



Progress Report

AIR QUALITY

APRIL 2004

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Introduction

Wychavon District Council's Stage 1 and 2 Review and Assessment of Air Quality published in November 2000 and the Updating and Screening Assessment published in May 2003 both concluded that the National Air Quality Objectives will not be exceeded in Wychavon District Council. They can be viewed on www.wychavon.gov.uk

There have been no developments during 2003 that would change the conclusions that the objectives for Benzene, 1-3 Butadiene, Carbon Monoxide, Lead, and Sulphur Dioxide are unlikely to be exceeded.

The objectives for Nitrogen Dioxide and Particulates (PM₁₀) are continually considered because of their relationship to road transport and also in the case of particulates, developments such as landfill sites and quarrying.

Monitoring

Since the Updating and Screening Assessment we have continued to monitor Nitrogen Dioxide levels using Diffusion Tubes.

Nitrogen Dioxide Diffusion Tube Monitoring

In January 2003 the supply and analysis of the tubes was changed from Worcester Scientific Services to Gradko International. Adjoining authorities in Worcestershire also made the switch.

A review of the nitrogen dioxide monitoring sites was also carried out. Monitoring at sites where previous monitoring had shown low levels was stopped and the following changes made.

The tube by The Swan at Whittington was re-sited closer to the roadside on the A4440 dual carriageway that takes traffic from Worcester to junction 7 of the M5.

New roadside sites were established in the High Street Pershore, Swan Lane and Port Street in Evesham.

Mayflower Road and Tagwell Close Droitwich are close to the M5, therefore to increase the reliability of the results the single tubes were increased to three.

A new roadside triple site was established at Wychbold junction 5 on the M5 adjacent to a new housing development.

The sites are listed and the locations shown on the maps in Appendix 1.

The results of the four original sites in Pershore are submitted to NETCEN as part of the National Survey.

Results of the Monitoring

The annual averages from 1997 to 2003 at sites that are continuing, are set out in Appendix 2.

The report "Compilation of Diffusion Tube Collocation Studies Carried by Local Authorities published in November 2002" compared the results from the studies to produce an overall bias factor for the results from the same Laboratory and method.

The 2003 results have been adjusted by using this overall bias factor derived from the results from 9 sites that have co-located diffusion tubes and where the exposed tubes have been prepared using the 20% TEA/ Water method and analysed by Gradko.

The 2002 results were adjusted with a bias derived from co-location with Malvern District Council and Herefordshire County Council.

As all the sites are roadside, the bias adjusted results have been corrected by applying the factors for distance to receptor. The results for 2003 are set out in Appendix 3.

The roadside results have also been projected forward to 2005 and 2010 using the factors derived from the Technical guidance LAQM. TG(03) and are set out in Appendix 3a. The site at Swan Whittington remains above the objective in 2005 and 2010, Westlands is above in 2003 and the A38 in 2003 and 2005.

The results indicate that the levels of Nitrogen dioxide continue to be below the annual mean objective of $40\mu\text{g}/\text{m}^3$ in 2005 and 2010, except for the site at the Swan at Whittington where the annual average was $41.19\mu\text{g}/\text{m}^3$ at the building façade in 2003. This level was the result of monthly averages in April, July and October of 86.5, 86.4 and $148.33\mu\text{g}/\text{m}^3$ respectively. There is no explanation for these results. Therefore to increase the reliability of the monitoring, two additional tubes have been added in 2004

When projected forward to 2005 the 2003 result at the Swan would result in a level below the objective.

New Local Developments

Industrial Processes

Part A1 Processes

Applications were lodged with the Environment Agency in respect of the following A1 activities:

Baxendon Chemicals Ltd, Union Lane, Droitwich (existing)	Production of polyester resins and other products.
BIFFA Waste Services, Whitlence Lane, Hartlebury	Landfill
BIFFA Waste Services, Waresley, Hartlebury	Landfill

Part A2 Processes

During 2003 three existing authorised Part B processes that use more than 200 tonnes of volatile organic compounds per year submitted applications for Integrated Pollution Prevention and Control (IPPC) permits as required by the Pollution Prevention and Control Regulations 2000 as they are classed as A2 premises.

- Amcor Flexibles Evesham Orleans Close Evesham Flexible Packaging Printing
- TPL Printers (UK) Ltd UNIT 111 Hartlebury Trading Estate Hartlebury Web-off set printing on paper
- Polestar Varnicoat Ltd Terrace Road Pinvin Pershore Gravure printing on paper

In addition, two brickworks submitted IPPC applications:

- Baggeridge Brick Plc, Hartlebury Works, Whitlence Lane, Hartlebury
- Baggeridge Brick Plc, Hartlebury Industrial Estate, Hartlebury

Part B Processes

The existing Part B cement and lime, other mineral, timber and waste oil burning activities were deemed to have submitted applications to change to permits, these have all been issued. The conditions within the permits will be reviewed when the revised sector guidance is approved.

During the year Part B applications were received from:

- Worcestershire Recycling Ltd Mobile Crusher
- S E Davis and Sons Ltd Mobile Screener
- MRW Ltd Mobile Crusher
- Carrs Paints Ltd Coating Manufacture (containing VOC)

New Retail Development

During 2003 no new retail development that would have an adverse effect on air quality received planning approval. No major retail developments were commenced.

New Road Development

The Wyre Piddle bypass was opened and reclassified as the A44, this will have resulted in an improvement in air quality because of the reduction in traffic through the village. This is a welcomed improvement even though our previous assessments had concluded that the objectives for nitrogen dioxide and particulates were not being exceeded.

The A44 route through Pershore is now the B4084, this should in due course result in a reduction in through traffic and an improvement in air quality. It is believed that a scheme of traffic management will be considered to encourage through traffic to use the A44.

A plan to improve the traffic flow along the High Street in Evesham is being considered by Wychavon District Council partnership with Worcestershire County Council.

New Mineral Development

Preparation works were commenced to bring into production a new clay pit at New House Farm Walton Lane Hartlebury. This new pit is an extension to the existing workings at Hartlebury Quarry and will provide clay for Baggeridge Brick at Hartlebury. Currently the development has not had an impact on air quality and it is not thought that, when in operation that the PM₁₀ particulate objective will be exceeded.

New Landfill Development

As the reserves of clay at Hartlebury Quarry are worked out a landfill activity will commence, it is currently the subject of an A1 permit application.

Mixed use development (residential/ commercial)

During 2003 no new mixed use developments were commenced that would have an adverse effect on air quality.

Conclusion

We continue to believe that the National Air Quality Objectives will not be exceeded the air in Wychavon District Council.

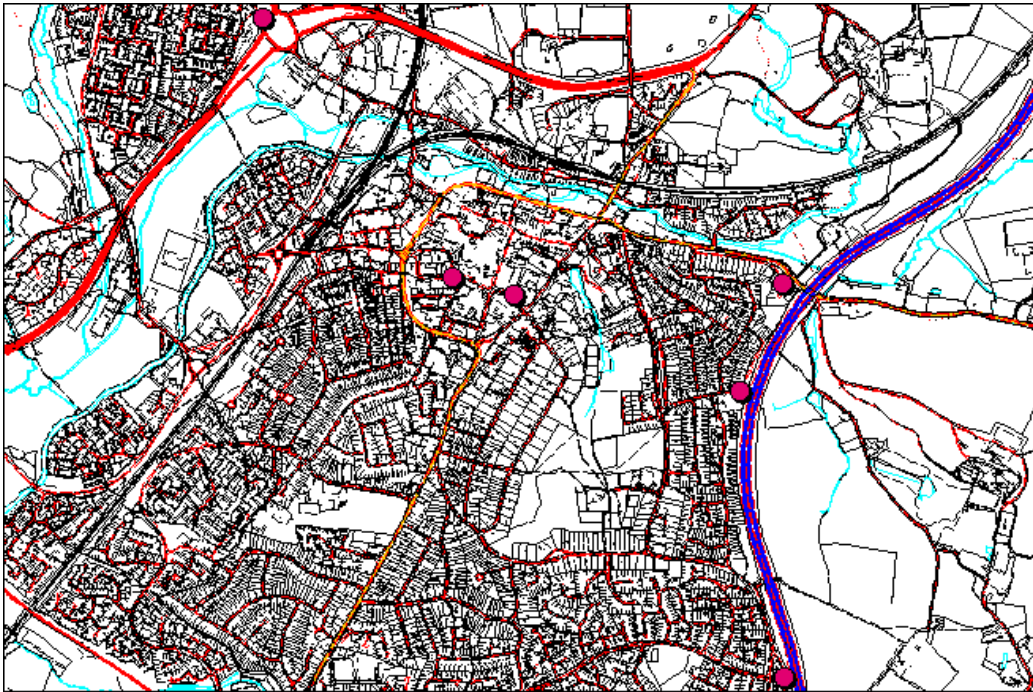
We will continue diffusion tube monitoring for Nitrogen dioxide paying particular attention to the results from the site at the Swan, Whittington.

Appendix 1

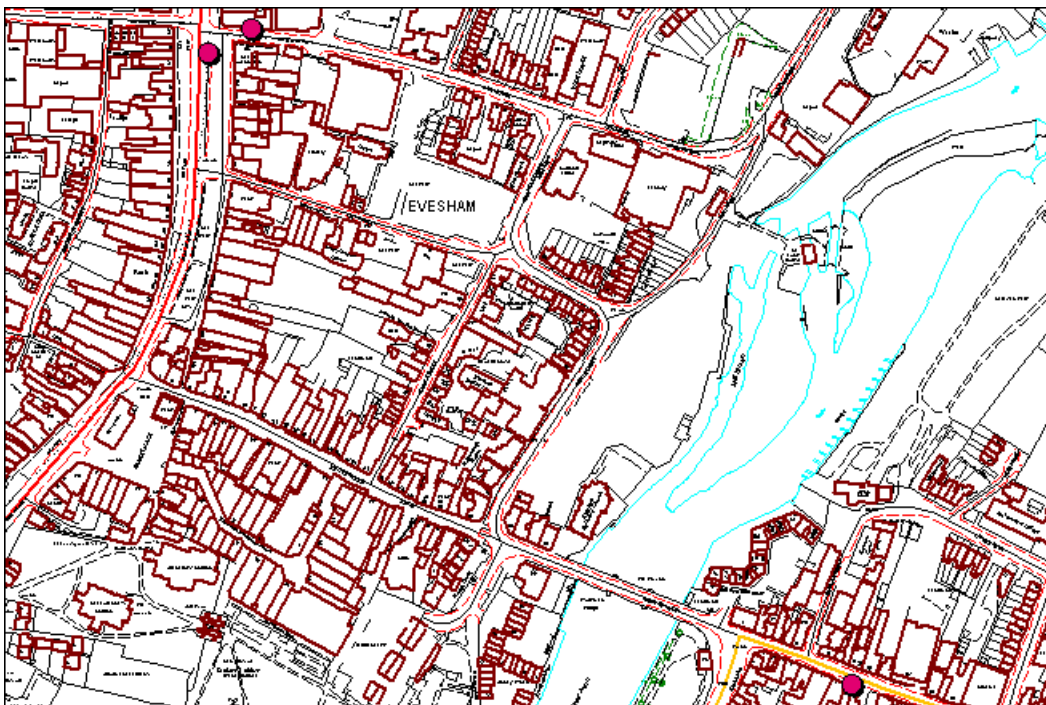
NO₂ Diffusion Tube Sites

Nitrogen Dioxide Diffusion	Tube Sites	Description of Sites
Norton	Church Lane	Roadside near M5
Whittington	Nr Swan (LP 50)	Roadside near
Whittington	Berkeley Close	Urban background M5 nearby
Swinesherd	Homeleigh	At house M5 30 metres away
Strensham	Mill Lane	Roadside near M5
Pershore	Civic Centre	Urban Background
Pershore	High Street	Roadside
Pershore	40 High Street	Roadside
Pershore	St. Andrews Road	Urban Background
Pershore	Broad Street	Roadside
Broadway	High Street	Roadside
Broadway	Leamington Road	Roadside
Evesham	Swan Lane	Roadside Evesham Town Centre
Evesham	Port Street	Roadside Evesham Town Centre
Evesham	High Street	Roadside Evesham Town Centre
Droitwich	Omersley Street East	Roadside Droitwich Town Centre
Droitwich	St. Andrews Road	Roadside Droitwich Town Centre
Droitwich	Hanbury Road (LP34)	Residential Area M5 50 metres
Droitwich	Mayflower Road (1)	Residential Area M5 40 metres
Droitwich	Mayflower Road (2)	
Droitwich	Mayflower Road (3)	
Droitwich	Tagwell Close (LP4) - (1)	Residential Area M5 30 metres
Droitwich	Tagwell Close (LP4) - (2)	
Droitwich	Tagwell Close (LP4) - (3)	
Droitwich	Westlands	Roadside at roundabout
Wychbold	A38 Road	Roadside slip road M5
Wychbold	Worcester Road (1)	Roadside off M5 junction
Wychbold	Worcester Road (2)	“
Wychbold	Worcester Road (3)	“
Blank	Reference Tube	

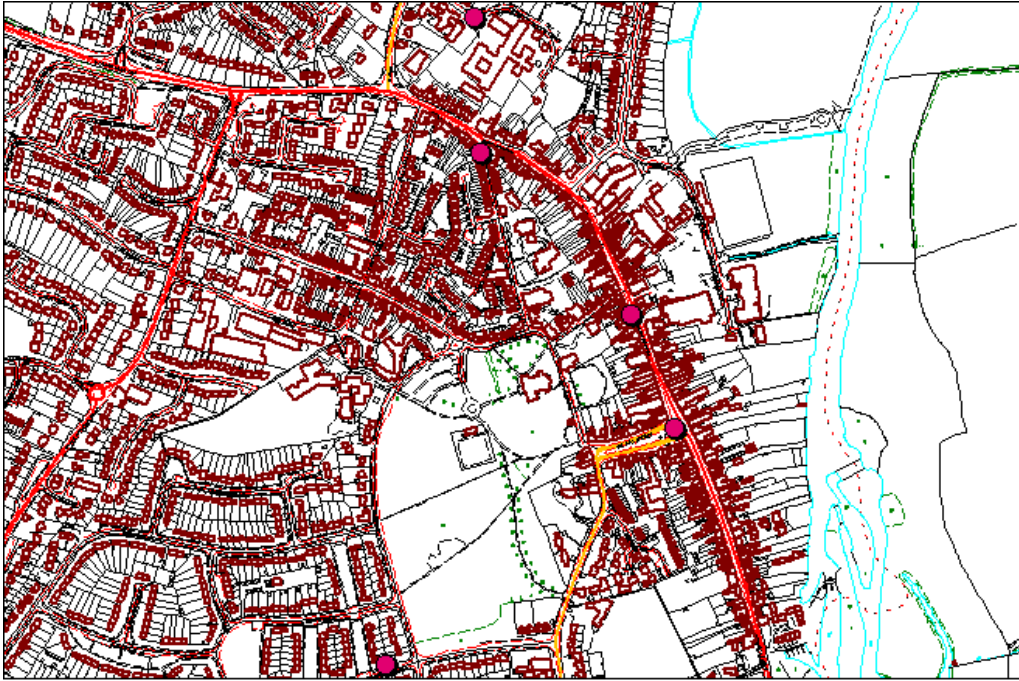
Droitwich NO₂ Diffusion Tube Sites



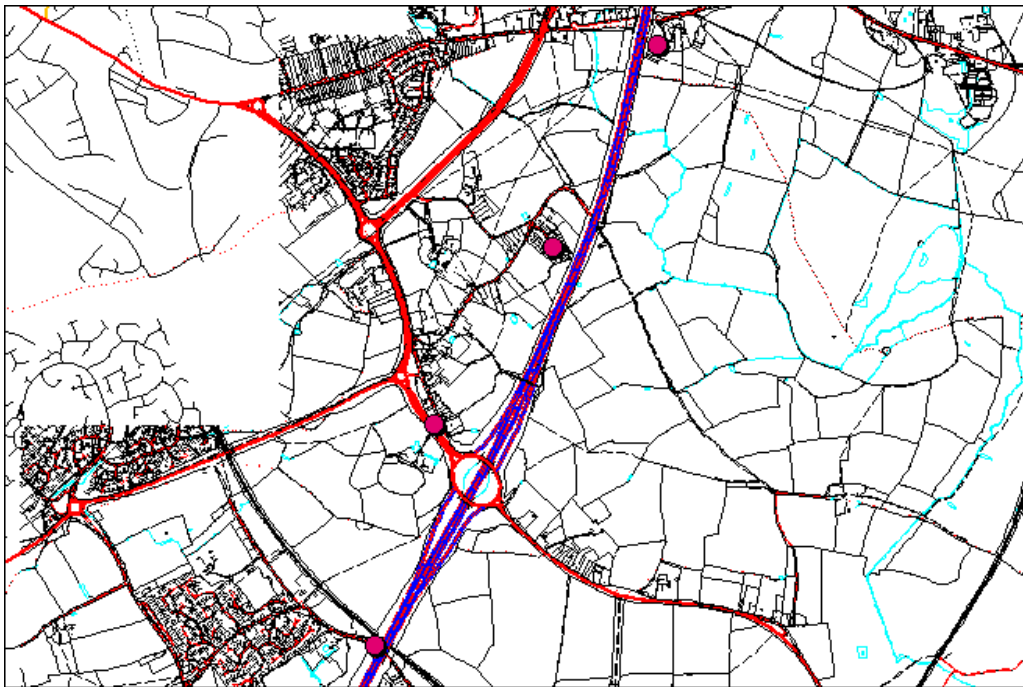
Evesham NO₂ Diffusion Tube Sites



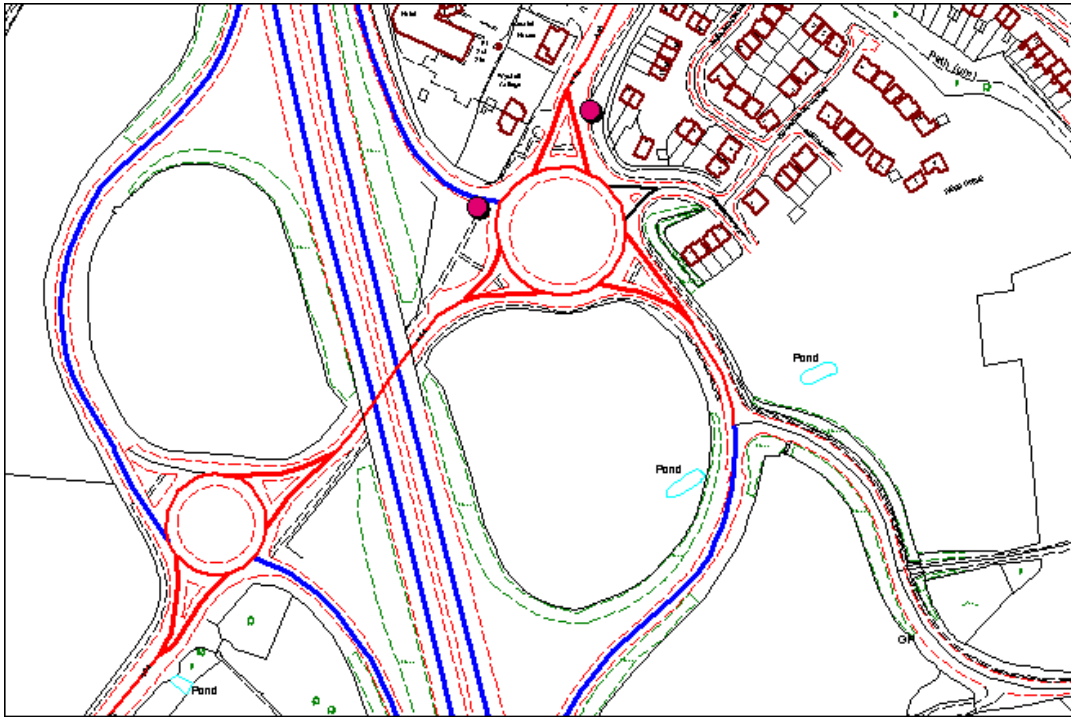
Pershore NO₂ Diffusion Tube Sites



Worcester NO₂ Diffusion Tube Sites



Wychbold NO₂ Diffusion Tube Sites

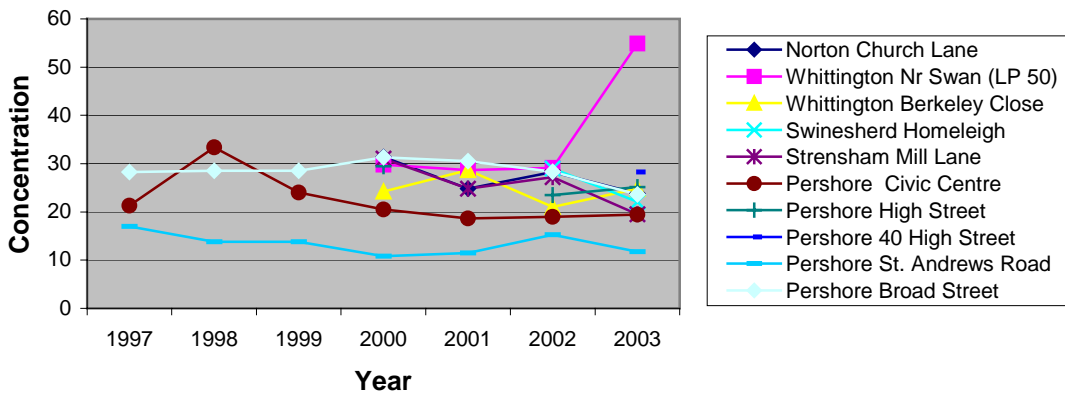


Appendix 2

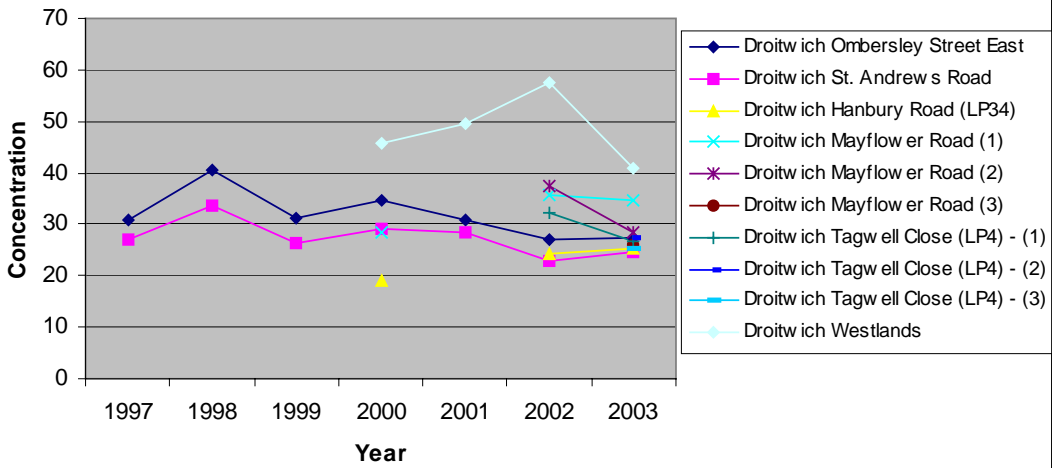
NO₂ Diffusion Tube Results

		Annual Roadside Average NO ₂ concentration µg/m ³						
		1997	1998	1999	2000	2001	2002	2003
Norton	Church Lane				31.42	24.83	28.3	23.85
Whittington	Nr Swan (LP 50)				29.83	28.65	29.13	54.92
Whittington	Berkeley Close				24.2	28.65	21.01	24.81
Swinesherd	Homeleigh						29	22.13
Strensham	Mill Lane				31.04	24.83	27.23	19.53
Pershore	Civic Centre	21.32	33.37	24	20.49	18.68	18.95	19.44
Pershore	High Street				29.5		23.49	25.17
Pershore	40 High Street							28.26
Pershore	St. Andrews Road	17.02	13.79	13.79	10.82	11.46	15.28	11.72
Pershore	Broad Street	28.27	28.54	28.54	31.3	30.56	28.33	23.6
Broadway	High Street	23.81	23.3	15.15	20.15	18.26	18.15	14.58
Broadway	Leamington Road	23.56	23.89	15.58	16.67	17.67	16.64	17.88
Evesham	Swan Lane							33.1
Evesham	Port Street							32.96
Evesham	High Street	33.73	49	36.08	36.29	40.3	45.46	32.39
Droitwich	Omersley Street East	30.69	40.53	31.24	34.59	30.82	26.89	27.34
Droitwich	St. Andrews Road	27.03	33.76	26.24	29.28	28.27	22.92	24.51
Droitwich	Hanbury Road (LP34)				19.1		24.14	25.3
Droitwich	Mayflower Road (1)				28.43		35.66	34.5
Droitwich	Mayflower Road (2)						37.38	28.57
Droitwich	Mayflower Road (3)							26.1
Droitwich	Tagwell Close (LP4) - (1)						32.3	26.83
Droitwich	Tagwell Close (LP4) - (2)							27.37
Droitwich	Tagwell Close (LP4) - (3)							25.3
Droitwich	Westlands				45.65	49.66	57.57	40.77
Wychbold	A38 Road				50.71	45.84	42.08	42.34
Wychbold	Worcester Road (1)							35.15
Wychbold	Worcester Road (2)							35.15
Wychbold	Worcester Road (3)							34.46
Blank	Reference Tube	0	0	0	0	0	0	0

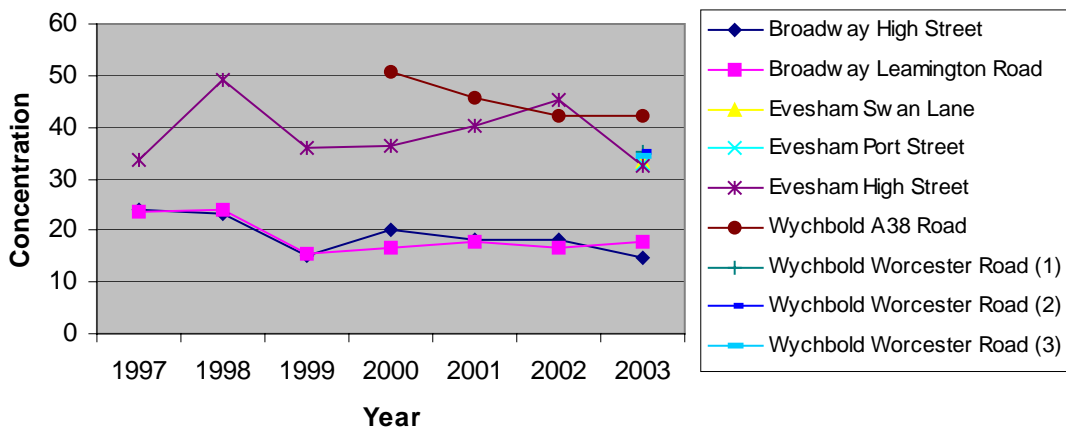
Roadside Diffusion Tube Results 1997 to 2003



Roadside Diffusion Tube Results 1997 to 2003



Roadside Diffusion Tubes 1997 to 2003



Appendix 3

Roadside Result corrected for distance to building facade					
		2003	Series 1		Series 2
			ug/m3	Distance	ug/m3
			Correction		
1	Norton	Church Lane	23.85	0.9	21.47
2	Whittington	Nr Swan (LP 50)	54.92	0.75	41.19
3	Whittington	Berkeley Close	24.81	0.75	18.61
4	Swinesherd	Homeleigh	22.13	0.75	16.6
5	Pershore	Civic Centre	19.44	0.9	17.5
6	Pershore	High Street	25.17	0.9	22.65
7	Pershore	40 High Street	28.26	0.95	26.85
8	Pershore	St. Andrews Road	11.72	0.9	10.55
9	Pershore	Broad Street	23.6	0.75	17.7
10	Broadway	High Street	14.58	0.95	13.85
11	Broadway	Leamington Road	17.88	0.9	16.09
12	Evesham	Swan Lane	33.1	0.95	31.45
13	Evesham	Port Street	32.96	0.95	31.31
14	Evesham	High Street	32.39	0.9	29.15
15	Droitwich	Ombersley Street East	27.34	0.9	24.61
16	Droitwich	St. Andrews Road	24.51	0.9	22.06
17	Droitwich	Hanbury Road (LP34)	25.3	0.9	22.77
18	Droitwich	Mayflower Road (1)	34.5	0.75	25.88
19	Droitwich	Mayflower Road (2)	28.57	0.75	21.43
20	Droitwich	Mayflower Road (3)	26.1	0.75	19.58
21	Droitwich	Tagwell Close (LP4) - (1)	26.83	0.75	20.12
22	Droitwich	Tagwell Close (LP4) - (2)	27.37	0.75	20.53
23	Droitwich	Tagwell Close (LP4) - (3)	25.3	0.75	18.98
24	Droitwich	Westlands	40.77	0.75	30.58
25	Wychbold	A38 Road	42.34	0.75	31.76
26	Wychbold	Worcester Road (1)	35.15	0.75	26.36
27	Wychbold	Worcester Road (2)	35.15	0.75	26.36
28	Wychbold	Worcester Road (3)	34.46	0.75	25.85
29	Blank	Reference Tube	0	0	

Appendix 3a

	Roadside result corrected for year			
		2003	2005	2010
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$
Norton	Church Lane	23.85	22.61	18.79
Whittington	Nr Swan (LP 50)	54.92	52.06	43.28
Whittington	Berkeley Close	24.81	23.52	19.55
Swinesherd	Homeleigh	22.13	20.98	17.44
Pershore	Civic Centre	19.44	18.43	15.32
Pershore	High Street	25.17	23.86	19.84
Pershore	40 High Street	28.26	26.79	22.27
Pershore	St. Andrews Road	11.72	11.11	9.24
Pershore	Broad Street	23.6	22.37	18.60
Broadway	High Street	14.58	13.82	11.49
Broadway	Leamington Road	17.88	16.95	14.09
Evesham	Swan Lane	33.1	31.38	26.08
Evesham	Port Street	32.96	31.25	25.97
Evesham	High Street	32.39	30.71	25.52
Droitwich	Ombersley Street East	27.34	25.92	21.54
Droitwich	St. Andrews Road	24.51	23.24	19.31
Droitwich	Hanbury Road (LP34)	25.3	23.98	19.94
Droitwich	Mayflower Road (1)	34.5	32.71	27.19
Droitwich	Mayflower Road (2)	28.57	27.08	22.51
Droitwich	Mayflower Road (3)	26.1	24.74	20.57
Droitwich	Tagwell Close (LP4) - (1)	26.83	25.43	21.14
Droitwich	Tagwell Close (LP4) - (2)	27.37	25.95	21.57
Droitwich	Tagwell Close (LP4) - (3)	25.3	23.98	19.94
Droitwich	Westlands	40.77	38.65	32.13
Wychbold	A38 Road	42.34	40.14	33.36
Wychbold	Worcester Road (1)	35.15	33.32	27.70
Wychbold	Worcester Road (2)	35.15	33.32	27.70
Wychbold	Worcester Road (3)	34.46	32.69	27.15
Blank	Reference Tube	0	0	0

