Best Available Techniques for Assessment and Control of Odour

R&D Technical Summary P4-079/TS/2

The Agency has responsibilities for regulating odorous releases from a wide range of industrial activities under Pollution Prevention and Control (PPC). It also has odour-related responsibilities under the Waste Management Licensing regime, some aspects of which will transfer to PPC. The Operators of prescribed activities (except landfills which will be required to meet the requirements of the landfill directive) will have to conduct their activities such that "all the appropriate preventative measures are taken against pollution in particular through the application of best available techniques". This includes odorous releases. The term "odour" covers a very broad range of compounds released from a potentially wide range of industrial activities. Odour can be a very subjective issue; a given exposure will evoke a different response between individuals. The requirement is to avoid harm which, in the case of odour, is considered in terms of "offence to the senses of human beings".

To support the IPPC (Integrated Pollution Prevention and Control) Sector Guidance Notes, the need for a cross-sectoral guidance note on odour was recognised. This would sit alongside the Sector notes and assist in the determination of BAT for odour on an installation-specific basis.

In addition it would provide advice on the different methodologies for qualitative and quantitative assessment of odour and indicate the appriopriate use of each in order to bring about consistency of approach.

Project P4-079 has produced two outputs. The first of these, P4-079/1 is a study of BAT for Noise and Vibration. The aim of this second part, P4-079/2, was to produce a technical report based on a desk-top study of the best available techniques used to assess and control odour in a wide range of situations. These situations would reflect those types of activities and odour sources to be regulated by the Agency under IPPC. This would then underpin the guidance on the subject.

The "measurement" of odour in the conventional sense can be difficult. Most odours are mixtures of compounds and a knowledge of the chemical species present rarely gives any indication of the human response to a mixture. The subjective view can be obtained by using olfactometry. Sometimes it is appropriate to measure a single chemical compound by conventional analytical methods or a suitable "surrogate" substance selected from a mixture for monitoring but must be representative of the mixture. It was seen as necessary to bring together an overview of the relevant British Standards, CEN standards and other guidelines relating to the quantitative and qualitative assessment of odours and to show how and where they should be used.

Consideration of "end-of-pipe" odour control options was to include standard options as well as low cost options and innovative solutions to odour problems. Prevention and/or effective management of odour is often a more cost-effective means of control than add-on abatement technologies and should normally be a first consideration. For some types of operation, where enclosure of the odour generating activities within buildings is not possible, management techniques are the only option available. The project therefore set out to explore "best practice" in terms of odour management, in addition to abatement hardware. The capital and running costs of odour control hardware were also considered for a range of different scenarios.

This work was undertaken by AEA Technology Environment. R&D Technical Report P4-079/2 provides a body of information on the assessment and control of odorous emissions, operations and activities covered by IPPC, although it could potentially be of wider application.

The aims of the work were met although in describing the various standards and guidance available, the report, deliberately, does not attempt to extract a prescriptive method for establishing odour limits. The setting of an appropriate limit or other conditions will always depend on local factors. This aspect was outside of the remit of the project and is regarded as the role of regulatory guidance.

Four case studies are included in the report to illustrate odour assessment and control in practice. It was not possible to use IPPC examples, as the regime had not been fully implemented at the time that the work was undertaken. However the examples which have been used demonstrate a mixture of both innovative and more standard ways to address odour emissions from various operations. They demonstrate the difficulties, costs and benefits of each.

The work has been incorporated into the IPPC Horizontal Odour Guidance, Part 2: "Assessment and Control". Part 1: Regulation and Permitting, is due to be issued for consultation alongside Part 2 in Autumn 2002.

This R&D Technical Report contains additional information which does not appear in the guidance notes; in particular the case studies. **This report should <u>not</u> be used for the purpose of regulatory decision-making.**

This R&D Technical Summary relates to information from R&D Project P4-079/TR/2 reported in detail in the following output:-

R&D Technical Report P4-079/TR/2
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Project Manager
Loraine Powell, Environmental Protection National Service, HO

Research Contractor
AEA Technology Environment.

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Rio House
Waterside Drive
Aztec West
Almondsbury
Bristol
BS32 4UD

Tel: 01454 624400
Fax: 01454 624409