

London Borough of Sutton**Beddington and Wallington Area Committee -2 May 2007****Report of the
Report of the Executive Head of Environmental Sustainability****Air Quality Monitoring in Wallington & Beddington****Ward Location:**

Wallington South &
Beddington North

Author(s) and Contact Phone Number(s):

Martin Easton x 5547

Sarah Collins x 5557

**Report for
information****Summary**

This Report is to inform members of the results of the most recent analysis of air quality in Wallington and Beddington and dust monitoring in the Beddington Lane area.

1. Background

- 1.1 The Sutton 4 air quality-monitoring site was installed in Woodcote Road at the end of September 2002 as a direct response to the Stage 3 Air Quality review and assessment exercise carried out by the London Borough of Sutton.
- 1.2 The Sutton 5 air quality monitoring station was installed at the junction of Beddington Lane and Brookmead Avenue in December 2005 following the findings of the air quality Updating and Screening Assessment (USA) carried out in 2004. Because of the very dusty nature of the area due to the proximity of mineral workings, landfill, recycling activities, handling of waste from building and demolition activities as well as concrete batching processes, the USA concluded that a 'Detailed Assessment' was needed in the Beddington Lane area.
- 1.3 Both air quality monitoring sites are located within Sutton's Air Quality Management Area.
- 1.4 In connection with the need for a Detailed Assessment in Beddington Lane and due to a high level of complaints of dust in the area, it was decided to carry out an in-depth dust survey in the Coomber Way / Beddington Lane area. Consultants Bureau Veritas were employed to carry out the dust survey and the analysis of the results using scanning electron microscopy and energy dispersive spectroscopy.

2. Issues

2.1 The Air Quality Results - for the calendar year 2006 for Wallington - Sutton 4, are summarised in the following table.

Pollutant	Objective	Result	Achieved Objective
Nitrogen Dioxide	Annual mean not exceeding 40ug/m3	78	NO
Nitrogen Dioxide	No more than 18 occurrences of hourly mean.>200ug/m3	99	NO
PM10 Particulate	Annual mean less than 40ug/m3 (gravimetric equivalent)	33	YES
PM10 Particulate	No more than 35 days where daily mean.>50ug/m3 (gravimetric equivalent)	21	YES

2.2 Care must be taken in interpreting these results as the data at this stage is still provisional and open to alteration following ratification.

2.3 The results for the first year of air quality monitoring at Beddington Lane are summarised in the following table.

Summary of Air Quality Results for Beddington, Sutton 5 for the calendar year 2006

Pollutant	Objective	Result	Achieved Objective
Nitrogen Dioxide	Annual mean not exceeding 40ug/m3	38	YES
Nitrogen Dioxide	No more than 18 occurrences of hourly mean.>200ug/m3	0	YES
PM10 Particulate	Annual mean less than 40ug/m3 (gravimetric equivalent)	35	YES
PM10 Particulate	No more than 35 days where daily mean.>50ug/m3 (gravimetric equivalent)	50	NO

- 2.4 These results are also based on provisional data at the present time with a data capture rate of less than 75% (74%). It should be noted that results may be open to change following ratification and must be used for guidance only.
- 2.5 Both sets of results show that the air quality in these locations failed to meet the air quality objectives for at least one pollutant.
- 2.6 In Beddington Lane the objective for daily mean for PM10 of no more than 35 days was not met.
- 2.7 In Wallington both the annual mean and number of occurrences of hourly mean >200ug/m³ for Nitrogen Dioxide were not met. However the results for nitrogen dioxide showed a slight improvement from the previous calendar year. See Appendix 1 for comparison with the corrected figures for the calendar year 2005.
- 2.8 Details of all air quality readings for all the air quality monitoring stations in the borough can be found at www.londonair.org.uk
- 2.9 Combustion processes in air (significantly road vehicles) generate both Nitric oxide (NO) and nitrogen dioxide (NO₂). The major proportion emitted as NO becomes oxidised for example by a chemical reaction with Ozone (another pollutant of concern) to Form NO₂. It is therefore regarded as a secondary pollutant. However an increase in primary NO₂ is occurring due to the increased market penetration of diesel cars and the retrofitting of catalytically regenerative particle traps to vehicle fleets such as London buses.
- 2.10 PM10s again arise from road vehicles both from combustion of fuels (mainly diesel), and the re-suspension of dust from the roads, as well as from mineral, waste and construction sources identified elsewhere in this report.

3.0 Fugitive Dust Monitoring

- 3.1 As a result of the air quality assessments it was considered that there was a pressing need for the detailed assessment of fugitive dust, particularly in the Beddington Lane area.
- 3.2 Beddington Lane contains diverse commercial and industrial enterprises from builders merchants to recycling facilities. Of particular concern have been complaints relating to Country Skips and 777 Demolition although it is acknowledged that there is a significant concentration of other dust producing sources such as gravel extraction, mineral processing, landfill, cement batching plants etc in the area. Significant particulate emissions can arise from industrial processes, which include mechanical break up and pulverization, and these emissions can be carried and re-suspended via traffic movements. Another sources of dust in the area arises from uncovered vehicles passing through the area
- 3.3 A dust-monitoring scheme in Beddington Lane was carried out in May 2006 to July 2006. The aim of the study was to quantify fugitive dust deposition at key locations near specific dust generating operations and to determine the likely composition of these deposits with a view to source apportionment. It was hoped this information would give a better understanding of the dust problems in the Beddington Lane area. In addition it was hoped that it might be possible to devise a strategy to

minimise dust in the area. Three sites were selected based on nuisance complaints received by Sutton. A fourth site was chosen as a background site against which results from the other three sites could be compared. The monitoring site locations are described in Appendix 1

- 3.4 There is currently no statutory or official assessment criterion for dust annoyance, due to the subjective nature of determining the level at which dust soiling becomes a nuisance. However in the UK there is a Custom and Practice benchmark set at 200mg/m²/day which is widely used in environmental assessments in the absence of any official criteria.
- 3.5 The results of the 3-month study indicate that three out of the four monitoring sites approached or exceeded a nuisance guideline of 200mg/m². In one case a result of 3569mg/ m² was reached. (17 times greater than the nuisance guideline)
- 3.6 The background site consistently recorded the lowest dust deposition rates, with no exceedences of the nuisance guideline.
- 3.7 The in depth analysis of the results showed that there was a wide range of particles in all the samples. The presence of calcium and / or silicon rich particles in most of the samples illustrates the proliferation of dust from mineral type processing, waste and recycling operations and construction activities throughout the Beddington Lane industrial area.

4. The Next Steps

- 4.1 It is necessary for the council to work more closely with local business operators particularly in the Beddington Lane Industrial area to improve their standards of 'house keeping' and to mitigate the negative impacts on the environment outside of their premises. There is also a need for more robust consideration in determining planning applications for new or extended facilities, which are likely to have a disproportionate negative effect on the environmental conditions in the locality. There may also be some benefit arising from educational and promotional events such as 'Take Part and Take Pride'.
- 4.2 Closer partnership working with waste management, street scene, and Highway enforcement officers will be required to ensure that the Council helps to maintain higher standards of cleanliness of the Beddington area without taking responsibility away from local business occupiers in minimising their own dust emissions and to clean up for instance, after highway spillages

5. Air Pollution Bulletins

- 5.1 We receive air pollution bulletins from King's College London Environmental Research Group from time to time where air pollution levels reach unusual levels. The following notification including reference to the Beddington lane AQ station was received on 9th February 2007. This is the first time we have received a 'High' level notification in the Borough. Most interesting is the reason given for elevated levels of PM10 particles:-

LAQN Air Pollution Incident Notification 7th- 8th February 2007

Issued: Friday 9th February 2007

Extensive gritting of dry roads Tuesday through to Thursday resulted in a

rise in PM10 particulate levels at roadside locations due to resuspension of the grit/salt.

The peak in these levels occurred during Wednesday evening rush hour.

Greenwich 8 (Woolwich flyover) reached 'Very High' levels. Harrow 2 reached 'High' and Brent 4 (Ikea) was only just below the threshold. Brent 5

*(Neasden), Bexley 4 (Manor Road) and **Sutton 5 (Beddington Lane) locations with known local issues as a result of waste transfer stations also all reached 'High'**. 'Moderate' levels were reached at 21 other locations in*

London. The only background locations to reach 'moderate' were in Barking and Dagenham and Thurrock

The peak PM10 concentrations occurred late on the 7th and breaches of the 'moderate' threshold occurred both on the 7th and the 8th. Ambient levels fell rapidly in the early hours of the 8th as snow fell and then melted.

Note: The Threshold descriptors applied to air pollution concentrations as defined by the UK Air Quality Information System for PM10 are

Low – Below 50 ug/m3

Moderate – 50 ug/m3

High – 75 ug/m3

Very High - 100 ug/m3

6. Financial Implications

The financial implications of education, enforcement and ongoing monitoring are not fully identified at this time.

7. Influence of the Council's Values

Working in partnership with people who live or work in the Borough and empowering everyone so that we can all take part and take pride are key values influencing this work to reduce pollution.

8. Contribution to the Achievement of the Council's AIMS

The work on air pollution monitoring and pollution reduction is fundamental to the achievement of developing a cleaner greener environment and improving health and well-being.

9. Background Papers

Sutton reviews of air quality and assessment and upgrading and screening assessment reports.

Cleaning the Air – The Mayors Air Quality Strategy

Trends in Primary Nitrogen Oxide in the UK, Draft 2006 – Air Quality Expert Group

The Control of dust and emissions from construction and demolition – best practice Guidance – London Councils in partnership with the Greater London Authority.

APPENDIX 1

The corrected results for the calendar year **2005** for Wallington, Sutton 4 are summarised in the following table for comparison.

Pollutant	Objective	Result	Achieved Objective
Nitrogen Dioxide	Annual mean not exceeding 40ug/m ³	83	NO
Nitrogen Dioxide	No more than 18 occurrences of hourly mean.>200ug/m ³	189	NO
PM10 Particulate	Annual mean less than 40ug/m ³ (gravimetric equivalent)	31	YES
PM10 Particulate	No more than 35 days where daily mean.>50ug/m ³ (gravimetric equivalent)	14	YES

Description of monitoring sites for the Beddington Lane Fugitive dust survey.

Site A Was located at the boundary fence between 777 Demolition and CCS Enforcement services Ltd. The dust deposition gauge was sited approximately 0.8 m from the boundary fence and 20m from the CCS Enforcement Services Office building. The boundary fence is situated at the edge of a vertical precipice, about 2m above the concrete yard of 777 Demolition.

Site B was located opposite Cemex UK operations in the vehicle yard owned by London Borough of Sutton (accessed from Therapia Lane) However the gauge was located adjacent to a chain link fence marking the boundary of the yard with the pavement of Coomber Way.

Site C was located on a herbaceous verge in the Travelwise Bus Depot Beddington Lane. It was approximately 50 metres across the road from the Country Waste Management Site

Site D was located in a corner of the Asda supermarket delivery yard in Marlowe Way off Beddington Lane. This site was selected to establish **background** dust soiling levels away from any known sources of fugitive dust.