



**London City Airport
Air Quality Measurement
Programme:
Summary Quarterly
Report, July – Sept 2010**

December 2010



Experts in air quality
management & assessment

Document Control

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1 Summary Conclusions

- 1.1 This document represents the July to September 2010 Quarterly Report for the Air Quality Measurement Programme (AQMP) that is operated on behalf of London City Airport. This programme measures concentrations of nitrogen dioxide (NO₂) and fine particles (the so called PM₁₀ fraction, i.e. particles that are less than 10 micrometres in diameter).
- 1.2 Monitoring is carried out at two automatic monitoring stations. One is situated on the roof of City Aviation House (LCA-CAH) whilst the other is to the north of Royal Albert Dock, adjacent to the Newham Docks building (LCA-ND). These automatic sites are supplemented by a network of passive monitoring devices (nitrogen dioxide diffusion tubes) located at a further 17 sites in and around the Airport boundary.
- 1.3 The Government has set a number of air quality objectives to protect human health. These are equivalent to, or are more stringent than the limit values set by the European Union. Both the objectives and the limit values are based on monitoring carried out over the period of a calendar year. It is thus not possible to directly compare the concentrations measured over the period July to September 2010 with the objectives or the limit values.
- 1.4 In some cases, these objectives and limit values refer to average concentrations of pollutants measured over the calendar year (the “annual mean”); in other cases they refer to the number of hours or days on which a specified pollutant concentration should not be exceeded (for example, no more than 35 days in each calendar year on which PM₁₀ concentrations exceed 50 µg/m³, and no more than 18 hours in each calendar year on which nitrogen dioxide concentrations exceed 200 µg/m³).
- 1.5 In addition to the objectives and limit values, the Government has established a set of descriptors for the 1-hour mean concentrations of nitrogen dioxide and 24-hour mean concentrations of PM₁₀. Air quality is defined by these descriptors as being Low, Moderate, High and Very High.
- 1.6 Pollution concentrations measured in and around the Airport are associated with a wide range of sources at the local, regional, national and international scales. On occasions when pollution levels rise, these higher levels are often observed across the whole of London as a “regional pollution episode”. To assist with the interpretation of the results, pollution levels measured at other London monitoring sites are included in this report.

Nitrogen Dioxide

- 1.7 The period mean nitrogen dioxide concentration measured at the automatic station on the roof of City Aviation House was 24 µg/m³ (microgrammes per cubic metre); a slightly higher concentration (28 µg/m³) was measured at the Newham Docks site. This compares with the objective value of

40 $\mu\text{g}/\text{m}^3$. There were no recorded exceedences of the 1-hour mean objective, and all hourly concentrations were classified as “Low”.

- 1.8 Mean concentrations of nitrogen dioxide at other background sites in London over this period ranged from 19-38 $\mu\text{g}/\text{m}^3$, with similar patterns in levels as seen at the two London City Airport sites. There was a good correlation between observed peaks at the Airport sites and other London sites, suggesting that these occurrences were due to regional sources and changing weather conditions that affect the dispersion and dilution of pollutant emissions.
- 1.9 The period mean nitrogen dioxide concentrations measured at the diffusion tube sites ranged from 13 to 32 $\mu\text{g}/\text{m}^3$ compared with the objective value of 40 $\mu\text{g}/\text{m}^3$.

Fine Particles (PM₁₀)

- 1.10 The period mean PM₁₀ concentration measured at the automatic station on the roof of City Aviation House was 18 $\mu\text{g}/\text{m}^3$ (microgrammes per cubic metre). This compares with the objective value of 40 $\mu\text{g}/\text{m}^3$. There were no recorded exceedences of the 24-hour mean objective (compared with the 35 exceedences allowed in a calendar year). All of the running 24-hour mean concentrations were classified as “Low”.
- 1.11 Concentrations of PM₁₀ at other background sites in London over this period showed similar patterns in levels as seen at the Airport site. There was a good correlation between observed peaks at the Airport site and other London sites, suggesting that these occurrences were due to regional sources and changing weather conditions that affect the dispersion and dilution of pollutant emissions.