



2009 Air Quality Updating and Screening Assessment for *Amber Valley Borough Council*

In fulfillment of Part IV of the Environment Act 1995
Local Air Quality Management

April, 2009

Amber Valley Borough Council - England

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Executive Summary

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents.

Since there has again been little change since the Updating and Screening Assessment completed in 2006, or the Progress Reports of 2007 and 2008, the pollutants have not been considered on an individual basis but a conclusion has been reached about the overall need for a detailed assessment. There is little likelihood of any air quality objectives being exceeded and it would therefore not be justifiable to proceed to a detailed assessment for any of the identified pollutants.

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1 Introduction

1.1 Description of Local Authority Area

The borough of Amber Valley is located on the eastern side of Derbyshire, between Derby to the south and Chesterfield to the north. The area is comprised of four main towns; Alfreton, Belper, Heanor and Ripley, and is divided into twenty-five wards. Amber Valley covers just over 260 square kilometres and, apart from the towns, is largely rural in character. The present population, taken during 2004, is 118,200.

The borough has a wide range of industrial sectors including instrument engineering, timber and furniture manufacture, hotels and catering, business services, textiles and clothing. Almost 500 companies are located within 20 industrial estates, with a further 400 located on singular sites or within the urban areas.

Major roads include the A38, providing a link between Derby and junction 28, A6, A609 and A610. The A52 between Derby and Ashbourne cuts through the southern-most tip of the borough. The only rail stations in the area are at Belper, which is on the busy east coast mainline, and at Alfreton, with through trains to London, Manchester and the north.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM in **England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

| Pollutant | Air Quality Objective | | Date to be achieved by |
|---|---|---------------------|------------------------|
| | Concentration | Measured as | |
| Benzene | 16.25 $\mu\text{g}/\text{m}^3$ | Running annual mean | 31.12.2003 |
| | 5.00 $\mu\text{g}/\text{m}^3$ | Running annual mean | 31.12.2010 |
| 1,3-Butadiene | 2.25 $\mu\text{g}/\text{m}^3$ | Running annual mean | 31.12.2003 |
| Carbon monoxide | 10.0 mg/m^3 | Running 8-hour mean | 31.12.2003 |
| Lead | 0.5 $\mu\text{g}/\text{m}^3$ | Annual mean | 31.12.2004 |
| | 0.25 $\mu\text{g}/\text{m}^3$ | Annual mean | 31.12.2008 |
| Nitrogen dioxide | 200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year | 1-hour mean | 31.12.2005 |
| | 40 $\mu\text{g}/\text{m}^3$ | Annual mean | 31.12.2005 |
| Particles (PM ₁₀) (gravimetric) | 50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year | 24-hour mean | 31.12.2004 |
| | 40 $\mu\text{g}/\text{m}^3$ | Annual mean | 31.12.2004 |
| Sulphur dioxide | 350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year | 1-hour mean | 31.12.2004 |
| | 125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year | 24-hour mean | 31.12.2004 |
| | 266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year | 15-minute mean | 31.12.2005 |

1.4 Summary of Previous Review and Assessments

The area is semi-rural with four small towns as the main urban areas, no significant road links, no congestion problems or large industry.

Monitoring exercises, from the first round of Review and Assessment, included stage 2 reports for sulphur dioxide, particulates and nitrogen dioxide and a stage 3 assessment of nitrogen dioxide. These indicated that all pollutant levels were either currently or anticipated to be well below the standards by the relevant objective dates.

The results of the Updating and Screening Assessment completed in 2003 showed no change to these conclusions and the Progress Reports in 2004 and 2005 again showed no need for a 'Detailed Assessment'. The NO₂ diffusion tube survey conducted to inform the compilation of the Progress Report 2005 also indicated that the concentrations measured at all sampling locations are below the air quality standards.

The Updating and Screening Assessment completed in 2006 did not identify any significant changes which may have impacted in the borough's air quality, it was not proposed to proceed to a detailed assessment for any of the pollutants listed. The Progress Reports of 2007 and 2008 did not identify any significant changes that would require the Council to consider a Detailed Assessment before the next full round of review and assessment.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

The 2008 Progress Report concluded that it was unlikely that any National Air Quality Objectives would be exceeded in Amber Valley, as such it was not deemed necessary to conduct any air monitoring in the past 12 months.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

The threshold for vehicle movements in narrow congested streets, with residential properties within 2 m of the kerb, has been reduced from 10000 to 5000 vehicles per day.

Local knowledge, analysis of vehicle count data provided by Derbyshire County Council, and selections of property polygons at or within 2m of highway polygons using a Geographical Information System did not find any properties in the borough that met the descriptions contained within Box 5.3 Section A.1 of the LAQM.TG(09).

Amber Valley Borough Council confirms there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, and with traffic speed below 15mph throughout most of the day, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Amber Valley Borough Council confirms there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.3 Roads with a High Flow of Buses and/or HGVs.

Amber Valley Borough Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

Amber Valley Borough Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

Amber Valley Borough Council confirms that there are no new/proposed roads that fit the relevant descriptions.

3.6 Roads with Significantly Changed Traffic Flows

Derbyshire County Council provided average count data for the preceding five years where flows were greater than 8000 vehicles over a 12 hour period. The Highways Authority recommended multiplying this 12hr data by 25% to reflect likely flows over a 24 hour period.

Eleven junctions and 10 roads were identified as having a 24-hr average traffic flow greater than 8000 vehicles over a 12 hour period (or 10000 vehicles over a 24 hour period).

Where counts were available for locations where data had previously been provided the change in vehicle movements was calculated. No increases were greater than 25%, which is described as large or significant in LAQM.TG(09).

Amber Valley Borough Council confirms that there are no new/newly-identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Amber Valley Borough Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Amber Valley Borough Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Amber Valley Borough Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Amber Valley Borough Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

Amber Valley Borough Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Amber Valley Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been introduced.

Amber Valley Borough Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment.

Amber Valley Borough Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Amber Valley Borough Council confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

Amber Valley Borough Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Amber Valley Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

There are no biomass combustion plant in the Local Authority area and no significant domestic solid fuel burning in the borough. It is deemed to be unnecessary to assess the combined impacts of biomass combustion.

Amber Valley Borough Council confirms that there are no biomass combustion plant in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

This was considered in the Updating and Screening Assessment 2006, which concluded that detailed assessment was not required. The house condition survey conducted at the time showed coal burning to be declining in this area so further assessment is not necessary.

Amber Valley Borough Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

As recorded in the Progress Report 2008; UK Coal have been granted planning permission, by Derbyshire County Council, for the extraction of approximately 1,000,000 tonnes of coal, over a 4.5 year period, by opencast methods at the 122 hectare Lodge House Opencast site, which lies east of Smalley village. The planning application included an Environmental Statement (ES), which assessed the sites impact on air quality.

The ES found that the sites operation would result in 118 HGV movements per day. The ES compared this figure with traffic growth forecasts and concluded that this would equate to a 6.5% increase in HGVs.

The coal handling operations will operate under a Part B permit issued under the Pollution Prevention and Control Regulations 2000. AVBC have issued the installation a Permit under the Pollution Prevention Control Act 1999. The permit contains a number of conditions aimed at controlling dust emission from the site and requiring the operator to monitor dust emissions.

Results of PM10 monitoring undertaken to date do not indicate any exceedences in the air quality objectives.

Inspection of the site has found no significant dust emissions.

The Council will keep the sites impact on air quality standards under review.

Amber Valley Borough Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

The Progress Report 2008 concluded that the cost of a monitoring programme could not be justified based on the very low likelihood that National Air Quality Objectives would be breached in the borough. As such there is no new monitoring data to discuss.

8.2 Conclusions from Assessment of Sources

Amber Valley Borough Council can confirm that no local developments are predicted to increase the concentration levels of any ambient pollution as listed in the regulations.

This assessment was intended to identify those aspects that have changed since the last round of review and assessment. The USA was also intended to indicate which pollutants and specific locations within the Borough require a Detailed Assessment.

This report has considered all the potential issues within the Borough that may impact on air quality but, since the area is semi-rural with four small towns as the main urban areas, no significant road links, no congestion problems or large industry, there is no reason to believe there will be any exceedences of National Air Quality Objectives, therefore there is no requirement to procedure to Detailed Assessment.

8.3 Proposed Actions

This Updating and Screening Assessment has not identified any potential exceedences of the National Air Quality Objectives in Amber Valley. There is no requirement to proceed to Detailed Assessment.

Based on the findings of this, and previous reports, the cost of implementing an air-monitoring scheme in Amber Valley cannot currently be justified. This decision will remain under review, and any relevant emerging information will be considered.

Amber Valley Borough Council's next course of action is to submit a Progress report in April 2010.

9 References

- AVBC USA 2006.
- AVBC Progress Report 2007
- AVBC Progress Report 2008
- Defra (2003) Local Air Quality Management. Technical Guidance. LAQM.TG (03).
- Defra (2009) Local Air Quality Management. Technical Guidance. LAQM.TG (09)
- National Atmospheric Emissions Inventory website, <http://www.naei.org.uk/>
- <http://www.airquality.co.uk/laqm/tools.php>