



2019 Air Quality Annual Status Report (ASR)

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

June 2019

Amber Valley Borough Council

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Executive Summary: Air Quality in Our Area

Air Quality in Amber Valley Borough

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

Amber Valley Borough is semi-rural with four small towns as the main urban areas; it has no significant road links, no significant congestion problems or large industry. Air quality is generally good and no Air Quality Management Areas (AQMAs) have been declared.

There are no new major sources of emissions since the last Air Quality Status Report.

Actions to Improve Air Quality

As air quality in Amber Valley Borough does not exceed the Air Quality Objectives the Council has not developed a specific programme or any targets for air quality improvements.

The following contribute to management of air quality in Amber Valley Borough:

- Regulation of industrial emissions- Local authorities regulate a range of industries that may cause local emissions to air and this work also forms part of our response to securing air quality in the district
- Planning and development- Officers of the Environment Unit at Amber Valley Borough Council are consulted on planning applications where the development is anticipated to give rise to concerns about air quality.

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

² Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

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- Investigation of reports of dark smoke and smoke causing a statutory nuisance, including intervention where necessary
- Smoke control areas - Amber Valley Borough has 28 Smoke Control Areas (SCA)

Amber Valley Borough Council works alongside other organisations in the Derbyshire Air Quality Working Group (DAQWG).

Conclusions and Priorities

Changes to the Local Air Quality Management (LAQM) approach place greater emphasis on action planning to bring forward improvements in air quality and to include local measures. Recognising this change in emphasis, Amber Valley Borough Council will continue to work with partners in the DAQWG. This working group, which comprises officers from a number of relevant disciplines at County Council, District councils and the voluntary sector, has been established for agreeing strategic priorities and ensuring collaborative action around air quality in the region.

Local Engagement and How to Get Involved

Amber Valley Borough Council has used its website to promote actions which improve air quality (www.ambervalley.gov.uk/environment/pollution/air-pollution/what-can-i-do-about-air-pollution/)

In addition, the Council engages with the public on matters relating to air quality through, for example, dialogue with local interest groups and interested individuals.

One of the key sources of localised air pollution is road traffic. Some of the things you can do to help reduce emissions from road traffic are:

- Use your car less and use public transport when you can
- Make short trips on foot or by bike
- Avoid driving during congested peak traffic periods
- Car share whenever possible
- Adapt your driving style to improve energy efficiency. More information is available at www.energysavingtrust.org.uk/travel/driving-advice
- Use a low emission vehicle such as an electric or hybrid car

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Heating systems for homes and other buildings can also be a source of air pollution. Combustion of fuels such as coal, oil, gas and wood all result in emissions to air. Some of the things you can do to reduce emissions to air from domestic heating are:

- Be as energy efficient as possible by insulating your home
- Upgrade boilers to more efficient boilers with lower NO_x and carbon emissions
- Use electric heating powered by non-combustion forms of renewable energy
- More information on this and links to other resources are available at www.uk-air.defra.gov.uk
- Domestic burning of solid fuel is the largest source of small particulate air pollution (PM_{2.5}) in the UK. Smokeless fuel or dry wood have lower emissions than house coal or unseasoned wet wood.

Amber Valley Borough has 28 Smoke Control Areas (SCA) where smoke emissions from chimneys are controlled by requiring the use of smokeless fuel or using 'exempt appliances', that can burn other fuels without causing significant smoke emissions. If you would like to check if you are in an SCA see the 'My Property' section of Amber Valley Borough Council's website (www.ambervalley.gov.uk/utilities/my-property).

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1 Local Air Quality Management

This report provides an overview of air quality in Amber Valley during 2019. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) 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 an exceedance is considered likely the local authority must 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. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Amber Valley Borough Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table A.1 in Appendix A.

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an Air Quality Action Plan (AQAP) within 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

Amber Valley Borough Council has not previously declared, nor does not currently have any AQMAs.

2.2 Progress and Impact of Measures to address Air Quality in Amber Valley

Defra's appraisal of last year's ASR concluded:

"The report is clearly written and provides the information specified in the Guidance. The comments below are provided to help guide future reporting.

- 1. It is encouraging that Amber Valley Borough Council continue to undertake regular modelling to determine whether exceedances of air quality objectives are likely to occur. It would be useful if more detailed results of the modelling were provided in the ASR report.*
- 2. The Local Authority may wish to consider conducting monitoring of NO₂ with diffusion tubes for a year or two, to assess the validity of the model findings, and confirm that there are no exceedances of air quality objectives likely to occur within the Borough.*
- 3. It is noted that the material prepared by the Local Authority to provide information on air quality has not yet been widely distributed, and therefore there is not yet an assessment of any outcomes of this action. The Local Authority should report on the progress of this measure and its outcomes in next years ASR."*

Once again, modelling has been carried out to determine whether exceedances of air quality objectives are likely to occur. The results are shown in section 3 of this report.

Defra's comment that The Authority may wish to consider monitoring with diffusion tubes is noted. Amber Valley Borough Council will continue to evaluate the necessity to carry out monitoring.

Information for residents on air quality and the actions they can take to reduce their emissions has been placed on the Amber Valley Borough Council website (www.ambervalley.gov.uk/environment/pollution/air-pollution/what-can-i-do-about-air-pollution/).

Further public awareness work has been carried out by Public Health at Derbyshire County Council, one of the members of the Derbyshire Air Quality Working Group (DAQWG). It is anticipated that the outcome of making residents more aware of their

own role in improving air quality will be behaviour change that will contribute to a reduction in air pollution.

Amber Valley Borough Council will continue work with partners in the DAQWG, benefiting from the strategic overview and collaborative working. The group has been continuing it's work on a Joint Derbyshire County and Derby City Air Quality Strategy and guidance for local planners to secure local air quality where development is proposed.

The Council continues to take broad action through:

- Local Authority Pollution Prevention and Control (Environmental Permitting) - Local Authorities regulate Part A2 and B activities, which involve emissions to air.
- Planning and development- Officers of the Environment Unit at Amber Valley Borough Council are consulted on planning applications where development may significantly affect traffic, introduce new point sources of pollution, expose people to existing sources of air pollutants or produce dust during construction.
- Investigation of reports of dark smoke and smoke causing a statutory nuisance, including intervention where necessary.
- Smoke control areas - Amber Valley Borough has 28 Smoke Control Areas (SCA).
- Addressing residents' concerns about air quality and advising local groups who have an interest in air quality.

2.3 PM_{2.5} – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of PM_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Amber Valley Borough Council is not currently taking specific measures to address PM_{2.5}, but the measures described in Section 2.2 will contribute towards reducing PM_{2.5}.

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

3.1 Summary of Monitoring Undertaken

Previous Updating and Screening Assessment Reports and Progress Reports for Air Quality in Amber Valley 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.

Traffic flow and background air quality data for 2017 were used to predict NO₂ and PM₁₀ concentrations at 44 receptor locations near to road links likely to have the highest pollutant levels. The results of this modelling showed that there were no areas that were likely to exceed the air quality objectives (see Table 1).

Table 1 -Predictions of NO₂ and PM₁₀ modelled using DRMB and the NO_x to NO₂ calculator

Site ID	NO ₂	PM ₁₀	
	annual mean (µg/m ³)	annual mean (µg/m ³)	days >50µg/m ³
1	15.02	15.17	0.14
2	15.73	13.80	0.00
3	13.63	12.20	0.00
4	15.29	15.69	0.00
5	16.98	14.43	0.00
6	14.91	14.29	0.00
7	17.30	14.68	0.00
8	20.98	16.20	0.38
9	18.87	15.12	0.14
10	21.04	15.59	0.21
11	17.25	15.68	0.23
12	21.48	16.07	0.34
13	22.47	16.25	0.40
14	20.89	16.91	0.69
15	26.60	16.51	0.50
16	26.32	16.52	0.51
17	21.94	17.06	0.77
18	23.26	15.77	0.25
19	26.62	17.10	0.80
20	29.89	16.98	0.73
21	17.87	14.58	0.00
22	34.38	19.42	2.73

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Site ID	NO ₂	PM ₁₀	
	annual mean (µg/m ³)	annual mean (µg/m ³)	days >50µg/m ³
23	18.55	16.11	0.35
24	19.99	15.49	0.19
25	32.97	19.69	3.03
26	22.32	16.51	0.50
27	19.76	16.00	0.31
28	16.86	15.85	0.27
29	17.17	15.79	0.25
30	16.83	14.91	0.00
31	22.17	15.40	0.17
32	24.45	18.28	1.62
33	23.99	16.92	0.70
34	23.76	17.67	1.16
35	17.66	14.69	0.00
36	24.04	17.06	0.77
37	25.69	17.55	1.07
38	25.10	15.49	0.19
39	33.96	19.80	3.16
40	29.61	18.98	2.26
41	16.99	14.32	0.00
42	19.84	16.06	0.33
43	15.42	14.05	0.00
44	24.36	16.48	0.49

Appendix A: Summary of Air Quality Objectives in England

Table A.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective ⁴	
	Concentration	Measured as
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m ³	Annual mean
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m ³	Annual mean
Sulphur Dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean

⁴ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
ASR	Air quality Annual Status Report
AVBC	Amber Valley Borough Council
DAQWG	Derbyshire Air Quality Working Group
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SCA	Smoke control areas
SO ₂	Sulphur Dioxide