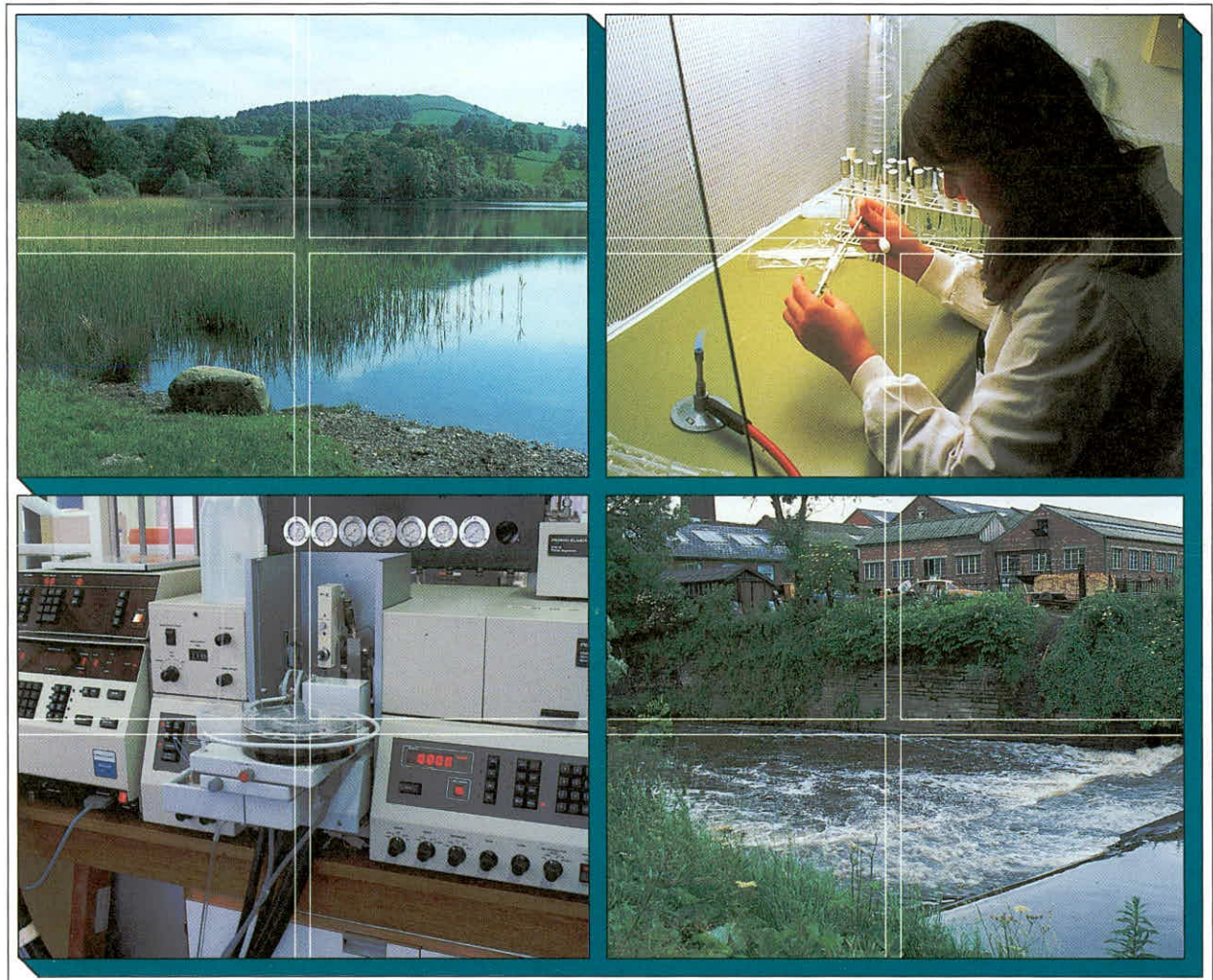




Institute of
Freshwater
Ecology

An audit of performance in the processing of macro-invertebrate samples in 1992. NRA Northumbrian Region

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**An audit of performance in the processing
of macro-invertebrate samples in 1992.**
NRA Northumbrian Region

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Project leader:	R.J.M. Gunn
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The Institute of Freshwater Ecology is part of the Terrestrial and Freshwater Sciences Directorate of the Natural Environment Research Council.

1. INTRODUCTION

In 1992 the sampling of aquatic macro-invertebrates for the biological assessment of river quality continued throughout the United Kingdom. This task was undertaken by the National Rivers Authority (NRA) in England and Wales, the River Purification Boards (RPBs) in Scotland and the Industrial Research & Technology Unit (IRTU) in Northern Ireland.

In view of the number of staff involved and the variability of sample processing techniques, it was recognised that an independent quality control exercise was necessary to promote a consistently high level of reliability. The IFE was contracted to undertake an audit of the sample sorting and identification performance of each NRA region, several RPBs and the IRTU. This report presents the results of 60 samples audited for Northumbrian Region of the NRA. The IFE was not required to perform any statistical analyses nor interpretation of the results of the audit.

Each organisation employed standard collection procedures, as used in the 1990 River Quality Survey, and the sampling strategy was therefore compatible with RIVPACS (River InVertebrate Prediction And Classification System), which has been developed by the Institute of Freshwater Ecology (IFE).

Samples were sorted by NRA, RPB and IRTU personnel for the families of macro-invertebrates included in the Biological Monitoring Working Party (BMWP) system. Taxa present were recorded on site data sheets. Sample processing and recording techniques varied from region to region.

2. SAMPLE SELECTION

Samples for audit were selected internally by each of the agencies being monitored. The biologists processing these samples had no prior knowledge of the samples to be audited.

The manner of sample selection, which biologists would be monitored and the number of audit samples from each season, were left to the discretion of the agency, within the limits of the total number of samples that IFE was contracted to audit.

3. SAMPLE PROCESSING

The normal protocol for NRA, RPB and IRTU biologists was to sort their samples within the laboratory and to select examples of each scoring taxon within the BMWP system. In most cases, the invertebrates were placed in a vial of preservative (4% formaldehyde solution or 70% industrial alcohol) and the BMWP taxa were listed on a data sheet. The vial of animals and the sorted material were then returned to the sample container and preservative added. Thus, each sample available to IFE for audit should have included:

- i) a list of the BMWP families found in the sample
- ii) a vial containing representatives from each family
- iii) the preserved sample

When these three elements were present, the sequence of operations at IFE was as follows:

- a) The remainder of the sample was sorted and the BMWP families listed
- b) The families contained within the vial were identified and listed
- c) A comparison was made between the NRA listing of families and those identified from the vial by IFE
- d) A comparison was made between the NRA listing of families and those found in the sample by IFE
- e) "Losses" or "gains" from the NRA listing of families were noted. In the case of "gains", each additional family was identified, where possible, to species level, in order to clarify any specific repetitive errors.

For a number of different reasons, some samples did not include a vial containing representative examples of the families listed on the data sheet. Others arrived with the vial damaged in transit such that the representative examples were no longer separated. For these samples, only operations a), d) and e) above were appropriate.

Several directives were issued to IFE relating to the treatment of BMWP taxa. Terrestrial representatives of BMWP scoring families, animals deemed to have been dead at the time of sampling, cast insect skins, pupal exuviae, empty mollusc shells and posterior ends of "living" specimens were to be excluded from the listing of families present. Chrysomelidae and Curculionidae, which appear in the BMWP list, were also to be excluded for the purposes of the audit. Trichopteran pupae, although not routinely identified by many biologists, were to be included in the listing of families.

4. REPORTING

The results of each sample audit were recorded on a standard report form (Table 1). For audit samples where a vial of animals was included, the comparison between the NRA listing and the taxa found in the vial by IFE was shown in box A of the report form. Discrepancies could be due to carelessness, misidentifications or errors in completing the NRA data sheet. Families not on the NRA listing but found by IFE in the remainder of the sample were entered in box B of the report form under "additional families". When the families listed as "losses" in section A of the report form were compared with the full list of families recorded in the sample by IFE, some apparent losses from the vial were offset by the presence of those families in the remainder of the sample. These taxa were therefore listed in the "losses" box of section A and the "gains" box of section B and were neither a net loss nor a net gain. In these cases, the families were marked with an asterisk in both boxes. Such errors are noted as "omissions" in the tables which summarise the results for each season (Tables 2, 3 and 4).

Species identifications, state of development (eg adult or larval coleopterans) and the presence of a single representative of a family within the remainder of the sample were recorded in the notes section of the report form. Where the NRA data sheet indicated that a family was noted and released at the site, this was recorded in the notes section but not included as a "loss", even though the family was not found in the vial.

For those samples in which the vial of animals was damaged or missing, box A of the report form was not applicable (N/a). Families not on the NRA list but present in the sample were listed in box B under "additional families" as before. Families recorded on the NRA list but not found by IFE were indicated on the left hand side of box B. If the vial of animals was retained by the NRA, entries in this box could include the sole representative of a family which was removed by the NRA, a family seen at the site which escaped or was released (without mention being made on the NRA data sheet), inaccurate identification, the wrong family box being ticked on the NRA data sheet or the family being present in the sample but missed by IFE.

Results of the audits of individual samples are presented in the Appendix.

ACKNOWLEDGEMENTS

Thanks to Kay Symes for help with production of results and to Valerie Palmer for typing the manuscript.

TABLE 1. The IFE Report form

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

[illegible]

RIVER

DATE SITE

SORTER

SAMPLE CODE

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5

<div style="border: 1px solid black; padding: 2px; display: inline-block;">A</div> <div style="text-align: center; padding: 10px;">VIAL</div>	<div style="text-align: center; padding: 10px;">BMWP FAMILIES NOT FOUND BY IFE</div>	<div style="text-align: center; padding: 10px;">ADDITIONAL FAMILIES FOUND BY IFE</div>
<p>Differences between:</p> <ul style="list-style-type: none"> i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE 		

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	<p>Differences between:</p> <p>i) BMWP families listed on sample data sheet and</p> <p>ii) BMWP families found in SAMPLE by IFE</p>	<p>(This box only completed when no vial is supplied with sample)</p>	

NOTES:



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TABLE 2. The 20 spring samples audited for Northumbrian Region.

River	Site	Sorter	Losses	Gains	Omissions
Derwent	Allensford	SS/VW	0	0	0
Trout Burn	Mine	SS/VW	0	0	0
*Coquet	Pauperhaugh	SS	1	2	0
Coquet	Weldon	VW/SS	0	0	0
Tyne	Old Bridge End	AP	0	2	0
Dipton Burn	B6310 Bridge	SS	0	0	0
Westerhope Burn	Westerhope	SS	0	0	0
West Allen	Carrishiel	SS	0	1	0
Harwood Beck	New House	VW	0	0	0
Leven	Leven Bridge	VW	0	1	0
Tees	Low Coniscliffe	AP	0	2	1
Burnhope Burn	Wearhead	SS	0	2	0
Harthope Burn	Coronation Wood	AP	0	1	0
Alwin	Alwinton	VW/SS	0	0	0
Cowbridge Burn	Works	SS	0	1	0
Broughton Beck	Kirkby Bridge	VW	0	1	0
Carrs	Chilton Lane	AP	0	0	0
Tame	Tame Bridge	VW	0	0	0
Ridlees Burn	Linshields	SS/VW	1	0	0
Wreigh Burn	Thropton	SS	0	1	0

* indicates vial broken in transit

TABLE 3. The 20 summer samples audited for Northumbrian Region

River	Site	Sorter	Losses	Gains	Omissions
Browney	u/s STW	SS	0	1	0
Gunnerton Burn	Burnmouth Cottages	JH	0	1	0
Etters Gill Beck	B6277 Bridge	EC	2	1	0
South Tyne	Unthank	SS	0	0	1
Kilton Beck	Lodge Wood	VW	1	1	0
Catraw Burn	Stannington	SS	0	1	0
Kilton Beck	Skinningrone	VW	0	2	0
Tyne	Corbridge	SS	0	0	0
Mortonwood Beck	B1380 Bridge	EC	0	1	0
Houxy Burn	B6320 Bridge	VW	1	1	0
Maize Burn	Birkdale	JH	0	1	0
Erring Burn	Chollerton	JH	1	3	0
Pont	Foxcovert Lane	RJ	0	2	0
Trout Burn	Mine	JH	0	1	1
Chirdon Burn	Chirdon Mill	VW	0	0	0
Tipalt Burn	u/s South Tyne	SS	0	3	0
Lewis Burn	Bridge	SS	0	0	0
North Tyne	The Green	SS	0	0	0
South Tyne	Haydon Bridge	SS	0	0	0
North Tyne	Falstone	VW	0	0	0

TABLE 4. The 20 autumn samples audited for Northumbrian Region

River	Site	Sorter	Losses	Gains	Omissions
Grassless Burn	Swindon	VW	0	0	0
Catraw Burn	Stannington	SS	0	1	0
Stockerley Burn	Stockerley Bridge	EC	0	1	0
Elsdon Burn	d/s Elsdon	RJ	1	1	0
North Tyne	Chirdon	RJ	0	1	0
Hazon Burn	Whittle Colliery	VW	0	2	0
Flushiemere Beck	Bowlees	VW	0	1	0
Fenwick Burn	Fenwick	JH	1	0	1
Crook Burn	Simonburn	VW	0	0	1
Browney	Witton Gilbert	RJ	0	1	0
Tarset Burn	Redmire	RJ	0	1	0
Barrasford	d/s Gravel pit	JH	1	1	0
Chevington Burn	Red Row	JH	1	0	0
Swinhope Burn	Swinhope	VW	0	0	0
Smallhope Burn	Low Meadow	RJ	0	0	0
Browney	Malton Colliery	EC	0	0	0
Pont	Kirkley Mill	EC	0	0	0
Rookhope Burn	Eastgate	SS	0	0	0
Gaunless	Butterknow	SS	0	0	0
Howl Beck	Howlbeck Bridge	JH	0	0	0

APPENDIX

Results of individual sample audits

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Derwent

DATE 24.3.92

SITE Allensford

SORTER SS/VW

SAMPLE CODE NRA02 1380

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES NET GAINS

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Trout Burn

DATE 24.5.92

SITE Mine

SORTER SS/VW

SAMPLE CODE NRA02 4060

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Coquet
DATE	14.5.92	SITE	Pauperhaugh
SORTER	SS	SAMPLE CODE	NRA02 0450

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	Vial broken in transit. Contents dispersed in sample. Identification check not possible.	Not applicable

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample) 1 Hydrobiidae	2 Dendrocoelidae 3 Hydroptilidae

NET LOSSES

1

NET GAINS

2

NOTES:

- 1 Empty shell only found in sample
 2 Dendrocoelum lacteum 1 only
 3 Ithytrichia sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Coquet

DATE 14.5.92

SITE Weldon

SORTER VW/SS

SAMPLE CODE NRA02 0440

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Tyne

DATE 28.3.92

SITE Old Bridge End

SORTER AP

SAMPLE CODE NRA02 1180

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Glossiphoniidae 2 Hydroptilidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Helobdella stagnalis 1 only
2 Ithytrichia sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Dipton Burn

DATE 24.2.92

SITE B6310 Bridge

SORTER SS

SAMPLE CODE NRA02 1440

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Westerhope Burn
DATE	17.4.92	SITE	Westerhope
SORTER	SS	SAMPLE CODE	NRA02 2790

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES NET GAINS

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria
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RIVER	West Allen
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DATE	2.3.92
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SITE	Carrishiel
------	------------

SORTER	SS
--------	----

SAMPLE CODE	NRA02 1720
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AQC OF BMWP FAMILIES A. IN VIAL

B. IN SAMPLE	+
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
21	1
22	1
23	1
24	1
25	1
26	1
27	1
28	1
29	1
30	1
31	1
32	1
33	1
34	1
35	1
36	1
37	1
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84	1
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86	1
87	1
88	1
89	1
90	1
91	1
92	1
93	1
94	1
95	1
96	1
97	1
98	1
99	1
100	1

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	<p>Differences between:</p> <p>i) BMWP families listed on sample data sheet and</p> <p>ii) BMWP families found in SAMPLE by IFE</p>	<p>(This box only completed when no vial is supplied with sample)</p>	<p>1 Limnephilidae</p>

NET LOSSES

0

NET GAINS

1

NOTES :

1 *Ecclisopteryx guttulata*

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Harwood Beck
DATE	24.5.92	SITE	New House
SORTER	VW	SAMPLE CODE	NRA02 4020

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

NET GAINS

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Leven
DATE	1.5.92	SITE	Leven Bridge
SORTER	VW	SAMPLE CODE	NRA02 3400

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Lepidostomatidae

NET LOSSES

NET GAINS

NOTES:

1 Lepidostoma hirtum 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Tees

DATE 5.3.92

SITE Low Coniscliffe

SORTER AP

SAMPLE CODE NRA02 2950

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Hydropsychidae*	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	2 Oligochaeta 3 Taeniopterygidae 4 Hydropsychidae*

NET LOSSES

0

NET GAINS

2

NOTES:

2 Indet tubificids
 3 Brachyptera risi 1 only
 4 Hydropsyche pellucidula, H.siltalai, Cheumatopsyche lepida

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Burnhope Burn
DATE	12.4.92	SITE	Wearhead
SORTER	SS	SAMPLE CODE	NRA02 2840

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Elmidae 2 Rhyacophilidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Riolus subviolaceus (adult) 1 only
2 Rhyacophila dorsalis 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Harthope Burn
DATE	9.4.92	SITE	Coronation Wood
SORTER	AP	SAMPLE CODE	NRA02 0140

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Lepidostomatidae

NET LOSSES

NET GAINS

NOTES:

1 Lepidostoma hirtum 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Alwin
DATE	21.5.92	SITE	Alwinton
SORTER	VW/SS	SAMPLE CODE	NRA02 0670

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

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1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Cowbridge Burn

DATE 24.4.92

SITE Works

SORTER SS

SAMPLE CODE NRA02 3100

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Hydrobiidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Potamopyrgus jenkinsi 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbria

RIVER Broughton Beck

DATE 1.5.92

SITE Kirkby Bridge

SORTER VW

SAMPLE CODE NRA02 3510

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Planorbidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Armiger crista 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Carrs
DATE	18.3.92	SITE	Chilton Lane
SORTER	AP	SAMPLE CODE	NRA02 3730

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

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1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Tame
DATE	1.5.92	SITE	Tame Bridge
SORTER	VW	SAMPLE CODE	NRA02 3490

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

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1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Ridlees Burn
DATE	23.5.92	SITE	Linshields
SORTER	SS/VW	SAMPLE CODE	NRA02 0680

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Hydrobiidae	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

1

NET GAINS

0

NOTES:

1 Small Lymnaea palustris/truncatula + L.peregra in vial.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbria	RIVER	Wreigh Burn
DATE	14.5.92	SITE	Thropton
SORTER	SS	SAMPLE CODE	NRA02 0640

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Leptoceridae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Athripsodes sp. (juvenile) 1 only

1992 RIVER QUALITY SURVEY · AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Browney

DATE 11.6.92

SITE u/s STW

SORTER SS

SAMPLE CODE NRA02 2485

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Leptophlebiidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Habrophlebia fusca 1 only

1992 RIVER QUALITY SURVEY · AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Gunnerton Burn

DATE 1.7.92

SITE Burnmouth Cottages

SORTER JH

SAMPLE CODE NRA02 1840

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Beraeidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Beraea maurus 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Etters Gill Beck
DATE	14.7.92	SITE	B6277 Bridge
SORTER	EC	SAMPLE CODE	NRA02 4010

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Siphonuridae 2 Hydrophilidae	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	3 Psychomyiidae

NET LOSSES

2

NET GAINS

1

NOTES:

3 Tinodes waeneri

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER South Tyne

DATE 2.7.92

SITE Unthank

SORTER SS

SAMPLE CODE NRA02 1610

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Psychomyiidae*	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	2 Psychomyiidae*

NET LOSSES

0

NET GAINS

0

NOTES:

2 Psychomyia pusilla

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Kilton Beck

DATE 24.6.92

SITE Lodge Wood

SORTER VW

SAMPLE CODE NRA02 4120

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Lymnaeidae	2 Scirtidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

1

NET GAINS

1

NOTES:

- 1 Remains of terrestrial gastropod in vial
2 Elodes sp.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Catraw Burn

DATE 22.7.92

SITE Stannington

SORTER SS

SAMPLE CODE NRA02 1000

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Scirtidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Elodes sp. (larvae)

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Kilton Beck

DATE 24.6.92

SITE Skinningrone

SORTER VW

SAMPLE CODE NRA02 4110

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Hydrobiidae 2 Asellidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Potamopyrgus jenkinsi
2 Asellus aquaticus 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Tyne

DATE 2.7.92

SITE Corbridge

SORTER SS

SAMPLE CODE NRA02 1170

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Mortonwood Beck

DATE 26.8.92

SITE B1380 Bridge

SORTER EC

SAMPLE CODE NRA02 3220

AQC OF BMWP FAMILIES A. IN VIAL +

B. IN SAMPLE +

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Elmidae

NET LOSSES 0

NET GAINS 1

NOTES:

1 Elmis aenea (larva) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Houxty Burn

DATE 1.7.92

SITE B6320 Bridge

SORTER VW

SAMPLE CODE NRA02 1880

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Perlodidae	2 Perlidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

1

NET GAINS

1

NOTES:

2 Dinocras cephalotes

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Maize Burn
DATE	8.7.92	SITE	Birkdale
SORTER	JH	SAMPLE CODE	NRA02 4050

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Leuctridae

NOTES:

NET LOSSES NET GAINS

1 Leuctra fusca 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Erring Burn
DATE	1.7.92	SITE	Chollerton
SORTER	JH	SAMPLE CODE	NRA02 1810

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Dytiscidae	2 Haliplidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	3 Hydrophilidae 4 Simuliidae

NET LOSSES

1

NET GAINS

3

NOTES:

2 Brychius elevatus (adult)
 3 Helophorus brevipalpis (adult) 1 only
 4 Simulium ornatum group 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Pont
DATE	16.7.92	SITE	Foxcovert Lane
SORTER	RJ	SAMPLE CODE	NRA02 1020

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Sphaeriidae 2 Hydroptilidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Pisidium sp.
2 Hydroptila sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Trout Burn
DATE	8.7.92	SITE	Mine
SORTER	JH	SAMPLE CODE	NRA02 4060

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Chironomidae*	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	2 Caenidae 3 Chironomidae*

NET LOSSES

0

NET GAINS

1

NOTES:

2 Caenis rivulorum 1 only
3 Diamesinae, Orthocladiinae, Chironomini

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Chirdon Burn

DATE 23.6.92

SITE Chirdon Mill

SORTER VW

SAMPLE CODE NRA02 2020

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Tipalt Burn
DATE	28.6.92	SITE	u/s S.Tyne
SORTER	SS	SAMPLE CODE	NRA02 1740

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Haliplidae 2 Hydrophilidae 3 Brachycentridae

NOTES: NET LOSSES NET GAINS

1 Halipulus sp. (larva) 1 only
2 Hydraena gracilis (adult) 1 only
3 Brachycentrus subnubilus 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Lewis Burn
DATE	23.6.92	SITE	Bridge
SORTER	SS	SAMPLE CODE	NRA02 2050

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

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1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	North Tyne
DATE	1.7.92	SITE	The Green
SORTER	SS	SAMPLE CODE	NRA02 1220

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NOTES:

NET LOSSES NET GAINS

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	South Tyne
DATE	2.7.92	SITE	Haydon Bridge
SORTER	SS	SAMPLE CODE	NRA02 1590

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

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1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	North Tyne
DATE	23.6.92	SITE	Falstone
SORTER	VW	SAMPLE CODE	NRA02 1250

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NOTES:

NET LOSSES NET GAINS

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Grasslees Burn
DATE	29.9.92	SITE	Swindon
SORTER	VW	SAMPLE CODE	NRA02 0650

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NOTES:

NET LOSSES NET GAINS

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Catraw Burn

DATE 29.10.92

SITE Stannington

SORTER SS

SAMPLE CODE NRA02 1000

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Glossiphoniidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Helobdella stagnalis 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Stockerley
DATE	13.10.92	SITE	Stockerley Bridge
SORTER	EC	SAMPLE CODE	NRA02 2600

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Heptageniidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Rhithrogena semicolorata 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Elsdon Burn
DATE	21.10.92	SITE	d/s Elsdon
SORTER	RJ	SAMPLE CODE	NRA02 1970

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Haliplidae	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	2 Psychomyiidae

NET LOSSES

1

NET GAINS

1

NOTES:

1 Remains of Brychius elevatus (dead at time of capture) in vial
2 Tinodes waeneri 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER North Tyne

DATE 7.10.92

SITE Chirdon

SORTER RJ

SAMPLE CODE NRA02 1240

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Ephemeraidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Ephemera danica

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Hazon Burn
DATE	13.10.92	SITE	Whittle Colliery
SORTER	VW	SAMPLE CODE	NRA02 0530

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	1 Limnephilidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	2 Polycentropodidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Indet Limnephilid (juvenile)
2 Plectrocnemia conspersa 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Flushiemere Burn
DATE	17.9.92	SITE	Bowlees
SORTER	VW	SAMPLE CODE	NRA02 4000

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Tipulidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Dicranota sp., Pedicia sp., Tipula montium group

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Fenwick Beck
DATE	27.10.92	SITE	Fenwick
SORTER	JH	SAMPLE CODE	NRA02 1090

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Valvatidae 2 Chironomidae*	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	3 Chironomidae*

NET LOSSES

1

NET GAINS

0

NOTES:

3 *Brillia modesta*

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Crook Burn
DATE	20.10.92	SITE	Simonburn
SORTER	VW	SAMPLE CODE	NRA02 1860

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Polycentropodidae*	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	2 Polycentropodidae*

NET LOSSES

0

NET GAINS

0

NOTES:

2 Polycentropus flavomaculatus, Plectrocnemia conspersa

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Browney
DATE	13.10.92	SITE	Witton Gilbert
SORTER	RJ	SAMPLE CODE	NRA02 2490

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Rhyacophilidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Rhyacophila sp. (juvenile) 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Tarset Burn
DATE	21.10.92	SITE	Redmire
SORTER	RJ	SAMPLE CODE	NRA02 2030

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	1 Hydroptilidae

NET LOSSES

0

NET GAINS

1

NOTES:

1 Oxyethira sp. 1 only

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Barrasford
DATE	20.10.92	SITE	d/s Gravel Pit
SORTER	JH	SAMPLE CODE	NRA02 1830

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Hydrobiidae	2 Lymnaeidae

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

1

NET GAINS

1

NOTES:

2 Lymnaea palustris

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Chevington Burn
DATE	4.11.92	SITE	Red Row
SORTER	JH	SAMPLE CODE	NRA02 0700

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	1 Hydrophilidae	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

1

NET GAINS

0

NOTES:

1 Terrestrial Chrysomelid in vial

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Swinhope Burn
DATE	20.9.92	SITE	Swinhope
SORTER	VW	SAMPLE CODE	NRA02 2800

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Smallhope Burn
DATE	13.10.92	SITE	Low Meadow
SORTER	RJ	SAMPLE CODE	NRA02 2580

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

Posterior end only of Haliplid larva found by IFE in sample. Not counted as a "gain" for purposes of audit.

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Browney
DATE	13.10.92	SITE	Malton Colliery
SORTER	EC	SAMPLE CODE	NRA02 2500

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NOTES:

NET LOSSES NET GAINS

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION Northumbrian

RIVER Pont

DATE 27.10.92

SITE Kirkley Mill

SORTER EC

SAMPLE CODE NRA02 1010

AQC OF BMWP FAMILIES A. IN VIAL B. IN SAMPLE

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES NET GAINS

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Rookhope Burn
DATE	20.9.92	SITE	Eastgate
SORTER	SS	SAMPLE CODE	NRA02 2770

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Gaunless
DATE	20.10.92	SITE	Butterknow
SORTER	SS	SAMPLE CODE	NRA02 2680

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

1992 RIVER QUALITY SURVEY AQC - BIOLOGICAL SAMPLES

REGION	Northumbrian	RIVER	Howl Beck
DATE	20.10.92	SITE	Howlbeck Bridge
SORTER	JH	SAMPLE CODE	NRA02 4100

AQC OF BMWP FAMILIES A. IN VIAL

+

B. IN SAMPLE

+

A	VIAL	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in VIAL by IFE	None	None

B	SAMPLE	BMWP FAMILIES NOT FOUND BY IFE	ADDITIONAL FAMILIES FOUND BY IFE
	Differences between: i) BMWP families listed on sample data sheet and ii) BMWP families found in SAMPLE by IFE	(This box only completed when no vial is supplied with sample)	None

NET LOSSES

0

NET GAINS

0

NOTES:

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