

LOCAL AIR QUALITY
REVIEW AND ASSESSMENT

Updating and Screening

Environment Directorate
Public Protection Division

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1.1 The Legislative Background

Part IV of the Environment Act 1995 Act requires each local authority periodically to review air quality in its area. The primary objective is to identify areas where air quality is unlikely to meet the objectives prescribed in the Air Quality (Wales) Regulations 2000 and the Air Quality (Amendment) (Wales) Regulations 2002.

1.2 The Phased Approach to Review and Assessment

The process of continuous review and assessment started with the first report being produced by BGCBC in 1999. This report concluded that the likely hood of the air quality objectives for any of the seven key pollutants being exceeded was negligible.

In 2003 a further Updating and Screening Assessment was carried out. Using the additional data gathered in the period between the previous report it was establish that the likelihood of

2.1 Introduction and Objectives

2.3.3 There are no other industrial processes exist

3.1 Introduction and Objectives

3.1.1 The 1, 3 - butadiene in air derives solely from human activity. It is an important industrial chemical being used particularly in the manufacture of synthetic rubber for tyres. Apart

3.4 Conclusions

- 3.4.1 DEFRA considers that existing national policies are expected to deliver the prescribed air objective for 1,3 - butadiene by the end of 2003. Roadside levels of 1,3 - Butadiene, next to even the busiest of congested roads are expected to be well below the air quality objective. As this authority has no major industri

4.1 Introduction and Objectives

4.3 Road Traffic

4.3.1 None of the major roads or junctions in Blaenau Gwent have a current or projected average daily traffic flow greater than the bench mark figure of 80 000 vehicles per day for single carriageways or 120 000 vehicles per day for dual carriageways. There are no motorways in Blaenau Gwent.

4.4 Conclusions

4.4.1 DEFRA considers that emissions from road traffic will continue to decline.

4.4.2 As there are no very busy roads or junctions within Blaenau Gwent and monitoring carried out by neighbouring Authorities are show that levels are below the objective level there is little risk of the air quality objective for Carbon Monoxide being exceeded in Blaenau Gwent

4.4.3 Therefore, no detailed assessment is required.

5.1 Introduction and Objectives

5.1.1 Lead occurs in the earth's crust and is relea

- 5.3.2 As part of planning process the company, Envirowales Limited, were required to submit an Environmental Impact Assessment. The company were required by this Authority to not only model emissions from the proposed new plant but also include emissions from the existing Yuasa plant.
- 5.3.3 The results were scrutinised by this Authority and an independent consultant. Initially concerns were raised over the validity of the meteorological data used. There are no meteorological stations in or around Blaenau Gwent so data was obtained from distant stations. However, the report was accepted on the basis that the data used represented the worst-case scenario.
- 5.3.4 The report concluded that the highest annual average ground level concentration of lead would be $0.453\mu\text{g}/\text{m}^3$ in 2003, including emissions from Yuasa Battery (UK) Ltd, Envirowales Ltd and predicted background levels. The report emphasised that the data represented the worst-case scenario as the data from Envirowales was the worst predicted and the background levels were obtained from Cardiff City Council where the background concentrations were higher than would be expected in the semi-rural location of the Rassau Industrial Estate.
- 5.3.5 The figures from the modelling are included in appendix 2.
- 5.3.6 As part of the permit to operate issued by the Environment Agency under the Pollution Prevention (England and Wales) Regulations 2000 (as amended) EnviroWales are required to set up lead monitoring stations both within the plant and at a nearby sensitive receptor. The remote monitoring station will be placed at Garnlydan Primary School by April 2006. This will ensure that data is obtained before the plant is commissioned allowing a comparison to be made.
- 5.3.7 Blaenau Gwent County Borough Council has entered an agreement with EnviroWales so the data obtained can be used as part of future Updating and Screening Assessments. The company are also collecting meteorological data that this Authority will be able to use in the future.
- 5.3.8 A location map of the site of the lead monitoring station is included in appendix 3.
- 5.3.9 There are no new industrial sources in neighbouring authorities that have the potential to effect the ground level concentrations of lead in this County Borough.
- 5.4 Existing Industrial Sources / sources with increased emissions or new relevant exposure
- 5.4.1 As mentioned in paragraph 5.3.1 above there is a long established industrial source of lead in Blaenau Gwent, Yuasa Battery (UK) Limited. In the 2003 Updating and Screening Assessment it was concluded that the air quality objectives were unlikely to be exceeded as a result of the operation of Yuasa Battery (UK) Limited.
- 5.4.2 The operation of the existing plant and the new plant has been considered above.
- 5.4.3 There are no new receptors within the county borough or neighbouring authorities that will be exposed to significant ground level concentrations of lead.
- 5.4.4 The company have reported that emissions have not increased substantially since the last review and assessment report in 2003.

5.5 Conclusions

- 5.5.1 The modelling study for the new plant combined with the emissions data from the existing plant indicate that the ground level concentrations of lead will be within the objective level of $0.5\mu\text{g}/\text{m}^3$ for 2004.
- 5.5.2 Further monitoring is to be carried out to establish the actual ground level concentration of lead from the new EnviroWales plant both on site and at local sensitive receptors. This will allow more accurate predictions to be made for future years objective levels.
- 5.5.3 The permit issued to EnviroWales Limited under the Pollution Prevention and Control (England and Wales) Regulations (as amended) includes the II

6.1 Introduction and Objectives

- 6.1.1 Nitrogen Dioxide is a gas produced by the reaction of nitrogen and oxygen in combustion processes. By far the largest amount of Nitrogen Dioxide in the atmosphere is formed as a consequence of combustion of fossil fuels – petrol, oil, coal and gas, especially by motor transport and non-nuclear power stations.
- 6.1.2 Once formed, nitrogen dioxide takes part in chemical reactions in the atmosphere that convert it into nitric acid and nitrates, both of which can be removed by rain. However, nitrates can also remain in the air as very small particles, for example ammonium nitrate, which can be dispersed widely in the atmosphere contributing to the airborne concentrations of small particles known as PM₁₀(Particle Matter less than 10µm in diameter)
- 6.1.3 Nitrogen Dioxide is an irritant gas that has been known for many years to have serious and sometimes fatal effects on health when inhaled in the very high concentrations associated with accidental exposures. There is now evidence that it has more subtle effects on health at the much lower concentrations that may occur in the ambient atmosphere, both outdoors and indoors.
- 6.1.4 Generally, ground level concentrations of nitrogen dioxide outdoors are influenced more by emissions from motor vehicles than from other sources, such as power stations, which disperse pollutants from tall stacks.

Industrial sources with substantially increased emissions, or new relevant exposure;
Aircraft.

The checklist points relevant to Blaenau Gwent CBC are discussed below.

6.3.5 Seven new sites were identified and tubes have been in place since January 2006. The new sites are as follows:

WAQF Reference	Location
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6.5 Road Traffic Junctions

6.5.1 There are no junctions within the County Borough that have more than 10 000 vehicle movements per day and with receptors within 10m of the kerb of a busy junction. There is one junction on the A465 at Brynmawr where the ADT is almost 20 000 but the nearest receptor is over 10 metres from the kerb.

6.6 Busy streets where people may spend 1-hour or more close to traffic

6.6.1 There are no areas within the County Borough that fulfil the DEFRA definition of busy where people may be exposed for 1-hour or more per day.

6.11 New Industrial Sources

6.11.1 There have been three new part B processes in Blaenau Gwent since the last review and assessment. These are two crushing processes and one printing process.

6.11.2 Using the Technical Guidance LAQM TG (03) (amended) none of these processes have the potential to emit significant quantities of Nitrogen Dioxide.

6.11.3 There have been two new part A1 processes in Blaenau Gwent since the last review and assessment. One process is a landfill site and the other an acid process.

7.1 Introduction and Objectives

- 7.1.1 The ability of a particle to remain suspended in the air depends essentially on size, shape and density. Large heavy particles fall rapidly, while fine light particles remain suspended for longer. The same properties determine where in the human respiratory track a particle can penetrate. In general, spherical particles below $10\mu\text{m}$ in diameter (PM_{10}) have the greatest likelihood of reaching the furthest parts of the lung air spaces where delicate tissues involved in the essential processes of respiration are to be found.
- 7.1.2 Particles may arise from a wide variety of sources, either natural or man made. Biological sources are ubiquitous, and particularly in rural areas considerable numbers of pollen grains, fungal spores and their fragments contribute to the total mass of airborne particles. Man-made airborne particles result mostly from combustion processes, from the working of soil and rock, and from many other industrial processes and from the abrasion of road surfaces by motor vehicles.
- 7.1.3 The Welsh Assembly Government has adopted two air quality objectives for PM_{10} . The objectives are $40\mu\text{g}/\text{m}^3$ as the annual mean, and $50\mu\text{g}/\text{m}^3$

7.3 Monitoring Data

7.3.1 No monitoring for PM₁₀ is carried out in Blaenau Gwent.

7.3.2 The estimated annual mean background gravimetric PM₁₀ concentration for Blaenau Gwent is 15-20µg/m³. In 2010 it is estimated that this level will drop to 10-15µg/m³.

7.3.3 Torfaen County Borough Council currently monitor PM₁₀ at Cwmbran. The latest data available is for 2004 where the annual mean was 18µg/m³ with over 99% data capture.

7.3.4 Merthyr Tydfil County Borough Council started monitoring for PM₁₀ in 2005 using a TEOM monitor. They currently estimate that the gravimetric concentration of PM₁₀ for 2005 was 14.8µg/m³.

7.3.5 Taking into account that this is the best data available and that both neighbouring authorities are similar in location, size and population density it is acceptable to conclude that the PM₁₀ levels in Blaenau Gwent are within the air quality objective levels.

7.4 Junctions

7.4.1 There are no road junctions in Blaenau Gwent that meet the DEFRA definition of busy, i.e. 10 000 vehicles per day and exposure within 10 metres of the kerb.

7.5 Roads with high flows of buses and/or HGV's.

7.5.1 There are no specific figures available to assess this criteria. However, local knowledge suggests that there are no roads with an unusually high proportion of buses and/or HGV's.

7.5.2 There are no bus only routes wi

7.6.3 Recent traffic flow figures on the A465 show that the predicted annual traffic flows have indeed been realised. Therefore, the conclusions of the 2003 Review and Assessment remain valid.

7.14 Conclusions

7.14.1 In review of the data obtained above there is little chance of the air quality objective for PM_{10} being exceeded in Blaenau Gwent.

7.14.2 Therefore, no detailed assessment is required.

8.1 Introduction and Objectives

8.1.1 From the time of the industrial revolution un

9.0 Conclusions and Recommendations

- 9.1 An updating and screening assessment has been carried out by Blaenau Gwent County Borough Council in line with the technical guidance LAQM.TG(03) (as amended).
- 9.2 Seven pollutants examined were examined it none of air quality objectives for these pollutants were likely to be exceeded with the County Borough of Blaenau Gwent.
- 9.3 Therefore, there is no need to proceed to a detailed assessment for any pollutant.
- 9.4 It is recommended that following the relocation of several of the NO_x Diffusion Tubes throughout the borough to give a more representative picture the results from these tubes be examined in more detail in the next progress report and updating and screening assessment.
- 9.5 It is also recommended that traffic flow data is regularly monitored especially on the A465 at Tredegar and the A4046 in Cwm to ensure that the flows do not exceed the AADT stated in the DEFRA guidance.

List of Part A1, A2 and B Installations

PART B INSTALLATIONS

Company Name	Address of Installation	Permit Reference Number	Activity Permitted / PPC section
Tarmac Topmix Limited	Trefil Quarry, Trefil, Tredegar, NP22 4HF	BG/PPC/B/01/A	Cement Batching B 3.1
Hanson Premix Limited	Waun Y Pound Ind. Est, Ebbw Vale, NP23 6PL	BG/PPC/B/02/A	Cement Batching B 3.1
Thomas Waste Management	Hafod Garage Transfer Station, Old Abergavenny Road, Brynmawr, NP23 4BU	BG/PPC/B/03/A	Mobile Crushing and Screening B 3.5

PART A2 INSTALLATIONS

Company Name	Address of Installation	Permit Reference Number	Activity Permitted / PPC section
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Appendix 2

Modelling data for Lead Emissions on Rassau Industrial Estate.

Appendix 4

Location map of all NOx Tubes



