

THE SOIL AND GROUNDWATER TECHNOLOGY ASSOCIATION

SAGTA REPORT 19 - LANDFILL DIRECTIVE - ISSUES AND WAY FORWARD

Introduction

Site remediation activities can often involve procedures that generate waste or materials that may be legally defined as waste. This waste can often be treated and recycled and at other times it may be disposed of using landfill sites. Recently the Landfill directive (1999/31/EEC) has been ratified by the European Union and is being implemented in member states in a staged manner.

SAGTA's workshop in September 2002 sought to identify issues that might arise from the implementation of the directive from a perspective of how it might impact on soil and groundwater remediation activities. The workshop also considered where SAGTA could contribute to the development of appropriate practice and knowledge. Aspects of presentations and areas where SAGTA can contribute are summarised below.

The Landfill Directive (1999/31/EEC)

The aim of the directive is largely similar to objectives under the Waste Management Licencing (WML) regulations in seeking to prevent or reduce as far as possible negative effects on the environment. In particular this relates to pollution of surface water, groundwater, soil, air, as well as any resulting risk to human health from the landfilling of waste. Key issues are:

- the directive is a hazard rather than risk based and this can lead to conflicts in approach with contaminated land procedures
- landfill sites will be split into three main types, that is inert, non hazardous and hazardous according to the type of waste that they are permitted to receive
- there is a 5-year timetable, ending in 2007, for bringing these different types of site within the auspices of the directive
- the Environment Agency (EA) is preparing substantial amounts of technical guidance, associated with the permitting and operational aspects of the directive
- after 2004 for hazardous waste and 2005 for non-hazardous waste, almost all waste that is not inert will need to be treated (physically or chemically) prior to disposal in landfill sites. A possible problem in the contaminated land area is that it is sometimes neither practical nor economic for material to be treated prior to disposal, particularly where project economics are critical (in site development schemes, for example)
- most waste (except inert waste) sent to landfill sites after July 2005 will be required to satisfy Waste Acceptance Criteria (or WACs) before they are admitted for disposal. Interim WACs for the UK have been provided. Most WACs will eventually depend on leachate testing procedures, which are currently being defined and developed. Some key contaminants are still to be assigned WACs eg Benzo(a)Pyrene (B(a)P).

Areas where SAGTA can contribute

- *EA technical guidance:* Guidance needs to be appropriate from a site remediation point of view. SAGTA is happy to be involved in the consultation processes that precede the implementation of regulations.

Waste Classification

There will be future emphasis on classification schemes to describe waste e.g. via the European Waste Catalogue, or EWC, which has been integrated with the Hazardous Waste List (HWL) in Commission

Decision 2001/118/EC. Also, the UK 'Special Waste' designation will change to 'Hazardous Waste' and this will introduce additional hazard criteria e.g. ecotoxicity which could lead to contaminated soils to be newly classified as hazardous waste, whereas previously this was not the case.

Producers of hazardous waste will need to be registered with the EA. When land remediation projects are undertaken, this may raise the question as to who is the waste producer.

Areas where SAGTA can contribute

- SAGTA can contribute by ensuring that contaminated soils receive the appropriate profile when
- remediation schemes are being implemented. The revised EWC includes two 'mirror' entries for contaminated soils. One is hazardous (17 05 03, soils and stones containing dangerous substances) and the other (17 05 04, soils and stones other than those mentioned in 17 05 03) is non-hazardous. It will be for the remediator to decide which category to apply.

Regulation

The Pollution Prevention and Control (PPC) regulations will in the UK cover all recovery and disposal operations. Hence it is likely to be a significant area of law when remedial activities are undertaken.

The definition of waste is wide-ranging and open to interpretation and case law is being reassessed continuously. Within current WML regulations, remediation activities can be covered by Mobile Plant Licences (MPLs) and by listed exemptions.

A number of waste management activities will in the future fall directly under the PPC regulatory regime as landfill sites will be regulated via that route. Various noteworthy activities are likely to be outside the scope of the PPC regulations, e.g. use of suitable inert waste for development, restoration and filling-in work for construction purposes. Alternatively activities could be covered by exemptions

Areas where SAGTA can contribute

- SAGTA is happy to comment on emerging guidance to help achieve the development of workable solutions.

Case Studies

Case studies are a valuable source of practical experience that can be used to inform future legislative and regulatory actions. Evidence from previous remediation schemes involving work under waste disposal and waste management regimes has highlighted difficulties with the definition of waste when applied to contaminated land, but there is optimism that problems can be overcome. Key points in the process have been:

- working with the regulators and the planners, ensuring everyone is kept well informed and there are no nasty surprises
- ensuring that the site is well understood, chemically, physically and from the wider environmental point of view
- planning the verification process as soon as possible, recognising that it is a process, not a one-off event.

Areas where SAGTA can contribute

- SAGTA should develop a casebook of case study examples and use studies such as the CLUSTER initiative to further build upon experiences
- Use these experiences to initiate change where appropriate eg on the definition of waste in remediation schemes.

Treatment Technologies

Research has been commissioned by the EA (Technical report P5-056) into pre-treatment technologies that might be useful for soil remediation work in order to:

- meet the requirements of the waste pre-treatment under the terms of the Landfill Directive
- enable disposal to a lower classification of landfill
- be suitable for re-use of materials on-site, without requiring special engineering procedures.

Areas where SAGTA can contribute

- SAGTA can compare this research report with information that it holds e.g. its treatment technology project.

Waste Leaching Tests

Waste leaching tests are becoming increasingly important because of their direct association with WACs. As a result, they will have a part to play in the execution of remediation schemes.

There are many different factors that control the leaching characteristic of waste e.g. the nature of waste and the leachant, chemistry of the contaminants, pH, redox potential and physical, chemical and biological changes over time. It is important that the appropriate well-designed leaching test is selected when a waste is to be tested and this is particularly problematic for contaminated land streams, which vary significantly in their make-up, even on the same site. Work is currently being carried out by the European Standards Agency (CEN) to develop this guidance in order to achieve correct selection. UK representation on the working groups, however, is poor. Procedures could be expensive and time consuming, costing around £2000 per test and percolation tests can take 25 days to complete. These could have significant impacts on remediation schemes.

Areas where SAGTA can contribute

- SAGTA is happy to comment on proposals for WACs and leaching tests
- SAGTA can also assist by keeping up-to-date and disseminating information on developments and their potential legislative/regulatory implications
- SAGTA could consider participation in a BSI Committee (B508/3) that shadows the CEN Technical Standards committee which is producing the leaching test protocols.

Initiatives and Related Research

Single Regeneration Permit

Work is being carried out on a Single Regeneration Permit, which will attempt to simplify the regulatory processes involved when instituting remediation schemes and will hopefully avoid the stigma associated with landfill licences.

For further information on SAGTA please contact the Secretary of the Association Doug Laidler at douglas.laidler@atkinsglobal.com Tel +44 01372 726140

