School of
Health and
Life Sciences
Environmental
Research Group

KING'S College LONDON
Founded 1829
University of London

UK Automatic Urban Network
London Air Quality Network Affiliated Sites

Management Report
January to March 2002

Prepared for the Department for Environment, Food and Rural Affairs (DEFRA), by:

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1 King's ERG Interface with the Data Dissemination Unit (DDU)

1.1 Data Handling

Between January and March 2002, King's College London Environmental Research Group have estimated that over 99% of hourly e-mails arrived at the DDU to meet their timetabled requirements. Accurate figures of punctual e-mails can be obtained from the DDU.

2 Site Performance

2.1 Scaling of Data for January to March 2002

Scaling of data was carried out as in previous months using the zero and span readings from fortnightly calibration checks. Validation of data was carried out twice daily and reviewed again at the end of each month.

2.2 Quality Control / Quality Assurance (QA/QC)

The QA/QC Unit (NPL) carried out routine equipment audits at the London affiliated AURN sites during this quarter to assess the performance of the instruments.

NPL were unable to get access to the Tower Hamlets Roadside site during their scheduled visits.

Site	Audit Dates
Bromley Roadside	06/02/02
Camden Kerbside	01/02/02
Eltham	13/02/02
Haringey Roadside	11/02/02
London Haringey	11/02/02
Hackney	07/02/02
Hounslow Roadside	13/02/02
London North Kensington	01/02/02
Lewisham	11/02/02
Marylebone Road	01/02/02
London Southwark	06/02/02
Southwark Roadside	06/02/02
Sutton Roadside	12/02/02
London Sutton	12/02/02
Tower Hamlets Roadside	N/A
London Wandsworth	12/02/02

Table 1: QA/QC Audit Dates

2.3 Data for January to March 2002

Data capture rates for January, February and March are detailed in Table 2, Table 3, and Table 4. The data capture rates for each month are expressed as a percentage of valid hourly averages, after excluding data lost due to calibration and the faults discussed. The overall data capture rates for the quarter January to March are detailed in the Table 5.

Specific issues affecting data collection and quality at each site are discussed in 2.3.1 and 2.3.2. Details of faults are given where data capture rates fall below 90% for the quarter.

Site	Hourly Data Capture % for January 2002				
	CO	PM10	NO_x	O_3	SO_2
Bromley Central	99		100		
Camden Kerbside		99	100		
Eltham		99	99	99	99
Haringey Roadside		94	99		
London Haringey				100	
Hackney	99		99	99	
Hounslow Roadside	88		93		
London North Kensington	86	99	97	99	99
Lewisham			69	62	69
Marylebone Road	99	94	99	95	96
London Southwark	100		99	100	100
Southwark Roadside	100	99	100		100
Sutton Roadside	99	98	100		99
London Sutton			99	99	
Tower Hamlets Roadside	99		99		
London Wandsworth			100	100	

Table 2: Hourly Data Capture % for January 2002

Site	Hourly Data Capture % for February 2002				
	CO	PM10	NO_x	O_3	SO_2
Bromley Central	97		96		
Camden Kerbside		100	99		
Eltham		99	99	100	99
Haringey Roadside		99	99		
London Haringey				99	
Hackney	99		99	98	
Hounslow Roadside	99		97		
London North Kensington	97	100	99	99	99
Lewisham			100	38	100
Marylebone Road	96	99	95	92	92
London Southwark	99		99	99	99
Southwark Roadside	99	100	99		99
Sutton Roadside	98	99	99		99
London Sutton			99	99	
Tower Hamlets Roadside	99		100		
London Wandsworth			99	99	

Table 3: Hourly Data Capture % for February 2002

Site	Hourly Data Capture % for March 2002				
	CO	PM10	NO_x	O_3	SO_2
Bromley Central	21		83		
Camden Kerbside		100	100		
Eltham		100	100	94	100
Haringey Roadside		99	100		
London Haringey				100	
Hackney	99		99	99	
Hounslow Roadside	99		99		
London North Kensington	99	100	99	100	99
Lewisham			100	76	100
Marylebone Road	100	99	100	96	96
London Southwark	96		96	96	96
Southwark Roadside	96	96	96		96
Sutton Roadside	99	99	99		99
London Sutton			99	99	
Tower Hamlets Roadside	99		99		
London Wandsworth			89	99	

Table 4: Hourly Data Capture % for March 2002

Site	Hourly Data Capture % for January to March 2002				
	CO	PM10	NO_x	O_3	SO_2
Bromley Central	71		93		
Camden Kerbside		100	100		
Eltham		99	100	98	99
Haringey Roadside		97	99		
London Haringey				100	
Hackney	99		99	98	
Hounslow Roadside	95		97		
London North Kensington	94	99	99	99	99
Lewisham			89	59	89
Marylebone Road	98	97	98	94	94
London Southwark	98		98	98	98
Southwark Roadside	98	98	98		98
Sutton Roadside	99	98	99		99
London Sutton			99	99	
Tower Hamlets Roadside	99		100		
London Wandsworth			96	99	

Table 5: Hourly Data Capture % for January to March 2002

2.3.1 Bromley Roadside

2.3.1.1 Carbon Monoxide 71%

The ESU was called out as a result of a reduced response to calibration gas, he adjusted the infrared source in an attempt to rectify the problem. However, at the next calibration visit the analyser still showed a low response. The engineer then removed the analyser to the workshop for further tests and found no problems, when he returned to site, further investigation revealed a lose connection in the sample line where it joins the calibration gas port. This would have caused dilution of both the ambient sample and the calibration gas.

After the repair further data loss was caused by the out-of-service switch being accidentally moved to the on position. These switches are connected to the logger and are not normally used; the engineer was unaware of their existence.

2.3.2 Lewisham

2.3.2.1 Nitrogen Oxides and Sulphur Dioxide 89 %

1st January – 10th January 2002 (226 hours)
Due to power interruptions there was insufficient calibration information to scale this data. However, the final decision on this data is a matter for the QA/QC unit.

2.3.2.2 Ozone 59%

1st January – 10th January 2002 (226 hours)
Due to power interruptions there was insufficient calibration information to scale this data. However, the final decision on this data is a matter for the QA/QC unit.

11th February – 8th March 2002 (597 hours)
The sample inlet tube was left disconnected after the audit visit on 11th February and was not reconnected until nearly 4 weeks later by an engineer attending site to repair another fault.