

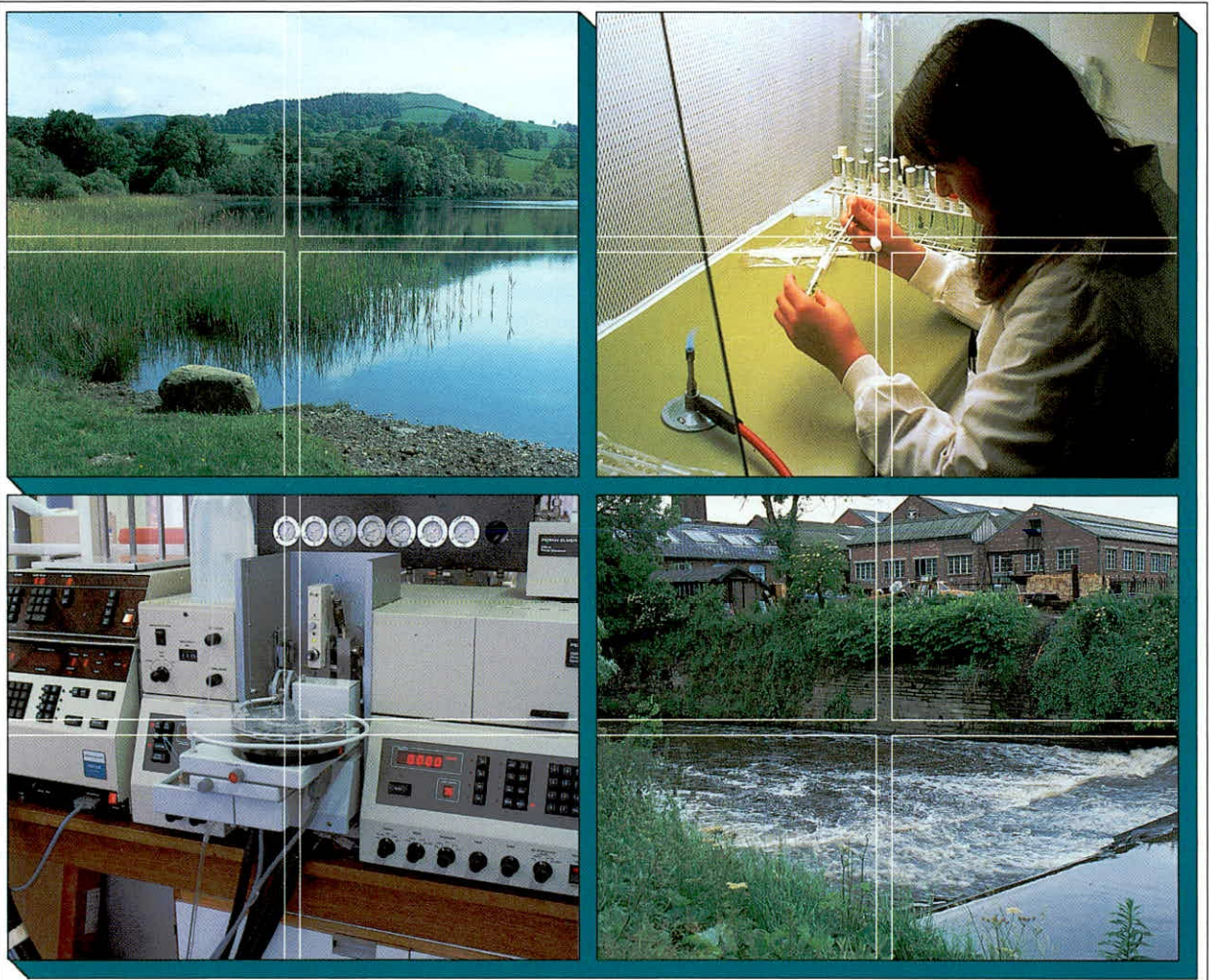


**Institute of
Freshwater
Ecology**

An audit of performance in the processing of macro-invertebrate samples in 1993.

NRA North West Region

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Project leader:	R.J.M. Gunn
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1. INTRODUCTION

In 1993 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 North West 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 Valerie Palmer for typing the report.

TABLE 1. The IFE Report form

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	<input type="text"/>	RIVER	<input type="text"/>
DATE	<input type="text"/>	SITE	<input type="text"/>
SORTER	<input type="text"/>	SAMPLE CODE	<input type="text"/>

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		

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)	

NOTES:

NET LOSSES ☐NET GAINS ☐

TABLE 2. The 6 spring samples audited for North West Region.

River	Site	Sorter	Losses	Gains	Omissions
* Marron	Woodend Bridge	AJ	0	2	0
* Barbon Beck	A683 Bridge	BJI/NSW	0	1	0
* Cunsey Beck	Cunsey Bridge	KJR/NSW	0	0	0
* Sleet Beck	NY 497 758	RFP/NSW	0	1	0
* Hall Beck	NY 513 465	JL	0	2	0
* Park Beck	NY 144 205	DS/NSW	2	3	0

* indicates no vial of animals present in sample

TABLE 3. The 26 summer samples audited for North West Region

River	Site	Sorter	Losses	Gains	Omissions
Medlock	ptc Lords Brook	JCH	1	3	0
Agden Brook	A56 Agden Brook Farm	MH	1	0	0
Fairywell Brook	ptc Baguley Brook	JCH	3	0	0
Shelf Brook	u/s Glossop Super Alloys	KW	1	2	0
Mersey	Bollin Point	KW	1	0	0
Goyt	Taxal	JCH	0	3	0
Limy Water	u/s Loveclough Textiles	KW	0	6	1
Mill Brook	u/s A5117 Bridge	KW	1	2	0
Weaver	Frodsham Bridge	MH	0	0	0
Dane	u/s Water Street	JCH	0	1	0
Wyre Catchment	Site No. 363	JAW	1	4	0
Ribble Catchment	Site No. 299	EIG	0	6	0
Darwen Catchment	Site No. 117	JAW	1	2	0
Sankey Catchment	Site No. 812	JAW	0	3	0
Lostock Catchment	Site No. 45	JAW	2	3	0
Ribble Catchment	Site No. 249	EIG	2	4	0
Hyndburn Catchment	Site No. 205	CDD	0	0	0
Douglas Catchment	Site No. 701	SLP	0	3	0
Calder Catchment	Site No. 193	JAW	1	0	0
Hodder Catchment	Site No. 156	JAW	0	1	0
Sprint	d/s Sprint Bridge	KJR/NC	0	1	0
* Pow Beck	NY 247 237	AJ/AJ	3	5	0
* Watendlath Beck	d/s Road Bridge	AJ/AJ	1	3	0
* Cumwhitton Beck	NY 500 528	DS/DS	0	3	0
* Eden	Warwick Bridge	RFP/NC	1	1	0
Lyvennet	Lyvennet Bridge	DS/AJ	1	3	0

* indicates no vial of animals present in samples

TABLE 4. The 28 autumn samples audited for North West Region

River	Site	Sorter	Losses	Gains	Omissions
Pendle Catchment	Site No. 214	EIG	0	2	0
Cocker Catchment	Site No. 381	JEL	0	0	0
Lostock Catchment	Site No. 47	JEL	0	2	0
Yarrow Catchment	Site No. 5	JAW	1	2	1
Crossens Catchment	Site No. 775	SLP	0	5	0
Douglas Catchment	Site No. 661	JAW	0	2	1
Ribble Catchment	Site No. 254	JAW	1	9	2
Darwen Catchment	Site No. 96	SLP	0	3	0
Sankey Catchment	Site No. 834	JAW	1	3	0
Hodder Catchment	Site No. 150	JAW	0	4	1
Lostock Catchment	Site No. 52	CDD	0	3	0
Mosedale Beck	Down in the Dale Bridge	AJ/AJ	0	0	2
Gill Gooden	NY 157 412	AJ/DS	3	4	1
Argill Beck	NY 825 129	DS/AJ	1	6	0
Levy (Dragley) Beck	Low Mill Bridge	KJR/NC	0	1	1
* Stony Beck	Stonybeck Inn	JL/JL	1	0	0
Appletreeworth Beck	Hawk Bridge	AJ/AJ	0	3	2
Mersey	Northenden Weir	SM	0	0	0
Medlock	d/s Strinesdale Reservoir	TP	0	0	0
Worsley Brook	Barton	JH	0	0	0
Randall Carr Brook	ptc R. Goyt	TP	2	5	0
Weaver	Rookery Hall	SM	1	4	1
Forge Brook	ptc Witton Brook	SM	0	0	0
Spodden	ptc R. Roch	SM	0	4	0
Chew Brook	ptc R. Tame	TP	3	3	0
Marthall Brook	Springwood Farm	JH	0	2	0
Swettenham Brook	d/s The Mill	JH	0	2	0
Irk	Fir Lane	JH	0	2	0

* indicates no vial of animals present in sample

APPENDIX

Results of individual sample audits

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Marron
DATE	2.3.93	SITE	Woodend Bridge
SORTER	AJ	SAMPLE CODE	NRA03 06po

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Hydrobiidae 2 Sphaeriidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Potamopyrgus jenkinsi
2 Pisidium sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Barbon Beck
DATE	24.3.93	SITE	A683 Bridge ptc R.Lune
SORTER	BJI/NSW	SAMPLE CODE	NRA03 0z3w

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Nemouridae

NET LOSSES NET GAINS

NOTES:

1 Amphinemura sulcicollis

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Cunsey Beck
DATE	24.3.93	SITE	Cunsey Bridge ptc Windermere
SORTER	KJR/NSW	SAMPLE CODE	NRA03 191o

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	No vial of animals present in sample. Identification check not possible.	N/a

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:

Astacidae not found by IFE in sample. Assumed returned to river.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Sleet Beck
DATE	30.4.93	SITE	NY 497 758
SORTER	RFP/NW	SAMPLE CODE	NRA03 Otec

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	No vial of animals present in sample. Identification check not possible.	N/a

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. (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Hall Beck
DATE	5.3.93	SITE	NY 513 465
SORTER	JL	SAMPLE CODE	NRA03 0ir0

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Perlodidae 2 Lepidostomatidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Isoperla grammatica 1 only
2 Crunoecia irrorata 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Park Beck
DATE	8.3.93	SITE	NY 144 205
SORTER	DS/NSW	SAMPLE CODE	NRA03 07eo

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Erpobdellidae 2 Limnephilidae	3 Glossiphoniidae 4 Polycentropodidae 5 Sericostomatidae

NET LOSSES

2

NET GAINS

3

NOTES:

- 2 Empty case found by IFE in sample
- 3 Helobdella stagnalis 1 only
- 4 Indet Polycentropodid (juvenile) 1 only
- 5 Sericostoma personatum 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Medlock
DATE	29.6.93	SITE	ptc Lord's Brook
SORTER	JCH	SAMPLE CODE	NRA03 m75g

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 Oligochaeta 3 Glossiphoniidae 4 Hydropsychidae

NET LOSSES NET GAINS

NOTES:

2 Indet Lumbricid 1 only
 3 Helobdella stagnalis 1 only
 4 Hydropsyche sp. (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION North West

RIVER Agden Brook

DATE 30.7.93

SITE A56 Agden Brook Farm

SORTER MH

SAMPLE CODE NRA03 lijc

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 Planariidae	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:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION North West

RIVER Fairywell Brook

DATE 17.6.93

SITE ptc Baguley Brook

SORTER JCH

SAMPLE CODE NRA03 puxw

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 Asellidae 3 Mesoveliidae	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 3

NET GAINS 0

NOTES:

- 1 Empty shells in vial & sample
- 2 Terrestrial Isopod in vial
- 3 Velia caprai in vial

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Shelf Brook
DATE	15.6.93	SITE	u/s Glossop Super Alloys
SORTER	KW	SAMPLE CODE	NRA03 ngtw

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	2 Lepidostomatidae

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 Siphonuridae

NET LOSSES NET GAINS

NOTES:

- 1 Rhyacophila sp. (gill-less juvenile) in separate vial
2 Crunoecia irrorata
3 Siphonurus lacustris 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION North West

RIVER Mersey

DATE 29.7.93

SITE Bollin Point

SORTER KW

SAMPLE CODE NRA03 q19o

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 Gammaridae	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:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Goyt
DATE	29.6.93	SITE	Taxal
SORTER	JH	SAMPLE CODE	NRA03 ofv0

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 Chloroperlidae

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 Sialidae 3 Limnephilidae

NET LOSSES NET GAINS

NOTES:

1 Chloroperla torrentium
 3 Sialis fuliginosa 1 only
 3 Indet Limnephilid (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Limy Water
DATE	16.7.93	SITE	u/s Loveclough Textiles
SORTER	KW	SAMPLE CODE	NRA03 pdt8

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 Oligochaeta*	2 Lymnaeidae 3 Planorbidae 4 Caenidae 5 Rhyacophilidae

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)	6 Oligochaeta* 7 Asellidae 8 Leuctridae

NET LOSSES NET GAINS

NOTES:

2 Lymnaea peregra
 3 Planorbis carinatus
 4 Caenis luctuosa/macrura
 5 Rhyacophila dorsalis
 6 Indet Tubificid 1 only
 7 Asellus aquaticus 1 only
 8 Leuctra fusca 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Mill Brook
DATE	1.7.93	SITE	u/s A5117
SORTER	KW	SAMPLE CODE	NRA03 obuk

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 Sphaeriidae	2 Valvatidae 3 Ancylidae

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)	

NET LOSSES NET GAINS

NOTES:

2 Valvata piscinalis
3 Ancylus fluviatilis

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION North West

RIVER Weaver

DATE 28.7.93

SITE Frodsham Bridge

SORTER MH

SAMPLE CODE NRA03 rtb8

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:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Dane
DATE	9.6.93	SITE	u/s Water Street
SORTER	JCH	SAMPLE CODE	NRA03 mfbw

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 Dendrocoelidae

NET LOSSES

0

NET GAINS

1

NOTES:-

1 Dendrocoelum lacteum 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Wyre Catchment
DATE	18.8.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0363

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 Sialidae

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 Planariidae 4 Hydrobiidae 5 Hydropsychidae

NET LOSSES NET GAINS

NOTES:

2 Sialis lutaria
 3 Crenobia alpina
 4 Potamopyrgus jenkinsi 1 only
 5 Hydropsyche sp. (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Ribble Catchment
DATE	4.8.93	SITE	
SORTER	EIG	SAMPLE CODE	NRA03 0299

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 Baetidae 2 Limnephilidae

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 Sphaeriidae 4 Hydrophilidae 5 Hydroptilidae 6 Chironomidae

NET LOSSES NET GAINS

NOTES:

1 Baetis rhodani
 2 Halesus radiatus
 3 Pisidium sp. 1 only
 4 Hydraena gracilis (adults)
 5 Hydroptila sp.
 6 Tanypodinae, Orthocladinae

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Darwen Catchment
DATE	20.8.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0117

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 Planorbidae	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 Sphaeriidae 3 Hydropsychidae

NET LOSSES

1

NET GAINS

2

NOTES:

- 1 Terrestrial snail in vial
- 2 Pisidium sp. 1 only
- 3 Hydropsyche sp. (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Sankey Catchment
DATE	27.8.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0812

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 Glossiphoniidae

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 Dendrocoelidae 3 Ancyliidae

NET LOSSES

0

NET GAINS

3

NOTES:

1 Glossiphonia heteroclita
2 Dendrocoelum lacteum
3 Ancylyus fluviatilis

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Lostock Catchment
DATE	13.7.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0045

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 Curculionidae	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 Dendrocoelidae 4 Ancyliidae 5 Limnephilidae

NET LOSSES

2

NET GAINS

3

NOTES:

- 1 Empty shells in vial and sample
- 2 IFE instructed to exclude Curculionidae from audit
- 3 Dendrocoelum lacteum
- 4 Ancylyus fluviatilis 1 only
- 5 Indet Limnephilids (juveniles)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Ribble Catchment
DATE	25.8.93	SITE	
SORTER	EIG	SAMPLE CODE	NRA03 0249

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 Goeridae 2 Sericostomatidae	3 Caenidae 4 Leptoceridae

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)	5 Hydrobiidae 6 Hydrophilidae

NET LOSSES NET GAINS

NOTES:

3 Caenis luctuosa/macrura
 4 Athripsodes albifrons in vial, Ceraclea nigronervosa in sample
 5 Potamopyrgus jenkinsi 1 only
 6 Hydraena gracilis (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Hyndburn Catchment
DATE	14.7.93	SITE	
SORTER	CDD	SAMPLE CODE	NRA03 0205

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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EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Douglas Catchment
DATE	10.8.93	SITE	
SORTER	SLP	SAMPLE CODE	NRA03 0701

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 Planariidae 2 Hydrobiidae 3 Elmidae

NET LOSSES NET GAINS

NOTES:

1 Dugesia polychroa/lugubris 1 only
 2 Potamopyrgus jenkinsi
 3 Esolus parallelepipedus (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Calder Catchment
DATE	18.6.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0193

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 Gammaridae	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:

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EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Hodder Catchment
DATE	6.7.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0156

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

NET LOSSES

NET GAINS

NOTES:

1 Leuctra sp. (juvenile) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Sprint
DATE	9.8.93	SITE	d/s Sprint Bridge
SORTER	KJR/NC	SAMPLE CODE	NRA03 15o0

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 Hydrobiidae

NET LOSSES NET GAINS

NOTES:

1 Potamopyrgus jenkinsi

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Pow Beck
DATE	20.7.93	SITE	NY 247 237
SORTER	AJ/AJ	SAMPLE CODE	NRA03 050k

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Oligochaeta 2 Asellidae 3 Nemouridae	4 Planariidae 5 Hydrobiidae 6 Sphaeriidae 7 Hydropsychidae 8 Limnephilidae

NET LOSSES

3

NET GAINS

5

NOTES:

4 Polycelis felina 1 only
 5 Potamopyrgus jenkinsi
 6 Pisidium sp. 1 only
 7 Hydropsyche sp. (pupa) 1 only
 8 Ecclisopteryx guttulata 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Watendlath Beck
DATE	8.7.93	SITE	d/s Road Bridge
SORTER	AJ/AJ	SAMPLE CODE	NRA03 04bk

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Ancyliidae	2 Sphaeriidae 3 Caenidae 4 Scirtidae

NET LOSSES

☐ 1

NET GAINS

☐ 3

NOTES:

2 Pisidium sp. 1 only
 3 Caenis rivulorum 1 only
 4 Hydrocyphon deflexicollis (larvae)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Cumwhitton Beck
DATE	1.7.93	SITE	NY 500 528
SORTER	DS/DS	SAMPLE CODE	NRA03 0iwk

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Oligochaeta 2 Rhyacophilidae 3 Chironomidae

NET LOSSES

0

NET GAINS

3

NOTES:

1 Stylodrilus heringianus (Lumbriculidae) 1 only
 2 Rhyacophila dorsalis (larva + pupa)
 3 Orthocladinae

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Eden
DATE	29.6.93	SITE	Warwick Bridge
SORTER	RFP/NC	SAMPLE CODE	NRA03 0eqk

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Limnephilidae	2 Corixidae

NET LOSSES

☐ 1

NET GAINS

☐ 1

NOTES:

2 Micronecta poweri 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Lyvennet
DATE	5.7.93	SITE	Lyvennet Bridge
SORTER	DS/AJ	SAMPLE CODE	NRA03 Ore4

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 Odontoceridae	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)	2 Glossiphoniidae 3 Hydrophilidae 4 Polycentropodidae

NET LOSSES

NET GAINS

NOTES:

2 Glossiphonia complanata 1 only
 3 Hydraena gracilis (adult) 1 only
 4 Polycentropus flavomaculatus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Pendle Catchment
DATE	2.12.93	SITE	
SORTER	EIG	SAMPLE CODE	NRA03 0214

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 Planariidae 2 Hydrophilidae

NET LOSSES NET GAINS

NOTES:

1 Polycelis felina 1 only
2 Hydraena gracilis (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Cocker Catchment
DATE	5.11.93	SITE	
SORTER	JEL	SAMPLE CODE	NRA03 0381

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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EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Lostock Catchment
DATE	26.10.93	SITE	
SORTER	JEL	SAMPLE CODE	NRA03 0047

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 2 Sphaeriidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Anisus sp. (damaged specimen) 1 only
2 Pisidium sp.

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Yarrow Catchment
DATE	10.11.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0005

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 Asellidae* 2 Dytiscidae	3 Tipulidae

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)	4 Asellidae* 5 Hydrophilidae

NET LOSSES

NET GAINS

NOTES:

3 Limnophila (Eloeophila) sp.
4 Asellus aquaticus
5 Hydraena gracilis (adult) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Crossens Catchment
DATE	15.12.93	SITE	
SORTER	SLP	SAMPLE CODE	NRA03 0775

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 Planariidae 2 Hydrobiidae 3 Sphaeriidae 4 Erpobdellidae 5 Dytiscidae

NET LOSSES

NET GAINS

NOTES:

- 1 Polycelis nigra/tenuis
- 2 Potamopyrgus jenkinsi
- 3 Pisidium sp.
- 4 Indet Erpobdellid (juvenile) 1 only
- 5 Ilybius sp. (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Douglas Catchment
DATE	30.11.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0661

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 Hydropsychidae 3 Lepidostomatidae 4 Chironomidae*

NET LOSSES

0

NET GAINS

2

NOTES:

2 Hydropsyche sp. (juvenile) 1 only
 3 Crunoecia irrorata 1 only
 4 Brillia modesta (Orthocladiinae)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Ribble Catchment
DATE	19.11.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0254

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 Oligochaeta* 2 Caenidae* 3 Limnephilidae	4 Lepidostomatidae 5 Tipulidae

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)	6 Dendrocoelidae 7 Oligochaeta* 8 Piscicolidae 9 Erpobdellidae 10 Caenidae* 11 Perlodidae 12 Hydrophilidae 13 Leptoceridae 14 Simuliidae

NET LOSSES NET GAINS

NOTES:

4 Lepidostoma hirtum	13 Athripsodes albifrons 1 only
5 Antocha vitripennis	14 Simulium argyreatum/variegatum 1 only
6 Dendrocoelum lacteum 1 only	
7 Stylodrilus heringianus (Lumbriculidae)	
8 Piscicola geometra	
9 Erpobdella octoculata	
10 Caenis luctuosa/macrura, C. rivulorum	
11 Isoperla grammatica 1 only	
12 Hydraena gracilis (adult) 1 only	

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Darwen Catchment
DATE	23.11.93	SITE	
SORTER	SLP	SAMPLE CODE	NRA03 0096

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 Dendrocoelidae 2 Planorbidae 3 Simuliidae

NET LOSSES

0

NET GAINS

3

NOTES:

1 Dendrocoelum lacteum 1 only
 2 Bathyomphalus contortus 1 only
 3 Simulium ornatum group

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Sankey Catchment
DATE	15.12.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0834

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
	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 Heptageniidae 3 Leptophlebiidae 4 Chironomidae

NET LOSSES

1

NET GAINS

3

NOTES:

- 1 Empty shells in vial and sample
- 2 Rhithrogena semicolorata/germanica 1 only
- 3 Paraleptophlebia submarginata 1 only
- 4 Orthocladiinae including Brillia modesta

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Hodder Catchment
DATE	25.11.93	SITE	
SORTER	JAW	SAMPLE CODE	NRA03 0150

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 Oligochaeta*	2 Odontoceridae

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 Oligochaeta* 4 Nemouridae 5 Lepidostomatidae 6 Simuliidae

NET LOSSES

NET GAINS

NOTES:

2 Odontocerum albicorne
 3 Naididae
 4 Nemoura cambrica/erratica 1 only
 5 Lepidostoma hirtum
 6 Simulium argyreatum/variegatum

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Lostock Catchment
DATE	27.10.93	SITE	
SORTER	CDD	SAMPLE CODE	NRA03 0052

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 Planariidae 2 Planorbidae 3 Baetidae

NET LOSSES NET GAINS

NOTES:

1 Dugesia polychroa/lugubris 1 only
 2 Gyraulus albus, Hippeutis complanatus
 3 Baetis scambus/fuscatus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Mosedale Beck
DATE	26.10.93	SITE	Down in the Dale Bridge
SORTER	AJ/AJ	SAMPLE CODE	NRA03 012w

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 Nemouridae* 2 Simuliidae*	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 Nemouridae* 4 Simuliidae*

NET LOSSES NET GAINS

NOTES:

3 Amphinemura sulcicollis 1 only
4 Simulium variegatum (pupae)

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Gill Gooden
DATE	17.9.93	SITE	NY 157 412
SORTER	AJ/DS	SAMPLE CODE	NRA03 09ew

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 Erpobdellidae 3 Perlidae 4 Goeridae	5 Perlodidae 6 Hydrophilidae

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)	7 Lymnaeidae* 8 Nemouridae 9 Dytiscidae

NET LOSSES

3

NET GAINS

4

NOTES:

5 Isoperla sp. (juvenile)
 6 Hydraena gracilis (adults)
 7 Lymnaea peregra 1 only
 8 Protonemura sp. (juvenile) 1 only
 9 Platambus maculatus (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Argill Beck
DATE	21.10.93	SITE	NY 825 129
SORTER	DS/AJ	SAMPLE CODE	NRA03 Of14

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 Sericostomatidae	2 Oligochaeta

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 Sphaeriidae 4 Leptophlebiidae 5 Dytiscidae 6 Polycentropodidae 7 Hydroptilidae

NET LOSSES

1

NET GAINS

6

NOTES:

2 Stylodrilus sp. (Lumbriculidae) in vial, indet Naididae in sample
 3 Pisidium sp. 1 only
 4 Paraleptophlebia sp. (juveniles)
 5 Oreodytes sanmarkii (adult) 1 only
 6 Plectrocnemia conspersa 1 only
 7 Hydroptila sp. 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Levy (Dragley) Beck
DATE	17.11.93	SITE	Low Mill Bridge
SORTER	KJR/NC	SAMPLE CODE	NRA03 1bzs

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
	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 Hydrobiidae* 3 Planorbidae

NET LOSSES

0

NET GAINS

1

NOTES:

2 Potamopyrgus jenkinsi
3 Armiger crista 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Stony Beck
DATE	12.10.93	SITE	Stonybeck Inn
SORTER	JL/JL	SAMPLE CODE	NRA03 0m2g

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	No vial of animals present in sample. Identification check not possible.	N/a

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 Limnephilidae	None

NET LOSSES

1

NET GAINS

0

NOTES:

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EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Appletreeworth Beck
DATE	6.10.93	SITE	Hawk Bridge
SORTER	AJ/AJ	SAMPLE CODE	NRA03 1dug

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 Tipulidae* 2 Simuliidae*	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 Planariidae 4 Hydrophilidae 5 Hydroptilidae 6 Tipulidae* 7 Simuliidae*

NET LOSSES

0

NET GAINS

3

NOTES:

3 Polycelis felina
 4 Hydraena gracilis (adult) 1 only
 5 Hydroptila sp. 1 only
 6 Dicranota sp. 1 only
 7 Simulium cryophilum group

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Mersey
DATE	25.11.93	SITE	Northenden Weir
SORTER	SM	SAMPLE CODE	NRA03 q0hw

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:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Medlock
DATE	11.11.93	SITE	d/s Strinesdale Reservoir
SORTER	TP	SAMPLE CODE	NRA03 m6m0

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:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Worsley Brook
DATE	28.9.93	SITE	u/s Liverpool Road, Barton
SORTER	JH	SAMPLE CODE	NRA03 ps0c

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:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Randall Carr Brook
DATE	4.10.93	SITE	ptc R.Goyt
SORTER	TP	SAMPLE CODE	NRA03 o19g

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 Rhyacophilidae 2 Lepidostomatidae	3 Nemouridae 4 Psychomyiidae

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)	5 Sphaeriidae 6 Dytiscidae 7 Leptoceridae

NET LOSSES NET GAINS

NOTES:

3 Nemoura avicularis
4 Tinodes waeneri
5 Pisidium sp.
6 Platambus maculatus (larva) 1 only
7 Mystacides azurea 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Weaver
DATE	28.10.93	SITE	Rookery Hall
SORTER	SM	SAMPLE CODE	NRA03 rpgc

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 Planariidae* 2 Coenagriidae	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 Planariidae* 4 Dendrocoelidae 5 Lymnaeidae 6 Calopterygidae 7 Psychomyiidae

NET LOSSES

1

NET GAINS

4

NOTES:

3 Polycelis nigra/tenuis
 4 Dendrocoelum lacteum 1 only
 5 Lymnaea truncatula 1 only
 6 Calopteryx sp. (juvenile) 1 only
 7 Lype phaeopa/reducta

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Forge Brook
DATE	23.11.93	SITE	ptc Witton Brook
SORTER	SM	SAMPLE CODE	NRA03 syo4

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:

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Spodden
DATE	13.12.93	SITE	ptc R.Roch
SORTER	SM	SAMPLE CODE	NRA03 qt1o

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 Planariidae 2 Hydrobiidae 3 Oligochaeta 4 Gerridae

NET LOSSES NET GAINS

NOTES:

- 1 Polycelis nigra/tenuis 1 only
- 2 Potamopyrgus jenkinsi
- 3 Tubificidae, Lumbriculidae
- 4 Gerris lacustris 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Chew Brook
DATE	20.12.93	SITE	ptc R.Tame
SORTER	TP	SAMPLE CODE	NRA03 r7ec

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 Planorbidae 2 Hirudinidae 3 Psychomyiidae	4 Erpobdellidae 5 Asellidae 6 Polycentropodidae

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

3

NET GAINS

3

NOTES:

1 Terrestrial snail in vial
 4 Trocheta subviridis
 5 Asellus aquaticus
 6 Polycentropus flavomaculatus

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Marthall Brook
DATE	24.11.94	SITE	Springwood Farm
SORTER	JH	SAMPLE CODE	NRA03 lhrk

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 Ancyliidae 2 Asellidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Ancylos fluviatilis
2 Asellus aquaticus 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Swettenham Brook
DATE	10.9.93	SITE	d/s The Mill
SORTER	JH	SAMPLE CODE	NRA03 mowc

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 Hydrophilidae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Pisidium sp.
2 Indet Hydrophilid (larva) 1 only

EXTERNAL AUDIT OF BIOLOGICAL SAMPLES - 1993

REGION	North West	RIVER	Irk
DATE	23.11.93	SITE	Fir Lane
SORTER	JH	SAMPLE CODE	NRA03 ovg4

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
	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 Nemouridae

NET LOSSES

0

NET GAINS

2

NOTES:

1 Micropterna sequax
2 Nemurella picteti

