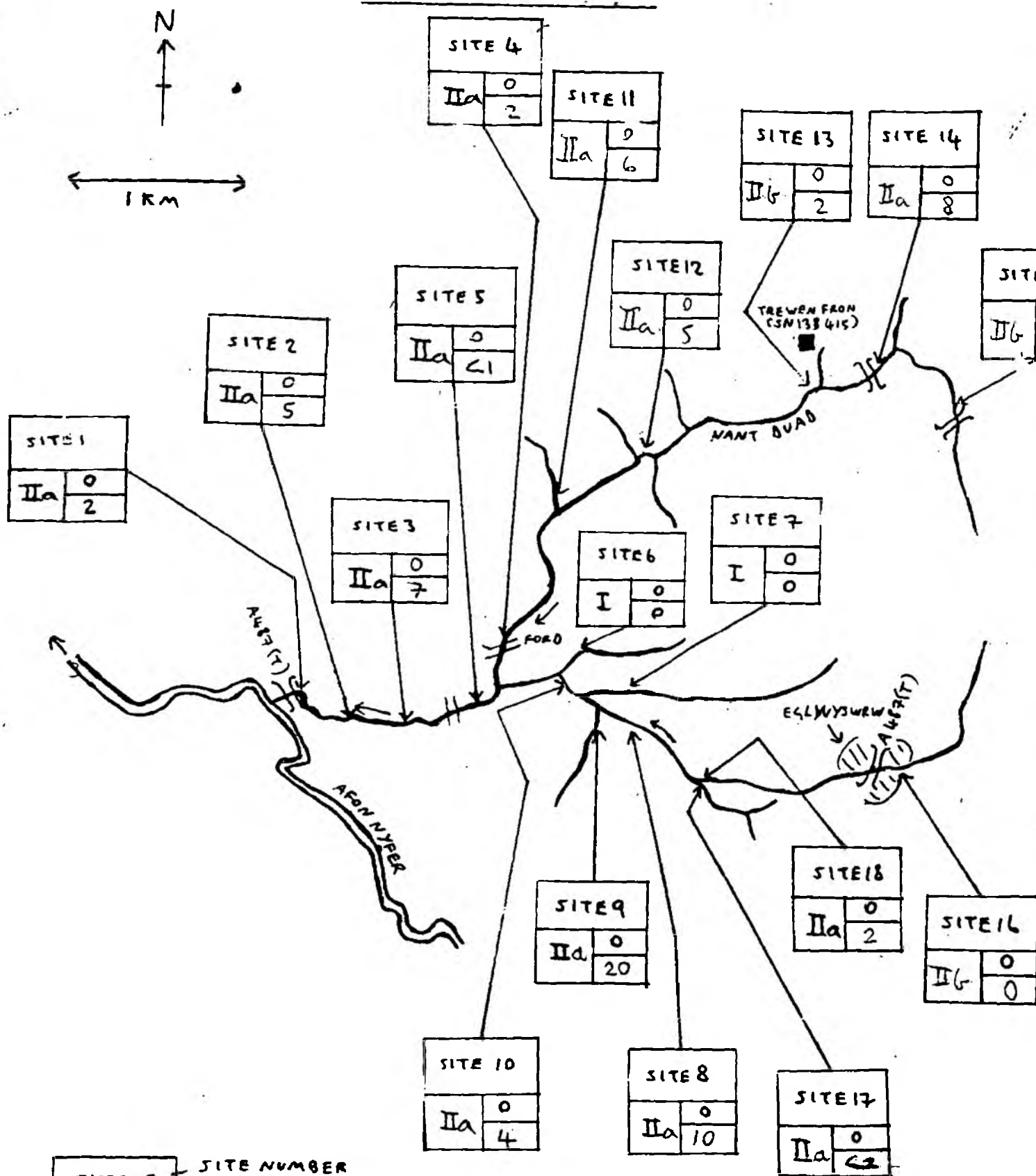
IIb = MODERATE/HISTORIC POLLUTION IMPACT ON FAUNA

IIc = MODERATE/HISTORIC POLLUTION SERIOUS IMPACT ON FAUNA

III = GROSS POLLUTION SERIOUS IMPACT ON FAUNA

WRC/NRA AGRICULTURAL POLLUTION PROJECT  
NANT DUAD CATCHMENT SURVEY

24/2/92



|        |    |                              |
|--------|----|------------------------------|
| SITE 2 |    | SITE NUMBER                  |
| II     | 10 | % SEWAGE FUNGUS ABOVE STONES |
|        | 30 | % " " BELOW STONES           |

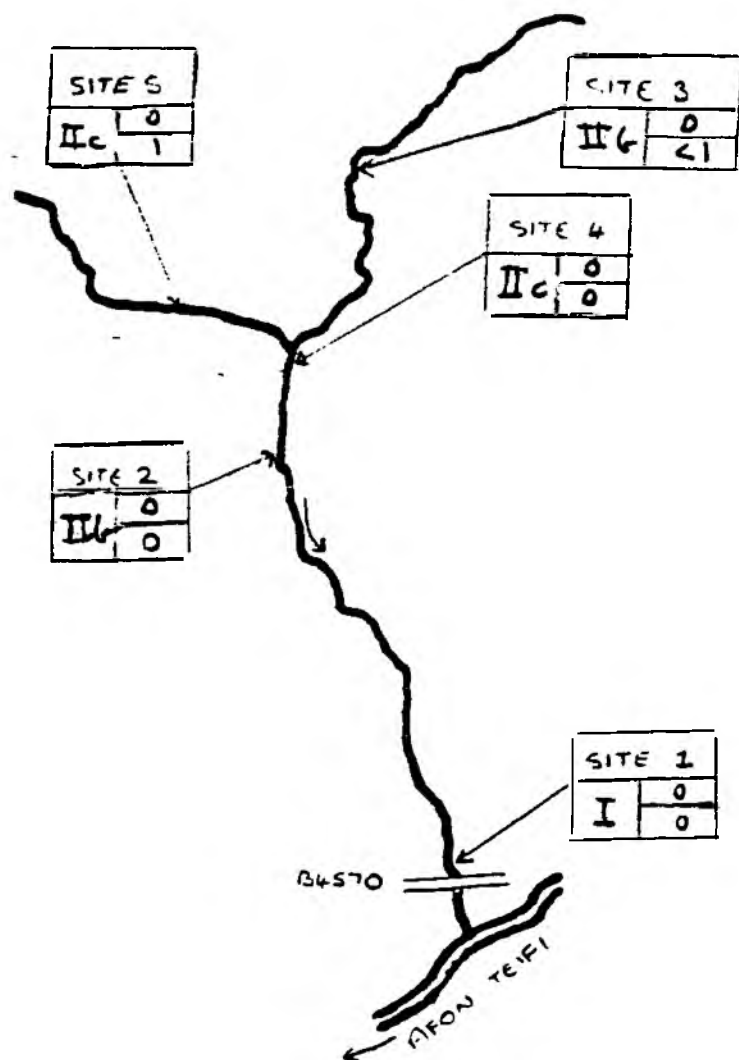
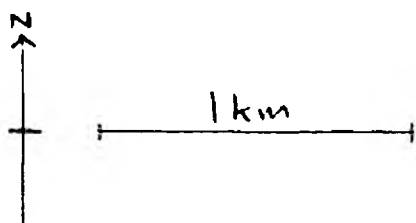
POLLUTION GROUP: I = UNPOLLUTED

IIa = MODERATE INPUT NO IMPACT ON FAUNA

IIb = MODERATE / HISTORICAL POLLUTION, IMPACT ON FAUNA

III = MODERATE / HISTORICAL POLLUTION SERIOUS IMPACT ON FAUNA

IV = GREY POLLUTION SERIOUS IMPACT ON FAUNA

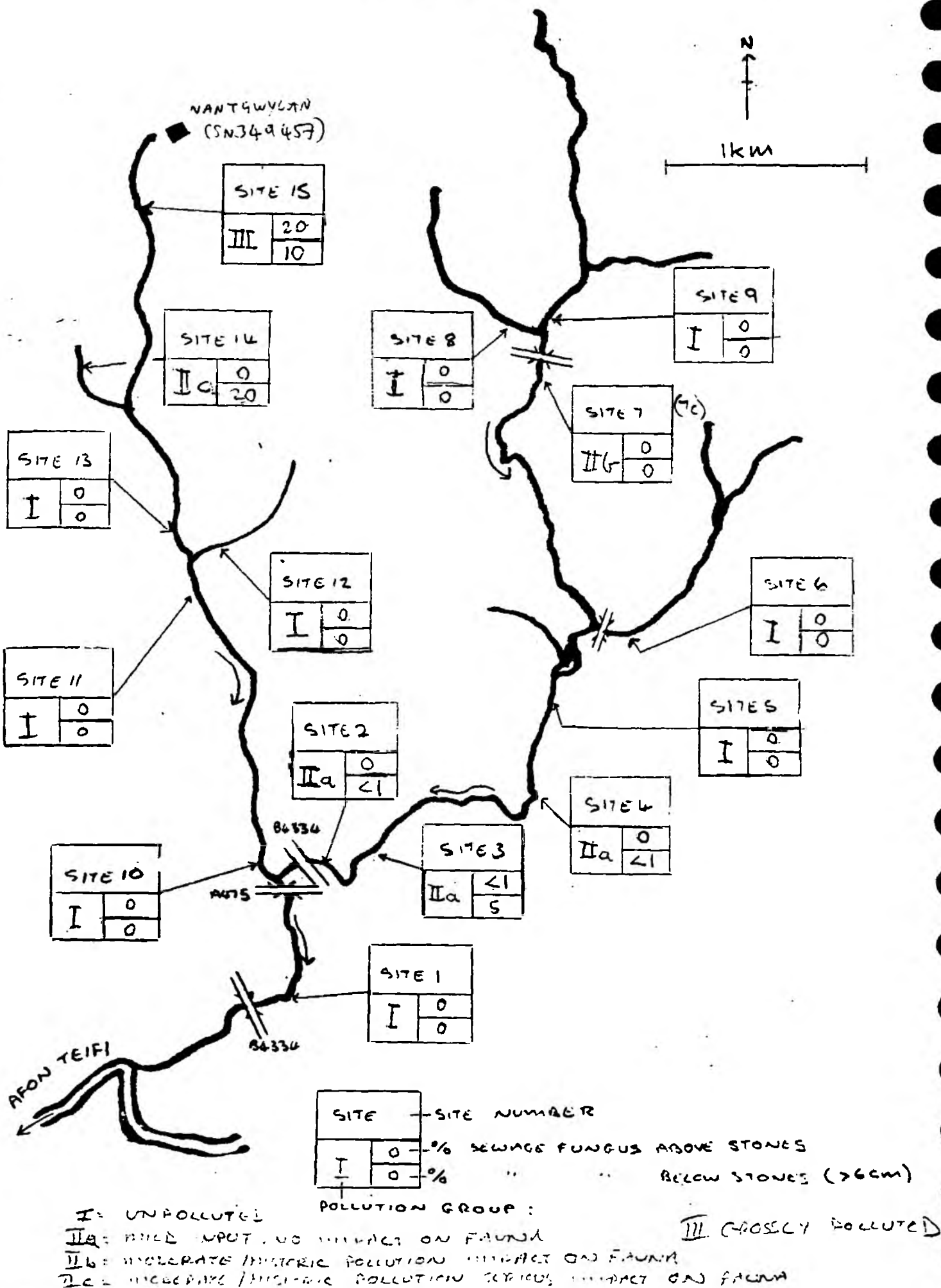


|                      |    |                              |  |
|----------------------|----|------------------------------|--|
| SITE 1 - SITE NUMBER |    |                              |  |
| I                    | 40 | % SEWAGE FUNGUS ABOVE STONES |  |
|                      | 0  | % " " BELOW STONES           |  |

#### POLLUTION GROUP

- I = UNPOLLUTED
- IIa = MILD INPUT NO IMPACT ON FAUNA
- IIb = MODERATE/HISTORIC POLLUTION IMPACT ON FAUNA
- IIc = MODERATE/HISTORIC POLLUTION SERIOUS IMPACT ON FAUNA
- III = GROSS POLLUTION SERIOUS IMPACT ON FAUNA

21 &amp; 24 / 2 / 92



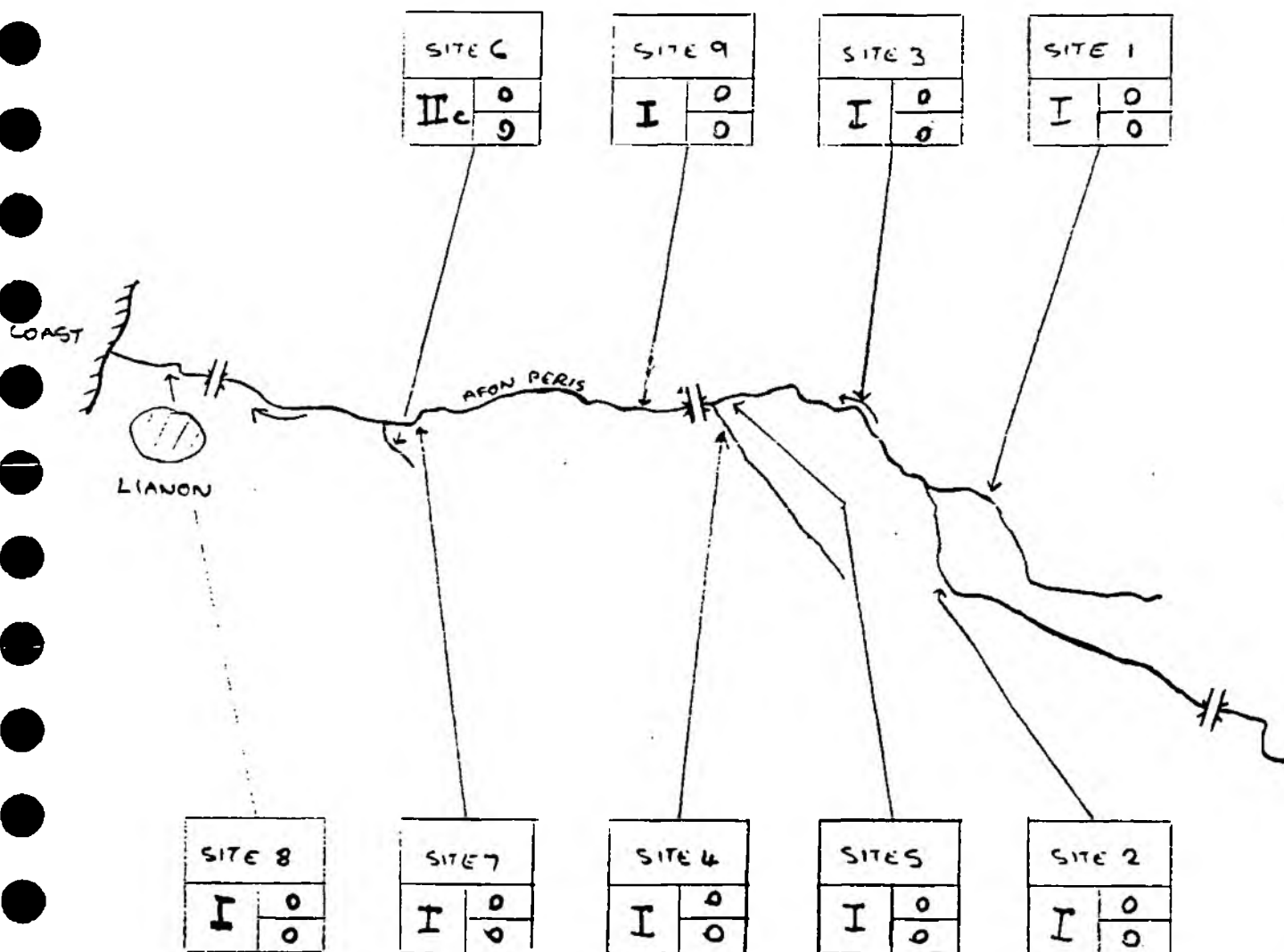
WRC / NRA FARM POLLUTION STUDY

AFON PERIS CATCHMENT SURVEY

20/2/92



1km



| SITE |   | SITE NUMBER |
|------|---|-------------|
| I    | 0 |             |
|      | 0 |             |

% SEWAGE FUNGUS COVER ABOVE STONES  
% " " " BELOW STONES

POLLUTION GROUP

I = UNPOLLUTED

IIc = MILD INPUT NO IMPACT ON FAUNA

IIb = MODERATE / HISTORIC POLLUTION IMPACT ON FAUNA

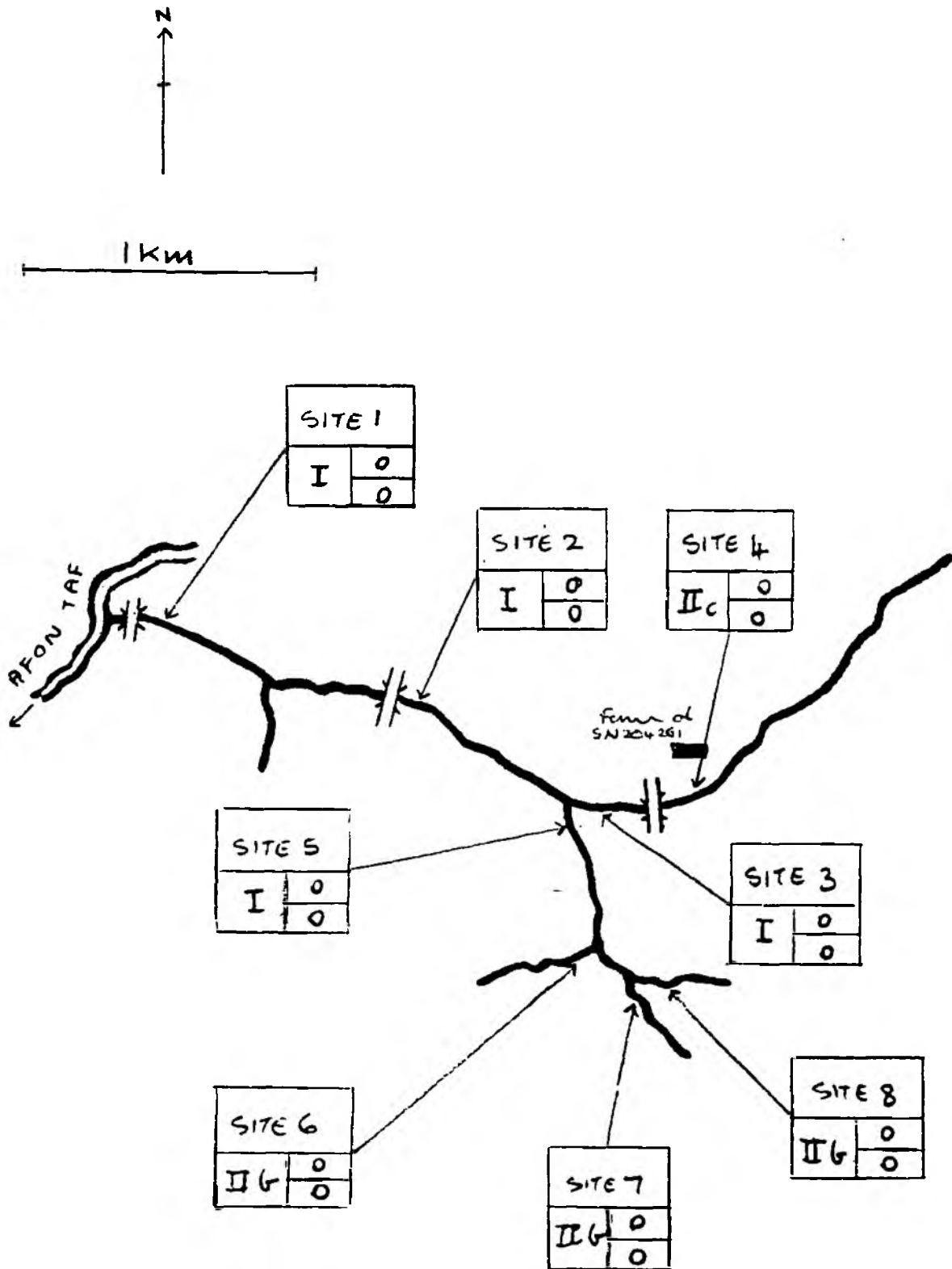
IIc = MODERATE HISTORIC POLLUTION IMPACT ON FAUNA

III = GROSS POLLUTION  
SERIOUS IMPACT ON FAUNA



# AFON TIGEN CATCHMENT SURVEY

11



|        |                                    |
|--------|------------------------------------|
| SITE 1 | SITE NUMBER                        |
| I      | % SEWAGE FUNGUS COVER ABOVE STONES |
| 0      | % " " " " BELOW STONES (>6cm)      |
| 0      |                                    |

POLLUTION GROUP

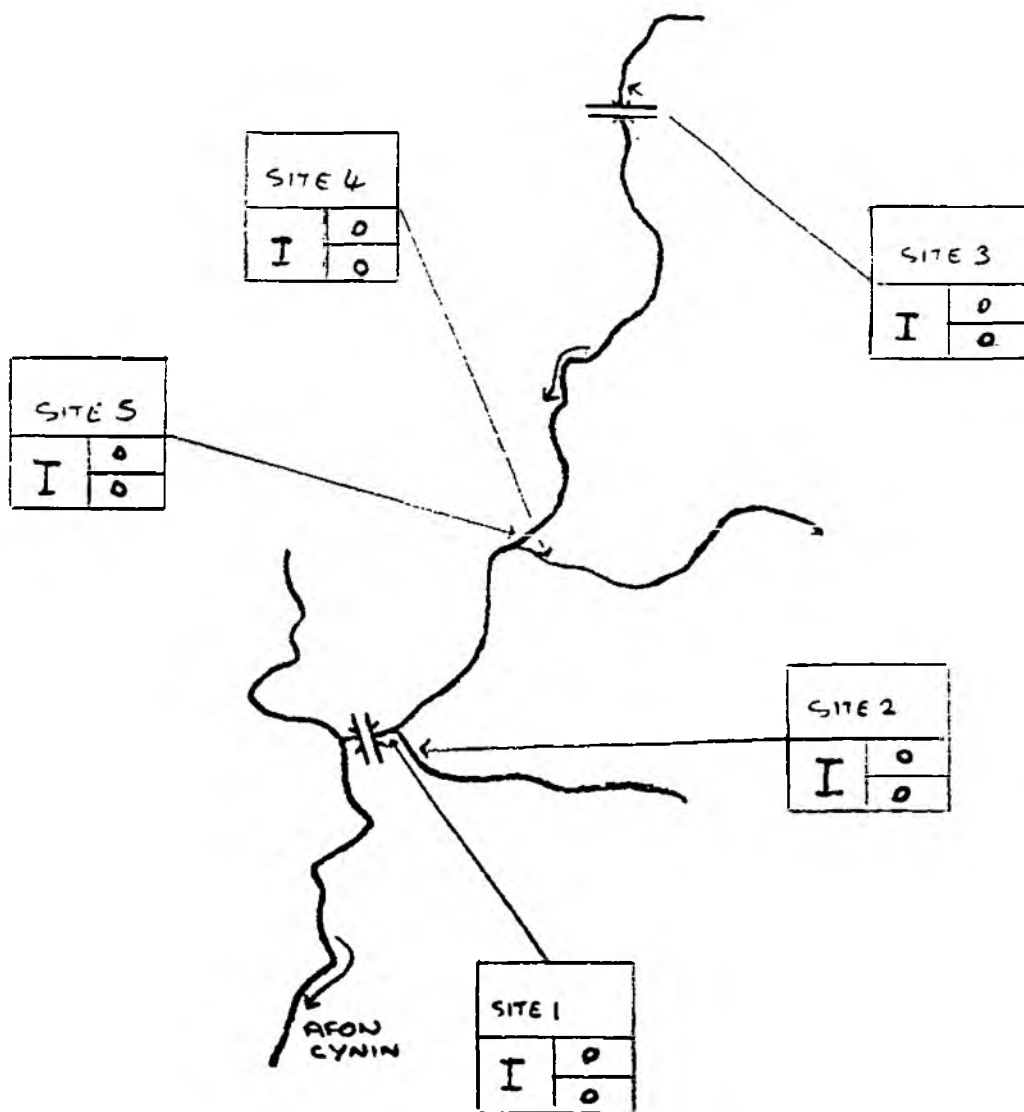
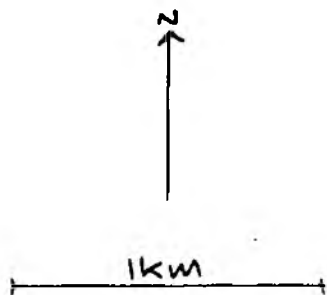
- I = UNPOLLUTED
- IIa = MILD INPUT NO IMPACT ON FAUNA
- IIb = MODERATE / HISTORIC POLLUTION MINOR IMPACT ON FAUNA
- IIc = MODERATE / HISTORIC POLLUTION, SERIOUS IMPACT ON FAUNA
- III = GROSS POLLUTION SERIOUS IMPACT ON FAUNA

# WRC/NRA AGRICULTURAL POLLUTION PROJECT

12

## TRIB OF AFON CYNIN CATCHMENT SURVEY

Feb 28 / 2 / 92



| SITE            |   | SITE NUMBER                  |
|-----------------|---|------------------------------|
| I               | 0 | % SEWAGE FENCES ABOVE STONES |
|                 | 0 | % " " BELOW " "              |
| POLLUTION GROUP |   |                              |

I - UNPOLLUTED

II - MODERATE / HISTORIC POLLUTION, IMPACT ON FISH

III - MODERATE / HISTORIC POLLUTION, IMPACT ON FISH

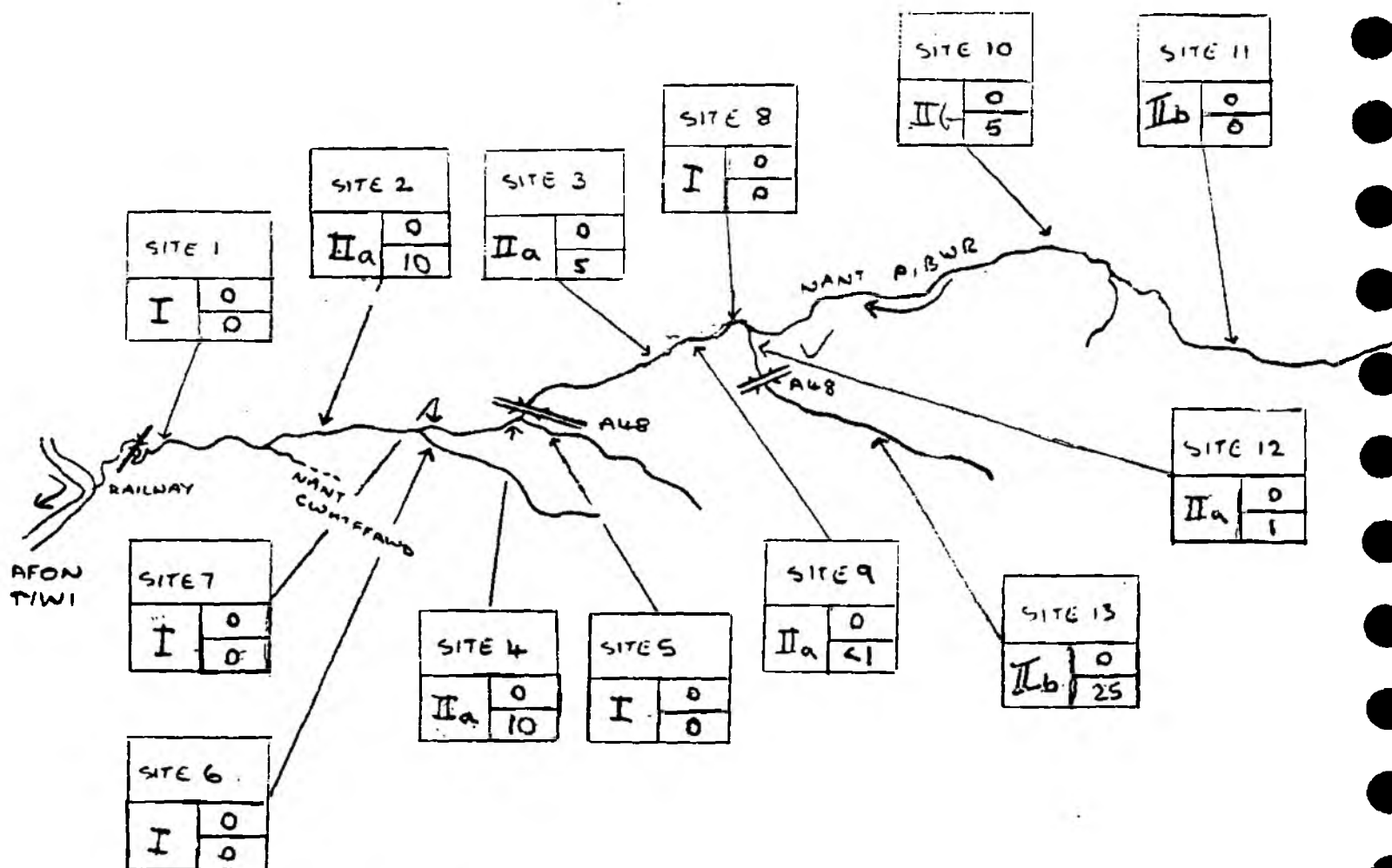
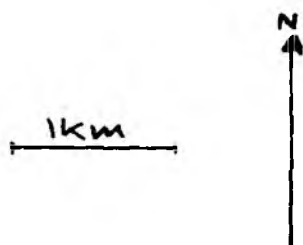
IV - MODERATE / HISTORIC POLLUTION, IMPACT ON FISH

III - MODERATE / HISTORIC POLLUTION, IMPACT ON FISH

# WRC/NRA AGRICULTURAL POLLUTION PROJECT

## NANT PIOWR CATCHMENT SURVEY

19/2 & 3/3 92



→ INPUT

| SITE | SITE NUMBER                  |
|------|------------------------------|
| I    | % SLOWLY FUNGUS ABOVE STONES |
| II   | % " " BELOW STONES           |

### POLLUTION GROUP

I. LOW POLLUTION

IIa = MODERATE / HISTORIC POLLUTION, NO IMPACT ON FAUNA

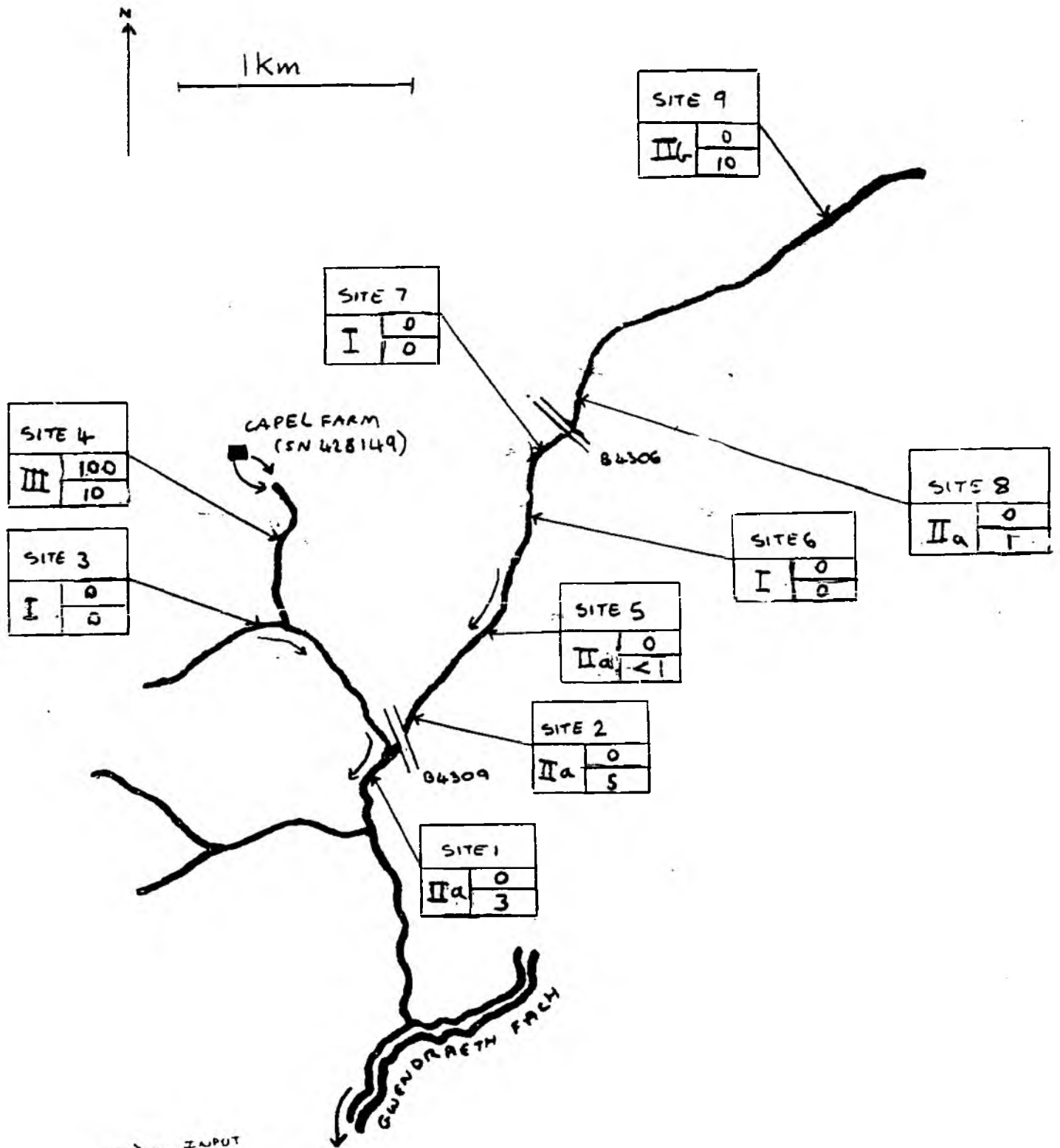
IIb = MODERATE / HISTORIC POLLUTION, IMPACT ON FAUNA

IIc = MODERATE / HISTORIC POLLUTION, SERIOUS IMPACT ON FAUNA

III = CROSS POLLUTION, SERIOUS IMPACT ON FAUNA

WANT RHYDW CATCHMENT SURVEY

18/2/92



| SITE |   | SITE NUMBER                  |  |
|------|---|------------------------------|--|
| I    | 0 | % CHANGE FUNGUS ABOVE STONES |  |
|      | 0 | % " " BELOW STONES (below)   |  |

POLLUTION GROUP: I = UNPOLLUTED

IIa - MILD INPUT, NO IMPACT ON FAUNA

III = MODERATE/HISTORIC POLLUTION IMPACT ON FAUNA

III = CROSS POLLUTION

G4 Farm visit sheets

**FARM DATA SHEET**

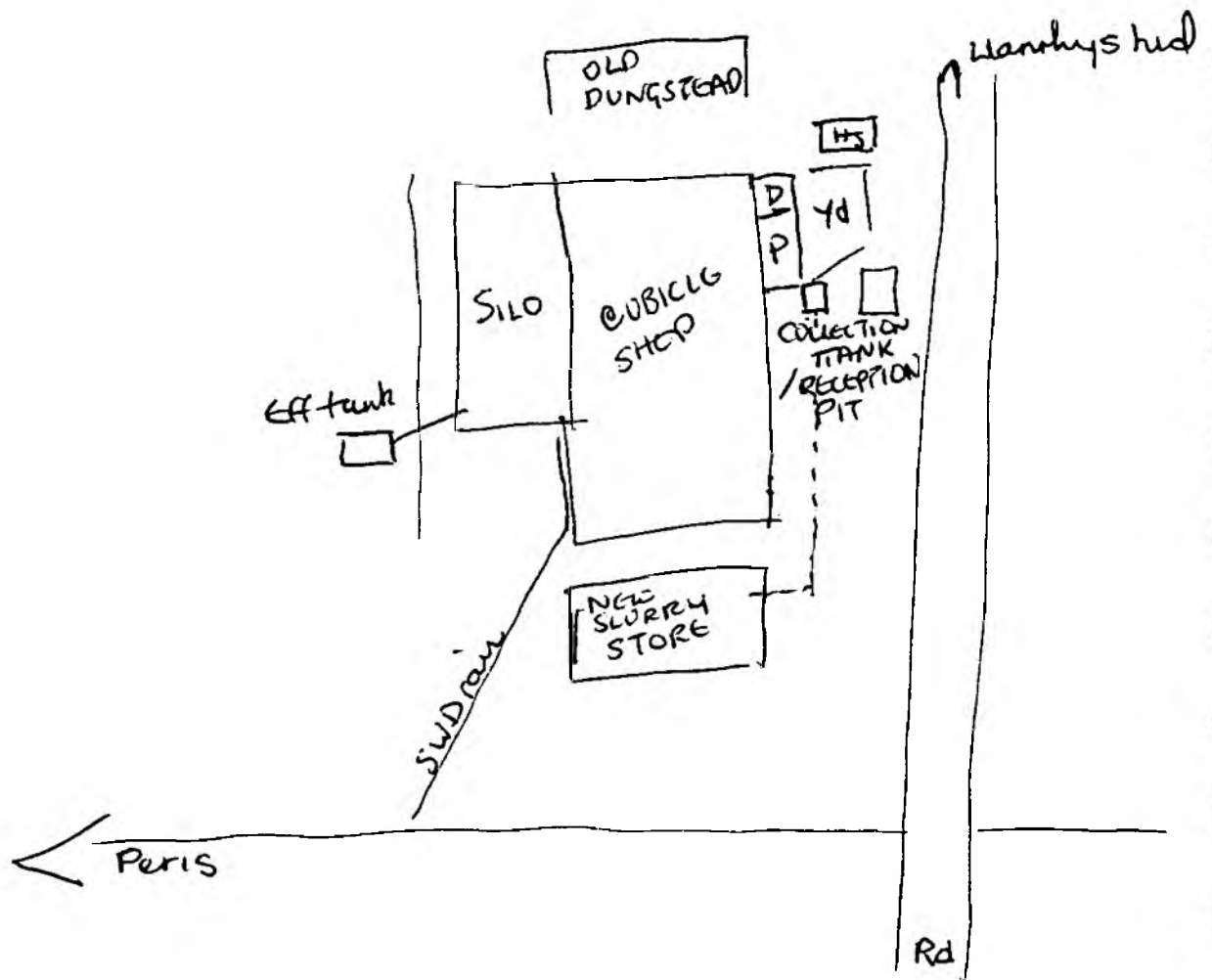
|                                                                                      |                                                                                                                                                                                                                            |                     |                                                |                  |                       |                                                   |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------------------|------------------|-----------------------|---------------------------------------------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | HAFOD PERIS<br>AFON PERIS<br>SN 551673<br>MARCH 1991                                                                                                                                                                       |                     |                                                |                  | Acreage               | ABOUT<br>150 Acres                                |
| Farmer<br>Address                                                                    | M. LL. & D.M.P. Alban                                                                                                                                                                                                      |                     | Owner                                          | Alban            |                       |                                                   |
| Tel. No.                                                                             | Hafod Peris<br>Klaruhyshud<br>Dyfed.                                                                                                                                                                                       |                     |                                                |                  |                       |                                                   |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                       | 65                  | Followers                                      | ~20              | Beef Cattle           | -                                                 |
|                                                                                      | Pigs                                                                                                                                                                                                                       | -                   | Sheep                                          | some             | Poultry               | -                                                 |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                   | ✓                   | Parlour                                        | ✓                | Covered Silo          | ✓                                                 |
|                                                                                      | Cowshed                                                                                                                                                                                                                    | -                   | Loose Hsing                                    | For<br>followers | Other                 | -                                                 |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                     | -                   | Above Ground Store<br>With Reception Pit       |                  | -                     |                                                   |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                       | A                   | Weeping Wall Store<br>or Undergr'nd Tank<br>at |                  | C                     |                                                   |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                       | AC                  | Soakaway                                       |                  | -                     |                                                   |
|                                                                                      | Ditch                                                                                                                                                                                                                      | -                   | Stream                                         |                  | -                     |                                                   |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                  | yes                 | Discharged To                                  |                  | AFON PERIS.           |                                                   |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                   | -                   | Oil                                            | Drums            | Sheep Dip<br>Location | AT SIDE<br>OF MAIN<br>RD. 1000 YDS<br>FROM BLDGS. |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | Staged FCG scheme commenced March 1991<br>P/D wash collection completed Dec. 1991 after<br>severe construction difficulties. Improvements<br>to roofwater drainage and silage effluent<br>handling carried out spring 1991 |                     |                                                |                  |                       |                                                   |
| Date of Letter/s                                                                     | 22-391.                                                                                                                                                                                                                    | Follow Up Visit/s   |                                                | Date-            | JUNE 1991             |                                                   |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                      | JUNE. 1991 DEC 1991 | A.I.S. Scheme                                  | Yes              | No                    |                                                   |
| Pollution Risk<br>was                                                                | High                                                                                                                                                                                                                       | Medium              | ✓                                              | Low              |                       |                                                   |
| Priority                                                                             | High                                                                                                                                                                                                                       | Medium              | ✓                                              | Low              |                       |                                                   |
| Comments                                                                             | Farmer engaged very competent consultant/advisor<br>when he took the farm over from his father or<br>about the beginning of 1991                                                                                           |                     |                                                |                  |                       |                                                   |
| Signed                                                                               | H. M. Wilkinson                                                                                                                                                                                                            |                     | Date                                           | 30.7.92          |                       |                                                   |

P.T.O.

(Please complete sketch plan of farm on back of form)



-6 AUG 1992

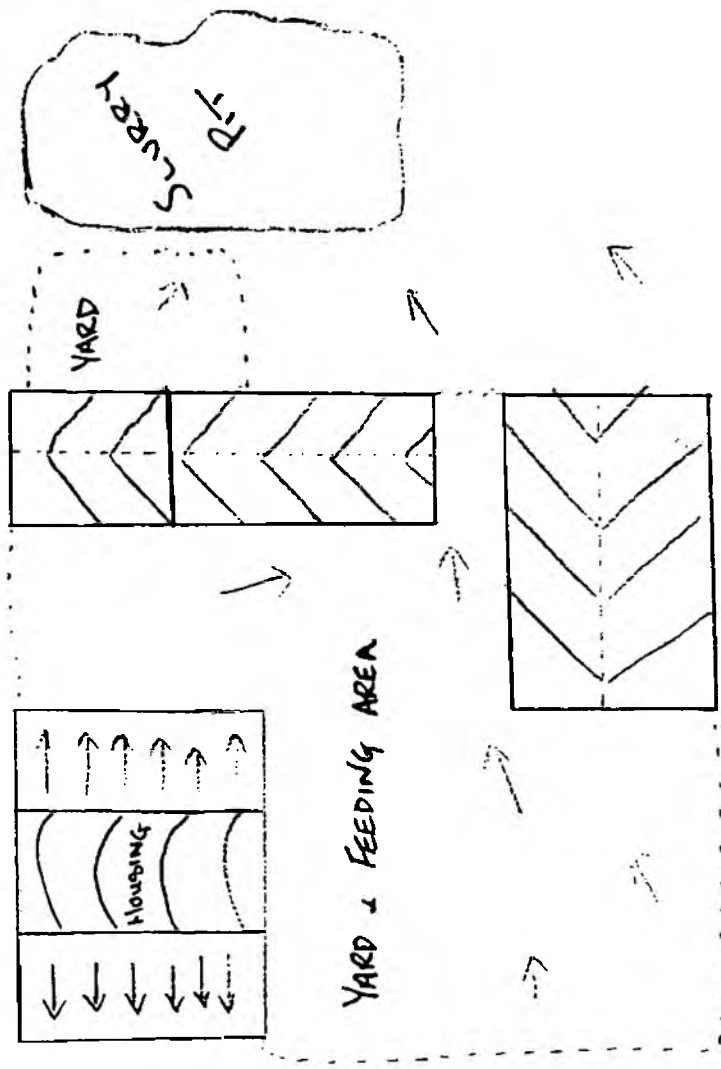


FARM DATA SHEET

|                                                                                      |                                                                        |               |                                          |               |                       |     |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------|------------------------------------------|---------------|-----------------------|-----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | Good Hook                                                              |               |                                          |               | Acreage               | 200 |
| Farmer<br>Address<br><br>Tel. No.                                                    | MR M S DAVIES<br>GOOD HOOK FARM<br>HAVERFORDWEST.<br><br>H'WEST 768430 |               | Owner                                    |               |                       |     |
| Livestock Numbers                                                                    | Cows                                                                   |               | Followers                                |               | Beef Cattle           | 40  |
|                                                                                      | Pigs                                                                   |               | Sheep                                    |               | Poultry               |     |
| Buildings<br>(tick box)                                                              | Cubicles                                                               |               | Parlour                                  |               | Covered Silo          |     |
|                                                                                      | Cowshed                                                                |               | Loose Hsing                              |               | Other                 |     |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                 | A. D          | Above Ground Store<br>With Reception Pit |               |                       |     |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                   |               | Weeping Wall Store<br>or Undergr'nd Tank |               |                       |     |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                   | A. D          | Soakaway                                 |               |                       |     |
|                                                                                      | Ditch                                                                  |               | Stream                                   |               |                       |     |
| Roof/Clean Water                                                                     | Separated                                                              | No            |                                          | Discharged To |                       |     |
| Chemicals                                                                            | Herbicides<br>Pesticides                                               |               | Oil                                      |               | Sheep Dip<br>Location |     |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               |                                                                        |               |                                          |               |                       |     |
| Date of Letter/s                                                                     |                                                                        |               | Follow Up Visit/s                        |               | Date-                 |     |
| Work Completed & Inspected                                                           | Date-                                                                  | A.I.S. Scheme |                                          | Yes           | No                    |     |
| Pollution Risk                                                                       | High                                                                   |               | Medium                                   |               | Low                   |     |
| Priority                                                                             | High                                                                   |               | Medium                                   |               | Low                   |     |
| Comments                                                                             |                                                                        |               |                                          |               |                       |     |
| Signed                                                                               |                                                                        |               |                                          | Date          |                       |     |

P.T.O.

(Please complete sketch plan of farm on back of form)



HOUSE

YARD + FEEDING AREA

Sewer

YARD

Housing

ENTRANCE →

FIELD

BAGGED  
SILAGE

SILAGE

HEDGE

SEepage of SILAGE EFFluent THROUGH  
HEDGE AND INTO DITCH RUNNING UNDER  
ENTRANCE TO STREAM.

**FARM DATA SHEET**

|                                                                                      |                                                                                                                                                                                                                                                                                                        |    |                   |                                          |                       |             |  |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-------------------|------------------------------------------|-----------------------|-------------|--|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | MERRYBORO<br>FENTON                                                                                                                                                                                                                                                                                    |    |                   |                                          | Acreage               | 140         |  |
| Farmer<br>Address<br><br>Tel. No.                                                    | W. D. SMITH.<br>MERRYBORO<br>WISTON, HAVERFORDWEST, DYFED, SA62 4BE                                                                                                                                                                                                                                    |    |                   |                                          | Owner                 | E. G. SMITH |  |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                   | 40 | Followers         | 10                                       | Beef Cattle           | 60          |  |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                   | -  | Sheep             | -                                        | Poultry               | -           |  |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                               |    | Parlour           |                                          | Covered Silo          | 2 OPEN      |  |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                |    | Loose Hsing       |                                          | Other                 |             |  |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                 |    | ✓                 | Above Ground Store<br>With Reception Pit |                       |             |  |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                   |    |                   | Weeping Wall Store<br>or Undergr'nd Tank |                       |             |  |
|                                                                                      | Land                                                                                                                                                                                                                                                                                                   |    |                   | Soakaway                                 |                       |             |  |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                  |    |                   | Stream                                   |                       |             |  |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                              |    |                   | Discharged To                            |                       |             |  |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                               |    | Oil               |                                          | Sheep Dip<br>Location |             |  |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. GRATING AT ENTRANCE TO FEED YARD L TO DIVERT SW.<br>2. CONSIDER URGENTLY FEASIBILITY OF DIVERSION OF WATERCOURSE/SPRINGS<br>FROM ABOVE OLD COWSHED INTO FORMER WATERCOURSE IN FIELD<br>3. EMPTY LAGOON - CHECK INTEGRITY.<br>4. COLLECT EFFLUENTS BELOW SUGGESTED - YARD + PARLOUR + DAIRY WASHINGS |    |                   |                                          |                       |             |  |
| Date of Letter/s                                                                     | 4.2.92                                                                                                                                                                                                                                                                                                 |    | Follow Up Visit/s |                                          | Date-                 |             |  |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                  |    |                   | A.I.S. Scheme                            | Yes                   | No          |  |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                   | ✓  | Medium            |                                          | Low                   |             |  |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                   |    | Medium            | ✓                                        | Low                   |             |  |
| Comments                                                                             | 1. SPRINGS EVERYWHERE. PARLOUR<br>WORST ACROSS FEED BARRIER &<br>RAB BEHIND PARLOUR. FEED YARD WALL<br>BEHIND SILO<br><br>2. APPRECIABLE OPEN YARD AREA.                                                                                                                                               |    |                   |                                          |                       |             |  |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                        |    |                   | Date                                     |                       |             |  |

3/1/92  
20gms sludge  
on 7/2/92 + 20gms  
sludge  
SUCRA 1001  
U. 1001

Quotation of  
£20,000 FROM  
OCMSIS.

P.T.O.

(Please complete sketch plan of farm on back of form)

Good Hope Mike Davies Cwrt Pw Mill Llan. House N. S. B. J. John Hammond New T. 6

Core  
Loft

CLEAN YAZO

SW needs diversification

[illegible]

Начало 1900

ALL CONCRETE: BLACK  
SILO STRUCTURE.

30' 6 BAYS  
30' SELF FEED  
60' w/ 1/2 of ☐  
30' (10' RESTS)

|      |            |
|------|------------|
| GATE | GATE       |
|      | BLACK WALL |

EARTH BANK Surety License  
(Full)

OVERGROWN AREA  
(WILLOW + BRACKEN)  
SPRINGS IN WET WEATHER  
SPRING NETTLES

✓ STREAM WITH CONSIDERABLE EVIDENCE  
OF LONG TERM POLLUTION

To Fenton 13:00h

40 dc - 20 young stock + 20 on straw  
slurry pit and used

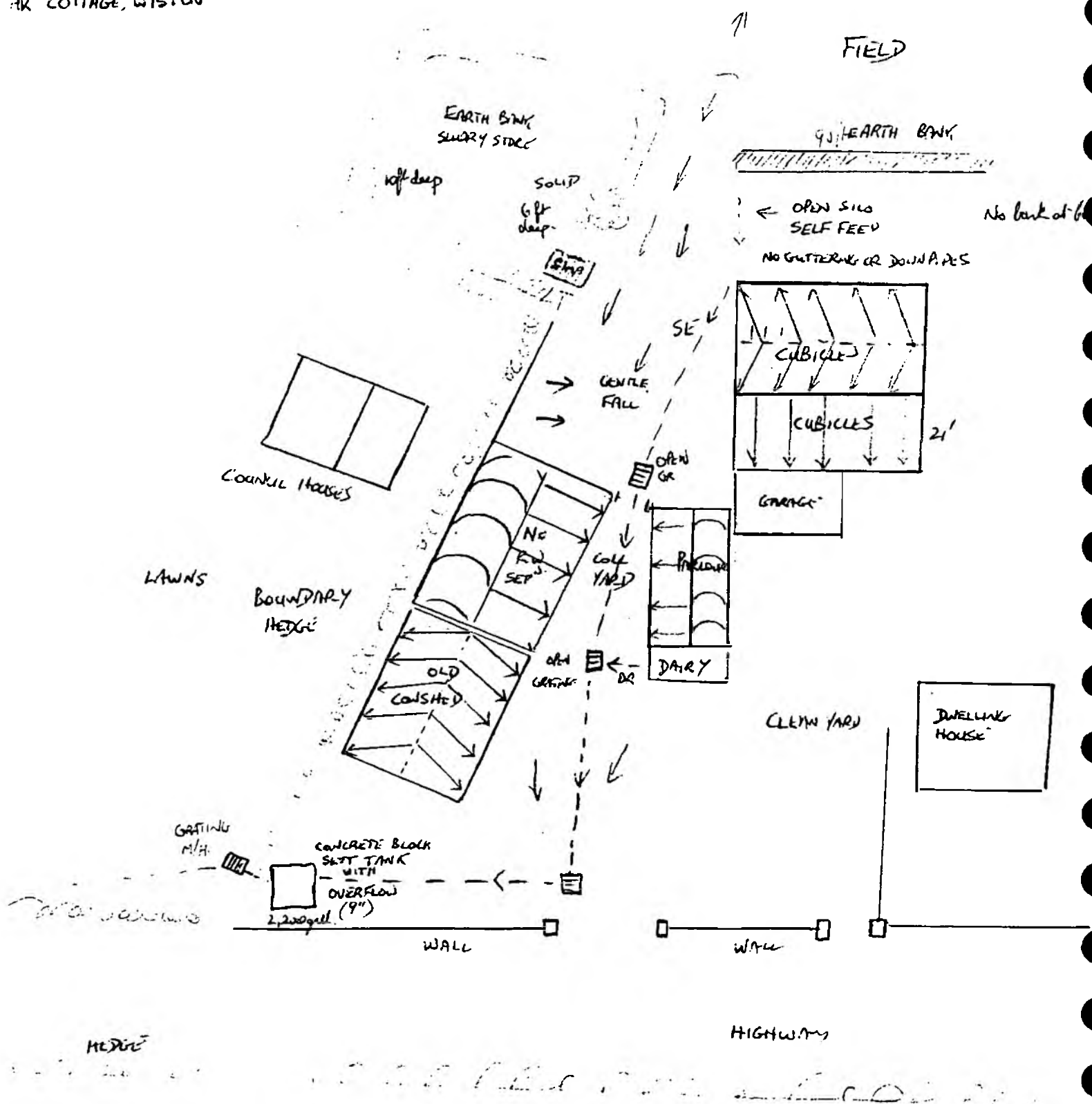
FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                      |                           |                                          |                       |              |     |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------|-----------------------|--------------|-----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | OAK COTTAGE<br>FENTON BROOK<br>SN 029 177<br>8.7.91                                                                                                                                                                                                                                                                  |                           |                                          |                       | Acreage      | 120 |
| Farmer<br>Address<br>Tel. No.                                                        | P. C. VOYLE<br>OAK COTTAGE<br>WISTON, HAVERFORDWEST, SA62 4PR<br>CLARASTON 498                                                                                                                                                                                                                                       |                           | Owner                                    |                       |              |     |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                 | 50                        | Followers                                | 10-15                 | Beef Cattle  |     |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                 |                           | Sheep                                    | 80                    | Poultry      |     |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                             | *                         | Parlour                                  | *                     | Covered Silo |     |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                              |                           | Loose Hsing                              |                       | Other        |     |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                               | A                         | Above Ground Store<br>With Reception Pit |                       |              |     |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                 |                           | Weeping Wall Store<br>or Undergr'nd Tank |                       | B, C, D      |     |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                 | A                         | Soakaway                                 |                       |              |     |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                |                           | Stream                                   |                       |              |     |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                            |                           | Discharged To                            |                       |              |     |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                             |                           | Oil                                      | Sheep Dip<br>Location |              |     |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. Clean water / Dirty water separation, separation of all clean water by " "<br>2. Slurry SE mixing with clean water<br>3. Best of SE entry to drain.<br>4.                                                                                                                                                         |                           |                                          |                       |              |     |
| Date of Letter/s                                                                     | 10.1.92                                                                                                                                                                                                                                                                                                              | Follow Up Visit/s   Date- |                                          |                       |              |     |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                | A.I.S. Scheme             |                                          | Yes                   | No           |     |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                 | ✓                         | Medium                                   |                       | Low          |     |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                 | ✓                         | Medium                                   |                       | Low          |     |
| Comments                                                                             | Short term remedial will involve regular pumping out of<br>collection tank to prevent overflow<br>2, 200 GALL TANK FOR PARLOUR/YARD WASHINGS LEAKING TO<br>ROADSIDE DRAIN. CONNECTING TO FENTON BROOK.<br>REMEDIAL WORK URGENTLY REQUIRED.<br>(FILLS IN 2-3 DAYS RAIN. PROPOSED TO PUMP OUT WASH.<br>GRAZING/SILAGE) |                           |                                          |                       |              |     |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                      |                           |                                          | Date                  |              |     |

P.T.O.

(Please complete sketch plan of farm on back of form)





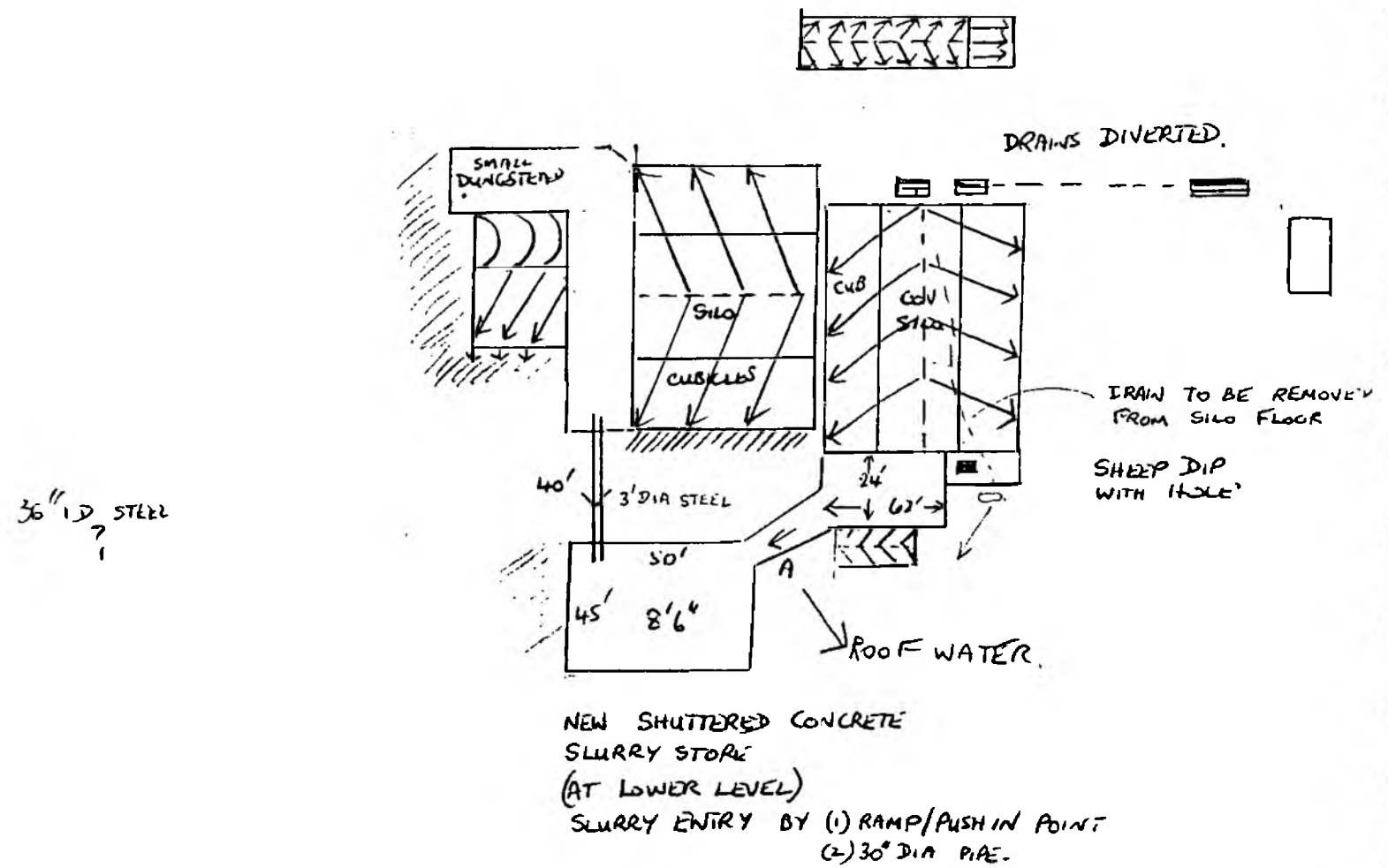
PRESENT & FOLLOWING CONSTRUCTION OF WISTON COUNCIL HOUSES 1960's (1965)', YARD WATER FROM DAK HOUSE CONNECTED TO SEWER TO WISTON H.A.W. CAUSED OVERLOADING PROBLEMS AT WORKS IN 1984. A SETT TANK WAS CONSTRUCTED BY PRESEN (RENDERED CONCRETE BLOCK) WITH 9" OVERFLOW TO SURFACE DRAIN PASSING THROUGH COUNCIL HOUSE PROPERTIES. SETT TANK INITIALLY EMPTIED BY COUNCIL TANK EVERY 6 WEEKS TO 2 MONTHS (FOR 2 YEARS) THEN PURCHASED A T VACUUM TANKER FOR MR VOYLET USE (FOR 8 YEARS NOW) COUNCIL ASSUMED RESPONSIBILITY BY SUPPLYING TANKER BUT MR VOYLE HAS REFUSED TO SIGN FOR TANK.

FARM DATA SHEET

|                                                                                      |                                                                                                    |                            |                           |                                       |                    |     |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------------|---------------------------|---------------------------------------|--------------------|-----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | GLYNCEMAES<br>RHYDYFALLEN STREAM - EASTERN CLEDDAU<br>SN 074260<br>28.1.92                         |                            |                           |                                       | Acreage            | 187 |
| Farmer<br>Address<br><br>Tel. No.                                                    | W. I. L. DAVIES<br>GLYNCEMAES<br>NEW MOAT, CLARBESTON RD, H'WEST, SA 33 6SR<br>MAENCLOCHOG 532369. |                            | Owner                     | SAME                                  |                    |     |
| Livestock Numbers                                                                    | Cows                                                                                               | 90 <small>SUCKLERS</small> | Followers                 | 60 <small>CALVES</small>              | Beef Cattle        |     |
|                                                                                      | Pigs                                                                                               |                            | Sheep                     | 350                                   | Poultry            |     |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                           |                            | Parlour                   |                                       | Covered Silo       |     |
|                                                                                      | Cowshed                                                                                            |                            | Loose Hsing               |                                       | Other              |     |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked Lagoon                                                                                |                            |                           | Above Ground Store With Reception Pit |                    |     |
|                                                                                      | Mass Concrete or Block Wall Store                                                                  |                            |                           | Weeping Wall Store or Undergr'nd Tank |                    |     |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                               |                            |                           | Soakaway                              |                    |     |
|                                                                                      | Ditch                                                                                              |                            |                           | Stream                                |                    |     |
| Roof/Clean Water                                                                     | Separated                                                                                          |                            | Discharged To             |                                       |                    |     |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                           |                            | Oil                       |                                       | Sheep Dip Location |     |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | REMOVAL OF REMAINS OF ABANDONED DRAIN AT SHALLOW DEPTH IN SILO FLOOR, WHEN EMPTY                   |                            |                           |                                       |                    |     |
| Date of Letter/s                                                                     |                                                                                                    |                            | Follow Up Visit/s   Date- |                                       |                    |     |
| Work Completed & Inspected                                                           | Date-                                                                                              |                            | A.I.S. Scheme             | Yes                                   | No                 |     |
| Pollution Risk                                                                       | High                                                                                               |                            | Medium                    |                                       | Low                |     |
| Priority                                                                             | High                                                                                               |                            | Medium                    |                                       | Low                |     |
| Comments                                                                             | NO EVIDENCE OF POLLUTION                                                                           |                            |                           |                                       |                    |     |
| Signed                                                                               |                                                                                                    |                            | Date                      |                                       |                    |     |

P.T.O.

(Please complete sketch plan of farm on back of form)



ADAS PLANS FOR SLURRY STORE ONLY PROVIDED  
(NO PLANS FOR CONVEYANCE OF SLURRY TO SLURRY STORE.)

# FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                                          |                                  |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------------------------------|----------------------------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | GLYNCEMAES<br>RHYDYFALLEN STREAM- EASTERN CLEDDAU<br>SN 074 260<br>12.4.91                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | Acreage                                  | 187                              |
| Farmer<br>Address                                                                    | W.I.L DAVIES<br>GLYNCEMAES<br>NEW MOAT, CLARBESTON RD, H'WEST, SA33 6SR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      | Owner                                    | SAME                             |
| Tel. No.                                                                             | MAENCLOCHOG 532369                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                                          |                                  |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 91 SUCKLERS          | Followers                                | 30 COWS                          |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | —                    | Sheep                                    | 300                              |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ✓                    | Parlour                                  | REMOVED                          |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      | Loose Hsing                              | ✓                                |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ✓                    | Above Ground Store<br>With Reception Pit | —                                |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      | Weeping Wall Store<br>or Undergr'nd Tank |                                  |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      | Soakaway                                 |                                  |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      | Stream                                   |                                  |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                   | Discharged To                            | YARD/SILURRY PIT                 |
| Chemicals                                                                            | Herbicides                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | Oil                                      | 300 GALL<br>DIESEL               |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | Pesticides                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      | Sheep Dip<br>Location                    | ON<br>YARD<br>WITH DRAIN<br>HOLE |
| Date of Letter/s                                                                     | Follow Up Visit/s   Date-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                                          |                                  |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | A.I.S. Scheme Yes No |                                          |                                  |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Medium               | Low                                      |                                  |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Medium               | Low                                      |                                  |
| Comments                                                                             | <p>FORMERLY A DAIRY UNIT OF APPROX 180 COWS (CEASED DAIRYING 7.7.87)<br/>         PARLOUR DAIRY AND COLLECTING YARD WASHINGS DRAINAGE<br/>         DRAINED TO SURFACE WATER AND STREAM.<br/>         ALL ROOF WATER AND SUBSTANTIAL SURFACE WATER DRAINING TO LAGOON<br/>         ALSO ROAD FOLLOWING CONSTRUCTION (BEING AT A HIGHER LEVEL)<br/>         SEEPING THROUGH WIDE ADJOINING BANK TO SLURRY LAGOON</p> <p>1<br/>         FOLLOWING CESSATION OF DAIRYING AT SITE, FARM EMPTY 1 YEAR, RENT 1 YEAR<br/>         PURCHASED BY PRESENT OWNER APRIL 89 COMPLETION NOV 89</p> |                      |                                          |                                  |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      | Date                                     |                                  |

+ 1 OPEN  
(TO BE ABANDONED)

P.T.O.

(Please complete sketch plan of farm on back of form)

c...V.P.

→ 1... + 1... to 10 months.

MAX  
91

HEADAGE  
MARGINAL £20/HECTARE

OUTFALL  
PIPE

BREACHED

DEEPEST POINT

[PIPE EMBANKMENT  
STABLE MATERIAL]

OVERGROWN  
AREA

EVIDENCE OF PAST  
SEPPAGES FROM LAGOON.

(3) PIPES FOUND IN EMBANKMENT  
DURING SITE PREPARATION  
FOR NEW SLURRY STORE.

HOUSE

PREVIOUS OWNERS DAVID MASON → 1980 → W.P. RATHGOLD & BERNES

FIELD ON  
HIGHER LEVEL  
(4-5 ft higher)

FIELD

FIELDAR:

CAVES BUILD-UP

GRID TO BE RAISED

PRIMER DRAIN

EXTREME  
LANE

FIELD

EARTH BANK

SILLO 54" x 36"

↓ SPILLS FROM BANK

ENTRY/TS

ROOF WITH  
DIVERSION

6" PIP  
42"

15FT GRID

WORKSHOP

WATER FROM

POD

AT HIGHER LEVEL

NON EMPTY

CONCRETE  
PAD TO LAGGED

EARTH BANK LAGGED

ROOF WITH  
CATTENARY

SHEEP WITH DRAIN  
TO BE SEATED/RAIDONE

SURFACE WATER + PRIMER  
DRAIN  
COLLECTING  
WASHING

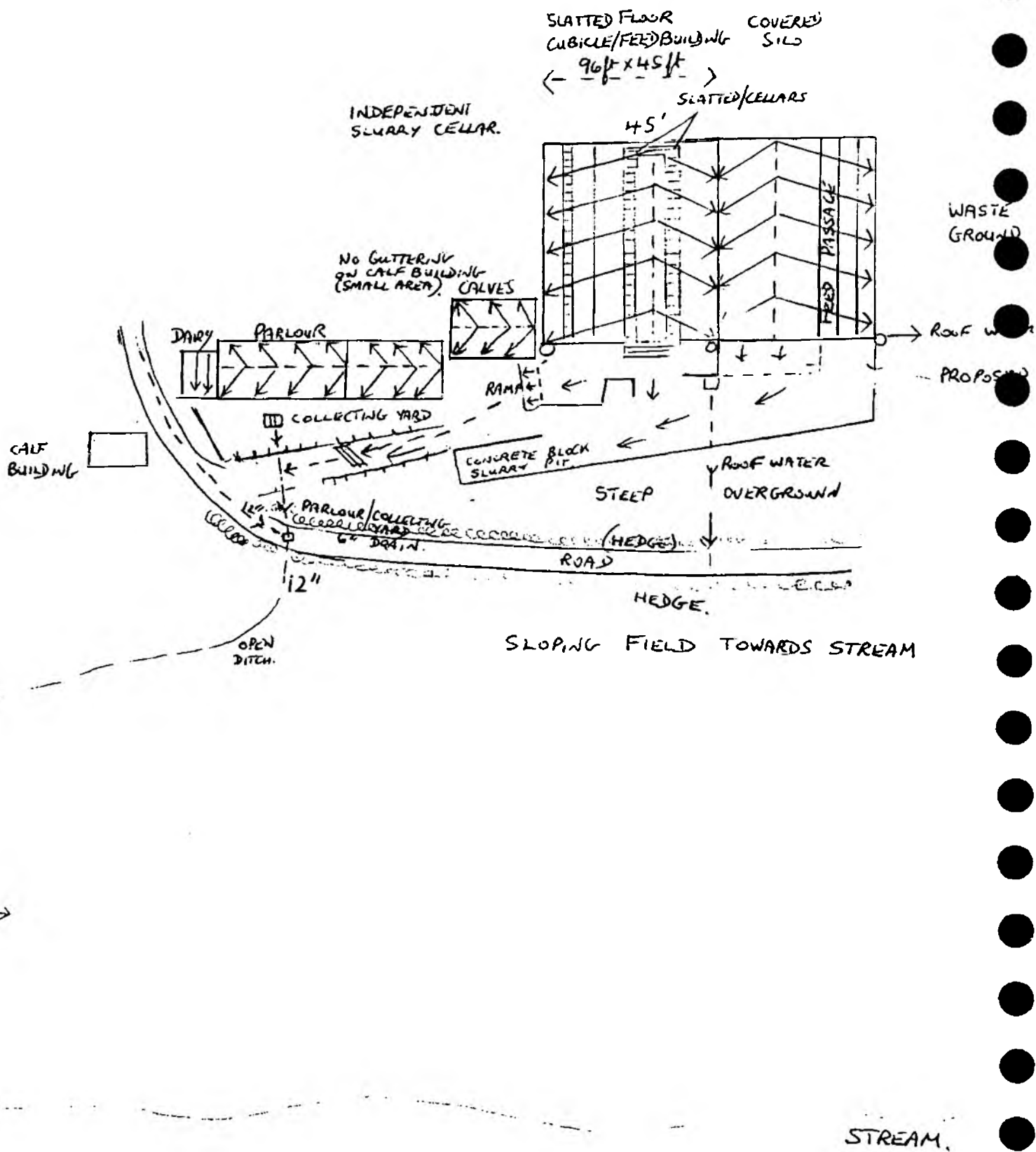


FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                           |               |                   |                                          |                       |     |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|------------------------------------------|-----------------------|-----|
| Name of Farm                                                                         | GLYNLLEWELYN                                                                                                                                                                                                                                              |               |                   |                                          | Acreage               | 150 |
| Catchment                                                                            | LLANYCEFN BROOK - EASTERN CLEDDAU                                                                                                                                                                                                                         |               |                   |                                          |                       |     |
| Grid Ref.                                                                            | SN 098236                                                                                                                                                                                                                                                 |               |                   |                                          |                       |     |
| Date of Visit                                                                        | 17.5.91 & 28.1.92                                                                                                                                                                                                                                         |               |                   |                                          |                       |     |
| Farmer                                                                               | J.H & E.M. WILLIAMS                                                                                                                                                                                                                                       |               | Owner             | ✓                                        |                       |     |
| Address                                                                              | GLYNLLEWELYN<br>LLANYCEFN<br>CLYNDERWEN, SA66 7LL                                                                                                                                                                                                         |               |                   |                                          |                       |     |
| Tel. No.                                                                             | 0437 563554                                                                                                                                                                                                                                               |               |                   |                                          |                       |     |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                      | 65-70         | Followers         | 60                                       | Beef Cattle           | —   |
|                                                                                      | Pigs                                                                                                                                                                                                                                                      | —             | Sheep             | —                                        | Poultry               | —   |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                  | ✓             | Parlour           | ✓                                        | Covered Silo          | ✓   |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                   |               | Loose Hsing       | ✓                                        | Other                 |     |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                    |               |                   | Above Ground Store<br>With Reception Pit |                       |     |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                      |               | ✓                 | Weeping Wall Store<br>or Undergr'nd Tank |                       |     |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                      |               |                   | Soakaway                                 |                       |     |
|                                                                                      | Ditch                                                                                                                                                                                                                                                     |               |                   | Stream                                   |                       |     |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                 |               |                   | Discharged To                            |                       |     |
| Chemicals                                                                            | Herbicides                                                                                                                                                                                                                                                |               | Oil               |                                          | Sheep Dip<br>Location |     |
| Chemicals                                                                            | Pesticides                                                                                                                                                                                                                                                |               |                   |                                          |                       |     |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | (1) PROVISION OF SLATTED FLOOR EFFLUENT COLLECTION<br>TANK FOR PARLOUR/DAIRY/COLLECTING YARD WASHINGS<br>- LONG DELAY FOR W.O.A.D. APPROVAL UNDER 'A.I.S'<br>GRANT SCHEME - SLATS/CELLAR IN COLLECTING YARD                                               |               |                   |                                          |                       |     |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                           |               | Follow Up Visit/s | Date-                                    |                       |     |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                     | A.I.S. Scheme |                   | Yes                                      | No                    |     |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                      |               | Medium            |                                          | Low                   |     |
| Priority                                                                             | High                                                                                                                                                                                                                                                      |               | Medium            |                                          | Low                   |     |
| Comments                                                                             | PROPOSALS FOR PROVISION OF EFFLUENT COLLECTION<br>TANK FOR PARLOUR/DAIRY/COLLECTING IN COLLECTING<br>YARD DELAYED BY W.O.A.D. DUE TO 'NO-VARIATION'<br>RULES OF GRANT SCHEME. N.R.A. LETTER TO SUPPORT<br>PROPOSALS FOR VARIATION OF SCHEME NOW ACCEPTED. |               |                   |                                          |                       |     |
| Signed                                                                               |                                                                                                                                                                                                                                                           |               |                   | Date                                     |                       |     |

P.T.O.

(Please complete sketch plan of farm on back of form)



NANTHIGGIN ~ 40dc  
 NANTYGOF ~ 30-40dc  
 LLANDRE UCHAF ~ 25-30dc

# FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                            |                                                                          |                                          |                |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------|----------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | NANTYGOF<br>LLANYCEFN BROOK.<br>SN 092 248<br>27.11.91                                                                                                                                                                                                                                                                                                     |                                                                          | Acreage                                  | 127            |
| Farmer<br>Address<br>Tel. No.                                                        | I J HOWELLS<br>NANTYGOF<br>LLANYCEFN<br>CLYNDERWEN SA66 7LH<br>0437 532301                                                                                                                                                                                                                                                                                 |                                                                          | Owner                                    | ✓              |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                       | 38 <del>40</del>                                                         | Followers                                | 9-10           |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                       | 1                                                                        | Sheep                                    | 80             |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                   | ✓                                                                        | Parlour                                  | —              |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                    | ✓                                                                        | Loose Hsing                              | —              |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                     | ROCK FLOOR                                                               | Above Ground Store<br>With Reception Pit |                |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                       |                                                                          | Weeping Wall Store<br>or Undergr'nd Tank |                |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                       | A, B                                                                     | Soakaway                                 |                |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                      |                                                                          | Stream                                   |                |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                  | HALF SEPARATED ON<br>CUBICLE - HALF TO LAGOON<br>SURFACE WATER SEPARATED | Discharged To                            | SURFACE WATER. |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                   | Oil                                                                      | Sheep Dip<br>Location                    |                |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | (1) DIVERSION OF SPRING/WELL OVERFLOW TO SURFACE WATER DRAIN.<br>(2) INVESTIGATE FEASIBILITY OF DIVERSION OF ROOF WATER ON HALF CUBICLE BUILDING.<br>(3) IMPROVEMENT OF OPERATION/CONTROL/FLOW OF SYPHON. BUT (C.O.G.A.P.)<br>CONSIDERATION OF LOW RATE IRRIGATION ONTO LAND ABOVE SLOPES. (4) DIVERT SPRING DRAW TO SLURRY PIT DURING AFTER SILAGE MAKING |                                                                          |                                          |                |
| Date of Letter/s                                                                     | 2.12.9                                                                                                                                                                                                                                                                                                                                                     | Follow Up Visit/s   Date-                                                |                                          |                |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                      | A.I.S. Scheme                                                            | Yes                                      | No             |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                       | Medium                                                                   | ✓                                        | Low            |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                       | Medium                                                                   | ✓                                        | Low            |
| Comments                                                                             | SYPHONING OF LIQUID COMPONENT OF SLURRY PIT ONTO FIELD ADJACENT TO SLURRY PIT - FIRST SECTION SOLID PIPE WITH ATTACHED PERFORATED DRAINAGE PIPE SLURRY PIT ON SITE OF OLD POND WITH FORMER OUTLET SEALED WITH CONCRETE.<br>EMBANKMENT OF SLURRY PIT - OLD POND BANK - NO APPARENT SEEPAGES.<br>SPRINGS IN SLURRY STORE                                     |                                                                          |                                          |                |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                                            |                                                                          | Date                                     |                |

SELF FEED.

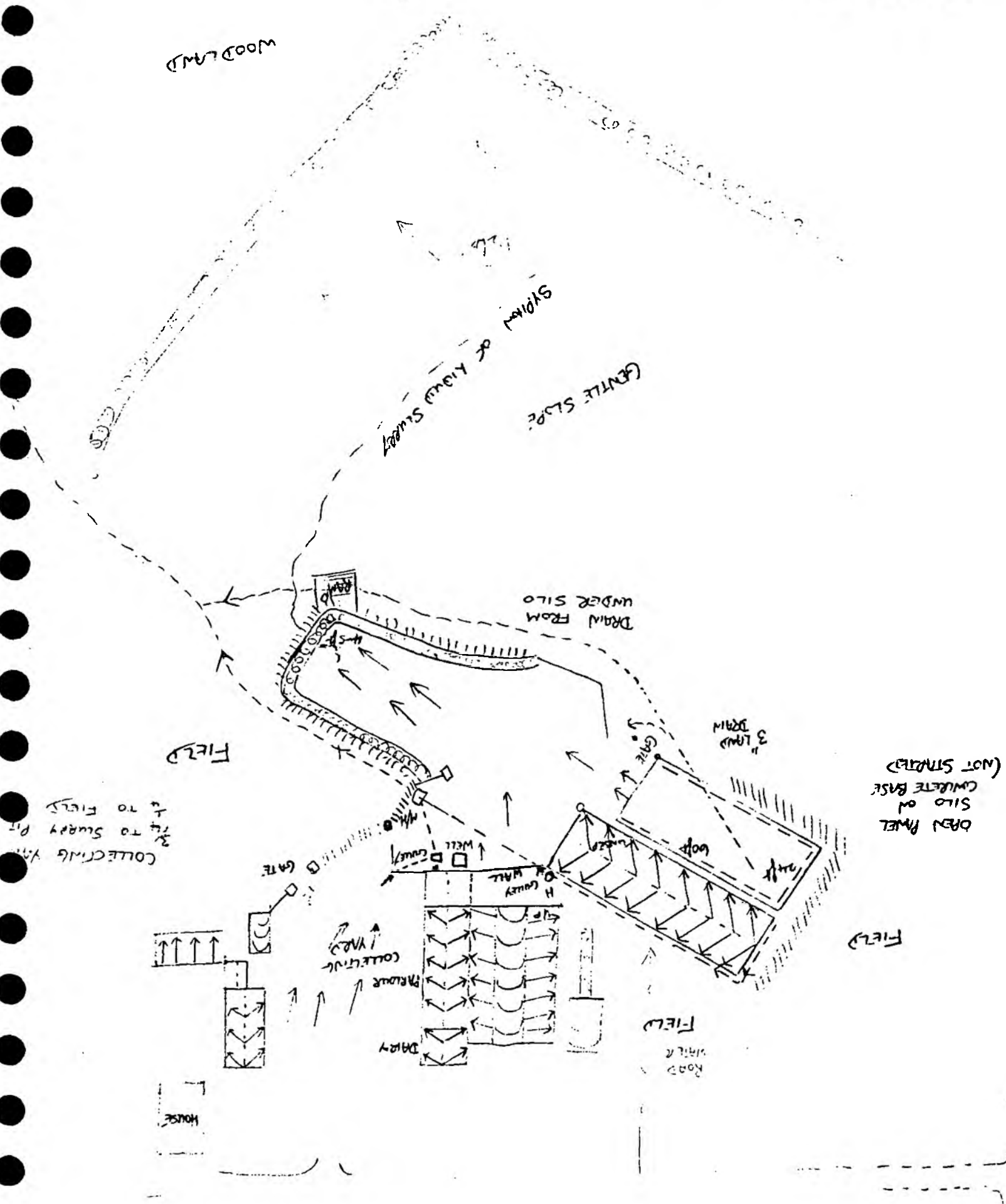
(C.O.G.A.P.)  
SLAGE MAKING

FIRST EMPLOYED  
THIS YEAR

P.T.O.

(Please complete sketch plan of farm on back of form)

1. CY to lagoon  
 2. Spraying under side of pond/canal  
 3. In lagoon in summer with water 15 ft  
 4. 2 or 3 days/weeks - effluent  
 5. Discharge to lagoon in winter with water 15 ft



DRAIN PANEL  
 SILO of  
 COMPLETE BASE  
 (NOT STRAIGHT)

COLLECTING VESSEL  
 3/4 TO STAFF PIT  
 1/4 TO FIELD

FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                                                     |                       |              |   |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------|-----------------------|--------------|---|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | TREWENFRO<br>NANT DUAD<br>SN 138415<br><br>9.12.89, 19.11.91                                                                                                                                                                                                                                                                                                                                                                                            |               |                                                     |                       | Acreage      |   |
| Farmer<br>Address<br><br>Tel. No.                                                    | T.G. DAVIES<br>TREWENFRO<br>GLANRHYD, CARDIGAN, SA43 3PS<br><br>023986 289                                                                                                                                                                                                                                                                                                                                                                              |               | Owner                                               | T. G. DAVIES          |              |   |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 180           | Followers                                           | 30                    | Beef Cattle  |   |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               | Sheep                                               |                       | Poultry      |   |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                                                                                | ✓             | Parlour                                             | ✓                     | Covered Silo | ✓ |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               | Loose Hsing                                         |                       | Other        | ✓ |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                                                                                                  |               | Above Ground Store<br>With Reception Pit<br>2 x N°. |                       | ✓            |   |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                                                                                                                    |               | Weeping Wall Store<br>or Undergr'nd Tank            |                       |              |   |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               | Soakaway                                            |                       |              |   |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               | Stream                                              |                       |              |   |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                                                                                               | ✓             | Discharged To                                       |                       | STREAM       |   |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                                                                                                                |               | Oil                                                 | Sheep Dip<br>Location | —            |   |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. ADDITIONAL CONTAINMENT/DISPOSAL OF DIRTY YARD WATER<br>- COLLECTION/LOW RATE IRRIGATION SYSTEM<br>(SLURRY MANAGEMENT PLAN)<br>2. SEALING OF SILC FLOORS.                                                                                                                                                                                                                                                                                             |               |                                                     |                       |              |   |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               | Follow Up Visit/s   Date-                           |                       |              |   |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                                                                                                   | A.I.S. Scheme |                                                     | Yes                   | No           |   |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ✓             | Medium                                              |                       | Low          |   |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ✓             | Medium                                              |                       | Low          |   |
| Comments                                                                             | (100 GALLS SPRING BARLEY 30ACRES FODDER SILET)<br>CONSIDERABLE EXPENDITURE ON WASTE HANDLING IN LAST<br>2 YEARS - ADDITIONAL SLURRY STORAGE-<br>(1) SLATTED FLOOR BELOW GROUND SLURRY STORE. (10,000gall)<br>(2) NEW SLURRY STORE (325,000gall) / RECEPTION PIT<br>(3) NEW RECEPTION PIT (ENLARGED) 1991<br>(4) DIVERSION OF PARLOUR/DAIRY WASHINGS TO RECEPTION PIT<br>(5) PROVISION OF SLUDGE EFFLUENT TANKS.<br>SUBSTANTIAL OPEN YARD AREAS AT UNIT. |               |                                                     |                       |              |   |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               | Date                                                |                       |              |   |

P.T.O.

(Please complete sketch plan of farm on back of form)

☐ DIRTY WATER  
COLLECTION TANK

↓ ROOF WATER

↓ ROOF WATER  
↓ SEWAGE

Stream, 

Total



DOWNPIPE

DOWNPIPE

90'

45'

50'

24'

CURICLE

OPEN SILO

75'

75'

SILO

CUBICLES

CUBICLES

CUBICLES

CUBICLES

CUBICLES

CUBICLES

CUBICLES

CUBICLES

CUBICLES

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CUBICLES

CUBICLES

CUBICLES

NEW  
ARLOUR

DAIRY

NEW  
RECEPTION  
PIT

NEW  
RECEPTION  
PIT

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RECEPTION  
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NEW  
RECEPTION  
PIT

SILOAGE EFFLUENT  
TANK

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

RAV. SERVICE

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

WALL

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

BELOW GROUND  
SILOAGE STORAGE  
(70,000 GALL.)

FEED (SILOAGE)

FEED (SILOAGE)

FEED (SILOAGE)

ABOVE GROUND  
TOWER  
325,000 GALL.

ORIGINAL  
SILOAGE  
STORE

NEW  
RECEPTION  
PIT

NEW  
RECEPTION  
PIT

NEW  
RECEPTION  
PIT

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RECEPTION  
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NEW  
RECEPTION  
PIT

# FARM DATA SHEET

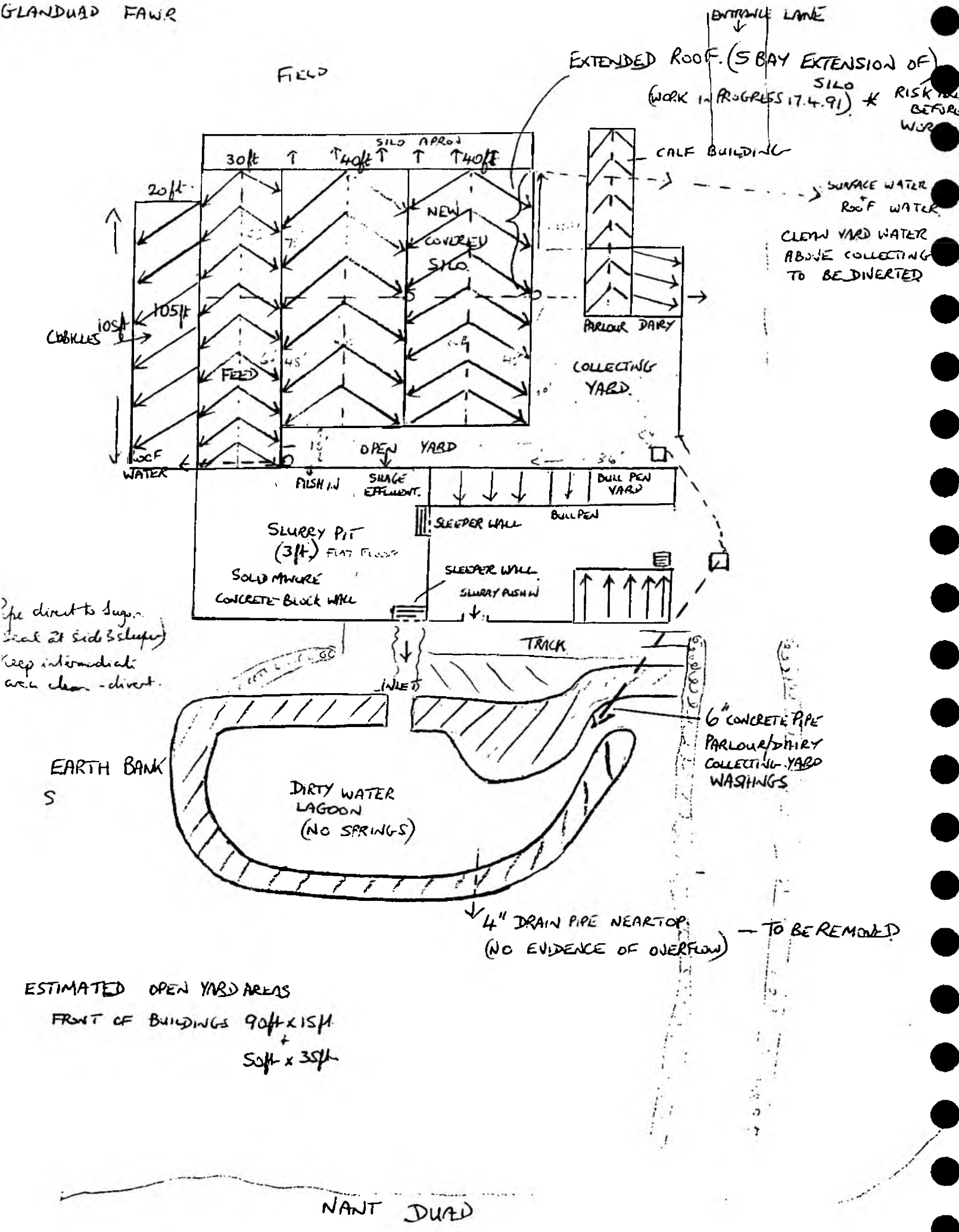
|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                   |               |                                          |                       |              |    |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|-----------------------|--------------|----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | GLANDUAD FAWR<br>NANT NUAD<br>SN 115388<br>19.11.91                                                                                                                                                                                                                                                                                                               |               |                                          |                       | Acreage      |    |
| Farmer<br>Address<br>Tel. No.                                                        | O.E./M.E./T.I. WILLIAMS<br>GLANDUAD FAWR<br>FELINDRE, CRYMYCH, SA41 3UT.<br>0239 79452 or 79207                                                                                                                                                                                                                                                                   |               | Owner                                    | ✓                     |              |    |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                              | 131           | Followers                                | 88                    | Beef Cattle  | 14 |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                              | —             | Sheep                                    | TACK<br>(400)         | Poultry      | —  |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                          | ✓             | Parlour                                  | ✓                     | Covered Silo | ✓  |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                           | —             | Loose Hsing                              | ✓                     | Other        |    |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                            | C, D          | Above Ground Store<br>With Reception Pit | —                     |              |    |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                              | A, B          | Weeping Wall Store<br>or Undergr'nd Tank | A B                   |              |    |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                              | A, B, C, D    | Soakaway                                 | —                     |              |    |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                             | —             | Stream                                   | —                     |              |    |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                         | ✓             | Discharged To                            | WATER COURSE          |              |    |
| Chemicals<br>WHEAT - REY - TITIKEL<br>40 ACRES OF LOCK-UP<br>WINTER BARLEY/WHEAT     | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                          | Oil           | 2x200<br>GALL<br>DIESEL                  | Sheep Dip<br>Location | —            |    |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | (1) REMOVAL OF HIGH LEVEL OVERFLOW PIPE IN DIRTY WATER LAGOON<br>(2) PROVISION OF INCREASED SLURRY STORAGE CAPACITY<br>(3) SEPARATE SILAGE EFFLUENT COLLECTION/CONTAINMENT.<br>(4) ARE LIQUID PORTION FROM SLURRY STORE DIRECTLY TO LAGOON<br>(TO KEEP INTERMEDIATE AREA CLEAN) - SHORT TERM IMPROVEMENT.                                                         |               |                                          |                       |              |    |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                                                                                   |               | Follow Up Visit/s                        | Date-                 |              |    |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                             | A.I.S. Scheme |                                          | Yes                   | No           |    |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                              | ✓             | Medium                                   |                       | Low          |    |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                              |               | Medium                                   | ✓                     | Low          |    |
| Comments                                                                             | SUBSTANTIAL EXTENSION OF ROOF WATER DURING YEAR -<br>COVER OF SILOS<br>REMAINING OPEN AREAS - SOLID DUNGSTEND/SILAGE STORE,<br>ACCESS BELOW RAMPS DIRTY WATER LAGOON.<br>FARM IN LOW POINT OF VALLEY - SUITABLE LAND FOR<br>SLURRY APPLICATION REMOTE FROM UNIT.<br>(ONE FIELD OF 16 ACRE - 60ft HEAD LAND FAIRLY FREE DRAINAGE<br>41 ACRES 25 ACRE - 120ft HEAD) |               |                                          |                       |              |    |
| Signed                                                                               | G. James                                                                                                                                                                                                                                                                                                                                                          |               | Date                                     | 19.11.91              |              |    |

88 followers  
INCLUDES 33 COW

GRAND/CU

P.T.O.

(Please complete sketch plan of farm on back of form)



Life direct to Super.  
at 21 Side 3 sleeper  
Keep intermediate  
area clean - direct.

ESTIMATED OPEN YARD AREAS  
FRONT OF BUILDINGS 90ft x 15ft  
+  
50ft x 35ft

# FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                               |               |             |                                          |              |          |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|------------------------------------------|--------------|----------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | PALLAU ISAF<br>NANT DUAD<br>SN 148 406<br>13.11.91                                                                                                                                                                            |               |             |                                          | Acreage      | 79       |
| Farmer<br>Address<br><br>Tel. No.                                                    | GLYN LEWIS<br>PALLAU ISAF<br>EGLWYSRW, CRYMYCH, SA41 3PR<br>0239 79645                                                                                                                                                        |               |             |                                          | Owner        | DYFED CC |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                          | 45            | Followers   | 40                                       | Beef Cattle  |          |
|                                                                                      | Pigs                                                                                                                                                                                                                          |               | Sheep       |                                          | Poultry      |          |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                      | *             | Parlour     | *                                        | Covered Silo | 1/2      |
|                                                                                      | Cowshed                                                                                                                                                                                                                       | *             | Loose Hsing |                                          | Other        |          |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                        | A, B, C, D    |             | Above Ground Store<br>With Reception Pit |              |          |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                          |               |             | Weeping Wall Store<br>or Undergr'nd Tank |              |          |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                          | A, B, C, D    |             | Soakaway                                 |              |          |
|                                                                                      | Ditch                                                                                                                                                                                                                         |               |             | Stream                                   |              |          |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                     | *             |             | Discharged To<br>STREAM                  |              |          |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                      |               | Oil         | Sheep Dip<br>Location                    |              |          |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1) REINFORCEMENT OF LOWER BANK OF LAGOON.<br>2) THE LAGOON TO HAVE A GREATER LEVEL OF FREEBOARD.<br>(SEE LETTER)                                                                                                              |               |             |                                          |              |          |
| Date of Letter/s                                                                     | Follow Up Visit/s   Date-                                                                                                                                                                                                     |               |             |                                          |              |          |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                         | A.I.S. Scheme |             | Yes                                      | No           |          |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                          |               | Medium      | *                                        | Low          |          |
| Priority                                                                             | High                                                                                                                                                                                                                          |               | Medium      |                                          | Low          | *        |
| Comments                                                                             | THE ONLY WORRY ABOUT THIS FARM IS THE DISTANCE BETWEEN<br>THE LAGOON AND THE STREAM - A MERE 15 YARDS AT ONE POINT<br>BUT IF THE IMPROVEMENTS ARE CARRIED OUT AS INDICATED<br>THIS WOULD CUT THE POLLUTION RISK CONSIDERABLY. |               |             |                                          |              |          |
| Signed                                                                               |                                                                                                                                                                                                                               |               |             | Date                                     |              |          |

SOME CALVES

38415 COVERED  
200 BIG BAGS

P.T.O.

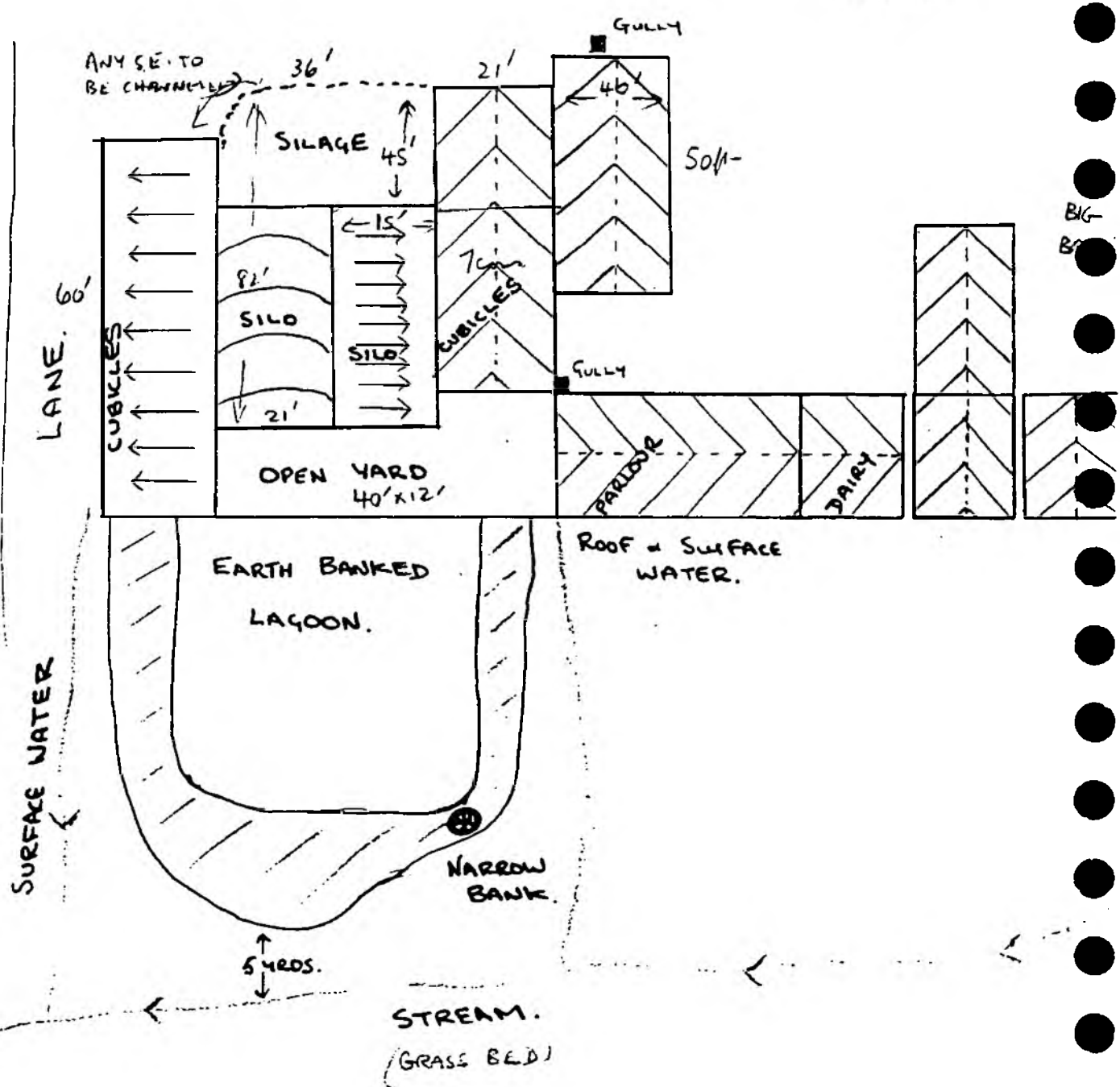
(Please complete sketch plan of farm on back of form)



HOUSE



CLEAN  
YARD



BIG  
BO

# FARM DATA SHEET

|                                                                                      |                                                                                                                                                            |               |                                          |     |                       |          |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|-----|-----------------------|----------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | PENCNWL MAWR<br>NANT DUAD<br>SN 132385<br>13. 11. 91                                                                                                       |               |                                          |     | Acreage               | 180      |
| Farmer<br>Address<br>Tel. No.                                                        | T. J. THOMAS<br>PENCNWL MAWR<br>EGLWYSRW, CRYMYCH, SA41 3UB<br>0239 79612                                                                                  |               | Owner                                    | ✓   |                       |          |
| Livestock Numbers                                                                    | Cows                                                                                                                                                       |               | Followers                                |     | Beef Cattle           | 50       |
|                                                                                      | Pigs                                                                                                                                                       |               | Sheep                                    | 300 | Poultry               |          |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                   |               | Parlour                                  |     | Covered Silo          | -        |
|                                                                                      | Cowshed                                                                                                                                                    |               | Loose Hsing                              |     | HAY/BIG BALKS         |          |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                     |               | Above Ground Store<br>With Reception Pit |     |                       |          |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                       |               | Weeping Wall Store<br>or Undergr'nd Tank |     |                       |          |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                       |               | Soakaway                                 |     |                       |          |
|                                                                                      | Ditch                                                                                                                                                      |               | Stream                                   |     |                       |          |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                  |               | Discharged To                            |     |                       |          |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                   |               | Oil                                      |     | Sheep Dip<br>Location | SN13/384 |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | MINIMAL POLLUTION RISKS.<br>NO PROBLEMS IDENTIFIED.                                                                                                        |               |                                          |     |                       |          |
| Date of Letter/s                                                                     |                                                                                                                                                            |               | Follow Up Visit/s   Date-                |     |                       |          |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                      | A.I.S. Scheme |                                          | Yes | No                    |          |
| Pollution Risk                                                                       | High                                                                                                                                                       |               | Medium                                   |     | Low                   | ✓        |
| Priority                                                                             | High                                                                                                                                                       |               | Medium                                   |     | Low                   | ✓        |
| Comments                                                                             | STOCKING 25 BEEF HOUSED AT PENCNWL MAWR<br>25 BEEF HOUSED ON OTHER CATOIMEN T (OVER A487)<br>LOOSE HOUSING ON STRAW BEDDING<br>REGULAR APPLICATION TO LAND |               |                                          |     |                       |          |
| Signed                                                                               |                                                                                                                                                            |               | Date                                     |     |                       |          |

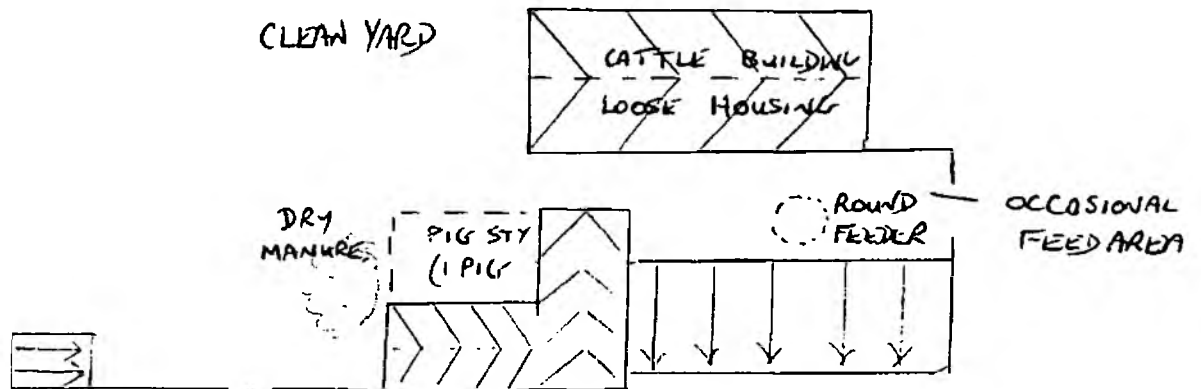
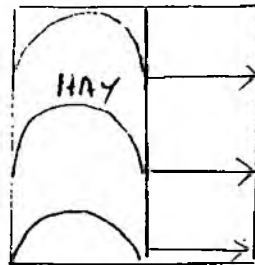
BIG BALKS  
1991

P.T.O.

(Please complete sketch plan of farm on back of form)



 SHEEP DIP



SLOPING  
PART OPEN/WOODLAND AREA

SOAKS AWAY

LEAF CARPET

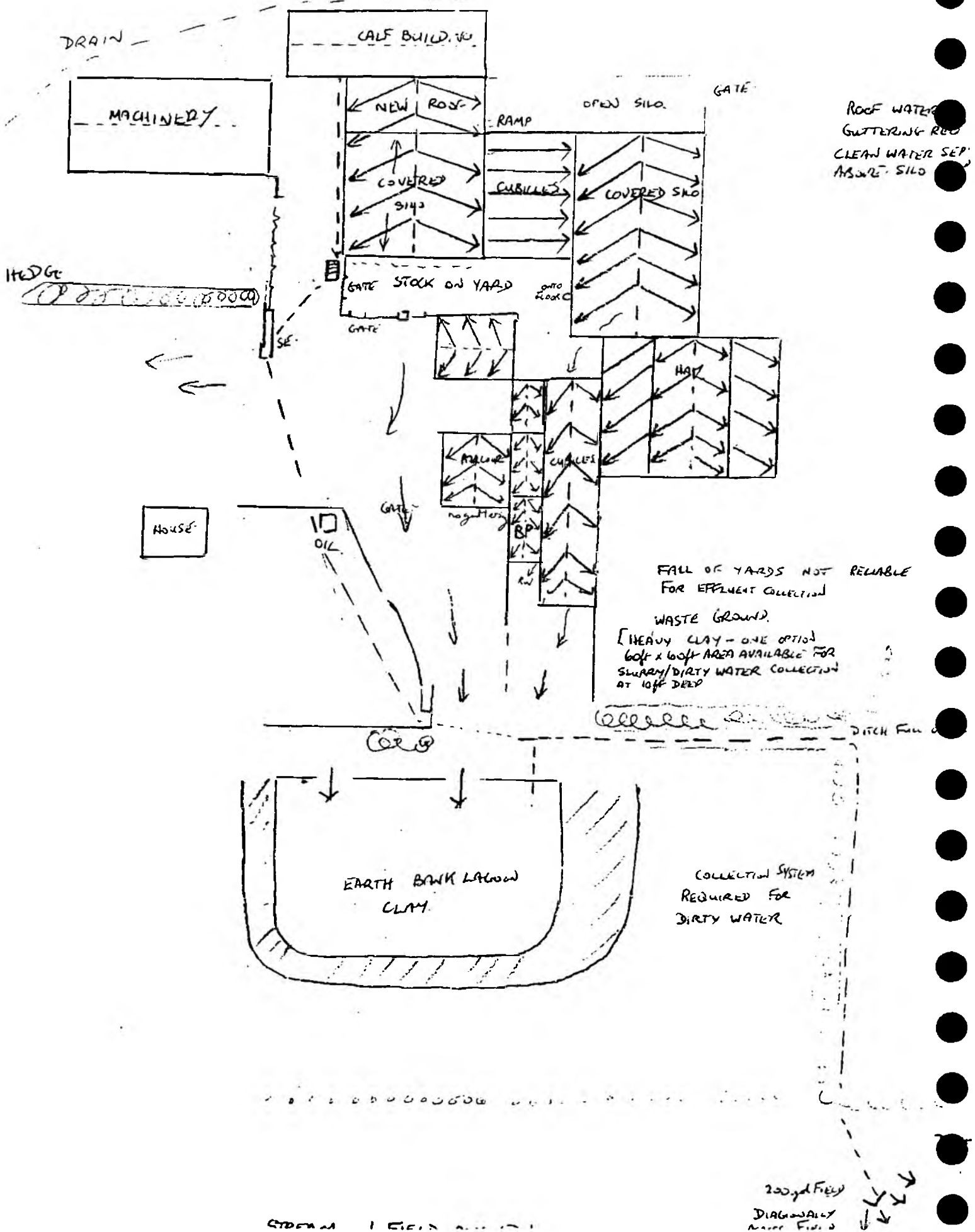
WOODLAND

# FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                        |               |                                          |     |                       |    |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|-----|-----------------------|----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | GLYN<br>NANT DUAD - TRIBUTARY OF NEVERN<br>SN 148 384<br>8. 11. 91                                                                                                                                                                                                                     |               | Acreage                                  |     |                       |    |
| Farmer<br>Address<br>Tel. No.                                                        | J.E. REES<br>GLYN<br>EGLWYSWRW, CRYMYCH SA 41 3 SR.<br>0239 79274                                                                                                                                                                                                                      |               | Owner                                    |     |                       |    |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                   | 50            | Followers                                | 30  | Beef Cattle           | 30 |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                   |               | Sheep                                    | 160 | Poultry               |    |
|                                                                                      | Cubicles                                                                                                                                                                                                                                                                               |               | Parlour                                  |     | Covered Silo          |    |
| Buildings<br>(tick box)                                                              | Cowshed                                                                                                                                                                                                                                                                                |               | Loose Hsing                              |     | Other                 |    |
|                                                                                      |                                                                                                                                                                                                                                                                                        |               |                                          |     |                       |    |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                 |               | Above Ground Store<br>With Reception Pit |     |                       |    |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                   |               | Weeping Wall Store<br>or Undergr'nd Tank |     |                       |    |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                   |               | Soakaway                                 |     |                       |    |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                  |               | Stream                                   |     |                       |    |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                              |               | Discharged To                            |     |                       |    |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                               |               | Oil                                      |     | Sheep Dip<br>Location |    |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1 SEPARATION OF ROOF WATER<br>2 DIVERSION OF DIRTY YARD WATER TO LAGOON<br>OR PROVISION OF SEPARATE CONTAINMENT/DISPOSAL SYSTEM<br>3. SLUDGE EFFLUENT COLLECTION/CHANNEL RATHER THAN RUN OVER CONCRETE AREAS                                                                           |               |                                          |     |                       |    |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                        |               | Follow Up Visit/s                        |     | Date-                 |    |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                  | A.I.S. Scheme |                                          | Yes | No                    |    |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                   |               | Medium                                   | ✓   | Low                   |    |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                   | ✓             | Medium                                   |     | Low                   |    |
| Comments                                                                             | Substantial proportion of unseparated roof water + surface water above<br>Dirty water in ditch above lagoon - distributed diagonally across field.<br>No apparent pollution despite fact that DIRTY WATER NOT ALL ENTERING LAGOON.<br>PARLOUR AND DAIRY WASHINGS - POWER HOSE 100g.p.d |               |                                          |     |                       |    |
| Signed                                                                               |                                                                                                                                                                                                                                                                                        |               | Date                                     |     |                       |    |

P.T.O.

(Please complete sketch plan of farm on back of form)



FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                               |               |                                          |               |                       |    |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|---------------|-----------------------|----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | TRECLYN ISAF<br>NANT DUAD - TRIB OF NEVERN<br>SN 148386<br>8.10.91                                                                                                                                                                                                                                            |               |                                          |               | Acreage               |    |
| Farmer<br>Address<br><br>Tel. No.                                                    | O. J. REES & SON<br>TRECLYN ISAF<br>EGLWYSWRW, CRYMYCH, DYFED                                                                                                                                                                                                                                                 |               | Owner                                    |               |                       |    |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                          | 65            | Followers                                | 25            | Beef Cattle           | 15 |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                          | —             | Sheep                                    | —             | Poultry               | —  |
|                                                                                      | Cubicles                                                                                                                                                                                                                                                                                                      | ✓             | Parlour                                  | ✓             | Covered Silo          | ✓  |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                       |               | Loose Hsing                              |               | Other                 |    |
| Buildings<br>(tick box)                                                              |                                                                                                                                                                                                                                                                                                               |               |                                          |               |                       |    |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                        |               | Above Ground Store<br>With Reception Pit |               |                       |    |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                          |               | Weeping Wall Store<br>or Undergr'nd Tank |               |                       |    |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                          |               | Soakaway                                 |               |                       |    |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                         |               | Stream                                   |               |                       |    |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                     |               |                                          | Discharged To |                       |    |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                      |               | Oil                                      |               | Sheep Dip<br>Location |    |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | Separation OF ROOF WATER AND PIPE TO POND<br>OVERFLOW/SURFACE WATER FROM GLYN FARM POND<br>DIVERSION OF FIELD/GROUND WATER FROM BEHIND BUILDINGS                                                                                                                                                              |               |                                          |               |                       |    |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                               |               | Follow Up Visit/s                        | Date-         |                       |    |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                         | A.I.S. Scheme |                                          | Yes           | No                    |    |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                          | ✓             | Medium                                   |               | Low                   |    |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                          | ✓             | Medium                                   |               | Low                   |    |
| Comments                                                                             | POND EMBANKMENT 2 YARDS FROM WATERCOURSE.<br>PARLOUR/DAIRY/COLLECTING YARD/DUNGSTEAD DRAINAGE/SILAGE LIQUOR.<br>LAGOON OVERFLOW IN WET WEATHER POSSIBLY TO POND<br>OVERFLOW VIA A WEAK EMBANKMENT/PART BREACH TO ADJACENT W/C.<br>LOWER LAGOON/POND-UNSATISFACTORY<br>SEWAGE FUNGUS IN WATERCOURSE BELOW POND |               |                                          |               |                       |    |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                               |               |                                          | Date          |                       |    |

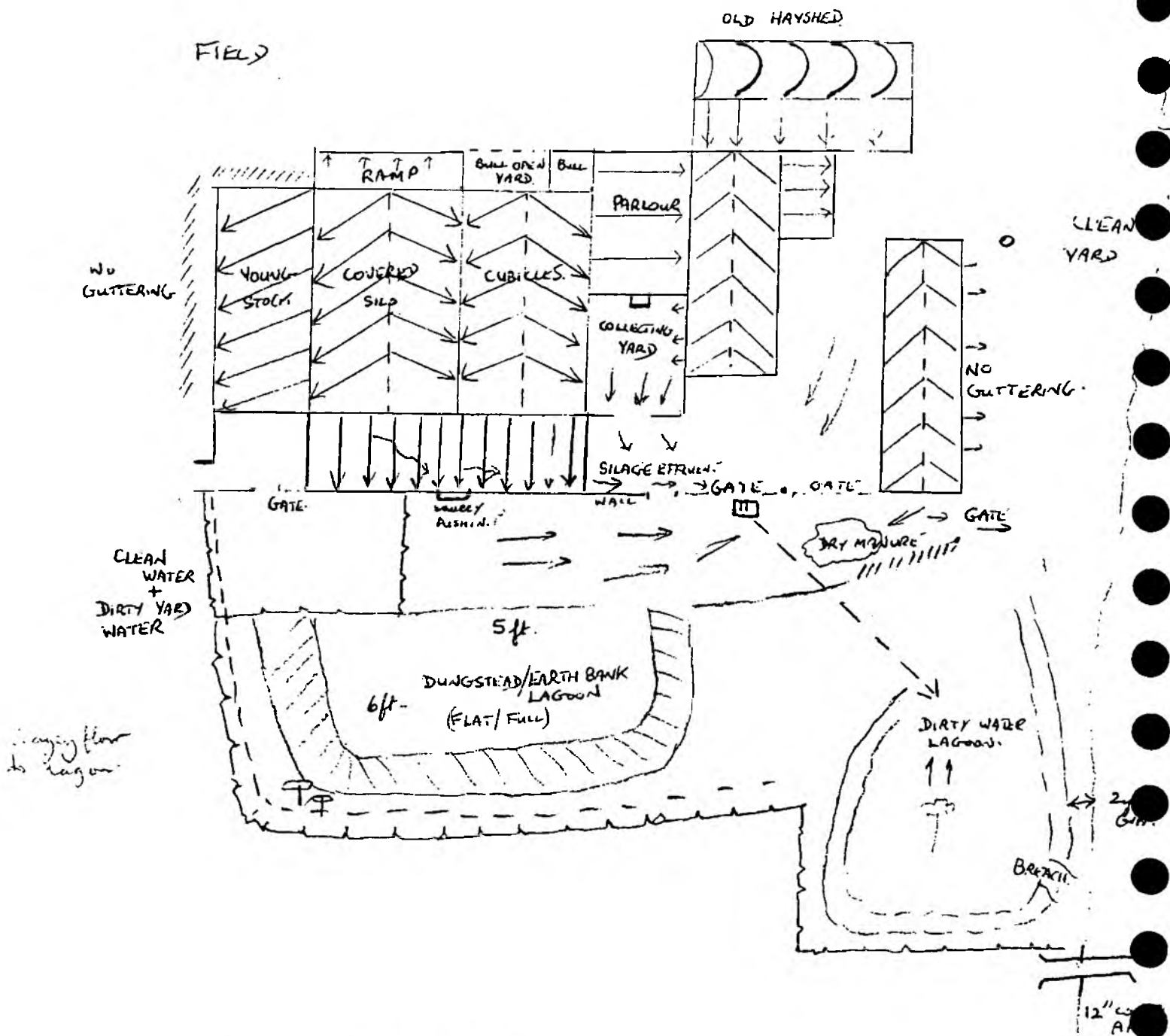
P.T.O.

(Please complete sketch plan of farm on back of form)

TRECLYN UCHAF - EMPTY FARM BUILDINGS

BUILT 1900-1910  
1300c 3000c

HOUSE



Rat Yardwater + S.E. + P+D to lower lagoon  
 Top threshold can overflow to 2nd lagoon  
 12" SW.  
 12" concrete pipe below lower lagoon  
 Very weak part of lower lagoon - has breaches

#### MAIN REMEDIAL MEASURES REQ'D

- 1 RW diversion on all buildings
- 2 Cover collecting yard (Gully join)
- 3 SW cap
- 4 Grid 2 pipes in same trench (one parlour, one dairy steps)
- 5 all D.Y.W. to entrance gully
- 6 Drainage

**FARM DATA SHEET**

|                                                                                      |                                                                      |   |                           |                                          |                       |   |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------|---|---------------------------|------------------------------------------|-----------------------|---|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | TRECLYN UCHAF<br>NANTDUAD<br>SN 150 387<br>8.10.91                   |   |                           |                                          | Acreage               |   |
| Farmer<br>Address<br><br>Tel. No.                                                    |                                                                      |   |                           |                                          | Owner                 |   |
| Livestock Numbers                                                                    | Cows                                                                 | — | Followers                 | —                                        | Beef Cattle           | — |
|                                                                                      | Pigs                                                                 | — | Sheep                     | —                                        | Poultry               | — |
| Buildings<br>(tick box)                                                              | Cubicles                                                             |   | Parlour                   |                                          | Covered Silo          |   |
|                                                                                      | Cowshed                                                              |   | Loose Hsing               |                                          | Other                 |   |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                               |   |                           | Above Ground Store<br>With Reception Pit |                       |   |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                 |   |                           | Weeping Wall Store<br>or Undergr'nd Tank |                       |   |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                 |   |                           | Soakaway                                 |                       |   |
|                                                                                      | Ditch                                                                |   |                           | Stream                                   |                       |   |
| Roof/Clean Water                                                                     | Separated                                                            |   | Discharged To             |                                          |                       |   |
| Chemicals                                                                            | Herbicides<br>Pesticides                                             |   | Oil                       |                                          | Sheep Dip<br>Location |   |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               |                                                                      |   |                           |                                          |                       |   |
| Date of Letter/s                                                                     |                                                                      |   | Follow Up Visit/s   Date- |                                          |                       |   |
| Work Completed & Inspected                                                           | Date-                                                                |   | A.I.S. Scheme             | Yes                                      | No                    |   |
| Pollution Risk                                                                       | High                                                                 |   | Medium                    |                                          | Low                   | ✓ |
| Priority                                                                             | High                                                                 |   | Medium                    |                                          | Low                   | ✓ |
| Comments                                                                             | PART OF BLAENGAFREN FARM (SN 151 393)<br>EMPTY BUILDINGS - NO STOCK. |   |                           |                                          |                       |   |
| Signed                                                                               |                                                                      |   |                           | Date                                     |                       |   |

P.T.O.

(Please complete sketch plan of farm on back of form)

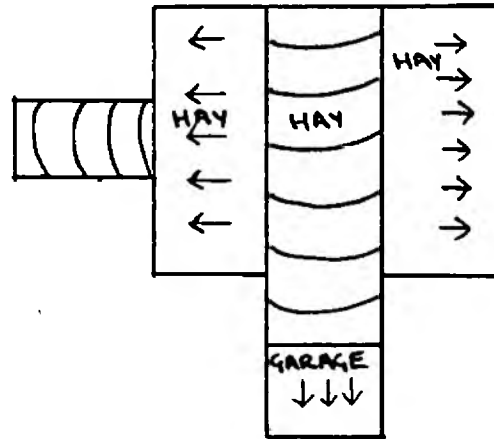
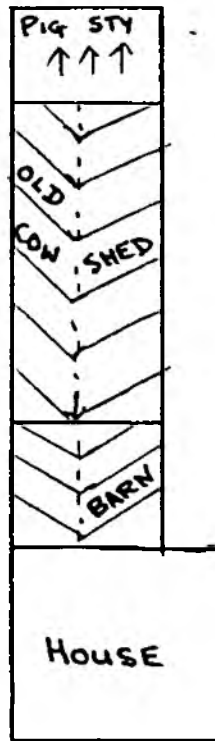


**FARM DATA SHEET**

|                                                                                      |                                                                                                                                                                                                                                                                                  |   |                   |                                                              |                       |          |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------|--------------------------------------------------------------|-----------------------|----------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | WERN VILLA<br>NANT DUAD<br>SN 148 397<br>13.11.91                                                                                                                                                                                                                                |   |                   |                                                              | Acreage               | 33       |
|                                                                                      | Farmer<br>Address                                                                                                                                                                                                                                                                |   |                   | W L DANIEL<br>WERN VILLA, CRYMYCH,<br>SA41 3SX<br>0239 79218 | Owner                 | *        |
|                                                                                      | Tel. No.                                                                                                                                                                                                                                                                         |   |                   |                                                              |                       |          |
|                                                                                      |                                                                                                                                                                                                                                                                                  |   |                   |                                                              |                       |          |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                             |   | Followers         |                                                              | Beef Cattle           | 11       |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                             |   | Sheep             |                                                              | Poultry               |          |
|                                                                                      | Cubicles                                                                                                                                                                                                                                                                         |   | Parlour           |                                                              | Covered Silo          |          |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                          | * | Loose Hsing       |                                                              | Other                 | HAY SHED |
| Buildings<br>(tick box)                                                              | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                           |   |                   | Above Ground Store<br>With Reception Pit                     |                       |          |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                             |   |                   | Weeping Wall Store<br>or Undergr'nd Tank                     |                       |          |
|                                                                                      | Land                                                                                                                                                                                                                                                                             |   |                   | Soakaway                                                     |                       |          |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                            |   |                   | Stream                                                       |                       |          |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  |                                                                                                                                                                                                                                                                                  |   |                   |                                                              |                       |          |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D |                                                                                                                                                                                                                                                                                  |   |                   |                                                              |                       |          |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                        |   |                   | Discharged To                                                |                       |          |
| Chemicals                                                                            | Herbicides                                                                                                                                                                                                                                                                       |   | Oil               |                                                              | Sheep Dip<br>Location |          |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               |                                                                                                                                                                                                                                                                                  |   |                   |                                                              |                       |          |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                  |   | Follow Up Visit/s |                                                              | Date-                 |          |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                            |   |                   | A.I.S. Scheme                                                | Yes                   | No       |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                             |   | Medium            |                                                              | Low                   | *        |
| Priority                                                                             | High                                                                                                                                                                                                                                                                             |   | Medium            |                                                              | Low                   | *        |
| Comments                                                                             | <p>Formerly Mr Daniel had 22 dairy cows, but this terminated in 1978. His beef cattle are out all year and he lets out <math>\frac{1}{3}</math> his acreage to a neighbouring farmer.</p> <p>In the present situation there is no danger of this farm causing any pollution.</p> |   |                   |                                                              |                       |          |
| Signed                                                                               |                                                                                                                                                                                                                                                                                  |   |                   | Date                                                         |                       |          |

P.T.O.

(Please complete sketch plan of farm on back of form)



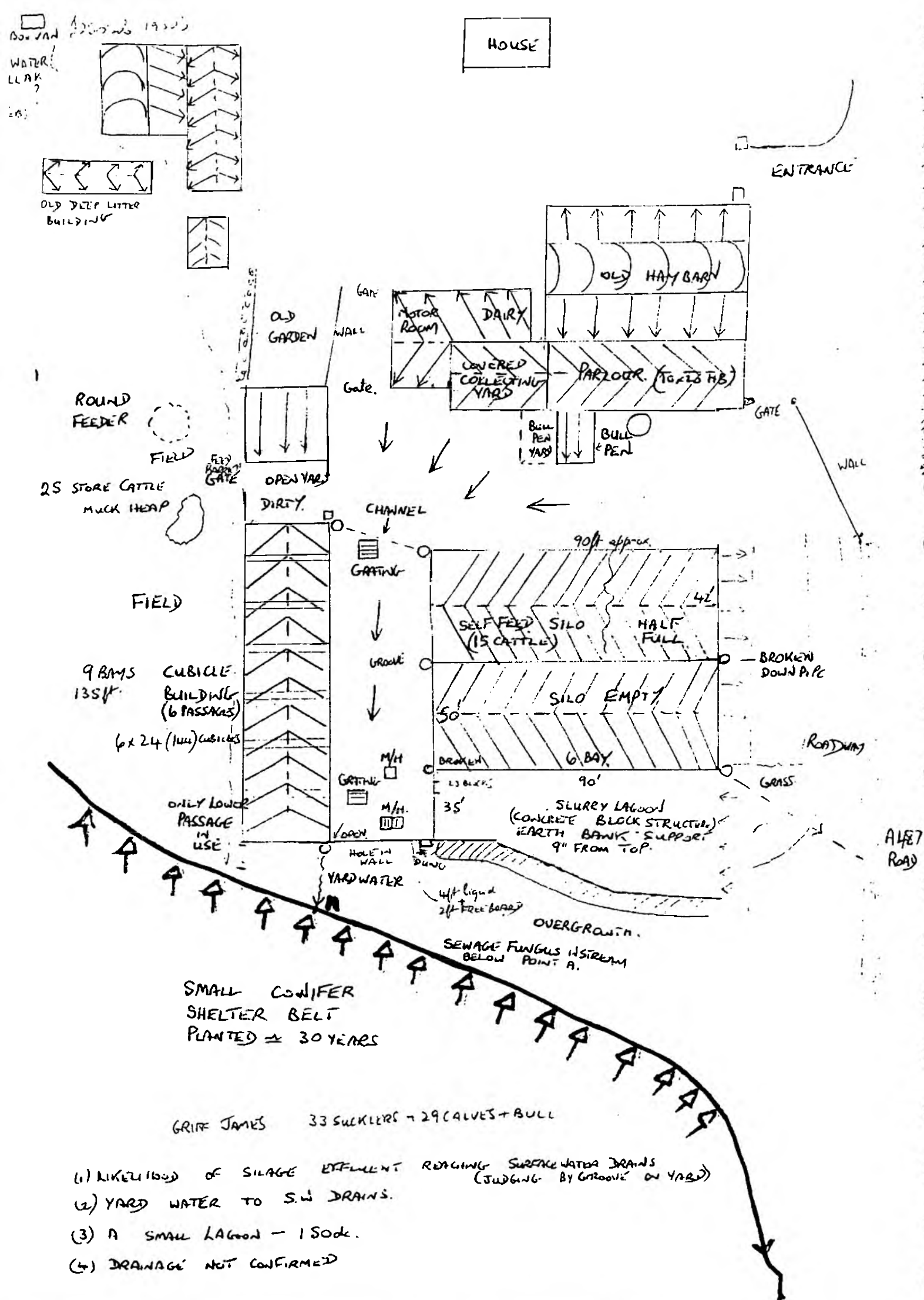
ENTRANCE

# FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |                                          |                        |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|------------------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | BLAENGAFREN<br>NANT DUAD<br>SN 151393<br>13.11.91 31.1.92                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               | Acreage                                  |                        |
| Farmer<br>Address<br>Tel. No.                                                        | RHYDGARNWEN,<br>CROFT, CARDIGAN, SA 43 3NW<br>0239 615265                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               | Owner                                    | MR JRS B.A.Y. LE ROUX. |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Followers     | Beef Cattle                              |                        |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sheep         | Poultry                                  |                        |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parlour       | Covered Silo                             |                        |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Loose Hsing   | Other                                    |                        |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               | Above Ground Store<br>With Reception Pit |                        |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               | Weeping Wall Store<br>or Undergr'nd Tank |                        |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               | Soakaway                                 |                        |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               | Stream                                   |                        |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               | Discharged To                            |                        |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Oil           | Sheep Dip<br>Location                    |                        |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | OWNER NOR OCCUPIERS MET ON SITE -<br>DIRTY YARD WATER ENTRY FROM 2 YARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                                          |                        |
| Date of Letter/s                                                                     | Follow Up Visit/s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | Date-                                    |                        |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A.I.S. Scheme | Yes                                      | No                     |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Medium        | ✓                                        | Low                    |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Medium        | ✓                                        | Low                    |
| Comments                                                                             | <p>CESSATION OF DAIRYING - MAY 1989. SALE OCT.<br/>         FORMERLY A LARGE DAIRY FARM 350 ACRES - 125 COWS<br/>         THIRD WINTER WITHOUT DAIRYING (TOTAL STOCK 300)<br/>         NO SILAGE BELIEVED TO HAVE BEEN MADE SINCE 1989. NOW ONLY 1000<br/>         TWO FARMERS HOUSING/RENTING FARM BUILDINGS<br/>         1. SELF FEED REMAINING SILAGE - 1 CATTLE 2. STOCK IN FIELD/PART SHALL YARD - 20 CATTLE<br/>         G.D. JAMES PETER LEWIS<br/>         TRERIFFITH PENRHIN<br/>         MOYLEGROVE PENYGOES<br/>         (0239) 86207 CRYMCH.<br/>         0239 792227</p> |               |                                          |                        |
| Signe                                                                                | Date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                                          |                        |

P.T.C

(Please complete sketch plan of farm on back of form)

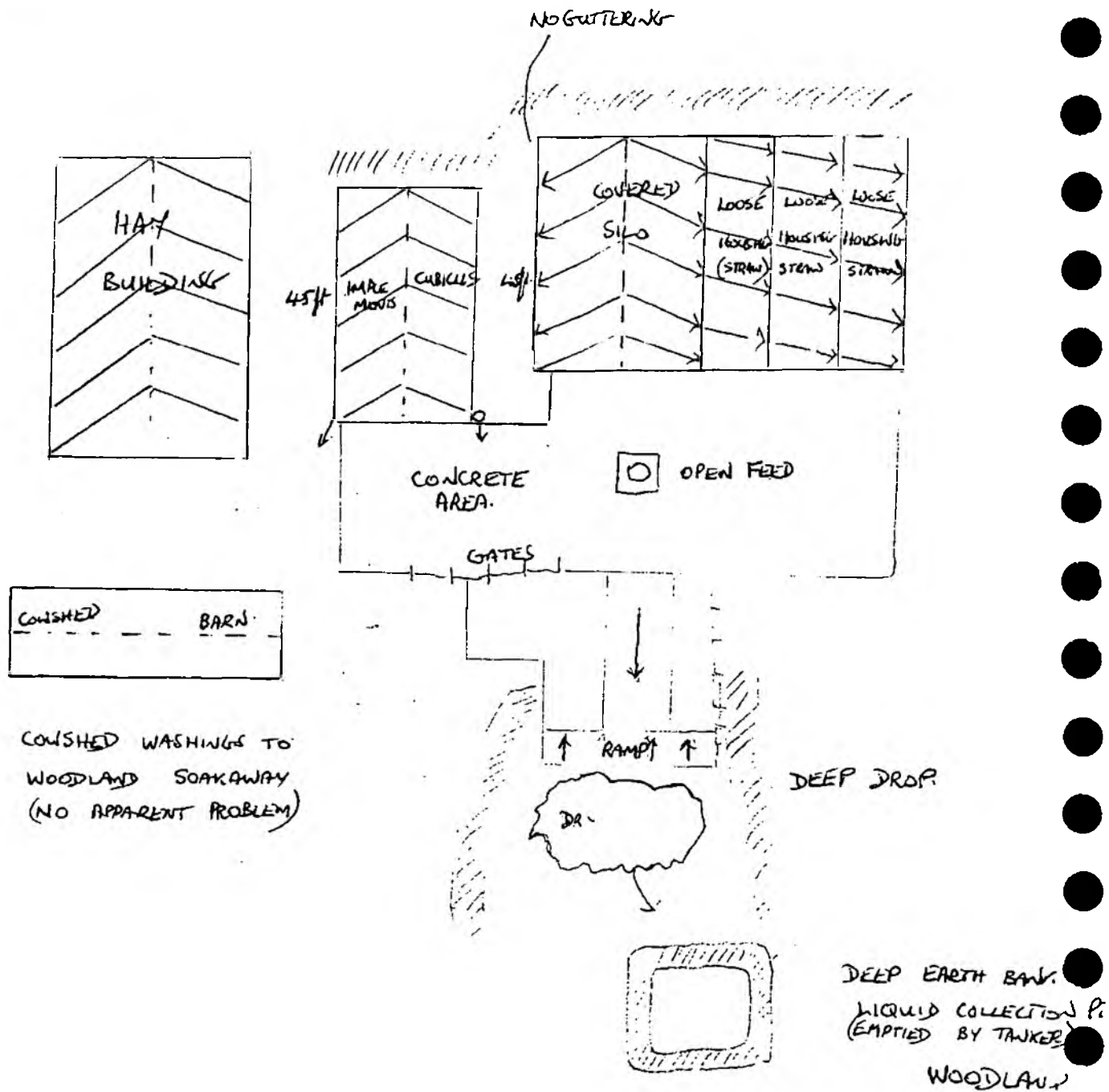


FARM DATA SHEET

|                                                                                      |                                                                                             |               |                                          |                       |              |     |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------|------------------------------------------|-----------------------|--------------|-----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | PENPEDWAS<br>NANT DUAD<br>SN 123390<br>19. 11. 91                                           |               |                                          |                       | Acreage      | 153 |
| Farmer<br>Address<br><br>Tel. No.                                                    | R. PHILLIPS<br>PENPEDWAS<br>EGLWYSWRW, CRYMYCH<br>CROSSWELL 249                             |               | Owner                                    |                       |              |     |
| Livestock Numbers                                                                    | Cows                                                                                        | 10            | Followers                                | 40                    | Beef Cattle  | 50  |
|                                                                                      | Pigs                                                                                        |               | Sheep                                    |                       | Poultry      |     |
|                                                                                      | Cubicles                                                                                    |               | Parlour                                  |                       | Covered Silo |     |
| Buildings<br>(tick box)                                                              | Cowshed                                                                                     |               | Loose Hsing                              |                       | Other        |     |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                      |               | Above Ground Store<br>With Reception Pit |                       |              |     |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                        |               | Weeping Wall Store<br>or Undergr'nd Tank |                       |              |     |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                        |               | Soakaway                                 |                       |              |     |
|                                                                                      | Ditch                                                                                       |               | Stream                                   |                       |              |     |
| Roof/Clean Water                                                                     | Separated                                                                                   |               | Discharged To                            |                       |              |     |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                    |               | Oil                                      | Sheep Dip<br>Location |              |     |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               |                                                                                             |               |                                          |                       |              |     |
| Date of Letter/s                                                                     | Follow Up Visit/s   Date-                                                                   |               |                                          |                       |              |     |
| Work Completed & Inspected                                                           | Date-                                                                                       | A.I.S. Scheme |                                          | Yes                   | No           |     |
| Pollution Risk                                                                       | High                                                                                        | Medium        | ✓                                        | Low                   |              |     |
| Priority                                                                             | High                                                                                        | Medium        | ✓                                        | Low                   |              |     |
| Comments                                                                             | OUT WINTERED CATTLE FEED AREA IN WOODLAND<br>CLEARANCE AREA ADJACENT TO NANT DUAD INSARTED, |               |                                          |                       |              |     |
| Signed                                                                               |                                                                                             |               |                                          | Date                  |              |     |

P.T.O.

(Please complete sketch plan of farm on back of form)





**FARM DATA SHEET**

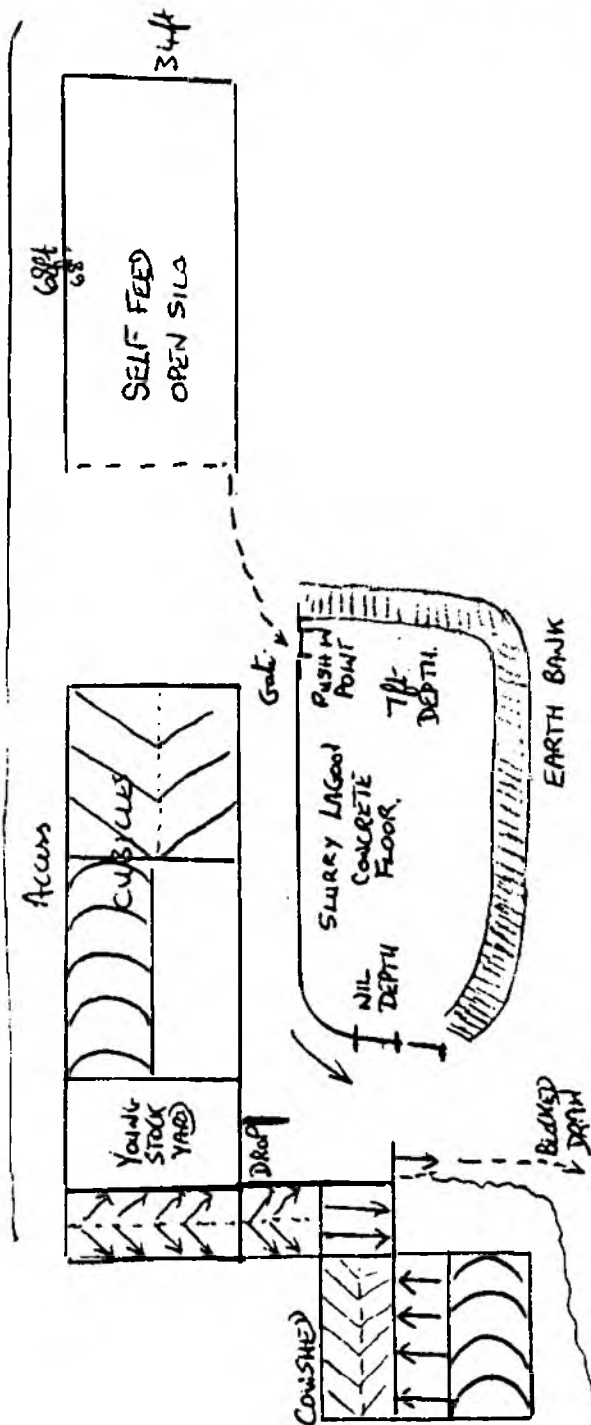
|                                                                                      |                                                                                                                                                                                                                                                                                                                                         |                                          |                                          |                                                |                                     |     |                                                   |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------------|-------------------------------------|-----|---------------------------------------------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | PARCAU<br>NANT COU<br>SN 287443<br>28.3.91                                                                                                                                                                                                                                                                                              |                                          |                                          |                                                | Acreage                             | 112 | 100 CLEAN                                         |
| Farmer<br>Address<br>Tel. No.                                                        | D.J. & M. DAVIES<br>PARCAU FARM<br>CWMCOU. N.C. EMLYN SA38 9PR<br>0239 710568                                                                                                                                                                                                                                                           |                                          |                                          |                                                | Owner                               | ✓   |                                                   |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                    | 40                                       | Followers                                | 40                                             | Beef Cattle                         | 20  | 100 STOCK                                         |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                    | —                                        | Sheep                                    | —                                              | Poultry                             | —   |                                                   |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                | ✓ For 55/60                              | Parlour                                  | ✓                                              | Covered Silo<br>OPEN                | 1✓  | 500 tonne                                         |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                 | —                                        | Loose Hsing                              | —                                              | Other                               | —   |                                                   |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                  | ✓ CONCRETE<br>FLOOR<br>SLOANING<br>FLOOR | Above Ground Store<br>With Reception Pit |                                                | —                                   |     |                                                   |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                    | —                                        | Weeping Wall Store<br>or Undergr'nd Tank |                                                | —                                   |     |                                                   |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                    |                                          | Soakaway                                 |                                                |                                     |     |                                                   |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                   |                                          | Stream                                   |                                                |                                     |     |                                                   |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                               | NONE                                     |                                          | Discharged To                                  | ONTO CATTLE<br>YARDS AND ONTO FIELD |     |                                                   |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                |                                          | Oil                                      | TWO TANKS<br>ONE 500gall DIESEL<br>ONE 250gall | Sheep Dip<br>Location               | —   |                                                   |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. Empty slurry lagoon and prevent overflow<br>2. Separation of Roof Water/Surface Water above (rock water)/springs<br>3. Installation of Dirty Water Collection System below unit<br>4. Review of waste handling facilities/methods with Ag Consultant (Perry)<br>Dirty water tank/ additional lagoon.                                 |                                          |                                          |                                                |                                     |     | Steel plank...<br>lined tank<br>23ft x 13ft x 6ft |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                                                         |                                          | Follow Up Visit/s                        |                                                | Date-                               |     |                                                   |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                   |                                          |                                          | A.I.S. Scheme                                  | Yes                                 | No  |                                                   |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                    | ✓                                        | Medium                                   |                                                | Low                                 |     |                                                   |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                    | ✓                                        | Medium                                   |                                                | Low                                 |     |                                                   |
| Comments                                                                             | Pollution occurring during visit due to previous overflow<br>of lagoon, washing of yard water/parlour washings etc into<br>field below and its channelling diagonally across the<br>field to enter the stream above the bridge.<br>Collection of Parlour/Dairy and Yard Water required.<br>Sludge effluent enters lagoon when produced. |                                          |                                          |                                                |                                     |     |                                                   |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                         |                                          |                                          | Date                                           |                                     |     |                                                   |

P.T.O.

(Please complete sketch plan of farm on back of form)

J. M. L. L. L. L.

# ROCK FACE & HIGHER GROUND.



YARD WASHING PERSONS DAILY WASHINGS

NANT GWERNITRAD ONE FIELD BELOW.



**FARM DATA SHEET**

|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                       |               |                                            |          |  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------|---------------|--------------------------------------------|----------|--|
| Name of Farm                                                                      | PENBWLIAID                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                       |               | Acreage                                    | 160      |  |
| Catchment                                                                         | NANT COU                                                                                                                                                                                                                                                                                                                                                                                                                                              |             |                                       |               |                                            |          |  |
| Grid Ref.                                                                         | SN 294 447                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |                                       |               |                                            |          |  |
| Date of Visit                                                                     | 28.3.91                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |                                       |               |                                            |          |  |
| Farmer                                                                            | D.J. & J. DAVIES,                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |                                       |               | Owner                                      | ✓        |  |
| Address                                                                           | PENBWLIAID FARM,                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |                                       |               |                                            |          |  |
|                                                                                   | BRYNGWYN, NEWCASTLE EMLYN                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                       |               |                                            |          |  |
|                                                                                   | SA 38 9PJ                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                       |               |                                            |          |  |
| Tel. No.                                                                          | NEWCASTLE EMLYN T10427                                                                                                                                                                                                                                                                                                                                                                                                                                |             |                                       |               |                                            |          |  |
| Livestock Numbers                                                                 | Cows                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 32          | Followers                             | 2             | Beef Cattle                                | 100      |  |
|                                                                                   | Pigs                                                                                                                                                                                                                                                                                                                                                                                                                                                  | —           | Sheep                                 | 80            | Poultry                                    |          |  |
| Buildings (tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                                                                              | —           | Parlour                               | —             | Covered Silo                               | —        |  |
|                                                                                   | Cowshed                                                                                                                                                                                                                                                                                                                                                                                                                                               | ✓<br>BUCKET | Loose Hsing                           | ✓             | Other                                      | HAY BARN |  |
| Effluent Storage (use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked Lagoon                                                                                                                                                                                                                                                                                                                                                                                                                                   |             | Above Ground Store With Reception Pit |               |                                            |          |  |
|                                                                                   | Mass Concrete or Block Wall Store                                                                                                                                                                                                                                                                                                                                                                                                                     |             | Weeping Wall Store or Undergr'nd Tank |               |                                            |          |  |
| Effluent Disposal (use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             | Soakaway                              |               |                                            |          |  |
|                                                                                   | Ditch                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             | Stream                                |               |                                            |          |  |
| Roof/Clean Water                                                                  | Separated                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |                                       | Discharged To | SURFACE WATER DITCH FROM PENYBRYN BEULAIH. |          |  |
| Chemicals                                                                         | Herbicides                                                                                                                                                                                                                                                                                                                                                                                                                                            |             | Oil                                   |               | Sheep Dip Location                         |          |  |
| Remedial Works Agreed or Improvements Planned                                     | COWSHED WASHINGS + DAIRY WASHINGS PRESENTLY DISCHARGING TO SPRING/SURFACE WATER DRAINAGE TO BE INTERCEPTED & ROUTED TO AN IMPERVIOUS COLLECTION SYSTEM - FOR REGULAR DISPOSAL TO LAND<br>(VERY LITTLE DIRTY YARD AREAS - ONLY IN FRONT OF COWSHED DURING CATTLE MOVEMENT TIMES)                                                                                                                                                                       |             |                                       |               |                                            |          |  |
| Date of Letter/s                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             | Follow Up Visit/s                     | Date-         |                                            |          |  |
| Work Completed & Inspected                                                        | Date-                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             | A.I.S. Scheme                         | Yes           | No                                         |          |  |
| Pollution Risk                                                                    | High                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             | Medium                                |               | Low                                        | ✓        |  |
| Priority                                                                          | High                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             | Medium                                | ✓             | Low                                        |          |  |
| Comments                                                                          | DUNGSTEPS USED FOR TEMPORARY STORAGE IN FIELD AWAY FROM WATERCOURSES - LEEKHATE DISPERSED OVER FIELD (18" CONCRETE PIPE FOR SURFACE WATER DRAINAGE FROM BEULAIH VILLAGE LYING ABOVE FARM).<br>AN INTERESTING FARM EMPLOYING TRADITIONAL (NOW OUT-MODED) FARMING/LIVESTOCK SYSTEMS VIZ COWSHED/MILKING BUCKETS) ALSO BEEF CATTLE INHOUSED IN LOOSE HOUSING (DEPLITTER) SYSTEM DAIRY COWS WITH STRAW BEDDING.<br>* LONG ROUGH TERRAIN LANE - 1/2 MILE * |             |                                       |               |                                            |          |  |
| Signed                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |             |                                       | Date          |                                            |          |  |

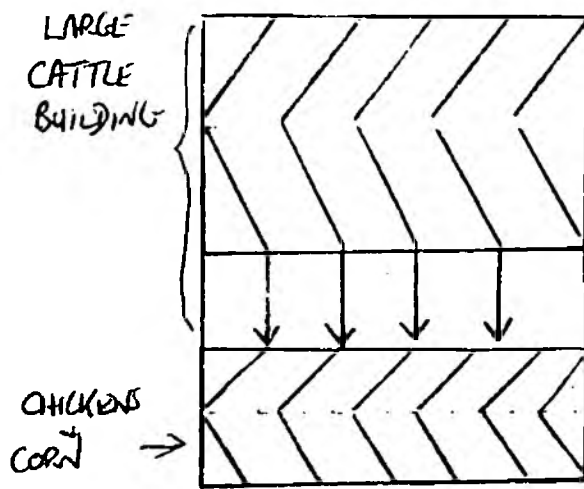
SILAGE MADE ON ANOTHER FARM PENYBRYN.

(LHS & LANE)

P.T.O.

(Please complete sketch plan of farm on back of form)

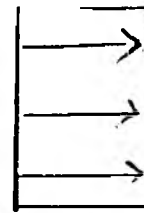
Cost of 18" concrete tubes?



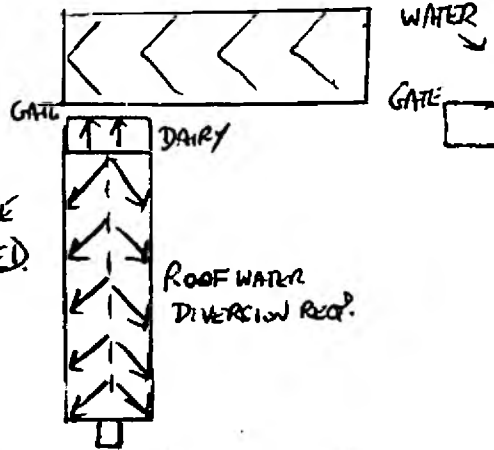
ACCESS  
LANE ACCESS  
LANE

SURFACE WATER  
FROM BELOW  
(SLOPE VALLEY  
BELOW).

\* SEALED  
ROOF  
WATER?  
DOWN PIPE



MACHINERY



\* 20 TIE  
COWSHED

ROOF WATER  
DIVERSION REQ.

SURFACE WATER  
FROM ABOVE FARM



HOUSE

COWSHED  
WASHING



IMPERVIOUS  
EMBANKMENT

FIELD

**FARM DATA SHEET**

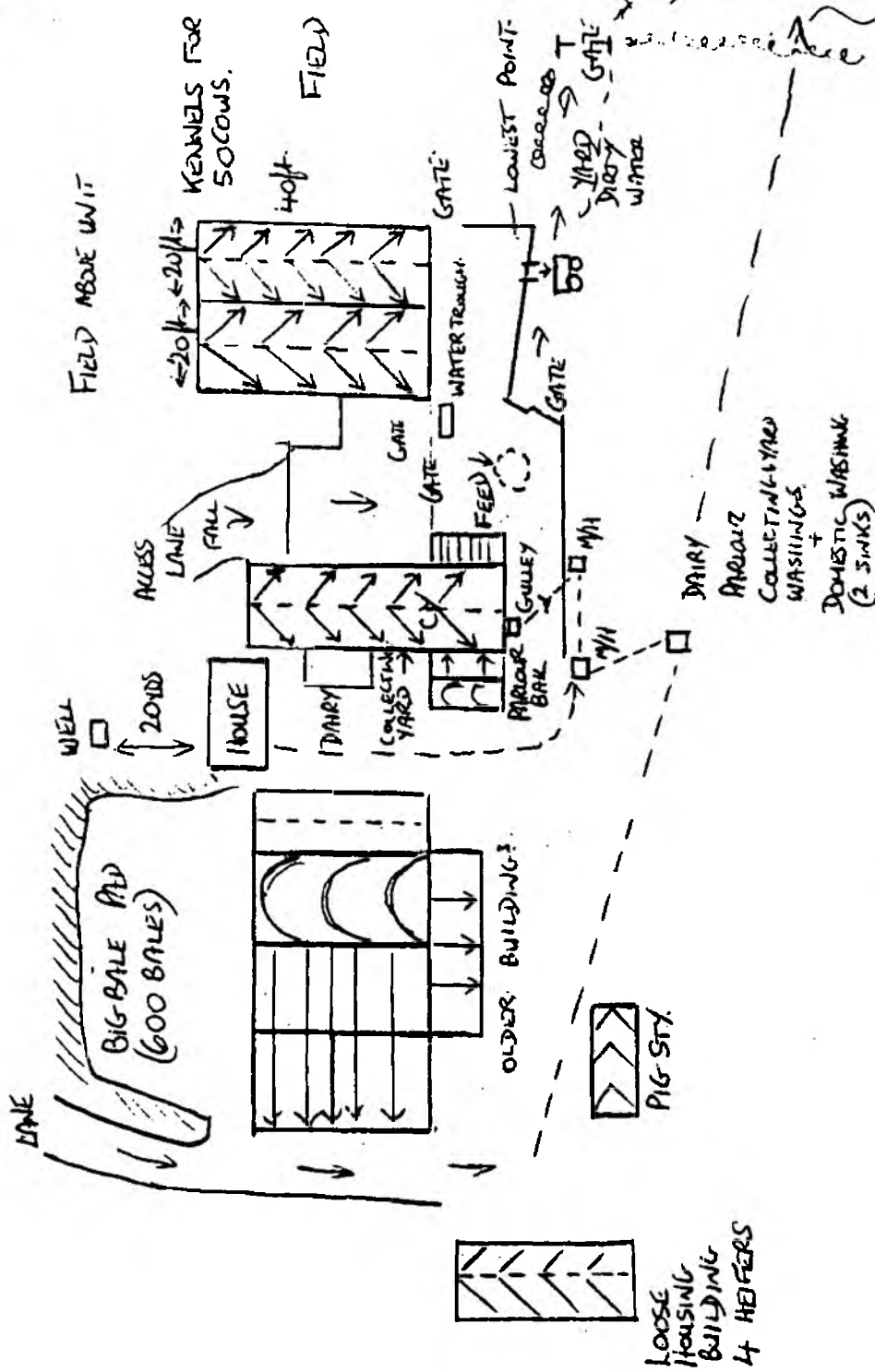
|                                                                                      |                                                                                                                                                                                                                                                                                                                                              |                |                   |                    |                                          |             |  |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------|--------------------|------------------------------------------|-------------|--|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | FRONGLYD<br>NANT COU<br>SN 283486<br>28.3.91                                                                                                                                                                                                                                                                                                 |                |                   |                    | Acreage                                  | 90          |  |
| Farmer<br>Address                                                                    | O. J. JAMES<br>FRONGLYD FARM<br>CWM COU, NEWCASTLE EMLYN, SA32 9PA                                                                                                                                                                                                                                                                           |                |                   |                    | Owner                                    | O. J. JAMES |  |
| Tel. No.                                                                             | NEWCASTLE EMLYN 710469                                                                                                                                                                                                                                                                                                                       |                |                   |                    |                                          |             |  |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                         | 30             | Followers         | 36                 | Beef Cattle                              | 9           |  |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                         | 2              | Sheep             | —                  | Poultry                                  | —           |  |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                     | 2              | Parlour           | ✓                  | Covered Silo                             | —           |  |
|                                                                                      | KENNELS                                                                                                                                                                                                                                                                                                                                      |                |                   |                    | BIG BALES                                |             |  |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                      | ✓              | Loose Hsing       | ✓                  | Other                                    |             |  |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                       |                |                   |                    | Above Ground Store<br>With Reception Pit |             |  |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                         |                |                   |                    | Weeping Wall Store<br>or Undergr'nd Tank |             |  |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                         |                | A.                |                    | Soakaway                                 |             |  |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                        |                | C, D              |                    | Stream                                   |             |  |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                    | NOT SEPARATED  |                   | Discharged To      |                                          | ONTO YARDS  |  |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                     | NONE<br>STORED | Oil               | 250 GALL<br>DIESEL | Sheep Dip<br>Location                    |             |  |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. Separation of surface water by piping & diversion of lane water etc.<br>2. Separation of roof water<br>3. Collection Tank for Parlour/Dairy washings for transfer to prepared slurry store.<br>4. Review of waste handling system required - approaching<br>5. ADAS for further professional advice.<br>D.                                |                |                   |                    |                                          |             |  |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                                                              |                | Follow Up Visit/s |                    | Date-                                    |             |  |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                        |                | A.I.S. Scheme     |                    | Yes                                      | No          |  |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                         |                | Medium            | ✓                  | Low                                      |             |  |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                         | ✓              | Medium            | .                  | Low                                      |             |  |
| Comments                                                                             | NO SLURRY STORAGE FACILITIES - DAILY LAND DISPOSAL.<br>NO CLAMP SILAGE MADE / BIG BALE PTD BEHIND HOUSE<br>(LOW POLLUTION RISK HERE)<br>REVIEW OF SLURRY STORAGE FACILITIES DISCUSSED<br>AND INTERCEPTION OF PARLOUR/DAIRY WASHINGS ALONG WITH<br>HOUSE WASH WATER -- POSSIBLE USE OF SOAKAWAY (SOIL POROSITY<br>AND SEPARATE DRAINAGE) TEST |                |                   |                    |                                          |             |  |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                              |                |                   | Date               |                                          |             |  |

NO SILO \*

P.T.O.

(Please complete sketch plan of farm on back of form)





↑ 2 FIELDS ↓

20

LINE

Gad

WOODLAND

Box

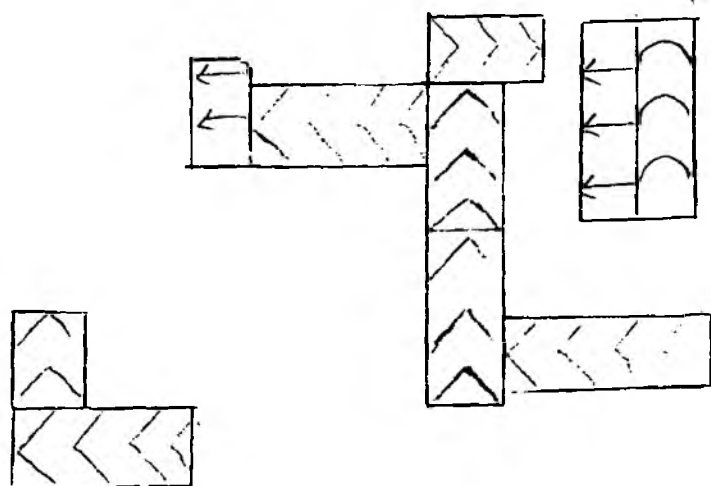
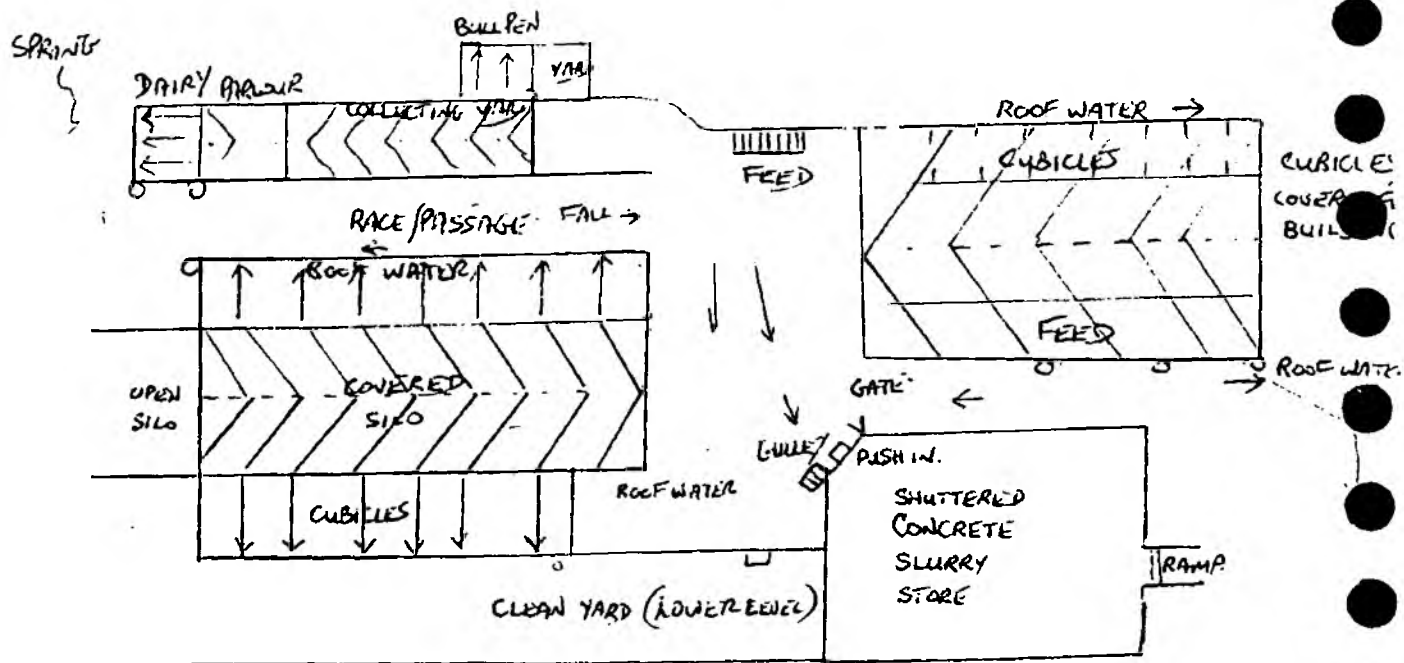
**FARM DATA SHEET**

|                                                                                      |                                                                                                                                                                                                                                             |               |                                          |                     |                       |      |                    |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|---------------------|-----------------------|------|--------------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | BLAENGWROG<br>COU (TRIB OF TEIFI)<br>SN 278443<br>28.3.91                                                                                                                                                                                   |               |                                          |                     | Acreage               | 95   | + OTHER<br>GRAZING |
| Farmer<br>Address<br><br>Tel. No.                                                    | J. L. T. DAVIES<br>BLAENGWROG<br>BEULAH, NEWCASTLE EMLYN, SA38 9QS<br>0239 710473                                                                                                                                                           |               |                                          |                     | Owner                 | SAME |                    |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                        | 50            | Followers                                | 50                  | Beef Cattle           | -    |                    |
|                                                                                      | Pigs                                                                                                                                                                                                                                        | -             | Sheep                                    | 28                  | Poultry               | -    |                    |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                    | ✓             | Parlour                                  | ✓                   | Covered Silo          | ✓    |                    |
|                                                                                      | Cowshed                                                                                                                                                                                                                                     | -             | Loose Hsing                              | ✓                   | Other                 | -    |                    |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                      | -             | Above Ground Store<br>With Reception Pit | -                   |                       |      |                    |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                        | ✓             | Weeping Wall Store<br>or Undergr'nd Tank | -                   |                       |      |                    |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                        | A, B, C, D    | Soakaway                                 | -                   |                       |      |                    |
|                                                                                      | Ditch                                                                                                                                                                                                                                       | -             | Stream                                   | -                   |                       |      |                    |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                   | ✓             | Discharged To                            | DITCH BELOW<br>FARM |                       |      |                    |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                    |               | Oil                                      | 300 GALLON          | Sheep Dip<br>Location |      |                    |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | NO MAJOR REMEDIAL WORKS DISCUSSED ONLY MINOR<br>ROOF WATER DIVERSION AT PARLOUR/DAIRY PASSAGE AND<br>SPRING ENTERING ONTO CLEAN YARD AREA - THIS WORK HAS<br>BEEN SCHEDULED                                                                 |               |                                          |                     |                       |      |                    |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                             |               | Follow Up Visit/s                        | Date-               |                       |      |                    |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                       | A.I.S. Scheme |                                          | Yes                 | No                    |      |                    |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                        |               | Medium                                   |                     | Low                   |      |                    |
| Priority                                                                             | High                                                                                                                                                                                                                                        |               | Medium                                   |                     | Low                   |      |                    |
| Comments                                                                             | <p>A WELL MANAGED UNIT WITH PROVISION FOR<br/>COLLECTION OF ALL WASTES PRODUCED.</p> <p>NO POLLUTION EVIDENCE /PRESENT OR PAST IN<br/>WATERCOURSES BELOW UNIT.</p> <p>(SLURRY STORE CONTRACTOR - WYN DAVIES, FFOSHELYG,<br/>TALGARREG.)</p> |               |                                          |                     |                       |      |                    |
| Signed                                                                               |                                                                                                                                                                                                                                             |               |                                          | Date                |                       |      |                    |

P.T.O.

(Please complete sketch plan of farm on back of form)

FIELD



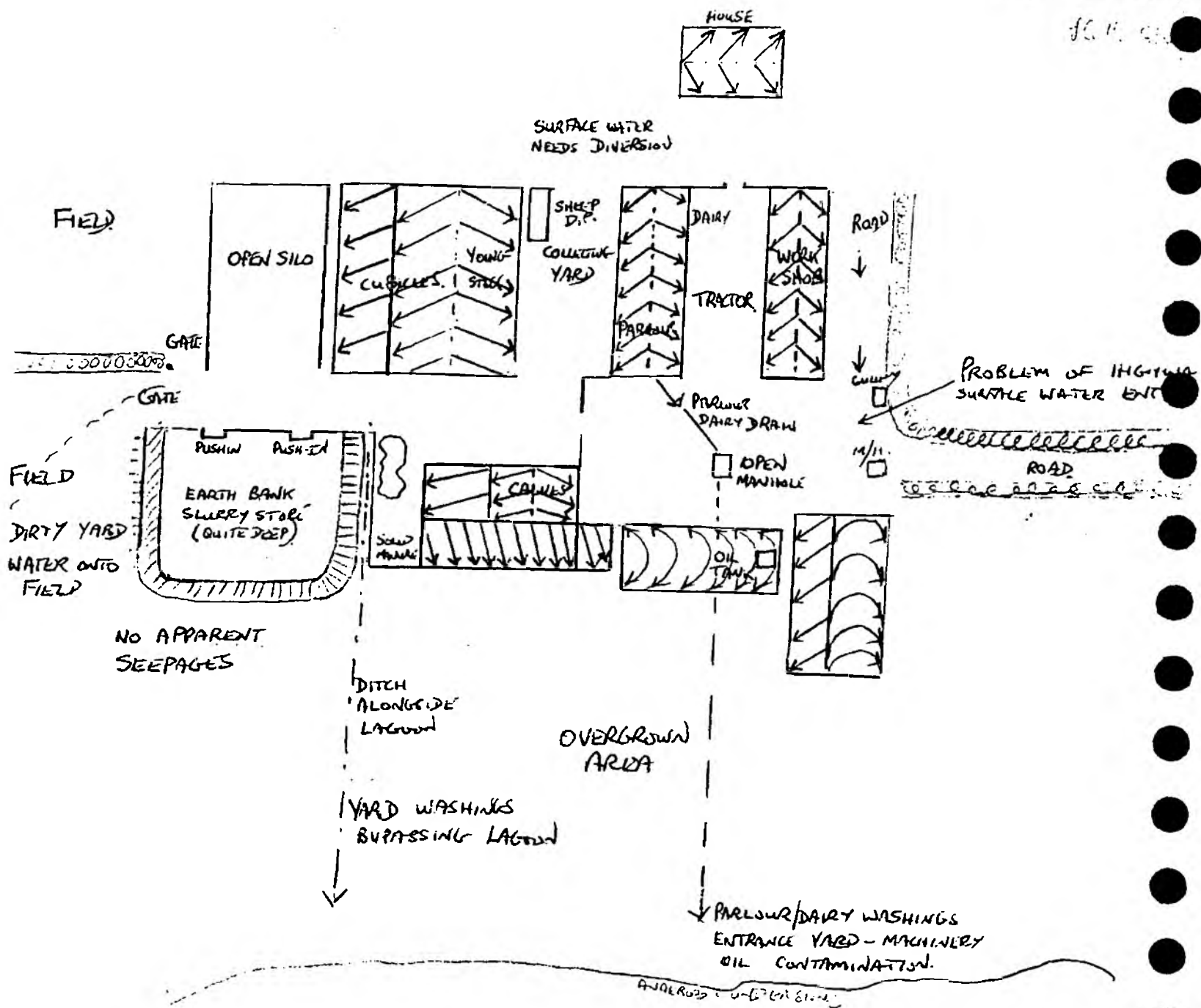
OLD DAIRY SET-UP

ROOF WATER TO DITCH IN FIELD

|                                                                                      |                                                                                                                                                                      |    |                                          |       |                       |            |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------|-------|-----------------------|------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | PEN BONT PREN<br>PIBWR<br>SN 450189<br>15.4.91, 29.4.91                                                                                                              |    |                                          |       | Acreage               | 68         |
| Farmer<br>Address<br>Tel. No.                                                        | K. S. EVANS<br>TIRIARLL<br>BOLAHUAL ROAD, CWMFFRWYD, CARMARTHEN, SA 32 8EW<br>0267 230701                                                                            |    |                                          |       | Owner                 | ✓          |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                 | 50 | Followers                                | 30    | Beef Cattle           | —          |
|                                                                                      | Pigs                                                                                                                                                                 | —  | Sheep                                    | 146   | Poultry               | —          |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                             | ✓  | Parlour                                  | ✓     | Covered Silo          | —          |
|                                                                                      | Cowshed                                                                                                                                                              |    | Loose Hsing                              |       | OPEN                  | —          |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                               |    | Above Ground Store<br>With Reception Pit |       |                       |            |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                 |    | Weeping Wall Store<br>or Undergr'nd Tank |       |                       |            |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                 |    | Soakaway                                 |       |                       |            |
|                                                                                      | Ditch                                                                                                                                                                |    | Stream                                   |       |                       |            |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                            |    | Discharged To                            |       |                       |            |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                             |    | Oil                                      | 1000l | Sheep Dip<br>Location | ON<br>YARD |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. ROOF WATER DIVERSION.<br>2. SURFACE WATER SEPARATION.<br>3. OIL CONTAMINATION ON YARD - PREVENTION<br>4. HIGHWAY SURFACE WATER SHOULD BE DIVERTED<br>5. DIVERSION |    |                                          |       |                       |            |
| Date of Letter/s                                                                     |                                                                                                                                                                      |    | Follow Up Visit/s                        |       | Date-                 |            |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                |    | A.I.S. Scheme                            |       | Yes                   | No         |
| Pollution Risk                                                                       | High                                                                                                                                                                 |    | Medium                                   |       | Low                   |            |
| Priority                                                                             | High                                                                                                                                                                 |    | Medium                                   |       | Low                   |            |
| Comments                                                                             | SILAGE EFFLUENT TO SLURRY STORE.<br>SLURRY STORE - NO APPARENT SEEPAGES.<br>DAIRY DRAIN THROUGH YARD.                                                                |    |                                          |       |                       |            |
| Signed                                                                               |                                                                                                                                                                      |    | Date                                     |       |                       |            |

STANDING ABOVE  
PIT

# PENBONTREN, NANTYCAWS,



1. ROOF WATER INSTALLATION ON BUILDINGS ESP. CUBICLE BUILDINGS
2. DIVERSION OF SURFACE WATER ABOVE COLLECTING YARD AREA
3. CLOSURE OF MANHOLE AT LOWER END OF ENTRANCE YARD
4. DIVERT PARLOUR/DAIRY WASHINGS TO LAGOON
5. PREVENT ANY OIL SPILLAGES ENTERING MANHOLE TO STREAM
6. CONSULT HIGHWAY AUTHORITY RE DIVERSION OF SURFACE WATER.
7. BLOCK HOLES IN CONCRETE BLOCK WALL TO DITCH, TO ALLOW COLLECTION OF 'DIRTY' YARD WATER IN LAGOON.
8. ARRANGEMENTS FOR COLLECTION OF ANY OIL SPILLAGES AND ENSURING NO LOSSES OF OIL FROM 1000L TANK IN BARN CAN GET TO OPEN DRAIN.



# FARM DATA SHEET

PREVIOUS OWNERS - OSTEN DOKI  
BARJON (SOLD MILK QUOTA)

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                                          |                    |                                   |               |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|--------------------|-----------------------------------|---------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | PARCYMARCHOG<br>NANT PIBWR<br>SN 481189<br>15.5.91 & 2.12.91                                                                                                                                                                                                                                                                                                                                                                                 |               |                                          | Acreage            | 134                               |               |
| Farmer<br>Address<br>Tel. No.                                                        | DAVID HENRY THOMAS<br>PARCYMARCHOG<br>CAPEL DEWI, CARMARTHEN, SA32 4AH<br>0267 275300                                                                                                                                                                                                                                                                                                                                                        |               | Owner                                    | ✓                  |                                   |               |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                                                                                         | —             | Followers                                | —                  | Beef Cattle                       | 14<br>4       |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                                                                                         | —             | Sheep                                    | 350<br>EWS         | Poultry                           |               |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                                                                     | NOT<br>USED   | Parlour                                  | NOT<br>USED        | Covered Silo                      | NOT IN<br>USE |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                                                                                      |               | Loose Hsing                              |                    | Other                             |               |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                                                                                       | ✓             | Above Ground Store<br>With Reception Pit |                    |                                   |               |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                                                                                                         |               | Weeping Wall Store<br>or Undergr'nd Tank |                    |                                   |               |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                                                                         |               | Soakaway                                 |                    |                                   |               |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                                                                                        |               | Stream                                   |                    |                                   |               |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                                                                                    |               | Discharged To                            |                    |                                   |               |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                                                                                                     |               | Oil                                      | 200 GALL<br>DIESEL | Sheep Dip<br>Location<br>SN481189 |               |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. RAIN WATER DIVERSION FROM SLURRY PIT<br>2. DISPOSAL OF SHEEP DIP IN ACCORDANCE WITH C.O.G.A.P.                                                                                                                                                                                                                                                                                                                                            |               |                                          |                    |                                   |               |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                              |               | Follow Up Visit/s                        | Date-              |                                   |               |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                                                                                        | A.I.S. Scheme |                                          | Yes                | No                                |               |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                                                                                         | Medium        | Low                                      | ✓                  |                                   |               |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                                                                                         | Medium        | Low                                      | ✓                  |                                   |               |
| Comments                                                                             | NO APPARENT POLLUTION PROBLEMS WITH EXISTING<br>FARMING PRACTICE - PREDOMINANTLY SHEEP.<br>FORMERLY A DAIRY FARM UNTIL SALE OF QUOTA BY PREVIOUS<br>OWNER.<br>INSPECTION OF DRAINAGE/LAYOUT ETC INDICATED POLLUTION<br>PROBLEMS IN PAST VIZ<br>(1) DRAINAGE OF YARD WATER (INCLUDING SILAGE EFFLUENT) BYPASSING<br>LAGOON.<br>(2) PARLOUR AND DAIRY WASHINGS TO DITCH BYPASSING LAGOON<br>(3) EARTH BANK LAGOON EMBANKMENT ADJOINING STREAM. |               |                                          |                    |                                   |               |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                              |               | Date                                     |                    |                                   |               |

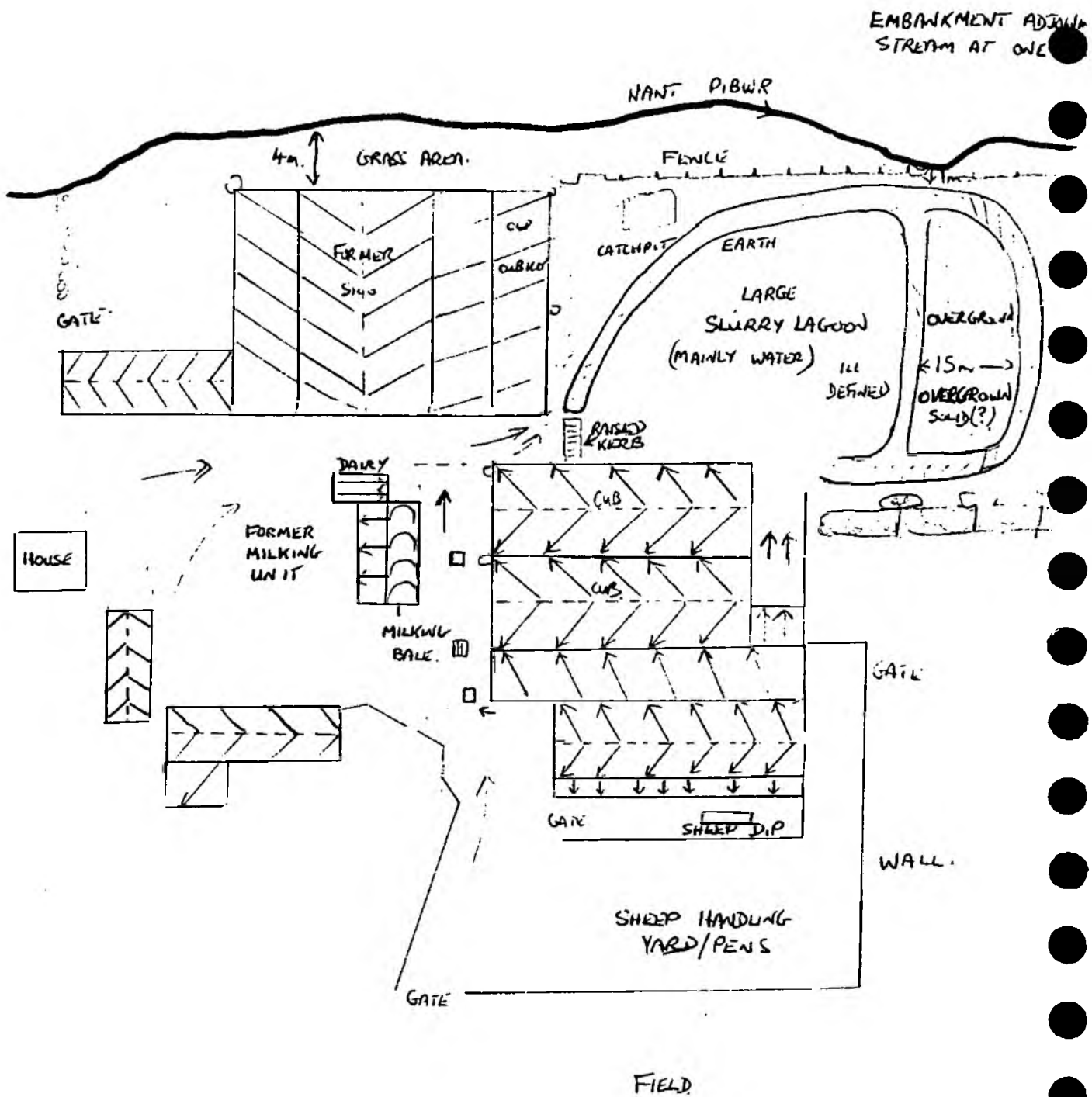
15.5.91  
2.12.91

BIG BALE  
SILAGE

ABOVE BUILDINGS  
DISPOSAL BY PETEX  
PUMP 0.50 LAND

P.T.O.

(Please complete sketch plan of farm on back of form)



Separate clean water flow

Petrol driven pump for  
application of shrimp dip to

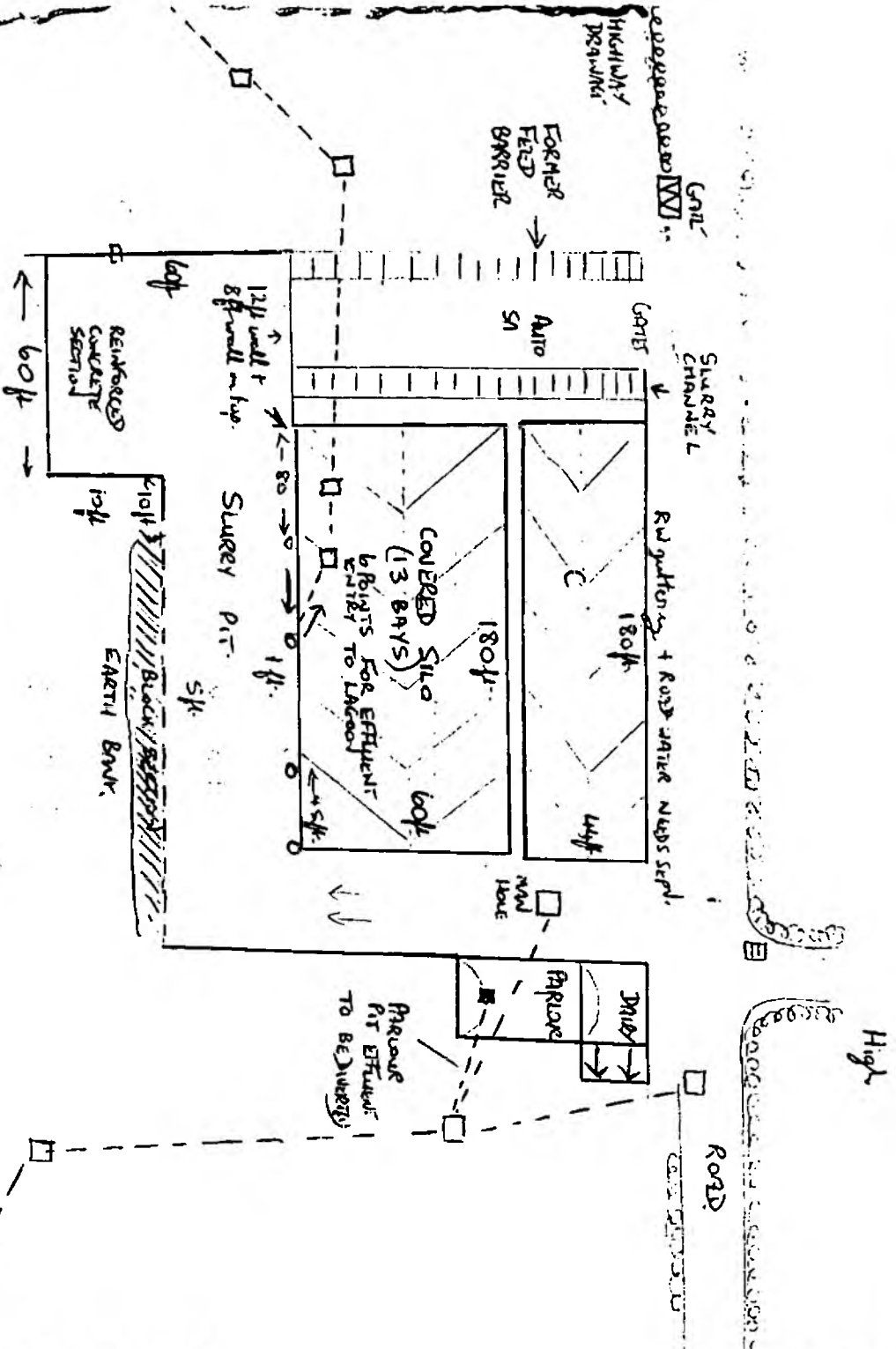
FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                          |               |                       |     |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------|---------------|-----------------------|-----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | CAPEL<br>RHYDW<br>SN 428149<br>26.3.91                                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                          |               | Acreage               | 250 |
| Farmer<br>Address                                                                    | C.O. EVANS<br>CAPEL<br>BANCYCAEL, CARMARTHEN, SA32 8EB                                                                                                                                                                                                                                                                                                                                                                                     |                               |                                          | Owner         | SAME                  |     |
| Tel. No.                                                                             | 0267 237280                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                          |               |                       |     |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                                                                                       | 200                           | Followers                                | 80            | Beef Cattle           | -   |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                                                                                       | -                             | Sheep                                    | 150<br>TACK   | Poultry               | -   |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                                                                   | ✓                             | Parlour                                  | ✓             | Covered Silo          | ✓   |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                                                                                    | -                             | Loose Hsing<br>CUBICLE                   | -             | Other                 |     |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                                                                                     | ✓                             | Above Ground Store<br>With Reception Pit |               | -                     |     |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                                                                                                       | ✓                             | Weeping Wall Store<br>or Undergr'nd Tank |               | -                     |     |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                                                                       | A,B,C,D                       |                                          | Soakaway      | C<br>DAIRY            |     |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |                                          | Stream        |                       |     |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                                                                                  | ✓ BUT DAMAGED<br>NOT COMPLETE |                                          | Discharged To | DITCH.                |     |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                                                                                                   | NONE<br>STORED                | Oil                                      | 600<br>GALL   | Sheep Dip<br>Location |     |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1 PARLOUR PIT WASHINGS TO BE INTERCEPTED FROM ROADWAY SURFACE<br>WATER DRAIN AND DIVERTED TO A FIELD SOAKAWAY. (20GALL/MILKING)<br>2. DRAIN ON COLLECTING YARD TO BE SEALED/PATE. *<br>3. DRAINS ON ROAD INADEQUATE AND NEED RE SURVEYING.<br>4. SEALING OF FORMER PROPOSED SLURGE RECESS - WOODEN BOARDED STREET.<br>5. SEALING OF 2 MANHOLES IN SILC                                                                                     |                               |                                          |               |                       |     |
| Date of Letter/s                                                                     | Follow Up Visit/s   Date-                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                          |               |                       |     |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                                                                                      | A.I.S. Scheme                 |                                          | Yes           | No                    |     |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                                                                                       | ✓                             | Medium                                   |               | Low                   |     |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                                                                                       | ✓                             | Medium                                   |               | Low                   |     |
| Comments                                                                             | SLURRY STORE CONCRETE STRUCTURE (1974) - CAPACITY 1 MILL GALLONS<br>AUTUMN SPREADING OF SOLID MANURE - (1000) ALL LAND<br>LIQUID APPLICATION TO LAND SOUTH FACING.<br>YARD AREA COMPACT FOR HERD SIZE - LARGE LAGOON AREA<br>HIGHWAY DRAINAGE / ROOF WATER DRAINAGE NEEDS FURTHER ATTENTION<br>SILO INSPECTION / MANHOLE SEALING<br>MOST PARLOUR WASHINGS USED TO WASH DAIRY<br>ONLY ONE EFFLUENT CG TO SURFACE WATER DRAIN - PARLOUR P.T. |                               |                                          |               |                       |     |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                          | Date          |                       |     |

P.T.O.

(Please complete sketch plan of farm on back of form)

# CAROL FARM, LANGENDIERNE



EVIDENCE OF SEWAGE TANKS  
IN BRICK WATER DRAINAGE

1st FIELD

## REMEDIAL WORKS - RECOMMENDATIONS

1. Interception of Road pit drain from Highway Surface water drain for discharge at a public sewerage. approx 50 gallons/day
2. Reinforcement of Road water in lower side of silo a existing lagging
3. Sealing of 2 Road modules in silo
4. Sealing of square drain runs on east slurry wall.
5. Diversion of road water on top side of vehicle a surface water outside unit i.e highway
6. Sealing of Collecting Pond Man hole.

2nd FIELD

Hedge

SN

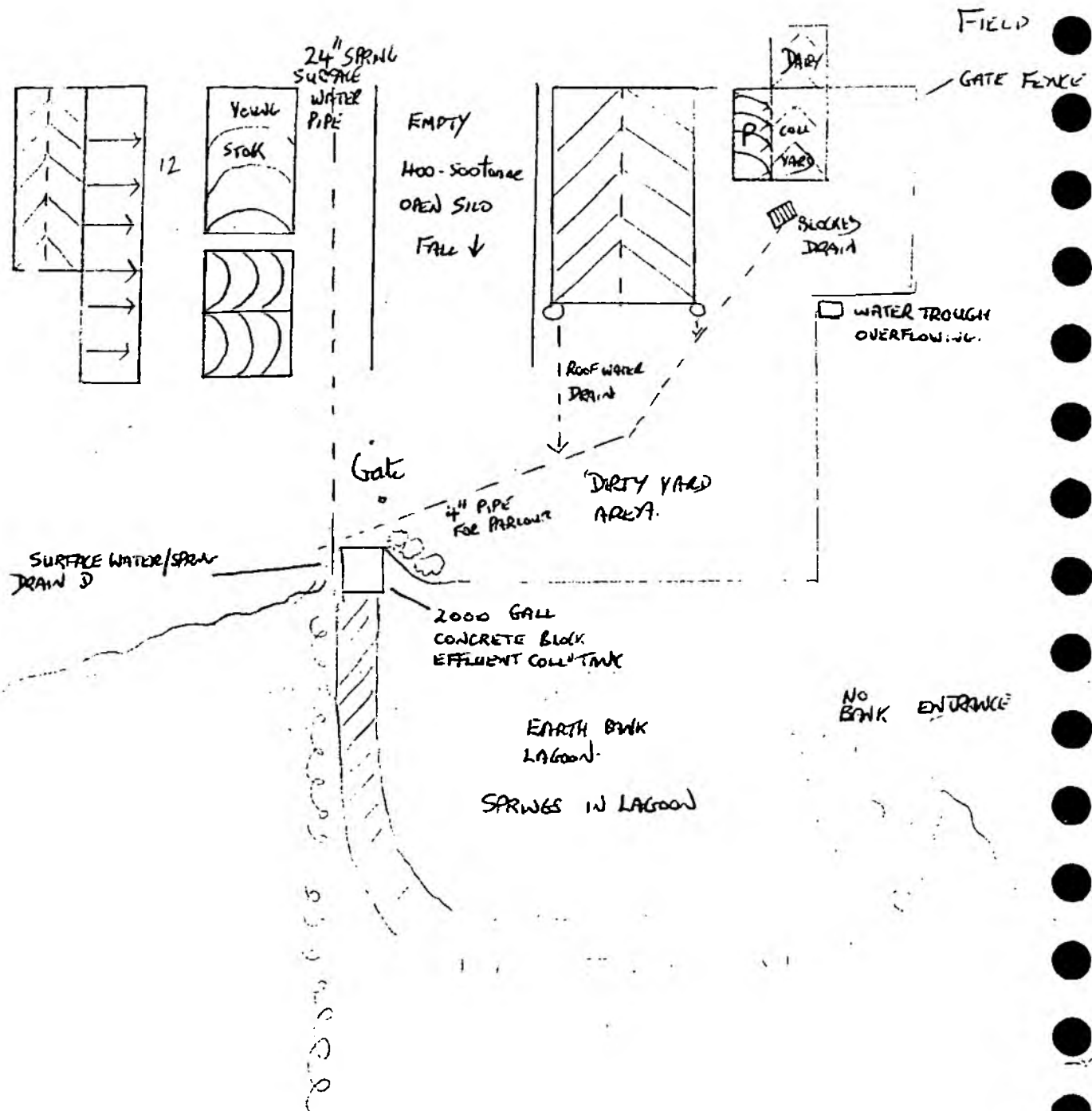
**FARM DATA SHEET**

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                    |                            |                                               |                       |                                |    |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------|-----------------------|--------------------------------|----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | ISCWM<br>RHYDW<br>SN431145<br>23.4.91                                                                                                                                                                                                                                                                                                                                              |                            |                                               |                       | Acreage                        | 71 |
| Farmer<br>Address                                                                    | JOHN E. EVANS<br>ISCWM FARM<br>BANCYCAPEL                                                                                                                                                                                                                                                                                                                                          |                            |                                               |                       | Owner                          | ✓  |
| Tel. No.                                                                             | 0267 234960                                                                                                                                                                                                                                                                                                                                                                        |                            |                                               |                       |                                |    |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                               | 60                         | Followers                                     | 30                    | Beef Cattle                    | —  |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                               | —                          | Sheep                                         | 90                    | Poultry                        | —  |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                           | ✓                          | Parlour                                       | ✓                     | Covered Silo<br>OPEN/SELF FEED | —  |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                            | —                          | Loose Hsing                                   | ✓                     | Other                          | —  |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                             | ✓                          | Above Ground Store<br>With Reception Pit      | —                     |                                |    |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                                               | —                          | Weeping Wall Store<br>or Undergr'nd Tank      | ✓<br>EFFLUENT TANK    |                                |    |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                               | A                          | Soakaway                                      | —                     |                                |    |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                              | —                          | Stream                                        | —                     |                                |    |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                          | —                          | Discharged To                                 | —                     |                                |    |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                                           | ONLY<br>LITTLE USED<br>Oil | TWO<br>500 GALL TANKS<br>DIESEL +<br>MOLASSES | Sheep Dip<br>Location | AT LAM<br>FARM<br>IDOLE        |    |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | 1. Investigate all possible measures of diversion of field surface water (Also repair of overflowing water trough)                                                                                                                                                                                                                                                                 |                            |                                               |                       |                                |    |
| Date of Letter/s                                                                     | Follow Up Visit/s   Date-                                                                                                                                                                                                                                                                                                                                                          |                            |                                               |                       |                                |    |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                              | A.I.S. Scheme              |                                               | Yes                   | No                             |    |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                               | ✓                          | Medium                                        | —                     | Low                            | —  |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                               | ✓                          | Medium                                        | —                     | Low                            | —  |
| Comments                                                                             | <p>Everything planned by ADAS during development/expansion 68/69<br/>Yard water missing lagoon.<br/>Sludge effluent will flow over yard to concrete block cell tank.<br/>of suspect condition adjoining outfall from 24" surface water<br/>pipe (HIGH RISK)<br/>Evidence of lagoon overflowing - due to both clean water<br/>ingress from field and also spring water ingress.</p> |                            |                                               |                       |                                |    |
| Signed                                                                               | —                                                                                                                                                                                                                                                                                                                                                                                  |                            |                                               | Date                  | —                              |    |

+16+19 ACRES  
CJ OTHER FARM

P.T.O.

(Please complete sketch plan of farm on back of form)



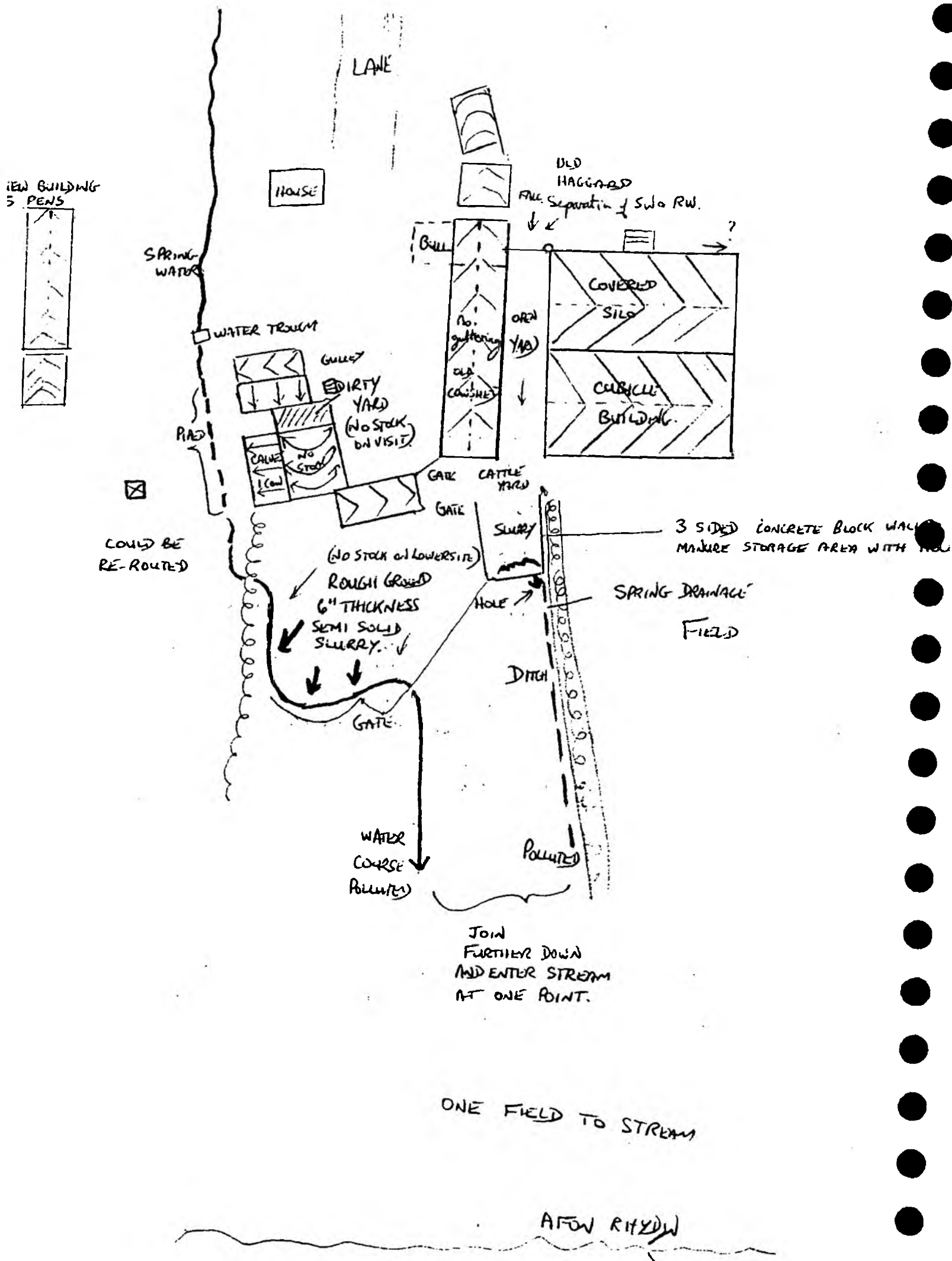
TRIBUTARY OF RHYDW 2 FIELDS FROM FARM.



## FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                          |                                |                   |                                          |                       |                |  |                                |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------|------------------------------------------|-----------------------|----------------|--|--------------------------------|
| Name of Farm                                                                         | FFOSWALTER                                                                                                                                                                                                                                                                                                                                                                                               |                                |                   |                                          | Acreage               | 128            |  | BLAEN RHYDW<br>+<br>FFOSWALTER |
| Catchment                                                                            | RHYDW.                                                                                                                                                                                                                                                                                                                                                                                                   |                                |                   |                                          |                       |                |  |                                |
| Grid Ref.                                                                            | SN 438151                                                                                                                                                                                                                                                                                                                                                                                                |                                |                   |                                          |                       |                |  |                                |
| Date of Visit                                                                        | 27.3.91                                                                                                                                                                                                                                                                                                                                                                                                  |                                |                   |                                          |                       |                |  |                                |
| Farmer                                                                               | DAVID W. B. JONES,                                                                                                                                                                                                                                                                                                                                                                                       |                                |                   |                                          | Owner                 | D. W. B. JONES |  |                                |
| Address                                                                              | GOLWGY BRYN,<br>LLANGENDEIRNE,                                                                                                                                                                                                                                                                                                                                                                           |                                |                   |                                          |                       |                |  |                                |
| Tel. No.                                                                             | 0267 237626                                                                                                                                                                                                                                                                                                                                                                                              |                                |                   |                                          |                       |                |  |                                |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                                                     | 40                             | Followers         | 80                                       | Beef Cattle           | } 120 SUCKLERS |  |                                |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                                                     | —                              | Sheep             | —                                        | Poultry               |                |  |                                |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                                 | ✓                              | Parlour           | —                                        | Covered Silo          | ✓              |  |                                |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                                                  | ✓ NO COWS                      | Loose Hsing       | ✓                                        | Other                 |                |  |                                |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                                                   | —                              |                   | Above Ground Store<br>With Reception Pit | —                     |                |  |                                |
|                                                                                      | <del>Mass Concrete or</del><br>Block Wall Store                                                                                                                                                                                                                                                                                                                                                          | SMALL DUNGSTED<br>WITH<br>HOLE |                   | Weeping Wall Store<br>or Undergr'nd Tank | —                     |                |  |                                |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                                     | A                              |                   | Soakaway                                 | —                     |                |  |                                |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                                                    | A, B                           |                   | Stream                                   | A, B                  |                |  |                                |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                                                | NO                             |                   | Discharged To                            | YARD                  |                |  |                                |
| Chemicals                                                                            | Herbicides                                                                                                                                                                                                                                                                                                                                                                                               | —                              | Oil               | 250 GALL<br>DIESEL                       | Sheep Dip<br>Location | —              |  |                                |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | (1) COLLECTION OF SILAGE EFFLUENT<br>(2) DIVERSION OF SURFACE WATER FROM HAGUARD AND ROOF<br>WATER<br>(3) COLLECTION/STORE FOR SLURRY<br>(4) DIVERSION OF WATERCOURSE.                                                                                                                                                                                                                                   |                                |                   |                                          |                       |                |  |                                |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                          |                                | Follow Up Visit/s | Date-                                    |                       |                |  |                                |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                                                    |                                |                   | A.I.S. Scheme                            | Yes                   | No             |  |                                |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                                                     | ✓                              | Medium            |                                          |                       | Low            |  |                                |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                                                     | ✓                              | Medium            |                                          |                       | Low            |  |                                |
| Comments                                                                             | POLLUTION OCCURRING FROM 2 POINTS DURING VISIT ON DRY DAY<br>(i) SMALL DUNGSTED/GAP - TO DITCH (ii) OPEN ROUGH GROUND AREA<br>ADJACENT TO STREAM<br>NO PROPOSAL FOR SLURRY STORAGE FACILITIES IN HAND.<br>THE PRESENT AND POTENTIAL PROBLEMS (SILAGE EFFLUENT) DISCUSSED<br>WITH MR JONES, WHO INDICATED THAT HE WOULD GIVE UP STOCK<br>REARING AT FFOSWALTER.<br>NO PROPER LIQUOR COLLECTION FACILITIES |                                |                   |                                          |                       |                |  |                                |
| Signed                                                                               | g. Jones                                                                                                                                                                                                                                                                                                                                                                                                 |                                |                   | Date                                     | 27. MARCH 91          |                |  |                                |
| P.T.O.                                                                               | Please complete sketch plan of farm on back of form)                                                                                                                                                                                                                                                                                                                                                     |                                |                   |                                          |                       |                |  |                                |

NO STOCK AT BLAENRHYDW SN 440153

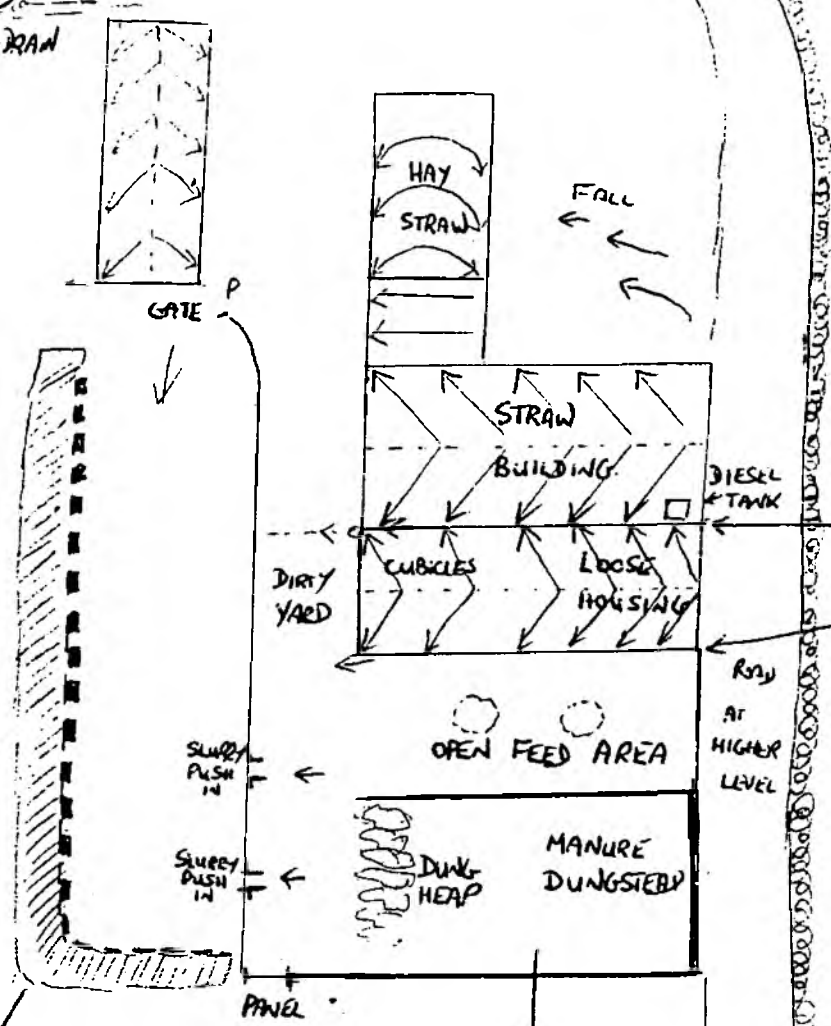
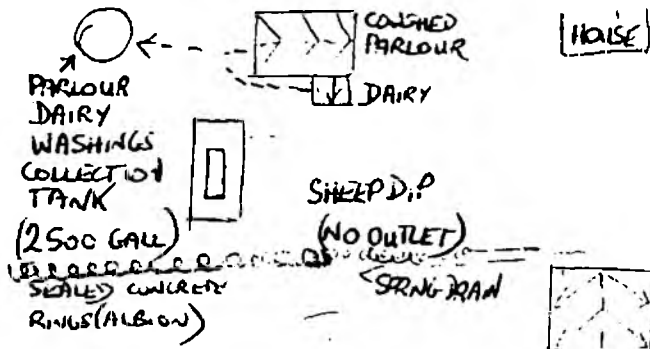


## FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                             |                                   |                                          |                             |                                  |                     |
|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------|-----------------------------|----------------------------------|---------------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | RHYDW FACH<br>RHYDW<br>SN 445157<br>27. 3. 91                                                                                                                                                                                                                                                                                               |                                   |                                          |                             | Acreage                          | 50                  |
| Farmer<br>Address                                                                    | G.E.M. BUSSELL,<br>RHYDW FACH FARM<br>LLANGENDYKYN, KIDWELLY<br>CARMARTHEN 236308                                                                                                                                                                                                                                                           |                                   | Owner                                    | G.E.M. BUSSELL.             |                                  |                     |
| Tel. No.                                                                             |                                                                                                                                                                                                                                                                                                                                             |                                   |                                          |                             |                                  |                     |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                        | 18                                | Followers                                | —                           | Beef Cattle                      | 40                  |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                        | —                                 | Sheep                                    | 100                         | Poultry                          | —                   |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                    | ✓                                 | Parlour<br>COWSHED                       | ✓                           | Covered Silo<br>OPEN - ABANDONED | —                   |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                     |                                   | Loose Hsing                              | ✓                           | Other                            | BIG BALEY<br>& HAY. |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                      | INTERVAL BLOCK<br>CONCRETE - FULL | Above Ground Store<br>With Reception Pit |                             | —                                |                     |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                        | —                                 | Weeping Wall Store<br>or Undergr'nd Tank |                             | —                                |                     |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                        | A, C                              | Soakaway                                 |                             | —                                |                     |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                       |                                   | Stream                                   |                             | —                                |                     |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                   | NO                                | Discharged To                            | YARD & TO<br>LAGOON.        |                                  |                     |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                    | Oil                               | 300 GALL                                 | Sheep Dip<br>Location       | ON FARM<br>YARD<br>NO DRAIN      |                     |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | (1) IMMEDIATE EMPTYING OF SLURRY STORE / DUNGSTEAD AREA<br>(2) REINSTATE ROOF GUTTERING AND PROVISION OF ROOF WATER DIVERSION. ALL R.W TO LAGOON<br>(3) MAINTENANCE OF SLURRY STORE TO ENSURE RELIABILITY<br>(4) MAINTENANCE OF ADEQUATE FREEBOARD / PREVENT OVERLOADING<br>(5) INSTALLATION OF LOW RATE IRRIGATION 'DIRTY WATER' DISPOSAL. |                                   |                                          |                             |                                  |                     |
| Date of Letter/s                                                                     | Follow Up Visit/s   Date-                                                                                                                                                                                                                                                                                                                   |                                   |                                          |                             |                                  |                     |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                       | A.I.S. Scheme                     |                                          | Yes                         | No                               |                     |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                        | Medium                            | ✓                                        | Low                         |                                  |                     |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                        | Medium                            | ✓                                        | Low                         |                                  |                     |
| Comments                                                                             | EFFECTIVE MAINTENANCE/DIVERSION OF ROOF WATER<br>AND MANAGEMENT OF SLURRY STORE<br>ALL SILAGE MADE AS BAGGED SILAGE FOR 2 YEARS<br>NO SILAGE EFFLUENT POLLUTION RISKS<br>EVIDENCE OF OVERFLOW OF SLURRY FROM LAGOON<br>AND YARD AREA. - NO DISCHARGE DURING VISIT.<br>SEWAGE FUNGUS IN DITCH ALONG OLD LANE DITCH<br>DARK COLOUR - DYING-   |                                   |                                          |                             |                                  |                     |
| Signed                                                                               | G. James                                                                                                                                                                                                                                                                                                                                    |                                   | Date                                     | 27 <sup>th</sup> MARCH 1991 |                                  |                     |

P.T.O.

(Please complete sketch plan of farm on back of form)



EARTH BANKED  
SLURRY LAGOON  
FULL EVIDENCE  
OF OVERFLOW.

ABANDONED BUNKER SILO (CONCRETE)  
BIG BALES NOW MADE

WATERCOURSE ALONGSIDE  
HEDGE - OTHER SIDE OF  
RHYDW - DECOMPOSING  
SEWAGE FUNGUS

RHYDW  
STREAM

# FARM DATA SHEET

tiny ON FARM ABOVE - CROESASGWEN - 20 DAIRY COWS

|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                            |                               |                                       |                               |                             |    |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|-------------------------------|-----------------------------|----|
| Name of Farm                                                                      | LLWYNPIOD                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                       |                               | Acreage                     | 60 |
| Catchment                                                                         | RHYDW                                                                                                                                                                                                                                                                                                                                                                                      |                               |                                       |                               |                             |    |
| Grid Ref.                                                                         | SN 452160                                                                                                                                                                                                                                                                                                                                                                                  |                               |                                       |                               |                             |    |
| Date of Visit                                                                     | 27.3.91                                                                                                                                                                                                                                                                                                                                                                                    |                               |                                       |                               |                             |    |
| Farmer                                                                            | N. L. EVANS                                                                                                                                                                                                                                                                                                                                                                                |                               |                                       | Owner                         | N. L. EVANS                 |    |
| Address                                                                           | LLWYNPIOD<br>LLANGYNDEYRN<br>KIDWELLY                                                                                                                                                                                                                                                                                                                                                      |                               |                                       |                               |                             |    |
| Tel. No.                                                                          | CARMARTHEN 231501                                                                                                                                                                                                                                                                                                                                                                          |                               |                                       |                               |                             |    |
| Livestock Numbers                                                                 | Cows                                                                                                                                                                                                                                                                                                                                                                                       | 45                            | Followers                             | 4                             | Beef Cattle                 | 2  |
|                                                                                   | Pigs                                                                                                                                                                                                                                                                                                                                                                                       | —                             | Sheep                                 | —                             | Poultry                     | —  |
| Buildings (tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                   | ✓                             | Parlour                               | ✓                             | Covered Silo                | 1  |
|                                                                                   | Cowshed                                                                                                                                                                                                                                                                                                                                                                                    | —                             | Loose Hsing                           | —                             | Other                       |    |
| Effluent Storage (use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked Lagoon                                                                                                                                                                                                                                                                                                                                                                        | ✓                             | Above Ground Store With Reception Pit | ✓                             |                             |    |
|                                                                                   | Mass Concrete or Block Wall Store                                                                                                                                                                                                                                                                                                                                                          | —                             | Weeping Wall Store or Undergr'nd Tank | ✓                             |                             |    |
| Effluent Disposal (use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                       | A, B, D                       | Soakaway                              | PARLOUR PIT<br>DAIRY WASHINGS |                             |    |
|                                                                                   | Ditch                                                                                                                                                                                                                                                                                                                                                                                      | PARLOUR PIT<br>DAIRY WASHINGS | Stream                                | —                             |                             |    |
| Roof/Clean Water                                                                  | Separated                                                                                                                                                                                                                                                                                                                                                                                  | NO                            | Discharged To                         | YARD                          |                             |    |
| Chemicals                                                                         | Herbicides                                                                                                                                                                                                                                                                                                                                                                                 | NIL                           | Oil                                   | NOT AT FARM BUT BEING PLANNED | Sheep Dip Location          | —  |
| Remedial Works Agreed or Improvements Planned                                     | (1) DIVERSION OF ROOF WATER ESSENTIAL.<br>(2) COLLECTION OF SILAGE EFFLUENT AT SITE - COLLECTION TANK.                                                                                                                                                                                                                                                                                     |                               |                                       |                               |                             |    |
| Date of Letter/s                                                                  | Follow Up Visit/s   Date-                                                                                                                                                                                                                                                                                                                                                                  |                               |                                       |                               |                             |    |
| Work Completed & Inspected                                                        | Date-                                                                                                                                                                                                                                                                                                                                                                                      | A.I.S. Scheme                 |                                       | Yes                           | No                          |    |
| Pollution Risk                                                                    | High                                                                                                                                                                                                                                                                                                                                                                                       | Medium                        | ✓                                     | Low                           |                             |    |
| Priority                                                                          | High                                                                                                                                                                                                                                                                                                                                                                                       | Medium                        | ✓                                     | Low                           |                             |    |
| Comments                                                                          | WELL MANAGED SMALL FARM - LARGE DIRTY YARD AREA IN FRONT OF BUILDINGS - INORDINATELY LARGE IN RELATION TO STOCK NUMBERS - DAIRY HERD PREVIOUSLY SUPPORTED AT UNIT 150 COWS PRIOR TO FAMILY REDISTRIBUTION OF HERD.<br>DIRTY YARD WATER - A LIKELY/POSSIBLE PROBLEM IN WET WEATHER - NEEDS ATTENTION/RE-EXAMINATION<br>SOAKAWAY FOR PARLOUR PIT & DAIRY WASHINGS - NOT AN APPARENT PROBLEM. |                               |                                       |                               |                             |    |
| Signed                                                                            | J. James                                                                                                                                                                                                                                                                                                                                                                                   |                               |                                       | Date                          | 27 <sup>TH</sup> MARCH 1991 |    |

P.T.O.

(Please complete sketch plan of farm on back of form)

Grid Walker Farm (Rogentham) 15 cows

FARMS ABOVE.

TIR UCHAFFRE WILLIAMS  
20dr + HAY\*

CROESASGWEN

30dr - OTHER CATCHMENT





## FARM DATA SHEET

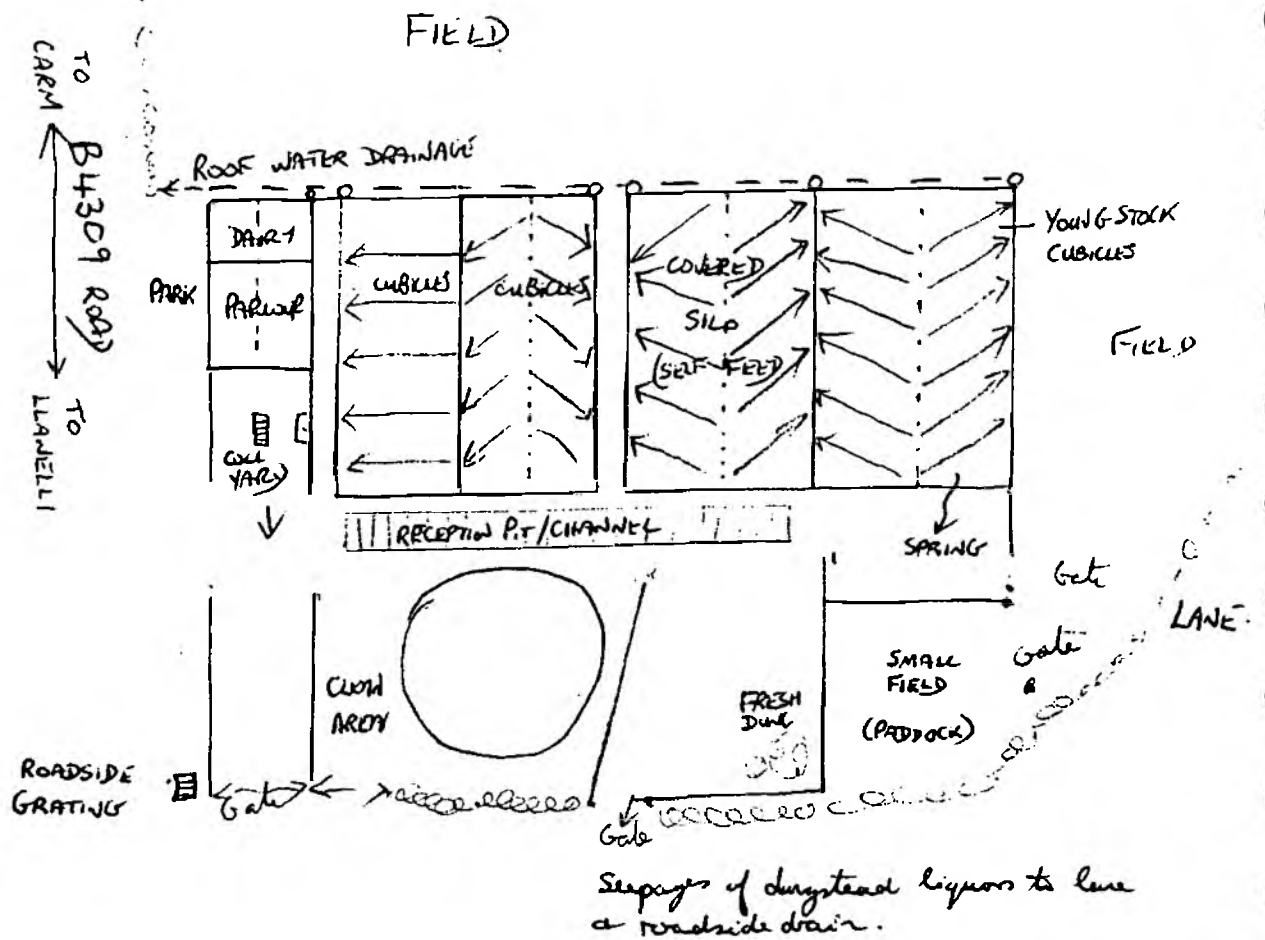
|                                               |                                                                                                                                                                                                                                                                                        |               |                   |                                       |                      |     |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|---------------------------------------|----------------------|-----|
| Name of Farm                                  | DANYBANC                                                                                                                                                                                                                                                                               |               |                   |                                       | Acreage              | 60  |
| Catchment                                     | NANT RHYDW                                                                                                                                                                                                                                                                             |               |                   |                                       |                      |     |
| Grid Ref.                                     | SN 431149                                                                                                                                                                                                                                                                              |               |                   |                                       |                      |     |
| Date of Visit                                 | 26 MARCH 1991                                                                                                                                                                                                                                                                          |               |                   |                                       |                      |     |
| Farmer Address                                | MR JOHN A KNOTT                                                                                                                                                                                                                                                                        |               | Owner             | ✓                                     |                      |     |
|                                               | DANYBANC FARM                                                                                                                                                                                                                                                                          |               |                   |                                       |                      |     |
|                                               | BANCY CAPEL                                                                                                                                                                                                                                                                            |               |                   |                                       |                      |     |
| Tel. No.                                      | CARMARTHEN 237061                                                                                                                                                                                                                                                                      |               |                   |                                       |                      |     |
| Livestock Numbers                             | Cows                                                                                                                                                                                                                                                                                   | 50            | Followers         | 50                                    | Beef Cattle          | -   |
|                                               | Pigs                                                                                                                                                                                                                                                                                   | -             | Sheep             | -                                     | Poultry              | -   |
|                                               | Cubicles                                                                                                                                                                                                                                                                               | ✓             | Parlour           | ✓                                     | Covered Silo         | ✓   |
| Buildings (tick box)                          | Cowshed                                                                                                                                                                                                                                                                                | -             | Loose Hsing       |                                       | Other                |     |
| Effluent Storage (use letters)                | Earth Banked Lagoon                                                                                                                                                                                                                                                                    |               | -                 | Above Ground Store With Reception Pit |                      | ✓   |
| Slurry-A Silage-B Parlour/Dairy-C Yard-D      | Mass Concrete or Block Wall Store                                                                                                                                                                                                                                                      |               | -                 | Weeping Wall Store or Undergr'nd Tank |                      | -   |
| Effluent Disposal (use letters)               | Land                                                                                                                                                                                                                                                                                   |               | A, B, D           | Soakaway                              |                      | C   |
| Slurry-A Silage-B Parlour/Dairy-C Yard-D      | Ditch                                                                                                                                                                                                                                                                                  |               |                   | Stream                                |                      | C ? |
| Roof/Clean Water                              | Separated                                                                                                                                                                                                                                                                              | ✓             |                   | Discharged To                         | CANKIL DRAIN ON ROAD |     |
| Chemicals                                     | Herbicides                                                                                                                                                                                                                                                                             |               | Oil               |                                       | Sheep Dip Location   | -   |
| Remedial Works Agreed or Improvements Planned | (i) ABANDONMENT OF SOAKAWAY SYSTEM FOR PARLOUR (PIT) DAIRY AND COLLECTING YARD WASHINGS AND DIVERSION TO RECEPTION PIT OF DIMENSIONS 45ft x 6ft x 7ft (4-5 days slurry storage capacity)<br>(ii) INTERCEPTION OF SPRING WATER FROM YOUNG STOCK CUBICLES AND DIVERSION BEHIND BUILDINGS |               |                   |                                       |                      |     |
| Date of Letter/s                              |                                                                                                                                                                                                                                                                                        |               | Follow Up Visit/s | Date-                                 |                      |     |
| Work Completed & Inspected                    | Date-                                                                                                                                                                                                                                                                                  | A.I.S. Scheme |                   | Yes                                   | No                   |     |
| Pollution Risk                                | High                                                                                                                                                                                                                                                                                   |               | Medium            | ✓                                     | Low                  |     |
| Priority                                      | High                                                                                                                                                                                                                                                                                   |               | Medium            | ✓                                     | Low                  |     |
| Comments                                      | HIGHWAY DRAINAGE PIPE DISCHARGING TO STREAM, UPSTREAM OF DWELLING HOUSE/GARDEN - SLIGHT DISCOLORATION - POSSIBLY FROM PARLOUR/DAIRY/YARD WASHINGS SOAKAWAY - DISCUSSION WITH FARM TO REMEDY SITUATION AT UNIT.                                                                         |               |                   |                                       |                      |     |
| Signed                                        |                                                                                                                                                                                                                                                                                        |               |                   | Date                                  |                      |     |

ALL COVERED

PARLOUR AT WASH.  
DAIRY WASHINGS

P.T.O.

(Please complete sketch plan of farm on back of form)



KEMIRA 25.5.5 GREEN  
23.5.10 RED

FARM DATA SHEET

|                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                |               |                                          |                    |                       |                    |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|--------------------|-----------------------|--------------------|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | PISTYLL<br>RHYDW<br>SN 443157<br>27.3.91                                                                                                                                                                                                                                                                                                                                                       |               |                                          |                    | Acreage               | 60                 |
| Farmer<br>Address                                                                    | D. L EVANS<br>PISTYLL FARM<br>LLANGENDIRNE, KIDWELLY, SAIT SHG                                                                                                                                                                                                                                                                                                                                 |               | Owner                                    | D. L EVANS         |                       |                    |
| Tel. No.                                                                             | CARMARTHEN 231174                                                                                                                                                                                                                                                                                                                                                                              |               |                                          |                    |                       |                    |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                                                                                                                                                                                                           | 40            | Followers                                | —                  | Beef Cattle           | 40                 |
|                                                                                      | Pigs                                                                                                                                                                                                                                                                                                                                                                                           | —             | Sheep                                    | 40                 | Poultry               | —                  |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                                                                                                                                                                                                       | ✓             | Parlour                                  | ✓                  | Covered Silo<br>OPEN  |                    |
|                                                                                      | Cowshed                                                                                                                                                                                                                                                                                                                                                                                        | —             | Loose Hsing                              | ✓                  | Other                 | —                  |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                                                                                                                                                                                                         | ✓             | Above Ground Store<br>With Reception Pit | —                  |                       |                    |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                                                                                                                                                                                                           | —             | Weeping Wall Store<br>or Undergr'nd Tank | —                  |                       |                    |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                                                                                                                                                                                                           | A, B, C, D    | Soakaway                                 | —                  |                       |                    |
|                                                                                      | Ditch                                                                                                                                                                                                                                                                                                                                                                                          | D             | Stream                                   | —                  |                       |                    |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                                                                                                                                                                                                      | ✓             | Discharged To                            | DITCH              |                       |                    |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                                                                                                                                                                                                       | —             | Oil                                      | 600 GALL<br>DIESEL | Sheep Dip<br>Location | ALLTYCADNO<br>FARM |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | (i) CLOSE GAP BETWEEN SLURRY STORE AND ABANDONED DUNGSTEAD<br>(ii) PREVENT YARD WATER ENTERING DITCH ALONGSIDE TOP SIDE<br>OF LAGOON - DIVERT DIRTY YARD WATER TO LAGOON<br>(iii) MAINTAIN FREE FLOW/ENLARGE YARD WATER/SILAGE EFFLUENT/ARLOUR<br>WASHINGS - MINIMISE DIRTY YARD AREAS<br>(iv) REINFORCE/CONSOLIDATE/SEAL LAGOON BANK (NOT W.D. OR KEYED)                                      |               |                                          |                    |                       |                    |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                |               | Follow Up Visit/s                        | Date-              |                       |                    |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                                                                                                                                                                                                          | A.I.S. Scheme |                                          | Yes                | No                    |                    |
| Pollution Risk                                                                       | High                                                                                                                                                                                                                                                                                                                                                                                           | ✓             | Medium                                   |                    | Low                   |                    |
| Priority                                                                             | High                                                                                                                                                                                                                                                                                                                                                                                           |               | Medium                                   | ✓                  | Low                   |                    |
| Comments                                                                             | 1ST EVIDENCE OF POLLUTION - YARD WATER ENTRY TO<br>DITCH ALONGSIDE LAGOON - SEWAGE FUNGUS EVIDENCE<br>ATTENTION/REINFORCEMENT TO SLURRY STORE EMBANKMENT<br>(MAXIMUM DEPTH NOW ONLY 3 ft)<br>FOLLOWING ON SITE DISCUSSION - FARMER CONSIDERING<br>PROVISION OF ALTERNATIVE SLURRY STORE TO PROPER STANDARDS<br>FURTHER VISIT BY N.R.A. REQUESTED<br><br>(CONCRETE FLOOR FOR SLURRY PIT - 1981) |               |                                          |                    |                       |                    |
| Signed                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                |               |                                          | Date               |                       |                    |

Short term  
Long term

P.T.O.

(Please complete sketch plan of farm on back of form)

FIELD BOUNDARY HEDGE

House

FIELD

DIVERSION OF FIELD WATER NEARBY

GATE

FED

VAR

OPEN-EARTH BANK SILO

PARLOUR

DARY

Pond

LANE

DITCH

Low  
EMBANKMENT

EARTH BANK LAGOON (3 FT DEEP)  
(EXTENDED) CONCRETE FLOOR (1981)

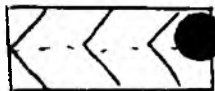
ABANDONED  
SLURRY STORAGE  
AREA

GAP

BLIND DITCH (home sewage)

Not a problem

1 MONTH SLURRY STORAGE CAPACITY IN WET WEATHER.  
(NOT WELL CONSTRUCTED) - NARROW WIDTH.  
NO BANK KEYING  
MATERIAL SUSPECT (SOME STONES)



20YCWJ  
LOOSE HOUSE

SEWAGE TUNNELS  
IN WATER COURSE  
(PAST POLLUTION)

WATER SUPPLY  
RAM

AFON RHYD.

HEDGE

**FARM DATA SHEET**

|                                                                                      |                                                                                                                                                                                                                |       |                                          |       |                       |    |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------|-------|-----------------------|----|
| Name of Farm<br>Catchment<br>Grid Ref.<br>Date of Visit                              | TIRUCHAF<br>RHYDW<br>SN 455160<br>10.12.91                                                                                                                                                                     |       |                                          |       | Acreage               | 30 |
| Farmer<br>Address<br><br>Tel. No.                                                    | F. WILLIAMS<br>TIRUCHAF<br>LLANGENDEIRNE, KIDWELLY, SA 175HA.<br><br>0267 236069.                                                                                                                              |       | Owner                                    | ✓     |                       |    |
| Livestock Numbers                                                                    | Cows                                                                                                                                                                                                           | 18-21 | Followers                                | —     | Beef Cattle           | 10 |
|                                                                                      | Pigs                                                                                                                                                                                                           |       | Sheep                                    | 42    | Poultry               |    |
| Buildings<br>(tick box)                                                              | Cubicles                                                                                                                                                                                                       |       | Parlour                                  |       | Covered Silo          | —  |
|                                                                                      | Cowshed                                                                                                                                                                                                        |       | Loose Hsing                              |       | Other                 |    |
| Effluent Storage<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D  | Earth Banked<br>Lagoon                                                                                                                                                                                         |       | Above Ground Store<br>With Reception Pit |       |                       |    |
|                                                                                      | Mass Concrete or<br>Block Wall Store                                                                                                                                                                           |       | Weeping Wall Store<br>or Undergr'nd Tank |       |                       |    |
| Effluent Disposal<br>(use letters)<br>Slurry-A Silage-B<br>Parlour/Dairy-C<br>Yard-D | Land                                                                                                                                                                                                           |       | Soakaway                                 |       |                       |    |
|                                                                                      | Ditch                                                                                                                                                                                                          |       | Stream                                   |       |                       |    |
| Roof/Clean Water                                                                     | Separated                                                                                                                                                                                                      |       | Discharged To                            |       |                       |    |
| Chemicals                                                                            | Herbicides<br>Pesticides                                                                                                                                                                                       |       | Oil                                      |       | Sheep Dip<br>Location |    |
| Remedial Works<br>Agreed or<br>Improvements<br>Planned                               | FUTURE RENDERING OF CONCRETE BLOCK SLURRY COLLECTION BAY/PIT AND<br>SEALING OF HOLE OR DIVERT OVER FIELD SHORT TERM.                                                                                           |       |                                          |       |                       |    |
| Date of Letter/s                                                                     |                                                                                                                                                                                                                |       | Follow Up Visit/s                        | Date- |                       |    |
| Work Completed & Inspected                                                           | Date-                                                                                                                                                                                                          |       | A.I.S. Scheme                            | Yes   | No                    |    |
| Pollution Risk                                                                       | High                                                                                                                                                                                                           |       | Medium                                   |       | Low                   | ✓  |
| Priority                                                                             | High                                                                                                                                                                                                           |       | Medium                                   |       | Low                   |    |
| Comments                                                                             | REGULAR (DAILY) COLLECTION AND DISPOSAL OF SOLID/LIQUID MANURES<br>BY SCRAPING TO ROTO-SPREADER.<br>HALF <sup>3</sup> OF YARD WATER TO FIELD, OTHER PART TO LAKE.<br>SPRINGS ON YARD AND FROM UNDER BUILDINGS. |       |                                          |       |                       |    |
| Signed                                                                               |                                                                                                                                                                                                                |       | Date                                     |       |                       |    |

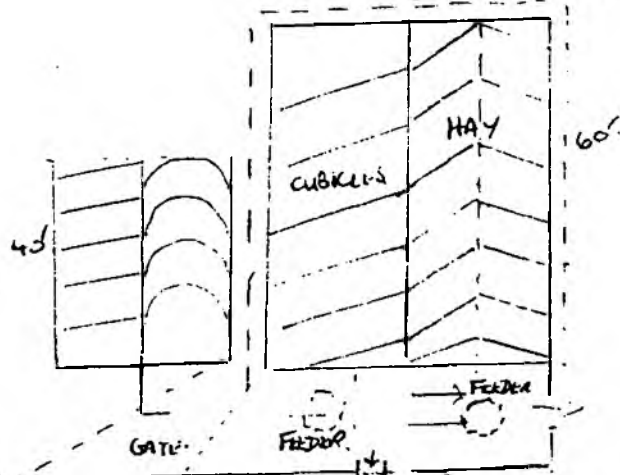
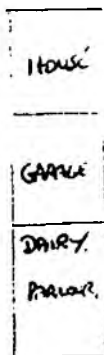
Quartz for 42  
(Based 1970)  
No SILO  
BIG BALES (45C)  
HAY NORMALLY

P.T.O.

(Please complete sketch plan of farm on back of form)

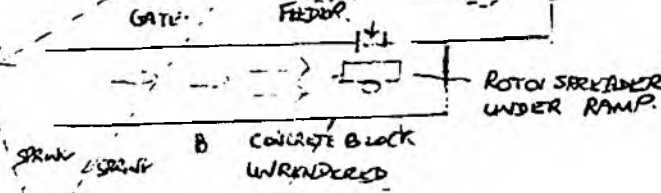
ENTRANCE  
LANE

GARDED



SPRING COLLECTOR

BIG BALE  
AREA ON  
FIELD



APPROX  
10ft wide

SPRING  
B CORRUGATED BLACK  
WRAPPED  
FIELD

LANE

HOUSE SPRING  
WATER SUPPLY

SPRING & SURFACE WATER DRAINAGE



G5 Environmental data for Yorkshire catchments

Tape storage details:-

APPENDIX\G\G1\README.TXT

The file in this directory, york.dat, contains environmental data from Yorkshire catchments. Data for each of the sites is saved in a row/column matrix and is in ASCII format.

G6 Environmetal data for Cheshire catchments

Tape storage details:-

APPENDIX\G\G6\README.TXT

The file in this directory, Norwest.dat, contains environmental data from Cheshire catchments. Data for each of the 45 sites is saved in a row/column matrix and is in ASCII format.

G7 RIVPACS output for Upper Weaver site

Tape storage details:-

APPENDIX\G\G7\README.TXT

The file in this directory, Wevrpacs.dat, contains RIVPACS results from the Upper Weaver site. Data is in ASCII format.

APPENDIX H

INVESTIGATION OF POLLUTION PROCESSES

Contents:

H1 Continuous monitoring data - Pontfaen\*

H2 Rainfall data - Pontfaen\*

H3 Spot sample data - Pontfean\*

H4 Autosamples - Pontfaen - Event 1

H5 Autosamples - Pontfaen - Event 2

H6 Invertebrate data - Pontfaen\*\*

H7 Habscore data - Pontfaen\*

H8 Continuous monitoring data - Rhydw\*

H9 Rainfall data - Rhydw\*

H10 Spot sample data - Rhydw\*

H11 Continuous monitoring data - Pibwr\*

H12 Spot sample data - Pontfean\*

H13 Data from Slurry transport studies

H14 Rainfall data from Clarbeston\*

KEY:- \* = Data held on tape

+ = Maitland P.S. (1977) A coded checklist of animals  
occurring in Freshwater in the British Isles. ITE  
publication (NCC) 12, Hope Terrace, Edinburgh

H1 Continuous monitoring data Pontfaen

Tape storage details:-

APPENDIX\H\H1\README.TXT

The two data files in this directory contain data from  
Pontfaen catchment:-

Ponta.dat  
Pontb.dat

Both files are in ascii format.



H2 Rainfall data - Pontfaen

Tape storage details:

The file in this directory, Raipont.dat, contains raingauge data from Pontfaen catchment. Data shows the time at which the rain gauge bucket tipped, indicating 0.45mm of rain. Data is an ASCII format and saved in a row/column matrix.

H3 Spot sample data -Pontfaen

Tape storage details:-

APPENDIX\H\H3\README.TXT

The data file in this directory pontfaen.dat contains data from  
Pontfaen catchment:-

Data is tabulated to show: date/location/determinands measured

file is in ascii format.

H4 Autosamples - Pontfaen - Event 1

11:57 12/11/92

N.R.A. - WELSH REGION - TECHNICAL DATA / INFORMATION BANK

PAGE 1

## WATER QUALITY SAMPLE TABULATION

PONTFAEN EVENT 1 5/6 OCT 1990

GRAHAM RUFF

SAMPLING POINT NO : 190102

INVESTIGATIONS TEAM SAMPLES :

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0062<br>CONDUCTIVITY<br>(20C) (US/CM) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L P) |
|---------------------|-------|------------|---------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------|
|                     |       | <----->    | <----->                               | <----->                                    | <----->                                        | <----->                     | <----->                            |
| 05/10/90            | 16.05 | 7.3        | 116.1                                 | 0.05                                       | 1.21                                           | 0.006                       | 0.05 LT                            |
|                     | 16.35 | 7.3        | 108.5                                 | 0.08                                       | 1.46                                           | 0.007                       | 0.05 LT                            |
|                     | 17.05 | 7.3        | 107.1                                 | 0.07                                       | 1.63                                           | 0.008                       | 0.05 LT                            |
|                     | 17.35 | 7.3        | 108.9                                 | 0.06                                       | 1.23                                           | 0.008                       | 0.05 LT                            |
|                     | 18.05 | 7.3        | 110.8                                 | 0.08                                       | 1.74                                           | 0.008                       | 0.05 LT                            |
|                     | 18.35 | 7.1        | 108.1                                 | 0.11                                       | 1.49                                           | 0.013                       | 0.05 LT                            |
|                     | 19.05 | 7.3        | 110.8                                 | 0.11                                       | 1.52                                           | 0.008                       | 0.05 LT                            |
|                     | 19.35 | 7.3        | 111.4                                 | 0.1                                        | 1.56                                           | 0.008                       | 0.05 LT                            |
|                     | 20.05 | 7.1        | 109.4                                 | 0.1                                        | 1.48                                           | 0.008                       | 0.05 LT                            |
|                     | 20.35 | 7.3        | 114.6                                 | 0.25                                       | 1.51                                           | 0.008                       | 0.05                               |
|                     | 21.05 | 7.3        | 116.2                                 | 0.26                                       | 1.55                                           | 0.008                       | 0.05                               |
|                     | 21.35 | 7.1        | 114.                                  | 0.23                                       | 1.45                                           | 0.008                       | 0.05                               |
|                     | 22.05 | 7.3        | 113.5                                 | 0.19                                       | 1.55                                           | 0.009                       | 0.05 LT                            |
|                     | 22.35 | 7.3        | 112.3                                 | 0.16                                       | 1.53                                           | 0.01                        | 0.05 LT                            |
|                     | 23.05 | 7.2        | 115.                                  | 0.2                                        | 1.65                                           | 0.013                       | 0.05 LT                            |
|                     | 23.35 | 6.8        | 186.6                                 | 2.34                                       | 0.05 LT                                        | 0.014                       | 0.3                                |
| 06/10/90            | 00.05 | 6.6        | 142.4                                 | 0.83                                       | 1.38                                           | 0.048                       | 0.14                               |
|                     | 00.35 | 6.7        | 145.4                                 | 1.18                                       | 1.32                                           | 0.045                       | 0.08                               |
|                     | 01.05 | 6.5        | 124.1                                 | 0.49                                       | 1.07                                           | 0.032                       | 0.11                               |
|                     | 01.35 | 6.5        | 129.7                                 | 0.4                                        | 1.34                                           | 0.031                       | 0.1                                |
|                     | 02.35 | 6.2        | 136.8                                 | 0.24                                       | 1.68                                           | 0.047                       | 0.14                               |
|                     | 04.05 | 6.1        | 143.7                                 | 0.26                                       | 1.82                                           | 0.029                       | 0.08                               |
|                     | 05.05 | 6.2        | 146.5                                 | 0.23                                       | 1.77                                           | 0.03                        | 0.07                               |

## WATER QUALITY SAMPLE TABULATION

PONTFAEN EVENT 1 5/6 OCT 1990

GRAHAM RUTT

SAMPLING POINT NO : 190102

INVESTIGATIONS TEAM SAMPLES :

| SAMPLE   |       | 0301                                    |
|----------|-------|-----------------------------------------|
| DATE     | TIME  | DISSOLVED<br>ORGANIC CARBON<br>(MG/L.C) |
|          |       | <----->                                 |
| 05/10/90 | 16.05 | 2.8                                     |
|          | 16.35 | 2.1                                     |
|          | 17.05 | 2.1                                     |
|          | 17.35 | 2.2                                     |
|          | 18.05 | 2.2                                     |
|          | 18.35 | 2.1                                     |
|          | 19.05 | 2.4                                     |
|          | 19.35 | 2.6                                     |
|          | 20.05 | 1.9                                     |
|          | 20.35 | 2.1                                     |
|          | 21.05 | 2.5                                     |
|          | 21.35 | 2.7                                     |
|          | 22.05 | 2.4                                     |
|          | 22.35 | 2.3                                     |
|          | 23.05 | 2.9                                     |
|          | 23.35 | 7.8                                     |
| 06/10/90 | 00.05 | 8.4                                     |
|          | 00.35 | 10.8                                    |
|          | 01.05 | 8.1                                     |
|          | 01.35 | 11.7                                    |
|          | 02.35 | 11.3                                    |
|          | 04.05 | 11.7                                    |
|          | 05.05 | 13.8                                    |

H5 Autosamples - Pontfaen - Event 2

# WATER QUALITY SAMPLE TABULATION

OPERATION EVENT 23/24 NOV 1990

GRAHAM RUII

SAMPLING POINT NO : 190102

INVESTIGATIONS TEAM SAMPLES :

| SAMPLE<br>DATE TIME | 0061<br>PH | 0062<br>CONDUCTIVITY<br>(20C) (US/CM) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L P) |
|---------------------|------------|---------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------|
|                     |            |                                       |                                            |                                                |                             |                                    |
| 23/11/90            | 13.00      | 7.1                                   | 114.                                       | 0.08                                           | 2.6                         | 0.007                              |
|                     | 13.30      | 7.2                                   | 115.                                       | 0.13                                           | 2.59                        | 0.009                              |
|                     | 14.00      | 7.2                                   | 116.                                       | 0.17                                           | 2.59                        | 0.021                              |
|                     | 14.30      | 7.                                    | 118.                                       | 0.24                                           | 2.53                        | 0.015                              |
|                     | 15.00      | 7.                                    | 120.                                       | 0.32                                           | 2.48                        | 0.019                              |
|                     | 15.30      | 7.                                    | 126.                                       | 0.43                                           | 2.37                        | 0.026                              |
|                     | 16.00      | 7.                                    | 124.                                       | 0.4                                            | 2.3                         | 0.022                              |
|                     | 16.30      | 7.                                    | 123.                                       | 0.39                                           | 2.19                        | 0.022                              |
|                     | 17.00      | 7.2                                   | 122.                                       | 0.36                                           | 2.07                        | 0.018                              |
|                     | 17.30      | 7.2                                   | 120.                                       | 0.42                                           | 1.93                        | 0.021                              |
|                     | 18.00      | 6.9                                   | 124.                                       | 0.57                                           | 1.87                        | 0.026                              |
|                     | 18.30      | 6.8                                   | 117.                                       | 0.47                                           | 1.86                        | 0.036                              |
|                     | 19.00      | 6.6                                   | 116.                                       | 0.39                                           | 1.91                        | 0.041                              |
|                     | 19.30      | 6.3                                   | 109.                                       | 0.32                                           | 2.01                        | 0.034                              |
|                     | 20.00      | 6.3                                   | 106.                                       | 0.28                                           | 2.08                        | 0.033                              |
|                     | 20.30      | 6.3                                   | 110.                                       | 0.25                                           | 2.16                        | 0.031                              |
|                     | 21.00      | 6.5                                   | 114.                                       | 0.23                                           | 2.31                        | 0.025                              |
|                     | 21.30      | 6.5                                   | 120.                                       | 0.19                                           | 2.48                        | 0.019                              |
|                     | 22.00      | 6.6                                   | 121.                                       | 0.12                                           | 2.54                        | 0.026                              |
|                     | 22.30      | 6.7                                   | 122.                                       | 0.19                                           | 2.63                        | 0.026                              |
|                     | 23.00      | 6.7                                   | 123.                                       | 0.16                                           | 2.72                        | 0.014                              |
|                     | 23.30      | 6.7                                   | 123.                                       | 0.16                                           | 2.77                        | 0.012                              |
| 24/11/90            | 00.01      | 6.8                                   | 125.                                       | 0.17                                           | 2.77                        | 0.011                              |
|                     | 00.30      | 6.8                                   | 125.                                       | 0.23                                           | 2.79                        | 0.013                              |
|                     | 01.00      | 6.8                                   | 120.                                       | 0.2                                            | 2.64                        | 0.036                              |
|                     | 01.30      | 6.7                                   | 118.                                       | 0.21                                           | 2.51                        | 0.014                              |
|                     | 02.00      | 6.6                                   | 113.                                       | 0.3                                            | 2.48                        | 0.062                              |
|                     | 02.30      | 6.7                                   | 117.                                       | 0.17                                           | 2.54                        | 0.009                              |
|                     | 03.00      | 6.7                                   | 120.                                       | 0.17                                           | 2.64                        | 0.008                              |
|                     | 03.30      | 6.7                                   | 120.                                       | 0.17                                           | 2.68                        | 0.009                              |
|                     | 04.00      | 6.7                                   | 120.                                       | 0.19                                           | 2.69                        | 0.009                              |
|                     | 04.30      | 6.8                                   | 122.                                       | 0.19                                           | 2.73                        | 0.007                              |
|                     | 05.00      | 6.8                                   | 118.                                       | 0.2                                            | 2.73                        | 0.009                              |
|                     | 05.30      | 6.7                                   | 123.                                       | 0.2                                            | 2.82                        | 0.011                              |
|                     | 06.00      | 6.8                                   | 124.                                       | 0.19                                           | 2.82                        | 0.014                              |
|                     | 06.30      | 6.8                                   | 124.                                       | 0.2                                            | 2.86                        | 0.013                              |
|                     | 07.00      | 6.8                                   | 125.                                       | 0.2                                            | 2.9                         | 0.011                              |
|                     | 07.30      | 6.4                                   | 126.                                       | 0.19                                           | 2.99                        | 0.012                              |
|                     | 08.00      | 6.6                                   | 127.                                       | 0.19                                           | 3.08                        | 0.011                              |
|                     | 08.30      | 6.7                                   | 130.                                       | 0.16                                           | 3.08                        | 0.011                              |
|                     | 09.00      | 6.8                                   | 129.                                       | 0.21                                           | 3.08                        | 0.011                              |
|                     | 09.30      | 6.8                                   | 129.                                       | 0.19                                           | 3.08                        | 0.011                              |
|                     | 10.00      | 6.8                                   | 129.                                       | 0.18                                           | 3.13                        | 0.013                              |
|                     | 10.30      | 6.9                                   | 127.                                       | 0.22                                           | 3.12                        | 0.011                              |
|                     | 11.00      | 6.9                                   | 129.                                       | 0.22                                           | 3.11                        | 0.01                               |
|                     | 11.30      | 6.9                                   | 120.                                       | 0.24                                           | 3.12                        | 0.013                              |
|                     | 12.00      | 6.8                                   | 130.                                       | 0.27                                           | 3.2                         | 0.027                              |
|                     | 12.30      | 6.9                                   | 131.                                       | 0.25                                           | 3.11                        | 0.013                              |



## WATER QUALITY SAMPLE TABULATION

PONTFAEN EVENT2 23/24 NOV 1990

GRAHAM RUFF

SAMPLING POINT NO : 190102

INVESTIGATIONS TEAM SAMPLES :

| SAMPLE<br>DATE | TIME  | 0301<br>DISSOLVED<br>ORGANIC CARBON<br>(MG/L.C)<br><-----> |
|----------------|-------|------------------------------------------------------------|
| 23/11/90       | 13.00 | 2.3                                                        |
|                | 13.30 | 2.2                                                        |
|                | 14.00 | 2.5                                                        |
|                | 14.30 | 3.                                                         |
|                | 15.00 | 3.4                                                        |
|                | 15.30 | 3.9                                                        |
|                | 16.00 | 4.5                                                        |
|                | 16.30 | 4.8                                                        |
|                | 17.00 | 6.                                                         |
|                | 17.30 | 5.8                                                        |
|                | 18.00 | 6.5                                                        |
|                | 18.30 | 9.8                                                        |
|                | 19.00 | 10.1                                                       |
|                | 19.30 | 9.3                                                        |
|                | 20.00 | 8.2                                                        |
|                | 20.30 | 8.7                                                        |
|                | 21.00 | 9.3                                                        |
|                | 21.30 | 9.                                                         |
|                | 22.00 | 7.                                                         |
|                | 22.30 | 7.4                                                        |
|                | 23.00 | 7.                                                         |
|                | 23.30 | 7.                                                         |
| 24/11/90       | 00.01 | 5.8                                                        |
|                | 00.30 | 6.8                                                        |
|                | 01.00 | 6.5                                                        |
|                | 01.30 | 6.6                                                        |
|                | 02.00 | 7.6                                                        |
|                | 02.30 | 8.6                                                        |
|                | 03.00 | 8.1                                                        |
|                | 03.30 | 7.8                                                        |
|                | 04.00 | 6.7                                                        |
|                | 04.30 | 6.7                                                        |
|                | 05.00 | 7.6                                                        |
|                | 05.30 | 7.3                                                        |
|                | 06.00 | 5.7                                                        |
|                | 06.30 | 5.9                                                        |
|                | 07.00 | 6.3                                                        |
|                | 07.30 | 5.9                                                        |
|                | 08.00 | 5.4                                                        |
|                | 08.30 | 7.                                                         |
|                | 09.00 | 7.4                                                        |
|                | 09.30 | 5.2                                                        |

H6 Invertebrate data Pontfaen

Tape storage details:-

APPENDIX\H\H6\README.TXT

The four files in this directory, \*.dat, contain invertebrate data from Pontfaen catchment. Data is structured within each file as follows:

Site ref, NGR, Date  
Invertebrate code, abundance,

Reference to decode the ivertebrate names Maitland (1977)

H7 HABSCORE data - Pontfean

Tape storage details:-

APPENDIX\H\H7\README.TXT

This directory contains three files of data collected for HABSCORE evaluation. The sites are located on the Pontfaen Brook. Files are ASCII format.

H8 Continuous data monitoring data - Rhydw

Tape storage details:-

APPENDIX\H\H8\README.TXT

The 185 data files in this directory, contains continuous monitoring data from the Rhydw catchment. All files are in ASCII format and have the following common filenames.

XXXZ9999.REP

Where

XXX = The determinand    AMM - Ammonia  
                            TEM - Temperature  
                            CON - Conductivity  
                            OX - Dissolved oxygen  
                            PH - pH

Z = The site            A -  
                            B -  
                            D -

9999 = Week of deployment    0-17 - Full dates are  
                                                         included in the file

This directory also has subdirectory of archived files which require NEWLOG software to be fully analysed.

H9 Rainfall data - Rhydw

Tape storage details:-

APPENDIX\H\H9\README.TXT

The file in this directory, Rairhyd.dat, contains raingauge data from Rhydw catchment. Data shows the time at which the rain gauge bucket tipped, indicating 0.45mm of rain. Data is in ASCII format and saved in a row/column matrix.

H10 Spot sample data - Rhydw

Tape storage details:-

APPENDIX\H\H10\README.TXT

The data file in this directory Rhydw.dat contains data from  
Rhydw catchment:-

Data is tabulated to show: date/location/determinands measured

file is in ASCII format.

H11 Continuous monitoring data Pibwr

Tape storage details:-

APPENDIX\H\H11\README.TXT

The 119 data files in this directory, contains continuous monitoring data from the Pibwr catchment. All files are in ASCII format and have the following common filenames.

XXXZ9999.REP

Where

|       |                 |                       |
|-------|-----------------|-----------------------|
| XXX = | The determinand | AMM - Ammonia         |
|       |                 | TEM - Temperature     |
|       |                 | CON - Conductivity    |
|       |                 | OX - Dissolved oxygen |
|       |                 | PH - pH               |

|     |          |     |
|-----|----------|-----|
| Z = | The site | A - |
|     |          | B - |
|     |          | D - |

9999 = Week of deployment 0-17 - Full dates are included in the file

This directory also has subdirectory of archived files which require NEWLOG software to be fully analysed.



H12 Spot sample data - Pibwr

Tape storage details:-

APPENDIX\H\H12\README.TXT

The data file in this directory Pibwr.dat contains data from  
Pibwr catchment:-

Data is tabulated to show: date/location/determinands measured

File is in ASCII format.

H13 Data from Slurry transport studies

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

5555556. RUT1. LANELLI

| SAMPLE<br>DATE TIME |          | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L. O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L. P) |
|---------------------|----------|------------|----------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------------|
|                     |          | <----->    | <----->                                | <----->                                    | <----->                                        | <----->                     | <----->                             |
| 190102              |          |            |                                        |                                            |                                                |                             |                                     |
| 19/01/90            | 15.01 1A |            |                                        | 0.01 LT                                    | 20.2                                           | 0.002 LT                    |                                     |
|                     | 15.02 1B | 6.3        |                                        | 0.01 LT                                    | 18.                                            | 0.002 LT                    |                                     |
|                     | 15.03 1C | 6.5        | 1.3                                    | 0.01 LT                                    | 24.5                                           | 0.002 LT                    |                                     |
|                     | 15.04 1D | 6.7        |                                        | 0.01 LT                                    | 11.                                            | 0.002 LT                    |                                     |
|                     | 15.05 2A | 6.6        | 0.6                                    | 0.01 LT                                    | 37.                                            | 0.002 LT                    |                                     |
|                     | 15.06 2B | 6.6        | 1.                                     | 0.01                                       | 16.5                                           | 0.002 LT                    |                                     |
|                     | 15.07 2C | 6.8        | 0.9                                    | 0.01 LT                                    | 8.5                                            | 0.002 LT                    |                                     |
|                     | 15.08 2D | 6.7        | 0.9                                    | 0.01 LT                                    | 9.                                             | 0.002 LT                    |                                     |
|                     | 15.09 3A | 6.5        | 0.7                                    | 0.01 LT                                    | 21.                                            | 0.002 LT                    |                                     |
|                     | 15.10 3B | 6.7        | 1.4                                    | 0.01 LT                                    | 14.                                            | 0.002 LT                    |                                     |
|                     | 15.11 3C | 6.7        | 1.1                                    | 0.01 LT                                    | 21.                                            | 0.002 LT                    |                                     |
|                     | 15.15 3D | 6.7        | 1.3                                    | 0.01 LT                                    | 9.                                             | 0.002 LT                    |                                     |
|                     | 15.16 4A | 6.7        | 1.3                                    | 0.01 LT                                    | 19.                                            | 0.002 LT                    |                                     |
|                     | 15.17 4B | 6.3        | 1.3                                    | 0.02                                       | 53.                                            | 0.004                       |                                     |
|                     | 15.18 4C | 6.4        | 1.                                     | 0.01 LT                                    | 31.                                            | 0.002 LT                    |                                     |
|                     | 15.19 4D | 6.6        | 0.9                                    | 0.01 LT                                    | 13.                                            | 0.002 LT                    |                                     |
|                     | 15.20 6A | 7.7        | 1.                                     | 0.01 LT                                    | 10.                                            | 0.002 LT                    |                                     |
|                     | 15.21 6B | 8.1        |                                        | 0.01 LT                                    | 7.5                                            | 0.002 LT                    |                                     |
|                     | 15.23 7A | 7.7        |                                        | 0.01 LT                                    | 11.                                            | 0.002 LT                    |                                     |
|                     | 15.24 7B | 7.5        | 1.3                                    | 0.01 LT                                    | 4.8                                            | 0.002 LT                    |                                     |
|                     | 15.25 8A | 7.3        |                                        | 0.01 LT                                    | 2.2                                            | 0.002 LT                    |                                     |
|                     | 15.26 8C | 8.5        | 0.8                                    | 0.01 LT                                    | 7.                                             | 0.002 LT                    |                                     |
|                     | 15.27 6D | 7.9        |                                        | 0.01 LT                                    | 7.5                                            | 0.002 LT                    |                                     |
|                     | 15.28 9A | 7.4        |                                        | 0.01 LT                                    | 6.                                             | 0.002 LT                    |                                     |
|                     | 15.29 9B |            |                                        | 0.01 LT                                    | 3.07                                           | 0.002 LT                    |                                     |
|                     | 15.30 9C | 7.1        |                                        | 0.01 LT                                    | 28.                                            | 0.002 LT                    |                                     |
|                     | 15.31 8D | 7.4        | 1.4                                    | 0.01 LT                                    | 15.5                                           | 0.002 LT                    |                                     |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

555555G, RUTT, LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L. O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L. P) |
|---------------------|-------|------------|----------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------------|
|                     |       |            |                                        |                                            |                                                |                             |                                     |
| 190102              |       |            |                                        |                                            |                                                |                             |                                     |
| 31/01/90            | 13.10 | 4A         | 6.6                                    | 1.1                                        | 0.01 LT                                        | 18.8                        | 0.004                               |
|                     | 13.15 | 4B         | 6.7                                    |                                            | 0.02                                           | 54.                         | 0.004                               |
|                     | 13.20 | 4C         | 6.4                                    | 0.8                                        | 0.01 LT                                        | 25.3                        | 0.003                               |
|                     | 13.25 | 4D         | 6.5                                    | 1.8                                        | 0.01 LT                                        | 18.                         | 0.004                               |
|                     | 13.30 | 3A         | 6.3                                    | 1.3                                        | 0.01 LT                                        | 23.6                        | 0.003                               |
|                     | 13.35 | 3B         | 6.5                                    | 1.5                                        | 0.01 LT                                        | 18.3                        | 0.006                               |
|                     | 13.40 | 3C         | 6.6                                    | 1.                                         | 0.01 LT                                        | 21.3                        | 0.005                               |
|                     | 13.45 | 3D         | 6.7                                    | 1.1                                        | 0.02                                           | 7.2                         | 0.006                               |
|                     | 13.50 | 2A         | 6.8                                    | 1.                                         | 0.01                                           | 47.                         | 0.007                               |
|                     | 13.55 | 2B         | 6.7                                    | 0.7                                        | 0.01                                           | 18.2                        | 0.006                               |
|                     | 14.00 | 2C         | 7.                                     | 1.4                                        | 0.01                                           | 8.8                         | 0.005                               |
|                     | 14.05 | 2D         |                                        | 1.2                                        | 0.01                                           | 7.9                         | 0.005                               |
|                     | 14.10 | 1A         | 6.9                                    | 1.9                                        | 0.04                                           | 21.4                        | 0.008                               |
|                     | 14.15 | 1B         | 6.9                                    | 1.2                                        | 0.03                                           | 14.9                        | 0.005                               |
|                     | 14.20 | 1C         | 6.8                                    | 1.                                         | 0.01                                           | 23.2                        | 0.004                               |
|                     | 14.25 | 1D         | 6.8                                    | 1.3                                        | 0.01 LT                                        | 11.4                        | 0.005                               |
|                     | 14.30 | DP         | 5.9                                    | 1.1                                        | 0.01 LT                                        | 26.9                        | 0.004                               |
|                     | 14.35 | DC         | 6.8                                    | 1.5                                        | 0.11                                           | 16.7                        | 0.049                               |
|                     | 14.40 | 9A         |                                        | 1.7                                        | 0.02                                           | 1.57                        | 0.005                               |
|                     | 14.45 | 9B         |                                        |                                            | 0.04                                           | 1.18                        | 0.005                               |
|                     | 14.50 | 9C         | 6.3                                    | 1.5                                        | 0.01 LT                                        | 3.96                        | 0.005                               |
|                     | 14.55 | 9D         |                                        | 1.9                                        | 0.01                                           | 1.06                        | 0.005                               |
|                     | 15.00 | 8A         | 6.5                                    | 1.5                                        | 0.02                                           | 1.78                        | 0.005                               |
|                     | 15.05 | 8B         | 6.9                                    | 2.2                                        | 0.03                                           | 2.68                        | 0.004                               |
|                     | 15.10 | 8C         |                                        | 1.6                                        | 0.02                                           | 3.22                        | 0.003                               |
|                     | 15.15 | 8D         | 6.7                                    | 1.4                                        | 0.02                                           | 4.14                        | 0.003                               |
|                     | 15.20 | 7A         | 6.7                                    | 1.3                                        | 0.01                                           | 5.95                        | 0.004                               |
|                     | 15.25 | 7B         | 7.                                     | 2.3                                        | 0.03                                           | 3.93                        | 0.003                               |
|                     | 15.30 | 7C         | 7.1                                    | 1.5                                        | 0.06                                           | 7.18                        | 0.008                               |
|                     | 15.35 | 7D         |                                        | 2.1                                        | 0.42                                           | 6.4                         | 0.019                               |
|                     | 15.40 | 6A         | 7.7                                    | 1.4                                        | 0.03                                           | 4.8                         | 0.004                               |
|                     | 15.45 | 6B         | 8.                                     | 1.6                                        | 0.03                                           | 2.54                        | 0.003                               |
|                     | 15.50 | 6C         | 7.5                                    | 2.                                         | 0.02                                           | 3.04                        | 0.004                               |
|                     | 15.55 | 6D         |                                        | 1.8                                        | 0.01 LT                                        | 2.24                        | 0.003                               |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

555555G. RUTT. LANELL1

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L. O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L. P) |
|---------------------|-------|------------|----------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------------|
|                     |       |            |                                        |                                            |                                                |                             |                                     |
| 190102              |       |            |                                        |                                            |                                                |                             |                                     |
| 08/02/90            | 14.01 | 1A         | 6.8                                    | 0.5                                        | 0.01 LT                                        | 16.                         | 0.002 LT                            |
|                     | 14.02 | 1B         | 6.9                                    | 1.6                                        | 0.01 LT                                        | 5.7                         | 0.002                               |
|                     | 14.03 | 1C         | 6.9                                    | 0.7                                        | 0.01 LT                                        | 10.4                        | 0.002 LT                            |
|                     | 14.04 | 1D         | 6.8                                    | 1.4                                        | 0.01 LT                                        | 5.                          | 0.002 LT                            |
|                     | 14.05 | 2A         | 6.6                                    | 0.8                                        | 0.01                                           | 23.                         | 0.002 LT                            |
|                     | 14.06 | 2B         | 6.8                                    | 1.2                                        | 0.01 LT                                        | 8.8                         | 0.008                               |
|                     | 14.07 | 2C         | 6.8                                    | 0.9                                        | 0.01 LT                                        | 6.4                         | 0.002                               |
|                     | 14.08 | 2D         | 6.8                                    | 1.1                                        | 0.01 LT                                        | 3.26                        | 0.002 LT                            |
|                     | 14.09 | 3A         | 6.6                                    | 1.                                         | 0.01 LT                                        | 17.7                        | 0.002 LT                            |
|                     | 14.10 | 3B         | 6.9                                    | 2.                                         | 0.01                                           | 13.4                        | 0.002 LT                            |
|                     | 14.11 | 3C         | 6.9                                    | 0.9                                        | 0.01 LT                                        | 17.7                        | 0.002 LT                            |
|                     | 14.12 | 3D         | 6.7                                    | 0.8                                        | 0.01 LT                                        | 2.15                        | 0.002 LT                            |
|                     | 14.13 | 4A         | 6.6                                    | 1.2                                        | 0.01 LT                                        | 15.8                        | 0.002 LT                            |
|                     | 14.14 | 4B         | 6.1                                    | 1.5                                        | 0.02                                           | 31.9                        | 0.008                               |
|                     | 14.15 | 4C         | 6.2                                    | 1.3                                        | 0.01 LT                                        | 18.7                        | 0.002 LT                            |
|                     | 14.16 | 4D         | 6.5                                    | 0.8                                        | 0.01 LT                                        | 14.7                        | 0.002 LT                            |
|                     | 15.00 | 6A         |                                        | 1.3                                        | 0.01 LT                                        | 3.25                        | 0.002 LT                            |
|                     | 15.01 | 6B         | 7.4                                    | 1.3                                        | 0.01                                           | 3.23                        | 0.002 LT                            |
|                     | 15.02 | 6C         | 7.                                     | 1.4                                        | 0.01 LT                                        | 3.25                        | 0.002 LT                            |
|                     | 15.03 | 6D         | 7.3                                    | 1.6                                        | 0.01 LT                                        | 2.93                        | 0.002 LT                            |
|                     | 15.04 | 7A         | 6.7                                    | 0.9                                        | 0.01 LT                                        | 8.                          | 0.002 LT                            |
|                     | 15.05 | 7B         |                                        |                                            | 0.02                                           | 4.22                        | 0.002 LT                            |
|                     | 15.06 | 7C         | 7.1                                    | 1.1                                        | 0.06                                           | 16.9                        | 0.008                               |
|                     | 15.07 | 7D         |                                        | 1.4                                        | 0.35                                           | 11.6                        | 0.074                               |
|                     | 15.08 | 8A         | 6.7                                    | 0.6                                        | 0.01 LT                                        | 2.44                        | 0.002 LT                            |
|                     | 15.09 | 8B         |                                        |                                            | 0.06                                           | 1.73                        | 0.004                               |
|                     | 15.10 | 8C         | 7.3                                    | 0.7                                        | 0.01 LT                                        | 6.                          | 0.002 LT                            |
|                     | 15.11 | 8D         | 7.2                                    | 1.2                                        | 0.01 LT                                        | 4.48                        | 0.002 LT                            |
|                     | 15.12 | 9A         | 7.1                                    | 0.7                                        | 0.01 LT                                        | 2.49                        | 0.002 LT                            |
|                     | 15.13 | 9B         | 7.1                                    | 1.                                         | 0.01                                           | 2.2                         | 0.002 LT                            |
|                     | 15.14 | 9C         | 7.1                                    | 1.1                                        | 0.01 LT                                        | 4.58                        | 0.002 LT                            |
|                     | 15.15 | 9D         | 7.4                                    | 0.9                                        | 0.01 LT                                        | 2.05                        | 0.002 LT                            |
|                     | 15.20 | DP         | 6.1                                    | 1.5                                        | 0.01 LT                                        | 26.5                        | 0.002 LT                            |
|                     | 15.25 | DC         | 6.9                                    | 1.1                                        | 0.03                                           | 17.5                        | 0.07                                |
|                     | 16.00 | 10OF       | 5.8                                    | 4.                                         | 1.12                                           | 0.5                         | 0.057                               |
|                     | 16.01 | 11OF       | 5.7                                    | 3.1                                        | 0.3                                            | 0.21                        | 0.034                               |
|                     | 16.02 | 12OF       | 6.2                                    | 3.8                                        | 0.47                                           | 0.69                        | 0.079                               |
|                     | 16.03 | 13OF       | 5.8                                    | 3.2                                        | 0.32                                           | 0.39                        | 0.074                               |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

555555G.RUIT.LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L.O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L.P) |
|---------------------|-------|------------|---------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------|
|                     |       | <----->    | <----->                               | <----->                                    | <----->                                        | <----->                     | <----->                            |
| 190102              |       |            |                                       |                                            |                                                |                             |                                    |
| 14/02/90            | 13.01 | 100F 6.8   | 6.4                                   | 0.29                                       | 1.82                                           | 0.025                       | 0.12                               |
|                     | 13.02 | 110F 6.3   | 6.3                                   | 0.42                                       | 1.58                                           | 0.022                       | 0.09                               |
|                     | 13.03 | 120F 6.5   | 4.9                                   | 0.92                                       | 2.13                                           | 0.084                       | 0.29                               |
|                     | 13.04 | 130F 6.5   | 4.7                                   | 0.72                                       | 1.33                                           | 0.071                       | 0.29                               |
|                     | 14.01 | 6A 7.3     | 0.7                                   | 0.02                                       | 4.56                                           | 0.002 LT                    | 0.64                               |
|                     | 14.02 | 6D         | 2.7                                   | 0.01 LT                                    | 2.75                                           | 0.002 LT                    | 0.96                               |
|                     | 14.03 | 7A 6.6     | 0.6                                   | 0.01                                       | 5.83                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 14.04 | 7B 6.6     | 0.8                                   | 0.02                                       | 6.21                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 14.06 | 7D 6.7     | 0.7                                   | 0.19                                       | 16.8                                           | 0.054                       | 0.05 LT                            |
|                     | 14.07 | 8A 6.7     | 1.3                                   | 0.01                                       | 2.53                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 14.08 | 8B 6.8     | 2.3                                   | 0.03                                       | 3.09                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 14.09 | 8C 6.9     | 1.9                                   | 0.02                                       | 4.76                                           | 0.002 LT                    | 0.82                               |
|                     | 14.10 | 8D 6.8     | 0.7                                   | 0.02                                       | 6.13                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 14.11 | 9A 7.      | 1.1                                   | 0.01                                       | 2.71                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 14.13 | 9C 6.5     | 1.3                                   | 0.01 LT                                    | 5.14                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 14.14 | 9D 8.      | 5.6                                   | 0.01 LT                                    | 2.03                                           | 0.002 LT                    | 0.86                               |
|                     | 16.01 | 1A 7.      | 2.3                                   | 0.04                                       | 12.5                                           | 0.006                       | 0.05 LT                            |
|                     | 16.02 | 1B 6.8     | 1.2                                   | 0.01                                       | 4.68                                           | 0.002 LT                    | 0.33                               |
|                     | 16.03 | 1C 6.7     | 0.9                                   | 0.02                                       | 9.52                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.04 | 1D 6.6     | 1.                                    | 0.01 LT                                    | 5.74                                           | 0.002 LT                    | 0.12                               |
|                     | 16.05 | 2A 6.7     | 1.1                                   | 0.01                                       | 22.9                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.06 | 2B 6.6     | 1.2                                   | 0.02                                       | 7.26                                           | 0.002                       | 0.05 LT                            |
|                     | 16.07 | 2C 6.7     | 1.1                                   | 0.01                                       | 6.72                                           | 0.004                       | 0.05 LT                            |
|                     | 16.08 | 2D 6.7     | 0.5                                   | 0.01 LT                                    | 3.16                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.09 | 3A 6.4     | 1.3                                   | 0.01 LT                                    | 14.9                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.10 | 3B 6.3     | 0.5                                   | 0.01                                       | 12.6                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.11 | 3C 6.4     | 0.5                                   | 0.01 LT                                    | 16.1                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.12 | 3D 6.6     | 0.7                                   | 0.01 LT                                    | 3.28                                           | 0.002 LT                    | 0.07                               |
|                     | 16.13 | 4A 6.7     | 1.                                    | 0.01                                       | 17.5                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.14 | 4B 6.1     | 0.5                                   | 0.04                                       | 38.                                            | 0.011                       | 0.05 LT                            |
|                     | 16.15 | 4C 6.2     | 1.4                                   | 0.01                                       | 19.8                                           | 0.002 LT                    | 0.05 LT                            |
|                     | 16.16 | 4D 6.4     | 0.8                                   | 0.01 LT                                    | 13.                                            | 0.002 LT                    | 0.05 LT                            |
|                     | 16.30 | DC 6.8     | 2.                                    | 0.1                                        | 2.04                                           | 0.047                       | 0.2                                |

## WATER QUALITY SAMPLE TABULATION

5555556. RUIT. LANELLI

WRC HIST DATA

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L. O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L. P) |         |
|---------------------|-------|------------|----------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------------|---------|
|                     |       |            |                                        |                                            |                                                |                             |                                     |         |
| 190102              |       |            |                                        |                                            |                                                |                             |                                     |         |
| 20/02/90            | 14.01 | 1A         | 6.8                                    | 0.6                                        | 0.07                                           | 10.4                        | 0.014                               | 0.05 LT |
|                     | 14.02 | 1B         | 6.9                                    | 1.                                         | 0.03                                           | 4.8                         | 0.011                               | 0.371   |
|                     | 14.03 | 1C         | 6.8                                    | 1.2                                        | 0.03                                           | 9.2                         | 0.01                                | 0.05 LT |
|                     | 14.05 | 2A         | 6.5                                    | 0.6                                        | 0.03                                           | 20.5                        | 0.012                               | 0.05 LT |
|                     | 14.06 | 2B         | 6.6                                    | 0.5                                        | 0.03                                           | 4.2                         | 0.013                               | 0.05 LT |
|                     | 14.07 | 2C         | 6.8                                    | 0.5                                        | 0.03                                           | 7.                          | 0.012                               | 0.05 LT |
|                     | 14.08 | 2D         | 6.6                                    | 0.5                                        | 0.02                                           | 2.4                         | 0.012                               | 0.05 LT |
|                     | 14.09 | 3A         | 6.4                                    | 0.7                                        | 0.02                                           | 13.1                        | 0.011                               | 0.05 LT |
|                     | 14.10 | 3B         | 6.4                                    | 0.7                                        | 0.03                                           | 7.8                         | 0.011                               | 0.05 LT |
|                     | 14.11 | 3C         | 6.5                                    | 0.7                                        | 0.02                                           | 15.8                        | 0.011                               | 0.05 LT |
|                     | 14.12 | 3D         | 6.6                                    | 0.5                                        | 0.02                                           | 3.5                         | 0.01                                | 0.088   |
|                     | 14.14 | 4B         | 5.7                                    | 0.7                                        | 0.05                                           | 25.3                        | 0.019                               | 0.05 LT |
|                     | 14.15 | 4C         | 6.                                     | 0.5                                        | 0.02                                           | 18.3                        | 0.01                                | 0.05 LT |
|                     | 14.16 | 4D         | 6.3                                    | 0.9                                        | 0.02                                           | 10.1                        | 0.01                                | 0.05 LT |
|                     | 14.20 | 10F        | 7.1                                    | 5.2                                        | 0.44                                           | 1.3                         | 0.071                               | 0.228   |
|                     | 14.40 | DP         | 5.9                                    | 0.2                                        | 0.03                                           | 23.8                        | 0.007                               | 0.031   |
|                     | 14.45 | DC         | 7.                                     | 2.6                                        | 0.54                                           | 10.1                        | 0.109                               | 0.329   |
|                     | 15.01 | 6A         | 7.                                     | 0.9                                        | 0.04                                           | 5.2                         | 0.011                               | 0.558   |
|                     | 15.02 | 6B         | 7.4                                    | 0.9                                        | 0.03                                           | 4.8                         | 0.009                               | 0.852   |
|                     | 15.03 | 6C         | 7.2                                    | 1.1                                        | 0.03                                           | 3.2                         | 0.008                               | 0.11    |
|                     | 15.04 | 6D         | 7.3                                    | 0.7                                        | 0.02                                           | 2.9                         | 0.008                               | 0.78    |
|                     | 15.05 | 7A         | 7.1                                    | 0.4                                        | 0.03                                           | 5.4                         | 0.009                               | 0.05 LT |
|                     | 15.06 | 7B         | 7.1                                    | 1.1                                        | 0.04                                           | 6.5                         | 0.009                               | 0.056   |
|                     | 15.07 | 7C         | 7.1                                    | 0.7                                        | 0.05                                           | 15.2                        | 0.013                               | 0.05 LT |
|                     | 15.08 | 7D         | 7.2                                    | 0.9                                        | 0.11                                           | 15.3                        | 0.024                               | 0.05 LT |
|                     | 15.09 | 8A         | 7.                                     | 0.5                                        | 0.03                                           | 2.1                         | 0.009                               | 0.05 LT |
|                     | 15.10 | 8B         | 7.                                     | 1.7                                        | 0.03                                           | 2.9                         | 0.011                               | 0.05 LT |
|                     | 15.11 | 8C         | 7.2                                    | 0.9                                        | 0.03                                           | 6.4                         | 0.009                               | 0.773   |
|                     | 15.12 | 8D         | 7.                                     | 0.7                                        | 0.03                                           | 6.5                         | 0.009                               | 0.05 LT |
|                     | 15.13 | 9A         |                                        | 1.4                                        | 0.05                                           | 2.8                         | 0.012                               | 0.05 LT |
|                     | 15.14 | 9B         |                                        | 0.9                                        | 0.03                                           | 2.                          | 0.009                               | 0.05 LT |
|                     | 15.15 | 9C         | 6.3                                    | 0.5                                        | 0.02                                           | 3.9                         | 0.009                               | 0.05 LT |
|                     | 15.16 | 9D         | 7.5                                    | 0.7                                        | 0.02                                           | 1.8                         | 0.009                               | 0.948   |
|                     | 15.21 | 70F        | 6.9                                    | 8.7 GT                                     | 0.44                                           | 2.3                         | 0.056                               | 0.055   |
|                     | 16.01 | 100F       | 6.5                                    | 4.4                                        | 0.44                                           | 2.1                         | 0.039                               | 0.105   |
|                     | 16.03 | 120F       | 6.8                                    | 4.3                                        | 0.99                                           | 2.5                         | 0.085                               | 0.221   |
|                     | 16.04 | 130F       | 6.6                                    | 6.8                                        | 0.85                                           | 1.4                         | 0.093                               | 0.455   |



16:09 23/09/92

## N.R.A. - WELSH REGION - TECHNICAL DATA / INFORMATION BANK

PAGE 1

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

5555556. RUIT. LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L.O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L.P) |
|---------------------|-------|------------|---------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------|
| 190102              |       |            |                                       |                                            |                                                |                             |                                    |
| 26/02/90            | 15.01 | 1A         | 6.8                                   | 0.4                                        | 0.01 LT                                        | 9.                          | 0.002 LT                           |
|                     | 15.02 | 1B         | 6.9                                   | 0.9                                        | 0.01 LT                                        | 4.1                         | 0.002 LT                           |
|                     | 15.03 | 1C         | 6.9                                   | 0.8                                        | 0.1                                            | 4.8                         | 0.002 LT                           |
|                     | 15.04 | 1D         | 7.1                                   | 0.9                                        | 0.01 LT                                        | 4.7                         | 0.002 LT                           |
|                     | 15.05 | 2A         | 6.7                                   | 0.5                                        | 0.01 LT                                        | 15.1                        | 0.002 LT                           |
|                     | 15.06 | 2B         | 6.8                                   | 0.7                                        | 0.01 LT                                        | 2.6                         | 0.002 LT                           |
|                     | 15.07 | 2C         | 6.8                                   | 0.3                                        | 0.01 LT                                        | 4.9                         | 0.002 LT                           |
|                     | 15.08 | 2D         | 6.7                                   | 0.7                                        | 0.01 LT                                        | 2.8                         | 0.002 LT                           |
|                     | 15.09 | 3A         | 6.5                                   | 0.5                                        | 0.01 LT                                        | 12.2                        | 0.002 LT                           |
|                     | 15.10 | 3B         | 6.8                                   | 0.3                                        | 0.01 LT                                        | 7.6                         | 0.002 LT                           |
|                     | 15.11 | 3C         | 6.4                                   | 0.3                                        | 0.03                                           | 16.                         | 0.008                              |
|                     | 15.12 | 3D         | 6.6                                   | 0.3                                        | 0.01 LT                                        | 4.3                         | 0.002                              |
|                     | 15.13 | 4A         | 6.5                                   | 0.6                                        | 0.01 LT                                        | 18.8                        | 0.003                              |
|                     | 15.14 | 4B         | 5.9                                   | 0.5                                        | 0.04                                           | 29.                         | 0.009                              |
|                     | 15.15 | 4C         | 6.2                                   | 0.5                                        | 0.01 LT                                        | 20.                         | 0.003                              |
|                     | 15.16 | 4D         | 6.4                                   | 0.7                                        | 0.01 LT                                        | 11.                         | 0.002                              |
|                     | 15.30 | 1 OF       | 6.4                                   | 5.4                                        | 0.74                                           | 2.8                         | 0.064                              |
|                     | 15.33 | 4 OF       | 6.4                                   | 9.4                                        | 1.24                                           | 7.1                         | 0.093                              |
|                     | 15.40 | DP         | 6.                                    | 0.5                                        | 0.22                                           | 25.                         | 0.002 LT                           |
|                     | 15.41 | DC         | 7.                                    | 1.9                                        | 0.83                                           | 17.                         | 0.218                              |
|                     | 16.01 | 6A         | 7.3                                   | 0.8                                        | 0.08                                           | 6.6                         | 0.003                              |
|                     | 16.02 | 6B         | 7.5                                   | 0.8                                        | 0.02                                           | 5.7                         | 0.002                              |
|                     | 16.03 | 6C         | 7.4                                   | 1.2                                        | 0.01 LT                                        | 3.4                         | 0.002 LT                           |
|                     | 16.04 | 6D         | 7.6                                   | 0.6                                        | 0.01 LT                                        | 3.4                         | 0.002                              |
|                     | 16.05 | 7A         | 7.2                                   | 0.7                                        | 0.01 LT                                        | 6.1                         | 0.002                              |
|                     | 16.06 | 7B         | 7.2                                   | 1.                                         | 0.01                                           | 7.4                         | 0.002                              |
|                     | 16.07 | 7C         | 7.1                                   | 0.7                                        | 0.06                                           | 18.7                        | 0.005                              |
|                     | 16.08 | 7D         |                                       | 0.6                                        | 0.07                                           | 18.9                        | 0.011                              |
|                     | 16.09 | 8A         | 6.9                                   | 0.9                                        | 0.96                                           | 3.5                         | 0.004                              |
|                     | 16.10 | 8B         |                                       | 0.8                                        | 0.03                                           | 2.9                         | 0.002                              |
|                     | 16.11 | 8C         | 7.6                                   | 0.7                                        | 0.02                                           | 7.5                         | 0.002                              |
|                     | 16.12 | 8D         | 7.1                                   | 0.9                                        | 0.03                                           | 6.2                         | 0.003                              |
|                     | 16.13 | 9A         |                                       |                                            | 0.01 LT                                        | 3.4                         | 0.002                              |
|                     | 16.14 | 9B         | 7.2                                   |                                            | 0.01 LT                                        | 18.4                        | 0.003                              |
|                     | 16.15 | 9C         | 6.6                                   | 0.3                                        | 0.01 LT                                        | 5.4                         | 0.002 LT                           |
|                     | 16.16 | 9D         |                                       | 0.8                                        | 0.01 LT                                        | 12.1                        | 0.002                              |
|                     | 16.30 | 6 OF       | 8.1                                   | 205.                                       | 30.6                                           | 8.5                         | 6.                                 |
|                     | 16.31 | 7 OF       | 7.2                                   | 2.7                                        | 6.1                                            | 22.3                        | 0.116                              |
|                     | 16.33 | 9 OF       | 7.                                    | 5.6                                        | 41.2                                           | 48.6                        | 0.107                              |
|                     | 16.41 | 10 OF      | 7.3                                   | 256.                                       | 113.                                           | 33.6                        | 23.8                               |
|                     | 16.42 | 11 OF      | 7.6                                   | 256.                                       | 55.                                            | 1.3                         | 1.5                                |
|                     | 16.43 | 12 OF      | 7.8                                   | 253.                                       | 49.                                            | 1.6                         | 1.                                 |
|                     | 16.44 | 13 OF      | 6.1                                   | 8.3                                        | 16.5                                           | 18.2                        | 0.063                              |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

555555G. RU11. LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L.O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L.P) |
|---------------------|-------|------------|---------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------|
| 190102              |       |            |                                       |                                            |                                                |                             |                                    |
| 07/03/90            | 14.00 |            | 7.3                                   | 1.4                                        | 0.01 LT                                        | 3.1                         | 0.039                              |
|                     | 14.01 | 1A         |                                       | 1.4                                        | 0.01                                           | 7.72                        | 0.002 LT                           |
|                     | 14.02 | 1B         |                                       | 1.6                                        | 0.03                                           | 3.4                         | 0.002 LT                           |
|                     | 14.03 | 1C         |                                       | 1.1                                        | 0.03                                           | 4.3                         | 0.002 LT                           |
|                     | 14.04 | 1D         |                                       | 1.2                                        | 0.03                                           | 2.7                         | 0.002 LT                           |
|                     | 14.05 | 2A         | 6.2                                   | 0.4                                        | 0.02                                           | 13.8                        | 0.002 LT                           |
|                     | 14.06 | 2B         |                                       |                                            | 0.03                                           | 1.3                         | 0.002 LT                           |
|                     | 14.07 | 2C         | 6.5                                   | 0.5                                        | 0.01                                           | 6.4                         | 0.002 LT                           |
|                     | 14.08 | 2D         |                                       | 1.3                                        | 0.01                                           | 2.4                         | 0.002 LT                           |
|                     | 14.09 | 3A         | 6.4                                   | 1.                                         | 0.04                                           | 13.3                        | 0.002 LT                           |
|                     | 14.10 | 3B         |                                       | 1.1                                        | 0.05                                           | 5.6                         | 0.002 LT                           |
|                     | 14.11 | 3C         |                                       | 1.2                                        | 0.01                                           | 13.8                        | 0.002 LT                           |
|                     | 14.12 | 3D         | 6.6                                   | 0.9                                        | 0.01 LT                                        | 1.                          | 0.002 LT                           |
|                     | 14.13 | 4A         | 6.4                                   | 1.6                                        | 0.01 LT                                        | 17.3                        | 0.002 LT                           |
|                     | 14.14 | 4B         | 6.1                                   | 1. LT                                      | 0.07                                           | 15.5                        | 0.006                              |
|                     | 14.15 | 4C         | 6.1                                   | 1. LT                                      | 0.01 LT                                        | 22.3                        | 0.002 LT                           |
|                     | 14.16 | 4D         | 6.3                                   | 0.9                                        | 0.01 LT                                        | 5.1                         | 0.002 LT                           |
|                     | 14.17 |            | 6.5                                   | 0.5                                        | 0.01                                           | 6.4                         | 0.002 LT                           |
|                     | 14.30 |            | 7.1                                   | 3.8                                        | 0.74                                           | 2.4                         | 0.023                              |
|                     | 14.33 | 40F        | 6.5                                   | 7.8                                        | 1.04                                           | 4.7                         | 0.056                              |
|                     | 14.40 | DP         | 5.7                                   | 0.9                                        | 0.03                                           | 25.8                        | 0.002 LT                           |
|                     | 15.01 | 6A         |                                       | 1.1                                        | 0.01 LT                                        | 6.4                         | 0.002 LT                           |
|                     | 15.02 | 6B         |                                       | 1.2                                        | 0.02                                           | 6.9                         | 0.002 LT                           |
|                     | 15.03 | 6C         |                                       | 1.                                         | 0.01 LT                                        | 4.5                         | 0.002 LT                           |
|                     | 15.04 | 6D         |                                       | 1.                                         | 0.01 LT                                        | 3.4                         | 0.002 LT                           |
|                     | 15.05 | 7A         |                                       | 1.1                                        | 0.01 LT                                        | 5.5                         | 0.002 LT                           |
|                     | 15.06 | 7B         |                                       | 1.3                                        | 0.01 LT                                        | 6.3                         | 0.002 LT                           |
|                     | 15.08 | 7D         | 7.                                    | 1. LT                                      | 0.02                                           | 19.                         | 0.002 LT                           |
|                     | 15.09 | 8A         | 7.                                    | 2.                                         | 0.04                                           | 2.2                         | 0.002 LT                           |
|                     | 15.10 | 8B         |                                       | 1.3                                        | 0.01 LT                                        | 2.7                         | 0.002 LT                           |
|                     | 15.11 | 8C         |                                       | 1.2                                        | 0.01 LT                                        | 8.9                         | 0.002 LT                           |
|                     | 15.12 | 8D         | 6.9                                   | 1.2                                        | 0.01                                           | 5.3                         | 0.002 LT                           |
|                     | 15.13 | 9A         |                                       |                                            | 0.03                                           | 3.6                         | 0.002 LT                           |
|                     | 15.14 | 9B         |                                       | 1.2                                        | 0.01                                           | 34.1                        | 0.002 LT                           |
|                     | 15.15 | 9C         |                                       | 1.1                                        | 0.01                                           | 6.9                         | 0.002 LT                           |
|                     | 15.16 | 9D         |                                       | 1.                                         | 0.01 LT                                        | 15.2                        | 0.002 LT                           |
|                     | 15.30 | 60F        | 7.5                                   | 25.                                        | 15.2                                           | 13.8                        | 0.171                              |
|                     | 15.33 | 90F        | 7.2                                   | 5.6                                        | 26.4                                           |                             | 0.191                              |
|                     | 15.45 |            | 7.                                    | 0.7                                        | 1.24                                           | 11.2                        | 0.029                              |
|                     | 16.30 | 100F       | 6.9                                   | 29.                                        | 49.6                                           |                             | 0.243                              |
|                     | 16.31 | 110F       | 6.8                                   | 6.8                                        | 14.5                                           | 4.9                         | 0.144                              |
|                     | 16.32 | 120F       | 7.1                                   | 25.                                        | 15.8                                           | 2.3                         | 0.138                              |
|                     | 16.33 | 130F       | 6.5                                   | 3.2                                        | 8.2                                            | 9.5                         | 0.118                              |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

5555556. RU11. LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L.O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L.P) |    |
|---------------------|-------|------------|---------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------|----|
| 190102              |       |            |                                       |                                            |                                                |                             |                                    |    |
| 12/03/90            | 14.01 | 1A         | 0.9                                   | 0.03                                       | 8.4                                            | 0.004                       | 0.68                               |    |
|                     | 14.02 | 1B         | 0.9                                   | 0.24                                       | 3.05                                           | 0.009                       | 1.                                 |    |
|                     | 14.03 | 1C         | 0.5                                   | 0.04                                       | 4.24                                           | 0.003                       | 0.7                                |    |
|                     | 14.04 | 1D         | 0.7                                   | 0.03                                       | 2.69                                           | 0.004                       | 0.5                                |    |
|                     | 14.05 | 2A         | 0.3                                   | 0.03                                       | 15.1                                           | 0.004                       | 0.07                               |    |
|                     | 14.06 | 2B         | 0.5                                   | 0.04                                       | 2.63                                           | 0.004                       | 0.5                                |    |
|                     | 14.07 | 2C         | 6.5                                   | 0.05                                       | 6.6                                            | 0.004                       | 0.07                               |    |
|                     | 14.08 | 2D         | 0.4                                   | 0.14                                       | 3.5                                            | 0.005                       | 0.9                                |    |
|                     | 14.09 | 3A         | 6.3                                   | 0.00                                       | 14.8                                           | 0.006                       | 0.7                                |    |
|                     | 14.10 | 3B         | 0.5                                   | 0.06                                       | 6.3                                            | 0.004                       | 1.                                 |    |
|                     | 14.11 | 3C         | 6.2                                   | 0.03                                       | 14.9                                           | 0.003                       | 0.69                               |    |
|                     | 14.12 | 3D         | 0.8                                   | 0.1                                        | 1.78                                           | 0.005                       | 0.6                                |    |
|                     | 14.14 | 4B         | 6.                                    | 0.07                                       | 18.7                                           | 0.005                       | 0.05                               | LT |
|                     | 14.15 | 4C         | 6.1                                   | 0.02                                       | 23.1                                           | 0.003                       | 0.68                               |    |
|                     | 14.16 | 4D         | 0.5                                   | 0.03                                       | 2.24                                           | 0.002                       | 0.69                               |    |
|                     | 14.30 | 5P         | 5.6                                   | 0.02                                       | 27.3                                           | 0.004                       | 0.05                               | LT |
|                     | 14.40 | DC         | 7.5                                   | 0.01                                       | 6.6                                            | 0.07                        | 0.05                               |    |
|                     | 15.01 | 6A         | 0.2                                   | 0.01                                       | 6.6                                            | 0.002                       | 0.9                                |    |
|                     | 15.02 | 6B         | 1.5                                   | 0.02                                       | 7.1                                            | 0.002                       | 1.1                                |    |
|                     | 15.03 | 6C         | 0.8                                   | 0.05                                       | 4.64                                           | 0.009                       | 0.15                               |    |
|                     | 15.04 | 6D         | 0.5                                   | 0.02                                       | 3.79                                           | 0.004                       | 1.3                                |    |
|                     | 15.05 | 7A         | 0.5                                   | 0.03                                       | 6.3                                            | 0.005                       | 0.05                               | LT |
|                     | 15.06 | 7B         | 0.4                                   | 0.03                                       | 7.2                                            | 0.004                       | 0.08                               |    |
|                     | 15.07 | 7C         | 0.2                                   | 0.03                                       | 17.1                                           | 0.004                       | 0.05                               | LT |
|                     | 15.09 | 8A         | 0.4                                   | 0.03                                       | 2.77                                           | 0.003                       | 0.05                               |    |
|                     | 15.10 | 8B         | 0.4                                   | 0.03                                       | 9.                                             | 0.003                       | 1.3                                |    |
|                     | 15.11 | 8C         | 0.7                                   | 0.02                                       | 3.31                                           | 0.004                       | 0.08                               |    |
|                     | 15.12 | 8D         | 6.2                                   | 0.04                                       | 6.6                                            | 0.003                       | 0.06                               |    |
|                     | 15.13 | 9A         | 0.6                                   | 0.04                                       | 3.72                                           | 0.003                       | 0.05                               | LT |
|                     | 15.14 | 9B         | 0.5                                   | 0.03                                       | 24.9                                           | 0.005                       | 0.05                               | LT |
|                     | 15.15 | 9C         | 0.4                                   | 0.03                                       | 8.3                                            | 0.004                       | 0.05                               | LT |
|                     | 15.16 | 9D         | 0.7                                   | 0.01                                       | 11.7                                           | 0.004                       | 2.                                 |    |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

555555G. RUIT. LANELL1

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L.O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L.P) |    |
|---------------------|-------|------------|---------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|------------------------------------|----|
| 190102              |       |            |                                       |                                            |                                                |                             |                                    |    |
| 22/03/90            | 14.01 | 1A         | 7.2                                   | 0.05                                       | 0.56                                           | 0.007                       | 0.05                               | LT |
|                     | 14.02 | 1B         | 7.1                                   | 0.07                                       | 3.97                                           | 0.006                       | 0.91                               |    |
|                     | 14.03 | 1C         | 7.2                                   | 0.01 LT                                    | 3.98                                           | 0.002                       | 0.05                               | LT |
|                     | 14.04 | 1D         | 7.2                                   | 0.01 LT                                    | 2.91                                           | 0.003                       | 0.49                               |    |
|                     | 14.05 | 2A         | 6.9                                   | 0.01 LT                                    | 16.6                                           | 0.003                       | 0.05                               | LT |
|                     | 14.06 | 2B         | 6.9                                   | 0.01 LT                                    | 3.66                                           | 0.004                       | 0.5                                |    |
|                     | 14.07 | 2C         | 7.1                                   | 0.01 LT                                    | 7.89                                           | 0.003                       | 0.05                               | LT |
|                     | 14.08 | 2D         | 7.                                    | 0.07                                       | 5.42                                           | 0.003                       | 0.18                               |    |
|                     | 14.09 | 3A         | 6.9                                   | 0.01 LT                                    | 15.23                                          | 0.003                       | 0.05                               | LT |
|                     | 14.10 | 3B         | 6.9                                   | 0.02                                       | 6.05                                           | 0.005                       | 0.24                               |    |
|                     | 14.11 | 3C         | 6.9                                   | 0.01 LT                                    | 15.1                                           | 0.003                       | 0.05                               | LT |
|                     | 14.13 | 4A         | 7.                                    | 0.05                                       | 15.4                                           | 0.004                       | 0.27                               |    |
|                     | 14.14 | 4B         | 6.6                                   | 0.01 LT                                    | 20.7                                           | 0.005                       | 0.05                               | LT |
|                     | 14.15 | 4C         | 6.1                                   | 0.01 LT                                    | 22.4                                           | 0.003                       | 0.05                               | LT |
|                     | 14.16 | 4D         | 6.4                                   | 0.01 LT                                    | 2.93                                           | 0.004                       | 0.05                               | LT |
|                     | 14.21 | 5D         | 6.9                                   | 0.04                                       | 1.52                                           | 0.003                       | 0.61                               |    |
|                     | 15.01 | 6A         | 1.1                                   | 0.01 LT                                    | 7.19                                           | 0.003                       | 0.86                               |    |
|                     | 15.02 | 6B         | 0.7                                   | 0.01 LT                                    | 7.53                                           | 0.003                       | 1.1                                |    |
|                     | 15.03 | 6C         | 0.7                                   | 0.01 LT                                    | 5.1                                            | 0.003                       | 0.11                               |    |
|                     | 15.04 | 6D         | 0.8                                   | 0.01 LT                                    | 4.24                                           | 0.004                       | 1.2                                |    |
|                     | 15.05 | 7A         | 0.8                                   | 0.01 LT                                    | 6.54                                           | 0.003                       | 0.05                               | LT |
|                     | 15.06 | 7B         | 0.9                                   | 0.01 LT                                    | 6.54                                           | 0.003                       | 0.07                               |    |
|                     | 15.07 | 7C         | 0.7                                   | 0.01 LT                                    | 18.1                                           | 0.003                       | 0.05                               | LT |
|                     | 15.08 | 7D         | 1. LT                                 | 0.01                                       | 20.2                                           | 0.004                       | 0.05                               | LT |
|                     | 15.09 | 8A         | 0.7                                   | 0.01 LT                                    | 2.84                                           | 0.003                       | 0.06                               |    |
|                     | 15.10 | 8B         | 0.9                                   | 0.01 LT                                    | 3.73                                           | 0.004                       | 0.05                               | LT |
|                     | 15.11 | 8C         | 1.                                    | 0.01 LT                                    | 7.74                                           | 0.003                       | 0.92                               |    |
|                     | 15.12 | 8D         | 0.6                                   | 0.01 LT                                    | 6.                                             | 0.003                       | 0.06                               |    |
|                     | 15.13 | 9A         | 1. LT                                 | 0.01                                       | 3.85                                           | 0.003                       | 0.05                               | LT |
|                     | 15.14 | 9B         | 1. LT                                 | 0.01 LT                                    | 22.5                                           | 0.004                       | 0.05                               | LT |
|                     | 15.15 | 9C         | 1. LT                                 | 0.01 LT                                    | 8.44                                           | 0.002                       | 0.05                               | LT |
|                     | 15.16 | 9D         | 1. LT                                 | 0.01 LT                                    | 10.08                                          | 0.003                       | 1.9                                |    |

16:54 23/09/92

N. R. A. - WELSH REGION - TECHNICAL DATA / INFORMATION BANK

PAGE 2

WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

555555G. RUTT. LANELLI

0301  
DISSOLVED  
ORGANIC CARBON  
(MG/L. C)

<----->

| SAMPLE<br>DATE | TIME  |     |  |
|----------------|-------|-----|--|
| 190102         |       |     |  |
| 22/03/90       | 14.01 |     |  |
|                | 14.02 |     |  |
|                | 14.03 |     |  |
|                | 14.04 |     |  |
|                | 14.05 |     |  |
|                | 14.06 |     |  |
|                | 14.07 |     |  |
|                | 14.08 |     |  |
|                | 14.09 |     |  |
|                | 14.10 |     |  |
|                | 14.11 |     |  |
|                | 14.13 |     |  |
|                | 14.14 |     |  |
|                | 14.15 |     |  |
|                | 14.16 |     |  |
|                | 14.21 |     |  |
| 15.01          | 6A    | 1.8 |  |
| 15.02          | 6B    | 2.1 |  |
| 15.03          | 6C    | 2.2 |  |
| 15.04          | 6D    | 2.7 |  |
| 15.05          | 7A    | 0.7 |  |
| 15.06          | 7B    | 1.3 |  |
| 15.07          | 7C    | 0.8 |  |
| 15.08          | 7D    | 1.1 |  |
| 15.09          | 8A    | 0.9 |  |
| 15.10          | 8B    | 3.  |  |
| 15.11          | 8C    | 2.4 |  |
| 15.12          | 8D    | 2.4 |  |
| 15.13          | 9A    | 2.  |  |
| 15.14          | 9B    | 1.8 |  |
| 15.15          | 9C    | 3.8 |  |
| 15.16          | 9D    | 2.2 |  |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

5555556. RUIT. LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L. O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0100<br>ORTHOPHOSPHATE<br>(MG/L. P) |    |
|---------------------|-------|------------|----------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------------|----|
|                     |       | <----->    | <----->                                | <----->                                    | <----->                                        | <----->                     | <----->                             |    |
| 190102              |       |            |                                        |                                            |                                                |                             |                                     |    |
| 27/03/90            | 13.01 | 1A 6.8     |                                        | 0.03                                       | 8.82                                           | 0.004                       | 0.05                                | L1 |
|                     | 13.02 | 1B 7.2     |                                        | 0.09                                       | 2.69                                           | 0.006                       | 0.02                                |    |
|                     | 13.03 | 1C 6.9     |                                        | 0.01                                       | 3.74                                           | 0.003                       | 0.05                                | L1 |
|                     | 13.04 | 1D 6.9     |                                        | 0.01                                       | 2.65                                           | 0.003                       | 0.44                                |    |
|                     | 13.05 | 2A 6.6     |                                        | 0.01                                       | 19.1                                           | 0.005                       | 0.05                                | L1 |
|                     | 13.06 | 2B 6.9     |                                        | 0.03                                       | 3.52                                           | 0.002                       | 0.45                                |    |
|                     | 13.07 | 2C 6.9     |                                        | 0.01                                       | 7.86                                           | 0.003                       | 0.05                                | LT |
|                     | 13.08 | 2D 6.9     |                                        | 0.08                                       | 5.48                                           | 0.003                       | 0.17                                |    |
|                     | 13.09 | 3A 6.6     |                                        | 0.05                                       | 13.4                                           | 0.003                       | 0.05                                | LT |
|                     | 13.10 | 3B 6.8     |                                        | 0.03                                       | 6.02                                           | 0.003                       | 0.24                                |    |
|                     | 13.11 | 3C 6.6     |                                        | 0.02                                       | 14.3                                           | 0.002                       | 0.05                                | LT |
|                     | 13.12 | 3D 7.      |                                        | 0.02                                       | 0.98                                           | 0.002                       | 0.58                                |    |
|                     | 13.13 | 4A 7.      |                                        | 0.04                                       | 13.8                                           | 0.003                       | 0.29                                |    |
|                     | 13.14 | 4B 6.3     |                                        | 0.06                                       | 21.9                                           | 0.003                       | 0.05                                | LT |
|                     | 13.15 | 4C 6.4     |                                        | 0.01                                       | 25.7                                           | 0.005                       | 0.05                                | LT |
|                     | 14.01 | 6A 7.7     | 0.8                                    | 0.02                                       | 7.24                                           | 0.004                       | 0.75                                |    |
|                     | 14.02 | 6B 7.7     | 1.                                     | 0.02                                       | 8.08                                           | 0.002                       | 0.81                                |    |
|                     | 14.03 | 6C 7.5     | 1.1                                    | 0.01                                       | 4.84                                           | 0.004                       | 0.11                                |    |
|                     | 14.04 | 6D 7.6     | 1.1                                    | 0.01                                       | 4.15                                           | 0.003                       | 0.88                                |    |
|                     | 14.05 | 7A 7.1     | 0.8                                    | 0.01                                       | 6.28                                           | 0.003                       | 0.05                                | LT |
|                     | 14.06 | 7B         | 0.5                                    | 0.01                                       | 6.92                                           | 0.003                       | 0.07                                |    |
|                     | 14.07 | 7C 6.7     | 1.2                                    | 0.01                                       | 18.1                                           | 0.002                       | 0.05                                | LT |
|                     | 14.08 | 7D 7.4     | 1.                                     | 0.01                                       | 19.9                                           | 0.003                       | 0.05                                | L1 |
|                     | 14.09 | 8A         | 1.                                     | 0.01                                       | 2.36                                           | 0.002                       | 0.05                                |    |
|                     | 14.10 | 8B 7.5     | 1.6                                    | 0.02                                       | 3.5                                            | 0.005                       | 0.05                                | L1 |
|                     | 14.11 | 8C         | 1.2                                    | 0.01                                       | 7.65                                           | 0.003                       | 0.79                                |    |
|                     | 14.12 | 8D         | 0.9                                    | 0.02                                       | 5.46                                           | 0.002                       | 0.05                                |    |
|                     | 14.13 | 9A         | 0.5                                    | 0.01                                       | 3.9                                            | 0.004                       | 0.05                                | LT |
|                     | 14.14 | 9B         | 0.5                                    | 0.03                                       | 21.8                                           | 0.003                       | 0.05                                | LT |
|                     | 14.15 | 9C         | 0.5                                    | 0.01                                       | 9.15                                           | 0.002                       | 0.05                                | LT |
|                     | 14.16 | 9D         | 0.7                                    | 0.04                                       | 9.52                                           | 0.009                       | 2.03                                |    |

16:18 23/09/92

N. R. A. - WELSH REGION - TECHNICAL DATA / INFORMATION BANK

PAGE 2

WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

SSSSSSG, RUT F, LANELLI

| 0301<br>DISSOLVED<br>ORGANIC CARBON<br>(MG/L.C) |         |
|-------------------------------------------------|---------|
| SAMPLE<br>DATE TIME                             | <-----> |
| 190102                                          |         |
| 27/03/90 13.01                                  |         |
| 13.02                                           |         |
| 13.03                                           |         |
| 13.04                                           |         |
| 13.05                                           |         |
| 13.06                                           |         |
| 13.07                                           |         |
| 13.08                                           |         |
| 13.09                                           |         |
| 13.10                                           |         |
| 13.11                                           |         |
| 13.12                                           |         |
| 13.13                                           |         |
| 13.14                                           |         |
| 13.15                                           |         |
| 14.01                                           | 6A 1.7  |
| 14.02                                           | 6B 1.5  |
| 14.03                                           | 6C 2.   |
| 14.04                                           | 6D 1.7  |
| 14.05                                           | 7A 0.3  |
| 14.06                                           | 7B 0.9  |
| 14.07                                           | 7C 0.5  |
| 14.08                                           | 7D 0.8  |
| 14.09                                           | 8A 1.3  |
| 14.10                                           | 8B 2.7  |
| 14.11                                           | 8C 1.3  |
| 14.12                                           | 8D 2.2  |
| 14.13                                           | 9A 5.2  |
| 14.14                                           | 9B 1.8  |
| 14.15                                           | 9C 2.1  |
| 14.16                                           | 9D 2.2  |



## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

5555556. RUT. LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L. O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L. P) |    |
|---------------------|-------|------------|----------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------------|----|
| 190102              |       |            |                                        |                                            |                                                |                             |                                     |    |
| 02/04/90            | 14.01 | 1A         | 6.9                                    | 0.05                                       | 10.05                                          | 0.006                       | 0.05                                | LT |
|                     | 14.02 | 1B         | 7.4                                    | 0.09                                       | 2.9                                            | 0.006                       | 0.9                                 |    |
|                     | 14.03 | 1C         | 6.9                                    | 0.04                                       | 3.48                                           | 0.004                       | 0.07                                |    |
|                     | 14.04 | 1D         | 7.2                                    | 0.04                                       | 2.5                                            | 0.005                       | 0.46                                |    |
|                     | 14.05 | 2A         | 6.9                                    | 0.03                                       | 23.                                            | 0.005                       | 0.05                                |    |
|                     | 14.06 | 2B         | 7.                                     | 0.04                                       | 4.66                                           | 0.005                       | 0.51                                |    |
|                     | 14.07 | 2C         | 6.9                                    | 0.04                                       | 8.41                                           | 0.004                       | 0.05                                |    |
|                     | 14.08 | 2D         | 6.9                                    | 0.1                                        | 5.54                                           | 0.006                       | 0.2                                 |    |
|                     | 14.09 | 3A         | 7.                                     | 0.05                                       | 18.3                                           | 0.004                       | 0.05                                | LT |
|                     | 14.10 | 3B         | 6.9                                    | 0.05                                       | 7.79                                           | 0.005                       | 0.27                                |    |
|                     | 14.11 | 3C         | 7.                                     | 0.05                                       | 17.3                                           | 0.003                       | 0.05                                | L1 |
|                     | 14.12 | 3D         | 7.1                                    | 0.06                                       | 1.87                                           | 0.006                       | 0.65                                |    |
|                     | 14.13 | 4A         |                                        | 0.06                                       | 14.85                                          | 0.005                       | 0.35                                |    |
|                     | 14.14 | 4B         | 6.6                                    | 0.33                                       | 25.3                                           | 0.006                       | 0.05                                |    |
|                     | 14.15 | 4C         | 6.9                                    | 0.06                                       | 23.5                                           | 0.005                       | 0.05                                | LT |
|                     | 14.16 | 4D         | 6.8                                    | 0.04                                       | 3.49                                           | 0.005                       | 0.05                                | LT |
|                     | 15.01 | 6A         | 1.2                                    | 0.02                                       | 7.99                                           | 0.003                       | 0.83                                |    |
|                     | 15.02 | 6B         | 1.2                                    | 0.03                                       | 8.86                                           | 0.004                       | 0.91                                |    |
|                     | 15.03 | 6C         | 0.9                                    | 0.09                                       | 6.55                                           | 0.011                       | 0.12                                |    |
|                     | 15.04 | 6D         | 1.                                     | 0.01                                       | 5.15                                           | 0.006                       | 0.92                                |    |
|                     | 15.05 | 7A         | 1.3                                    | 0.01                                       | 6.8                                            | 0.005                       | 0.05                                | L1 |
|                     | 15.06 | 7B         | 1.5                                    | 0.01                                       | 7.52                                           | 0.007                       | 0.06                                |    |
|                     | 15.07 | 7C         |                                        | 0.01                                       | 14.5                                           | 0.008                       | 0.05                                | LT |
|                     | 15.08 | 7D         | 1.1                                    | 0.01                                       | 19.1                                           | 0.007                       | 0.05                                | LT |
|                     | 15.09 | 8A         | 1.2                                    | 0.01                                       | 2.72                                           | 0.006                       | 0.08                                |    |
|                     | 15.10 | 8B         | 1.                                     | 0.02                                       | 4.1                                            | 0.006                       | 0.05                                | LT |
|                     | 15.11 | 8C         | 1.3                                    | 0.01                                       | 7.68                                           | 0.005                       | 0.73                                |    |
|                     | 15.12 | 8D         | 1.                                     | 0.02                                       | 5.53                                           | 0.007                       | 0.05                                |    |
|                     | 15.13 | 9A         | 1.7                                    | 0.01                                       | 3.6                                            | 0.008                       | 0.05                                | LT |
|                     | 15.14 | 9B         | 1.4                                    | 0.3                                        | 20.                                            | 0.008                       | 0.05                                | LT |
|                     | 15.15 | 9C         | 1.3                                    | 0.02                                       | 9.82                                           | 0.006                       | 0.05                                | LT |
|                     | 15.16 | 9D         | 2.1                                    | 0.01                                       | 8.88                                           | 0.007                       | 1.81                                |    |

16:23 23/09/92

N.R.A. - WELSH REGION - TECHNICAL DATA / INFORMATION BANK

PAGE 2

WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

555555G. RUIT. LANELLI

| SAMPLE    |       | 0301           |     |
|-----------|-------|----------------|-----|
| DATE TIME |       | DISSOLVED      |     |
|           |       | ORGANIC CARBON |     |
|           |       | (MG/L.C)       |     |
|           |       | <----->        |     |
| 190102    |       |                |     |
| 02/04/90  | 14.01 |                |     |
|           | 14.02 |                |     |
|           | 14.03 |                |     |
|           | 14.04 |                |     |
|           | 14.05 |                |     |
|           | 14.06 |                |     |
|           | 14.07 |                |     |
|           | 14.08 |                |     |
|           | 14.09 |                |     |
|           | 14.10 |                |     |
|           | 14.11 |                |     |
|           | 14.12 |                |     |
|           | 14.13 |                |     |
|           | 14.14 |                |     |
|           | 14.15 |                |     |
|           | 14.16 |                |     |
|           | 15.01 | 6A             | 1.7 |
|           | 15.02 | 6B             | 2.1 |
|           | 15.03 | 6C             | 2.4 |
|           | 15.04 | 6D             | 1.9 |
|           | 15.05 | 7A             | 0.6 |
|           | 15.06 | 7B             | 1.  |
|           | 15.07 | 7C             |     |
|           | 15.08 | 7D             | 1.3 |
|           | 15.09 | 8A             | 1.6 |
|           | 15.10 | 8B             | 1.9 |
|           | 15.11 | 8C             | 1.7 |
|           | 15.12 | 8D             | 2.3 |
|           | 15.13 | 9A             | 2.5 |
|           | 15.14 | 9B             | 2.3 |
|           | 15.15 | 9C             | 2.3 |
|           | 15.16 | 9D             | 2.8 |

## WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

5555556. RU11. LANELLI

| SAMPLE<br>DATE TIME |       | 0061<br>PH | 0085<br>TOTAL BOD 5<br>(ATU) (MG/L. O) | 0111<br>AMMONIACAL<br>NITROGEN (MG/L<br>N) | 0116<br>TOTAL OXIDISED<br>NITROGEN (MG/L<br>N) | 0118<br>NITRITE<br>(MG/L N) | 0180<br>ORTHOPHOSPHATE<br>(MG/L. P) |
|---------------------|-------|------------|----------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------|-------------------------------------|
| 190102              |       |            |                                        |                                            |                                                |                             |                                     |
| 10/04/90            | 13.15 | 1A         | 7.                                     | 0.08                                       | 8.5                                            | 0.002                       | 0.05 LT                             |
|                     | 13.16 | 1B         | 7.3                                    | 0.05                                       | 2.54                                           | 0.002                       | 0.89                                |
|                     | 13.17 | 1C         | 7.8                                    | 0.02                                       | 3.                                             | 0.002 LT                    | 0.05 LT                             |
|                     | 13.18 | 1D         | 7.4                                    | 0.02                                       | 2.79                                           | 0.002 LT                    | 0.44                                |
|                     | 13.19 | 2A         | 7.                                     | 0.01 LT                                    | 21.2                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.20 | 2B         | 7.1                                    | 0.06                                       | 4.07                                           | 0.003                       | 0.54                                |
|                     | 13.21 | 2C         | 7.1                                    | 0.01 LT                                    | 8.05                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.22 | 2D         | 7.4                                    | 0.01 LT                                    | 4.61                                           | 0.003                       | 0.18                                |
|                     | 13.23 | 3A         | 7.8                                    | 0.27                                       | 17.                                            | 0.002                       | 0.05 LT                             |
|                     | 13.24 | 3B         | 7.3                                    | 0.01 LT                                    | 6.59                                           | 0.002 LT                    | 0.29                                |
|                     | 13.25 | 3C         | 6.9                                    | 0.05                                       | 16.4                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.26 | 3D         | 7.1                                    | 0.01                                       | 1.42                                           | 0.002 LT                    | 0.66                                |
|                     | 13.27 | 4A         | 7.1                                    | 0.04                                       | 14.5                                           | 0.002                       | 0.33                                |
|                     | 13.28 | 4B         | 7.1                                    | 0.02                                       | 25.2                                           | 0.002                       | 0.05 LT                             |
|                     | 13.29 | 4C         | 7.                                     | 0.01                                       | 21.4                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.30 | 4D         | 7.1                                    | 0.01 LT                                    | 3.06                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.32 | 6A         | 0.4                                    | 0.01 LT                                    | 7.65                                           | 0.002 LT                    | 0.72                                |
|                     | 13.33 | 6B         | 0.5                                    | 0.01 LT                                    | 4.51                                           | 0.005                       | 0.1                                 |
|                     | 13.34 | 6C         | 0.5 LT                                 | 0.01 LT                                    | 4.1                                            | 0.002                       | 0.84                                |
|                     | 13.35 | 6D         | 0.5                                    | 0.01 LT                                    | 7.2                                            | 0.002 LT                    | 0.05 LT                             |
|                     | 13.36 | 7A         | 0.5 LT                                 | 0.01 LT                                    | 7.08                                           | 0.002 LT                    | 0.06                                |
|                     | 13.37 | 7B         | 0.2 LT                                 | 0.01 LT                                    | 18.8                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.38 | 7C         | 0.6                                    | 0.01 LT                                    | 19.1                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.39 | 7D         | 0.5 LT                                 | 0.01 LT                                    | 2.64                                           | 0.002 LT                    | 0.05                                |
|                     | 13.40 | 8A         | 0.5 LT                                 | 0.01 LT                                    | 3.65                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.41 | 8B         | 0.5 LT                                 | 0.01 LT                                    | 7.72                                           | 0.002 LT                    | 0.72                                |
|                     | 13.42 | 8C         | 0.5 LT                                 | 0.01 LT                                    | 4.89                                           | 0.002 LT                    | 0.05                                |
|                     | 13.43 | 8D         | 0.5 LT                                 | 0.01 LT                                    | 4.37                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.44 | 9A         | 1. LT                                  | 0.05                                       | 19.5                                           | 0.004                       | 0.05 LT                             |
|                     | 13.45 | 9B         | 0.6                                    | 0.01 LT                                    | 9.86                                           | 0.002 LT                    | 0.05 LT                             |
|                     | 13.46 | 9C         | 1. LT                                  | 0.52                                       | 7.61                                           | 0.002                       | 2.2                                 |
|                     | 13.47 | 9D         | 0.4                                    | 0.01 LT                                    | 7.62                                           | 0.002 LT                    | 0.76                                |

16:25 23/09/92

N. R. A. - WELSH REGION - TECHNICAL DATA / INFORMATION BANK

PAGE 2

WATER QUALITY SAMPLE TABULATION

WRC HIST DATA

5555556. RUT1. LANEL1

| SAMPLE<br>DATE TIME |       | 0301<br>DISSOLVED<br>ORGANIC CARBON<br>(MG/L.C)<br>←-----→ |     |
|---------------------|-------|------------------------------------------------------------|-----|
| 190102              |       |                                                            |     |
| 10/04/90            | 13.15 |                                                            |     |
|                     | 13.16 |                                                            |     |
|                     | 13.17 |                                                            |     |
|                     | 13.18 |                                                            |     |
|                     | 13.19 |                                                            |     |
|                     | 13.20 |                                                            |     |
|                     | 13.21 |                                                            |     |
|                     | 13.22 |                                                            |     |
|                     | 13.23 |                                                            |     |
|                     | 13.24 |                                                            |     |
|                     | 13.25 |                                                            |     |
|                     | 13.26 |                                                            |     |
|                     | 13.27 |                                                            |     |
|                     | 13.28 |                                                            |     |
|                     | 13.29 |                                                            |     |
|                     | 13.30 |                                                            |     |
|                     | 13.32 | 6A                                                         | 2.5 |
|                     | 13.33 | 6B                                                         | 1.8 |
|                     | 13.34 | 6C                                                         | 2.  |
|                     | 13.35 | 6D                                                         | 0.5 |
|                     | 13.36 | 7A                                                         | 1.1 |
|                     | 13.37 | 7B                                                         | 0.8 |
|                     | 13.38 | 7C                                                         | 0.9 |
|                     | 13.39 | 7D                                                         | 1.2 |
|                     | 13.40 | 8A                                                         | 2.5 |
|                     | 13.41 | 8B                                                         | 1.6 |
|                     | 13.42 | 8C                                                         | 2.2 |
|                     | 13.43 | 8D                                                         | 2.4 |
|                     | 13.44 | 9A                                                         | 2.3 |
|                     | 13.45 | 9B                                                         | 2.3 |
|                     | 13.46 | 9C                                                         | 3.5 |
|                     | 13.47 | 9D                                                         | 2.1 |

H14 Rainfall data - Clarbeston

Tape storage details:-

APPENDIX\H\H14\README.TXT

The file in this directory, Rainclar.dat, contains raingauge data from Clarbeston catchment. Data shows daily cumulative daily rainfall. Data is an ASCII format and saved in a row/column matrix.

APPENDIX I

SALMONID RECOLONIZATION STUDIES

Contents.

I Habscore Files

APPENDIX\I

The 20 files in this directory all contain data collected for HABSCORE evaluation. Filenames are organised as follows:

FENN\*.TXT  
DEEP\*.TXT

\* = site no (NGR's are given)  
FENN = Afon Fenni  
DEEP = Deepford

Data is in Ascii format.