



ODOUR - GENERATION, DETECTION, MODELLING & ABATEMENT

BMT Cordah Limited

The Environmental Protection Act 1990, the Environment Act 1995, and the Pollution Prevention and Control Act 1999 are the principal legal instruments to control emissions to the environment in the UK. This includes odour which is receiving increasing attention from regulators. The public's increasing sensitivity to odour and the widening of scope from IPC to PPC means that odour management has never been higher on the corporate agenda.

BMT Cordah offers a focused service on all aspects of odour and air pollution to clients wishing to confront these challenges, including:

- baseline air quality surveys
- standards and legislation
- air dispersion modelling studies
- abatement technology advice
- air quality monitoring
- integration of odour management into IPPC applications

Sectoral Expertise

BMT Cordah has a team of expert staff with extensive experience and technical understanding of a large number of air pollution problems, covering a wide range of industrial sectors:

- wastewater and sludge treatment
- waste, e.g. landfill odours
- food and drink
- agriculture, animal rendering
- transport e.g. vehicle exhaust emissions
- manufacturing and refining odours – hydrocarbons, formaldehyde
- fugitive and dust emissions from all sectors

Legislation and Expert Witness

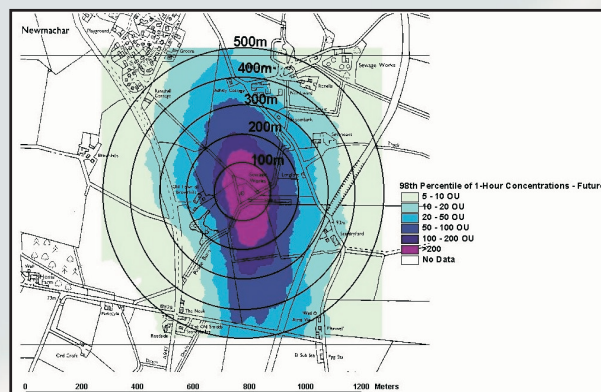
- advice on the interpretation of environmental and air pollution abatement control legislation
- expert witness at public inquiries, courts of law and public meetings

Baseline Air Quality and Monitoring

- assessment of data accuracy, reliability and monitoring techniques
- statistical analysis of data
- comparison of data with recommended air quality standards and guidelines
- monitoring of gaseous/particulate pollutants
- management of olfactometry testing and odour surveys
- design of detailed monitoring programmes appropriate to locality and objectives
- design of appropriate monitoring protocols

Air Dispersion Modelling Studies

- use of state-of-the-art UK and US EPA air dispersion models (e.g. ADMS 3, AERMOD)
- modelling for a range of emission, topographical and meteorological scenarios
- long-term and short-term predictions for emissions from a wide range of sources
- quantitative risk assessment
- BATNEEC and BPEO assessment of abatement options



Abatement Technology and Advice

- advice on the methods and technology for abating gaseous and particulate emissions
- determination and control of fugitive emissions

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Modelling Odour

Meaningful odour modelling requires the accurate collection and processing of data at two stages:

- odour generation and emissions monitoring
- atmospheric dispersion modelling

Odour generation is calculated from a combination of parameters such as the odour potential of individual sources and substances and from on-site odour monitoring.

Air dispersion modelling studies are undertaken using state-of-the-art dispersion models e.g. the UK ADMS and US EPA ISC/AERMOD models for a range of emission, topographical and meteorological scenarios. Long-term and short-term predictions are undertaken of emissions from point (stack), line (pipes, traffic), area (plant complexes) and volume (tanks) sources. The results are compared with recommended air quality standards and guidelines and odour detection thresholds. Predicted concentrations can be presented in terms of European odour units (OU_E). Quantitative risk assessments of the predicted results can also be undertaken.

Applications of Odour Modelling Include:

- source identification where there are many potential sources
- investigations of complaints
- planning or environmental impact assessment for new developments e.g. wastewater treatment plants
- cost effective assessment of odour control options
- prediction of exceedences of particular odour thresholds in the vicinity of a plant
- emergency and maintenance planning – to minimise effect of cleaning/maintenance on receptors
- landscaping design to minimise odour
- odour management planning for PPC

2003 Scottish Water

Ambient neighbourhood monitoring and dispersion modelling of odour from a large WWTP.

2003 Moray Council

Ambient monitoring to determine the odour impact from aircraft emissions at two RAF bases.

2001 Newmachar Wastewater Treatment Plant

Investigations, odour generation modelling, odour dispersion modelling, recommendations for monitoring and liaison with planning authority regarding proposals to extend Newmachar WWTP.

2000 Gasification (Client Confidential)

Environmental Statement, baseline studies and BPEO assessment for proposed waste gasification plant pursuant to IPPC authorisation.

1999 Aberdeen Wastewater PFI Project

Wide-ranging support for Buchan Environmental's bid for Aberdeen PFI project. IPC advice and odour modelling for numerous proposed WWTPs.

1999 Nigg Oil Terminal IPC Review

Review of air emissions, including odour and VOC emissions from wastewater treatment plant and remedial action to cure odour and effluent quality problems.

1999 Egger Chipboard Factory

Air quality monitoring and recommendations for reducing levels of emissions to ensure compliance, including formaldehyde and particulates.

1998 Hong Kong Government

Air quality impact assessment and assessment of odours from landfill sites in Hong Kong.



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